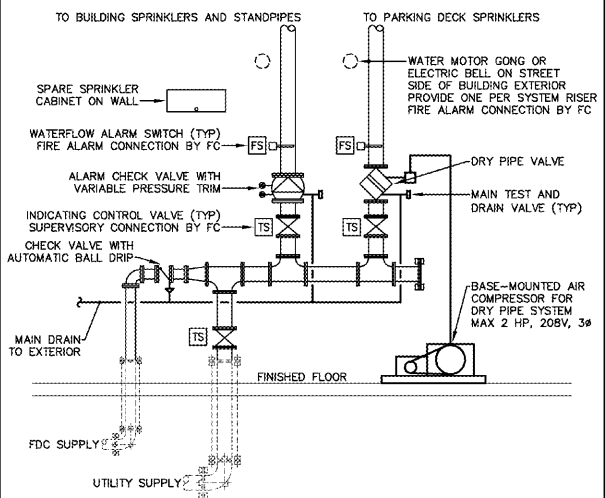
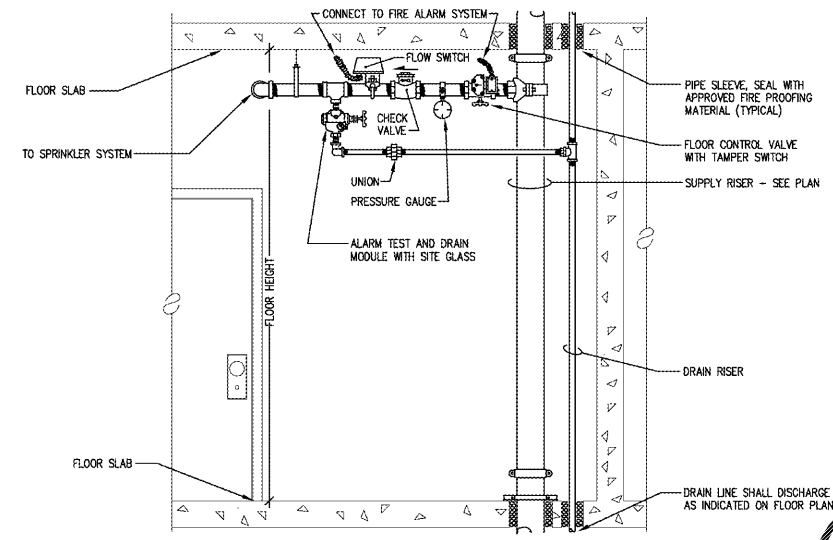


2 FLEXIBLE RETURN BEND
NOT TO SCALE



1 FIRE PROTECTION SYSTEM RISERS
NOT TO SCALE



3 COMBINED SPRINKLER AND STANDPIPE RISER - FLOOR ZONE CONTROL VALVE
NOT TO SCALE

FIRE PROTECTION DESIGN CRITERIA

OCCUPANCY CLASSIFICATION	TYPE	DESIGN DENSITY (GPM/SF)	HYDRAULIC REMOTE AREA (SF)	MAXIMUM SPRINKLER COVERAGE AREA (SF)	HOSE DEMAND		SPACE TYPES FOR COVERAGE AREAS
					INSIDE (GPM)	OUTSIDE (GPM)	
LIGHT HAZARD	WET	0.10	1,500	225	100	-	REMAINDER OF FACILITY, UNLESS NOTED OTHERWISE
ORDINARY HAZARD GROUP I	WET	0.15	1,500	130	100	150	MECHANICAL ROOMS, STORAGE ROOMS, ELECTRICAL ROOMS, JANITOR'S CLOSETS, ETC.
ORDINARY HAZARD GROUP II	DRY	0.20	1,950	130	100	150	PARKING DECK

