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SPRINKLER SYSTEM DESIGN CRITERIA							
AREA DESCRIPTION	HAZARD CLASS	SYSTEM TYPE	DENSITY (GPM/SF)	COVERAGE AREA	HOSE STREAM	SPRINKLER TEMP. RATING	KEY NOTES
OFFICE AREAS AND RESTAURANT SEATING AREAS.	LIGHT	WET NFPA 1.3	0.10	1500 SF	100 GPM	ORDINARY 155F	(1)
MECHANICAL ROOMS AND RESTAURANT COOKING AREAS.	ORDINARY HAZARD GROUP 1	WET NFPA 1.3	0.15	1500 SF	250 GPM	INTERMEDIATE 200F	-
MERCANTILE AREAS	ORDINARY HAZARD GROUP 2	WET NFPA 1.3	0.20	1500 SF	250 GPM	INTERMEDIATE 200F	-

GENERAL SPRINKLER SYSTEM NOTES:

A. PRIOR TO BEGINNING THE SPRINKLER SYSTEM DESIGN, THE SPRINKLER CONTRACTOR SHALL MEET WITH THE OWNER OR OWNER'S REPRESENTATIVE AND DISCUSS THE TYPE, COLOR, AND GENERAL LOCATIONS OF ALL SPRINKLER HEADS IN THE PROJECT. THE SPRINKLER CONTRACTOR'S DESIGN MUST REFLECT THE AGREED UPON SPRINKLER TYPES FOR ALL AREAS. A RECORD OF THIS MEETING SHALL BE AVAILABLE TO THE ENGINEER UPON REQUEST.

B. PRIOR TO THE MEETING BETWEEN THE OWNER AND THE SPRINKLER CONTRACTOR, SPRINKLER HEADS SHALL BE ASSUMED TO BE AS FOLLOWS UNLESS NOTED OTHERWISE ELSEWHERE:

- SPRINKLER HEADS SHALL BE CONCEALED TYPE (RECESSED WITH COVER PLATE), FAST RESPONSE SPRINKLERS IN ALL AREAS WITH A CEILING OF ANY TYPE, INCLUDING LAY-IN.
- SPRINKLER HEADS SHALL BE UPRIGHT PENDANT, FAST RESPONSE SPRINKLERS IN ALL AREAS WITHOUT A CEILING.
- SIDE WALL SPRINKLER HEADS MAY NOT BE USED WHERE A CEILING CAVITY EXISTS THAT WILL ALLOW FOR THE INSTALLATION OF SPRINKLERS IN THE CEILING.
- SIDE WALL HEADS MAY ONLY BE USED IF THE PIPING FOR A SPRINKLER HEAD LOCATED ON THE CEILING WOULD BE EXPOSED TO A FREEZING CONDITION.
- IF SPRINKLER CONTRACTOR AND OWNER AGREE TO USING DIFFERENT HEAD TYPES FOR CERTAIN AREAS CONTRACTOR MUST INCLUDE LETTER FROM OWNER STATING THE CHANGE IS ACCEPTED PER THE PROVISIONS IN ITEM "A" ABOVE.

C. IF, AT THE TIME OF CONSTRUCTION, ONE OR MORE AREAS ARE NOT CLEARLY DEFINED, THE SPRINKLER DESIGN SHALL BE BASED ON THE HYDRAULICALLY MOST DEMANDING CRITERIA OF THE POSSIBLE CHOICES.

D. LISTED, EXTENDED HEADS, MAY BE USED WHERE APPROPRIATE ON THIS PROJECT.

E. SEE CIVIL SITE PLAN AND SPECIFICATIONS FOR BACKFLOW PREVENTOR REQUIREMENTS FOR THE FIRE PROTECTION WATER SERVICE UNLESS BACKFLOW PREVENTOR IS NOTED ON PLUMBING PLANS AS LOCATED INSIDE THE BUILDING.

F. SEE CIVIL OR OTHER AVAILABLE SITE DRAWINGS FOR LOCATION OF WATER MAIN TAP AND INFORMATION ON PUBLIC WATER MAIN CHARACTERISTICS.

G. ALL SPRINKLER COMPONENTS SHALL COMPLY WITH THE LISTING AND/OR PERFORMANCE REQUIREMENTS OF NFPA 13.

H. CPVC SPRINKLER PIPING MAY BE USED WHERE ALLOWED BY NFPA, THE LOCAL FIRE MARSHAL, AND THE LISTING DOCUMENTATION OF THE CPVC PIPING. USE OF CPVC PIPING MUST BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.

I. THE CONTRACTOR MUST COMPLY WITH ALL LOCAL CODES, ORDINANCES, AND OTHER REQUIREMENTS FOR THE SPRINKLER SYSTEM DESIGN. THIS MAY INCLUDE PROVIDING SPRINKLERS FOR AREAS THAT ARE NOT INDICATED ABOVE.

