917 NE 8TH AVENUE

PROPOSED TOWNHOMES DELRAY BEACH, FLORIDA 33483

CIVIL SITE PLAN PACKAGE

SHEET

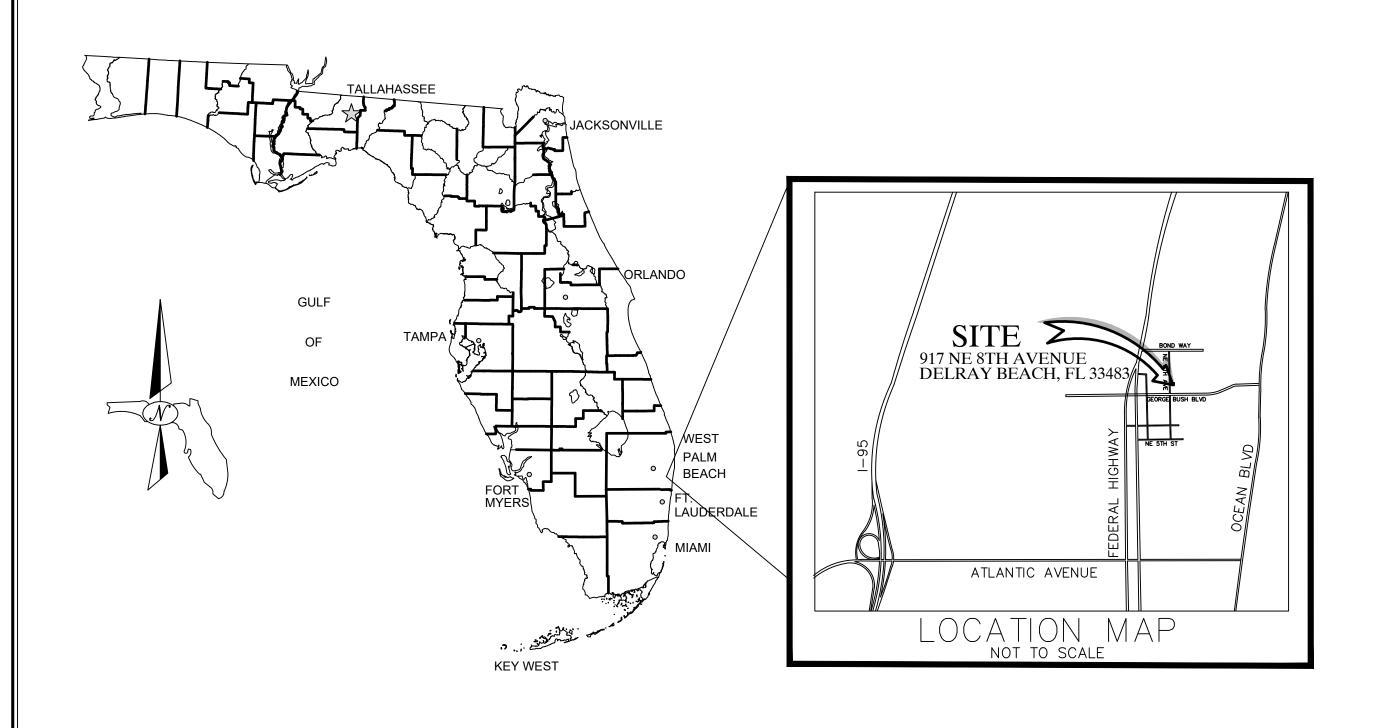
PD-3

WS-1

WS-5

PD-4 to PD-6

WS-2,WS-3

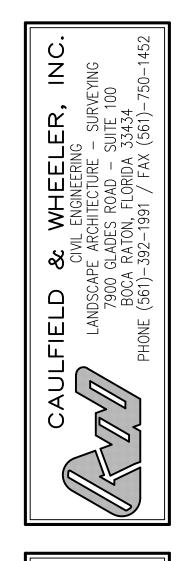


CS	Cover Sheet
PP-1	Pollution Prevention Plan
PD-1	General Notes Plan
PD-1A	Demolition Plan
PD-2	Paving & Grading Plan
PD-2A	Paving & Grading Plan Drainage Plan

