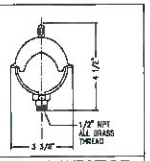
SPECIFICATIONS:
PRECHARGE PRESSURE = 22 PSIG.
TOTAL VOLUME = 10 CUBIC INCHES
MAXIMUM WORKING PRESSURE = 125 PSIG.
MAXIMUM SHOCK PRESSURE = 200 PSIG
MAXIMUM OPERATING TEMPERATURE = 200 DEG F.
MAXIMUM FLOW RATE = 10 FPS.

NOTES:
1. THIS UNIT IS A COMPLETELY SEALED AND DOES NOT REQUIRE AN ACCESS PANEL.
2. THIS A TYPICAL UNIT DETAIL. FOR SPECIFIC SIZE SEE ISOMETRICS.



TYPICAL WATER HAMMER ARRESTOR

NOT TO SCALE

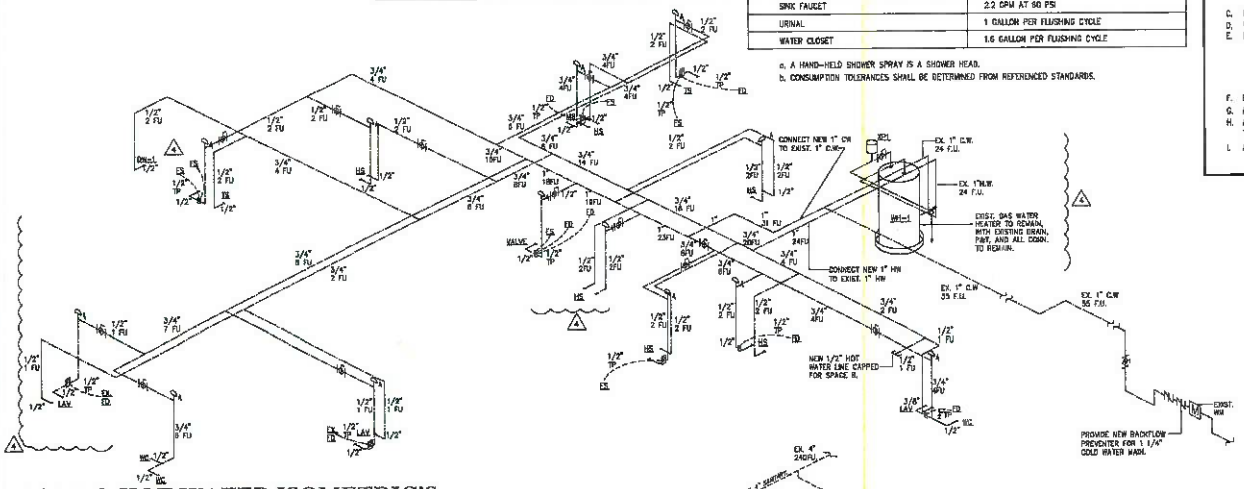
FBC TABLE 604.4
MAX. FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTING

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY (b)
LAVATORY, PRIVATE	2.2 GPM AT 60 PSI
LAVATORY, PUBLIC (METERING)	0.25 GALLON PER METERING CYCLE
LAVATORY PUBLIC (OTHER THAN METERING)	0.5 GPM AT 60 PSI
SHOWER HEAD (a)	2.5 GPM AT 60 PSI
SINK FAUCET	2.2 GPM AT 60 PSI
URINAL	1 GALLON PER FLUSHING CYCLE
WATER CLOSET	1.6 GALLON PER FLUSHING CYCLE

a. A HAND-HELD SHOWER SPRAY IS A SHOWER HEAD.
b. CONSUMPTION TOLERANCES SHALL BE DETERMINED FROM REFERENCED STANDARDS.

