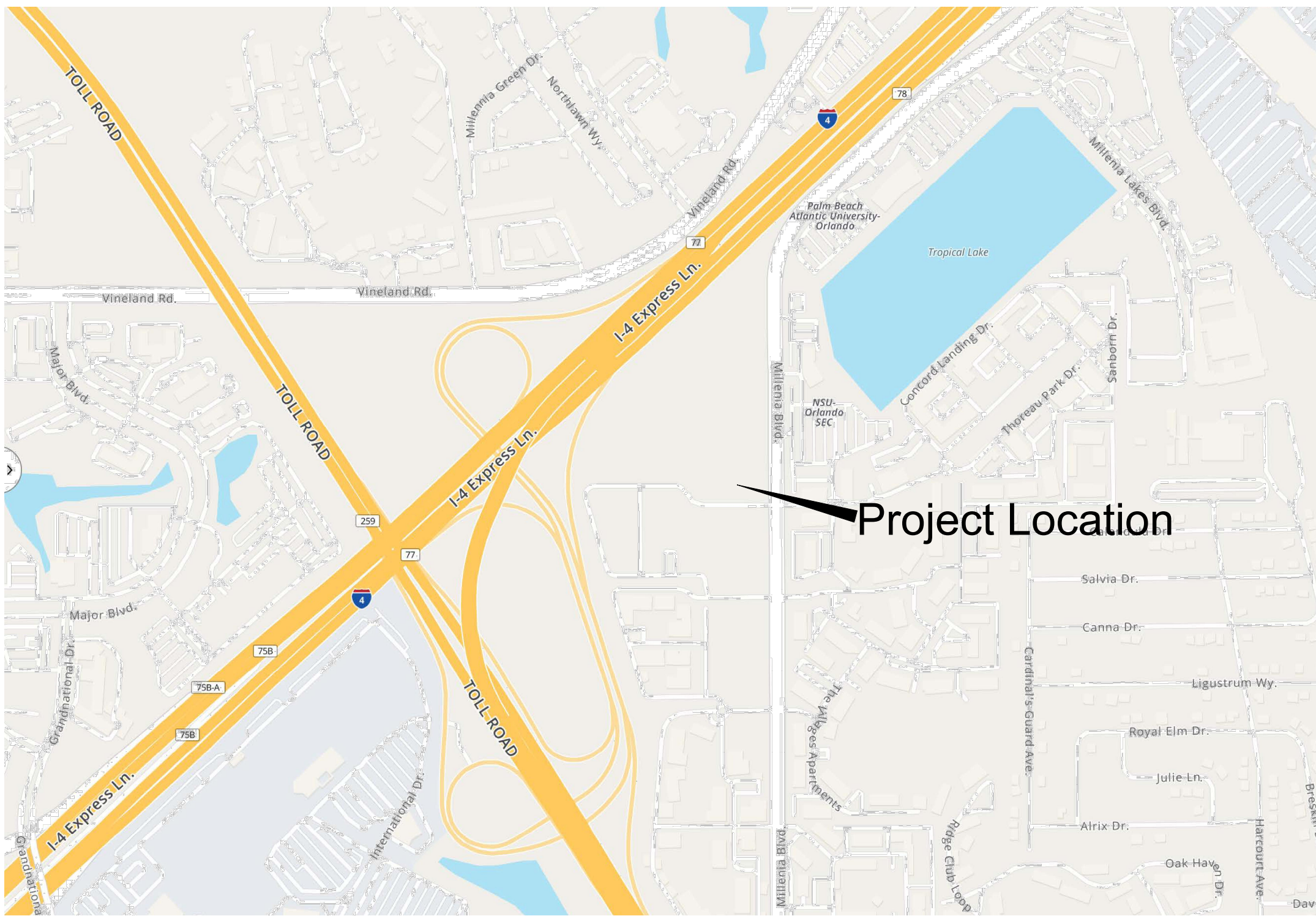


Site Construction Plans for:

Deuk Spine of Orlando

Millenia Place Dr., Orlando, Florida
Section 18, Township 23, Range 29
Parcel ID No. 18-23-29-0830-02-003

Location Map



Legal Description (per DOC# 2020015537):

LOT 2C, BOYLAND PROPERTIES AT MILLENIA PALMS, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 100, PAGES 33 THROUGH 36, PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA

Source: Boundary, Topographic, Tree & Improvements Survey prepared by American Surveying, Inc., Project No. 04001623, dated 4-23-23.

Sheet Index

No.	Title
C1	Cover Sheet
C2	Existing Conditions Aerial
C3	Site Plan
C4	Solid Waste Truck Circulation Plan
C4a	Fire Truck Circulation Plan
C5	Paving, Grading and Drainage Plan
C6	Utility Plan
C7	Stormwater Pollution Prevention Plan
C8	Details
C9	Details
C9-a	Details
C9-b	Details
C10	Notes

Sunshine State One Call of Florida, Inc.
(800) 432-4770
www.callsunshine.com

Owner / Developer:

Millenia Medical Development, LLC

7512 Dr. Phillips Blvd., Ste. 50-772
Orlando, FL 32819
Ph. (321) 593.2537
Attn: Dr. Ara Deukmedjian
deukmedjian@gmail.com

Civil Engineer/Planner:

Planeng, Inc.

3737 Lake Joyce Dr.
Land O Lakes, Florida 34639 Ph.
(813) 463.3344
Attn: Jay M. Gill, P.E. and/or Russell Ottenberg
jay@planeng.com, russell@planeng.com

Architect:

HuntonBrady Architects

333 S. Garland Ave., Ste. 1100
Orlando, FL 32801
Ph. (407) 839.0886
Attn: Alex Jordan
ajordan@huntonbrady.com

Landscape Architect:

Daniel Rogers Landscape Architecture

1775 Mohawk Trail
Maitland, FL 32725
Ph. (407) 353.0112
Attn: Danny Rogers
daniel@rogres-la.com

Surveyor:

American Surveying, Inc.

4847 N. Florida Ave.
Tampa, FL 33603
Ph. (813) 234-0103
Attn: John W. Strachan
jstrachan@americansurveying.com

Geotechnical Engineer:

Intertek PSI, Inc.

1748 33rd Street
Orlando, FL 32839
Ph. (407) 304.5560
Attn: Malcolm Thompson, P.E.
malcolm.thompson@intertek.com

PLANENG INC
Board of Professional Engineers
Certificate of Authorization
No. 26432

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Pensacola, FL 32505
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Tampa:
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Land O Lakes, FL 34639
T (813) 962.1752

Issue / Revisions
1, 5/14/26, Revised per City of Orlando staff review comments.

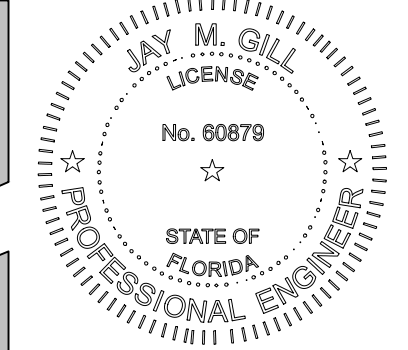
2, 8-3-26, Revised per City of Orlando staff review comments; updated Owner address info.



Scale
NTS

Deuk Spine of Orlando

PLANENG INC



Date

Reviewed by
JMG/RMO

Plan Description
Cover Sheet

Sheet No.

C1



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Issue / Revisions

PLANENGINEERING

Scale
1" = 20'

PLANENGINEERING

Deuk Spine of Orlando

Millenia Place Dr., Orlando, Florida

PLANENGINEERING

RAY M. GILL
LICENSE
No. 60679
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Date

RAY M. GILL, State of Florida, Professional Engineer, License No. 60679. This seal has been digitally signed and certified by Ray M. Gill, P.E., on the date adjacent to the seal. Signature must be verified on any electronic copies.

Reviewed by
JMG/RMO

Plan Description
Existing
Conditions
Aerial

Sheet No.
C2

2026-0426ORLcom C2 - EC Aerial.dwg
CAD date 8/6/2026

Name of Development -	Deuk Spine of Orlando
Site Address -	Millenia Place Drive
Parcel ID Number -	18-23-29-0830-02-003
SPMP Approval -	MPL2023-10033, DET2023-10202
Future Land Use -	Mixed Use Corridor, High Intensity
Current Zoning -	PD
Proposed Use -	Medical Office (see Development Program)

Maximum -

Provided Loading - 1 spaces (18.5' x 25')

4. FEMA Flood Zone -the site lies within Flood Zone X, according to FEMA

Proposed Gross Floor Area - 18,431 s.f.

1. Site development standards shall be in accordance with the approved PD zoning.
2. Urban Design/Architecture shall be in accordance with the architectural plans and elevations submitted herewith.
3. Driveway location is subject to the Specific Parcel Master Plan approval.

This is a detailed site plan for a Medical Office Building. The building footprint is shown in the center-right, with various rooms and an outdoor patio. To the left of the building is a large parking lot with numbered stalls (5, 6, 7, 8, 10, 11) and a proposed asphalt parking lot. The plan includes numerous annotations for easements (e.g., 10' drainage & utility, 152'± of reduced buffer width), sidewalks (e.g., 5' wide, 13'-5" wide), and other features like a fountain, light pole, and various signs. The site is bounded by Millenia Place Dr. to the north, Millenia Palms Dr. to the south, and Millenia Blvd. to the east. The plan also shows existing infrastructure like a fire hydrant and a force main easement.

Key Features and Annotations:

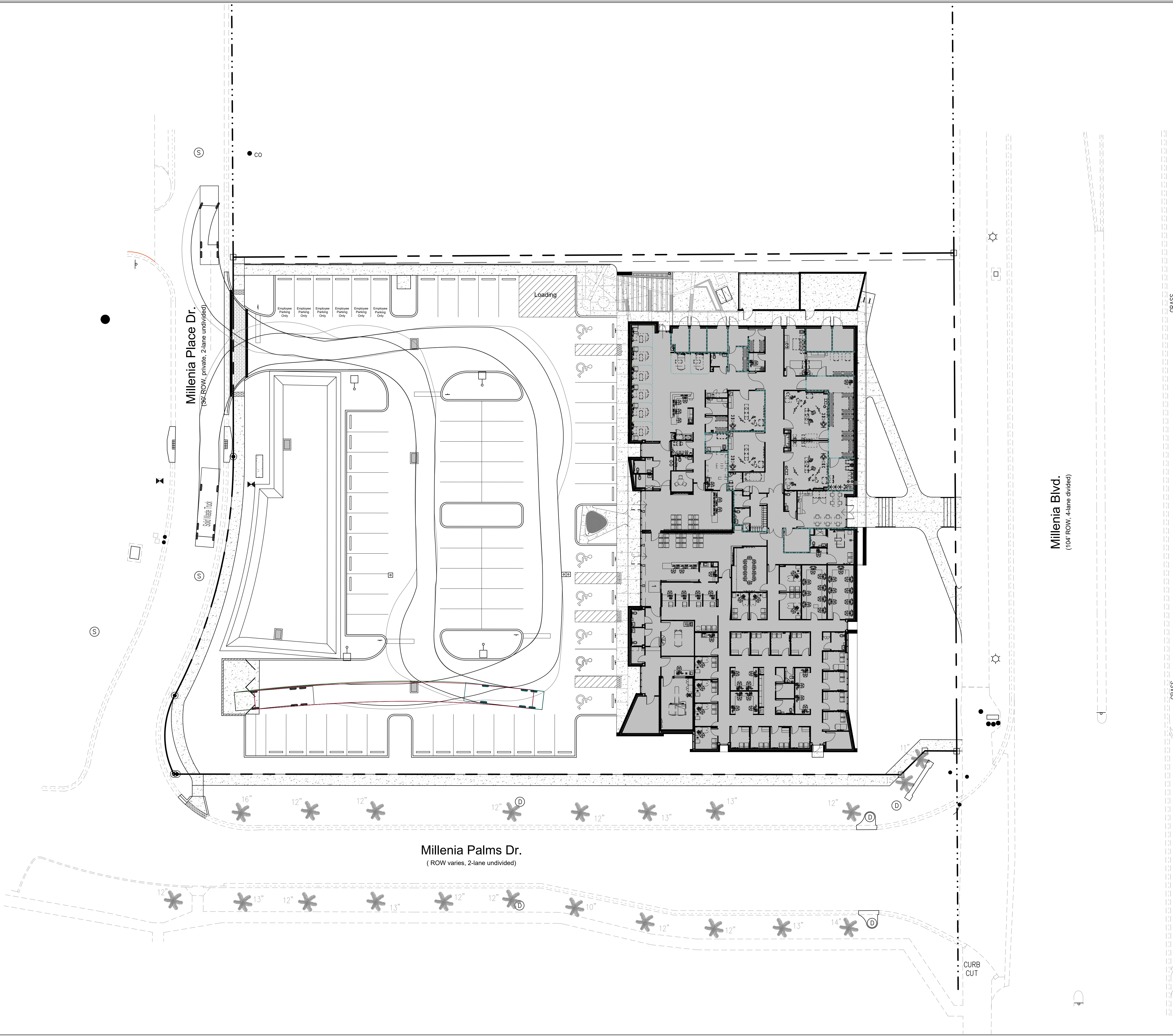
- Building:** Medical Office Building, 162 LF of aluminum pipe guiderail per FDOT Std. Plans, Index No. 515-070.
- Parking:** Employee Parking (6L, 5, 7, 8, 10, 11), Proposed asphalt parking lot, 2-wheeled parking, R1-1 "Stop" sign and 2' white stop bar, Typ.
- Sidewalks:** 5' wide, 13'-5" wide, 5' wide accessible route (< 4% slope), 5' sidewalk, 6.5' sidewalk, 6' sidewalk.
- Easements:** 10' drainage & utility easement, P.B. 100, PG. 34; 152'± of reduced buffer width; 10' access easement & Existing 10' force main easement; Existing 5' slope easement; Existing 20' drainage easement; Proposed cross-access easement; Proposed utility easement; Proposed 5' sidewalk.
- Other Features:** Outdoor Patio/Patient Discharge; Cyclesafe Ecopark 4-door, 4 bicycle locker, Model MO4; Belson Outdoors single loop bike rack, Model # HM1283CS238, 30" O.C.; Chillers Yard; Generator Enclosure; Dumpster Enclosure; Fountain, see Hardscape Plans for details; Wheel stop, Typ.; Light Pole, Typ.; 2-foot wide Detectable warning, Typ.; Handicapped parking sign (Typ.), see details on sheet C8; 12" wide solid white stripe either side of crosswalk; 12" LF of aluminum pipe guiderail per FDOT Std. Plans, Index No. 515-070; Clear sight distance per FDOT Driveway Information Guide using posted speed of 35 mph with a sight distance of 250' (actual posted speed is 15 mph); Clear sight distance per FDOT Driveway Information Guide using posted speed of 35 mph with a sight distance of 250' (actual posted speed is 15 mph); Proposed curb ramp per FDOT Std. Plans Index 522-022, Sheet 2 of 7, CR-A; Limits of construction activity; Existing (off-site) sign; Existing sidewalk; Existing 10' force main easement; Existing 5' slope easement; Existing 20' drainage easement; Property line; Millenia Place Dr. (30' ROW, private, 2-lane undivided); Millenia Palms Dr. (ROW varies, 2-lane undivided); Millenia Blvd. (104' ROW, 4-lane divided); 3 - 7.25" risers; 3 - 6.5" risers; Handrail, Typ., refer to Landscape Architecture plans for details; CURB CUT.

