

HEAT LOAD SUMMARY

PROJECT : KFC (FC)	LOCATION : IGIA, DELHI AIRPORT	DATE : 06.12.2023	REVISION : R5
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Assumptions -

- | | | | | |
|---|--------------------|---|-------|---------------------|
| 1 | Inside Condition | : | 22.78 | Deg C + / - 1 Deg C |
| 2 | Relative Humidity | : | 15 | % |
| 3 | Out Side Condition | : | 43.33 | Deg C |
| 4 | Lighting Load | : | 1 | Watts / Sq.ft |

Sr. No.	Space Description Area	Total Area	Non-AC Area	AC Area	Total Height	False Ceiling Height	Fresh Air	Occupancy	Electrical Load		As per Heatload		Proposed Units					
		(Sq. Ft)	(Sq. Ft)	(Sq. Ft)	(FT)	(FT)	CFM	Nos.	Eqpt. Load Kw	Lighting Load Watts/Sq.ft	TR	CFM	TYPE	TR	CFM	QTY.	TOTAL TR	TOTAL CFM
1	BOH AREA (FOOD COURT)	979	183	796	15.17	14.33	0	10	15	1	8.5	5560	CHW AHU	9.0	5720	1	9.0	5720
2	FRESH AIR PROVISION												AIR WASHER UNIT		4100	1		
3	EXHAUST AIR PROVISION												DRY SCRUBBER UNIT		4500	1		
		979	183	796			0	10			8.5	5560				1.0	9.0	5720

HEAT LOAD ESTIMATION SHEET

LOCATION : DELHI	LAT. DEG. N : 28° 34'	ALTITUDE (MTRS) : 216	DAILY RANGE : 25
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CUSTOMER :	BOH AREA
ESTIMATED BY :	RITESH
DATE :	06.12.2023

DESIGN CONDITIONS :					
TIME OF PEAK LOAD :		APRIL, 16:00 HRS			
DB	% RH	WB	TH	GR/LB	

TOTAL AREA =	979	SQFT
NON-AC AREA =	183	SQFT
AC AREA =	796	SQFT
TOTAL HT. =	15.17	FEET
AVAILABLE HT. =	14.33	FEET

SUMMER					
OUTSIDE	110.0	15	72.10	35.56	57.80
INSIDE	73	55	62.25	27.96	66.80
DIFF.	37	X	X	7.60	-9.00
MONSOON					
OUTSIDE	92.2	71.4	84.00	48.13	165.20
INSIDE	73	55	64.11	29.31	72.00
DIFF.	19.2	X	X	18.82	93.20

PEOPLE :	10	NOS. X	7.5	CFM =	75	
	0.198	AIRFLOW (CFM) PER SQ.FT.		=	158	
	1	AIR CHANGES PER HOUR		=	190	
FRESH AIR REQUIREMENT					=	233
FRESH AIR PROVISION (by DIAL)					=	464

Summer Correction Factor for walls	19.5
Monsoon Correction Factor for walls	1.5

STRUCT.	SQFT	FACTOR	TEMP.		BTU/HR		EFFECTIVE ROOM LATENT HEAT			Sum	Mon	
			Sum	Mon	Sum	Mon	F. A.					
EFFECTIVE ROOM SENSIBLE HEAT			Sum	Mon	Sum	Mon	F. A.	0	-9	0.15x0.68	0	0
WALL N	0	0.34	24	6	0	0	PEOPLE	10	NOS.	205	2050	2050
WALL NE	0	0.34	24	12	0	0	ERLH SUBTOTAL			2050	2050	
WALL E	0	0.34	24	20	0	0	FACTOR		12.5%	256	256	
WALL SE	0	0.34	38	20	0	0	ERLH TOTAL			2306	2306	
WALL S	0	0.34	36	18	0	0	1) EFFECTIVE ROOM TOTAL HEAT			99281	79319	
WALL SW	0	0.34	34	16	0	0	2) OAS	0	ΔT	1.08x.85	0	0
WALL W	0	0.34	32	14	0	0	3) OAL	0	GR/LB DIFF.	0.68x0.85	0	0
WALL NW	0	0.34	26	8	0	0	GRAND TOTAL HEAT SUBTOTAL = 1 + 2 + 3			99281	79319	
GLASS N	0	0.56	14	11	0	0	FACTOR		3.0%	2978	2380	
GLASS NE	0	0.56	12	11	0	0	GRAND TOTAL HEAT			102259	81699	
GLASS E	0	0.56	12	11	0	0	AIRCONDITIONING TONNAGE			8.5	6.8	
GLASS SE	0	0.56	12	11	0	0	ERSHF			0.98	0.97	
GLASS S	0	0.56	12	13	0	0	INDICATED ADP			57.40	57.00	
GLASS SW	0	0.56	100	127	0	0	SELECTED ADP			54.00	54.00	
GLASS W	0	0.56	164	165	0	0	DEHUMIDIFIER CFM			5560	4415	
GLASS NW	0	0.56	123	100	0	0	CHECK RESULTS					
ALL GLASS	0	0.61	30.8	14.8	0	0						
PRT. WL.	657	0.40	25.8	9.8	6782	2576	GRAND TOTAL HEAT (BTU / HR / SQ.FT)			128.47	102.64	
PRT. GLS.	0	1.13	25.8	9.8	0	0	ROOM SENSIBLE HEAT (BTU / HR / SQ.FT)			121.83	96.76	
ROOF	0	0.25	54.50	36.50	0	0	S.Q. FT / PERSON			79.60	79.60	
CEILING	979	0.40	32	14.2	12531	5561	TONS / S.Q.FT			0.02	0.02	
FLOOR	979	0.40	32	14.2	12531	5561	C.F.M. / SQ.FT			6.99	5.55	
F. A.	0	37	0.15x1.08	0.15x1.08	0	0	TONS / PERSON			0.86	0.69	
PEOPLE	10	NOS.	245	245	2450	2450	DEHUMIDIFIED C.F.M. / TON			652.44	648.54	
LIGHT (W)	1	796	3.41	3.41	2714	2714	AREA PER TON			93.41	116.92	
EQPT. (KW)	15	1	3410	3410	51150	51150	ERSH TOTAL					
ERSH SUBTOTAL					88159	70012						
FACTOR			10%		8816	7001						

CHW S/R AND SUPPLY AIR TAP-OFF PROVIDED BY AIRPORT

KED TAP-OFF 500 x 500 MM PROVIDED BY AIRPORT

AIR WASHER UNIT AIRFLOW: 4100 CFM 73"(L) X 40"(W) X 48"(H) UNIT LOAD : 900 KG

MS STRUCTURE FOR SERVICES AT 14'-8"

BOTH SUPPLY AND RETURN CHW LINE TO BE CONNECTED USING BELLOW

CHW S/R Ø40 MM 19.8 USGPM

9.0 TR CHW AHU AIRFLOW- 5720 CFM 19.8 USGPM - Ø40 MM (L)40" x (W)76" x (H)30" WT - 500 KG. (APPROX) B.O. UNIT 11'-0"

NOTES :

- THE COPYRIGHT OF THIS DRAWING REMAINS WITH WHITE WATER DESIGN STUDIO AND IT MAY NOT BE REPRODUCED IN ANY WHICH MANNER WITHOUT PRIOR WRITTEN CONSENT.
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- THIS DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
- ALL PROPOSED WORKS TO BE CARRIED OUT IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS AND SCHEDULES MENTIONED FOR INTERIOR WORKS.
- READ THIS DRAWING IN CONJUNCTION WITH ALL CONSULTANTS' & SPECIALISTS' DRAWINGS, DETAILS, SCHEDULES & SPECIFICATIONS FOR :
i. SPRINKLER INSTALLATION
ii. AUTOMATIC FIRE DETECTION SYSTEMS
iii. AIR CONDITIONING SYSTEM & DISTRIBUTION (HVAC)
iv. EMERGENCY LIGHTING
v. PRIMARY WIRING DESIGN & DISTRIBUTION
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- WHITE WATER DESIGN STUDIO TO APPROVE ALL CONTRACTORS' SETTINGS OUT & ALL CO-ORDINATION SHOP DRAWINGS PRIOR TO ALL MANUFACTURERS, CONTRACTORS, INSTALLERS & SPECIALISTS TO BE RESPONSIBLE FOR ENSURING THAT ALL OF THEIR COMMENCEMENT OF INSTALLATION
- WORKS FULLY COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITIES & FIRE DEPARTMENT & THAT ALL SAFETY STANDARDS ARE MET THROUGHOUT.
- ALL FIT-OUT CONTRACTORS & SPECIALISTS TO PREPARE FULL SHOP DRAWINGS WITH SPECIFIC REFERENCE TO SITE CONDITIONS FOR WHITE WATER DESIGN STUDIO APPROVAL PRIOR TO MANUFACTURE & INSTALLATION AS APPROPRIATE TO THEIR TASK.

