

City of Rockledge Public Works Department Technical Specification Effective Date: January 22, 2019



SCOPE:

These specifications are to assist the Design Engineer, Developer and Contractor in work and methods approved by the City of Rockledge. All work is to be done at no cost to the City of Rockledge.

The aforementioned are responsible for:

- All permits, licenses and fees for projects constructed including all tests.
- Complete Coordination with all utility companies involved.
- Compliance with any and all governing agencies involved.
- Relocation, extension, enlargement or refurbishment of any impacted areas of service in or out of the City of Rockledge.

MATERIALS:

A. DRAINAGE PIPING:

- Minimum sized piping shall be 18" or equivalent elliptical size and 24" on collector roads.
- Reinforced concrete pipe (RCP) shall meet or exceed the standard specifications designated by the American Society of Testing and Materials (ASTM—C685), free of honeycombs, exposed steel or bleed through from reinforcing, and smooth finish at bell and spigot ends.
- Polyethylene smooth inner double walled pipe shall meet or exceed the standard specifications designated by ASTM—D3350, free of defects before proceeding with installation.
- Aluminum pipe shall meet or exceed the standard specifications designated by ASTM—B745, free of dents and gouging. Aluminum piping may require arching for load bearing areas as determined by the Design Engineer and the City of Rockledge.
- All joints shall be wrapped with filter media.
- Aluminum or Galvanized Safety Bars shall be placed on pipe and miter end sections of 24" and larger in all ditches. Pipe ends at ponds may also require Safety Bars as determined by the City of Rockledge.
- Outfall end run to ditches and ponds shall have a concrete mitered end section, 6-inch thick slab with rounded upper corners, and a 2ft x 2ft steel reinforced concrete footer under the end of the pipe. Safety Bars placed on pipe and mitered end section slabs are to match the bank slopes, with appropriate erosion resistance fasteners and control measures.

B. DRAINAGE STRUCTURES

- All drainage structures shall meet specific planned use as determined by Design Engineer and the City of Rockledge.
- All catch basins, inlets or manhole structures shall be of precast reinforced concrete type unless otherwise approved.
- All structures shall meet or exceed the standard specifications as designated by the American Society of Testing and Materials (ASTM C-478 & C-913) 4000 PSI concrete.
- All structures shall be free of defects such as cracking, honey combs and exposed steel reinforcing including bleed through.
- Shop drawings shall be submitted before ordering material for planned project. Correspondence shall be between the Design Engineer and the City of Rockledge.

C. OUTFALL STRUCTURES:

- Outfall structures shall include aluminum skimmers, weir devices, weep holes and draw down systems as determined by Design Engineer and the City of Rockledge.
- Hardware to attach devices to outfall structures shall be stainless steel.

D. MANHOLE COVERS & GRATES

- Manhole frames, covers, and grates shall meet specific planned use as determined by Design Engineer and the City of Rockledge.
- Manhole frames and covers shall be of cast iron materials, free from cracks, holes or cold shuts. Frames and covers shall conform to a minimum standard of USF 1260 series or equivalent with covers stating "Storm Sewer".
- Frame and Grates shall be of cast iron materials, free from cracks, holes and cold shuts. Frames and grates shall conform to a minimum standard of USF 4160-6210 or equivalent.
- Throat inlet shall be used exclusively where practical as determined by the design engineer and the City of Rockledge. Pre-cast FDOT approved and accepted throat inlet may be used providing they are manufactured with two (2) concrete support posts in the throat.
- A 3' (foot) transition shall be utilized from the top of inlet to back of curbs.

SIDEWALKS:

- Concrete shall be 6" thick, 3000 PSI with wire mesh 6" O.C., 10/10 gauge or fiber mesh in driveways, between the property line and the curb. Expansion joint material (wood is not acceptable) shall be placed around all four sides of the sidewalk area.
- All other walks shall be 6" thick, 3000 PSI concrete at a width of 5' in residential areas, 5' in commercial areas and installed 6" outside of right of way line, with a minimum 1/4" per foot slope toward the street.
- Control (construction) joints shall be at 5' intervals and expansion joint material shall be placed every 75 - 80 feet at a 5' interval.
- Wheelchair ramps shall be installed at intersections of crossroads as determined by Design Engineer or the City of Rockledge. A 3' transition shall be made from curb and gutter sections each side.
- All sidewalks are to be broom finished.
- Fire hydrants shall be placed 3' away as a standard procedure.