Scale 1" = 20'

PLANENG INC

Sheet No. _____

C3



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Issue / Revisions

PLANENGINEERING INC.

1" = 20'

NORTH

Deuk Spine of Orlando

Millenia Place Dr., Orlando, Florida

PLANENGINEERING INC.

DAY M. GILL
LICENSE
No. 60679
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

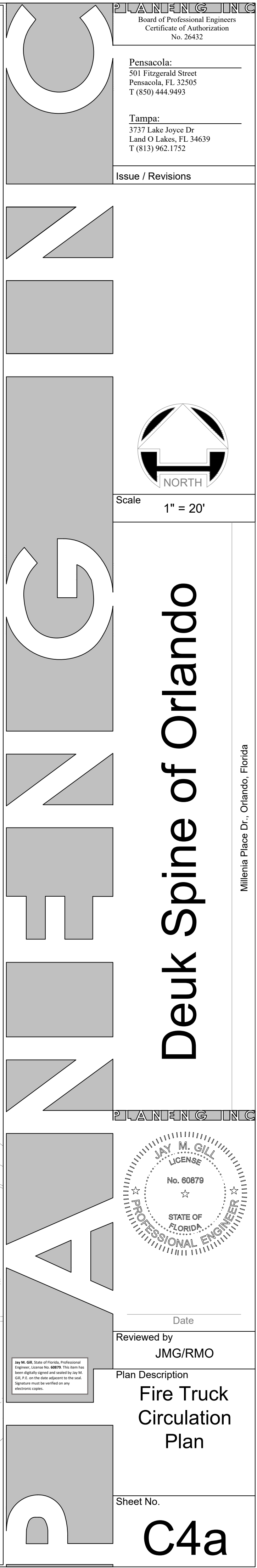
Date

Reviewed by
JMG/RMO

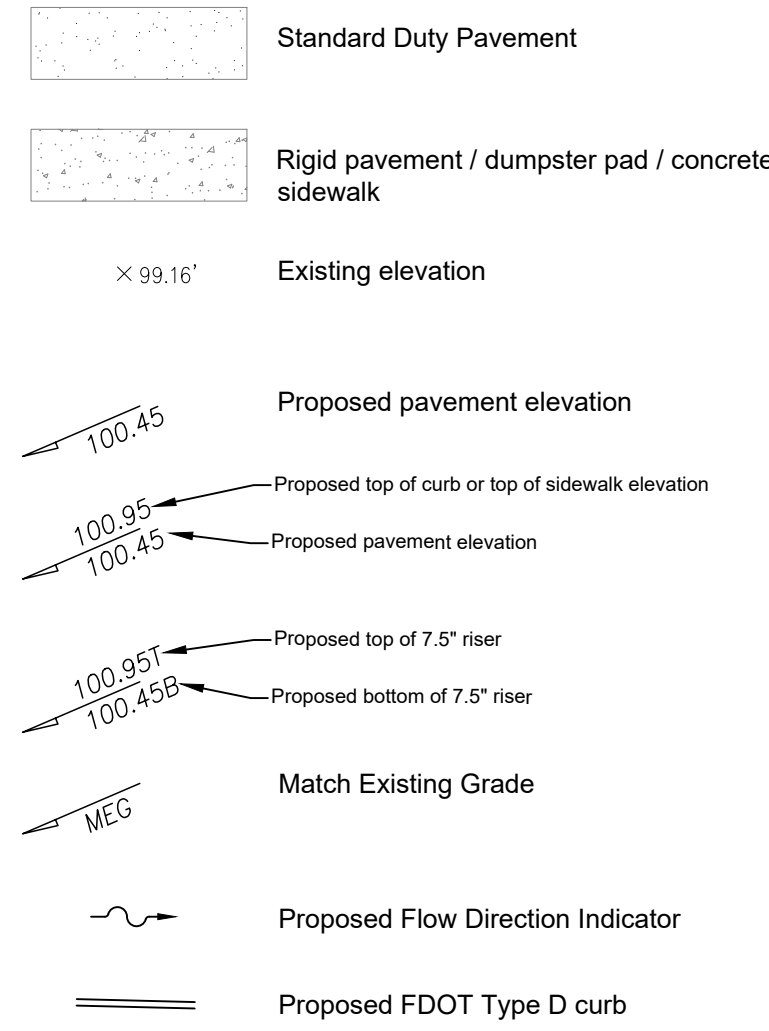
Plan Description
Solid Waste
Truck
Circulation
Plan

Sheet No.
C4

2026-0426ORLcom C4 - Solid Waste Truck Circulation Plan.dwg
CAD date 8/6/2026



LEGEND

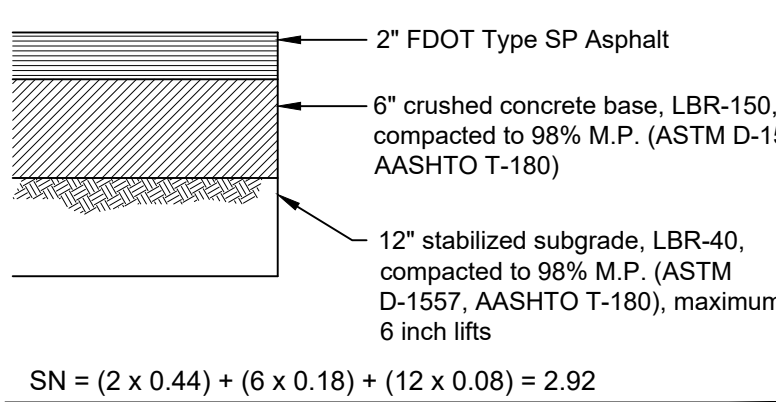


Note: Elevations shown are in NAVD83 datum; elevations reference the NAVD83 datum per the survey prepared by American Surveying, Inc.

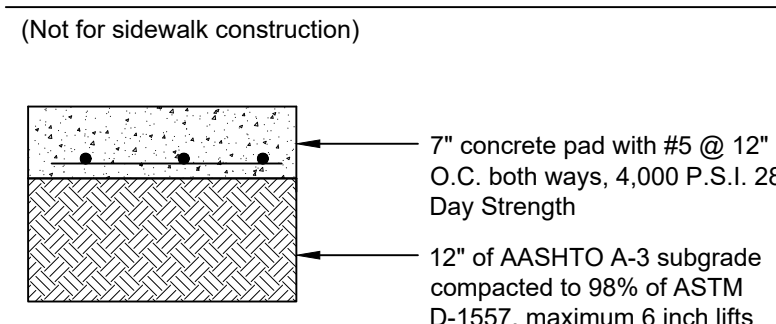
GENERAL NOTES:

- Contractor to ensure a minimum 1% slope away from building in all landscape areas immediately adjoining the building.
- Provide below slab connection between internal, 8" roof downspout and proposed 12" ADS storm pipes. Contractor to verify downspout locations as shown on the Architect's plans prior to construction. Sizes to match pipe sizes indicated on plans.
- Contractor shall match grades at property lines unless otherwise specified.
- All quantities and linear footages identified are approximate. Contractor shall use his best judgement in evaluating and determining quantities and items as required and necessary to perform the scope of work described.
- The Contractor shall protect the off-site stormwater system from construction activity related discharges and/or runoff until Substantial Completion.
- Maintenance of Traffic shall be in accordance with FDOT Standard Plans Index 102-601 & 102-603.
- All sidewalk cross-slopes shall be a maximum of 2%. All sidewalk longitudinal slopes shall be a maximum of 5%.

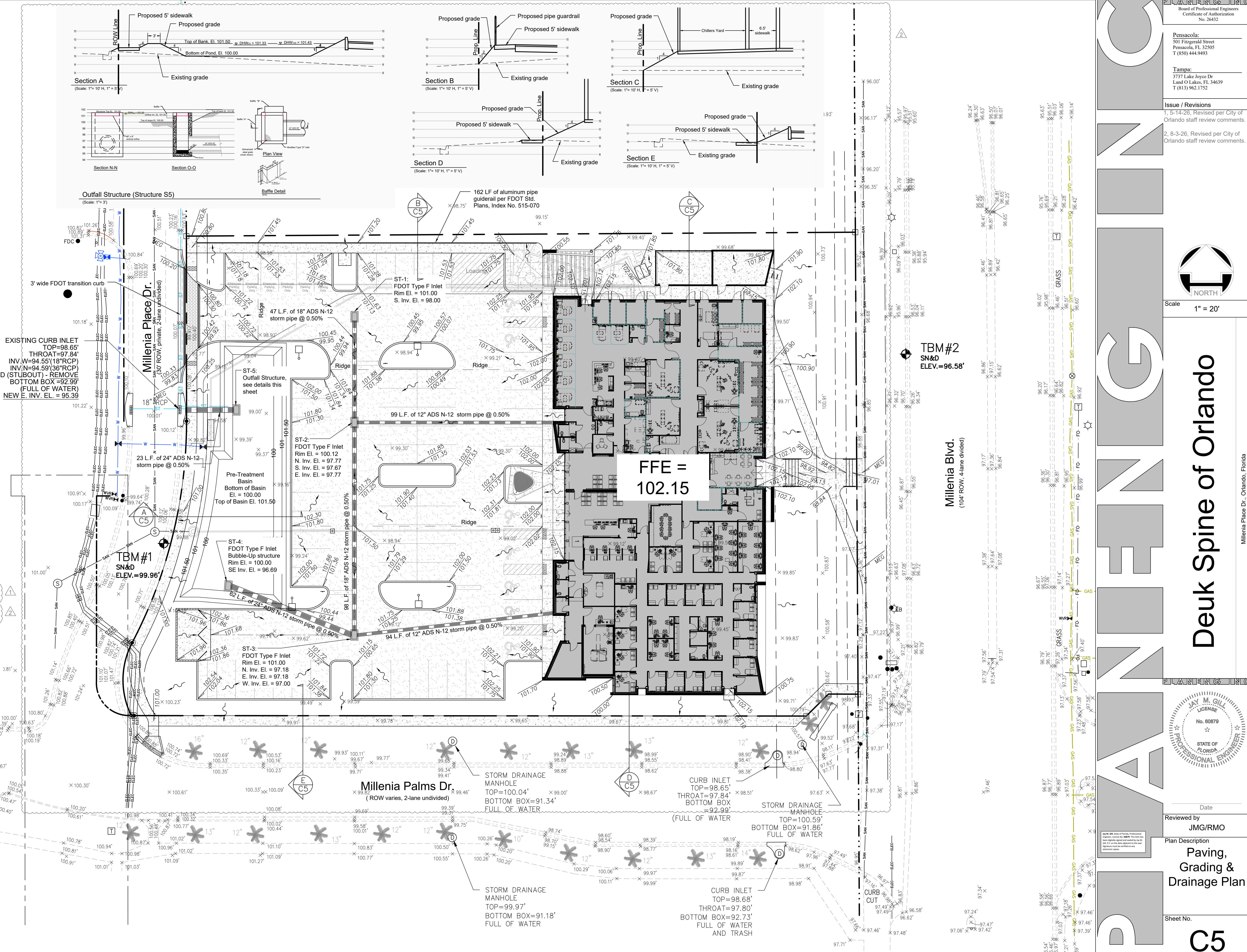
Standard Duty Pavement Detail



Dumpster Pad Pavement Detail



Note: The contractor shall also refer to the recommendations detailed in the Geotechnical Report prepared by Intertek PSI for this project for all pavement.



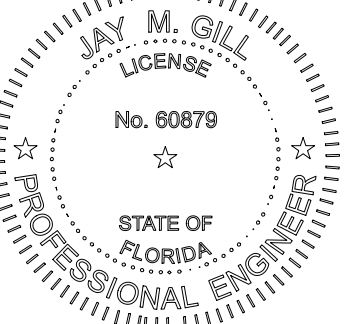
Issue / Revisions

- 1, 5-14-26, Revised per City of Orlando staff review comments.
- 2, 8-3-26, Revised per City of Orlando staff review comments.



Scale
1" = 20'

Deuk Spine of Orlando



Date

Reviewed by
JMG/RMO

Plan Description

Paving,
Grading &
Drainage Plan

Sheet No.

C5

GENERAL NOTES:

- CAUTION! Underground utilities present - contractor to exercise extreme caution when excavating.
- Contractor shall verify invert of existing cleanout prior to construction and report same to Engineer.
- Gravity sanitary sewer pipe shall be PVC SDR-26 unless otherwise noted.
- All non-public water and sewer facilities shall be owned and maintained by the owner/developer.
- Potable water and fire protection service shall be provided by the City of Orlando.
- Sanitary sewer service shall be provided by the City of Orlando.
- Fire protection shall be provided via hydrants; a building sprinkler system will be incorporated into the proposed building.
- If required, a fire hydrant shall be installed and in service prior to the accumulation of combustibles.
- Per the National Fire Protection Association, NFPA-1, 16.4.3.1.3: Where underground water mains and hydrants are to be provided, they shall be installed, completed, and in service prior to construction work.
- Connections into the existing water main shall be via wet tap. Excavation, backfill, and surface restoration shall be the contractor's responsibility.
- Private fire lines and hydrants shall be installed only by a Florida State Certified Fire System Contractor.
- All newly installed water distribution mains and service laterals shall be color coded blue.
- Fire department access roads shall have an unobstructed width of not less than 20 ft. The driving surface shall be maintained during all phases of construction and (FFPC-1-18.2.3.5.2) must be an all-weather driving surface capable of supporting a 32-ton emergency vehicle.
- There will be no gates across the project driveways or in the project parking lot.
- The center of a hose outlet shall be not less than 18-inches above final grade.
- The proposed installation of fire department connections shall have a sign posted meeting the requirements of 8.17.2.4.7 Signs. 8.17.2.4.7.1 Each fire department connection to sprinkler systems shall be designated by a sign having raised or engraved letters at least 1 in. (25 mm) in height on plate or fitting reading service design — for example, AUTOSPKR., OPEN SPKR., AND STANDPIPE. 8.17.2.4.7.2 A sign shall also indicate the pressure required at the inlets to deliver the greatest system demand.
- All underground fire mains shall be installed in accordance with NFPA 24, 2016 edition, "Standard for the Installation of Private Fire Service Mains and Their Appurtenances".
- Wastewater and reclaimed water service construction and materials shall comply with the "City of Orlando Engineering Services Manual, 5th Edition".
- Contractor shall field verify all existing utilities at all points of connection to, and at all areas of conflict with OUC mains prior to commencement of construction.
- Avg. Daily Potable Water Demand per F.A.C. 64E-6: (10 practitioners x 250 gpd/practitioner) + (30 employees x 15 gpd/employee) = 2,950 gpd.
- Refer to Architectural Plans, sheets P100A and E100A for fountains' plumbing and electrical requirements.
- Total irrigable acreage = 0.39 Ac.; weekly irrigation flow = 26,160 gallons; maximum flow rate = 25 gpm.

