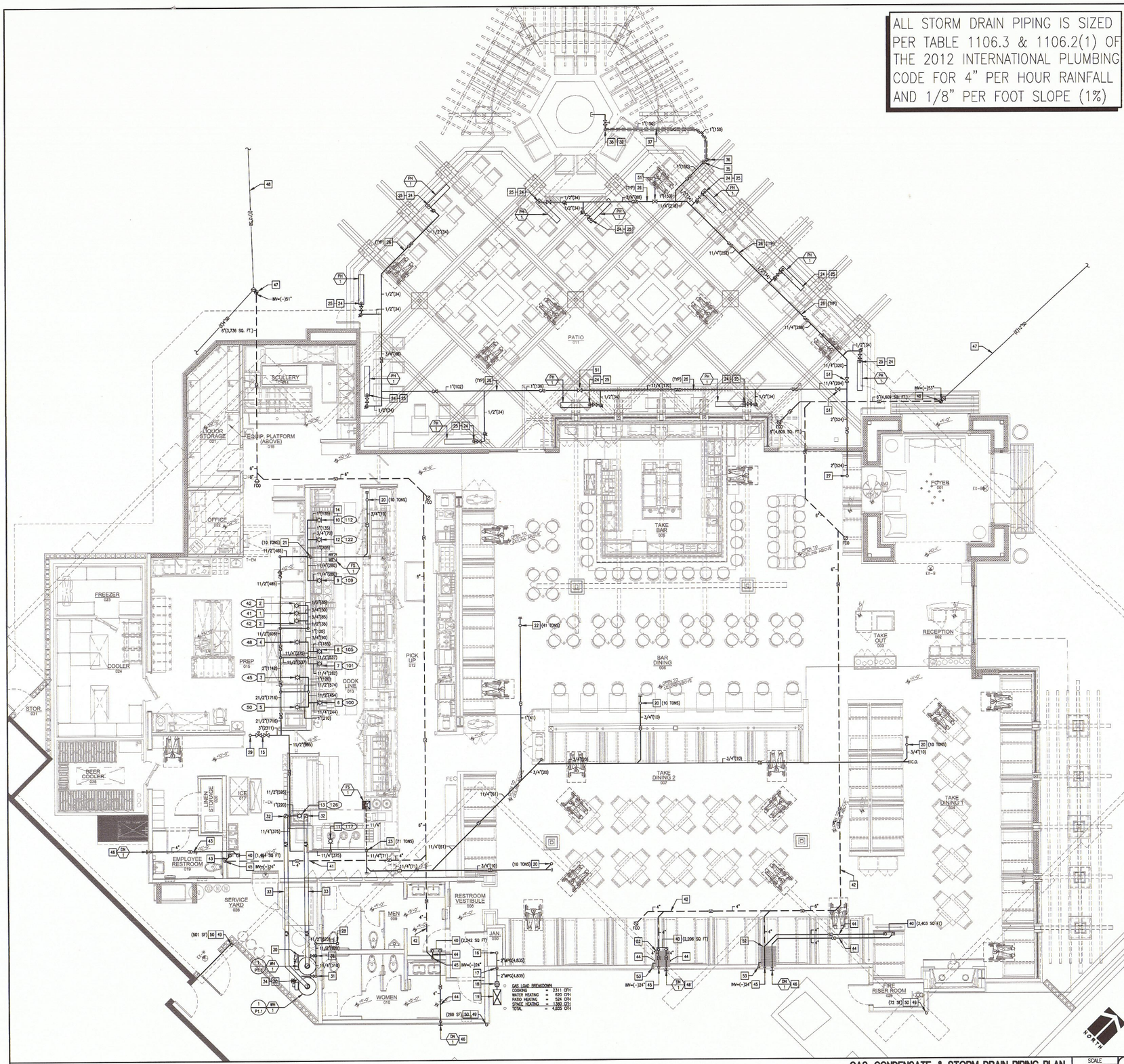
ALL STORM DRAIN PIPING IS SIZED PER TABLE 1106.3 & 1106.2(1) OF THE 2012 INTERNATIONAL PLUMBING CODE FOR 4" PER HOUR RAINFALL AND 1/8" PER FOOT SLOPE (1%)