J. ANY DEVIATIONS FROM THE REQUIREMENTS LISTED IN THIS SCHEDULE SHOULD BE CLEARLY MARKED ON THE SPRINKLER DRAWINGS WITH THE RELEVANT CODE SECTION ALLOWING THE DEVIATION NOTED.

K. NO WET SPRINKLER PIPING SHALL BE RUN IN A LOCATION SUBJECT TO FREEZING TEMPERATURES. THIS INCLUDES RUNNING PIPE ABOVE ISOLATED UNHEATED AREAS OF THE BUILDING, EVEN IF INSIDE THE INSULATED ENVELOPE OF THE BUILDING.

L. ALL SPRINKLER PIPING SHALL BE RUN TIGHT TO STRUCTURE ABOVE (OR INSIDE JOIST SPACE IF APPLICABLE) IN ORDER TO MAXIMIZE THE POTENTIAL FOR THE CEILING TO BE RAISED TO A HIGHER ELEVATION IN THE FUTURE WITH MINIMAL IMPACT TO THE SPRINKLER PIPING SYSTEM. ONLY PIPING FOR INDIVIDUAL SPRINKLER HEADS MAY BE DROPPED TO THE CEILING ELEVATION IN AREAS WITH LARGE ABOVE CEILING CAVITIES UNLESS DIRECTED OTHERWISE IN WRITING BY THE OWNER, ARCHITECT, OR PLUMBING ENGINEER.

SPRINKLER SYSTEM KEY NOTES:

(1) PROVIDE DRY PENDANT OR SIDEWALL, FAST RESPONSE SPRINKLERS AT ALL BALCONIES, PORCHES, OUTDOOR CORRIDORS, UNHEATED STORAGE ROOMS, UNHEATED ELECTRICAL ROOMS, AND BELOW ALL EXTERIOR OVERHANGS, ROOFS, OR CANOPIES EXCEEDING 4 FEET IN WIDTH.

PLUMBING SPECIALTY SCHEDULE						
SYMBOL	FIXTURE TYPE	MANUFACTURER MODEL NUMBER	PIPE SIZES		DESCRIPTION	NOTES:
			SOIL OR WASTE	VENT		
FD	FLOOR DRAIN, GENERAL PURPOSE TYPE	MIFAB F1100-C-1-5-7	2", 3", 4"	2"	DUCCO CAST IRON BODY AND FLASHING COLLAR, ADJUSTABLE NICKEL-BRONZE STRAINER HEAD, ROUND TOP, CAULK OUTLET. PROVIDE WITH 1/2" TRAP PRIMER CONNECTION.	1
WHYD	NON-FREEZE WALL HYDRANT	MIFAB MHY-20 SERIES	----	----	NON-FREEZE WALL HYDRANT WITH INTEGRAL VACUUM BREAKER, 3/4 TURN KEY ASSEMBLY, AND STAINLESS STEEL LOCKING BOX.	1
HB	HOSE BIBB	MIFAB MHY-10 SERIES	----	----	HOSE BIBB WITH INTEGRAL VACUUM BREAKER, 3/4 TURN KEY ASSEMBLY, AND EXPOSED HOSE CONNECTION.	1
FCO	FLOOR CLEAN OUT	MIFAB C1100-MR-1	2", 4"	----	TWIST TO FLOOR ADJUSTMENT ROUND TOP.	1
TP	TRAP PRIMER VALVE	PRECISION PLUMBING PR-500	----	----	TRAP PRIMER WITH INTERNAL VACUUM BREAKER AND INTEGRAL BACKFLOW PREVENTOR. SUPPLY WITH DISTRIBUTION UNIT. MAX 4 FLOOR DRAINS/FLOOR SINKS PER TRAP PRIMER. COORDINATE WITH MECHANICAL PLUMBING DRAWINGS FOR QUANTITY OF FLOOR DRAINS/FLOOR SINKS TO ENSURE ALL FLOOR DRAINS AND FLOOR SINKS ARE EQUIPPED WITH TRAP PRIMER.	1

NOTES:

1. APPROVED ALTERNATE MANUFACTURERS FOR PLUMBING FIXTURES AND EQUIPMENT ARE MIFAB, J.R. SMITH, JOSAM, WADE, WATTS, ZURN OR APPROVED OTHER.

PIPING TYPES & REQUIREMENTS			
SERVICE	LOCATION	MATERIAL	NOTES
SANITARY, WASTE & VENT	ALL	PVC	(1)
DOMESTIC WATER	ALL	CPVC	-
GAS	ALL	SCH. 40 BLACK STEEL	-

(1) TENANT IS RESPONSIBLE FOR REDUCING TEMPERATURE OF DISCHARGE INTO GREASE AND WASTE PIPE TO BELOW 140°F.