SANITARY SEWER MANHOLE
RIM=100.31'
INV.S=90.40'
INV.N=90.42'
INV.E=90.41'
(8"PVC)

SANITARY SEWER MANHOLE
RIM=100.31'
INV.SW=89.67'
INV.N=89.74'
INV.E=89.73'(8"PVC)

SANITARY SEWER MANHOLE
RIM=100.31'
INV.S=88.98'(12"PVC)
INV.E=89.02'(8"PVC)

City of Orlando Wastewater Calculation (Water Conserv II service area):
0.08 g/sf/day x 18,431 sf = 1,475 gpd.

FIRE HYDRANT CALCULATIONS:

- Building Type (IBC/IFC) = Type II-B
- Building will be sprinkled.
- Per NFPA Table 18.4.5.1.2, 18,441 sq.ft. building with Type II-B (or Type III (200) (Unprotected Ordinary) per NFPA), requires a fire flow of 3,000 gpm for 3 hours. Application of 75% reduction = 750 gpm . Thus the needed fire flow is 1,000 gpm for 3 hours.
- Per NFPA Annex I Table I.3, one fire hydrant is required (one exists).

OUC Water Engineering Notes (Rev. 11/20/23):

The developer/customer shall accomplish all water main and service work through the point of service/control valve and water meters and deed to OUC. OUC will own and operate up to and including the OUC point of service/control valve and meters only. The required work shall be performed per current OUC guidelines. OUC Water Distribution Standard Specifications and OUC Water Distribution Material Specifications and water detail sheet under OUC inspection. The developer/customer must contact OUC Inspection at 407-649-4428 to schedule a pre-construction meeting prior to any water construction.

A minimum 4' clearance (including landscaping) must be maintained around meter assembly.

Domestic/fire master meter assembly will be provided by OUC at the developer/customers expense and shall be installed by the developer/customer. After payment, allow 30 days for receipt of the meter by OUC. The developer/customer shall arrange pickup from the OUC warehouse facility through the OUC inspector.

Contact OUC Inspection department for approved material and construction specifications pertaining to the installation of ductile iron pipe via directional or jack and bore method.

The developer/customer shall field verify the horizontal and vertical location of existing OUC water facilities before commencement of construction.

For water wet taps, use only OUC approved tapping contractors:

Action Industries, Inc. 352-732-6941 or 800-216-4464
Central Florida Tapping and Construction Services, Inc. 407-834-8271
Mac Tapping, Inc. 407-468-0557
Rangeline Tapping Services, Inc. 800-346-5971
Garrison Enterprise, Inc. 352-409-4742

Easements:

All on-site OUC water facilities (mains, services, meters, and fire hydrants) shall be located within a utility easement in accordance with current OUC private property guidelines. The developer is to furnish all necessary information, including legal description(s) to prepare and document this easement. Project work order numbers for the associated project shall be included on all legal descriptions provided. Water meters and fire services will not be activated until the final easement(s) have been received and approved by OUC. Any questions or comments please contact OUC Property and Right of Way department at 407-434-2158.

Connection to Existing valve

Contractor to verify location, condition and pressure test existing valve prior to connection. If valve does not hold required pressure test additional valve will be required at developers/contractor's expense. All pressure tests must be witnessed by an OUC inspector.

OUC Backflow Prevention Requirements:

Backflow devices will be owned and maintained by customer unless otherwise noted. Any questions contact OUC Backflow Prevention Department at 407-649-4428.

Domestic and Irrigation

The Developer/Customer is responsible for the required Reduced Pressure Backflow Preventer. Residential domestic backflow preventers are now required for all residential connections. Special irrigation meter assembly setups are required for all connections using OUC water for irrigation. These will provide customers a sewer credit for irrigation water.

Fire Line:

The Developer/Customer is responsible for the required Reduced Pressure Detector Check Assembly w/Monitoring meter for backflow prevention.

As - Built Drawings

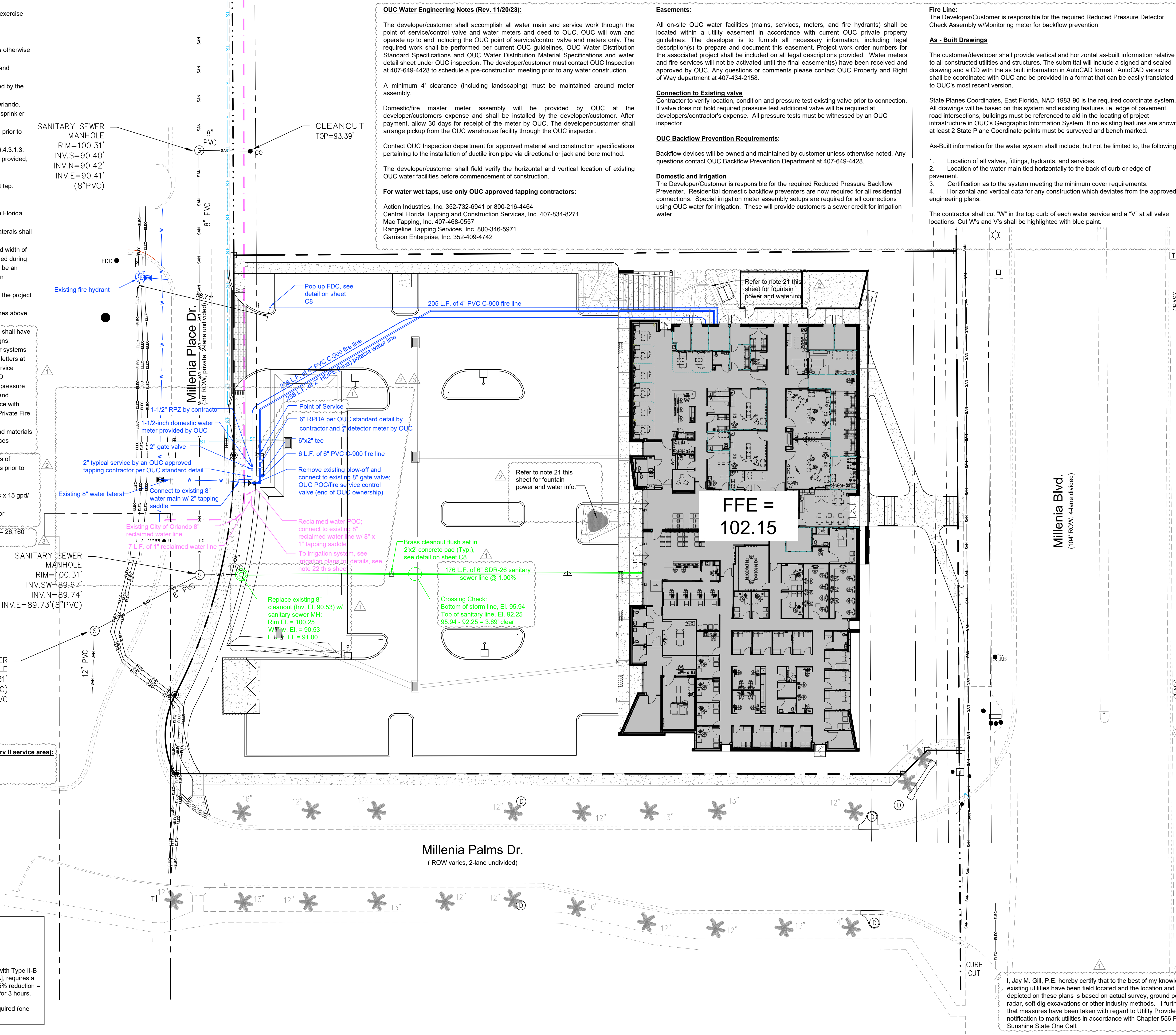
The customer/developer shall provide vertical and horizontal as-built information relative to all constructed utilities and structures. The submittal will include a signed and sealed drawing and a CD with the as built information in AutoCAD format. AutoCAD versions shall be coordinated with OUC and be provided in a format that can be easily translated to OUC's most recent version.

State Planes Coordinates, East Florida, NAD 1983-90 is the required coordinate system. All drawings will be based on this system and existing features i.e. edge of pavement, road intersections, buildings must be referenced to aid in the locating of project infrastructure in OUC's Geographic Information System. If no existing features are shown at least 2 State Plane Coordinate points must be surveyed and bench marked.

As-Built information for the water system shall include, but not be limited to, the following:

- Location of all valves, fittings, hydrants, and services.
- Location of the water main tied horizontally to the back of curb or edge of pavement.
- Certification as to the system meeting the minimum cover requirements.
- Horizontal and vertical data for any construction which deviates from the approved engineering plans.

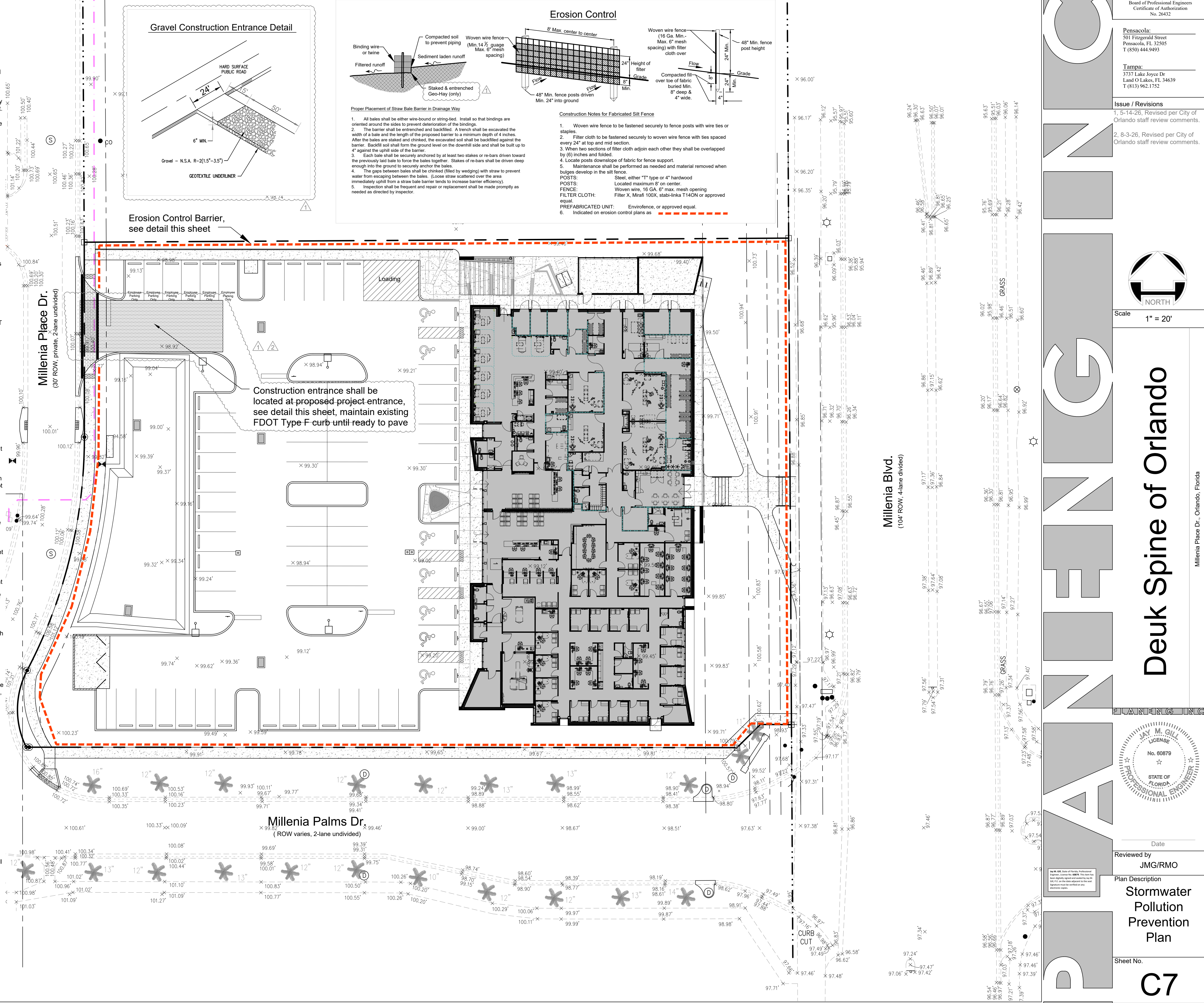
The contractor shall cut "W" in the top curb of each water service and a "V" at all valve locations. Cut W's and V's shall be highlighted with blue paint.