DUMPSTER PADS / ENCLOSURES:

- Dumpster pads shall be sized to residential units as determined by the City of Rockledge. Residential Units shall not exceed 16 units per 6 yard dumpster.
- All dumpster pads are to accommodate a 6 yard dumpster size:
 - New construction: Pad shall be 12' (feet) in width, inside dimension, and 16' (feet) in total length.
 - Existing facility: Pad dimensions to be adjusted, as necessary, with approval by the City of Rockledge.
 - Recycling bins in enclosure will require an additional pad width of 5' (feet) for a minimum width of 17' (feet).
- Pad shall be constructed of 3000 PSI concrete, 6" (inches) thick with wire mesh - 6" (inches) on center, 10/10 gauge or fiber mesh.
- Enclosure to be three-side screening 6' (feet) in height:
 - New construction: To be constructed of concrete block and finished in a like manner as the facility it serves.
 - Existing facility: To be constructed of concrete, PVC, or chain link with slats.
- Turning radii for sanitation vehicles shall be as follows:
 - 90° - minimum clear distance to structure will be 65' (feet).
 - 45° - minimum clear distance to structure will be 45' (feet).
- Bollards will be 6" (inch) galvanized pipe filled with concrete. They will be placed at the front corners of walls and in front of the rear wall.
- If commercial enclosure is gated, the following apply:
 - Gates are to be 6' (feet) in height, with casters and lock pins, and anchor holes
 - Gates are to be attached to 6' (foot) high front bollards and designated to open past 90°
 - Gate Material shall not be wood

ROADWAYS:

Roadways shall be classified in the following categories, including specified widths:

- Local Roads, including subdivision roads - 26' (feet) including 2' (foot) curb & gutter sections.
- Collector and Commercial Roads - 28' (feet) including 2' (foot) curb & gutter sections.
- Highway and Arterial - 50' (feet) including 2' (foot) curb and & gutter sections.

Construction of Roadways and Specific Criteria:

- High ground water table not to exceed 6" (inches) below stabilized sub base.
- Sub-grade to be clear of stumps, roots or any organic materials for a depth of 2' (feet) below this established grade. Sub-grade compaction shall be 100% as per AASHTO T-310 method 1' (foot) below the established grade.
 - Backfill material to be tested in one (1) foot lifts at 98% density every 200 feet or where determined necessary.
- Local roads, including subdivision roads:
 - Top 4" (inches) of sub grade shall be mixed with 4" (inches) of lime-rock or coquina rock FDOT approved by mechanical means creating a stabilized sub base of 8" (inches) meeting LBR of 50 and 98% compaction, AASHTO T-310 Method every 200 feet staggered lanes or where determined necessary
 - Base material shall be of lime-rock or coquina rock and placed 6" (inches) thick with an LBR of 100 & 98% compaction.
 - Curb areas to have densities of 98% compaction under curbs every 200 feet staggered lanes or where determined necessary.
- Commercial or Collector Roads:
 - Top 6" (inches) of sub grade shall be mixed with 6" (inches) of lime-rock or coquina rock FDOT approved by mechanical means creating a stabilized sub base of 12" (inches) meeting a LBR of 50 & 98% compaction.
 - Base material shall be of lime-rock or coquina rock and placed 8" (inches) thick with a LBR of 100 & 98% compaction.
- Prime tack coat with a sand seal or 3% seal coat shall follow after proper grades, compaction, and inspection approval.
- Asphalt shall be type SP 9.5 or equivalent and placed at 1-1/2" (inches) thick & compacted 1-1/4" (inches) thick, finished 1/4" (inch) to 1/16" (inch) above curb and pavement match line.
- Cul-de-sacs shall have a minimum of 105' (foot) right of way with 80' (feet) paved diameter.
- Cul-de-sacs shall be created at any dead end streets.
- Gutter sections shall be Miami type at 2' (foot) wide unless otherwise approved by the City of Rockledge. FDOT unmountable curb and gutter section shall be permitted where application warrants as approved by the City of Rockledge. Cylinder test to be at beginning pour and every 50 CYD thereafter reaching 3000PSI in 28 days.
- Slope shall be a minimum of 0.3% when curbs are used to transfer storm water.
- Crown roads shall be a minimum of 2% on standard roads.
- Piping under roadways shall be reinforced concrete wrapped with filter media.
- Developed areas shall create a stabilized 5' (foot) wide strip from back of curb toward the property line.
- All striping, stop bars, and pavement markings shall be thermoplastic.
- Street sign blades shall consist of HIP Film with 6" (inch) lettering Using CAE font with all uppercase on a 9" (inch) blank that is covered in an EC blue film for the background or latest MUTCD revision.