STANDPIPE SYSTEM: CLASS I, MANUAL WET

HYDRANT FLOW TEST DATA

DATE	TEST PERFORMED BY	HYDRANT LOCATIONS	PRESSURE		FLOW AT RESIDUAL (GPM)	FLOW AT 20 PSI (GPM)
			STATIC (PSI)	RESIDUAL (PSI)		
09/28/2015	R. EMMETT WILLIS CRAWFORD SPRINKLER CO.	FLOW: HYDRANT #11442 NEAR HYATT PLACE HOTEL TEST: HYDRANT #11187 NEAR BONEFISH GRILL	120.0	104.0	2159.0	5813.8



HYDRANT FLOW TEST REPORT

TEST LOCATION
Address: 7820 NC Hwy 751
Proposed Tap Location: Existing

JOB NAME
Name: Bonefish Grill
Address: 7820 NC Hwy 751
Contract With: CSCCO

SYSTEM ANALYSIS
Main Size: 4" Elevation of Test Location: 270

RESULTS
Static Pressure: 120 PSI Flowing Pressure (pitot): 45.8 & 90 PSI
Residual Pressure: 104 PSI Outlet Size: 2.5 & 2.5
Volume: 2,159 GPM Hydrant Coefficient: () 0.9 (X) 0.84 () 0.7

Completed by: R. Emmett Willis Date: 9/28/15

FIRE PROTECTION LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
---		WET-PIPE SUPPLY PIPING
---		DRY-PIPE SUPPLY PIPING
---		AUXILIARY OR MAIN DRAIN PIPING
⊗	OS&Y	OUTSIDE SCREW AND YOKE VALVE
⊠		CHECK VALVE
⊞	WMG	WATER MOTOR GONG OR ELECTRIC BELL

ADDITIONAL ABBREVIATIONS

ABOVE FINISH CEILING	AFC	MAXIMUM	MAX
MINIMUM ABOVE FINISH GRADE	AFG	MINIMUM	MIN
POUNDS PER SQUARE INCH	BFC		PSI
TAMPER SWITCH	BFF		TYP
TYPICAL	DN		
ELECTRICAL CONTROL	EC		
ALARM CONTROL	FC		
MECHANICAL CONTRACTOR	MC		
PLUMBING CONTRACTOR	PC		
SPRINKLER CONTRACTOR	SC		