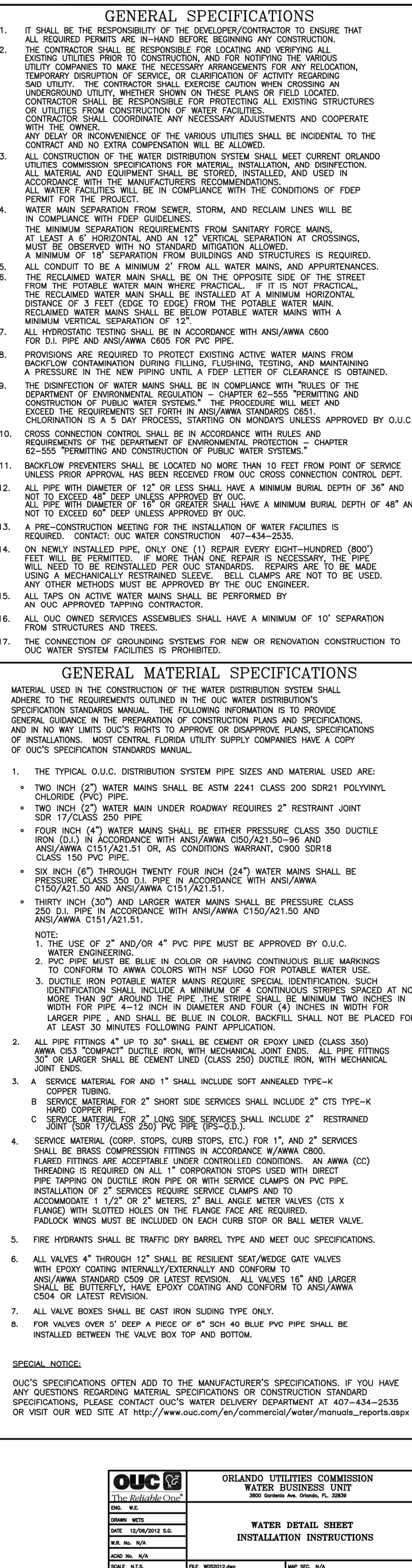
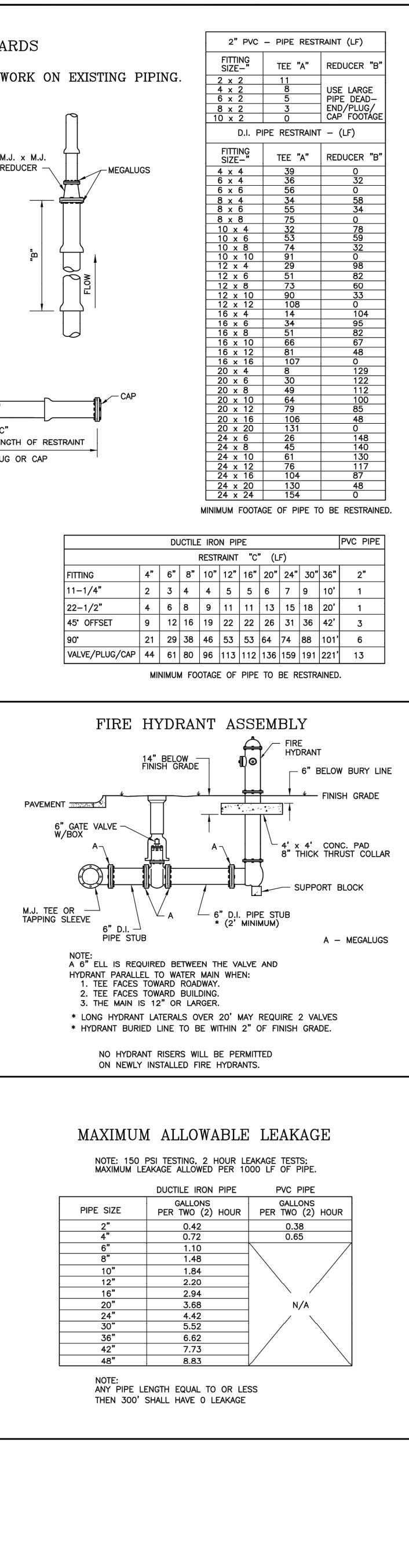
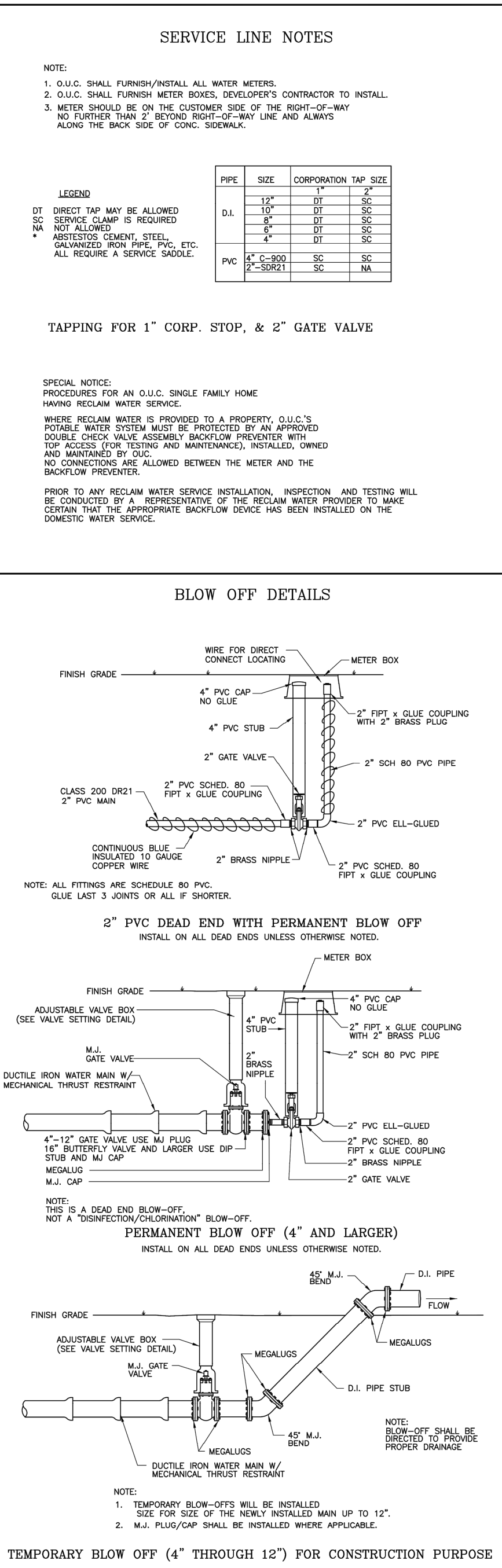
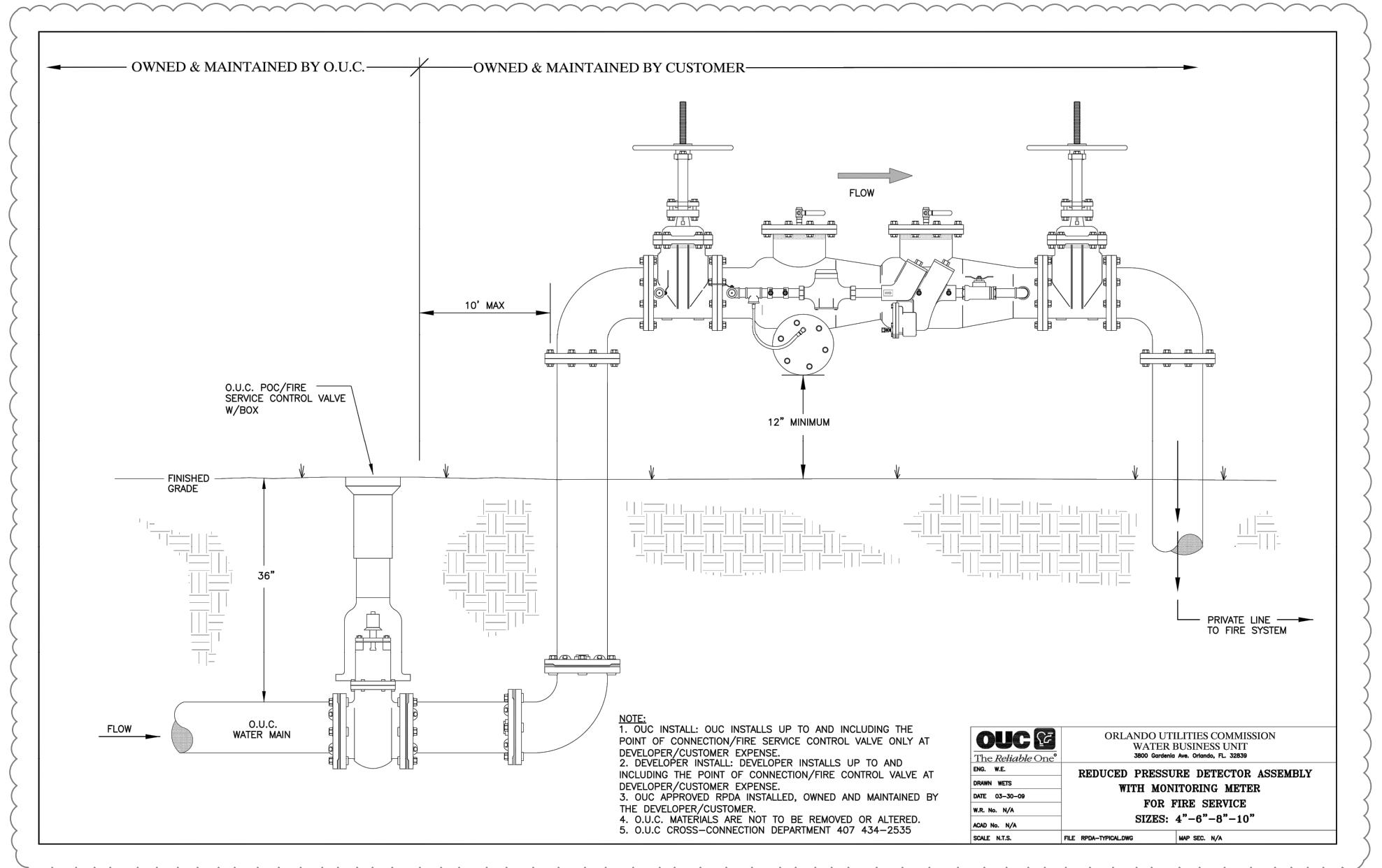