GAS LOAD BREAKDOWN

COOKING	=	2311 CFH
WATER HEATING	=	620 CFH
PATIO HEATING	=	524 CFH
SPACE HEATING	=	1,386 CFH
TOTAL	=	4,835 CFH

GAS, CONDENSATE, & STORM DRAIN PIPING PLAN — SCALE 1/4" = 1'-0" — 1

PLAN NOTES

1. 3/4" GAS PIPING @ +12" A.F.F. TO CONVECTION OVEN ITEM #41 (50 CFH).
2. 1/2 GAS PIPING @ +12" A.F.F. TO RICE COOKER ITEM #42 (35 CFH).
3. 1" GAS PIPING @ +12" A.F.F. TO BRASING PAN ITEM #45 (120 CFH).
4. 3/4" GAS PIPING @ +12" A.F.F. TO BRASING PAN ITEM #48 (90 CFH).
5. 1" GAS PIPING @ +12" A.F.F. TO 6-OPEN BURNER RANGE WITH OVEN ITEM #50 (210 CFH).
6. 11/4" GAS PIPING @ +12" A.F.F. TO FRYER BATTERY ITEM #100 (244 CFH).
7. 11/4" GAS PIPING @ +12" A.F.F. TO FRYER BATTERY ITEM #101 (282 CFH).
8. 1" GAS PIPING @ +34" A.F.F. TO GRIDDLE WITH OVEN ITEM #105 (185 CFH).
9. 11/4" GAS PIPING @ +32" A.F.F. TO 8-OPEN BURNER RANGE ITEM #109 (280 CFH).
10. 1" GAS PIPING @ +32" A.F.F. TO BROILER ITEM #112 (135 CFH).
11. 11/4" GAS PIPING @ +14" A.F.F. TO CHINESE WOK RANGE ITEM #117 (375 CFH).
12. 3/4" GAS PIPING @ +82" A.F.F. TO CHEESEMELTER ITEM #122 (70 CFH).
13. 1" GAS PIPING @ +16" A.F.F. TO PIZZA OVEN ITEM #126 (220 CFH).
14. FIXTURE IS APPROXIMATELY 78 FEET FROM GAS PRESSURE REGULATOR – GAS PIPING FOR COOK LINE IS SIZED PER TABLE 402.4(2) OF THE 2012 IFGC FOR 80 FEET AT 7" W.C. (1/4 PSI) PRESSURE.
15. 3" GAS COOK AND MECHANICAL SOLENOID GAS VALVE INSTALLED ABOVE T-BAR CEILING FOR HOOD FIRE PROTECTION SYSTEM (SEE DETAIL #5 ON SHEET K-3.0 FOR ADDITIONAL INFORMATION) – GAS VALVES ARE INSTALLED BY PLUMBING CONTRACTOR (P.C.). (2,311 CFH TOTAL) – LABEL T-BAR CEILING TITLE "HOOD VALVES ABOVE CEILING" – SEE GENERAL NOTE #85 ON SHEET P1.2.
16. 2" MPG PIPING (4,835 CFH) UP THRU ROOF – SEE SHEET P5.0 FOR CONTINUATION.
17. 2" MPG PIPING (4,835 CFH) DN IN EXTERIOR WALL TO NEW GAS METER ASSEMBLY.
18. PROVIDE AND INSTALL PACIFIC SEISMIC MODEL #315F 2" FLANGED HORIZONTAL GAS SEISMIC SHUT-OFF VALVE – COORDINATE INSTALLATION OF EARTHQUAKE VALVE WITH THE LOCAL GAS COMPANY.
19. LOCATION OF NEW GAS METER ASSEMBLY – GAS METER IS PROVIDED & INSTALLED BY LOCAL GAS COMPANY – ALL GAS PIPING IN THE BUILDING IS SIZED PER TABLE 402.4(5) OF THE 2012 INTERNATIONAL FUEL GAS CODE FOR 200 FEET @ 2-PSI MEDIUM PRESSURE GAS – GAS METER SHALL BE IDENTIFIED WITH 2" HIGH STENCILED SUITE NUMBERS. ALL GAS PIPING AND FITTINGS SHALL BE PAINTED IN ACCORDANCE WITH BUILDING STANDARDS.