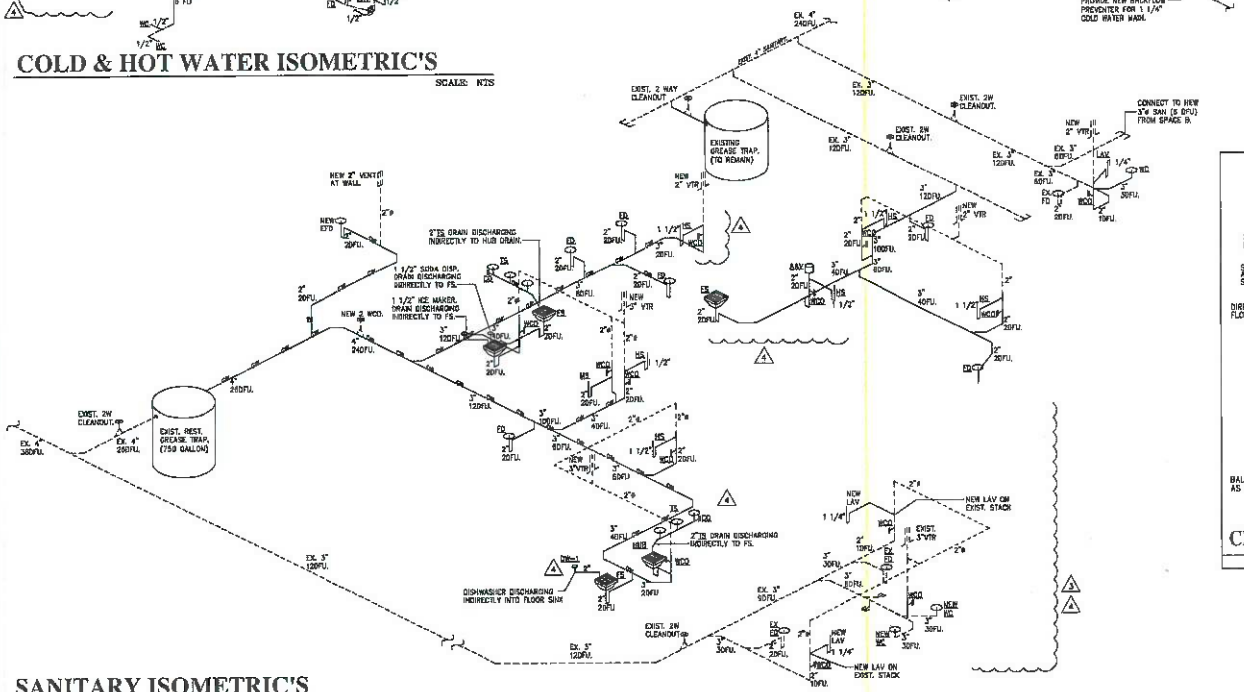
PLUMBING SPECIFICATIONS:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH FLORIDA PLUMBING CODE 2010 AND ALL CODES ADOPTED BY IT.
2. PRIOR TO ORDERING, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT TO ENGINEER OF RECORD FOR APPROVAL.
3. PLUMBING CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE THAT ALL PLUMBING WORK IS FREE FROM DEFECTS OF MATERIALS AND WORKMANSHIP, AND FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE, REPAIR AND REPLACE ALL WORK WHICH BECOMES DEFECTIVE AT NO EXPENSE TO THE OWNER
3. MATERIALS SHALL BE AS FOLLOWS:
   A. DOMESTIC WATER PIPING – TYPE 'L' COPPER WITH LEAD FREE SOLDER
   B. SANITARY WASTE PIPING – CAST IRON OR SCH 40 PVC
   C. CONDENSATE DRAINAGE PIPING – TYPE 'L' COPPER OR 1" ARMAFLEX
   D. VALVES – BRONZE NOBCO OR EQUAL AND RATED AT 125 PSI
   E. HANGERS – COPPER SHALL BE SUPPORTED EVERY 8'-0" HOR.
      – CAST IRON SHALL BE SUPPORTED EVERY 5'-0" HOR. AND AT THE BASE OF EACH STORY LESS THAN 15' HIGH.
      – PVC PIPING SHALL BE SUPPORTED EVERY 4'-0" HOR. AND AT THE BASE OF EACH STORY FOR PIPES GREATER THAN 2"ø AND AT EACH HALF STORY FOR PIPES UP TO 1 1/2"ø
   F. ELECTRIC WATER HEATER SHALL BE GLASS LINED WITH 5 YEAR WARRANTY.
   G. ALL HOSE BIBB SHALL BE EQUIPPED WITH VACUUM BREAKER
   H. ALL PLUMBING FIXTURES SHALL BE WATER SAVER PER CODE. FPC TABLE 604.4. TYPE, COLOR AND TRIM TO BE SELECTED BY OWNER.
   I. ALL FLOOR DRAINS SHALL HAVE TRAP PRIMERS.
   J. HOT WATER SHALL BE INSULATED IN 1" FIBERGLASS ENCASED IN CANVAS JACKET.
4. PERFORM FOLLOWING TESTS:
   A. WATER PIPING SHALL BE SUBJECTED TO 100 PSI HYDROSTATIC PRESSURE FOR A PERIOD OF TIME SUFFICIENT TO EXAMINE THE WHOLE SYSTEM BUT NOT LESS THAN ONE HOUR.
   B. DRAINAGE PIPING – THE ENDS OF THE PIPING SHALL BE PLUGGED AND THE SYSTEM FILLED WITH 5 FOOT HEAD OF WATER. WATER SHALL STAND UNTIL INSPECTION IS MADE AND WATER LEVEL REMAINS CONSTANT.
   C. CORRECT DEFECTS DISCLOSED BY ABOVE TEST.
5. STERILIZE WATER LINES WITH A MIXTURE OF 2 LBS OF CHLORINATED LIME TO EACH 1000 GALLONS OF WATER. RETAIN THE MIXTURE IN PIPES FOR 24 HOURS AND FLUSH THOROUGHLY WITH POTABLE WATER BEFORE PLACING IN SERVICE.
6. COMPLETE SYSTEM: FIXTURES AND EQUIPMENT SHALL BE GIVEN AN IN-SERVICE TEST AFTER COMPLETION OF INSTALLATION.
7. FURNISH REQUIRED FLASHING TO ROOFING CONTRACTOR FOR PIPES PENETRATING THE ROOF
8. PROVIDE EXCAVATION AND BACKFILL COMPACTION REQUIRED FOR PLUMBING UNDERGROUND WORK. ALL PIPING BELOW GRADE SHALL BE COORDINATED WITH STRUCTURAL ELEMENTS PRIOR TO ROUTING.
9. PDI ARRESTORS SHALL BE ONLY APPROVED MEANS OF CONTROLLING WATER HAMMER.



COLD & HOT WATER ISOMETRIC'S

SCALE: NTS



SANITARY ISOMETRIC'S

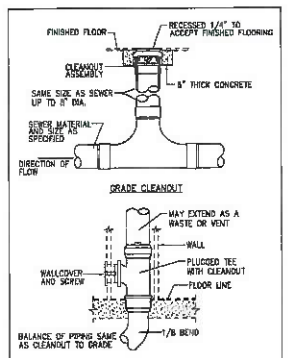
SCALE: NTS

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	BALL VALVE
	P&T RELIEF VALVE
	GATE VALVE IN RISER
	PIPE TURNS DOWN
	PIPE TURNS UP
	UNION
	HOSE BIBB
	PDI WATER HAMMER ARRESTOR LETTER DENOTES PDI SIZE.
	WALL CLEAN OUT
M	WATER METER
	GRADE CLEANOUT
	COLD WATER PIPING
	HOT WATER PIPING
	SANITARY WASTE PIPING
	VENT PIPING
C C C C C	CONDENSATE DRAIN PIPE
PAN	PAN DRAIN PIPE
P&T	P&T RELIEF PIPE