KEY PLAN :



AMMENDMENTS :

S.NO.	REV.DATE	DESCRIPTION	S.NO.
1.	23.10.2023	HVAC DLD PLAN	R0
2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :

KFC-FC-IGIA-HVAC-01

R4

DRAWING TITLE :

HVAC GFC LAYOUT (FOOD COURT)

LOCATION :

T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :

KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

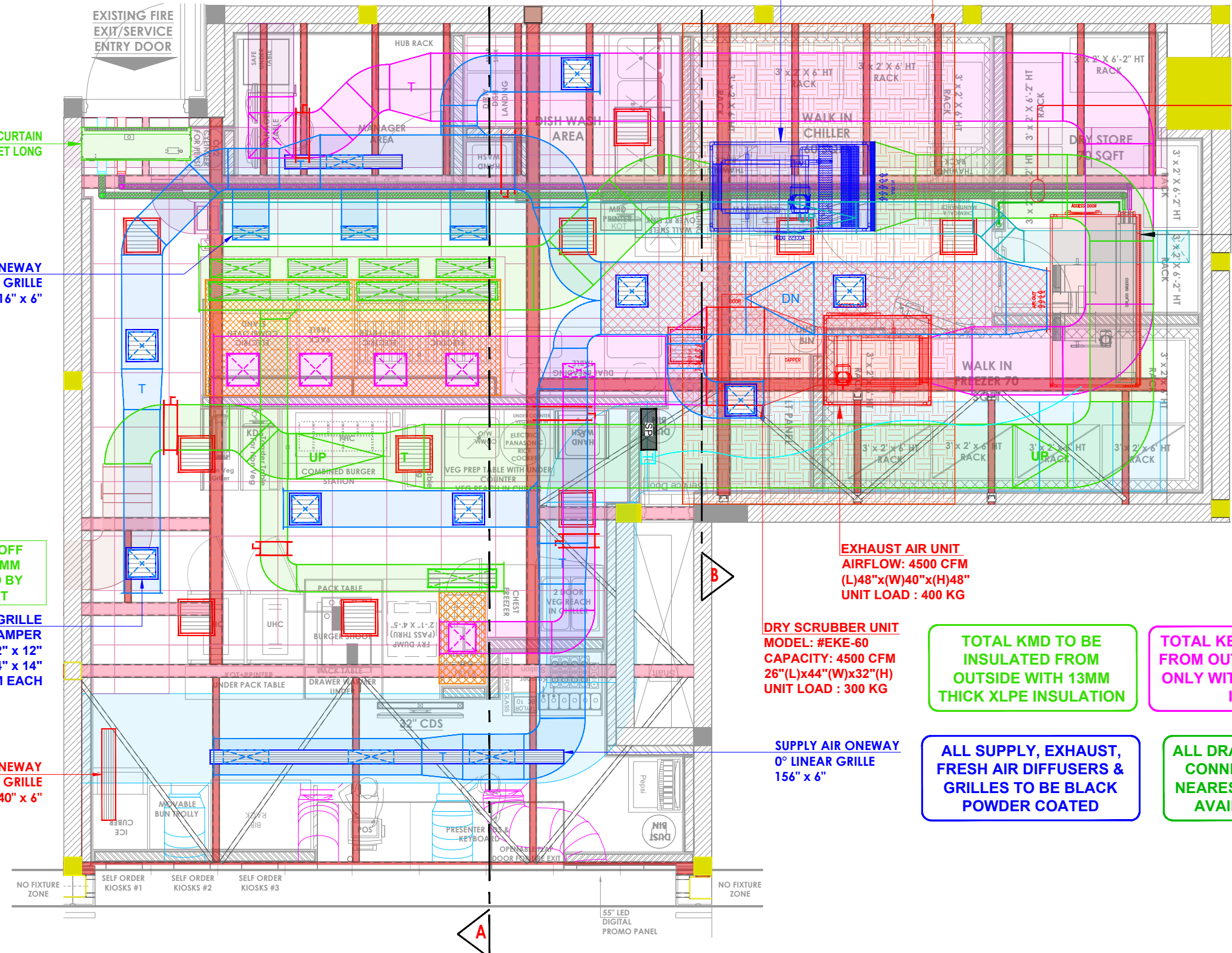
CLIENT :

TRAVEL FOODS SERVICES

WHITE WATER DESIGN STUDIO



HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi-(E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in



#3 SUPPLY AIR ONEWAY 0° LINEAR GRILLE 16" x 6"

KMD TAP-OFF 500 x 450 MM PROVIDED BY AIRPORT

#8 SA SQUARE GRILLE WITH COLLAR DAMPER NECK SIZE : 12" x 12" OUTER SIZE : 14" x 14" 477 CFM EACH

RETURN AIR ONEWAY 0° LINEAR GRILLE 40" x 6"

EXHAUST AIR UNIT AIRFLOW: 4500 CFM (L)48"x(W)40"x(H)48" UNIT LOAD : 400 KG

DRY SCRUBBER UNIT MODEL: #EKE-60 CAPACITY: 4500 CFM 26"(L)x44"(W)x32"(H) UNIT LOAD : 300 KG

TOTAL KMD TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION

TOTAL KED TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION

ALL SUPPLY, EXHAUST, FRESH AIR DIFFUSERS & GRILLES TO BE BLACK POWDER COATED

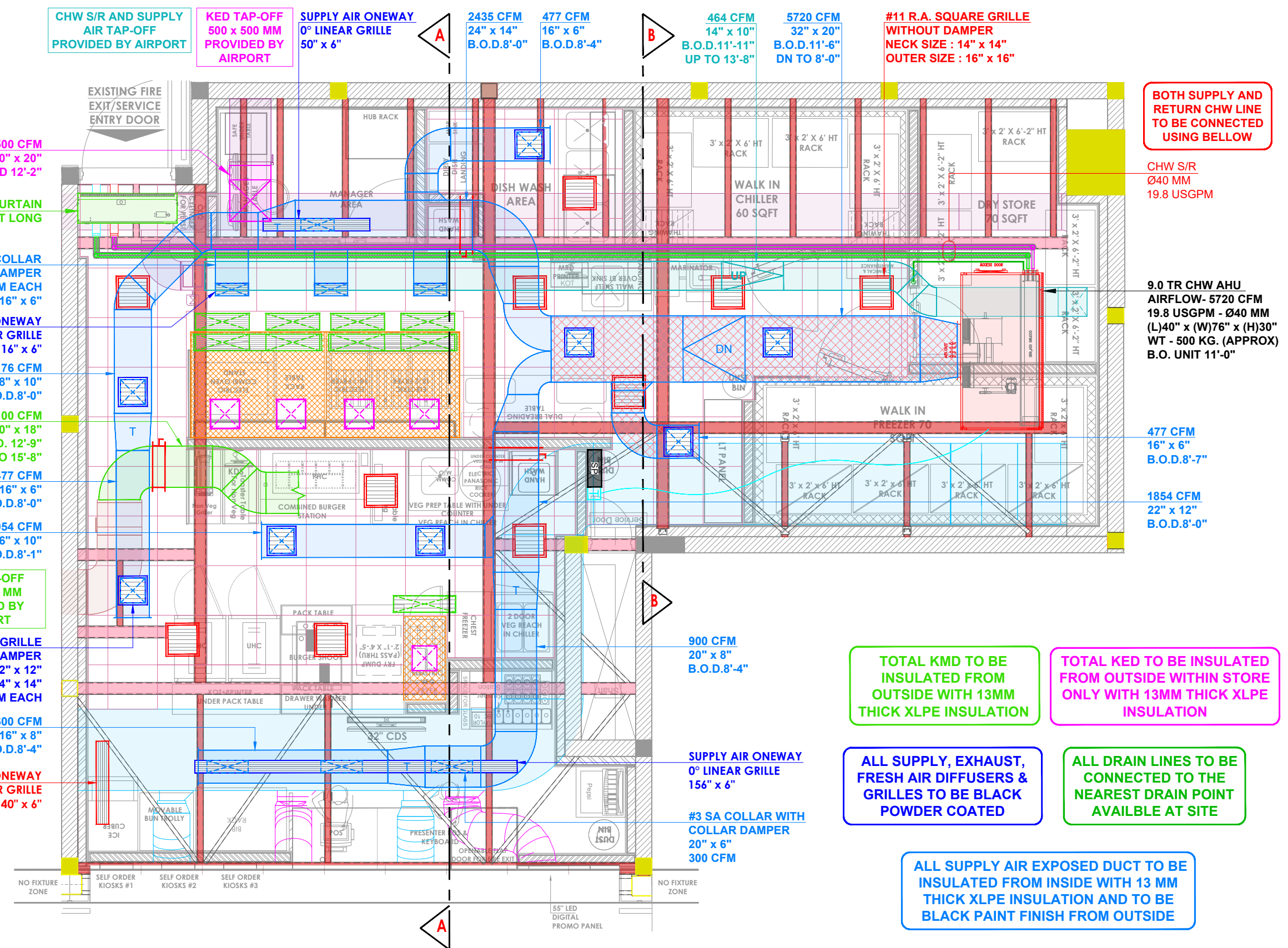
ALL DRAIN LINES TO BE CONNECTED TO THE NEAREST DRAIN POINT AVAILABLE AT SITE

SUPPLY AIR ONEWAY 0° LINEAR GRILLE 156" x 6"

