



ZRD1: Zoning Resolution Determination Form

Must be typewritten.

☒ Orient and affix BIS job number label here ☒

1 Location Information Required for all requests on filed applications.

House No(s) 217 Street Name West 57th Street
Borough Manhattan Block 1029 Lot 19 BIN 1080870 CB No. 105

2 Applicant Information Required for all requests on filed applications.

Last Name Jansen First Name David Middle Initial
Business Name AAI Architects, P.C. Business Telephone 416-967-1500
Business Address 14 Wall Street Business Fax
City New York State N.Y. Zip 10005 Mobile Telephone
E-Mail nzigomanis@adamson-associates.com License Number 02881
License Type ☐ P.E. ☒ R.A. DOB PENS ID # (if available)

3 Attendee Information Required if different from Applicant in section 2 or no Applicant.

Relationship to the property: ☒ Filing Representative ☐ Attorney ☐ Other:
Last Name Sillberman First Name Nathan Middle Initial
Business Name Construction Consulting Associates, Inc. Business Telephone 212-385-1818
Business Address 100 Church Street, Suite 850 Business Fax
City New York State N.Y. Zip 10007 Mobile Telephone
E-Mail Objections@ccacode.com License/Registration # (if P.E./R.A./Attorney)
DOB PENS ID # (if available)

4 Nature of Request Required for all requests. Only one request may be submitted per form.

Note: Use this form only to request Zoning Resolution determination (for all other requests, use CCD1 form)

Determination request issued to: ☒ Borough Commissioner's Office ☐ Technical Affairs

Job associated with this request? ☒ Yes (provide job#/doc#/examiner name below) ☐ No

Job Number: 121328205 Document Number: 01 Examiner: Damian Titus

Has this request been previously denied? ☐ Yes (attach all denied request form(s) and attachment(s)) ☐ No

Indicate total number of pages submitted with this request, including attachments: (attachment may not be larger than 11" x 17")

Indicate relevant Zoning Resolution section(s): section 12-10 definition of Floor area

Indicate all Buildings Department officials that you have previously reviewed this issue with (if any):

☐ Borough Commissioner ☐ Code & Zoning Specialist ☐ General Counsel's Office
☐ Deputy Borough Commissioner ☐ Chief Plan Examiner ☐ Other:

ADMINISTRATIVE USE ONLY	
Reference #:	Appointment date: Appointment time:
Appointment Scheduled With:	
Comments:	
Reviewed By:	Date Time:

REVIEWED BY
David Aigner
Senior Zoning Specialist
David J. Aigner
APPROVED
Control No.: 33883
Date: 5/23/14
Page: 1 of 12

5 Description of Request (additional space is available on page 3)

Note: Buildings Department officials will only interpret or clarify the Zoning Resolution. Any request for variations of the Zoning Resolution must be filed with the Board of Standards and Appeals (BSA) or the Department of City Planning (DCP).

Please itemize all attachments, including plans/sketches, submitted with this form. If request is based on a plan examiner objection, type in the applicable objection text exactly as it appears on the objection sheet.

This ZRD1 seeks reconsideration of the denial dated March 17, 2014 (the "Determination") of a zoning determination request filed under Control No. 32477. The request was made in respect of an application to construct a new building ("Building") at 217 West 57 Street in Manhattan ("Property") which is now being reviewed by the Department of Buildings (the "Department") under NB# 121328205. It asked that the Department confirm that heat pumps used to provide heat and air conditioning qualify as "mechanical equipment" and that the demised spaces in which they are installed are excluded from the calculation of floor area in accordance with Section 12-10 of the Zoning Resolution.

We believe, for the reasons set forth below, that heat pumps are mechanical equipment with respect to the Building as a whole, that so treating them is consistent with the past, present and proposed policy of the Department, and that the demised floor space under and around each individual heat pump should be excluded from the calculation of zoning floor area.

The operation of the heat pumps and their critical role as part of a central heating, ventilation and air conditioning (HVAC) system for the Building is described in the attached letter by Christopher O. McHugh of AKF Group LLC, and Drawings ZSK-23.1 through 23.5 prepared by AAI Architects, P.C. Simply put, the heat pumps allow the building's central HVAC system to service individual dwelling units effectively and efficiently. This is because, unlike an office building in which a central system can serve multiple floors (or even the entire building) with a uniform temperature, an apartment building's central system must have a component that both adjusts the air temperature for each apartment and distributes the climate controlled air around the apartment. The heat pump does this through a form of heat exchange – that is, it warms the air in the apartment by extracting heat from hot water produced by the building's boilers and cools the air in the apartment by rejecting heat into the condenser water produced by the building's cooling towers. Fans are used to control air flow across the heat pumps to extract or reject heat as necessary.

The proposed heat pumps cannot operate individually or otherwise function in a "stand-alone" capacity because they rely on the building's central system to provide hot and cold water. Nor can the building's central HVAC system provide individual apartment units with appropriate heating and cooling without the heat pumps, which both regulate the temperature of the air in each apartment and distribute the air around the apartment. Thus, the heat pumps are, unlike tenant specific mechanical equipment in an office building, permanent parts of the building's HVAC system. Indeed, it would be impossible for the building to maintain an inside air temperature that complies with the provisions of the Housing Maintenance and Building Codes governing to heat and ventilation without them.

Each heat pump will be demised within a floor-to-ceiling enclosure that also will contain both the hot and cold water risers necessary to serve all of the heat pumps in that line and the supply and return air ducts for the apartment unit. This volume of space is unfinished and uninhabitable, is segregated from living spaces within the Building, and, as indicated on drawings filed with this request, is no larger than is absolutely necessarily to house the equipment and provide space for its maintenance. Each enclosure will be accessible only by maintenance access panel. The nature and configuration of the proposed heat pumps is completely different from the individual radiators, convectors and air conditioning units (including portable, window box, in-wall or packaged terminal air conditioning units) and the spaces that house them – spaces that the Department has interpreted as counting toward floor area – in that, unlike the heat pumps, none of these units both condition and centrally distribute air and none are located in uninhabitable floor-to-ceiling enclosures.