DESCRIPTION

Paving & Grading Plan
Drainage Plan
Pavement, Marking & Signage Plan
Paving & Grading & Drainage Details
Water Distribution, Sanitary Sewer and Utility Plan
Water Distribution, & Sanitary Sewer Details
Composite Utility Plan

REV PER CITY COMMENTS	06/27/22	٧
REV PER CITY COMMENTS	04/14/22	∀
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AVENUE

DRAWN BY A F.B./ PG. ----

JOB # 9638
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C S

OF 14 SHEETS

1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.

2. CONTRACTOR TO REMOVE FABRIC JUST PRIOR TO PAVING.

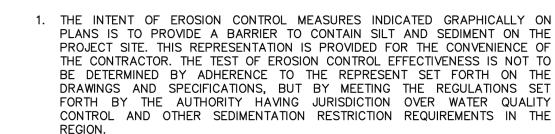
A SEDIMENT TRAP WILL BE EXCAVATED BEHIND THE CURB AT THE INLET. THE BASIN SHALL BE AT LEAST 12 TO 14 INCHES IN DEPTH, APPROXIMATELY 36 INCHES IN WIDTH, AND APPROXIMATELY 7 TO 10 FEET IN LENGTH PARALLEL TO THE CURB.

STORM WATER WILL REACH THE SEDIMENT TRAP VIA CURB CUTS ADJACENT TO EACH SIDE OF THE INLET STRUCTURE. THESE OPENINGS SHALL BE AT LEAST 12 INCHES IN LENGTH. STORM WATER MAY ALSO REACH THE BASIN VIA OVERLAND FLOW LAND AREA BEHIND THE CURB. THE CURB CUTS SHALL BE REPAIRED WHEN THE SEDIMENT TRAP IS REMOVED.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

INLET FILTER DETAIL

D10.0



- 2. APPROVED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY CLEARING GRADING, EXCAVATION, FILLING, OR OTHER LAND DISTURBANCE ACTIVITIES, EXCEPT THOSE OPERATIONS NEEDED TO INSTALL
- 3. INSPECTION OF ALL EROSION CONTROL MEASURES SHALL BE CONDUCTED WEEKLY, OR AFTER EACH RAINFALL EVENT. REPAIR, AND/OR REPLACEMENT OF SUCH MEASURES SHALL BE MADE PROMPTLY, AS NEEDED.
- 4. KEEP DUST WITHIN TOLERABLE LIMITS BY SPRINKLING OR OTHER ACCEPTABLE
- 5. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED
- 6. FAILURE TO PROPERLY INSTALL AND MAINTAIN EROSION CONTROL PRACTICES SHALL RESULT IN CONSTRUCTION BEING HALTED.

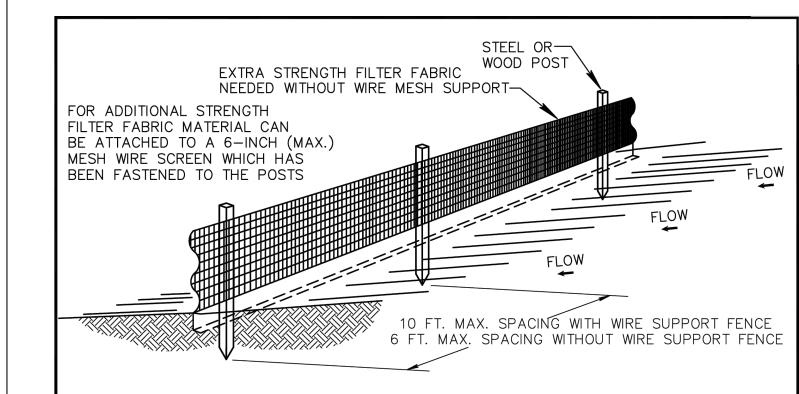
IF DEEMED NECESSARY BY ONSITE INSPECTION.