FIRE PROTECTION SPECIFICATIONS

- GENERAL REQUIREMENTS**
- THE INTENT OF THESE PLANS IS TO PROVIDE INFORMATION TO THE REVIEWING AUTHORITIES THAT THE BUILDING WILL BE PROTECTED BY AUTOMATIC SPRINKLER SYSTEMS. THE INFORMATION INCLUDED WITH THESE DOCUMENTS IS PROVIDED FOR COORDINATION AND AS A REFERENCE ONLY, AND THESE DOCUMENTS SHALL NOT BE CONSIDERED ACTUAL DESIGN OR CONSTRUCTION DOCUMENTS.
- PROVIDE SHOP DRAWINGS, FABRICATION, AND INSTALLATION OF HYDRAULICALLY CALCULATED AUTOMATIC SPRINKLER SYSTEMS, INCLUDING ALL SERVICES, MATERIALS, LABOR, AND EQUIPMENT REQUIRED FOR A COMPLETE WORKING SYSTEM DESIGN AND INSTALLATION. SPRINKLER SYSTEMS IN FULL COMPLIANCE WITH THE LATEST EDITION OF NFPA 13, NFPA 14, THE NORTH CAROLINA FIRE PREVENTION CODE, THE OWNER'S INSURANCE WRITER, AND THE LOCAL AUTHORITY HAVING JURISDICTION.
 - PROVIDE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS FOR REVIEW BY THE ENGINEER, INCLUDING BUT NOT LIMITED TO ALL REQUIRED ITEMS AS OUTLINED IN NFPA 13 CHAPTER 23 "PLANS AND CALCULATIONS". SHOP DRAWINGS MUST BE PREPARED BY A NICET LEVEL III (OR HIGHER) TECHNICIAN CERTIFIED IN WATER-BASED SYSTEMS LAYOUT. INCLUDE DESIGNER'S NAME, SIGNATURE, AND CERTIFICATION NUMBER ON EACH PLAN SHEET OF THE SHOP DRAWING PACKAGE AND ON THE COVER SHEET OF EACH HYDRAULIC CALCULATION. THE HYDRAULIC CALCULATIONS SHALL BE BASED ON THE ACTUAL MANUFACTURER'S PRODUCT DATA INTENDED FOR INSTALLATION IN THE SPRINKLER SYSTEMS.
 - THE CONTRACTOR SHALL PERFORM A FIRE FLOW TEST IN ACCORDANCE WITH NFPA 291 UTILIZING THE SAME TEST AND FLOW HYDRANTS INDICATED ON THESE DOCUMENTS PRIOR TO BEGINNING DESIGN. THE CONTRACTOR'S FIRE FLOW TEST DATA SHALL BE INCLUDED IN THE HYDRAULIC CALCULATIONS PROVIDED IN THE SHOP DRAWING PACKAGE FOR REVIEW BY THE ENGINEER. FIRE FLOW TEST DATA OLDER THAN ONE YEAR WILL NOT BE ACCEPTED.
 - EXAMINE THE CONSTRUCTION DOCUMENTS INCLUDING ANY SPECIFICATIONS OR PROJECT MANUALS. REVIEW THE PROJECT CONDITIONS AND VERIFY ALL MEASUREMENTS, DISTANCES, ELEVATIONS, CLEARANCES, PIPE SIZES, ETC. PRIOR TO THE START OF CONSTRUCTION. COORDINATE THE LOCATION OF SPRINKLERS WITH THE ARCHITECTURAL PLANS AND THE WORK OF OTHER TRADES. PROVIDE ADDITIONAL SPRINKLERS IN ORDER TO COORDINATE WITH LUMINAIRES, ANY CHANGES OR ALTERATIONS REQUIRED DUE TO A LACK OF COORDINATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
 - PROVIDE ALL NECESSARY OFFSETS, RISES, OR DROPS IN THE PIPING AND ASSOCIATED AUXILIARY DRAINS AS REQUIRED BY NFPA 13 AND/OR NFPA 14.
 - FIRESTOP ALL PENETRATIONS OF FIRE-RATED WALLS, FLOORS, AND PARTITIONS. PROVIDE A DEVICE OR SYSTEM WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING. PROVIDE A DEVICE OR SYSTEM WITH AN F-RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED. REFER TO ARCHITECTURAL PLANS FOR WALL AND FLOOR TYPES.
 - AT THE COMPLETION OF THE PROJECT, PROVIDE TO THE OWNER TWO SETS OF RECORD DRAWINGS WHICH CLEARLY SHOW ANY CHANGES AND/OR MODIFICATIONS, ADDITIONS, OR DELETIONS TO AND FROM THE CONSTRUCTION DOCUMENTS AND ALL WORK ADDED TO THE CONTRACT DOCUMENTS. THESE RECORD DRAWINGS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO TURNING THEM OVER TO THE OWNER.