FIXTURE SCHEDULE

MARK	DESCRIPTION	COLD	HOT	DRAIN
LAV	DROP IN COUNTER, SELF RIMMING, ROUND, PORCELAIN, 4" CENTER HOLES LAVATORY. 2.5 GPM, FAUCET W/ POP UP FAUCET SHALL HAVE TMV THAT CONFORM TO ASSE-1070 COLOR AND MODEL PER OWNERS CRITERIA	3/8"	3/8"	1 1/4"
WC	TANK TYPE, FLOOR MOUNTED, ELONGATED BOWL, SIPHON JET ACTION, 1.6 GPF WATER CLOSET. CLOSED FRONT SEAT WITH COVER. COLOR AND MODEL PER OWNERS CRITERIA	1/2"		3"
FS	8x8" FLOOR SINK WITH REMOVABLE 1/2"ø MAX. STEEL MESH BASKET STRAINER			2"
WCO	WALL CLEANOUT. PROVIDE ROUND CHROMIC ACCESS PLATE IN FINISHED AREAS.			
FCO	FLOOR CLEANOUT. – IN INTERIOR AREAS, RECESS CLEANOUT 1/4" TO ACCEPT FINISHED FLOORING			
HS	HAND SINK AND FAUCET PER KITCHEN EQUIPMENT SUPPLIERS CRITERIA FAUCET SHALL HAVE TMV THAT CONFORM TO ASSE-1070	1/2"	1/2"	1 1/2"
TS	TRIPLE COMPARTMENT BAR SINK AND FAUCET MAKE: BIG TRAY, MODEL #: EA2SSC32 OR PER OWNER'S CRITERIA. FAUCET SHALL HAVE TMV THAT CONFORM TO ASSE-1070	1/2"	1/2"	1 1/2"
VTR	VENT THROUGH ROOF.			
DW-1	MAKE: ECOLAB, MODEL #: ES2000 DISHMACHINE VOLTAGE: 115/1ø/60. LOW TEMPERATURE, SUPERIOR CLEANING. INCOMING TEMPERATURE = 120°F		1/2"	2"
DW-2	MAKE: ECOLAB, MODEL #: ES2000HT DISHMACHINE VOLTAGE: 240/1ø/60. PROVIDE ELECTRIC BOOSTER HEATER. PROVIDE SMOKE HOOD. SEE MECHANICAL PLAN. INCOMING TEMP: 120°F		1/2"	2"
XP1	HOT WATER EXPANSION TANK MAKE: AMTROL, MODEL #: ST-5-C			
MS	MOP SINK AND FAUCET PER KITCHEN EQUIPMENT SUPPLIERS CRITERIA FAUCET SHALL HAVE VACUUM BREAKER AND MOP ACCESSORIES.	1/2"	1/2"	2"
FD	6"ø HEEL PROOF BRONZE STRAINER, FLOOR DRAIN WITH TRAP PRIMER TAP WHERE SHOWN ON PLAN.			2"
EFD	DUMPSTER PAD EXTERIOR FLOOR DRAIN. 6"ø HEEL PROOF BRONZE STRAINER, FLOOR DRAIN PER OWNER'S CRITERIA.			2"
HUB	OPEN HUB RECEPTOR			2"
AAV	AIR ADMITTANCE VALVE BY OATEY OR APPROVED EQUAL.			



CLEANOUT DETAILS

NOT TO SCALE

SLOPE DRAINAGE PIPING AS FOLLOWS:
2"ø AND UNDER – 1/4" PER FOOT
3"ø AND OVER – 1/8" PER FOOT.

GREASE INTERCEPTOR SIZING:

S = NUMBER OF SEATS IN DINING AREA
GS = GALLONS OF WASTE WATER PER SEAT.
25 GALLONS FOR ORD. RESTAURANT.
HR = NUMBER OF HOURS ESTABLISHMENT IS OPEN
LF = LOAD FACTOR; 1.00 MAIN HIGHWAY.

CAPACITY : (S)X(GS)X(HR/12)X(LF)
CAP = 34X25X(8/12)X(1) = 638 GALLON
MIN. GREASE INTERCEPTOR REQ: 638 GALLON
EXIST GREASE INTERCEPTOR CAP: 750 GALLON

NATE NARTEY P.E. INC.
2550 SW 137th Ave. #104
Homestead, FL 33032
NNPE INC. COA : 28344
Tel: 954-348-4606

ENGINEER OF RECORD : NATE NARTEY P.E.
PROFESSIONAL ENGINEER# : #84476
SIGNATURE :
DATE :

REVISION DATES:
1 06/03/2014 BLDG. DEPT. REV.
2 06/09/2014 BLDG. DEPT. REV
3 08/09/2014 BLDG. DEPT. REV.
4 07/22/2014 OWNER'S REQ. REV.

RODRIGUEZ RAVELO ARCHITECTS, INC.
● ARCHITECTURE ● PLANNING ● INTERIOR DESIGN
901 SOUTH FEDERAL HIGHWAY SUITE 300 FORT LAUDERDALE, FLORIDA 33316
TELEPHONE: 954-764-8487 FAX: 954-764-8486 E-MAIL: info@rrarchitects.com
REGISTERED ARCHITECTS: ROBERTO RODRIGUEZ, AR 0011293 ANTONIO RAVELO, AR 0011294
REGISTERED BUSINESS: ARCHITECTURE, INTERIOR DESIGN, PLANNING
REGISTERED BUSINESS: ARCHITECTURE, INTERIOR DESIGN, PLANNING

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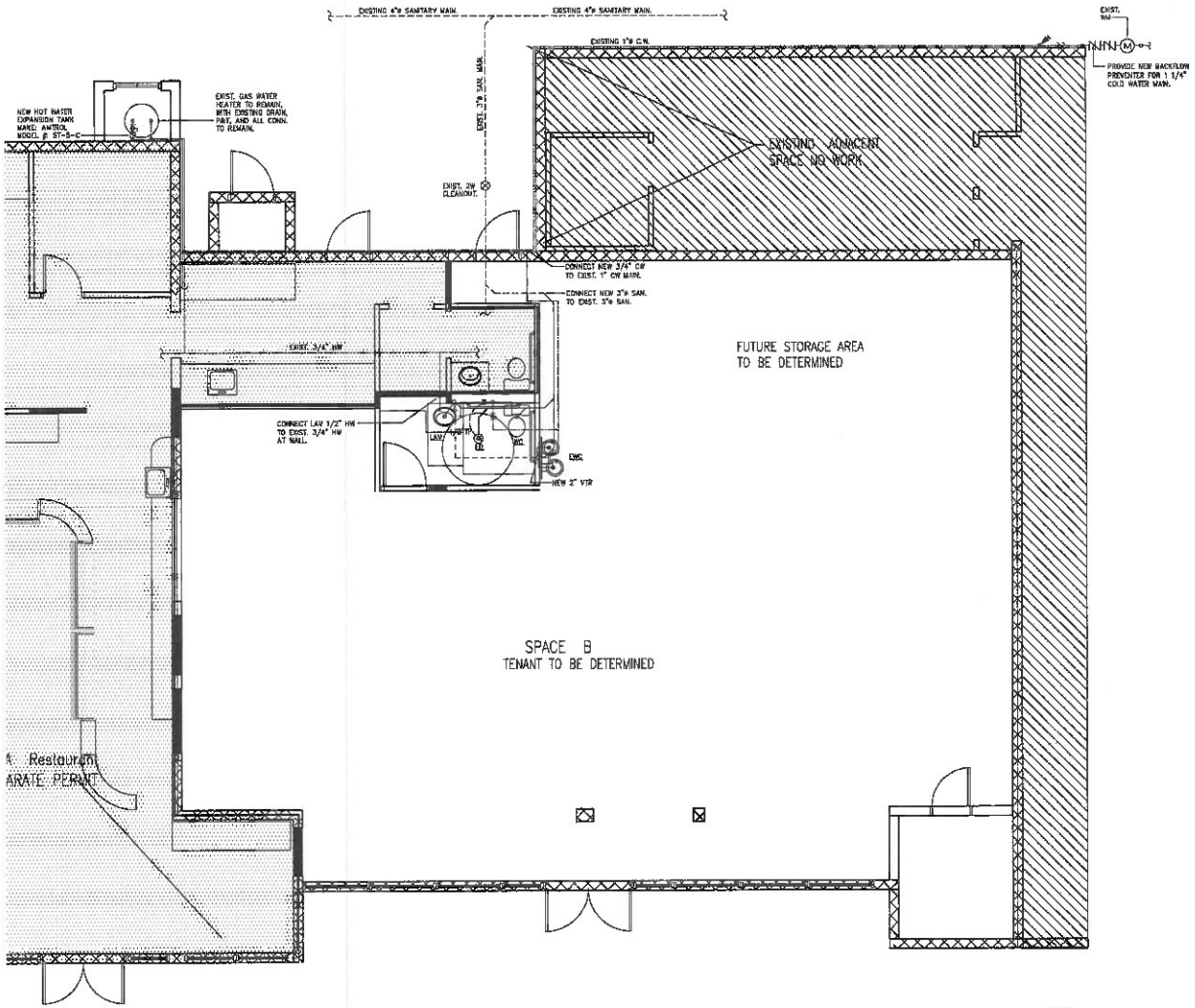
TENANT IMPROVEMENT
Le Carre Restaurant
2104 E. Oakland Park Blvd. Fort Lauderdale , Florida