WHERE PRACTICAL.

- 7. DRAINAGE INLETS SHALL BE PROTECTED BY FILTER AND GRADED ROCK AS PER INLET PROTECTION DETAIL.
- 8. ANY ACCESS ROUTES TO SITE SHALL BE BASED WITH CRUSHED STONE,
- 9. EROSION CONTROL MEASURES ARE TO BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- 10. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED AND
- 11. ALL WORK IS TO BE IN COMPLIANCE WITH THE RULES AND REGULATIONS SET FORTH BY THE STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE CITY OF DELRAY BEACH.
- 12. DISCHARGE FROM DEWATERING OPERATIONS SHALL BE RETAINED ONSITE IN A CONTAINMENT AREA.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

EROSION CONTROL NOTES DETAIL D 11.0



- THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 36 INCHES.
- THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS.
- POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 12 INCHES. WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.
- A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
- WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES, OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER
- 8. ALL PROJECTS REQUIRE SUBMITTAL OF POLLUTION PREVENTION PLAN (PPP).
- 9. ALL PROJECTS 1 AC. OR MORE MUST SUBMIT NOTICE OF INTENT (NOI) TO FDEP.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

SILT FENÇE INSTALLATION DETAIL (SHEET 1 of 2)

D12.0



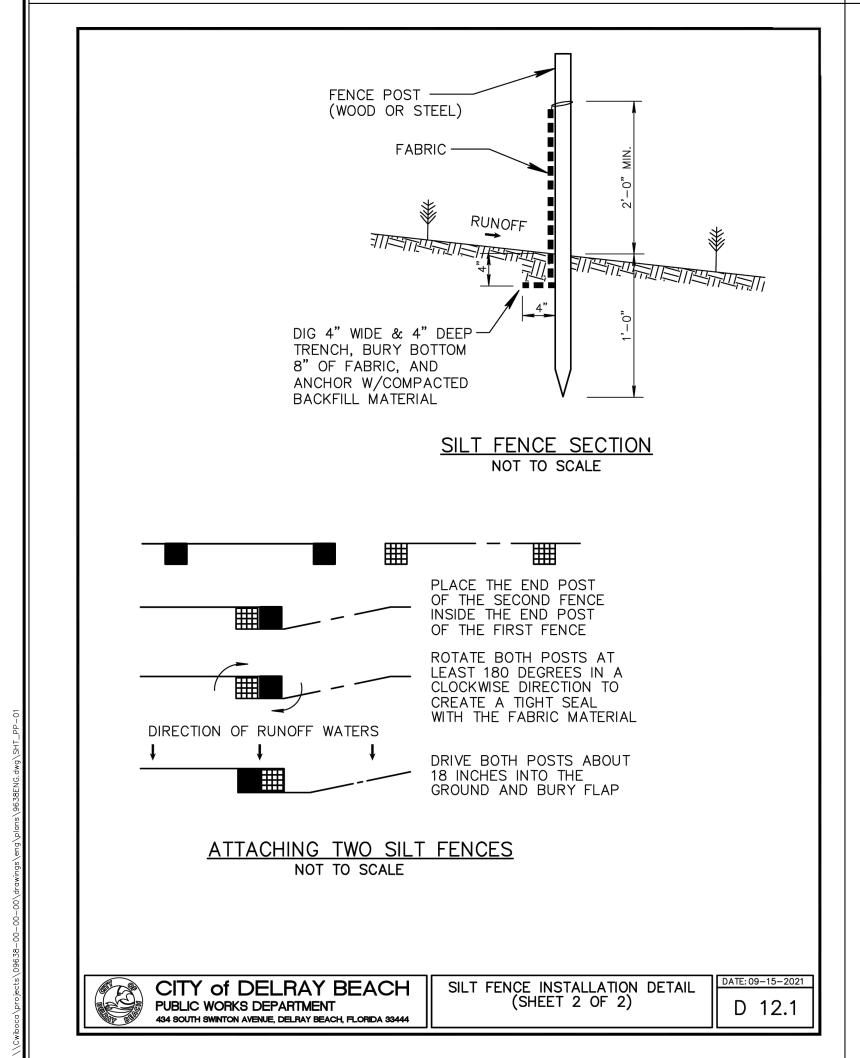


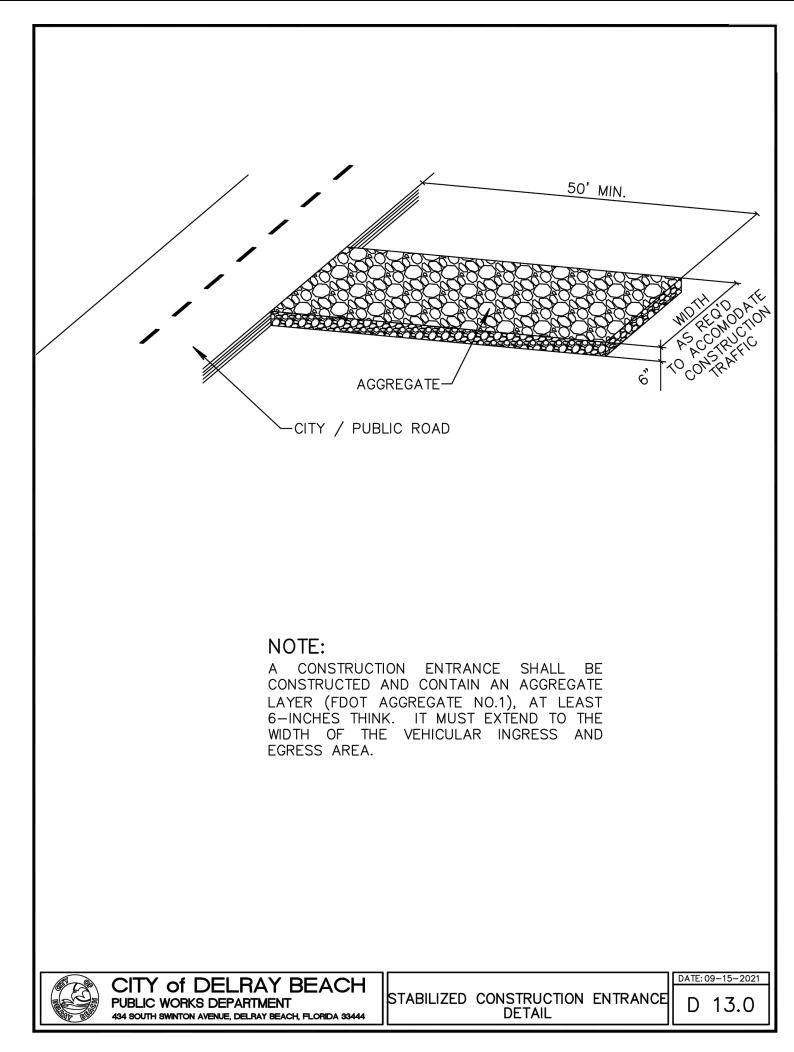
BOUNDARY OF POLLUTION PREVENTION (SLIT FENCE OR HAY BALES PER F..D.O.T. INDEX 103)

