20.General

- 20.1. It is the intent of these specifications to describe the minimum acceptable technical requirements for the materials and workmanship for construction of site improvements for this project. Such improvements may generally include, but not to be limited to, clearing, grading, paving, removal of existing pavement, storm drainage, water lines and sanitary sewers.
- 20.2. It is the intent that the Florida Department of Transportation (FDOT) "Standard Specifications for Road and Bridge Construction: (current edition) together with "Supplemental Specifications to the Standard Specifications for Road and Bridge Construction" (current edition), and the FDOT Roadway and Traffic Design Standards (current edition) be used where applicable for the various work, and that where such wording therein refers to the State of Florida and its Department of Transportation and personnel, such wording is intended to be replaced with the wording which would provide proper terminology; thereby making such "Standard Specifications for Road and Bridge Construction" together with the "FDOT Roadway and Traffic Design Standards" as the "Standard Specifications" for this project. If within a particular section, another section, article or paragraph is referred to, it shall be part of the Standard Specifications also. The Contractor shall abide by all local and State laws, regulations and building codes which have jurisdiction in the area.
- with these specifications and the construction drawings. The material 22.4. Location of drainage structures shall govern, and pipe length may and equipment shown or specified shall not be taken to exclude any other incidentals necessary to complete the work.
- 20.4. All labor, materials, and methods of construction shall be in strict 22.5. Distance and lengths shown on plans and profile drawings are accordance with the plans and construction specifications and the minimum engineering and construction standards adopted by the unit of government which has jurisdiction and responsibility for the construction. Where conflicts or omissions exist, the jurisdictional government Engineering Department's standards shall govern 23 Asphalt Paving Substitutions and deviations from plans and specifications shall be 23.1. Where new asphalt meets existing asphalt, the existing asphalt shall permitted only when written approval has been issued by the Engineer.
- 20.5. Guarantee all materials and equipment to be furnished and/or installed by the Contractor under this contract, shall be guaranteed for a period of (I) one year from the date of final acceptance thereof, against 23.2. Internal asphalt paving constructed on existing sandy soils shall be defective materials, design and workmanship. Upon receipt of notice from the owner of failure of any part of the guaranteed equipment or materials, during the guarantee period, the affected part or materials shall be replaced promptly with new parts or materials by the contractor, at no expense to the owner. In the event the Contractor fails to make necessary replacement or repairs within (7) seven days after notification by the owner, the owner may accomplish the work at the expense of the contractor.

21.Earthwork

- 21.1. All areas within the project limits shall be cleared and grubbed prior 23.4. Limerock base shall be prepared, compacted and graded and shall to construction. This shall consist of the complete removal and disposal of all trees, brush, stumps, roots, grass, weeds, rubbish and all other obstructions resting on or protruding through the surface of the existing ground to a depth of 1'. All work shall be in accordance with section 110 of the Standard Specifications.
- 21.2. None of the existing limerock material from demolished pavement is to be incorporated in the new limerock base, unless noted in plans. The existing limerock material from demolished pavement may be incorporated into the stabilized subgrade / subbase, or stabilized shoulder.
- 21.3. Fill material shall be classified as A-I, A-3, or A-2-4 in accordance with AASHTO N--145 and shall be free from vegetation and organic 23.5. Limerock base material shall be placed in maximum 6" lifts. Bases material. Not more than 12% by weight of fill material shall pass the no.
- 21.4. All fill material in areas not to be paved shall be compacted to 95% of the maximum density as determined by AASHTO T-99.
- 21.5. All material of construction shall be subject to inspection and testing to establish conformance with the specifications and suitably for the uses intended. The Contractor shall notify the Engineer at least 24 hours prior to the time he will be ready for an inspection or test. The 24.Concrete Construction Contractor shall follow City and County inspection procedures. The 24.1. Concrete sidewalk shall be in accordance with section 522 of the Contractor shall not proceed with any phase of work dependent on an inspection or test of an earlier phase of work, prior to that test or inspection passing. The Contractor shall be responsible for providing certified material test results to the Engineer of record prior to the release of final certification by the Engineer. Test results must include, but may not be limited to, densities for subgrade and limerock, utilities, excavation, asphalt gradation reports, concrete cylinders, etc.
- 21.6. When encountered, muck shall be completely removed from the 24.2. Sidewalk Curb ramps hall be in accordance with F.D.O.T. Roadway center line (10) ten feet beyond the edge of pavement each side. All such material shall be replaced by approved granular fill.
- 21.7. When encountered within drainage swales, hardpan shall be removed to full depth for a width of (5) five feet at the invert and replaced with granular materials.
- 21.8. All underground utilities and drainage installations shall be in place prior to subgrade compaction and pavement construction.
- 21.9. Ground adjacent to roadway/pavement having runoff shall be graded Section 30 Water distribution and sanitary sewer force mains. (2) two inches lower than the edge of pavement to allow for the placement of sod.
- 21.10. Site grading elevations shall be within 0.1' of the required elevation for non paved areas and all areas shall be graded to drain without ponding.
- 21.11. The Contractor shall perform all excavation, fill, embankment and grading to achieve the proposed plan grades including typical road sections, side slopes and canal sections. All work shall be in accordance with section 120 of the Standard Specifications. If fill material is required in excess of that generated by the excavation, the Contractor shall supply this material as required from off-site.
- 21.12. A 2" blanket of top soil shall be placed over all areas to be sodded or seeded and mulched within the project limits unless otherwise indicated

on the plans.

21.13. Sod shall be St. Augustine unless otherwise indicated on the plans, and shall be placed on the graded top soil and watered to insure satisfactory condition upon final acceptance of the project.

22.Drainage

- 22.1. Inlets all inlets shall be the type designated on the plans, and shall be constructed in accordance with section 425 of the Standard 30.2. Ductile iron pipe for water distribution mains shall conform to 30.18. Sewage force main valves shall be plug valves which shall be of the Specifications. All inlets and pipe shall be protected during construction to prevent siltation in the drainage systems by way of temporary plugs and plywood or plastic covers over the inlets. The entire drainage system shall be cleaned of all debris prior to final acceptance.
- 22.2. Pipe specifications: the material type is shown on the drawings by one of the following designations:
- RCP = reinforced concrete pipe. ASTM designation C--76. section 941 of the Standard Specifications.
- CMP = corrugated metal (aluminum) pipe, ASTM designation M-196.
- CMP (smooth lined) = corrugated metal aluminum pipe, (smooth lined) ASTM designation M-196.
- SCP = slotted concrete pipe, sections 941 and 942, of the Standard Specifications.
- PVC = polyvinyl chloride pipe.
- PCMP = perforated cmp, section 945, of the Standard Specifications
- Corrugated High Density Polyethylene Pipe (HDPE) (12 Inches to 60 Inches), shall meet the requirements of FDOT Specification

20.3. The Contractor shall furnish all labor, materials and equipment and 22.3. Pipe backfill - requirements for pipe backfill crossing roads or parking perform all operations required to complete the construction of a paving areas shall be as defined in the section 125-8, of the Standard and drainage system as shown on the plans, specified herein, or both. It Specifications. Pipeline backfill shall be placed in 6 inch lifts and is the intent to provide a complete and operating facility in accordance compacted to 100% of the standard proctor (AASHTO T--99 specifications) 30.5. PVC pressure pipe for sizes 4" through 12" and shall conform to 30.21. Swing check valves for water, sewage, sludge, and general service

have to be adjusted to accomplish construction as shown on these

referenced to the inner walls of structures.

22.6. Filter fabric shall be Mirafi, Typar or equal conforming to section 985 of the Standard Specifications.

- be saw cut to provide a straight even line. Prior to removing curb or gutter, the adjacent asphalt shall be saw cut to provide a straight even
- constructed with a 12" subgrade, compacted to a minimum density of 100% maximum density as determined by AASHTO T-99. The compacted subgrade shall be constructed in the limits shown on the plans. All subgrade shall have an LBR of 40 unless otherwise noted.
- 23.3. Asphaltic concrete surface course shall be constructed to the limits shown on the plans. The surface course shall consist of the thickness and type asphaltic concrete as specified in the plans. All asphaltic concrete shall be in accordance with sections 320, 327, 330, 334, 336, 337, 337, 338, 339 and 341 of the Standard Specifications.
- be in accordance with section 200 of the Standard Specifications. All 30.10 Water distribution system restraint: all fittings and specific pipe joints limerock shall be compacted to 98% per AASHTO T-180 and have not less than 70% of carbonates of calcium and magnesium unless otherwise designated. The Engineer shall inspect the completed base course and the Contractor shall correct any deficiencies and clean the base course prior to the placement of the prime coat. A tack coat will also be required if the Engineer finds that the primed base has become excessively dirty or the prime coat has cured to the extent of losing bounding effect prior to placement of the asphaltic concrete surface course. The prime and tack coats shall be in accordance with section 300 of the Standard Specifications.
- greater than 6" shall be placed in two equal lifts. If, through field tests, the Contractor can demonstrate that the compaction equipment can 30.11. Sewage force main system restraint: all fittings and specific pipe achieve density for the full depth of a thicker lift, and if approved by the joints shall be restrained as outlined below engineer, the base may be constructed in successive courses of not more than 8 inches (200 mm) compacted thickness.
- 23.6. Asphalt edges that are not curbed shall be saw cut to provide a straight even line to the dimensions shown on plans.

- Standard Specifications and in accordance with F.D.O.T. Roadway and Traffic Design Standards, index no. 310. Concrete sidewalk shall be 4" thick, unless otherwise not and constructed on compacted subgrade, with 1/2" expansion joints placed at a maximum of 75', unless otherwise noted on plans. Crack control joints shall be 5' on center. All concrete 30.12. Water distribution valves shall be gate valves, iron body, fully sidewalks that cross driveways shall be 6" thick, unless otherwise noted on plans.
- and Traffic Design Standards, index no. 304.
- 24.3. Concrete curb shall be constructed to the limits shown on the plans. The concrete shall have a minimum compressive strength of 2500 PSI at 28 days and shall be in accordance with section 520 of the Standard Specifications. Concrete curbing shall be in accordance with F.D.O.T. Roadway and Traffic Design Standards, index no. 300.

Note: If materials list here on are in conflict with utility owner, material owner requirements shall govern

30.1. All water main pipe, including fittings, shall be color coded or marked using blue as a predominant color to differentiate drinking water from reclaimed or other water. Underground plastic pipe shall be solid-wall or black pipe with blue stripes incorporated into, or applied to, the pipe 30.16.Dresser couplings shall be regular black couplings with plain gaskets blue pipe, shall have a co-extruded blue external skin, or shall be white wall; and underground metal or concrete pipe shall have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, 30.17. Fire hydrants shall be Mueller centurion traffic type A-423 with 5 1/4" 33.2. The pressure test shall be witnessed by a representative of the utility that are located at no greater than 90-degree intervals around the pipe,

and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top

- ANSI/AWWA standard C151/A21.51 latest revision, "ductile iron pipe centrifugally cast in metal molds or sand-lined molds" with a minimum wall thickness of class 52 unless otherwise noted in the plans. Ductile iron pipe shall be cement lined and seal coated in accordance with ANSI/AWWA standard C104/A21.4 latest revision. The pipe shall be adapted for use with class 250 fittings for all sizes. Water main shall be colored blue in accordance with Florida State Statutes.
- 30.3. Ductile iron pipe for sewage force mains shall conform to ANSI/AWWA standard C151/A21.51 latest revision, "ductile iron pipe centrifugally cast in metal molds or sand- lined molds" with a minimum wall thickness of class 52 unless otherwise noted in the plans. Ductile iron pipe shall be interior ceramic epoxy lined and exterior coated with the manufacturer's coating system (Protecto 401 ceramic epoxy with a minimum dry film thickness of 40 mils and an outside coating of either coal tar epoxy or asphalt). Cement mortared linings are not appropriate 30.19. Plug valves shall be designed for a working pressure of 150 PSI the
- 30.4. All pipe & fittings on the lift station sites shall be ductile iron conforming to the same specifications as above for sewage force mains except that flanged ductile iron pipe & fittings shall be used inside valve pits and wet wells. Flanged pipe and fittings shall conform to ANSI/AWWA C115/a21.15 latest revision and ANSI/AWWA adhered to: all sizes - class 52.
- ANSI/AWWA standard C900 latest revision. PVC pressure pipe shall be made from class 12454-a or class 12454-b virgin material and conform with the outside diameter of cast iron pipe with a minimum wall thickness of dr series 18. Ultra violet degradation or sun bleached pipe will be cause for rejection. Water main shall be colored blue in accordance with Florida State Statutes. Force main shall be impregnated with green pigment. Reuse main shall be impregnated with 30.22. High density polyethylene pipe (HDPE) for water distribution mains purple pigment
- 30.6. Ductile iron fittings for water distribution mains shall conform to ANSI/AWWA standard C110/A21.10 latest revision. Fittings 4" and 31.Service connection: larger shall be cement lined and seal coated in accordance with ANSI/AWWA standard C104/A21.4 latest revision. Water Main fitting 31.1. Service saddles shall be fusion bonded plastic coated ductile iron shall be colored blue in accordance with Florida state statutes.
- 30.7. Cast iron and ductile iron fittings for sewage force mains shall conform to ANSI/AWWA standard C110/A21.10 latest revision. Fittings 4" and larger shall be coated in accordance with the requirements of ductile iron pipe for sewage force mains.
- to ANSI/AWWA standard C111/A21.11 latest revision. Mechanical joint or push-on joint to be rubber gasket compression-type. Special fittings approval of the engineer.
- gasket type only. No solvent weld or threaded joints will be permitted.

shall be restrained as outlined below

Push-on P.V.C. EBAA iron series 1600

- Push-on DIP EBAA iron series 1700
- tr-flex by U.S. Pipe or flex ring by American
- Fittings w/ DIP EBAA iron series 1100 megalug
- Fittings w/ P.V.C. EBAA iron series 2000 megalug
- Length of restrained pipe shall be as indicated on restrained joint pipe detail. (see water & sewer detail sheet)

- Joint restraint
- Push-on P.V.C. EBAA iron series 1600
- Push-on DIP EBAA iron series 1700
- tr-flex by U.S. Pipe or
- flex ring by American
- Fittings w/ DIP EBAA iron series 1100 megalug
- Fittings w/ P.V.C. EBAA iron series 2000 megalug
- Length of restrained pipe shall be as indicated on restrained joint pipe detail. (see water & sewer detail sheet)
- resilient seat bronzed mounted non-rising stem, rated at 200 PSI and conforming to ANSI/AWWA C509 latest revision, and shall have mechanical joints.
- 30.12.1. Gate valves 4" and larger shall be Mueller A-2360, American 33.Testing: latest revision or approved equal.
- 30.12.2. Tapping valves shall be Mueller T-2360 or approved equal. 30.12.3. Gate valves 3" or less shall be Nibco T-133 or T-136 with
- malleable hand wheels or approved equal. 30.13. Tapping sleeves shall be Mueller H615, Clow F- 2505 or approved
- 30.14. Valve boxes shall be U.S. foundry 7500 or approved equal painted blue with the designation "water"
- 30.15. Retainer glands for DIP shall conform to ANSI/AWWA C111/A21.11 latest revision. All glands shall be manufactured from ductile iron as listed by underwriters laboratories for 250 psi minimum water pressure rating. Clow corporation model f-1058, standard fire protection equipment company or approved equal.
- for galvanized steel pipe. They shall be dresser style 90. No substitutions allowed.
- internal valve opening or approved equal.. Pumper nozzle to be 18"

Retainer glands are preferred for restraining. Fire hydrant shall comply with ANSI/AWWA C502 latest revision. Fire hydrants shall be painted in 33.4. For water distribution pipes, disinfection and bacteriological testing accordance with NFPA #291 or per agency standards having iurisdiction. Blue raised reflective pavement marker (rpm) shall be used to identify fire hydrant location. The placement of the rpm to be at the centerline of the outside roadway lane.

- non-lubricated, eccentric type with resilient faced plugs, port areas for valves 20 inches and smaller shall be at least 80% of full pipe area. Port area of valves 24 inches and larger shall be at least 70% of full pipe area. The body shall be of semi-steel (ASTM A-126 C1.b) and shall have bolted bonnet which gives access to the internals of the valve. Seats shall be welded overlay of high nickel content or a stainless steel plate locked in the body cavity. If a plate is used, it shall be replaceable 40.General through the bonnet access. Bearings shall be permanently lubricated of 40.1. Manhole, valve box, meter box and other structure rim elevations stainless steel, bronze or Teflon lined, fiber glass backed Duralon. Bearing areas shall be isolated from the flow with grit seals. Valves shall have packing bonnets where the shaft protrudes from the valve and the packing shall be self-adjusting chevron type which can be replaced without removing the bonnet. All nuts, bolts, springs and washers shall
- valve and actuator shall be capable of satisfactory operation in either direction of flow against pressure drops up to and including 100 PSI (for directions at 100 psi differential. Plug valves over 12" in diameter shall have worm gear operators. The operating mechanism shall be for buried service with a 2 inch square operating nut.
- C110/A21.10 latest revision. The following thickness classes shall be 30.20.Plug valves are to be installed with the seat pointed towards the upstream flow, when specified
 - shall be of the outside lever and spring or weight type, in accordance with ANSI/AWWA C 508 latest revision swing-check valves for waterworks service, 2" through 24" NPS, unless otherwise indicated, with full-opening passages, designed for a water-working pressure of 150 PSI they shall have a flanged cover piece to provide access to the

shall conform to AWWA C906 standard, latest revision. Pipes shall be color-coded blue, minimum 40 feet standard lengths.

- 31.2. Service lines shall be polyethylene (PE 3408), 200 p.s.i rated, DR9. 41.6. Pipe joints shall be of the compression type totally confined grip seal
- 30.8. Joints for bell and spigot ductile iron pipe and fittings shall conform 31.3. Corporation stops shall be manufactured of brass alloy in 41.7. PVC clean-outs to have screw type access plug. Long radius wye accordance with ASTM B-62 with threaded ends, as manufactured by Ford ballcorp, catalog # 1100 or approved equal.
 - and joints shall be considered for specific installation subject to the 31.4. Curb stops shall be Ford v63-44w-x" latest revision or approved 41.8. Cleanouts shall be installed at all sewer services exceeding 75' in
- 30.9. Joints for PVC pressure pipe shall be bell and spigot push-on rubber 31.5. Meter stops shall be 90 degree lockwing type and shall be of bronze construction in accordance FV63-777W" latest revision with ASTM B-62. Meter stops shall be closed bottom design and resilient "0" ring sealed against external leakage at the top. Stops shall be equipped with
 - approved equal.
 - 32. Installation: 32.1. Where restrained pipe joints are required due to fittings appurtenances, etc., pipe material shall be DIP
 - 32.2. All PVC pipe shall be installed in accordance with the uni-bell plastic municipal water distribution system," and ANSI/AWWA C605-xx latest
 - 32.3. All DIP shall be installed in accordance with ANSI/ C600-xx latest providing uniform bearing under the base.
 - 32.4. All water mains shall typically be laid with a minimum 36" cover for 42.6. Two coats of Koppers 300-m, first red, second one black, shall be PVC and 30" cover for DIP
 - 32.5. Detector tape shall be laid 18 inches above all water and sewer lines. A 14 gauge multi-strand wire shall be attached to all nonconductive water mains to facilitate location. An extra 4 feet of wire shall be provided at all valves, blow-offs, hydrants, etc. The wire shall be tested for continuity at the pressure test.
 - 32.6. Pipe deflection shall not exceed 50% of the maximum deflection recommended by the manufacturer.
 - 32.7. A continuous and uniform bedding shall be provided. Backfill material shall be placed in accordance with the plans and specifications.
 - 32.8. All valves shall be installed with adjustable cast iron valve boxes with the word "water" or "sewer", as applicable, cast in the cover. U.S. foundry or approved equal.

250 line or Clow F-6100, conforming to ANSI/AWWA C500 33.1. Before any physical connections and acceptance for operation to the existing water mains are made, the complete water system shall be flushed, pressure tested and disinfected. Copies of passing bacteriological results and pressure test results must be submitted to, and approved by, the engineer, utility owner, and health department. 43.4. The installed sewers may require video inspections. Hydrostatic testing of new mains shall be performed at a minimum starting pressure of 150 PSI for two hours in accordance with ANSI/AWWA C600-05 (hydrostatic test). The pressure test shall not vary more than 5 PSI during the test. The allowable leakage during the pressure test shall be less than the number of gallons per hour as determined by the formula:

L = (sd(p)1/2)/148,000.

