



LEGEND	
	PROPOSED LINE
	WATER MAIN
	SEWER SERVICE LINE
	MANHOLE
	VALVE
	CLEANOUT
	FIRE HYDRANT
	METER
	PRESSURE GAUGE
	ELECTRIC CHAMBER
	ELECTRICAL PANEL
	ELECTRICAL BOX
	ELECTRICAL CONDUIT
	ELECTRICAL CABLE
	ELECTRICAL RACEWAY
	ELECTRICAL SWITCH
	ELECTRICAL OUTLET
	ELECTRICAL PANEL
	ELECTRICAL BOX
	ELECTRICAL CONDUIT
	ELECTRICAL CABLE
	ELECTRICAL RACEWAY
	ELECTRICAL SWITCH
	ELECTRICAL OUTLET

WATER SYSTEM NOTES

- Specifications for this project shall be the BCWS and City of Dade Beach.
- Ductile iron water main pipe shall conform to the requirements of ANSI, AWWA, C-151/A 21.51-02 and lined and coated per ANSI, AWWA, C-104/A-21.4-03, 20" or smaller pipe shall be pressure class 350; 24" and larger, pipe shall be pressure class 250.
- All P.V.C. mains shall be series 1120, class 150 (DR 18) pressure pipe, conforming to ANSI, AWWA, C-900-97, or latest revision, and shall have push on joints and iron pipe O.D.
- Fittings shall be ductile iron meeting ANSI, AWWA, C-110/A21.10-03. Fittings must be cement lined and seal coated per ANSI, AWWA, C-104/A-21.4-03.
- Tapping valves shall be Mueller H677 or approved equal.
- Gate valves 3" or less shall be NIBCO 1-133 OR 1-136 with malleable hand wheels. No substitutions allowed.
- Tapping sleeves shall be Mueller H615 or approved equal.
- Restored joint pipe shall be used for all bends, tees, crosses, plugs, and fire hydrants. Thrust blocks shall not be allowed.
- All valves shall be furnished with extension type cast iron valve boxes of proper length for pipe depth. All boxes shall conform with AWWA specifications with a short of no less than 18" depth. All boxes shall have a cast iron cover. Base of valve box shall be a fixed section to fit over stuffing box of valve.
- Gate valves 4" or larger shall meet ANSI, AWWA, C-500-02 specification (latest revision). Valves shall be Mueller Co. or approved equal.
- Fire hydrants shall be breakaway Mueller Co. Centurion model #A-423, or American Dorring Type F.H.
- Fire hydrants shall be installed with the center of the nozzle 18" above finished grade.
- All meter service connections shall be bronze from plug valve. No gate valves are to be used (2" or less).
- Proposed water mains shall be dewatered in accordance with ANSI/AWWA standards C651-05 by a certified environmental testing laboratory and be witnessed by the engineer of record and BCWS inspector.
- All connections to existing mains shall be made under the direction of Broward County Water and Wastewater Engineering Division.
- Pipe shall be tested under constant pressure of 150 P.S.I. for a minimum test period of 2 hours and shall not exceed the leakage requirements as per ANSI/AWWA specifications of C-600-03 leakage formula: $Q = S \cdot D^2 \cdot P / 149,000$
 $Q = \text{ALLOWABLE LEAKAGE, IN GALLONS PER HOUR}$
 $D = \text{DIAMETER OF THE PIPE TESTED, IN INCHES}$
 $S = \text{SPECIFIC GRAVITY OF WATER AT TEST PRESSURE, IN POUNDS PER SQUARE INCH}$
 $P = \text{AVERAGE TEST PRESSURE, IN POUNDS PER SQUARE INCH}$
- Distinction of mains shall comply with ANSI, AWWA, C-651-05 standard. Bacteriological sampling points shall be designated on the engineering plans. Minimum one sampling point at each end. Maximum space between sampling points is 1500 feet.
- Dead end water mains 6" or larger shall terminate with a fire hydrant.
- No connections to the existing lines shall be made until the pressure and bacteriological test have been performed in the proposed water mains and the system is acceptable to BCWS the City of Hollywood and Broward County Public Health Unit (BCPHU).
- All service lines shall be copper tubing, type "K", or plasticized polyethylene 3408, ASTM, D-2737, S.D.R. 9, 200 P.S.I.
- Sanitary sewers and force mains should cross under water mains whenever possible. Sanitary sewers and force mains crossing water mains shall be laid to provide a minimum vertical distance of 18" between the invert of the upper pipe and the crown of the lower pipe whenever possible.
- Where sanitary sewer force mains must cross a water main with less than 18" vertical separation, both the sewer and water main shall be constructed of ductile iron pipe (DIP) at the crossing. Sufficient lengths of DIP must be used to provide a minimum separation of 10 feet between any two joints. All joints on the water main within 20 feet of the crossing shall be chronically restrained. A minimum vertical clearance of 6" must be maintained at all crossings.
- Where it is not possible to maintain a vertical distance of 18" in parallel installations, the water main shall be constructed of DIP and the sanitary sewer or force main shall be constructed of ductile iron pipe (DIP) above the water main. Joints on the water main shall be located as far apart as possible from the joints on the sewer or force main (staggered joints).
- All crossings shall be arranged so that the sewer pipe joints and the water main pipe joints are equidistant from the point of crossing (pipes centered on the crossing).
- Where a new pipe conflicts with an existing pipe with less than 18" vertical clearance, the new pipe shall be arranged to meet the crossing requirements above.
- All DIP shall have adequate protective measures against corrosion and it shall be used only if as determined by the design engineer, based on field conditions.
- Reducer glands/restricting shall be used only if authorized by the Engineer and shall conform to ANSI, AWWA standards C 111/A-21.11-00, or latest revision.
- All glands shall be manufactured from ductile iron as listed by underwriter's laboratory for 250 P.S.I. minimum water pressure rating.
- Service saddles shall be ductile iron with stainless steel straps. Saddles shall be double strap type. All service saddles shall conform to ANSI, AWWA, C 111/A-21.11-00 and ASTM, A588.
- P.V.C. pipe shall be installed in accordance with the Uni-Bell plastic pipe Association's "Guide for installation of P.V.C. pressure pipe for Municipal water distribution system". Water distribution pipe shall be of "BLUE" color.
- Detonate tape on all P.V.C. mains shall be installed 18" above the water main.
- All P.V.C. mains must have #6 copper wire, single strand, placed on top of pipe shall with a #12 wire.
- All P.V.C. pipe shall be installed in accordance with ANSI, AWWA, C-600-05, or latest revision.
- Pipe deflection shall not exceed 50% of the maximum deflection recommended by the manufacturer.
- A continuous and uniform bedding shall be provided. Backfill material shall be tamped in the trench in the trench shall be removed for a depth of at least 6" below the bottom of the pipe.
- All water main installations shall comply with the color coding requirements of Chapter 62-555.320, FAC.
- A minimum cover of 30" is require for DIP.

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

REVISIONS	DATE	DESCRIPTION

SEAL

DATE: REGINA BOBO-JACKSON, P.E.
FL. P.E. NO.: 38550

GATOR ENGINEERING ASSOCIATES, INC.

11360 TEMPLE STREET
COOPER CITY, FL 33330
TEL: (854) 434-5905 FAX: (854) 434-5904
CERTIFICATE OF AUTHORIZATION NUMBER 30230

SHEET TITLE
WATER & SEWER PLAN
CS of 9

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