General:

This design manual shall be used in conjunction with the City of Palmetto's Comprehensive Plan and the Code of Ordinances. The purpose is to regulate minimum standards for the protection of the public and to insure uniformity for Public Works maintenance.

Revision will be printed in italics with revision date following. *(Rev. 05-05-00)*

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SECTION 1 DRAINAGE

A. Scope:

A complete drainage system shall be provided as required by the State of Florida. All areas with the subdivision and any other areas within the drainage basin shall be suitably drained. The system shall be designed by a certified Engineer for long life and low cost maintenance.

B. Requirements for Construction Approval;

1. A copy of the application and the information sent to the Southwest Florida Water Management District or the Florida Department of Transportation for the evaluation must be submitted along with the approval received.
2. Two (2) sets of construction plans and specifications using the "Standard Details" as minimum design practices.
3. Two (2) copies of any shop drawings, addendums, or change orders that may occur during the construction.
4. One (1) set of reproducible and complete "As-Built" drawings certified by the subdivider's engineer prior to final approval.

C. Drainage Pipe Specification;

All drainage pipe to be maintained by the City shall be Class 3 reinforced concrete pipe or pvc. Pvc and/or concrete pipe shall conform to the most current specifications of the Florida Department of Transportation, and shall be subject to approval by the City

Engineer.

Minimum pipe diameters shall be 15 inches for side drains and 18 inches for cross drains, unless otherwise specifically approved.

D. Underdrain Specifications

Pipe used for underdrains shall have a minimum diameter of 4 inches. Suitable corrugate polyethylene (PE) pipe, or other pipe approved by the City Engineer. Invert of pipe shall be no less than 24 inches below finished grade of street and have a clean out every 400 feet for proper maintenance. Underdrain pipe shall be laid where designated.

E. Swales and Ditches:

Swales and ditches will not be allowed because the City has had problems in the past, i.e., people not mowing them, insect problems and driveways extensions over them.

F. Culvert Structures:

All culverts under roadways shall have headwalls made of reinforced concrete or reinforced concrete block or other approved structure. Where shallow swale ditches intersect deeper drainage ditches, erosion control shall be provided by use of culvert pipes, concrete swales, sandbag rip-rap, headwalls with spillways, or other suitable means approved by the City Engineer. Cover material over culverts in swales shall be suitably stabilized or be provided with sandbag rip-rap to prevent erosion.

1. Sandbag Rip-rap. The sandbag rip-rap mixture shall contain at least one (1) part cement to three (3) parts of clean sand. Construction methods shall comply with Florida Department of Transportation current specifications.
2. The proposed design of reinforced concrete or reinforced concrete block headwalls shall be submitted for approval by the City Engineer.

G. <u>Drainage Outfalls:</u>

1. Drainage and flood waters shall be conducted to positive outfalls that can be permanently maintained, practical, and aligned to provide effective erosion and sitting control. Outfalls to existing waterways, canals, lakes or storm sewer systems shall be acceptable, provided such receiving systems have adequate capacity to receive the proposed additional flood flow. If the above receiving system does not have such capacity, then the subdivider shall include in his plans measures for adequately increasing said capacity and shall bear the responsibility and expense of construction, provided that when major water ways are involved, improvement of such may be taken as individual cases to be considered specially.
2. Side ditches along public roads shall not be accepted as suitable positive outfalls except as may be specifically accepted by the City Engineer and by the County Engineer, and/or the Florida Department of Transportation, if applicable.

<u>SECTION 2</u> <u>STREETS</u>

A. Scope:

Streets and highways are built to endure and to provide for safe passage of vehicles. To achieve this objective, the design must adopt certain criteria for strength, safety, uniformity and ease of maintenance. Thus these standards are developed to meet this objective.

B. Requirements for Construction Approval:

l. A copy of the application and the information sent to Florida Department of Transportation or Manatee County for evaluation of a connection, utility, right-of-way use, etc., permits and approval received must be submitted.

2. Two (2) sets of construction plans and specifications using the "Standard Details" as minimum design practices.

3. Two (2) copies of any shop drawings, addendums, or change orders that may occur during the construction.

4. One (1) set of reproducible and complete "As-Built" drawings certified by the subdivider's Engineer prior to final approval.

C. Geometric Design:

The design shall follow the "Florida Manual of Uniform Minimum Standards for the Design Construction and Maintenance for Streets and Highways", in the latest edition and the City's standard details.

D. Street Lighting:

All intersections or cul-de-sacs shall have at least one street light with the same illumination as the surrounding area and using high pressure sodium lamps.

E. Traffic Control Devices:

The U.S. Department of Transportation's "Manual on Uniform Traffic Control Devices" shall be used for controlling traffic.

SECTION 3 WATER DISTRIBUTION

A. Scope:

The guidelines set forth herein are meant to provide minimum standards for design and construction so as to assure an adequate, continuous, economical supply of safe and palatable water at satisfactory pressure throughout the area to be served.

B. Requirements for Construction Approval:

1. A copy of the application and the information sent to Manatee County Health Department for the evaluation of the permit and the approval received must be submitted.
2. Two (2) sets of construction plans and specifications using the "Standard Details" as minimum design practices.
3. Two (2) copies of any shop drawings, addendums or change orders that may occur during the construction.

4. One (1) set of reproducible and complete "As-Built" drawings certified by the subdivider's Engineer prior to final approval.

C. DESIGN:

1. General - Pipe and special fittings used in water distribution systems shall be designed to withstand internal water pressure inducted by static and kinetic pressures and shock pressures from water hammer. They shall be designed to withstand external pressures acting on them, such as from trench loads and live loads resulting from heavy traffic and impact.
2. Water Main Sizes: Sizes will depend upon factors such as the demand requirements, the degree to which fighting supply will be provided, the pressure requirements in the distribution system and plans for expansion of the system. Pipe sizes less than six (6) inches will not be used, unless approved by the City Engineer.

   Hydrants shall be spaced in accordance with the nature and characteristics of the area to be served. Spacing should not exceed (800) feet.

D. Layout of System:

1. General - The piping shall be looped where possible and valved to permit shutting off of service to only a small number of connections for repairs or maintenance.

Preferably, disruption of service should be limited to one block

2. Dead Ends - Unlooped mains shall be equipped with a fire hydrant, flushing hydrant, or, under unusual circumstances, a blow-off. The flushing hydrant or blow-off valve shall be at least the size of the main or four (4) inches, whichever is smaller. No flushing device shall be directly connected to a sanitary sewer or storm drain.

3. Air Relief Valves - Air relief valves and blow-off valves should not be used except in locations where fire hydrants are not practical. Air relief valves shall be located at high points on the line and blow-off valves shall be placed at low points.

E. Materials:

1. General - All materials to be used shall be described in the specifications. Materials and appurtenances shall be of acceptable quality, free of defects and suitable to accomplish stated objectives for community water systems. Pipe fittings, valves and appurtenances shall be manufactured in conformity with the latest standard specifications issued by the American Water Works Association, the American National Standards Institute or the Federal Government.

2. Plastic Pipe - Applicable standards include:

ASTM D-784 - PVC

ASTM D-2241 - PVC

AWWA C-900 - PVC

ASTM D-2321 - PVC

3. Valves - Resilient seated gate valves shall conform to UL-262, standard for gate valves for Fire Protection, and Factory Mutual Research FM approved standard class no. 1120 and 1130 with a full 10 year warranty.

4. Hydrants - Hydrants shall be dry barrel, breakaway type, with a main opening of 5 1/4" and be in compliance with the latest AWWA C502 standards.

F. ***Pressure Testing*:**

All new water lines shall be tested at 150 psi for 2 hours, with the City of Palmetto, and the Engineer of record present. *(Rev. 05-04-00)*

G. Disinfection of Water Mains:

For disinfecting newly laid mains or after repairs to the system, the mains shall be disinfected in accordance with AWWA Standard for Disinfecting Water Mains - C601 and permitted through Manatee County Health Department. All mains must pass the bacterial test with a copy to the City Engineer.

SECTION 4 SEWAGE COLLECTION

A. Scope:

The guidelines set forth herein are meant to provide a minimum standard for design and

construction and to ensure an adequate, continuous and economical collections system

B. Requirements for Construction Approval:

1. A copy of the application and the information sent to Manatee County Health Department for the evaluation of the permit and the approval received must be submitted.
2. Two (2) sets of construction plans and specifications using the "Standard Details" as minimum design practices.
3. Two (2) copies of any shop drawings addendums or change orders that may occur during the construction.
4. One (1) set of reproducible and complete "As-Built" drawings certified by the subdivider's Engineer prior to final approval. (Note: DER Chapter 17-6).

C. Design:

1. **General** - New gravity sewers shall be designed on the basis of an average daily flow of not less than 100 gallons per capita. Laterals and submains should be designed with capacities, when flowing full, of at least 4.0 times the average daily flow. Main and trunk sewers should have capacities when flowing full of not less than 2.5 times the average daily flow.

   Combined sewers, that is, those handling sanitary sewerage and storm rain water from roofs and streets, shall not be approved.

Industrial wastes from service station wash racks, lubrication racks and floor drains shall not be connected into the sanitary sewer system without pretreatment and preferably, should be disposed of separately. Caustic wastes, hazardous and other offensive manufacturing wastes shall not be connected into the sanitary sewerage system without approved pretreatment first. Strict compliance with the discharge of wastes into sewerage systems will be enforced

2. **Size** - The minimum allowable size for any sewer main other than residential service connections shall be eight (8) inches in diameter. Residential service connections shall conform to the plumbing code in all respects.

3. **Slope** - Gravity sewers shall have sufficient slope to maintain a velocity of 2.0 feet per second. In general, the following minimum grades shall be provided:

8 inch sewers	0.40%
10 inch sewers	0.28%
12 inch sewers	0.22%
15 inch sewers	0.15%
18 inch sewers	0.12%
21 inch sewers	0.10%
24 inch sewers	0.08%

4. **Location** - Generally, sanitary sewers shall be located so as to be remote from

public drinking water sources. Water and sewer mains shall not be laid in the same trench. A lateral separation of 10 feet and a vertical separation of 1.5 feet shall be maintained in the case of crossings. In the event the vertical separation is less than 1.50 feet, the sewer shall be constructed of cast iron pipe or encased with 6 inches of concrete, a distance of 10 feet either side of the water line. There shall be no physical connection between a potable water supply and any sanitary sewage facility which may allow passage of sewage into the potable water supply.

Manholes:

1. **Location** - Manholes shall be installed at the end of each sewer; at every change in grade, size or alignment; at all intersections; and at distances not greater than 400 feet. Cleanouts may be used only for special conditions and shall not be substituted for manholes nor installed at the end of laterals greater than 150 feet in length, and must be approved by the City Engineer.

2. **Drop Manholes** - A drop pipe shall be provided for sewer entering a manhole at an elevation of 24 inches or more above the manhole channel invert that is less than 24 inches, the invert shall be filleted to create a channel which will prevent solids deposition in the manhole.

3. **Diameter** - The minimum inside diameter of manholes shall be 48 inches.

4. **Flow Channel** - The manhole's bottom shall have a flow channel made to conform in shape and carrying capacity to that of the sewers. There shall be a 0.1 foot drop through the manhole.

5. **Increasing Size** - At manholes where the sewer is increased in size, the invert of the larger sewer shall be at such lower elevation to maintain the same energy gradient. To approximate this, the 0.8 depth point of both sewers may be placed at the same elevation.

6. **Force Mains** - Force mains shall not be less than four (4) inches internal diameter and designed with a minimum velocity of 2.0 feet per second

A. **Air Relief Valve** - Where necessary an automatic air relief valve shall be placed at high points in the force main to prevent air locking. Where possible, the force main shall pitch continuously upward avoiding any high points in the line.

B. ***Pressure Testing*** - *All force mains shall* be *tested at 120 psi for 2 hours, with the City of Palmetto, and the Engineer of record present. (Rev. 05-05-00)*

Termination - Force mains should enter the gravity sewer system at a point not

more than two (2) feet above the flow line of the receiving manhole.

7. Color Coded Utilities (Underground)

SEWER - GREEN

POTABLE WATER - BLUE

FORCE MAIN - BROWN

SECTION 5 RECLAIM WATER DISTRIBUTION

A. Scope:

The guidelines set forth herein are meant to provide minimum standards for design and construction for Reclaim Water at satisfactory pressure throughout the area to be served.

B. Requirements for Construction Approval:

1. Two (2) sets of construction plans and specifications using the "Standard Details" as minimum design practices.
2.. Two (2) copies of any shop drawings, addendums or change orders that may occur during the construction.
3. One (1) set of reproducible and complete "As-Built" drawings certified by the subdivider's Engineer prior to final approval.

C. DESIGN:

1. General - Pipe and special fittings used in water distribution systems shall be

designed to withstand internal water pressure inducted by static and kinetic pressures and shock pressures from water hammer. They shall be designed to withstand external pressures acting on them, such as from trench loads and live loads resulting from heavy traffic and impact.

2. Water Main Sizes: Sizes will depend upon factors such as the demand requirements, the degree to which fighting supply will be provided, the pressure requirements in the distribution system and plans for expansion of the system, and the cities Reclaim Water plan. Pipe sizes less than four (4) inches will not be used, unless approved by the City Engineer.

D. Layout of System:

1. General - The piping shall be valved to permit shutting off of service to only a small number of connections for repairs or maintenance. Preferably, disruption of service should be limited to two blocks.
2. Dead Ends - Unlooped mains shall be equipped with a flushing hydrant, or a blow-off. The flushing hydrant or blow-off valve shall be a minimum of two (2) inches. No flushing device shall be directly connected to a sanitary sewer or storm drain.
3. Air Relief Valves - Air relief valves and blow-off valves should not be used except in locations where fire hydrants are not practical. Air relief valves shall be located at high points on the line and blow-off valves shall be placed at

low points.

E. Materials:

1. General - All materials to be used shall be described in the specifications. Materials and appurtenances shall be of acceptable quality, free of defects and suitable to accomplish stated objectives for community water systems. Pipe fittings, valves and appurtenances shall be manufactured in conformity with the latest standard specifications issued by the American Water Works Association, the American National Standards Institute or the Federal Government.

2. Plastic Pipe - Applicable standards include:

   AWWA C-900 - PVC

3. Valves - Resilient seated gate valves shall conform to UL-262, standard for gate valves for Fire Protection, and Factory Mutual Research FM approved standard class no. 1120 and 1130 with a full 10 year warranty.

F. Pressure Testing:

All reclaim water mains shall be tested at 150 psi for 2 hours, with the City of Palmetto, and the Engineer of record present. (Rev. 05-05-00)

OVERALL VIEW & PLAN VIEW

_____ 1. North arrow (pointing up or to the right).

_____ 2. Stationing shall be from south to north or west to east.
_____ 3. Centerline stationing shown on plan view.
_____ 4. Stationing at all intersections.
_____ 5. Stationing at end of improvements.
_____ 6. Scale at 20 feet per inch.
_____ 7. Show names of all streets.
_____ 8. Show flow line elevations on cross gutter at intersections.
_____ 9. Centerline curve data.
_____ 10. Lot lines and right-of-way lines.
_____ 11. Lot numbers.
_____ 12. Show connection to existing improvements with elevations and stationing.
_____ 13. Lengths and stationing of tapers.
_____ 14. Show proposed improvements with solid line and existing improvements with dashed lines.
_____ 15. Limits of different type of curb and gutter.
_____ 16. Show typical sections for all streets per County Standards.
- _____ a. Dimensions of right-of-way, pavement and parkway.
- _____ b. Type and thickness of asphalt, base and subbase.
- _____ c. Curb sections.
- _____ d. Slopes to adjacent property lines.
- _____ e. Supplement cross-sections required for different designs.
- _____ f. County or private roads.
- _____ g. Underdrain detail with standard note.

_____ 17. Radius at entrance roads to meet City of Palmetto Code Requirements.
_____ 18. Sidewalk to meet City of Palmetto's requirements.
- _____ a. 4 or 5 foot sidewalk on north and west side of all proposed local roads.
- _____ b. 5 foot sidewalk on both sides of Major Thoroughfare Streets.
- _____ c. 4 inch thickness at 300 PSI.

_____ 19. Cul-de-sac's to meet City of Palmetto's Public Works Utility Specifications.
_____ 20. Typical cross-section of lots or proposed grade lot elevations on plan view.
_____ 21. Minimum distance for driveways from intersections as stated in City of Palmetto Public Works Utility Specifications.

PROFILE VIEW

_____ 1. Vertical scale at 2 feet per inch.

_____ 2. Existing and future centerline.

_____ 3. Label all grade lines and profiles; show percent of grade of each (existing an proposed swales and ditches on both sides).

_____ 4. Stationing and elevations at beginning and end of improvement.

_____ 5. Stationing and elevations.

_____ 6. Stationing and elevations at P.V. I.

_____ 7. Elevations for vertical curves.

_____ 8. Extend profiles beyond end of improvements for 100 feet.

_____ 9. Stationing at bottom of profile sheet.

_____ 10. Names and stationing at intersecting street points.

_____ 11. Use vertical curves for all grade break differentials more than one percent.

_____ 12. Profile to be shown of graded or improved drainage facilities (pipes, curb inlets and catch basins).

OVERALL DRAINAGE PLAN

_____ 1. Existing contours.

_____ 2. Sufficient number of proposed elevations to determine direction of flow.

_____ 3. Existing contours at least 100 feet off of property.

_____ 4. LWL, HWL, and TB for all proposed lakes.

_____ 5. Bottom elevation for proposed dry retention ponds.

_____ 6. Proposed grades for centerline of roads or parking

_____ 7. Cross-section for all proposed lakes, retention ponds, ditches and swales.

_____ 8. Details, for all drainage structures.

_____ 9. Proposed drainage structures with inverted elevations, pipe sizes, pipe slopes, type of pipe, type of drainage structure, weir elevations, rim elevations and underdrain information.

_____ 10. Existing drainage structures with inverted elevations, and pipe sizes.

_____ 11. Sufficient cover for all cross-pipes.

_____ 12. Sufficient pipe sizes to adequately handle stormwater runoff.

_____ 13. Pre Q and Post Q requirements are met.

_____ 14. Curb Inlets.
a) Not on radius
b) Sufficient distance between CI's

_____ 15. Drainage calculations with signature and seal.

_____ 16. a) 15' drainage easement for pipes 30" or smaller.
b) 20' drainage easement for pipes greater than 30" and smaller than or equal to 48".

_____ 17. 15 feet - 25 feet of drainage easement on each side of ditch, swale or canal from top of bank.

_____ 18. At least 12 foot of drainage easement from top of bank of lake or retention area.

_____ 19. Check for possible flooding onto borderline properties due to lot grading.

PRELIMINARY PLATS

Review for Compliance with submittal requirements Comprehensive Plan, Concurrency, City Ordinances

Drainage in the Area and Drainage Intent

Co-ordinate with Master Drainage Plan

Access Existing and Access Classification

Thoroughfare affecting site

Right-of-Way Needs

Traffic Generation

Improvements Needed for access to site

Intersection Separation

Sidewalk Requirements

Respond at D.R.C. Meeting

Respond in writing

Attend City Council Meeting

See Construction Plan Review (Check List)

CONSTRUCTION PLANS

Check for compliance with submittal requirements

Check for any City Council Stipulations

Check against previous review

Check against checklist

Prepare approval letter

Provide Inspection Section with Set of approved Plans

FINAL SITE PLANS

Check for compliance with Submittal Requirements

Check for any City Council Stipulations

ACCESS

Improvements Needed for access to site

Intersection Separation and Drive Locations

Right of Way Needs

Sidewalk Requirements

TRAFFIC IMPACTS

Co-ordinate with Master Drainage Plan

Drainage Easement Needs

Review Construction Plans and Check against appropriate item on Construction Plan Checklist

Respond at D. R. C. Meeting

Respond in writing

ZONING CHANGES WITHOUT PLAN REVIEW

Review for

Comprehensive Plan, Concurrency, Ordinances

Access Traffic Impacts Drainage in the area

Right-of-Way Needs

Sidewalk Requirements

Respond in Writing

Attend City Council Meeting

VARIANCES

Review for conflicts with

Right-of-Way Needs

Drainage Easement Needs

Existing facilities

Visibility Requirements

GENERAL NOTES

1. All City road construction shall conform to City of Palmetto Engineer Design Standards.

2. Asphaltic Concrete Type S-I : Florida Department of Transportation 1986 Standard Specifications; Section 331.

   Asphaltic Concrete Type III: Florida Department of Transportation 1986 Standard Specifications; Section 333.

   (a) Surface material will be consistent with existing surface or better.

3. Limerock Base Course: Florida Department of Transportation 1986 Standard Specifications; Section 200.

4. Stabilized Sub-Grade: Florida Department of Transportation 1986 Standard Specifications; Sections 160 and 914.

5. Drainage: Florida Department of Transportation 1986 Standard Specifications; Section 941.

   (a) No soft, yielding or super-saturated material that will not readily compact will be used for backfill. This is at the discretion of the Field Engineer.

6. Soil Cement: Florida Department of Transportation 1986 Standard Specifications; Section 270.

7. Concrete Gutters: Florida Department of Transportation 1986 Standard Specifications; Section 520.

8. Sodding: Florida Department of Transportation 1986 Standard Specifications; Section 575.

   Grassing: Florida Department of Transportation 1986 Standard Specifications; Section 570.

   (a) Entire R/W between road and property line shall be fertilized (1000 lbs. of 8-12-6 per acre) and sodded (30 lbs. Bahia and 30 lbs. of rye per acre) and mulched as directed by the engineer.

   (b) Hydromulch (Section 571) D.O.T. Specifications

9. Visibility Triangles: City of Palmetto zoning ordinance 387.

10. Pavement Markings and signs shall be in accordance with the manual on Traffic Control Devices.

11. 4" 3000 P.S.I. concrete, except where sidewalk bisects driveway minimum shall be 6" Class I reinforced with 6 x 6 #10 mesh.

12. Sidewalks, constructed to the specifications of the City of Palmetto Engineering Design Standards and a minimum of four (4) feet wide, shall be installed along the north and west sides of all new * streets which are constructed in conjunction with a new residential development.

13. Sidewalks constructed to the specifications of the City of Palmetto Engineering Design Standards and a minimum of five (5) feet in width shall be installed on both sides of all thoroughfares.

14. Sidewalks, constructed with a smooth dustless surface, shall inter-connect all principal structures, parking areas, and recreational facilities.

15. The concrete shall be given a broom finish. The surface variations shall not be more than 1/4 inch under a ten-foot straightedge, nor more than 1/8 inch on a five-foot transverse section. The edge of the sidewalk shall be carefully finished with an edging tool having a radius of ½ inch.

16. Expansion Joint: Expansion joints between the sidewalk and the curb or driveway or at fixed objects and sidewalk intersections shall be ½ inch joints.

17. Contraction Joints: Open-Type Joints: Open-Type contraction joints shall be formed by staking a metal bulkhead in place and depositing the concrete on both sides. After the concrete has set sufficiently to preserve the width and shape of the joint, the bulkhead shall be removed. After the sidewalk has been finished over the joint, the slot shall be edged with a tool having 1/2 inch radius. Sawed Joints: A slot approximately 3/16 inch wide and not less than 1 1/2 inches deep shall be cut with a concrete saw after the concrete has set.

18. Sidewalks along other streets shall be constructed and dedicated as required by the approving authority when necessary to continue an existing or proposed sidewalk.

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ORDINANCE NO. 365

AN ORDINANCE OF THE CITY OF PALMETTO, FLORIDA, REGULATING THE SUBDIVIDING OF LAND WITHIN THE CITY; PROVIDING A PROCEDURE FOR SUBDIVISION PLAT APPROVAL; PROVIDING MINIMUM REQUIREMENTS AND STANDARDS OF DESIGN; AUTHORIZING THE CITY ENGINEER TO PREPARE A DESIGN MANUAL OF ADDITIONAL REQUIREMENTS AND STANDARDS OF DESIGN; AUTHORIZING THE CITY CLERK TO PREPARE NECESSARY TO EFFECTUATE THE INTENT AND PROVISIONS OF THE ORDINANCE; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PALMETTO, IN REGULAR SESSION ASSEMBLED:

SECTION 1. PURPOSE, AUTHORITY AND JURISDICTION

(a) Purpose:

Land subdivision is the first step in the process of community development. Once land has been divided into streets, lots, and blocks, and publicly recorded, the correction of defects is costly and difficult. Subdivided land sooner or later becomes a public responsibility, in that roads and streets must be maintained and various public services customary in urban areas must be provided. The welfare of the entire community is affected by land subdivision in many important respects. It is, therefore, in the interest of the public, the devolper and the future residents, that subdivisions be conceived, designed and developed in accordance with sound practice and adequate standards.

The intent of these regulations is to provide for the harmonious development of the City; to assure coordination between adjacent land developments, and also to secure adequate

provision for light, air, open space, recreation, transportation, potable water, flood prevention, drainage, sewers and other sanitary facilities. It is the further intent of these regulations to assure that each new subdivision result in an attractive environment, which will maintain its value over the years.

These standards set forth in these regulations are minimums, Subdivision plans which barely meet these minimums or are poorly designed will result in poor quality development and not comply with the above stated intent. In addition to meeting or exceeding the minimum standards, compliance with the intent of these regulations requires that good design be practiced in subdivision planning, that valuable and scenic natural features be conserved, and that adequate open spaces be dedicated and developed for public or neighborhood use. Subdivision developers should employ the skills of land planners as well as surveyors and engineers. Subdivision design should be adapted to the peculiarities and opportunities of the site, should utilize contemporary, imaginative design, avoid monotonous repetition of pattern, (e.g., grid street patterns), and long straight minor or collector streets, and must be properly oriented with the City's and County's arterial highway plans. Size, shape, and orientation of lots and blocks should be carefully considered with relation to future use.

(b) Authority.

These subdivision regulations are adopted under the authority granted by Manatee County Planning Law, H.B. 2384, Special Acts of Florida, 1963. The Planning Commission and City Council have fulfilled the requirements set forth in this law.

(c) Jurisdiction.

These regulations shall govern all subdivision of land within the limits of the City of

Palmetto as now or hereafter established.

SECTION 2. DEFINITIONS.

For the purpose of this Ordinance, certain words, terms, and symbols are to be interpreted as follows, unless the context clearly indicates otherwise.

ALLEY means a narrow strip of land intended for vehicular traffic which has a minimum width of twenty (20) feet, is designed to give only secondary access to the side or rear of properties whose principal frontage and access is on a street, and is legally established to provide such secondary access.

ARTERIAL STREET means a street designed primarily for high vehicular speeds and heavy traffic volumes. They are usually characterized by signals at major intersections, channelized intersections, and where feasible, median strips. Arterial streets serve as the links to major traffic generators, such as commercial and employment centers, and provide access to adjacent land uses. To further facilitate traffic movement, access along arterials should be controlled. The terms arterial or arterial street shall be deemed to include all streets so designated in the Major Thoroughfare Plan of the Comprehensive Plan.

AS-BUILT DRAWINGS means drawings showing the locations, elevations, dimensions, capacity, and operational capability of structures or facilities as they have been constructed as installed.

COLLECTOR, MAJOR means a street designed to carry vehicles primarily from local and minor collector streets to arterial streets or major traffic generators. A major collector does provide access to residential parcels of land, but because of the higher traffic volumes, building setbacks should compensate for higher noise levels and other nuisances. The terms major

collector or major collector street shall be deemed to include all streets so designated in the Major Thoroughfare Plan of the Comprehensive Plan.

COLLECTOR, MINOR means a street which provides for principal internal movements at moderate operating speeds within residential developments, neighborhoods and commercial or industrial areas. It also provides the primary means of circulation between adjacent neighborhoods and can serve as a local bus route. A minor collector street functions to carry traffic between arterials, major collectors, and local streets. Minor collectors may provide both land access and traffic circulation. On street parking is usually permitted. The term minor collector or minor collector street shall be deemed to include all streets so designated in the Major Thoroughfare Plan of the Comprehensive Plan.

COMMERCIAL SUBDIVISION means a subdivision, as defined elsewhere in this Section, having an intended use of providing day-to-day retail, service and office needs of the community and that contains permitted uses under the C-1, C-2, C-4, C-5 and PR classifications of the most current Zoning Code of the City of Palmetto.

COMPREHENSIVE PLAN is the Comprehensive Plan for the City of Palmetto, adopted pursuant to the "Local Government Comprehensive Planning Act of 1975," s.163.3161 et seq., Florida Statutes (1987).

DESIGN MANUAL means the additional requirements and minimum design standards prepared by the City Engineer pursuant to Section 7, hereof.

DEVELOPMENT REVIEW COMMITTEE or **COMMITTEE** means a committee of officials of the City, namely, City Engineer, Superintendent of Public Works, City Clerk or their designees and such other governmental agencies appointed by the Mayor of the City for the

purpose of reviewing and making technical recommendations on proposed subdivision and such other matters as may be referred to it.

ENGINEER means an engineer registered under Chapter 471, Florida Statues, who is in good standing with the Board of Professional Engineers.

ESTATE RESIDENTIAL means a zoning classification as created in Ordinance 298, as amended, of the Ordinances of the City of Palmetto.

FLAG, LOT means a lot with a front lot line less than 80 percent of the applicable minimum lot width.

INDUSTRIAL SUBDIVISION means a subdivision, as defined elsewhere in this Section, having an intended use of providing manufacturing, assembly, storage and distribution of products and that contain permitted uses under the C-3 classification of the most current Zoning Code of the City of Palmetto.

MAJOR WATERWAYS means Manatee River, Terra Ceia Bay and navigable canals.

MARGINAL SERVICE ROAD means a street, paralleling and contiguous to an existing or proposed arterial street, designed, primarily, to promote safety by providing free access to arterial streets. All points of ingress and egress are subject to approval by the appropriate authorities.

MINOR STREET means any street, not classified as arterial, major collector, or minor collector, which primarily provides direct access to residential, commercial, industrial, or other abutting property. A local street is designed to carry light volumes of traffic. Overall operating speeds are low in order to permit frequent stops or turning movements to be made with maximum safety. Service to through traffic movement shall be deliberately discouraged.

PLANNED UNIT DEVELOPMENT means a subdivision, as defined elsewhere in this Section, primarily residential in character, and that is developed based upon a unified development approach rather than on a lot by lot basis, and constitutes a permitted use under the PUD classification of the most current Zoning Code of the City of Palmetto.

PLAT means a map or delineated representation of the subdivision of lands, being a complete exact representation of the subdivision and other information in compliance with the requirements of all applicable sections of this and other ordinances and statutes, and may include the terms "replat", "amended plat", or "revised plat". (Sec. 177.031 (14), F.S.) All plats shall include the square footage of each individual lot.

PRIVATE STREET means a street, way, or easement, not a component of the State system or the Major Thoroughfare Plan of the Comprehensive Plan.

PROPERTY OWNER means an owner of fee title to the land in question, and may include their agents; provided that for the purposes of filing any application for a subdivision plat approval, the owners of fee title shall file such application jointly with any agents they appoint to thereafter act on their behalf in the matter.

PUBLIC IMPROVEMENTS shall include streets, sidewalks, sanitary and storm sewer collection and pumping facilities, water distribution mains, parks and recreation facilities.

RESIDENTIAL SUBDIVISION means a subdivision, as defined elsewhere in this Section, having an intended use of providing day to day housing needs of the community and that contains permitted uses under the R-1, R-1B, R-1C, R-2, R-3, R-3A, R-4, R4-1A, R4-1B. R-5, R-6, T, T-1 ,and ER classification of the most current Zoning Code of the City of Palmetto.

STREET means a strip of land intended for vehicular or pedestrian traffic and providing

the principal means of access to property, including but not limited to road, lane, drive, avenue, highway, expressway, boulevard, or any other thoroughfare. The term street shall not be deemed to include alley, except as otherwise specifically provided herein.

SUBDIVIDER means the legal or beneficial property owner of the land involved, or the authorized agent, thereof. The holder of an option or contract to purchase, any person with the power of condemnation, or other person having an enforceable possessory interest in such land shall be deemed to be a subdivider for the purposes of this Ordinance; provided that no application for subdivision plat approval shall be accepted unless it is made by the property owner of the land involved, or duly authorized agent.

SUBDIVISION means the division of a parcel of land into three (3) or more parcels of land, for the purpose, whether immediate or future, of transfer of ownership, or, if the establishment of a new street is involved, any division of a parcel of land; provided, however, that the division of land into parcels of more than five (5) acres not involving any change in street lines or easements shall not be deemed to be a subdivision within the meaning of these regulations. For purposes of this designation, the term "street" means the primary means of access, whether public or private to a lot or parcel of land. For the purposes of these Regulations, the term "re-subdivision" means any amendment to an approved recorded subdivision plat if such amendment affects an street layout or any reserved or dedicated area or easements for pubic use, or any lot or lot line so as to permit an increase in the residential density. For purposes of this Ordinance, the definition of Subdivision includes the term "re-subdivision". All regulations as set forth herein that apply to subdivisions shall apply as well to re-subdivisions, and when appropriate to the context, shall relate both to the process of

re-subdividing or to the land so re-subdivided.

SUBDIVISION, MINOR means a subdivision containing not more than six (6) lots fronting on an existing improved public street, and meeting all of the following requirements: (1) all public improvements are presently provided to all of the lots; and (2) is consistent with the Comprehensive Plan, Building Code or other officially adopted plans, policies or regulations.

SURVEYOR includes the term "professional land surveyor" and means a person who is registered to engage in the practice of land surveying under Section 472.001.039, Florida Statutes.

THROUGH LOT means a lot, other than a corner lot, abutting two (2) or more public streets, but not including an alley.

SECTION 3. SUBDIVISION PLAT APPROVAL PROCEDURE.

(a) Pre-Application:

(1) The subdivider shall contact the appropriate City Staff to:

a. To discuss how the Comprehensive Plan and other official plans of pertinent jurisdictions will affect the subdivision, and also discuss general design standards, zoning, and other related matters;

b. To discuss improvements necessary to meet water supply and waste disposal requirements, as pertains to Manatee County Health Department standards;

c. To discuss what improvements and requirement are necessary to meet engineering standards; and

d. Discuss what improvements are necessary to meet all the requirements for water, sewer, and other utilities.

e. To provide location sketch map, showing site in relation to the portion of the City in which it is located;

f. To provide a simple sketch plan on a topographic survey. This may be a free hand pencil sketch on a print of a topographic survey based on Mean Sea Level datum (The National Geodetic Vertical Datum), showing general layout of lots, streets, major drainageways and other features in relation to existing conditions on the site;

g. To provide general subdivision information including data on existing covenants, land characteristics, wooded areas, available and proposed community facilities and utilities, typical lot size, etc.

(2) The aforementioned officials shall discuss the results of their review with the subdivider or his agent. Thereafter, the subdivider may proceed with the application for Preliminary Plat Approval.

(b) Application for Preliminary Plat Approval.

(1) Subdivider's Preliminary Plat shall be prepared by an engineer, or surveyor if no engineering design is required. Subdivider shall submit an application and fee with ten (10) copies of the Preliminary Plat to the office of the City Clerk. All appropriate City Departments shall review the preliminary plat with their respective staff for conformity with all City regulations. Upon receipt of all departmental recommendations, the City Clerk shall place the Application for

Preliminary Plat Approval on the next scheduled meeting of the Planning Commission.

(2) The Planning Commission shall review the staff reports and the preliminary plat, and shall recommend, in writing, approval, amendment, or denial of the preliminary plat to the City Council.

(3) At the first regular City Council meeting following the Council's receipt of the Planning Commission's written recommendation, the Council may approve, amend, or deny the preliminary plat.

(4) For a Minor Subdivision, the provisions of this subsection for a Preliminary Plat may be waived by the City Council upon the recommendation of the Development Review Committee. Such a Minor Subdivision shall comply with all other provisions of this Ordinance.

(c) Application for Construction Plan Approval:

(1) On the basis of the Approval of the Preliminary Plat, the subdivider's engineer shall prepare construction plans and specifications and submit two (2) copies to both the City Engineer and the Superintendent of Public Works. Subdivider may proceed with subdivision development only after obtaining approval of construction plans by the City Engineers, the Superintendent of Public Works, the Department of Environmental Regulation and the Department of Transportation of the State of Florida, and the Southwest Florida Water Management District, and in addition, approval of all required applications and receipt by the City Engineer of copies of the Applications and corresponding permits.

(2) Subdivisions which have received preliminary plat approval may be developed in accordance with subdivision standards which were in effect at the time of preliminary approval, with the following exceptions: if subdivision development has not been commenced within one year (12 months) or if all public improvements within the subdivision have not been completely developed within five (5) years of preliminary plat approval, the plat approval expires, and the plans must be submitted for review and re-approval. Plans thus submitted for review and re-approval shall comply with all regulations in effect at time of review or re-approval.

(d) Application for Record Plat Approval:

(1) Record plats may only be brought before the City Council for approval either when all improvements are completed in accordance with the approved construction plans, or when security has been posted guaranteeing completion of all improvements. If security is posted, it must be satisfactory in form to the City Attorney, and equal in amount to 110% of the cost of all uncompleted improvements. An engineer shall prepare the cost estimate, and the estimate must be approved by the City Engineer.

(2) The record plat shall be prepared by a registered land surveyor. The subdivider shall submit the original and ten (1) copies to the appropriate City Official and, at the same time, make application to the City Council for Record Plat Approval. The City Official shall disburse to City Attorney, City Engineer, Superintendent of Public Works, Community Development Department, and the City Clerk one

(1) copy of the final plat for their review and recommendations.

(3) The City Engineer will review, approve and sign the original and forward it to the City Attorney who will check it for proper legal form and content and present it to the City Council for their review, approval, and appropriate signatures.

(4) The City Council may approve the Record Plat. If not approved, the City Council shall return the plat to the registered land surveyor who prepared the plat. If resubmitted, this section must be complied with again.

(5) Within thirty (30) days from the approval by the appropriate governing bodies, the plat shall be submitted to the Clerk of the Circuit Court or other recording officer for his acceptance and recording. The subdivider shall deliver to the City Clerk a reproducible mylar of the recorded plat.

(6) The subdivider may now sell lots by reference to the plat after compliance with all terms and conditions of this Ordinance.

SECTION 4. GENERAL REQUIREMENTS AND MINIMUM STANDARDS OF DESIGN

(a) Streets:

(1) The location and width of all arterial and collector streets shall conform to the Major Thoroughfare Plan of the Comprehensive Plan.

(2) The proposed street system shall recognize and extend suitable existing streets, and shall make possible the future extension of streets into adjacent undeveloped land where feasible.

(3) Subdivisions bounded by an arterial street or streets shall be planned with widely spaced collector streets as main subdivision entryways from the arterial street or

streets.

(4) Subdividers will be required to provide marginal service roads or road segments at their expense. In order to minimize hazardous conditions and congestion, if any activity abuts an existing or proposed arterial street, a marginal service road or road segment is required.

a. The marginal service road shall have a right-of-way of no less than fifty (50) feet and otherwise conform to the design criteria as set forth herein. It must be designated on all site and development plans and must align with adjacent or proposed access road segments.

b. The establishment of the access road or road segment shall be required as follows:

(i) The subdivider shall construct the road and dedicate it to the City of Palmetto; or

(ii) The subdivider dedicates the right-of-way required for the road and places in escrow 110% of the cost estimated by the City Engineer to construct the access road. The escrowed funds shall be escrow agreement, a copy of which shall be provided to the City Engineer.

(iii) Upon completion of the access road, all individual points of ingress and egress into the arterial highway shall be eliminated and primary access shall then be provided by the marginal access road.

(iv) In the instance where various activities are intermittently developing along an arterial street, it shall be the responsibility of the City Council to determine when the construction of the marginal service road shall be required.

(5) Minor streets shall avoid intersection with arterial streets, if possible.

(6) Minor streets shall be planned so that residential lots will have drives onto arterial highways.

(7) Intersections shall be as nearly at right angles as possible.

(8) In residential areas, "T" intersections are preferable to four way intersections.

(9) Private streets shall normally be prohibited; however, in certain instance they may be approved if they comply with "Required Street Improvements" as set forth in Section 6 (c), requirements set forth in the design manual, and when the following conditions exist:

a. Subdivisions containing private streets shall not block logical access to adjoining lands.

b. Private streets or drives, shall have an impervious, minimum, travel-way width of a minimum of 11 feet per travel lane

c. Perpetual maintenance, adequate to insure good travel conditions at all time must be assured by recorded document.

(10) The minimum width of right-of-way (R.O.W.) shall be as indicated on the Major Thoroughfare Plan of the Comprehensive Plan for the City of Palmetto,

Florida, and as follows:

SUBDIVISIONS:

Collector Streets:	Min. R.O.W.	Major Coll.	100'
		Minor Coll.	84'
Minor Streets:	Min. R.O.W.		50'
Marginal Access Streets:	Min. R.O.W.		50'
Alleys:	Min. R.O.W.		20'
Cul-de-Sacs	Min. R.O.W.		110' diameter

MOBILE HOME PARKS

Collector Streets:	Min. R.O.W.	50'
Minor Streets:	Min. R.O.W.	40'
Cul-de-Sacs:	Min. R.O.W.	110' diameter

(11) Engineering requirements may result in greater minimum R.O.W. requirements than above.

(12) Additional width on Existing Streets - Subdivisions that adjoin existing streets shall dedicate additional right-of-way to meet the above minimum street width requirements.

a. The entire right-of-way shall be provided where any part of the subdivision is on both sides of the existing street.

b. When the subdivision is located on only one side of an existing

street, one-half of the required right-of-way, measured from the center line of the existing right-of-way, shall be provided.

(13) No dead-end streets shall exceed eight hundred (800) feet in length. All dead-end streets shall be provided with a paved turn-around diameter of 90' minimum and a right-of-way diameter as set forth in Section 4 (a) (10).

(14) Street jogs with centerline offsets of less than 125' are prohibited.

(15) A tangent at least one hundred feet (100') in length shall be provided between reverse curves on arterial streets and collector streets. Minimum radius of centerline curvature on arterial highways shall be one thousand feet (1,000) and on collector streets shall be four hundred feet (400'), or as approved by the City Engineer.

(16) Property lines at street intersections shall be rounded with a minimum radius of twenty-five feet (25').

(17) Radius of curvature at back of curbline of street intersections shall be minimum or twenty-five (25').

(b) Distance Between Street Intersections:

The distance between street intersections shall not exceed two thousand (2000) feet in any development other than proposed developments in which lot sizes are five (5) acres or more.

(c) Lots:

(1) Lots shall front on a street for at least twenty-five feet (25').

(2) A lot shall have its principal frontage (lot width) on a street, or on such other means of access as may be determined in accordance with the provisions of the

law to be adequate, as a condition of the issuance of a building permit for building on such lot.

(3) Corner lots shall be at least fifteen percent (15%) wider than the minimum width permitted in the district in which they are located.

(4) Through lots shall be avoided except where essential to provide separation of residential development from arterial highways or to overcome specific disadvantages of topography and orientation.

(5) Side lot lines shall be substantially at right angles or radial to street lines where practicable.

(6) Flag lots will not be permitted where:

a. More than three (3) lots front on a public street contiguously with front footage less than one hundred fifty feet (150'); or

b. In subdivisions of four (4) or more lots, where the percentage of flag lots exceeds twenty-five percent (25%); or

c. Lots are less than one-half (1/2) acre in size. Square footage of all individual lots must be noted on final plat.

(d) Recreation and Open Space Facilities:

In developments of four (4) acres or larger, a minimum of five percent (5%) of the gross land area of a residential subdivision shall be reserved as recreation and open space area, and appropriately developed with facilities geared to the needs of the residents of the subdivision. The Planning Commission shall insure that appropriate open space has been provided in each subdivision plan which it considers. Commercial developments shall be required to provide open

space as a buffer between commercial and residential areas.

(e) Easements:

(1) There are hereby expressly reserved easements of five (5) feet along the rear and side lot lines of all lots for underground utilities, surface and underground drainage purposes, but limited, if used to one side of any one lot. Where more than one lot is intended as a building site, the outside boundaries of said building site shall carry said easements. All other easements shown on the plat shall be reserved in perpetuity for the purposes noted.

(2) Pedestrian easements or dedications, not less than ten (10) feet wide with sidewalks, shall be provided for necessary access to schools, playgrounds, shopping centers, public transportation, and other community facilities where said facilities abut the proposed development. Lots adjoining said pedestrian easements shall not be considered corner lots.

(3) Lateral cross access pedestrian easements shall be provided in addition to the pedestrian easements required in Section 4(e) (2), above, for each block that is up to (400) feet in length. In the event a bock is greater than (400) feet in length, two (2) or more such easements shall be provided depending upon the length of the block.

(f) Access:

No subdivision shall be approved unless its street system is connected to an arterial street by a public road which is City, County or State maintained.

SECTION 5. REQUIRED IMPROVEMENTS FOR SUBDIVISIONS

All improvements required by these Regulations shall be installed by, and at the expense of the developer, as required by the City Engineer in accordance with professional engineering standards.

(a) Permanent Reference Monuments (P.R.M.'s):

Permanent Reference monuments shall be placed as each corner or change in direction on the boundary of the lands being platted; however P.R.M.'s need not be set closer than 310 feet, but shall not be more than 1400 feet apart. In all cases there shall be a minimum of four (4) P.R.M. shall be shown on the plat, or if unnumbered, shall so state. Permanent reference monuments shall be set before the recording of the plat and this will be so stated in the surveyor's certificate on the plat.

(b) Permanent Control Points (P.C.P.'s):

Permanent Control Points shall be set at the intersection of the centerline of the right-of-way at the intersection of all streets, at points of curvature (P.C.), points of tangency (P.T.), points of compound curvature (P.C.C.), and points of reverse curvature (P.R.C.) and no more than 1,000 feet apart, on tangent, between changes of direction, or along the street right-of-way or block lines at each change in direction and no more than 1,000 feet apart. Such P.C.P.'s shall be set prior to the expiration of the bond or other performance security for required subdivision improvements.

(c) P.R.M .and P.C.P. Standards:

P.R.M.'s and P.C.P.'s shall be constructed and installed in accordance with Florida Statues, Chapter 177.

(d) Lot Corners:

All lot corners shall be marked with a reinforcing bar not less than one-half (½) of an inch in diameter nor less than eighteen (18) inches long, and driven so as to be flush with the finished grade. In special cases, such as waterfront lots, alternate methods adhering to not less than the minimum technical standards for land surveying (F.A.C. 21 HH - 6) may be employed.

(e) Drainage:

An adequate drainage system, including necessary curbs, pipes, culverts, drop inlets, bridge, swale ditches, ponds, lakes and their outlets, sub-surface drains, etc., shall be provided for the proper drainage of all surface water. All drainage shall be designed using the appropriate criteria of the Southwest Florida Water Management District or where applicable, County or FDOT minimum criteria for drainage design. As-built drawings shall be supplied by the subdivider.

(f) Required Street Improvements, Including Private Streets Serving 4 or More Lots:

(1) Minor Streets: Pavement widths are measured from face-to-face of standing curb, inside face-to-inside-face of valley gutter, or edge-to-edge of travelway if there is no curb.

a. Multi-family residential and mobile home developments, or single family residential subdivisions in which the average lot size is less than 5, 000 sq. feet, 32' minimum paved street, or if the necessity for on-street parking is completely eliminated by appropriate design, the paved street width may be reduced to 24' exclusive of curbs.

Concrete curb and gutter or valley gutter, and subsurface drainage as required.

b. Single or double family residential subdivisions in which the average lot size is between 5,000 and 10,000 square feet.

22' minimum paved street.

Concrete curb and gutter or valley gutter, and subsurface drainage as required.

c. Single family residential subdivisions in which the average lot size is between 10,000 square feet and ½ acre:

22' minimum paved street.

Concrete curb and gutter or valley gutter, and subsurface drainage as required.

d. Subdivisions in which the average lot size is greater than ½ acre and smaller than 5 acres:

22' minimum paved street.

Concrete curb and gutter or valley gutter, or swale drainage, and subsurface drainage as required.

e. No street will be accepted for maintenance by the City unless it meets paved street specifications.

(2) Collector Streets:

Minor - 36' Minimum Paved Street.

Major - Two 24' Pavements with a Minimum 10' Median strip.

Concrete curb and gutter or valley gutter, or swale drainage, and subsurface drainage as required.

(3) Arterial Highways:

24' pavement, located with its center a minimum of 20' off center of the R.O.W. (This permits later construction of a parallel 24' roadway, resulting in a 4-lane divided arterial highway.)

(4) Rights-of-way for arterial highways which fall within new subdivisions shall be dedicated by the developer of that subdivision. When a development abuts a planned or existing arterial highway, and traffic problems may reasonably be expected from multiple driveways, a parallel service road will be provided at the developer's cost. When multiple owners and development schedules are involved, suitable right-of-way will be required of each owner, and at a time determined by the Planning Commission, all driveways except the primary entrance will be closed.

(g) Sidewalks:

(1) Major Thoroughfare Streets:

Sidewalks constructed to the specifications of the Design Manual, a minimum of five (5) feet wide, shall be installed on the sides of the Major Thoroughfare Streets abutting the development.

(2) Other Public Streets:

Sidewalks, constructed to the specifications of the Design Manual, a minimum of Four (4) feet wide, shall be installed along the north and west sides of all new or existing public streets, lying or adjacent to or within the proposed development. The City Council may allow construction of sidewalks on the opposite side of the

streets where conditions make an alternative location or design more feasible or practical, or where necessary to extend an existing or proposed sidewalk.

(3) Non-Dedicated Rights-of-Way:

In developments where the streets are not dedicated to the public, sidewalks shall not be required. However, all developments shall provide pedestrian walks which interconnect principal structures, parking areas, recreational facilities and adjoining sidewalks. Such walks shall be paved unless adequate assurance is provided for continued maintenance of other surface materials.

(4) Sidewalks shall be placed within the street right-of-way.

(h) Street Numbers:

Street numbers and addresses shall be assigned by the City Clerk's Office. Street names, if used in addition to street numbers, shall be approved by the City Clerk's office and local Postmaster.

(i) Street Signs:

City approved Street Number signs shall be placed at each street intersection by the Subdivider, or by the City at Subdivider's cost.

(j) Canals:

The ownership of all canals or parts of canals located within the boundaries of the subdivision shall be reserved unto the owner(s) in the subdivision and shall not be dedicated to the public, except that said canals may be utilized by the City for purposes of drainage of surrounding areas.

(k) Commercial Subdivisions; Industrial Subdivisions; Planned Unit Developments:

The preceding design and improvement standards are primarily matched to typical residential subdivision needs. Commercial and Industrial Subdivisions normally require thicker and wider pavements and sidewalks at driveways, and have other peculiar design requirements. Planned Unit Developments may also be quite different from typical subdivisions, and as such their design and improvement needs may vary to some degree. In the case of Commercial or Industrial Subdivision, Planned Unit Development or other non-typical residential subdivision development, the Planning Commission may recommend waiver of such portion of these regulations as they determine to be inapplicable, and may recommend such alternate and additional requirements as are found to be appropriate in the particular case.

(1) Water Supply:

Water mains and fire hydrants shall be installed, and each lot within the subdivision shall be provided with a connection to such water mains. Water mains shall be connected with the public water supply system by the Subdivider in such a manner as to adequately serve all lots shown on the Subdivision Plat for both domestic use and fire protection.

The sizes of water mains, location, types of valves and connections for fire hydrants, and other features of the installation shall meet the standards as set forth in the City Engineer's Design Manual. In areas where City water supply is not available, the developer shall extend the necessary lines to insure adequate service for both domestic and fire use.

(m) Sewage:

(1) Generally:

Sewer mains shall be installed by the subdivider, and each lot within the subdivision shall be provided with a connection to such mains. For further design

criteria see the City Engineer's Design Manual.

In areas where a central municipal sewer system is not available, the subdivider shall extend central municipal sewer to his subdivision either through gravity or lift station force main and install the system within his subdivision. Any oversizing of lift station, force main or gravity sewer requested by the City shall be reimbursed to the subdivider subject to the requirements of (2) below. The provisions of this regulation may be waived by the City Council if, in its judgment, it is determined that the City's wastewater treatment plant will not have available capacity in the immediate future.

(2) Participatory Excess Capacity:

In the event the City requests public improvements be provided for a capacity which exceeds that required by the subdivision itself, except as otherwise provided in this Ordinance, for the purpose of serving future growth and development outside the subdivision, the City may pay the cost of this excess capacity, subject to:

a. Developer shall request such participation reasonable in advance of the City's budget-making process;

b. Developer shall provide cost estimates satisfactory to the City Engineer, for use in preparing the budget;

c. Developer shall agree to finance any and all costs in excess of the estimate;

d. The City is not bound to fund any such improvements, and the final

decision on such funding commitment shall not be made until after the budget has been approved.

(n) Other Utilities:

All other utilities, including but not limited to electric, telephone, and cable television shall be placed underground in all subdivisions which are not minor subdivisions. This may be considered for a waiver by the Commission upon a showing of substantial public necessity to maintain such utilities above ground.

SECTION 6. INSTALLATION OF REQUIRED IMPROVEMENTS

(a) Purpose and intent:

This subsection is established to provide procedures to assure the proper and timely installation of all required improvements in new developments.

(b) Applicability:

This subsection shall apply to all developments subject to Final Subdivision Plat approval.

(c) Construction Drawings:

(1) Procedure:

a. Submission

Prior to commencing any site work, grading, or other on-site construction activities connected with the development, except brush approval in connection with surveying, the developer shall submit Construction Drawings for the installation of all required improvements in the

development or approved construction phase. Construction Drawings shall be submitted to the respective City departments. Construction Drawings shall be prepared and certified for all required improvements by a Florida registered engineer, architect, or similarly qualified professional. Plans shall be drawn at a scale no smaller than one inch (1") equals fifty feet (50'), unless otherwise specifically authorized. All revisions shall be prepared and submitted as required for original drawings.

b. Review

Upon receipt of Construction Drawings, the respective City Departments, within a reasonable period of time, shall approve or disapprove the Construction Drawings, stating in writing the reasons for any disapproval.

c. Effect of Approval

Upon approval of the Construction Drawings, the developer may commence site development and installation of improvements.

(d) General Requirements:

(1) Generally:

Prior to approval of the Final Subdivision Plat, the developer shall install, at his sole expense, all improvements required under these Regulations in accordance with Construction Drawings as approved. In lieu of installation prior to Final Plat approval, the City council may permit the posting of performance security for such installation in accordance with Paragraph (e) below.

(2) Exception:

Where the Development Review Committee determines that the installation of the following improvements may be delayed without substantial detriment to the public health, safety, or welfare or where necessary to coordinate such improvements with public expenditures or development on adjacent property, it may permit the developer to provide performance security and an agreement to install such improvements at a later specified date. Such improvements shall be limited to:

a. Improvements within public rights-of-way.

b. Installation of sidewalks and bikeways.

c. Improvements to major drainageways.

d. Provision of recreational facilities in lieu of recreational open space.

(3) Procedure:

Such security and agreement shall be provided prior to issuance of any Certificate of Occupancy, and except for the effective period shall be subject to the performance security requirements of the Subdivision Regulations. Inspection by City agencies shall be permitted at all times during the installation of required improvements. For all improvements to be dedicated or installed on City, County or State property, including easements and rights-of-way, the developer's engineer of record shall submit a certificate that they have been properly installed together with as-built drawings prior to the issuance of any Certificate of Completion for the project. For such public improvements, defect security shall also be required in accordance with the requirements of the Subdivision Regulations.

(e) Performance Security

(1) Generally:

Where the City Council permits the posting of performance security for the installation of improvements in lieu of actual installation prior to Final Subdivision Plat approval, the developer shall provide in his application for Final Subdivision Plat approval evidence of security adequate to assure the installation of all required improvements for the subdivision.

(2) Form, Amount:

Such performance security shall comply with all statutory requirements and shall be satisfactory to the Attorney for the City as to form and manner of execution. The amount of such security shall be based upon an estimate by the engineer of record, and shall be subject to approval of the City Engineer, and shall be equal to the maximum cost, adjusted for inflation during the maximum effective period of the security, for provision of the uncompleted portion of required improvements. Provided, however, such amount shall not be less than 110 percent nor exceed 130 percent of the current construction costs of such improvements.

(3) Sidewalks and Bikeways:

To minimize the risk of damage to sidewalks and bikeways during site development and building construction, the City Council may permit the posting of separate performance security and defect security for such facilities, provided the developer also enters into a sidewalk guarantee for such improvements in accordance with procedures and forms established by the City Council

(4) Effective Period, Extensions, Substitutions:.

The effective period of the performance security shall not exceed one (1) year from the date of approval of the Final Subdivision Plat, subject to extension by the City Council for good cause for a maximum period of one (1) additional year, provided that the City may require renegotiation of the performance security amount for the extension period. The City Council may at any time during the effective period of the performance security accept a substitution of principal, sureties, or other parties, upon recommendation by the Attorney for the City.

(5) Approval:

Performance security provided under this Paragraph shall be subject to approval by the City Council.

(6) Default:

Where approved performance security has been provided, and the required improvements have not been installed according to the terms of the performance security instrument, the City Council may, upon thirty (30) days written notice by certified mail, return receipt requested, to the parties to the instrument, declare the performance security to be in default and exercise the City's rights thereunder. Upon default, no further City permits or approval shall be granted for the project until adequate progress toward completion of the remaining required improvements is shown as determined by the City Council. The City Council shall receive payment in full if the improvements are not completed or an extension has not been granted prior to the expiration of the performance

security.

(f) Completion and Acceptance of Improvements:

(1) As-Built Drawings:

Upon the completion of any required improvements, the developer shall submit to the City Engineer, high quality, reproducible, mylar, "as-built" drawings prepared and certified by the engineer of record, showing the actual installation of all such improvements, as may be required by such agencies. An information copy of such drawings, which need not be reproducible mylar, shall also be submitted to the City Clerk.

(2) Defect Security:

Prior to the issuance of a Certificate of Completion, the developer shall post security, in an amount equal to ten percent (10%) of the actual installation costs of all required improvements, for the purpose of correcting any construction, design, or material defects or failures within public rights-of-way or easements in the development or required off site improvements. The form, and manner of execution of such security shall be subject to the approval of the Attorney for the City. The effective period for such security shall be twelve (12) months following the issuance of a Certificate of Completion and City's acceptance of the installed improvements. Substitution of principal, sureties, or other parties shall be subject to the approval of the City Council, upon recommendation by the Attorney for the City. Upon default, the City Council may exercise its rights under the Defect Security instrument, upon ten (10) days written notice by

certified mail, return receipt requested, to the parties to the instrument.

(3) Acceptance:

a. Certificate of Completion:

The City Engineer shall issue a Certificate of Completion for all required improvements only upon compliance by the developer with all of the following requirements:

(i) Completion of satisfactory final inspections,

(ii) Submission and approval of a certification by the engineer of record that the required improvements have been installed and completed in accordance with submitted and approved "as-built" drawings or the original approved construction drawings, in exact conformance with Forms prescribed by the City,

(iii) Posting and approval of the required defect security, in accordance with the subparagraph (2) above, Defect Security.

b. Reduction or Release of Performance Security

The issuance of a Certificate of Completion shall authorize the reduction of any required performance security in an amount equal to the original cost estimate for the installation of improvements which the certificate covers, and where a Certificate of completion has been issued for all required improvements, any required performance security shall be thereby fully released.

c. Release of Defect Security

Subject to the application of any portion of required defect security according to the terms of the security instrument, the balance of the defect security shall be released by the City Engineer at the expiration of its effective period.

d. Acceptance of Required Improvements

Upon the issuance of any Certificate of Completion for any required improvements, the City shall thereby accept responsibility for the maintenance of such improvements, provided such improvements are on land which the City owns, or for which it has accepted an offer of dedication. Unless and until the City acquires such interests, maintenance of such improvements shall remain the sole responsibility of the developer.

SECTION 7. ADDITIONAL REQUIREMENTS AND MINIMUM STANDARDS OF DESIGN

(a) In addition to the requirements and minimum standards of design set forth in Sections 4 through 6 of this Ordinance, the subdividers shall also comply with the requirements and minimum standards of design as set forth in the City Engineer's Design Manual, as provided for in subsection (b) of this Section.

(b) The City Engineer of the City of Palmetto is hereby authorized to prepare a Design Manual to set forth additional requirements and minimum standards of design pertaining to subdivisions, which manual shall include provisions concerning, but to limited to, drainage requirements, street improvements, water and sewer specifications.

(1) The Design Manual may be revised, from time to time, by the City Engineer; provided that, at no time, shall provisions in the manual conflict with any provisions of this Ordinance, as amended. In the event of a conflict, the provisions of this Ordinance shall prevail over the provisions of the Design Manual.

(2) Three (3) copies of the Design Manual shall be and remain on file in the office of the City Clerk for use of the public.

(3) The Design Manual, as it is and may be revised by the City Engineer, is hereby adopted as if fully incorporated and set out at length herein.

SECTION 8. FORMS.

The City Clerk is hereby authorized to prepare and maintain in the City Clerk's Office, any and all forms, applications, written procedures and other documents which are necessary and appropriate for the purpose of effectuating the intent and provisions of this Ordinance.

SECTION 9. FEES.

The City Clerk is hereby authorized to prepare and set a schedule of any and all fees which are necessary and appropriate for the purpose of effectuating the intent and provisions of this Ordinance subject to the approval of City Council. Such fees may be adjusted from time to time within the discretion of the City Clerk, as approved by the City Council.

SECTION 10. CONFLICTS.

All ordinances or parts of ordinances in conflict with this Ordinance are hereby repealed. Specifically, Ordinance No. 41, Subdivision Regulations, City of Palmetto is hereby repealed.

SECTION 11. SEVERABILITY.

If any part of this Ordinance for any reason, is held to be unconstitutional, void, or invalid, the remainder of this Ordinance shall not be affected thereby.

SECTION 12. EFFECTIVE DATE.

This Ordinance shall take effect immediately upon its passage and adoption and publication, according to law.

PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF PALMETTO, FLORIDA, IN REGULAR SESSION ASSEMBLED, THIS _____DAY OF_____,1998.

_____

MAYOR:

_____

CITY CLERK

(Blank)

DEPARTMENT OF PUBLIC WORKS

UTILITY SPECIFICATIONS

2011 EDITION

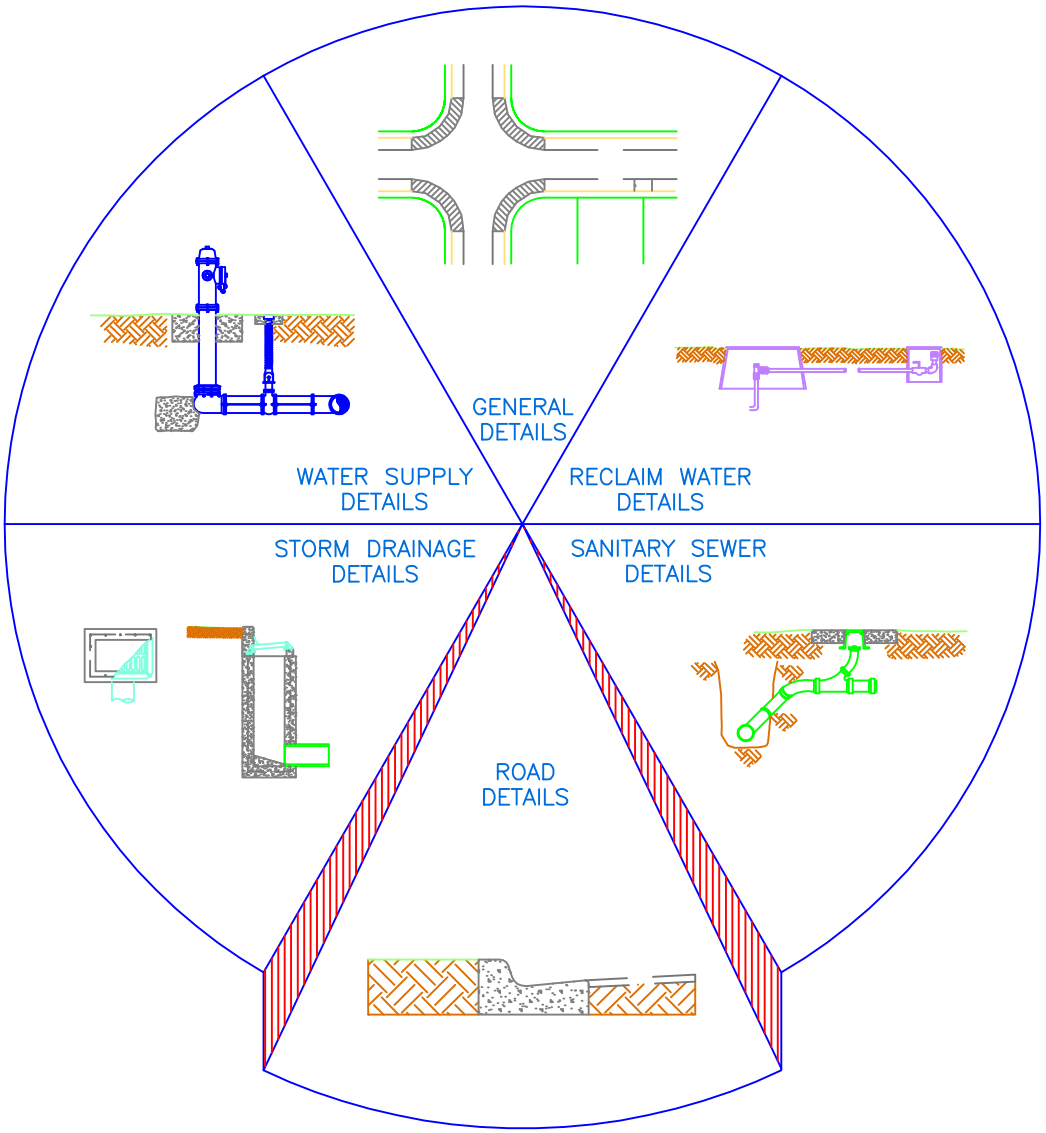


TABLE OF CONTENTS

UTILITY STANDARDS–ROADS

CITY OF PALMETTO
ENGINEERING DEPARTMENT

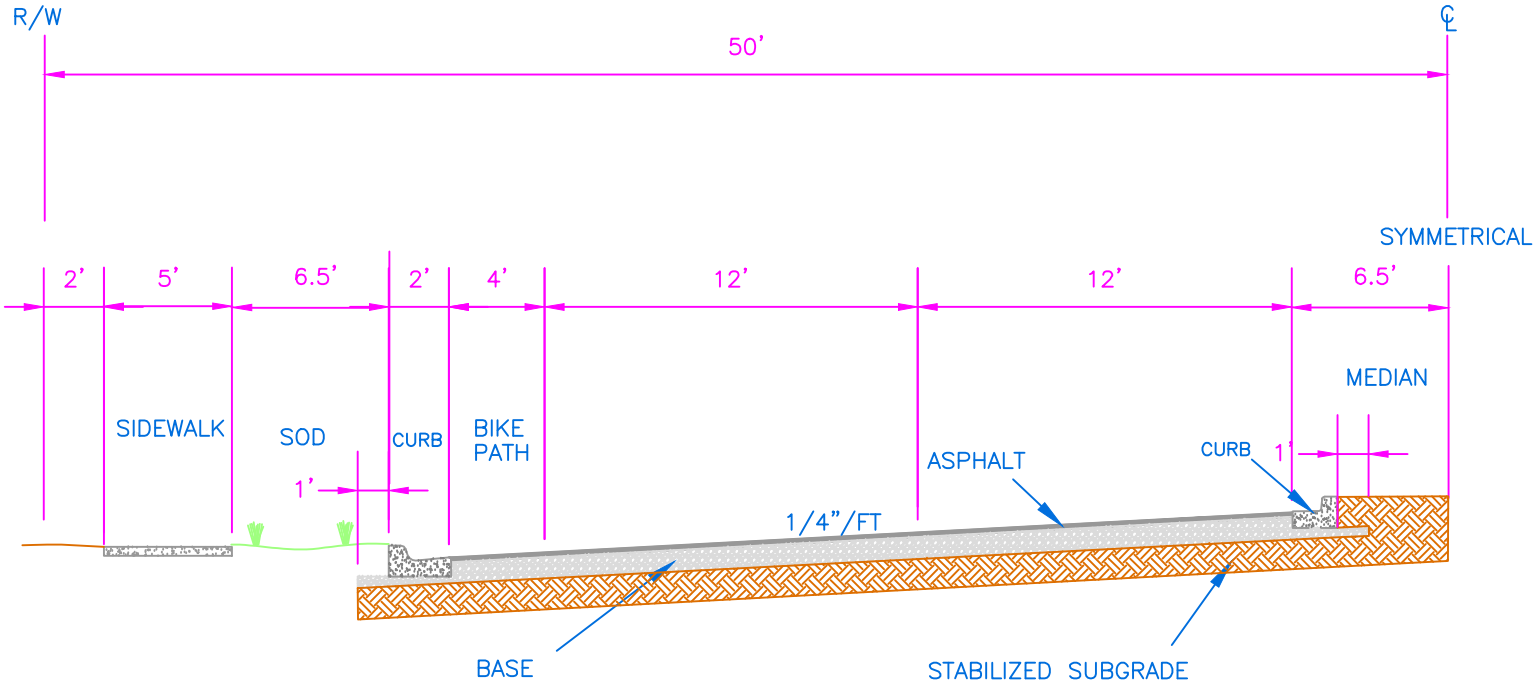
DRAWN BY: BWM
DATE: 5-20-11

REVISED

MINIMUM STANDARD DETAIL

MAJOR COLLECTOR 100' R/W

PAGE R 1



NOTES:

ASPHALT	–1 1/4" STRUCTURAL AND 1" FRICTION (OR APPROVED EQUAL).
BASE	–'CEMENT TREATED BASE' 10" COMPACTED SHELL OR 8" CRUSHED CONCRETE LBR 100
SUBGRADE	–12" STABILIZED TO LBR 40
SIDEWALK	–5' WIDE ON EACH SIDE OF ROAD (SEE R–17)
CURB	–TYPE "F" (SEE R–8)
MEDIAN CURB	–TYPE "AB" (SEE R–8)
SOD	–ARGENTINE BAHIA
BIKE PATH	–4' WIDE ON EACH SIDE OF ROAD (SEE R–17A)

CITY OF PALMETTO
ENGINEERING DEPARTMENT

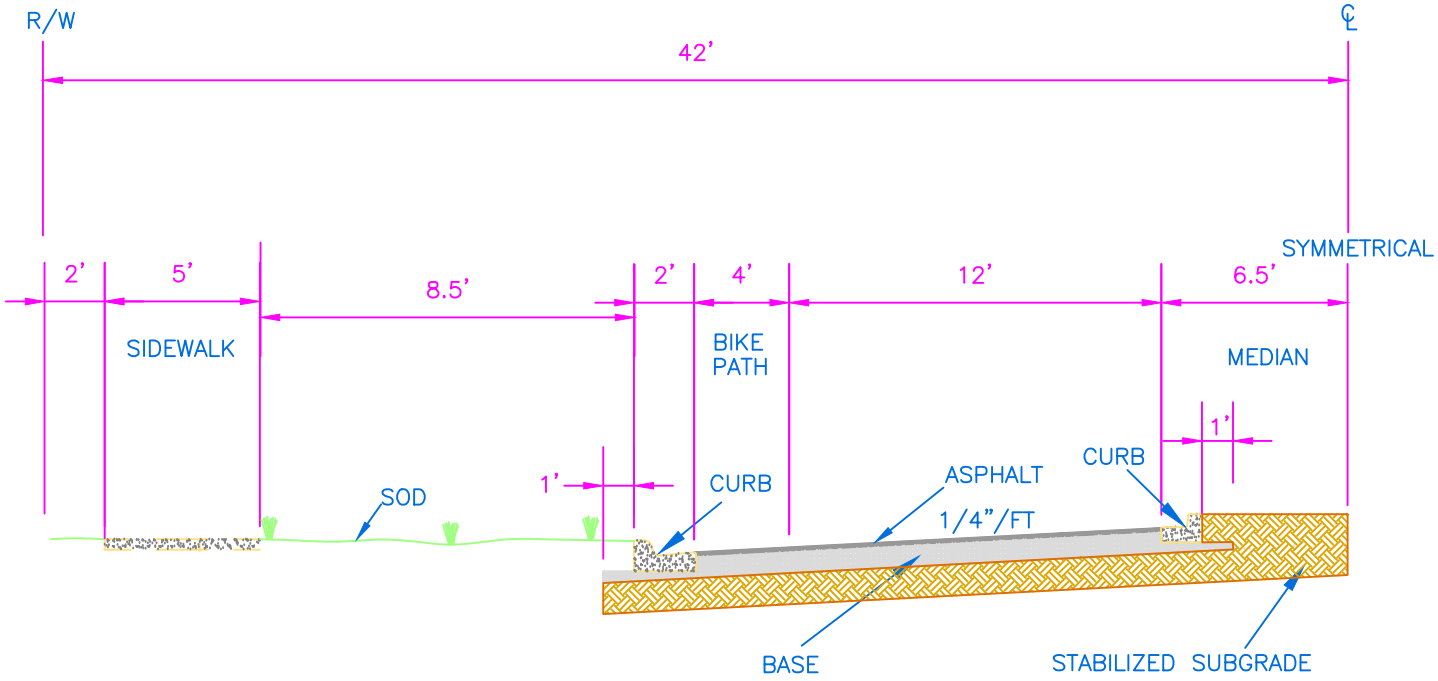
DRAWN BY: BWM
DATE: 5-20-11

REVISED

MINIMUM STANDARD DETAIL

MINOR COLLECTOR 84' ROW

PAGE R 2



NOTES:

ASPHALT	-2" S-3 ASPHALT
BASE	-'CEMENT TREATED BASE' 10" COMPACTED SHELL OR 8" CRUSHED CONCRETE LBR 100
SUBGRADE	-8" MIN. STABILIZED TO LBR 40
SIDEWALK	-5' WIDE BOTH SIDES (SEE R-17)
CURB	-TYPE "F" (SEE R-8)
MEDIAN CURB	-TYPE "AB" (SEE R-8)
SOD	-ARGENTINE BAHIA
BIKE PATH	-4' WIDE ON EACH SIDE OF ROAD (SEE R-17A)

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY BWM

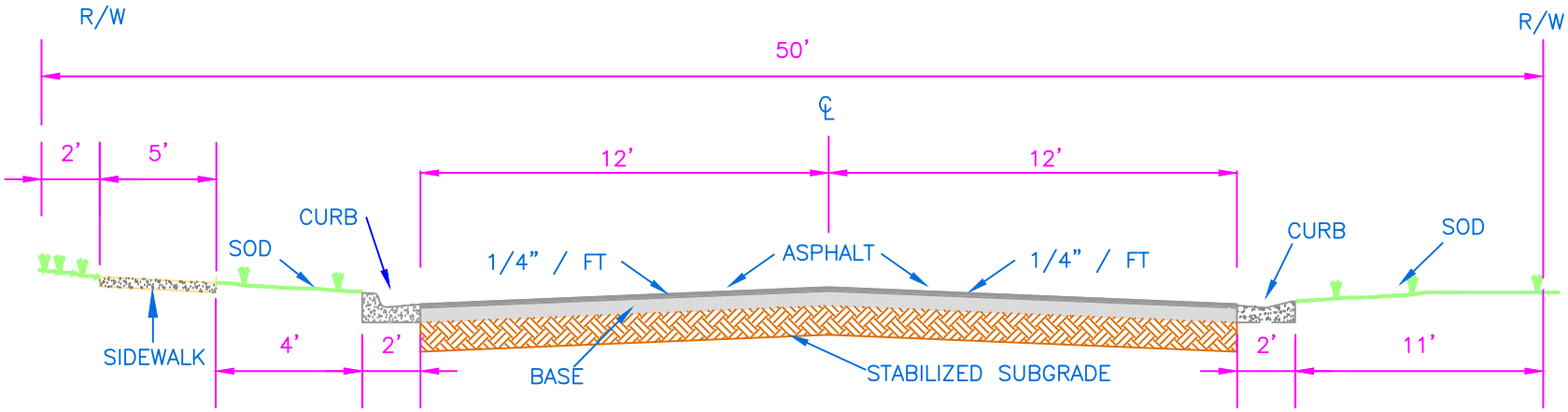
DATE 5-20-11

REVISED

MINIMUM STANDARD DETAIL

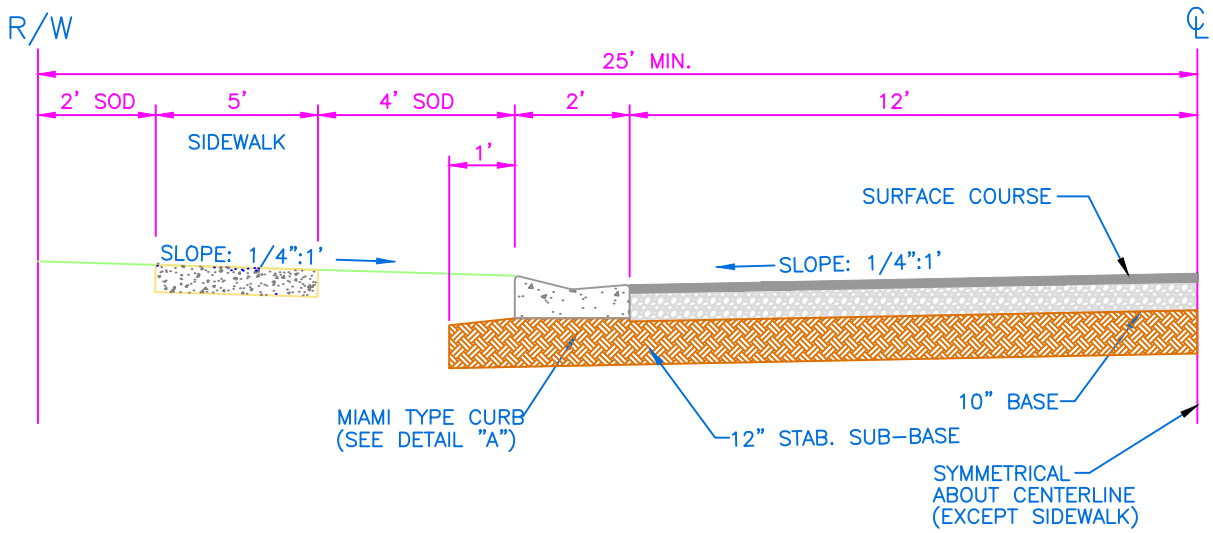
LOCAL STREET 50' ROW

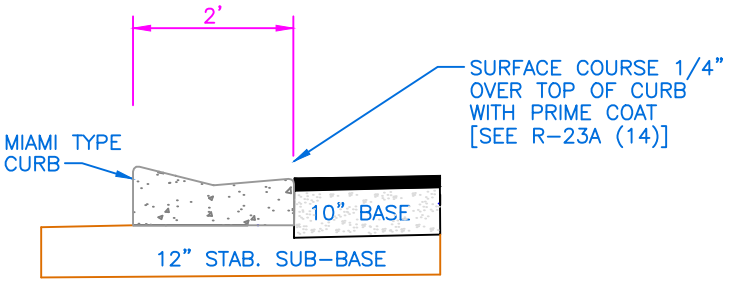
PAGE R 3



NOTES:

ASPHALT –1 1/2" ASPHALT
BASE –'CEMENT TREATED' 6" COMPACTED SHELL OR 6" CRUSHED CONCRETE LBR 100
SUBGRADE–STABILIIZED TO LBR 40
CURB –TYPE "F" OR MIAMI (SEE R–8)
SIDEWALK –NORTH AND WEST SIDES (SEE R–17)
SOD –ARGENTINE BAHIA





DETAIL "A"

NOTES:

A) Asphalt concrete surface course shall be 3" minimum thickness. Two lifts of asphalt shall be standard practice. The first lift shall be 2" of S-I, the second lift shall be 1" of S-III.