In which L equals the allowable leakage in gallons per hour. S equals length of pipe (linear feet), d equals nominal diameter of pipe (inches) and p equals the average test pressure (pounds per square inch gauge). Maximum length of test pipe section should be 2000 feet. The water system shall be disinfected in accordance with the ANSI/AWWA C651-05 (water main bacteriological tests).

owner and the engineer of record.

from finished grade. All hydrants to be installed with control valve. 33.3. For water distribution pipes, sampling points shall be provided by the contractor at the locations shown on the plans.

- shall be in accordance with ANSI/AWWA C651-14 (water main bacteriological tests). Maximum distance between sampling points shall be as follows:
- Transmission mains: every 1200 feet
- Branch mains: every 1000 feet
- Isolated mains < 1000 feet: 2 sample points
- Isolated mains > 1000 feet: 3 sample points

Section 40 - Gravity Sanitary Sewer Collection System

- within the limits of construction are to be adjusted to conform to plan grades proposed in these plans. If no other individual cost item is included in the contract schedule for a particular structure adjustment.
- 40.2. Distance and lengths shown on plans and profile drawings are referenced to the center of structures.

Note: If materials list here on are in conflict with utility owner, material owner requirements shall govern.

- plug valves over 12" in diameter). Valves shall be bubble tight in both 41.1. All PVC sewer pipe and fittings shall be non-pressure polyvinyl chloride (PVC) pipe conforming to ASTM D 3034, SDR 26, with push-on rubber gasket joints.
 - ¥1.2. Ductile iron pipe shall conform to ANSI/AWWA C151/A21.51-*y*a latest revision, "ductile iron pipe centrifugally cast in metal molds or sand lined molds" with wall thickness class 51 for 8" and above, class 52 for 4 and 6", unless otherwise directed by the engineer Ductile iron pipe shall be epoxy lined or coated with the manufacturer's coating system as approved by the engineer of record and the local municipality or utility owner. In either case, the engineer's review and approval is required for either alternative prior to construction. Cement mortared linings are not appropriate for this application.
 - 41.3. All ductile iron fittings shall conform to ANSI/AWWA standard C110/A21.10-xx latest revision. I fittings and accessories shall be epoxy lined and as manufactured or supplied by the pipe manufacturer or approved equal.
- (ASTM A536) with stainless steel straps, saddles shall be double strap 41.5. Manholes are to be sealed with type II sulphate resistant cement or approved equal - no molding plaster.

41.4. Manholes shall be precast per ASTM C 478 and in accordance with

- Joints for bell and spigot ductile iron pipe and fittings shall conform to ANSI/AWWA standard C111/A21.11-xx latest revision. Mechanical ✓joint or push-on joint to be rubber gasket compression- type.
- connections and fittings shall be used in order to access clean-out length (every 75') with a clean out at the property line, easement line, or 5' from a building. The contractor shall coordinate the location of the

building cleanout (5' from the building) and elevation of the end of the

sewer service with the building plumbing contractor. Cleanouts shall be

- the same size as the service lateral in which they are installed.
- a meter coupling nut on the outlet sides, as manufactured by Ford or 42. Installation: 42.1. PVC sewer pipe shall be laid in accordance with ASTM D 2321 and the Uni-Bell plastic pipe association's "recommended practice for the installation of PVC sewer pipe."
 - 42.2. DIP shall be installed in accordance with ANSI/AWWA C-600-xx
- pipe association "guide for installation of PVC pressure pipe for 42.3. Pipe to manhole connection to be Fernco neoprene boot couplings with stainless steel accessories or approved equal.
 - 42.4. Manboles shall be set plumb to line and grade on firm subgrade
 - All openings and joints shall be sealed watertight.
 - applied to the inside of all manholes and shall be applied in accordance with the manufacturer's specifications (16 mils per coat). Coating as required by utility owner or engineer shall be applied to the outside of the manhole. The interior coats shall be applied after sewer lamping of lines. After the application of each coat, the utility owner and engineer shall inspect the manholes. The inspection shall be scheduled a minimum of 48 hours prior to inspection.
 - 43.Testing: Testing of gravity sewer mains and laterals shall be in accordance with the utility owner's minimum design and construction standards latest revision.
 - 43.1. After construction of the sewer system, the engineer may require a visual infiltration and/or exfiltration test to be performed on the entire
 - 43.2. An air test may be substituted for the water exfiltration test, upon approval of the engineer. 43.3. The allowable limits of sewer pipe leakage for gravity sewer mains
 - shall not exceed 100 gallons per inch of inside pipe diameter per mile per day for any section tested. No visible leakage shall be allowed.

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consulting engineers

2160 NW 82nd Avenue Doral, Florida 33122

Florida Certificate of Authorization # - 7928

PH: (954) 788-3400

SID / CONTRACT NO.

REVISIONS

DESCRIPTION DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION THESE PLANS ARE NOT FULLY PERMITTED

AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS. RESPONSIBILITY FOR THE USE OF THESE PLANS PRIOR TO OBTAINING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT WILL FALL SOLELY UPON THE USER.



ADAMS STREET CITY OF HOLLYWOOD FLORIDA

SCALE: AS NOTED DATE ISSUED: FEBRUARY 2018 DRAWN BY: MC DESIGNED BY: SB CHECKED BY

JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

SHEET TITLE

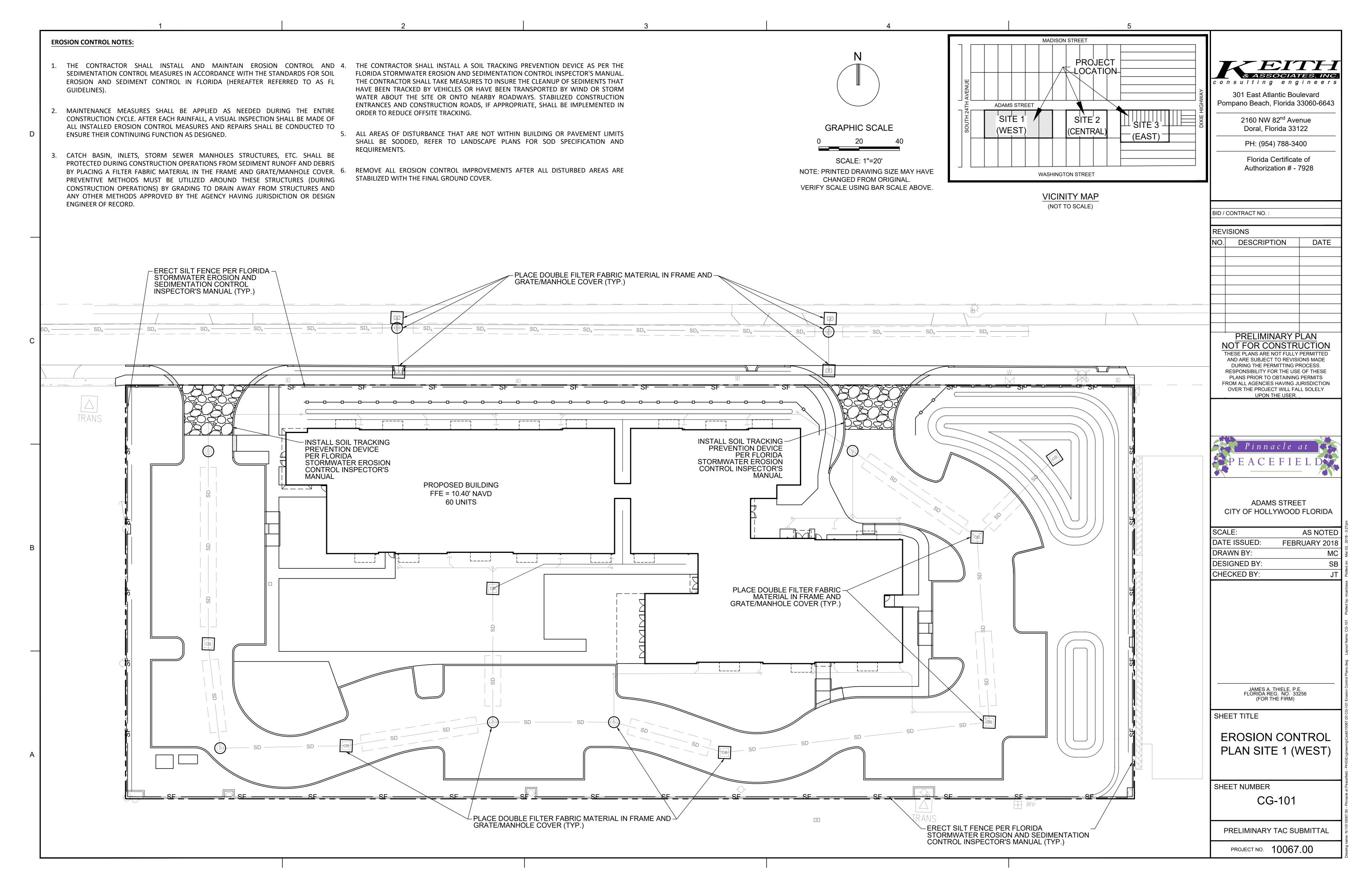
CONSTRUCTION **SPECIFICATIONS**

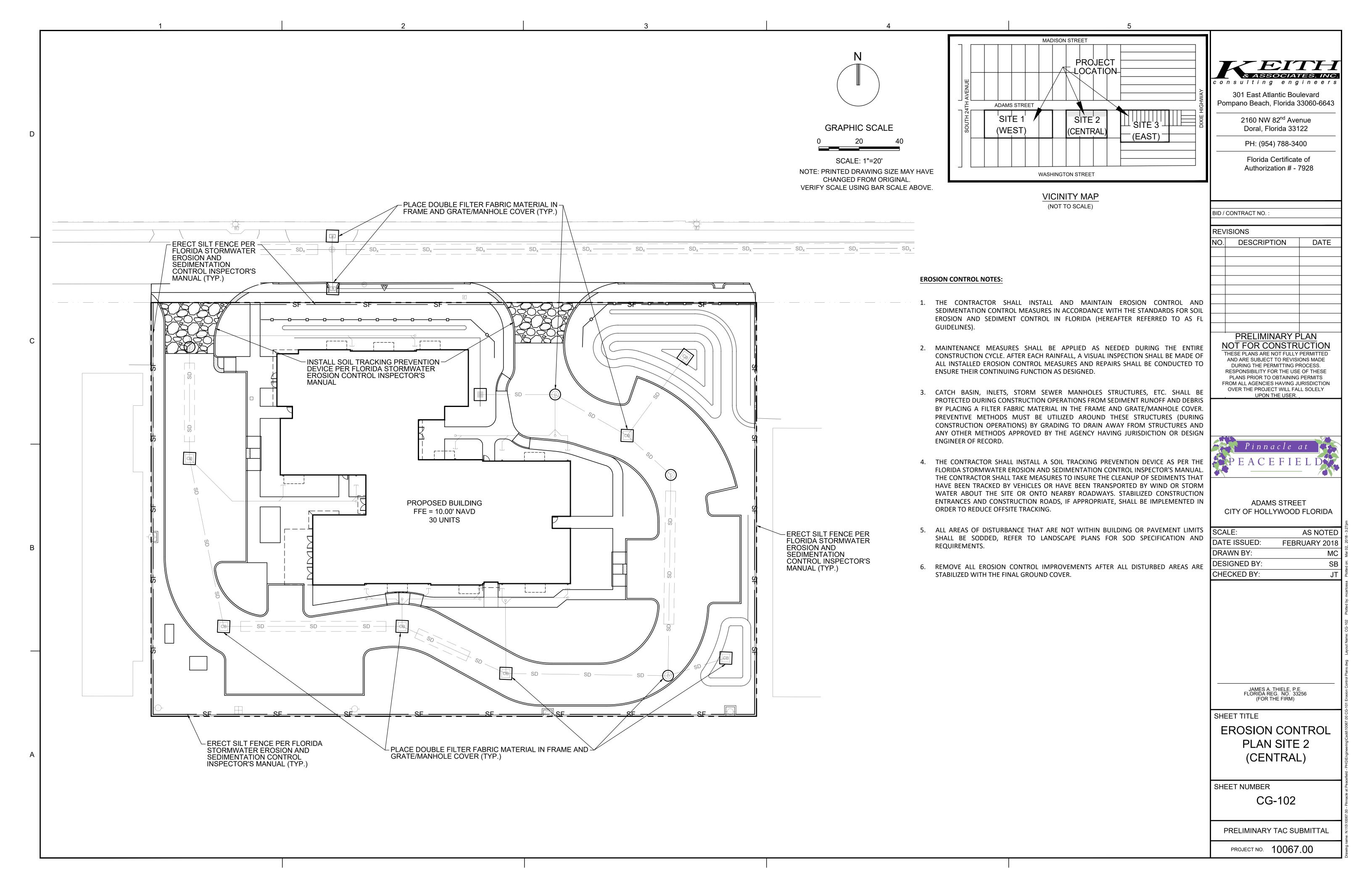
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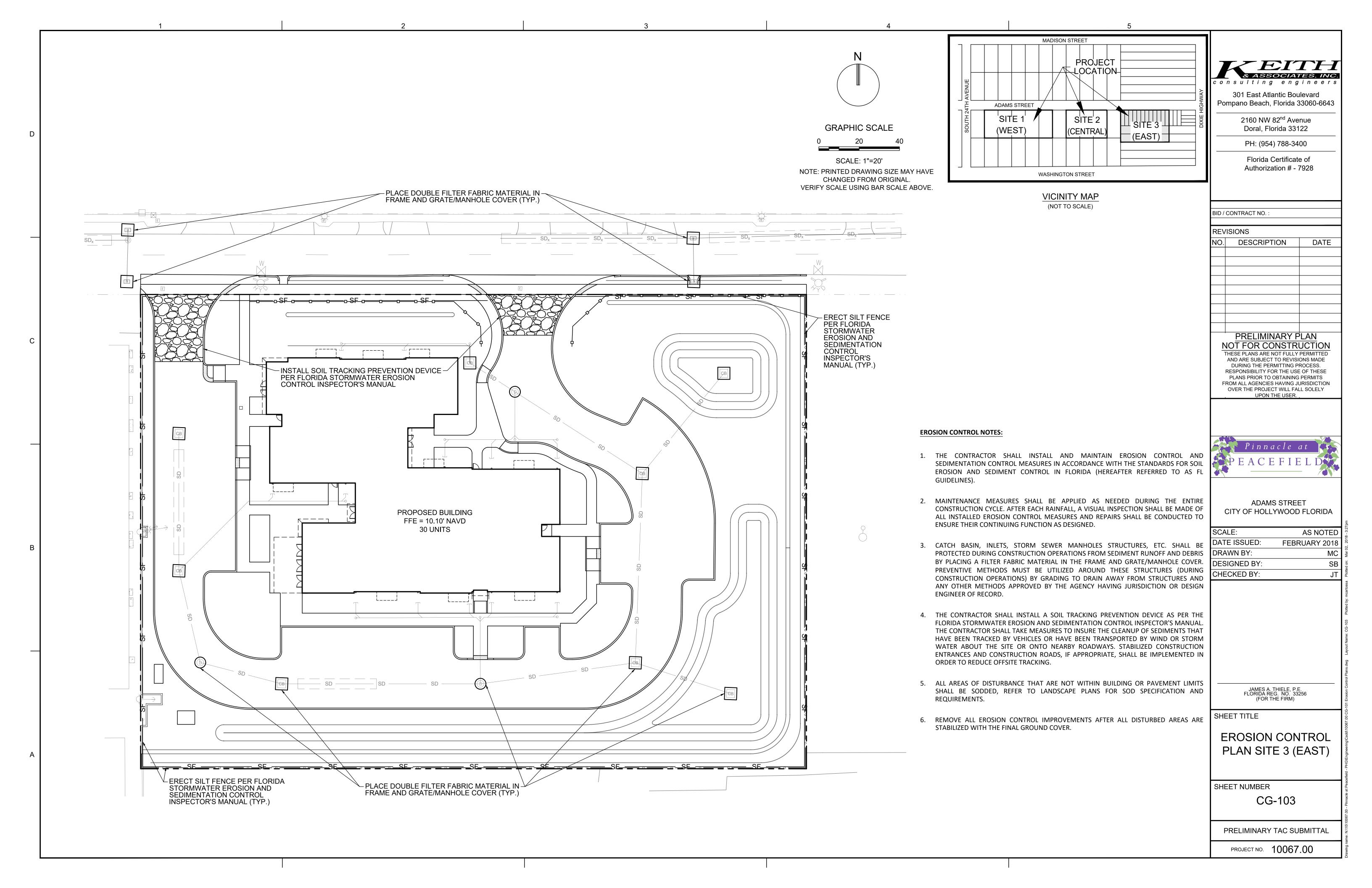
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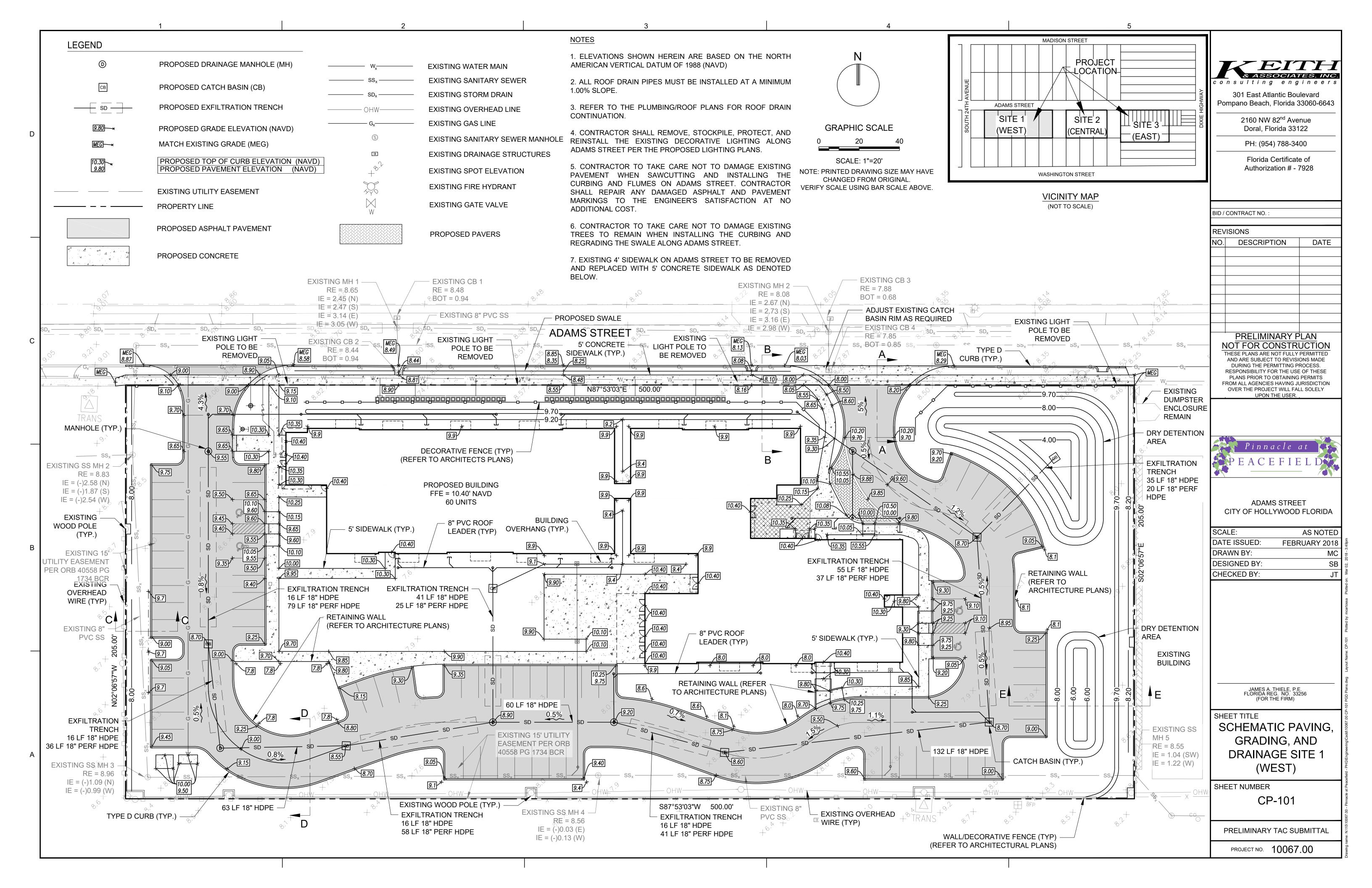
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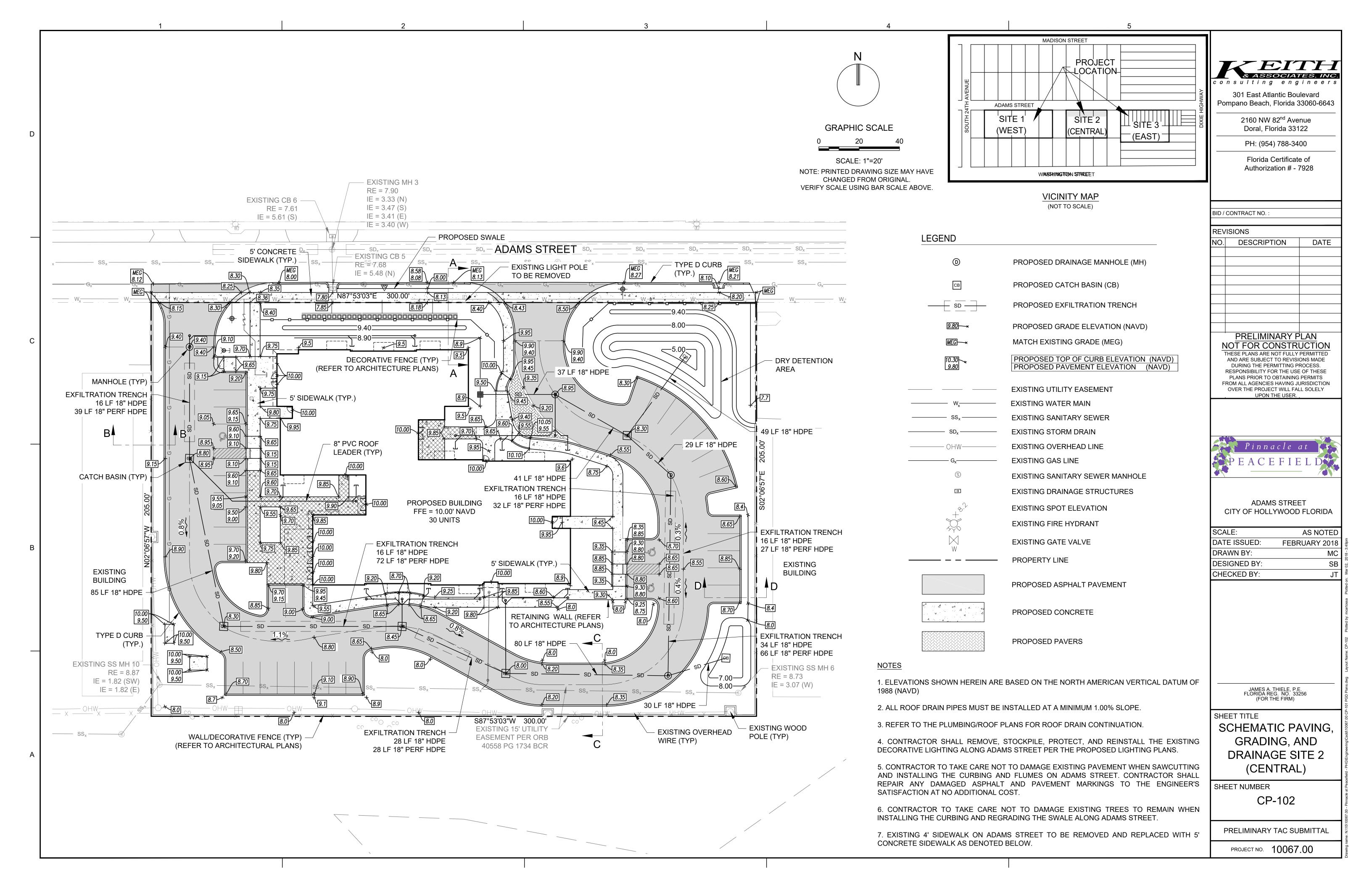
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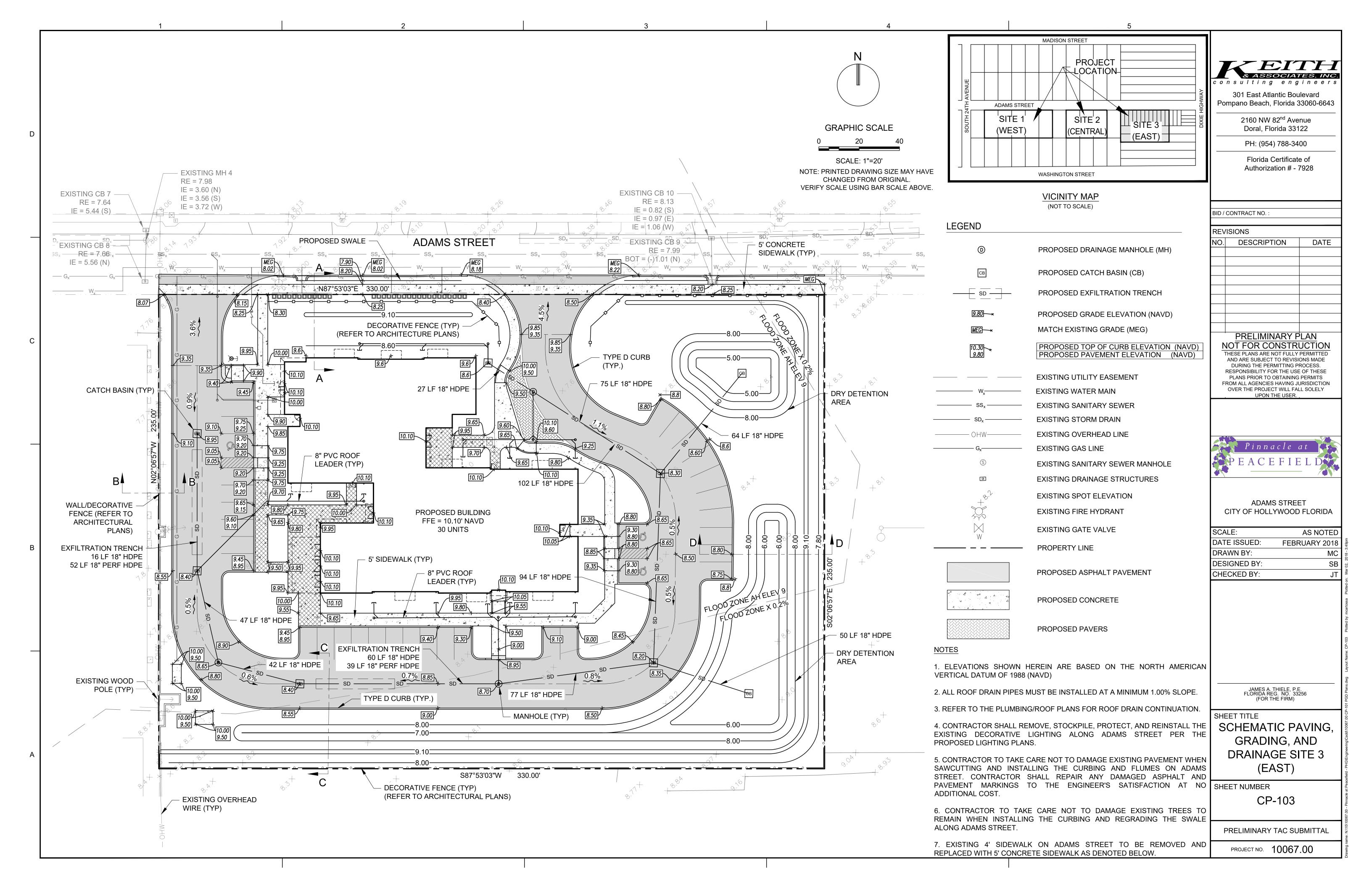