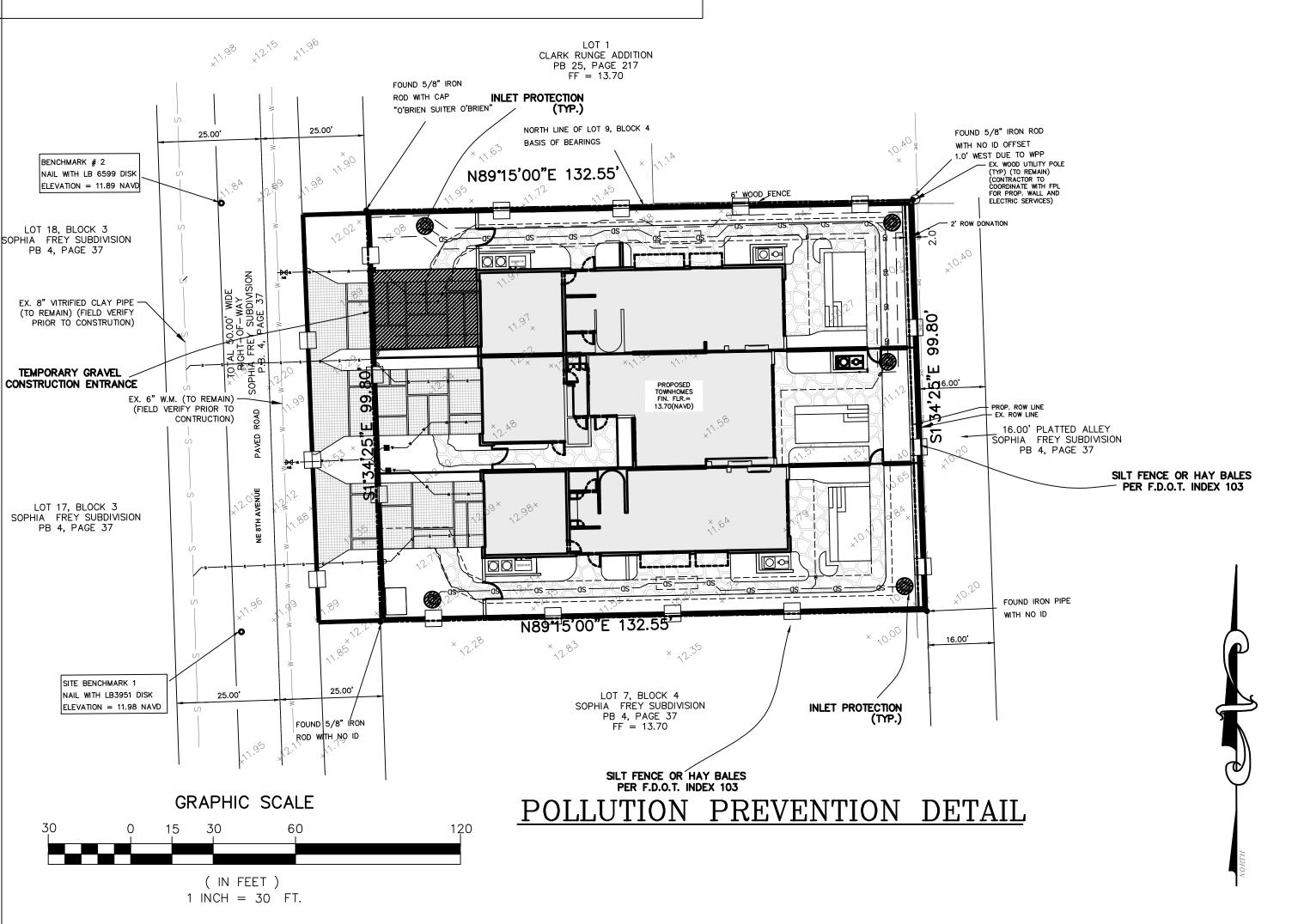
INLET FILTER (REQUIRED FOR ALL INLETS DOWNSTREAM OF

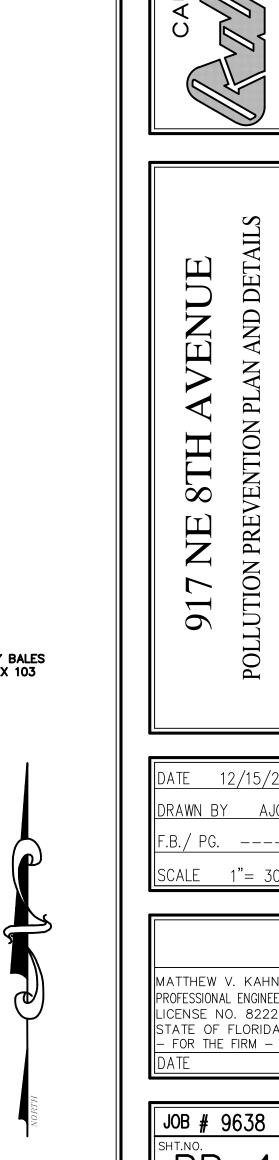
DISTURBED AREAS)