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
	SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER

- NOTE:
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
 - DRY SCRUBBER (EXHAUST AIR) DUCT TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION.
 - ALL EXPOSED DUCTS TO MATCH FINAL CEILING PAINT
 - ALL EXHAUST AIR AND FRESH AIR DROPPER TO BE INSTALL WITH COLLAR DAMPER
 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER



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6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-02 **R4**

DRAWING TITLE :
HVAC BELOW STRUCTURE LAYOUT (FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

CLIENT :
TRAVEL FOODS SERVICES

WHITE WATER DESIGN STUDIO

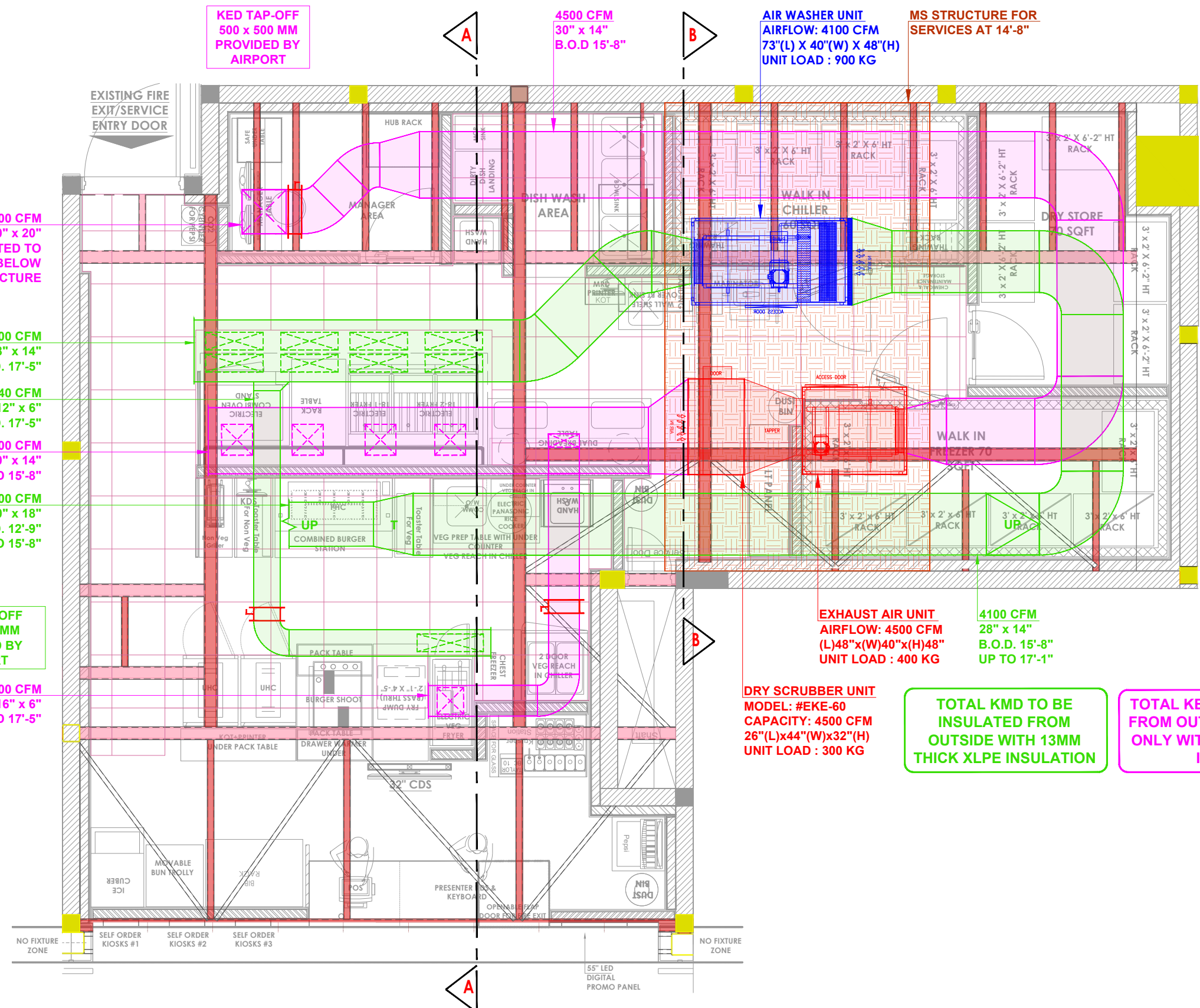
W.W.

HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi-(E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
			SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER

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6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-03 R4

DRAWING TITLE :
HVAC ABOVE STRUCTURE LAYOUT (FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

CLIENT :
TRAVEL FOODS SERVICES

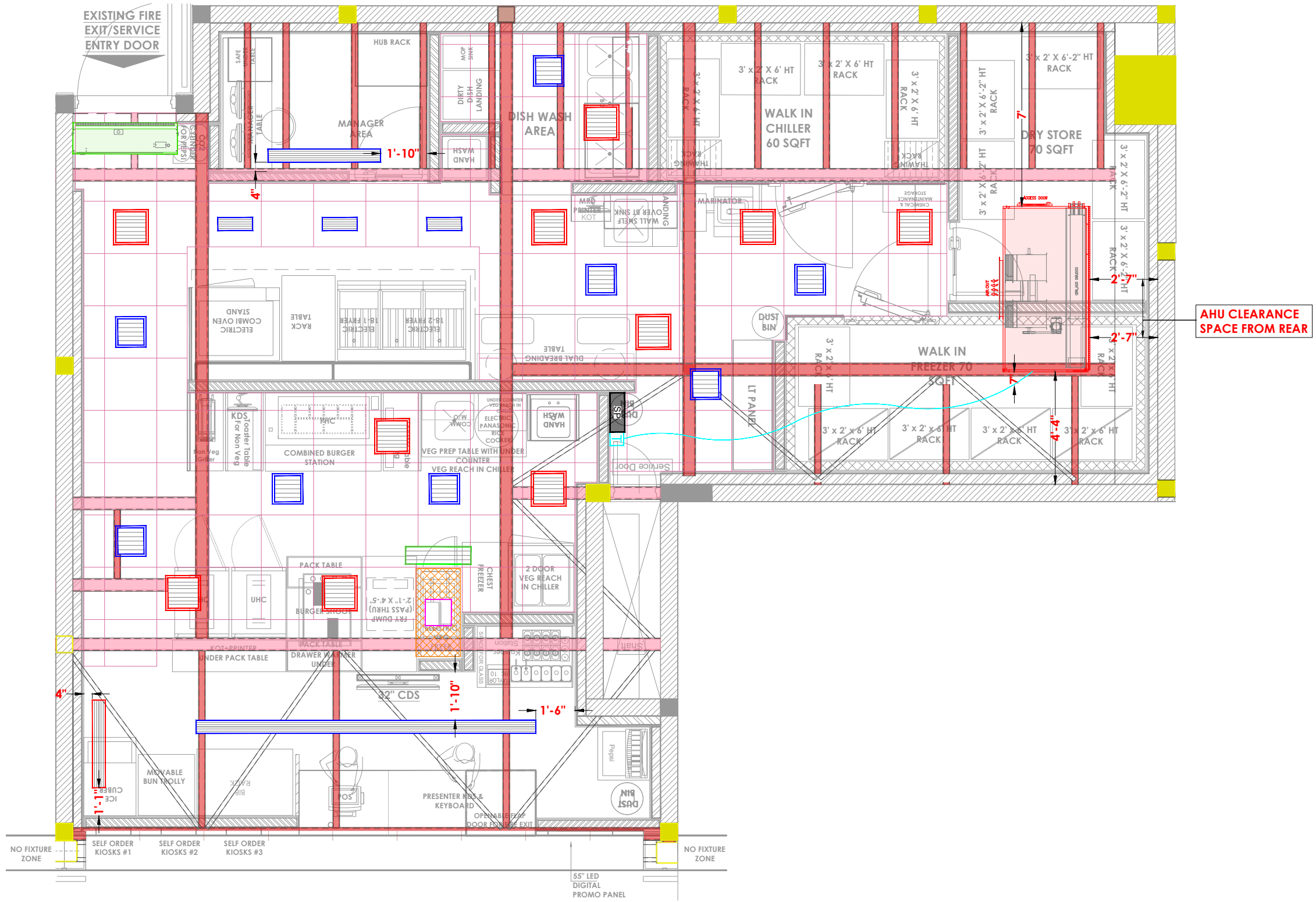
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7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-04 R4