B) Cement treated base 10" compacted shell or 8" crushed concrete LBR 100.

C) 12" stabilized sub-base shell marl blended with sandy sub-grade minimum LBR 40, 98% T180 AASHTO.

D) Sidewalk shall be constructed per R-24.

E) See R-8 for curb and gutter types.

F) No portion of a drainage pipe shall be allowed in the sub-base.

G) Laboratory tests are required to substantiate structural section design. Specifications shown on this sheet are minimum requirements.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL URBAN INDUSTRIAL	PAGE R 4

CITY OF PALMETTO
ENGINEERING DEPARTMENT

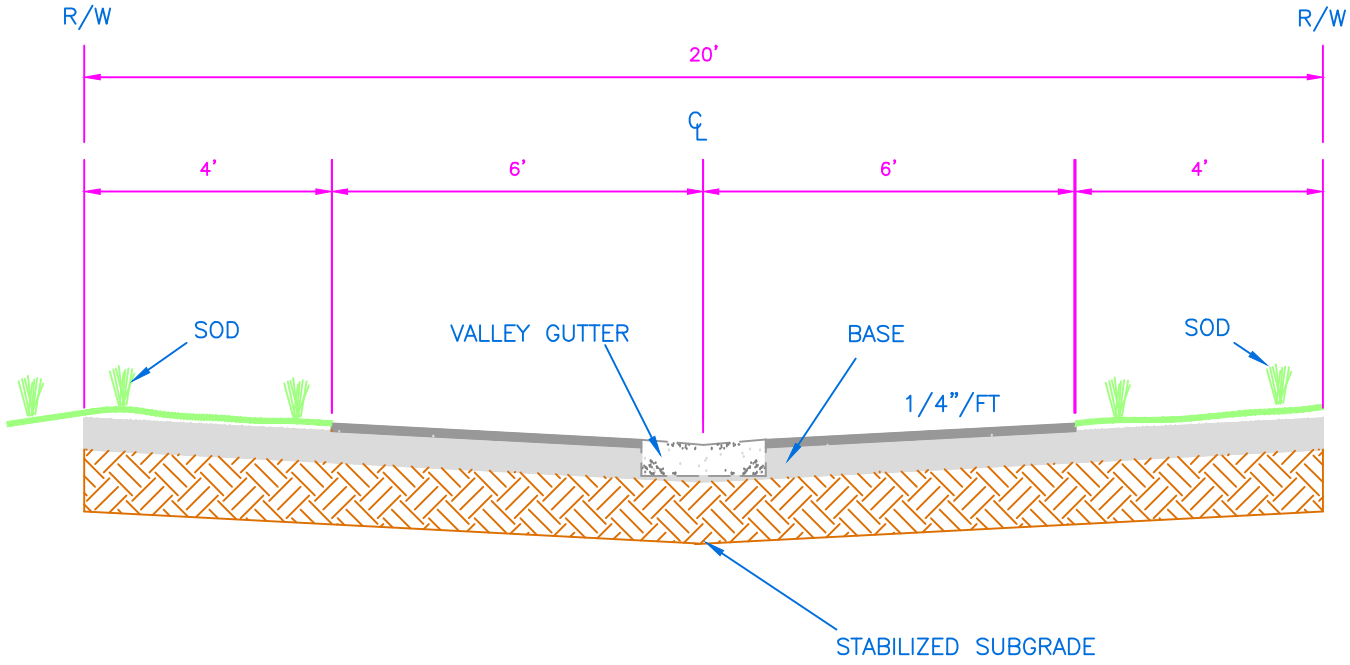
DRAWN BY BWM
DATE 5-20-11

REVISED

MINIMUM STANDARD DETAIL

ALLEY
20' ROW

PAGE R 5



NOTES:

ASPHALT	–1 1/2" ASPHALT
BASE	–'CEMENT TREATED' 6" COMPACTED SHELL OR 6" CRUSHED CONCRETE LBR 100
SUBGRADE	–STABILIIZED TO LBR 40
GUTTER	–VALLEY (SEE R–8)
SOD	–ARGENTINE BAHIA

CITY OF PALMETTO
ENGINEERING DEPARTMENT

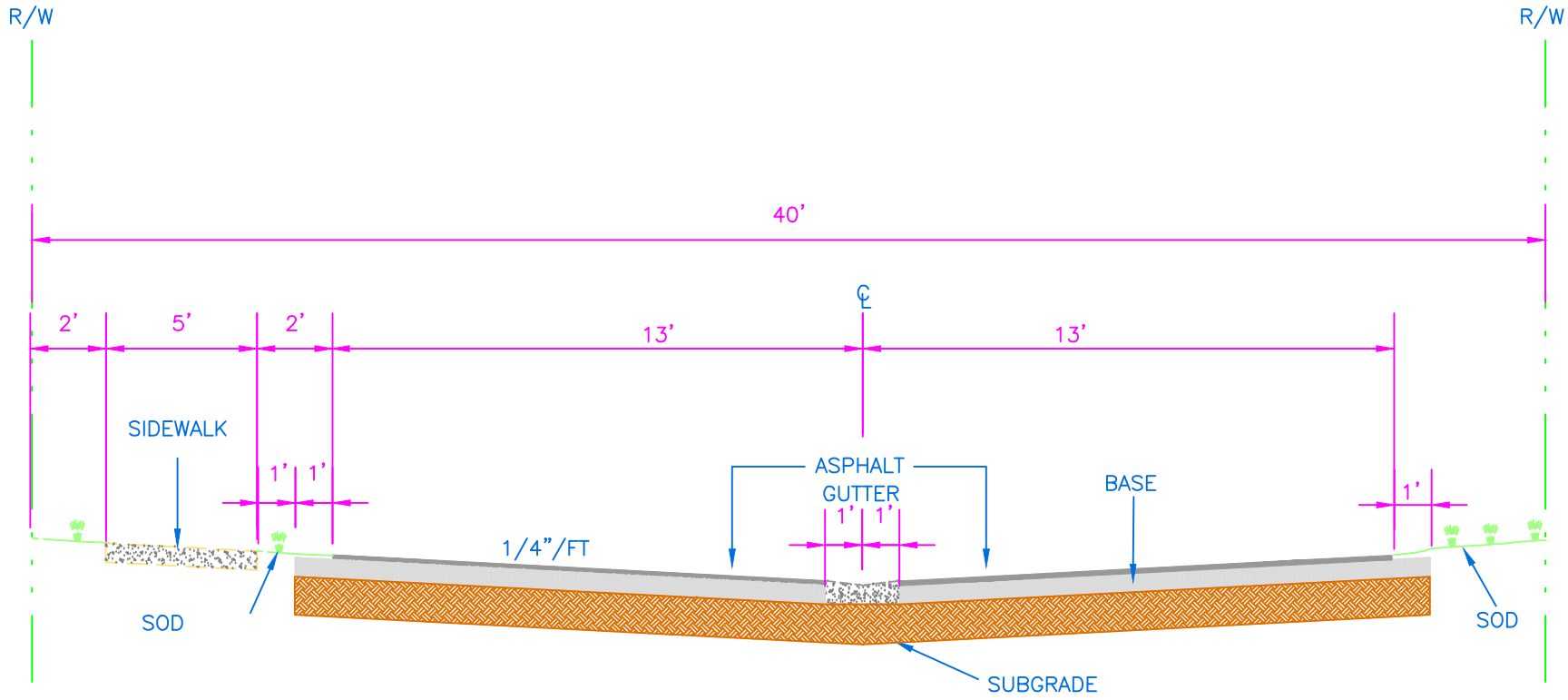
DRAWN BY: BWM
DATE: 5-20-11

REVISED

MINIMUM STANDARD DETAIL

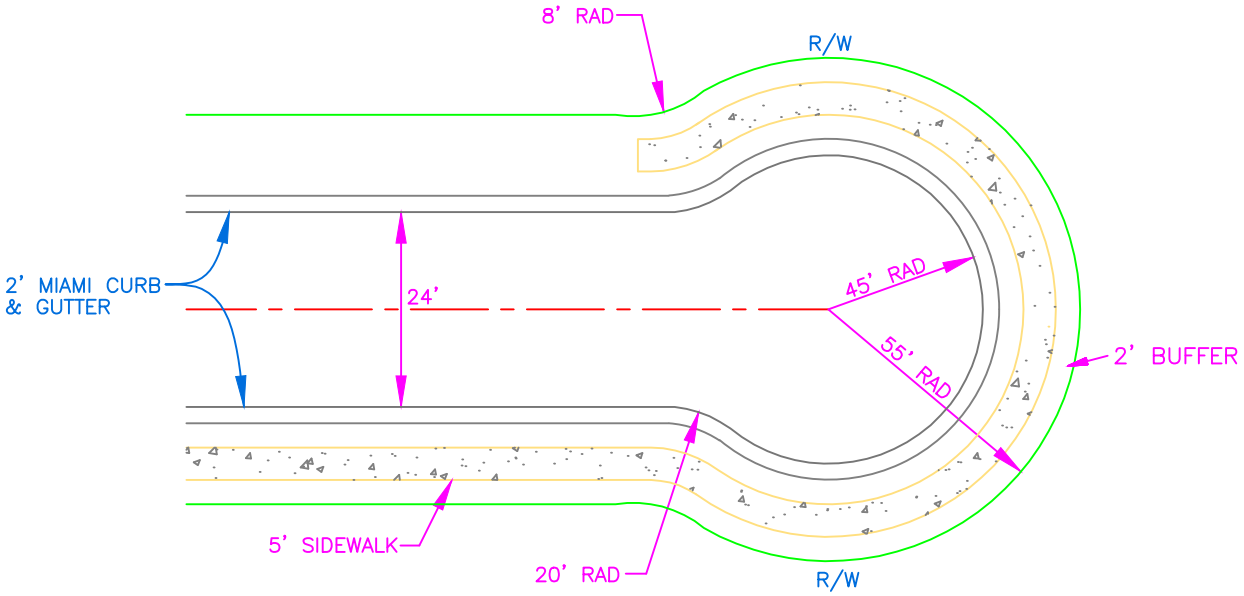
MINOR STREET 40'ROW

PAGE R 6

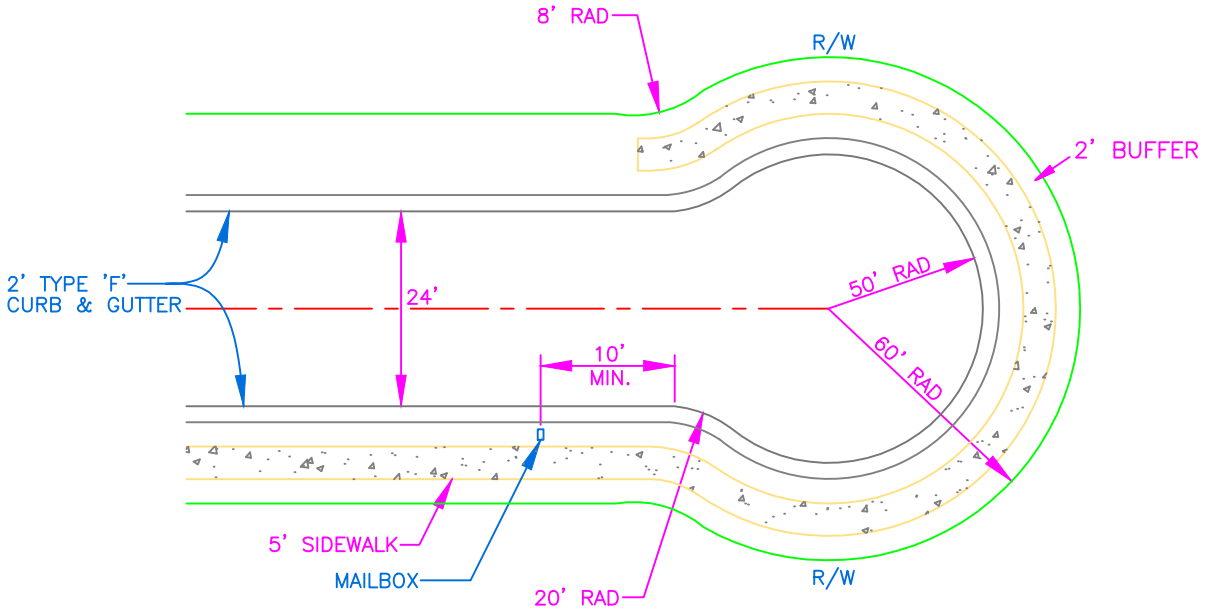


NOTES:

ASPHALT	–1 1/2" ASPHALT
BASE	–'CEMENT TREATED' 10" COMPACTED SHELL OR 8" CRUSHED CONCRETE LBR 100
SUBGRADE	–STABILIZED TO LBR 40
SIDEWALK	–5' SIDEWALK NORTH AND WEST SIDE (SEE R–17)
GUTTER	–VALLEY (SEE R–8)
SOD	–ARGENTINE BAHIA

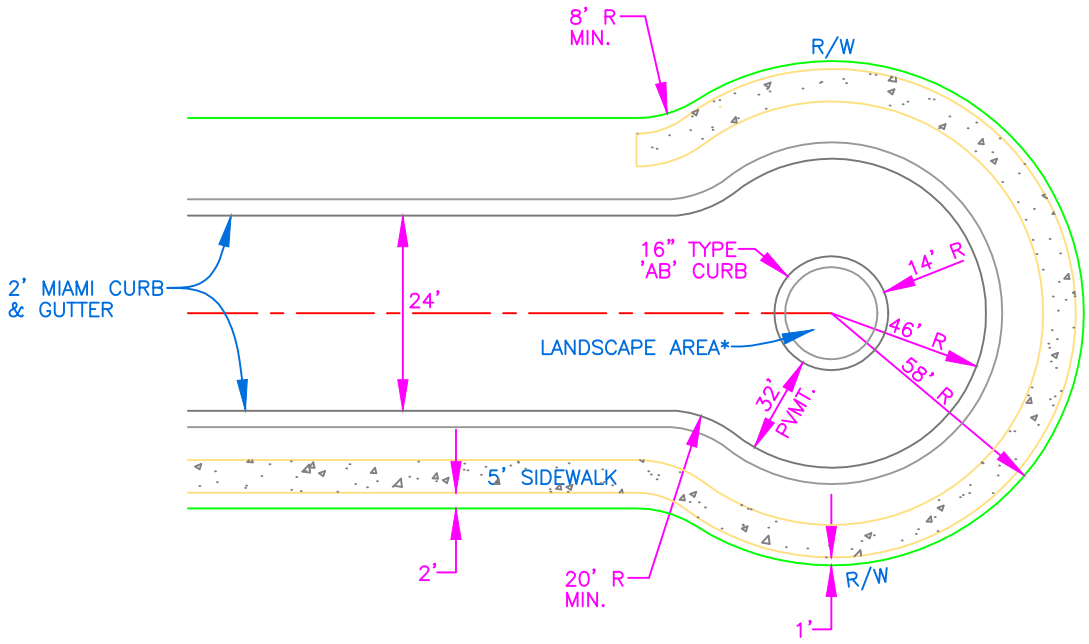


RESIDENTIAL CUL-DE-SAC

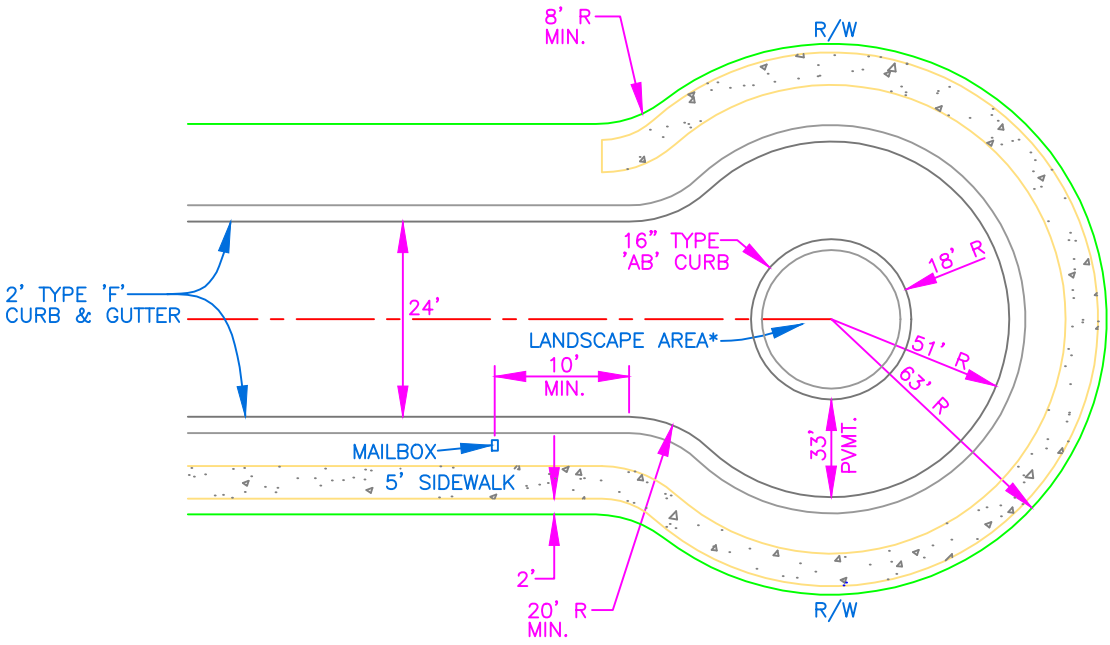


INDUSTRIAL CUL-DE-SAC

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL RESIDENTIAL AND INDUSTRIAL CUL-DE-SAC	PAGE R 7



RESIDENTIAL CUL-DE-SAC

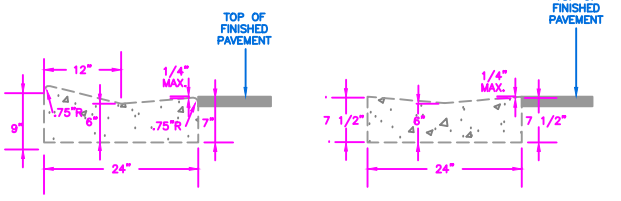


INDUSTRIAL CUL-DE-SAC

ALTERNATE:

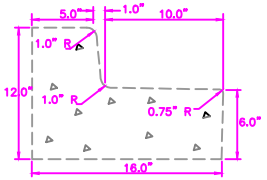
TRUCK COLLAR DESIGN MAY BE USED BETWEEN RADIUS OF 16-1/2' AND 30' (SEE R-23).

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL RESIDENTIAL AND INDUSTRIAL CUL-DE-SAC WITH MEDIAN	PAGE R 7A

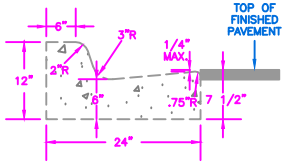


MIAMI CURB

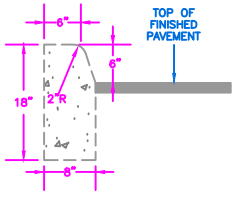
VALLEY GUTTER



TYPE "AB"
MODIFIED CURB & GUTTER

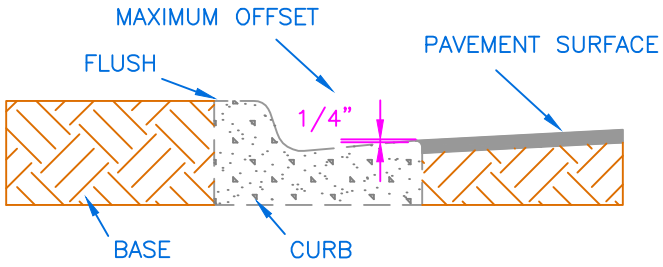


TYPE "F" CURB

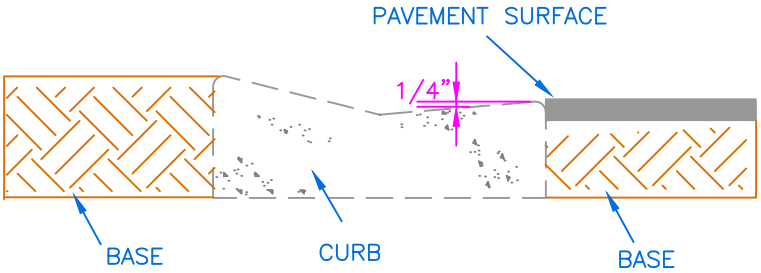


STANDING CURB

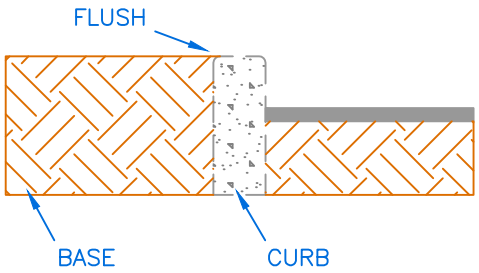
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL CURB AND GUTTER	PAGE R 8



TYPE "F" CURB



MIAMI CURB



STANDING CURB

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL PAVEMENT ENDINGS	PAGE R 9

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY: BWM
DATE: 5-20-11

REVISED

MINIMUM STANDARD DETAIL

RESIDENTIAL DRIVEWAY SPACING

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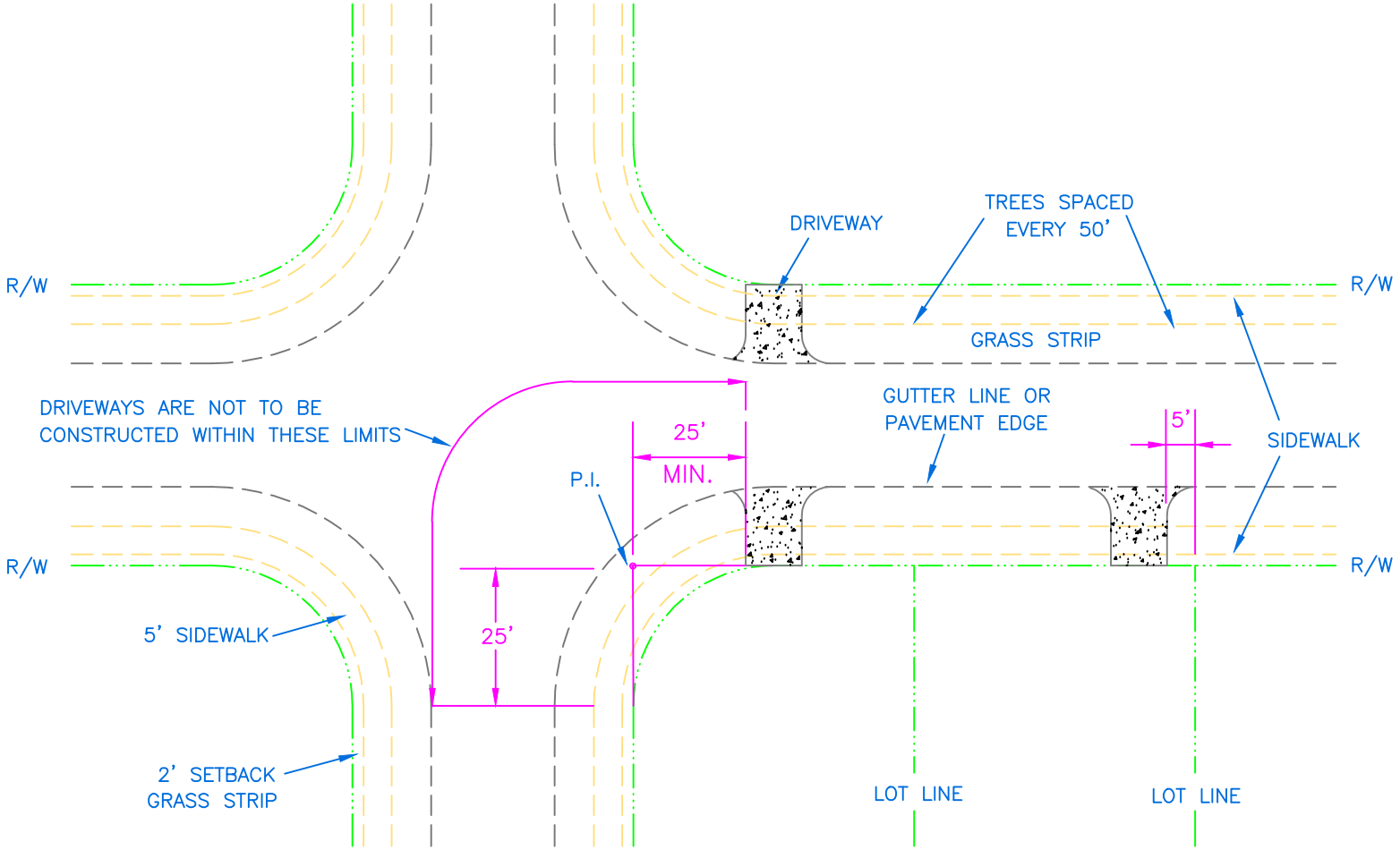


NOTES:

1. THE LIMITS WITHIN WHICH DRIVEWAYS MAY NOT BE CONSTRUCTED ARE DETERMINED BY MEASURING FROM P.I. OR R/W LINES A DISTANCE OF 25' ALONG THE R/W LINE CURVE TANGENTS.
2. ALL DRIVEWAYS MUST BE CONTRUCTED SO THAT NO PART OF THE DRIVEWAY (EXCLUDING THE TRANSITION) BETWEEN THE EDGE OF ROADWAY PAVEMENT AND THE R/W LINE CLOSER THAN 5' FROM A SIDE LOT LINE EXTENDED.
3. SEE R-12 AND R-14.

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY: BWM
DATE: 5-20-11

REVISED

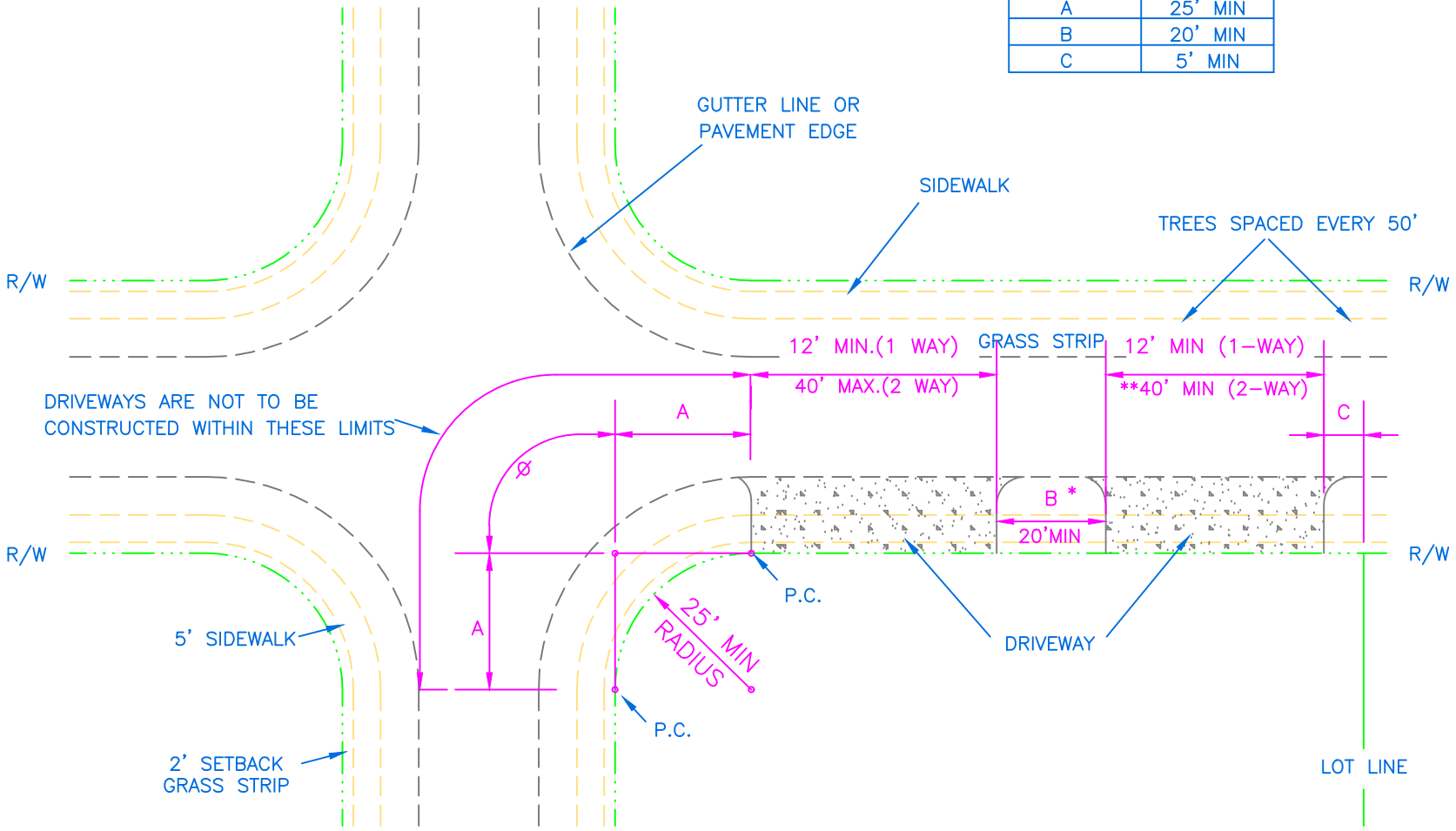
MINIMUM STANDARD DETAIL

COMMERCIAL & INDUSTRIAL DRIVEWAY SPACING

PAGE R 11

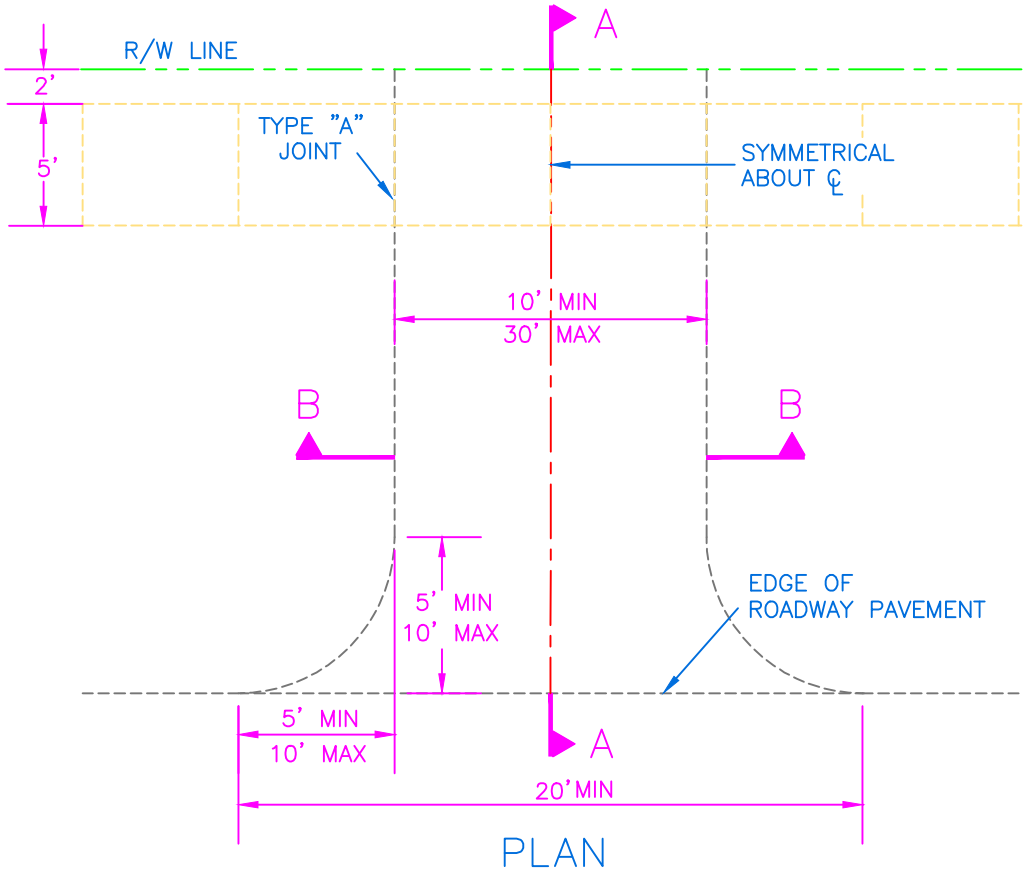
** WIDTHS BETWEEN 40' & 60' WILL BE PERMITTED ON FRONTAGE 130' OR GREATER, PROVIDED DIMENSIONS REMAIN AS SHOWN ON TABLE BELOW.

LOCATION	DIMENSION
A	25' MIN
B	20' MIN
C	5' MIN

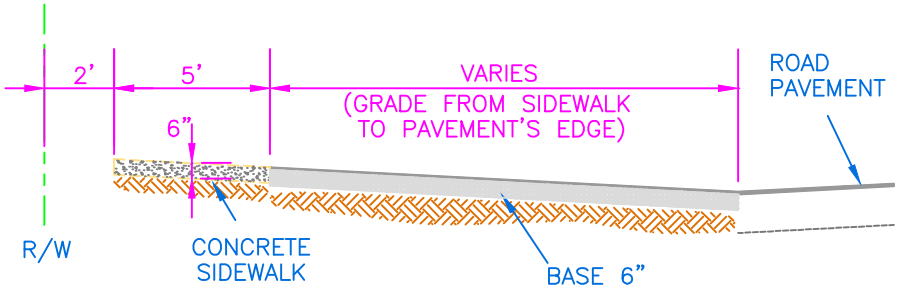


NOTES:

1. WHEN THIS DISTANCE IS LESS THAN 50' THE AREA SHALL BE PAVED AND A 6" CONCRETE CURB CONSTRUCTED AT THE BACK OF SIDEWALK. DRAINAGE WILL BE REQUIRED IN DRIVEWAY AREA.
2. SEE R-12 TO R-15.



PLAN

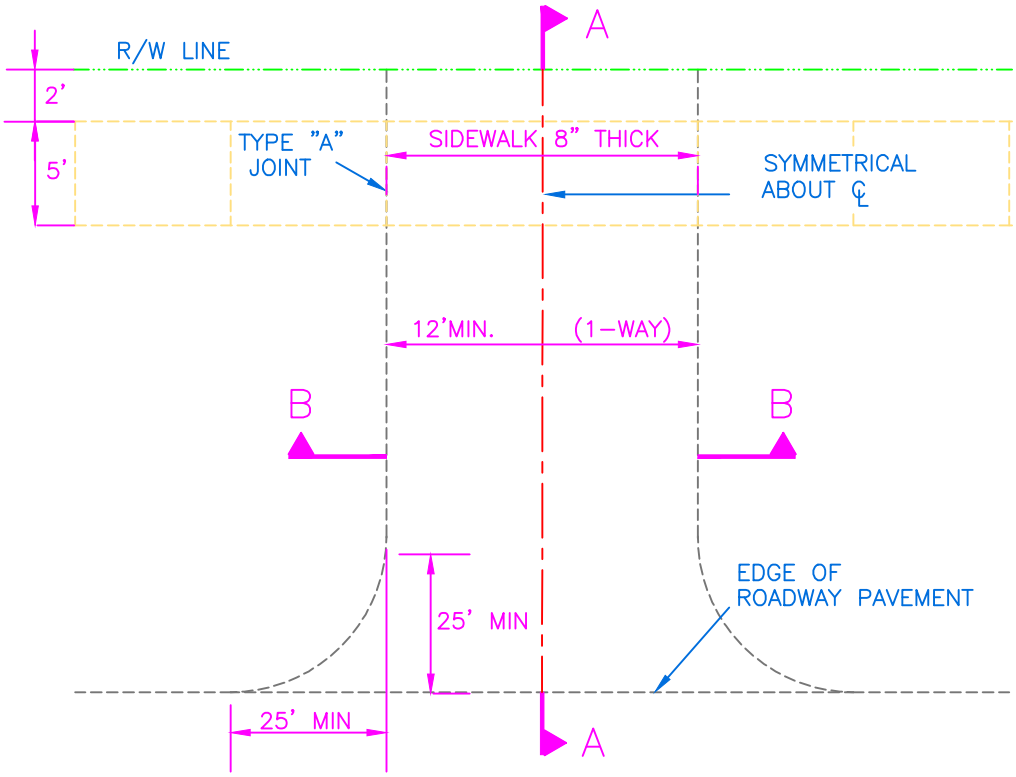


SECTION A–A

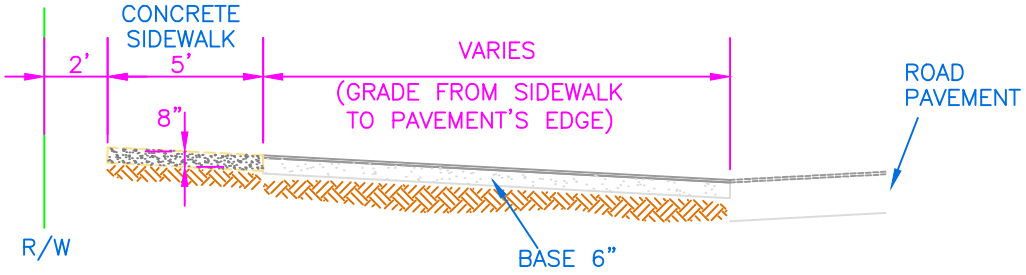
SECTION B–B

NOTES:
SEE R–10 AND R–17
5' SIDEWALK 6" THICK

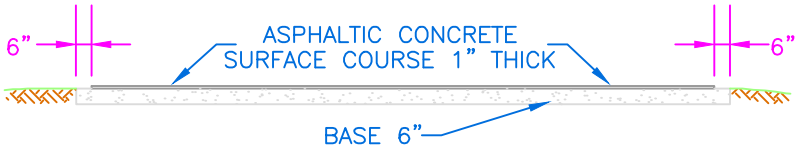
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL ASPHALT DRIVEWAY RESIDENTIAL	PAGE R 12



PLAN



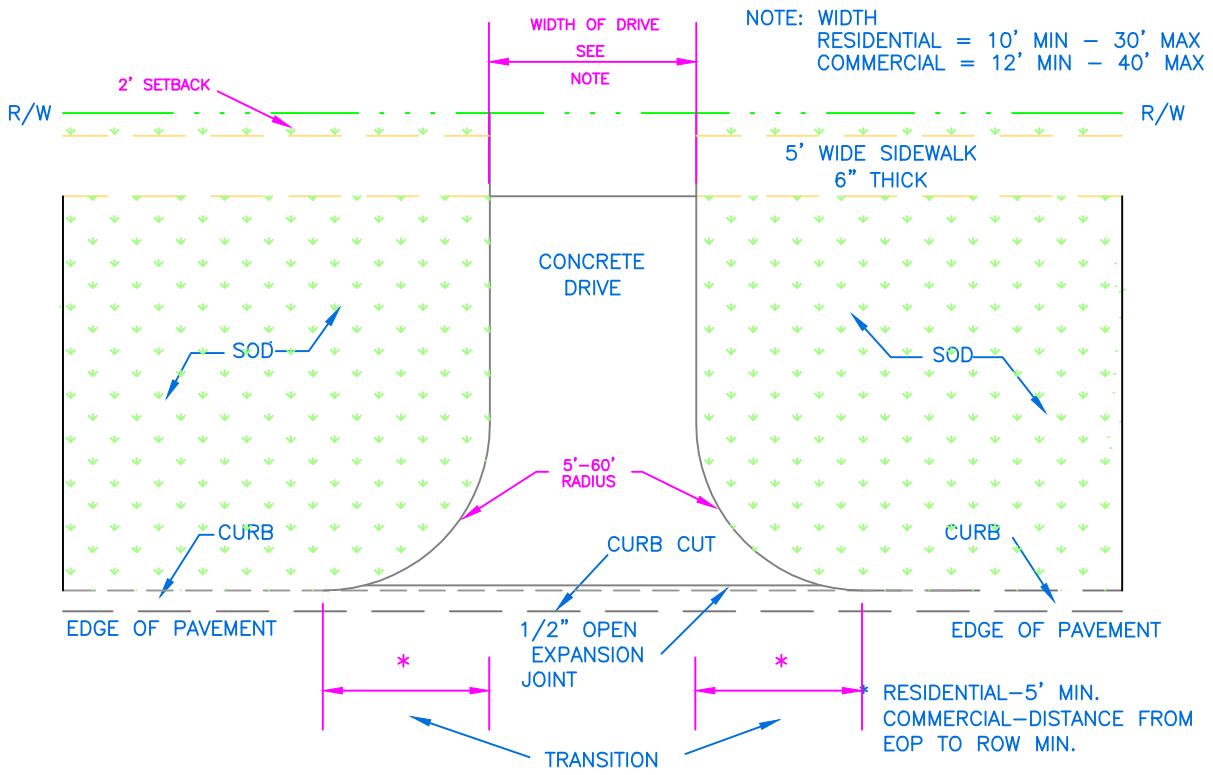
SECTION A-A



SECTION B-B

NOTES:
SEE R-11 AND R-17
5' SIDEWALK 8" THICK CROSSING DRIVEWAY
NO SWALES OR DITCHES ALLOWED FOR DRAINAGE

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL ASPHALT DRIVEWAY COMMERCIAL	PAGE R 13



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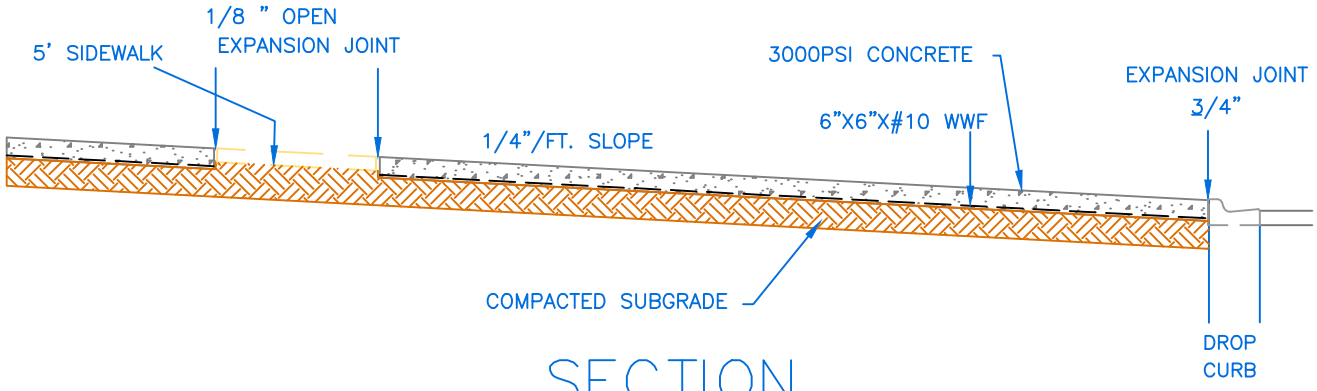

SECTION

NOTES:

A) REMOVE VERTICAL CURB, REPLACE WITH MIAMI CURB & GUTTER. (SEE R–8)

B) RESIDENTIAL: REMOVE EXISTING SIDEWALK, REPLACE WITH 6" CONC. 6X6#10 MESH, 3,000 P.S.I AT 28 DAYS. (SEE R–17)

C) COMMERCIAL: REMOVE EXISTING SIDEWALK, REPLACE WITH 8" CONC. 6X6#10 MESH, 3,000 P.S.I AT 28 DAYS. (SEE R–17)

D) RESIDENTIAL: DRIVEWAY CONSTRUCTION WITH 6" CONC. 6X6#10 MESH 3,000 P.S.I AT 28 DAYS.

E) COMMERCIAL: DRIVEWAY CONSTRUCTION WITH 8" CONC. 6X6#10 MESH 3,000 P.S.I AT 28 DAYS.

F) EXPANSION JOINT 1/2" PREFORMED JOINT FILLER OR APPROVED ALTERNATE. * ON DRIVEWAYS WIDER THAN 12', JOINT AT 10' CENTERS.

G) PIPING TO CONFORM TO SECTION 430 FLORIDA D.O.T. STANDARDS.

H) NO SWALES OR DITCHES ALLOWED FOR DRAINAGE.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL CONCRETE DRIVEWAY	PAGE R 14

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY: BWM
DATE: 5-20-11

REVISED

MINIMUM STANDARD DETAIL

CROSSING DITCH

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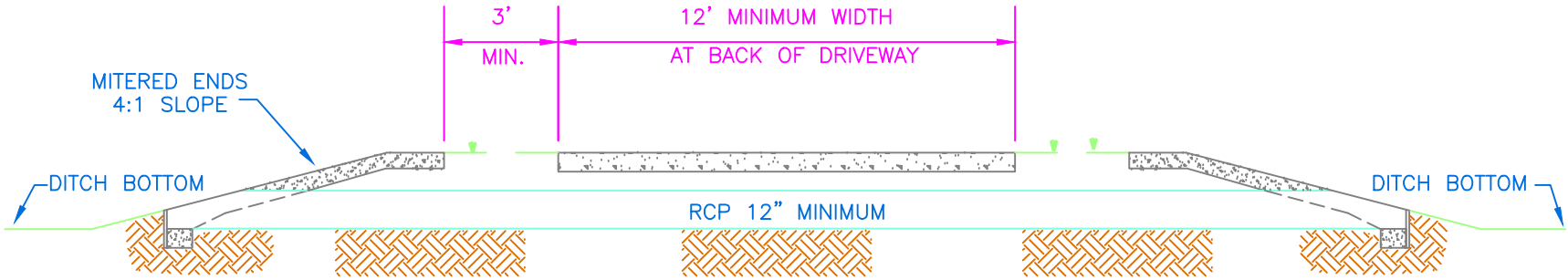


NOTE:

1) GRADES, LOCATION AND INSTALLATIONS WILL BE APPROVED BY ENGINEERING DEPARTMENT.
2) CONSTRUCTION JOINT MUST BE PLACED ABOVE PIPE IF CONCRETE IS USED.
3) SEE R-8 AND R-12
4) RCP WILL REQUIRE A MINIMUM OF 6" COVER INCLUDING DRIVEWAY.

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY: BWM
DATE: 5-20-11

REVISED

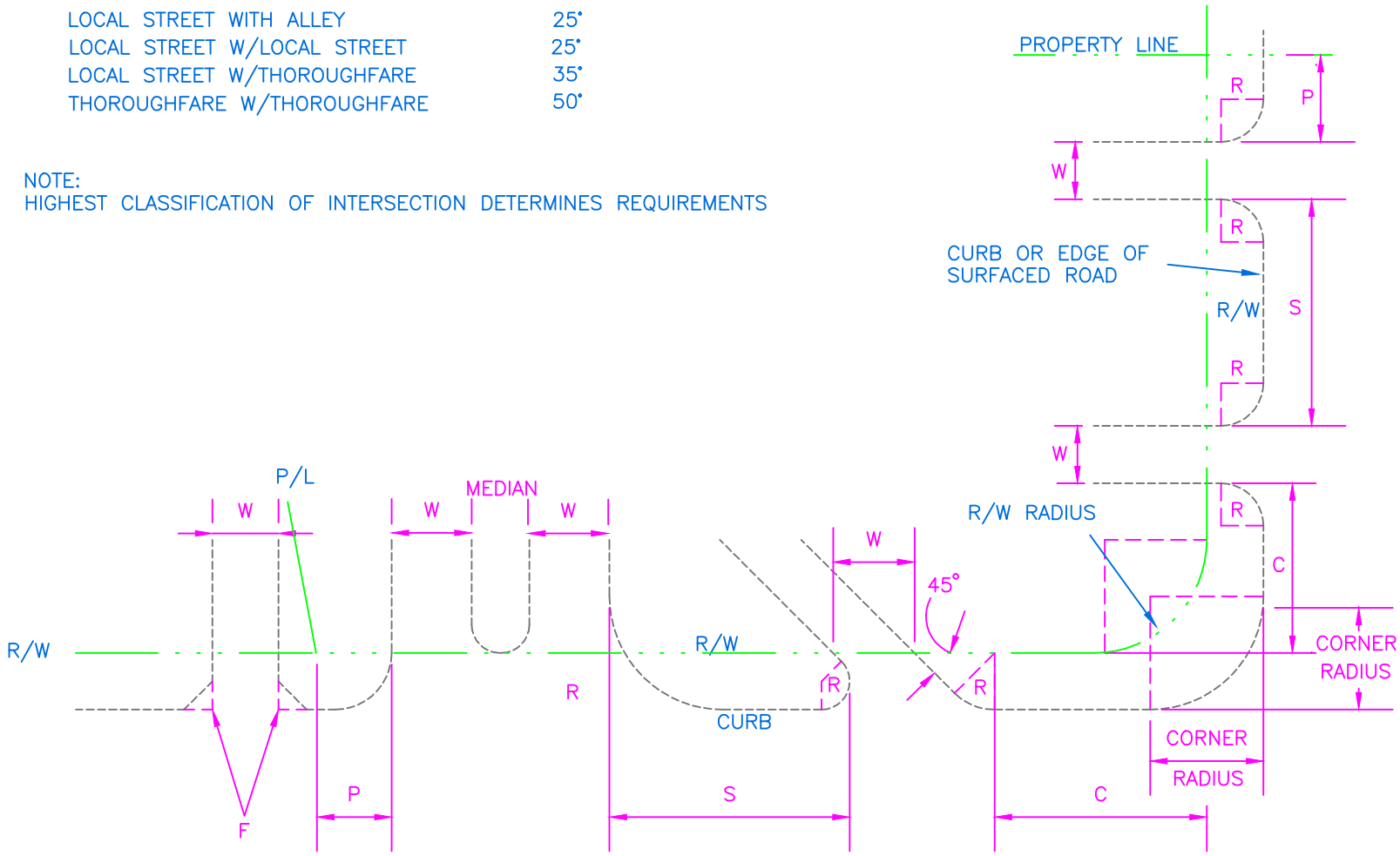
MINIMUM STANDARD DETAIL

RESIDENTIAL DRIVEWAY DIMENSION

PAGE R 16

INTERSECTION TYPE	MIN. CORNER RADIUS
LOCAL STREET WITH ALLEY	25'
LOCAL STREET W/LOCAL STREET	25'
LOCAL STREET W/THOROUGHFARE	35'
THOROUGHFARE W/THOROUGHFARE	50'

NOTE:
HIGHEST CLASSIFICATION OF INTERSECTION DETERMINES REQUIREMENTS



NOTES:

1. DRIVEWAY FLARE OR RADIUS NOT TO EXCEED BEYOND PROPERTY LINE EXTENDED TO EDGE OF PAVEMENT.
2. SEE R-10, R-11 AND R-16A

		RESIDENTIAL USE				ALL OTHER USES			
	DIMENSION REFERENCE	LOCAL STREET	MINOR COLLECTOR	MAJOR COLLECTOR	ARTERIAL	LOCAL STREET	MINOR COLLECTOR	MAJOR COLLECTOR	ARTERIAL
WIDTH	W								
MIN.		10	10	10	10	12	12	12	12
MAX.		30	30	30	30	40	40	40	40
W MEDIAN									
MIN.						16	16	16	16
MAX.						24	24	24	24
MEDIAN						12	12	12	12
DRIVE RADIUS	R								
MIN.		5	5	15	15	15	15	25	25
MAX.		15	15	25	25	25	25	50	50
TRANS FLARE	F	3'X8'	3'X8'						
MIN SPACING									
FROM P/L	P	*	10	15	20	*	15	20	25
FROM STREET CORNER	C	30	30	40	60	40	40	60	75
BETWEEN	S		20	30	40		30	40	50

NOTE: DIMENSIONS IN FEET

NOTES:

SEE R–16

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL RESIDENTIAL DRIVEWAY DIMENSION (CONTINUED)	PAGE R 16A

CITY OF PALMETTO
ENGINEERING DEPARTMENT

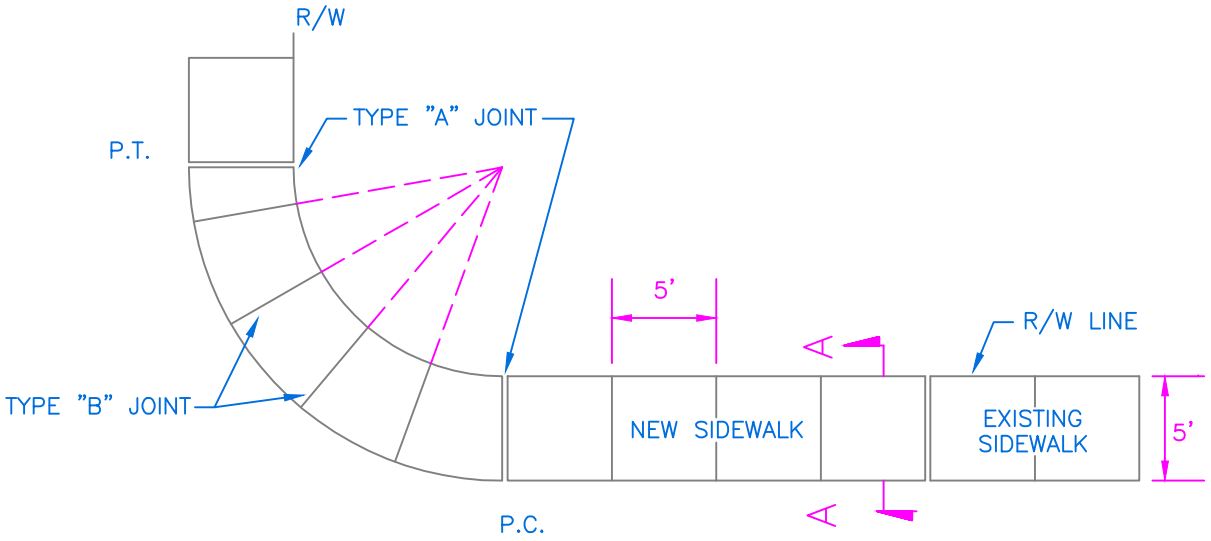
DRAWN BY BWM
DATE 5-20-11

REVISED

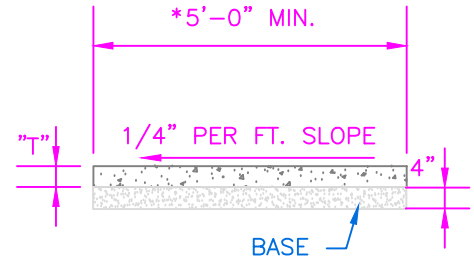
MINIMUM STANDARD DETAIL

SIDEWALK CONSTRUCTION

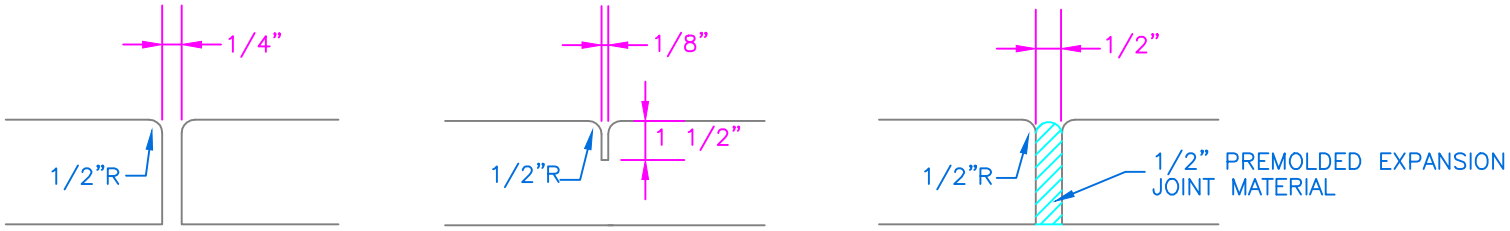
PAGE R 17



PLAN



SECTION A-A



TYPE "A" TYPE "B" TYPE "C"

SIDEWALK JOINTS

NOTES:

SIDEWALKS WILL BE 5' IN WIDTH.
RESIDENTIAL SIDEWALK THICKNESS ("T") WILL BE 6".
AT DRIVEWAYS AND OTHER AREAS THICKNESS ("T") WILL BE 8".
FOR 5' SIDEWALKS JOINTS WILL ALSO BE 5'.
BASE WILL BE 4" CRUSHED CONCRETE.

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
"A"	P.C. AND P.T. OF CURVES. JUNCTION OF EXISTING AND
"B"	NEW SIDEWALKS. 5'-0" CENTER TO CENTER OF SIDEWALKS.
"C"	WHERE SIDEWALKS ABUTS CONCRETE CURBS, DRIVEWAYS AND SIMILAR STRUCTURES.

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY BWM

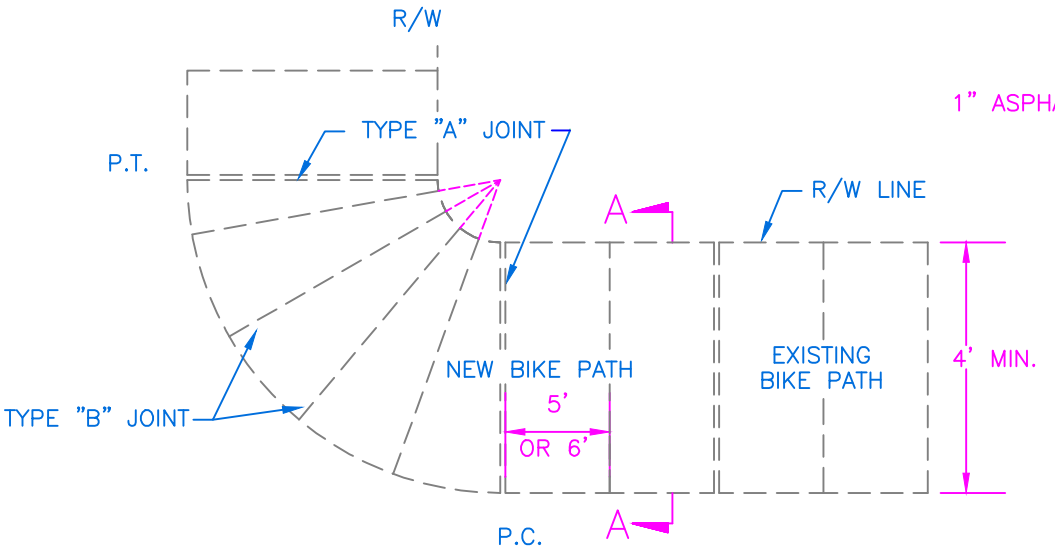
DATE 5-20-11

REVISED

MINIMUM STANDARD DETAIL

BIKE PATH CONSTRUCTION

PAGE R 17A



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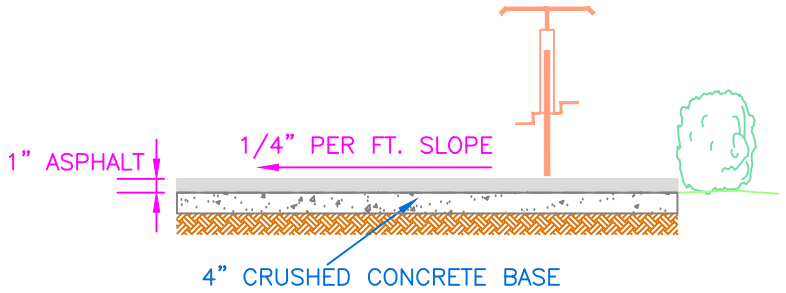
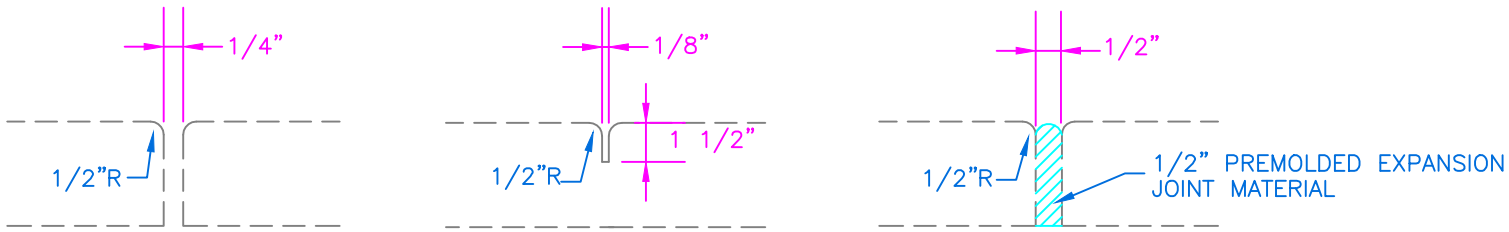


SECTION A–A



BIKE PATH JOINTS

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
"A"	P.C. AND P.T. OF CURVES. JUNCTION OF EXISTING AND
"B"	NEW BIKE PATHS 12' CENTER TO CENTER ON PATHS
"C"	WHERE PATHS ABUTS CONCRETE CURBS, DRIVEWAYS AND SIMILAR STRUCTURES.

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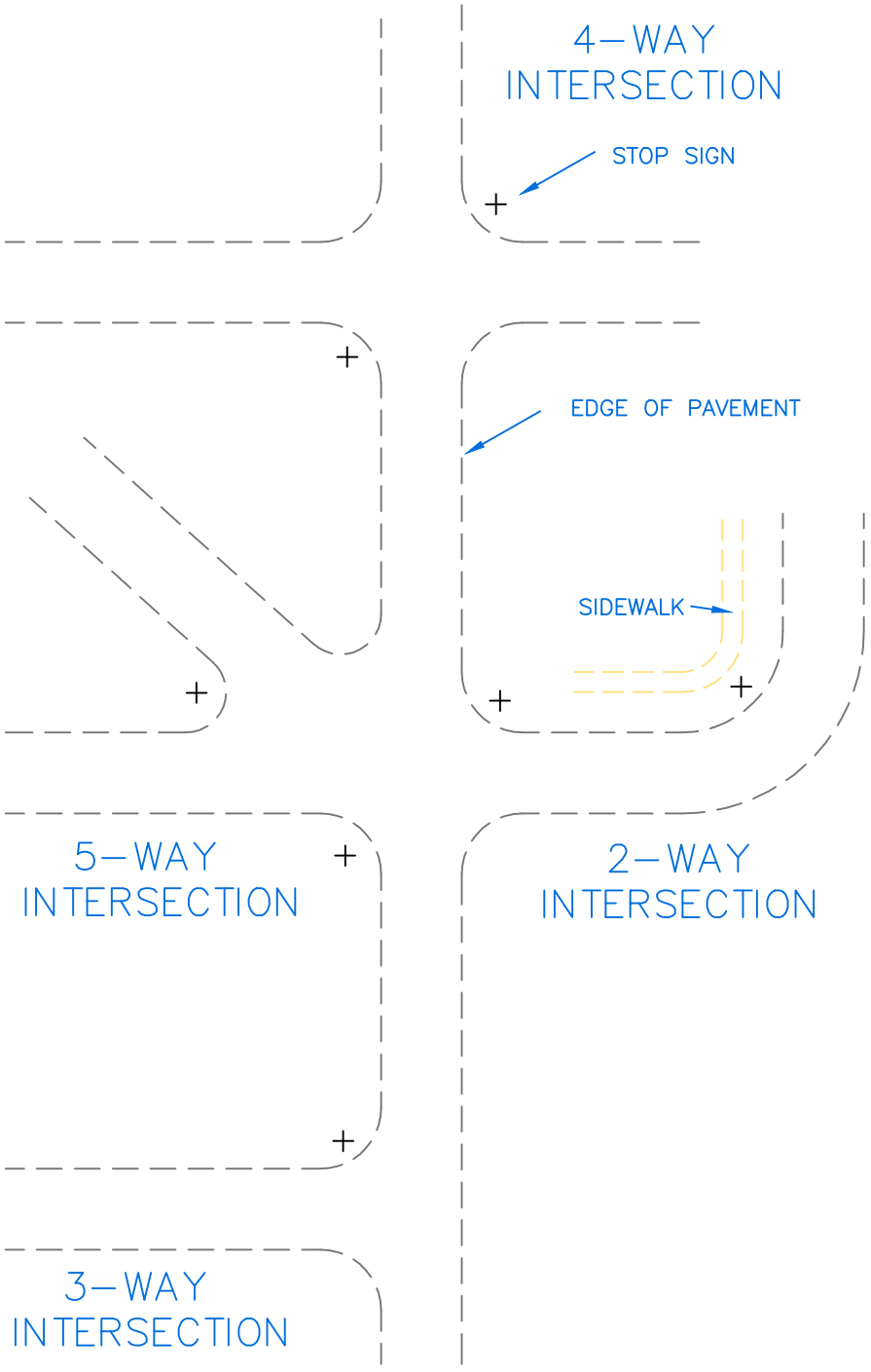


NOTES:

1. WHERE SIDEWALKS EXIST INSTALL SIGNS ADJACENT TO SIDEWALK EDGE ON STREET SIDE.
2. WHERE SIDEWALKS DO NOT EXIST INSTALL SIGNS 10' FROM PAVEMENT EDGE.
3. SIGNS ARE TO BE LOCATED AT CENTER OF PAVEMENT ARCS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL SIGN LOCATION	PAGE R 18

RECOMMENDED SIGN SPACING FOR ADVANCE WARNING SIGN SERIES		
SPEED IN MPH	MINIMUM DISTANCE IN FEET	
	BETWEEN SIGNS	LAST SIGN TO TAPER
0-20	200	200
25-30	300	250
30-35	300	300
40-45	500	400
50-60	500-1600	500-1000

RECOMMENDED TAPER LENGTH & DEVICE SPACING				
APPROACH SPEED OF TRAFFIC MPH	TAPER LENGTHS LANE WIDTH			MAXIMUM DEVICE SPACING IN FT
	10 FT	11 FT	12 FT	
20	70	75	80	20
25	105	115	125	25
30	150	165	180	30
35	205	225	245	35
40	265	295	320	40
45	450	495	540	45
50	500	550	600	50
55	550	605	660	55
60	600	660	720	60
65	650	715	780	65

TAPER LENGTHS SHOWN ARE ROUNDED TO NEAREST 5 FEET

$$L = \frac{WS^2}{60}$$ FOR SPEEDS OF 40 MPH OR LESS

L=WS FOR SPEEDS OF 45 MPH OR MORE

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL RECOMMENDED SIGN PLACEMENT	PAGE R 19

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY BWM

DATE 5-20-11

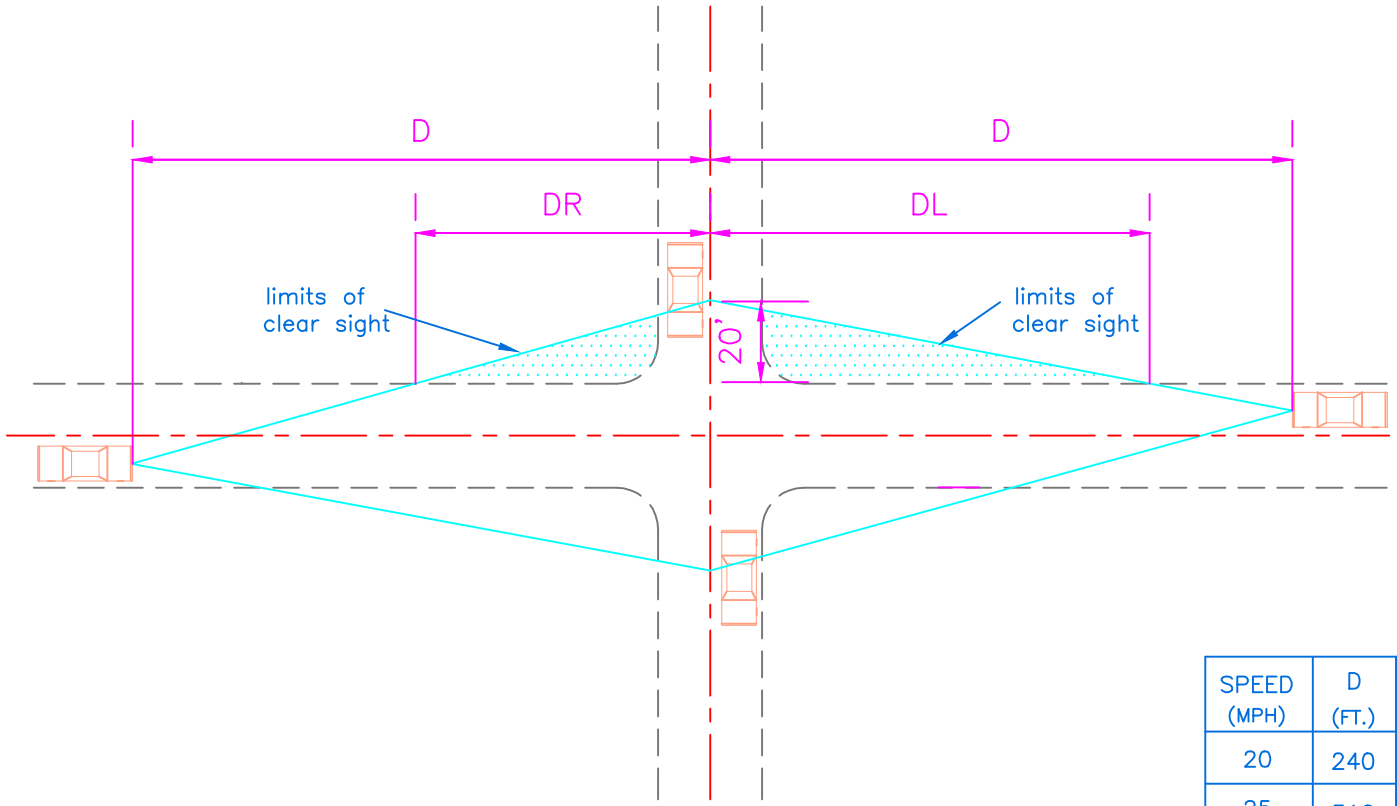
REVISED

MINIMUM STANDARD DETAIL

CITY INTERSECTION SIGHT DISTANCE

PAGE R 20

2 LANE UNDIVIDED



SPEED (MPH)	D (FT.)	DL (FT.)	DR (FT.)
20	240	220	130
25	310	220	160
30	380	290	200
35	470	370	250
40	580	450	310
45	710	550	380
50	840	650	450
55	990	760	520
60	1150	890	610
SEE NOTE 2.			

based on DOT index 546

NOTE:

1. THE CORRIDOR DEFINED BY THE LIMITS OF CLEAR SIGHT IS A RESTRICTED PLANTING AREA. NO OBSTRUCTIONS OVER 2' SHALL BE PLACED WITHIN LIMITS OF CLEAR SIGHT.

2. SIGHT DISTANCE (D) APPLIES TO NORMAL AND SKEWED INTERSECTIONS (INTERSECTING ANGLES BETWEEN 60° AND 120°) , AND WHERE VERTICAL AND/OR HORIZONTAL CURVES ARE PRESENT. SIGHT DISTANCE (D) IS MEASURED ALONG THE MAJOR ROADWAY FROM THE CENTER OF THE INTERSECTING ROADWAY. DISTANCES DL & DR ARE MEASURED FROM THE CENTERLINE OF THE INTERSECTING ROADWAY TO A POINT ON THE EDGE OF THE NEAR SIDE OUTER TRAFFIC LANE ON THE MAJOR ROADWAY.

GENERAL NOTES

(1) All road construction shall conform to these City of Palmetto Standards.

(2) Asphaltic Concrete Type S: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 331

Asphaltic Concrete Type III: Shall be per Florida Department Of Transportation 2000 Standard Specifications; Section 333.

(A) Superpave mixes equivalent to F.D.O.T. Type S mixes are an accepted alternative upon directors approval.

(B) Surface material will be consistent with existing surface, or better.

(3) Limerock Base Course: Shall be per Florida Department Of Transportation 2000 Standard Specifications: Section 200.

(4) Crushed concrete base course is acceptable unless otherwise noted.

(5) Drainage: Shall be per Florida Department Of Transportation Road & Bridge Standard Specifications, latest edition.

Soft, yielding or super-saturated material that will not readily compact shall be considered unacceptable for backfill. This is at the discretion of the field engineer. This type of existing material must be excavated from the road footprint to a depth as set by an approved testing lab.

(6) Concrete Gutters: Shall be per Florida Department Of Transportation Standard Specifications, latest edition.

(7) Visibility Triangles: Shall be in accordance with R-20.

(8) Handicap Ramps shall meet Florida Accessibilities Standards, and Section 302 series.

(9) Prime coat shall be applied @ a rate of 0.2 gal/sy. Tack coat of 0.08 gal/sy rate to be applied for overlay of existing roads.

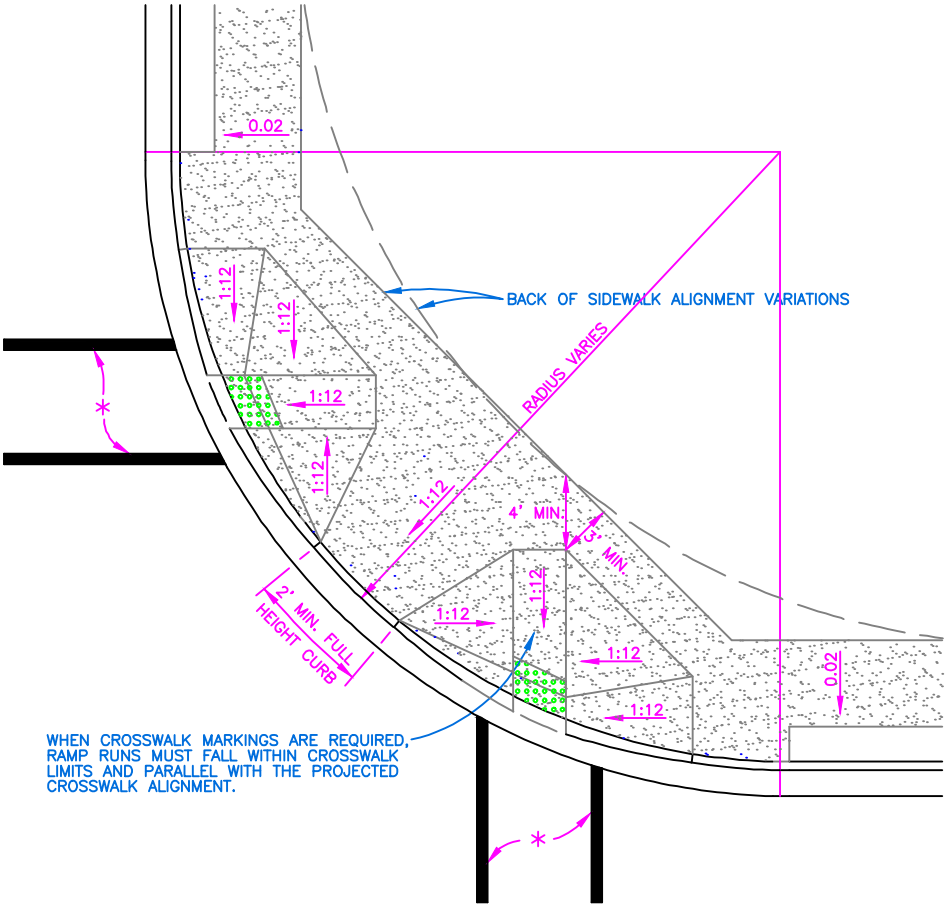
(10) All the signage, striping and signals (FDOT) shall conform to the latest revision of the Florida Department Of Transportation Standard Specifications For Road And Bridge Construction, the Manual On Uniform Traffic Control Devices, F.D.O.T. Design Standards and the City of Palmetto Standards.

(11) In general, all signing, marking, and traffic control devices shall conform to the Florida Department Of Transportation Roadway And Traffic Standard Specifications For Road And Bridge Construction (latest revision) and the Manual On Uniform Traffic Control Devices For Streets And Highways (latest revision), as well as the City of Palmetto Standards.

(12) Any road widening (including divided roads) will require full width milling.

(13) The base, sub-base and asphalt thickness shown for 6-lane, 4-lane, Minor Collector, Rural Industrial and Urban Industrial are minimums. If the engineer can demonstrate a reduction based upon an analysis of equal single axle load, then it may be considered.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL ROADS GENERAL NOTES	PAGE R 21



* CROSSWALK WIDTHS AND CONFIGURATION VARY; MUST CONFORM TO FDOT INDEX NO. 17344 AND 17346. LATEST STANDARDS.

1) CURB CUT RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS.

2) SEE SHEETS R–21 "GENERAL NOTES" 2 FOR FURTHER REQUIREMENTS.

3) RADIUS OF CURB VARIES AS FOLLOWS:

   A) 25' RAD. LOCAL STREET WITH ALLEY.
   B) 25' RAD. LOCAL STREET WITH LOCAL STREET.
   C) 35' RAD. LOCAL STREET WITH THOROUGHFARE OR COLLECTOR.
   D) 50' RAD. THOROUGHFARE WITH THOROUGHFARE

4) CURB RADIUS SHOULD BE A MINIMUM OF 50' WHERE INDUSTRIAL AND BUS TRAFFIC (5% OR MORE) IS ANTICIPATED ON LOWER CLASSIFICATION ROADWAYS.

