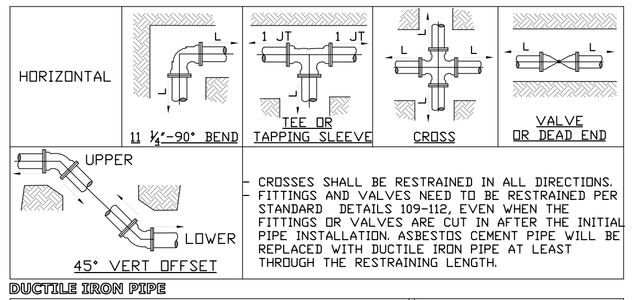
WATER MAIN SEPARATION IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1) (4)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER (2)	Water Main 3 ft. minimum	Water Main 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 3 ft. minimum Water Main
VACUUM SANITARY SEWER	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches min	Alternate 3 ft. minimum Water Main
GRAVITY SANITARY SEWER,(3) SANITARY SEWER FORCE MAIN, RECLAIMED WATER	Water Main 10 ft. preferred 6 ft. minimum	Water Main 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 6 ft. minimum Water Main
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 ft. minimum	———	———

(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
(3) 3 FT. FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
(4) 18" VERTICAL MINIMUM SEPARATION REQUIRED BY WWS, UNLESS OTHERWISE APPROVED.

WATER MAIN SEPARATION



- CROSSES SHALL BE RESTRAINED IN ALL DIRECTIONS.
- FITTINGS AND VALVES NEED TO BE RESTRAINED PER STANDARD DETAILS 109-112, EVEN WHEN THE FITTINGS OR VALVES ARE CUT IN AFTER THE INITIAL PIPE INSTALLATION. ASBESTOS CEMENT PIPE WILL BE REPLACED WITH DUCTILE IRON PIPE AT LEAST THROUGH THE RESTRAINING LENGTH.

DUCTILE IRON PIPE

	HORIZONTAL, L (FEET)						45° VERTICAL OFFSET (FEET)	
Diameter	11 ¼°	22 ½°	45°	90°	Tee or Cross	Valves and Dead End	UPPER	LOWER
4	1	2	4	10	3	20	9	3
6	2	3	6	14	11	28	12	4
8	2	4	8	17	20	37	16	5
10	2	5	19	21	27	44	19	6
12	3	5	10	24	34	52	22	6

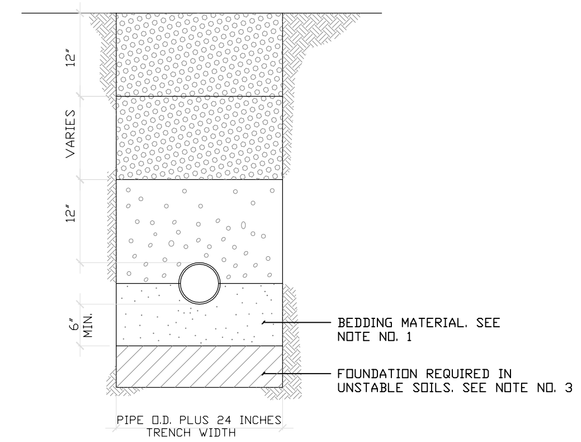
PVC PIPE

	HORIZONTAL, L (FEET)						45° VERTICAL OFFSET (FEET)	
Diameter	11 ¼°	22 ½°	45°	90°	Tee or Cross	Valves and Dead End	UPPER	LOWER
4	2	3	5	12	5	32	14	3
6	2	4	7	16	18	45	19	5
8	3	5	9	21	31	59	25	6
10	3	5	11	25	43	71	30	7
12	3	6	12	29	55	83	35	7

THE NOTED REQUIREMENTS WERE CALCULATED IN ACCORDANCE WITH THRUST RESTRAINT CALCULATOR V6.1 BY EBAA IRON WITH THE FOLLOWING ASSUMPTIONS:
SOIL CONDITIONS: SAND (SW, SP, GW)
LAYING CONDITION: 4, SAND BEDDING, BACKFILL COMPACTED > 80%
MINIMUM COVER: 3.0 FT SAFETY FACTOR: 1.5 BARE PIPE
IF FIELD CONDITIONS DIFFER FROM THE ABOVE, CONTRACTOR SHALL NOTIFY WWS.
FOR PIPE LARGER THAN INCLUDED IN THE ABOVE TABLES, ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT REQUIRING RESTRAINT.

SINGLE FITTING RESTRAINED JOINT
150 PSI TEST PRESSURE

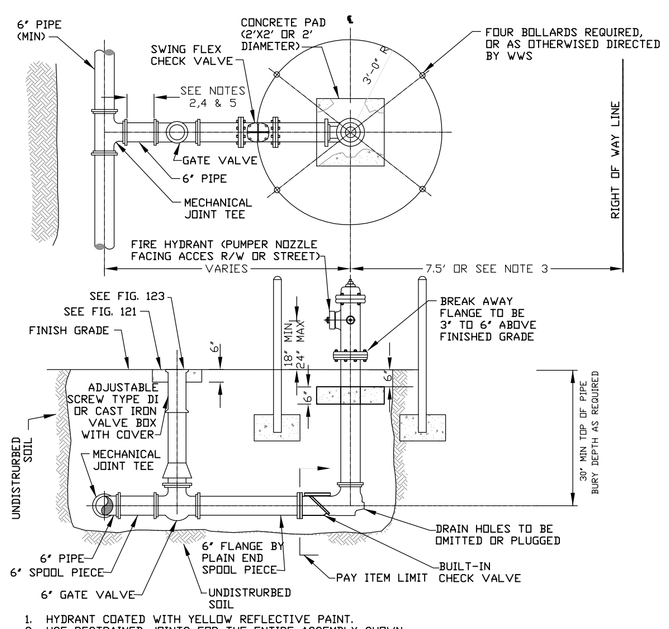
RESTRAINED JOINT
REQUIREMENTS SINGLE FITTING