PROJECT DESIGN BY:
DRAWN BY:
CHECKED BY:
DATE: 5-28-2014

PROJECT NUMBER: 201410

SHEET NUMBER: P-2



PLUMBING PLAN

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

NATE MARTEY P.E. INC.
19330 NW 19th Ave. #104
Homestead, FL 33032
NMPE INC. COA : 28344
Tel: 954-348-4606

ENGINEER OF RECORD : NATE MARTEY P.E.
PROFESSIONAL ENGINEER# : 56478
SIGNATURE :
DATE :

A REVISION DATES
1 08/12/2014 BLDG. DEPT. REV.

RODRIGUEZ RAVELO ARCHITECTS, INC.
• ARCHITECTURE • PLANNING • INTERIOR DESIGN
900 SOUTH FEDERAL HIGHWAY SUITE 310 , FORT LAUDERDALE, FLORIDA 33316
TELEPHONE: 954-764-0407 FAX: 954-764-0440 WWW.RRARCHITECTS.COM
REGISTERED ARCHITECT: RICARDO J. RODRIGUEZ, LICENSE NO. AR0009616
INTERIOR DESIGN, ARCHITECT STATE OF FLORIDA, LIC. NO. AR0009616

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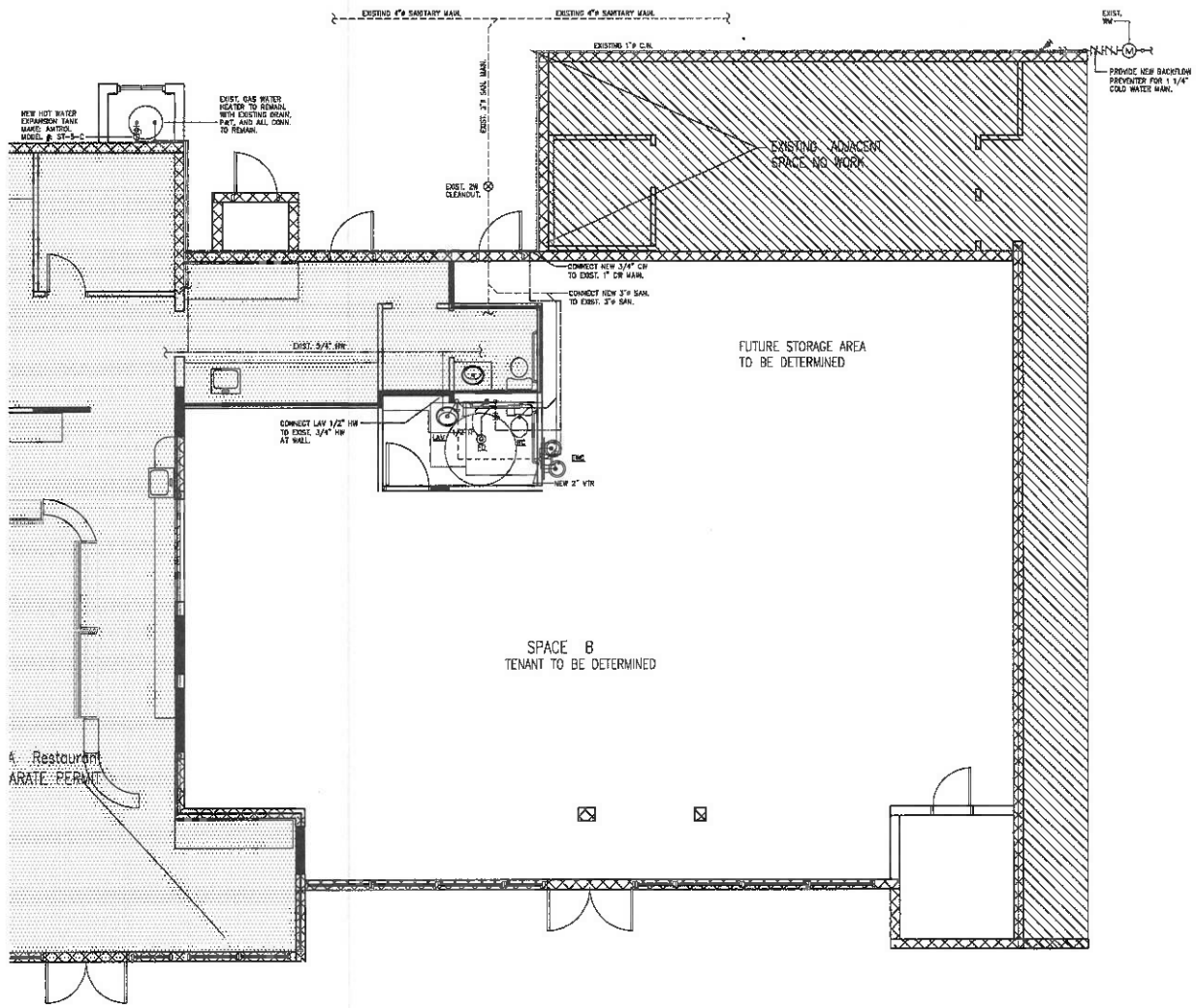
TENANT IMPROVEMENT
Space B
2104 E. Oakland Park Blvd. Fort Lauderdale, Florida