20. 3/4" CONDENSATE DRAIN PIPING UP THRU ROOF – SEE SHEET P5.0 FOR CONTINUATION.
21. 3/4" CONDENSATE DRAIN PIPING DN IN WALL – SPILL TO FLOOR SINK WITH A 11/2" LEGAL AIR GAP.
22. 1" CONDENSATE DRAIN PIPING UP THRU ROOF – SEE SHEET P5.0 FOR CONTINUATION.
23. 11/4" CONDENSATE DRAIN PIPING DN IN WALL – SPILL TO FLOOR SINK WITH A 2" LEGAL AIR GAP.
24. LOCATION OF GAS-FIRED PATIO HEATER (PH-1).
25. 1/2" GAS TO CEILING MOUNTED PATIO HEATER (34 CFH) – INSTALL 1/4 TURN SHUT-OFF VALVE DIRECTLY ABOVE PATIO HEATER AND ROUTE GAS ABOVE HEATER TO GAS CONNECTION – HARD PIPE CONNECTION TO PATIO HEATER – DO NOT USE FLEX PIPING TO MAKE FINAL CONNECTION – PAINT EXPOSED GAS PIPING BLACK – INSTALL WITH DIRT LEG (SEDIMENT TRAP) ON GAS LINE TO PATIO HEATER.
26. ROUTE GAS PIPING ON TOP OF PATIO TRELLIS FRAMING – PAINT GAS PIPING TO MATCH TRELLIS FRAMING.
27. 2" GAS PIPING (524 CFH) UP THRU ROOF – SEE SHEET P5.0 FOR CONTINUATION.
28. 11/2" GAS PIPING (820 CFH) UP THRU ROOF – SEE SHEET P5.0 FOR CONTINUATION.
29. 3" GAS PIPING (2,311 CFH) UP THRU ROOF – SEE SHEET P5.0 FOR CONTINUATION.
30. 11/4" GAS PIPING TO WATER HEATER (310 CFH) – INSTALL WITH DIRT LEG (SEDIMENT TRAP) ON GAS LINE TO WATER HEATER.
31. INSTALL 1/4 TURN SHUT-OFF VALVE DIRECTLY ABOVE WATER HEATER AND ROUTE GAS ABOVE WATER HEATER TO GAS CONNECTION (310 CFH) – HARD PIPE CONNECTION TO WATER HEATER – DO NOT USE FLEX PIPING TO MAKE FINAL CONNECTION – PAINT EXPOSED GAS PIPING BLACK.
32. 6"Ø TYPE "B" FLUE UP THRU ROOF (SEE SHEET P5.0 FOR CONTINUATION) – FLUE SHALL TERMINATE 10'-0" (MIN) FROM ANY OUTSIDE AIR INTAKE & 8'-0" (MIN) FROM ANY VERTICAL SURFACES.
33. SLOPE 6"Ø TYPE "B" WATER HEATER FLUE UPWARDS TOWARDS ROOF PENETRATION.
34. FIXTURE IS APPROXIMATELY 43 FEET FROM GAS PRESSURE REGULATOR – GAS PIPING FOR WATER HEATERS IS SIZED PER TABLE 402.4(2) OF THE 2012 INTERNATIONAL FUEL GAS CODE FOR 50 FEET AT 7" W.C. (1/4 PSI) PRESSURE.
35. 1" GAS DN IN WALL – PENETRATE EXTERIOR WALL @ +18" ABOVE FINISHED GRADE.
36. 1" PIPING DN TO BELOW PATIO SLAB ON GRADE WITH 1/4 TURN SHUT-OFF VALVE ON DROP – GAS PIPING SHALL TRANSITION FROM SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON FITTINGS TO PLIDCO GAS PIPE SDR-11 IPS.