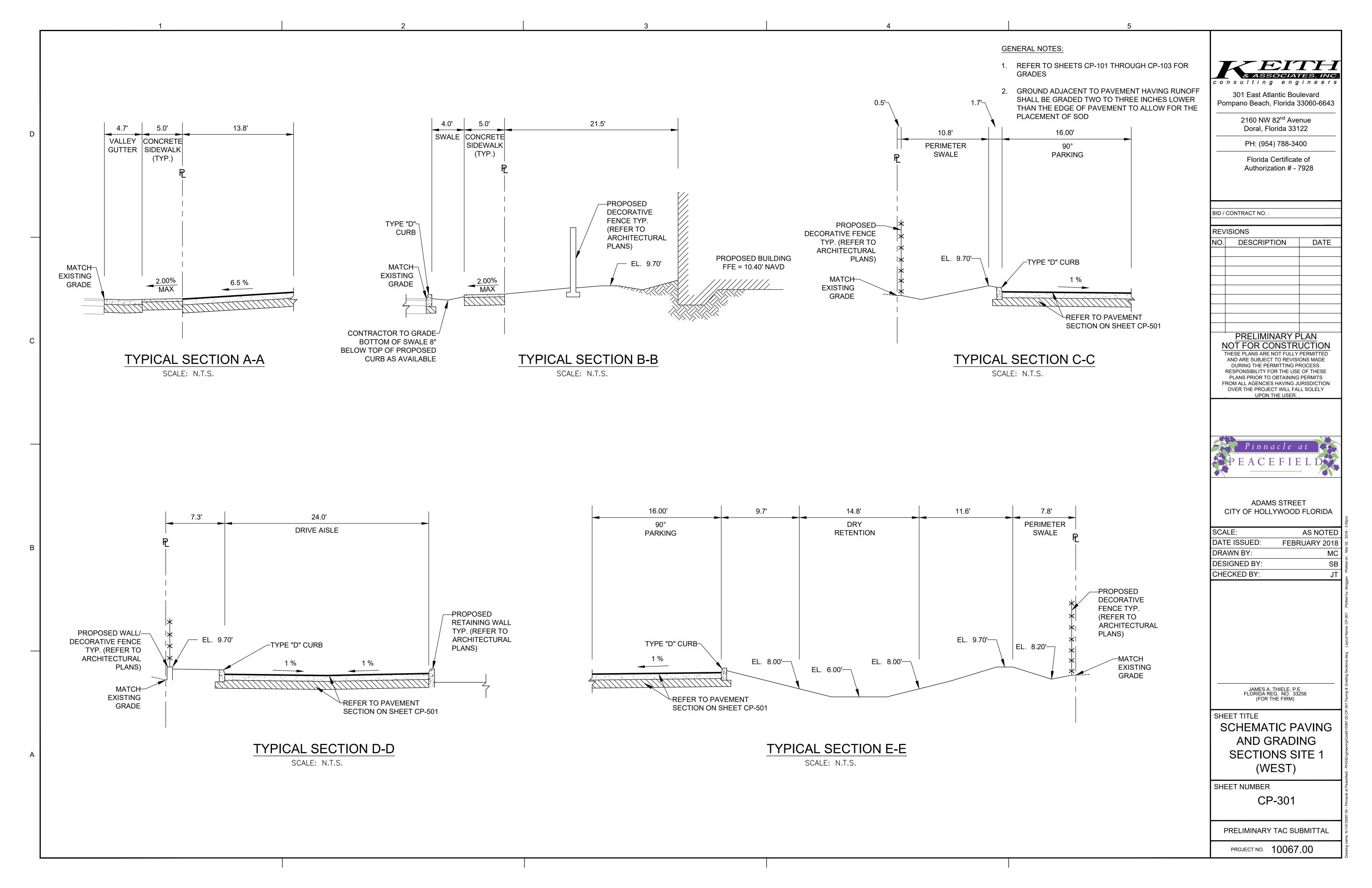


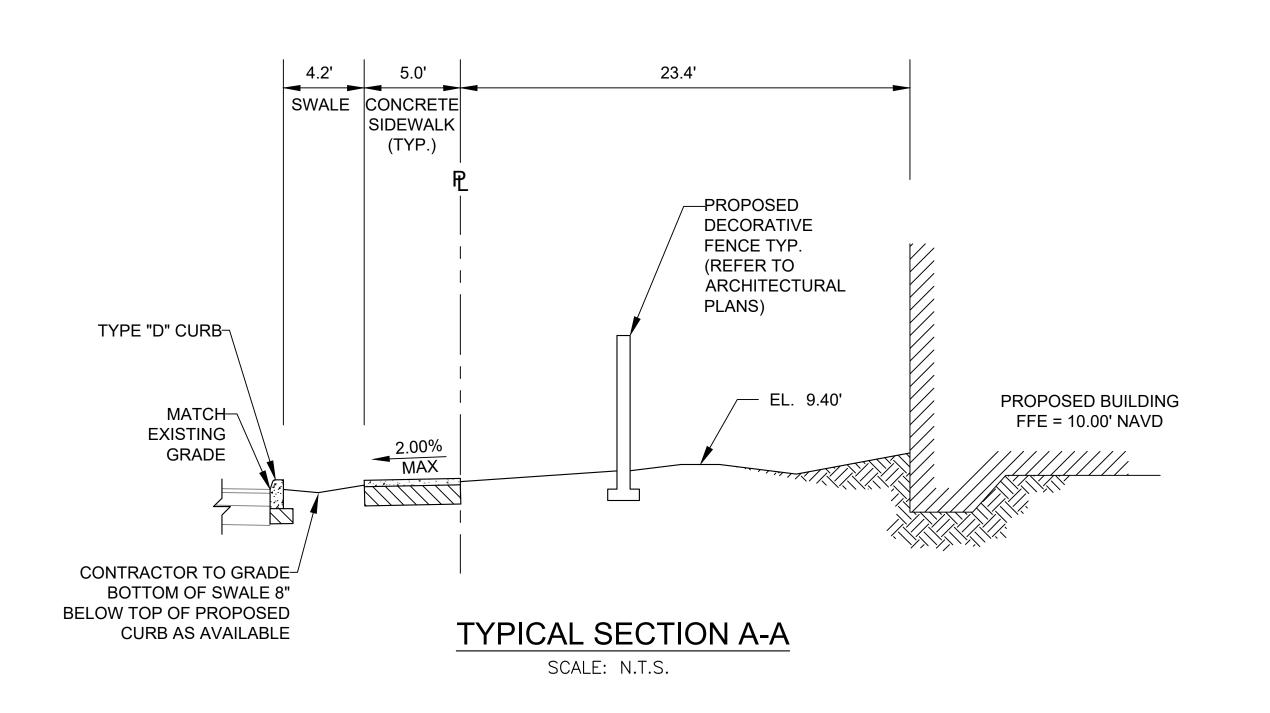


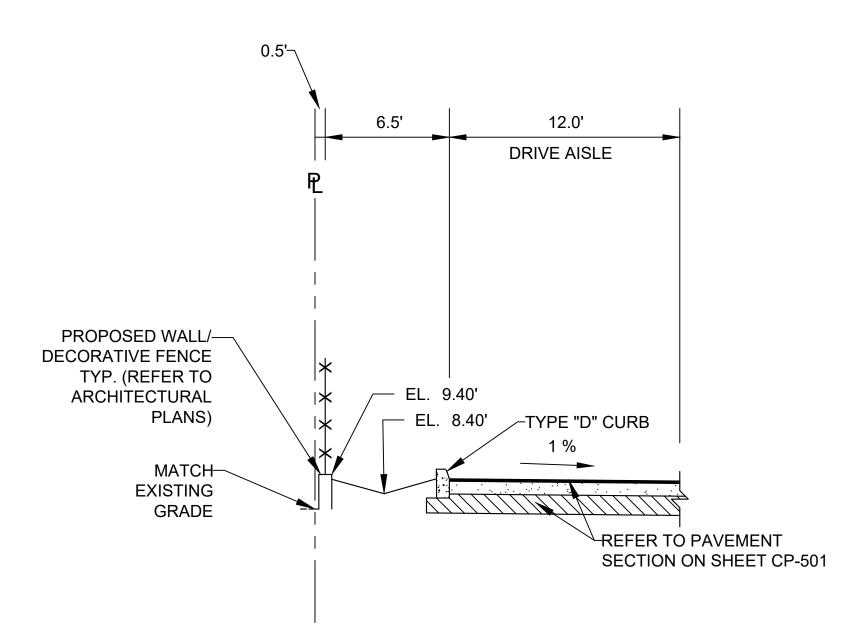












GENERAL NOTES:

- REFER TO SHEETS CP-101 THROUGH CP-103 FOR GRADES
- 2. GROUND ADJACENT TO PAVEMENT HAVING RUNOFF SHALL BE GRADED TWO TO THREE INCHES LOWER THAN THE EDGE OF PAVEMENT TO ALLOW FOR THE PLACEMENT OF SOD

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ADAMS STREET
CITY OF HOLLYWOOD FLORIDA

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DESIGNED BY:	SB
CHECKED BY:	JT

JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

SHEET TITLE

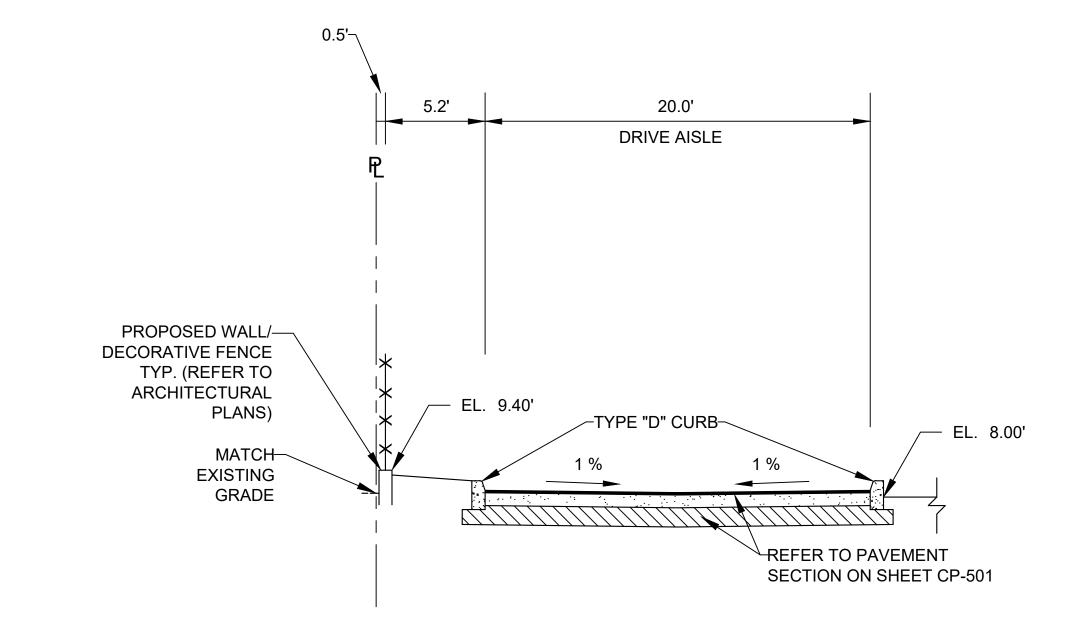
SCHEMATIC PAVING AND GRADING SECTIONS SITE 2 (CENTRAL)

SHEET NUMBER

CP-302

PRELIMINARY TAC SUBMITTAL

PROJECT NO. 10067.00



TYPICAL SECTION C-C

SCALE: N.T.S.

TYPICAL SECTION D-D
SCALE: N.T.S.