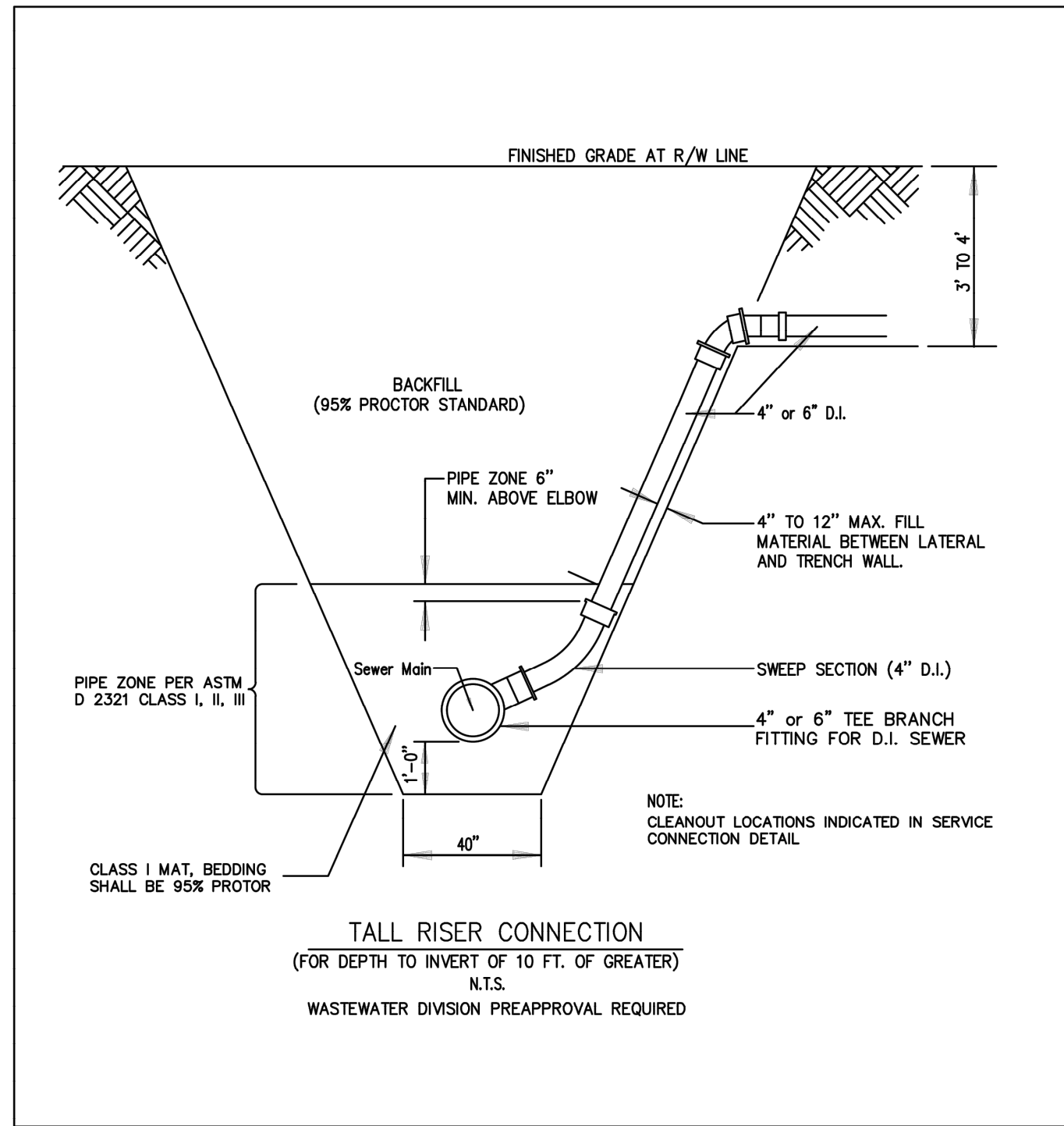
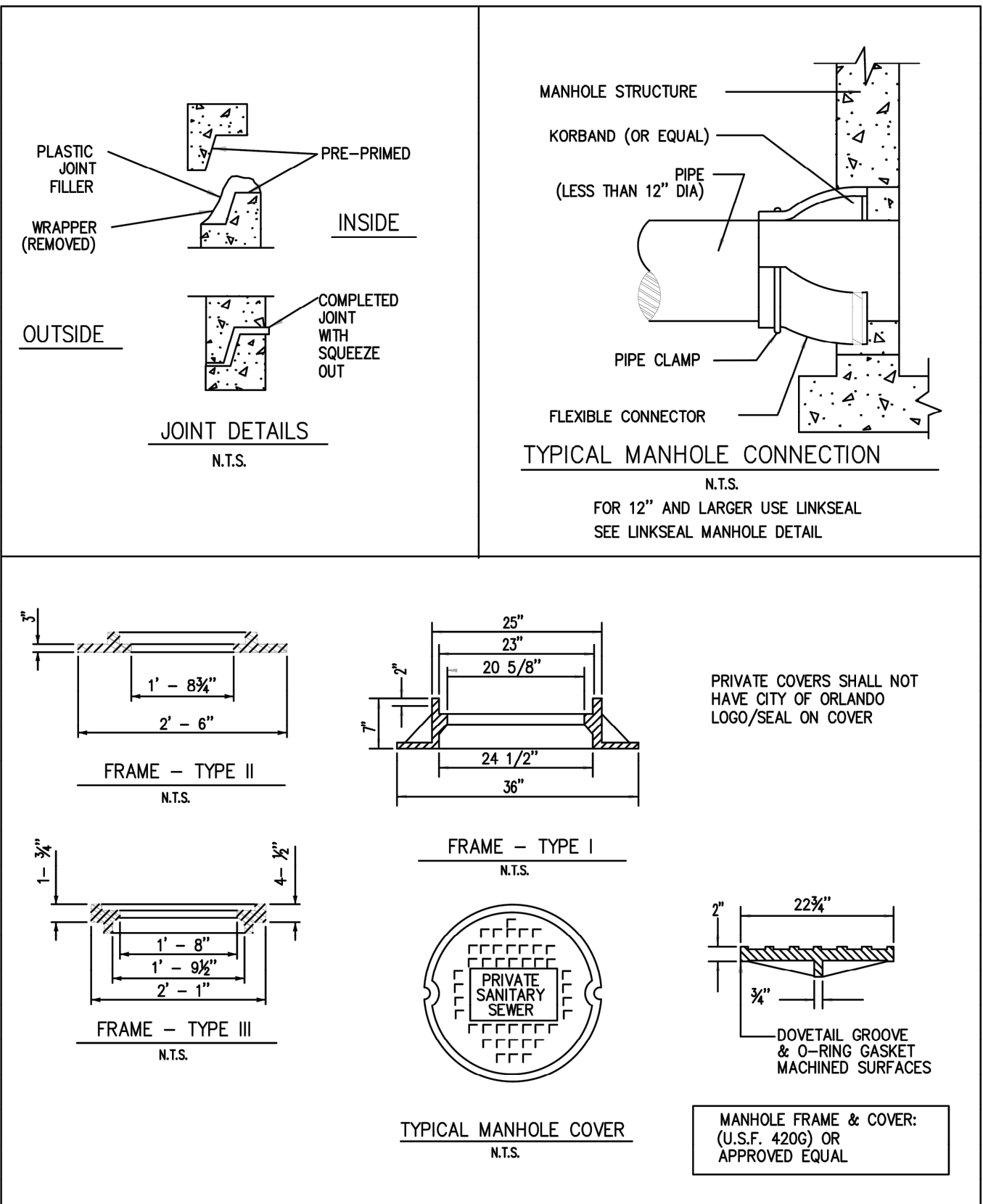
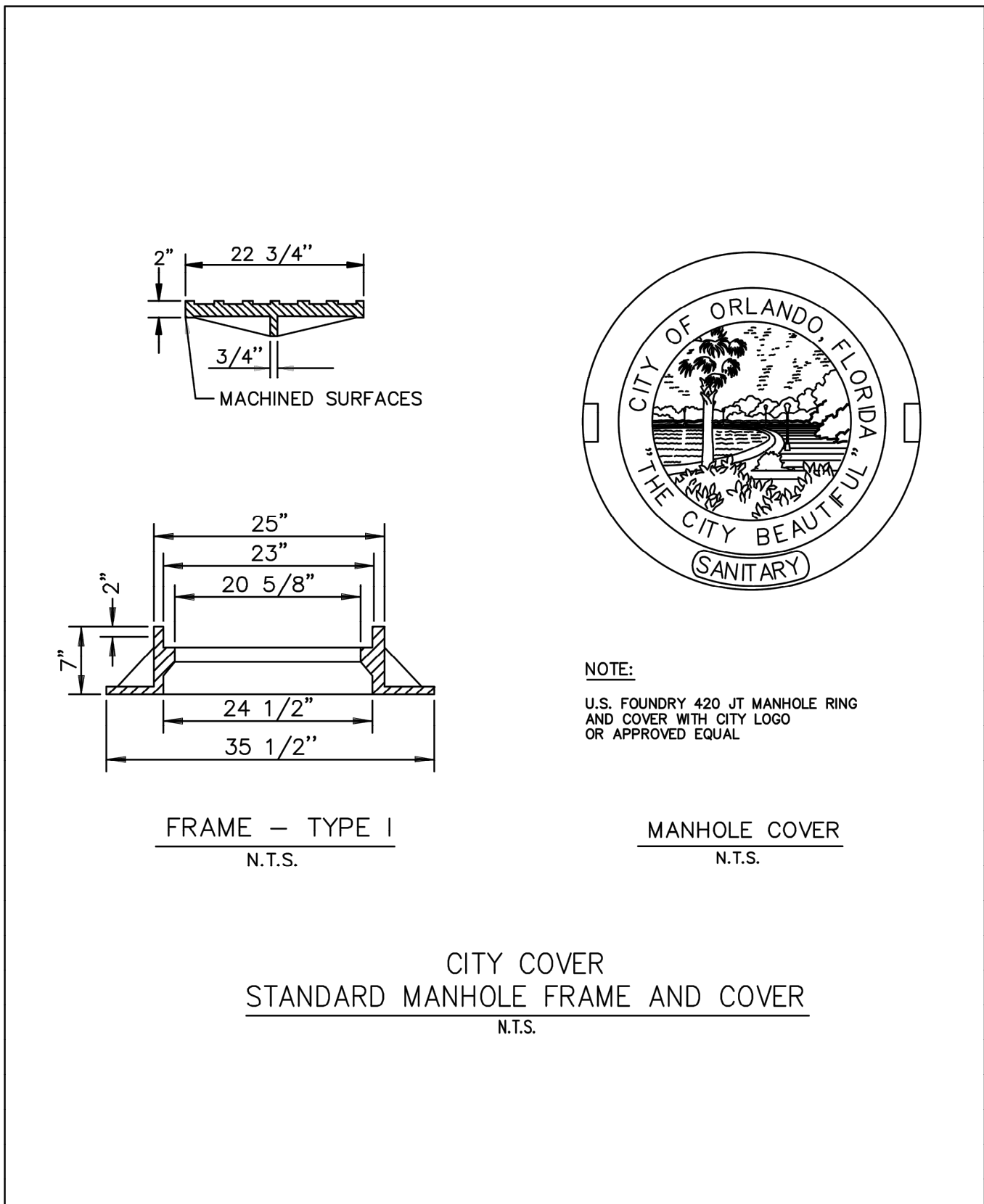
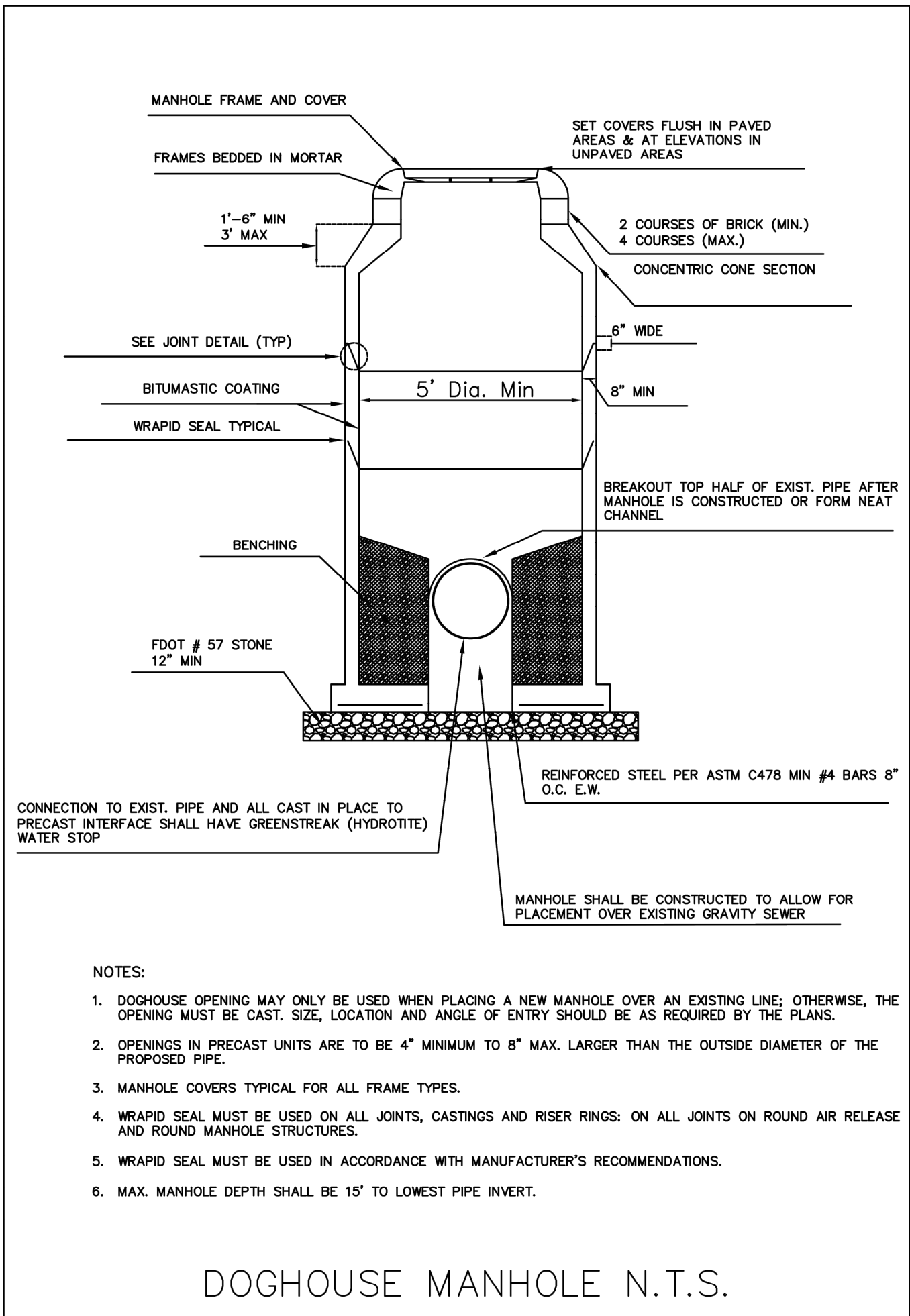
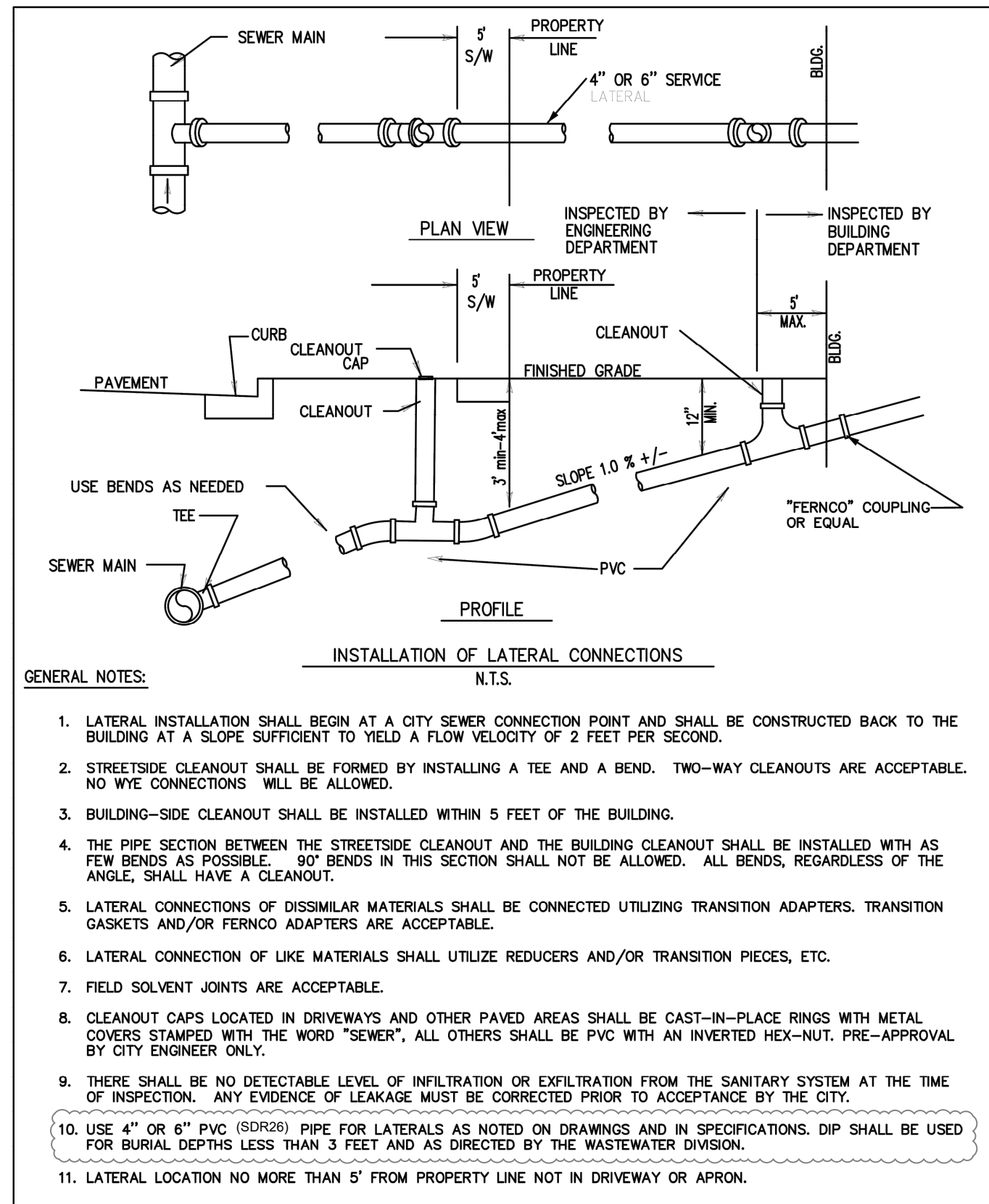
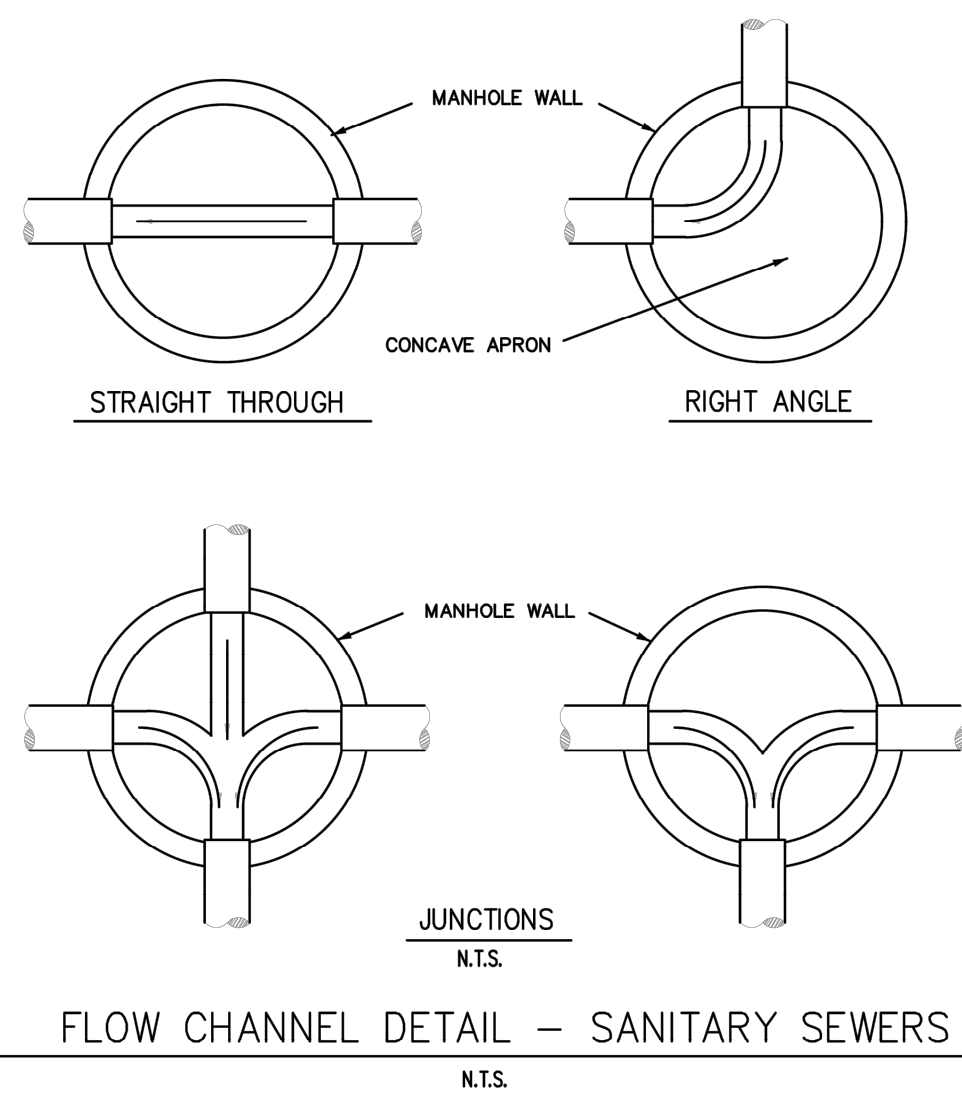
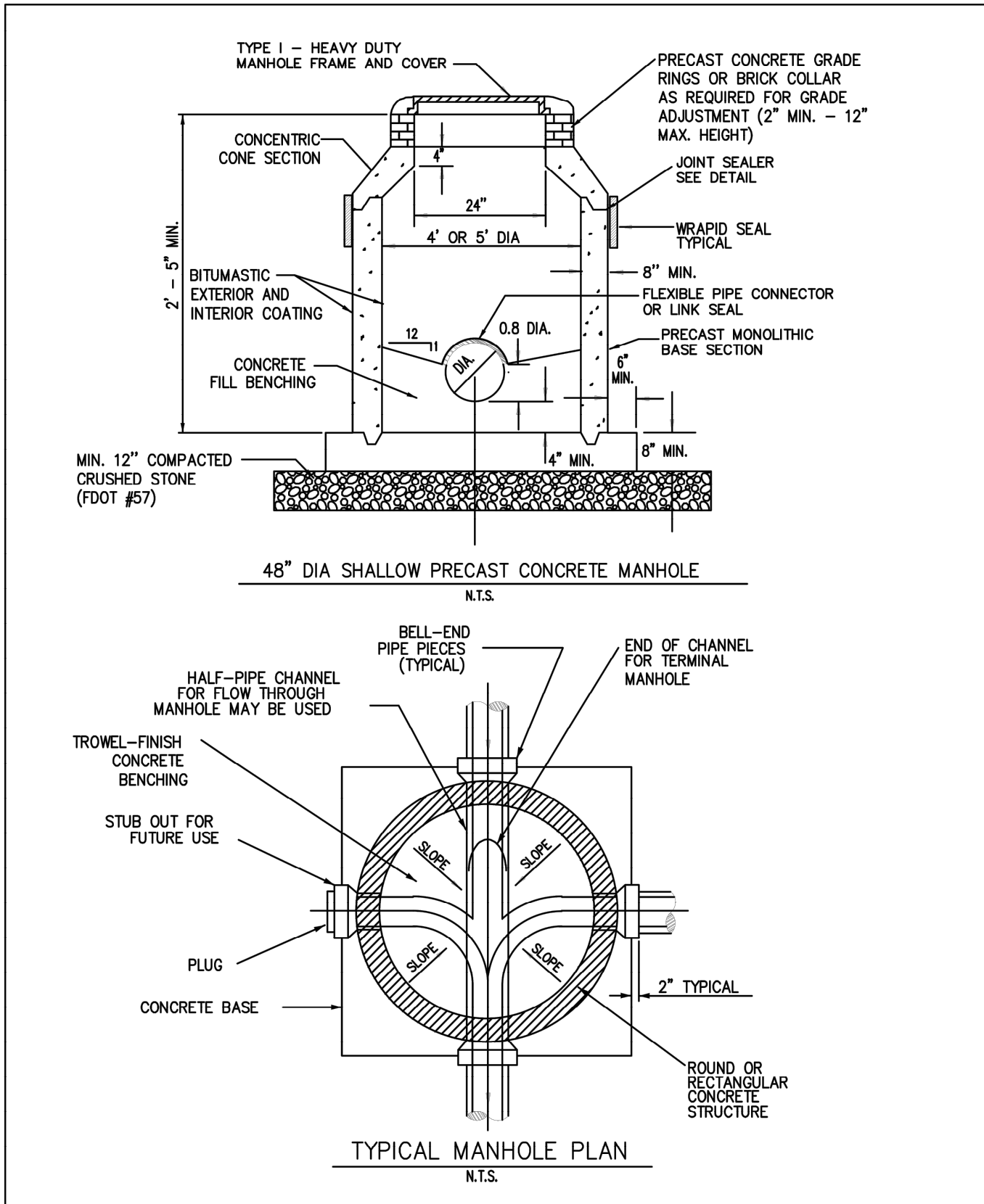
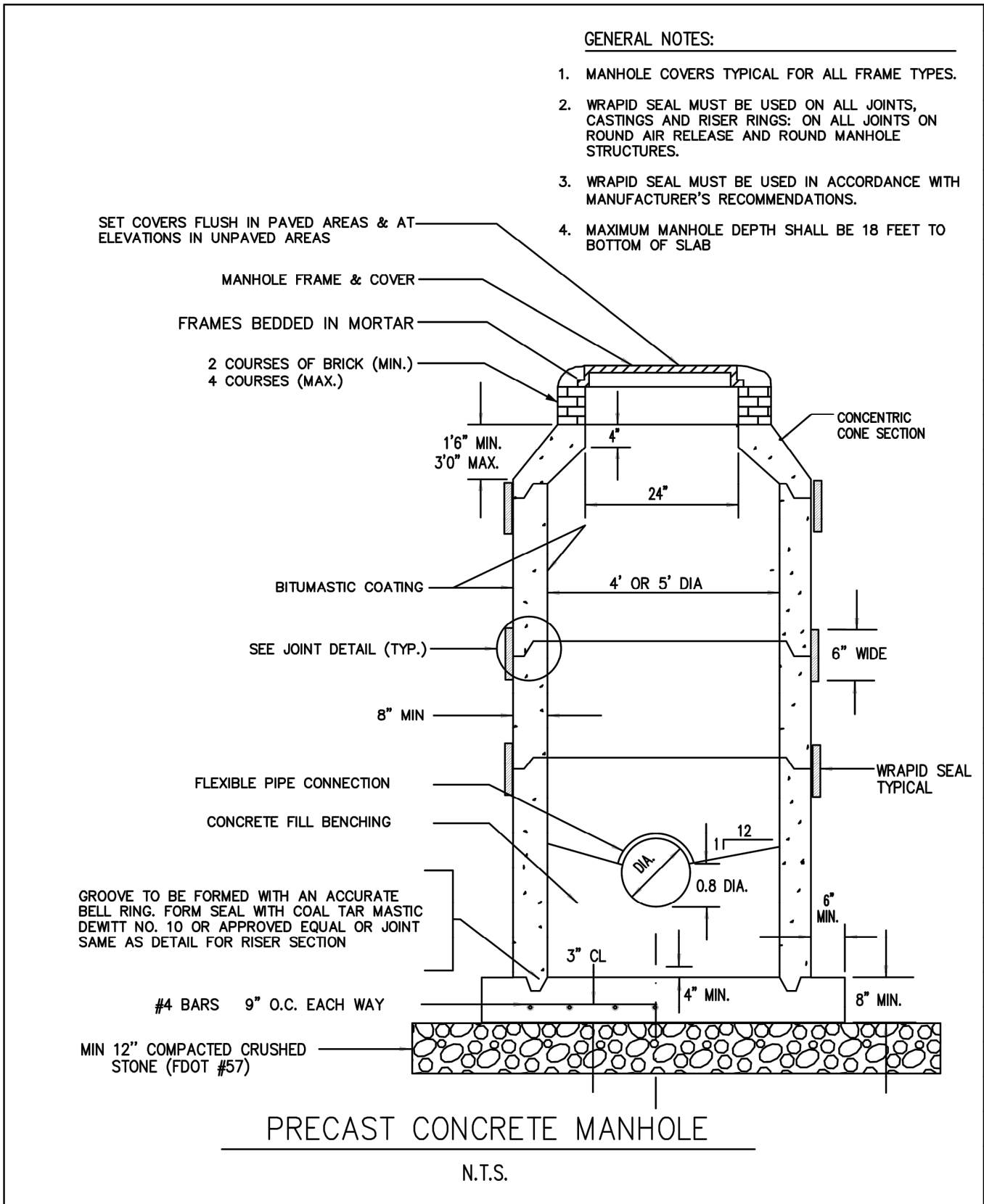
Operation and Maintenance Instructions for Stormwater Management System