DRAWING TITLE :
HVAC DIMENSION LAYOUT - BELOW STRUCTURE (FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

CLIENT :
TRAVEL FOODS SERVICES

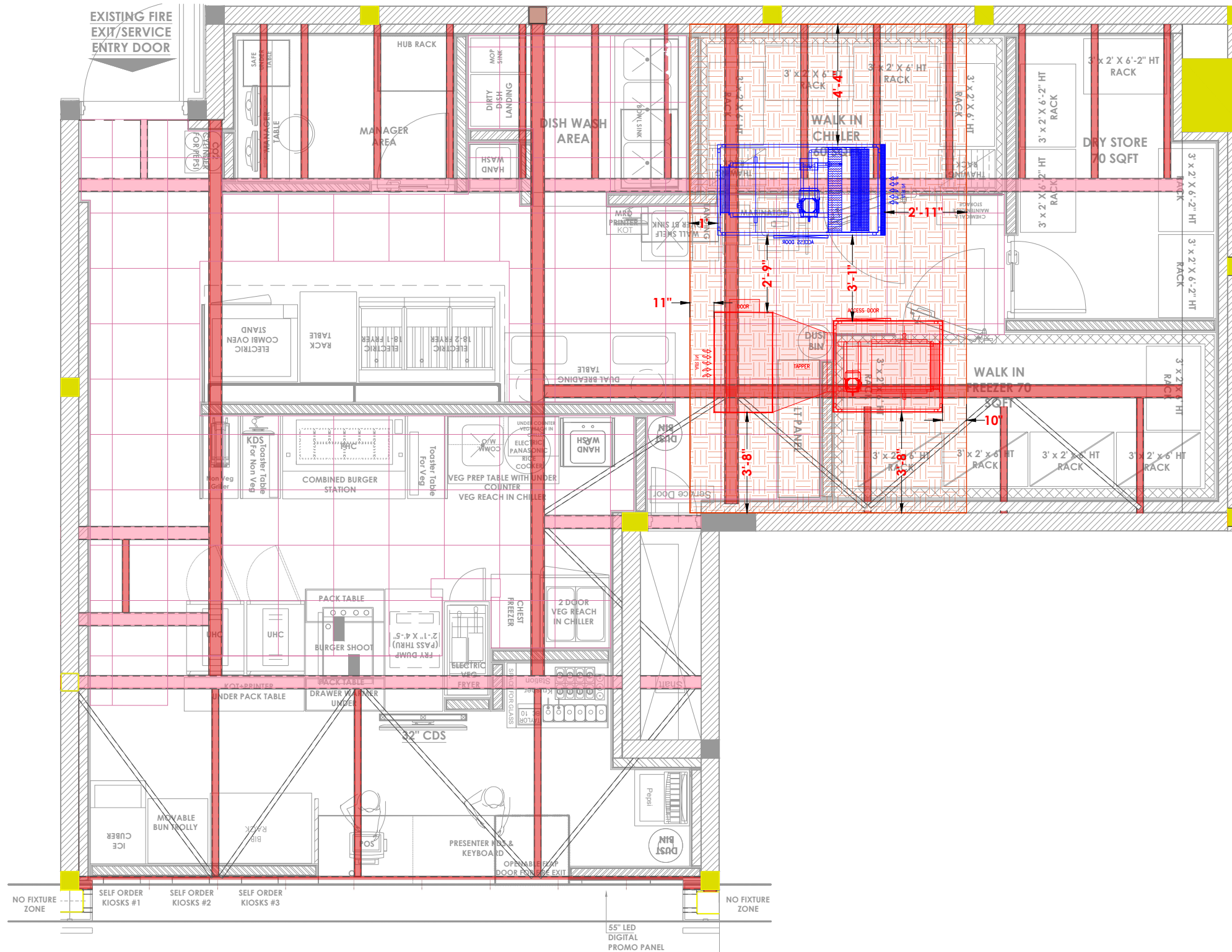
WHITE WATER DESIGN STUDIO

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Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
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	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
			SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER

- NOTE:**
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
 - DRY SCRUBBER (EXHAUST AIR) DUCT TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION.
 - ALL EXPOSED DUCTS TO MATCH FINAL CEILING PAINT
 - ALL EXHAUST AIR AND FRESH AIR DROPPER TO BE INSTALL WITH COLLAR DAMPER
 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER



- NOTES :**
- THE COPYRIGHT OF THIS DRAWING REMAINS WITH WHITE WATER DESIGN STUDIO AND IT MAY NOT BE REPRODUCED IN ANY WHICH MANNER WITHOUT PRIOR WRITTEN CONSENT.
 - FIGURED DIMENSIONS ARE TO BE USED IN PREFERENCES TO SCALED SIZES. ALL DIMENSIONS MUST BE CHECKED BEFORE COMMENCING WORK ON SITE.
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 - SPRINKLER INSTALLATION
 - AUTOMATIC FIRE DETECTION SYSTEMS
 - AIR CONDITIONING SYSTEM & DISTRIBUTION (HVAC)
 - EMERGENCY LIGHTING
 - PRIMARY WIRING DESIGN & DISTRIBUTION
 - ALL WORK IS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH IS STANDARDS (WHERE APPLICABLE) & BEST TRADE PRACTICES. ALL WORK MUST SATISFY THE REQUIREMENTS OF THE LOCAL AUTHORITIES.
 - WHITE WATER DESIGN STUDIO TO APPROVE ALL CONTRACTORS' SETTINGS OUT & ALL CO-ORDINATION SHOP DRAWINGS PRIOR TO ALL MANUFACTURERS, CONTRACTORS, INSTALLERS & SPECIALISTS TO BE RESPONSIBLE FOR ENSURING THAT ALL OF THEIR COMMENCEMENT OF INSTALLATION
 - WORKS FULLY COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITIES & FIRE DEPARTMENT & THAT ALL SAFETY STANDARDS ARE MET THROUGHOUT.
 - ALL FIT-OUT CONTRACTORS & SPECIALISTS TO PREPARE FULL SHOP DRAWINGS WITH SPECIFIC REFERENCE TO SITE CONDITIONS FOR WHITE WATER DESIGN STUDIO APPROVAL PRIOR TO MANUFACTURE & INSTALLATION AS APPROPRIATE TO THEIR TASK.



AMMENDMENTS :

S.NO.	REV.DATE	DESCRIPTION	S.NO.
1.	23.10.2023	HVAC DLD PLAN	R0
2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-05 R4