5) BOTH LOCATION OPTIONS FOR HANDICAPPED RAMP ARE SHOWN. ENGINEER MAY SELECT EITHER, WHICHEVER FITS THE SITUATION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL HANDICAPPED RAMP SHEET 1	PAGE R 22

MINIMUM FACE OF CURB RADIUS FOR INTERSECTING ROADS

ROAD CLASSIFICATION	LOCAL RESIDENTIAL (URBAN & RURAL)	INDUSTRIAL (URBAN & RURAL)	MINOR COLLECTOR	MAJOR COLLECTOR	ARTERIAL
LOCAL RESIDENTIAL (URBAN & RURAL)	25'	40'	35'	35'	35'
INDUSTRIAL (URBAN & RURAL)	40'	50'	50'	50'	50'
MINOR COLLECTOR	35'	50'	50'	50'	50'
MAJOR COLLECTOR	35'	50'	50'	50'	50'
ARTERIAL	35'*	50'	50'	50'	50'

INCREASE PER MPO FREIGHT MANAGEMENT STUDY

* WITHOUT TURN LANE = 50'

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY BWM

DATE 5-20-11

REVISED

MINIMUM STANDARD DETAIL

MINIMUM CURB RADIUS

PAGE R 23

DEPARTMENT OF PUBLIC WORKS

UTILITY SPECIFICATIONS

2011 EDITION

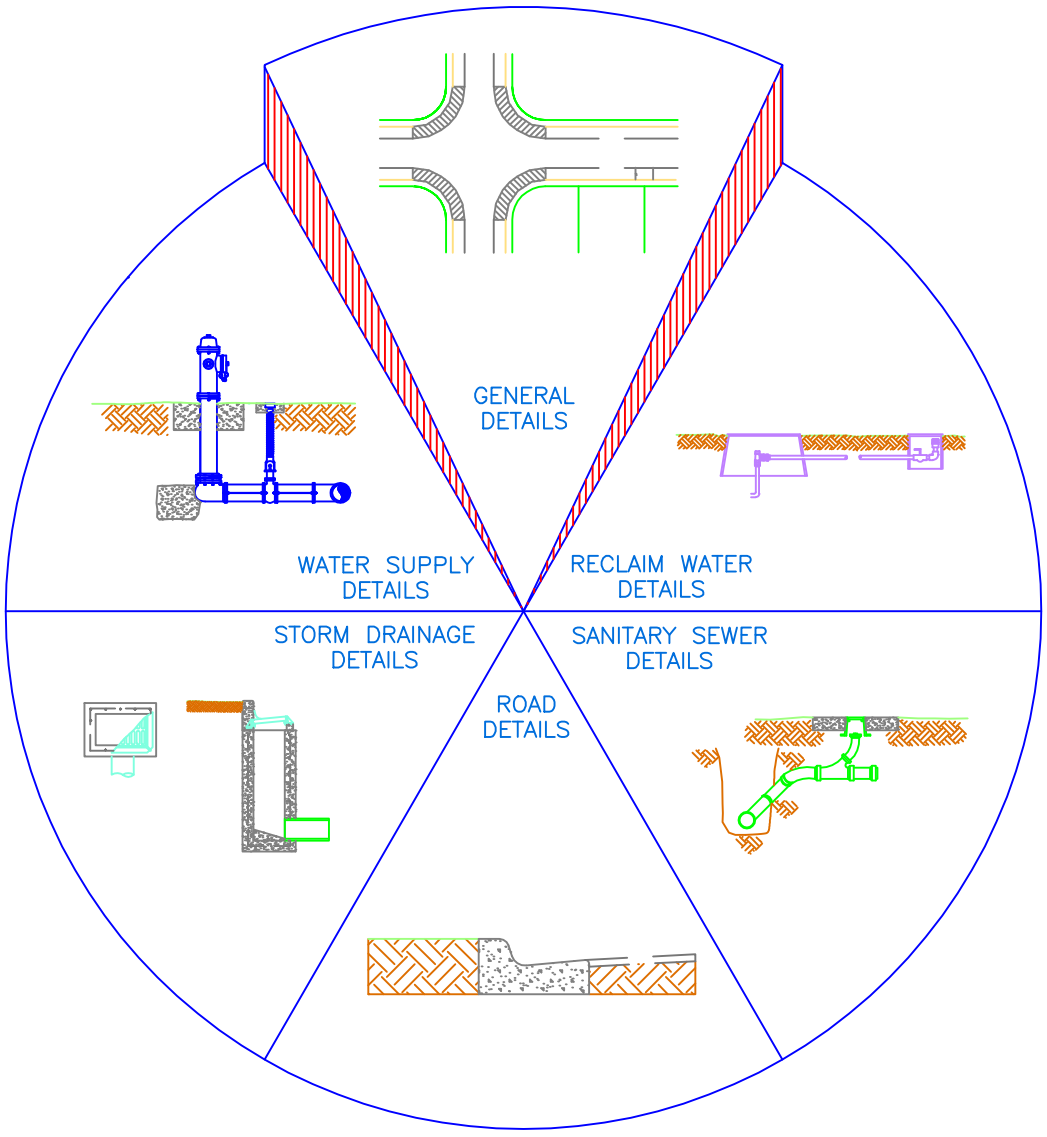
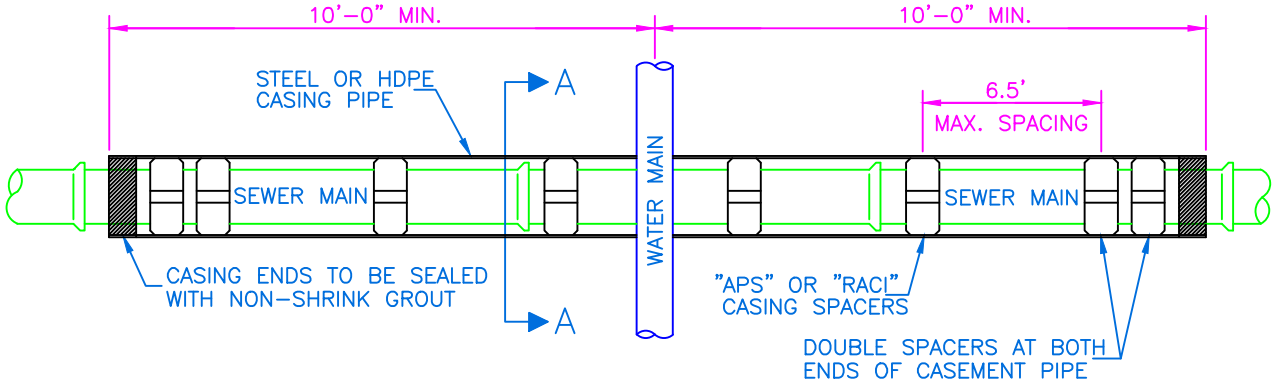
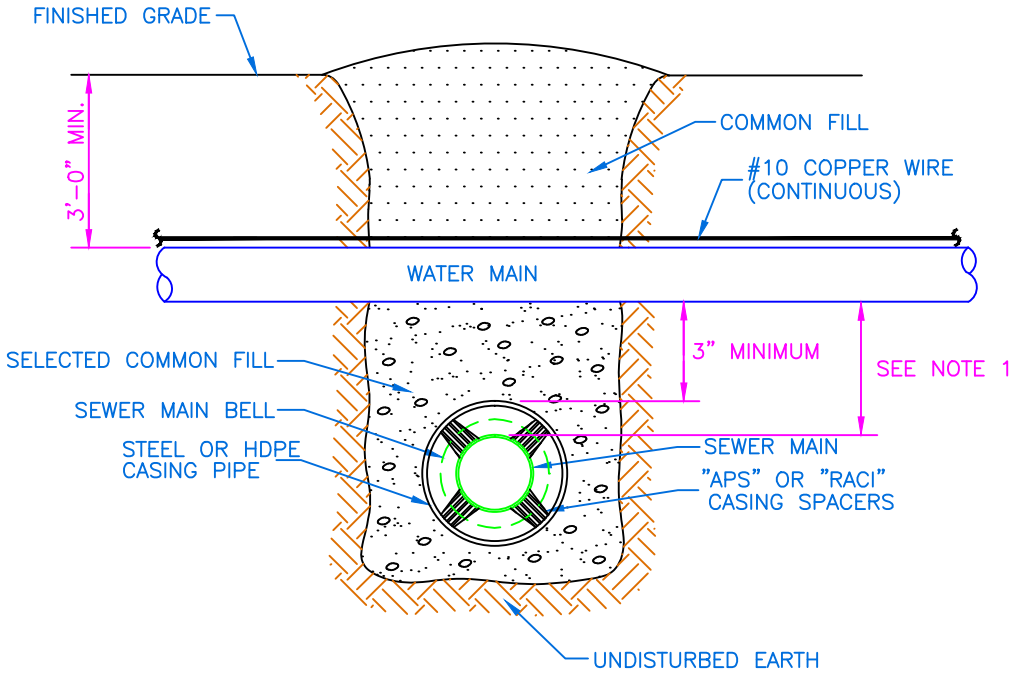


TABLE OF CONTENTS

UTILITY STANDARDS—GENERAL CONSTRUCTION



PLAN VIEW

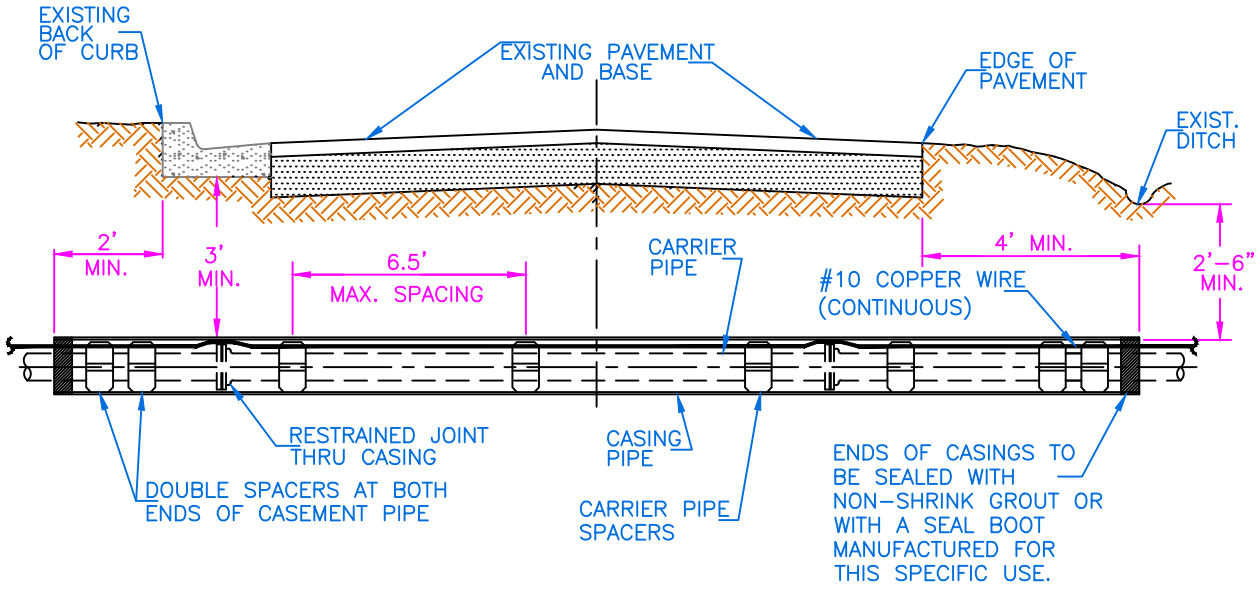


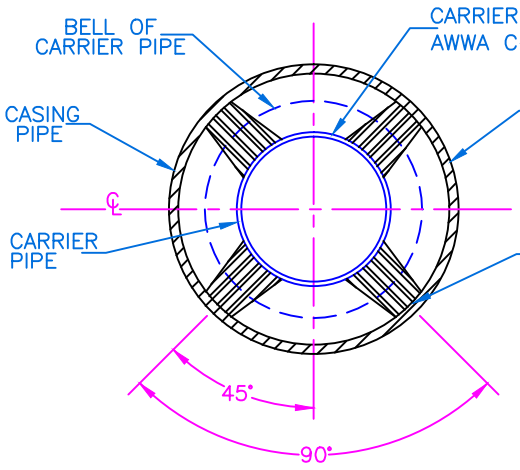
SECTION A-A

NOTE:

1. WHERE CLEARANCE IS LESS THAN 18", SEWER MAIN SHALL BE ENCASED AS DETAILED. FOR VERTICAL CLEARANCE OF 18" OR GREATER NO CASEMENT IS REQUIRED.
2. NEW WATER MAIN AND SEWER MAIN PIPE SECTIONS ARE TO BE CENTERED AT THE CROSSING POINT REGARDLESS OF THE VERTICAL CLEARANCE.
3. REFER TO STANDARD DETAIL G-3 FOR ADDITIONAL CASING AND SPACER DETAILS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TYPICAL WATER & SEWER CROSSING	PAGE G 2





CARRIER PIPE TO BE DUCTILE IRON CLASS 350 OR AWWA C-900 PVC CLASS 235 (DR-18) AS REQUIRED.

STEEL CASING PIPE JOINTS SHALL BE MADE BY USING A FULL CIRCUMFERENCE COMPLETE PENETRATION GROOVE WELD. STEEL MATERIAL SHALL MEET OR EXCEED ASTM A139 GRADE B. PIPE SHALL BE STRAIGHT SEAM PIPE OR SEAMLESS PIPE.

CARRIER PIPE SPACERS: 304 STAINLESS STEEL BAND CASING INSULATORS AS MANUFACTURED BY ADVANCE PRODUCTS & SYSTEMS INC. AND PIPELINE SEAL & INSULATOR INC. OR PLASTIC (HDPE) SPACERS AS MANUFACTURED BY RACI OR APPROVED EQUAL BY CITY OF PALMETTO

CARRIER SIZE & MINIMUM CASING SIZE									
CARRIER	4"	6"	8"	10"	12"	14"	16"	18"	20"
CASING	12"	14"	18"	20"	24"	30"	30"	36"	36"
CASING / WALL THICKNESS	0.188	0.188	0.250	0.250	0.344	0.406	0.406	0.406	0.406

NOTES:

1. THE ENGINEER OF RECORD MAY SELECT LARGER CASING DIAMETERS.
2. FOR JACK & BORE SPECIFICATIONS UNDER STATE ROADS AND RAILROADS REFER TO THE F.D.O.T. UTILITY ACCOMMODATION MANUAL, LATEST EDITION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL JACK & BORE CROSSING	PAGE G 3

CITY OF PALMETTO
ENGINEERING DEPARTMENT

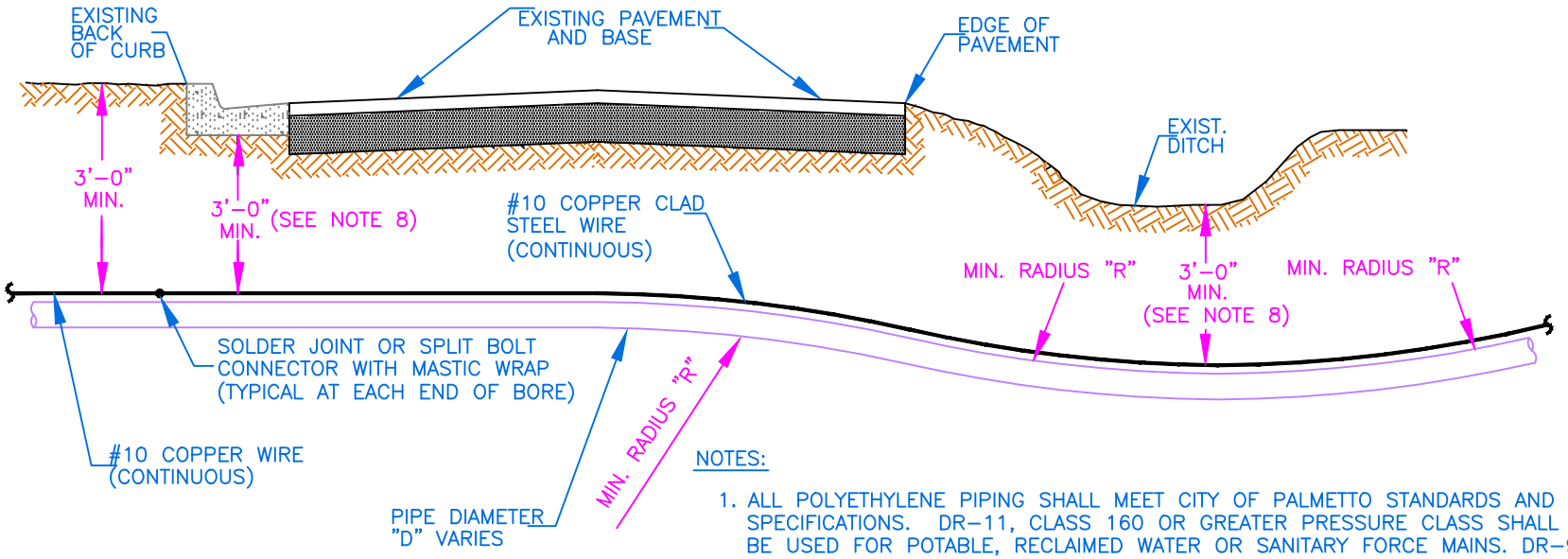
DRAWN BY BWM
DATE 5-20-11

REVISED

MINIMUM STANDARD DETAIL

DIRECTIONAL BORE
ROADWAY CROSSING

PAGE G 4



	MIN. RADIUS FOR PE PIPE IN FEET	
PIPE DIAMETER "D" IN INCHES	MIN. RADIUS "R" FOR DR-11	MIN. RADIUS "R" FOR DR-9
2	4	5.5
3	6	8.3
4	8	11.0
6	12	16.5
8	16	22.0
10	20	27.5
12	24	33.0
16	32	44.0
18	36	49.5
20	40	55.0

NOTES:

1. ALL POLYETHYLENE PIPING SHALL MEET CITY OF PALMETTO STANDARDS AND SPECIFICATIONS. DR-11, CLASS 160 OR GREATER PRESSURE CLASS SHALL BE USED FOR POTABLE, RECLAIMED WATER OR SANITARY FORCE MAINS. DR-9 MAY BE REQUIRED BASED ON THE ENGINEERS CALCULATIONS. SEE NOTE #2.
2. THE ENGINEER SHALL SUBMIT CALCULATIONS FOR THE MAXIMUM PULLING LENGTH, TOTAL PULL FORCE AND THE ALLOWABLE TENSILE LOAD, IN ACCORDANCE WITH AWWA M55 & ASTM F1804. DESIGN SHALL ALSO BE IN ACCORDANCE WITH ASTM F1962.
3. THE PIPE STRING SHALL BE ATTACHED TO THE BACKREAMER THROUGH A "WEAK-LINK" DEVICE TO ENSURE THAT THE PULLING FORCE DOES NOT EXCEED THE PIPE'S ALLOWABLE TENSILE LOAD RATING.
4. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN TRENCHLESS/NON-DIRECTIONAL BORE APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.
5. COLOR CODED BLUE FOR POTABLE WATER MAINS.
6. COLOR CODED PURPLE FOR RECLAIMED WATER MAINS.
7. COLOR CODED GREEN FOR SANITARY FORCE MAINS.
8. PIPE DEPTHS MAY NEED TO BE DEEPER TO AVOID FRACKOUTS. PIPE ALIGNMENT SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
9. FDOT CRITERIA SHALL BE MET FOR PIPES UNDER STATE ROADS.

CITY OF PALMETTO
ENGINEERING DEPARTMENT

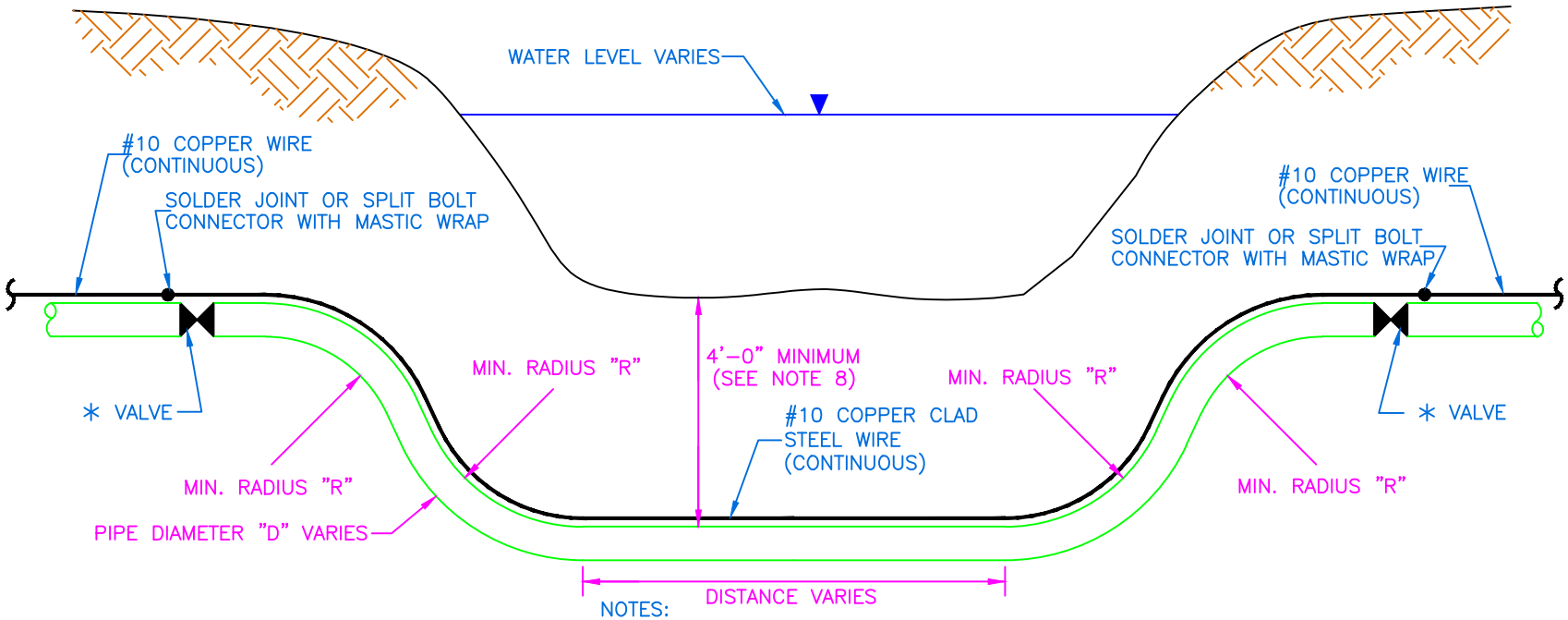
DRAWN BY BWM
DATE 5-20-11

REVISED

MINIMUM STANDARD DETAIL

DIRECTIONAL BORE
SUBAQUEOUS CROSSING

PAGE 5 G



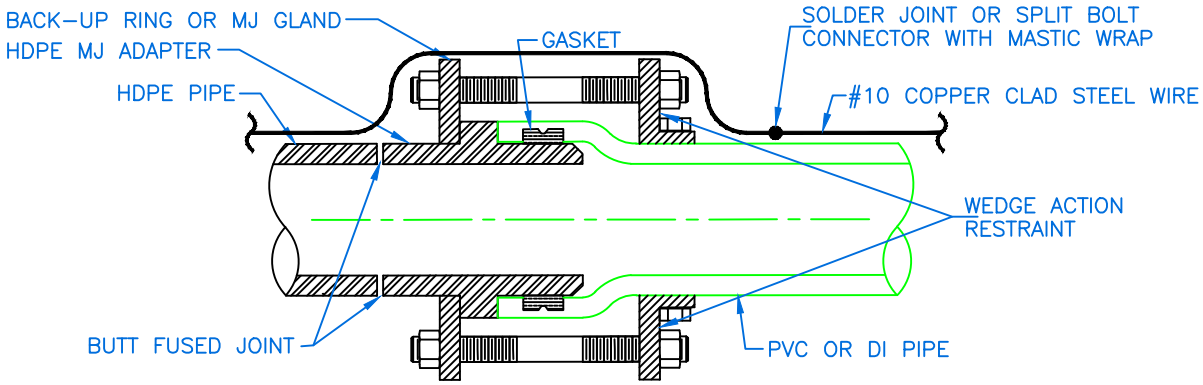
NOTES:

1. ALL POLYETHYLENE PIPING SHALL MEET CITY OF PALMETTO STANDARDS AND SPECIFICATIONS. DR-11, CLASS 160 OR GREATER PRESSURE CLASS SHALL BE USED FOR POTABLE, RECLAIMED WATER OR SANITARY FORCE MAINS. DR-9 MAY BE REQUIRED BASED ON THE ENGINEERS CALCULATIONS. SEE NOTE #2.
2. THE ENGINEER SHALL SUBMIT CALCULATIONS FOR THE MAXIMUM PULLING LENGTH, TOTAL PULL FORCE AND THE ALLOWABLE TENSILE LOAD, IN ACCORDANCE WITH AWWA M55 & ASTM F1804. DESIGN SHALL ALSO BE IN ACCORDANCE WITH ASTM F1962.
3. THE PIPE STRING SHALL BE ATTACHED TO THE BACKREAMER THROUGH A "WEAK-LINK" DEVICE TO ENSURE THAT THE PULLING FORCE DOES NOT EXCEED THE PIPE'S ALLOWABLE TENSILE LOAD RATING.
4. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN TRENCHLESS/ NON-DIRECTIONAL BORE APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.
5. COLOR CODED BLUE FOR POTABLE WATER MAINS.
6. COLOR CODED PURPLE FOR RECLAIMED WATER MAINS.
7. COLOR CODED GREEN FOR SANITARY FORCE MAINS.
8. PIPE DEPTHS MAY NEED TO BE DEEPER TO AVOID FRACKOUTS.

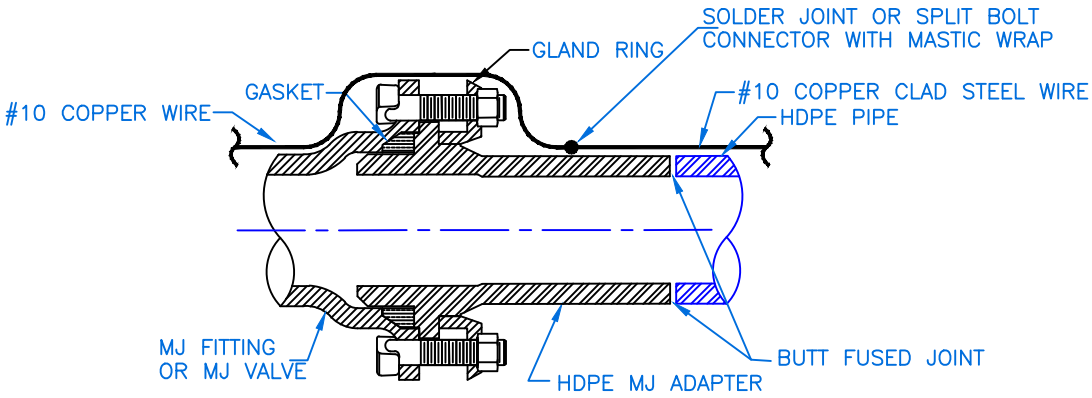
* NOTES:

1. FOR SANITARY FORCE MAIN USE PLUG VALVE.
2. FOR POTABLE AND RECLAIMED WATER USE GATE VALVE OR BUTTERFLY VALVE.

	MIN. RADIUS FOR PE PIPE IN FEET	
PIPE DIAMETER "D" IN INCHES	MIN. RADIUS "R" FOR DR-11	MIN. RADIUS "R" FOR DR-9
2	4	5.5
3	6	8.3
4	8	11.0
6	12	16.5
8	16	22.0
10	20	27.5
12	24	33.0
16	32	44.0
18	36	49.5
20	40	55.0

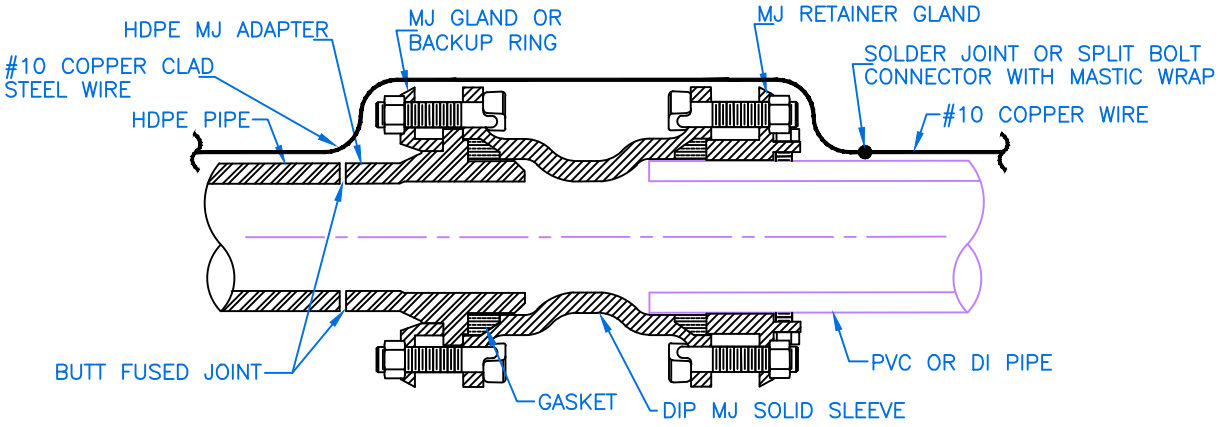


HDPE PIPE TO PVC PIPE / SPIGOT TO BELL CONNECTION



NOTE: SCHEMATIC SHOWN FOR STANDARD MJ FITTINGS AND GATE VALVES.

HDPE PIPE TO MJ FITTING TRANSITION

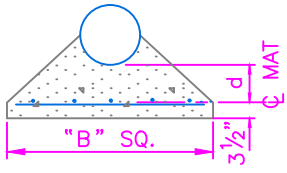


HDPE PIPE TO PVC PIPE SPIGOT TO SPIGOT CONNECTION

1. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN NON–DIRECTIONAL BORE (TRENCHES AND BORE & JACK) APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30–MILS OF POLYETHYLENE INSULATION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL HDPE TO PVC OR DI PIPE ADAPTER	PAGE G 6

THRUST BLOCK DIMENSIONS B ft. x d inches												
PIPE SIZE	90°BEND		45°BEND		22.5°BEND		11.25°BEND		DEAD END & TEE		45° WYE	
(IN.)	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 1/2	1.1	3 1/2	0.8	3 1/2	0.6	3 1/2	1.3	3 1/2	1.1	3 1/2
6	2.2	5 1/4	1.6	3 3/4	1.2	3 1/2	0.8	3 1/2	1.9	4 1/2	1.6	3 3/4
8	2.9	7	2.1	5	1.5	3 1/2	1.1	3 1/2	2.4	5 3/4	2.0	4 3/4
10	3.5	8 1/2	2.6	6 1/4	1.9	4 1/2	1.3	3 1/2	3.0	7 1/4	2.5	6
12	4.2	10	3.1	7 1/2	2.2	5 1/4	1.6	3 3/4	3.5	8 1/2	3.0	7 1/4
14	4.9	11 3/4	3.6	8 3/4	2.6	6 1/4	1.8	4 1/4	4.1	9 3/4	3.4	8 1/4
16	5.5	13 1/4	4.1	9 3/4	2.9	7	2.1	5	4.7	11 1/4	3.9	9 1/4
18	6.2	15	4.6	11	3.3	8	2.3	5 1/2	5.2	12 1/2	4.4	10 1/2
20	6.9	16 1/2	5.0	12	3.6	8 3/4	2.6	6 1/4	5.8	14	4.9	11 3/4
24	8.2	19 3/4	6.0	14 1/2	4.3	10 1/4	3.1	7 1/2	6.9	16 1/2	5.8	14
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9	8.5	20 1/2	7.2	17 1/4
36	12.1	29	8.9	21 1/4	6.4	15 1/4	4.5	10 3/4	10.2	24 1/2	8.6	20 3/4



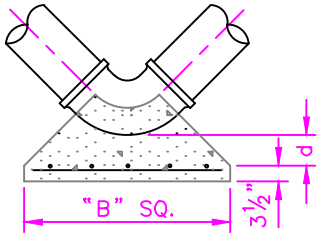
REINFORCEMENT MAT SCHEDULE

FOR DIM."B"BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY

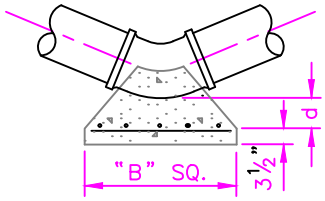
FOR DIM."B"LESS THAN 5.75' USE #3 @ 8" EACH WAY

NOTES:

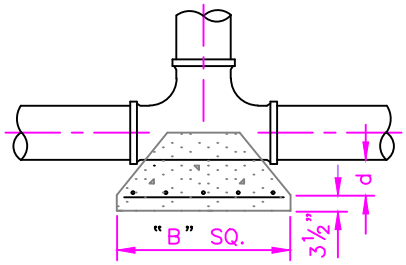
1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF, CONCRETE STRENGTH f_c=3000 PSI, REINFORCEMENT f_y=60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
3. FOR LARGER"B"DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
4. RESTRAINED JOINTS SHALL BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.



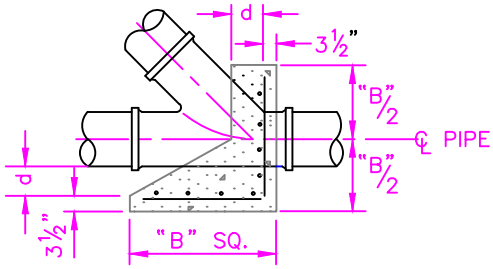
90° BEND



45°, 22.5° OR 11.25° BEND



TEE OR DEAD END



45° WYE

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL CONCRETE THRUST BLOCKS	PAGE G 7

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS			TEES					REDUCERS			PLUGS	VALVES
	90°	45°	22.5°	SIZE / LENGTH					SIZE / LENGTH				
24	90	38	18	X24 169	X20 132	X16 90	X12 38	X10 6	X20 64	X16 117	X12 158	214	107
20	78	32	16	X20 141	X16 101	X12 53	X10 24	X8 1	X16 65	X12 115	X10 149	184	92
16	66	27	13	X16 111	X12 67	X10 41	X8 12		X12 64	X10 107	X8 111	151	76
12	52	22	10	X12 80	X10 56	X8 31	X6 1		X10 58	X8 62	X6 86	118	59
10	44	18	9	X10 63	X8 40	X6 7			X8 33	X6 61	X4 81	100	50
8	37	15	7	X8 49	X6 18	X4 1			X6 35	X4 60		83	42
6	29	12	6	X6 29	X4 1				X4 33			63	32
4	21	8	4	X4 12								45	23

NOTES:

1.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

2.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

3.) ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.

4.) PIPE SIZES ARE GIVEN IN INCHES.

5.) RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.

6.) LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.

7.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFTEY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.

8.) SEE RESTRAINED LENGTHS FOR PIPE STD. DETAIL G-10.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL RESTRAINED LENGTHS FOR PVC PIPE	PAGE G 8

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS	VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH					
36	142	59	28	x36 / 393	x30 / 318	x24 / 232	x20 / 165	x16 / 84	x12 / 1	X30 / 137	X24 / 247	X20 / 309	X16 / 359	453	227
30	124	51	25	X30 / 333	X24 / 252	X20 / 189	X16 / 115	X12 / 23	x10 / 1	X24 / 137	X20 / 213	X16 / 276		391	196
24	106	44	21	X24 / 270	X20 / 211	X16 / 143	X12 / 61	X10 / 10	x8 / 1	X20 / 98	X16 / 178	X12 / 241		327	164
20	92	38	18	X20 / 225	X16 / 161	X12 / 85	X10 / 39	x8 / 1		X16 / 98	X12 / 176	X10 / 227		280	140
16	77	32	15	X16 / 177	X12 / 107	X10 / 65	X8 / 19	x6 / 1		X12 / 98	X10 / 163	X8 / 169		231	116
12	61	25	12	X12 / 127	X10 / 89	X8 / 50	x6 / 1			X10 / 88	X8 / 96	X6 / 131		181	91
10	52	22	10	X10 / 101	X8 / 64	x6 / 11				X8 / 51	X6 / 94	X4 / 125		153	77
8	44	18	9	X8 / 78	X6 / 30	x4 / 1				X6 / 54	X4 / 92			128	64
6	34	14	7	X6 / 46	x4 / 1					X4 / 50				98	49
4	24	10	5	x4 / 19										69	35

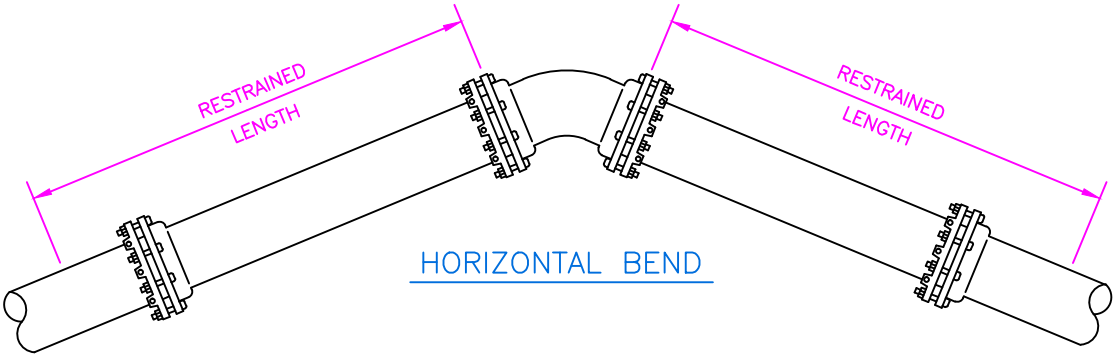
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS			TEES						REDUCERS				PLUGS	VALVES
	90°	45°	22.5°	SIZE / LENGTH						SIZE / LENGTH					
36	100	42	20	x36 / 163	x30 / 132	x24 / 96	x20 / 68	x16 / 35	x12 / 1	X30 / 57	X24 / 103	X20 / 128	X16 / 149	188	94
30	88	37	18	X30 / 138	X24 / 104	X20 / 78	X16 / 48	X12 / 10	x10 / 1	X24 / 57	X20 / 88	X16 / 114		162	81
24	75	31	15	X24 / 112	X20 / 87	X16 / 59	X12 / 25	x10 / 4	x8 / 1	X20 / 40	X16 / 74	X12 / 100		135	68
20	65	27	13	X20 / 93	X16 / 67	X12 / 35	X10 / 16	x8 / 1		X16 / 41	X12 / 73	X10 / 94		116	58
16	54	22	11	X16 / 73	X12 / 44	X10 / 27	x8 / 8	x6 / 1		X12 / 41	X10 / 68	X8 / 70		96	48
12	43	18	8	X12 / 53	X10 / 37	X8 / 21	x6 / 1			X10 / 37	X8 / 40	X6 / 54		75	38
10	37	15	7	X10 / 42	X8 / 26	x6 / 5				X8 / 21	X6 / 39	X4 / 52		63	32
8	30	13	6	X8 / 32	X6 / 12	x4 / 1				X6 / 22	X4 / 38			53	27
6	24	10	5	X6 / 19	x4 / 1					X4 / 21				41	21
4	17	7	3	x4 / 8										29	15

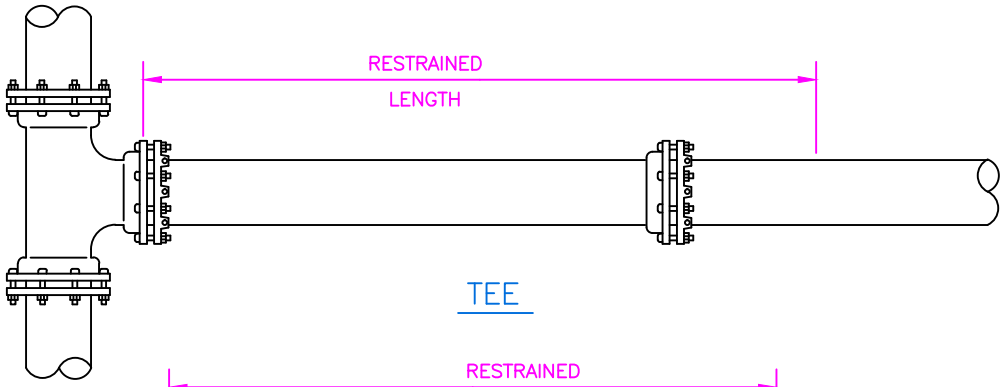
NOTE:

SEE "RESTRAINED LENGTHS FOR PVC PIPE" DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL RESTRAINED LENGTHS FOR DIP	PAGE G 9

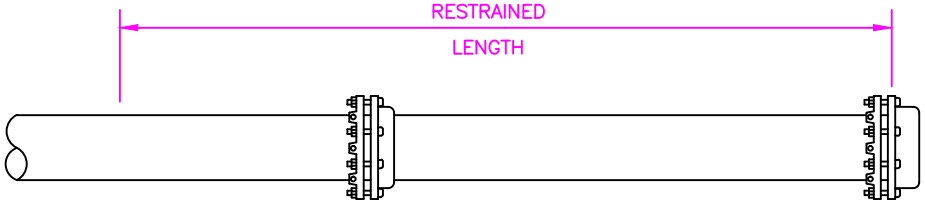


HORIZONTAL BEND

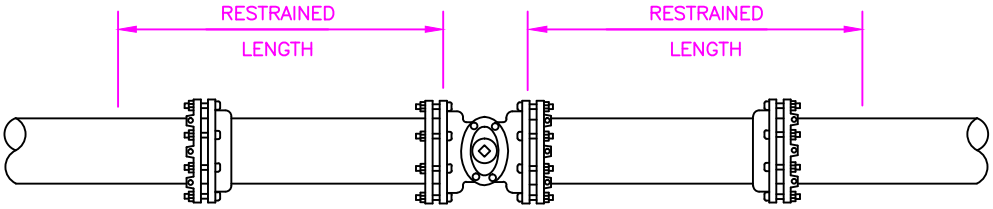


TEE

REDUCER



CAP OR PLUG



ISOLATION VALVE

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL RESTRAINED LENGTHS FOR PIPE	PAGE G 10

NOTES:

1.) USE OF TYPE A–2 AND A–3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

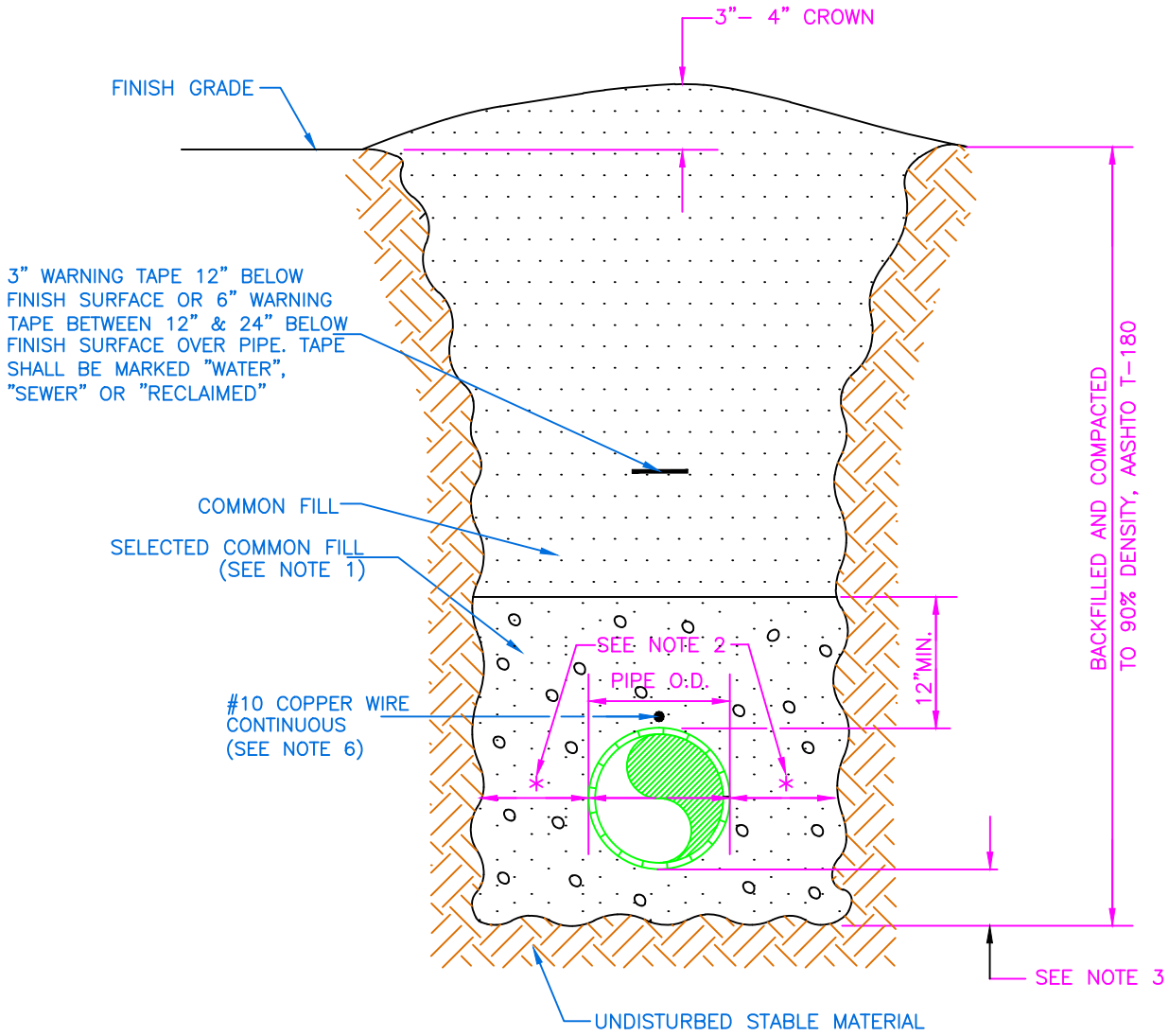
2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) BACKFILL AASHTO M–145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES FOR SELECTED COMMON FILL AND NOT TO EXCEED 12 INCHES FOR COMMON FILL. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 90% AASHTO T–180 DENSITY.

6.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL TRENCH WITH UNIMPROVED SURFACE TYPE A–1 PIPE BEDDING	PAGE G 11

NOTES:

1.) USE OF TYPE A–2 AND A–3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER: AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) ASPHALTIC CONCRETE FRICTION COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF ONE INCH, WHICHEVER IS GREATER.

6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 2" BELOW SUBGRADE.

7.) BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE. SAND ASPHALT BASE WILL BE AN ACCEPTABLE ALTERNATIVE.

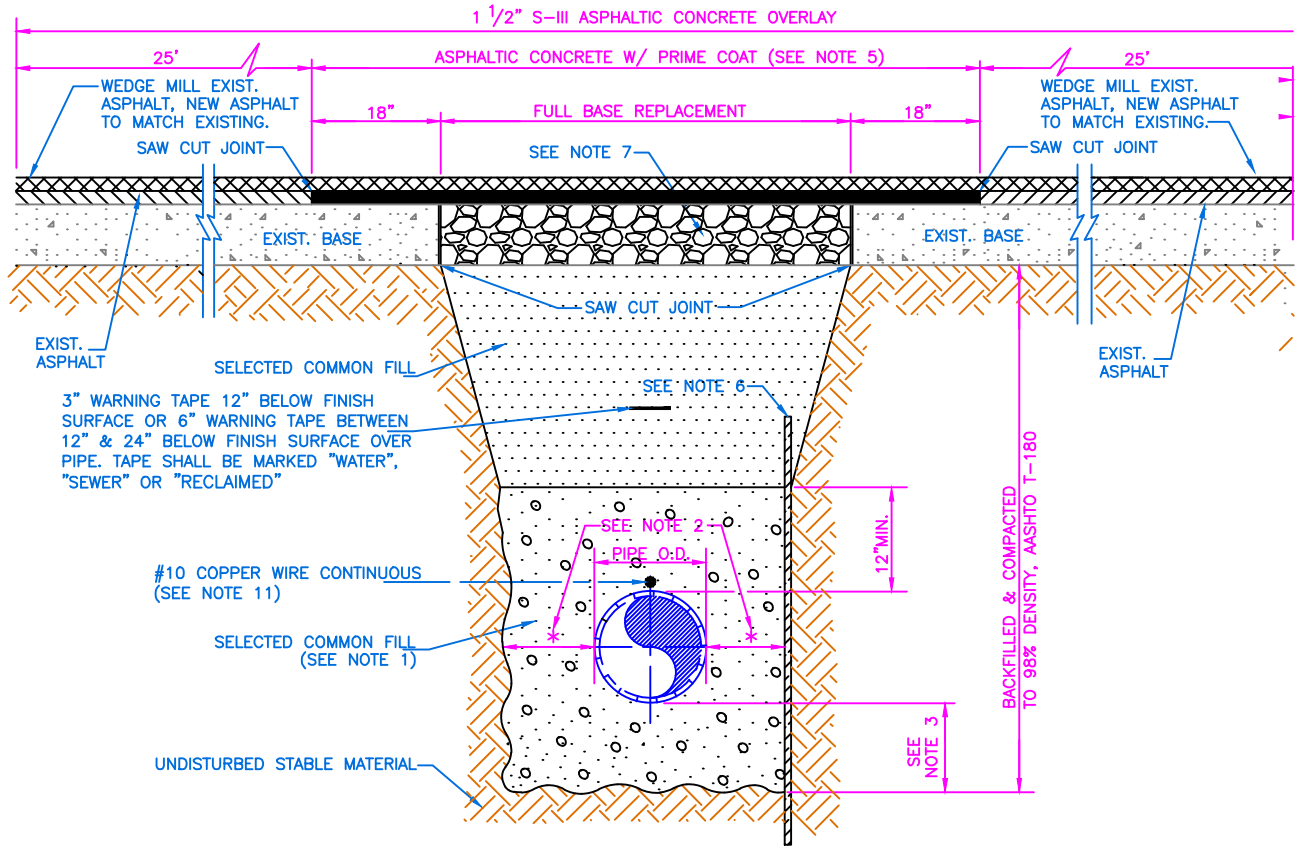
8.) BACKFILL AASHTO M–145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T–180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.

11.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

12.) NOTES 5.) THRU 11.) ARE MINIMUM REQUIREMENTS. REFER TO CITY OF PALMETTO ROAD STANDARDS FOR ADDITIONAL REQUIREMENTS.



CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A–1 PIPE BEDDING	PAGE G 12

NOTES:

1.) USE OF TYPE A–2 AND A–3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER: AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.

6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE. SAND ASPHALT BASE WILL BE AN ACCEPTABLE ALTERNATIVE.

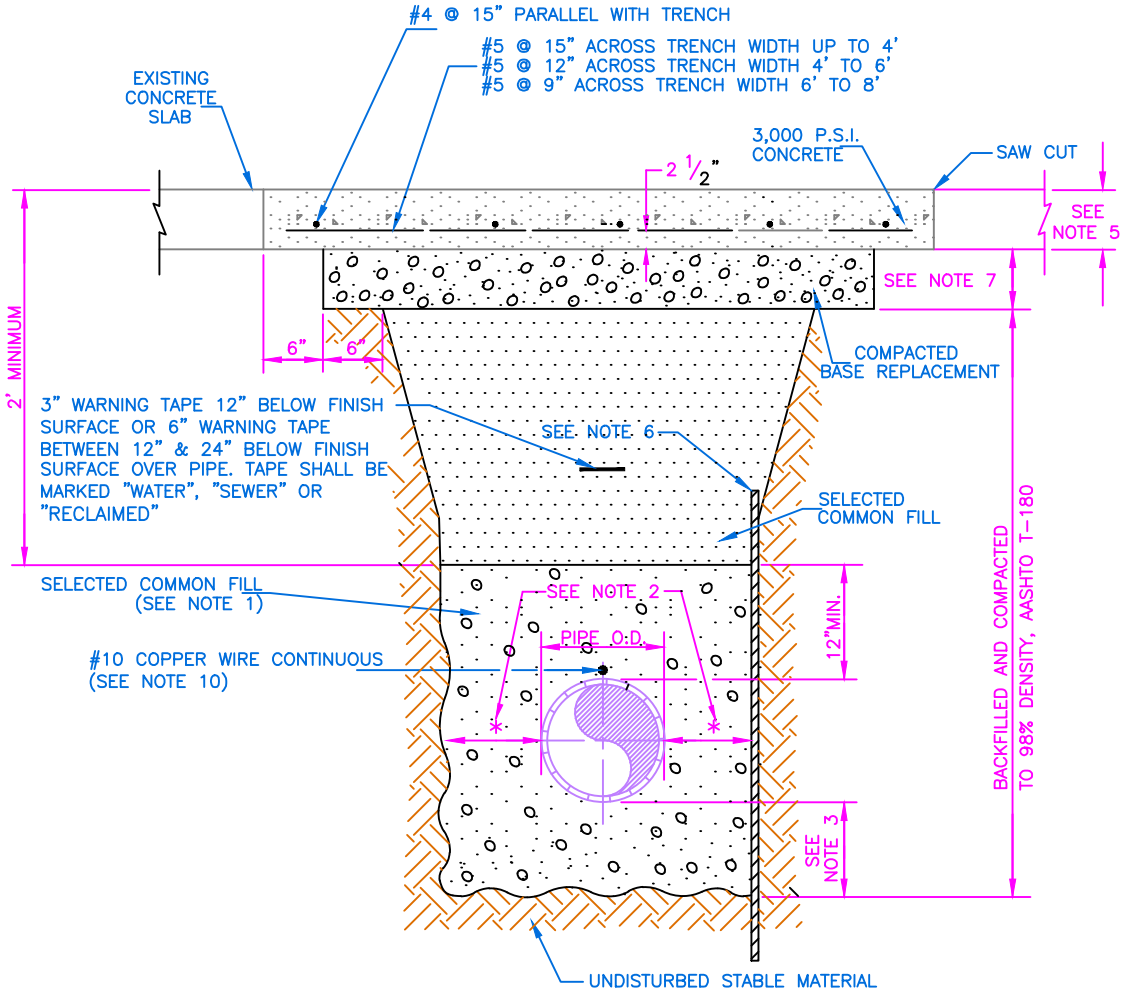
8.) BACKFILL AASHTO M–145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T–180 DENSITY.

9.) TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.

10.) RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.

11.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

12.) NOTES 5.) THRU 11.) ARE MINIMUM REQUIREMENTS. REFER TO CITY OF PALMETTO ROAD STANDARDS FOR ADDITIONAL REQUIREMENTS.



CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A–1 PIPE BEDDING	PAGE G 13

NOTES:

1.) USE OF TYPE A–2 AND A–3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.

4.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5.) THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.

6.) SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.

7.) BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.

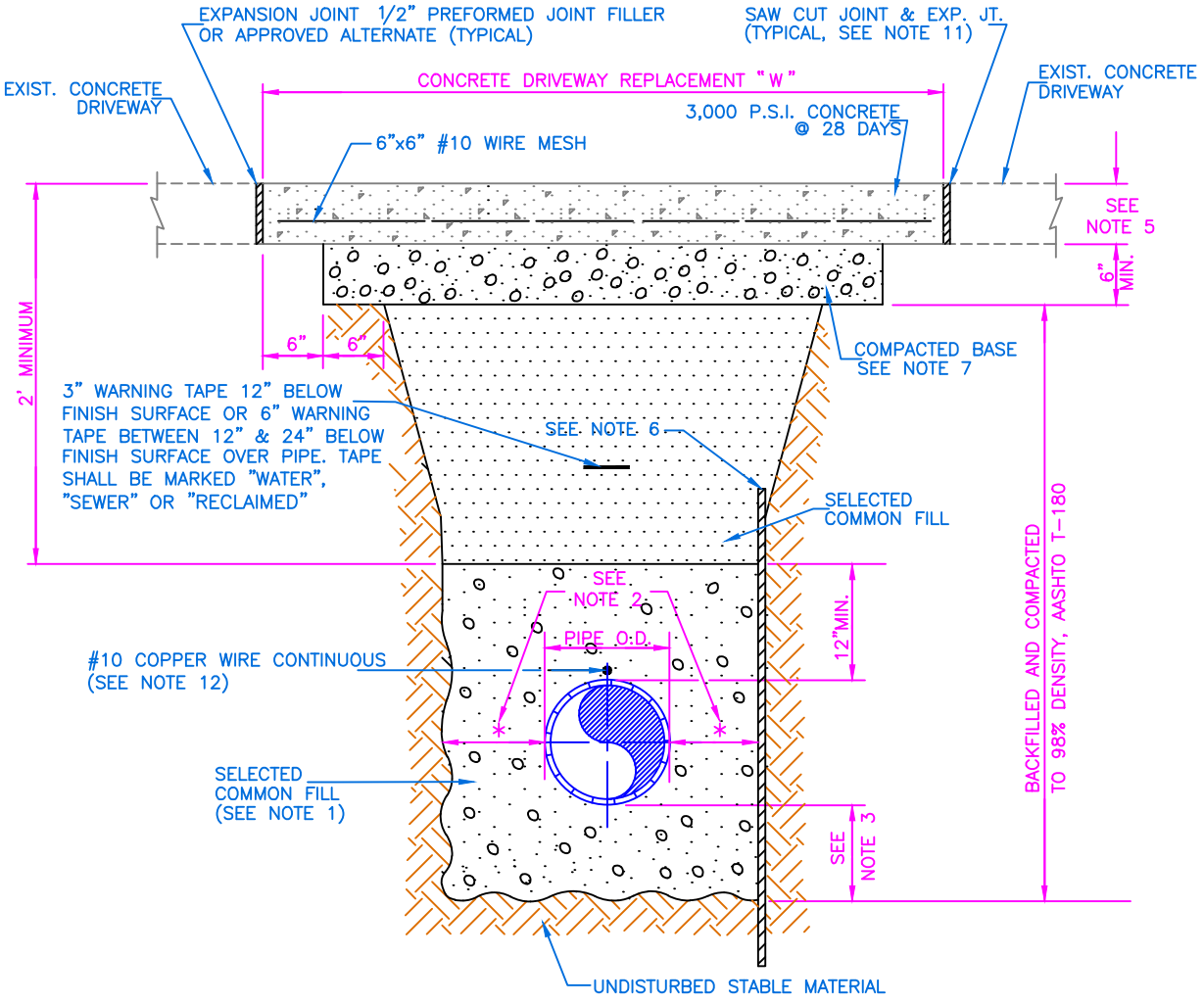
8.) BACKFILL AASHTO M–145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T–180 DENSITY.

9.) DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.

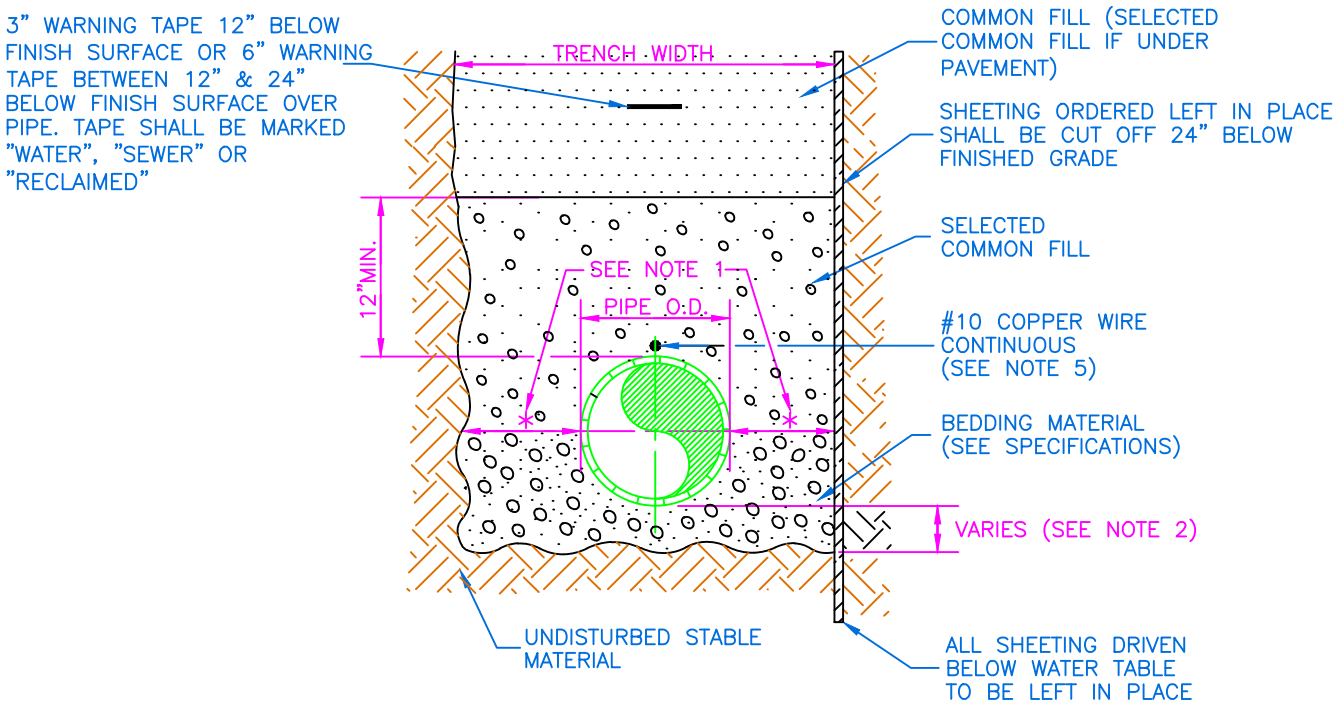
10.) IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY ($3/16$" WIDE AND $1\ 1/2$" DEEP) AFTER THE CONCRETE HAS SET.

11.) IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.

12.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A–1 PIPE BEDDING	PAGE G 14



NOTES:

1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

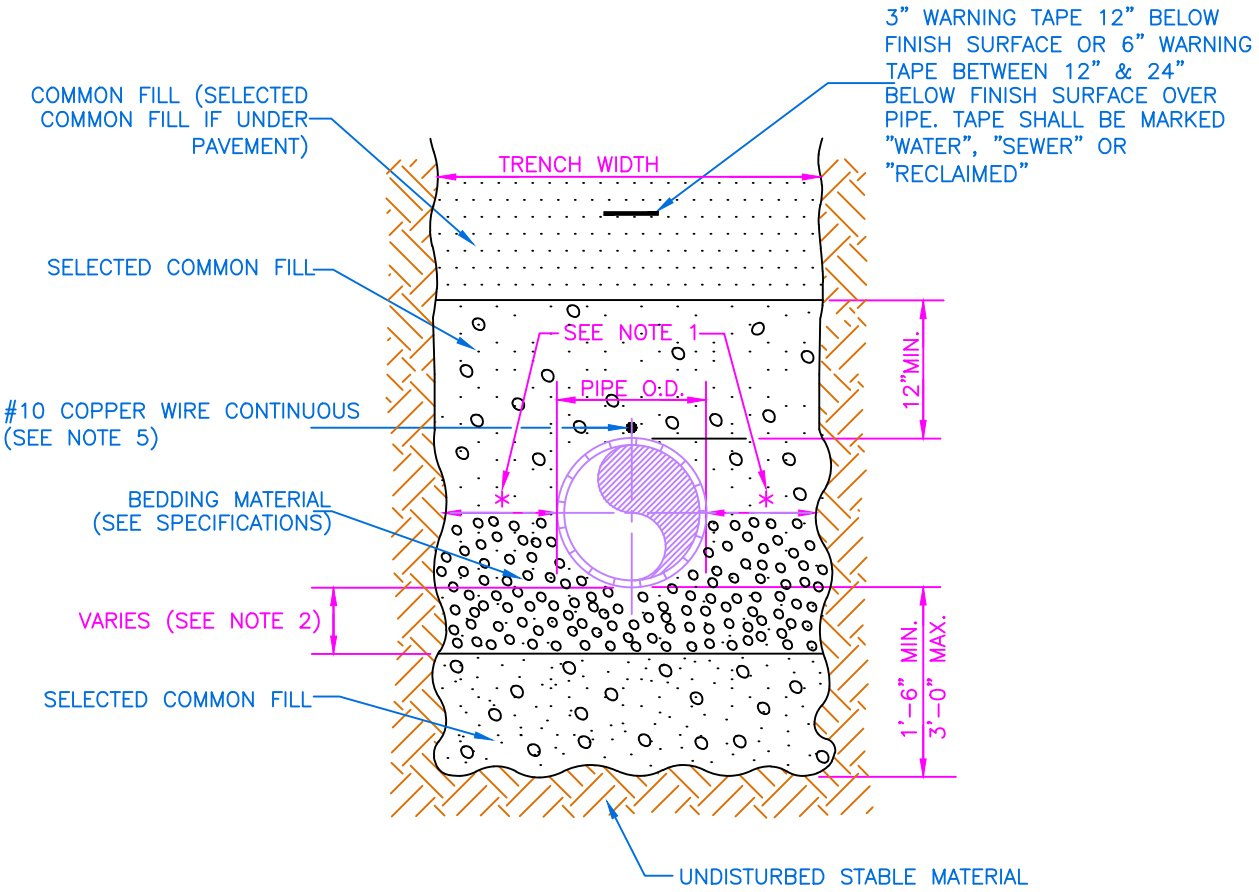
2.) 4" MAX. FOR PIPE 16" DIAMETER AND LESS; 6" MAX. FOR PIPE DIAMETER 18" TO 36" AND 9" MAX. FOR PIPE DIAMETER 42" AND OVER.

3.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

4.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 90% AASHTO T-180 DENSITY UNPAVED AREAS, 98% PAVED AREAS.

5.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TRENCH WITH TYPE A-2 PIPE BEDDING	PAGE G 15



NOTES:

1.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.

2.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER.

3.) PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

4.) BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 90% AASHTO T-180 DENSITY UNPAVED AREAS, 98% PAVED.

5.) TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TRENCH WITH TYPE A-3 PIPE BEDDING	PAGE G 16

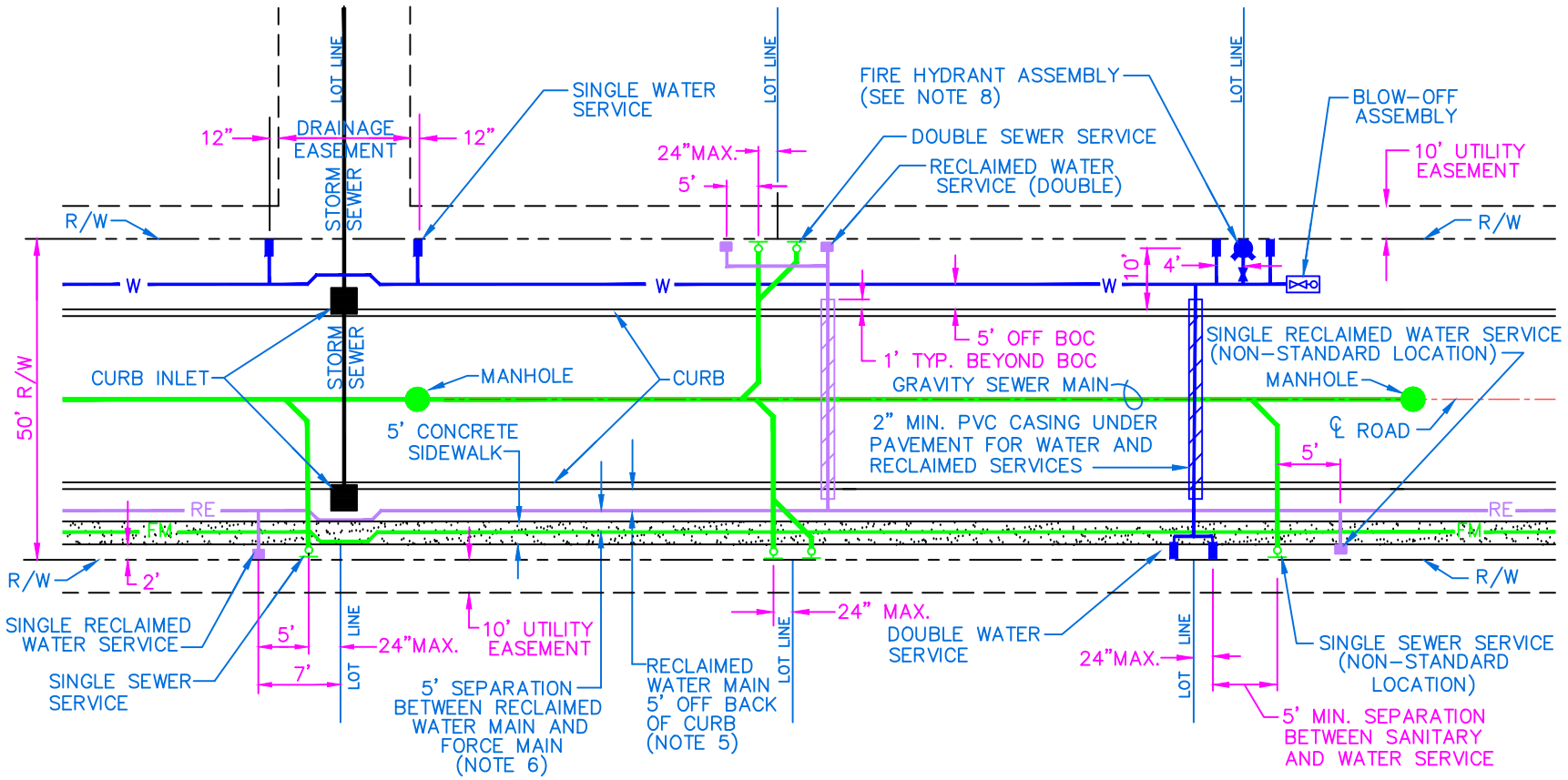
CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY BWM
DATE 5-20-11
REVISED

MINIMUM STANDARD DETAIL

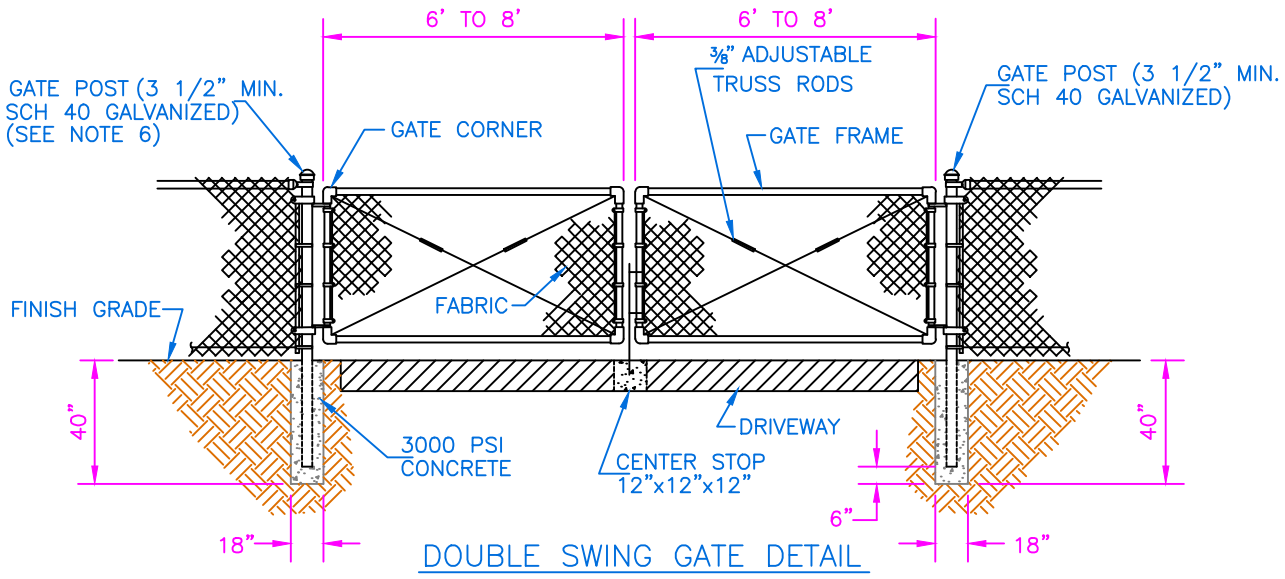
UTILITY LAYOUT FOR 50' R/W

PAGE G 17

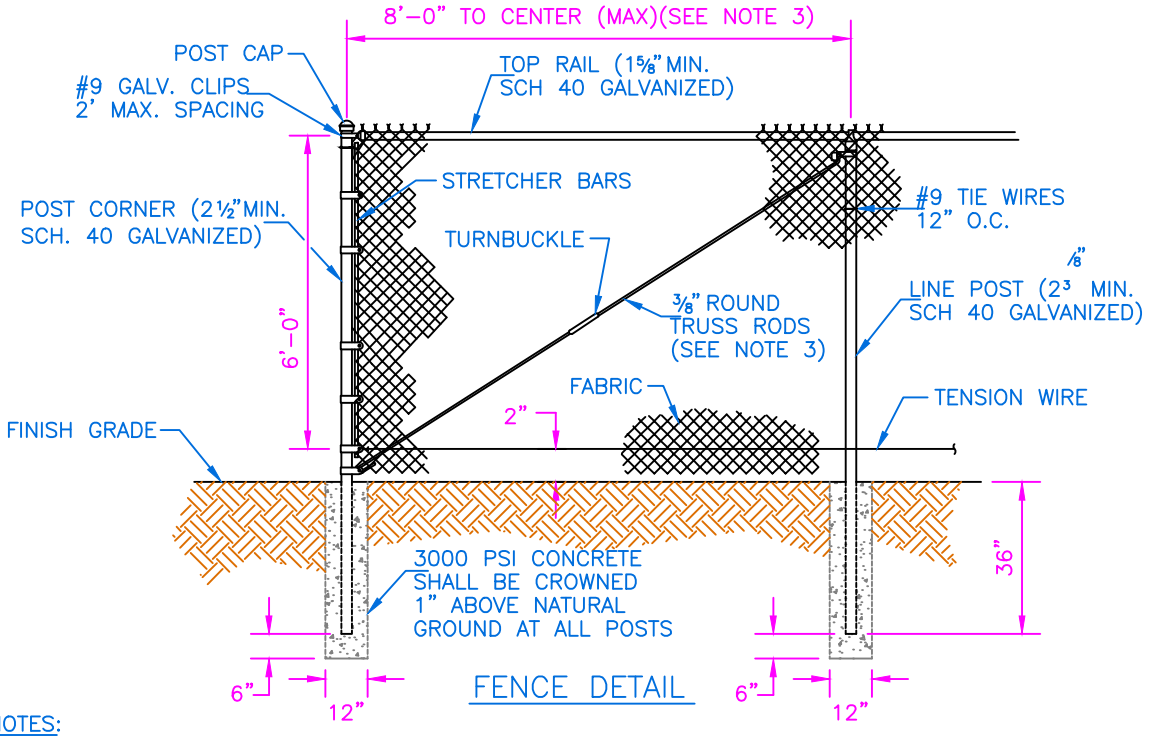


UTILITY LAYOUT NOTES:

1. 5' WIDE SIDEWALK TO BE LOCATED 2' OFF RIGHT-OF-WAY LINE (4' SEPARATION FROM SIDEWALK TO BACK OF CURB). SEE PLAN FOR SIDEWALK LOCATION.
2. WATER SERVICES TO BE 24" MAX. OFF LOT LINE, 12" MAX. AT DRAINAGE EASEMENTS. SANITARY CLEAN-OUTS TO BE 12" OFF RIGHT-OF-WAY LINE AND 24" MAX. OFF LOT LINE, 12" MAX. AT DRAINAGE EASEMENTS. RECLAIMED WATER SERVICES TO BE 7' MAX. OFF LOT LINE (5' AWAY FROM SANITARY SERVICES), 6' MAX. AT DRAINAGE EASEMENTS.
3. POTABLE WATER MAIN TO BE 5' OFF BACK OF CURB, ON OPPOSITE SIDE OF ROAD FROM SIDEWALK.
4. SEWER MAIN TO BE ALONG CENTERLINE OF ROADWAY, EXCEPT IN CURVES, AND SHALL IN NO CASE BE CLOSER THAN 10' AWAY FROM POTABLE WATER MAINS AND 5' AWAY FROM RECLAIMED WATER MAINS. MANHOLE COVERS SHALL BE IN CENTERLINE OF ROADWAY, OR CENTER OF TRAVELED LANE.
5. RECLAIMED WATER MAIN TO BE 5' OFF BACK OF CURB (OPPOSITE SIDE OF ROAD FROM POTABLE WATER MAIN), EXCEPT WHEN INSTALLED ON SAME SIDE OF ROAD AND PARALLEL TO FORCE MAIN, IN WHICH CASE RECLAIMED WATER MAIN TO BE 3' OFF BACK OF CURB. 10' UTILITY EASEMENT SHALL BE IN THE FRONT OF THE LOTS IN LIEU OF THE BACK OF THE LOTS.
6. FORCE MAIN TO BE 5' OFF BACK OF CURB (OPPOSITE SIDE OF ROAD FROM POTABLE WATER MAIN), EXCEPT WHEN INSTALLED ON SAME SIDE OF ROAD AND PARALLEL TO RECLAIMED WATER MAIN, IN WHICH CASE FORCE MAIN TO BE 8' OFF BACK OF CURB.
7. POTABLE WATER, RECLAIMED WATER AND FORCE MAINS TO DEFLECT BEHIND AND NOT TOUCH CURB INLETS. MAXIMUM OBTAINABLE SEPARATIOIN OF POTABLE WATER, RECLAIMED WATER AND FORCE MAINS TO CURB INLETS SHALL BE PROVIDED WHILE MAINTAINING ALL OTHER SETBACK REQUIREMENTS.
8. FIRE HYDRANTS TO BE 10' OFF BACK OF CURB, ON SAME SIDE OF ROAD AS WATER MAIN, AT LOT LINES (TYPICALLY AT PROPERTY CORNERS WHERE WATER SERVICES ARE LOCATED).
9. PVC CASINGS FOR WATER AND RECLAIMED WATER SERVICE ROADWAY CROSSINGS TO HAVE 36" MINIMUM COVER.
10. THE MINIMUM SETBACKS FOR FORCEMAINS, POTABLE & RECLAIMED WATERMAINS FROM THE BACK OF CURB AND SETBACKS FROM THE R/W LINE FOR A 50' R/W SHALL ALSO BE MAINTAINED FOR ALL OTHER R/W WIDTHS.