Note: Buildings Department Determinations will be issued on the ZRD1 Response Form

ADMINISTRATIVE USE ONLY
Reviewed By: **David Aigner**
Senior Zoning Specialist

Reviewed By:

Date:

Time:

APPROVED

Control No.: **33883**
Date: **5/23/14**
Page: **2 of 12**

6 Description of Request (use this section if additional space is required for description)

We therefore urge you to confirm that the heat pumps in the Building are mechanical equipment and the space within which they are located is excluded from zoning floor area.

- The heat pumps are fully integrated into and permanent parts of the Buildings central HVAC system.
- The heat pumps function as heat exchangers, using hot water to heat air and chilled condenser water to cool air that is then circulated around an apartment to ensure the comfort of its occupants and compliance with the Housing Maintenance and Building Codes.
- The enclosures within which the heat pumps are installed are, unlike radiators, convectors and air conditioning units, fully demised from the habitable spaces in the building and sized no larger than is necessary to accommodate the heat pumps themselves, the risers that serve them, the ductwork connected to them, and an adjacent area for service.
- Lastly, we believe that the exclusion of heat pumps from floor area was specifically intended, pre-saged and included in all of the drafts of Department Bulletin (not yet issued) on the subject of Mechanical Deductions. We have used this draft Bulletin as a guide in the calculations of floor area for the project.

We are available to meet and discuss this issue further at your convenience.

Note: Buildings Department Determination will be issued on the ZRD1 Response Form

7 Statements and Signature Required for all requests

I hereby state that all of the above information is correct and complete to the best of my knowledge. Falsification of any statement is a misdemeanor 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.

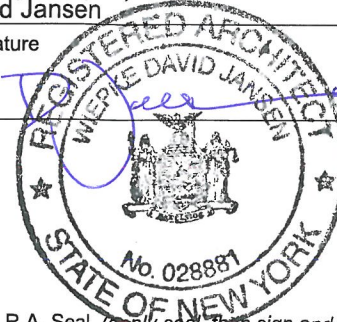
Name (please print)

David Jansen

Signature

Date

5/2/14



P.E. / R.A. Seal (apply seal then sign and date over seal – not required for Attorneys on unfilled applications)

REVIEWED BY

David Aigner

Senior Zoning Specialist

ADMINISTRATIVE USE ONLY

Reviewed By:

Date

Time:

APPROVEDControl No.: **33883**

Date:

5/23/14

Page:

3 of 12

ZRD1/CCD1 Response Form

Location Information (To be completed by a Buildings Department official if applicable)

House No(s) 217

Street Name West 57th Street

Borough Manhattan

Block 1029

Lot 19

BIN 1080870

Job No. 121328205

DETERMINATION (To be completed by a Buildings Department official)

Request has been: ☒ Approved ☐ Denied ☐ Approved with conditions

Follow-up appointment required? ☐ Yes ☒ No

Primary Zoning Resolution or Code Section(s): ZR 12-10 "floor area," paragraph (8)

Other secondary Zoning Resolution or Code Section(s):

Comments:

The request, to determine that heat pumps provided within individual dwelling units may be excluded from floor area as shown, is hereby approved.

Because the proposed heat pumps located within dwelling units (i) are minimally sized, (ii) are within a fire rated enclosure, and (iii) occupy floor space from floor to ceiling resulting in no usable space within such area, such heat pumps may be excluded from the calculation of floor area as "mechanical equipment" as per ZR 12-10 "floor area", paragraph (8), and the request is approved.

=====

Note: If determination is not uploaded via eSubmit or scanned (whichever is applicable), it will be deemed invalid.

Name of Authorized Reviewer (please print): Edwin Tang, RA

Title (please print): Executive Director (on behalf of NYC Development Hub)

Authorized Signature:

REVIEWED BY
David Aigner
Senior Zoning Specialist

Date:

Time:

Issuers: write signature, date, and time on each page of the request forms; and attach this form.

Note: Determination will expire if construction document approval is not obtained within 12 months of issuance.

APPROVED

Control No.: **33883**

Date: **5/23/14**

Page: **4 of 12**



March 28, 2014

Mr. Jed Weiss
Executive Zoning Specialist
NYC Development Hub
80 Centre Street, 3rd Floor
New York, NY 10013

Re: Extell - 217 West 57th Street Project
Heat Pump System
AKF Project No. Y130747

Dear Mr. Weiss:

AKF is a full-service Consulting Engineering firm serving public and private sector clients across the United States with specific expertise on high-rise residential projects in the New York City area such as the nearly completed Extell One57 tower. We are also the engineering firm currently designing the mechanical systems for 217 West 57th Street which is a mixed use building with a retail department store podium and a high-rise residential tower above. I am the mechanical engineer of record.

The heating, ventilation, and air conditioning (HVAC) system for all of the residential floors, as illustrated in the enclosed flow diagram, relies on a number of essential components such as cooling towers, pumps, heat exchangers, tanks, boilers, piping and heat pumps working together to form a complete and essential system integral to the building operation. We are writing to reinforce that the heat pump units located within each dwelling are clearly a critical component of this system.

The system for heating the building relies on building boilers in the heating season that inject hot water into the heat pump system which allows each residential floor to extract the heat from the condenser water medium as needed. The system for cooling the building relies on cooling towers to provide condenser water to each heat pump. The condenser water provides a medium for heat rejection from each residential floor.

Each heat pump enclosure is full height floor to ceiling minimally sized to contain the building water risers to serve the vertical heat pump units along with both supply and return ductwork and controls. The vertical heat pump supply ductwork runs to the top of the enclosure and then is distributed through the zone of the space to provide the needed cooling and heating to condition each residential floor depending on the temperature requirements through air outlets in the ceiling and walls. The return ductwork is located at the top of the heat pump enclosure and extends into the ceiling space to bring return air back to the unit. This is completely different from individual stand-alone radiators, convectors or air conditioning units such as through-the-wall units, called "PTAC" units which are situated under the windows of the dwelling unit and are not floor to ceiling.



It must be understood that the heat pumps are a critical mechanical component of the building and without these units the residential spaces would not be provided with cooling and primary heating to meet code requirements for legal habitation.