DRAWING TITLE :
HVAC DIMENSION LAYOUT - ABOVE STRUCTURE (FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

CLIENT :
TRAVEL FOODS SERVICES

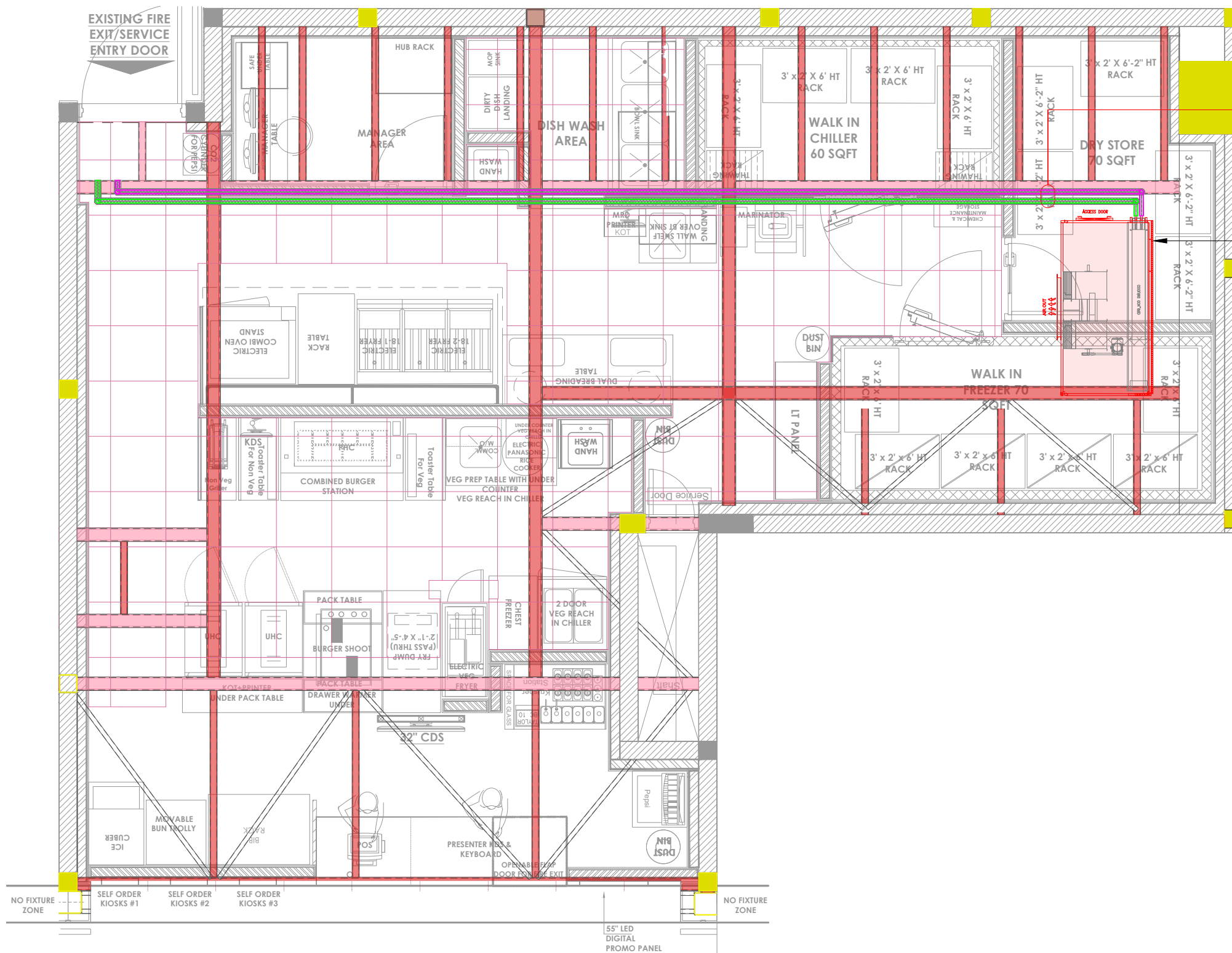
WHITE WATER DESIGN STUDIO

HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi-(E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
	SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER		

- NOTE:**
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
 - DRY SCRUBBER (EXHAUST AIR) DUCT TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION.
 - ALL EXPOSED DUCTS TO MATCH FINAL CEILING PAINT
 - ALL EXHAUST AIR AND FRESH AIR DROPPER TO BE INSTALL WITH COLLAR DAMPER
 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER



BOTH SUPPLY AND RETURN CHW LINE TO BE CONNECTED USING BELOW

CHW S/R
Ø40 MM
19.8 USGPM

9.0 TR CHW AHU
AIRFLOW- 5720 CFM
19.8 USGPM - Ø40 MM
(L)40" x (W)76" x (H)30"
WT - 500 KG. (APPROX)
B.O. UNIT 11'-0"

- NOTES :**
- THE COPYRIGHT OF THIS DRAWING REMAINS WITH WHITE WATER DESIGN STUDIO AND IT MAY NOT BE REPRODUCED IN ANY WHICH MANNER WITHOUT PRIOR WRITTEN CONSENT.
 - FIGURED DIMENSIONS ARE TO BE USED IN PREFERENCES TO SCALED SIZES. ALL DIMENSIONS MUST BE CHECKED BEFORE COMMENCING WORK ON SITE.
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 - AUTOMATIC FIRE DETECTION SYSTEMS
 - AIR CONDITIONING SYSTEM & DISTRIBUTION (HVAC)
 - EMERGENCY LIGHTING
 - PRIMARY WIRING DESIGN & DISTRIBUTION
 - ALL WORK IS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH IS STANDARDS (WHERE APPLICABLE) & BEST TRADE PRACTICES. ALL WORK MUST SATISFY THE REQUIREMENTS OF THE LOCAL AUTHORITIES.
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KEY PLAN :

AMMENDMENTS :

S.NO.	REV.DATE	DESCRIPTION	S.NO.
1.	23.10.2023	HVAC DLD PLAN	R0
2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-06 R4

DRAWING TITLE :
HVAC CHW PIPING LAYOUT - BELOW STRUCTURE (FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

CLIENT :
TRAVEL FOODS SERVICES

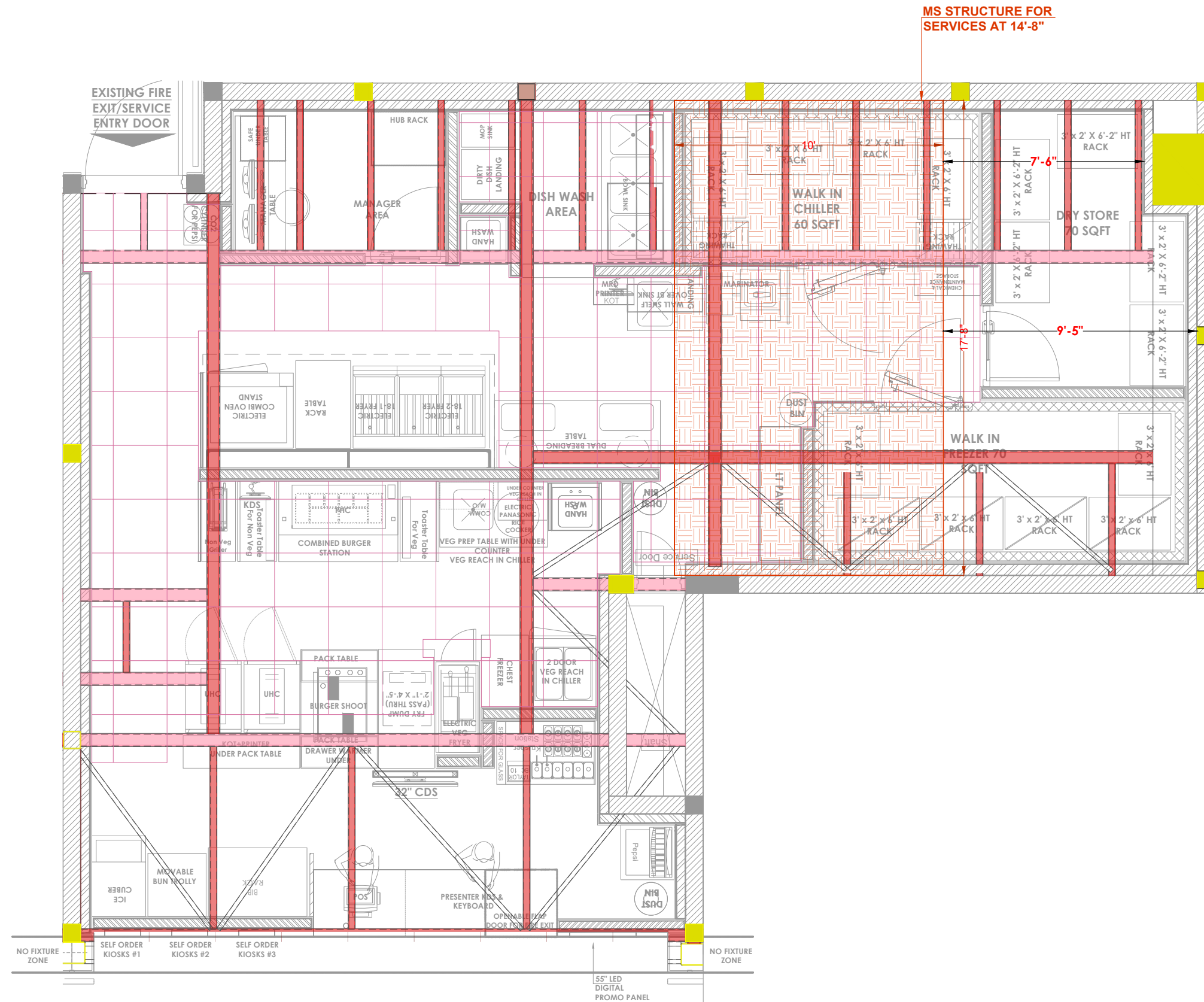
WHITE WATER DESIGN STUDIO

HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi-(E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
			SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER

- NOTE:**
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
 - DRY SCRUBBER (EXHAUST AIR) DUCT TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION.
 - ALL EXPOSED DUCTS TO MATCH FINAL CEILING PAINT
 - ALL EXHAUST AIR AND FRESH AIR DROPPER TO BE INSTALL WITH COLLAR DAMPER
 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER



- NOTES :**
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 - AUTOMATIC FIRE DETECTION SYSTEMS
 - AIR CONDITIONING SYSTEM & DISTRIBUTION (HVAC)
 - EMERGENCY LIGHTING
 - PRIMARY WIRING DESIGN & DISTRIBUTION
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AMMENDMENTS :

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1.	23.10.2023	HVAC DLD PLAN	R0
2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-07 **R4**

DRAWING TITLE :
HVAC STRUCTURE LAYOUT (FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

CLIENT :
TRAVEL FOODS SERVICES

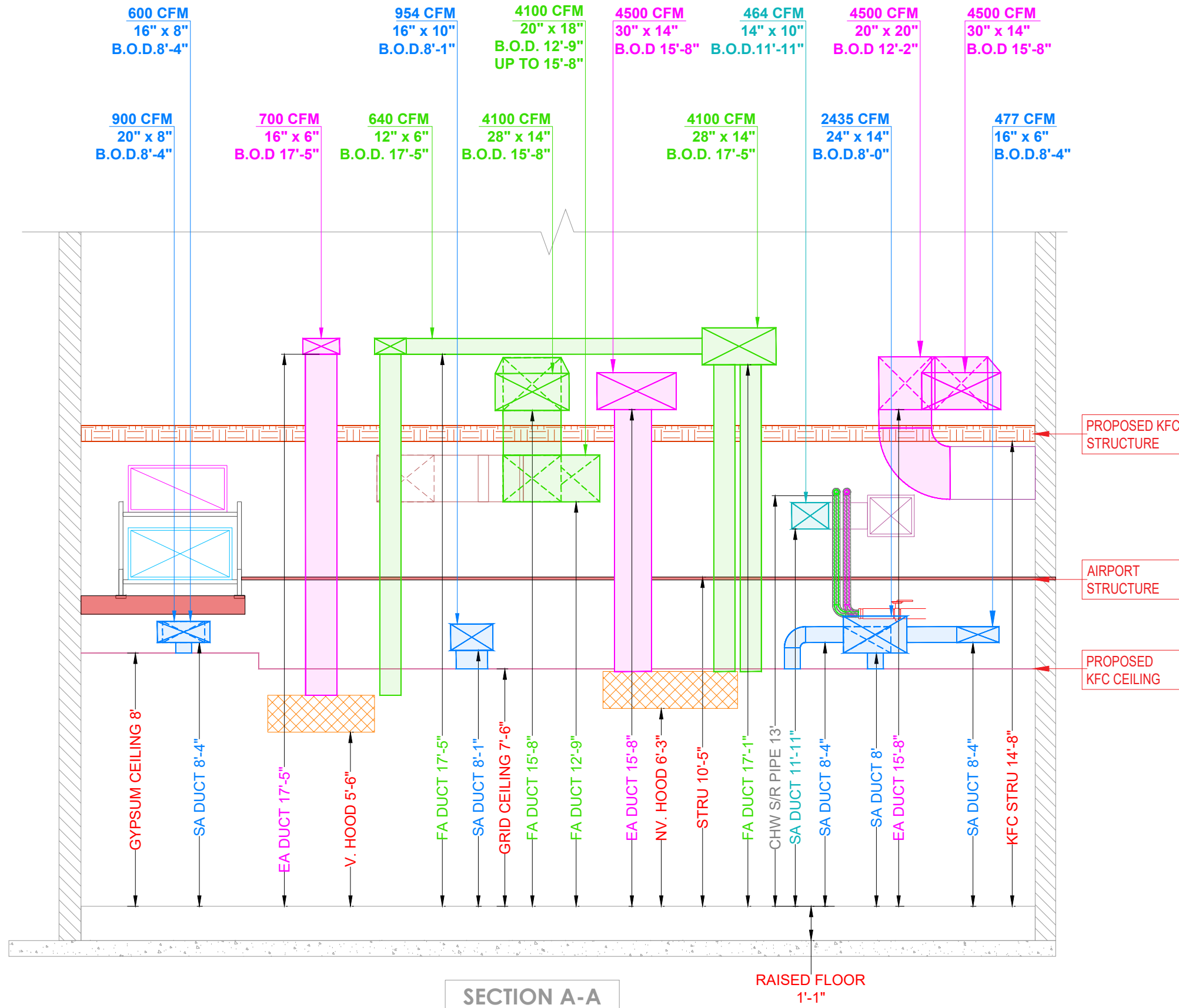
WHITE WATER DESIGN STUDIO

HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi-(E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
	SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER		

- NOTE:**
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
 - DRY SCRUBBER (EXHAUST AIR) DUCT TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION.
 - ALL EXPOSED DUCTS TO MATCH FINAL CEILING PAINT
 - ALL EXHAUST AIR AND FRESH AIR DROPPER TO BE INSTALL WITH COLLAR DAMPER
 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER



SECTION A-A

**RAISED FLOOR
1'-1"**

- NOTES :**
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i. SPRINKLER INSTALLATION
ii. AUTOMATIC FIRE DETECTION SYSTEMS
iii. AIR CONDITIONING SYSTEM & DISTRIBUTION (HVAC)
iv. EMERGENCY LIGHTING
v. PRIMARY WIRING DESIGN & DISTRIBUTION
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AMMENDMENTS :

S.NO.	REV.DATE	DESCRIPTION	S.NO.
1.	23.10.2023	HVAC DLD PLAN	R0
2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-08 **R4**