DOUBLE SWING GATE DETAIL



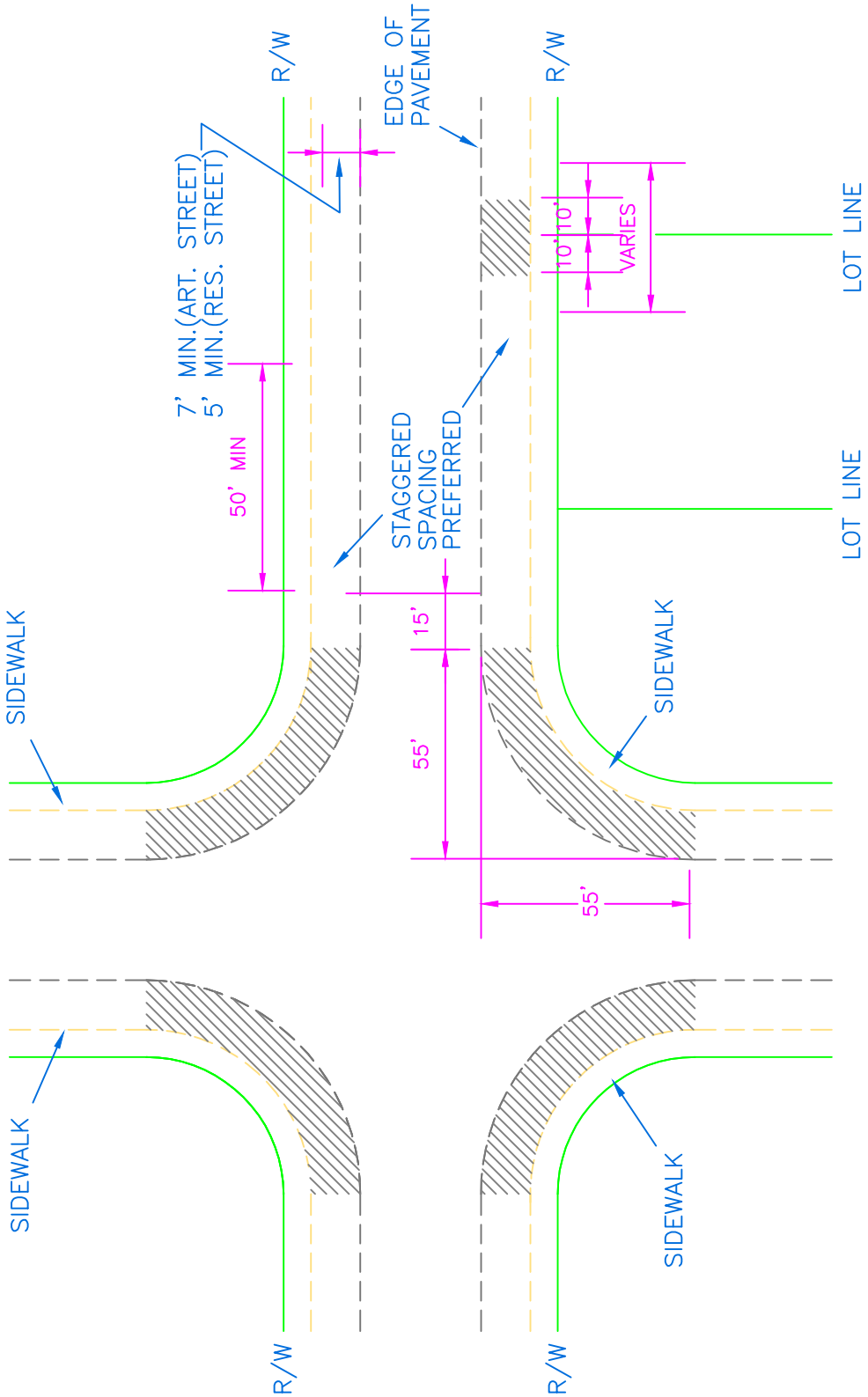
FENCE DETAIL

NOTES:

1. FENCING SHALL BE CONCRETE AGGREGATE, STUCCO, BRICK, STONE, SPLIT FACE CONCRETE MASONARY, OR CHAIN LINK.
2. CHAIN LINK FENCING SHALL BE #9 GAUGE, GALVANIZED STEEL WITH VINYL COATING.
3. TRUSS BARS ON CHAIN LINK FENCES ARE REQUIRED FOR THE FIRST SPAN ON EACH SIDE OF THE CORNER POST AND FOR EACH GATE SECTION.
4. LANDSCAPE SCREENING SHALL BE LOCATED ON THE EXTERIOR OF LIFT STATION FENCING.
5. SWING GATES SHALL BE CAPABLE OF SWINGING BOTH INWARDS AND OUTWARDS. CANTILEVER SLIDE GATES AND ROLL SLIDE GATES MEETING FDOT DESIGN STANDARDS MAY BE USED AS AN OPTION TO SWING GATES.
6. GATE POSTS AND TRACK LINE POSTS SHALL BE 4 INCH SCHEDULE 40 FOR CANTILEVER SLIDE GATES AND ROLL SLIDE GATES.

END & CORNER POST TOP OPTIONS		TOP & BOTTOM FABRIC OPTIONS	
STANDARD	DOME	TWIST	KNUCKLE
			

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY: BWM DATE: 5-20-11	REVISED	MINIMUM STANDARD DETAIL SECURITY FENCING	PAGE G 18



NOTE:
NO PLANTINGS PERMITTED WITHIN HATCHED AREAS

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL LOCATION OF PLANTING WITHIN PUBLIC ROW	PAGE G 19

CITY OF PALMETTO
ENGINEERING DEPARTMENT

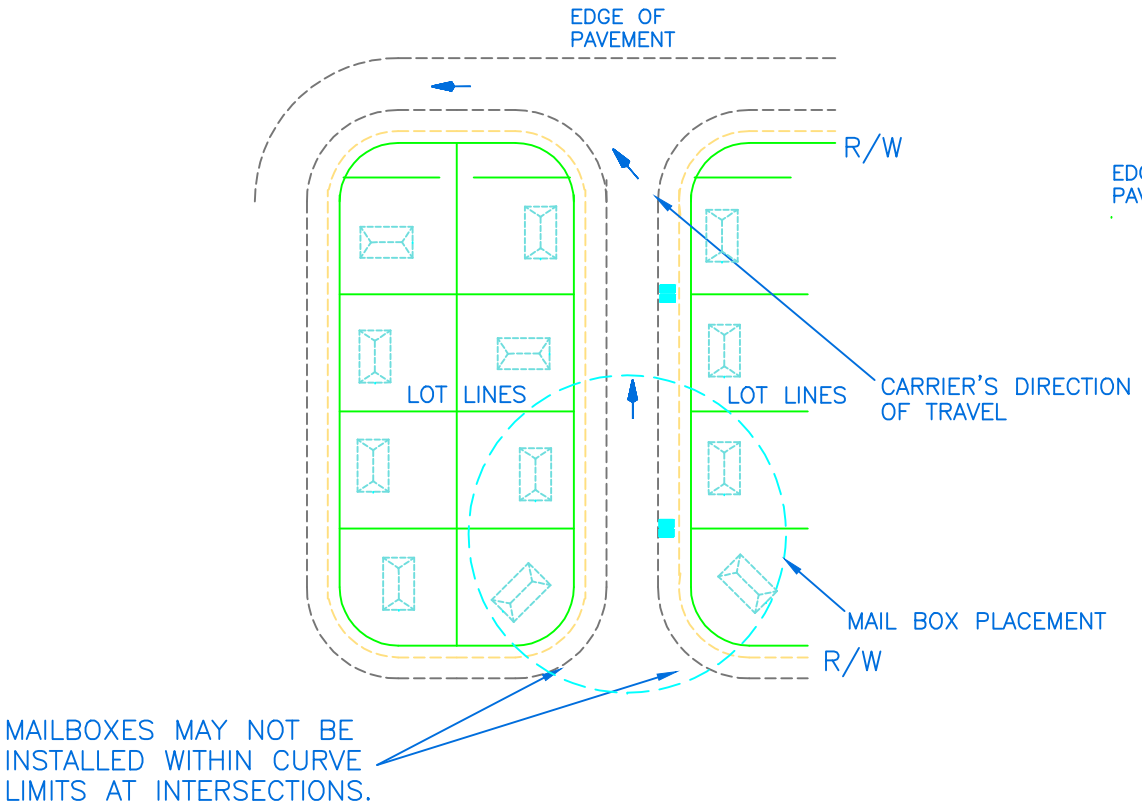
DRAWN BY BWM

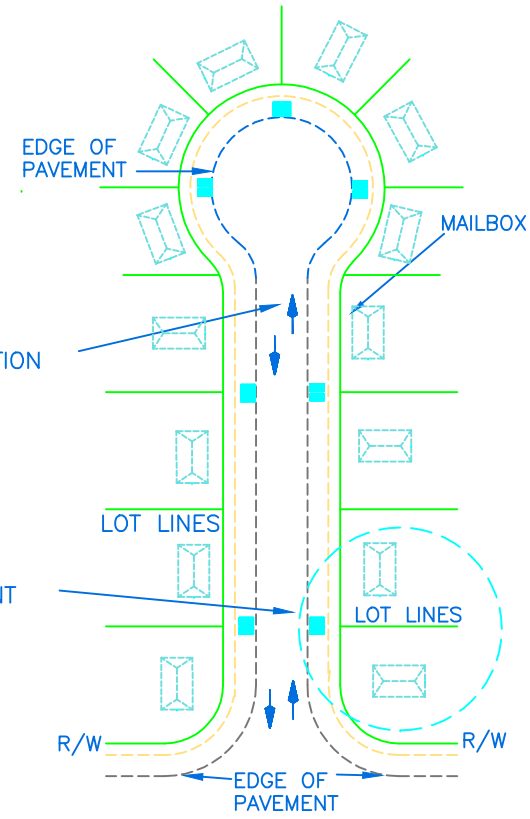
DATE 5-20-11

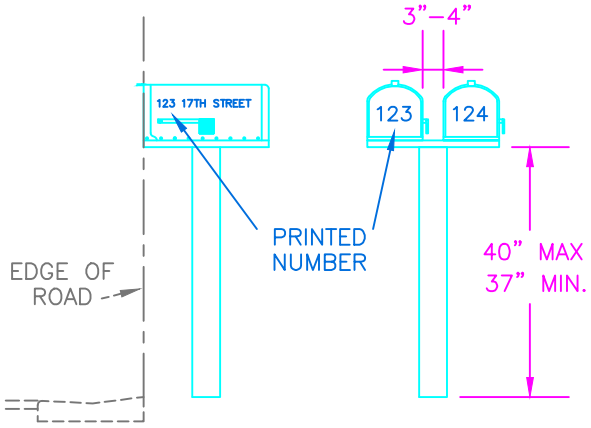
REVISED

MINIMUM STANDARD DETAIL

LOCATION OF MAILBOXES WITHIN PUBLIC ROW

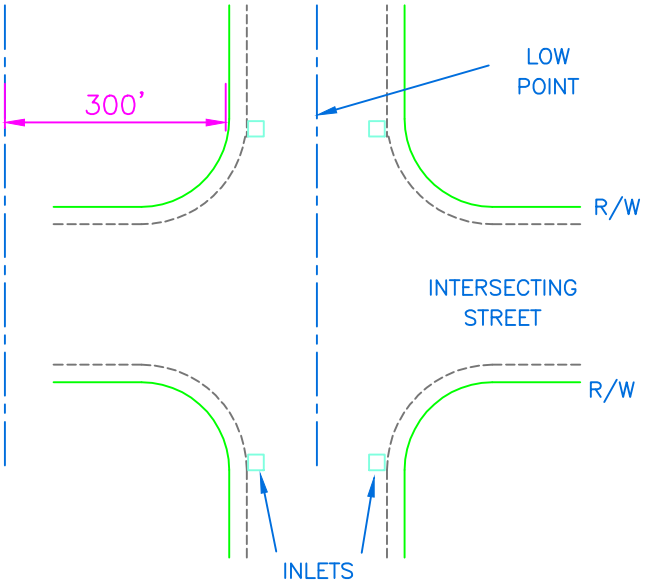




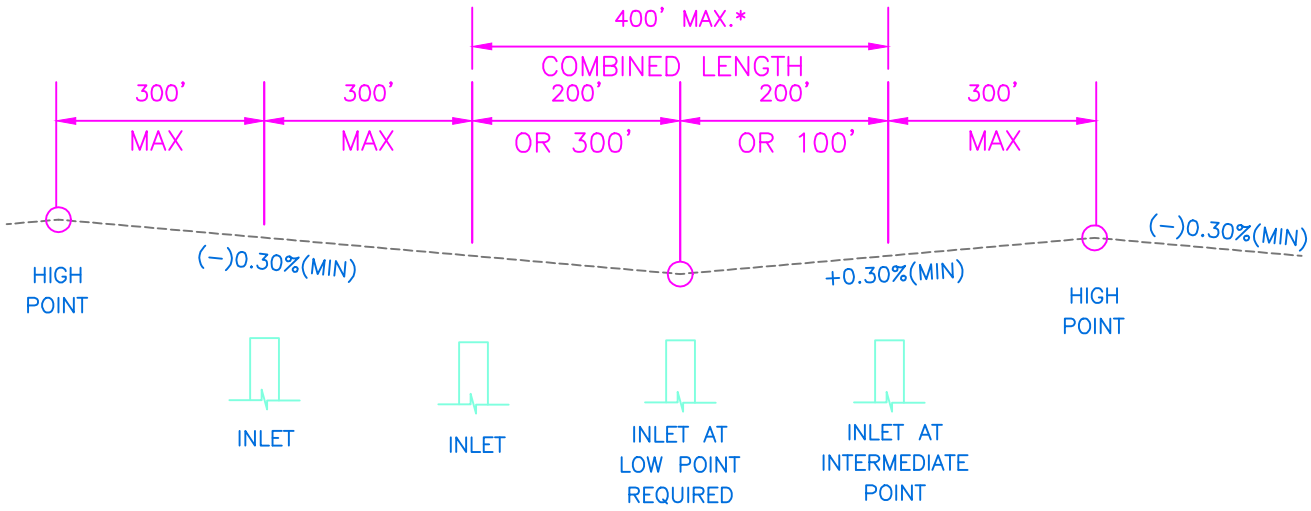


NOTES:

1. NO OBSTRUCTIONS ARE PERMITTED WITHIN THE RIGHT-OF-WAY THAT WOULD PRECLUDE A MAIL CARRIER FROM PULLING OFF TRAFFIC LANES OF PAVEMENT TO MAKE DOOR DELIVERIES.
2. THE MAILBOX SHOULD BE SET BETWEEN 37" MIN. TO 40" MAX. IN HEIGHT.
3. THE MAILBOX MUST BE LOCATED SO THAT THE MAIL CARRIER DOES NOT HAVE TO LEAVE HIS VEHICLE TO PLACE MAIL IN BOX.
4. ALL NEW DEVELOPMENT WILL USE CENTRALIZED MAIL DELIVERY. CONTACT POSTMASTER OF PALMETTO.
5. EXISTING DEVELOPMENT SHALL UTILIZE DUAL BOXES AT SHARED PROPERTY LINES.
6. BOX NUMBER MUST BE PAINTED ON BOX IN NUMERALS NOT LESS THAN 1" HIGH.



PLAN



PROFILE

NOTES:

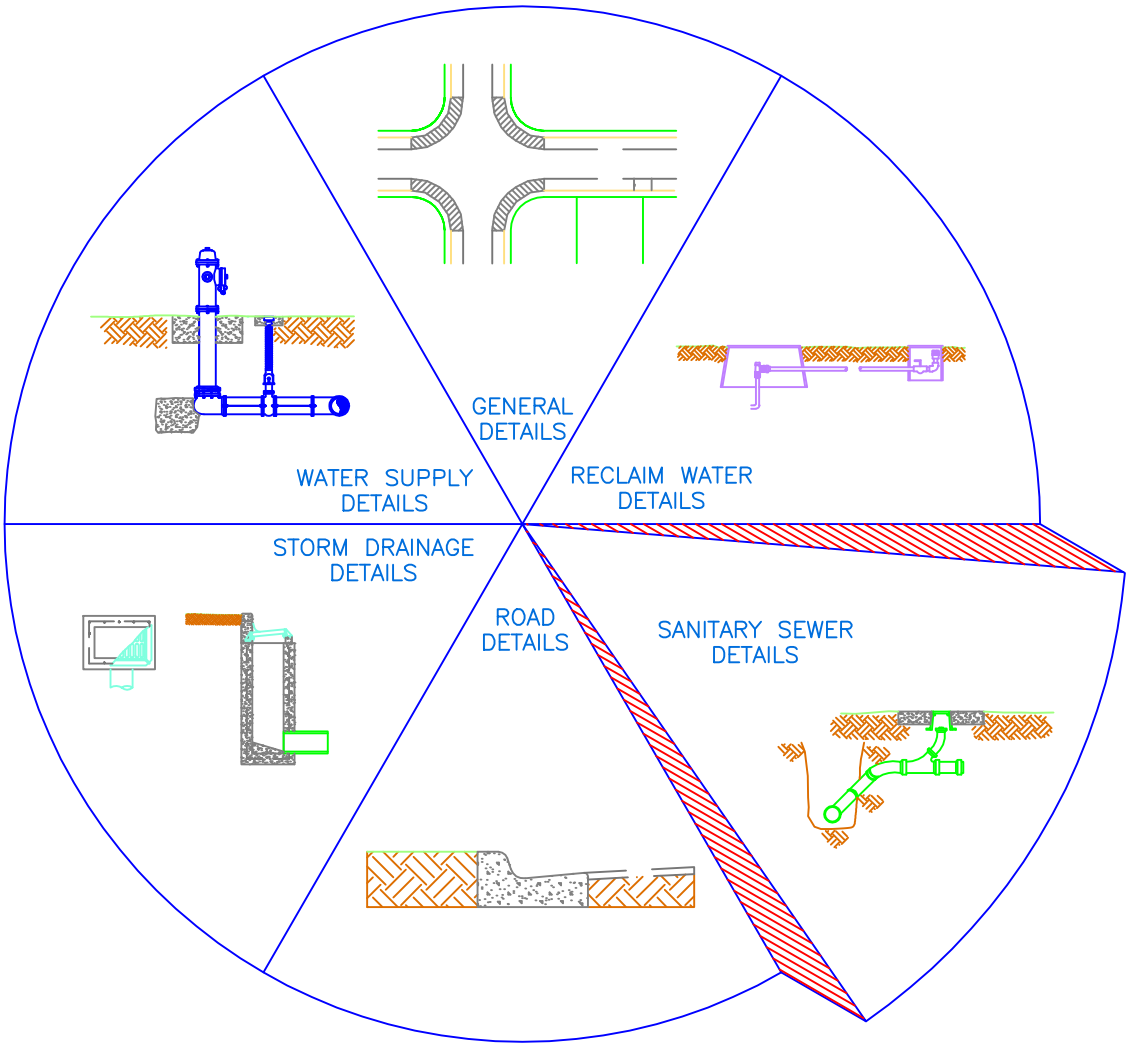
1. MAXIMUM TOTAL CURB DISTANCE LENGTH WHEN DRAINING INTO (1) INLET AT LOW POINT. WHEN LOW POINT EXISTS AT INTERSECTING STREET AS SHOWN, AND THERE IS AN INLET ON EACH CORNER, THEN THE 300' SPACING APPLIES.
2. THE HORIZONTAL DIMENSIONS DO NOT CONTROL DISTANCES BETWEEN POINTS OF AN INTERSECTION OF GRADE TANGENTS.
3. USE ABOVE REQUIREMENTS ON PROJECTS WITH CURB AND GUTTER ROAD SECTIONS ONLY.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL INLET SPACING FOR DRAINAGE SYSTEMS	PAGE G 21

DEPARTMENT OF PUBLIC WORKS

UTILITY SPECIFICATIONS

2011 EDITION



SS-0

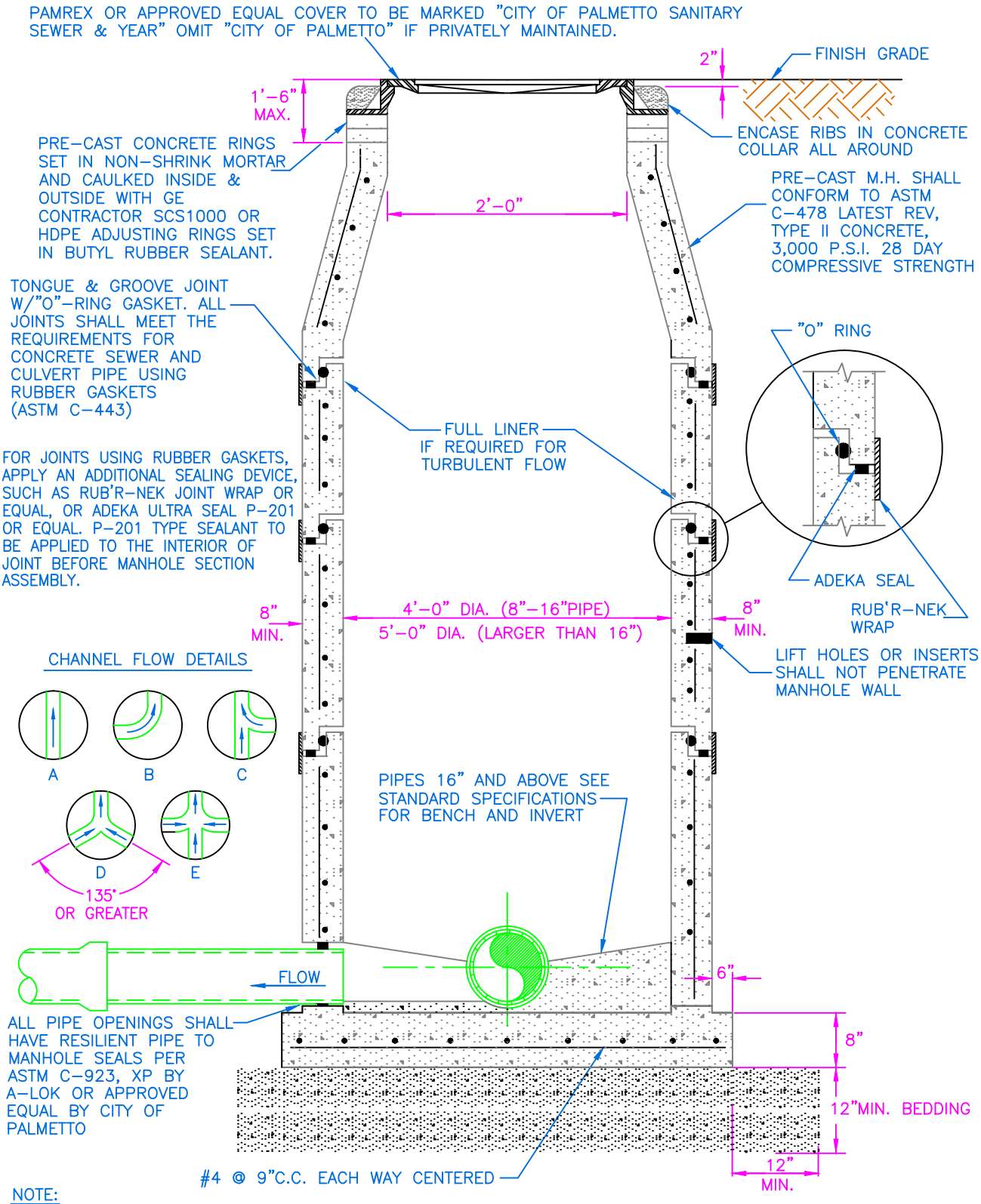
TABLE OF CONTENTS

UTILITY STANDARDS – SANITARY SEWER

NOTE:

SEWAGE WORKS SHALL BE DESIGNED IN ACCORDANCE WITH F.D.E.P. REGULATIONS AND "RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES" BY THE GREAT LAKES–UPPER MISSISSIPPI RIVER BOARD OF STATE AND PROVINCIAL PUBLIC HEALTH AND ENVIRONMENTAL MANAGERS – LATEST EDITION.

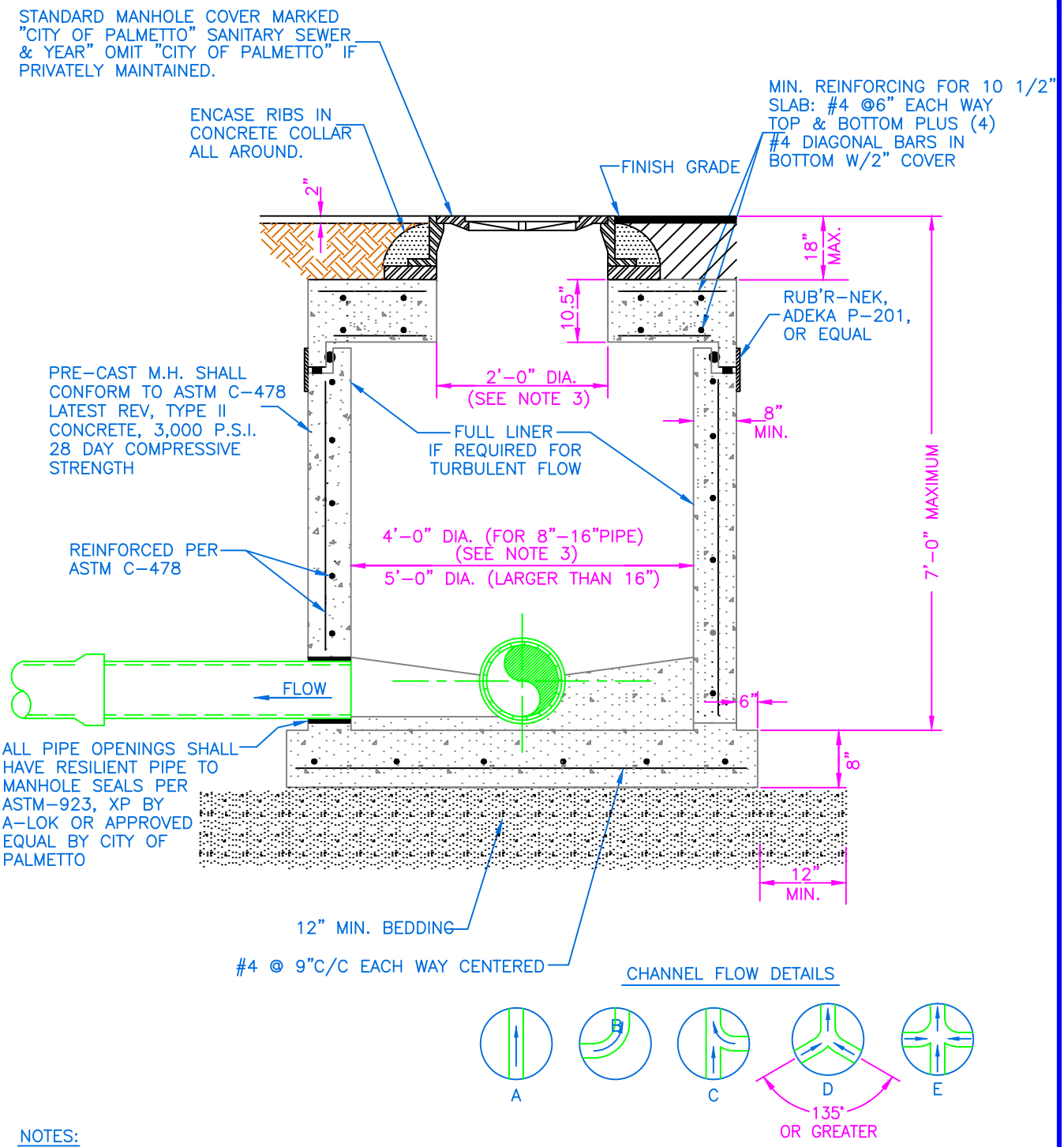
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05–26–11	REVISED	MINIMUM STANDARD DETAIL TABLE OF CONTENTS SANITARY SEWER	PAGE SS 1



NOTE:

DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES IMMEDIATELY UPSTREAM OF A LIFT STATION WET WELL, MANHOLES WITH GRAVITY SEWERS GREATER THAN 12 INCHES IN DIAMETER, MANHOLES RECEIVING A FORCE MAIN AND THE FIRST TWO GRAVITY MANHOLES DOWNSTREAM OF MANHOLES RECEIVING A FORCE MAIN SHALL HAVE AN APPROVED LINER.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR UNDISTURBED FLOW	PAGE SS 2

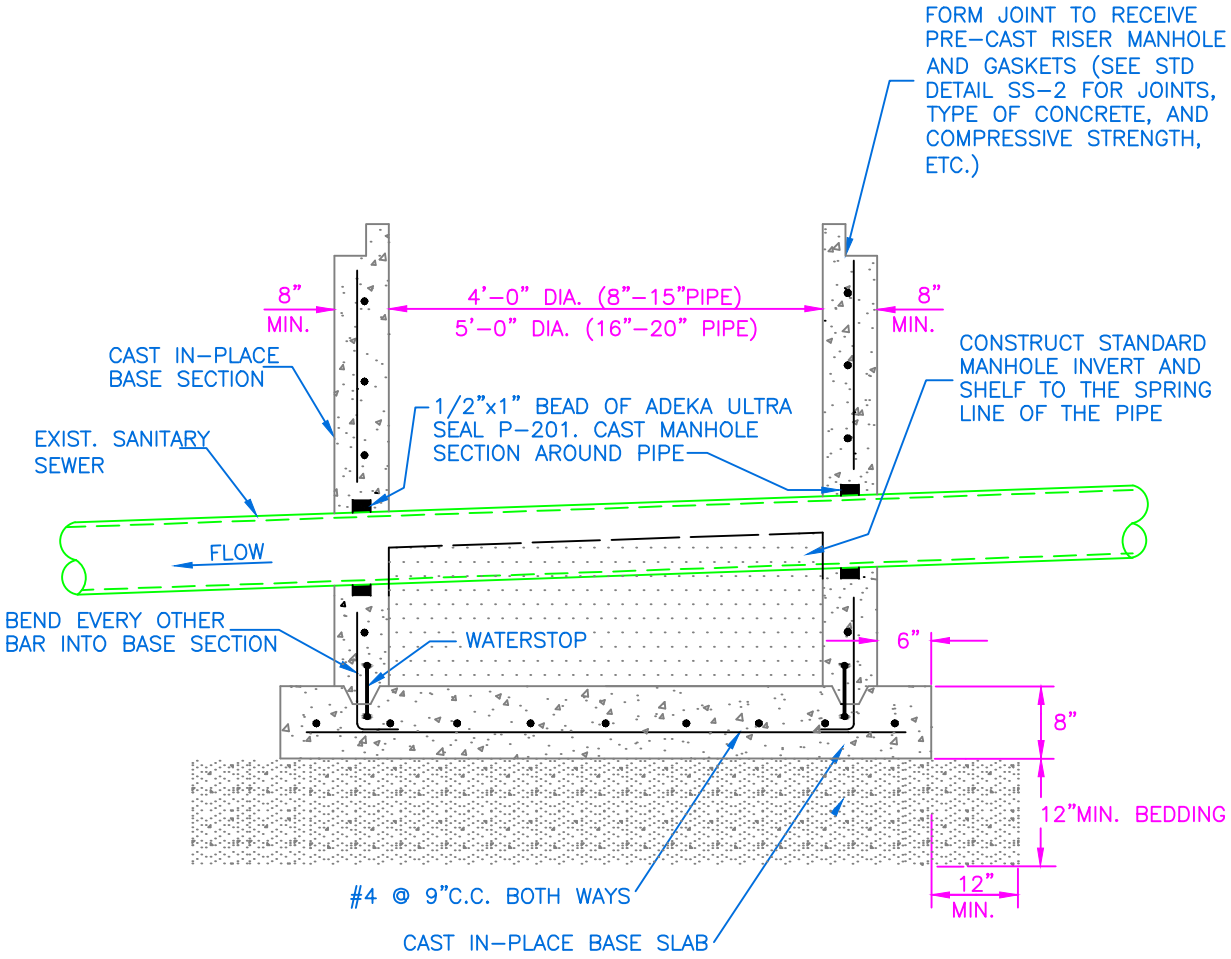


CHANNEL FLOW DETAILS

NOTES:

1. DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES IMMEDIATELY UPSTREAM OF A LIFT STATION WET WELL, MANHOLES WITH GRAVITY SEWERS GREATER THAN 12 INCHES IN DIAMETER, MANHOLES RECEIVING A FORCE MAIN AND THE FIRST TWO GRAVITY MANHOLES DOWNSTREAM OF MANHOLES RECEIVING A FORCE MAIN SHALL HAVE AN APPROVED LINER.
2. LIFT HOLES OR INSERTS SHALL NOT PENETRATE THE WALLS OF THE MANHOLES.
3. A MINIMUM COVER OF 3' OVER THE GRAVITY SEWER SHALL BE PROVIDED. FOR MANHOLES WITH LESS THAN 4' OF COVER OVER THE GRAVITY SEWER, THE MANHOLE INSIDE DIAMETER SHALL BE 5'-0" AND THE FRAME AND COVER SHALL BE 32" PAMPREX WITH 32" OPENING.

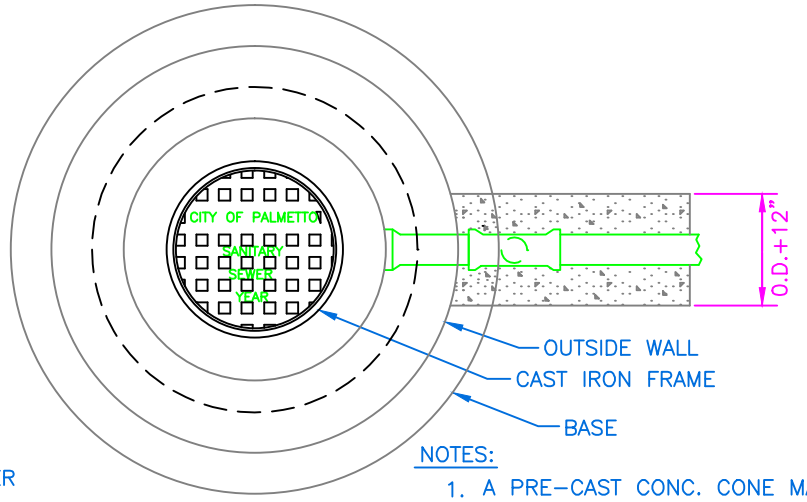
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL STANDARD PRE-CAST SHALLOW MANHOLE	PAGE SS 3



NOTES:

1. PRIOR TO ANY EXCAVATION OVER THE PIPE, A TV RECORDING OF THE EXISTING SEWER MAIN SHALL OCCUR BETWEEN THE UPSTREAM AND DOWNSTREAM MANHOLES WHILE THE CITY INSPECTOR IS PRESENT.
2. THE CONTRACTOR SHALL CAREFULLY EXCAVATE AROUND AND PROPERLY SUPPORT THE EXISTING PIPE.
3. PREFERRED CONSTRUCTION IS BY "CUTTING-IN" A STANDARD SANITARY SEWER MANHOLE WITH A TEMPORARY FLOW BY-PASS SYSTEM.
4. SEWER LINES GREATER THAN 20" REQUIRE SPECIAL DESIGN AND APPROVAL BY CITY OF PALMETTO ENGINEERING.
5. ALLOW SUFFICIENT CURING TIME, 24-36 HOURS, FOR THE ADEKA ULTRA-SEAL P-201, BEFORE POURING CONCRETE.
6. FOLLOWING SATISFACTORY CURING OF THE INVERT CHANNEL AND SHELF, THE CONTRACTOR SHALL CUT AND REMOVE THE TOP HALF OF THE EXISTING PIPE WITHIN THE MANHOLE, TAKING CARE NOT TO ALLOW ANY PIECES TO BE WASHED DOWN STREAM IN THE PIPE. CUTTING OF THE PIPE SHALL BE IN A WORKMAN LIKE MANNER, PROVIDING A SMOOTH AND EVEN FINISHED PRODUCT.
7. A TV RECORDING OF THE SEWER MAIN SHALL ALSO OCCUR AFTER CONSTRUCTION WHILE THE CITY INSPECTOR IS PRESENT. PIPE DEFLECTION SHALL NOT DEVIATE BY MORE THAN 1 INCH FROM THE DESIGN LINE.
8. THERE SHALL BE NO VISIBLE LEAKS IN THE MANHOLE.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SANITARY SEWER MANHOLE CONSTRUCTED OVER EXISTING SEWER LINE	PAGE SS 4

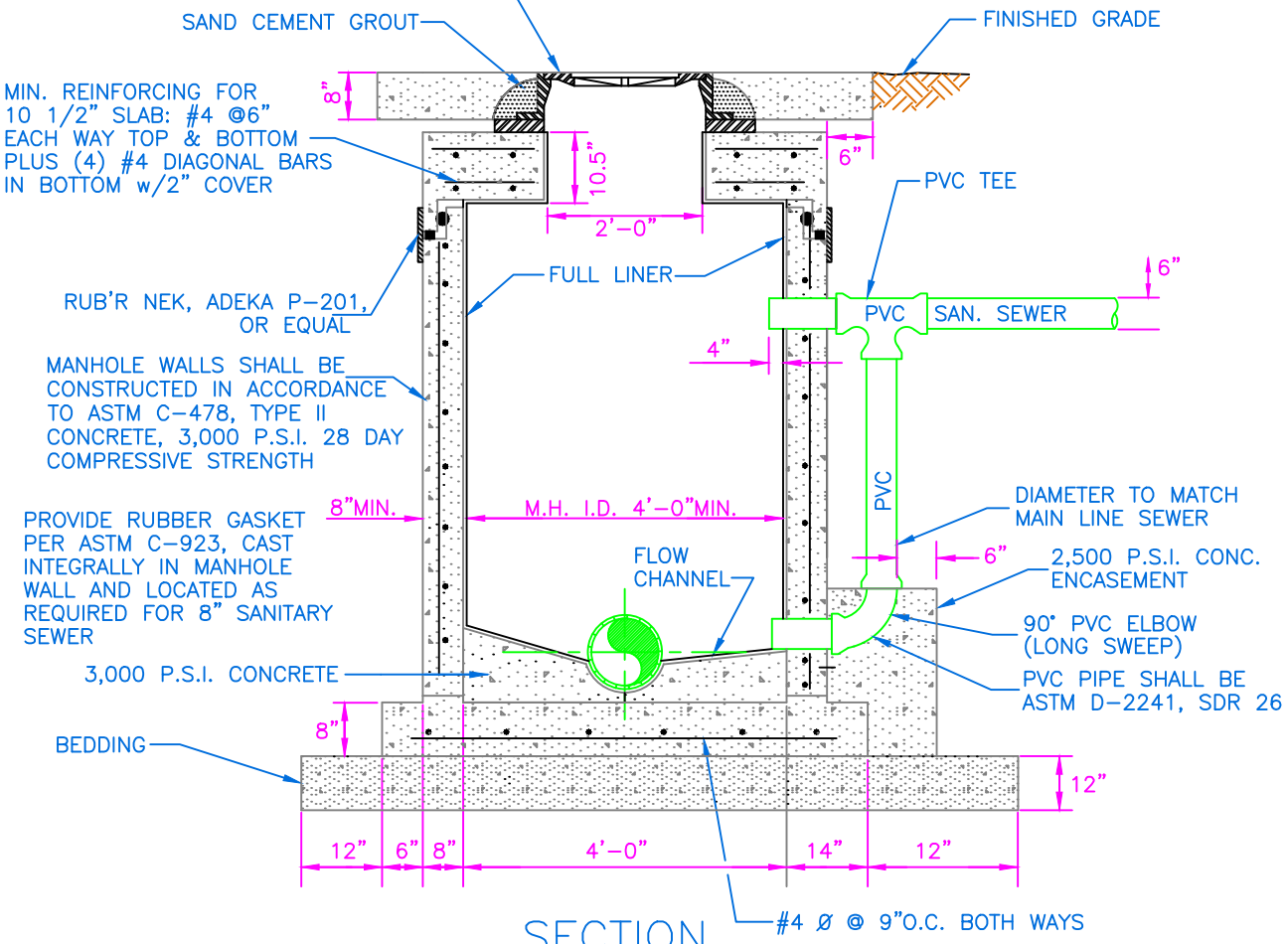


PAMREX RING & COVER
OR APPROVED EQUAL
MARKED "CITY OF PALMETTO
SANITARY SEWER & YEAR"
OMIT "CITY OF PALMETTO"
IF PRIVATELY MAINTAINED.

PLAN

NOTES:

1. A PRE-CAST CONC. CONE MAY BE USED IN LIEU OF THE FLAT TOP SHOWN IN THIS DETAIL.
2. A PRE-CAST CONC. OUTSIDE DROP MAY BE USED IN LIEU OF THE CAST IN PLACE ENCASEMENT SHOWN BELOW.

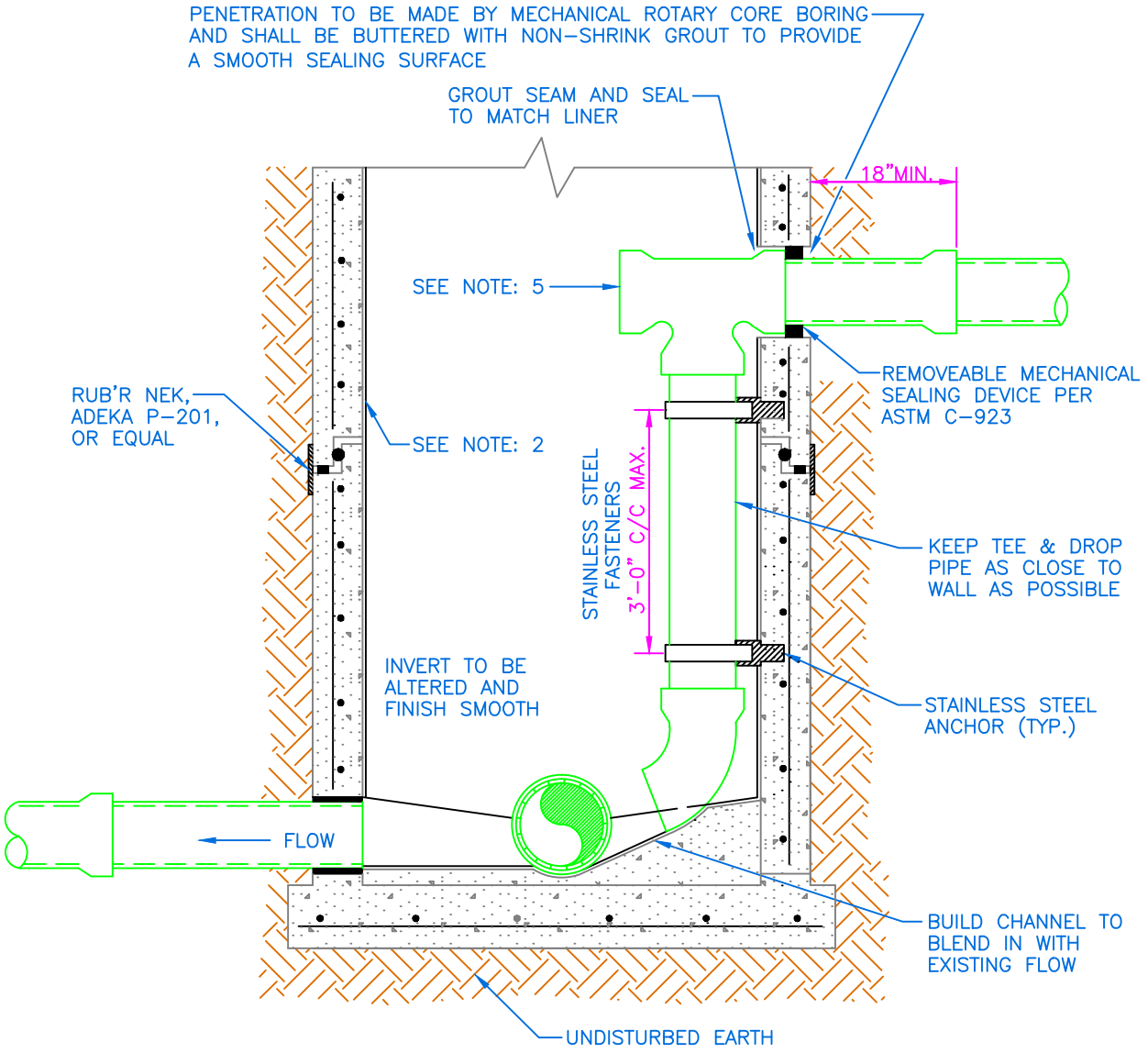


SECTION

NOTES:

1. THIS IS AN INTERCEPT MANHOLE AND MUST BE LINED WITH AN APPROVED LINER.
2. DROP MANHOLES ARE REQUIRED WHEN THE VERTICAL DISTANCE BETWEEN THE LOWEST EXISTING MANHOLE INVERT AND THE HIGHEST PIPE INVERT IS 2'-0" OR GREATER.

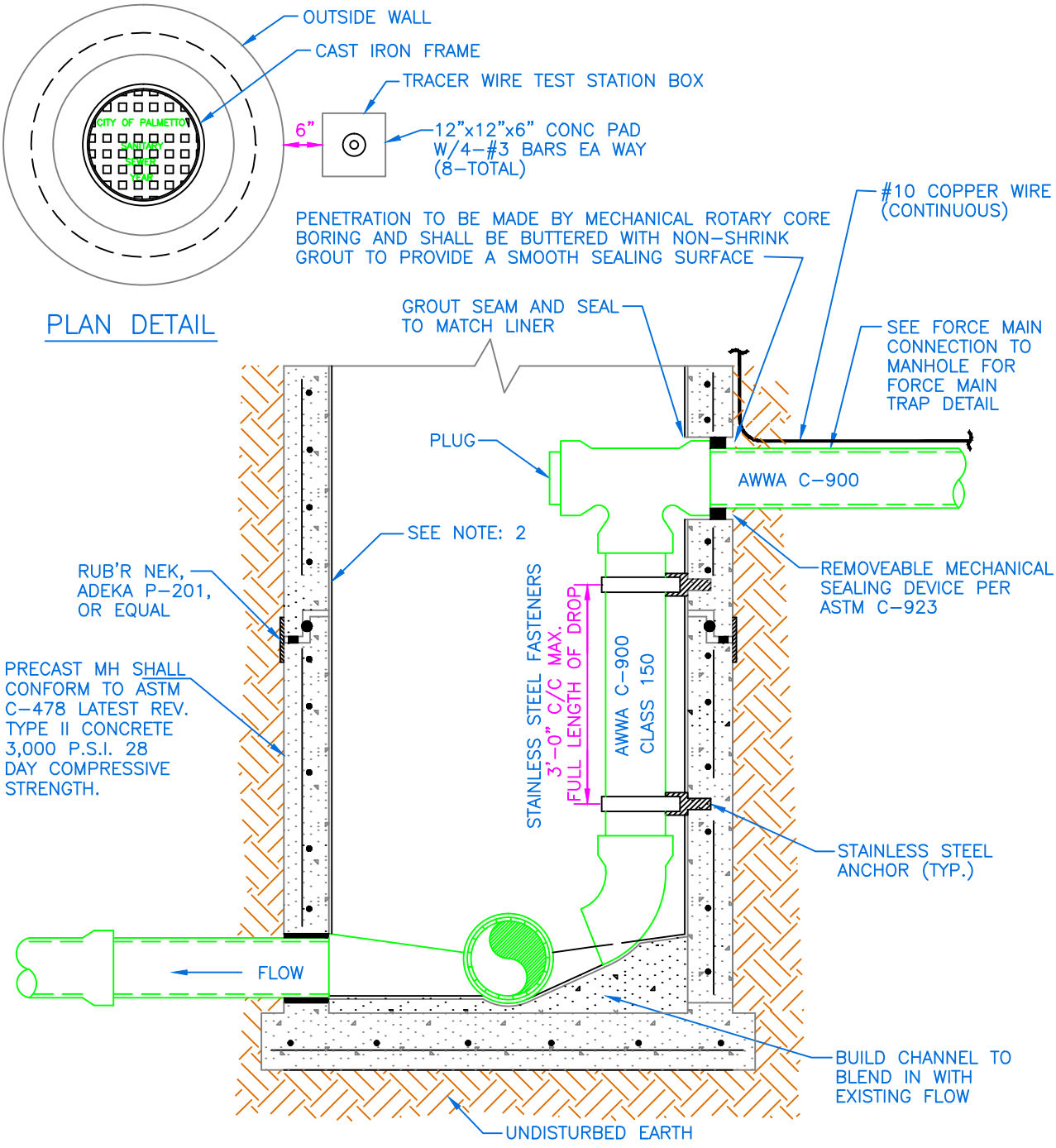
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL GRAVITY SEWER STANDARD DROP CONNECTION	PAGE SS 5



NOTES:

1. PVC PIPE AND FITTINGS SHALL BE ASTM D-3034 SDR 26.
2. THIS IS AN INTERCEPT MANHOLE AND MUST BE LINED WITH APPROVED LINER. ALSO APPROVED SPRAY-ON LINERS MAY BE USED FOR EXISTING MANHOLES.
3. INSIDE DROP MANHOLES ARE REQUIRED WHEN THE VERTICAL DISTANCE BETWEEN THE LOWEST EXISTING MANHOLE INVERT AND THE HIGHEST PIPE INVERT IS 2'-0" OR GREATER.
4. ALL HARDWARE AND FASTENERS SHALL BE 316 STAINLESS STEEL.
5. PVC TEE MAY BE SUBSTITUTED WITH A PLASTIC COMPOSITE/FIBERGLASS DROP BOWL AS MANUFACTURED BY RELINER/DURAN.

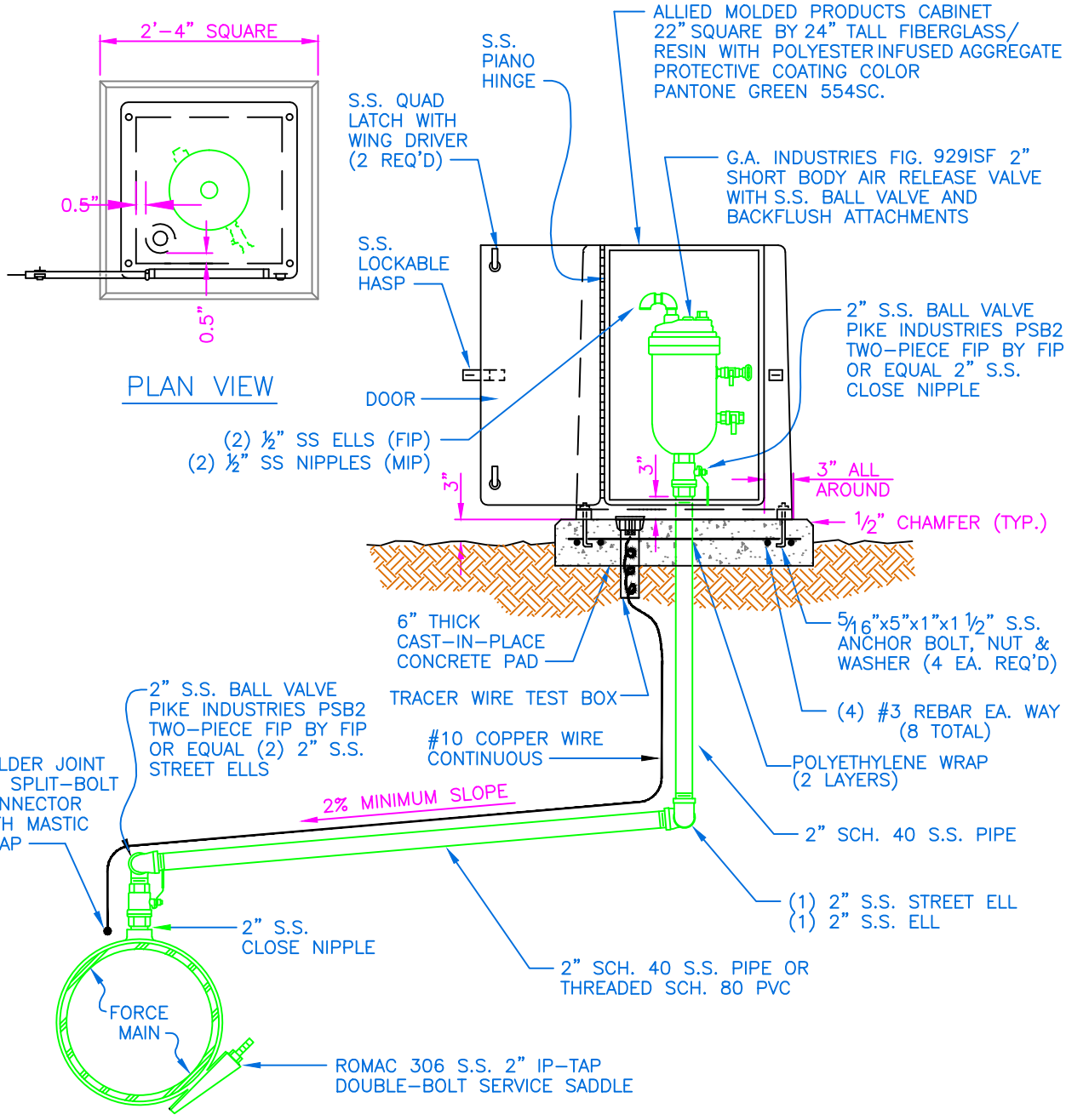
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL GRAVITY INSIDE-DROP FOR RETROFIT OF EXISTING MANHOLE	PAGE SS 6



NOTES:

1. ALL FITTINGS SHALL BE AWWA C-907. DROP PIPE SHALL BE AWWA C-900 (CLASS 150, DR18).
2. THIS IS AN INTERCEPT MANHOLE AND MUST BE LINED WITH AN APPROVED LINER. ALSO APPROVED SPRAY-ON LINERS MAY BE USED FOR EXISTING MANHOLES. REFER TO SECTION 1 OF THE CITY OF PALMETTO UTILITY STANDARDS.
3. INSIDE DROP MANHOLES ARE REQUIRED WHEN THE VERTICAL DISTANCE BETWEEN THE LOWEST EXISTING MANHOLE INVERT AND THE HIGHEST PIPE INVERT IS 2'-0" OR GREATER.
4. ALL HARDWARE AND FASTENERS SHALL BE 304 STAINLESS STEEL.

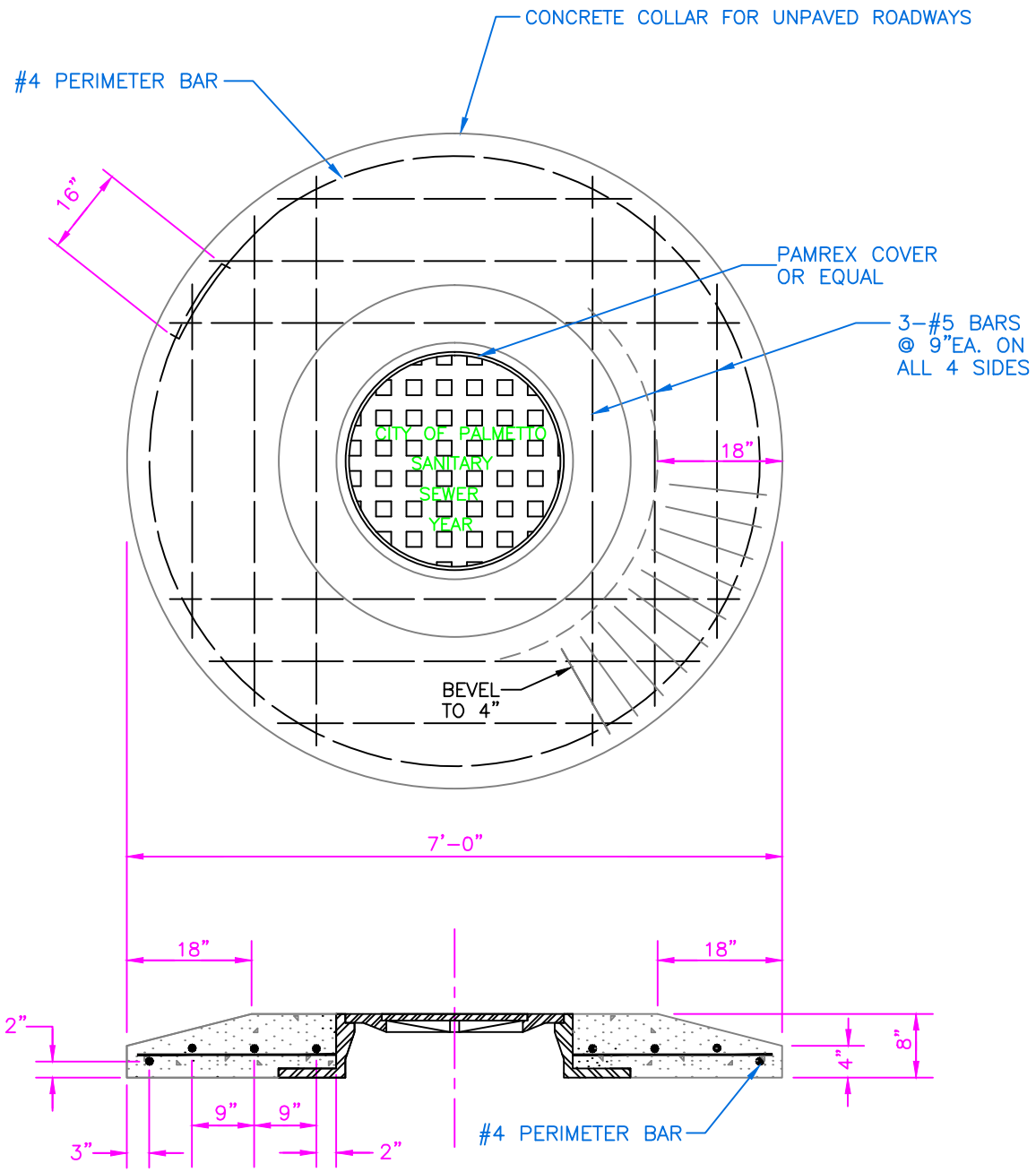
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL FORCE MAIN RETROFIT FOR INSIDE-DROP CONNECTION	PAGE SS 7



NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED, ALONG 4" AND LARGER FORCE MAINS.
2. FORCE MAIN VERTICAL ALIGNMENT TO BE DESIGNED SUCH THAT THE MINIMUM NUMBER OF REQUIRED AIR RELEASE VALVES ARE INSTALLED.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
6. CONCRETE PAD SHALL BY TYPE I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH.

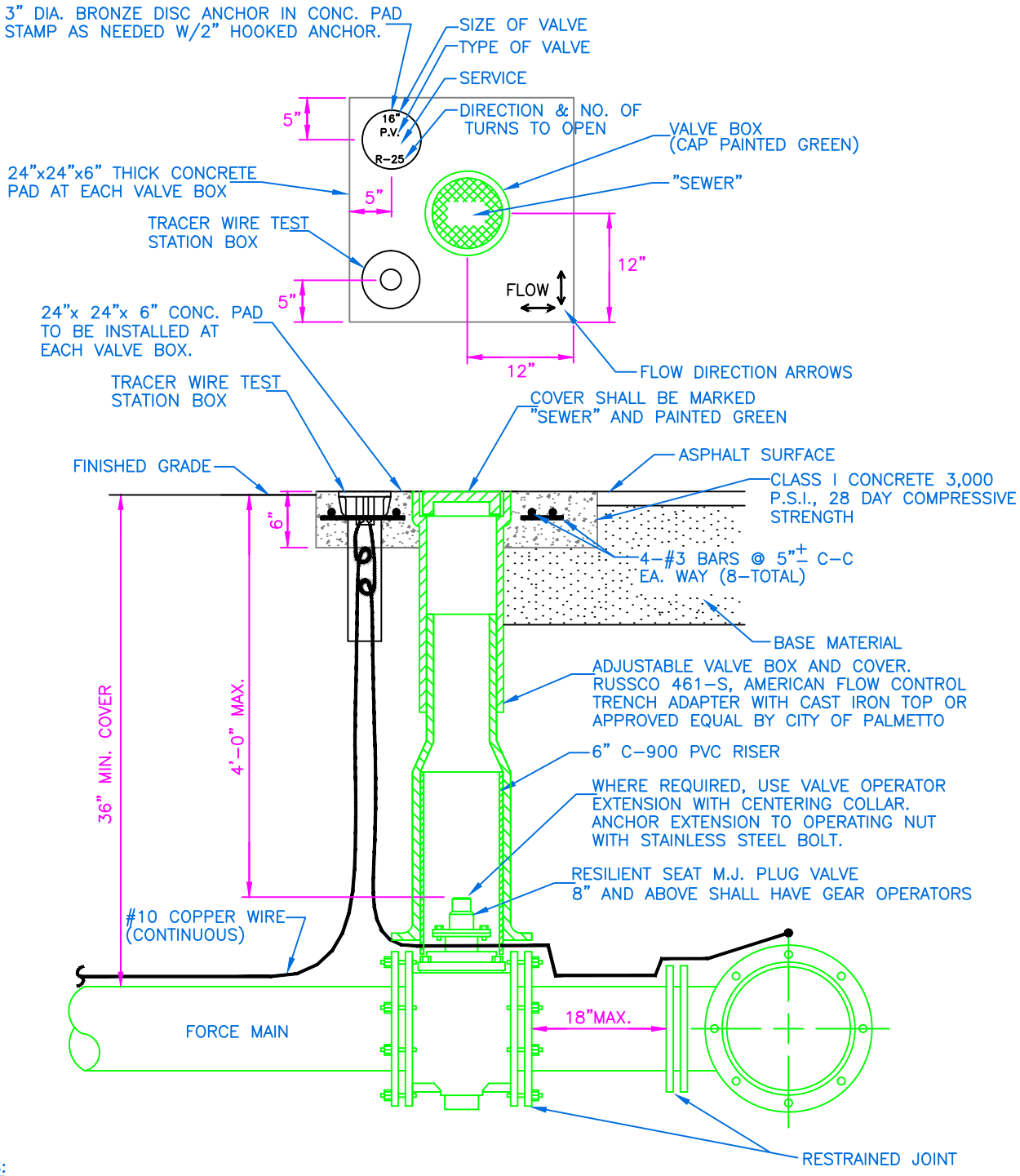
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR FORCE MAINS	PAGE SS 8



NOTES:

1. OMIT "CITY OF PALMETTO" IF PRIVATELY MAINTAINED.
2. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE 1, AND CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I.

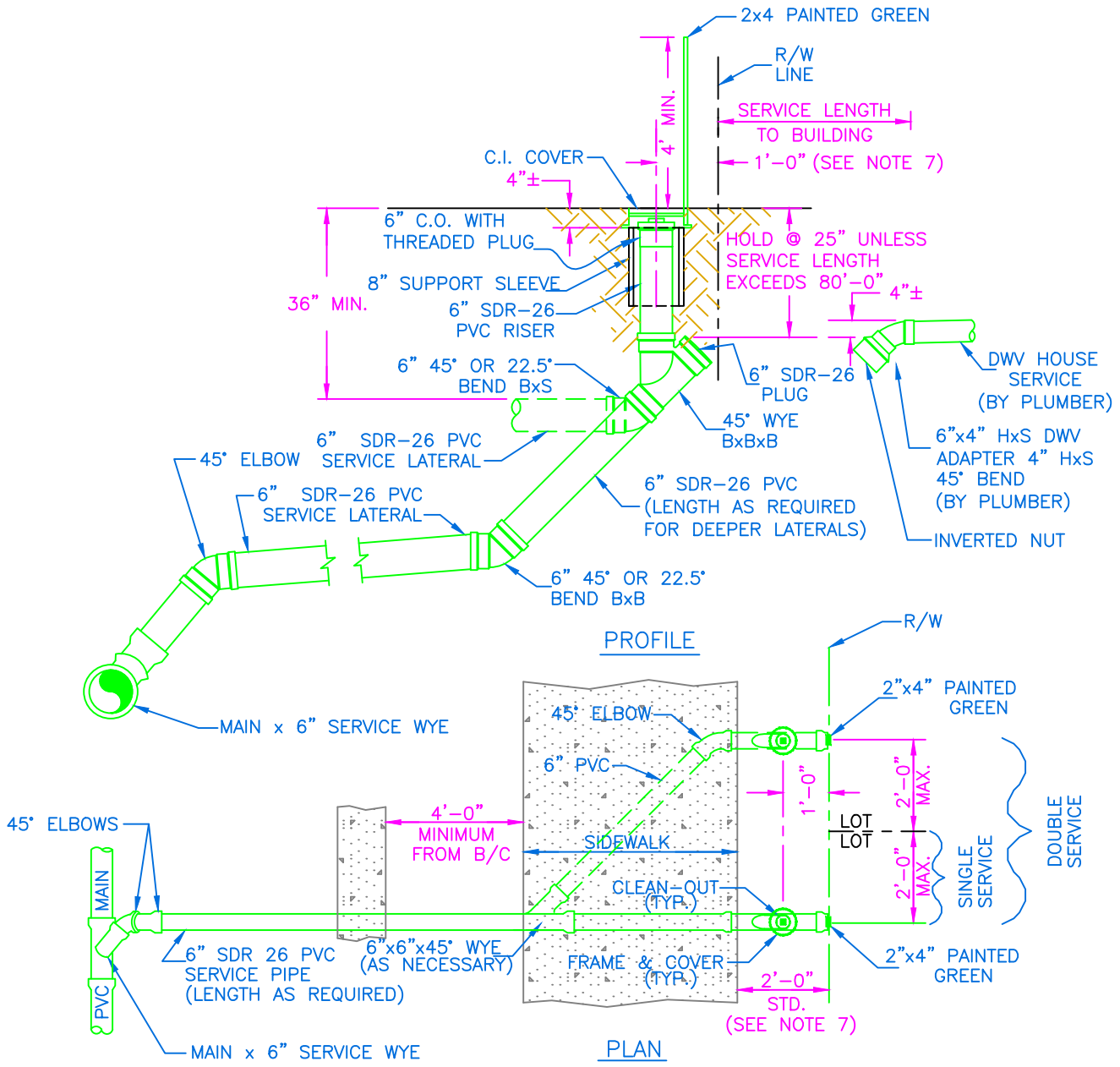
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL MANHOLE COVER & CONCRETE COLLAR FOR UNPAVED ROADWAYS	PAGE SS 9



NOTES:

1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH THE DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8"x1" GALVINIZED. STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (FT.) FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PLUG VALVES SHALL NOT BE USED AS A TAPPING VALVE. A SEPARATE TAPPING GATE VALVE AND TAPPING SLEEVE IS REQUIRED IN ADDITION TO PLUG VALVE. SEE STANDARD DETAIL WS-4.

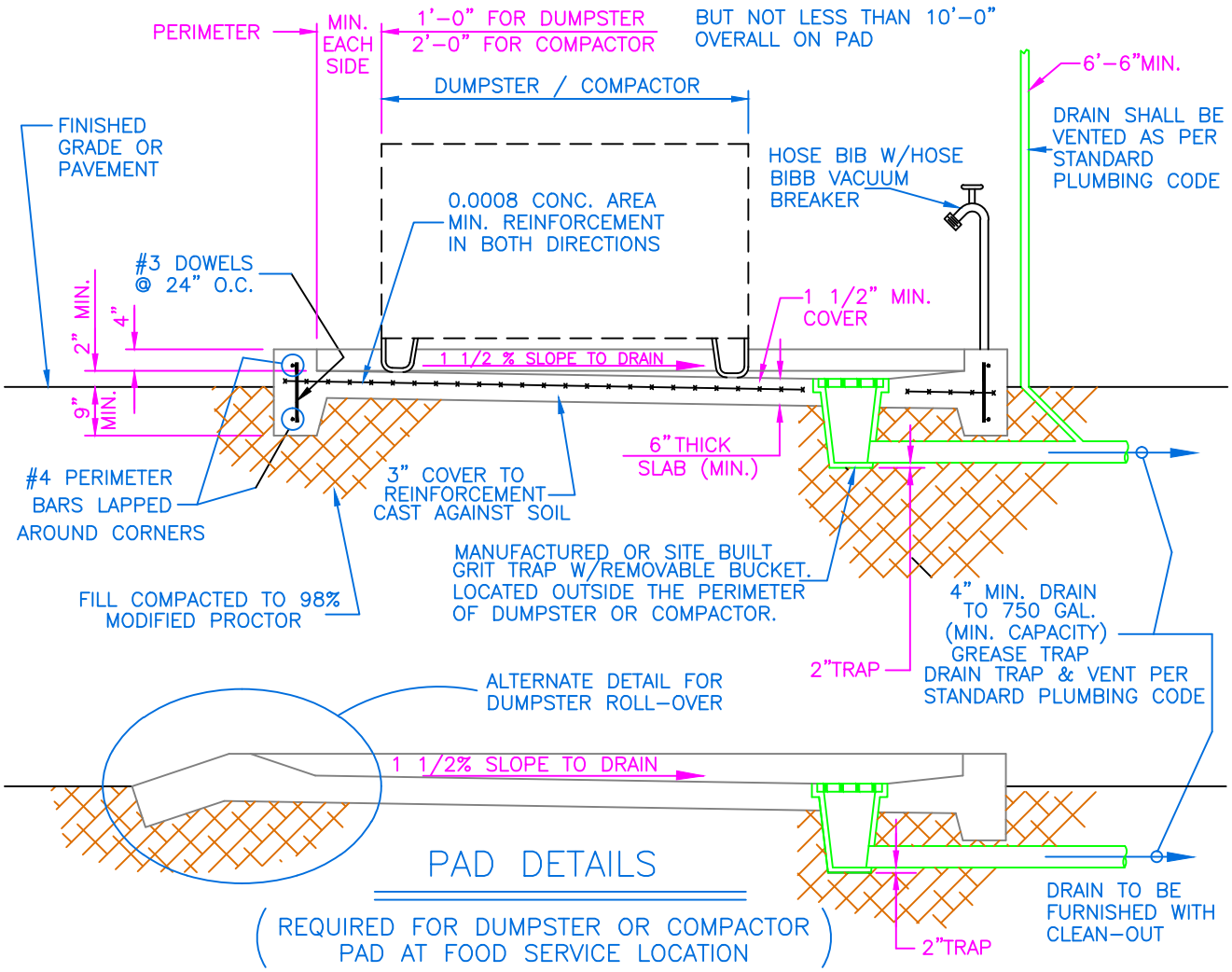
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL PLUG VALVE, BOX, COVER AND TAG	PAGE SS 10



NOTES:

1. RUBBER DONUTS ARE NOT TO BE USED.
2. "SCO" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE CLEAN-OUT. IF NO CURB, INSTALL A GREEN DISC WITH 'SCO' AND A 1/8" X 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE CLEAN-OUT.
3. SANITARY SEWER CLEAN-OUTS SHALL NOT BE LOCATED IN DRAINAGE SWALES, EASEMENTS, SIDEWALKS OR DRIVEWAYS.
4. NO SERVICE CONNECTIONS TO BE MADE TO THE CLEAN-OUT RISER. ALL DOMESTIC CONNECTIONS SHALL BE MADE TO THE STUB-OUT PROVIDED.
5. SEWER SERVICE SHALL BE 5' MIN. FROM WATER SERVICE OR FIRE HYDRANT.
6. CLEAN-OUT THREADS SHALL BE ENTIRELY WRAPPED WITH TEFLON TAPE PRIOR TO ATTACHING THREADED PLUG.
7. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK & THE R/W LINE IS ONE FOOT (CUL-DE-SAC W/ MEDIAN) THE DISTANCE BETWEEN THE CENTER OF THE CO RISER & THE R/W LINE SHALL BE 6".
8. CLASS I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH SHALL BE USED FOR SIDEWALK AND CURB. REFER TO CITY OF PALMETTO ROAD AND STORMWATER STANDARDS.

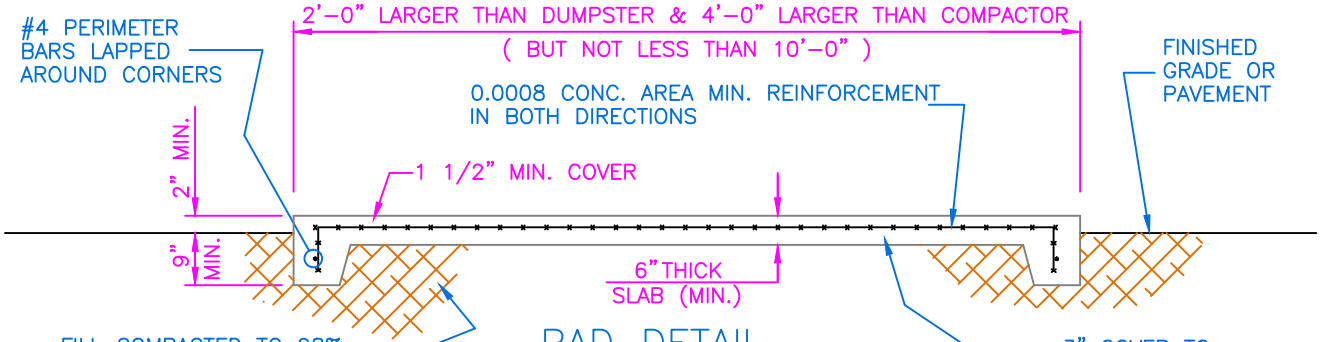
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SINGLE AND DOUBLE SERVICE CONNECTION	PAGE SS 11



PAD DETAILS

(REQUIRED FOR DUMPSTER OR COMPACTOR PAD AT FOOD SERVICE LOCATION)

NOTE : MINIMUM GATE OPENING THRU FENCE OR SCREEN IS 9'-5"



PAD DETAIL

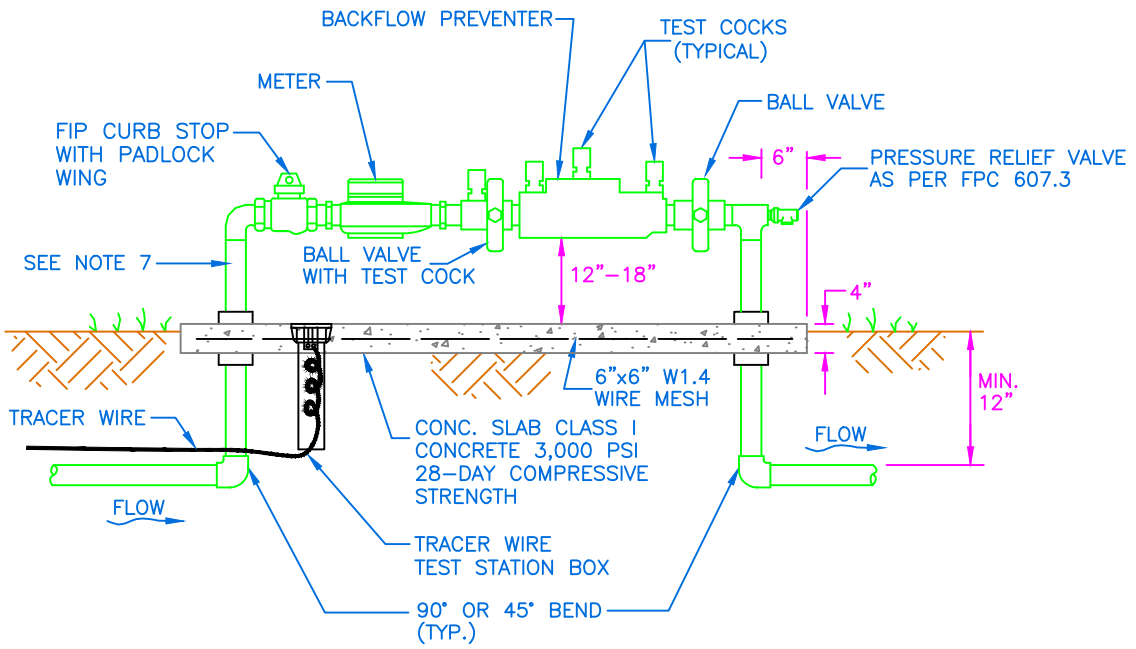
(MINIMUM REQUIRED FOR DUMPSTER OR COMPACTOR PAD AT NON-FOOD SERVICE LOCATION)

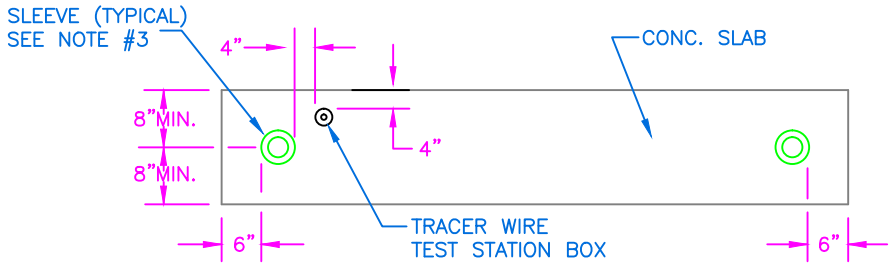
NOTES:

1) DUMPSTER PAD SHALL BE CLASS I CONCRETE W/ MIN. COMP. STRENGTH f'c= 3,000 P.S.I & MIN. REINFORCEMENT STRENGTH fy= 60,000 P.S.I.