PLUMBING LEGEND		
SYMBOL	MARK	DESCRIPTION
---	W	WASTE PIPE BELOW SLAB
---	GW	GREASE WASTE PIPE BELOW SLAB
---	RW	RAIN WATER PIPE
---	V	VENT PIPE
---	CW	COLD WATER PIPE
---	G	GAS PIPE
○	FD	FLOOR DRAIN
○	CO	CLEANOUT
●	BV	BALL VALVE
+	WHYD	NON-FREEZE WALL HYDRANT
+	HB	HOSE BIBB
---	B/F	BELOW FLOOR
---	B/G	BELOW GROUND
---	N.C.	NORMALLY CLOSED
---	VTR	VENT THRU ROOF

- GENERAL NOTES**
- COORDINATE ALL PIPING WITH DUCT WORK AND LIGHTING FIXTURES.
 - MAKE ALL FINAL CONNECTIONS TO ALL FIXTURES AND EQUIPMENT.
 - CAP ALL OPEN PIPING ENDS DURING CONSTRUCTION TO PREVENT THE ENTRY OF DEBRIS INTO THE PLUMBING SYSTEMS.
 - ALL WASTE PIPING 4" OR LARGER TO BE SLOPED AT 1/8" PER LINEAR FOOT. ALL WASTE PIPING SMALLER THAN 4" TO BE SLOPED AT 1/4" PER LINEAR FOOT.
 - ALL PIPING IN EXTERIOR WALLS TO BE RUN ON "WARM" SIDE OF INSULATION.
 - DOMESTIC AND FIRE PROTECTION WATER SERVICE PIPING BELOW GRADE TO BE BURIED BELOW LOCAL FROST LINE CONDITION.
 - ALL PIPING ABOVE TO BE HUNG AS HIGH AS POSSIBLE.
 - MOUNT ALL WALL HYDRANTS 18" ABOVE FINISHED GRADE OR FLOOR.
 - UNLESS OTHERWISE INDICATED, ALL SANITARY, WASTE, AND RAINWATER PIPING SHOWN ON DRAWINGS IS BELOW FLOOR AND ALL WATER, GAS, AND VENT PIPING IS ABOVE CEILING.
 - PROVIDE TRAP PRIMERS (AUTOMATIC OR WATER SAVER TYPE) ON ALL FLOOR DRAINS AND HUB DRAINS. SEE DETAIL SHEET FOR TRAP PRIMER DETAIL.
 - PROVIDE A GAS RATED BALL VALVE, DIRT LEG AND UNION AT EACH GAS APPLIANCE CONNECTION.
 - ALL COPPER PIPING SHALL BE ISOLATED FROM DISSIMILAR METALS.
 - SEE SPECIFICATIONS FOR WATER PIPING INSULATION REQUIREMENTS.
 - ALL VENT OPENINGS SHALL BE A MINIMUM OF 10 FEET FROM ANY AIR INTAKE, DOOR, OR OPERABLE WINDOW.
 - ALL VALVES ON ALL PLANS AND DETAILS ARE NORMALLY OPEN UNLESS NOTED OTHERWISE ON DRAWINGS, SPECIFICATIONS, OR MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 - CONTRACTOR SHALL VERIFY THAT THERE IS NO PIPING AND/OR DUCTWORK INSTALLED ABOVE ELECTRICAL PANELS OR LOADCENTERS.
 - THE GENERAL CONTRACTOR SHALL PROVIDE NOTICE TO THE ARCHITECT/ENGINEER THAT THERE HAS BEEN A FACE-TO-FACE MEETING WITH THE MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL SUBCONTRACTORS TO COORDINATE THEIR WORK. THIS MUST BE DONE PRIOR TO ORDERING ANY EQUIPMENT AND SHALL SERVE TO MATCH THE VOLTAGE, PHASE, AMPS, MCA, AND MOCP OF THE EQUIPMENT WITH THE DESIGNED ELECTRICAL CHARACTERISTICS.

FLOW TEST DATA	
UPON AWARDING OF CONTRACT THE FIRE PROTECTION CONTRACTOR SHALL PERFORM A FLOW TEST ON THE TWO HYDRANTS NEAREST THE SITE AND FORWARD THE DATA TO THE ENGINEER AND ARCHITECT.	
PROVIDER OF TEST	CHARLOTTE FIRE DEPARTMENT
DATE OF TEST	04-27-17
TIME OF DAY OF TEST	11:00AM
LOCATION OF FLOW HYDRANT	401 E 36TH STREET
ELEVATION OF HYDRANT	UNKNOWN
STATIC PRESSURE	68 PSI
RESIDUAL PRESSURE	64 PSI
FLOW	1061 GPM