PROJECT CODE: 00
PROJECT MANAGER:
DRAWN BY:
DATE: 8-17-2014

PROJECT NUMBER: 201419

SHEET NUMBER: P-1



PLUMBING PLAN

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

NATE NARTEY P.E. INC.
22510 SW 197th Ave. #104
Homestead, FL 33032
NRPE INC. COA : 26344
Tel: 954-348-4606

ENGINEER OF RECORD : NATE NARTEY P.E.
PROFESSIONAL ENGINEER : 86478

SIGNATURE :

DATE :

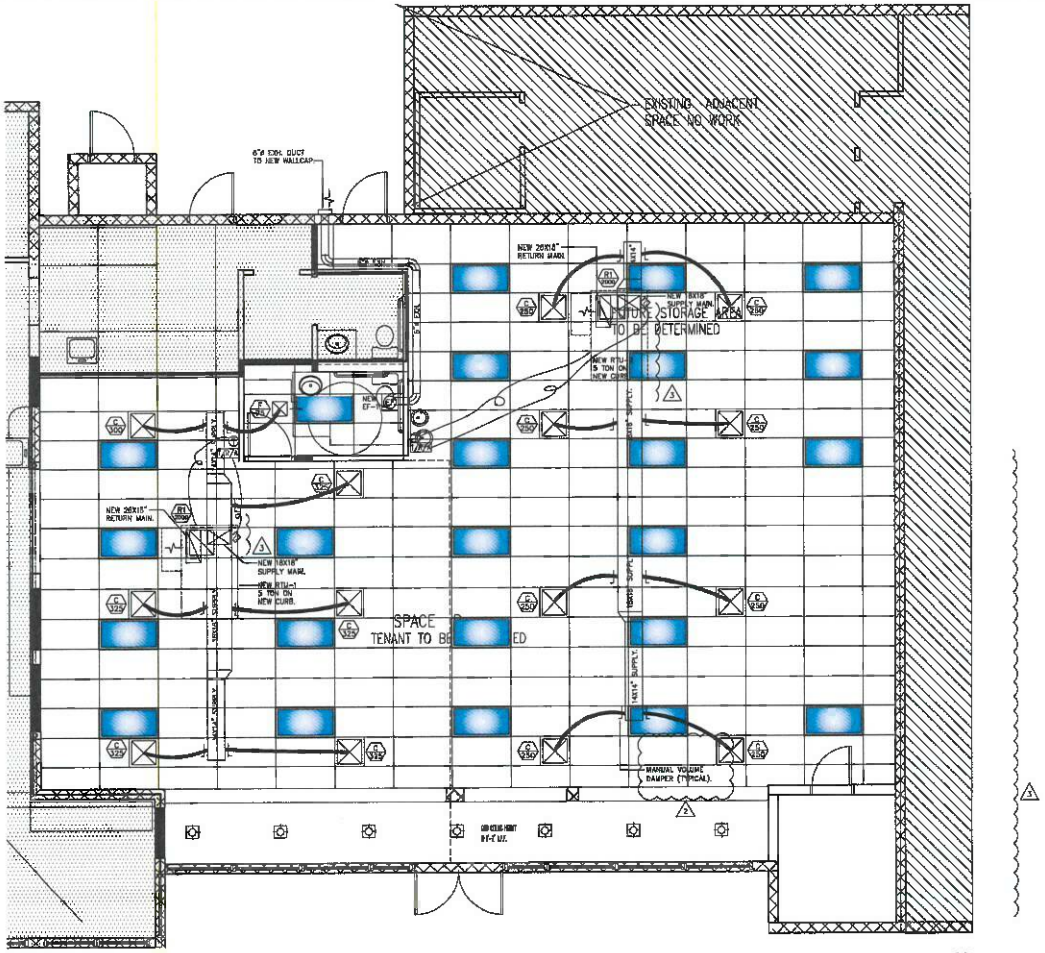
REVISION DATES:
1 08/12/2014 BLDG. DEPT. REV.

RODRIGUEZ RAVELO ARCHITECTS, INC.
• ARCHITECTURE • PLANNING • INTERIOR DESIGN
800 NORTH FEDERAL HIGHWAY SUITE 300 FORT LAUDERDALE, FLORIDA 33304
TELEPHONE: 954-764-0007 FAX: 954-764-0008 WWW.RODRIGUEZRAVELOARCHITECTS.COM
REGISTERED FLORIDA CORPORATION - LICENSE NO. AA0003777
REGISTERED MARYLAND ARCHITECT STATE OF FLORIDA LIC. NO. AR0004818

TENANT IMPROVEMENT
Space B
2104 E. Oakland Park Blvd. Fort Lauderdale, Florida

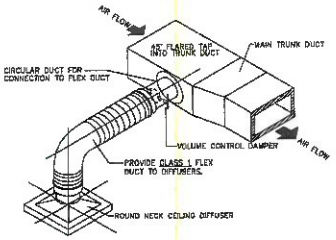
PROJECT NUMBER:
201419

SHEET NUMBER:
P-1



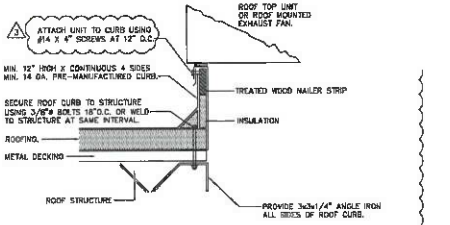
MECHANICAL PLAN

SCALE 1/4" = 1'-0"



SPIN COLLAR DETAIL:

NOT TO SCALE



CONTRACTOR RTU & FAN DETAIL

NOT TO SCALE

NATE NARTKY P.E. INC.
25310 SW 127th Ave. #304
Homestead, FL 33032
NNPE INC. COA : #8344
Tel: 954-948-9666

ENGINEER OF RECORD PROFESSIONAL ENGINEER : NATE NARTKY P.E. 55976

SIGNATURE :

DATE :

△REVISION DATES:
1 △ 08/12/2014 BLDG. DEPT. REV.
2 △ 08/18/2014 BLDG. DEPT. REV
3 △ 01/17/2015 AS BUILT REV.