(The notes below are not inclusive of all erosion and sediment control requirements. It is the responsibility of the contractor to comply with the full requirements of the Florida Erosion and Sediment Control Manual, latest edition.)

- The installation of temporary erosion control barriers shall be coordinated with the construction of the permanent erosion control features to the extent necessary to assure economical, effective and continuous control of erosion and water pollution throughout the life of the construction phase
- The type of erosion control barriers used shall be governed by the nature of the construction operation and soil type that will be exposed. Silty and clayey material usually require solid sediment barriers to prevent turbid water discharge, while sandy material may need only silt screens or hay bales to prevent erosion. Floating turbidity curtains shall be used in open water situations. Diversion ditches or swales may be required to prevent turbid stormwater runoff from being discharged to wetlands or other water bodies. It may be necessary to employ a combination of barriers, ditches and other erosion / turbidity control measures if conditions warrant.
- Inlet protection shall be included for all proposed stormwater inlets and any existing stormwater inlets within the project limits. Inlet protection shall be via geotextile fabric sandwiched between the inlet and the inlet frame and shall overlap the top edges of the inlet.
- Where pumps are to be used to remove groundwater or turbid waters from construction areas, the water shall be treated prior to discharge. Treatment methods include and are not limited to, turbid water being pumped into grassed swales or appropriate vegetated areas, sediment basins, or confined by an appropriate enclosure such as turbidity barriers, and kept confined until its turbidity level meets state water quality standards.
- The contractor shall schedule his operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposed, unprotected construction to the elements shall be as short as practicable. Clearing and grubbing shall be so scheduled and performed that grading operations can follow immediately thereafter, and grading operations shall be scheduled and performed that permanent erosion control features can follow immediately thereafter if conditions on the project permit.
- The contractor and/or owner's representative shall provide routine maintenance of permanent and temporary erosion control features until the project is complete and all bare soils are stabilized.
- Silt fence shall be located at the perimeter of construction limits, locations as shown hereon and at locations as defined by field conditions. Erosion control must be installed prior to starting construction and must be maintained throughout the duration of the project. An erosion control inspection is required prior to the start of construction. Contractor to contact City of Orlando to schedule an inspection.
- Inlet structures, pipes and stormwater basins shall be inspected for siltation accumulation every six months (minimum). Accumulated silt (greater than 3 inches) shall be removed.
- A stone stabilized pad shall be located at points of vehicular ingress and egress on the construction site. FDOT No. 1 Coarse Aggregate (1.5 - 3.5 inch stone) shall be used. The aggregate layer shall be at least 6 inches thick, and extend the full width of the vehicular ingress and egress area. The length of the entrance must be at least 50 feet. The entrance must widen at its connection to the roadway in order to accommodate the turning radius of large trucks. If conditions on the site are such that most of the mud is not removed by the vehicles traveling over the gravel, then the tires of the vehicles shall be washed before entering a public road. Wash water will be carried away from the entrance to a settling area to remove sediment. A wash rack may also be used to make washing more convenient and effective. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way.
- Sediment trap(s) shall be located to obtain the maximum storage benefit from the terrain, for ease of clean out and disposal of trapped sediment and to minimize interference with construction activities. Sediment shall be periodically removed from the trap and placed in approved areas, based on composition of the material. Sediment traps, along with other perimeter controls, shall be installed before any land disturbance takes place in the drainage area. The sediment trap shall have an initial storage volume of 134 cubic yards, or 3600 cubic feet per acre of drainage area, measured from the low point of the ground to the crest of the gravel outlet. Sediment should be removed from the basin when the volume is reduced by one-half. The maximum height of the sediment trap embankment shall be 5 feet as measured from the low point. Side slopes of the embankment shall be 2:1 or flatter. The outlets shall be designed, constructed and maintained so that sediment does not leave the trap and that erosion of the outlet does not occur. A trap may have several different outlets with each outlet conveying part of the flow. The combined outlet capacity shall be sufficient for the drainage area. The structure shall be checked regularly to insure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the outlet shall be checked to ensure that its center is at least one foot below the top of the embankment.
- Sediment basins shall be located so as to intercept the largest possible amount of runoff from the disturbed area, generally low areas and natural drainageways below disturbed areas. Drainage into the basin can be improved by the use of diversion dikes and ditches. The basin shall not be located in a live stream and shall be located to trap sediment-laden runoff before entering streams. The basin shall not be located where its failure would result in the loss of life, damage to adjacent properties, or interruption of the use of public utilities or roads. The design capacity of the basin shall be at least 134 cubic yards or 3600 cubic feet per acre of drainage area measured from the bottom of the basin to the crest of the principal spillway (riser pipe). Sediment should be removed from the basin when the volume of the basin has been reduced to 55 cubic yards per acre of drainage area. The elevation of the sediment clean out level shall be calculated and clearly marked on the riser. In no case shall the sediment clean out level be higher than one foot below the top of the riser. The embankment shall have a minimum top width of 8 feet. The side slopes shall be 2:1 or flatter. The embankment may have a maximum height of 10 feet if the side slopes are 2:1. If the side slopes are 2.5:1 or flatter, the embankment may have a maximum height of 15 feet. The outlets for the basin may consist of a combination of principal and emergency spillways or a principal spillway alone. Dewatering shall be done in a way that removes relatively clean water without removing any of the sediment that has settled out and without removing any appreciable quantities of floating debris. The embankment of the basin should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. Additionally, no offsite discharges are allowed during dewatering activities. The General Contractor shall furnish a specific dewatering plan as necessary.
- Equipment maintenance areas: exceptional care shall be taken during each individual repair or maintenance operation to prevent potential pollutants from becoming available to be washed into streams or conveyance systems. Temporary waste disposal receptacles shall be provided and emptied as required.
- Where construction materials, chemicals, cements, solvents, paints, or other potential water pollutants are to be stored, they shall be isolated in areas where they will not cause runoff pollution. Toxic chemicals and materials, such as pesticides, paints, and acids, shall be stored according to manufacturers' guidelines. Overuse shall be avoided and great care shall be taken to prevent accidental spillage. Containers shall never be washed in or near flowing streams or stormwater conveyance systems. Groundwater resources shall be protected from leaching by placing a plastic mat, tar paper, or other impervious materials on any areas where toxic liquids are to be opened and stored.
- Runoff from the construction trailer shall be diverted to a temporary sediment trap or basin.
- Location of the temporary construction trailer, construction material, debris pile, fuel storage, etc. shall be approved by the local municipality prior to the start of construction.
- Dust control measures shall be implemented and maintained throughout construction. Dust control measures shall be as approved by the City of Orlando.
- Dewatering is not anticipated.
- No excavating material shall be stockpiled in a manner as to direct runoff directly off the project site or into any adjacent water body or stormwater collection facility.
- All excess fill material will be hauled offsite.
- Inspections by the contractor to determine the effectiveness of erosion/sediment control efforts shall be conducted daily and within 24 hours after each 0.50 inch or greater rainfall event. Any necessary remedies shall be performed immediately.
- Sedimentation controls/BMPs shall prevent stormwater runoff with turbidity greater than 29 NTUs from leaving the construction site.