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.B./ PG. ____ SCALE 1"= 3

PROFESSIONAL ENGINEE LICENSE NO. 8222 STATE OF FLORIDA - FOR THE FIRM -

JOB # 9638 OF 14 SHEETS

GENERAL NOTES

PAVING, GRADING & DRAINAGE ALL DIMENSIONS SHOWN ON THESE DRAWINGS ARE SCALED DISTANCES. THE CONTRACTOR SHALL CONFIRM ALL MEASUREMENTS IN

THE FIELD AND NOTIFY THE ENGINEER IN WRITING OF ANY

- DISCREPANCY PRIOR TO PERFORMING THE WORK. ALL QUANTITIES SHALL BE PAID ON THE BASIS OF FIELD MEASUREMENTS OF COMPLETED REINFORCED CONCRETE PIPE (R.C.P.) SHALL BE IN ACCORDANCE WITH F.D.O.T. STANDARDS SPECIFICATIONS SEC. 941. CORRUGATED ALUMINUM PIPE
- (C.A.P.) SHALL BE IN ACCORDANCE WITH F.D.O.T. STANDARDS SPECIFICATIONS SEC. 945. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE SUCH EXAMINATION OF THE SITE OF THE WORK, AND OF ANY MATERIAL
- SOURCES INDICATED IN THE PLANS, AS MAY BE NECESSARY TO INFORM HIMSELF OF THE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED.
- PROPOSED GRADES SHOWN IN PAVED AREAS REFER TO FINISH PAVEMENT PAVEMENT MARKING AND GEOMETRICS SHALL BE IN ACCORDANCE WITH
- THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND PALM BEACH COUNTY TYPICAL NO. T-P-17. ALL LOTS. ROADWAYS AND BORROW AREAS SHALL BE STRIPPED OF ALL
- DELETERIOUS (UNSUITABLE) MATERIALS AND MATERIALS SHALL BE DISPOSED WITHIN THE SITE. ALL GRADING OF STREETS, INCLUDING THE REMOVAL OF ALL MATERIALS AND THE FINISHING OF ALL SHOULDERS, SUBGRADE
- PREPARATION, SWALES AND BACKSLOPES, IN ACCORDANCE WITH THE TYPICAL SECTIONS SHOWN HEREON SHALL BE INCLUDED IN THE BID PRICE FOR PAVING ANY EXISTING ROADWAY AND/OR UTILITY THAT IS DAMAGED BY THE
- CONTRACTOR SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER. AND UTILITY 9. THE FULL DEPTH OF ALL EXISTING ORGANIC AND DELETERIOUS MATERIALS WITHIN THE RIGHT -OF- WAY AND UTILITIES AND DRAINAGE EASEMENT
- SHALL BE COMPLETE REMOVED. NO MATERIALS OF F.D.O.T. CLASS A-5, A-7, OR A-8 SHALL BE ALLOWED. 10. ANY MUCK POCKETS OR GUMBO ENCOUNTERED SHALL BE REMOVED WITHIN
- THE ROADWAY TO 1.0' BELOW SUBGRADE AND TO OUTSIDE EDGE OF BOTH SHOULDERS. 11. ALL PAVING AND DRAINAGE WORK TO BE CONSTRUCTED IN FULL
- ACCORDANCE WITH PALM BEACH COUNTY STANDARDS AND
- 12. THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATIONS OF EVERY KIND THAT WILL BE BENEATH THE PAVEMENT CURRENTLY TO BE CONSTRUCTED SHALL BE INSTALLED PRIOR TO THE COMPACTION OF SUBGRADE. 13. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER AND COUNTY
- ON ALL PIPE, PIPE BANDS, DRAINAGE STRUCTURES, GRATES, FRAMES AND COVERS. 14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF EXISTING UTILITIES WHETHER SHOWN OR NOT SHOWN ON THESE DRAWINGS AND SHALL VERIFY ALL ELEVATIONS BEFORE
- STARTING CONSTRUCTION. ALL EXISTING UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE RESTORED TO EXISTING OR BETTER CONDITIONS BY CONTRACTOR AT NO EXPENSE TO OWNER. 15. WHERE CONNECTIONS TO AN EXISTING DRAINAGE SYSTEM ARE PROPOSED, SAID EXISTING DRAINAGE STRUCTURES AND LINES SHALL BE PURGED OF ALL SILT AND DEBRIS PRIOR TO SAID CONNECTION,
- AND WHERE EXISTING DRAINAGE SYSTEM INCLUDES DITCHES, SAID DITCHES SHALL BE CLEARED AND REWORKED, AS NECESSARY, TO RESTORE THEM TO THEIR APPROVED DESIGN SECTION. 16. ALL PIPE JOINTS ARE TO BE INSPECTED BY A REPRESENTATIVE OF THE ENGINEER PRIOR TO BACKFILLING. ALL INSPECTIONS SHOULD BE
- ARRANGED NO LESS THAN 48 HOURS IN ADVANCE. 17. ALL CATCH BASIN GRATES MUST HAVE LOCKING CHAINS IN ACCORDANCE WITH FDOT INDEX 201.