REFER TO PAVEMENT

SECTION ON SHEET CP-501

TYPICAL SECTION B-B

8.25'

EL. 9.40'—\

PROPOSED WALL/

TYP. (REFER TO

ARCHITECTURAL

-MATCH

GRADE

EXISTING

PLANS)

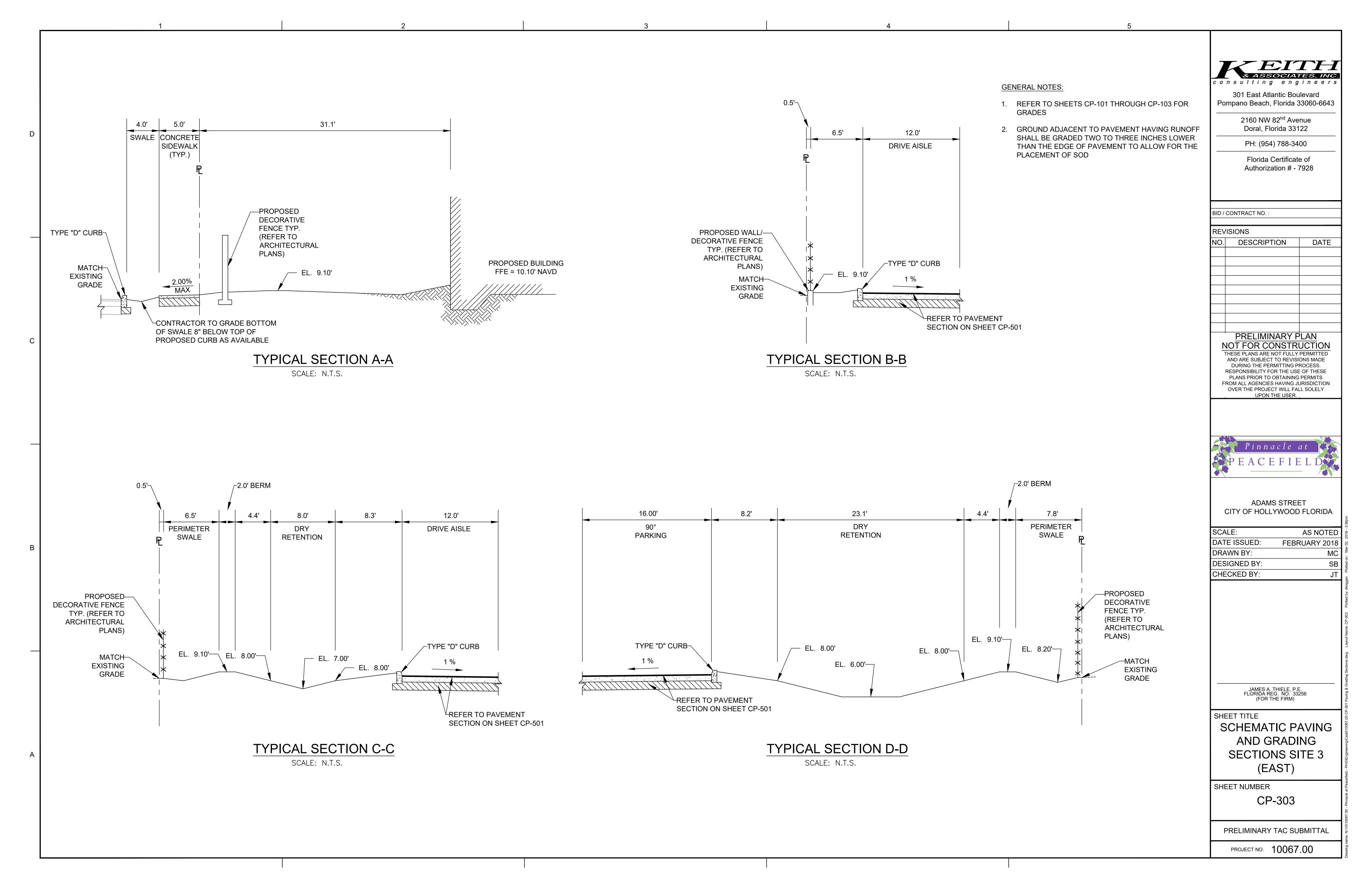
DECORATIVE FENCE

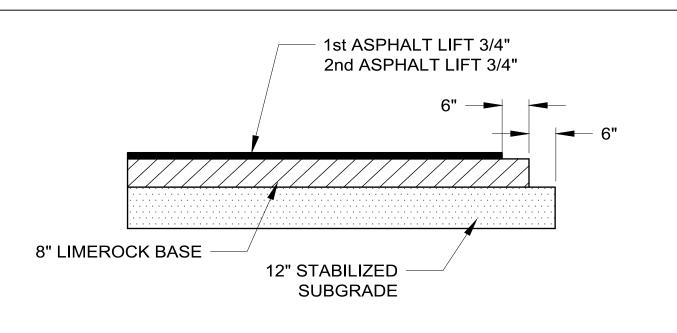
SCALE: N.T.S.

16.00'

PARKING

TYPE "D" CURB-\





ASPHALTIC CONCRETE VEHICULAR:
FIRST LIFT - 3/4" FDOT - S-III OR APPROVED EQUAL
SECOND (FINAL) LIFT - 3/4" FDOT - S-III OR APPROVED EQUAL
ASPHALT SURFACE COURSE SHALL CONFORM TO THE REQUIREMENTS
OF FDOT STANDARDS SPECIFICATIONS SECTION 331.
SECOND LIFT OF ASPHALT SHALL NOT BE PLACED UNTIL FINAL

PRIME AND TACK COAT:
LIMEROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS
OF FDOT STANDARDS SPECIFICATIONS SECTION 300.
APPLICATION RATES:

PRIME COAT - 0.10 GALLONS PER SQ. YD. TACK COAT - 0.08 GALLONS PER SQ. YD.

LANDSCAPE/HARDSCAPE HAS BEEN INSTALLED.

8" LIMEROCK BASE COMPACTED TO 98% OF MAXIMUM DENSITY (AASHTO T-180), LIMEROCK BASE TO CONFORM WITH THE REQUIREMENTS OF FDOT SPECIFICATIONS SECTIONS 200 AND 911.

SUBGRADE: 12" STABILIZED SUBGRADE COMPACTED TO 98% OF MAXIMUM DENSITY (AASHTO T-180); MINIMUM LBR = 40. MATCH EXIST.
GROUND

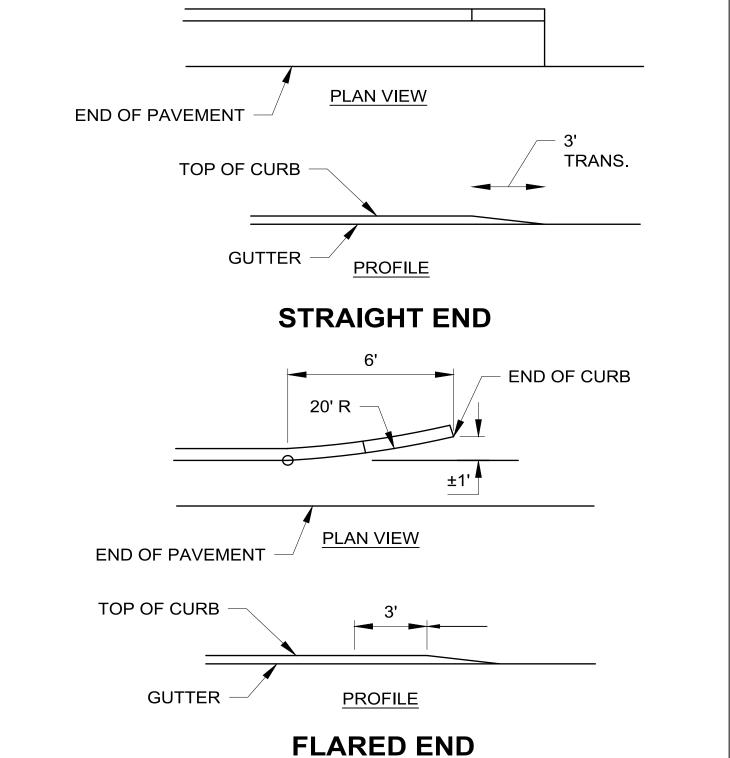
12"
8"
2" R

6"
ASPHALT
LIMEROCK
BASE

CONC. CURB TO BE
CLASS 1 CONC. 3000 PSI
SUBGRADE

ALL TYPE "D" CURB SHALL BE IN ACCORDANCE WITH

THE STANDARD REQUIREMENTS OF FDOT INDEX 300.



3

CURB & GUTTER FLARED AND STRAIGHT ENDS

SCALE: NOT TO SCALE

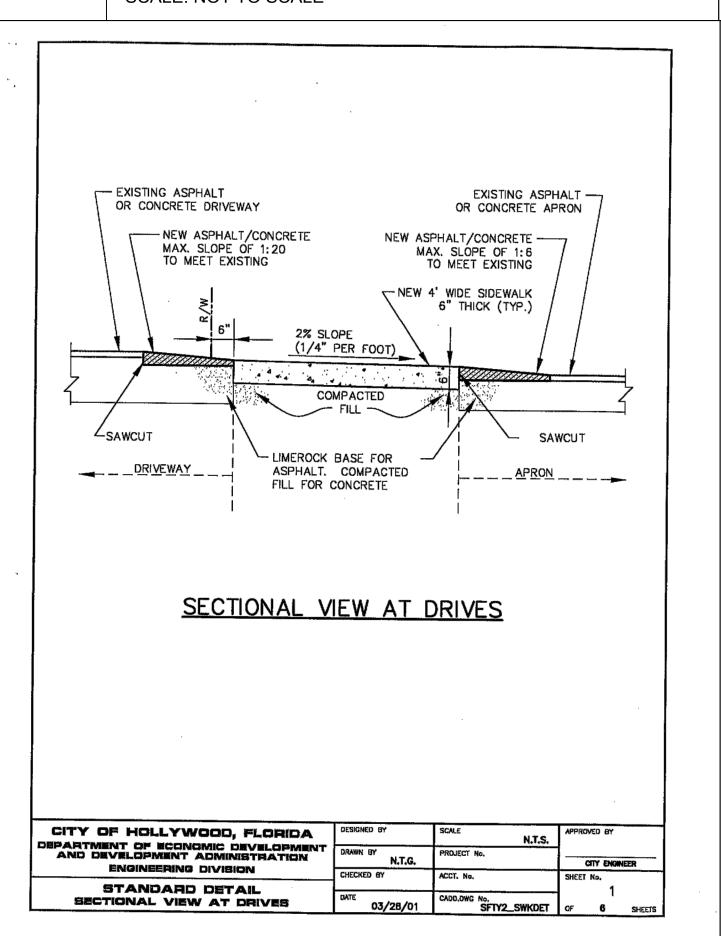
ASPHALT PAVEMENT DETAIL

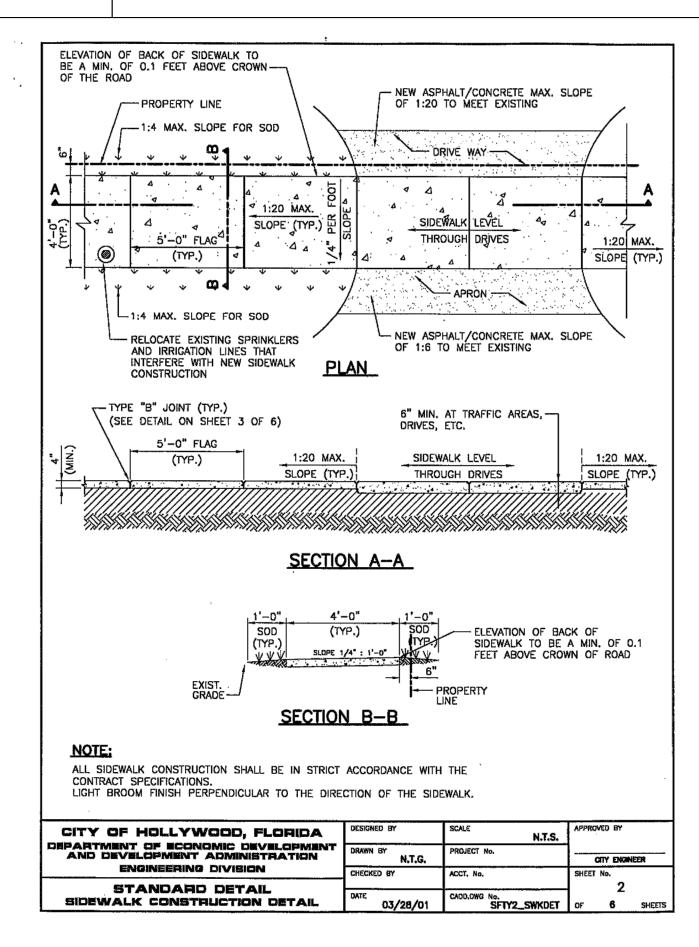
SCALE: NOT TO SCALE

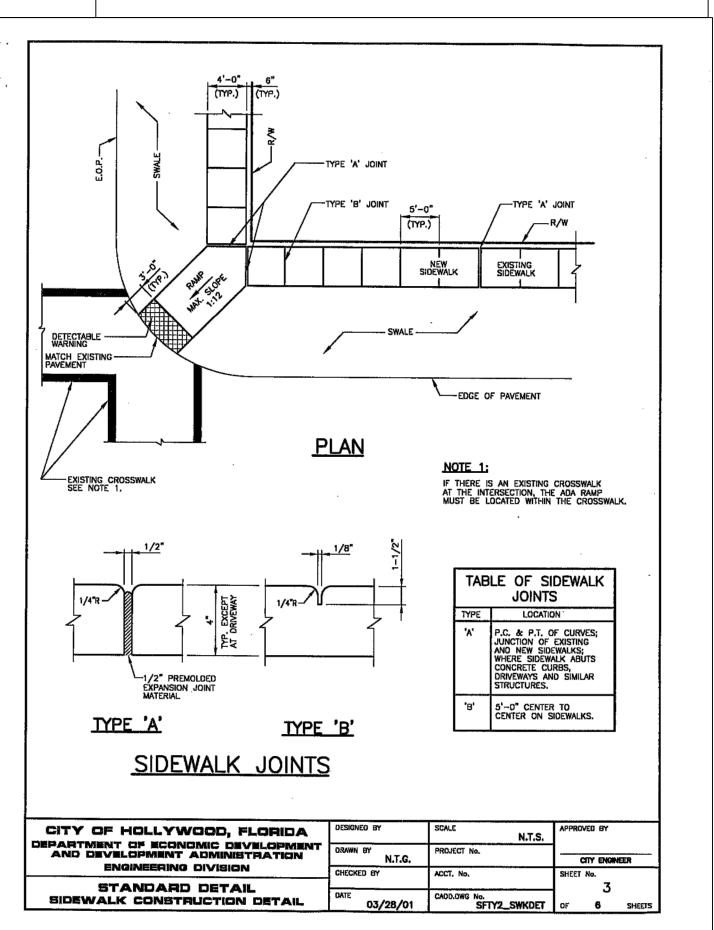
2

TYPE 'D' CURB DETAIL

SCALE: NOT TO SCALE







EITH & ASSOCIATES, INC

301 East Atlantic Boulevard Pompano Beach, Florida 33060-6643

2160 NW 82nd Avenue

Doral, Florida 33122 PH: (954) 788-3400

Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO. DESCRIPTION DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION

THESE PLANS ARE NOT FULLY PERMITTED
AND ARE SUBJECT TO REVISIONS MADE
DURING THE PERMITTING PROCESS.
RESPONSIBILITY FOR THE USE OF THESE
PLANS PRIOR TO OBTAINING PERMITS
FROM ALL AGENCIES HAVING JURISDICTION
OVER THE PROJECT WILL FALL SOLELY
UPON THE USER.



ADAMS STREET
CITY OF HOLLYWOOD FLORIDA

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY 2018
DRAWN BY:	MC
DESIGNED BY:	SB
CHECKED BY:	JT

JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

SHEET TITLE

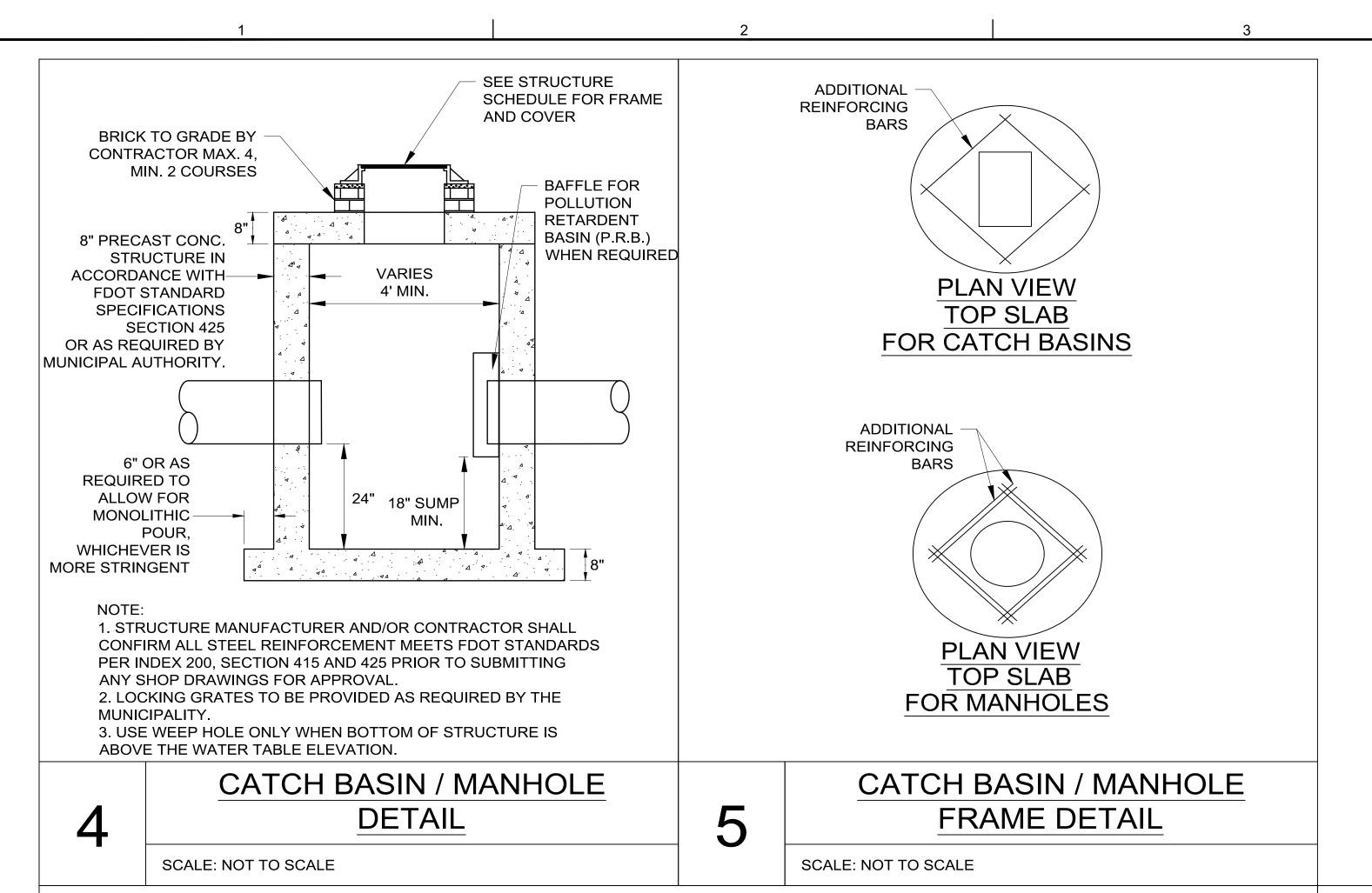
PAVING, GRADING, AND DRAINAGE DETAILS

SHEET NUMBER

CP-501

PRELIMINARY TAC SUBMITTAL

PROJECT NO. 10067.00



6

SCALE: NOT TO SCALE

MIN. FINISHED GRADE ELEV. = VARIES NAVD (SEE PLAN) MIRAFI 140N 12" MIN. FILTER FABRIC OVERLAP 3/4" WASHED TOP OF TRENCH ROCK ELEV. = VARIES NAVD (5.00' - 6.00') 18" PERF. HDPE INV. EL.= 1.50 NAVD <u> W.T. EL.</u> **BOTTOM OF** 1.50 NAVD EXFILT. TRENCH ELEV.= 0.50 NAVD **VARIES** (5' - 8')

SCALE: NOT TO SCALE

SEE STRUCTURE SCHEDULE FOR FRAME AND COVER SEE PAVEMENT BRICK TO GRADE BY -**SECTION FOR DETAILS** CONTRACTOR MAX. 4, BAFFLE FOR POLLUTION RETARDENT BASIN (P.R.B.) WHEN REQUIRED MIN. 2 COURSES SELECT FILL -MIRAFI 140 N 8" PRECAST—► FILTER FABRIC CONC. STRUCTURE IN ACCORDANCE W/ FDOT INDEX No.425 **VARIES** OR AS REQUIRED 4' MIN. BY MUNICIPAL 3/4" WASHED AUTHORITY. ROCK PERFORATED DRAINAGE 5' MIN. OF NON-PERFORATED PIPE [⊆]12" MIN. MIRAFI 140 N FILTER FABRIC 18" SUMP MIN. - 6" OR AS REQUIRED CONNECTING BAND (TYP.) TO ALLOW FOR MONOLITHIC POUR, WHICHEVER IS - UNDISTURBED SOIL MORE STRINGENT CATCH BASIN W/ P.R.B. AND EXFILTRATION TRENCH EXFILTRATION TRENCH DETAIL

301 East Atlantic Boulevard Pompano Beach, Florida 33060-6643

> 2160 NW 82nd Avenue Doral, Florida 33122

> > PH: (954) 788-3400

Florida Certificate of Authorization # - 7928

BID / CONTRACT NO.