2) DUMPSTER PAD SHALL BE FENCED IN ACCORDANCE WITH THE CITY OF PALMETTO LAND DEVELOPMENT CODE.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL COMPACTOR AND DUMPSTER PADS	PAGE SS 12

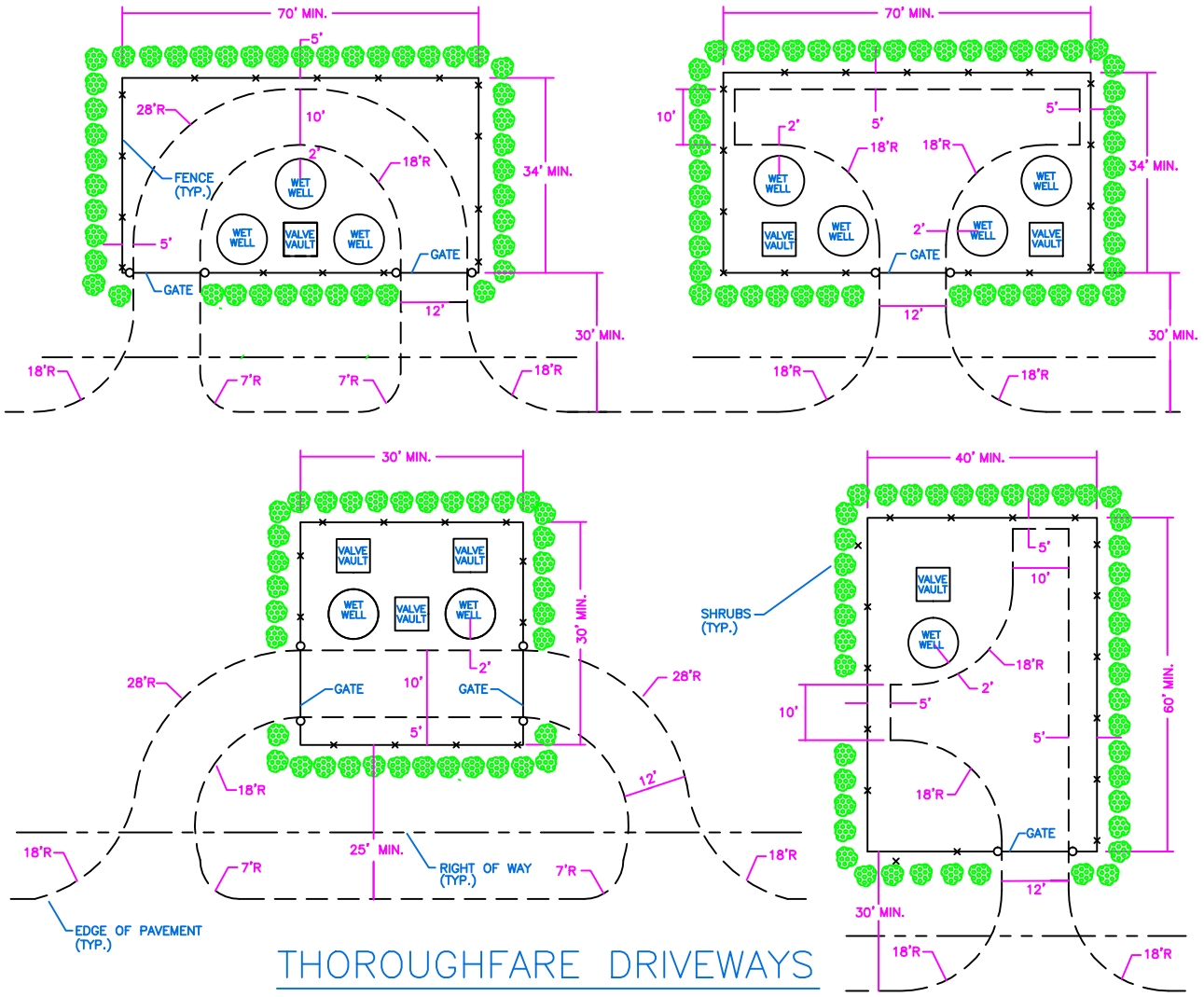




NOTES:

1. BACKFLOW DEVICE MUST BE INSTALLED DOWNSTREAM OF METER, AS CLOSE TO METER AS POSSIBLE.
2. COPPER PIPE TYPE "L" OR BRASS PIPE MINIMUM SCHEDULE 40 SHALL BE USED TO A MINIMUM DEPTH OF 12" BELOW GRADE.
3. PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVED.
4. THE SYSTEM MUST MEET ALL REQUIRMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND THE CITY OF PALMETTO BACKFLOW PREVENTION ORDINANCE (LATEST EDITION).
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. BACKFLOW PREVENTER SHALL BE TESTED AT THE TIME OF INSTALLATION.
7. PRESSURE REDUCING VALVE REQUIRED UPSTREAM OF BACKFLOW IF SYSTEM PRESSURE EXCEEDS 80 PSI.
8. 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF CONCRETE SLAB AND CLEAR OPENING FOR ACCESS FROM STREET.
9. THE WATER METER AND BACKFLOW PREVENTER SHALL BE LOCATED WITHIN THE LIFT STATION SECURITY FENCING FOR PUBLICLY OWNED AND MAINTAINED LIFT STATIONS. THE WATER METER AND BACKFLOW PREVENTER SHALL NOT BE LOCATED WITHIN THE LIFT STATION FENCING FOR PRIVATE LIFT STATIONS. WATER METER FOR PRIVATE LIFT STATIONS SHALL BE LOCATED WITHIN THE ROW, ADJACENT TO THE ROW LINE OR WITHIN AN EASEMENT.
10. LIFT STATIONS SHALL HAVE A 5/8 INCH WATER METER, WITH A REDUCED PRESSURE BACKFLOW PREVENTER, AS SHOWN IN THIS DETAIL. LIFT STATIONS WITH A WETWELL DIAMETER GREATER THAN OR EQUAL TO 12 FT SHALL HAVE A 2 INCH WATER METER, WITH A REDUCED PRESSURE BACKFLOW PREVENTER, AS SHOWN IN STANDARD DETAIL WS–13.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL WATER METER & BACKFLOW PREVENTER FOR LIFT STATIONS	PAGE SS 13

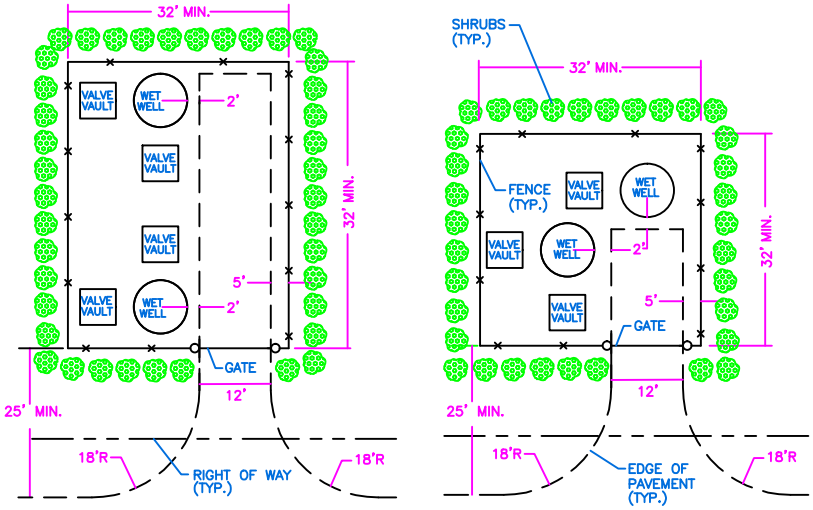


THOROUGHFARE DRIVEWAYS

N.T.S

NOTES:

1. IF FENCES ARE REQUIRED A MINIMUM OF 5 FT SHALL BE PROVIDED BETWEEN LIFT STATION STRUCTURES/EQUIPMENT AND THE. FENCE.
2. LIFT STATION EASEMENT SHALL EXTEND A MINIMUM OF 15 FT BEYOND ALL FOUR SIDES OF THE LS SECURITY FENCE.
3. LIFT STATION SHALL BE ACCESSIBLE WITH A MINIMUM 30 FT WIDE CORIRIDOR/ EASEMENT.
4. A MINIMUM SETBACK OF 5 FT SHALL BE PROVIDED BETWEEN THE SHRUB'S BASE STEM AND THE LS SECURITY FENCE.
5. IF NO FENCE, A MINIMUM OF 10 FT SHALL BE PROVIDED BETWEEN THE SHRUB'S BASE STEM AND THE LIFT STATION EQUIPMENT.
6. SPECIFIC LANDSCAPING REQUIREMENTS SHALL BE IN ACCORDANCE WITH CITY OF PAMETTO UTILITY STANDARDS.
7. DRIVEWAY MATERIALS SHALL BE IN ACCORDANCE WITH CITY OF PALMETTO ROAD STANDARDS FOR THE ENTIRE LENGTH OF THE DRIVEWAY.
8. FENCE SHALL BE BLACK CHAIN LINK.

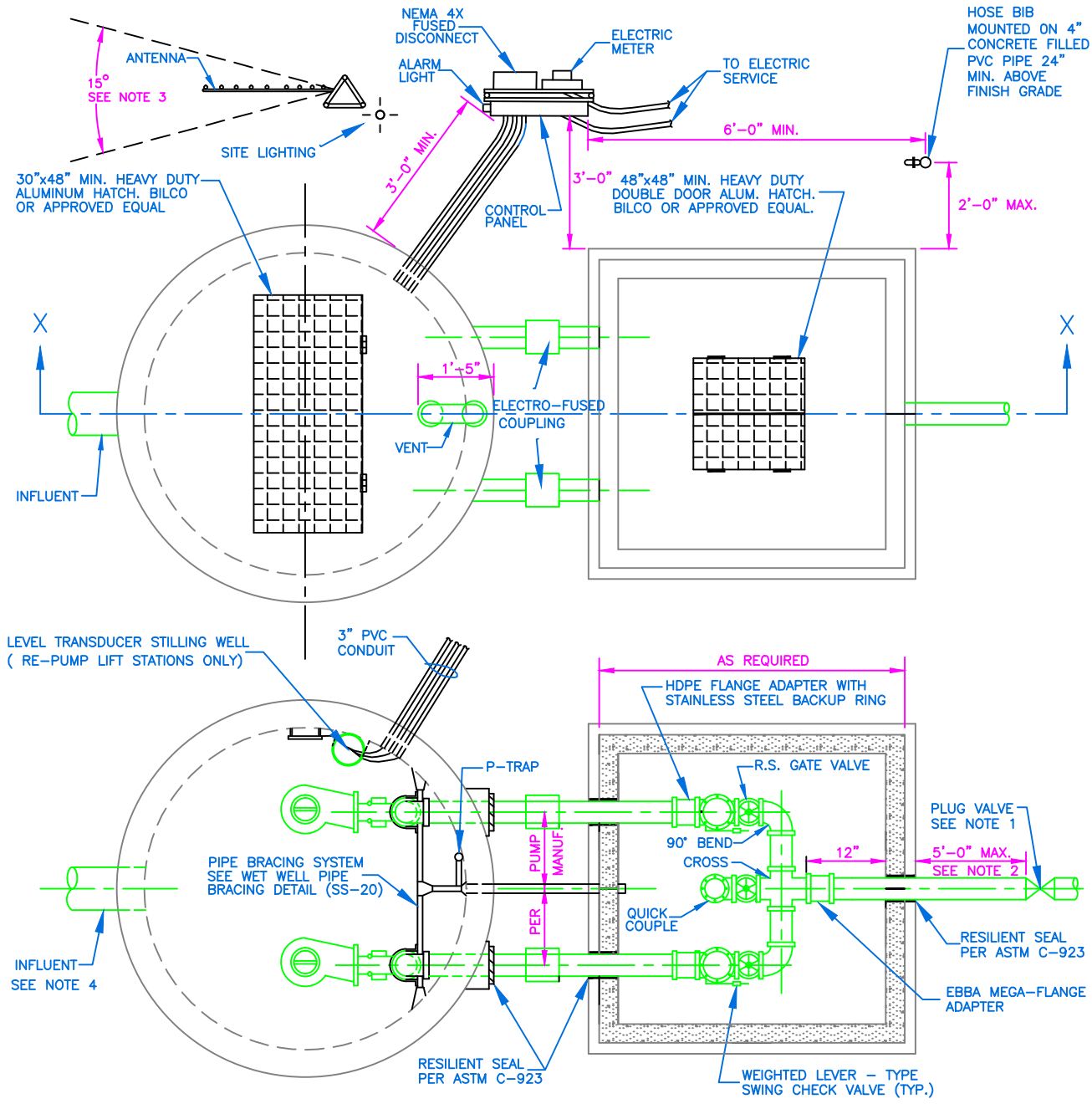


NON-THOROUGHFARE DRIVEWAYS

N.T.S

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL MINIMUM ACCESS/EGRESS AND LANDSCAPING REQUIREMENTS FOR LIFT STATIONS	PAGE SS 14

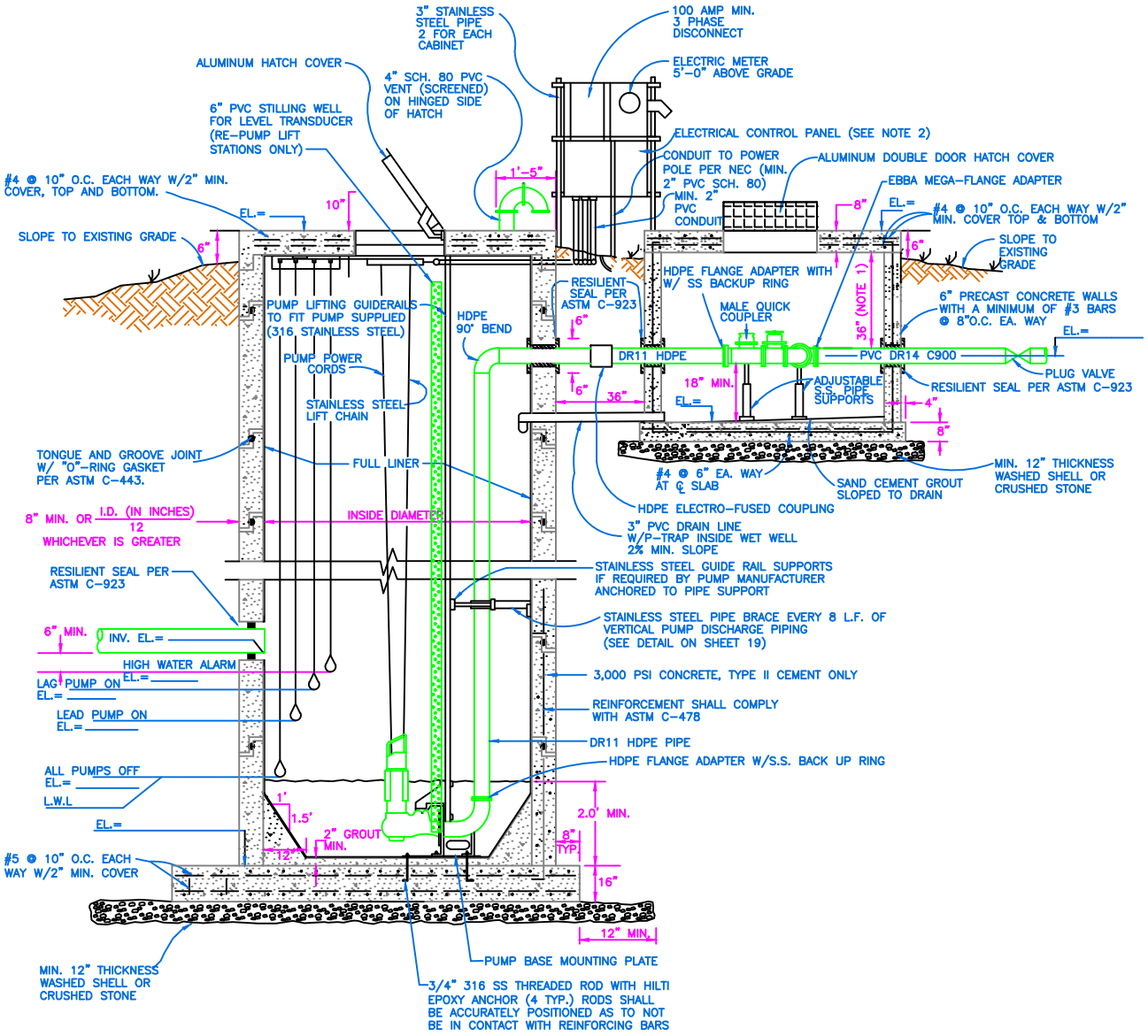
EXACT LAYOUT MAY VARY



NOTES:

1. A FLOW METER AND FLOW METER VAULT SHALL BE INSTALLED UPSTREAM OF PLUG VALVE FOR ALL LIFT STATIONS THAT RE-PUMP SEWAGE FROM OTHER LIFT STATIONS.
2. FOR LIFT STATIONS WITH GRINDER PUMPS, THE FORCE MAIN SHALL BE AT LEAST 18 INCHES BELOW THE TOP SLAB WITHIN THE VALVE VAULT. A 90 DEGREE BEND, THAT IS TURNED DOWN, SHALL BE INSTALLED 18 INCHES OUTSIDE OF THE VALVE VAULT TO SUBSEQUENTLY OBTAIN A MINIMUM 3 FEET OF COVER OVER THE FORCEMAIN.
3. THE ANTENNA FOR THE RADIO TELEMETRY UNIT REQUIRES DIRECT LINE-OF-SIGHT SIGNALING CAPABILITY TO THE UTILITIES DEPARTMENT'S OFFICE THAT WILL RECEIVE THE SIGNAL. THERE SHALL BE AN UNOBSTRUCTED HORIZONTAL ANGLE OF FIFTEEN (15) DEGREES FROM THE ANTENNA MAST (7.5 DEGREES ON BOTH SIDES OF THE DIRECT LINE-OF-SIGHT AZIMUTH). NO TREE SHALL BE PLANTED WITHIN THE DESIGNATED UNOBSTRUCTED ANGLE FOR A TWENTY (20) FEET HORIZONTAL DISTANCE MEASURED FROM THE MAST. LANDSCAPE BUFFER PLANTINGS ARE TO BE FIELD ADJUSTED IN COORDINATION WITH THE LOCATION OF THE CONSTRUCTED TELEMETRY ANTENNA.
4. THE INFLUENT GRAVITY SEWER SHALL BE ALIGNED SO THAT FLOW DROPS BETWEEN THE PUMPS AS SHOWN ABOVE. AS AN OPTION, A DROP PIPE/BOWL MAY BE INSTALLED AS SHOWN IN STANDARD DETAIL SS-18.
5. FOR SECTION X-X SEE WET WELL & VALVE VAULT SECTIONAL VIEW ON DETAIL SS-16
6. CONCRETE SHALL BE TYPE II WITH 3,000 PSI 28-DAY COMPRESSIVE STRENGTH.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION WET WELL & VALVE VAULT PLAN VIEW	PAGE SS 15



NOTES:

1. FOR LIFT STATIONS WITH GRINDER PUMPS, THE FORCE MAIN SHALL BE AT LEAST 18 INCHES BELOW THE TOP SLAB WITHIN THE VALVE VAULT. A 90 DEGREE BEND, THAT IS TURNED DOWN, SHALL BE INSTALLED 18 INCHES OUTSIDE OF THE VALVE VAULT TO OBTAIN A MINIMUM 3 FEET OF COVER.
2. FOR PROPER ORIENTATION OF CONTROL PANEL, SEE SHEET SS-15.
3. THIS DETAIL REPRESENTS SECTION X-X OF SHEET SS-15.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION WET WELL & VALVE VAULT SECTIONAL VIEW	PAGE SS 16

GENERAL LIFT STATION NOTES:

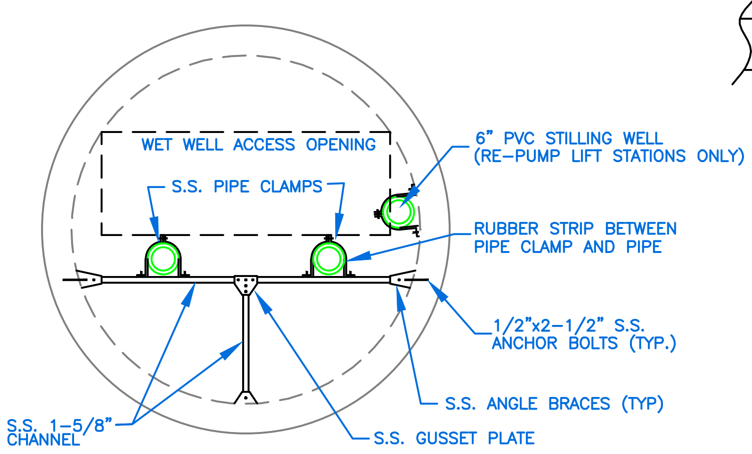
1. ALL ACCESS COVERS SHALL BE ALUMINUM, WITH STAINLESS STEEL HARDWARE AND RATED FOR 300 P.S.F. LOADING. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE 2 COATS BITUMASTIC EPOXY, TOTAL 16 MILS DFT. ALL ACCESS COVERS SHALL BE EQUIPPED WITH A LOCKING STAPLE OR BAR FOR USE WITH A PADLOCK. PADLOCKS FOR WETWELL, VALVE VAULT, FENCE GATE AND CONTROL PANELS OF PUBLICLY OWNED & MAINTAINED LIFT STATIONS SHALL BE FURNISHED BY THE CITY OF PALMETTO UTILITIES DEPARTMENT.
2. INSTALL WET WELL VENT ON THE HINGED SIDE OF THE WET WELL HATCH COVER.
3. GROUND SHALL BE SLOPED AWAY FROM SLAB TO NATURAL GROUND ELEVATION IN ALL DIRECTIONS. SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH WASHED SHELL OR ROCK WITHIN LIFT STATION FENCING, SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD TYPE MULCH UNDER THE SHRUBS AND UP TO OUTSIDE OF THE FENCE. WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD–TYPE MULCH SHALL BE LOCATED UNDER THE TREES FOR A MINIMUM DISTANCE OF 3 FEET FROM THE TREE. SODDING OR SHREDDED WOOD–TYPE MULCH SHALL BE INSTALLED ON THE REMAINDER OF THE SITE TO THE EDGE OF THE EASEMENT.
4. DUCTILE IRON OR CAST IRON VALVES AND FITTINGS SHALL HAVE A FACTORY APPLIED FUSION BONDED EPOXY EXTERIOR AND INTERIOR COATING.
5. ALL FORCE MAIN PIPING AND FITTINGS WITHIN THE WETWELL AND THE VALVE VAULT, FROM THE PUMP BASE ELBOW TO THE CHECK VALVE, SHALL BE DR11 HDPE. ALL CONNECTIONS TO IRON BODIED FLANGE FITTINGS IN THE WETWELL (PUMP BASE ELLS) AND TO THE VALVE VAULT CHECK VALVES SHALL BE MADE USING HDPE FLANGE ADAPTERS WITH 316 STAINLESS STEEL BACKUP RINGS. ALL HDPE CONNECTIONS SHALL BE THERMAL FUSED OR ELECTRO–FUSED. ALL PIPING DOWNSTREAM OF THE CROSS IN THE VALVE VAULT TO THE PLUG VALVE SHALL BE PVC DR 14 C–900.
6. ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. GREEN–RAW SEWAGE; PANTONE 522C PURPLE–RECLAIMED: BLUE–POTABLE WATER.
7. ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL.
8. ALL INTERIOR SURFACES OF WET WELL SHALL BE LINED. SEE STANDARD PRE–CAST SANITARY SEWER MANHOLE FOR TURBULENT FLOW DETAIL.
9. ALL METAL APPURTENANCES INCLUDING BOLTS, NUTS AND WASHERS INSIDE THE WET WELL AND VALVE VAULT SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED (TYPE 316). ALL STAINLESS STEEL BOLTS SHALL BE TREATED WITH NEVER–SEIZE PRIOR TO ASSEMBLY. 401 COATING TO BE APPLIED.
10. VERTICAL HDPE PUMP DISCHARGE PIPE IN THE WET WELL SHALL BE BRACED EVERY EIGHT (8) LINEAR FEET TO PREVENT EXCESSIVE BOWING. THE PIPE SHALL BE CLAMPED TO A SINGLE LENGTH OF 1–5/8" STAINLESS STEEL CHANNEL INSTALLED HORIZONTALLY AND ANCHORED TO THE WET WELL WALL AT EACH END WITH A CENTER BRACE OF 1–5/8" CHANNEL ATTACHED TO THE BACK OF THE WET WELL. THE PIPE CLAMPS SHALL BE A MINIMUM OF 1–1/2" WIDE, 12 GA. STAINLESS STEEL. WET WELLS LARGER THAN 8 FEET OR PIPING LARGER THAN 6 INCHES SHALL HAVE BRACING CONSTRUCTED FROM 1/4 INCH X 4 INCH STAINLESS STEEL ANGLE.
11. VALVE & METER VAULTS SHALL BE PRECAST TYPE II REINFORCED CONCRETE.
12. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION DURING CONSTRUCTION. ENGINEER SHALL SUBMIT FLOTATION CALCULATIONS ALONG WITH HYDRAULIC CALCULATIONS TO CITY OF PALMETTO ENGINEERING SERVICES DIVISION AT CONSTRUCTION PLAN REVIEW SUBMITTAL.
13. TOP OF WETWELL'S AND VALVE VAULT'S TOP SLABS SHALL BE AT THE SAME ELEVATION.
14. FOR 5/8" WATER METER, PROVIDE POTABLE WATER SERVICE CONNECTION WITH 3/4" BRASS LOCKSHIELD AND LOOSE KEY HOSE BIB. PROVIDE WATTS 909 BACKFLOW PREVENTER (OR APPROVED EQUAL). ALL WATER SERVICE PIPING FROM WATER METER TO BE TYPE "K" COPPER OR BRASS, 3/4" MIN. DIAMETER FOR 5/8" METER AND 2" MIN. DIAMETER PIPING FOR 2" METER, SEE DETAIL SS–14.
15. LANDSCAPING SHALL BE IRRIGATED WITH NON–POTABLE WATER. A RAIN SENSOR SHALL BE FURNISHED AND INSTALLED.
16. HOSE BIB TO BE A MAXIMUM OF 2 FEET FROM THE VALVE VAULT, A MINIMUM OF 6 FEET FROM THE ELECTRICAL CONTROL PANEL, 24" ABOVE THE SURROUNDING FINISH GRADE, AND ANCHORED TO A 4" PVC CONCRETE FILLED PIPE.
17. WATER METER ASSEMBLY TO BE INSTALLED BY CONTRACTOR AS PART OF WATER SERVICE CONNECTION WITH FEES PAID BY THE DEVELOPER.
18. BASE AND FIRST WALL SECTION SHALL BE MONOLITHIC.
19. EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO CONSTRUCT WATERTIGHT STRUCTURES WITH NO VISIBLE LEAKS. COMPLETED STRUCTURES THAT ARE NOT WATERTIGHT AND/OR DO NOT MEET THE REQUIREMENTS OF ASTM C–443 WILL BE REJECTED.
20. FLEXIBLE GASKET CONNECTORS SHALL MEET THE REQUIREMENTS OF ASTM C–923 LATEST REVISION AND ARE REQUIRED IN ALL MANHOLES.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL LIFT STATION NOTES	PAGE SS 17

GENERAL LIFT STATION NOTES: (CONTINUED)

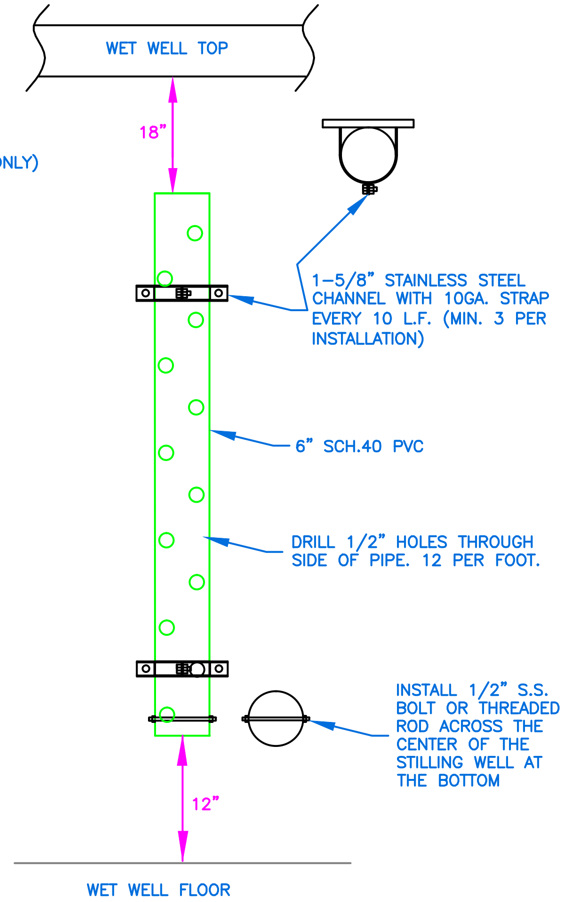
21. ALL GATE VALVES SHALL BE RESILIENT SEAT IN ACCORDANCE WITH THESE STANDARDS.
22. ELECTRICAL SERVICE SHALL BE 3 PHASE MINIMUM UNLESS THE ELECTRICAL UTILITY PROVIDES CORRESPONDENCE STATING THAT 3 PHASE SERVICE IS UNAVAILABLE.
23. ELECTRICAL CONDUIT SHALL BE RUN BY THE SHORTEST ROUTE POSSIBLE FROM THE ELECTRICAL SOURCE TO THE CONTROL PANEL AND FROM THE CONTROL PANEL TO THE LIFT STATION WET WELL. NO ELECTRICAL SHALL BE INSTALLED BETWEEN THE WET WELL AND VALVE VAULT STRUCTURES.
24. THE VALVE VAULT SHALL HAVE A MINIMUM CLEARANCE OF 12" FROM FLANGES TO THE VALVE VAULT WALL, 18" FROM FLANGES TO THE VALVE VAULT FLOOR AND 12" FROM THE CROSS TO THE VALVE VAULT WALL AT THE FORCE MAIN EXIT POINT.
25. A FLOW METER, BACKUP POWER GENERATOR, FUEL STORAGE LEVEL TRANSDUCER AND FORCE MAIN PRESSURE TRANSDUCER SHALL BE REQUIRED FOR ALL LIFT STATIONS THAT REPUMP SEWAGE FROM OTHER LIFT STATIONS.
26. THE CONTROL PANEL, HOSE BIB, EMERGENCY GENERATOR, FUEL STORAGE TANK AND ANTENNA SHALL NOT BE LOCATED BETWEEN THE WETWELL, VALVE VAULT AND THE DRIVEWAY. THE GENERATOR SHALL NOT BE LOCATED WITHIN 25 FEET OF THE EDGE OF THE LIFT STATION EASEMENT AND THE ROW LINE.
27. ALL STATIONS WHICH REPUMP SEWAGE FROM OTHER LIFT STATIONS SHALL BE EQUIPPED WITH A FLOW METER WITH ABOVE GROUND TRANSMITTER IN WEATHER PROOF HOUSING, A PRESSURE TRANSDUCER TO MONITOR FORCE MAIN PRESSURES, AND A TRANSDUCER AS THE PRIMARY LEVEL SENSOR MOUNTED INSIDE A STILLING WELL IN THE WET WELL.

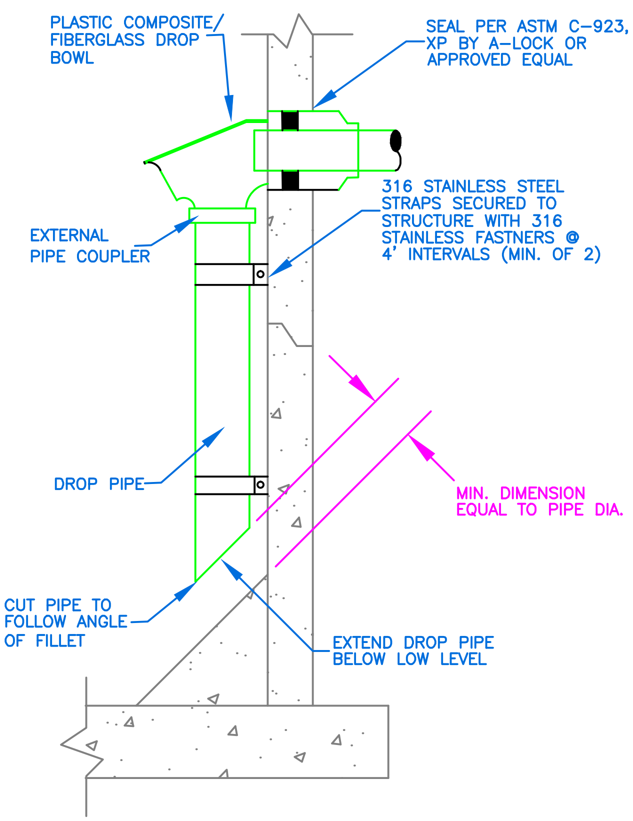
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL LIFT STATION NOTES (CONTINUED)	PAGE SS 17A



WET WELL PIPE BRACING DETAIL

NTS





INFLUENT DROP PIPE/BOWL

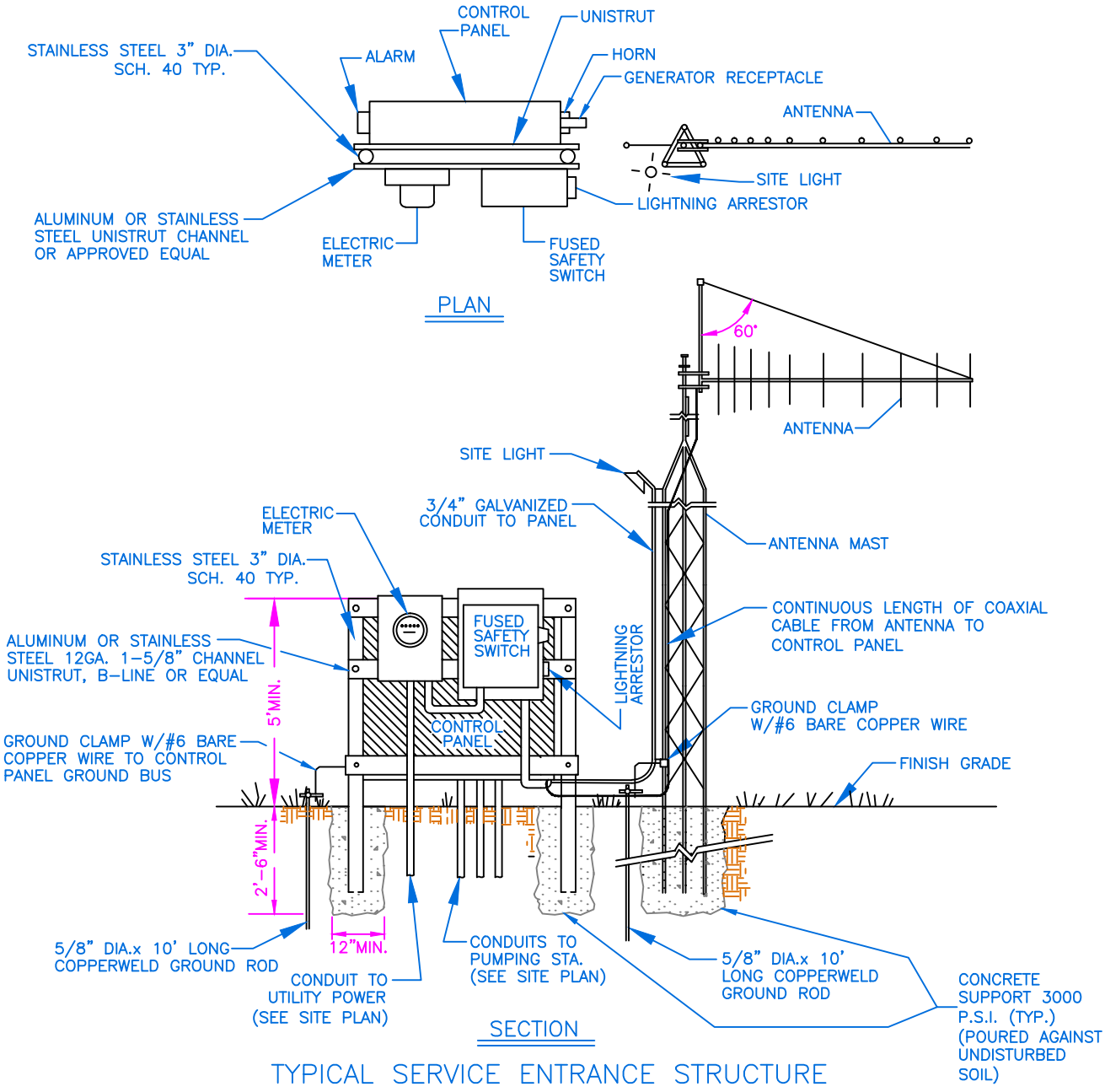
NTS

PUMP DATA AND DESIGN CHARACTERISTICS	
NUMBER OF PUMPS	
DESIGN CAPACITY PER PUMP, G.P.M.	
TOTAL DYNAMIC HEAD, FT.	
MIN. EFF. AT DESIGN CAPACITY %	
HORSEPOWER PER PUMP, H.P.	
SHUT-OFF HEAD, FT.	
MAX. SIZE SOLIDS, IN.	
DISCHARGE SIZE, IN.	
PUMP MANUF. & MODEL NUMBER	
IMPELLER DIAMETER, IN.	
PUMP R.P.M.	
ELECT. SVC- VOLTAGE & PHASE	
FORCE MAIN- LENGTH, DIAMETER & MATERIAL	
FORCE MAIN DISCHARGE ELEV. & HIGHEST EL.	

NOTES:

1. STILLING WELL FOR LEVEL TRANSDUCER REQUIRED FOR RE-PUMP LIFT STATIONS ONLY.
2. REFER TO STANDARD DETAILS SS-15, SS-16 & SS-17 & 17A FOR PUMP STATION DETAILS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL LIFT STATION PUMP DATA, DROP PIPE, PIPE BRACING, & STILLING WELL DETAILS	PAGE SS 18

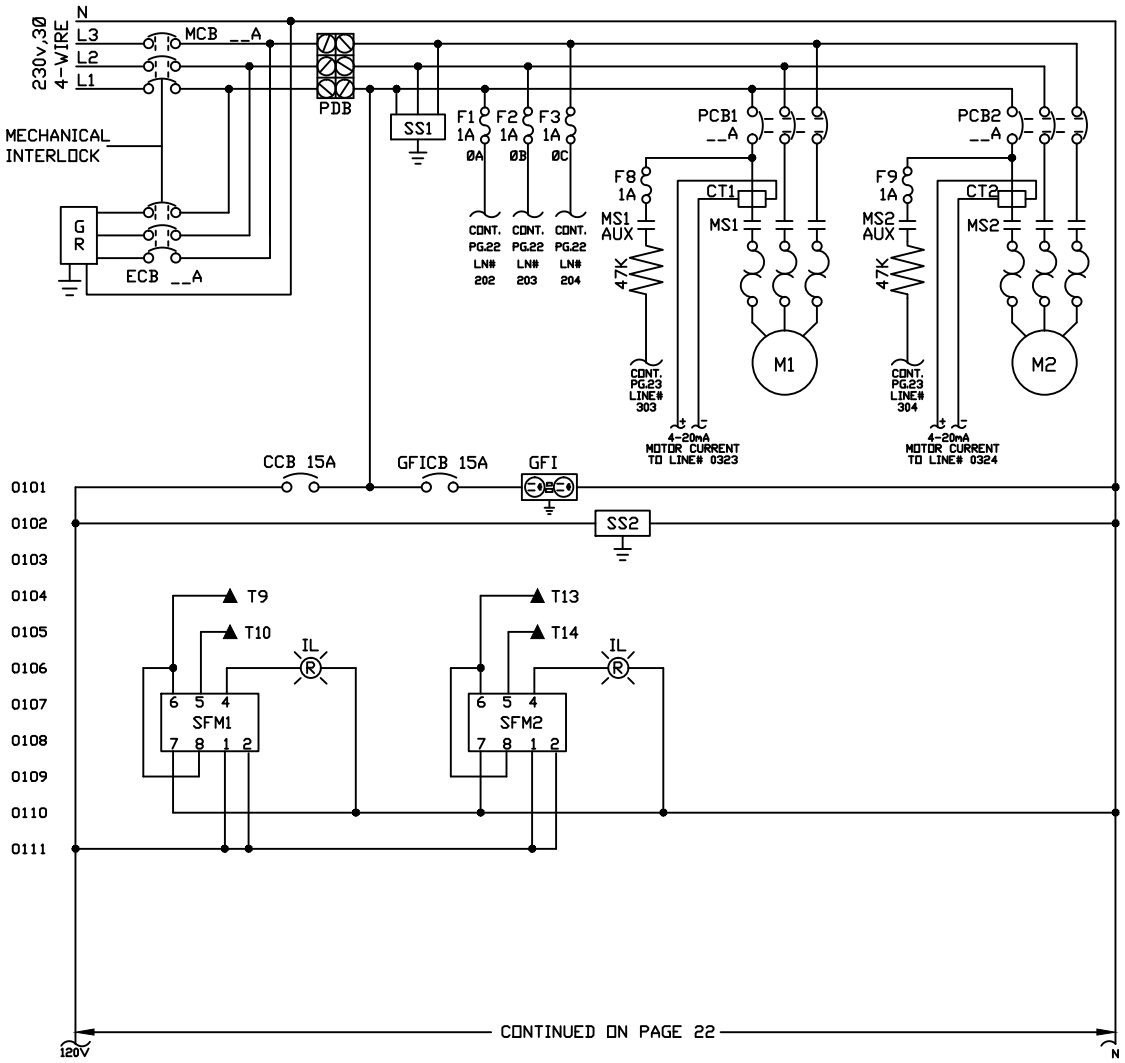


TYPICAL SERVICE ENTRANCE STRUCTURE

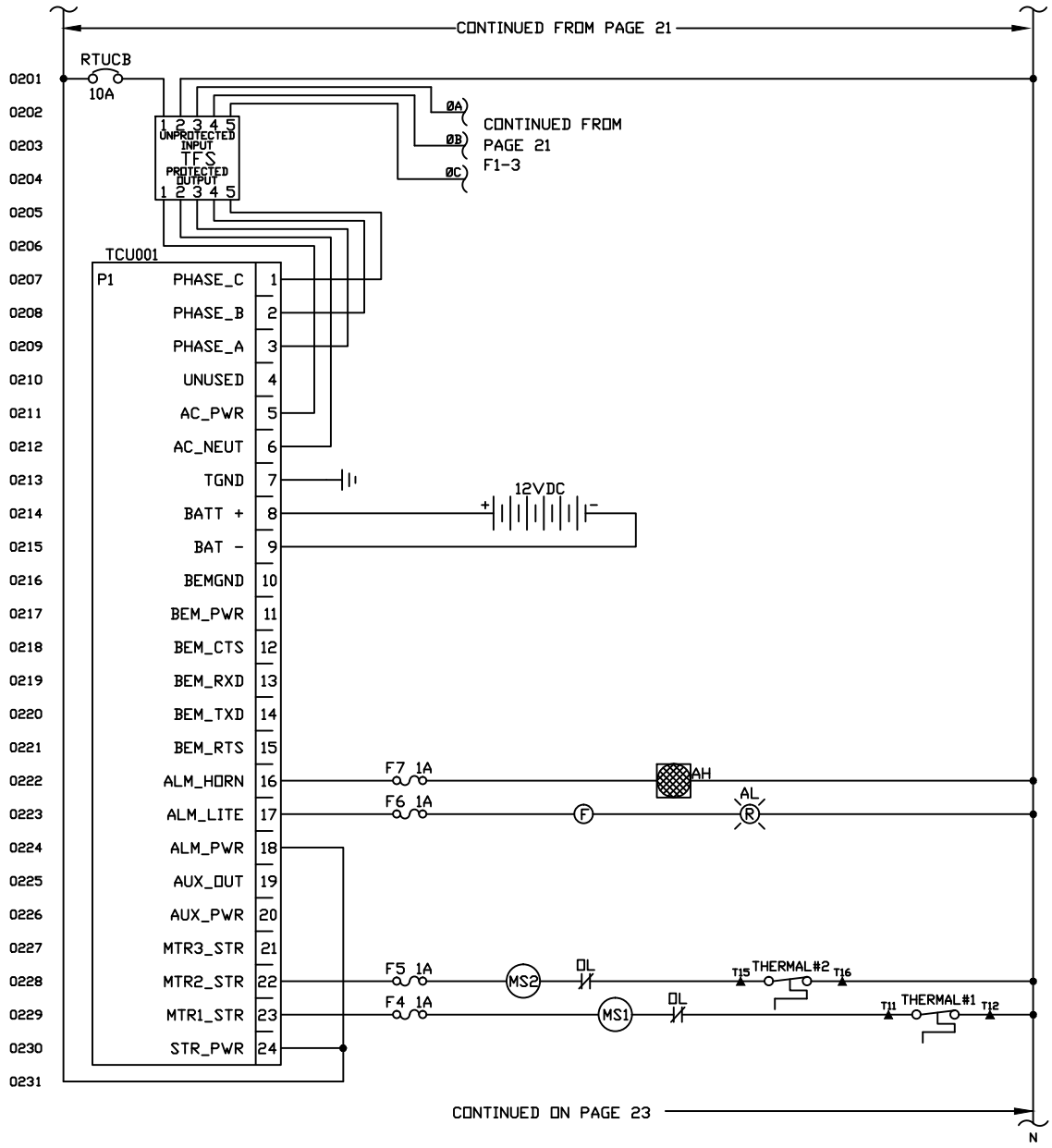
NOTES:

1. ALL EQUIPMENT FURNISHED FOR THE PUMP STATION SHALL CONFORM TO CITY OF PALMETTO PUBLIC WORKS UTILITY STANDARDS.
2. POWER TO BE SUPPLIED AS DIRECTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING TEMPORARY AND PERMANENT ELECTRICAL SERVICE.
3. ALL CONDUIT ENTERING THE CONTROL PANEL SHALL BE SEALED WITH DUCT SEAL.
4. CONTROL AND FLOW METER ENCLOSURE TO BE NEMA 3R 304 STAINLESS STEEL WITH RAIN SHIELD. DISCONNECT ENCLOSURE TO BE NEMA 4X STAINLESS STEEL.
5. ALL P.V.C. CONDUIT SHALL BE SCHEDULE 80.
6. ANTENNA MAST SHALL BE RATED FOR 150 MPH WINDS
7. IF ANTENNA MAST IS MORE THAN 18" FROM PANEL RUN CONDUIT FOR SITE LIGHT UNDERGROUND.

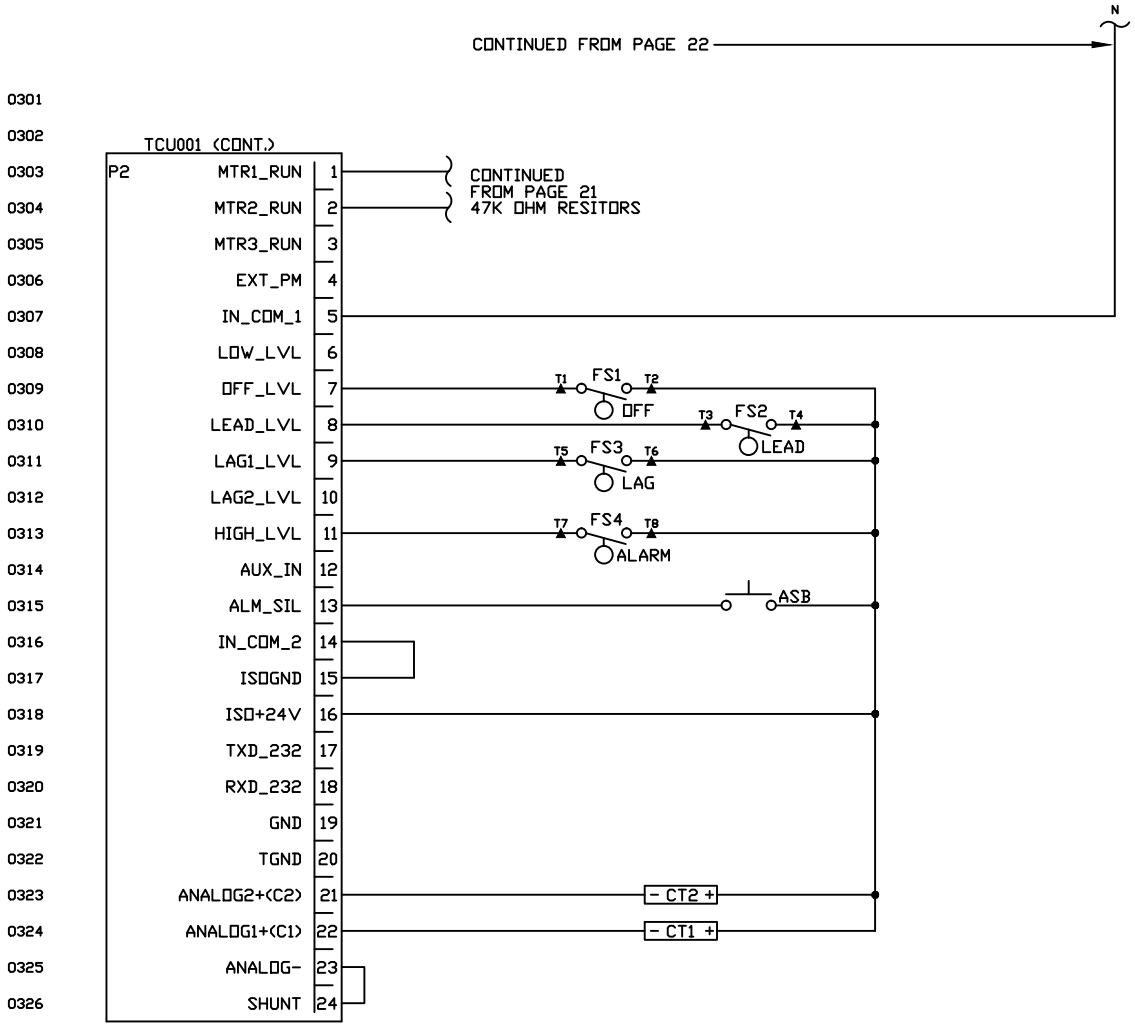
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION METER & ELECTRICAL DETAILS	PAGE SS 19



CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION CONTROL PANEL (230v) ELECTRICAL DETAILS	PAGE SS 20



CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION CONTROL PANEL (230v) ELECTRICAL DETAILS (CONT.)	PAGE SS 21

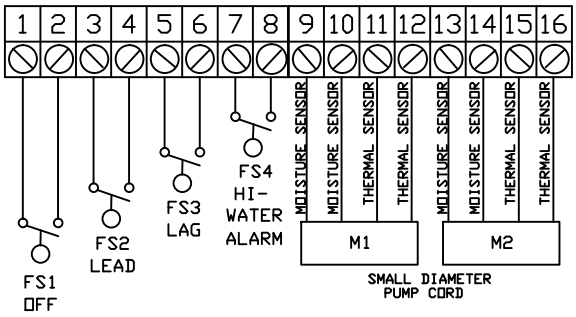


CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION CONTROL PANEL (230v) ELECTRICAL DETAILS (CONT.)	PAGE SS 22

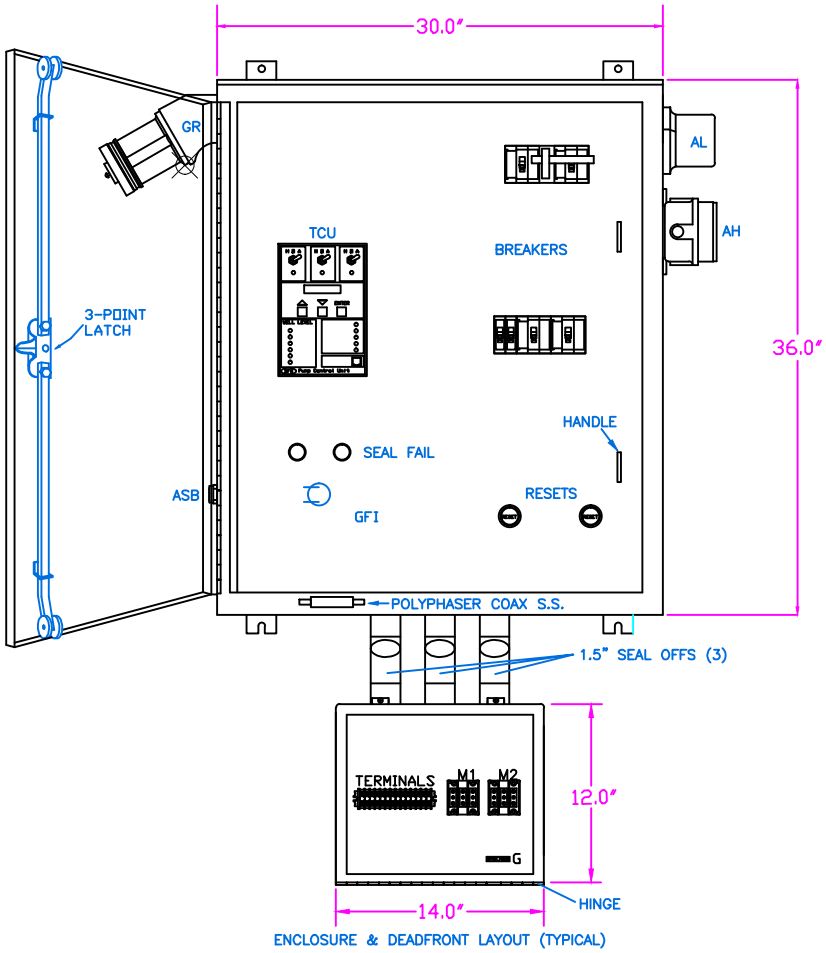
BILL OF MATERIALS			
QTY.	ABBR.	DESCRIPTION	MANUFACTURER, PART#
1	ENC	ENCLOSURE,NEMA 3R/12,304SS,3PT. LATCH	36X30X12 (MINIMUM SIZE)
1	MCB	MAIN CIRCUIT BREAKER	SQ.D, *
1	ECB	EMERGENCY CIRCUIT BREAKER	SQ.D, *
2	PCB1,2	PUMP CIRCUIT BREAKER	SQ.D, *
1	CCB	CONTROL CIRCUIT BREAKER	SQ.D, QOU115
1	GFICB	GFI CIRCUIT BREAKER	SQ.D, QOU115
2	MS1,2	MOTOR STARTER	SQ.D, 8536 * (MINIMUM SIZE 1)
6	OL	OVERLOAD HEATER	SQ.D, *
2	CT1-2	CURRENT TRANSFORMER	EAGLE INST., AT*-420-24L-FT
1	GR	GENERATOR RECEPTACLE	RUSSELL STOLL, JRSB1044FR (100A) JRSB2044FR (200A)
1	AL	ALARM LIGHT	INGRAM, LX-25
1	F	FLASHER	INGRAM, SSF-150W
1	AH	ALARM HORN	FEDERAL, 350-120-30 W/WB
1	ASB	ALARM SILENCE BUTTON	SQ.D, 9001 SKR1BH5
2	IL	INDICATING LIGHT	A-B, 800FD-P4D5
1	GFI	120V RECEPTACLE	HUBBELL, GF15IL
2	SFM1,2	SEAL FAIL MODULE	SYRELEC, PNRU-110A
1	JBOX	JUNCTION BOX	HOFFMAN, A-1412CHNFSS

* - POWER COMPONENTS SIZED PER MOTOR HORSEPOWER AND FULL LOAD AMPS

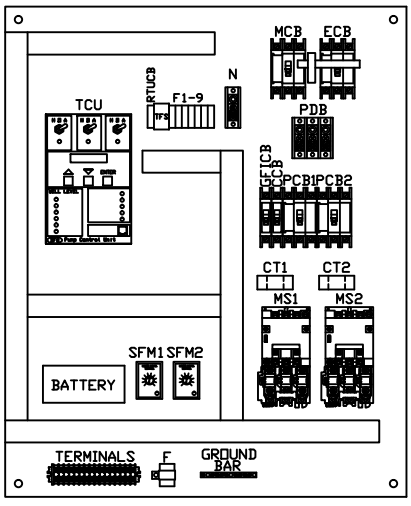
DATA FLOW SYSTEMS TCU BILL OF MATERIALS			
QTY.	ABBR.	DESCRIPTION	MANUFACTURER, PART#
1	TCU001	TELEMETRY CONTROL UNIT	DFS, DFS-00367-008
1		CONFIGURATION CONNECTOR ASSEMBLY	DFS, DFS-00319-008-001
1	RTUCB	RTU CIRCUIT BREAKER	DFS, 014-0010
9	F1-9	FUSE AND HOLDER, WAGO	DFS, DFS-00271-008-09, 1AMP SLOW BLOW
2	47K	RESISTOR BLOCK, WAGO	DFS, DFS-00271-008-01
1	TFS	TRANSIENT FILTER SHIELD	DFS, DFS-00306-008-01
1	SS1	230V SURGE SUPPRESSOR	DFS, 005-0062
1	SS2	120V SURGE SUPPRESSOR	DFS, 005-0061
1		BATTERY BACKUP	DFS, DFS-00363-008-02
1		46" RF PIGTAIL	DFS, DFS-00125-008-12
1		COAX SUPPRESSOR, POLYPHASER	DFS, 005-0058



CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION CONTROL PANEL (230v) BILL OF MATERIALS	PAGE SS 23



ENCLOSURE & DEADFRONT LAYOUT (TYPICAL)



BASE PLATE LAYOUT (TYPICAL)

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL SEWAGE PUMP STATION CONTROL PANEL (230v)	PAGE SS 24

DEPARTMENT OF PUBLIC WORKS

UTILITY SPECIFICATIONS

2011 EDITION

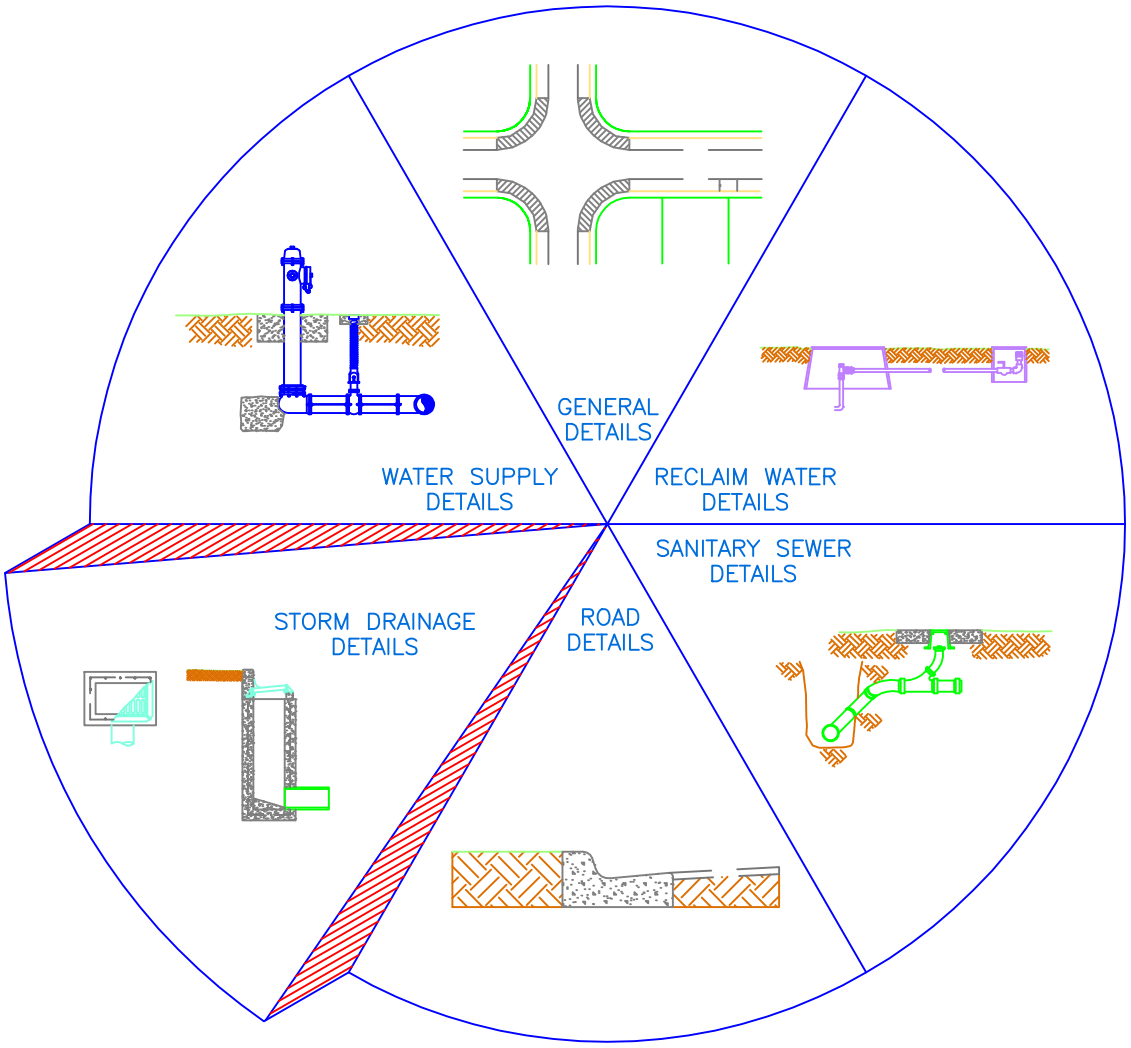
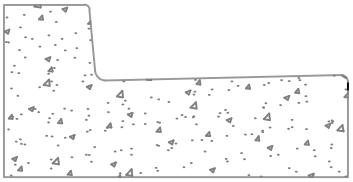


TABLE OF CONTENTS
STORM DRAINAGE

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL TABLE OF CONTENTS STORM DRAINAGE	PAGE SD 0.1

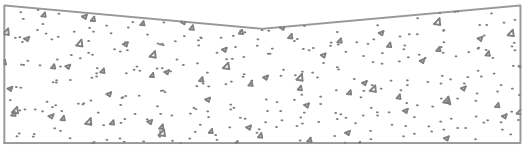
TYPE "A"
MIAMI CURB & GUTTER
STD. SD-2



TYPE "F"
CURB & GUTTER
STD. SD-3

TYPE "AB"
MODIFIED CURB & GUTTER
STD. SD-4

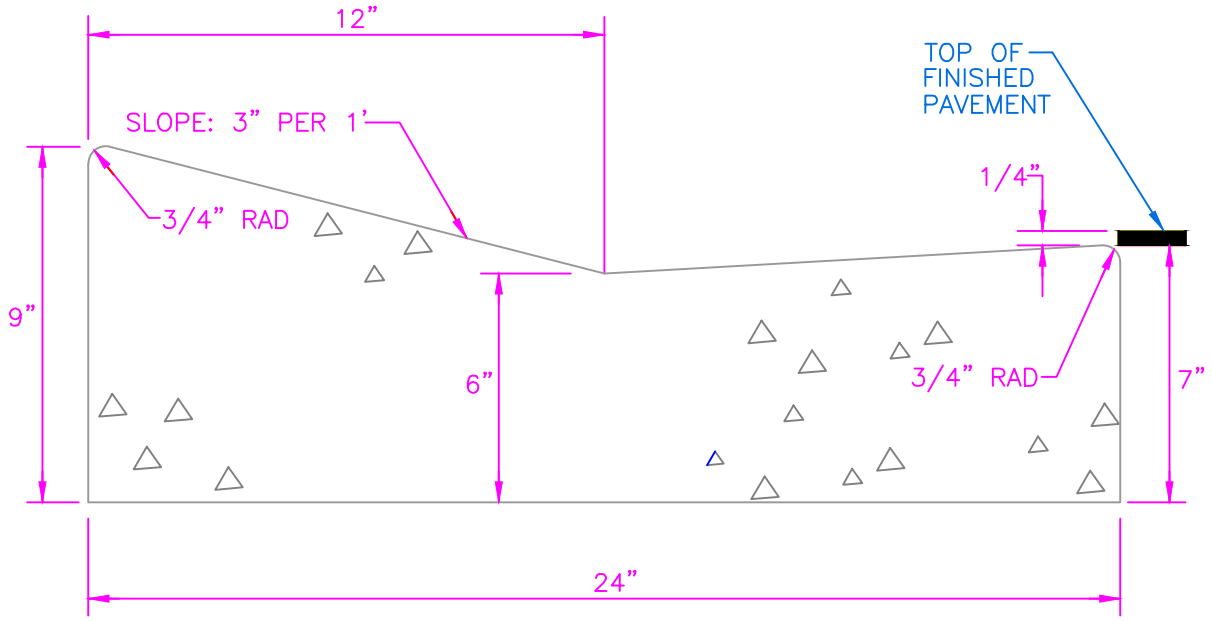
TYPE "D"
CURB
STD. SD-5



INVERTED CROWN
CURB & GUTTER
STD. SD-6

1. ALL CURB & GUTTER SHALL PROVIDE A 0.125" TO 0.25" CONTRACTION JOINT AT 10' CENTERS.
2. ALL CURB & GUTTER SHALL BE CONSTRUCTED IN COMPLIANCE WITH FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.
3. TOP OF FINISHED PAVEMENT SHALL BE 0.25" ABOVE LIP OF GUTTER, LOW SIDE.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL CURB & GUTTER CONTROL SHEET	PAGE SD 1

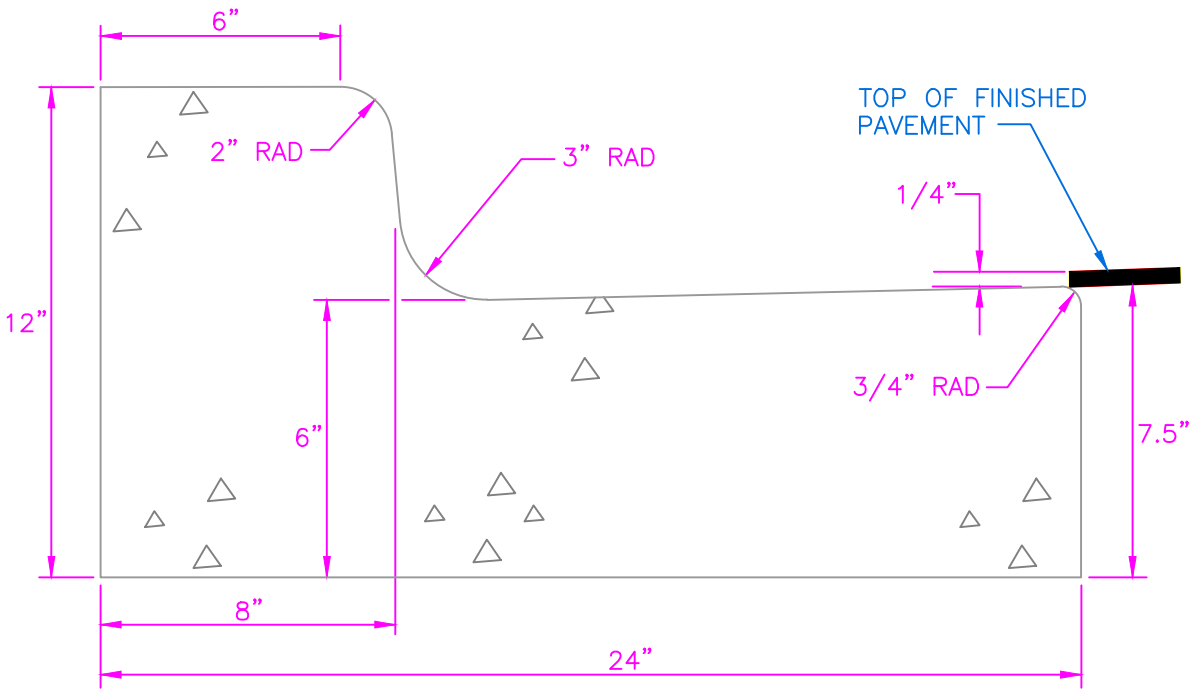


TYPE ”A”
MIAMI CURB & GUTTER

A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.

B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL TYPE A MIAMI CURB & GUTTER	PAGE SD 2

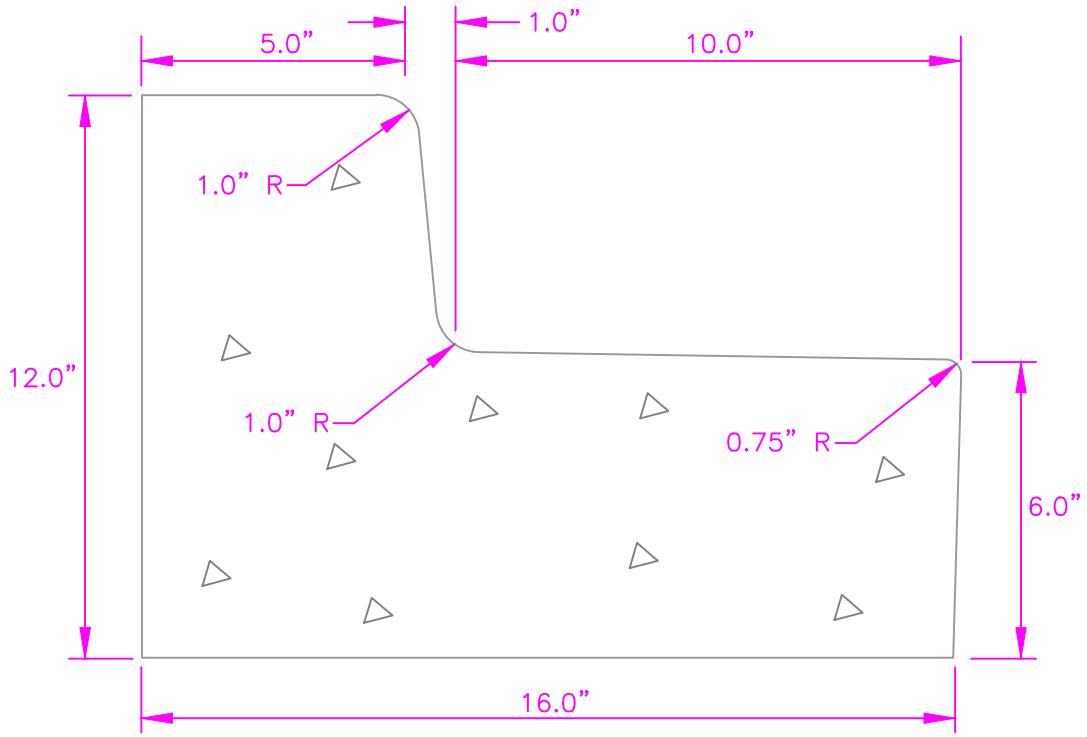


TYPE ”F” BARRIER CURB & GUTTER

A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.

B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL TYPE F CURB & GUTTER	PAGE SD 3

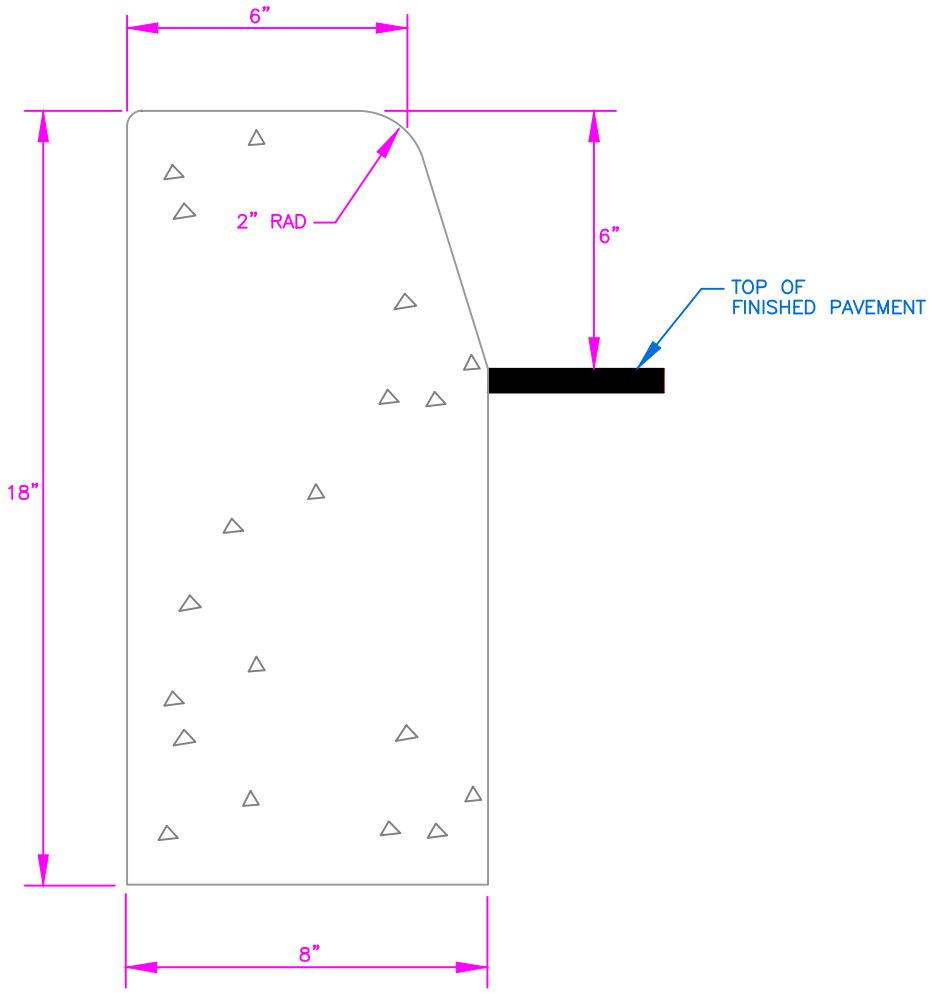


TYPE "AB"
MODIFIED CURB & GUTTER

A) CLASS 1 CONCRETE 3,000 PSI AT 28 DAYS.

B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS STANDARDS INDEX NO. 300, LATEST REVISION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL TYPE 'AB' MODIFIED CURB & GUTTER	PAGE SD 4

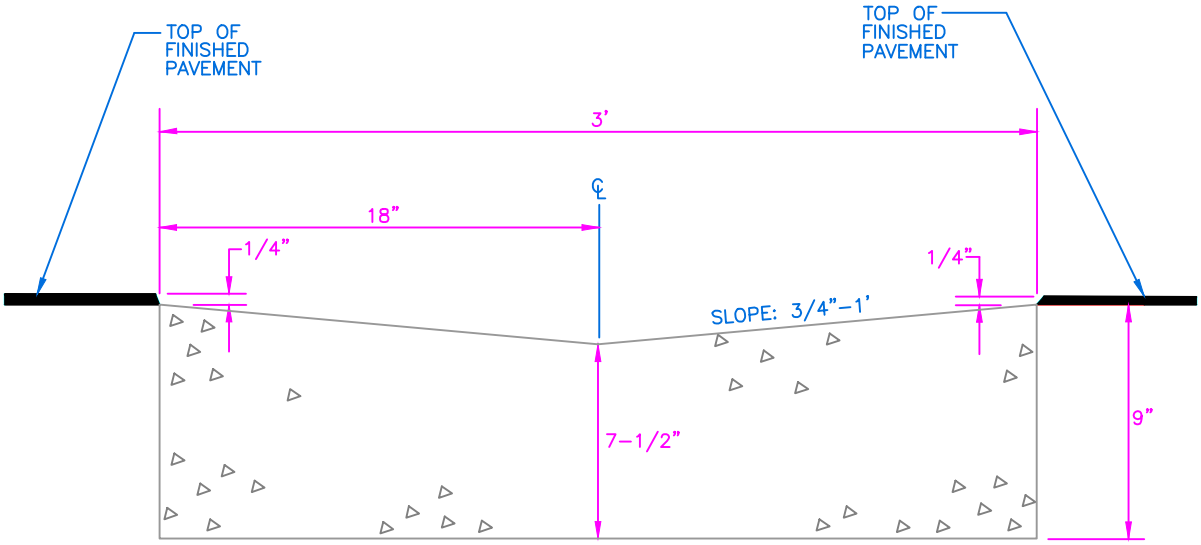


TYPE "D"
HIGH BACK CURB

A) CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.

B) CURB SHALL MEET THE SPECIFICATIONS ESTABLISHED BY F.D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL TYPE D CURB	PAGE SD 5



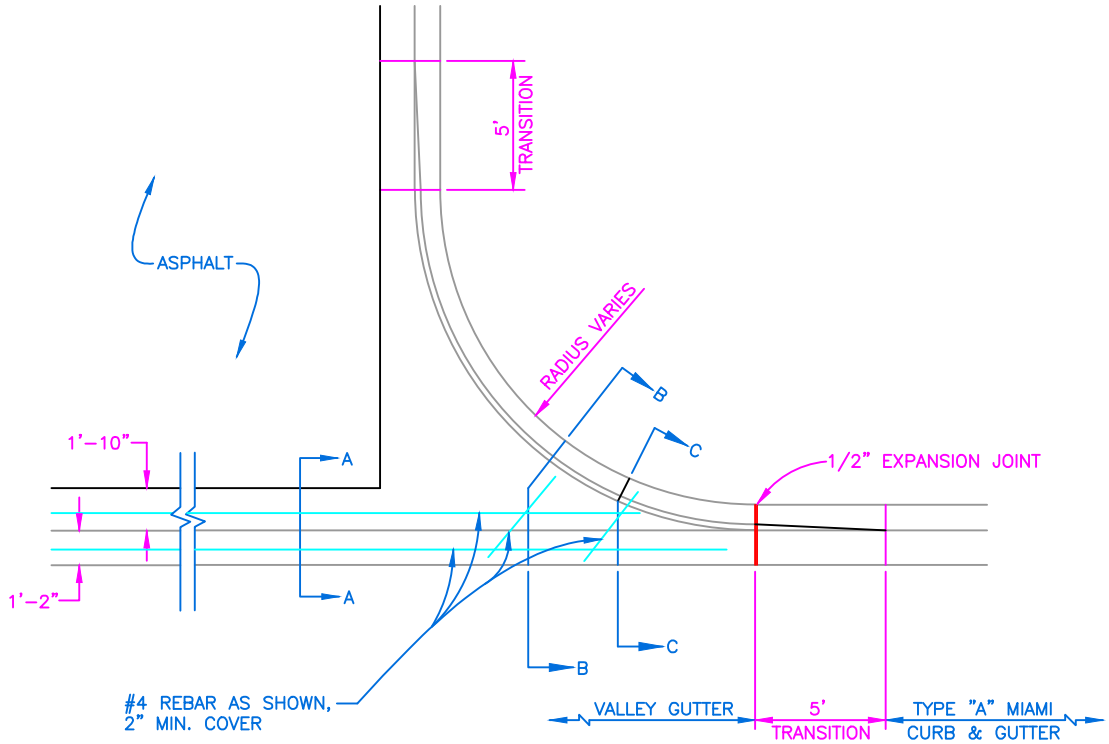
INVERTED CROWN GUTTER

A) CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.

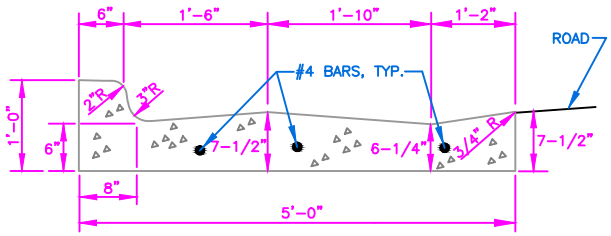
B) CURB SHALL MEET SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS, PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

NOTE: THIS TYPICAL SECTION SHALL BE CONSIDERED FOR PRIVATE ROAD USAGE ONLY! IT MUST BE APPROVED THRU THE PUBLIC WORKS DEPARTMENT.