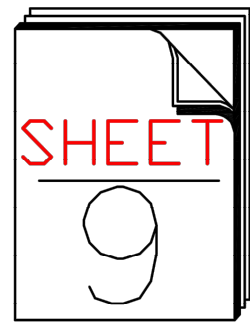
CITY OF ORLANDO, FLORIDA

DEPARTMENT OF PUBLIC WORKS

WASTEWATER BUREAU

CITY OF ORLANDO, FLORIDA

TITLE: SANITARY SEWER STRUCTURES



FILENAME:	CATEGORY:
DATE:	WASTEWATER
DRAWN BY:	SCALE:
DSG	N.T.S.
	APPROVED BY:
	RMH/CS

ENGINEERING STANDARDS MANUAL

The contractor shall verify control points for line and grade prior to construction.

2. Location, elevation, and dimensions of existing utilities, structures, and other features are shown in accordance with the best information available at time of the preparation of these plans but do not purport to be absolutely correct. All existing features are based on the Boundary, Topographic, Tree & Improvements Survey prepared by American Surveying, Inc., project No. 04001623, dated 4-23-23.

3. The contractor shall verify the location, elevation, and dimensions of all existing utilities, structures, and other features affecting his work and shall comply with all state, county, and local ordinances and obtain any necessary work permits that may be required prior to construction.

4. The contractor shall be responsible for the complete coordination of construction scheduling between the contractor and all utility agencies. The contractor shall adjust his schedule to coincide with other required utilities.

5. The engineer reserves the right to require quality assurance testing on all materials delivered to project.

6. In the event unsuitable material is encountered during excavation it is to be removed from the site except that it may be used to flatten slopes in areas approved by the engineers.

7. Overall cleanup shall be accomplished by the contractor in accordance with county standards or as directed by the engineer. Any and all expenses incurred for this work shall be included in the unit price bid for other items.

8. The contractor shall endeavor to protect private property. Any damage caused by the contractor in the performance of his work shall be corrected to the satisfaction of the engineer at the contractor's expense. Payment shall not be made for this work.

9. Any damage to state, county, or local roads caused by the contractor's equipment and operators shall be repaired by the contractor to the satisfaction of the engineer. Payment shall not be made for this work.

10. Any U.S.C. and G.S. Monument within limits of construction shall be protected by the contractor. If in danger of damage, the contractor shall notify:
Director, Charting & Geodetic Services
6001 Executive Blvd.
Atn. C172
Rockville, Maryland 20852
Phone: (301) 433-8319

11. Exterior sidewalks are to be constructed in County right-of-way as shown on these plans.

12. Wherever material or construction item specifications are not specifically covered by these plans, City of Orlando, or directed by the engineer, "the Florida Department of Transportation standard specifications for road and bridge construction" latest edition, shall apply.

13. All street and storm sewer construction to be in accordance with the current County standards and specifications.

14. Florida statute requires a minimum of 2 days and a maximum of 5 days notice before a contractor may excavate. The contractor shall call SUNSHINE 1-800-432-4770 before excavation shall commence.

15. Compaction for pipe backfill shall comply with AASHTO and City of Orlando unless otherwise noted.

16. All fill up to the spring line of the pipe must be hand tamped.

17. Contractor shall submit to the engineer and/or architect for review, 7 copies of shop drawings on bid items (fire hydrants, valves, pipes, inlets, manholes, pumps, control panels, light fixtures, plumbing fixtures, etc.). The contractor shall allow a minimum of 7 days for review of shop drawings. Approval of shop drawings is required prior to installation or construction. Substitution of specified items, if requested, will be evaluated by the project engineer.

18. It shall be the contractor's responsibility to notify (48 hours in advance) the engineer, utility company and regulatory agency for all inspections. It shall be the contractor's responsibility to supply results of all tests, in accordance with the testing schedule to the engineer prior to commencing the next phase. The tests required shall be performed by an independent testing laboratory approved by the owner and cost for the testing shall be paid for by the contractor and said cost will be included in the bid price.

19. The contractor shall contact the engineer's office immediately on any conflicts between what is shown herein and actual condition discovered during construction of any improvements shown on the drawings.

20. Prior to beginning work, the contractor shall expose all existing utilities to be extended or crossed. Any conflicts and the contractor's proposed resolutions shall be brought to the engineer's attention for approval.

21. All practicable effort shall be taken during construction to control and prevent erosion and transport of sediment materials to inlets, surface drains, wetlands and lake areas. The contractor shall be responsible for all restoration efforts that may be required. The silt fence shall be installed (as shown on these plans) and inspected as defined by the Florida Department of Environmental Protection rule 62-621.300(4), F.A.C.

22. It is the responsibility of the owner / developer to insure the installation of adequate erosion control barriers prior to the commencement of any site work. These erosion control devices must be maintained in good condition throughout the construction process and until all loose soils have stabilized. All erosion control devices shall be regularly inspected during construction and modified if conditions warrant.

23. The contractor is to control all fugitive dust originating on this project by watering or other methods as required.

24. All disturbed areas shall be seeded and mulched, unless otherwise noted, after regrading.

25. Contractor shall provide a (min.) 24 inch wide strip of sod adjacent to curb or pavement installations.

26. It is the responsibility of the contractor to establish in the field right of way lines, base lines, bench marks (elev.), center lines, and stationing as required to construct this project.

27. Contractor shall coordinate and reimburse the appropriate overhead utility company for required supply poles where construction may cause the pole to lose its self supporting ability.

28. Special pipe foundations, if required, shall be determined in the field and the type required will be as directed by the engineer.

29. Finished grade for ground elevations on drawings refer to grade after sod.

30. All tests shall be witnessed by the engineer and the utility company representative.

31. Proposed land alteration activities shall not unnecessarily remove existing vegetation or alter existing topography.

32. Site preparation and fill placement shall be performed in accordance with the recommendations and procedures specified in the geotechnical reports prepared by Intertek PSI, project No. 07573047, dated 5-18-23.

33. The Contractor shall protect all utilities and other improvements shown on these plans and all other and other improvements not shown. The Contractor shall assume all responsibility for repairs of utility and other improvements damaged during construction. The Contractor shall maintain sufficient protection to all utilities required to protect them from damage and to protect the public during construction. Any damage done to existing utilities shall be repaired by the contractor (at no additional expense) to a condition equal to or better than before the damage was done.

34. Relocation of existing street light poles, power or telephone poles, existing utilities, irrigation systems, sidewalks, etc., necessary for completion of the work are the responsibility of the Contractor.

35. Prior to construction, the Contractor shall obtain from the Engineer or Owner, a copy of all pertinent related to this project. It shall be the Contractor's responsibility to ensure that all construction activities in compliance with the conditions of all permits and approvals. It shall be the Contractor's responsibility to verify that all required permits have been secured to complete the work depicted in these plans. A copy of all permits shall be kept on site at all times during construction.

36.	All handicapped signages, ramps, accessible routes and related features shall conform to the Florida Accessibility Code for Building Construction (latest edition thereof) and the Americans with Disabilities Act, whichever is more restrictive. Should the contractor determine any of the foregoing is not in compliance with either document, he shall immediately notify the Engineer for guidance.
37.	It shall be the Contractor's responsibility to perform all necessary construction staking required to install the improvements shown on these drawings. Horizontal and vertical controls are shown on the boundary and topographic survey. Horizontal control shall be via an electronic file provided to the Contractor or his Surveyor. All documents, including original drawings, field notes, data and report originals are and shall remain the property of Planeng, Inc. as an instrument of service. If so requested in writing, the Contractor will be provided with reproducible drawings and other documents in consideration of which the Contractor agrees to use them without alteration solely in connection with the project.
38.	The Engineer shall be consulted to make any/all required interpretations of the plans; however, this in no way relieves the Contractor of his responsibility for constructing the project to accomplish the <u>intent</u> of the plans.
39.	Contractor to provide all warning signals, signs, lights, barricades, and flagman as required by applicable City, County or State regulations for construction adjacent to, or in public right-of-way.
40.	The Contractor shall notify the local Police Department and the local Fire Department before closing any street or making it impassable.
41.	It is suggested that the Contractor verify grading elevations prior to sodding or paving. Failure of inadequate grading may result in resodding, regrading, and repaving if finished grades are incorrect. All proposed elevations are finished grades. As-built elevations and dimensions shall be certified by a professional land Surveyor registered in the State of Florida.
42.	Refer to Building drawings for specifications of fill material underneath building pads, footers and etc.
43.	All private and public property affected by this work shall be restored to a condition equal to or better than existed before commencing construction unless specifically exempted by the plans.
44.	If during construction activities any evidence of historic resources, including but not limited to prehistoric or historic pottery, prehistoric stone tools, bone or shell tools, historic trash pits, or historic building foundation, are discovered, work shall come to an immediate stop and the Florida Department of Historic Resources (State Historic Preservation Officer) and City of Orlando shall be notified within two working days of the resources found on the site.
45.	All construction shall comply with the 2021 Florida Fire Prevention Code 5th Edition and the 2023 Florida Building Code, 8th Edition.
46.	The use of aerial photographs in these plans is for informational purposes only and does not constitute a guarantee of the veracity of said aerial photographs.
47.	Asphalt and/or concrete mix design(s) shall be reviewed by a Geotechnical Engineer.
48.	Lift station power requirements (including single/three phase availability) shall be the responsibility of the contractor; contractor shall notify the EOR once power source and pump are selected.
Asphalt Paving Notes	
Construction of asphalt paving shall be performed as follows:	
1.	The areas to be paved shall be graded to provide necessary drainage and shall slope away from structures.
2.	The subgrade shall be compacted to provide a minimum compacted density of 98% of maximum density as determined by modified proctor (ASTM subgrade).
3.	The surface shall be clean and dry. Prime coat shall be approved cutback asphalt (RC-70 or RC-90) and temperature when applied by means of a pressure distributor at the rate of approximately 0.1 to 0.25 gallons per square yard.
4.	An asphalt concrete analysis to guarantee compliance with County specifications shall be conducted by an independent laboratory and the final report submitted prior to final acceptance.
5.	All asphalt work shall conform to City of Orlando standards.
6.	All roadway construction (including pavement marking and signage) and material testing shall comply with roadway standards and specifications of the City of Orlando land development regulations.
7.	Base and backfill materials shall be either of the same type and composition as the materials removed, or of equal or greater structural adequacy. Material contaminated with deleterious substances during excavation shall not be used.
8.	The area of the trench above the pipe zone and below the base course must be backfilled and compacted in layers not exceeding twelve inches, except that the last two lifts shall not exceed six inches per lift.
9.	If roadway section has a shoulder, shoulder to extend eight feet from edge of pavement. Use LBR 30 (or better) back-fill material in top 24 inches of trench.
Bidding Notes	
1.	The contractor is to supply all construction stakeout and an as-built survey of project. The cost to prepare an as-built survey by a professional surveyor shall be included in the contractor's proposal. As-built shall consist of a complete set of record drawings prepared by a professional land surveyor and supplied by the contractor and shall include but not limited to: storm sewer system; inlets; manholes; piping locations; all pipe inverts; manhole and inlet tops; pipe inverts; roadway center line elevations; curb flow line elevations; and all design spot elevations expressly shown on the paving, grading and drainage plan. Owner's surveyor will supply horizontal and vertical controls, only.
2.	The information provided in these plans is solely to assist the contractor in assessing the nature and extent of conditions which will be encountered during the course of the work. The contractors are directed, prior to bidding to conduct whatever investigations they deem necessary to arrive at their own conclusion regarding the actual conditions that will be encountered, and upon which their bids will be based.
3.	The contractor is responsible for the coordination and cost of all required testing and inspections of the project. Contractor shall notify owner and engineer of all inspection requested from City of Orlando, DEP or SWFWMD, as appropriate, 24 hours prior to request. The contractor shall invite the owner and the engineer to all scheduled inspections by any reviewing agency.
4.	Questions on quantities, quality, or materials which could change the contract price should be brought to the attention of the engineer prior to bidding. All questions will be answered and copied to all bidders.
5.	The contractor shall contract with and direct a local testing laboratory for all required on site tests such as: concrete strength, slump, densities, or for roadbeds, etc. Copies of all tests shall be sent to the engineer and owner within 72 hours of the tests.
6.	The compaction of all lots in phases shall be tested at varying depths. The compaction testing of lots shall be performed on 1/4 of the lots at locations selected by the engineer. All lot fill shall meet 95 percent of the modified proctor.
7.	All slopes 4:1 or greater shall be sodded.
8.	Contractor shall supply all of the equipment, material and personnel required for all testing.
9.	Contractor shall be responsible for the engineer's cost(s) of re-inspections.
As-Built Notes	
1.	The General Contractor shall be responsible for providing as-builts in accordance with the local municipal, water management district and other AHS.
2.	In addition to the above, the as-builts shall include other information designated by the Engineer of Record.
3.	If the Engineer of Record has not furnished the General Contractor with as-built requirements 10 (ten) weeks prior to the scheduled CO/TCO/CO date, the contractor shall immediately request said requirements no later than nine (9) weeks prior to the anticipated CO/TCO/CO date.
4.	For utilities, at a minimum, as-built information shall include data on pipe locations, sizes and materials. Said data SHALL be collected prior to pipes being covered and/or trenches backfilled.
5.	For stormwater, at a minimum, as-built information shall include pipe locations, sizes and materials. Said data SHALL be collected prior to pipes being covered and/or trenches backfilled.
6.	The collection of the data specified in note 4 and/or 5 does not relieve the General Contractor from collecting additional data as may be required by the AHS.