FIRE PROTECTION SCOPE

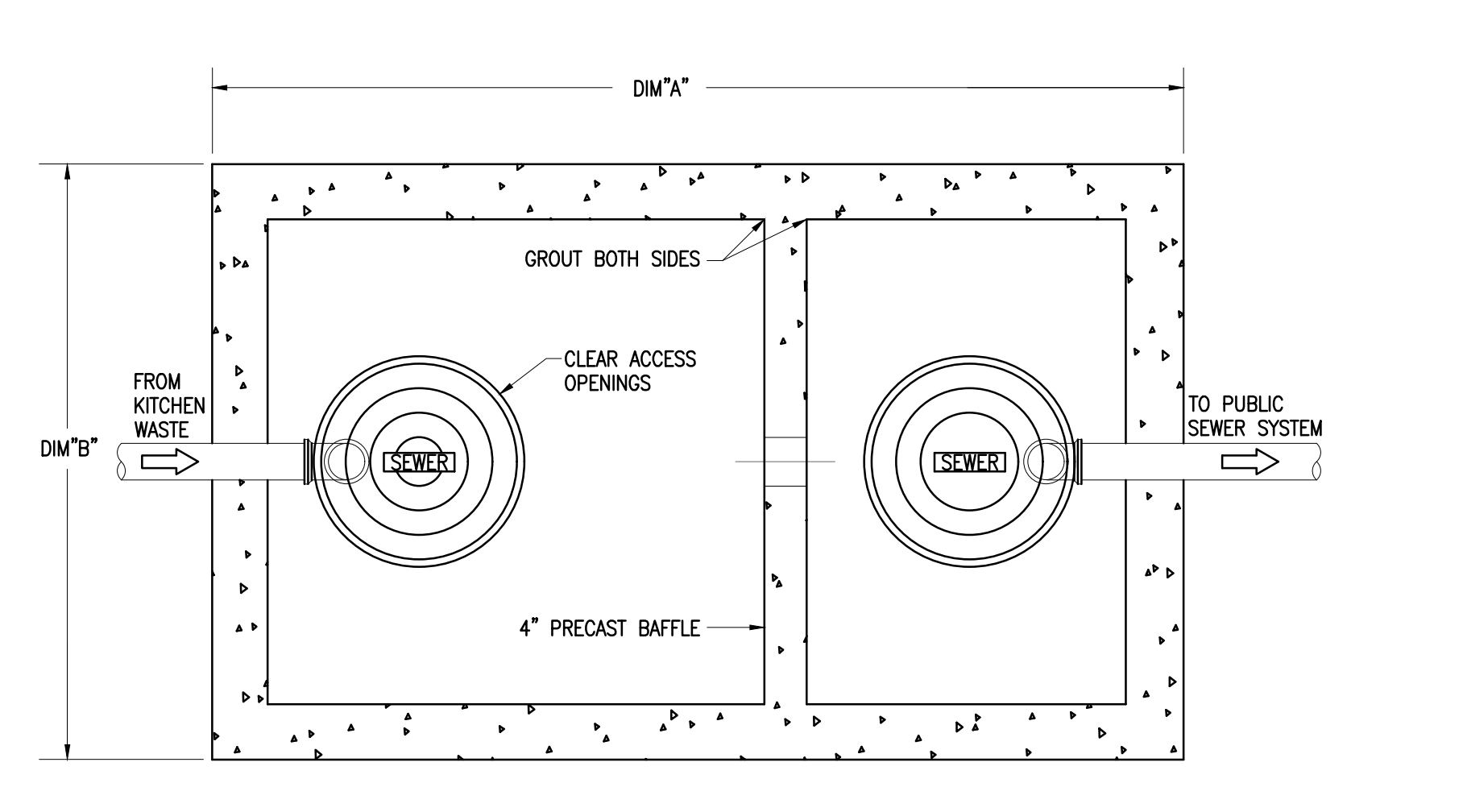
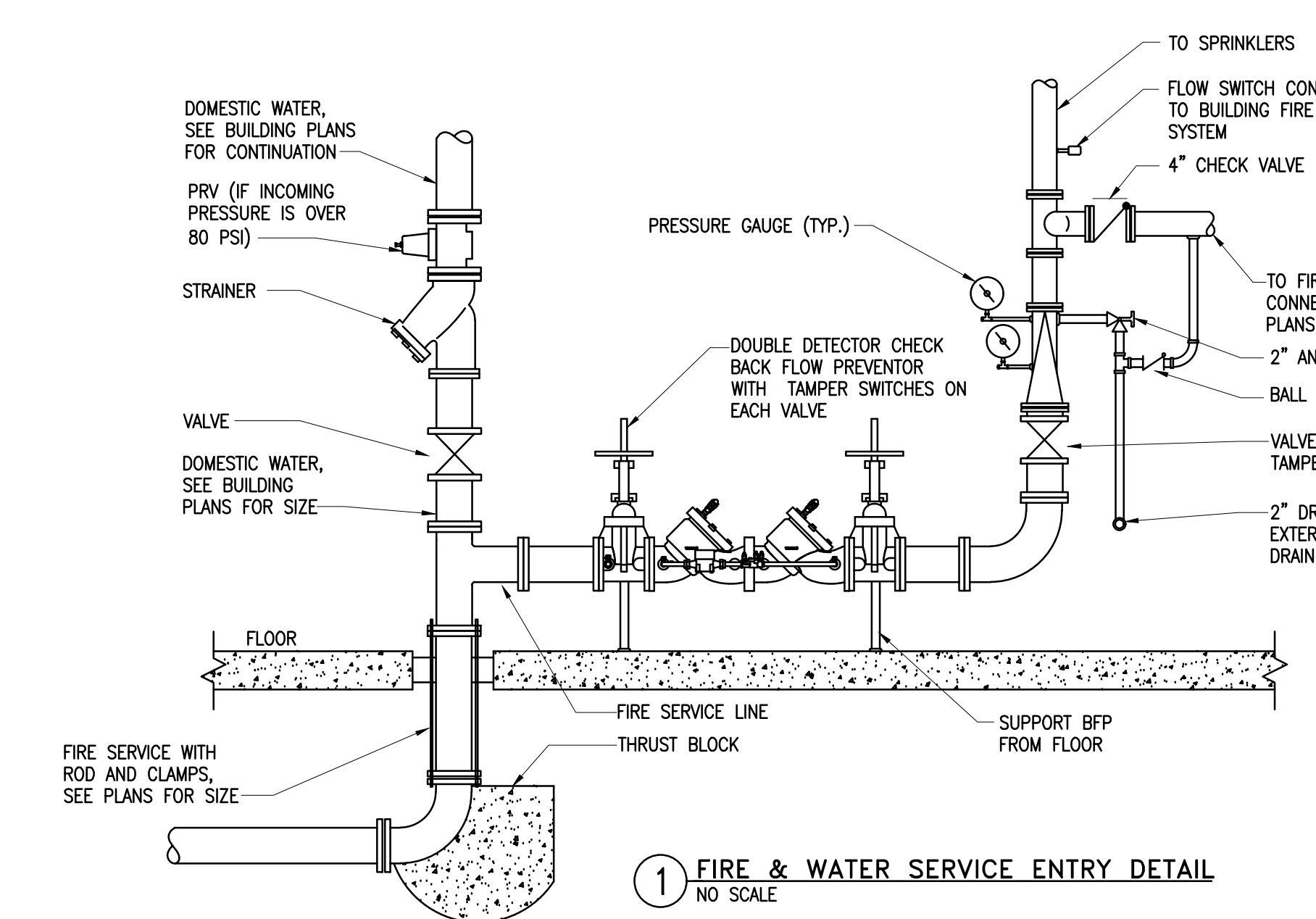
THE CONTRACTOR SHALL PROVIDE A RISER AND FULL DISTRIBUTION PIPING, SPRINKLER HEADS, AND ALL OTHER COMPONENTS TO PROVIDE A COMPLETE SYSTEM. PROVIDE SPRINKLER HEADS AND PIPING TO MEET THE CEILING TYPE AND HAZARD CLASSIFICATION (DESIGN CRITERIA). THE SYSTEM SHALL BE HYDRAULICALLY DESIGNED BY A LICENSED DESIGNER AND INCLUDE A FULL DOMESTIC LOAD OF 100 GPM. SUBMIT SHOP DRAWINGS INCLUDING HYDRAULIC CALCULATIONS DETAILING THE SYSTEM DESIGN AND PERFORMANCE.