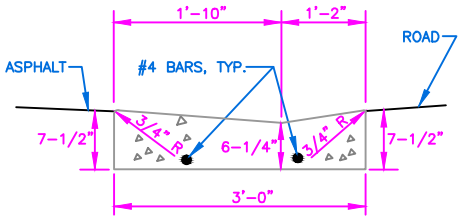
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL INVERTED CROWN	PAGE SD 6



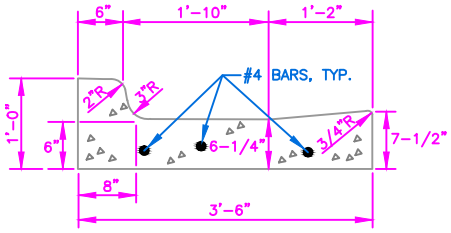
PLAN VIEW



SECTION "B-B"



SECTION "A-A"



SECTION "C-C"

3' VALLEY CROSSING

* CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL VALLEY CROSSING	PAGE SD 7

GENERAL NOTES

1. ALL REFERENCED STANDARDS SHALL BE LATEST REVISION.
2. CONCRETE SHALL BE CLASS "1" AS SPECIFIED IN SECTION 345 OF F.D.O.T. SPECIFICATIONS
3. SEE SECTION 425–2.2 "MORTAR" OF FLORIDA D.O.T. SPECIFICATIONS.
4. IRON CASTING SHALL BE AS SPECIFIED IN SECTION 962–8 OF F.D.O.T. SPECIFICATIONS. SEE SECTION 425–5.
5. ALL REINFORCEMENT STEEL SHALL BE AS SPECIFIED IN SECTIONS 415 & 931.1 OF F.D.O.T. SPECIFICATIONS.
6. SEE FLORIDA D.O.T. SPECIFICATIONS FOR GRATINGS.
7. SEE FLORIDA D.O.T. SPECIFICATIONS FOR SECTION 125 "EXCAVATION FOR STRUCTURES."
8. PRECAST TOP AND BOTTOM TO BE F.D.O.T. STANDARDS WITH MINIMUM TRAFFIC BEARING 8" THICKNESS.
9. ALL STORMWATER PIPE SHALL BE INSTALLED BEHIND THE CURB OR EDGE OF PAVEMENT AND WITHIN THE RIGHT OF WAY AND WITHIN THE DRAINAGE EASEMENTS.
10. THE FOLLOWING IS THE DRAINAGE STRUCTURE WALL MINIMUM THICKNESS:

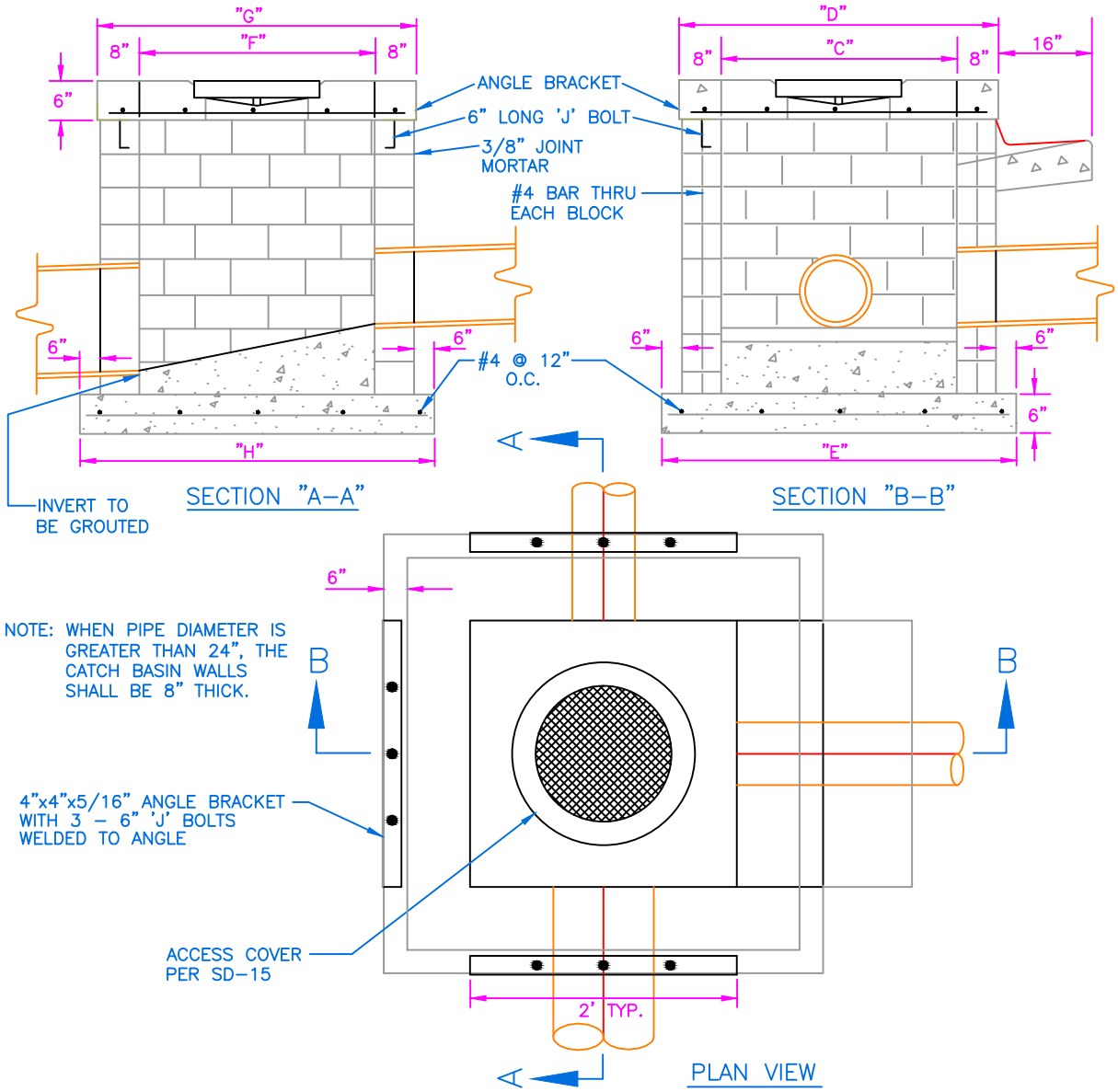
PRECAST	BLOCK
NON–TRAFFIC 6"	8" EITHER WAY

NOTE: FOR DRAINAGE STRUCTURES WITH PIPE DIAMETERS UP TO AND INCLUDING 24". 6" PRECAST WALLS ARE ACCEPTABLE FOR TRAFFIC BEARING.

DIMENSION INDEX

PIPE SIZE	TYPE	"C"	"D"	"E"	"F"	"G"	"H"
12"	RCP	2'8"	4'	5'	4'	5'4"	6'4"
15"	RCP	"	"	"	"	"	"
12"x18"	RCP	"	"	"	"	"	"
18"	RCP	"	"	"	"	"	"
14"x23"	RCP	"	"	"	"	"	"
24"	RCP	3'4"	4'8"	5'8"	"	"	"
19"x30"	RCP	4'	5'4"	6'4"	"	"	"
30"	RCP	"	"	"	"	"	"
24"x38"	RCP	5'	6'4"	7'4"	"	"	"
36"	RCP	5'	6'4"	"	"	"	"
66"	RCP	8'5"	9'9"	10'9"	4'8"	6'0"	7'0"

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY: BWM DATE: 06–28–11	REVISED	MINIMUM STANDARD DETAIL DRAINAGE CONTROL SHEET	PAGE SD 8



NOTE: DIMENSIONS PER SECTION SD–8

A) THE FOLLOWING MATERIALS TO BE AS SPECIFIED IN THE FLORIDA D.O.T. SPEC'S., LATEST EDITION, SECTION 346 CONCRETE, SECT. 962–8 IRON CASTING, SECT. 931–1 REINFORCEMENT STEEL, SECT. 425 INLETS, MANHOLES & JUNCTION BOXES.

B) FILL BLOCKS WITH 3,000 psi CONCRETE, USE #4 ROD IN EACH BLOCK, 16" O/C.

C) 2" MINIMUM COVER ON ALL REBAR.

D) USE #4 REBARS ON 6" CENTERS BOTH WAYS ON LID; NO.4 REBARS ON 12" CENTERS BOTH WAYS ON FLOOR SLAB.

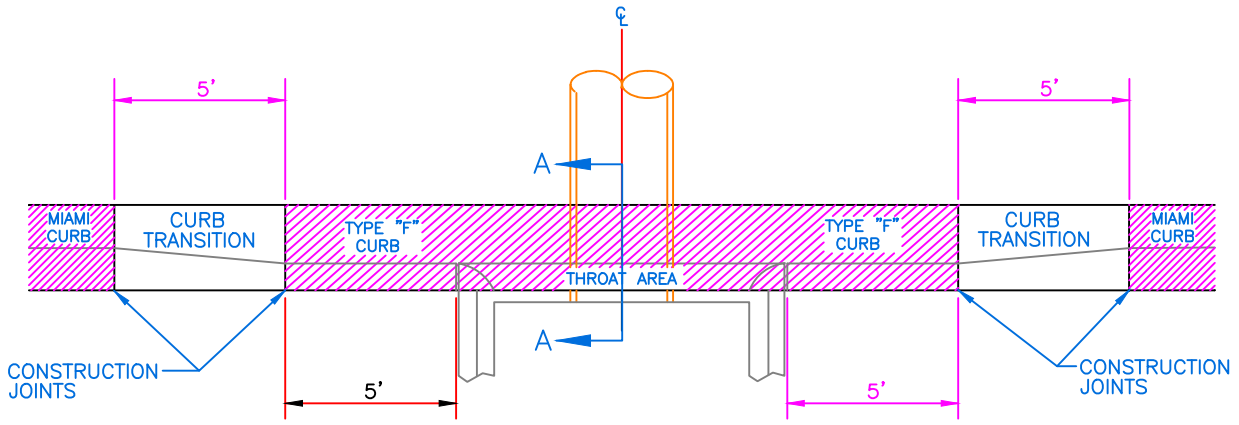
E) SEE SHEET SD–8 FOR GENERAL NOTES AND DIMENSION INDEX.

F) ALL EXPOSED CORNERS AND EDGES TO BE CHAMFERED 3/4".

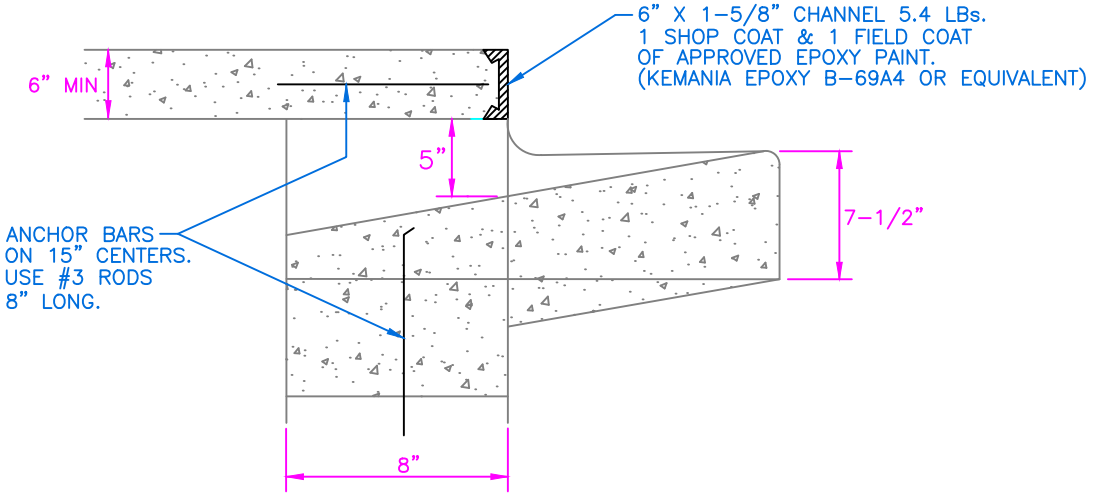
G) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE C.O.P PUBLIC WORKS DIRECTOR OR HIS DESIGNEE.

H) ALL PIPE ENTRIES TO CATCH BASIN TO BE GROUTED AND SEALED.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL TYPICAL CONC. BLOCK BOX	PAGE SD 9



PLAN VIEW



SECTION A-A

A) USE STANDARD CATCH BASIN & JUNCTION BOX DIMENSION INDEX (SHEET SD-8) DETAILS AND COVER (SHEET SD-15).

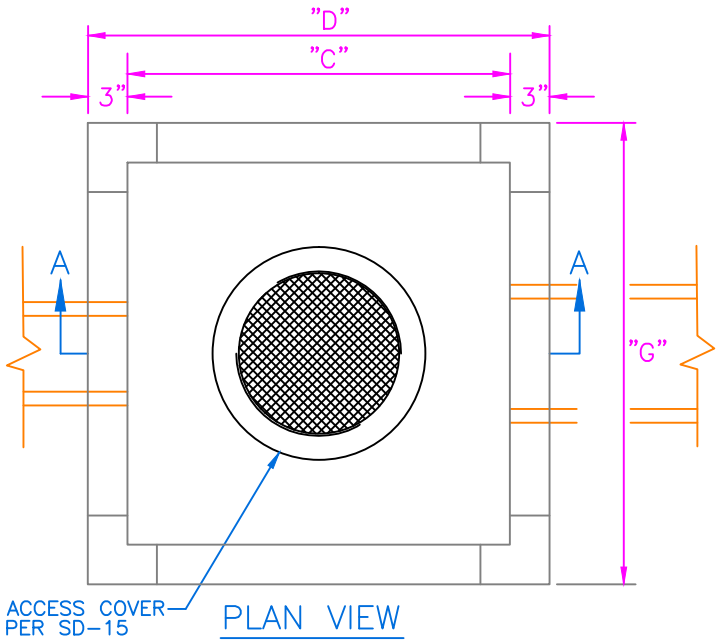
B) SEE CURB & GUTTER INDEX (SHEET # SD-1) FOR APPLICABLE CURB TYPE.

C) SEE SHEET # SD-8 "GENERAL NOTES" FOR APPLICABLE INFORMATION.

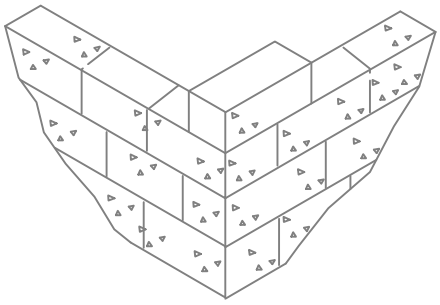
D) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION, ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE C.O.P PUBLIC WORKS DIRECTOR OR HIS DESIGNEE.

E) ANGLE BRACKETS SHOWN ON SD-9 NOT REQUIRED.

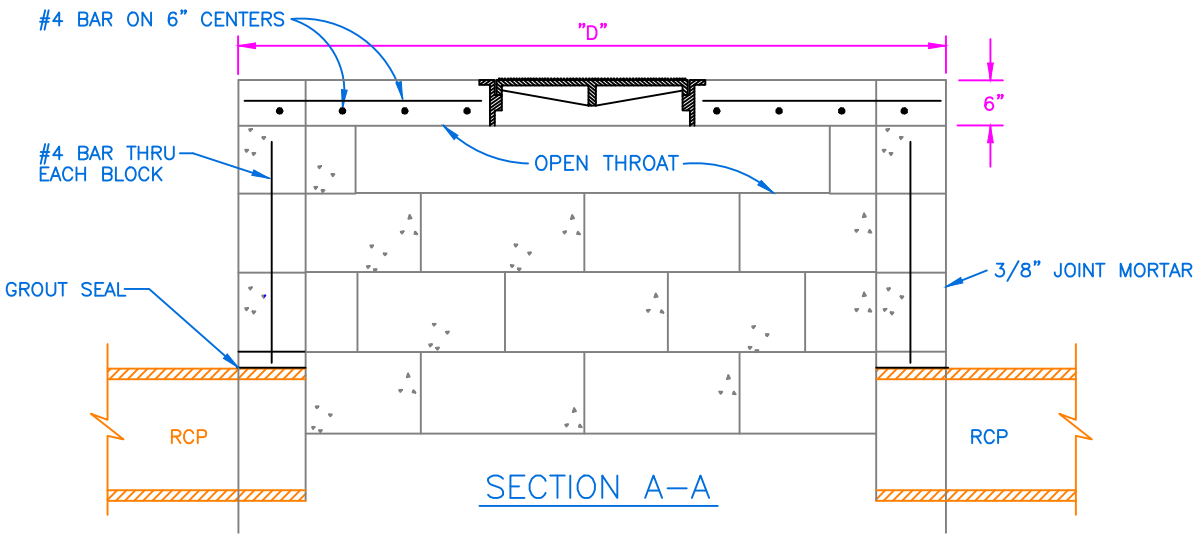
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL CURB INLET	PAGE SD 10



PLAN VIEW



CORNER VIEW



SECTION A–A

A) DROP INLET IS NOT DESIGNED TO BE SUBJECTED TO VEHICULAR TRAFFIC.

B) NUMBER OF SIDES OPEN FOR DRAINAGE DEPENDS UPON FLOW VOLUME REQUIREMENTS.

C) THE FOLLOWING MATERIALS SHALL BE AS SPECIFIED IN FLORIDA D.O.T. SPEC'S., LATEST EDITION. SEC 346 CONCRETE, SEC 962–8 IRON CASTING, SEC 931–1 REINFORCED STEEL.

D) FILL BLOCKS WITH 3,000 P.S.I. CONCRETE (EACH CELL), USE #4 ROD IN EACH BLOCK, 16" O/C.

E) USE #4 ROD ON 6" CENTERS BOTH WAYS ON LID.

F) SEE SHEET # SD–8 GENERAL NOTES AND DIMENSIONS INDEX, ALSO SHEET 202.1 TYP. CONC. BOX.

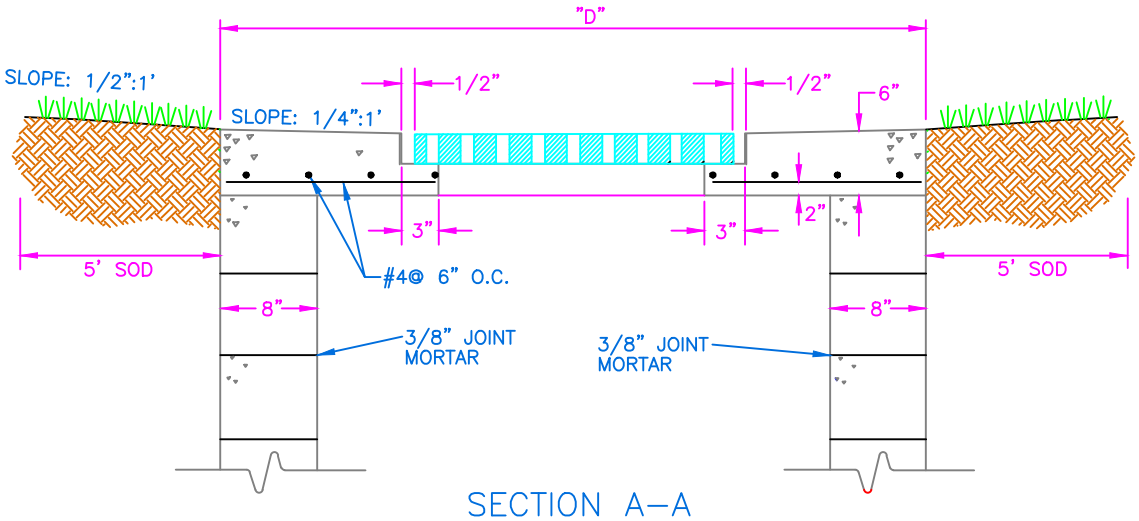
G) PRECAST BOXES TO F.D.O.T. SPECIFICATIONS ARE AN ACCEPTABLE ALTERNATE.

H) INVERT TO BE GROUTED (SEE SD–9).

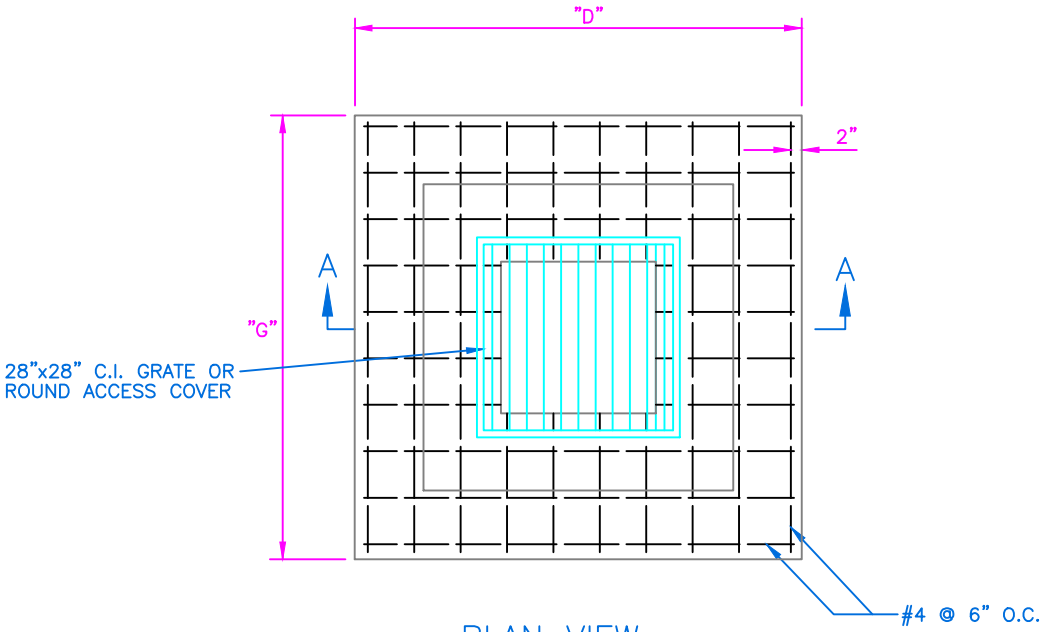
I) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION, ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE C.O.P PUBLIC WORKS DIRECTOR OR HIS DESIGNEE.

J) ANGLE BRACKETS SHOWN ON SD–9 NOT REQUIRED.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL THROAT DETAIL FOR DROP INLET	PAGE SD 11



SECTION A–A



PLAN VIEW

NOTE: DIMENSIONS "D" & "G" PER SECTION SD–8

A) ALTERNATE C.I. GRATES, 18"X 24", 24"X 24", 28"X 36".

B) SOD TO BE PLACED A MINIMUM OF 5' AROUND BOX.

C) THE FOLLOWING MATERIALS SHALL BE AS SPECIFIED IN FLORIDA D.O.T. SPEC'S., LATEST EDITION, SEC 346 CONCRETE, SEC 962–8 IRON CASTING, SEC 931–1 REINFORCED STEEL.

D) FILL BLOCKS WITH 3,000 P.S.I. CONCRETE (EACH CELL), USE # 4 ROD IN EACH BLOCK, 16" O/C.

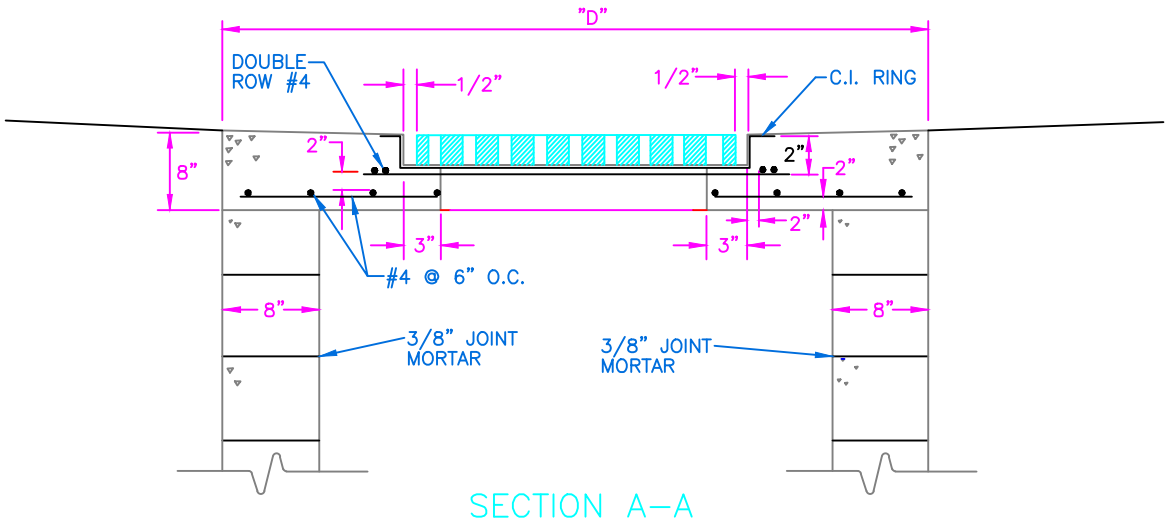
E) USE #4 ROD ON 6" CENTERS BOTH WAYS ON LID.

F) SEE SHEET # SD–8 GENERAL NOTES AND DIMENSIONS INDEX, ALSO SHEET 202.1 TYP. CONC. BOX.

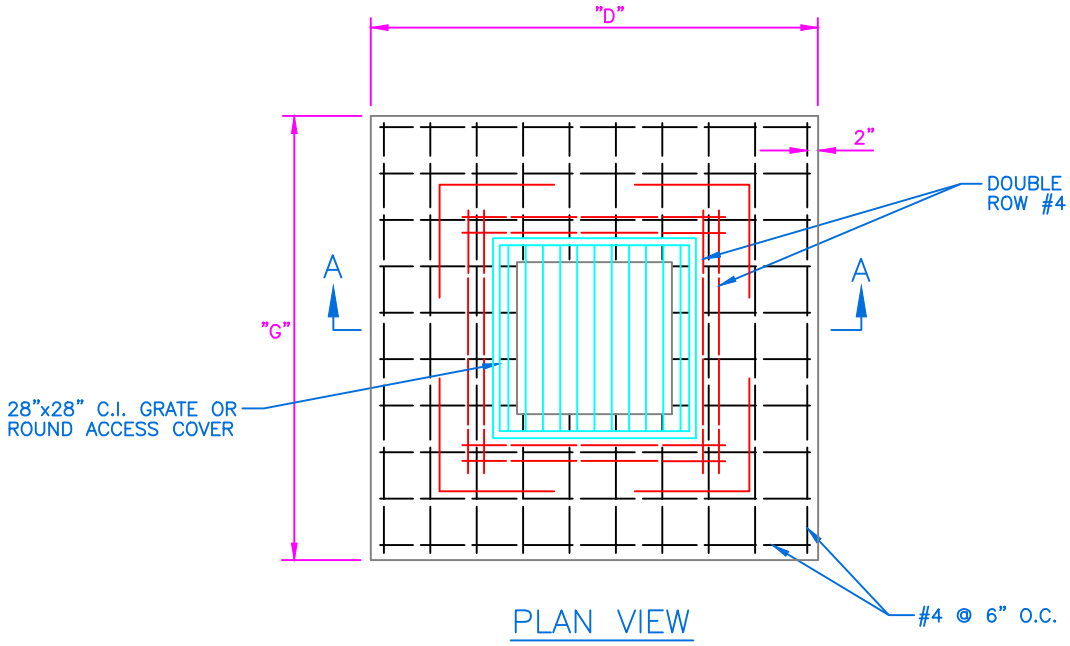
G) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION, ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE C.O.P. PUBLIC WORKS DIRECTOR OR HIS DESIGNEE.

H) ANGLE BRACKETS SHOWN ON SD–9 NOT REQUIRED.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL NON–TRAFFIC BEARING BOX LID	PAGE SD 12



SECTION A–A



PLAN VIEW

NOTE: DIMENSIONS "D" & "G" PER SECTION SD–8

A) ALTERNATE C.I. GRATES, 18"X 24", 24"X 24", 28"X 36" OR ACCESS COVER (SD–15).

B) 8" TRAFFIC BEARING LID W/ REINFORCING C.I. RING & DOUBLE ROW OF #4 REBAR.

C) FOLLOWING MATERIALS ARE SPECIFIED IN FLORIDA D.O.T. SPEC'S., LATEST EDITION. SEC 346 CONCRETE, SEC 962–8 IRON CASTING, SEC 931–1 REINFORCED STEEL.

D) FILL BLOCKS WITH 3,000 P.S.I. CONCRETE (EACH CELL), USE #4 ROD IN EACH BLOCK, 16" O/C.

E) USE #4 ROD ON 6" CENTERS BOTH WAYS ON LID. (SEE SD–11 E)

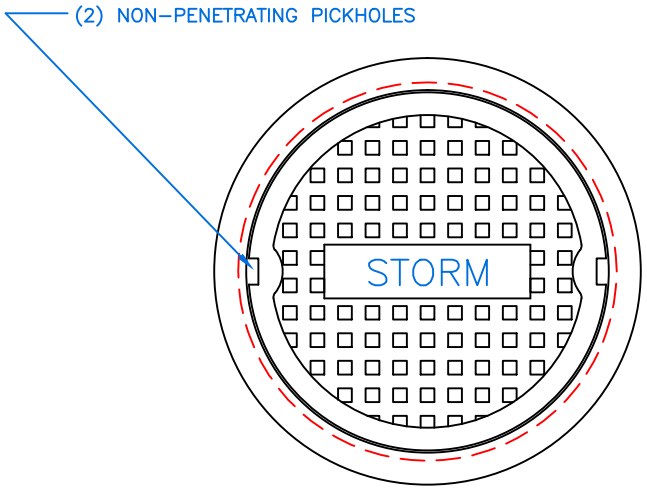
F) SEE SHEET # SD–8 GENERAL NOTES AND DIMENSIONS INDEX, ALSO SHEET SD–9 TYP. CONC. BOX.

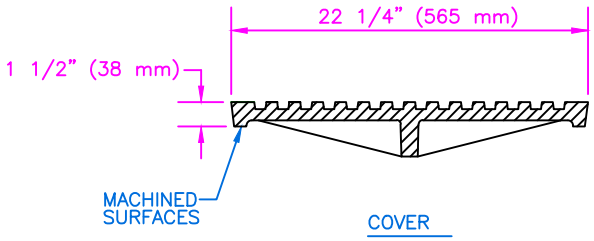
G) INVERT TO BE GROUTED (SEE SD–9).

H) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION, ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE TRANSPORTATION DIRECTOR OR HIS DESIGNEE.

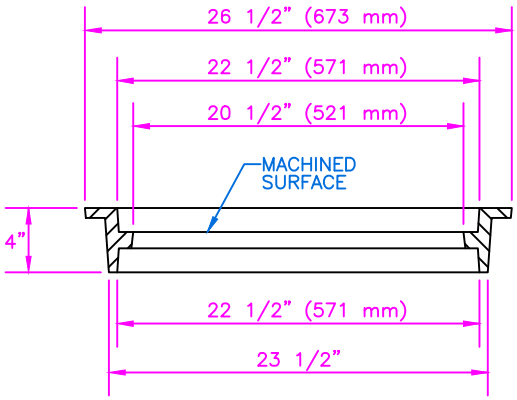
I) ANGLE BRACKETS SHOWN ON SD–9 NOT REQUIRED.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL TRAFFIC BEARING BOX LID	PAGE SD 13





COVER



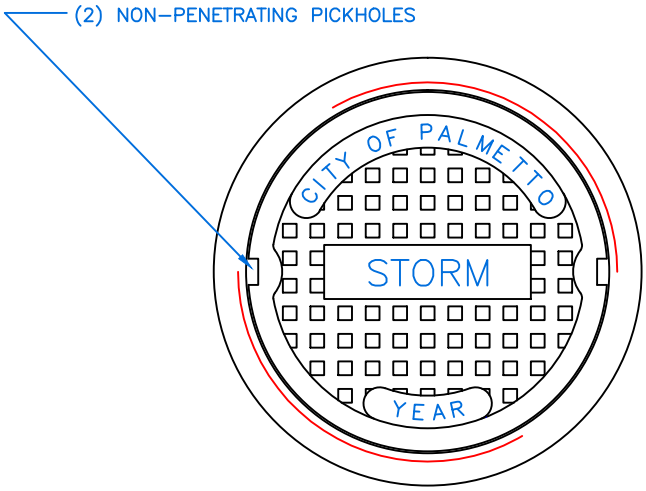
RING

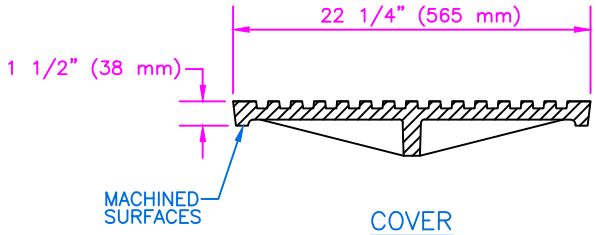
USF 1110 RING & PROPOSED COVER

NOTE:

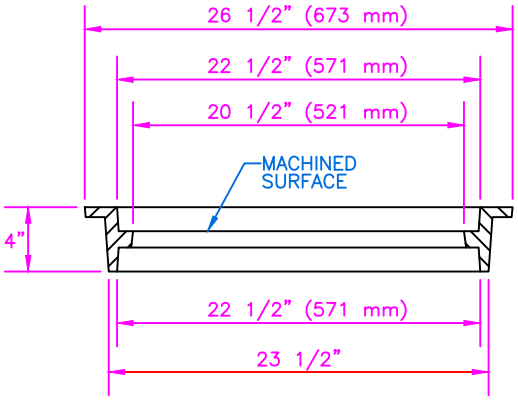
1 – MATERIAL; ASTM–A48 CLASS 30B GRAY IRON.
2 – COVER WEIGHT: 105 LBS. APPROX.
3 – RING WEIGHT: 90 LBS. APPROX.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL ACCESS COVER FOR STORMWATER JUNCTION BOX (PRIVATE)	PAGE SD 14





COVER



RING

USF 1110 RING & PROPOSED COVER

NOTE:

1 – MATERIAL; ASTM–A48 CLASS 30B GRAY IRON.
2 – COVER WEIGHT: 105 LBS. APPROX.
3 – RING WEIGHT: 90 LBS. APPROX.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL ACCESS COVER FOR STORMWATER JUNCTION BOX (PUBLIC)	PAGE SD 15

UNDERDRAIN

1. CORRUGATED POLYETHYLENE TUBING

   CORRUGATED POLYETHYLENE TUBING WITH A FILTER FABRIC WRAP, UNLESS OTHERWISE NOTED, MAY BE USED FOR UNDERDRAIN APPLICATIONS ASSOCIATED WITH ROADWAY CONSTRUCTION PROVIDING THE FOLLOWING SPECIFICATIONS ARE MET:

   A) THE CORRUGATED POLYETHYLENE TUBING SHALL MEET THE REQUIREMENTS OF ASTM F-405.

   B) THE CORRUGATED POLYETHYLENE TUBING SHALL HAVE A FILTER FABRIC SOCK MEETING F.D.O.T. SPEC. 948-3, LATEST REVISION. IF PERFORATIONS IN PIPE ARE LESS THAN 3/4", THEN FILTER FABRIC SOCK MAY BE OMITTED.

   C) THE ENVELOPE MATERIAL SURROUNDING THE TUBING SHALL BE CRUSHED STONE OR WASHED SHELL. THE THICKNESS OF THE ENVELOPE MATERIAL SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE TUBING, PLUS 12".

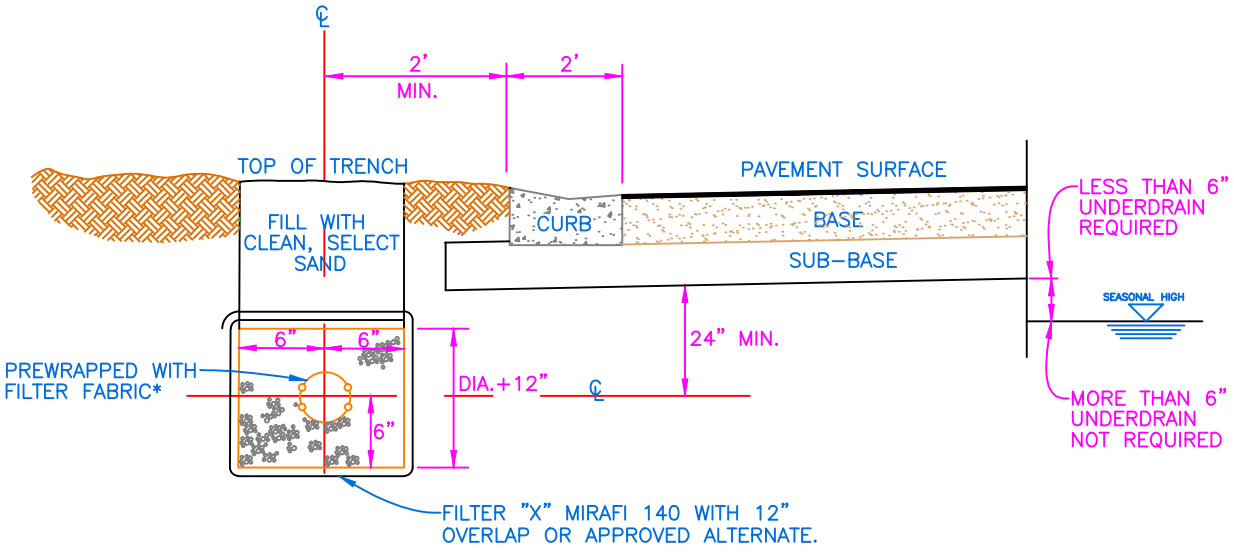
   D) CORRUGATED POLYETHYLENE TUBING SHALL NOT BE ACCEPTABLE UNDER ROADWAYS.

   E) EXTRA CARE SHALL BE TAKEN DURING PLACEMENT TO MAINTAIN PROPER LINE AND GRADE, TO BE PLACED W/ SLOPE OF ROAD.

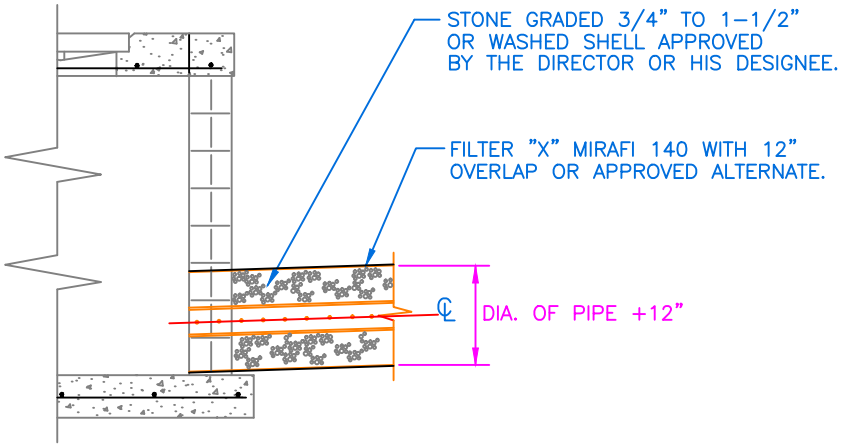
   F) A CLEAN-OUT SHALL BE CONSTRUCTED AT THE END OF EACH RUN OF UNDER-DRAIN. MAXIMUM SPACING EVERY 100 FEET.

   G) SOD 3' AROUND 18" CONC. SQUARE.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL UNDERDRAIN GENERAL NOTES	PAGE SD 16



UNDERDRAIN PLACEMENT



UNDERDRAIN TIE TO INLET

A) LOCATION OR NEED FOR UNDERDRAIN TO BE APPROVED BY THE C.O.P. PUBLIC WORKS DIRECTOR OR HIS DESIGNEE.

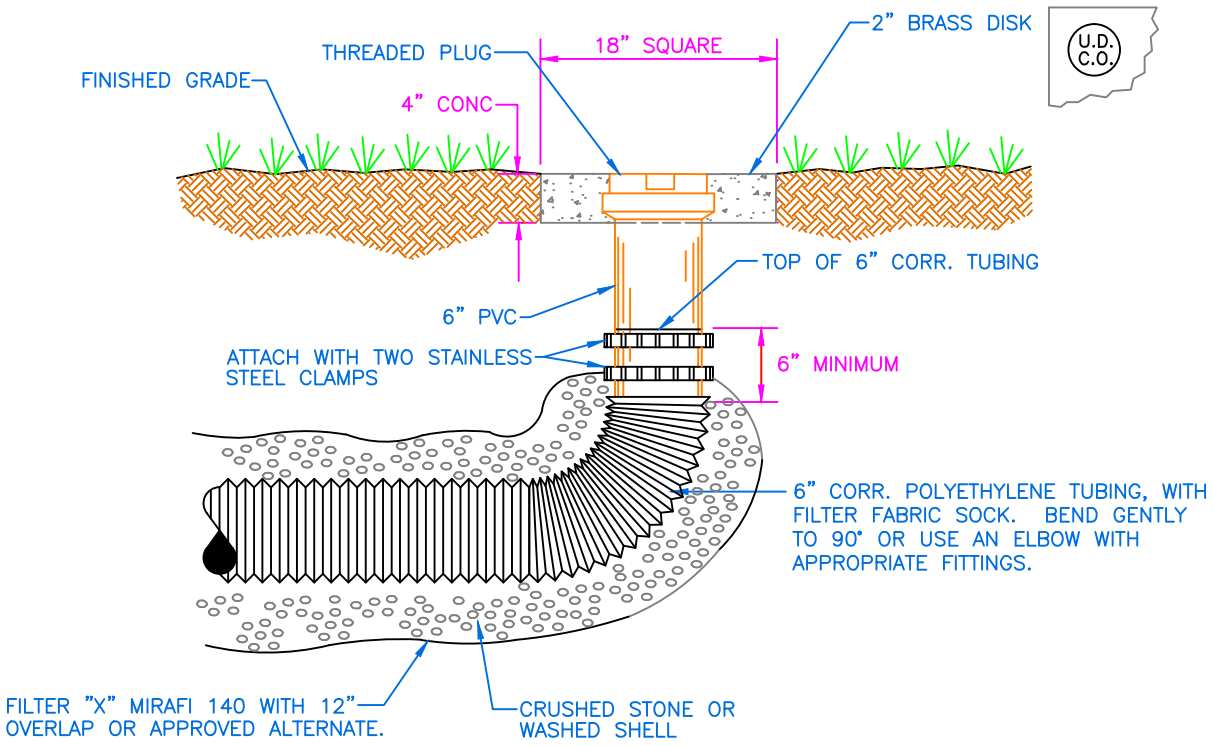
B) UNDERDRAIN SHALL BE AS SPECIFIED IN FLORIDA DEPT. OF TRANSPORTATION SPEC., LATEST EDITION.

C) 6" TO 8" PERFORATED PIPE AS REQUIRED.

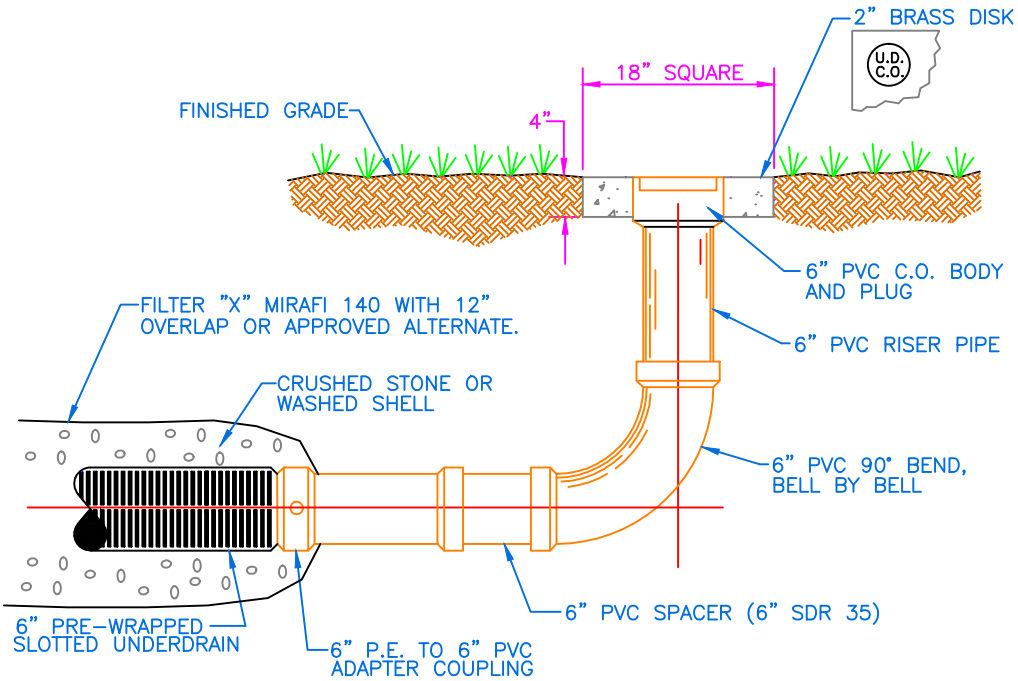
D) BACKFILL WITH CLEAN, SELECT SAND TO LINES SHOWN ON PLANS.

* IF PIPE PERFORATIONS ARE SMALLER THAN 3/4", THEN FILTER FABRIC SOCK MAY OMITTED.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL TYPICAL UNDERDRAIN LAYOUT	PAGE SD 17



UNDERDRAIN CLEAN–OUT DETAIL
CORRUGATED POLYETHYLENE TUBING



UNDERDRAIN CLEAN–OUT DETAIL – RIGID

* MAXIMUM SPACING EVERY 100 FEET.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL UNDERDRAN CLEAN–OUTS (FLEXIBLE & RIGID)	PAGE SD 18

HDPE STORM SEWER PIPE GENERAL NOTES

A. HDPE SHALL MEET CURRENT F.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.

B. MINIMUM COVER – 9" (TOP OF PIPE TO BOTTOM OF RIDGED PAVEMENT OF DRIVEWAY)
– 15" (TOP OF PIPE TO BOTTOM OF FLEXIBLE BASE OF DRIVEWAY)

C. SIZES ARE LIMITED TO CURRENT F.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.

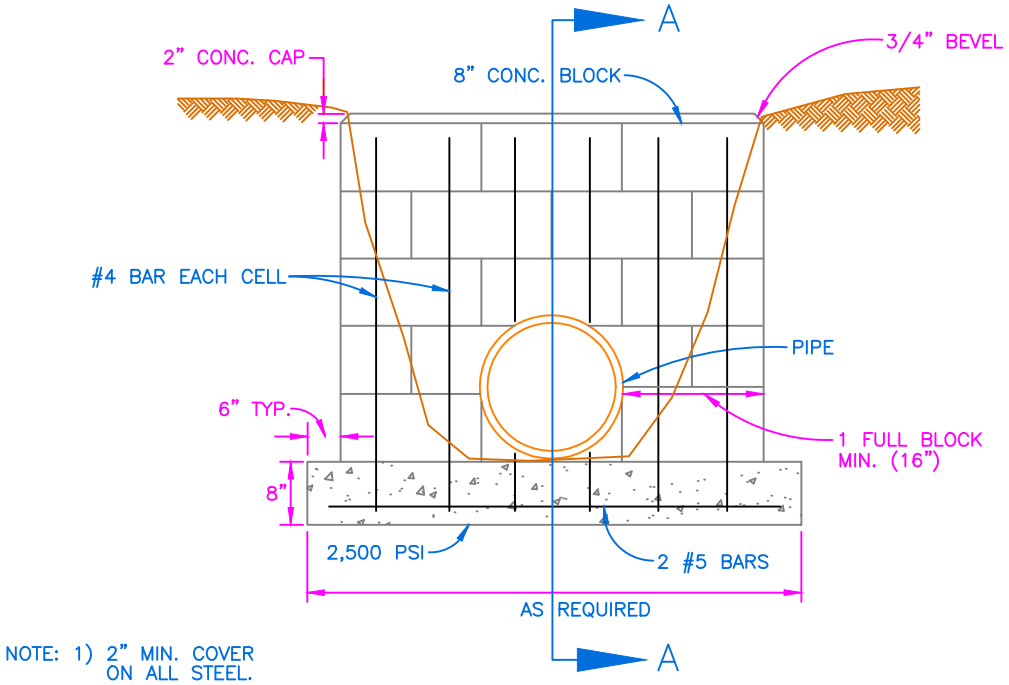
D. HDPE PIPE IS NOT ALLOWED UNDER ROADWAY.

FIBER OR WIRED REINFORCED CONC. PIPE, GENERAL NOTES

A. FRCP SHALL MEET CURRENT F.D.O.T. STANDARD SPECIFICATIONS, LATEST EDITION.

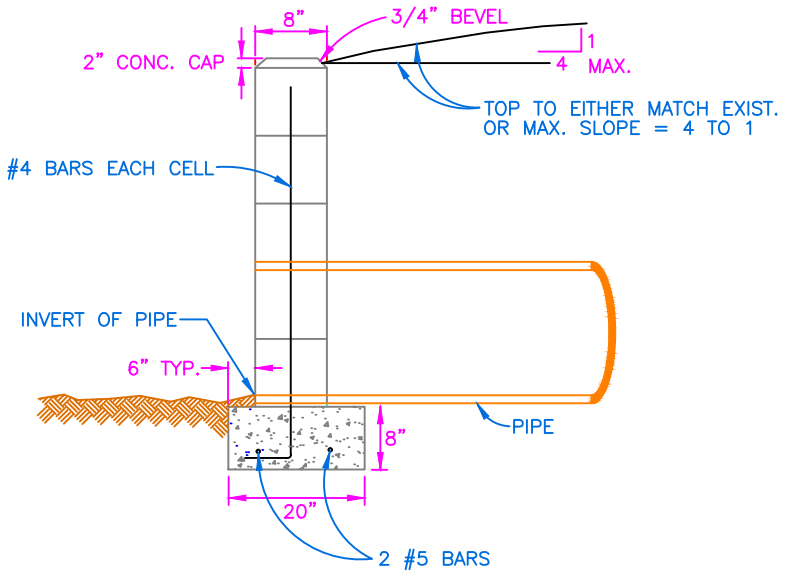
B. SIZES LIMITED TO F.D.O.T. CURRENT STANDARD SPECIFICATIONS, LATEST EDITION.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL STORM SEWER PIPE GENERAL NOTES	PAGE SD 19



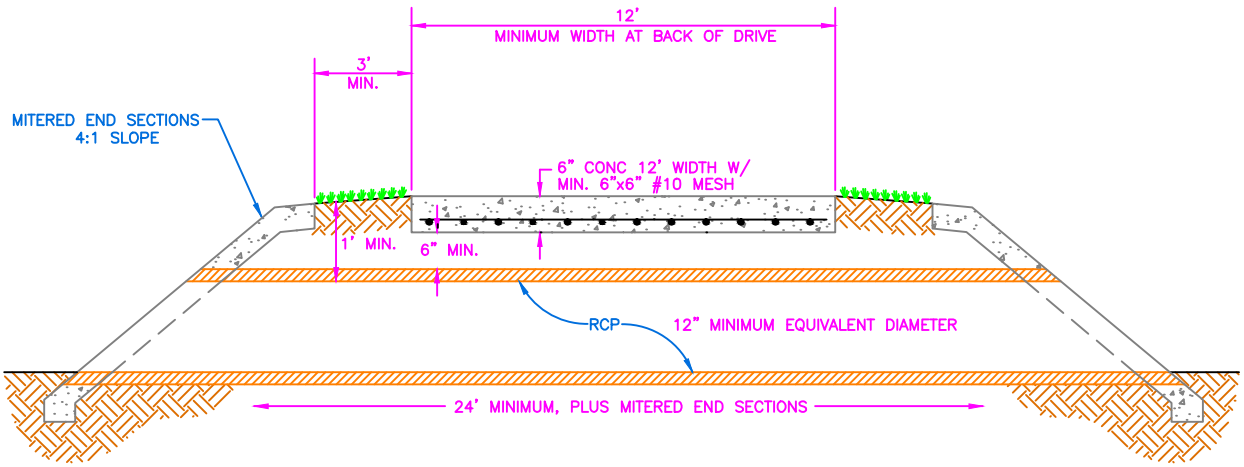
NOTE: 1) 2" MIN. COVER ON ALL STEEL.
2) EACH CELL OF BLOCK TO BE POURED

END VIEW



SECTION A–A

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06–28–11	REVISED	MINIMUM STANDARD DETAIL CONCRETE BLOCK HEADWALL	PAGE SD 20



TYPICAL DRIVEWAY

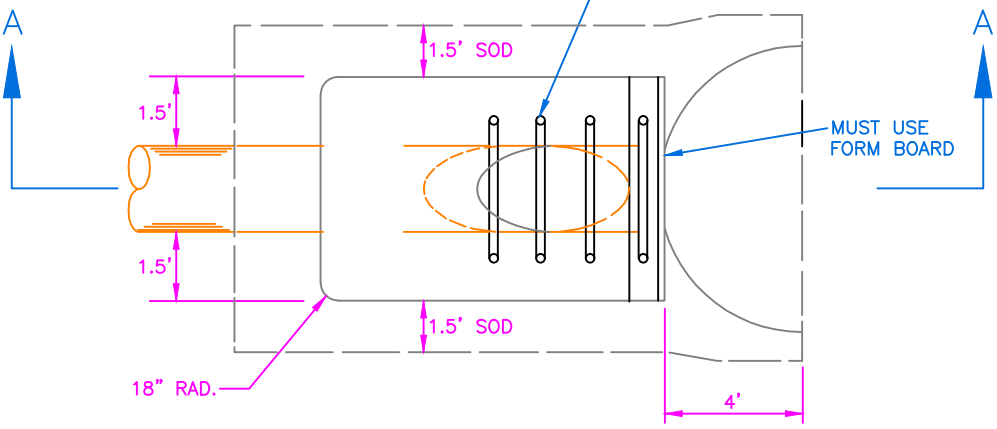
VARIABLES: C.M.P. WILL NOT BE ALLOWED WITHIN THE RIGHT-OF-WAY.
R.C.P. WILL REQUIRE A MINIMUM 6" OF COVER BENEATH BOTTOM OF DRIVEWAY, FOR A TOTAL OF 1' OF COVER. HDPE PIPE IS ACCEPTABLE IN LIEU OF RCP.

NOTE: 1) GRADES AND LOCATIONS MUST BE REVIEWED AND APPROVED BY THE CITY OF PALMETTO FOR ALL PIPE INSTALLATIONS

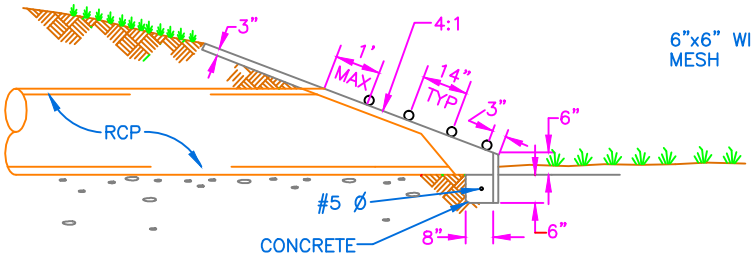
2) ACTUAL REQUIRED PIPE DIAMETER WILL BE BASED ON THE FLOW RATE REQUIRED TO PASS THROUGH PIPE SO AS NOT TO IMPOUND WATER UPSTREAM.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL TYPICAL DRIVEWAY PIPE CROSS SECTION	PAGE SD 21.

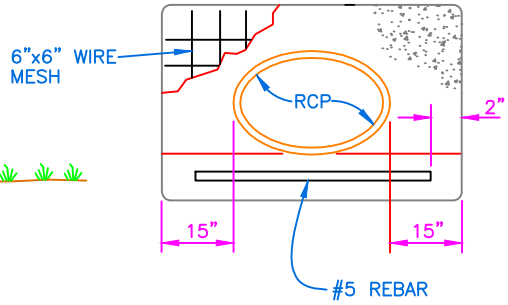
NOTE: ON SIDE DRAIN M.E.S., BARS ONLY TO BE USED ON ROUND PIPE 30" IN DIA. & GREATER, ELIPTICAL PIPE 19" X 30" & GREATER, AND ARCH PIPE 35" X 24" OR GREATER. FOR BAR SIZE SEE F.D.O.T., LATEST EDITION, INDEX NO. 273



PLAN VIEW



SECTION A–A



END VIEW

SOD TO BE PLACED 1.5 FT AROUND THE PERIMETER OF THE WALL, SOD TO BE BAHIA; ST. AUGUSTINE SOD WHERE THERE IS TIDAL, HEAVY CONCENTRATION OF SALT, OR SURROUNDING PROPERTY IS ST. AUGUSTINE.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-28-11	REVISED	MINIMUM STANDARD DETAIL DRIVEWAY AND ROAD PIPE MITERED END SECTION	PAGE SD 22

DEPARTMENT OF PUBLIC WORKS

UTILITY SPECIFICATIONS

2011 EDITION

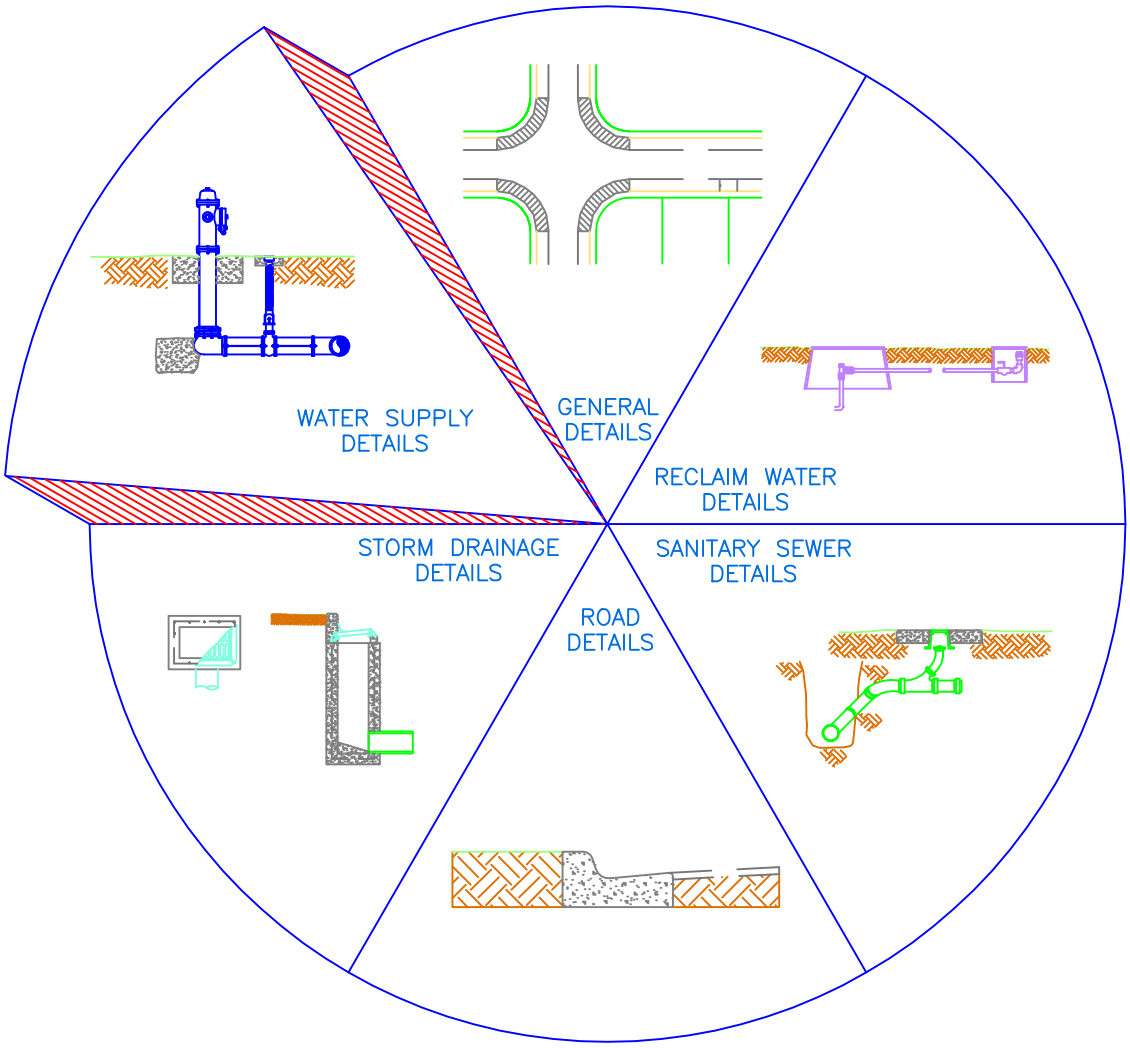
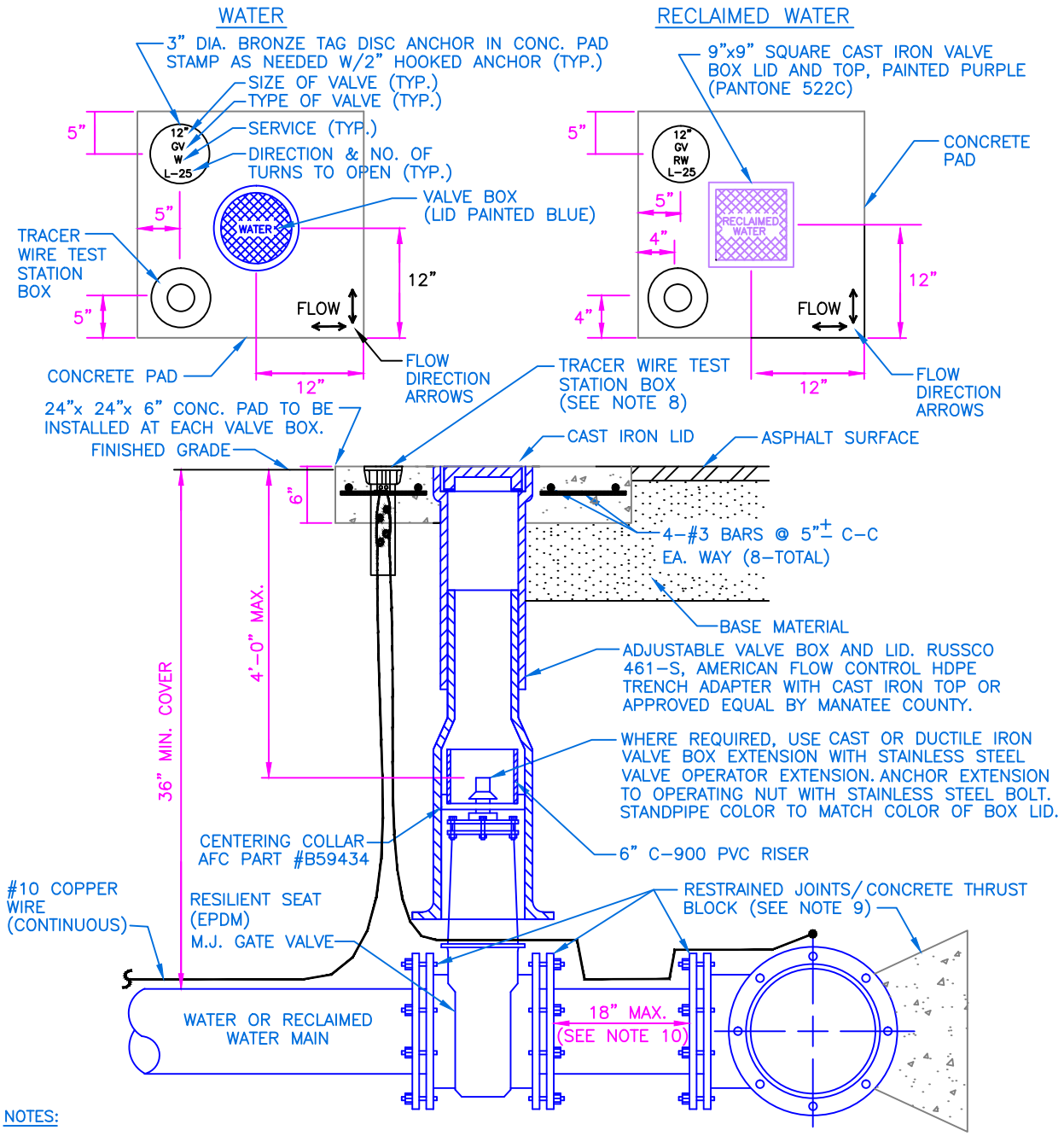


TABLE OF CONTENTS

UTILITY STANDARDS–WATER DISTRIBUTION SYSTEM

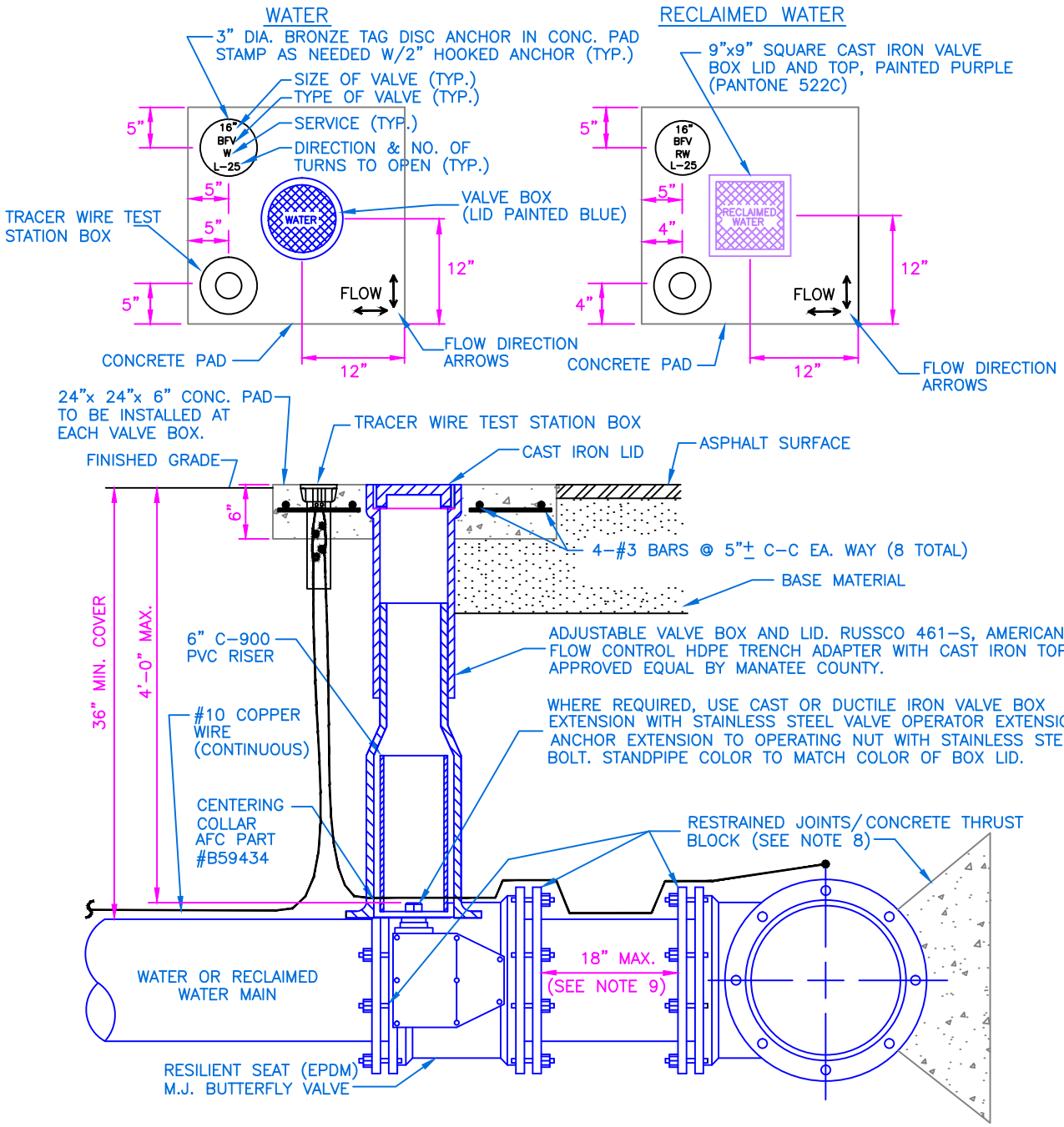
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY: BWM DATE: 05–26–11	REVISED	MINIMUM STANDARD DETAIL TABLE OF CONTENTS WATER DISTRIBUTION	PAGE WS 1



NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. "FLOW" AND FLOW DIRECTION ARROWS TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX. A TRACER WIRE BOX IS REQUIRED IN THE CONCRETE PAD AT ALL GATE VALVES AT CONNECTIONS TO EXISTING MAINS.
9. CONCRETE THRUST BLOCK IS ALSO REQUIRED UNLESS RESTRAINED JOINT LENGTH IS TREATED AS A PLUG SHOWN IN STANDARD DETAIL G-7.
10. SHOULD THERE BE AN OBSTACLE/CONFLICT IN INSTALLING THE VALVE, THE ENGINEER OF RECORD MAY PROPOSE A REVERSE TAP, ETC. AND SEPARATE APPROVAL SHALL BE OBTAINED FROM CITY OF PAMLETTO.

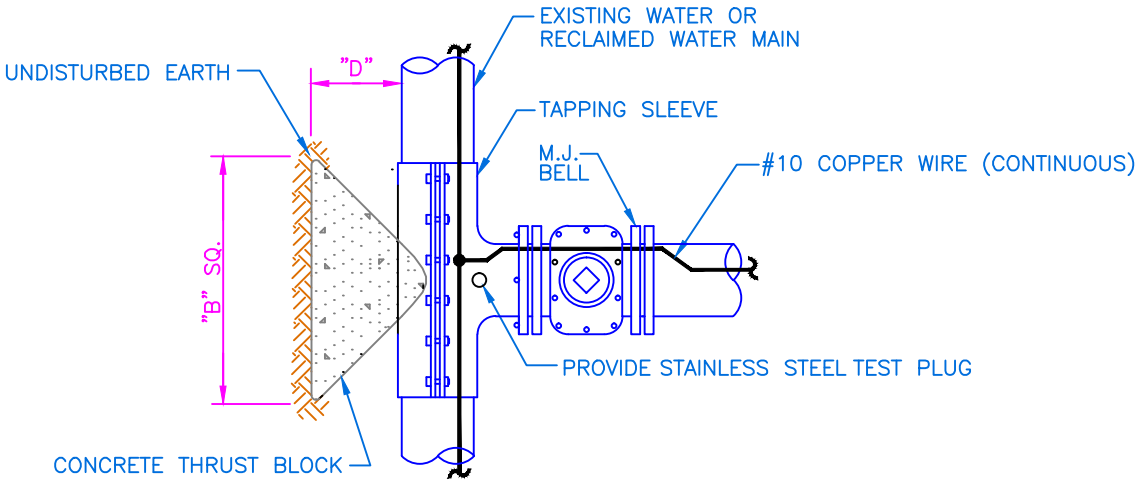
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL GATE VALVE, BOX LID AND TAG	PAGE WS 2



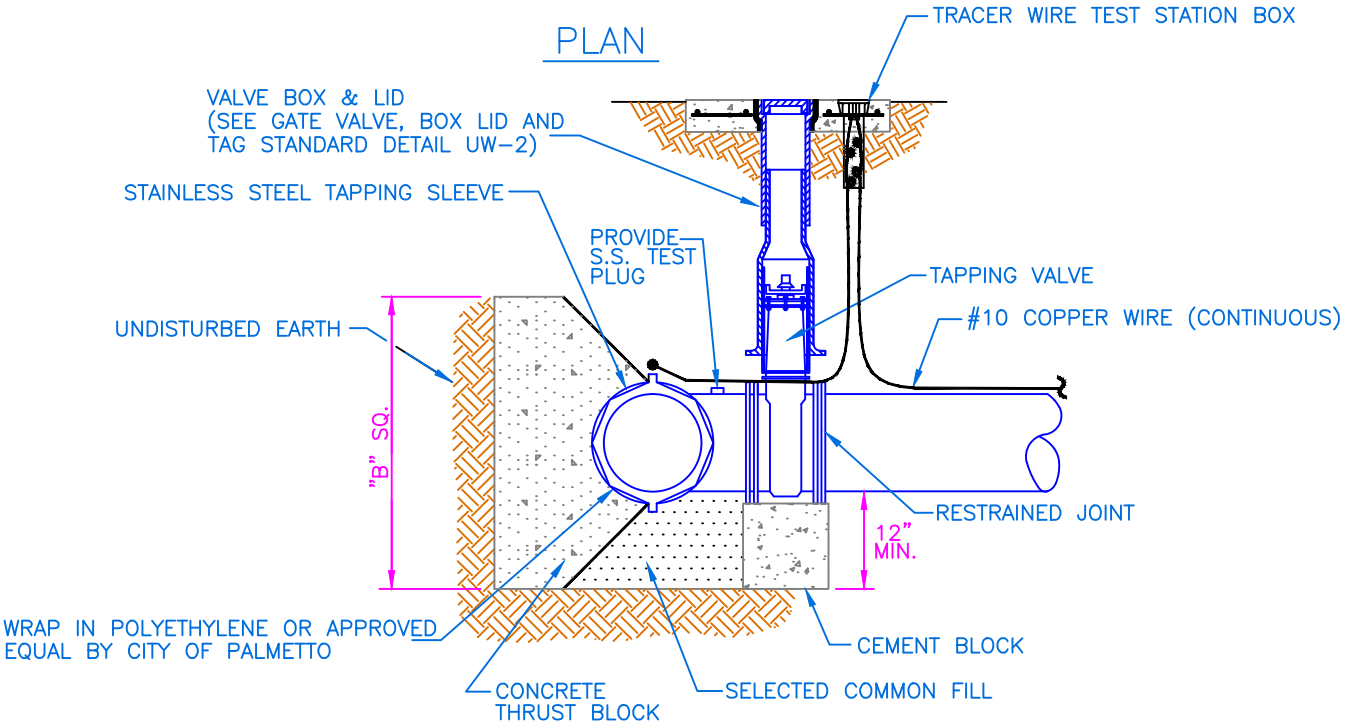
NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A 1/8"x1" GALVINIZED STEET SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. "FLOW" AND FLOW DIRECTION ARROWS TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. CONCRETE THRUST BLOCK IS ALSO REQUIRED UNLESS RESTRAINED JOINT LENGTH IS TREATED AS A PLUG SHOWN IN STANDARD DETAIL G-7.
9. SHOULD THERE BE AN OBSTACLE/CONFLICT IN INSTALLING THE VALVE, THE ENGINEER OF RECORD MAY PROPOSE A REVERSE TAP, ETC. AND SEPARATE APPROVAL SHALL BE OBTAINED FROM CITY OF PALMETTO.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-26-11	REVISED	MINIMUM STANDARD DETAIL BUTTERFLY VALVE, BOX, LID AND TAG	PAGE WS 3



PLAN

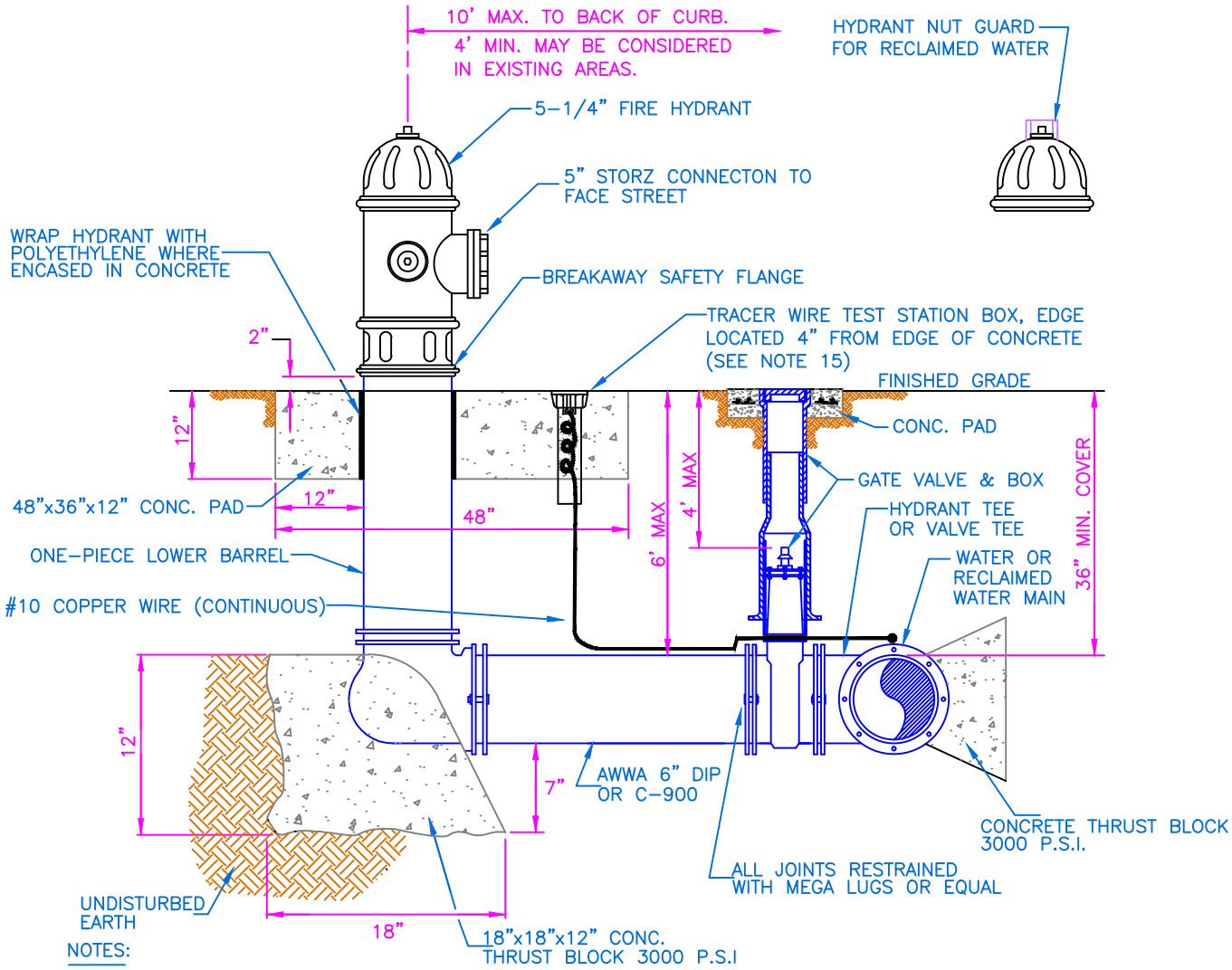


ELEVATION

NOTES:

1. NO CUTS SHALL BE MADE BEFORE:
   (A) A 120 MINUTE TEST OF 150 PSI FOR WATER OR FOR SEWER IS MADE.
   (B) ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
   (C) ALL TAPS ARE TO BE MADE BY A CITY OF PALMETTO APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
2. ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS LARGER) FROM A JOINT OR FITTING.
3. CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
4. THRUST BLOCK IS REQUIRED AND INCLUDED IN EVERY TAP. SEE CONCRETE THRUST BLOCK DETAIL G-7 FOR DIMENSIONS "B" & "D".
5. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.
6. SEE CONCRETE THRUST BLOCK DETIAL G-7.