REVISIONS

DESCRIPTION DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION

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ADAMS STREET CITY OF HOLLYWOOD FLORIDA

S	CALE:	AS NOTED
	ATE ISSUED:	FEBRUARY 2018
	RAWN BY:	MC
	ESIGNED BY:	SB
С	CHECKED BY:	JT

JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

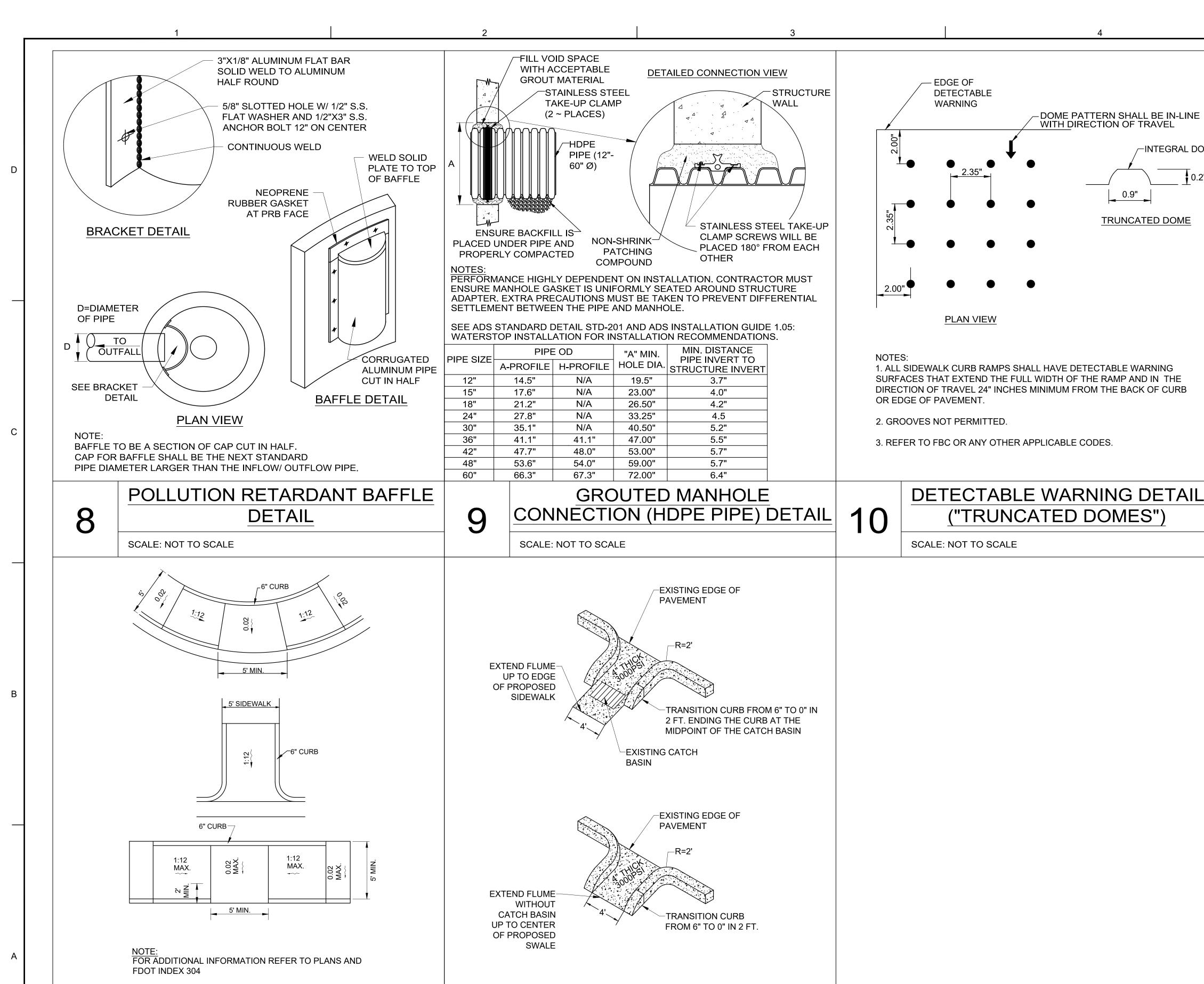
SHEET TITLE

PAVING, GRADING, AND DRAINAGE **DETAILS**

SHEET NUMBER

CP-502

PROJECT NO. 10067.00



CONCRETE FLUMES DETAIL

12

SCALE: NOT TO SCALE

STANDARD SIDEWALK CURB

RAMP DETAIL

SCALE: NOT TO SCALE

301 East Atlantic Boulevard Pompano Beach, Florida 33060-6643

> 2160 NW 82nd Avenue Doral, Florida 33122

PH: (954) 788-3400

Florida Certificate of Authorization # - 7928

BID / CONTRACT NO.

REVISIONS

-INTEGRAL DOME

0.2"

DESCRIPTION DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION

THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS. RESPONSIBILITY FOR THE USE OF THESE PLANS PRIOR TO OBTAINING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT WILL FALL SOLELY UPON THE USER.



ADAMS STREET CITY OF HOLLYWOOD FLORIDA

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY 2018
DRAWN BY:	MC
DESIGNED BY:	SB
CHECKED BY:	JT

JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

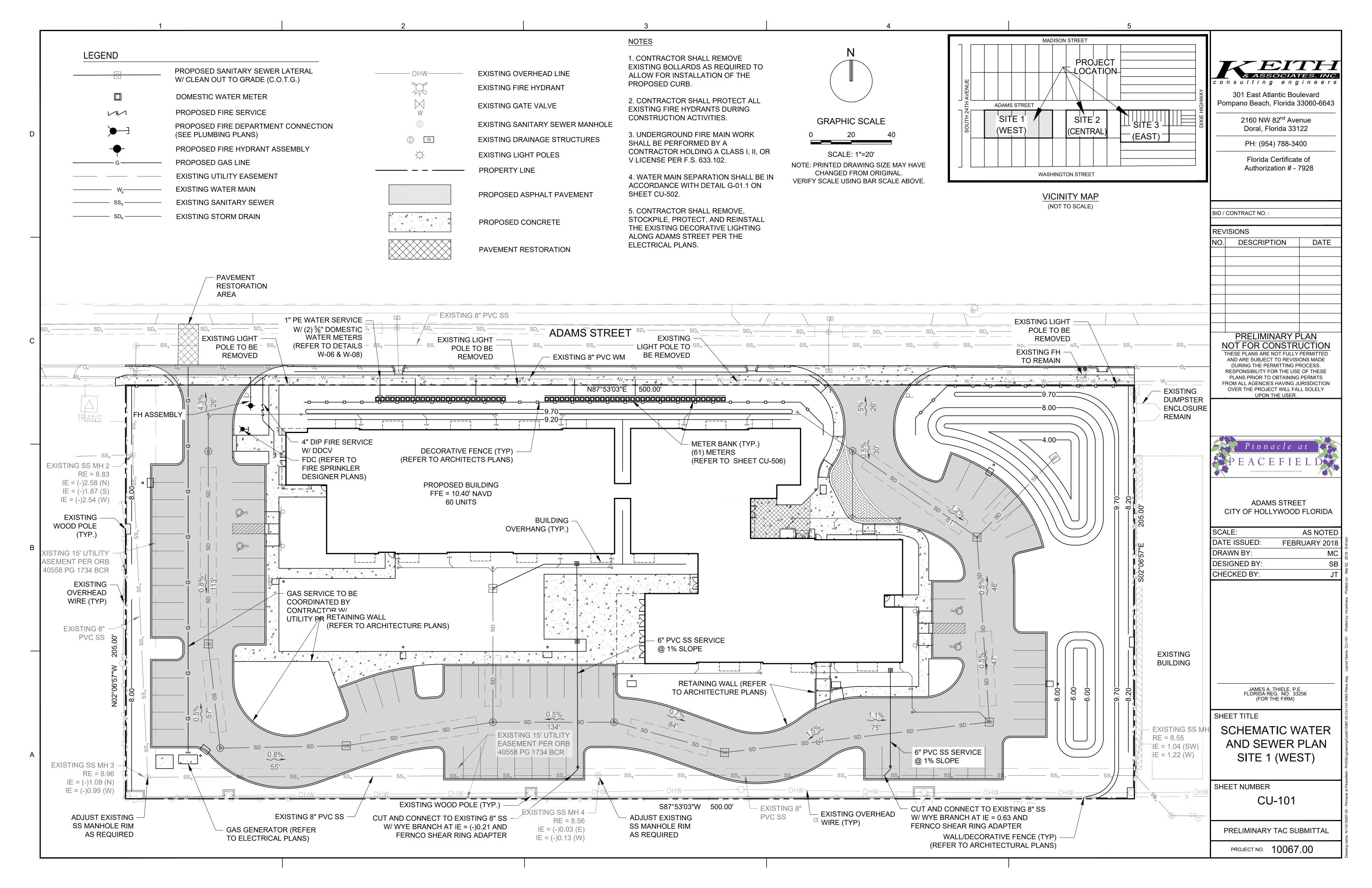
SHEET TITLE

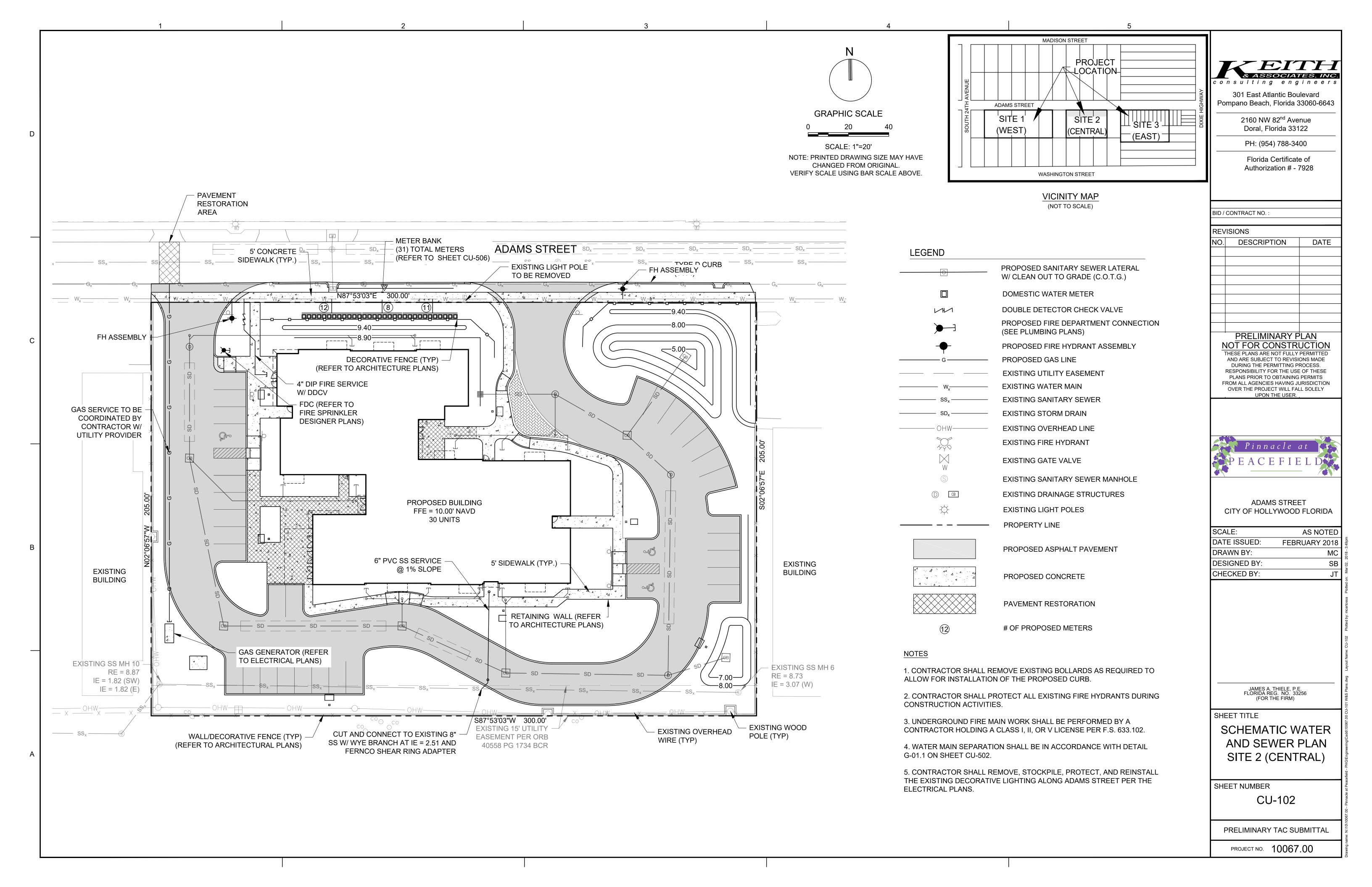
PAVING, GRADING, AND DRAINAGE **DETAILS**

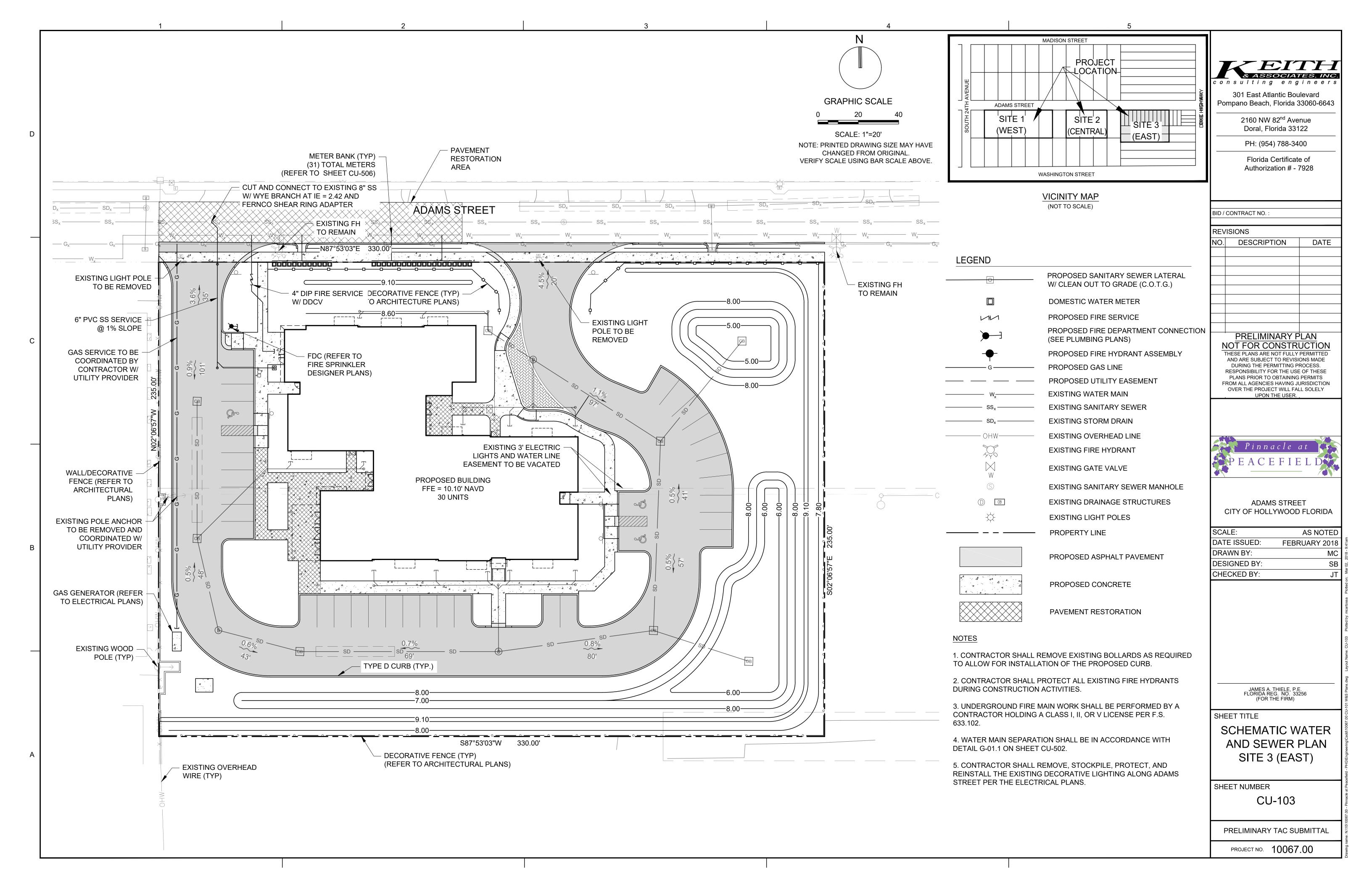
SHEET NUMBER

CP-503

PROJECT NO. 10067.00







GENERAL NOTES:

- 1. THE INFORMATION PROVIDED IN THESE DRAWINGS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH BIDS WILL BE BASED.
- 2. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO APPLICABLE STANDARDS AND SPECIFICATIONS OF THE CITY OF HOLLYWOOD DEPARTMENT OF PUBLIC UTILITIES, ENGINEERING AND CONSTRUCTION SERVICES DIVISION (ECSD), AND ALL OTHER LOCAL, STATE AND NATIONAL CODES, WHERE APPLICABLE.
- 3. LOCATIONS, ELEVATIONS, SIZES, MATERIALS, ALIGNMENTS, AND DIMENSIONS OF EXISTING FACILITIES, UTILITIES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE PLANS; AND DO NOT PURPORT TO BE ABSOLUTELY CORRECT. ALSO, THERE MAY HAVE BEEN OTHER IMPROVEMENTS, UTILITIES, ETC., WITHIN THE PROJECT AREA WHICH WERE CONSTRUCTED AFTER THE PREPARATION OF THESE PLANS AND/OR THE ORIGINAL SITE SURVEY. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND OTHER FEATURES AFFECTING HIS/HER WORK PRIOR TO CONSTRUCTION, AND NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICT BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ANY FACILITIES SHOWN OR NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL WORK AS NEEDED TO AVOID CONFLICT WITH EXISTING UTILITIES (NO ADDITIONAL COST SHALL BE PAID FOR THIS WORK). EXISTING UTILITIES SHALL BE MAINTAINED IN SERVICE DURING CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE RESPECTIVE UTILITY OWNER.
- 4. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES TO ARRANGE FOR THE RELOCATION AND TEMPORARY SUPPORT OF UTILITY FEATURES, ETC. AS NECESSARY TO COMPLETE THE WORK.
- 5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES ON THIS PROJECT, AND TO ENSURE THAT EXISTING UTILITIES ARE MAINTAINED IN SERVICE DURING CONSTRUCTION UNLESS APPROVED OTHERWISE BY THE UTILITY OWNER.
- 6. CONTRACTOR SHALL ADJUST ALL EXISTING UTILITY CASTINGS INCLUDING VALVE BOXES, MANHOLES, HAND-HOLES, PULL-BOXES, STORMWATER INLETS, AND SIMILAR STRUCTURES IN CONSTRUCTION AREA TO BE OVERLAID WITH ASPHALT PAVEMENT.
- 7. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL APPLICABLE CONSTRUCTION AND ENVIRONMENTAL PERMITS PRIOR TO THE START OF CONSTRUCTION.
- 8. THE CONTRACTOR SHALL NOTIFY ECSD AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- 9. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND INSTALLATION OF THE PROPOSED IMPROVEMENTS, SHOP DRAWINGS SHALL BE SUBMITTED TO ECSD IN ACCORDANCE WITH THE CONTRACT DOCUMENT'S REQUIREMENTS, FOR APPROVAL. IN ADDITION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY OTHER AGENCY SHOP DRAWING APPROVAL, IF REQUIRED.
- 10. THE CONTRACTOR SHALL NOTIFY ECSD IMMEDIATELY FOR ANY CONFLICT ARISING DURING CONSTRUCTION OF ANY IMPROVEMENTS SHOWN ON THESE DRAWINGS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
- 11. ELEVATIONS SHOWN ARE IN FEET AND ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

