

Environmental Analysis

Water Demand

A six (6) inch domestic water service will be extended from 8 inch water main in 23rd Street, NW. The water meter will be located inside the building. The system design pressure will provide 35 psi residual pressure at the highest, most remote flush valve and a maximum pressure of 80 psi to any plumbing fixture. The piping system will be sized to maintain a velocity of 4-8 feet per second within the piping system. Domestic water distribution will be provided in the lower level mechanical room to feed a domestic water booster pump system. Maximum estimated water load will be about 400 GPM. An eight (8) inch fire suppression service will be utilized for this project and will be extended from 8 inch water main in 23rd-Street, NW. The proposed connection for the fire and domestic service will be made within the existing distribution system and will be coordinated with the D.C. Fire Marshal and D.C. Water.

Sanitary Sewer Demand

A sanitary waste maximum estimated sanitary load is about 2300 Drainage Fixture Units (DFU's) as defined in the International Plumbing Code and this will be split in 2 ~ 8" laterals. The drainage systems will all be below the depth of the sewer system in the street. Therefore, all fixtures will drain by gravity to a sewage ejector placed at the lowest parking level. The sewage ejector will pump sanitary waste up to the lower level to the combined gravity sewer/storm outfalls. Approximate sewage ejector capacity is 150 gpm at 70 feet of discharge head for each ejector. All sewage ejectors will be on emergency/standby power. The proposed connection for the sanitary sewer line will be at the existing 21" combined sewer along 23rd-Street, NW and existing 15" combined sewer on H Street, NW and will be coordinated with the D.C. Water.

Stormwater Management

The proposed connection of the storm sewer line will be at the 15" combined sewer line along H Street, NW. District Department of Environment requires water quality and quantity for the project. The roofs and at grade structures will be drained via gutters, downspouts and area drains and it will be discharging to a below grade cistern structure. The cistern structure is designed to store more than the required volume by the District and it will be re-use water for irrigation. The project exceeded the quantity volume requirements by the District Department of Environment Watershed Protection Division and no runoff from a 15 year storm event will be discharged to the sewer city so therefore quality is not required. The project also provides green roof at the mechanical

level, landscaping and permeable pavers at ground floor for runoff reduction, reduction of impervious areas and to support green communities.

Erosion Control

Sediment and erosion control will be implemented during excavation and during construction per the District Department of Environment standards and specifications.