DRIVEWAYS OR ENTRANCES:

Two types of materials shall be used in driveways:

- Concrete:
 - Concrete shall be 3000 PSI, 6" (inches) thick with 6" wire mesh O.C., 10/10 gauge or fiber mesh.
- Asphalt:
 - Asphalt drives shall have a minimum of 6" (inches) thick lime-rock or coquina rock compacted to 98% density.
 - Asphalt shall be type SP 9.5 or equivalent placed at 1-1/2" (inches) thick & compacted to 1-1/4" (inches) thick.
 - Asphalt drives shall have a minimum radii of 35' (feet) and bordered with environmental curbs from property line to edge of pavement measuring 12" (inches) in width x 7" (inches) front x 6" (inches) back.

ELEVATIONS:

- Finished Floor elevations shall be shown on each lot in commercial and subdivision sites.
- Minimum floor elevation shall be 22" (inches) above crown of road in subdivision and 6" (inches) above crown of road on commercial sites. Standard finished floor elevation shall not exceed 26" (inches) above crown of road except where ground elevations of natural contour are impractical as determined by the City of Rockledge. Building Official may adjust finish floor elevations per application.
- Minimum crown of road elevation shall be 17.87 NAVD 88. Higher elevations may be required due to flood zones and higher ground water tables.
- Benchmark and elevations shall be shown on plans to be used in construction of projects.
- No assumed elevations will be accepted.

RETENTION AREAS:

- First 1" (inch) of rainfall shall be contained on site as a minimum standard. Calculations for retention required and provided shall be shown on plans.
- Retention on site shall meet requirements for a 100 year storm pre-post event where an effective discharge point is available. A 100 year total retention shall be met for sites with no effective positive discharge as determined by the City of Rockledge. The 100-year storm event rainfall amount is 13 inches. Approved redevelopment areas may vary.
- Retention areas shall be soded as a standard and slopes of City maintained facilities shall not exceed 5:1 slope (3:1 slope for commercial and industrial). Private retention areas shall become the responsibility of the Homeowners Association or legal entity for properties. The approved Retention or Detention facilities of an approved site plan must be completed and functional prior to the creation of any impervious area.
- Square Footage of impervious area must be shown on General Notes sheet.

LOTS:

- Lots must be filled to the crown of the road elevation as a minimum and are not to hold water
- A lot grading detail shall be provided on the plans showing lots on retention pond(s) draining both front and rear. Lots abutting other property shall be shown to drain to the road.
- Lots greater than 12' (inches) difference in height from abutting properties, shall require a concrete retaining wall along the property line sufficient in height to permit required grading and assure approved lot drainage.
- Finish floor elevations shall be shown on the plans and are to be no more than 4" (inches) higher than the house on either side.
- All natural buffer areas are to be designed so that there is no standing water.

GENERAL NOTES:

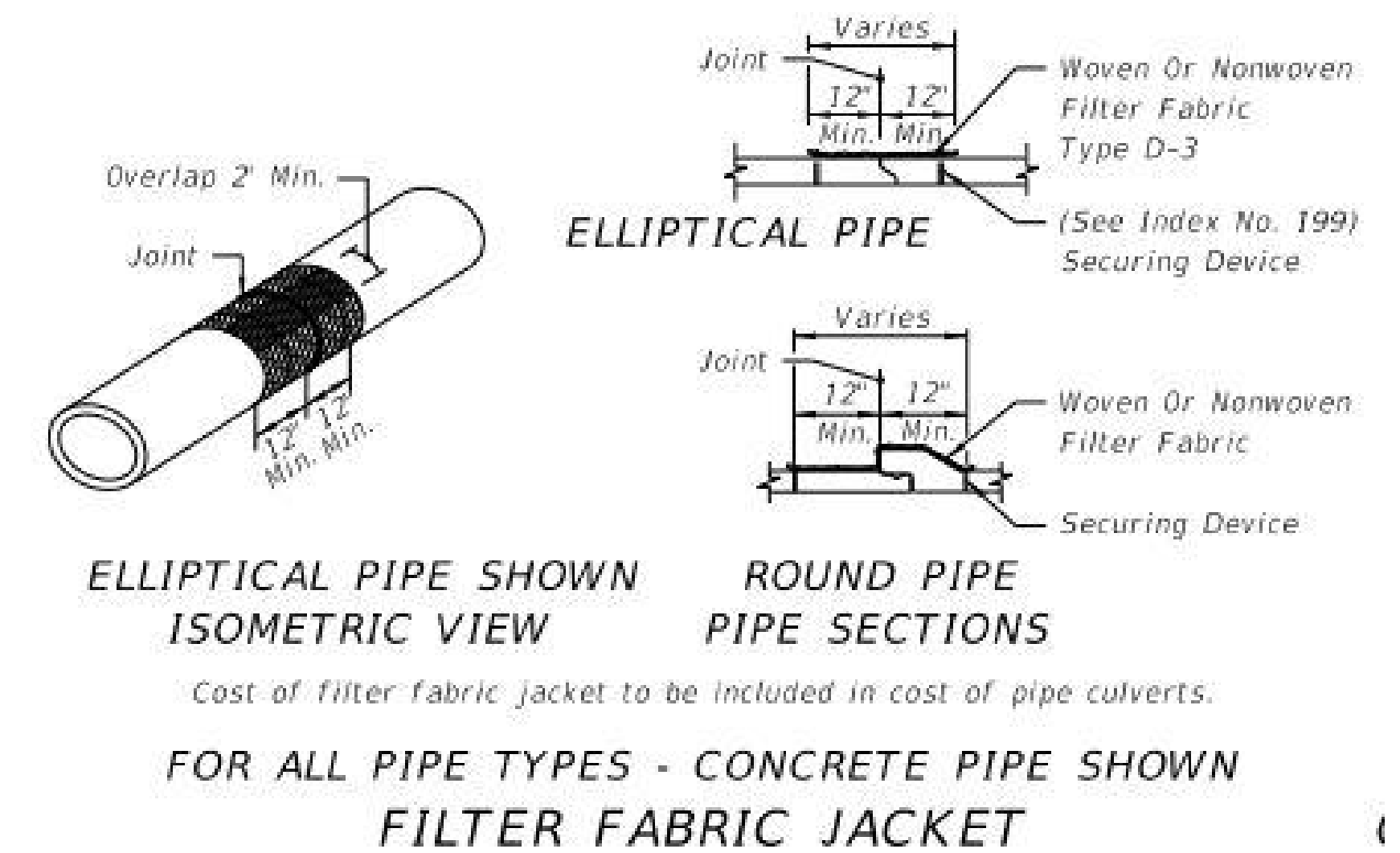
A 24-hour notice by contractor for required inspections of the above-mentioned facilities shall be given. Call (321) 204-6356. Please note that any inspections requested after 8 a.m. will be done the following business day.

The Public Works Engineering Division will require two (2) copies of the approved plans prior to construction start. A request for final inspection must be received prior to conducting a final inspection and issuance of any Certificate of Occupancy.