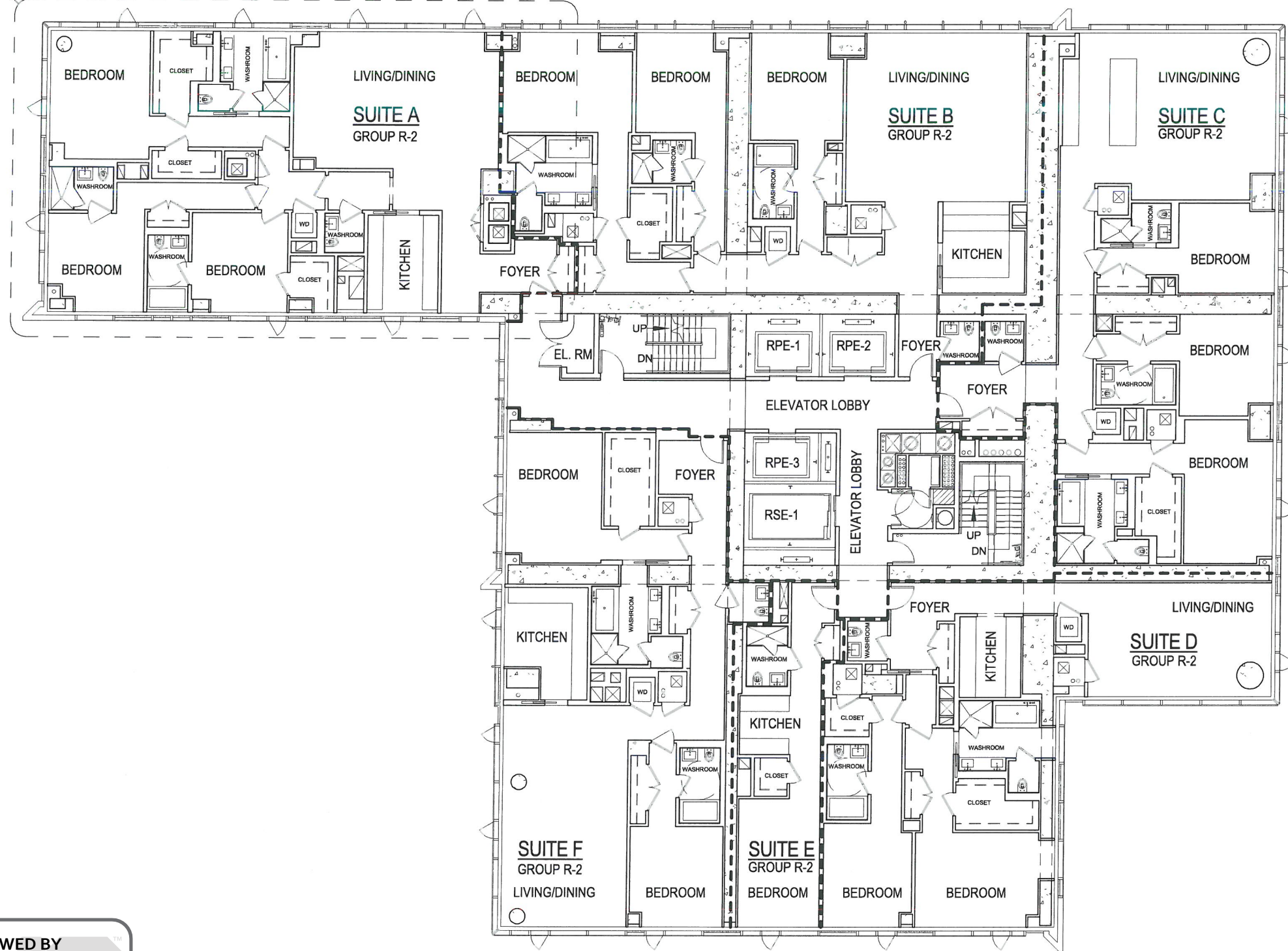
Very truly yours,

AKF

Christopher O. McHugh, P.E., LEED, CEM
Partner



1
ZSK-23.2

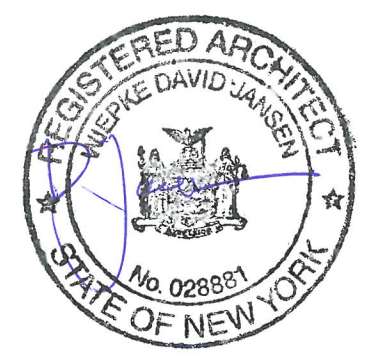


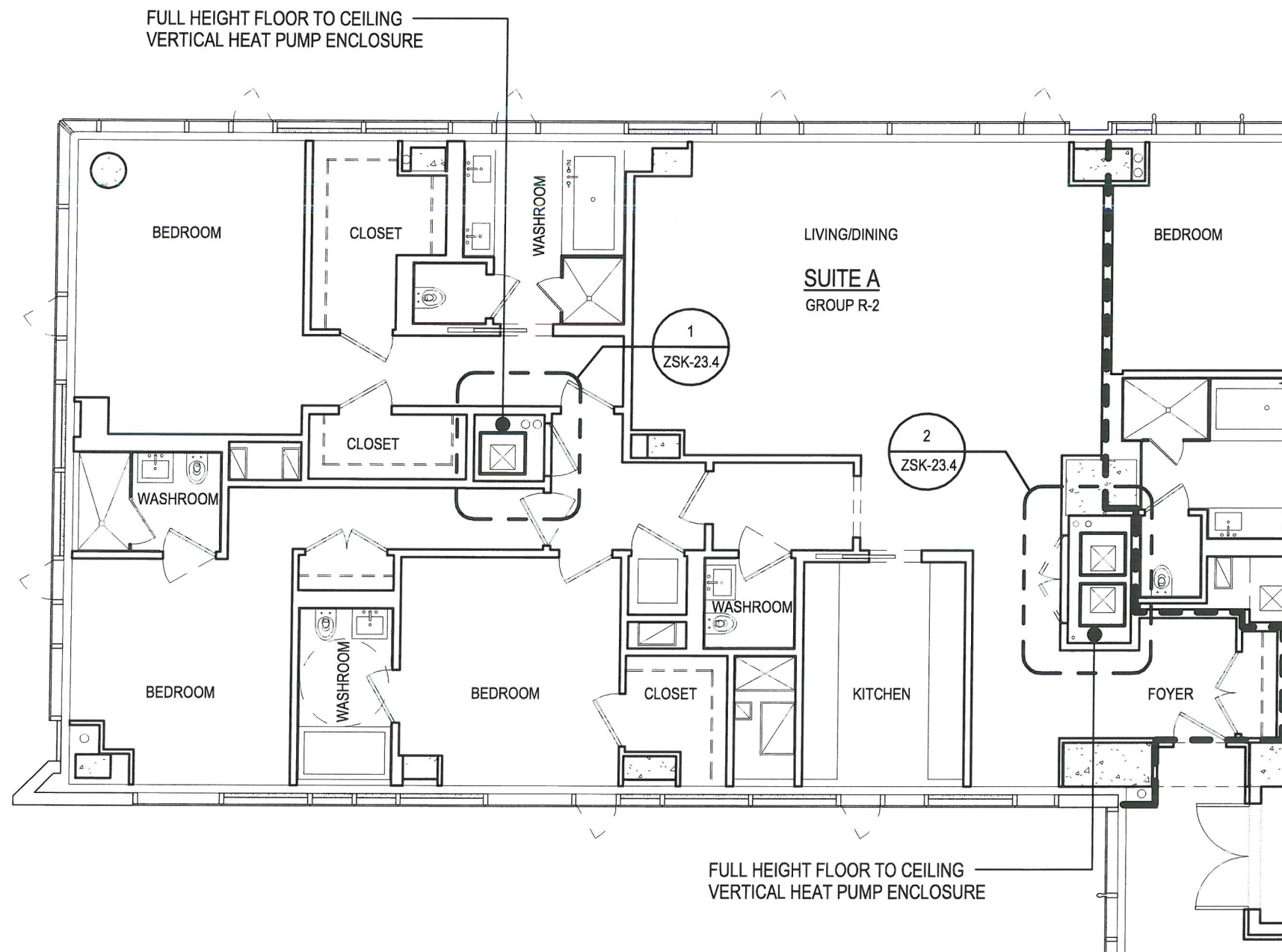
REVIEWED BY
David Aigner
Senior Zoning Specialist
David J. Aigner
APPROVED
Control No.: **33883**
Date: **5/23/14**
Page: **7 of 12**