RODRIGUEZ RAVELO ARCHITECTS, INC.
• ARCHITECTURE • PLANNING • INTERIOR DESIGN
NW 107TH PERSONAL ACCESSWAY OFFICE NO. 1700 LAUDERDALE, FLORIDA 33316
TEL: 954-742-0000 FAX: 954-742-0001 E-MAIL: rra@rra-arch.com WEB: www.rra-arch.com
DIRECTOR & INCORPORATED, STOCKHOLDERS, DIRECTORS OF FLORIDA INC. NO. 1000017956
DIRECTOR: RAFAEL ARCHITECT STATE OF FLORIDA LIC. NO. AR0010815

TENANT IMPROVEMENT

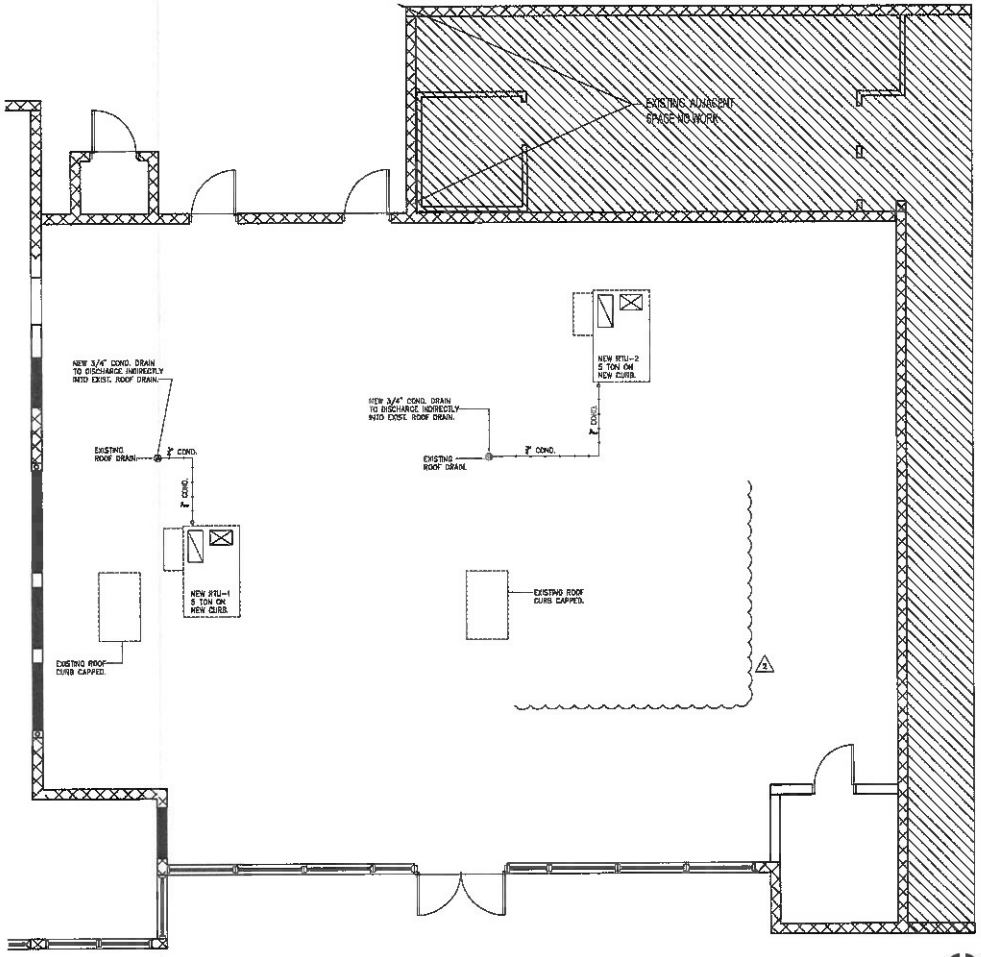
Space B

2104 E. Oakland Park Blvd. Fort Lauderdale, Florida

PROJECT START: JW
PROJECT MANAGER:
DRAWN BY:
DATE: 8-21-2014

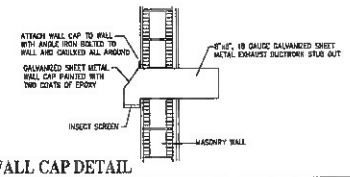
PROJECT NUMBER:
201419

SHEET NUMBER:
M-1



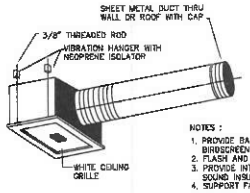
ROOF MECHANICAL PLAN

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



WALL CAP DETAIL

NOT TO SCALE

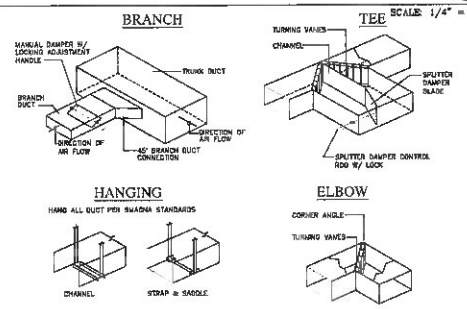


NOTES :

1. PROVIDE BACKDRAFT DAMPER WITH BIRDSCREEN.
2. FLASH AND SEAL WALL OR ROOF CAP
3. PROVIDE INTERNAL ISOLATION AND SOUND INSULATION.
4. SUPPORT FAN FROM STRUCTURE.

CABINET CEILING FAN

N.T.S.



HVAC DUCT DETAILS

NOT TO SCALE

NATH NARTEY P.E. INC.
25940 SW 137th Ave. #104
Homestead, FL 33032
NNPE INC. COA : 26344
Tel: 954-348-4606

ENGINEER OF RECORD : NATE NARTEY P.E.
PROFESSIONAL ENGINEER : 56475

SIGNATURE :

DATE :

REVISION DATES:
1 08/13/2014 BLDG. DEPT. REV.
2 02/17/2015 AS BUILT REV.

RODRIGUEZ RAVELO ARCHITECTS, INC.
• ARCHITECTURE • PLANNING • INTERIOR DESIGN
664 SOUTH FEDERAL HIGHWAY SUITE 102 FORT LAUDERDALE, FLORIDA 33316
TELEPHONE: 954-764-8007 FAX: 954-764-8008 WWW.RRARCHITECTS.COM
ROBERTO RAVELO, ARCHITECT STATE OF FLORIDA LIC. NO. AR0011615
ROBERTO RAVELO, ARCHITECT STATE OF FLORIDA LIC. NO. AR0011615

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TENANT IMPROVEMENT

Space B

2104 E. Oakland Park Blvd. Fort Lauderdale , Florida

PROJECT MANAGER: RR
DRAWN BY: RR
CHECKED BY: RR
DATE: F.E.-9/14

PROJECT NUMBER:
201419

SHEET NUMBER:
M-2

STRUCTURAL WIND LOADING CALCULATIONS:

1. Structural analysis of roof top air conditioning unit using ASCE-7.
2. $F = Q_z \times G_z \times C_f \times A$
   a. Where $Q_z = 0.00256\ K_z (Iv)^2$ from Equation 3

   K_z = 0.87 From table 6 for height less than 20 feet and exposure C per section 6.5.3.3.1

   I = 1.00 From table 5 for category IV per table 1.