NOTES:

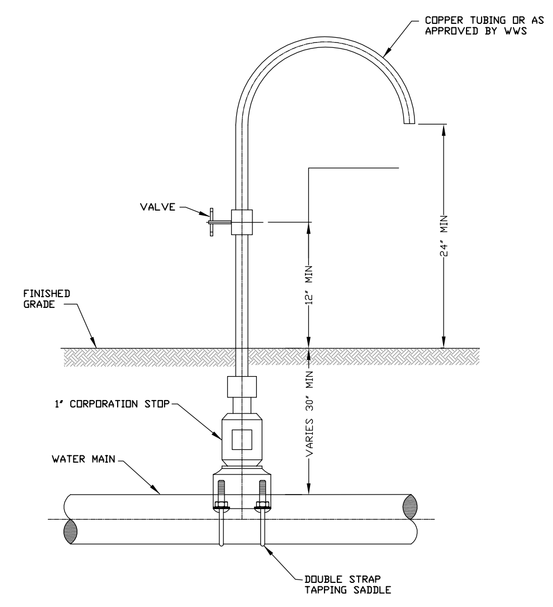
1. UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF SELECT BACKFILL MATERIAL 2" MAX. SIZE, COMPACTED TO AT LEAST 100% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. NO. T-99C.
2. WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.
3. WHERE UNSTABLE SOILS ARE ENCOUNTERED, INCLUDING PEAT, MUCK OR OTHER ORGANIC SOILS, ELASTIC SILT AND CLAYS, A FOUNDATION IS REQUIRED AS DETERMINED BY THE ENGINEER OF RECORD.

TYPICAL TRENCH BACKFILL



1. HYDRANT COATED WITH YELLOW REFLECTIVE PAINT.
2. USE RESTRAINED JOINTS FOR THE ENTIRE ASSEMBLY SHOWN.
3. HYDRANT SET BACK SHALL CONFORM TO FDOT AND BCHCED REQUIREMENTS, WHERE APPLICABLE.
4. GATE VALVE IS NORMALLY LOCATED NEXT TO TEE.
5. IF DISTANCE FROM MAIN LINE TO FIRE HYDRANT IS GREATER THAN 20 FEET ANOTHER GATE VALVE WILL BE PROVIDED CLOSE TO THE HYDRANT. THIS SECOND VALVE SHALL BE INSTALLED WITHIN 5' OF THE FIRE HYDRANT. CHECK VALVE SHALL BE WITHIN 3' OF FIRE HYDRANT UNLESS CHECK VALVE INTEGRAL TO HYDRANT ASSEMBLY.
6. HYDRANT FEED PIPE MAY BE TAPPED FOR A SERVICE LINE UPSTREAM OF THE ISOLATION GATE VALVE.
7. A BLUE RAISED REFLECTIVE PAVEMENT MARKER SHALL BE PLACED AT THE CENTER LINE OF THE OUTSIDE ROADWAY LANE TO IDENTIFY THE FIRE HYDRANT LOCATION.

FIRE HYDRANT INSTALLATION



1. SAMPLE POINTS SHALL BE LOCATED AND LATER REMOVED AS REQUIRED BY BROWARD COUNTY HEALTH DEPARTMENT.
2. CORPORATION STOP SHALL BE CLOSED AND PLUGGED/CAPPED WITH A BRASS FITTING AFTER HEALTH DEPARTMENT CLEARANCE.
3. SAMPLING POINTS MAY BE PLACED AT THE ENDS OF WATER SERVICES BEFORE THE METERS AND ON BLOW OFFS FOR TERMINAL WATER MAINS, WHERE SERVICES AND BLOW OFFS ARE REQUIRED BY THE PLANS.

SAMPLE POINT

GATOR ENGINEERING ASSOCIATES, INC.
11390 TEMPLE STREET
COOPER CITY, FL 33330
TEL: (954) 434-5805 FAX: (954) 434-5804
CERTIFICATE OF AUTHORIZATION NUMBER 30230

SEAL
Digitally signed by Regina Bobo-Jackson
Date: 2020.04.20 20:35:53 -04'00'
DATE:
REGINA BOBO-JACKSON, P.E.
FL P.E. NO.: 39550

REVISIONS

No.	DATE	DESCRIPTION

PROPOSED BALLROOM FOR:
VISTA GARDENS
5011 W HILLSBORO BLVD.
COCONUT CREEK, FL

GEA PROJECT NO.: 19012
DATE: 03-20-2019
SCALE: AS SHOWN
DESIGNED BY: R.B.J.
DRAWN BY: L.B.
CHECKED BY: R.B.J.
APPROVED BY: R.B.J.

SHEET TITLE

DETAILS

C6 OF 9