217 WEST 57TH STREET, NEW YORK

TYPICAL RESIDENTIAL FLOOR PLAN - VERTICAL HEAT PUMP ENCLOSURE
DATE: MARCH 28, 2014
DWG #: ZSK-23.1





REVIEWED BY
David Aigner
 Senior Zoning Specialist

David J. Aigner
 Buildings

APPROVED

Control No.: **33883**
 Date: **5/23/14**
 Page: **8 of 12**

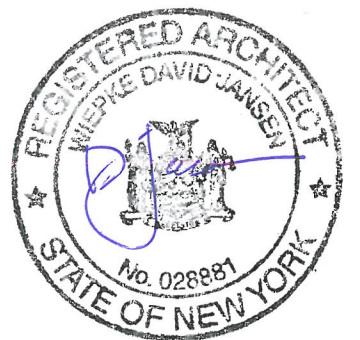


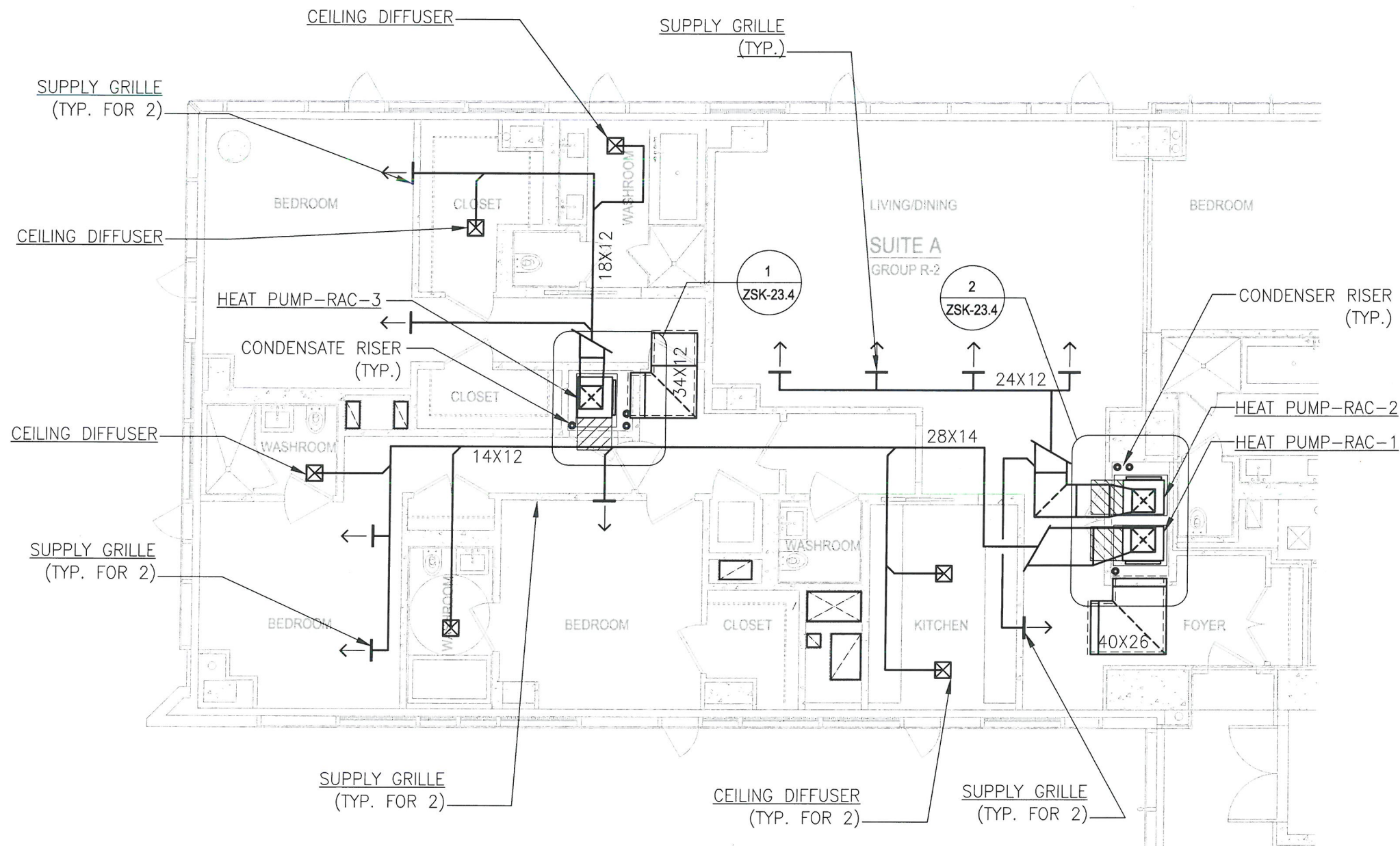
217 WEST 57TH STREET, NEW YORK