SPRINKLER CONTRACTOR SHALL DESIGN THE SPRINKLER SYSTEM TO WORK WITHIN THE PRESSURE AND FLOW INDICATED IN THE WATER PRESSURE FLOW TEST DATA SCHEDULE ON THIS SHEET.

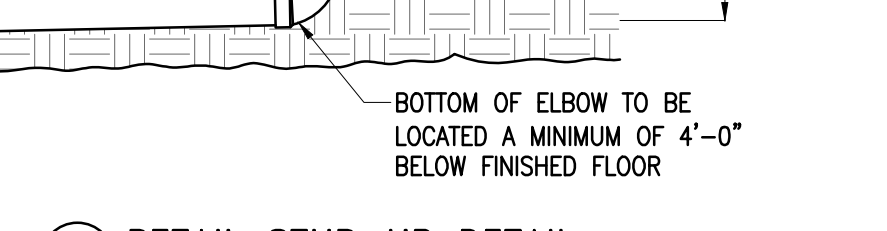
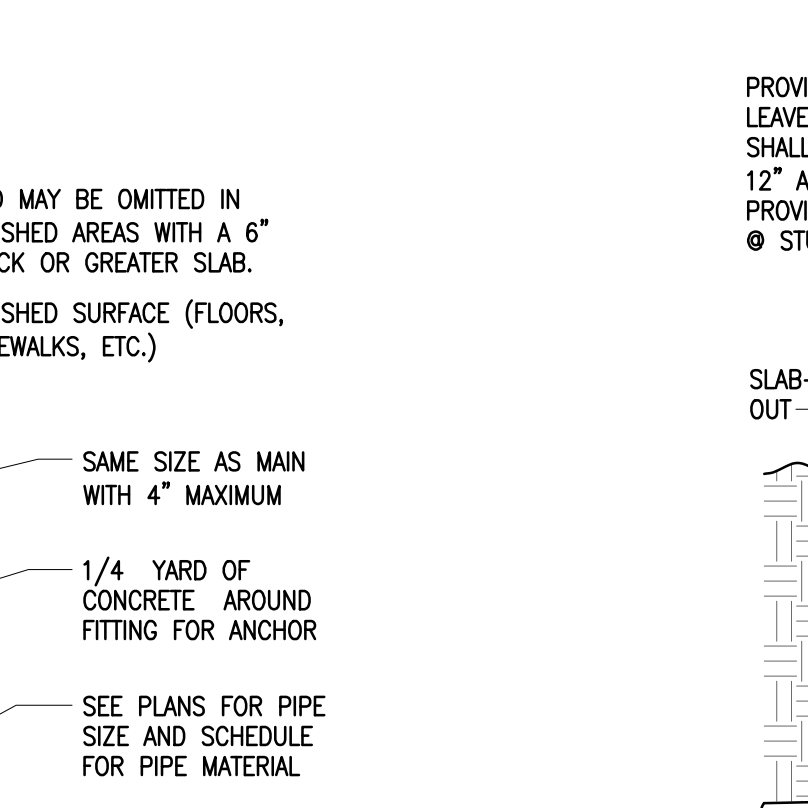
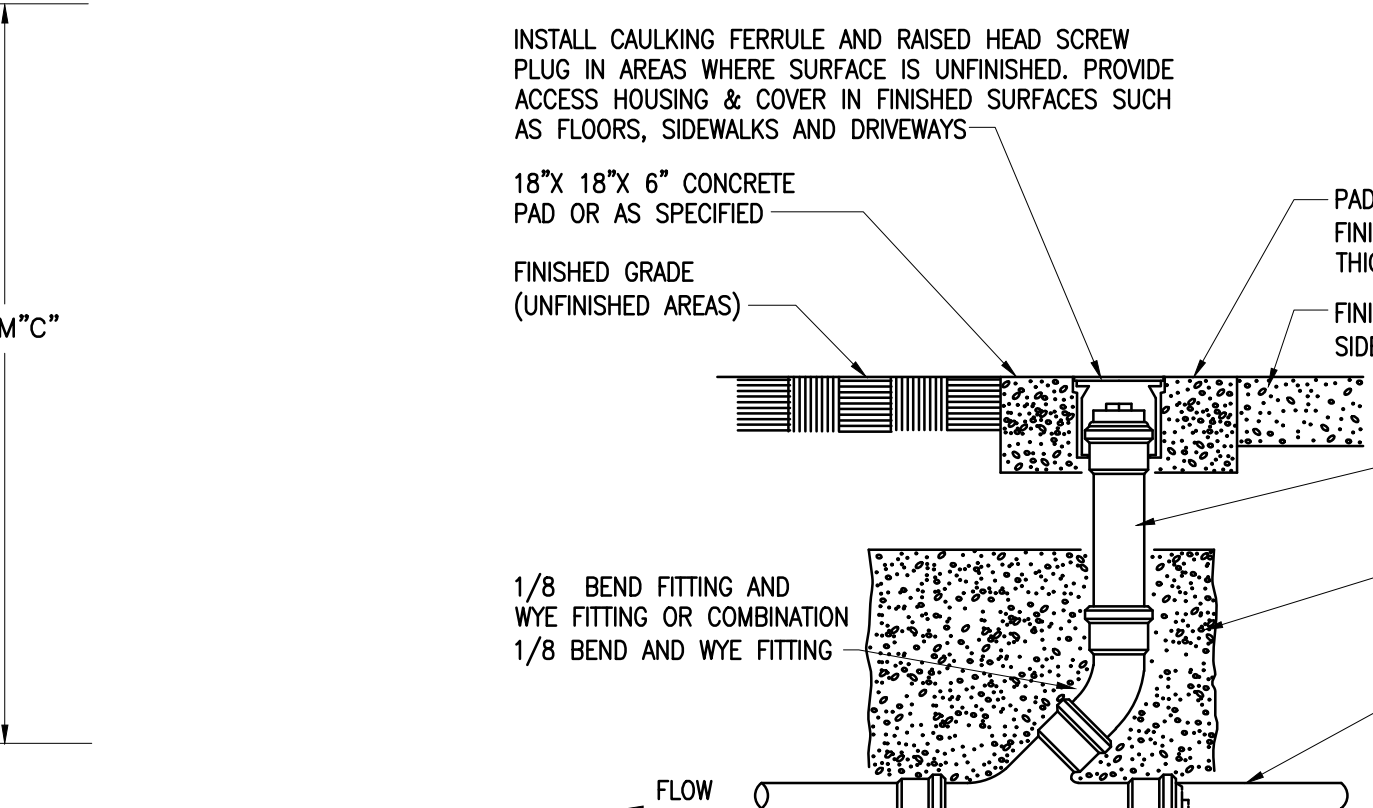
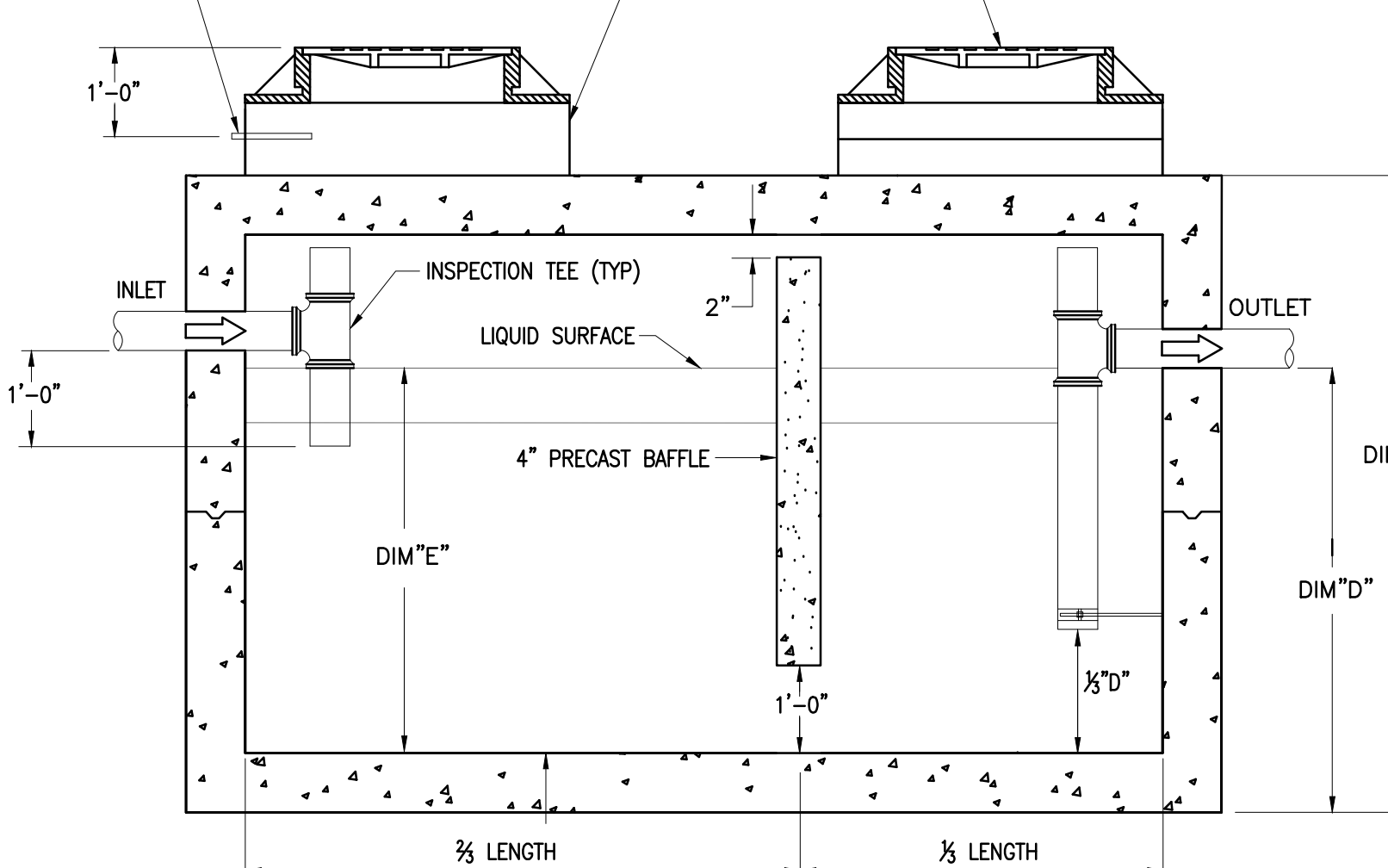
FOLLOW THE BOOK SPECS FOR SYSTEM REQUIREMENTS.