OF HOLLYWOOD, AIG	ISSUED:	03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
DIAMOND OF THE	DRAWN:	EAM		DRAWING NO.
GOLD COAST	APPROVED	: XXX	GENERAL NOTES	G-00

GENERAL NOTES (CONTINUED):

- 12. CITY OF HOLLYWOOD SHALL NOT PROVIDE STAGING / STORAGE AREA. CONTRACTOR SHALL SECURE STAGING / STORAGE AREA AS NECESSARY FOR CONSTRUCTION WORK.
- 13. CONTRACTOR SHALL HAUL AWAY EXCESSIVE STOCKPILE OF SOIL FOR DISPOSAL EVERY DAY. NO STOCKPILE SOIL IS ALLOWED TO BE LEFT ON THE CONSTRUCTION SITE OVER NIGHT.
- 14. CONTRACTOR SHALL CLEAN / SWEEP THE ROAD AT LEAST ONCE DAY OR AS REQUIRED BY THE ENGINEER.
- 15. CONTRACTOR SHALL PROTECT CATCH BASINS WITHIN / ADJACENT TO THE CONSTRUCTION SITE AS REQUIRED BY NPDES REGULATIONS.
- 16. THE CITY OF HOLLYWOOD HAS A NOISE ORDINANCE (CHAPTER 100) WHICH PROHIBITS EXCAVATION AND CONSTRUCTION BEFORE 8:00 A.M. AND AFTER 6:00 P.M., MONDAY THROUGH SATURDAY AND ALL DAY
- 17. SUITABLE EXCAVATED MATERIAL SHALL BE USED IN FILL AREAS. NO SEPARATE PAY ITEM FOR THIS WORK, INCLUDE COST IN OTHER ITEMS.
- 18. ALL ROAD CROSSINGS ARE OPEN CUT AS PER THE REQUIREMENTS OF THE ECSD UNLESS OTHERWISE
- 19. THE CONTRACTOR SHALL REPLACE ALL PAVING, STABILIZING EARTH, DRIVEWAYS, PARKING LOTS, SIDEWALKS, ETC. TO SATISFY THE INSTALLATION OF THE PROPOSED IMPROVEMENTS WITH THE SAME TYPE OF MATERIAL THAT WAS REMOVED DURING CONSTRUCTION OR AS DIRECTED BY ECSD FIELD
- 20. THE CONTRACTOR SHALL NOT ENCROACH INTO PRIVATE PROPERTY WITH PERSONNEL, MATERIAL OR EQUIPMENT. IN CASE WORK ON PRIVATE PROPERTY IS NEEDED, A CITY OF HOLLYWOOD "RIGHT OF ENTRY" FORM MUST BE SIGNED BY PROPERTY OWNER AND THE DIRECTOR OF PUBLIC UTILITIES. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ACCESS AT ALL TIMES TO PRIVATE HOMES/BUSINESSES.
- 21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE, REMOVAL OR MODIFICATION, CAUSED TO ANY IRRIGATION SYSTEM (PRIVATE OR PUBLIC) ACCIDENTALLY OR PURPOSELY. THE CONTRACTOR SHALL REPLACE ANY DAMAGED, REMOVED OR MODIFIED IRRIGATION PIPES, SPRINKLER HEADS OR OTHER PERTINENT APPURTENANCES TO MATCH OR EXCEED EXISTING CONDITIONS AT NO ADDITIONAL COST TO
- 22. MAIL BOXES, FENCES OR OTHER PRIVATE PROPERTY DAMAGED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE REPLACED TO MATCH OR EXCEED EXISTING CONDITION.
- 23. CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC IN ACCORDANCE WITH FDOT STANDARDS AND CITY OF HOLLYWOOD DEPARTMENT OF PUBLIC UTILITIES STANDARDS.
- 24. NO TREES ARE TO BE REMOVED OR RELOCATED WITHOUT PRIOR APPROVAL FROM THE ECSD FIELD ENGINEER.
- 25. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE NECESSARY TREE REMOVAL OR RELOCATION PERMITS FROM THE CITY OF HOLLYWOOD BUILDING DEPARTMENT FOR TREES LOCATED IN THE PUBLIC RIGHT OF WAY.
- 26. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE REGULATORY STANDARDS / REQUIREMENTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF ECSD.

DRAWN: EAM GENERAL NOTES DRAWING NO	/06/201
APPROVED: XXX (CONTINUED) G-00).1

GENERAL NOTES (CONTINUED):

40. THE CONTRACTOR SHALL GIVE AT LEAST 48 HOURS NOTICE TO UTILITY COMPANIES TO PROVIDE FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. CONTACT UTILITIES NOTIFICATION CENTER AT 811 OR 1-800-432-4770 (SUNSHINE ONE-CALL OF FLORIDA).



- 41. WHEN PVC PIPE IS USED, A METALLIZED MARKER TAPE SHALL BE INSTALLED CONTINUOUSLY 18"
 ABOVE THE PIPE. THE MARKER TAPE SHOULD BE IMPRINTED WITH A WARNING THAT THERE IS
 BURIED PIPE BELOW. THE TAPE SHALL BE MAGNA TEC, AS MANUFACTURED BY THOR ENTERPRISES
 INC. OR APPROVED EQUAL.
- 42. ALL CONNECTIONS TO EXISTING MAINS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. WATER CONNECTIONS SHALL BE METERED, AND THE COST OF WATER AND TEMPORARY METER SHALL BE BORNE BY THE CONTRACTOR.
- 43. A COMPLETE AS-BUILT SURVEY SHALL BE ACCURATELY RECORDED OF THE UTILITY SYSTEM DURING CONSTRUCTION. AS-BUILT SURVEY SHALL BE SUBMITTED TO ECSD SIGNED AND SEALED BY A FLORIDA REGISTERED SURVEYOR PRIOR TO FINAL INSPECTION AND ACCEPTANCE OF PROJECT. THE COST OF SIGNED AND SEALED AS-BUILTS SHALL BE COVERED IN OVERALL BID. THE AS-BUILT SURVEY SHALL
 - a. PLAN VIEW SHOWING THE HORIZONTAL LOCATIONS OF EACH MANHOLE, INLET, VALVE, FITTING, BEND AND HORIZONTAL PIPE DEFLECTIONS WITH COORDINATES AND IN REFERENCE TO A SURVEY BASELINE OR RIGHT-OF-WAY CENTERLINE.
 - b. THE PLAN VIEW SHALL ALSO SHOW SPOT ELEVATIONS OF THE TOP OF THE MAIN (WATER MAIN AND FORCE MAIN) OR PIPE INVERTS (GRAVITY MAINS) AT INTERVALS NOT TO EXCEED 100 FEET AS MEASURED ALONG MAIN. THE PLAN VIEW SHALL ALSO INCLUDE SPOT ELEVATIONS AT EACH MANHOLE, INLET, VALVE, FITTING, BEND AND VERTICAL PIPE
 - c. THE PLAN VIEW SHALL ALSO SHOW THE HORIZONTAL SEPARATION FROM UNDERGROUND UTILITIES IMMEDIATELY ADJACENT OR PARALLEL TO THE NEW MAIN.
 - d. PROFILE VIEW WITH SPOT ELEVATIONS OF THE TOP OF THE MAIN (WATER MAIN AND FORCE MAIN) OR PIPE INVERT (GRAVITY MAIN) AND OF THE FINISHED GRADE OR MANHOLE RIM DIRECTLY ABOVE THE MAIN AT INTERVALS NOT TO EXCEED 100 FEET AS MEASURED ALONG THE MAIN. THE PROFILE VIEW SHALL ALSO INCLUDE SPOT ELEVATIONS AT EACH MANHOLE, INLET, VALVE, FITTING, BEND AND VERTICAL PIPE DEFLECTION.
 - THE PROFILE VIEW SHALL SHOW ALL UNDERGROUND UTILITIES CROSSING THE NEW MAIN AND THE VERTICAL SEPARATION PROVIDED BETWEEN THAT UNDERGROUND UTILITY AND THE
 - ALL CADD FILES MUST BE CREATED FOLLOWING THE CITY OF HOLLYWOOD "SURVEY / AS-BUILT CAD DRAWING STANDARDS"

OF HOLLYWOOD, FILE	ISSUED:	03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: I	11/06/2017
DIAMOND OF THE GOLD COAST	DRAWN:	EAM	GENERAL NOTES	DRAWING NO).
	APPROVED): XXX	(CONTINUED)	G-00	ე.3

PAVEMENT (WIDTH VARIES) PAVEMENT (VARIES) SANITARY FORCE MAIN REUSE WATER MAIN APPROVED: XXX REVISED: 03/0/1994 DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL REVISED: 06/08/2006 DRAWN: EAM APPROVED: XXX WITHIN RIGHT-OF-WAY OR EASEMENT G-01

GENERAL NOTES (CONTINUED):

- 27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF AND MAKING THE REPAIRS TO EXISTING PAVEMENT, SIDEWALKS, PIPES, CONDUITS, CURBS, CABLES, ETC., WHETHER OR NOT SHOWN ON THE PLANS DAMAGED AS A RESULT OF THE CONTRACTORS OPERATIONS AND/OR THOSE OF HIS SUBCONTRACTORS, AND SHALL RESTORE THEM PROMPTLY AT NO ADDITIONAL EXPENSE TO THE OWNER. CONTRACTOR SHALL REPORT ANY DAMAGE TO SIDEWALK, DRIVEWAY, ETC., PRIOR TO BEGINNING WORK IN ANY AREA.
- 28. WHERE NEW PAVEMENT MEETS EXISTING, CONNECTION SHALL BE MADE IN A NEAT STRAIGHT LINE AND FLUSH WITH EXISTING PAVEMENT TO MATCH EXISTING CONDITIONS.
- 29. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR LEAVE EXCAVATED TRENCHES, OR PARTS OF, EXPOSED OR OPENED AT THE END OF THE WORKING DAY, WEEKENDS, HOLIDAYS OR OTHER TIMES, WHEN THE CONTRACTOR IS NOT WORKING, UNLESS OTHERWISE DIRECTED. ALL TRENCHES SHALL BE COVERED, FIRMLY SECURED AND MARKED ACCORDINGLY FOR PEDESTRIAN / VEHICULAR TRAFFIC.
- 30. ALL EXCAVATED MATERIAL REMOVED FROM THIS PROJECT SHALL BE DISPOSED OF OFF THE PROPERTY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- 31. ALL DUCTILE IRON PRODUCTS SHALL BE DOMESTIC MADE HEAVY DUTY CLASSIFICATION SUITABLE FOR HIGHWAY TRAFFIC LOADS, OR 20,000 LB.
- 32. ALL GRASSED AREAS AFFECTED BY CONSTRUCTION SHALL BE RE-SODDED.
- 33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION, INSTALLATION AND MAINTENANCE OF ALL TRAFFIC CONTROL AND SAFETY DEVICES, IN ACCORDANCE WITH SPECIFICATIONS OF THE LATEST REVISION OF FDOT DESIGN STANDARDS. IN ADDITION, THE CONTRACTOR IS RESPONSIBLE FOR THE RESETTING OF ALL TRAFFIC CONTROL AND INFORMATION SIGNAGE REMOVED DURING THE CONSTRUCTION PERIOD.
- 34. EXCAVATED OR OTHER MATERIAL STORED ADJACENT TO OR PARTIALLY UPON A ROADWAY PAVEMENT SHALL BE ADEQUATELY MARKED FOR TRAFFIC SAFETY AT ALL TIMES.
- 35. TEMPORARY PATCH MATERIAL MUST BE ON THE JOB SITE WHENEVER PAVEMENT IS CUT, OR THE CITY'S INSPECTOR WILL SHUT THE JOB DOWN.
- 36. CONTRACTOR MUST PROVIDE FLASHER ARROW SIGNAL FOR ANY LANE THAT IS CLOSED OR DIVERTED.
- 37. CONTRACTOR SHALL NOTIFY LAW ENFORCEMENT AND FIRE PROTECTION SERVICES TWENTY-FOUR (24) HOURS IN ADVANCE OF TRAFFIC DETOUR IN ACCORDANCE WITH SECTION 336.07 OF FLORIDA STATUTES.
- 38. CONTRACTOR TO RESTORE PAVEMENT TO ORIGINAL CONDITION AS REQUIRED.
- 39. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DEWATERING PER SPECIFICATION SECTION 02140 DEWATERING.

TON HOLLYWOOD AND	SSUED:	03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 11/06/2017	
DRAWN: EAM		EAM	GLINERAL NOTES	DRAWING NO.	
GOLD COAST	APPROVED	: XXX	(CONTINUED)	G-00.2	

WATER MAIN SEPARATION IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSING (1), (4)	JOINT SPACING @ CROSSING (FULL JOINT CENTERED) (8)
STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER (2)	3 ft minimum	WATER MAIN 12 inches is the minimum except for storm sewer, then 6 inches is the minimum and 12 inched is preferred	Alternate 3 ft minimum
GRAVITY SANITARY SEWER, (3) SANITARY SEWER FORCE MAIN, RECLAIMED WATER	WATER MAIN 10 ft prefered 6 ft minimum	12 inches is the minimum except for gravity sewer, then 6 inches is the minimum and 12 inched is preferred	Alternate 6 ft minimum WATER MAIN
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 ft minimum		

- WATER MAIN SHOULD CROSS ABOVE OTHER PIPE, WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
- SEPARATION IS 12 INCHES.
 RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
- . 3 FT. FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
 . 18" VERTICAL MINIMUM SEPARATION REQUIRED BY CITY OF HOLLYWOOD, UNLESS OTHERWISE APPROVED.
- . 18 VERTICAL MINIMOM SEPARATION REQUIRED BY CITY OF HOLLYWOOD, UNLESS OTHERWISE APPROVED.

 A MINIMUM 6 FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.
- 6. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID
- IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

 7. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN A PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SANITARY SEWER OR FORCE MAIN SHALL BE CONSTRUCTED OF DIP WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE

WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED

JOINTS).

ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALY RESTRAINED.

ISSUED: 0	3/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED:	11/06/2017
DRAWN:	EAM	SEPARATION REQUIREMENTS OF	DRAWING N	10.
APPROVED:	XXX	F.D.E.P.	G-0	1.1



301 East Atlantic Boulevard Pompano Beach, Florida 33060-6643

> 2160 NW 82nd Avenue Doral, Florida 33122

Florida Certificate of

Authorization # - 7928

PH: (954) 788-3400

BID / CONTRACT NO.:

REVISIONS

NO. DESCRIPTION DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION

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AND ARE SUBJECT TO REVISIONS MADE
DURING THE PERMITTING PROCESS.
RESPONSIBILITY FOR THE USE OF THESE
PLANS PRIOR TO OBTAINING PERMITS
FROM ALL AGENCIES HAVING JURISDICTION
OVER THE PROJECT WILL FALL SOLELY
UPON THE USER.



ADAMS STREET
CITY OF HOLLYWOOD FLORIDA

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY 2018
DRAWN BY:	MC
DESIGNED BY:	SB
CHECKED BY:	JT

JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

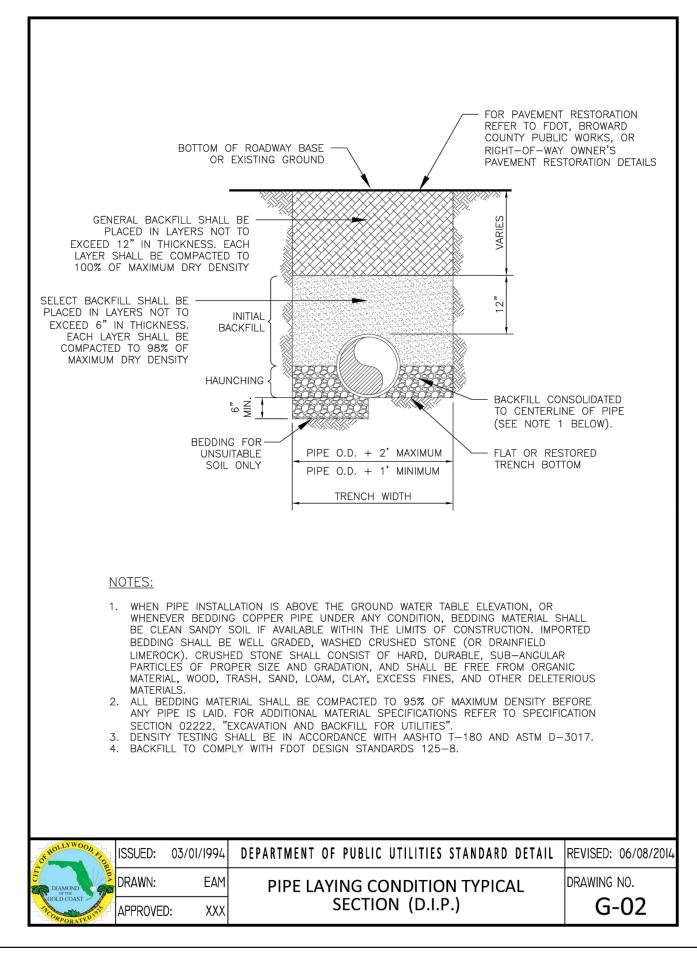
SHEET TITLE

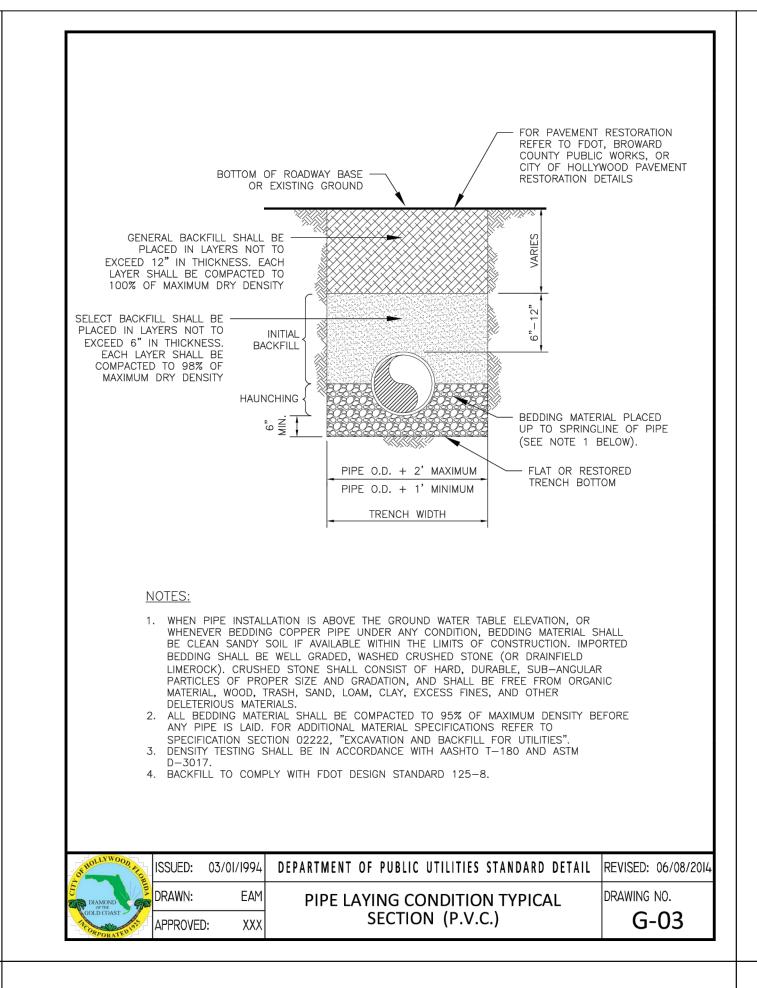
WATER AND SEWER
DETAILS

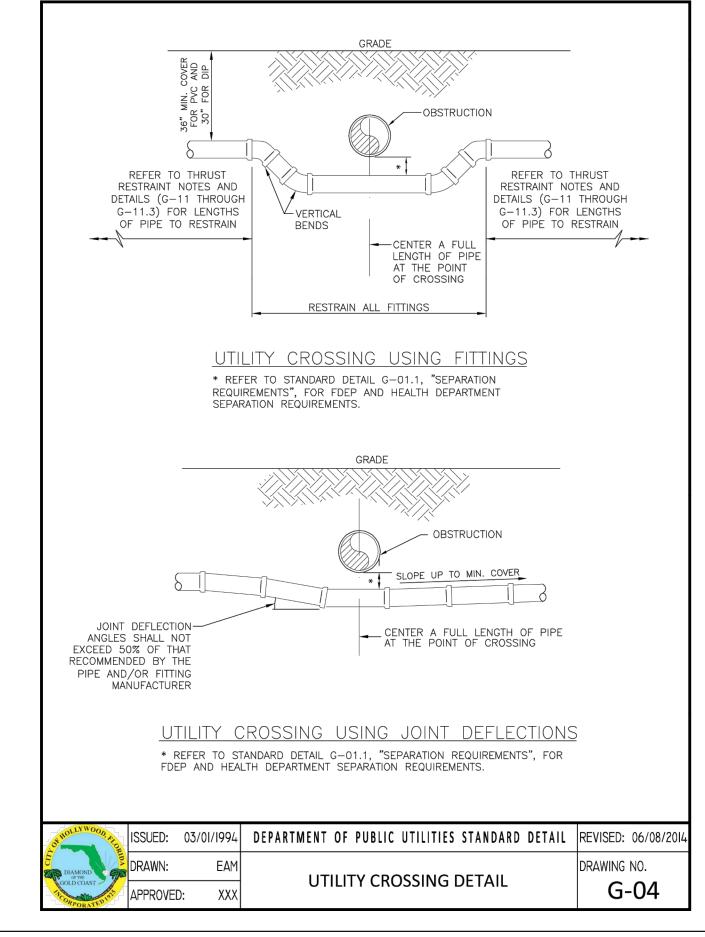
SHEET NUMBER

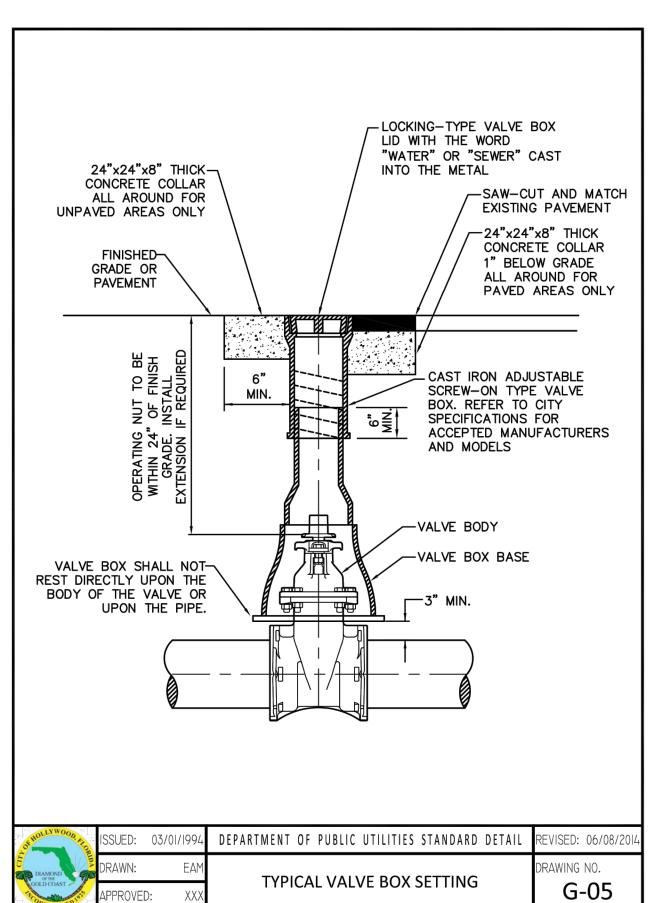
CU-501

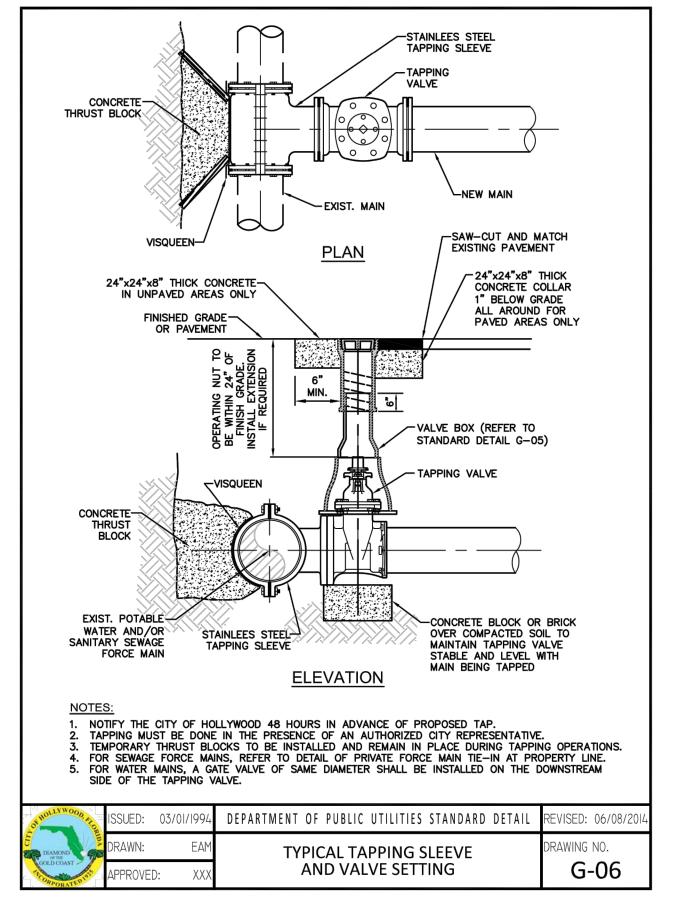
PROJECT NO. 10067.00

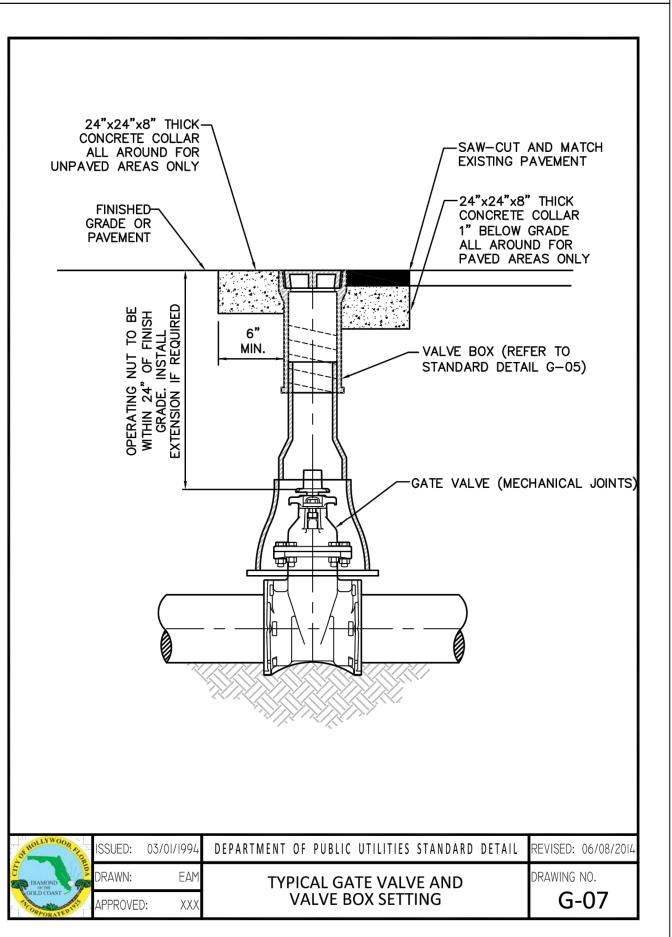














301 East Atlantic Boulevard Pompano Beach, Florida 33060-6643

> 2160 NW 82nd Avenue Doral, Florida 33122

PH: (954) 788-3400

Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO. DESCRIPTION DATE

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NOT FOR CONSTRUCTION

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ADAMS STREET CITY OF HOLLYWOOD FLORIDA

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JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

SHEET TITLE

WATER AND SEWER DETAILS

SHEET NUMBER

CU-502

------ 10007.00

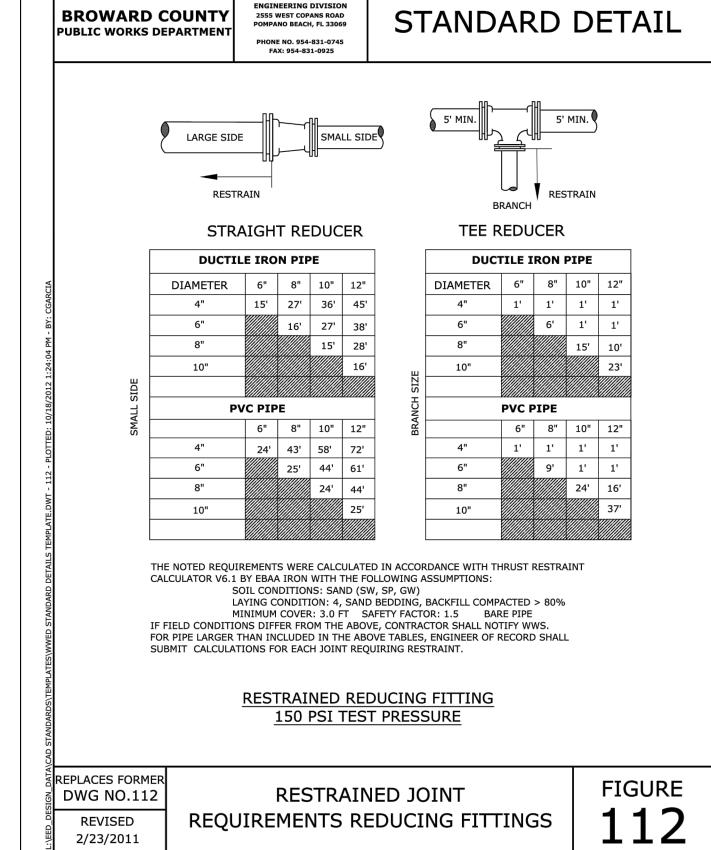
PROJECT NO. 10067.00

RESILIENT SEATED GATE VALVE SPECIFICATIONS:

4" THROUGH 12" SIZE (WATER AND FORCE MAIN)

- 1. GATE VALVES SHALL BE RESILIENT SEATED, MANUFACTURED TO MEET OR EXCEED THE REQUIREMENTS OF AWWA C509 (LATEST REVISION) AND IN ACCORDANCE WITH THE FOLLOWING
- 1.1. VALVES SHALL HAVE AN UNOBSTRUCTED WATERWAY EQUAL TO OR GREATER THAN THE FULL NOMINAL DIAMETER OF THE VALVE.
- 1.2. THE VALVES ARE TO BE NON-RISING STEM WITH THE STEM MADE OF CAST, FORGED OR ROLLED BRONZE SHOWN IN AWWA C509, TWO STEM SEALS SHALL BE PROVIDED AND SHALL BE OF THE O-RING TYPE, ONE ABOVE AND ONE BELOW THE THRUST COLLAR WITH LUBRICANT BETWEEN
- 1.3. THE STEM NUT, ALSO MADE OF BRONZE, MAY BE INDEPENDENT OF THE GATE OR CAST INTEGRALLY WITH THE GATE. IF THE STEM NUT IS CAST INTEGRALLY, THE THREADS SHALL BE STRAIGHT AND TRUE WITH THE AXIS OF THE STEM TO AVOID BINDING DURING THE OPENING OR CLOSING CYCLE.
- 1.4. THE SEALING MECHANISM SHALL CONSISTS OF A CAST IRON GATE HAVING A VULCANIZED SYNTHETIC RUBBER COATING OR A RUBBER SEAT MECHANICALLY RETAINED ON THE GATE, THE RESILIENT SEALING MECHANISM SHALL PROVIDE ZERO LEAKAGE AT THE WATER WORKING PRESSURE WHEN INSTALLED WITH THE LINE FLOW IN EITHER DIRECTION.
- 1.5. A 2-INCH SQUARE WRENCH NUT SHALL BE PROVIDED FOR OPERATING THE VALVE.
- ALL VALVES ARE TO BE SUPPLIED COMPLETE AND READY FOR INSTALLATION INCLUDING, BUT NOT LIMITED TO ALL NUTS, BOLTS RINGS AND RUBBERS.
- 1.7. ALL VALVES ARE TO BE TESTED IN STRICT ACCORDANCE WITH AWWA C509 LATEST REVISION).

	BROWAR PUBLIC WORK			ENGIN 2555 Y POMPA PHON	VASTEWATE NEERING DI WEST COPAN INO BEACH, F E NO. 954-83 IX: 954-831-0	VISION S ROAD L 33069		STA	NDAR	D	DETA	۱L
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ND STANDARDS\TEMPLATES\WWED STANDARD	THE NOTED REQUIREMENTS WERE CALCULATED IN ACCORDANCE WITH THRUST RESTRAINT CALCULATOR V6.1 BY EBAA IRON WITH THE FOLLOWING ASSUMPTIONS: SOIL CONDITIONS: SAND (SW, SP, GW) LAYING CONDITION: 4, SAND BEDDING, BACKFILL COMPACTED > 80% MINIMUM COVER: 3.0 FT SAFETY FACTOR: 1.5 BARE PIPE IF FIELD CONDITIONS DIFFER FROM THE ABOVE, CONTRACTOR SHALL NOTIFY WWS. FOR PIPE LARGER THAN INCLUDED IN THE ABOVE TABLES, ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT REQUIRING RESTRAINT. SINGLE FITTING RESTRAINED JOINT 150 PSI TEST PRESSURE											
SIGN_DATA\CAD	REPLACES FORMER DWG NO.109 RESTRAINED JOINT FIGURE											



ISSUED: 03/01/1994 DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL REVISED: 06/08/2014 DRAWING NO. RESILIENT SEATED GATE VALVE SPECIFICATIONS

G-07.1

G-12

REVISED 2/23/2011

REQUIREMENTS SINGLE FITTING

109

SEWER NOTES:

- 1. THE MINIMUM DEPTH OF COVER OVER D.I.P. SANITARY SEWER GRAVITY OR FORCE MAINS IS 30". THE MINIMUM DEPTH OF COVER OVER PVC SANITARY SEWER OR FORCE MAINS IS 36".
- 2. ALL CONNECTIONS TO EXISTING MAINS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 3. LEAKAGE TESTS AND ALIGNMENT (LAMPING) TESTS SHALL BE PERFORMED ON ALL NEW SEWER LINES UP TO THE CONNECTION POINT WITH THE EXISTING SEWER SYSTEM. THESE TESTS SHALL BE REQUESTED AND PAID FOR BY THE
- 4. LAMPING TESTS SHALL BE PERFORMED ON GRAVITY SEWERS FROM MANHOLE TO MANHOLE UP TO AND INCLUDING THE POINT OF CONNECTION TO THE EXISTING SEWER SYSTEM.
- 5. LEAKAGE TESTS SHALL BE PERFORMED ON ALL SEGMENTS OF A GRAVITY SEWER SYSTEM, INCLUDING SERVICE LATERALS AND MANHOLES, FOR A CONTINUOUS PERIOD OF NO LESS THAN 2 HOURS. AT THE END OF THE TEST, THE TOTAL MEASURED LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE SYSTEM, WITH ZERO ALLOWABLE LEAKAGE FOR LATERALS AND MANHOLES. AN EXFILTRATION OR INFILTRATION TEST SHALL BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET ON THE SECTION BEING
- 6. FORCE MAINS SHALL BE PRESSURE-TESTED IN ACCORDANCE WITH RULE 62-555.330 (FAC). THE PRESSURE TEST SHALL CONSIST OF HOLDING A TEST PRESSURE OF 150 PSI ON THE PIPELINE FOR A CONTINUOUS PERIOD OF 2 HOURS THE MAXIMUM ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING FORMULA:

$L = S \times D \times \sqrt{P}$

- L = ALLOWABLE LEAKAGE FOR SYSTEM IN GALLONS PER HOUR
- D = PIPE DIAMETER IN INCHES
- S = LENGTH OF LINES IN LINEAL FEET P = AVERAGE TEST PRESSURE IN PSI
- 7. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTYFYING CONFLICTS WITH FORCE MAINS PLACED AT MINIMUM COVER. IN CASE OF CONFLICT, FORCE MAIN SHALL BE LOWERED TO PASS UNDER CONFLICTS WITH 12" MINIMUM SEPARATION FROM WATER MAINS AND 6" MINIMUM SEPARATION FROM OTHER UTILITIES. NO ADDITIONAL PAYMENT SHALL BE DUE TO CONTRACTOR FOR LOWERING THE MAIN OR THE ADDITIONAL FITTINGS USED THEREON.
- 8. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE THE SIDES OF A TRENCH, THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING OR BRACING AS MAY BE NECESSARY TO SUPPORT THE SIDES OF THE EXCAVATION TO ENSURE PERSONNEL SAFETY, AND TO PREVENT MOVEMENT WHICH CAN IN ANY WAY DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SEQUENCE, METHODS AND MEANS OF CONSTRUCTION, AND FOR THE IMPLEMENTATION OF ALL OSHA AND OTHER SAFETY REQUIREMENTS.

SSUED: 03/01/1994 DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL REVISED: 06/08/201

SANITARY SEWER MAIN CONSTRUCTION NOTES

DRAWING NO. S-01

consulting engineer:

301 East Atlantic Boulevard Pompano Beach, Florida 33060-6643

> 2160 NW 82nd Avenue Doral, Florida 33122

PH: (954) 788-3400 Florida Certificate of

Authorization # - 7928

BID / CONTRACT NO.