RESIDENTIAL UNIT PLAN (TYPICAL 14 FLOOR) - VERTICAL HEAT PUMP ENCLOSURE

DATE: MARCH 28, 2014

DWG # : ZSK-23.2





REVIEWED BY
David Aigner
Senior Zoning Specialist

David J. Aigner
Buildings

APPROVED

Control No.: **33883**

Date: **5/23/14**

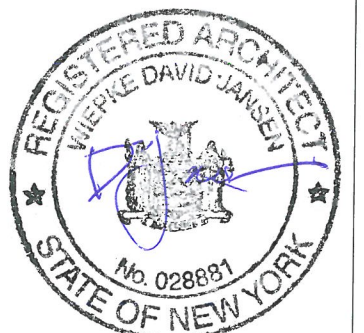
Page: **9 of 12**

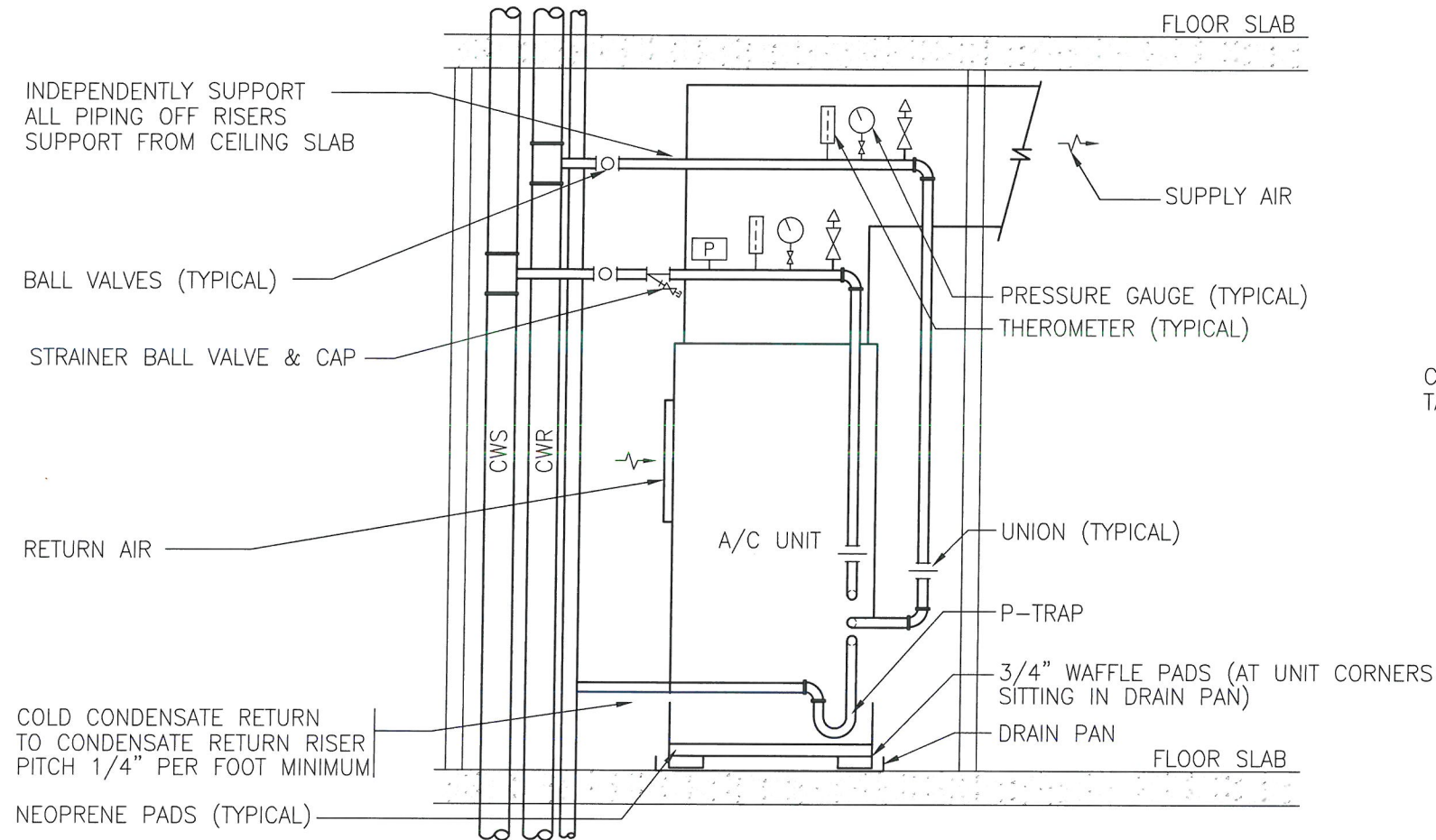
217 WEST 57TH STREET, NEW YORK