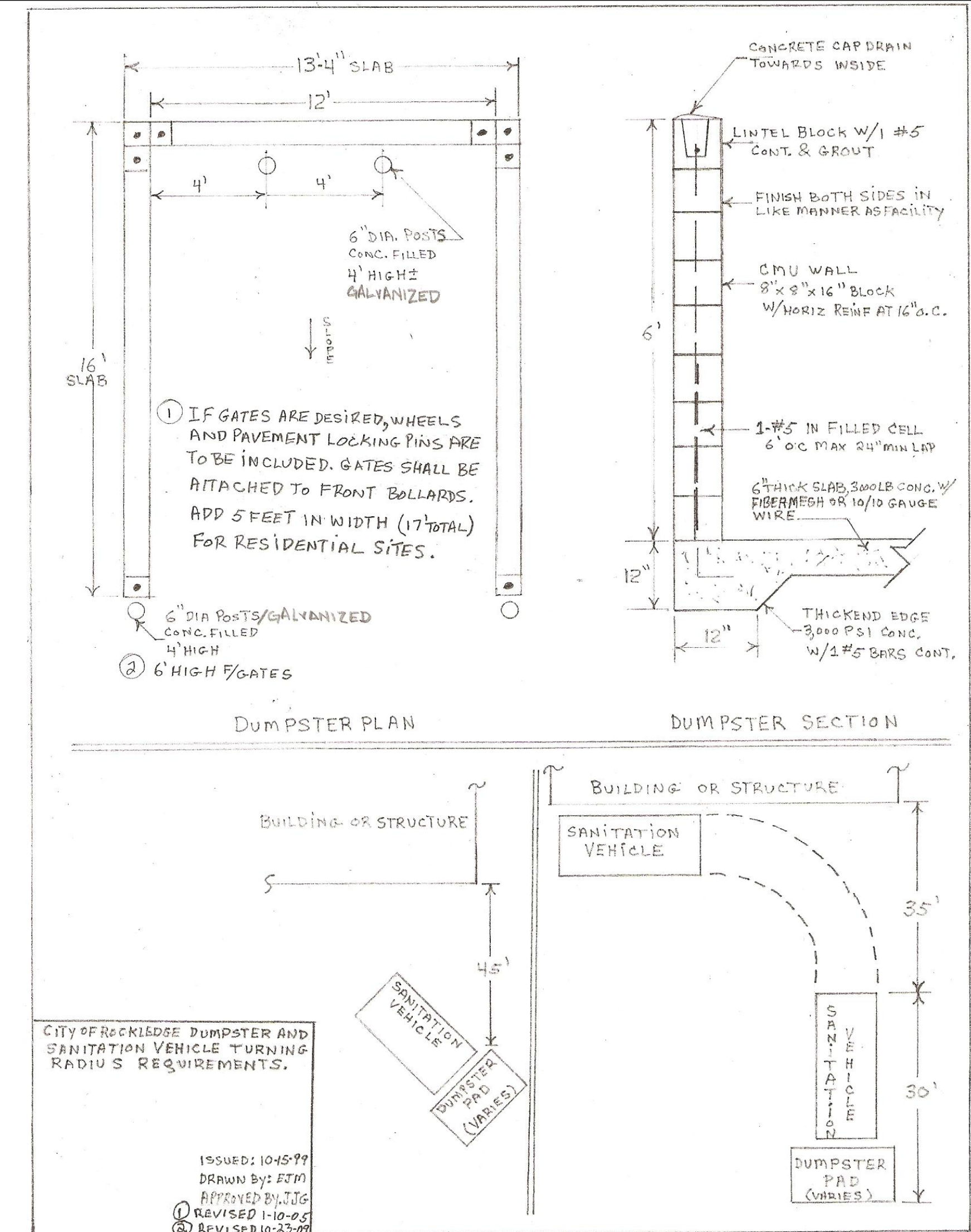
All stormwater piping within the road right-of-way, regardless of public or private, or stormwater piping that conveys stormwater under the roadway between stormwater treatment ponds, shall be inspected per Sections 430-4.8, 430-4.8.1, and 430-4.8.2 of the FDOT standard specifications for road and bridge construction, (latest edition). A copy of the pipe video shall be provided to the city as part of the submittal of the certification of completion request for final inspection. The city shall be notified one week prior to the start of the pipe video inspection process.

The Public Works Engineering Division will require two (2) hard copies and two (2) digital PDF and CAD drawing files of As-Built drawings and an Engineer of Record acceptance letter upon project completion. The As-Builts shall contain the following information:

- The As-Builts need to be Geo referenced to the Florida State Plane Coordinate System (SPC FL-0901)
- The vertical datum needs to be NAVD88.
- The storm structures require vertical and horizontal special data.
 - Size of structure
 - Bottom elevation
 - Location valve
 - Include condition assessment for existing structures



ELLIPTICAL PIPE SHOWN ISOMETRIC VIEW **ROUND PIPE PIPE SECTIONS**
Cost of filter fabric jacket to be included in cost of pipe culverts.
FOR ALL PIPE TYPES - CONCRETE PIPE SHOWN FILTER FABRIC JACKET



CITY OF ROCKLEDGE DUMPSTER AND SANITATION VEHICLE TURNING RADIUS REQUIREMENTS.
ISSUED: 10-05-99
DRAWN BY: EJM
APPROVED BY: JTG
REVISED 1-10-05
REVISED 10-22-09