ITEM	TEST	TEST IDENTIFICATION	TEST REQUIREMENT	TEST FREQUENCY
EMBANKMENT	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T99 ASTM D1557		PER SOL TYPE
	FIELD DENSITY	AASHTO T191, T204, T208 ASTM D1556, D2937, D5922	90% OF MAXIMUM DENSITY, WITHIN 2% PERCENTAGE POINTS OF OPTIMUM MOISTURE	ONE PER 100 L F HORIZONTALLY ALTERNATING LIFTS (1 FT)
BACKFILL OF STRUCTURES	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	PER SOL TYPE
	FIELD DENSITY	AASHTO T191, T204, T208 ASTM D1556, D2937, D5922	98% OF MAXIMUM DENSITY	EVERY 2' VERTICALLY
ROADWAY SUBGRADE	BEARING VALUES	LB/F.C.I. D.O.T.	LB/80+ MIN	ONE PER SOL TYPE CHECK POINT LBR AT 500 L F. HORIZONTALLY
	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	ONE PER SOL TYPE
	FIELD DENSITY & THICKNESS	AASHTO T191, T208 ASTM D1556, D2937, D5922	98% OF MAXIMUM DENSITY	ONE PER 100 L F HORIZONTALLY
BUILDING PADDS	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	PER BUILDING PAD
	FIELD DENSITY	AASHTO T191, T204, T208 ASTM D1556, D2937, D5922	90% OF MAXIMUM DENSITY	AS DIRECTED BY SOLS ENGINEER
BASE/PAVEMENT (LIMESTONE, SHELL OR CRUSHED CONCRETE)	BEARING VALUES	LB/F.C.I. D.O.T.	100% LB/F.C.I. D.O.T.	ONE PER SOURCE OR AS MATERIAL CHANGES Ck. PT. LBR AT 500 L F. HORIZONTAL
	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	ONE PER SOURCE
	THICKNESS	AASHTO T191, T208 ASTM D1556, D2937, D5922	98% OF MAXIMUM DENSITY	ONE PER 100 L F HORIZONTALLY
	FIELD DENSITY, GRADATION	AASHTO T191, T208 ASTM D1556, D2937, D5922	PER SPECIFICATIONS	ONE PER SOURCE
SOIL CEMENT BASE	ATTENERS LIMITS	ASTM C136, D424, D424	N/A	ONE PER SOURCE
	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T134 ASTM D1557	N/A	ONE PER SOL TYPE MIN. 10' ONLY
	COMPRESSIVE STRENGTH SPECIMENS	PORLAND CEMENT ASSOC. SPECIFICATIONS	300 PSI AT 7 DAYS	ONE SET PER SOL TYPE DAILY
	FIELD DENSITY & THICKNESS	AASHTO T191, T208 ASTM D1556, D2937, D5922	90% OF MAXIMUM DENSITY	ONE PER 100 L F HORIZONTALLY
ASPHALTIC CONCRETE	MATERIALS QUALITY			PER F.D.O.T. SPECIFICATIONS
	BITUMEN CONTENT GRADATION	AASHTO T184, T204 ASTM D5127	PER FOOT SPECIFICATIONS	ONE PER DAY
	FIELD DENSITY	ASTM D2950-81	96% OF LAB DENSITY	ONE PER 100 L F HORIZONTALLY
	THICKNESS	N/A	PER SPECIFICATIONS	ONE PER 100 L F
CURB & ROADWAY CONCRETE	SUMP TEST	ASTM T119-82 ASTM C143	PER SPECIFICATIONS	AS DEEMED NECESSARY BY SOLS ENGINEER. TESTS MAY BE DONE BY SOLS ENGINEER OR HIS REPRESENTATIVE.
	COMPRESSIVE STRENGTH CYLINDERS	ASTM T22-80 ASTM C31-69	N/A 3000 PSI @ 28 DAYS	ONE SET OF 4 CYLINDERS FOR 500 SQ. YARD OF PAVEMENT THEREOF PER DAY INCLUDES ONE SLUMP TEST

3. Existing above ground utility locations are based on information prepared by a licenses surveyor (as depicted on the attached survey). It is the Contractor's responsibility to verify the elevations and locations before any excavation. The Contractor shall be responsible for identifying and locating all existing utilities to prevent any conflicts and/or discrepancies [greater than one (1) ft. horizontally or one tenth of a foot (0.10") vertically] to the Engineer so that he may make any necessary revisions. The Contractor shall locate and expose all existing utilities to be connected sufficiently ahead of construction to allow redesign by the Engineer if such utilities are found to be different than shown on these plans.
2. Locations of all existing utilities shown on the plans have been determined from the best information available and are given for the convenience of the Contractor. The Engineer assumes no responsibility for their accuracy. Prior to any start of construction activity, it shall be the Contractor's responsibility to call SUNSHINE and to notify various utilities to make necessary arrangement to any relocation of these utilities with the owner of the utility. The Contractor shall exercise caution when crossing the underground utilities, whether shown on the plans or located by the utility company. All utilities which interfere with the proposed construction shall be relocated by the respective utility company and the Contractor shall cooperate with them during relocation operations.
3. All new or altered piping, including treatment plant processing piping and appurtenances conveying finished drinking water, shall be designed and constructed in accordance with Sections 8.0 through 8.5 and 8.7 through 8.11 in Recommended Standards for Water Works as incorporated into Rule 62-555.330, F.A.C., except that:
 - 3.1 Asbestos cement water mains shall be pressure and leakage tested in accordance with American Water Works Association(AWWA) standard C603 as incorporated into Rule 62-555.330, F.A.C., and polyvinyl chloride water mains shall be pressure and leakage tested in accordance with AWWA Standard C605 as incorporated into the Rule 62-555.330, F.A.C. while all other types of water mains shall be pressure and leakage tested in accordance with AWWA Standard C600 as incorporated into the Rule 62-555.330 F.A.C

WATER LINE PRESSURE TEST PROCEDURE:

- A. Tests shall be conducted at 150 psi (Min.) for two hours except for fire lines, which shall be conducted at 200 psi (Min.).
- B. Contractor shall pretest lines prior to calling Engineer to witness test.
- C. Pump-up point and blow-off point shall be located at opposite ends of the line being tested.
- D. The Contractor shall pump-up each line to be tested individually and leave pump connected to line. Pump shall be connected to open drum or bucket. During pump-up, the Contractor shall leave the blow-off valve open until water flows from valve under pressure of pump. Contractor shall then begin closing blow-off valve SLOWLY to minimize trapped air. DISCONNECTION OF PUMP FROM PUMP-UP POINT PRIOR TO COMPLETION OF TEST WILL VOID TEST.
- E. Leakage volumes will be calculated from open drum or bucket only.
- F. All costs associated with retesting/reinspection shall be borne by the Utility Contractor. Minimum charge for each retest/reinspection shall be \$700.00. Charge shall be paid to Engineer prior to any retesting/reinspection.

- 4. All water mains and appurtenances other than those that normally convey surface water, or ground water under the direct influence of surface water, and that are located upstream of all filtration and disinfection treatment facilities, shall be disinfected and bacteriologically evaluated in accordance with Rule 62-555.340, F.A.C.

5. Contractor shall install all lines such that the bells of pipes do not coincide with pipe crossings.
6. Backflow prevention assemblies/devices shall be provided in accordance with Rule 62-555.360 and the AWWA's manual M14, "Recommended Practice for Backflow Prevention and Cross-Connection Control".

8. All new water services and plumbing shall be in conformance with the State plumbing code, fire & building codes (including portion of potable & fire lines from the check valves to the building) and contain no more than eight (8) percent lead. All solder and flux shall contain no more than 0.2 percent lead.
9. All new water main pipe, valves, fittings, and fire hydrants shall be in conformance with applicable AWWA standards and shall contain no more than eight percent lead. All packing and joint materials used shall be in conformance with applicable AWWA standards.
10. All backflow prevention assemblies will be installed in accordance with the manufacturer's installation instructions and the following requirements:
 - 9.1. Pipe lines should be thoroughly flushed to remove foreign material and debris before installing the assembly.
 - 9.2. If not already provided, shutoff valves should be installed at each end of the assembly for testing and servicing purposes. Only resilient type shutoff valves (ball valves, resilient wedge/seat gate valves, etc.) will be accepted on backflow prevention assemblies in accordance with national standards.
 - 9.3. The assembly should be placed in the horizontal position unless otherwise specified by manufacturer's instructions.
 - 9.4. The assembly should always be installed in an accessible location to facilitate testing and servicing.
 - 9.5. The assembly should be installed at least 18 inches above ground or maximum flood level, whichever is highest, in order to prevent any part of the assembly from becoming submerged.
 - 9.6. Assemblies installed in modified pits should have at least 2 feet of clearance on each side of the assembly to facilitate testing and servicing. Adequate drainage should be provided.
 - 9.7. The relief valve should never be plugged or solidly piped into the drainage ditch, sewer, or pump. The relief valve discharge pipe should be terminated a minimum of 12 inches above ground or maximum flood level and located so it is clearly visible and accessible.
 - 9.8. The assembly should be adequately supported to prevent it from sagging.
 - 9.9. The assembly should be approved by or meet the standards of the SBCC Standards Plumbing Code (ASSE Standard #1103) or AWWA Standard #506-78.
11. All PVC water lines shall be wrapped with a #12 tracer wire & studded at each end in accordance with City/County requirements.
12. All proposed 8" PVC sanitary sewer lines shall be SDR26 PVC (green) and installed by an appropriately licensed contractor. The lines will need to be lamped.
13. All public water system components, excluding fire hydrants, that will be installed under this project and that will come into contact with drinking water will conform to NSF International Standard 61 as adopted in Rule 62-555.335, F.A.C., or other applicable standards, regulations, or requirements referenced in paragraph 62-555.320(3)(b), F.A.C.; [F.A.C. 62-555.320(3)(b), exceptions allowed under FAC 62-555.320(3)(d)]
14. All pipe and pipe fittings installed under this project will be color coded or marked in accordance with subparagraph 62-555.320(1)(b)3, F.A.C., using blue as a predominant color. (Underground plastic pipe will be solid white blue pipe, will have a co-extruded blue external skin, or will be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe will have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe will have continuous stripes that run parallel to the axis of the pipe, that are located no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint will be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipe with an internal diameter of 24" or greater, tape or paint will be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Above ground pipe will be painted blue or will be color coded or marked like underground pipe.) [FAC 62-555.320(1)(b)3]
15. Appropriate deflection tests shall be made for all flexible pipe. Testing is required after the final backfill has been in place for 30 days to permit stabilization of the soil-pipe system. Testing requirements specify: 1) no pipe shall exceed a deflection of 5%; 2) using a rigid ball or mandrel for the deflection test with a diameter of not less than 95% of the base inside diameter or average inside diameter of the pipe, depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured; and 3) performing the test without mechanical pulling devices. [RSWF 33.85]
16. Leakage tests: 1) the leakage exfiltration or infiltration does not exceed 0 gallons per inch of pipe diameter per mile per day for any section of the system; 2) exfiltration and infiltration tests performed with a minimum positive head of 2 feet; and 3) air tests, as a minimum, shall conform to the test procedure described in ASTM C-828 for clay pipe, ASTM C 924 for concrete pipe, ASTM F-1417 for plastic pipe, and for other materials appropriate test procedures. [RSWF 33.93, 33.94 and 33.95]
17. A bench shall be provided on each side of any manhole channel when the pipe diameter(s) are less than the manhole diameter and no lateral sewer, service connection, or drop manhole pipe discharges onto the surface of the bench. [RSWF 34.5]
18. a) manhole lift holes and gate adjustment rings shall be sealed with non-shrinking mortar or other appropriate material; b) inlet and outlet pipes shall be joined to the manhole with a gasketed flexible watertight connection or another watertight connection arrangement that allows differential settlement of the pipe and manhole wall; and c) watertight manhole covers shall be used wherever the manhole tops may be flooded by street runoff or high water. [RSWF 34.6]
19. Manhole inspection and testing for watertightness or damage shall be performed prior to placing manhole into service. Air testing, if specified for concrete sewer manholes, shall conform to the test procedures described in ASTM C-1244. [RSWF 34.9]
20. New or relocated underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer, storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed gravity-type sewer (or a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer if the bottom of the water main will laid at least six inches above the top of the sewer); a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed on-site sewage treatment and disposal system." [FAC 62-555.314(1), exceptions allowed under FAC 62-555.314(5)]
21. New or relocated underground water mains, that will cross any existing or proposed gravity or vacuum-type sanitary sewer or storm sewer, will be laid so the outside of the water main is at least six inches above the other pipeline or at least twelve inches below the other pipeline; and new or relocated underground water mains that will cross any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water will be laid so the outside of the water main is at least twelve inches above or below the other pipeline. [FAC 62-555.314(2), exceptions allowed under FAC 62-555.314(6)]
22. At the utility crossings described in Note 20 above, one full length of water main pipe will be centered above or below the other pipeline so the water main joints will be as the pipes will be arranged so that all water or far as possible from the other pipeline main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying regulated under Part III of Chapter 62-610, F.A.C. [FAC not reclaimed water 62-555.314(2), exceptions allowed under FAC 62-555.314(6)]
23. Pavement restoration shall be carried out in accordance with the requirements of the authority having jurisdiction.
24. The Contractor shall coordinate with the power company for size and location of electrical service components.
25. The Contractor shall coordinate with the local telephone company for service.
26. The Contractor shall coordinate with local gas company for service.
27. All new water main pipe, valves, fittings, and fire hydrants shall be in conformance with applicable AWWA standards and shall contain no more than eight percent lead. All packing and jointing materials used shall be in conformance with applicable AWWA standards.
28. The location of all newly installed fire hydrants shall be identified with a blue reflective pavement marker installed on the roadway, perpendicular to the fire hydrant. The reflective marker will be located in the center of the lane closest to the hydrant.
29. The contractor will be responsible for the flow testing and color coding of all newly installed fire hydrants in the existing or proposed City of Tampa right-of-way and utility easements that are to be dedicated to City of Tampa prior to the final inspection of the project. The contractor shall refer to NFPA Standard 291 for flow testing and color coding methods and procedures.