RESIDENTIAL UNIT PLAN (TYPICAL 14 FLOORS) DUCTWORK LAYOUT
- VERTICAL HEAT PUMP ENCLOSURE

DATE: MARCH 28, 2014

DWG # : ZSK-23.3

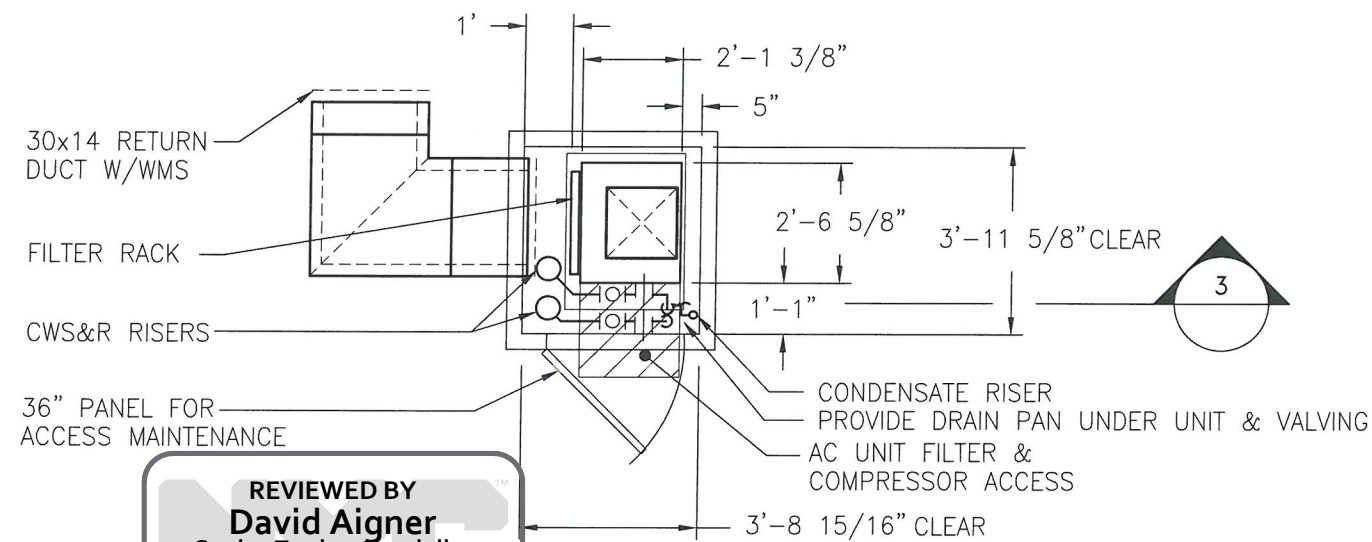




NOTES

1. EACH UNIT PROVIDED WITH UNIT MOUNTED 2-WAY FLOW VALVE & CALIBRATED BALANCING VALVE, FACTORY-INSTALLED IN CABINET.

3 RESIDENTIAL HEAT PUMP PIPING DETAIL



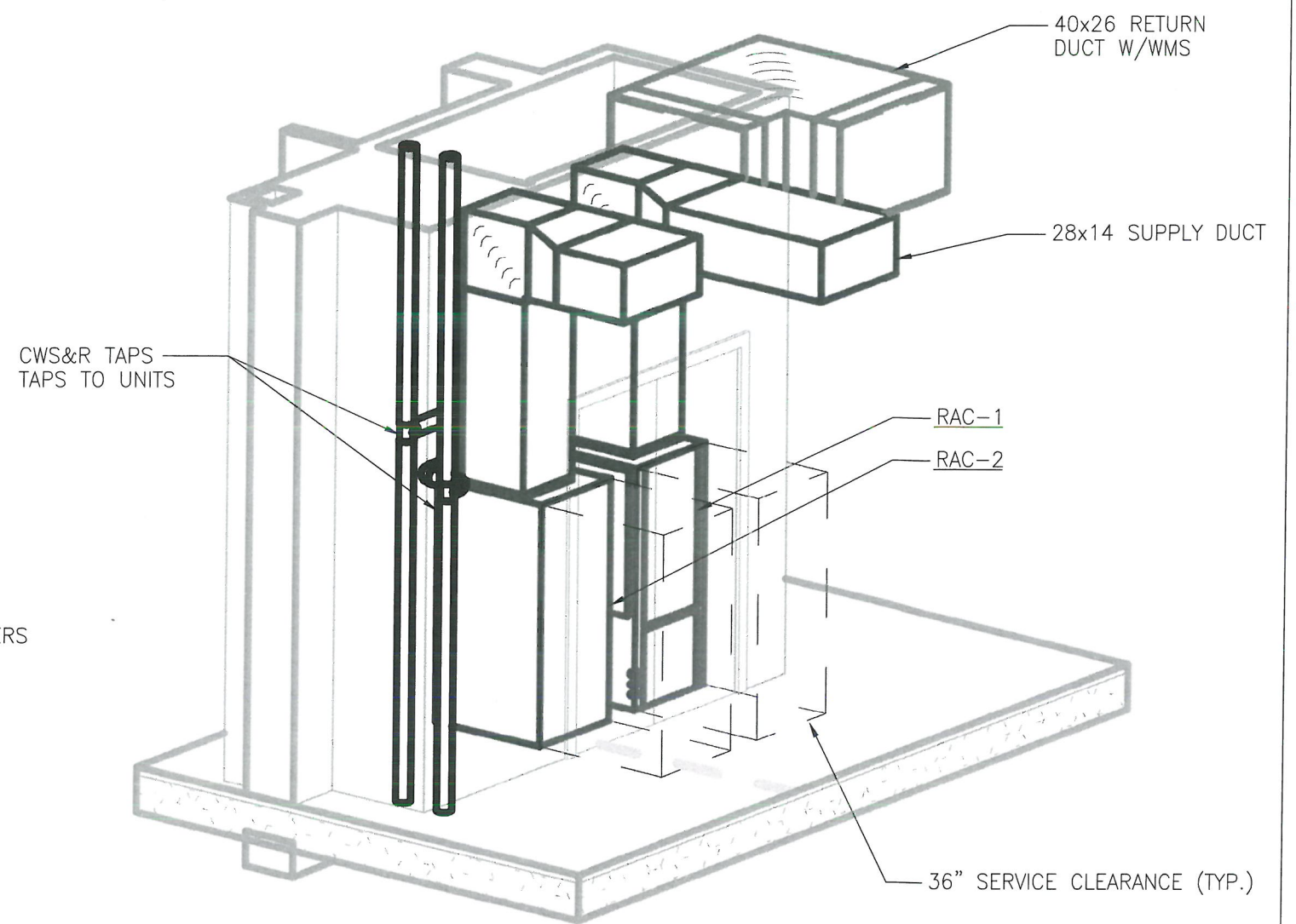
REVIEWED BY
David Aigner
Senior Zoning Specialist