DRAWING TITLE :
**HVAC SECTION A-A LAYOUT
(FOOD COURT)**

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
**KFC STORE AT INDIRA GANDHI
INTERNATIONAL AIRPORT, DELHI**

CLIENT :
TRAVEL FOODS SERVICES

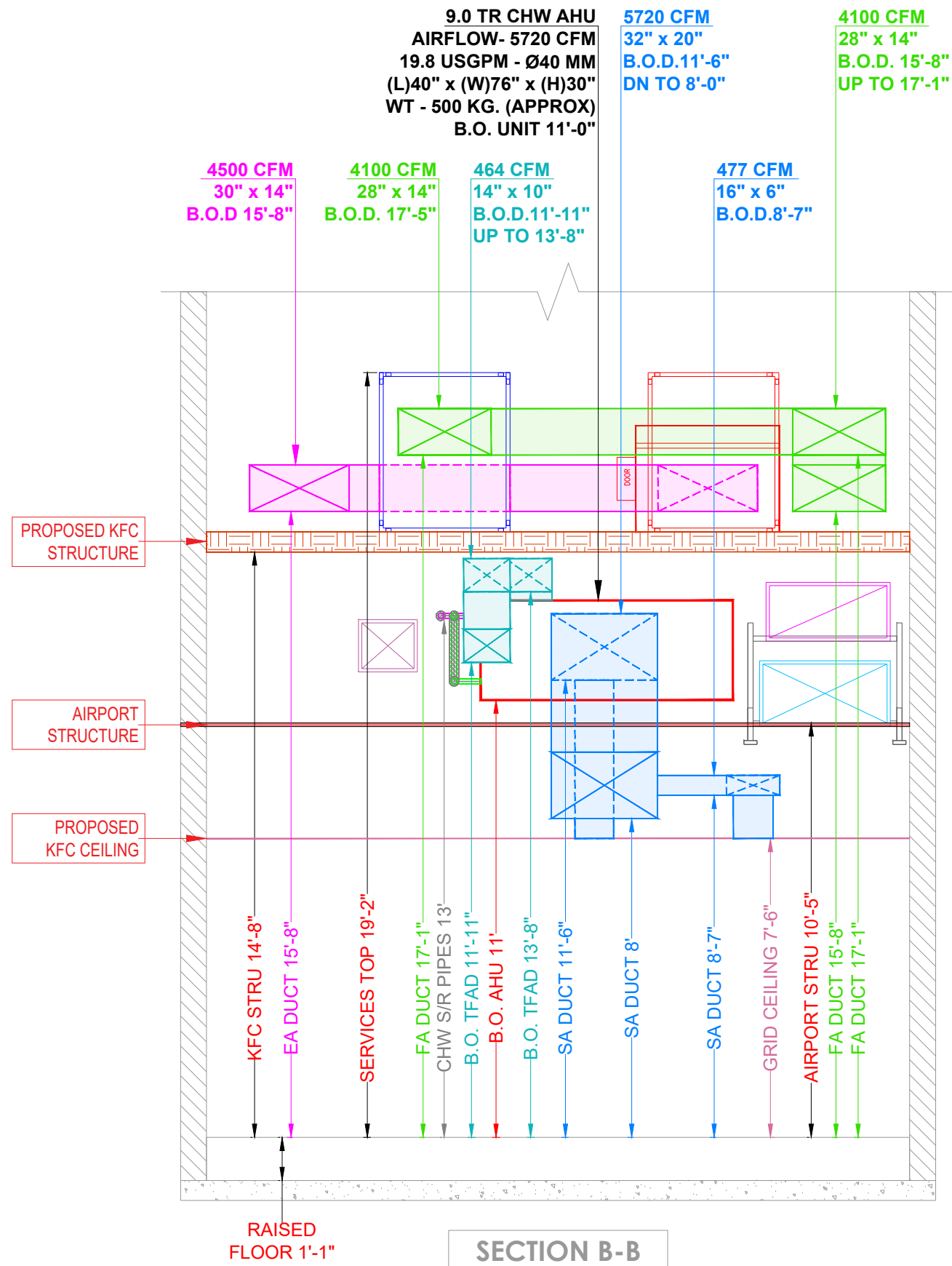
WHITE WATER DESIGN STUDIO

HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi (E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
	SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER		

- NOTE:**
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
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 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER



- NOTES :**
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AMMENDMENTS :

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1.	23.10.2023	HVAC DLD PLAN	R0
2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
 KFC-FC-IGIA-HVAC-09 **R4**

DRAWING TITLE :
HVAC SECTION B-B LAYOUT
(FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI
INTERNATIONAL AIRPORT, DELHI

CLIENT :
 TRAVEL FOODS SERVICES

WHITE WATER DESIGN STUDIO

HEAD OFFICE:-
 Anchorage, off Govandi Station Rd
 Near Amarnath Patil Ground, Govandi-(E)
 Mumbai 400 088
 TEL: +91 22 6740 7640.
 Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
	SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER		

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 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER

AHU CONDENSATE DRAIN LINE CONNECTED TO THE NEAREST DRAIN POINT AVAILABLE AT SITE

CONDENSATE DRAIN PIPE ROUTED THROUGH WALL TILL FLOOR LEVEL

CONDENSATE DRAIN PIPE EXPOSED

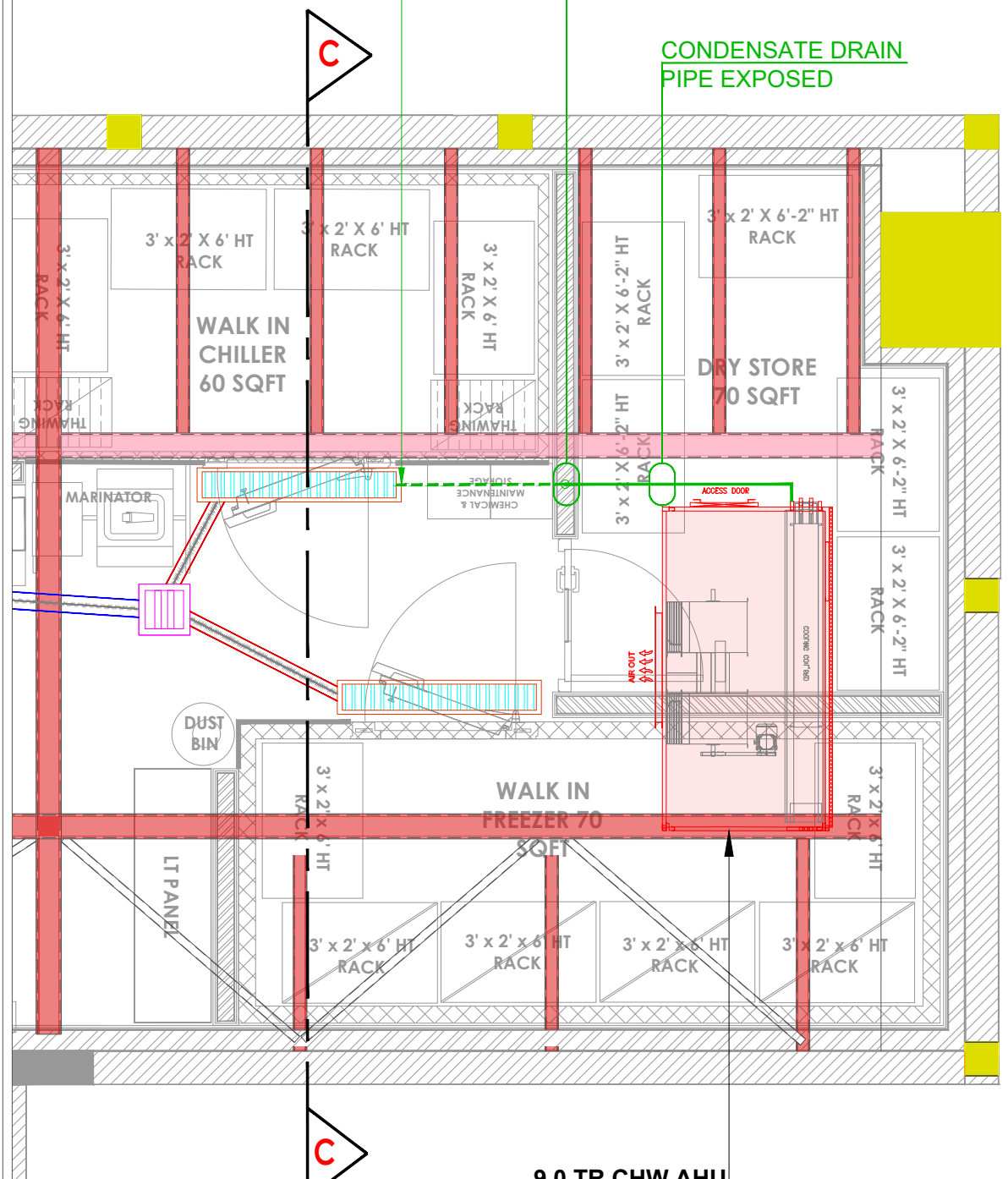
AHU CONDENSATE DRAIN LINE CONNECTED TO THE NEAREST DRAIN POINT AVAILABLE AT SITE

CONDENSATE DRAIN PIPE EXPOSED

CONDENSATE DRAIN PIPE ROUTED THROUGH WALL TILL FLOOR LEVEL

SECTION C-C

RAISED FLOOR 1'-1"



**9.0 TR CHW AHU
AIRFLOW- 5720 CFM
19.8 USGPM - Ø40 MM
(L)40" x (W)76" x (H)30"
WT - 500 KG. (APPROX)
B.O. UNIT 11'-0"**

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iv. EMERGENCY LIGHTING
v. PRIMARY WIRING DESIGN & DISTRIBUTION
 - ALL WORK IS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH IS STANDARDS (WHERE APPLICABLE) & BEST TRADE PRACTICES. ALL WORK MUST SATISFY THE REQUIREMENTS OF THE LOCAL AUTHORITIES.
 - WHITE WATER DESIGN STUDIO TO APPROVE ALL CONTRACTORS' SETTINGS OUT & ALL CO-ORDINATION SHOP DRAWINGS PRIOR TO ALL MANUFACTURERS, CONTRACTORS, INSTALLERS & SPECIALISTS TO BE RESPONSIBLE FOR ENSURING THAT ALL OF THEIR COMMENCEMENT OF INSTALLATION
 - WORKS FULLY COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITIES & FIRE DEPARTMENT & THAT ALL SAFETY STANDARDS ARE MET THROUGHOUT.
 - ALL FIT-OUT CONTRACTORS & SPECIALISTS TO PREPARE FULL SHOP DRAWINGS WITH SPECIFIC REFERENCE TO SITE CONDITIONS FOR WHITE WATER DESIGN STUDIO APPROVAL PRIOR TO MANUFACTURE & INSTALLATION AS APPROPRIATE TO THEIR TASK.