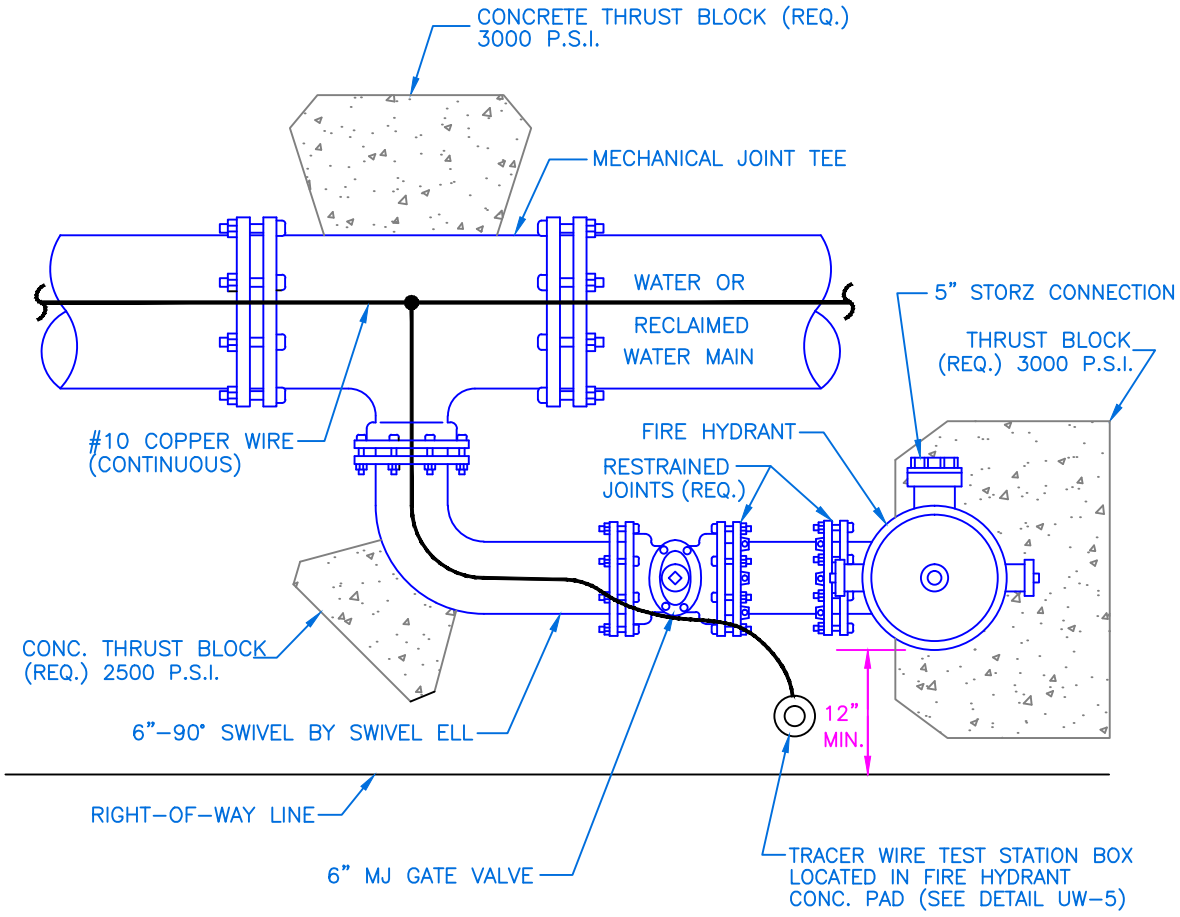
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-31-11	REVISED	MINIMUM STANDARD DETAIL TAPPING SLEEVE AND VALVE	PAGE WS 4



NOTES:

1. WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
2. FIRE HYDRANTS SHALL BE A MINIMUM OF 6' OFF EDGE OF PAVEMENT AND 10' MAX. FROM BACK OF CURB. WHERE POSSIBLE AND WHERE SIDEWALK IS TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT-OF-WAY LINE.
3. HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER AND PURPLE (PANTONE 522C) FOR RECLAIMED WATER. HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION.
4. FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
5. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
6. FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GRADELOK" OFFSET FITTING.
7. RAISED REFLECTIVE PAVEMENT MARKER (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER SHALL BE INSTALLED AT CENTERLINE OF PAVEMENT ADJACENT TO EACH HYDRANT.
8. PRECAST CONCRETE THRUST BLOCKS & PADS SHALL NOT BE USED.
9. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
10. FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
11. IN-LINE VALVES SHOULD BE LOCATED AT HYDRANT TEES.
12. HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER MAIN UNLESS APPROVED BY C.O.P.P.W.D.
13. THERE MUST BE A CLEARANCE OF 7 1/2 FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ABOVE GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC, PER THE FLORIDA FIRE PREVENTION CODE.
14. SEE GATE VALVE, BOX AND LID STANDARD DETAIL WS-2.
15. SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP THE SIDEWALK; THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.
16. SEE CONCRETE THRUST BLOCK DETAIL G-7.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-31-11	REVISED	MINIMUM STANDARD DETAIL FIRE HYDRANT ASSEMBLY	PAGE WS 5

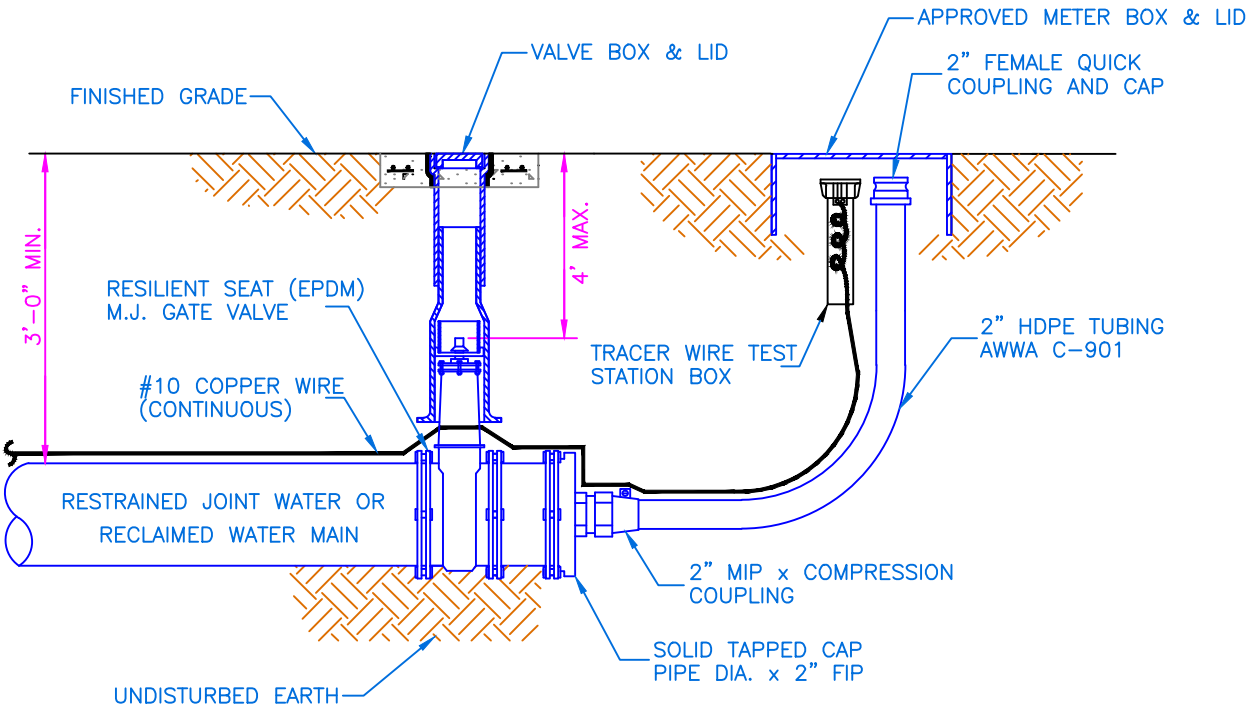


PLAN

NOTE:

1. THIS DETAIL FOR USE ONLY WHEN THE WATER MAIN IS LOCATED TOO CLOSE TO THE RIGHT-OF-WAY LINE TO USE THE FIRE HYDRANT ASSEMBLY DETAIL.
2. SEE GATE VALVE, BOX AND LID STANDARD DETAIL WS-2.
3. SEE CONCRETE THRUST BLOCK DETAIL G-7.

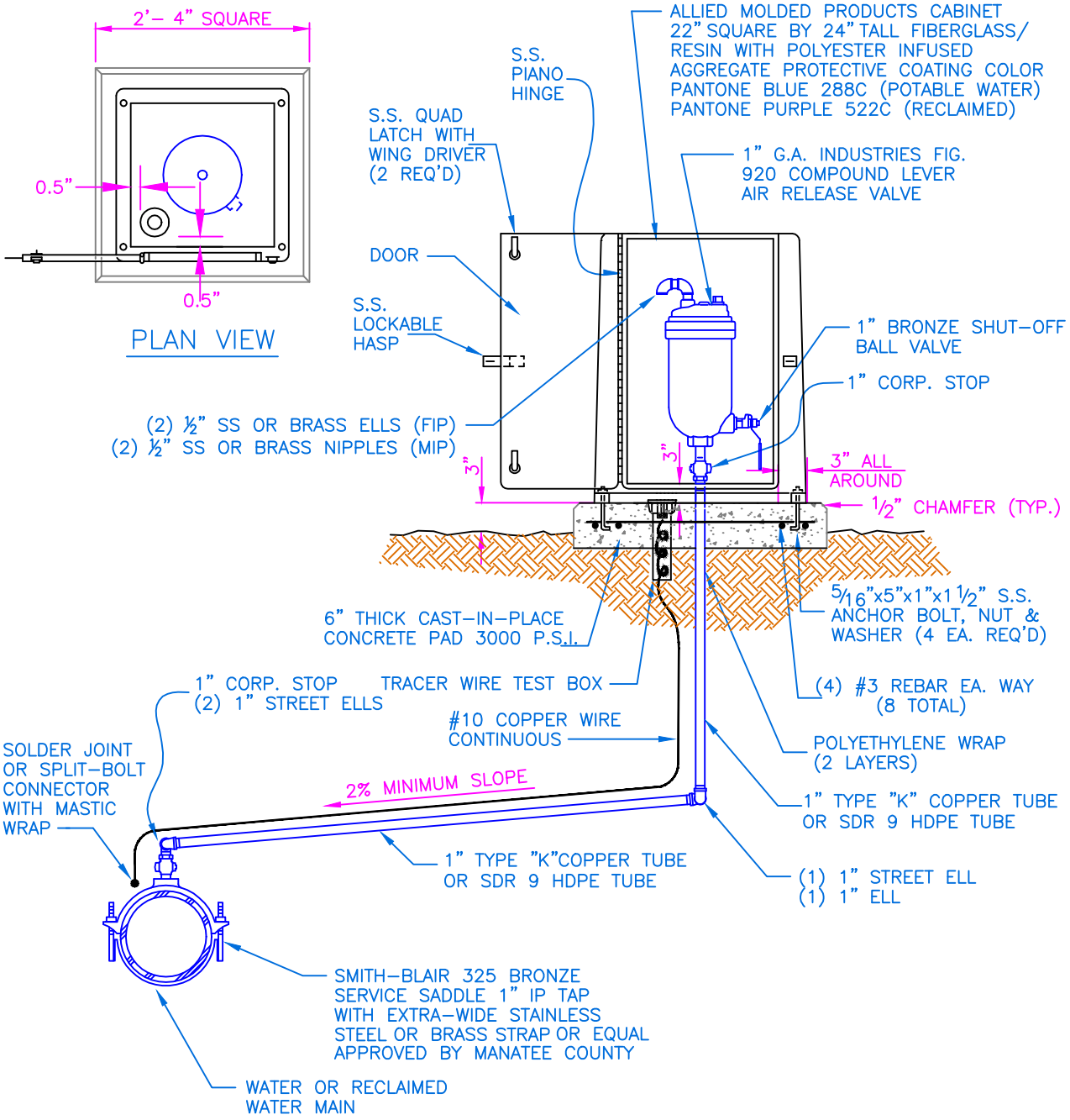
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-31-11	REVISED	MINIMUM STANDARD DETAIL FIRE HYDRANT WITH LOCKED 90° BEND	PAGE WS 6



NOTES:

1. SEE GATE VALVE, BOX AND LID STANDARD DETAIL WS-2.
2. SEE CITY OF PALMETTO PUBLIC WORKS UTILITY CONSTRUCTION STANDARD SPECIFICATIONS.

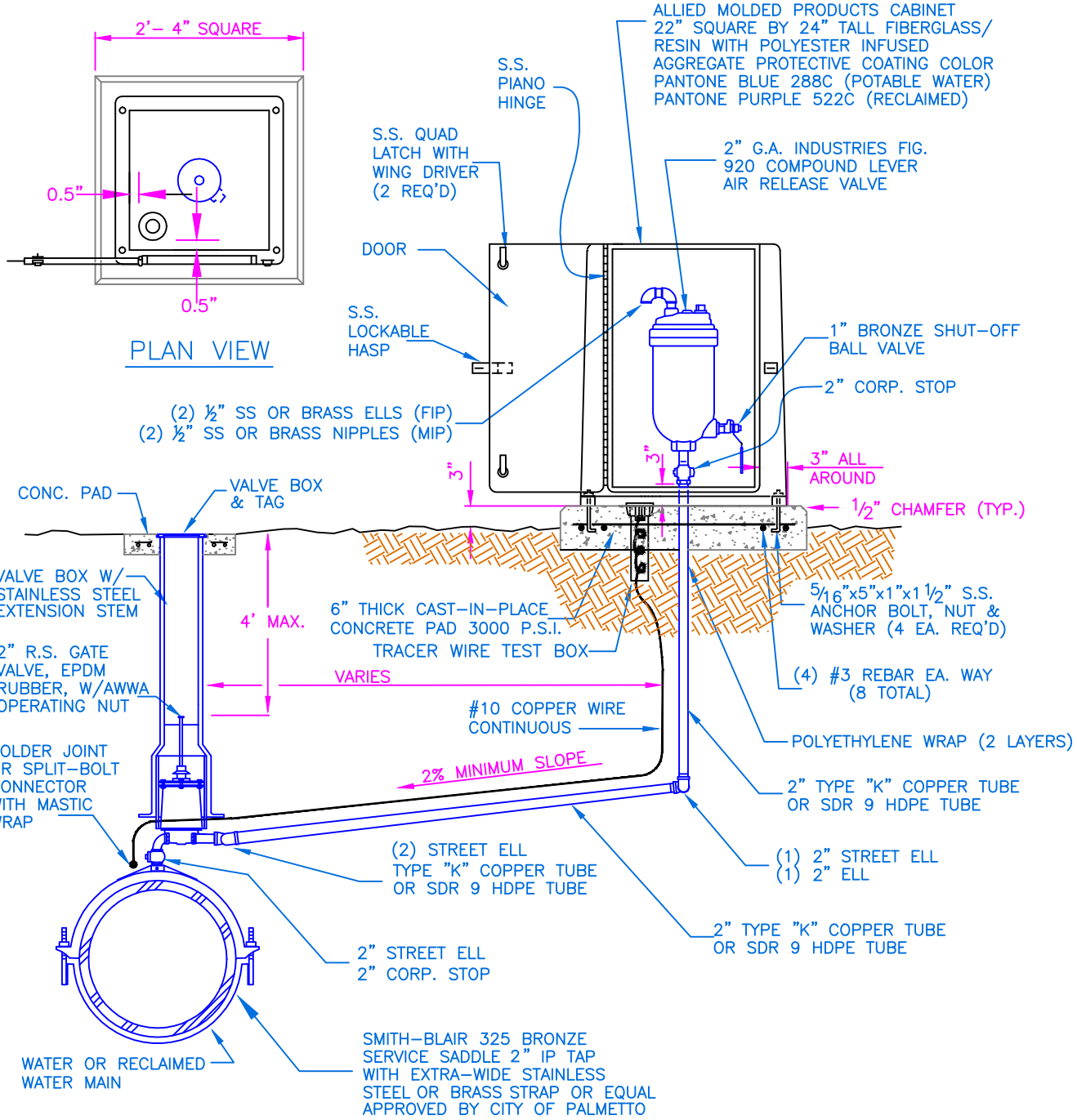
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-30-11	REVISED	MINIMUM STANDARD DETAIL 2" BLOW-OFF ASSEMBLY FOR 10" MAINS AND SMALLER	PAGE WS 7



NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS ALONG WATER MAINS WHERE SPECIFICALLY INDICATED ON THE PLAN.
2. ARV VENT ORIFICE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.

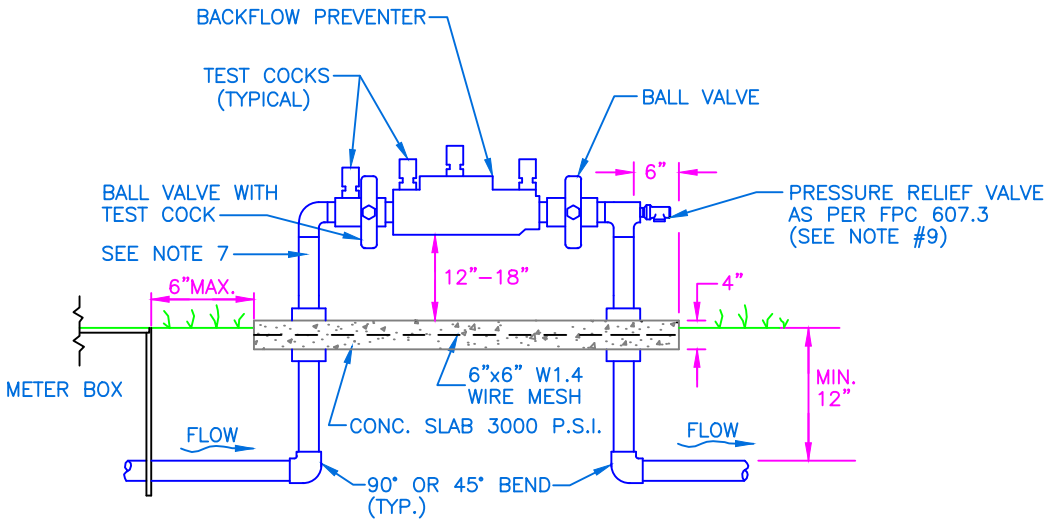
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05–30–11	REVISED	MINIMUM STANDARD DETAIL ABOVE–GROUND AIR RELEASE VALVE ASSY. FOR 12 INCH AND SMALLER WATER MAINS	PAGE WS 8

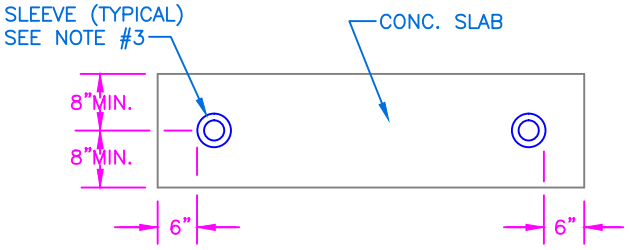


NOTES:

1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS ALONG WATER MAINS WHERE SPECIFICALLY INDICATED ON THE PLAN.
2. ARV VENT ORIFICE TO BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR WATER MAIN SIZE.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAID ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
6. SEE GATE VALVE, BOX AND LID STANDARD DETAIL WS–2. MJ GATE GATE VALVE IN DETAIL WS–2 SHALL BE SUBSTITUTED WITH THREADED FIP GATE VALVE. CENTERING COLLAR IS NOT REQUIRED ON 2" GATE VALVES.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05–31–11	REVISED	MINIMUM STANDARD DETAIL AIR RELEASE ASSEMBLY FOR 16–INCH AND LARGER MAINS	PAGE WS 9

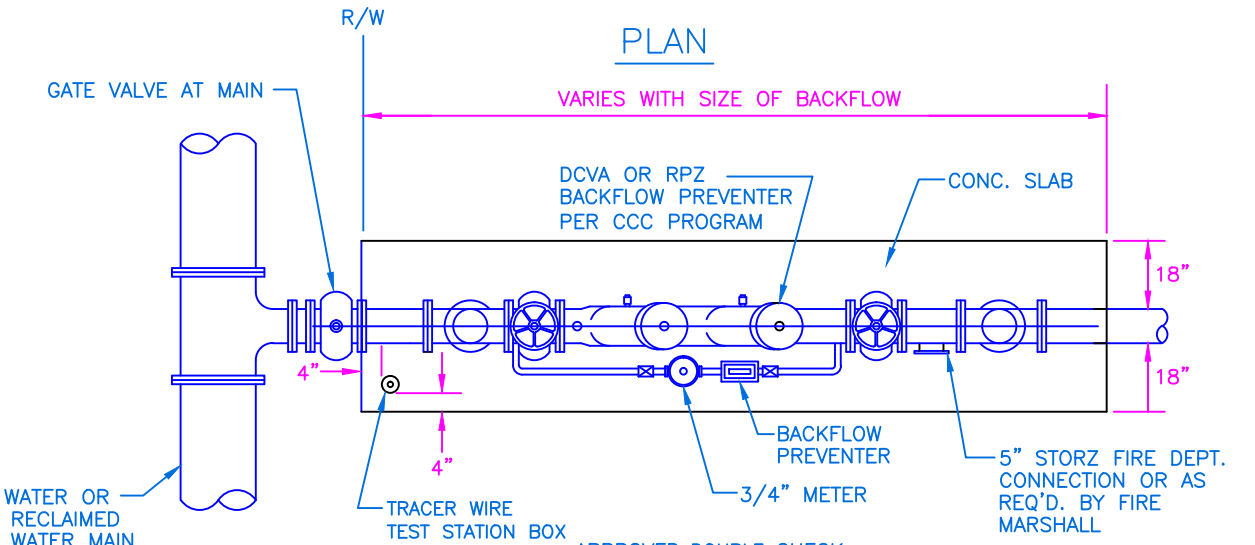


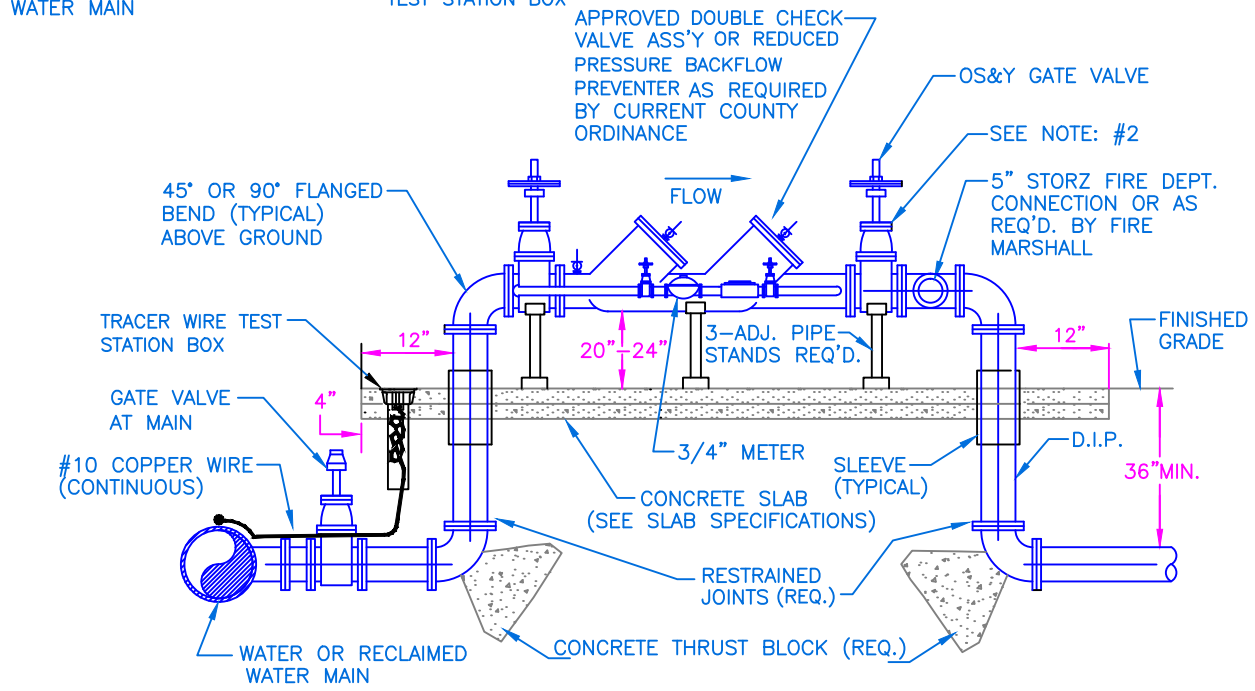


NOTES:

1. BACKFLOW DEVICE MUST BE INSTALLED IMMEDIATELY DOWNSTREAM OF METER, AS SHOWN ABOVE.
2. COPPER PIPE TYPE "K" SHALL BE USED TO A MINIMUM DEPTH OF 12" BELOW GRADE.
3. PIPES PASSING THROUGH OR ENCASED IN CONCRETE MUST BE PROPERLY PROTECTED AND SLEEVED.
4. THE SYSTEM MUST MEET ALL REQUIRMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION) AND THE CITY OF PALMETTO BACKFLOW PREVENTION ORDINANCE (LATEST EDITION).
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. BACKFLOW PREVENTER SHALL BE TESTED AT THE TIME OF INSTALLATION.
7. PRESSURE REDUCING VALVE REQUIRED UPSTREAM OF BACKFLOW IF SYSTEM PRESSURE EXCEEDS 80 PSI.
8. 3' MINIMUM CLEARANCE FROM LANDSCAPING PLANTS TO EDGE OF CONCRETE SLAB AND CLEAR OPENING FOR ACCESS FROM STREET.
9. IN ADDITION TO THE PRV, THE BUILDING DEPT. MAY REQUIRE AN APPROVED DEVICE FOR THERMAL EXPANSION CONTROL.
10. REFER TO STANDARD DETAIL SS–13 FOR LIFT STATIONS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05–31–11	REVISED	MINIMUM STANDARD DETAIL 3/4" & 1" BACKFLOW PREVENTER	PAGE WS 10





SLAB SPECIFICATIONS

PIPE DIAMETER	SLAB THICKNESS	REINFORCEMENT
3" TO 10"	4"	6x6 W1.4 WIRE MESH
12" TO 18"	4"	6x6 W3 WIRE MESH

NOTES:

1. THIS DETAIL FOR FIRE PROTECTION ONLY.
2. WHEN PRESSURE TESTING FIRE LINE, TEST AGAINST DOWNSTREAM GATE VALVE.
3. THE SYSTEM MUST MEET ALL REQUIREMENTS OF THE FLORIDA PLUMBING CODE (LATEST EDITION), THE CITY OF PALMETTO BACKFLOW PREVENTION ORDINANCE (LATEST EDITION) AND THE PALMETTO FIRE MARSHALL REQUIREMENTS.
4. ABOVE GROUND PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53 AND PAINTED RED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
6. LANDSCAPE VEGETATION SHALL BE 6 FEET MIN. FROM EDGE OF CONCRETE SLAB. STREET SIDE OF ASSEMBLY SHALL REMAIN OPEN.
7. ALL BOLTING SHALL BE 316 STAINLESS STEEL.
8. SEE GATE VALVE, BOX AND LID STANDARD DETAIL WS-2.
9. SEE CONCRETE THRUST BLOCK DETAIL G-7.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 05-31-11	REVISED	MINIMUM STANDARD DETAIL 3" AND ABOVE FIRE LINE BACK FLOW PREVENTER	PAGE WS 11

CITY OF PALMETTO
ENGINEERING DEPARTMENT

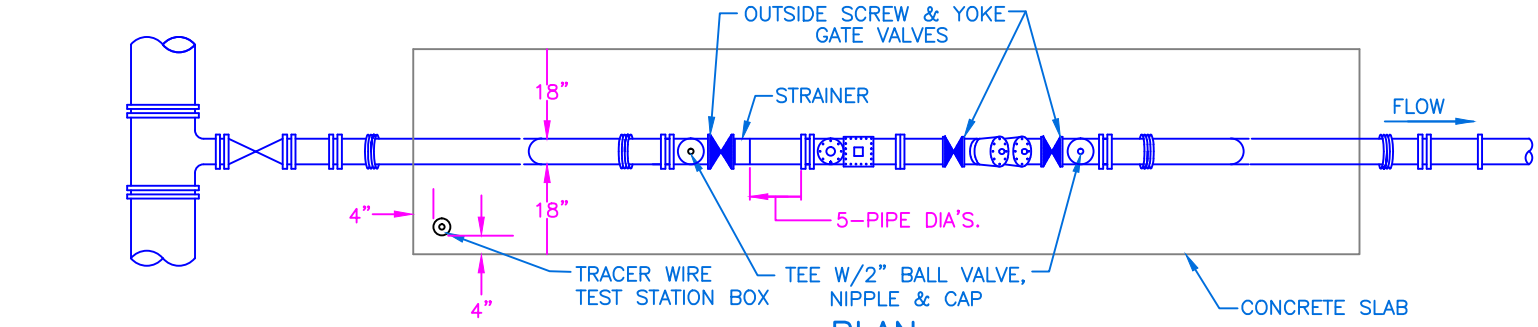
DRAWN BY: BWM
DATE: 06-01-11

REVISED

MINIMUM STANDARD DETAIL

2" AND ABOVE MASTER METER

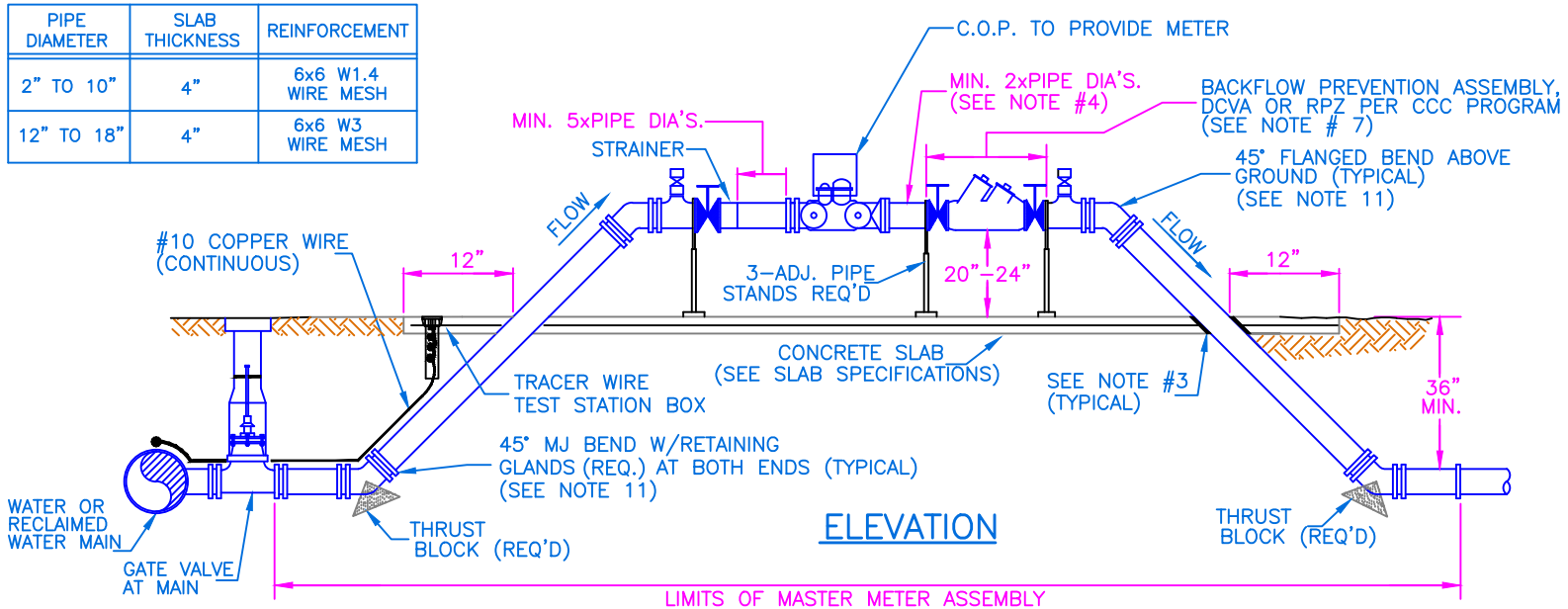
PAGE: WS 12



PLAN

SLAB SPECIFICATIONS

PIPE DIAMETER	SLAB THICKNESS	REINFORCEMENT
2" TO 10"	4"	6x6 W1.4 WIRE MESH
12" TO 18"	4"	6x6 W3 WIRE MESH



ELEVATION

NOTES:

1. ABOVE GROUND PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53, PAINTED BLUE FOR POTABLE WATER OR PANTONE 522C FOR RECLAIMED WATER.
2. METER ASSEMBLY SHALL BE INSTALLED LEVEL AND PRESSURE TESTED AGAINST UPSTREAM GATE VALVE.
3. PIPE ENCASED IN CONCRETE AND ALL BELOW GROUND D.I. PIPE AND FITTINGS SHALL BE POLYETHYLENE WRAPPED.
4. TEE BETWEEN METER AND BACKFLOW IS REQUIRED ON TURBINE METERS. TEE IS NOT REQUIRED ON COMPOUND METERS.
5. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
6. LANDSCAPE VEGETATION SHALL BE 10'-0" MIN. FROM METER & ABOVE GROUND PIPING. STREET SIDE OF ASSEMBLY SHALL REMAIN OPEN.
7. BACKFLOW PREVENTER IS NOT REQUIRED ON RECLAIMED WATER MASTER METER ASSEMBLY, EXCEPT WHERE FERTILIZER OR CHEMICAL INJECTION METHODS WILL BE IN USE.
8. ALL BOLTING SHALL BE 316 STAINLESS STEEL.
9. SEE GATE VALVE, BOX AND LID STANDARD DETAIL WS-2.
10. BALL VALVES SHALL BE FULL PORT WITH LOCKING TABS.
11. SHOULD THERE BE INSUFFICIENT ROOM TO INSTALL THE METER ASSEMBLY, 90° BENDS AND TEES MAY BE USED AS SHOWN IN STANDARD DETAIL WS-13.
12. SEE CONCRETE THRUST BLOCK DETAIL G-7.

CITY OF PALMETTO
ENGINEERING DEPARTMENT

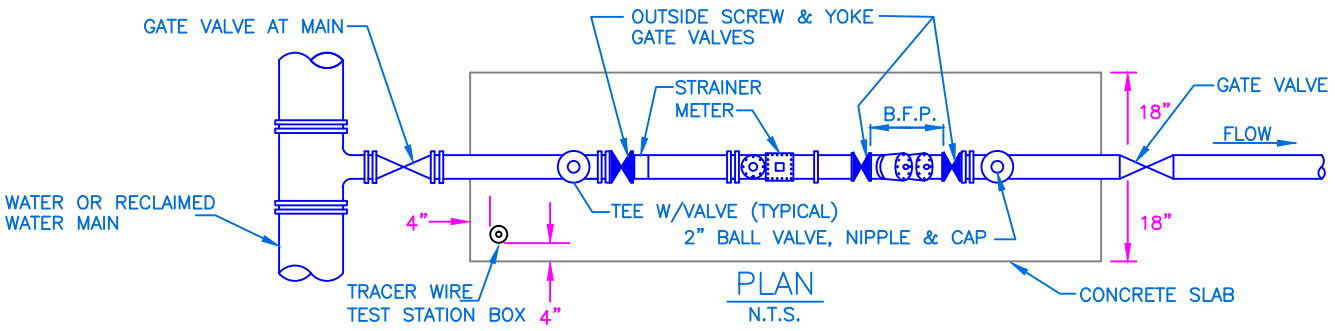
DRAWN BY: BWM
DATE: 06-01-11

REVISED

MINIMUM STANDARD DETAIL

REPLACEMENT FOR 2" AND ABOVE MASTER METER

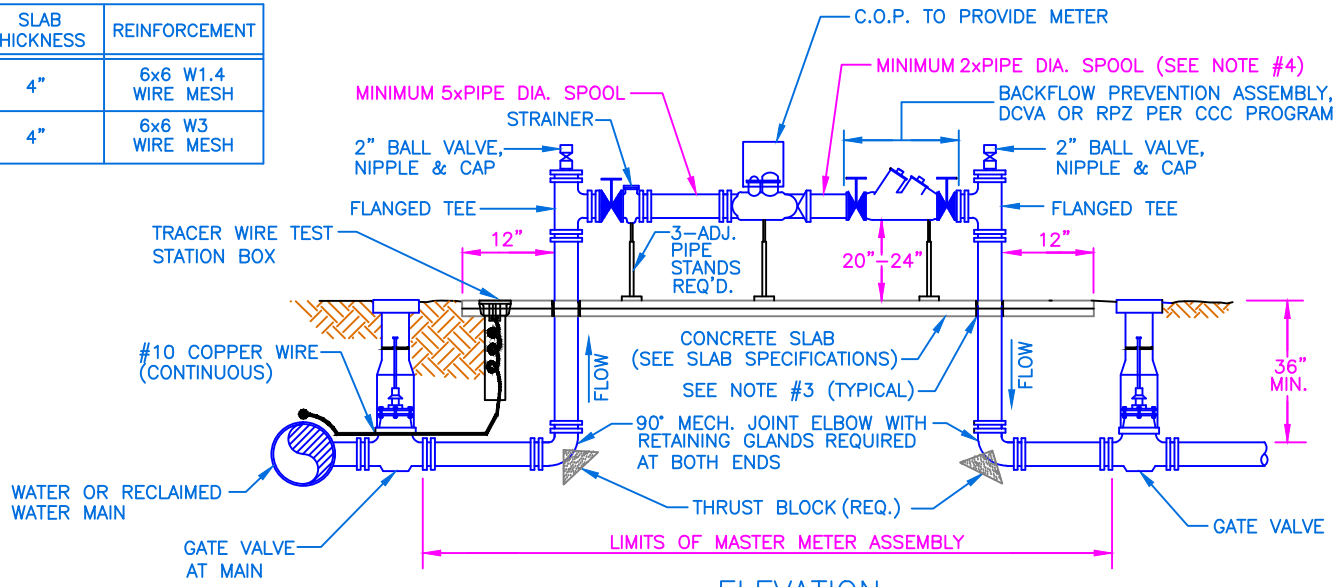
PAGE WS 13



PLAN
N.T.S.

SLAB SPECIFICATIONS

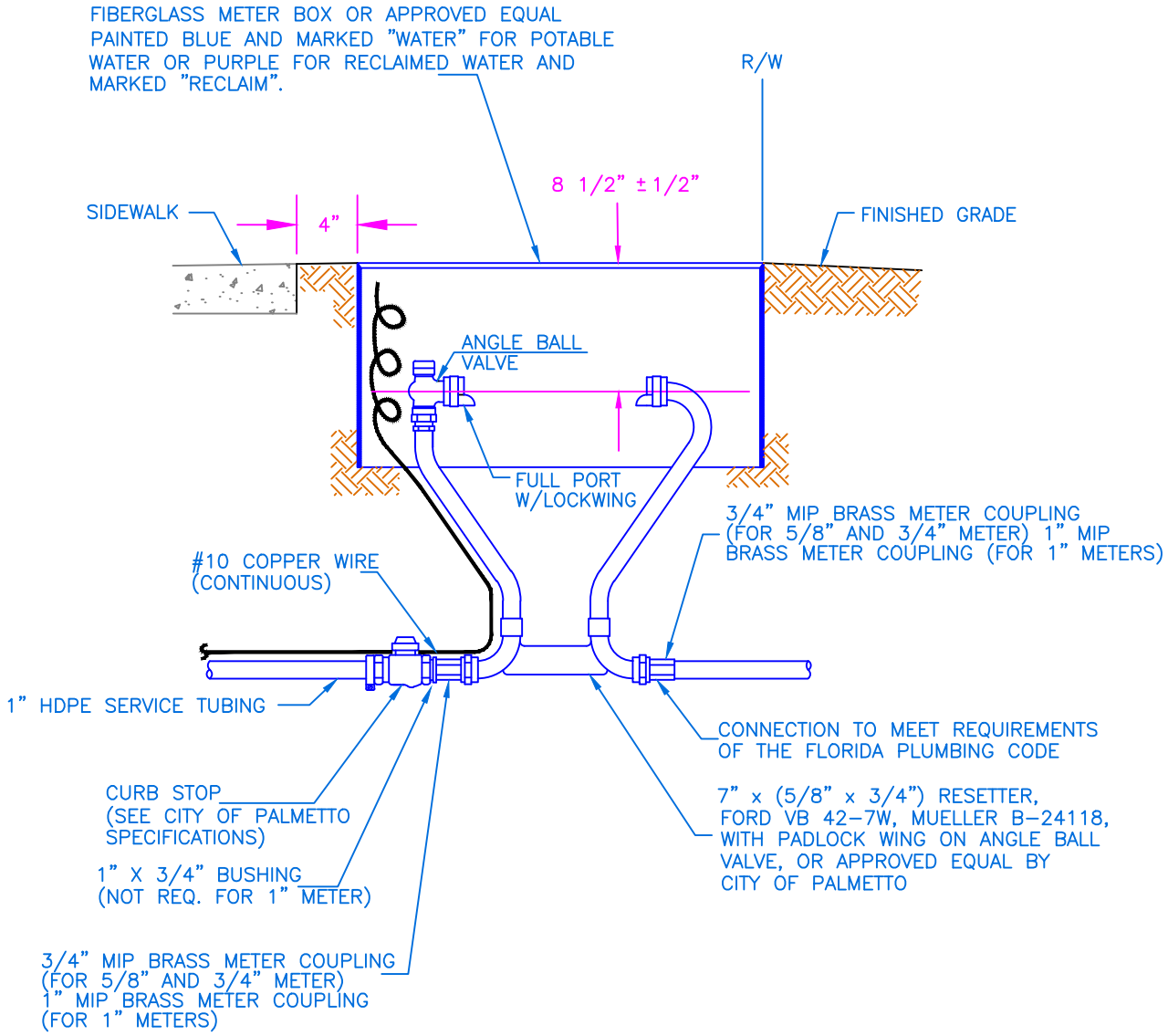
PIPE DIAMETER	SLAB THICKNESS	REINFORCEMENT
2" TO 10"	4"	6x6 W1.4 WIRE MESH
12" TO 18"	4"	6x6 W3 WIRE MESH



ELEVATION
N.T.S.

NOTES:

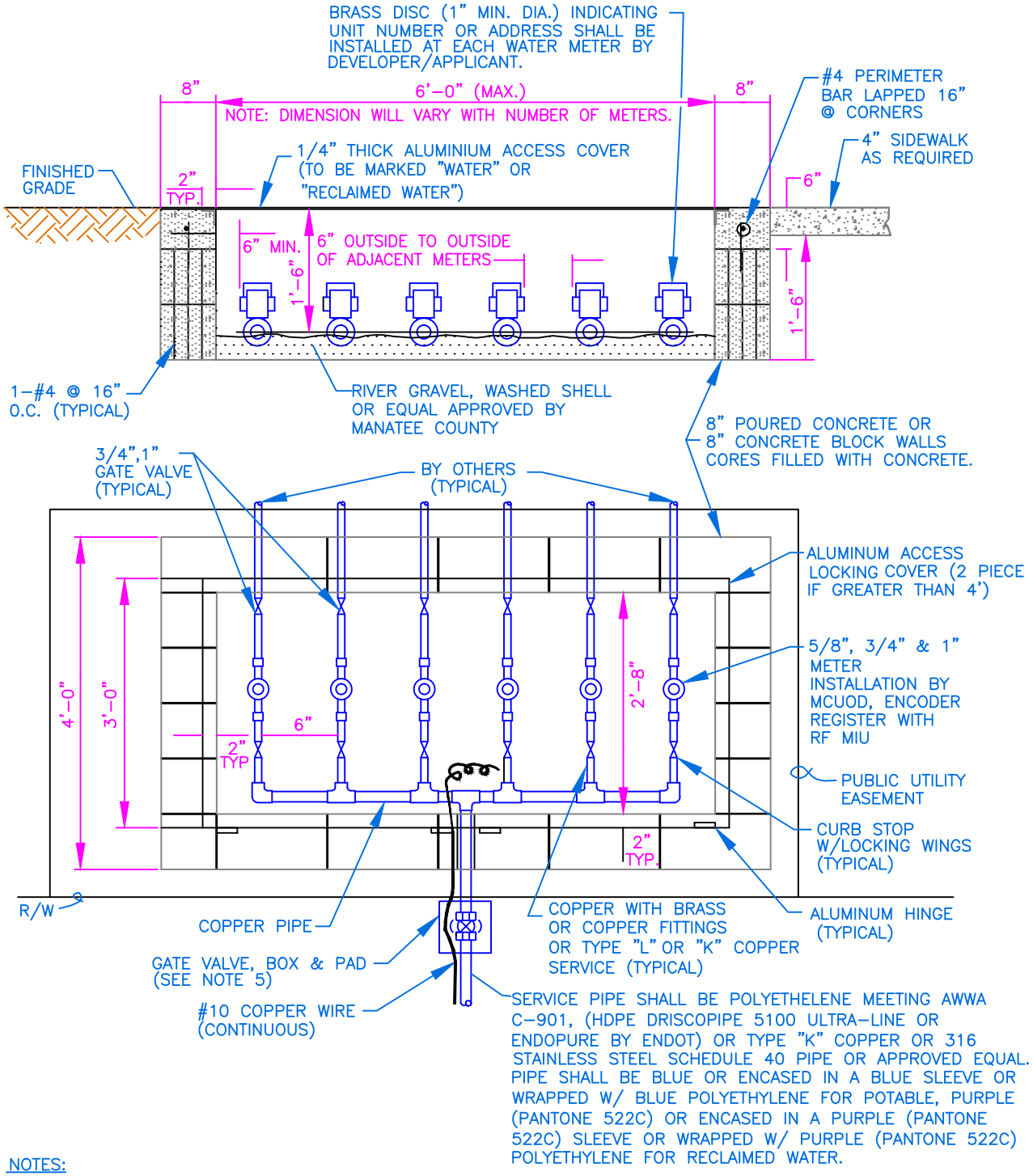
1. ABOVE GROUND PIPING SHALL BE FLANGED DUCTILE IRON CLASS 53, PAINTED BLUE FOR POTABLE WATER OR PURPLE FOR RECLAIMED WATER.
2. METER ASSEMBLY SHALL BE INSTALLED LEVEL AND PRESSURE TESTED AGAINST UPSTREAM GATE VALVE.
3. PIPE ENCASED IN CONCRETE AND ALL BELOW GROUND D.I. PIPE AND FITTINGS SHALL BE POLYETHYLENE WRAPPED.
4. TEE BETWEEN METER AND BACKFLOW IS REQUIRED ON TURBINE METERS. TEE IS NOT REQUIRED ON COMPOUND METERS.
5. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
6. LANDSCAPE VEGETATION SHALL BE 10'-0" MIN. FROM METER & ABOVE GROUND PIPING. STREET SIDE OF ASSEMBLY SHALL REMAIN OPEN.
7. BACKFLOW PREVENTER IS NOT REQUIRED ON RECLAIMED WATER MASTER METER ASSEMBLY, EXCEPT WHERE FERTILIZER OR CHEMICAL INJECTION METHODS WILL BE IN USE. WHEN BACKFLOW PREVENTION ASSEMBLY IS NOT REQUIRED, A SPOOL PIECE OF SAME LAY LENGTH AND AN OS&Y VALVE SHALL BE INSTALLED.
8. ALL BOLTING SHALL BE 316 STAINLESS STEEL.
9. TRACER WIRE TEST STATION BOX NOT REQUIRED FOR REPLACEMENT MASTER METER IF THE EXISTING PIPING TO THE EXISTING METER ASSEMBLY DID NOT HAVE A TRACER WIRE.
10. BALL VALVES SHALL BE FULL PORT WITH LOCKING TABS.
11. SEE CONCRETE THRUST BLOCK DETAIL G-7.



NOTES:

1. FORD 40 SERIES RESETTERS VB43 AND VB44 OR EQUAL FOR 3/4" OR 1" METERS ALSO ALLOWED.
2. METER BOX AND RESETTER ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS.
3. SEE TYPICAL SERVICE CONNECTION STANDARD DETAIL WS-17.
4. RESETTER IS NOT REQUIRED ON EXISTING SERVICE LINE REPLACEMENT THAT INITIALLY DID NOT HAVE A RESETTER, UNLESS THE EXISTING SERVICE LINE IS TO BE RELOCATED.
5. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE R/W IS ONE FOOT (CUL-DE-SAC W/ MEDIAN) A 10 FOOT PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE R/W.

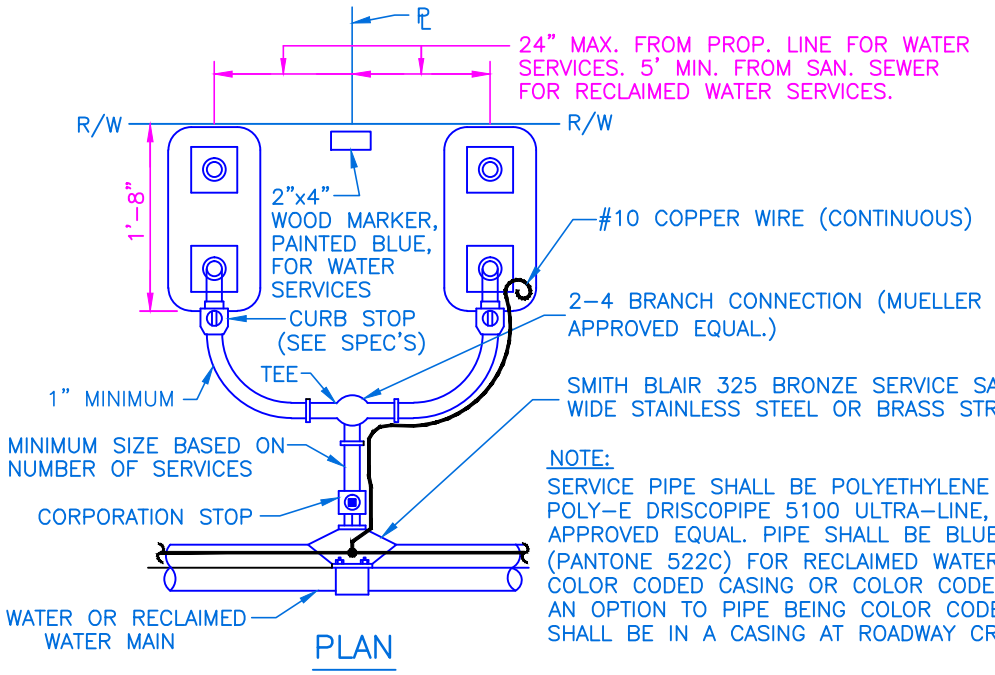
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-01-11	REVISED	MINIMUM STANDARD DETAIL METER BOX ASSEMBLY FOR 5/8" X 3/4", 3/4" & 1" METERS	PAGE WS 14



NOTES:

1. BACKFLOW PREVENTERS MAY BE REQUIRED DOWN STREAM OF METERS. IF A BACKFLOW PREVENTER IS REQUIRED, THE BASE SLAB SHALL BE INSTALLED NO GREATER THAN 6" FROM THE METER VAULT.
2. ALUMINUM ACCESS COVER SHALL HAVE RECESSED LIFTING HANDLES AND BE CAPABLE OF SUPPORTING A LOAD OF 75 P.S.F.
3. PUBLIC UTILITY EASEMENT REQUIRED FOR METER READING AND MAINTENANCE, METER VAULT TO BE MAINTAINED BY WATER CUSTOMER.
4. COVER LIFTING FORCE TO BE NO MORE THAN 50 POUNDS.
5. SEE GATE VALVE, BOX AND LID STANDARD DETAIL WS-2. MJ GATE VALVE SHALL BE SUBSTITUTED WITH THREADED FIP GV. CENTERING COLLAR NOT REQUIRED ON 2" GATE VALVES.

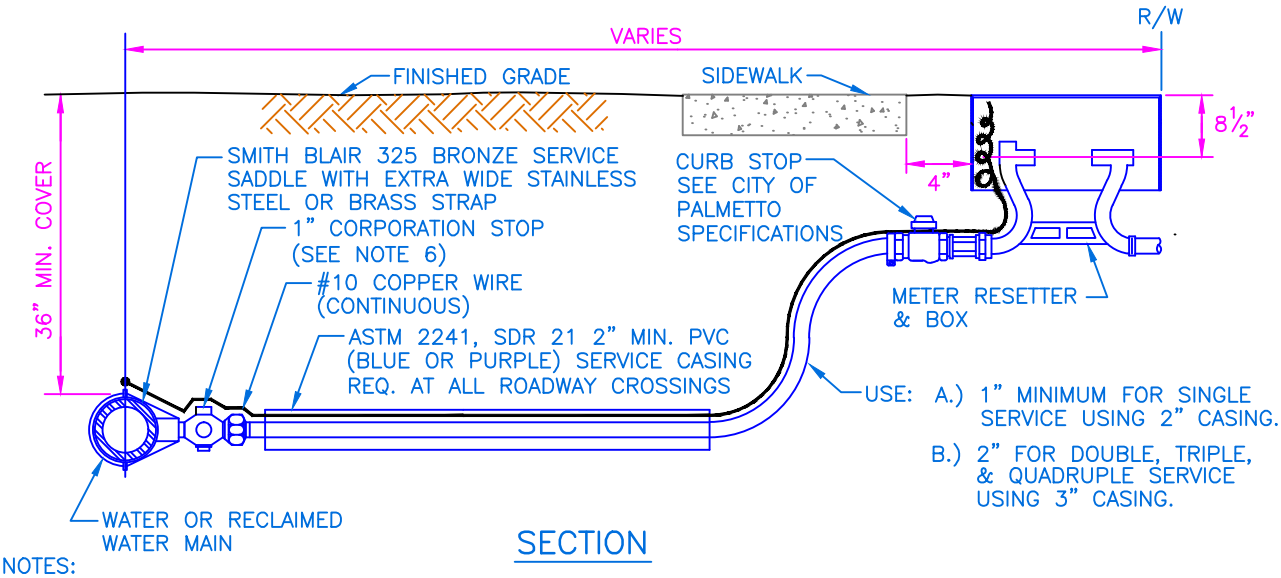
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-01-11	REVISED	MINIMUM STANDARD DETAIL MULTIPLE METER VAULT	PAGE WS 15



PLAN

NOTE:

SERVICE PIPE SHALL BE POLYETHYLENE MEETING AWWA C-901, POLY-E DRISCOPIPE 5100 ULTRA-LINE, ENDOPURE BY ENDOT, OR APPROVED EQUAL. PIPE SHALL BE BLUE FOR WATER OR PURPLE (PANTONE 522C) FOR RECLAIMED WATER. PIPING MAY BE IN A COLOR CODED CASING OR COLOR CODED POLYETHELENE WRAP, AS AN OPTION TO PIPE BEING COLOR CODED. ALL SERVICE PIPING SHALL BE IN A CASING AT ROADWAY CROSSINGS.

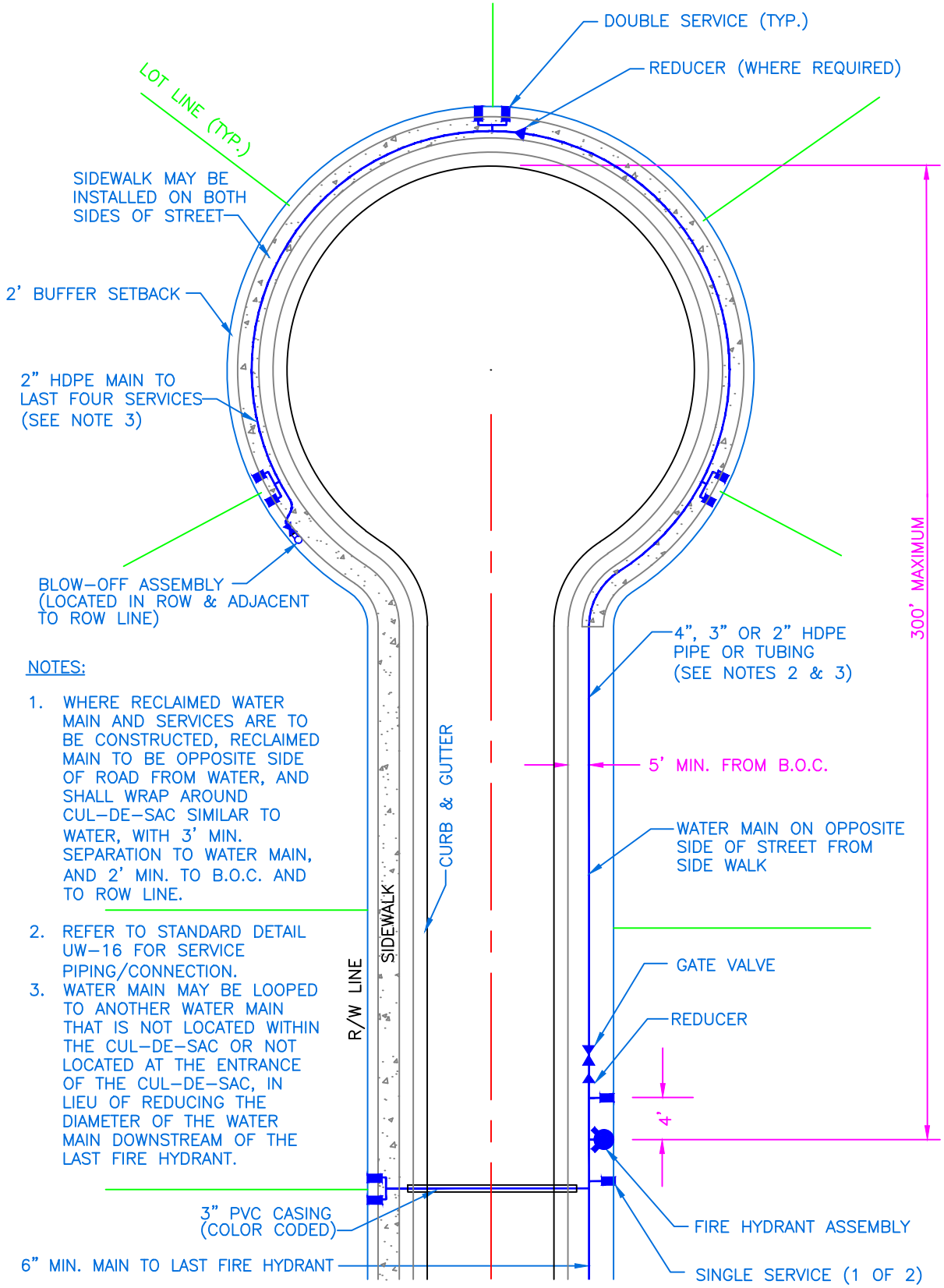


SECTION

NOTES:

1. ALL SERVICE TAPS TO BE LOCATED IN THE FIELD. TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVALS OR WITHIN 2'-0" FROM BELL OR SPIGOT ENDS.
2. METER BOXES & RESETTERS ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS.
3. "WM" OR "RWM" TO BE IMPRESSED INTO THE NEWLY POURED CONCRETE CURB ALONG WITH DISTANCE IN FEET TO THE METER. IF NO CURB, INSTALL A BLUE DISC WITH "WM" OR A PURPLE DISC WITH "RWM" AND A 1/8"x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
4. #10 COPPER WIRE SHALL BE INSTALLED WITH WATER AND RECLAIMED MAIN AND ALL SERVICES. SERVICE WIRE SHALL BE CONNECTED TO THE TRACER WIRE ALONG THE MAIN.
5. WATER AND RECLAIMED WATER SERVICE LINES TO BE 5' MINIMUM FROM SEWER SERVICE PIPES.
6. FOR 2" SERVICES REPLACE CORPORATION STOP WITH 2" RESILIENT WEDGE GATE VALVE W/BOX, LID & TAG. SEE STANDARD DETAIL WS-2. MJ GATE VALVE IN DETAIL WS-2 SHALL BE SUBSTITUTED WITH THREADED FIP GATE VALVE AND BRASS NIPPLE. CENTERING COLLAR NOT REQUIRED ON 2" GATE VALVES.
7. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE R/W IS ONE FOOT (CUL-DE-SAC W/ MEDIAN) A 10 FOOT PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE R/W.

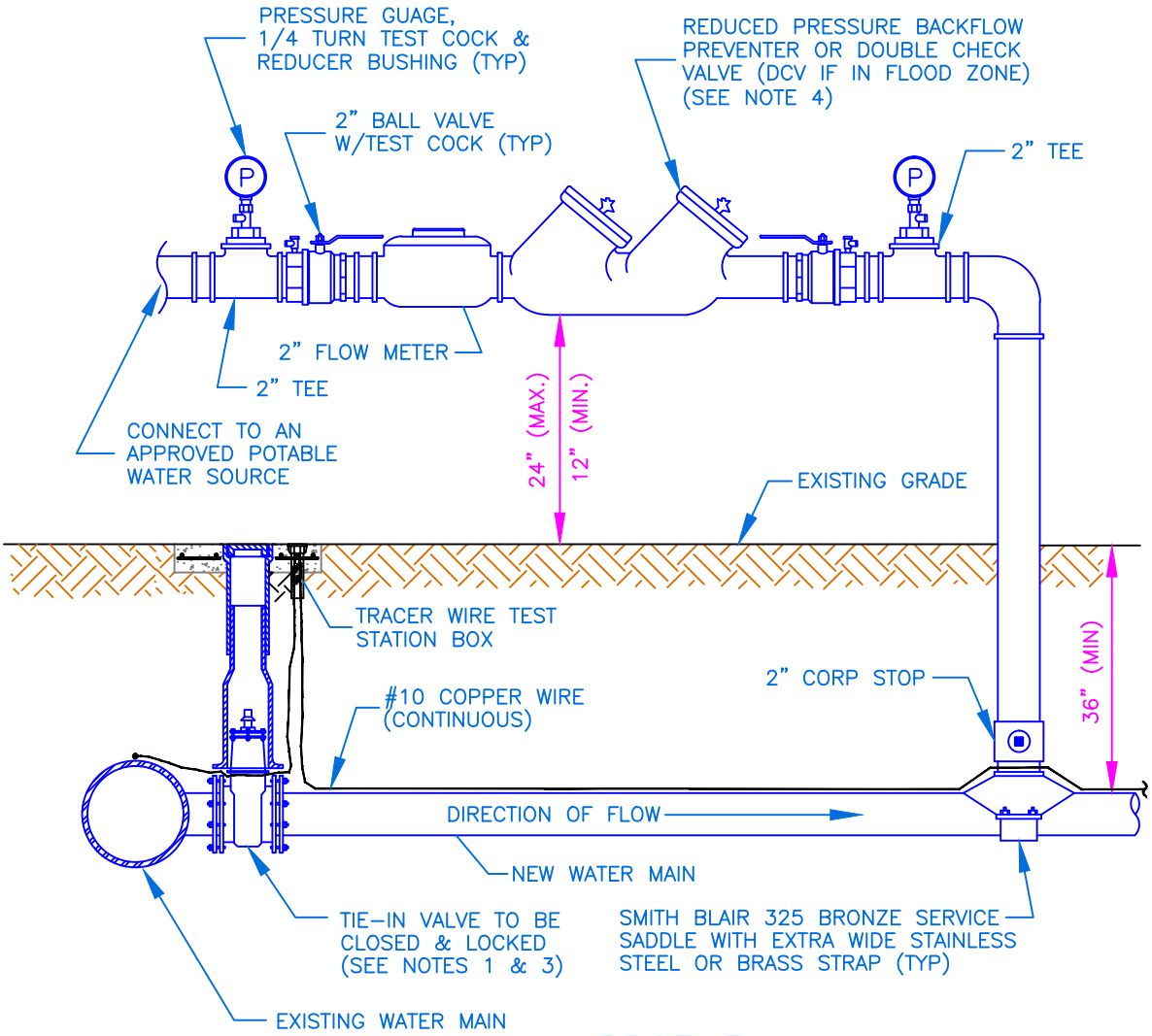
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY: BWM DATE: 06-01-11	REVISED	MINIMUM STANDARD DETAIL TYPICAL SERVICE CONNECTION	PAGE WS 16



NOTES:

1. WHERE RECLAIMED WATER MAIN AND SERVICES ARE TO BE CONSTRUCTED, RECLAIMED MAIN TO BE OPPOSITE SIDE OF ROAD FROM WATER, AND SHALL WRAP AROUND CUL-DE-SAC SIMILAR TO WATER, WITH 3' MIN. SEPARATION TO WATER MAIN, AND 2' MIN. TO B.O.C. AND TO ROW LINE.
2. REFER TO STANDARD DETAIL UW-16 FOR SERVICE PIPING/CONNECTION.
3. WATER MAIN MAY BE LOOPED TO ANOTHER WATER MAIN THAT IS NOT LOCATED WITHIN THE CUL-DE-SAC OR NOT LOCATED AT THE ENTRANCE OF THE CUL-DE-SAC, IN LIEU OF REDUCING THE DIAMETER OF THE WATER MAIN DOWNSTREAM OF THE LAST FIRE HYDRANT.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-01-11	REVISED	MINIMUM STANDARD DETAIL CUL-DE-SAC MAINS	PAGE WS 17



PROFILE

NOTES:

1. FOR TIE-IN VALVE, SEE DETAIL WS-4 FOR TAPPING SLEEVE VALVE, DETAIL WS-2 FOR GATE VALVE AND DETAIL WS-3 FOR BUTTERFLY VALVE.
2. CORPORATION STOP CONNECTIONS TO WATER MAINS SHALL BE AT A SUFFICIENT DISTANCE FROM NEW TAPPING SLEEVE & VALVE (TIE-IN VALVE). ALL CORPORATION STOP TAPS SHALL BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP DIAMETERS (WHICHEVER IS LARGER) FROM THE NEW TIE-IN VALVE (TAPPING VALVE & SLEEVE). A CROSS MAY BE INSTALLED IF THE EXISTING WATER MAIN IS NOT LARGER THAN THE NEW WATER MAIN.
3. IF THE EXISTING WATER MAIN IS LOCATED UNDER PAVEMENT OR CLOSE TO THE ROADWAY, BOTH JUMPER CORPORATION STOPS MAY CONNECT TO THE NEW WATER MAIN LOCATED OUTSIDE OF THE PAVEMENT. AN ADDITIONAL GATE VALVE OR BUTTERFLY VALVE SHALL BE INSTALLED AND THE VALVE MAY BE LOCATED AT THE ROW LINE. PIPING AND APPURTENANCES BETWEEN THE EXISTING MAIN AND ISOLATION VALVE AND JUMPER SHALL BE DISINFECTED BY SPRAYING OR SWABBING.
4. BACKFLOW PREVENTER SHALL BE STRUCTURALLY SUPPORTED.
5. SEE DETAIL WS-19 FOR ADDITIONAL JUMPER CONNECTION NOTES.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-01-11	REVISED	MINIMUM STANDARD DETAIL TEMPORARY JUMPER CONNECTION	PAGE WS 18

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE POTABLE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS WITH THE FOLLOWING EXCEPTIONS:
   A. PROJECTS THAT INCLUDE A PERMANENT BACKFLOW PREVENTER AT THE RIGHT-OF-WAY WHICH IS ADJACENT TO THE EXISTING WATER MAIN;
   B. PROJECTS THAT INCLUDE NEW WATER MAINS THAT ARE LESS THAN OR EQUAL TO 18 LINEAR FEET IN LENGTH; OR
   C. OTHER PROPOSED CASES THAT ARE APPROVED BY CITY OF PALMETTO AND THE CONSTRUCTION DRAWINGS SPECIFICALLY STATE THAT A TEMPORARY JUMPER CONNECTION IS NOT REQUIRED.
2. A TEMPORARY JUMPER SHALL BE USED AND BE CONNECTED TO AN APPROVED POTABLE WATER SOURCE (E.G., EXISTING FIRE HYDRANT, EXISTING MAIN, EXISTING SERVICE TAP OR TANK TRUCK, ETC.) AS SHOWN IN THE STANDARD TEMPORARY JUMPER DETAIL WS-18. A TEMPORARY JUMPER SHALL BE USED FOR FILLING ANY NEW WATER MAIN OF ANY SIZE, FOR FLUSHING OF NEW MAINS AND FOR DISINFECTION OF ANY NEW MAIN OF ANY SIZE. THE JUMPER THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFER THE FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) OR THE FLORIDA DEPARTMENT OF HEALTH (FDOH) HAS BEEN OBTAINED.
3. LOCATIONS AND ORIENTATION OF JUMPERS ASSOCIATED WITH CONNECTIONS TO EXISTING WATER MAINS THAT ARE LOCATED UNDER THE ROADWAY PAVEMENT SHALL BE APPROVED ON A CASE-BY-CASE BASIS.
4. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION. UNLESS APPROVED OTHERWISE, THE TAPPING SLEEVE, AND EXTERIOR OF THE EXISTING MAIN TO BE TAPPED, PIPING WITHIN THE JUMPER, AND NEW PIPING SHOWN ON STANDARD TEMPORARY JUMPER DETAIL WS-18 SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION 4.6 OF AWWA C651. UNLESS APPROVED OTHERWISE, THE REMAINDER OF THE NEW MAIN SHALL BE DISINFECTED IN ACCORDANCE WITH SECTION 4.4.3.3 OF AWWA C651. THE USE OF TABLETS IS PROHIBITED.
5. A SEPARATE AND SUCCESSFUL HYDROSTATIC TEST ON THE NEW SYSTEM SHALL OCCUR BETWEEN THE TIE-IN VALVE AND THE CLOSEST DOWNSTREAM GATE VALVE OR BUTTERFLY VALVE BEFORE PERFORMING A HYDROSTATIC TEST ON THE REMAINDER OF THE NEWLY-CONSTRUCTED WATER MAIN. THE TIE-IN VALVE AND THE CLOSEST DOWNSTREAM GATE VALVE OR BUTTERFLY VALVE SHALL BE CLOSED DURING THE HYDROSTATIC TEST OF THE REMAINDER OF THE NEWLY CONSTRUCTED WATER MAIN.
6. THE JUMPER SHALL INCLUDE A FLOW METER TO ENSURE THAT THE FLOW FROM THE SUPPLY SOURCE IS AT A CONSTANT MEASURED RATE WHILE CHLORINATING THE NEW MAIN. THE CHLORINE CONCENTRATION SHALL BE MEASURED AT REGULAR INTERVALS TO ENSURE THAT IT IS FED AT A CONSTANT RATE OF NOT LESS THAN 25 MILLIGRAMS PER LITER (MG/L) OF FREE CHLORINE.
7. AFTER PRELIMINARY FLUSHING OF THE NEW WATER MAIN, A MINIMUM FEED CONCENTRATION OF 25 MG/L OF FREE CHLORINE IS REQUIRED. THE CHLORINATED WATER SHALL BE RETAINED IN THE MAIN FOR AT LEAST 24 HOURS AND ALL PORTIONS OF THE MAIN SHALL HAVE A RESIDUAL OF NOT LESS THAN 10 MG/L OF FREE CHLORINE AT THE END OF THIS 24-HOUR PERIOD. THE CONTRACTOR SHALL PROVIDE THE INSPECTOR DOCUMENTATION THAT THE AFOREMENTIONED CONCENTRATIONS HAVE BEEN ACHIEVED. FINAL FLUSHING OF THE MAINS SHALL OCCUR PRIOR TO PERFORMING BACTERIOLOGICAL EVALUATIONS AND THE TOTAL CHLORINE RESIDUAL IN THE MAINS SHALL BE NO MORE THAN 4.0 MG/L IN ANY BACTERIOLOGICAL SAMPLE. IF THE CHLORINE RESIDUAL EXCEEDS 4.0 MG/L, A SAMPLE SHALL BE OBTAINED AT THE TEST COCK LOCATED UPSTREAM OF THE BACKFLOW PREVENTER, TO ENSURE THAT THE TOTAL CHLORINE RESIDUAL OF THE NEW MAIN DOES NOT EXCEED THE RESIDUAL OF THE EXISTING SYSTEM.
8. THE JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS CONTINUOUSLY AFTER DISINFECTION AND UNTIL FDEP/FDOH CLEARANCE LETTER IS OBTAINED.
9. ALL TEMPORARY BACKFLOW DEVICES OR "JUMPERS" UTILIZED DURING PIPELINE CONSTRUCTION MUST SHOW CERTIFICATION THAT THEY HAVE BEEN TESTED ANNUALLY ACCORDING TO THE FLORIDA BUILDING CODE, PLUMBING SECTION, CHAPTER 3, SECTION 312.9.1, 312.9.2, CHAPTER 6, SECTION 608, AND RESOLUTION R87-125. ANNUAL CERTIFICATION MUST BE VALID AT TIME OF INSTALLATION AND PROVIDED TO THE CITY OF PALMETTO INSPECTOR UPON REQUEST.
10. EXCEPT AS REQUIRED TO FLUSH LINES GREATER THAN 6 INCHES IN DIAMETER, THE LOCKABLE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY CITY OF PALMETTO. THE TIE-IN VALVE SHALL REMAIN CLOSED AND LOCKED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY THE FDEP/FDOH AND ALL OTHER PERTINENT AGENCIES.
11. AFTER RECEIPT OF CLEARANCE FOR USE BY FDEP/FDOH, CITY OF PALMETTO, AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2-INCH BRASS OR PVC STOPS.
12. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE, FLOW METER, FITTINGS, VALVES, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
13. IF THE WATER MAIN TO RECEIVE FINAL FLUSHING IS GREATER THAN 6 INCHES IN DIAMETER OR SUCH LENGTH THAT A FULL PIPE FLUSH AT THE MINIMUM VELOCITY CANNOT BE ACCOMPLISHED, THE FOLLOWING PROCEDURE SHALL BE UTILIZED:
   A. CHECK THE PRESSURE ON THE UPSTREAM SIDE OF THE JUMPER TO ENSURE THAT THERE IS ADEQUATE PRESSURE ON THE EXISTING SYSTEM.
   B. OPEN DOWNSTREAM VALVES IN THE NEW SYSTEM PRIOR TO FLUSH.
   C. PARTIALLY OPEN THE TIE-IN VALVE AND MAINTAIN A LOWER PRESSURE ON THE DOWNSTREAM SIDE OF THE JUMPER THAN THE PRESSURE ON THE UPSTREAM SIDE OF THE JUMPER WHILE FLUSHING/PIGGING THE NEW WATER MAIN.
   D. CITY OF PALMETTO PERSONNEL SHALL OPERATE THE TIE-IN VALVE TO ENSURE THAT A PRESSURE DIFFERENTIAL IS MAINTAINED.
   E. CLOSE TIE-IN VALVE AND THEN CLOSE ALL DOWNSTREAM VALVES IN THE NEW SYSTEM.
14. THE TIE-IN VALVE SHALL REMAIN CLOSED IF THE POTABLE WATER SOURCE IS A TANK TRUCK.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 06-01-11	REVISED	MINIMUM STANDARD DETAIL TEMPORARY JUMPER CONNECTION NOTES	PAGE WS 19

DEPARTMENT OF PUBLIC WORKS

UTILITY SPECIFICATIONS

2011 EDITION

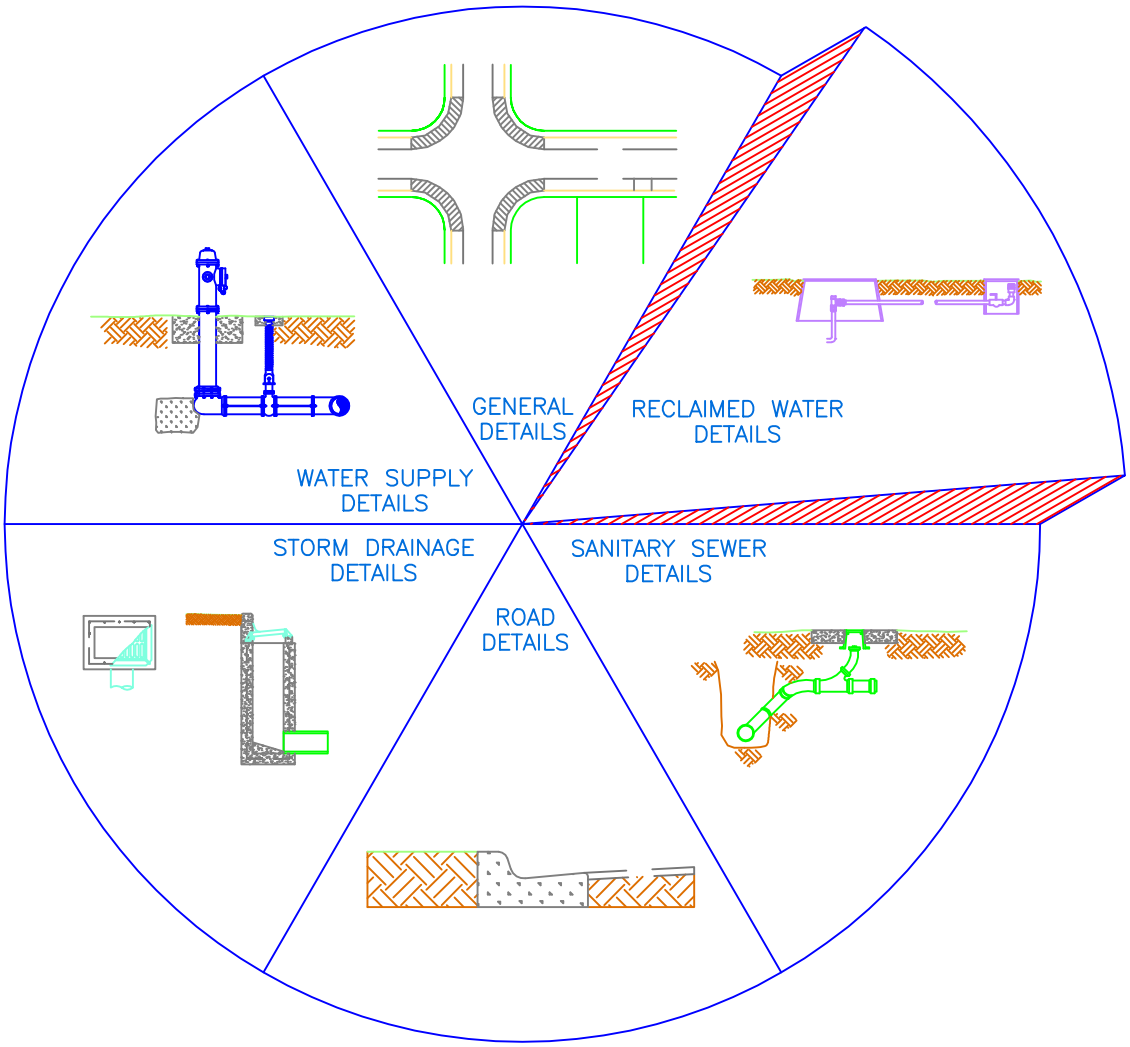


TABLE OF CONTENTS

UTILITY STANDARDS – RECLAIMED WATER

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL TABLE OF CONTENTS RECLAIMED WATER	PAGE RW 0.1

RECLAIMED LINE SPECIFICATIONS

0" TO BUT LESS THAN 4" DIAMETER USE SCHEDULE 40

4" OR GREATER USE C-900

ALL RECLAIM WATER PIPES SHALL BE PURPLE

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL RECLAIMED LINE SPECIFICATIONS	PAGE RW 0.9