37. GAS PIPING INSTALLED BELOW SLAB ON GRADE SHALL BE PLIDCO GAS PIPE SDR-11 IPS.
38. 1" SDR-11 IPS GAS PIPING (150 CFH) UP FROM BELOW GRADE TO CUSTOM PATIO FIRE FEATURE (BY OTHERS) – THE PLUMBING CONTRACTOR SHALL INSTALL KEY OPERATED 1/4 TURN GAS SHUT-OFF VALVE – INSTALL KEY OPERATED 1/4 TURN SHUT-OFF VALVE IN EASILY ACCESSIBLE LOCATION.
39. FIXTURE IS APPROXIMATELY 143 FEET FROM GAS PRESSURE REGULATOR – GAS PIPING FOR FIRE FEATURE IS SIZED PER TABLE 402.4(2) OF THE 2012 INTERNATIONAL FUEL GAS CODE FOR 150 FEET AT 7" W.C. (1/4 PSI) PRESSURE.
40. 4" STORM DRAIN & OVERFLOW DRAIN UP TO ROOF DRAIN (RD-1) AND OVERFLOW DRAIN (OD-1) – SEE SHEET P5.0 FOR LOCATION OF ROOF DRAIN (RD-1) AND OVERFLOW DRAIN (OD-1).
41. SLOPE THIS PORTION OF STORM DRAIN PIPING BELOW GRADE 1/8" PER FOOT (1%) MINIMUM.
42. SLOPE THIS PORTION OF STORM DRAIN PIPING BELOW GRADE 1/4" PER FOOT (2%) MINIMUM.
43. SLOPE THIS PORTION OF STORM DRAIN PIPING ABOVE THE CEILING 1/8" PER FOOT (1%) MINIMUM.
44. SLOPE THIS PORTION OF OVERFLOW DRAIN PIPING ABOVE THE CEILING 1/4" PER FOOT (2%) MINIMUM.
45. 4" STORM DRAIN PIPING DOWN IN WALL TO BELOW GRADE.
46. 4" OVERFLOW DRAIN DOWN IN WALL TO DOWNSPOUT NOZZLE (DN-1) @ +10" A.F.F. (MINIMUM).
47. EXISTING 12" HDPE STORM DRAIN LINE BELOW FINISHED GRADE – FIELD VERIFY EXISTING – SEE SHEET (LANDLORD) CIVIL DRAWINGS FOR MORE INFORMATION.
48. POINT OF CONNECTION OF NEW 6" STORM DRAIN INTO LANDLORD PROVIDED & INSTALLED 12" STORM DRAIN BELOW GRADE – THE PLUMBING CONTRACTOR SHALL FIELD VERIFY THE EXACT SIZE, LOCATION, DEPTH & CONDITION OF THE CIVIL PROVIDED & INSTALLED STORM DRAIN PRIOR TO THE START OF ANY NEW WORK AND PRIOR TO BID AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND OWNER OF ANY DISCREPANCIES.
49. 3" GUTTER DOWNSPOUT UP – SEE SHEET P5.0 FOR CONTINUATION.
50. 3" GUTTER DOWNSPOUT DN. TO SPILL ON GRADE WITH SPLASH BLOCK.
51. INSTALL ISOLATION 1/4 TURN BALL VALVES ABOVE THE CEILING OR TRELLIS AREAS TO ISOLATE INDIVIDUAL GAS SYSTEMS – INSTALL RED PLASTIC LABEL WITH WHITE LETTERS ON CEILING TILE INDICATING "MAIN GAS ISOLATION SHUT-OFF VALVE ABOVE THE CEILING" FOR KITCHEN AND BACK OF HOUSE AREAS ONLY.
52. SHADED AREA REPRESENTS SHEET METAL EMERGENCY DRIP PAN.
53. EMERGENCY DRIP PAN DRAIN DOWN IN WALL – SPILL AT +6" ABOVE FINISHED GRADE.