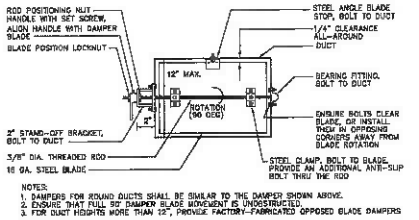
   V = 170 mph From figure 1.

   $Q_z = 0.00256 \times 0.87 \times (1.00 \times 170)^2 = 64.36$ psf.

   G_z = 1.29 From table 8 for height less than 20 feet and exposure C.

   C_f = 1.40 From table 12 for h/o = 20 = 3.33.

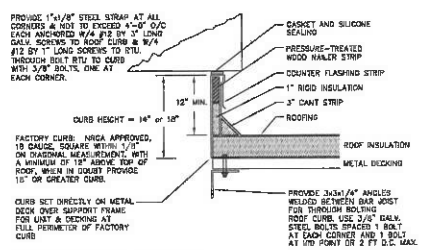
   $A = \frac{52 \times 48}{144} = 18.0$ sf.
3. F = 64.36psf x 1.29 x 1.4 x 18.0sf = 2092 lbs.
4. Overturning moment = (1.5 safety factor) x (2092 lbs.) x (3.0 ft.) = 9,414 ft. lbs.
5. Restoring force required = $\frac{9{,}414}{2.5} = 3{,}765.6$ lbs.
6. Detail requires 3/8" diameter through bolts, through roof to 3x4x1/4" angles. (4) bolts along each side for a total of 8 bolts.
7. The working load capacity of each 3/8" diameter steel bolt exceeds 5,000 lbs. The total required 7,008 lbs. restroing force is far exceeded by (8) bolts rated at 5,000 lbs. each.
8. Detail requires rooftop unit to be bolted to curb with #14 x 4" screws at 12" on center. therefore there will be a minimum of 14 bolts along all side.
9. Force/bolt = $\frac{3{,}765.6}{14} = 269$ lbs.
10. Working load capacity of 3/8" diameter steel bolts exceeds 5,000 lbs., therefore the attachment to the rooftop air conditioning unit to the roofcurb is ok.



NOTES:
1. DAMPERS FOR ROUND DUCTS SHALL BE SIMILAR TO THE DAMPER SHOWN ABOVE.
2. ENSURE THAT FULL 90° DAMPER BLADE MOVEMENT IS UNOBSTRUCTED.
3. FOR DUCT HEIGHTS MORE THAN 12", PROVIDE FACTORY-FABRICATED OPPOSED BLADE DAMPERS

MANUAL VOLUME DAMPER DETAIL

NOT TO SCALE



ROOF CURB DETAIL

NOT TO SCALE

PACKAGED UNIT SCHEDULE:

MARK	RTU-1	RTU-2		
AREA	RETAIL	RETAIL		
BTUH TOTAL	57,500	57,500		
BTUH SENSIBLE	40,460	40,460		
ENTERING DB/WB	80/67	80/67		
SUPPLY CFM	2000	2000		
OUTSIDE AIR CFM	225	225		
ESP INCHES	0.50	0.50		
EVAP. FAN H.P.	1.0	1.0		
COND. FAN H.P.	1/4	1/4		
HEAT KW	8.5	8.5		
VOLTAGE	208-230/1/60	208-230/1/60		
MCA	43.0	43.0		
MOCP	60.0	60.0		
EER/SEER	16.2	13.2		
REFRIGERANT	R-410	R-410		
MODEL NO.	50HC-A08A0A3	50HC-A08A0A3		
MANUFACTURER	CARRIER	CARRIER		
OUTSIDE DESIGN: 91°F DB, 79°F WB, WINTER 46°F DB				

NOTES: PROVIDE MOTORIZED 2 POSITION CONTROL DAMPER THAT OPENS THE INTAKE DAMPER WHEN BLOWER MOTOR IS ENERGIZED. 2

FAN SCHEDULE:

MARK	EF-1				
USE	RETAIL BATH				
CFM	80				
S.P. IN WATER	0.250				
RPM	100				
DRIVE	DIRECT				
HP/WATTS	10 W				
VOLTS	115/1/60				
MANUF.	BROAN				
MODEL NO.	XB-80				
NOTES	3,5,6,17				

NOTE: MODEL NUMBERS SHOWN ARE "OR EQUAL", SUBMIT SHOP DRAWINGS FOR ALTERNATES.

1. PROVIDE DISCONNECT SWITCH
2. PROVIDE PREFABRICATED ROOF CURB
3. PROVIDE BACKDRAFT DAMPER
4. PROVIDE GRAVITY SHUTTERS
5. PROVIDE BIRD SCREEN
6. PROVIDE WALL CAP
7. PROVIDE SPEED CONTROLLER
8. PROVIDE VIBRATION ISOLATORS
9. PROVIDE BELT GUARD
10. PROVIDE WEATHER PROOF ENCLOSURE
11. PROVIDE EXPLOSION PROOF FAN
12. CONTINUOUS RUNNING
13. THERMOSTAT CONTROLLED
14. INTERLOCK WITH A/C SYSTEM
15. EMERGENCY WALL PANIC SWITCH
16. PROVIDE ROOFTOP GOOSENECK
17. CONTROLLED BY WALL SWITCH
18. INTERLOCK SUPPLY AND EXHAUST FANS

AIR DISTRIBUTION SCHEDULE:

A — MARK; 100 — CFM

MARK	MAKE	MODEL	CFM/ NECK SIZE	DAMPER	REMARKS
A B C D E	MAILOR	ARNS 24x24 STAMPED SQUA OLD. DIFFUSER	60-100 CFM 08"ø NECK 105-200 CFM 09"ø 205-330 CFM 10"ø 355-500 CFM 12"ø 535-600 CFM 14"ø	OBD	SEE NOTE
F	MAILOR	S1C 3-WAY SUPPLY	50 CFM 6x4 NECK	OBD	SEE NOTE
R1	MAILOR	5470L45 24x24 RETURN	0-2000 CFM 20x20 NECK		SEE NOTE

NOTES:
1. ALL AIR DISTRIBUTION DEVICES SHALL BE OF ALUMINUM CONSTRUCTION.
2. FINISH FOR ALL AIR DISTRIBUTION DEVICES SHALL BE AS SELECTED BY ARCHITECT/OWNER
3. COORDINATE ALL AIR DISTRIBUTION DEVICES LOCATION WITH REFLECTED CEILING PLANS.
4. REFER TO CONTRACT DRAWINGS AND SPECIFICATIONS FOR OTHER ACCESSORIES AND/OR REQUIREMENTS.