AMMENDMENTS :

S.NO.	REV. DATE	DESCRIPTION	S.NO.
1.	23.10.2023	HVAC DLD PLAN	R0
2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-10 **R4**

DRAWING TITLE :
HVAC CONDENSATE DRAIN

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI INTERNATIONAL AIRPORT, DELHI

CLIENT :
TRAVEL FOODS SERVICES

WHITE WATER DESIGN STUDIO

HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi-(E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
	SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER		

- NOTE:**
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
 - DRY SCRUBBER (EXHAUST AIR) DUCT TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION.
 - ALL EXPOSED DUCTS TO MATCH FINAL CEILING PAINT
 - ALL EXHAUST AIR AND FRESH AIR DROPPER TO BE INSTALL WITH COLLAR DAMPER
 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER

- NOTES :**
- THE COPYRIGHT OF THIS DRAWING REMAINS WITH WHITE WATER DESIGN STUDIO AND IT MAY NOT BE REPRODUCED IN ANY WHICH MANNER WITHOUT PRIOR WRITTEN CONSENT.
 - FIGURED DIMENSIONS ARE TO BE USED IN PREFERENCE TO SCALED SIZES. ALL DIMENSIONS MUST BE CHECKED BEFORE COMMENCING WORK ON SITE.
 - THIS DRAWINGS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
 - ALL PROPOSED WORKS TO BE CARRIED OUT IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS AND SCHEDULES MENTIONED FOR INTERIOR WORKS.
 - READ THIS DRAWING IN CONJUNCTION WITH ALL CONSULTANTS' & SPECIALISTS' DRAWINGS, DETAILS, SCHEDULES & SPECIFICATIONS FOR :
 - SPRINKLER INSTALLATION
 - AUTOMATIC FIRE DETECTION SYSTEMS
 - AIR CONDITIONING SYSTEM & DISTRIBUTION (HVAC)
 - EMERGENCY LIGHTING
 - PRIMARY WIRING DESIGN & DISTRIBUTION
 - ALL WORK IS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH IS STANDARDS (WHERE APPLICABLE) & BEST TRADE PRACTICES. ALL WORK MUST SATISFY THE REQUIREMENTS OF THE LOCAL AUTHORITIES.
 - WHITE WATER DESIGN STUDIO TO APPROVE ALL CONTRACTORS' SETTINGS OUT & ALL CO-ORDINATION SHOP DRAWINGS PRIOR TO ALL MANUFACTURERS, CONTRACTORS, INSTALLERS & SPECIALISTS TO BE RESPONSIBLE FOR ENSURING THAT ALL OF THEIR COMMENCEMENT OF INSTALLATION
 - WORKS FULLY COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITIES & FIRE DEPARTMENT & THAT ALL SAFETY STANDARDS ARE MET THROUGHOUT.
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AMMENDMENTS :

S.NO.	REV.DATE	DESCRIPTION	S.NO.
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2.	03.11.2023	HVAC DLD PLAN	R1
3.	29.11.2023	HVAC GFC PLAN	R0
4.	05.12.2023	HVAC GFC PLAN	R1
5.	07.12.2023	HVAC GFC PLAN	R2
6.	29.12.2023	HVAC GFC PLAN	R3
7.	09.01.2024	HVAC GFC PLAN	R4

DRAWING NO :
KFC-FC-IGIA-HVAC-11 R4

DRAWING TITLE :
HOOD DETAILS LAYOUT
(FOOD COURT)

LOCATION :
T1 NODE L5, IGIA, DELHI

DATE : 09.01.2024
SCALE : AS STATED
DRN. BY : ARBAAZ
CHKD. BY : RITESH

PROJECT :
KFC STORE AT INDIRA GANDHI
INTERNATIONAL AIRPORT, DELHI

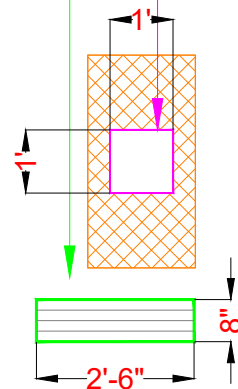
CLIENT :
TRAVEL FOODS SERVICES

WHITE WATER DESIGN STUDIO

HEAD OFFICE:-
Anchorage, off Govandi Station Rd
Near Amarnath Patil Ground, Govandi-(E)
Mumbai 400 088
TEL: +91 22 6740 7640.
Email: studio@whitewaterdesign.in

FRESH AIR 0° LINEAR GRILLE WITH VCD
NECK SIZE: 30" x 8"
AIRFLOW : 640 CFM

EXHAUST AIR OPENING WITH VCD
12" x 12"
700 CFM



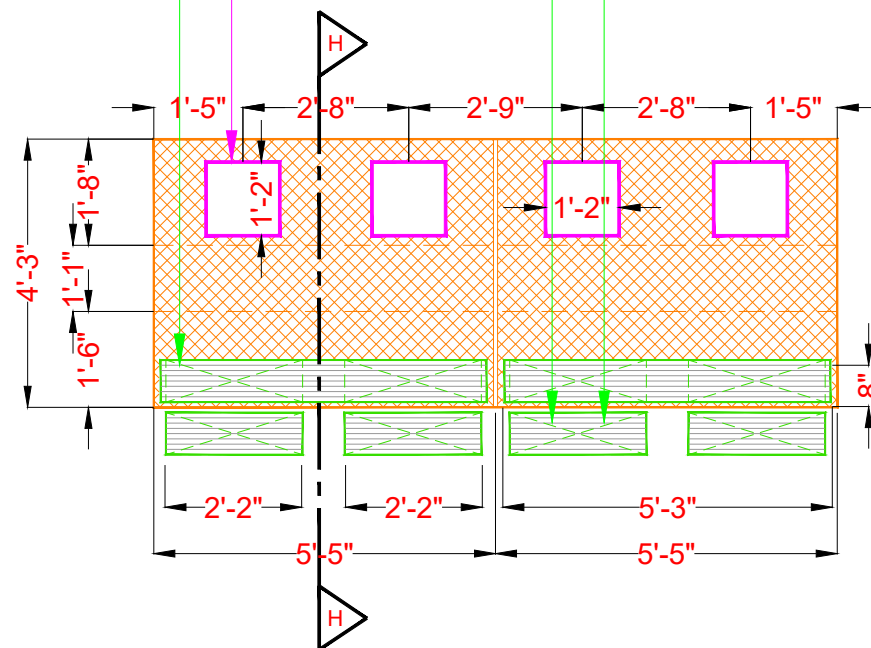
VEG FRYER HOOD (PLAN VIEW)

#2 FRESH AIR 0° INCLINATION LINEAR GRILLE
GRILLE SIZE - 62" x 8"

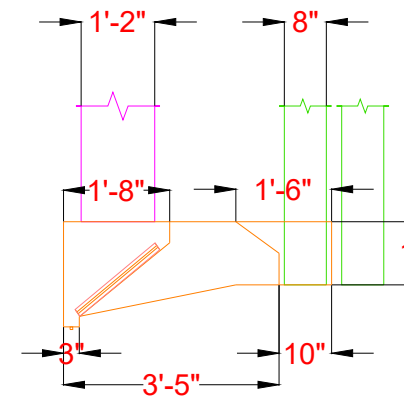
#4 EXHAUST AIR OPENING WITH VCD
14" x 14"
950 CFM EACH

#4 FRESH AIR 0° INCLINATION LINEAR GRILLE
GRILLE SIZE - 26" x 8"

#8 FRESH AIR COLLAR WITH VCD
26" x 8"
432 CFM EACH



NON VEG HOOD (PLAN VIEW)



STANDARD HOOD (SECTION H-H)

HVAC LEGENDS :

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CHW AHU UNIT		KED - EXHAUST AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		CONDENSATE DRAIN PIPE		AIR CURTAIN
	CHW AHU THERMOSTAT & STARTER PANEL		KMD - FRESH AIR DUCT WITH 13mm Thk. XLPE INSULATION FROM OUTSIDE		0° FRESH AIR LINEAR GRILLE		CHILLED WATER SUPPLY LINE
	TFAD - SUPPLY (FRESH) AIR DUCT WITH 13mm Thk. XLPE INSULATION		SUPPLY AIR DUCT WITH 13mm Thk. XLPE INSULATION		0° SUPPLY AIR LINEAR GRILLE		CHILLED WATER RETURN LINE
	SUPPLY AIR DUCT WITH 13mm Thk. ACOUSTIC INSULATION		0° SUPPLY AIR SQUARE GRILLE		VOLUME CONTROL DAMPER		

- NOTE:**
- FRESH AIR DUCT TO BE INSULATED FROM OUTSIDE WITH 13MM THICK XLPE INSULATION.
 - DRY SCRUBBER (EXHAUST AIR) DUCT TO BE INSULATED FROM OUTSIDE WITHIN STORE ONLY WITH 13MM THICK XLPE INSULATION.
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 - ALL EXHAUST AIR AND FRESH AIR DROPPER TO BE INSTALL WITH COLLAR DAMPER
 - ALL SUPPLY AIR GRILLE TO BE INSTALL WITH COLLAR DAMPER