David Aigner
Buildings

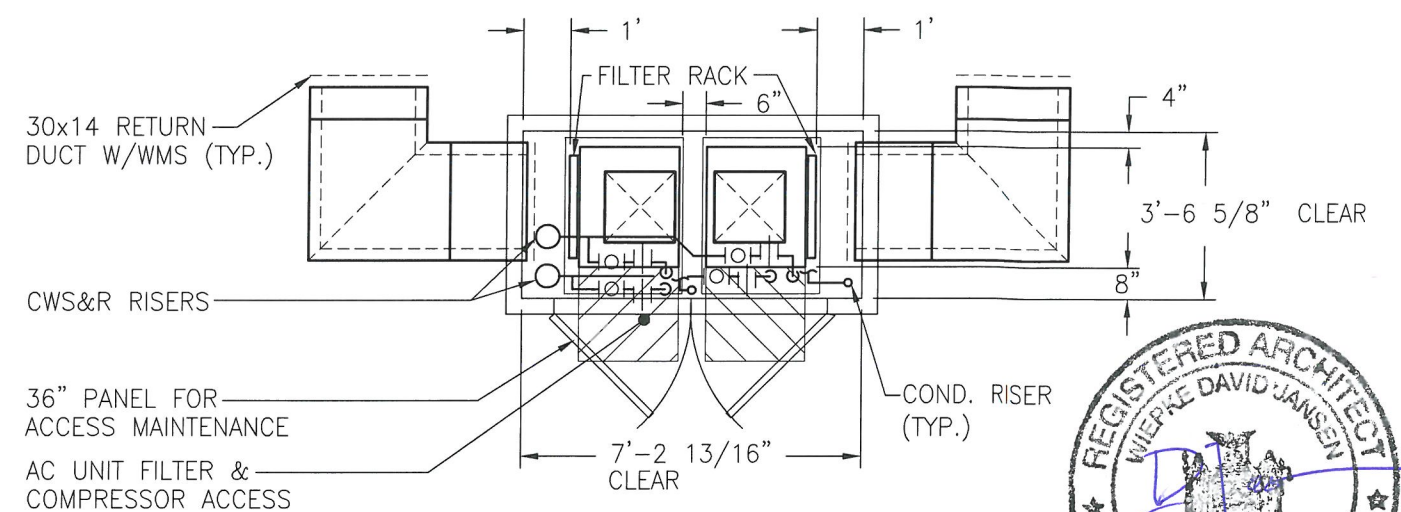
APPROVED

Control No.: **33883**
Date: **5/23/14**
Page: **10 of 12**

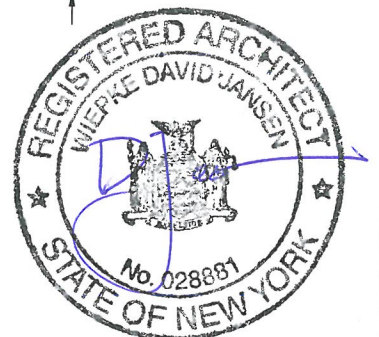
217 WEST 57TH STREET, NEW YORK



4 RESIDENTIAL HEAT PUMP PIPING ISOMETRIC



2 TYPICAL MER SIZE - BASED ON TWO UNITS



RESIDENTIAL DETAILS - VERTICAL HEAT PUMP ENCLOSURE

DATE: MARCH 28, 2014

DWG # : ZSK-23.4

BUILDING COOLING TOWERS
(TYP. FOR 4)

CWS&R = CONDENSER WATER SUPPLY & RETURN

ROOF

CWS&R

CHEMICAL TREATMENT

PLATE & FRAME HEAT EXCHANGER (TYP.)

EXPANSION TANK

CWS

CWR

HOT WATER INJECTION POINT
FROM BOILER POINT (TYP.)

BALANCING VALVE

CWS&R

CONDENSER WATER
PUMPS (TYP.)

SAND FILTER

MER

TYPICAL RES. FLOORS

BUILDING
CWS&R
RISER

BUILDING
CWS&R
RISER

BUILDING
CWS&R
RISER

BUILDING
CWS&R
RISER

BUILDING
CWS&R
RISER

72ND FLOOR

71ST FLOOR

70TH FLOOR

HEAT PUMP
CLOSET (TYP.)

REVIEWED BY
David Aigner
Senior Zoning Specialist

David J. Aigner
Buildings

APPROVED

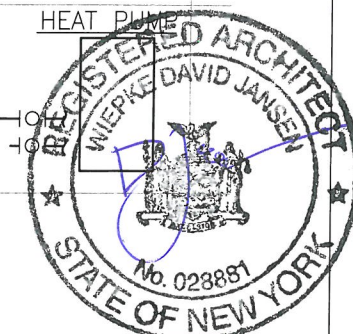
Control No.: **33883**
Date: **5/23/14**
Page: **11 of 12**