DUCT PRESSURE DROP CALC'S:

DUCTWORK	60FT X .08/100 =	.048
ELBOWS	(2) X 20FT X .08/100 =	.03
FILTER		.25
DIFFUSER		.10
MISC.		---
TOTAL ESP. REQUIRED		.428
TOTAL ESP. PROVIDED		.50

NOTES:

AIR CONDITIONING SPECIFICATIONS:

1. GENERAL:
   A. ALL DIMENSIONS AND ACTUAL CONSTRUCTION CONDITIONS MUST BE VERIFIED AT THE PROJECT SITE PRIOR TO SUBMITTING BID. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
   B. THESE DRAWINGS ARE DIAGRAMMATIC AND REQUIRE CLOSE COORDINATION WITH EXISTING STRUCTURE, LIGHTS, CONDUITS, PLUMBING AND CEILING SYSTEM. THE CEILING SPACE IS EXTREMELY TIGHT AND WILL REQUIRE CAREFUL ADVANCE PLANNING BEFORE DUCT INSTALLATION. THE CONTRACTORS PRICE FOR THIS PROJECT SHALL INCLUDE A SITE VISIT TO FIELD VERIFY, ALL COORDINATION, DUCT TRANSITIONS AND FIELD ROUTING AS REQUIRED FOR A COMPLETE OPERATING AND TESTED SYSTEM.
   C. SUBMIT MANUFACTURER'S DATA AND SHOP DRAWINGS ON ALL EQUIPMENT, MATERIALS AND DUCT SYSTEM LAYOUT FOR REVIEW BY THE ENGINEER PRIOR TO ORDERING, FABRICATION, OR INSTALLATION. PRIOR TO ORDERING ANY EQUIPMENT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT NAMEPLATE VOLTAGE AND POWER ARE AVAILABLE.
   D. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE FOLLOWING CODES:
      1. THE FLORIDA BUILDING CODE
      2. NFPA-90A AIR CONDITIONING AND VENTILATION
      3. SMACNA, LOW VELOCITY DUCT CONSTRUCTION
      4. NFPA 101, LIFE SAFETY CODE
2. MATERIALS:
   A. ALL SUPPLY, RETURN AND EXHAUST DUCTS SHALL BE OF G-90 GALVANIZED STEEL. PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH TAKE-OFFS. PROVIDE FLEXIBLE DUCTS, AS ALL DUCTS, FLEXIBLE DUCTS, MAY BE USED FOR DIFFUSER CONNECTIONS AS SHOWN ON THE PLANS. SUBMIT SHOP DRAWINGS. 2
   B. ALL CEILING DIFFUSERS SHALL HAVE OPPOSED BLADE DAMPERS.
   C. OUTSIDE AIR AND EXHAUST DUCTS SHALL BE GALVANIZED SHEET METAL.
3. TEST AND BALANCE:
   A. THE CONTRACTOR SHALL BALANCE THE SYSTEM TO DESIGN VALUES LISTED ON THE DRAWINGS TO WITHIN PLUS 10% OR MINUS 5%. PROVIDE STANDARD FORMS TO DOCUMENT AIR SYSTEM PERFORMANCE, MOTOR SPEEDS, AMPS, SUPPLY AND EXHAUST FAN CFM VALUES AND AIR CONDITIONER UNIT PERFORMANCE.
4. CONTRACTOR'S WARRANTY:
   A. CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY FOR ALL EQUIPMENT AND SYSTEMS FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. (CERTIFICATE OF OCCUPANCY).

HVAC SYMBOL LEGEND:

	THERMOSTAT		ROOF MTD. EXH. FAN
	REMOTE BULB SENSOR		DUCT TURN DOWN
	DUCT SMOKE DETECTOR		DUCT TURN UP
T/A	TEST, RESET & ANNUNCIATOR		FLEXIBLE DUCT
	TRANSITION		EXISTING SUPPLY
	TURNING VANE		EXISTING RETURN
	45° BRANCH DUCT TAKE-OFF		RELOCATED SUPPLY
	HORIZONTAL FIRE DAMPER		RELOCATED RETURN
M.V.D.	MANUAL VOLUME DAMPER		NEW SUPPLY
	RETURN REDISTER		NEW RETURN
	SUPPLY DIFFUSER		FIRE DAMPER
	RETURN AIR GRILLE		COMBINATION FIRE/SMOKE DAMPER
	AIR FLOW DIRECTION		MOTORIZED DAMPER
	EXHAUST FAN		VALVE

NOTES:

OUTSIDE AIR CALCULATION:

ASHRAE STANDARD 62 & FLORIDA MECHANICAL CODE 403.3

SALES BREATHING ZONE OUTDOOR AIRFLOW CALCULATION
$V(bz) = R(p)P(z) + R(a)A(z)$

V(bz) = BREATHING ZONE OUTDOOR AIRFLOW
A(z) = ZONE FLOOR AREA = 2276 SQFT
P(z) = ZONE POPULATION = 24 PEOPLE
R(a) = AREA OUTDOOR AIR RATE = 0.12 CFM/SQFT
R(p) = PEOPLE OUTDOOR AIR RATE = 7.5 CFM/PERSON

V(bz) = 7.5 CFM/PX24 PEOPLE + 0.12 CFM/SQFTX2276 SQFT
V(bz) = 450 O/A CFM

TOTAL O/A REQUIRED = 450 O/A CFM
TOTAL O/A PROVIDED = 450 O/A CFM

NOTES:

NATE NARTEY P.E. INC.
25510 SW 137th Ave, #304
Homestead, FL 33032
NNPE INC. COA : 28344
Tel: 954-348-4666

ENGINEER OF RECORD : NATE NARTEY P.E.
PROFESSIONAL ENGINEER : 66478
SIGNATURE :
DATE :

REVISION DATES:
1 08/12/2014 BLDG. DEPT. REV.
2 02/16/2014 BLDG. DEPT. REV.
3 02/17/2015 AR RULET REV.

RODRIGUEZ RAVELO ARCHITECTS, INC.
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TENANT IMPROVEMENT
Space B
2104 E. Oakland Park Blvd. Fort Lauderdale , Florida

PROJECT NUMBER: 201419

SHEET NUMBER: M-3