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ADAMS STREET CITY OF HOLLYWOOD FLORIDA

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JAMES A. THIELE, P.E. FLORIDA REG. NO. 33256 (FOR THE FIRM)

SHEET TITLE

WATER AND SEWER **DETAILS**

SHEET NUMBER

CU-503

PRELIMINARY TAC SUBMITTAL

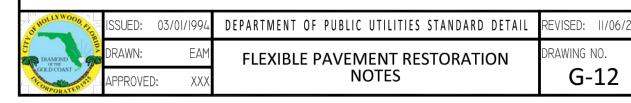
PROJECT NO. 10067.00

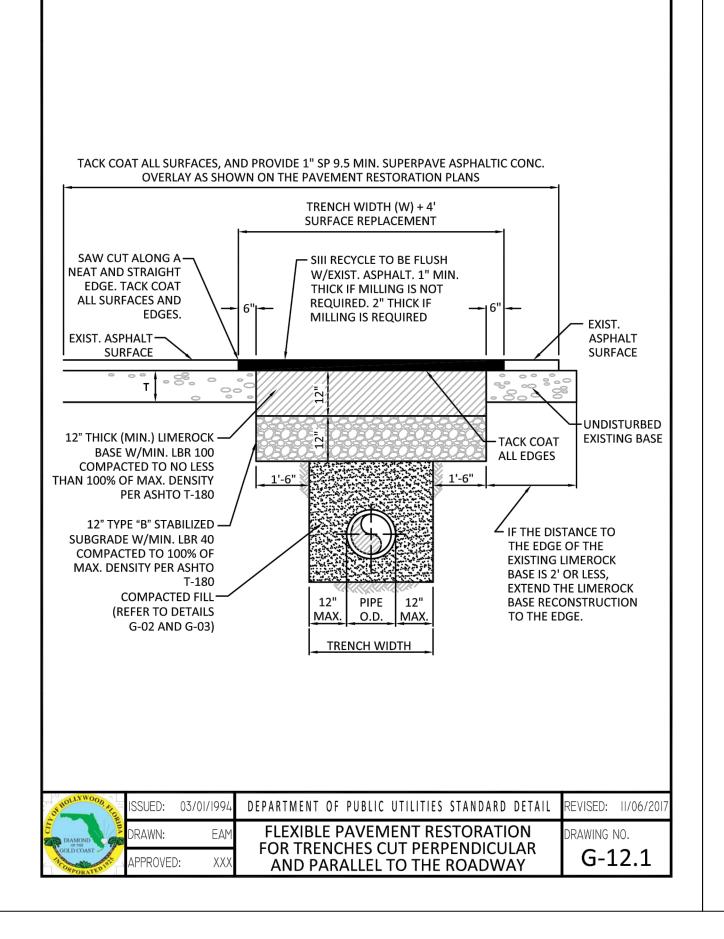
FLEXIBLE PAVEMENT RESTORATION NOTES:

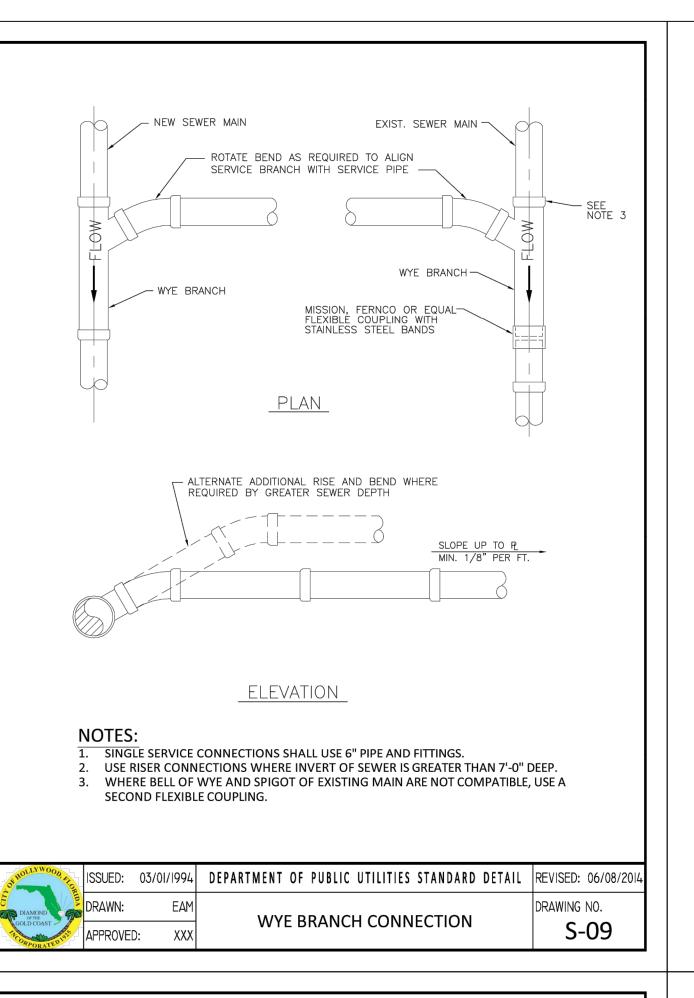
- THE ABOVE DETAILS APPLY ONLY TO ASPHALT PAVEMENT RESTORATION OVER UTILITY TRENCHES CUT WITHIN CITY OF HOLLYWOOD RIGHTS-OF-WAY. FOR PAVEMENT RESTORATION WITHIN BROWARD COUNTY OR FDOT RIGHTS-OF-WAY REFER TO THE CORRESPONDING DETAILS FOR THOSE AGENCIES.
- 2. LIMEROCK BASE MATERIAL SHALL HAVE A MINIMUM L.B.R. OF 100 AND A MINIMUM CARBONATE CONTENT OF 70%. REPLACED BASE MATERIAL OVER TRENCH SHALL BE A MINIMUM OF 12" THICK".
- LIMEROCK BASE MATERIAL SHALL BE PLACED IN 12" MAXIMUM (LOOSE MEASUREMENT) THICKNESS LAYERS WITH EACH LAYER THOROUGHLY ROLLED OR TAMPED AND COMPACTED TO 100% OF MAXIMUM DENSITY, PER AASHTO T-180, PRIOR TO THE PLACEMENT OF THE SUCCEEDING LAYERS.
- 4. STABILIZED SUBGRADE MATERIAL SHALL BE GRANULAR AND SHALL HAVE A MINIMUM L.B.R. OF 40.
- 5. BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE PIPE LAYING CONDITION TYPICAL SECTIONS IN DETAILS G-02 AND G-03, AND THE SPECIFICATIONS, BUT TESTING WILL BEGIN 12" ABOVE THE INSTALLED FACILITY.
- PARALLEL TO OR PERPENDICULAR TO THE ROADWAY, PRIOR TO THE RESURFACING. 7. RESURFACING MATERIAL SHALL BE FDOT SUPERPAVE, AND SHALL BE APPLIED A MINIMUM OF TWO
- INCH IN THICKNESS.

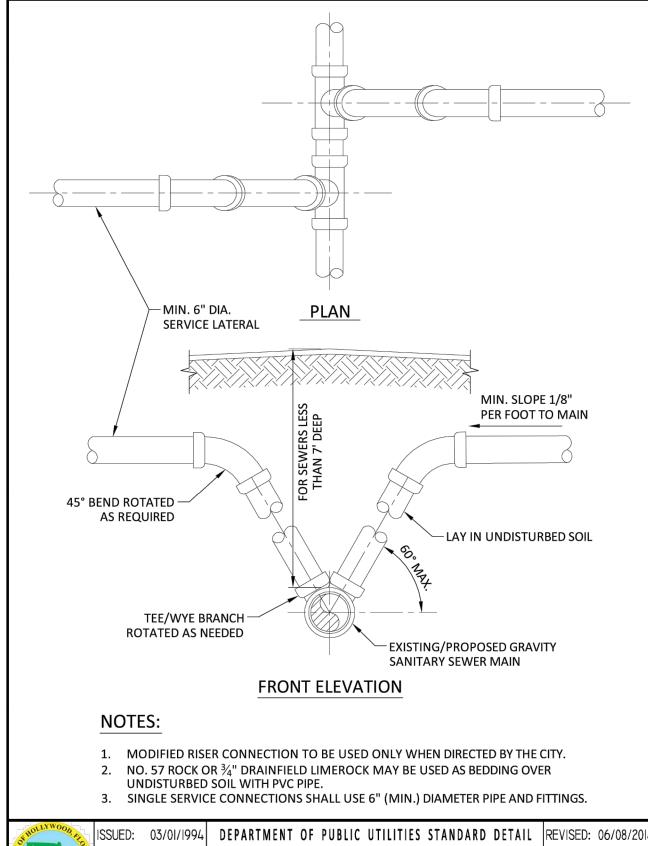
6. ALL EDGES AND JOINTS OF EXISTING ASPHALT PAVEMENT SHALL BE SAW CUT TO STRAIGHT LINES,

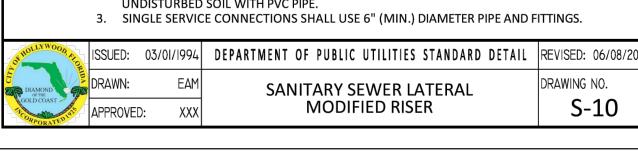
- 8. MILL AND BUTT JOINT TO EXISTING PAVEMENT.
- 9. IF THE TRENCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING UNTIL REPLACED WITH A PERMANENT PATCH.
- 10. REFER TO SPECIFICATIONS FOR DETAILED PROCEDURES.
- 11. WHERE THE UTILITY TRENCH CROSSES EXISTING ASPHALT DRIVEWAYS, THE LIMEROCK BASE THICKNESS MAY BE A MINIMUM OF 6 INCHES THICK. REGARDLESS OF THE EXTENT OF IMPACT, THE ENTIRE DRIVEWAY SURFACE BETWEEN THE EDGE OF THE ROADWAY PAVEMENT AND PROPERTY LINE OR FRONT OF SIDEWALK SHALL BE OVERLAID USING 2-INCH THICK MINIMUM ASPHALTIC CONCRETE SURFACE COURSE WHERE INDICATED ON THE PLANS OR AS DIRECTED BY THE CITY/ENGINEER.

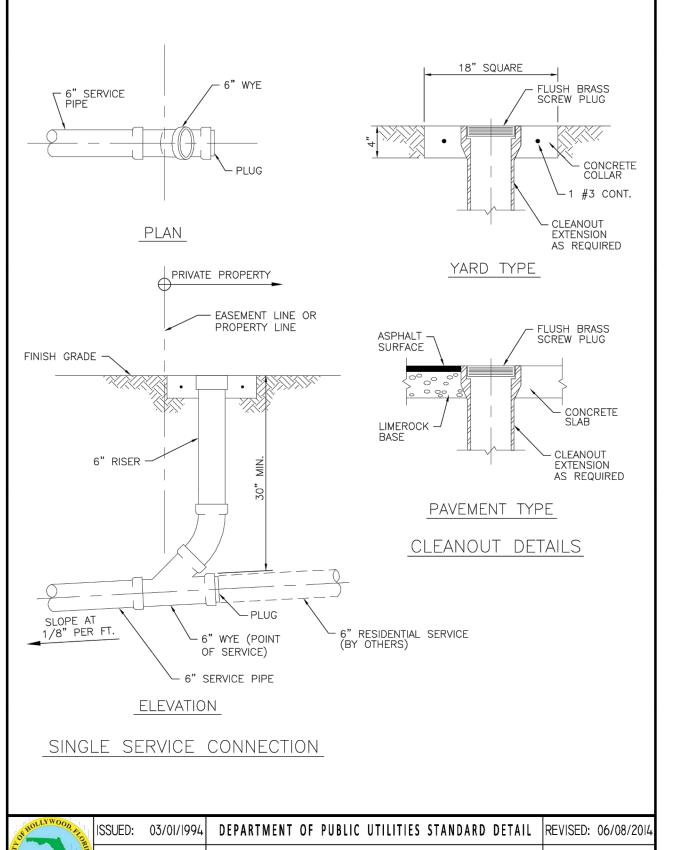












SEWER SERVICE CONNECTION AND

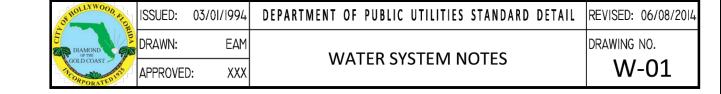
CLEANOUT AT PROPERTY LINE

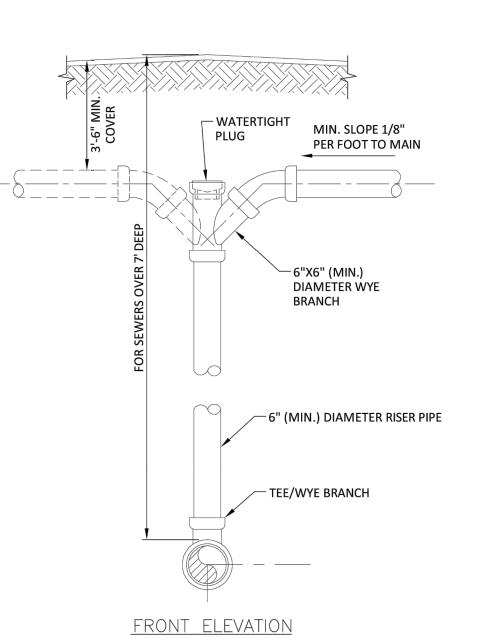
RAWING NO.

S-12

WATER SYSTEM NOTES:

- NEW OR RELOCATED UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE.
- NEW OR RELOCATED UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN. OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE. [FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5)].
- 3. AT ALL UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE WILL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE, OR THE PIPES WILL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORM WATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. [FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5)].
- 4. NEW UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT TO BE DUCTILE IRON PIPE (D.I.P.) WHEN CROSSING BELOW SANITARY SEWER MAINS.
- POLYETHYLENE ENCASEMENT MATERIAL SHALL BE USED TO ENCASE ALL BURIED DUCTILE IRON PIPE, FITTINGS, VALVES, RODS, AND APPURTENANCES IN ACCORDANCE WITH AWWA C105, METHOD A. THE POLYETHYLENE TUBING SHALL BE CUT TWO FEET LONGER THAN THE PIPE SECTION AND SHALL OVERLAP THE ENDS OF THE PIPE BY ONE FOOT. THE POLYETHYLENE TUBING SHALL BE GATHERED AND LAPPED TO PROVIDE A SNUG FIT AND SHALL BE SECURED AT QUARTER POINTS WITH POLYETHYLENE TAPE. EACH END OF THE POLYETHYLENE TUBING SHALL BE SECURED WITH A WRAP OF POLYETHYLENE TAPE.
- 6. THE POLYETHYLENE TUBING SHALL PREVENT CONTACT BETWEEN THE PIPE AND BEDDING MATERIAL, BUT IS NOT INTENDED TO BE A COMPLETELY AIRTIGHT AND WATERTIGHT ENCLOSURE. DAMAGED POLYETHYLENE TUBING SHALL BE REPAIRED IN A WORKMANLIKE MANNER USING POLYETHYLENE TAPE, OR THE DAMAGED SECTION SHALL BE REPLACED. POLY WRAP WILL NOT BE PAID FOR AS A SEPARATE BID ITEM. IT SHALL BE CONSIDERED TO BE A PART OF THE PRICE BID FOR WATER MAINS.
- 7. FIRE HYDRANT BARRELS SHALL BE ENCASED IN POLY WRAP UP TO THE GROUND SURFACE AND THE WEEP HOLES SHALL NOT BE COVERED BY THE POLY WRAP.
- GATE VALVES FOR USE WITH PIPE LESS THAN THREE INCHES (3") IN DIAMETER SHALL BE RATED FOR TWO HUNDRED (200) PSI WORKING PRESSURE, NON-SHOCK, BLOCK PATTERN, SCREWED BONNET, NON-RISING STEM, BRASS BODY, AND SOLID WEDGE. THEY SHALL BE STANDARD THREADED FOR PVC PIPE AND HAVE A MALLEABLE IRON HANDWHEEL. GATE VALVES 3" THROUGH 16" IN DIAMETER SHALL BE RESILIENT SEAT AND BIDIRECTIONAL FLOW ONLY. VALVES FOR SPECIAL APPLICATIONS WILL REQUIRE CITY UTILITY APPROVAL.
- 9. VALVE BOXES AND COVERS FOR ALL SIZE VALVES SHALL BE OF CAST IRON CONSTRUCTION AND ADJUSTABLE SCREW-ON TYPE. THE LID SHALL HAVE CAST IN THE METAL THE WORD "WATER" FOR THE WATER LINES. ALL VALVE BOXES SHALL BE SIX INCH (6") NOMINAL DIAMETER AND SHALL BE SUITABLE FOR DEPTHS OF THE PARTICULAR VALVE. THE STEM OF THE BURIED VALVE SHALL BE WITHIN TWENTY-FOUR INCHES (24") OF THE FINISHED GRADE UNLESS OTHERWISE APPROVED BY THE CITY.
- 10. ALL WATER MAIN INSTALLATIONS SHALL COMPLY WITH THE COLOR CODING REQUIREMENTS OF CHAPTER





NOTES:

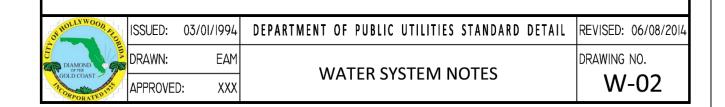
1. RISER CONNECTION TO BE USED ONLY WHEN SANITARY SEWER IS MORE THAN 7'-0"

- DEEP OR WHEN DIRECTED BY THE CITY.
- 2. NO. 57 ROCK OR $\frac{3}{4}$ " DRAINFIELD LIMEROCK MAY BE USED AS BEDDING OVER
- UNDISTURBED SOIL WITH PVC PIPE. 3. SINGLE SERVICE CONNECTIONS SHALL USE 6" (MIN.) DIAMETER PIPE AND FITTINGS.

WOOD, FLOR	ISSUED:	03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 06/08/2014
ND 90	DRAWN:	EAM	SANITARY SEWER LATERAL	DRAWING NO.
PAST PARTED 1919	APPROVE	D: XXX	VERTICAL RISER	S-11

WATER SYSTEM NOTES (CONTINUED):

- 11. ALL WATER MAIN INSTALLATIONS SHALL COMPLY WITH THE COLOR CODING REQUIREMENTS OF CHAPTER 62-555.320 F.A.C.
- 12. ALL PVC PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C900 LATEST REVISION AND CLASS COMPLYING WITH CLASS 52. ALL DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C151/A21.51-02 AND BE CEMENT LINED AND SEAL COATED PER ANSI/AWWA C104/A21.4-03.
- 13. FITTINGS SHALL BE DUCTILE IRON, MEETING ANSI/AWWA C153/A21.53-00 SPECIFICATIONS, WITH 350 PSI MINIMUM WORKING PRESSURE. FITTINGS MUST BE CEMENT LINED AND SEAL COATED PER ANSI/AWWA C104/A21.4-03. ALL DUCTILE IRON PIPE AND FITTINGS MUST BE MANUFACTURED IN THE UNITED STATES OF
- 14. ALL DUCTILE IRON PIPE TO BE MECHANICAL JOINTS, WRAPPED IN POLY. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY DESIGN.
- 15. PAVEMENT RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY.
- 16. ALL TRENCHING, PIPE LAYING, BACKFILL, PRESSURE TESTING, AND DISINFECTING MUST COMPLY WITH THE CITY OF HOLLYWOOD SPECIFICATIONS.
- 17. THE MINIMUM DEPTH OF COVER OVER WATER MAINS IS 30" (DIP) OR 36" (PVC).
- 18. MINIMUM HORIZONTAL SEPARATION BETWEEN STORM STRUCTURES AND WATER MAINS SHALL BE 3'.
- 19. MAXIMUM DEFLECTION PER EACH JOINT SHALL BE 50% OF MANUFACTURES RECOMMENDATION (MAXIMUM) WHERE DEFLECTION IS REQUIRED.
- 20. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING CONFLICTS WITH WATER MAINS PLACED AT MINIMUM COVER. IN CASE OF CONFLICT, WATER MAIN SHALL BE LOWERED TO PASS UNDER CONFLICTS WITH 18" MINIMUM VERTICAL SEPARATION. NO ADDITIONAL PAYMENT SHALL BE DUE TO CONTRACTOR FOR LOWERING THE MAIN OR THE ADDITIONAL FITTINGS USED THEREON.
- 21. PIPE JOINT RESTRAINT SHALL BE PROVIDED BY THE USE OF DUCTILE IRON FOLLOWER GLANDS MANUFACTURED TO ASTM A 536-80. TWIST-OFF NUTS SHALL BE USED TO ENSURE PROPER ACTUATING OF THE RESTRAINING DEVICES. THE MECHANICAL JOINT RESTRAINING DEVICES SHALL HAVE A WORKING PRESSURE OF 250 PSI MINIMUM, WITH A MINIMUM SAFETY FACTOR OF 2:1, AND SHALL BE EBAA IRON INC., MEGALUG OR APPROVED EQUAL. JOINT RESTRAINTS SHALL BE PROVIDED AT A MINIMUM OF THREE JOINTS (60 FEET) FROM ANY FITTING.
- 22. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE THE SIDES OF A TRENCH, THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING OR BRACING AS MAY BE NECESSARY TO SUPPORT THE SIDES OF THE EXCAVATION TO ENSURE PERSONNEL SAFETY, AND TO PREVENT MOVEMENT WHICH CAN IN ANY WAY DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SEQUENCE, METHODS AND MEANS OF CONSTRUCTION, AND FOR THE IMPLEMENTATION OF ALL OSHA AND OTHER SAFETY REQUIREMENTS.





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SHEET TITLE

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SHEET NUMBER

CU-504

PRELIMINARY TAC SUBMITTAL

PROJECT NO. 10067.00