 - AT THE COMPLETION OF THE PROJECT, PROVIDE TO THE OWNER ALL EXTRA STOCK REQUIRED BY NFPA 13 SECTION 6.2.9.
 - WARRANT THE SYSTEM LABOR, MATERIALS, AND EQUIPMENT FOR THE AMOUNT OF TIME SPECIFIED IN THE PROJECT MANUAL. IF NO WARRANTY IS PROVIDED, THEN WARRANT THE SYSTEM LABOR, MATERIALS, AND EQUIPMENT FOR A MINIMUM OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. PRIOR TO TURNING THE COMPLETED SYSTEM OVER TO THE OWNER, REVIEW THE INSTALLATION WITH THE ENGINEER AND REPLACE OR REPAIR ANY DEFECTIVE WORKMANSHIP, EQUIPMENT, AND/OR MATERIALS AT NO ADDITIONAL COST TO THE OWNER.
- MATERIALS:**
- PROVIDE UL LISTED BLACK STEEL PIPING (ASTM A53, ASTM A135, OR ASTM A795) WITH AN FM APPROVED MIC-INHIBITING COATING. PIPING 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH THREADED OR WELDED FITTINGS. PIPING 2" OR LARGER SHALL BE SCHEDULE 10 BLACK STEEL PIPE ROLL-GROVED FOR MECHANICAL FITTINGS.
 - PROVIDE UL LISTED STANDARD WEIGHT CAST IRON OR MALLEABLE IRON FITTINGS FOR PRESSURES UP TO 175 PSI. THREADED CAST IRON FITTINGS SHALL MEET ASME B16.4. FLANGED CAST IRON FITTINGS SHALL MEET ASME B16.1. THREADED MALLEABLE IRON FITTINGS SHALL MEET ASME B16.3. GROOVED FITTINGS AND COUPLINGS SHALL BE UL LISTED DUCTILE IRON UTILIZING AN EPDM GASKET. PLAIN-END FITTINGS AND COUPLINGS OR WELDED-SEGMENTED FITTINGS SHALL NOT BE USED. CHANGES IN PIPE DIAMETER SHALL BE MADE USING TAPERED REDUCING FITTINGS. BUSHINGS OR GROOVED-END REDUCING COUPLINGS SHALL NOT BE USED UNLESS STANDARD REDUCING FITTINGS ARE NOT REGULARLY AVAILABLE.
 - SUPPORT PIPING WITH UL LISTED SUPPORTS IN ACCORDANCE WITH NFPA 13 AND/OR NFPA 14.
 - PROVIDE ORDINARY AND INTERMEDIATE TEMPERATURE SPRINKLERS THROUGHOUT. PROVIDE CONCEALED PENDENT SPRINKLERS IN AREAS WITH CEILINGS. PROVIDE UPRIGHT SPRINKLERS IN AREAS WITH EXPOSED STRUCTURE. PROVIDE SIDEWALL SPRINKLERS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13. QUICK RESPONSE SPRINKLERS SHALL BE INSTALLED IN ALL LIGHT HAZARD AREAS IN ACCORDANCE WITH NFPA 13. WHERE QUICK RESPONSE SPRINKLERS ARE INSTALLED IN A COMPARTMENT, THEY SHALL BE INSTALLED THROUGHOUT THE COMPARTMENT.
 - PROVIDE OS&Y CONTROL VALVES, IRON BODY BRONZE MOUNTED, DOUBLE DISC WITH PARALLEL SEATS, AND/OR BUTTERFLY, LUC TYPE, DUCTILE IRON BODY, STAINLESS STEEL STEM, ALUMINUM BRONZE DISC, PHENOLIC RING AND SUNA N SEAT. VALVES SHALL BE UL LISTED OR FM APPROVED FOR FIRE PROTECTION SERVICE.
 - PROVIDE ALL PIPELINE INSTALLED ALARM INITIATING AND NOTIFICATION DEVICES REQUIRED BY NFPA 13 AND/OR NFPA 14. COORDINATE DEVICE QUANTITIES AND LOCATIONS WITH THE FIRE ALARM CONTRACTOR PRIOR TO DESIGN AND INSTALLATION.
 - PROVIDE ESCUTCHEONS WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS. COORDINATE COLOR WITH ADJACENT FINISHES AS INDICATED ON THE ARCHITECTURAL PLANS.
 - TEST AND FLUSH SYSTEM PIPING IN ACCORDANCE WITH NFPA 13 AND/OR NFPA 14 AS APPLICABLE.



FINLEY DESIGN PA
7806 NC HWY 751
SUITE 110
DURHAM, NC 27713
P 919-493-8200
F 919-493-8113
FINLEYDESIGNARCH.COM



**WESTPOINT 2
DURHAM, NC**

REVISIONS

NO.	DATE	DESCRIPTION
1	2017-09-01	PERMIT COMMENTS

PROJECT: 1342
DATE: 11/1/16
DRAWN BY: GCF
CHECKED BY: GCF

FIRE PROTECTION LEGEND, DATA, SPECIFICATIONS, AND DETAILS

FO.1
1 OF 6
OPTIMA # 16-0194

Order Plans @