NOTE:

1. THE FIRE CONTRACTOR SHALL PROVIDE AND INSTALL A BACKFLOW PREVENTER (LISTED) INSIDE THE BUILDING IN A LOCATION INDICATED ON THE CIVIL DRAWINGS. BFP SHALL BE SIZED TO MINIMIZE PRESSURE DROP AND THE HYDRAULIC CALCULATIONS SHALL TAKE INTO ACCOUNT THE BFP AND EXTERIOR PIPING FROM THE FLOW TEST HYDRANT. CONTRACTOR SHALL CONFIRM THAT WATER FLOW/PRESSURE IS ADEQUATE FOR THE DESIGN AND IF NOT NOTIFY THE ARCHITECT/ENGINEER PRIOR TO INSTALLING/ORDERING SYSTEM COMPONENTS.



GREASE TRAP INTERCEPTOR SCHEDULE					
CAPACITY US GAL	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"
1,500	11'-2"	5'-8"	7'-2"	4'-4"	4'-0"
2,000	12'-10"	6'-10"	7'-2"	5'-6"	5'-0"



REMOTE READ WATER METERS

ALL WATER SUBMETERS SYSTEM SHALL BE COMPATIBLE WITH OWNER'S METER READING SYSTEM. COORDINATE WITH OWNER PRIOR TO PURCHASE OR INSTALLATION.

- SYSTEM SHALL BE COMPLETELY WIRELESS AND FCC-LICENSED (NOT "FCC CERTIFIED" OR "FCC APPROVED").
- SYSTEM SHALL REQUIRE NOT MORE THAN 1 REPEATER FOR EACH 100 TRANSMITTERS.
- SYSTEM SHALL BE CAPABLE OF TRANSMITTING METER READINGS VIA INTERNET OR MOBILE.
- SYSTEM SHALL BE CAPABLE OF TRANSMITTING METER READINGS OF THE SYSTEM.
- SYSTEM SHALL BE CAPABLE OF TRANSMITTING METER READINGS MULTIPLE TIMES PER DAY.
- SYSTEM SHALL BE SUPPORTED BY A FULL WARRANTY DURING THE TERM OF THE ASSOCIATED READ, BILL, & COLLECT CONTRACT.
- SYSTEM SHALL BE SUPPORTED BY WEB SERVICES THAT ALLOW OCCUPANTS AND PROPERTY MANAGEMENT TO VIEW METER READS, BILLING AND COLLECTION INFORMATION ON A REAL-TIME BASIS. THESE WEB SERVICES SHALL BE AVAILABLE 24 HOURS PER DAY, 7 DAYS PER WEEK, AND 365 DAYS PER YEAR.
- WATER METERS MUST MEET OR EXCEED ANWA C-708 (AMERICAN WATER WORKS ASSOCIATION).
- WATER METERS MUST MEET OR EXCEED THE LOW LEAD REQUIREMENTS OF NSF-61 (NATIONAL SANITATION FOUNDATION) AND CALIFORNIA PROPOSITION 65.
- WATER METER MUST HAVE A TEMPERED GLASS LENS.
- WATER METER MEASURING CHAMBER AND MEASURING ELEMENT MUST BE EASILY REMOVABLE FROM THE MAIN CASE WITHOUT REMOVAL OF THE METER FROM THE LINE.
- INDIVIDUAL WATER METERS SHALL HAVE BATTERY OPERATED TRANSMITTERS WITH A MINIMUM 5 YEAR AVERAGE BATTERY LIFE. BATTERY SHALL BE REPLACEABLE WITHOUT REMOVING WATER METER FROM SERVICE OR REPLACING TRANSMITTER UNIT.
- WATER METER LINKAGE BETWEEN MEASURING ELEMENT AND DISPLAY REGISTER MUST BE MAGNETIC, WITH NO GEARING EXPOSED TO WATER.
- WATER METER MUST HAVE TAMPER DETECTION AND TAMPER PREVENTION FEATURES.
- SYSTEM ELECTRONICS, WATER METERS, SHUTOFF VALVES AND RELATED COMPONENTS MUST BE RATED FOR EXTERIOR USE WHEN INTENDED FOR EXTERIOR INSTALLATION.
- CONTRACTOR MUST COORDINATE LOCATIONS OF ALL REPEATERS OR OTHER COMPONENTS REQUIRING POWER WITH THE ELECTRICAL CONTRACTOR PRIOR TO INSTALLING ANY COMPONENTS.



PROJECT

CRESCENT COMMUNITIES
416 E. 36TH STREET, CHARLOTTE, NC 28205
NoDa RETAIL BUILDING

STAMP

DRAWING LOG

ISSUE: CONSTRUCTION DOCUMENTS
DATE: 6/20/2017
ISSUE: PRICING SET
DATE: 7/21/2017
ISSUE: PRICING UPDATE SET
DATE: 9/08/2017

SHEET INFORMATION
DATE OF DRAWING: 9/08/2017
DRAWN BY: BGE
JOB NUMBER: 119201

DETAILS & SCHEDULES - PLUMBING

P001

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