217 WEST 57TH STREET, NEW YORK

HVAC FLOW DIAGRAM - VERTICAL HEAT PUMP ENCLOSURE

DATE: MARCH 28, 2014

DWG # : ZSK-23.5



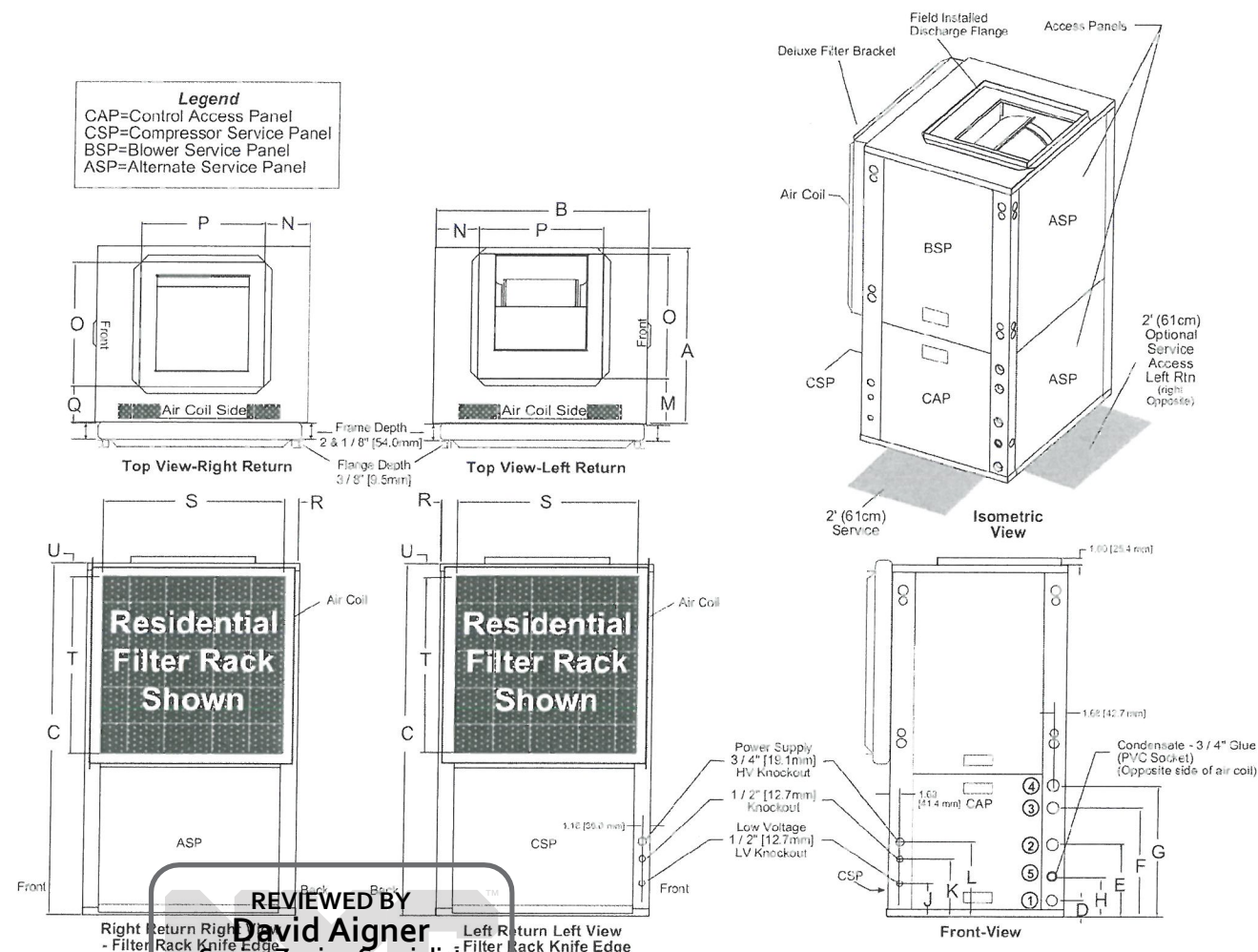
Dimensions — Vertical Downjow Tranquility® 30

Vertical Upflow Model		Discharge Connection Duct Flange Installed (+/- 0.20 in, +/- 5.1mm)					Return Connection Standard Deluxe Filter Rack (+/- 0.20 in, +/- 5.1mm)			
		M Left Return	N	O Supply Width	P Supply Depth	Q Right Return	R	S Return Depth	T Return Height	U
026	in	7.8	5.8	14.0	14.0	4.9	1.7	22.2	26.2	1.7
	cm	18.3	14.8	35.6	35.6	12.4	4.3	56.4	66.5	4.3
038	in	6.4	6.3	18.0	18.0	5.3	1.7	27.2	26.2	1.7
	cm	16.1	16.0	45.7	45.7	13.5	4.3	69.1	66.5	4.3
049	in	6.4	6.3	18.0	18.0	5.3	1.7	27.2	30.2	1.7
	cm	16.1	16.0	45.7	45.7	13.5	4.3	69.1	76.7	4.3
064	in	6.4	6.3	18.0	18.0	5.3	1.7	27.2	34.2	1.7
	cm	16.1	16.0	45.7	45.7	13.5	4.3	69.1	86.9	4.3
072	in	6.4	6.3	18.0	18.0	5.3	1.7	27.2	34.2	1.7
	cm	16.1	16.0	45.7	45.7	13.5	4.3	69.1	86.9	4.3

Vertical Downflow Model		Overall Cabinet		
		A Width	B Depth	C Height
026	in cm	22.4	25.6	52.5
		56.8	65.1	133.4
038	in cm	25.4	30.6	54.5
		64.5	77.8	138.4
049	in cm	25.4	30.6	58.5
		64.5	77.8	148.6
064	in cm	25.4	30.6	62.5
		64.5	77.8	158.8
072	in cm	25.4	30.6	62.5
		64.5	77.8	158.8

Vertical Downflow Model		Water Connections						
		1	2	3	4	5		
		D In	E Out	F HWG IN	G HWG Out	H Condensate	Loop Water FPT	HWG FPT
026	in cm	17.2	9.3	5.4	2.4	3.6	1"	1"
		43.7	23.6	13.7	6.1	9.2	Swivel	Swivel
038	in cm	17.9	10.5	5.7	2.4	3.6	1"	1"
		45.5	26.7	14.5	6.1	9.2	Swivel	Swivel
049	in cm	17.9	10.5	5.7	2.4	3.6	1"	1"
		45.5	26.7	14.5	6.1	9.2	Swivel	Swivel
064	in cm	17.9	10.5	5.7	2.4	3.6	1"	1"
		45.5	26.7	14.5	6.1	9.2	Swivel	Swivel
072	in cm	17.9	10.5	5.7	2.4	3.6	1"	1"
		45.5	26.7	14.5	6.1	9.2	Swivel	Swivel

Vertical Downflow Model		Electrical Knockouts		
		J 1/2"	K 1/2"	L 3/4"
		Low Voltage	External Pump	Power Supply
026	in cm	15.7	13.2	10.7
		39.9	33.5	27.2
038	in cm	17.7	15.2	12.7
		45.0	38.6	32.3
049	in cm	17.7	15.2	12.7
		45.0	38.6	32.3
064	in cm	17.7	15.2	12.7
		45.0	38.6	32.3
072	in cm	17.7	15.2	12.7
		45.0	38.6	32.3



Condensate is 3/4" PVC female glue socket and is switchable from front to side.
Unit shipped with deluxe duct collar/filter rack extending from unit 3" [7.6cm] and is suitable for duct connection.
Downflow unit does not have discharge flange, and is rated for zero clearance installation.



REVIEWED BY
David Aigner
Senior Zoning Specialist

Buildings

Control No.: **33883**
Date: **5/23/14**
Page: **12 of 12**

217 WEST 57TH STREET, NEW YORK

RESIDENTIAL HEAT PUMP MANUFACTURER'S DATA SHEET - VERTICAL HEAT PUMP ENCLOSURE

DATE: MARCH 28, 2014

DWG # : ZSK-23.6