STORM DRAIN SIZING TABLES (2012 IPC)

TABLE 1106.3
SIZE OF HORIZONTAL STORM DRAINAGE PIPING

SIZE OF HORIZONTAL PIPING (inches)	HORIZONTALLY PROJECTED ROOF AREA (square feet)					
	Rainfall rate (inches per hour)					
	1	2	3	4	5	6
	1/8 pitch (1/4 = 1) (slope 2 percent mean)					
3	3,288	1,644	1,095	822	657	548
4	7,520	3,760	2,506	1,800	1,504	1,253
5	13,360	6,680	4,453	3,340	2,672	2,227
6	21,400	10,700	7,133	5,350	1,504	1,253
8	46,000	23,000	15,330	11,500	9,200	7,600
10	82,800	41,400	27,600	20,700	16,580	13,800
12	133,200	66,600	44,400	33,300	26,650	22,200
15	218,000	109,000	72,800	59,500	47,600	39,650

TABLE 1106.2(1)
SIZE OF CIRCULAR VERTICAL CONDUCTORS AND LEADERS

DIAMETER OF CIRCULAR LEADER	HORIZONTALLY PROJECTED ROOF AREA (square feet)										
	Rainfall rate (inches per hour)										
	1	2	3	4	5	6	7	8	9	10	11	12
2	2,880	1,440	960	720	576	480	410	360	320	290	260	240
3	8,800	4,400	2,930	2,200	1,760	1,470	1,250	1,100	980	880	800	730
4	17,600	8,800	5,860	4,400	3,520	2,930	2,510	2,200	1,950	1,760	1,600	1,460
5	30,200	15,100	10,100	7,550	6,040	5,030	4,310	3,770	3,350	3,020	2,750	2,510
6	47,000	23,500	15,600	11,800	9,400	7,830	6,710	5,870	5,220	4,700	4,270	3,920
8	92,000	47,000	31,000	23,000	18,400	15,300	13,100	11,500	10,200	9,200	8,360	7,600
10	192,000	96,000	64,000	48,000	38,400	32,000	27,400	24,000	21,300	19,200	17,500	16,000

CONDENSATE SIZING TABLE

PIPE SIZE	CAPACITY IN TONS OF REFRIGERATION
3/4"	UP TO 20 TONS
1"	21 TO 40 TONS
11/4"	41 TO 90 TONS
11/2"	91 TO 125 TONS
2"	126 TO 250 TONS

GENERAL NOTES

SEE SHEET P1.2 FOR ALL PLAN SPECIFIC GENERAL NOTES

CRO ENGINEERING GROUP, INC.
Mechanical Engineers
18652 FLORIDA STREET, SUITE #100
HUNTINGTON BEACH, CALIFORNIA 92648
PHONE: (714) 596-0660 FAX: (714) 596-0650
CRO PROJECT NUMBER: 235-002

ENGINEER OF RECORD:
STEPHEN D. HEATH
46799
LICENSED
PROFESSIONAL ENGINEER
Stephen D. Heath, License #46799
Expiration Date: 12/31/2014

Revision Schedule

Rev	Date	Description
	01DEC2014	PLAN CHECK COMMENTS
	01DEC2014	LANDLORD COMMENTS
	01DEC2014	BID SET

CLIENT:

LAZY DOG RESTAURANT & BAR

PROJECT NAME:
LAZY DOG RESTAURANT & BAR

PROJECT ADDRESS:
VILLAGE ON THE PARKWAY
5100 BELT LINE ROAD, SUITE 500
ADDISON, TX 75254
BUILDING DEPT. 1ST SUBMITTAL

PROJECT #: 235-002
ISSUE DATE: 10-22-2014

SHEET TITLE:
GAS, CONDENSATE, & STORM DRAIN PIPING PLAN

SHEET NUMBER:
P4.0