CITY OF PALMETTO
ENGINEERING DEPARTMENT

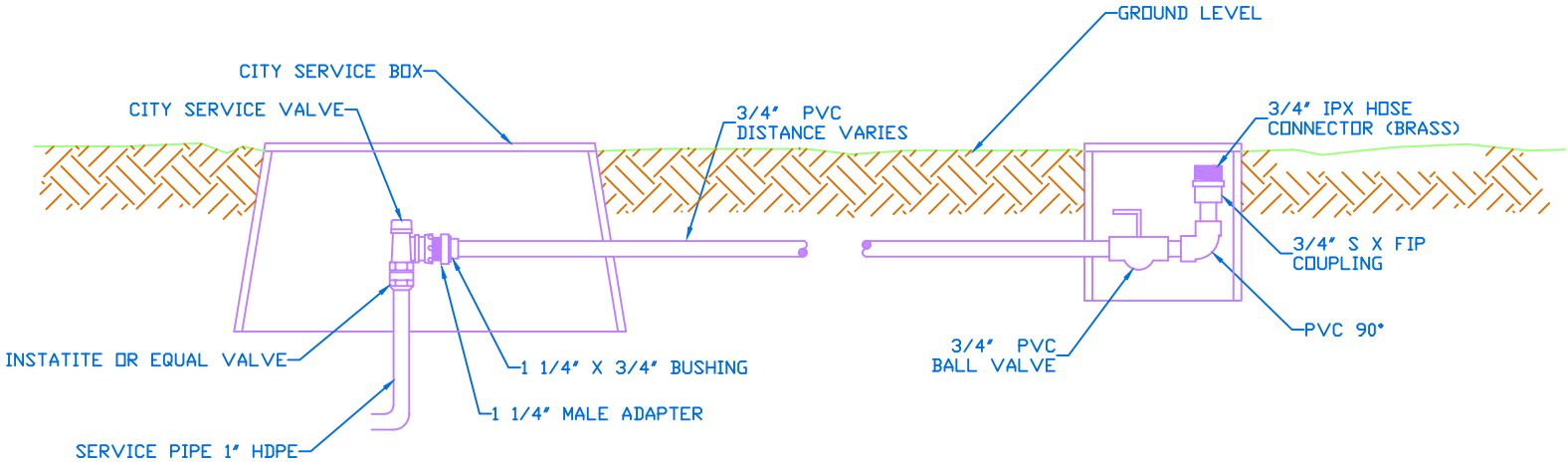
DRAWN BY: BWM
DATE: 5-20-11

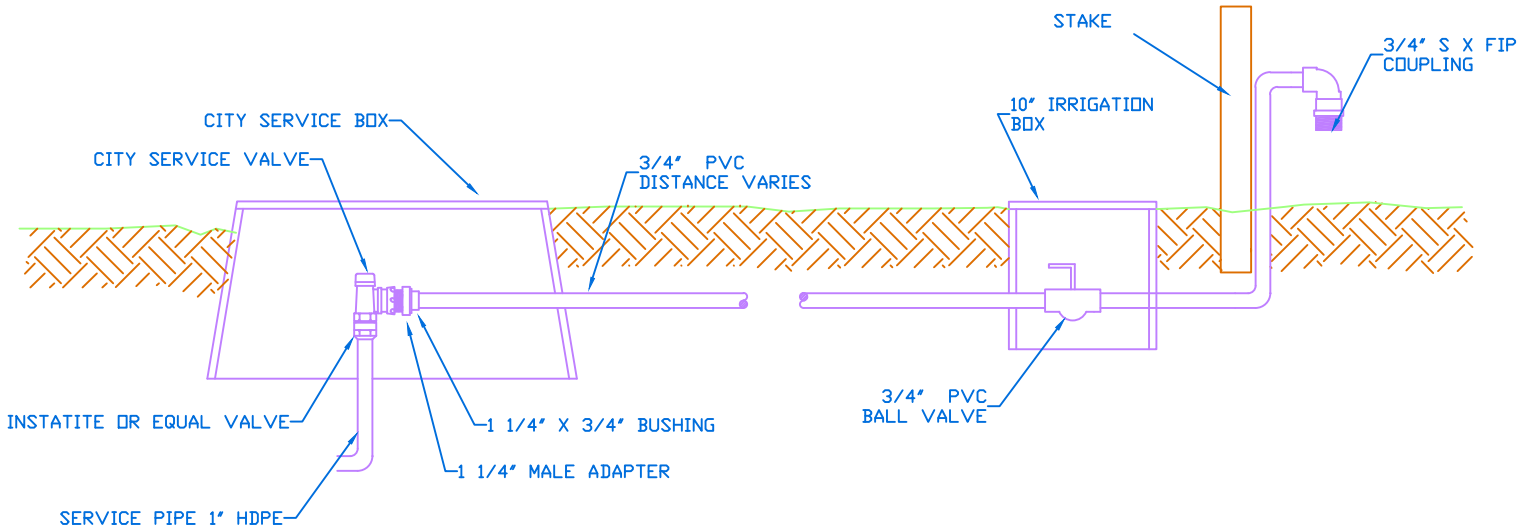
REVISED

MINIMUM STANDARD DETAIL

TYPICAL HOSE CONNECTION FOR RECLAIMED WATER

PAGE: RW 1





NOTE: OWNERS VALVE AND HOSE CONNECTION MAY BE LOCATED AT ANY LOCATION WITHIN THE OWNERS PROPERTY

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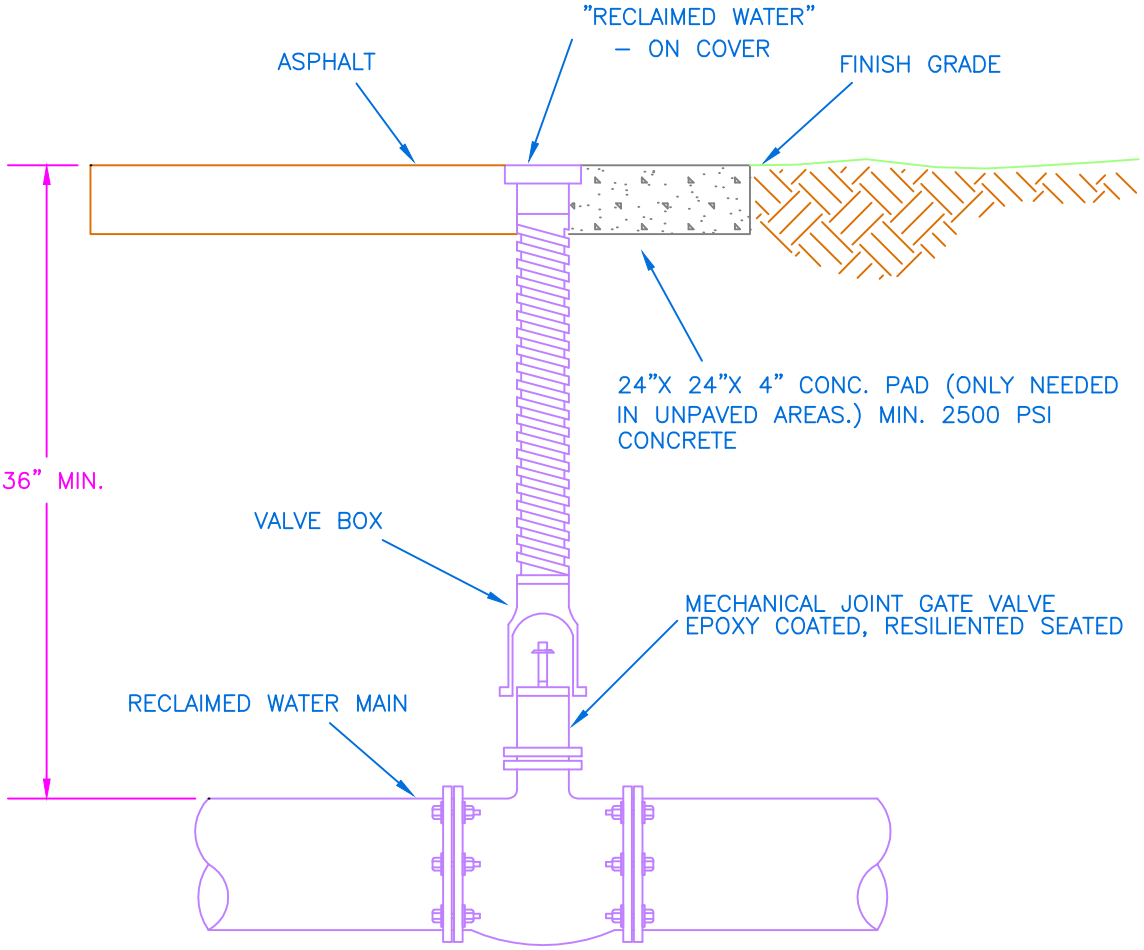
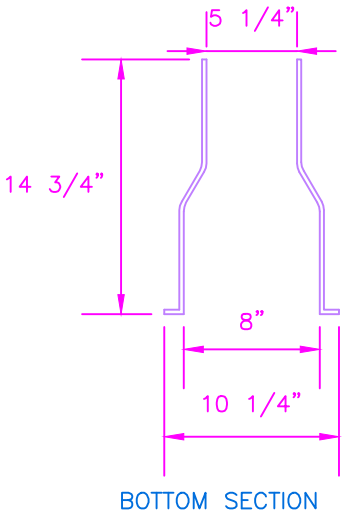
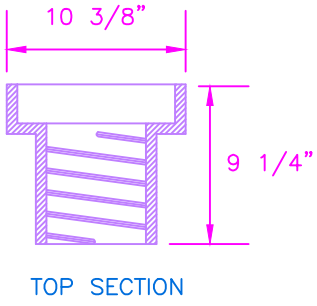
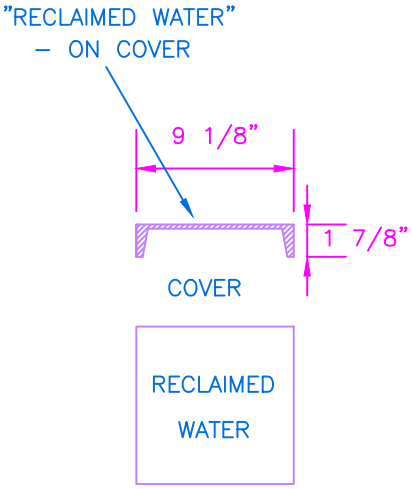




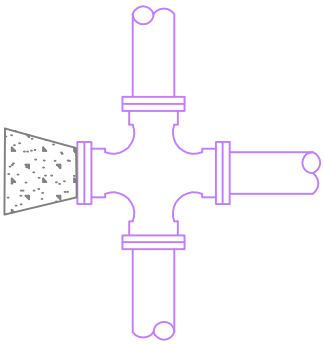




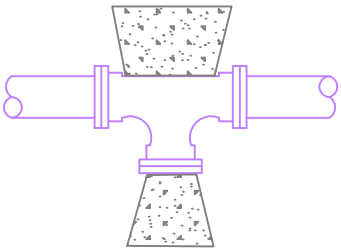
NOTE:

1. USE 7503 ADJUSTABLE SCREW TYPE VALVE BOX AND COVER

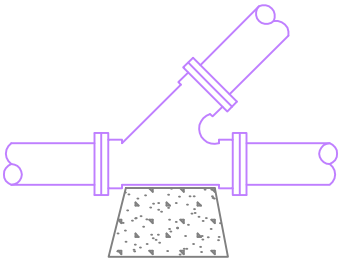
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL RECLAIMED WATER & VALVE BOX	PAGE RW 2



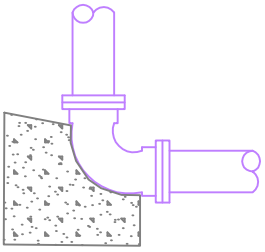
CROSS WITH PLUG



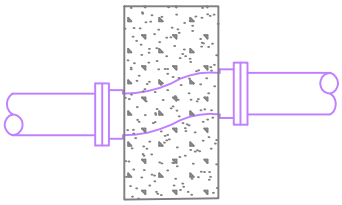
TEE WITH PLUG



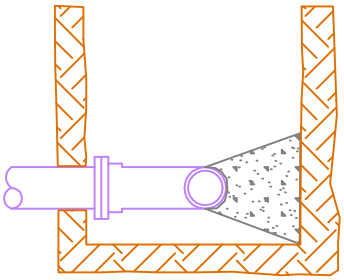
WYE



BEND



OFF–SET

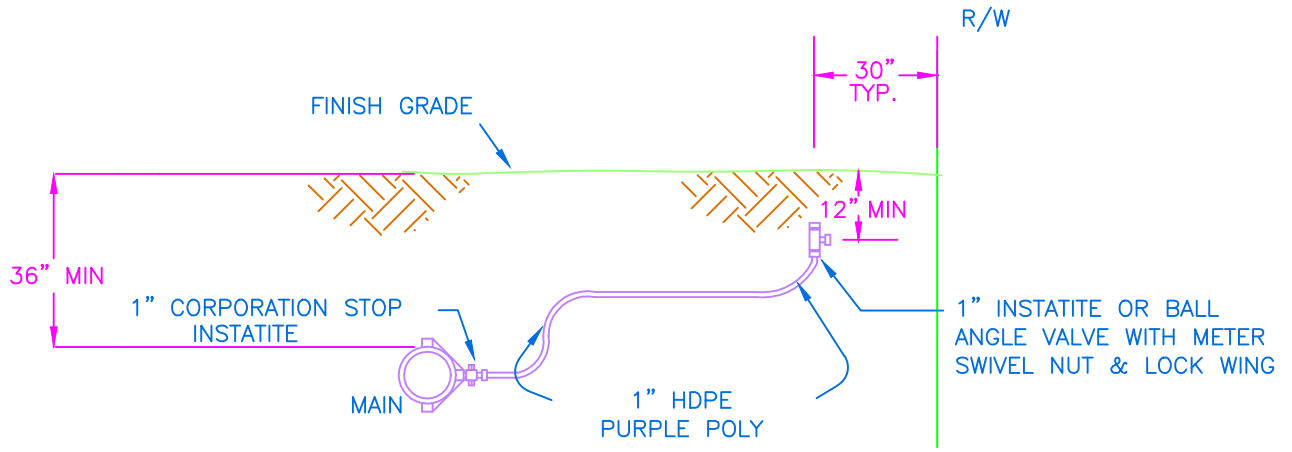


TYPICAL SECTION

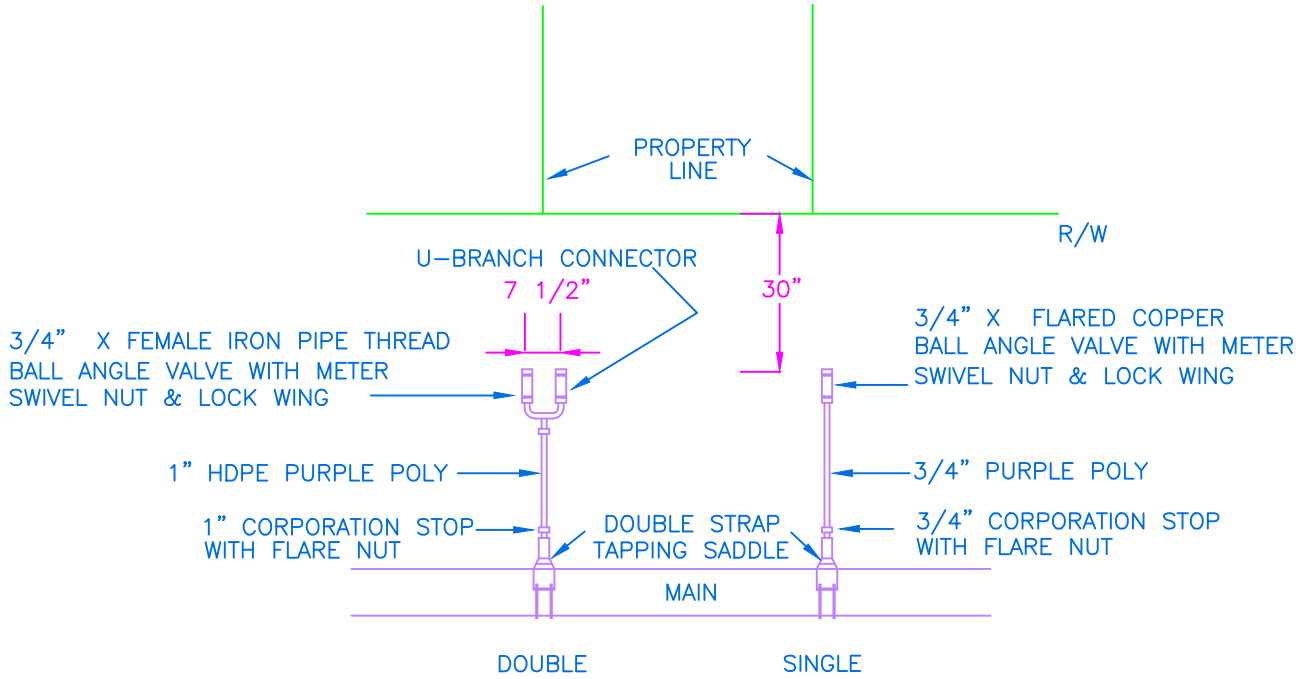
NOTES:

1. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
2. IN UNSTABLE MATERIALS, FOR VERTICAL BENDS OR OFFSETS, BLOCKING SHALL BE DESIGNED FOR ACTUAL THRUST USING THE FORMULA P=125(H)(A)SIN1/2 △ WHERE H=1 1/2 RATED HEAD, A=AREA OF PIPE IN SQ. FT, △=ANGLE, AND P=THRUST IN POUNDS.
3. BEFORE POURING, PLUGS SHALL BE WRAPPED WITH VISQUEEN AND A BOARD IN FRONT.
4. CONCRETE SHALL BE 2500 PSI.
5. MEGALUG, RESTRAINTS SEE DETAILS G–6, G–7, G–8, G–9 AND G–10
6. DESIGN ENGINEER TO LIST SIZES OF THRUST BLOCKS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL THRUST BLOCKS	PAGE RW 3



SECTION



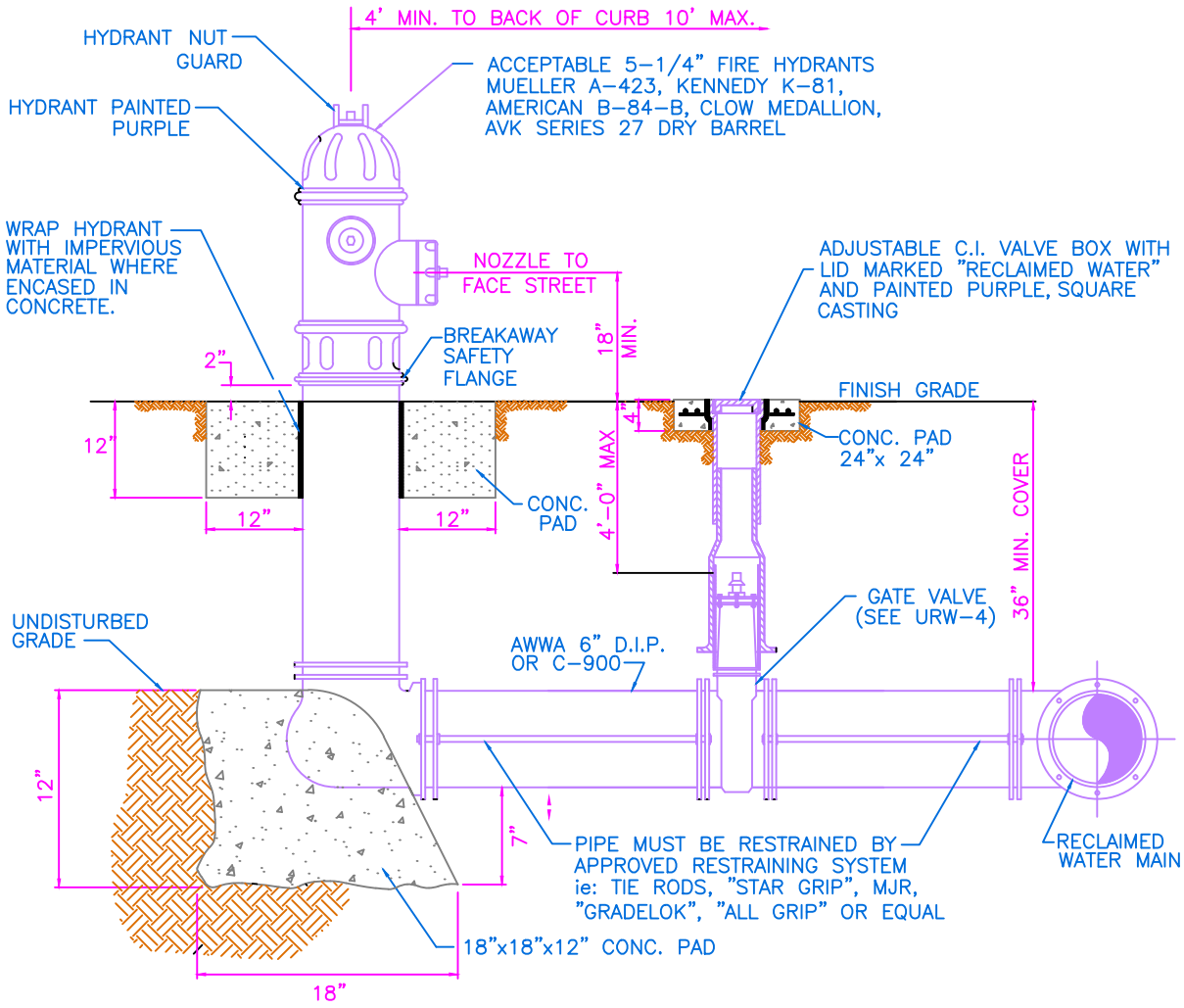
PLAN

NOTE:

1.) NEW SUBDIVISIONS–CONTRACTORS ARE TO FURNISH 10" NDS IRRIGATION BOX WITH STATEMENT: "RECLAIMED WATER, DO NOT DRINK" IN BOTH ENGLISH & SPANISH.

2.) IRRIGATION BOX TO HAVE METAL TAG / RING AFFIXED.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5–20–11	REVISED	MINIMUM STANDARD DETAIL RECLAIMED WATER SERVICE	PAGE RW 4



NOTES:

1. WEEPHOLES TO BE PLUGGED WITH BRASS PLUGS.
2. FIRE HYDRANTS SHALL BE A MINIMUM OF 6'-0" OFF EDGE OF PAVEMENT AND 10' MAX. TO BACK OF CURB WHERE POSSIBLE, AND WHERE A SIDEWALK IS TO BE INSTALLED, LOCATED BETWEEN THE SIDEWALK AND EDGE OF ROAD.
3. ALL RECLAIMED WATER HYDRANTS SHALL BE PAINTED PURPLE. HYDRANT SHALL BE ALL CAST IRON CONSTRUCTION.
4. PAY ITEMS FOR FIRE HYDRANT ASSEMBLIES SHALL INCLUDE HYDRANT, VALVE, PIPING, MAINLINE TEE, HARNESSING, VALVE BOX AND CONCRETE ENCASEMENTS.
5. FIRE HYDRANT OPERATING NUTS SHALL BE OPERATED WITH SPECIAL WRENCHES FOR USE WITH NUT GUARD.
6. FIRE HYDRANTS SHALL BE PREFERABLY PLACED SO THAT STORM WATER FLOWS AWAY FROM AND NOT TOWARD THE HYDRANT.
7. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR WATER LINES. IF EXTENSIONS ARE REQUIRED, THE COST SHALL BE INCLUDED IN THE PRICE BID.
8. FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GRADELOK" OFFSET FITTING.
9. RAISED REFLECTIVE PAVEMENT MARKER (PURPLE) SHALL BE INSTALLED AT CENTERLINE OF PAVEMENT ADJACENT TO EACH HYDRANT.
10. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TYPICAL FIRE HYDRANT ASSEMBLY	PAGE RW 5

CITY OF PALMETTO
ENGINEERING DEPARTMENT

DRAWN BY BWM

DATE 5-20-11

REVISED

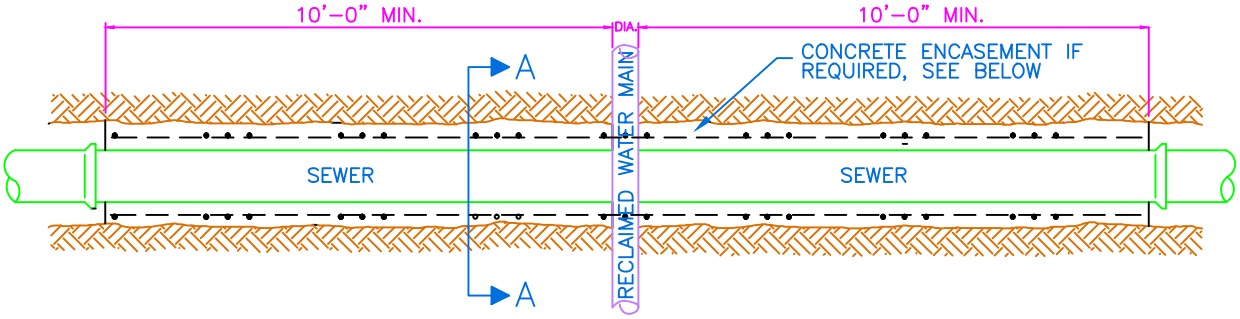
MINIMUM STANDARD DETAIL

TYPICAL RECLAIMED WATER/SEWER CROSSING

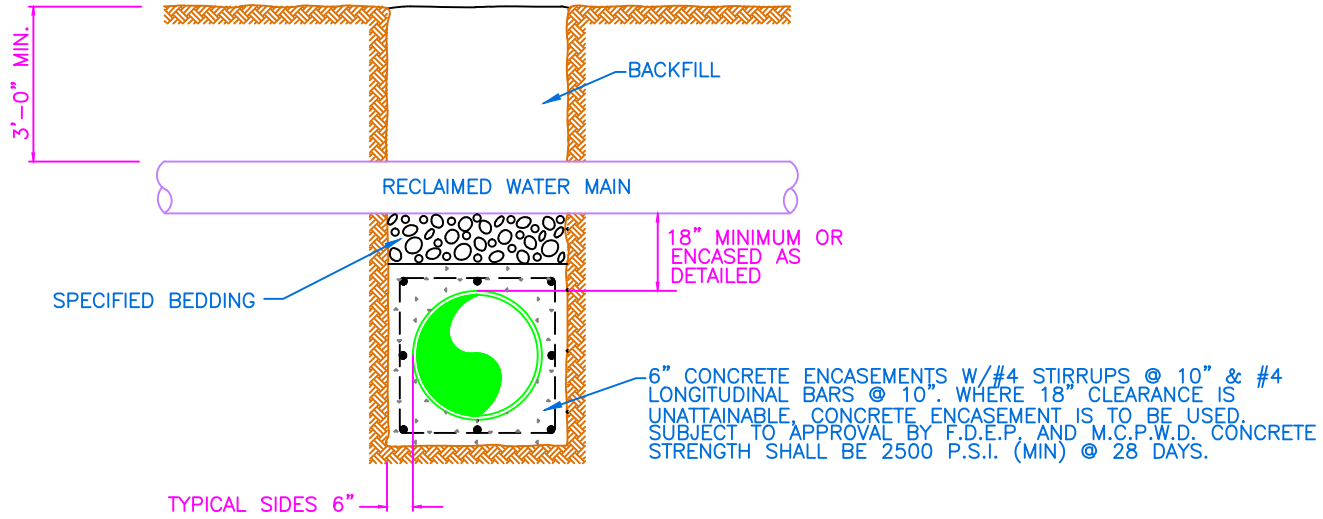
PAGE RW 6

REF.

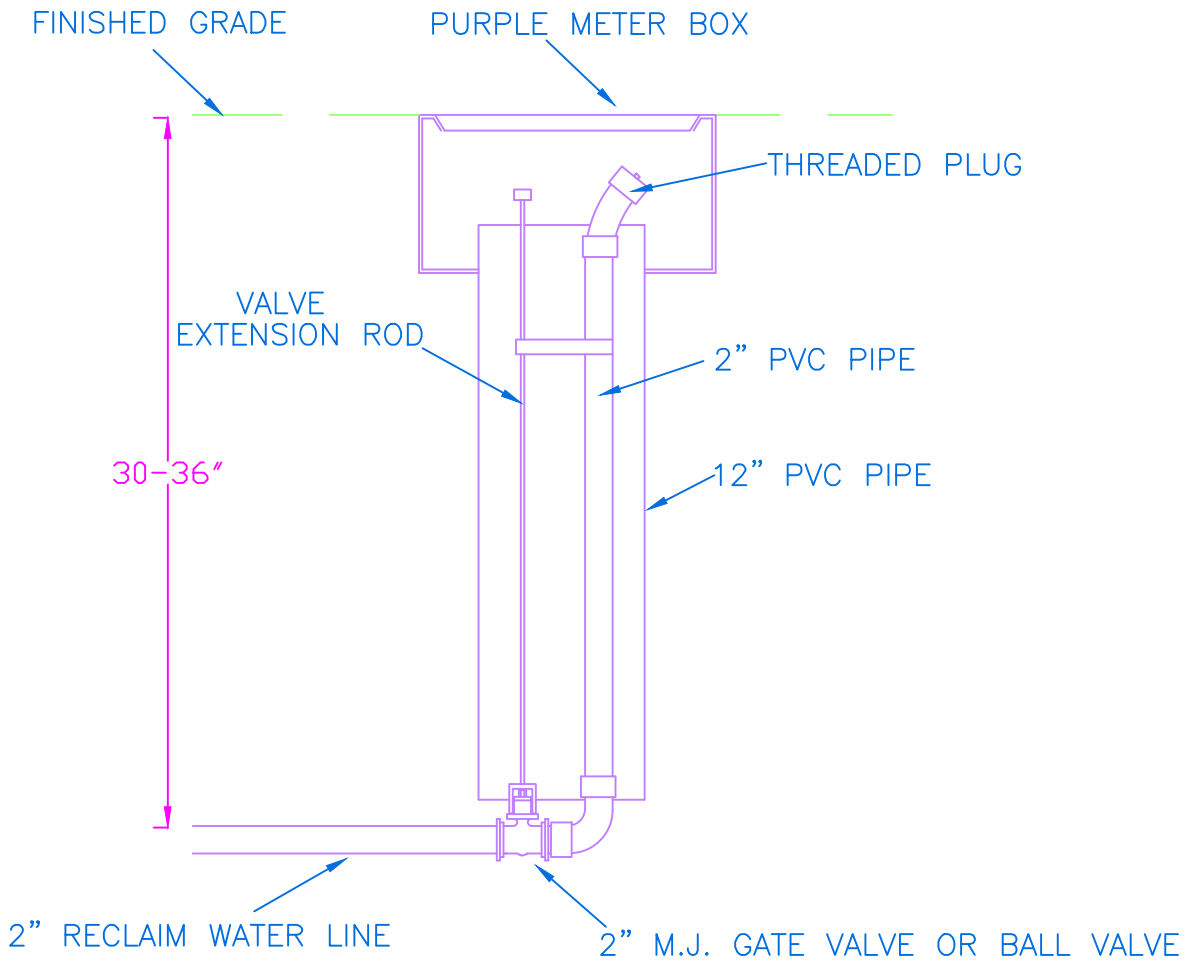
REF.



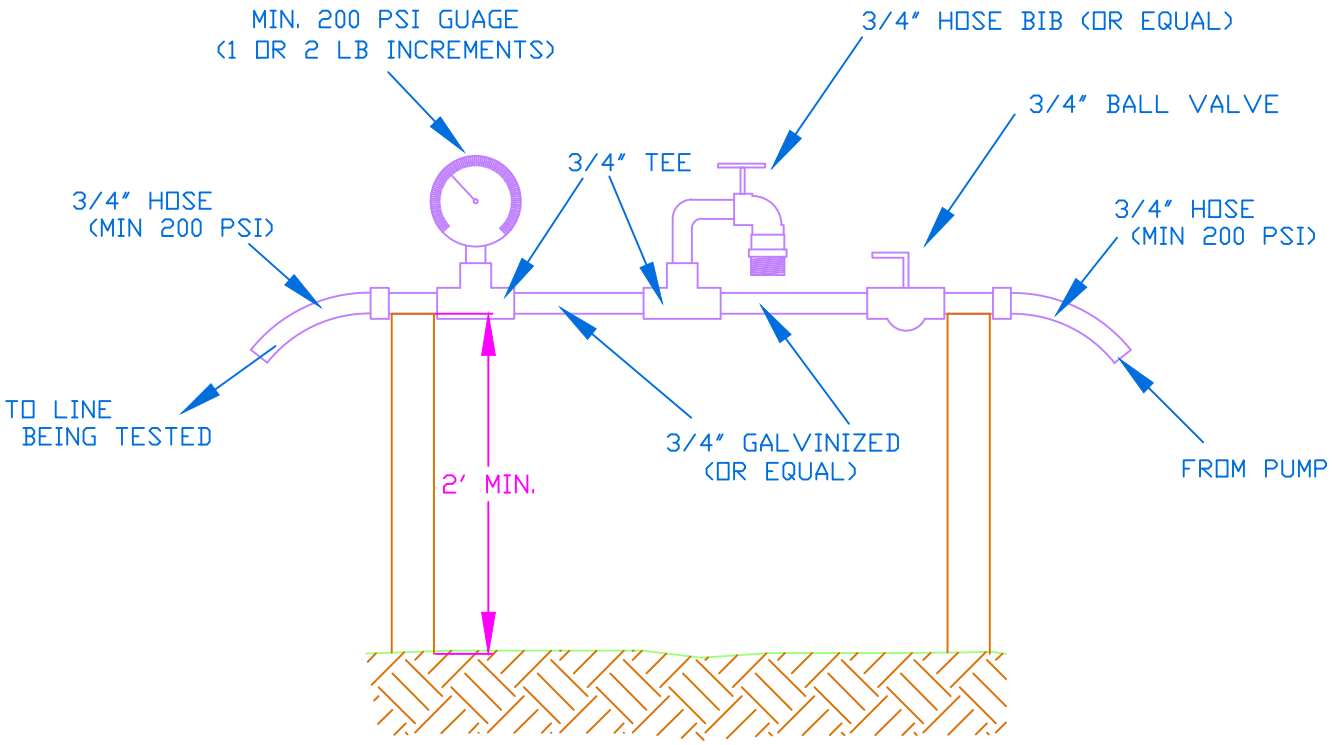
PLAN VIEW



SECTION A-A



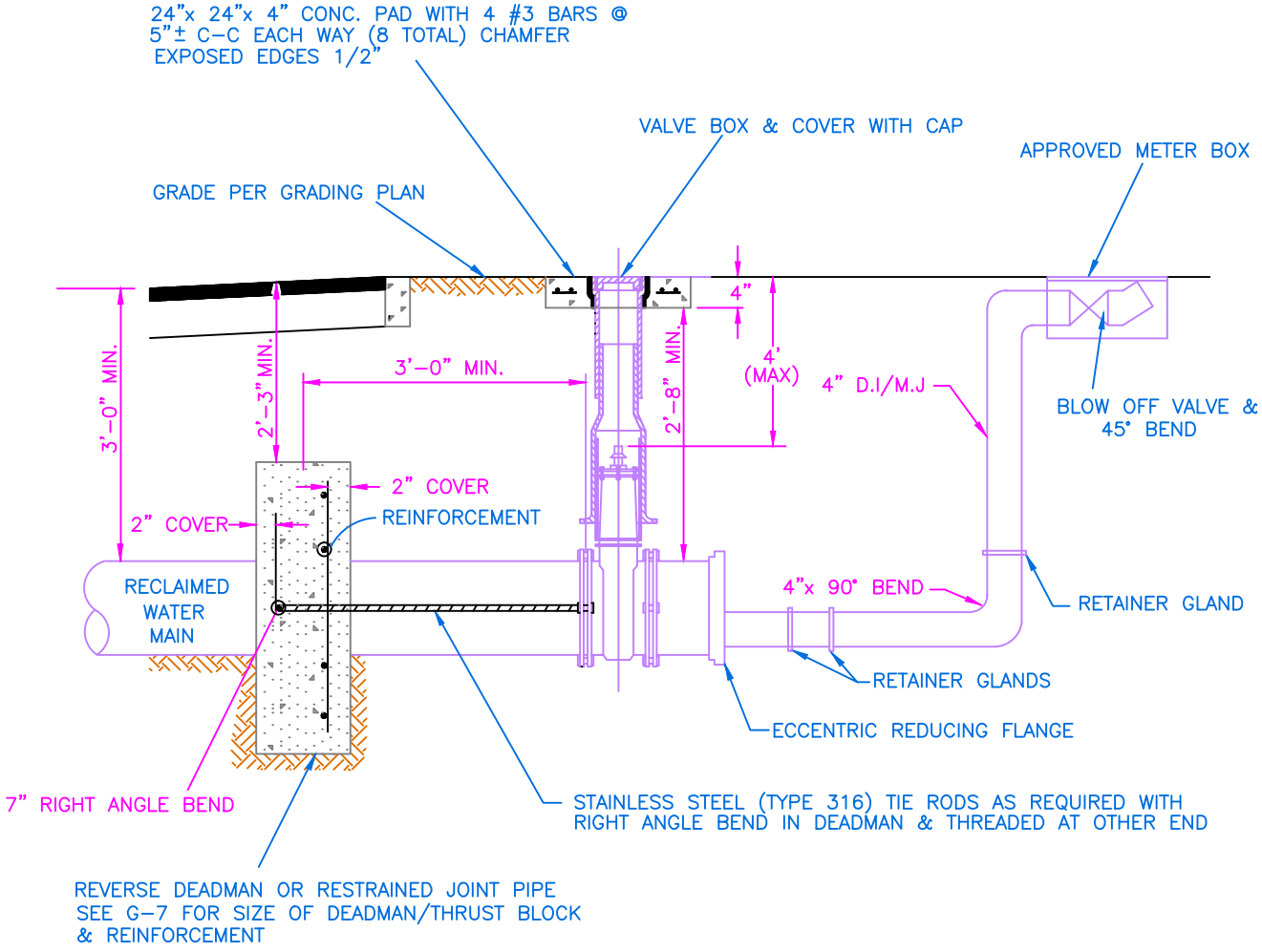
CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL TYPICAL 2 IN RECLAIMED WATER BLOW-OFF	PAGE RW 7



NOTE:

TEST TO RUN MINIMUM OF 2 HOURS @ 150 PSI. FAILURE POINT. . . 5 LB LOSS.

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL PRESSURE TEST SETUP	PAGE RW 8



NOTE:

THIS DETAIL TO BE USED FOR ALL RECLAIMED WATER MAINS LARGER THAN 10".

CITY OF PALMETTO ENGINEERING DEPARTMENT	DRAWN BY BWM DATE 5-20-11	REVISED	MINIMUM STANDARD DETAIL 4" AND LARGER BLOW–OFF ASSEMBLY	PAGE RW 9

AN ORDINANCE OF THE CITY OF PALMETTO, FLORIDA, RELATING TO THE PROTECTION OF PUBLIC POTABLE WATER SUPPLIES AGAINST POLLUTION BY REQUIRING UTILIZATION OF CROSS-CONNECTION CONTROL DEVICES BY PUBLIC WATER UTILITIES, BOTH GOVERNMENT AND PRIVATELY OWNED, IN THE INCORPORATED AREA OF THE CITY OF PALMETTO, MANATEE COUNTY FLORIDA; DESCRIBING THE LIMITS OF CITY RESPONSIBILITY FOR DETERMINING COMPLIANCE OF INSTALLATION, WORK, AND PLANS SPECIFICATIONS THEREFOR WITH THE PROVISIONS OF THIS ORDINANCE; PROVIDING UNIFORM STANDARDS FOR THE BACKFLOW PREVENTION PROGRAM; PROVIDING PROCEDURES FOR THE ADMINISTRATION OF THIS ORDINANCE; PROVIDING FOR FEES; PROVIDING PENALTIES; PROVIDING FOR SEVERABILITY; PROVIDING AN EFFECTIVE DATE.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PALMETTO, FLORIDA.

Section 1. Findings. The City Council of the City of Palmetto hereby makes the following findings:

(1) Improperly protected user systems expose the public potable water supply to contamination which would be hazardous to the public health and safety.

(2) The enactment of this Ordinance is necessary and desirable to protect and promote the public health, safety, and welfare and is in the best interests of the citizens within the City of Palmetto.

(3) The enactment of this Ordinance is necessary in accordance with Section 17-555.360(1),(2), and (3), Florida Administrative Code which provides in part "Community Water Systems shall establish a routine cross-connection control program for the purpose of detecting and preventing cross-connections that create or have the potential to create an imminent and substantial danger to public health. Such program shall be developed using accepted practices of the American Water Works Association guidelines as set forth in A.W.W.A. manuals M14, "Backflow Prevention and Cross-Connection Control," and "Cross - Connections and Backflow Prevention," 2nd Edition. Upon detection of a prohibited cross-connection both community and non-community water systems shall either eliminate the cross-connection by installation of an appropriate backflow prevention device acceptable to the Department, or discontinue service until the contaminant source is eliminated.

Section 2. Adoption of the Program. The City of Palmetto Cross-Connection Control Program attached hereto as exhibit "A" is hereby adopted and incorporated herein as part of this Ordinance.

Section 3. Applicability. No person, firm, association, corporation or other legal entity shall own, operate, or install, within the incorporated area of the City of Palmetto, Florida, a direct or indirect connection to a public water system, unless such connection is in accordance with this Ordinance.

Section 4. Schedule of Fees. The City Council may provide by resolution for a schedule of fees to be applicable in the administration of this Ordinance.

Section 5. References. References in this ordinance and any exhibit incorporated herein, to statutes, administrative rules, ordinances or similar codes, refer to such laws and rules as they may be amended from time to time.

Section 6. Penalties.

(1) Penalty for Non compliance: Any person, firm, association, corporation or other legal entity failing to comply with the provisions of this Ordinance; or causing any device to be by-passed; compromising an air-gap separation system; or failing to test, inspect or maintain any backflow prevention device in accordance with this Ordinance; shall be deemed to be in non-compliance with the Ordinance.

Any person, firm, association, corporation or other legal entity in non-compliance with this Ordinance shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punishable by a fine not exceeding Five Hundred Dollars ($500.00), or by imprisonment for a period not exceeding sixty (60) days per violation, or by both such fine and imprisonment. Each day a violation occurs shall be deemed a separate violation and shall be punishable as such.

(2) Civil Remedies. The City of Palmetto may have recourse to such remedies in law and in equity as may be necessary to ensure compliance with the provisions of this Ordinance, including enforcement by the City of Palmetto Code Enforcement Board pursuant to Chapter 162, Florida Statutes, as well as injunctive relief to enjoin any person, association, firm, corporation or other legal entity from violating these provisions and such damages as may be sustained by virtue of a violation of this Ordinance, together with all costs and expenses involved in the case.

Section 7. Severability.
If any provision of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, the provision shall be deemed as a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining provisions of this Ordinance.

Section 8. Effective Date.
This Ordinance shall take effect immediately upon receipt of official acknowledgment from the Office of the Secretary of State of the State of Florida that this Ordinance has been filed with said Office

PASSED AND DULY ADOPTED BY THE CITY OF PALMETTO CITY COUNCIL OF MANATEE COUNTY, FLORIDA, THIS _____ DAY OF _____, 1995.

City Council of Palmetto
of Manatee County, Florida

By:_____
Chairman

ATTEST:

_____, Clerk
of the Circuit Court and
Ex-Officio Clerk of the
City Council of Palmetto
of Manatee County, Florida.

By:_____
Deputy Clerk

(Blank)

EXHIBIT "A"

HANDBOOK OF THE CROSS-CONNECTION CONTROL PROGRAM

HANDBOOK OF THE CROSS-CONNECTION CONTROL PROGRAM

CONTENTS

D. Sample Forms, Survey Questionnaires, Test Forms, Notices

Section V
STANDARD DETAILS

A. Approved Devices - Standard Details

B. Installation - Approved Installation Methods Standard Details

SECTION I
DEFINITIONS

AIR-GAP. A physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air-gap separation" shall be at least double the diameter of the supply pipe measured vertically above the top of the rim of the vessel. In no case shall it be less than 1 inch.

APPROVED. Accepted by the water purveyor having jurisdiction.

AUXILIARY WATER SUPPLY. Any water supply on or available to the premises other than the water purveyor's approved public potable water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source(s) such as a well, spring, stream, river, harbor, etc., or "used waters" or "industrial fluids".

BACK PRESSURE. Any elevation of pressure in the downstream piping system (by pump, elevation of piping, or steam and/or air pressure) above the supply pressure at the point of consideration which would cause - or tend to cause - a reversal of the normal direction of flow through the backflow prevention assembly.

BACK-SIPHONAGE. A form of backflow due to a reduction in system pressure which causes a negative or sub-atmospheric pressure to exist at a site in the water system.

BACKFLOW. The undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source or sources.

BACKFLOW PREVENTER. A device or means designed to prevent back-pressure, back-siphonage, or backflow.

CONTAMINATION. An impairment of the quality of the potable water by sewage, industrial fluids or waste liquids, compounds or other materials to a degree which creates an actual hazard to the public health through poisoning or through the spread of disease. (see also pollution.)

CROSS-CONNECTION. Means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, sewage or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as the result of backflow. By-pass arrangements, jumper connections, removable sections, swivel or changeable devices and other temporary or permanent devices through which or because of which backflow could occur are considered to be cross connections.

CROSS-CONNECTION - CONTROLLED. A connection between a potable water system and a

non-potable water system with an approved backflow prevention device properly installed that will continuously afford protection against contamination or pollution commensurate with the degree of hazard.

CROSS-CONNECTION CONTROL BY CONTAINMENT. The installation of an approved backflow prevention device at the service connection to any customer's premises where it is not physically and economically feasible to find and permanently eliminate or control all actual or potential cross-connections within the customer's water system; or it shall mean the installation of an approved backflow prevention device on the service line leading to and supplying a portion of a customer's water system where there are actual or potential cross-connections which cannot be effectively eliminated or controlled at the point of connection.

DESIGNATED UTILITY OFFICIAL. The person or persons appointed by the water purveyor to manage, supervise, or implement the Cross-Connection Control program.

DOUBLE CHECK VALVE ASSEMBLY. An assembly composed of two single, independently acting, check valves, including tightly closing shutoff valves located at each end of the assembly and suitable connections for testing the water tightness of each check valve. A check valve is a valve that is drip-tight in the normal direction of flow when the inlet pressure is one psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g., clapper) shall be internally weighted or otherwise internally loaded to promote rapid and positive closure.

DOUBLE DETECTOR CHECK VALVE ASSEMBLY. An assembly of two independently operating approved check valves with tightly closing shut-off valves on each side of the check valves, plus properly located test cocks for the testing of each check valve. A by-pass arrangement consisting of an approved meter and an approved double check valve shall be incorporated with the device for detection of leaks, and unauthorized use of water. The entire assembly shall meet the design and performance specifications and approval of a recognized and county approved testing agency for backflow prevention devices. To be approved these devices must be readily accessible for in-line maintenance and testing.

HAZARD, DEGREE OF. A measure of hazard derived from an evaluation of the potential risk to public health and the adverse affect of the hazard upon the potable water system.

HAZARD - HEALTH. Any condition, device or practice in the water supply system and its operation which could create, or in the judgment of the water purveyor, may create a danger to the health and well-being of the water consumer. An example of a health hazard is a structural defect, including cross-connections, in a water supply system.

HAZARD - PLUMBING. A plumbing type cross-connection in a consumer's potable water system that has not been properly protected by a vacuum breaker, air-gap separation, or backflow prevention device. Unprotected plumbing type cross-connections are considered to be a health hazard.

HAZARD - POLLUTIONAL. An actual or potential threat to the physical properties of the water system or to the potability of the public or the consumer's potable water system, but which would constitute a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances, but would not be dangerous to health.

HAZARD - SYSTEM. An actual or potential threat of severe damage to the physical properties of the public potable water system or the consumer's potable water system or of a pollution or contamination which would have a protracted effect on the quality of the potable water in the system.

INDUSTRIAL FLUIDS SYSTEM. Any system containing fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration such as would constitute a health, plumbing, pollutional, or system hazard if introduced into the public potable water supply. This may include, but not be limited to: polluted or contaminated waters; all types of process waters and "used waters" originating from the public potable water system which may have deteriorated in sanitary quality; chemicals in fluid form; plating acids and alkalies, circulated cooling waters connected to an open cooling tower and/or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters such as from wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, etc.; oils, gases, glycerine, paraffins, caustic and acid solutions and other liquids and gaseous fluids used for industrial or other purposes or for fire-fighting purposes.

POLLUTION. Means the presence of any foreign substance (organic, inorganic, or biological) in water which tends to degrade its quality so as to constitute a hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

PUBLIC UTILITY. Means every person owning, leasing, constructing, operating or managing any public water system, in the incorporated area of the City serving or proposing to serve nine (9) or more equivalent dwelling units for compensation received directly or indirectly.

REDUCED PRESSURE BACKFLOW PREVENTER. A device containing within its structure a minimum of two independently acting approved check valves, together with an automatically operating pressure differential relief valve located between the two check valves. The first check valve reduces the supply pressure a predetermined amount so that during normal flow and at cessation of normal flow the pressure between the checks shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve, by discharging to atmosphere, shall operate to maintain the pressure between the checks less than the supply pressure. The unit to maintain the pressure between the checks less than the supply pressure. The unit shall include tightly closing shutoff valves located at each end of the device, and each device shall be fitted with properly located test cocks.

WATER-NONPOTABLE. Water which is not safe for human consumption.

WATER-POTABLE. Any water which, according to recognized standards is safe for human consumption.

WATER PURVEYOR. The term water purveyor shall mean the owner or operator of a public potable water utility supplying a potable water supply to the public.

WATER - SERVICE CONNECTIONS. The terminal end of a service connection from the public potable water system; i.e., where the Water Purveyor loses sanitary control over the water at its point of delivery to the customer's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream side of the meter. There should be no unprotected takeoffs from the service line ahead of any meter or backflow prevention device located at the point of delivery to the customer's water system. Service connections shall also include water service connections from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.

WATER - USED. Any water supplied by a water purveyor from a public potable water system to a consumer's water system after it has passed through the point of delivery and is no longer under sanitary control of the water purveyor.

SECTION II

RULES AND REGULATIONS

A Rules Concerning the Protection of the Public Potable Water Supply

B Excerpts from State Codes and Regulations

C Non-Compliance

C.1 Fees Disconnect/Reconnect

C.2 Termination of Service

D Hazard Review Process

E Issuance of Identification Numbers

F Typical Facilities and Plumbing Fixtures Requiring protection Against Cross-Connection

F.1 Facilities

F.2 Plumbing Fixtures

SECTION II
RULES AND REGULATIONS GOVERNING
CROSS-CONNECTION CONTROL

A. RULES CONCERNING THE PROTECTION OF THE PUBLIC POTABLE WATER SUPPLY SYSTEM.

In order to protect the public water supply system from contamination due to cross-connections, the City of Palmetto hereby establishes the following rules:

A.1 No installation of potable water supply piping or part thereof shall be made in such a manner that it will be possible for used, unclean, polluted or contaminated water, mixtures or substances to enter any portion of such piping from any tank, receptacle, equipment or plumbing fixture by reason of back-siphonage, back-pressure, or any other cause, either during normal use and operation thereof or when any such tank, receptacle, equipment or plumbing fixture is flooded, or subject to pressure in excess of the pressure in the hot or cold water piping.

A.2 No person shall make a connection or allow one to exist between pipes or conduits carrying domestic water supplied by any public or private water service system, and any pipes, conduits or fixtures containing or carrying water from any other source or containing or carrying water which has been used for any purpose whatsoever, or any substances whatsoever, unless there is provided an approved backflow prevention device. The approval of the water purveyor must be obtained before any connection is made between the domestic supply and any contaminated, polluted or auxiliary water system.

A.3 No plumbing fixture, device or construction shall be installed or maintained or shall be connected to any domestic water supply, when such installation or connection may provide a cross-connection between a distributing system of water for drinking and domestic purposes and water which may become contaminated by such plumbing fixture device or construction unless there is provided an approved backflow prevention device.

A.4 No water piping supplied by any private water supply system or industrial piping system shall be connected to the public potable water system without the approval from the Water Purveyor.

A.5 Any person having been found by the water purveyor to be a potential backflow source, or who meets the established requirements for backflow prevention protection, shall install or cause to be installed an approved backflow preventer.

B <u>EXCERPTS FROM STATE CODES AND REGULATIONS</u>

The following excerpts are herein incorporated into this program by reference, including any future amendments.

In the event of any conflict between this ordinance and other ordinances, codes, or regulations, excluding State and Federal laws, the terms and provisions of this Ordinance shall prevail.

B.1 RULES OF THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION - SECTION 17-555.360(1) and (2):

"Cross-connection, as defined in Rule 17-550.200, F.A.C. is prohibited. However, a person owning or managing a public water system may interconnect to another public water system if that system is operated and maintained in accordance with this Chapter."

" Community water systems shall establish a routine cross-connection control program for the purpose of detecting and preventing cross-connections that create or have the potential to create an imminent and substantial danger to public health. Such program shall be developed using accepted practices of the American Water Works Association guidelines as set forth in AWWA manuals M14. "Backflow Prevention and Cross Connection Control," and "Cross Connections and Backflow Prevention." 2nd Edition."

B.2 SOUTHERN STANDARD PLUMBING CODE - CHAPTER XII, SECTION 1204:

"Potable water supply piping, water discharge outlets, backflow prevention devices or similar equipment shall be so located as to make impossible their submergence in any contaminated or polluted liquid or substance."

B.3 SOUTHERN STANDARD PLUMBING CODE - APPENDIX D, SECTION D-102:

"The Plumbing Official shall enforce the provisions of this Code so as to insure the potability of the consumer's water supply, from the point of entrance of the public water supply to the extremities of the consumer's water system. The Plumbing Official has primary enforcing responsibility of new installations, alterations or repairs of water supply systems. He shall provide the Health Officer and the water purveyor with the assistance required to enforce the provisions of this program on existing water supply systems.

The water purveyor is primarily responsible for the prevention of contamination and pollution of the public water mains. Such responsibility begins at the point of origin of the public water supply and includes adequate treatment facilities and water mains, and ends at the point of entrance to the consumer's water system, provided adequate backflow and back-siphonage protection is maintained on all water supply systems directly connected to the water purveyor's public system. The water purveyor has secondary supervisory responsibility to the Plumbing Official for new installations, alterations or repairs of water supply systems and has secondary supervisory responsibility to the Health Officer for existing water supply systems.

The Health Officer, when administrative head of water quality control, is responsible for supervising the prevention of contamination and pollution of the public water main, all water supply systems and all water sources. Such responsibility extends from the point of origin of the public water supply to and including all extremities of the consumer's supply and its actual use. The Health Officer has prime supervisory responsibility for administration and enforcement of those portions of the Cross Connection, Backflow and Back-Siphonage Control Program applicable to existing water supply systems and water sources. The Health Officer has secondary supervisory responsibility to the Water Purveyor for the Public Water System.

The Consumer has prime responsibility of preventing contaminants and pollutants from entering the water supply system, and from entering the public water main or water source from his water supply system. The Consumer shall protect his water supply system against actual or potential cross connection, backflow or back-siphonage, as required by this Appendix, and other applicable regulations. He shall assure that all protective devices are tested and maintained in the working condition required. He shall assure the necessary plumbing permits are obtained for new water supply system installations, and for alterations or repair to existing systems, as required by this Appendix."

B.4 SOUTHERN STANDARD PLUMBING CODE - APPENDIX D, SECTION D-104:

"No water service connection to any premises shall be installed or maintained unless the potable water and water supply are protected against actual or potential contamination of pollution in the manner required."

C NON-COMPLIANCE

Any person failing to comply with this program or part hereof shall be deemed to be in non-compliance and water service may be terminated by the water purveyor until corrective actions required by this program are taken by the person in noncompliance.

C.1 Fees Disconnect/Reconnect: Any person or persons, having been deemed to be in non-compliance with this program shall pay a fee as set by the water purveyor.

C.2 Termination of Service: In emergency conditions, when the public potable water supply is being contaminated or is in immediate danger of contamination, water service may be disconnected by the purveyor.

D Hazard Review Process: The owner or authorized agent shall submit a cross-connection control survey form at the time of application for water service or as directed by the Water Purveyor. Failure to comply with the submittal of the cross-connection control survey form shall be a violation of this program. Upon review, the water purveyor shall designate a hazard potential.

E Issuance of Identification Numbers: The office of the designated utility official shall review surveys and make a hazard determination in accordance with this program. This office shall review the submittal and assign an identification number denoting location and type for each backflow preventer.

F Typical Facilities and Plumbing Fixtures Requiring Protection Against Cross-Connection

F.1 Typical Facilities Requiring Protection Against Cross-Connections

There are varying degrees of hazard, and the degree of protection should be commensurate with the degree of hazard. The following partial list of facilities shall be served by an approved backflow prevention device of the type designated, installed at the meter or service connection of the public potable drinking water supply.

RP = REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTIVE DEVICE.
DC = DOUBLE CHECK VALVE ASSEMBLY BACKFLOW PREVENTIVE DEVICE.
DDC = DOUBLE DETECTOR CHECK VALVE ASSEMBLY BACKFLOW PREVENTIVE DEVICE.
DRP = DETECTOR REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTIVE DEVICE.

1. Aircraft and Missile Plants ========== RP
2. Automotive Plants ========== RP
3. Auxiliary Water Systems (Interconnected) ========== RP
4. Auxiliary Water Systems (Not Interconnected) ========== DC
5. Beverage Bottling Plants ========== DC
6. Breweries ========== RP
7. Buildings with house pumps and/or water storage tank ========== DC
8. Buildings with sewage ejector (no in-plant protection) ========== RP
9. Buildings with sewage ejector (good in-plant protection)========== DC
10. Canneries, Packing Houses and Reduction Plants ========== RP
11. Car Wash and water reclamation systems ========== RP
12. Centralized Heating and Air Conditioning Plants ========== RP
13. Chemical Plants ========== RP
14. Chemically Treated Potable Water Systems ========== DC
15. Commercial Laundries ========== RP
16. Dairies and Cold Storage Plants ========== DC
17. Dye Works ========== RP
18. Food Processing or preparation facilities ========== RP
19. Film Processing Laboratories ========== RP
20. Fire Systems with Stand Pipe Systems ========== DDC
21. Fire Systems with auxiliary supply (health hazard only)========== RP
22. Fire Systems with pump and/or storage tank ========== DDC

23. High Schools and Colleges ========== RP
24. Hospitals (major complexes) ========== RP
25.Hospitals, Mortuaries, Medical and Dental Buildings and Sanitariums (new)====== RP
26. Irrigation Systems (premises having a separate source of water such as parks, cemeteries, golf courses, schools, estates, ranches, etc.)========== RP
27. Irrigation systems (premises not having a separate source of water)========== DC
28. Laboratories using toxic materials ========== RP
29. Manufacturing, Processing and Fabricating Plants using toxic material========== RP
30. Manufacturing, Processing and Fabricating Plants not using toxic materials======= DC
31. Mobile Home Parks ========== DC
32. Motion Picture Studios ========== RP
33. Oil and Gas Production Facilities ========== RP
34. Paper and Paper Production Plants ========== RP
35. Plating Plants ========== RP
36. Radioactive Materials Processing Facilities ========== RP
37. Restaurants, Kitchens, Food Processing Facilities ========== RP
38. Restricted, Classified or other Closed Facilities ========== RP
39. Rubber Plants ========== RP
40. Sand and Gravel Plants ========== RP
41. Sewage and storm Drainage Facilities (Including Sewage Lift Stations and Storm Drainage Lift Stations)========== RP
42. Waterfront Facilities ========== RP
43. Where a Cross-Connection is maintained ========== RP
44. Where the use of a substance, process water or water supplied by another utility is such as to subject the water to deterioration in sanitary quality and to permit its entry into the potable water system========== RP
45. Any location being served with reclaimed water========== DC
46. Any connection or withdrawal from a Palmetto fire hydrant========== RP

F.2 Typical Plumbing Fixtures Requiring Protection Against Cross-Connection

The following partial list of plumbing devices, and or fixtures shall be provided with appropriate backflow prevention devices, the purpose of which is to protect the purity of potable water and thereby safeguard public health.

1. Air Conditioning
2. Air Conditioned Chill Water
3. Air Conditioned Cooling Tower
4. Aspirators, Medical or Others
5. Autoclave & Sterilizer & Steam Tables
6. Below-the-rim or inverted supply water inlets in aquariums, bidets, baptisteries,

bedpan washers, bird baths, fish ponds, foot tubs, sinks, drinking fountains, siphon flush tanks, lavatories, tanks laundry and other tubs, vats, laboratory apparatus, therapeutic baths, X-ray developing tanks, etc.

7. Boiler Industrial Feeder lines
8. Condensers, Medical & Industrial
9. Commercial Dishwashing Machines
10. Chlorinators, Suction Side Pump
11. Degreasing Equipment
12. Digester, Hospital
13. Dye Vats & Tanks
14. Direct Connections, County Water and Sewer Pumps Hydraulic Elevators and
15. Dental Cuspidors & Saliva Ejector
16. Etching Tanks
17. Floor Drains with Trap Primers or Flushing Connections
18. Garbage Can Washers
19. Industrial In-Plant Plumbing Systems
20. Lawn Irrigation Systems with Fertilizer Injection Systems
21. Laundry Machine, Hospital
22. Post Mix Soda (soft drink) Equipment
23. Processing Tanks
24. Pumps for Unsafe Materials Primed by Water
25. Rubber Hoses
26. Swimming Pools, Home and Commercial
27. Steam Tables
28. Watering Troughs, Dairy & Stables
29. Watering Troughs with Vaccine, etc. Added for Poultry etc.
30. Water Operated Ejector

SECTION III
PROCEDURES

A Existing Facilities

B New Facilities

C Certification of Backflow Prevention Device Technicians

D Records

SECTION III
PROCEDURES

A EXISTING FACILITIES

A.1 All premises where cross-connections are suspect, shall be surveyed by the water purveyor to determine if a detailed inspection will be required.

A.2 The owners of the suspected premises shall be notified thirty (30) days in advance to secure an appointment for inspection of the premises. (See Section IV, Form Letter A). The owner or his authorized representative will be required to accompany the inspector during the tour of the premises.

A.3 An inspection form will be completed by the inspector and signed by the owner or his representative. (See Section IV Form B-1). The owner shall be made aware of any corrective measures that need to be made.

A.4 All official letters of notification shall be sent to the owner indicating what corrective measures must be taken. (See Section IV Form Letter C).

A.5 Upon conformance of the requirements in the notification letter, the owner shall immediately notify the Water Purveyor to schedule a date for reinspection.

B NEW FACILITIES

B.1 Each applicant for a water meter will be required to complete a questionnaire (See Section IV Form B-2).

B.2 If the water purveyor determines that a potential cross-connection conditions exists, the water purveyor shall establish a hazard level commensurate with the degree of that hazard level, utilizing AWWA standards as minimum guidelines, and require a specific type of backflow preventer for the premises.

B.3 The water purveyor may notify the new customer in writing and arrange a meeting to discuss the requirements for backflow prevention. Procedures for inspection of the backflow preventer will be discussed at this meeting. The customer may be required to provide construction drawings of his proposed facilities.

C CERTIFICATION OF BACKFLOW PREVENTION DEVICE TECHNICIANS

C.1 A person wishing to be certified as a Backflow Prevention Technician must complete a comprehensive training program established by the University of Florida's TREEO Center or by a comprehensive training program sanctioned by the

American Water Works Association, or the American Association of Sanitary Engineers, or other national associations as may be approved by the City of Palmetto Utilities Department.

C.2 If he/she wishes to be placed on the Utilities' list of Approved Backflow Prevention Device Technicians, he/she must submit his/her request in writing to the City of Palmetto Public Works Department office of the Cross-Connection Control Coordinator with a copy of their Certificate of Completion from an approved school as stated in this section. The Public Works Department shall notify the individual in writing as to his/her approval or denial.

D RECORDS

All records of tests, inspections, surveys, and repairs will be kept on file by the water purveyor in the office of the designated utility official.

Records of numbered backflow devices, containing location, type, size, use, model numbers, serial numbers, etc. shall be cross referenced with records of tests, inspections, surveys, and repairs.

SECTION IV
MAINTENANCE

A. Testing

B. Inspection

B.1 Potential Cross - Connection Surveys

B.2 Annual Inspection and Testing

B.3 Inspection of Newly Constructed Non - Residential Facilities

C. Repairs

D. Sample Forms, Survey Questionnaires, Test Forms, Notices

SECTION IV
MAINTENANCE

A. Testing

Testing shall be required on all backflow prevention devices. Testing is to be performed by a Certified Backflow Prevention Device Technician, as approved by City staff responsible for the administration of this program and in accordance with A.W.W.A. "Cross - Connection and Backflow Prevention" 2nd Edition.

All backflow prevention devices, reduced pressure or double check valve assemblies and all devices installed where testing is made possible by the design of the device shall be tested a minimum of every twelve months. In the opinion of the water purveyor, if a backflow preventer is used in extremely high hazard applications, it may be required to be tested more often.

The first annual testing shall be performed within 30 days from the date of installation or, within one year of the effective date of this Ordinance. Existing installations shall be tested as soon as the backflow device is discovered, recorded, repaired, or replaced.

Backflow prevention equipment not designed by the manufacturer to afford testing such as hose bib vacuum breakers will not require testing. Consumers of such devices should follow manufacturers recommendations.

The owner of a backflow prevention device shall be notified thirty (30) days in advance by the water purveyor as to when his device will require testing and inspection.

B Inspection

B.1 Potential Cross-Connection Surveys

Duly authorized employees or agents for the purveyor, shall be permitted to enter upon properties for the purpose of sampling or testing the potable water supply, or to make inspections or observations of connections to the potable water supply.
Refusal to allow inspection shall constitute a violation of this program.

B.2 Inspection of Newly Constructed Non - Residential Facilities

Upon making application for water service, the owner or agent for the owner shall complete the Cross-Connection Control Questionnaire, prior to establishment of water service. Said form shall be received by the purveyor, establishing the class of hazard for the new facility. The customer shall have installed the correct backflow prevention device as determined by the water purveyor. At such time an inspection by

the purveyor will be preformed, such inspection by the purveyor shall determine satisfactory compliance with this program by the customer. If such inspection shall fail to show compliance with this program the purveyor shall not be compelled to establish water service until such time as satisfactory compliance has been achieved.

C. Repairs

The customer, owner or authorized agent for the owner shall be responsible for any and all repairs necessary to maintain good working condition of the backflow prevention equipment. Said repairs shall be performed by a certified Backflow Prevention Technician as defined in section III, part C of this program, and meeting one or more of the following requirements:

1. Be a licensed plumbing contractor or an employee of a licensed plumbing contractor meeting all of the license requirements of the City of Palmetto.

2. Be a utility contractor or employee of a utility contractor meeting the requirements of Florida Statute 489, part 1, while working within the confines of a utility as governed by Florida Statutes 489.113, 489.119, 455.217, 120.53, and the Florida Industry Construction Licensing Board, Section 21.E-15.

3. Be a State licensed Fire Sprinkler contractor meeting all current State and local licensing requirements working within the confines of a fire line water service, fire sprinkler system, or any part of a fire system governed by the license holder. 4

4. Be the owner of a backflow prevention device or a direct employee of the owner of a backflow prevention device.

5. Be an employee of a water purveyor working within the confines of that water purveyor's utility.

Said technician shall determine and affirm to the purveyor the satisfactory repair and compliance of the backflow prevention equipment. Said affirmation of compliance by the technician shall be mailed to the purveyor within thirty (30) days of such repairs.

The owner of a backflow prevention device that fails a test or does not meet the standards of this program must have the backflow preventer repaired or altered to meet the standards of this program, and shall have thirty (30) days from the date of the inspection report to correct any deficiencies or problems with the backflow preventer. A test report submitted by a Certified Backflow Prevention Technician must be filed with The City of Palmetto Public Works Department in the office of the Cross-Connection Coordinator after the repairs or alterations have been made.

SAMPLE FORM LETTER A

(Date:)

(Customer's Name and Address)

RE: Cross-Connection Control Program

Dear Customer:

_____ is required to take reasonable precautions to protect the public water supply from possible contamination or pollution.

If a customer has a cross-connection in his plumbing, there exists the possibility that a contaminated or polluted water source could enter the water distribution system through back pressure or back-siphonage.

We are undertaking a program of on-site inspections of all businesses which handle or use hazardous, toxic or non-toxic substances. These businesses include hospitals, doctors' and dentists' offices, car washes, pest control companies, photo labs, commercial cleaners, funeral homes, veterinary clinics, beauty salons, and many more not mentioned in this letter.

I would like to visit your place of business on _____ at _____, to explain the Cross-Connection Control Program and discuss what this program means to you, the customer. If this date and time is not convenient for you, please contact me at_____.

Your cooperation in this matter will be greatly appreciated.

Sincerely,

SAMPLE FORM LETTER B

DATE:

(Customer's Name and Address)

SUBJECT: Testing of Backflow Preventers

Dear (Customer's Name:)

The _____ requires testing and inspections of backflow preventers on an annual basis. Our records indicate that your backflow device is due for inspection and testing.

Please contact a Certified Backflow Preventer Technician from the enclosed list to have your device tested and inspected.

Sincerely yours,

SAMPLE FORM LETTER C

(Date)

(Date of Inspection)

SUBJECT: Cross-Connection Control Results of Survey

Dear (Customer's Name), I met with you and briefly discussed our program of Cross-Connection Control and Backflow Prevention.

Having inspected the plumbing fixtures on your premise, as they apply to cross-connection control, the following recommendations are made:

Please contact me at (Tel. #) before (date)
to make arrangements to have the (type) backflow preventer inspected and tested.

Thank you for your cooperation.

Sincerely,

SAMPLE FORM LETTER E

(Date:)

(Customer's Name and Address)

SUBJECT: (Name of Premise)
Requirements for Cross-Connection Control

Dear (Customer's Name)

As a result of a Cross-Connection Control Survey completed by your firm, we are hereby requesting that you contact us at (area code + phone #) within thirty (30) days from the date of this letter to arrange a meeting concerning Cross-Connection Control requirements for your proposed facility.

Sincerely yours,

SAMPLE FORM LETTER F

(Date:)

(Individual's Name and Address)

SUBJECT: City of Palmetto
List Of Approved Backflow Prevention Device Technicians

Dear (Individual's Name)

Please be advised that you have been approved (denied) for placement on our list of Certified Backflow Prevention Device Technicians. We look forward to working with you and your clients in the future.

Sincerely yours,

Cross-Connection Control
Coordinator

SAMPLE LETTER G

(Date:)

(Customer's Name and Address)

SUBJECT: Repair of Backflow Prevention Devices

Dear (Customer's Name:)

In order to continue to maintain the quality of the City of Palmetto's water supply, we have tested your backflow prevention device and found that it does not meet the specifications required.

Please contact a Certified Backflow Prevention Technician to repair and re-test your Backflow Prevention Device.

Enclosed you will find a list of City Approved Backflow Prevention Technicians and a test report form. Please return the completed form to the City of Palmetto Public Works Department within thirty (30) days from the date of this letter.

I encourage you to have the repairs performed as soon as possible, the parts that may be required to repair the device may take a few weeks to arrive.

If you have any questions, please call me at (941) ___-____

Sincerely,

Cross-Connection Control
Coordinator

SAMPLE FORM B-1

CROSS-CONNECTION SURVEY FORM

PLACE: _____ DATE:_____

LOCATION:_____

_____ EXISTING DEVICE, DATE INSTALLED: _____

BUILDING REPRESENTATIVE(S) AND TITLE(S): _____

_____

NUMBER AND LIST OF ALL WATER SOURCE(S): (POTABLE, IRRIGATION, FIRE,

LAKE, OTHER) _____

_____

PIPING SYSTEM(S) (IN ADDITION TO POTABLE):_____

_____

POINTS OF INTERCONNECTION (ALL SYSTEMS):_____

_____

SPECIAL EQUIPMENT SUPPLIED WITH WATER, AND SOURCE:_____

_____

REMARKS OR RECOMMENDATIONS:_____

_____

_____

_____ COMMERCIAL OR INDUSTRIAL USE OF BUILDING

_____ RESIDENCE, SINGLE FAMILY

_____ MULTI-FAMILY, RESIDENTIAL

_____ OTHER, DESCRIBE BUILDING USAGE

NOTE: ATTACH SKETCHES OF CROSS-CONNECTIONS FOUND, WHERE NECESSARY FOR CLARITY OF DESCRIPTION. ATTACH ADDITIONAL SHEETS FOR ROOM BY ROOM SURVEYUNDER HEADINGS. DESCRIBE ALL CROSS-CONNECTIONS.

INSPECTED BY: _____

I, _____ HEREBY CERTIFY THAT THE ABOVE
(Name/Title)

INFORMATION IS ACCURATE AND IS A FULL DISCLOSURE OF THE REQUESTED INFORMATION.

_____ _____
SIGNED DATE

(SKETCHES)

SAMPLE FORM B-2
CROSS-CONNECTION CONTROL QUESTIONNAIRE

		YES	NO
1.	Is there another source of water to your property other than the service connection to the public potable supply i.e., private well, lake, stream, river, pond, etc.?	( )	( )
2.	Is there an irrigation system on your property?	( )	( )
3.	Are there any facilities (such as a booster pump, elevated tank etc.) to increase the water pressure above the supply pressure presently provided by the public potable supply?	( )	( )
4.	Are there any toxic or non toxic chemicals used in your operation?	( )	( )
5.	Are there any ejectors, aspirators, or pumps used in your operation?	( )	( )
6.	Is there water recycled during the operation of your air conditioner or other equipment in your plant or building?	( )	( )
7.	Are there any water supply lines submerged in tanks, vats, etc.?	( )	( )
8.	Are there any backflow prevention devices installed in any part of your piping?	( )	( )
9.	Is there a fire stand pipe or fire sprinkler system installed in your building?	( )	( )
10.	Is your building more than two (2) stories tall?	( )	( )

DATA FURNISHED BY:

_____ _____
CUSTOMER DATE

_____ _____
ADDRESS ACCOUNT #

_____ _____
REPORTED BY TITLE

REMARKS_____

INSPECTOR: _____ DATE: _____

SAMPLE FORM B-3

CITY OF PALMETTO CROSS-CONNECTION CONTROL
BACKFLOW DEVICE FIELD TEST REPORT

_____	_____	_____	_____
MANUFACTURER	MODEL NO.	SIZE	SERIAL NO.

DEVICE NUMBER:_____ DEVICE USED FOR:_____
SERVICE ADDRESS:_____ MTR. READING ON D.D.C._____
REDUCED PRESSURE PRINCIPLE_____

DOUBLE CHECK VALVE - INITIAL TEST-

CHECK VALVE #1	CHECK VALVE #2	DIFFERENTIAL PRESSURE RELIEF	DOUBLE DETECTOR CHECK VALVE
CLOSED TIGHT ____	CLOSED TIGHT____	OPEN AT_____	CLOSED TIGHT_____
R.P._____	PSID LEAKED ____	LEAKED _____	LEAKED _____
LEAKED _____		DIDN'T OPEN____	
CLEANED _____	CLEANED _____	CLEANED _____	CLEANED _____
REPLACED _____	REPLACED_____	REPLACED_____	REPLACED _____

REPAIRS - -

DISC _____	DISC _____	DISC _____	DISC _____
SPRING _____	SPRING _____	SPRING _____	SPRING _____
GUIDE _____	GUIDE _____	GUIDE _____	GUIDE _____
PINS _____	PINS _____	PINS _____	PINS _____
RETAINERS _____	RETAINERS ____	RETAINERS _____	RETAINERS ____
SEATS _____	SEATS _____	SEATS _____	SEATS _____
OTHERS _____	OTHERS _____	DIAPHRAGM ____	OTHERS _____
		LARGE _____	
		SMALL _____	
		SPACER _____	
		SCREWS _____	
		OTHER _____	

FINAL R.P._____ PSID CLOSED TIGHT_____ OPENED AT____PSID CLOSED TIGHT___
TEST CLOSED TIGHT____

COMMENTS:_____
_____
INITIAL TEST BY:_____CERTIFIED TESTER #_____DATE:_____
REPAIRED BY:_____ REPAIR COMPANY:_____DATE:_____
FINAL TEST BY:_____ DATE:_____CERTIFIED TESTER #_____

(Blank)