CLEARING AND GRUBBING:

- 18. WORK SHALL CONSIST OF THE COMPLETE REMOVAL AND DISPOSAL OF ALL BUILDINGS, TIMBER, BRUSH, STUMPS, ROOTS, RUBBISH, AND DEBRIS AND ALL OTHER OBSTRUCTIONS RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE EXISTING GROUND AND THE SURFACE OF EXCAVATED AREAS, AND OF ALL OTHER STRUCTURES AND OBSTRUCTIONS NECESSARY TO BE REMOVED, INCLUDING SEPTIC TANKS, BUILDING FOUNDATIONS, AND PIPES.
- 19. ROOTS AND OTHER DEBRIS SHALL BE REMOVED TO A DEPTH OF AT LEAST ONE FOOT BELOW THE GROUND SURFACE. ALL STUMPS WITHIN THE CONSTRUCTION AREA SHALL BE COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR.
- 20. EXISTING TREES TO REMAIN WHERE SO DIRECTED BY THE ENGINEER, SHALL BE TRIMMED PROTECTED AND LEET STANDING 21. PROPERTY OBSTRUCTIONS WHICH ARE TO REMAIN IN PLACE, SUCH AS
- BUILDINGS, SEWERS, DRAINS, WATER OR GAS PIPES, CONDUITS, POLES, WALLS, POSTS, BRIDGES, ETC. ARE TO BE CAREFULLY PROTECTED FROM INJURY AND ARE NOT TO BE DISPLACED.
- 22. CLEARING AND GRUBBING MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR IN LOCATIONS AND BY METHODS APPROVED BY THE SUBGRADE:

23. UTILIZATION OF MATERIAL IN SUBGRADE CONSTRUCTION SHALL BE IN

- ACCORDANCE WITH PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. 24. A PROCTOR TEST SHALL BE PERFORMED ON THE PROPOSED SUBGRADE MATERIAL TO DETERMINE THE OPTIMUM MOISTURE CONTENT AND MAXIMUM DENSITY OF THE MATERIAL. IN-PLACE DENSITY TESTS OF THE FINISH SUBGRADE SHALL BE PERFORMED AT A FREQUENCY OF AT LEAST ONE TEST FOR EVERY 7,000 SQ.FT. OF PORPOSED PAVEMENT AREA TO DETERMINE COMPLIANCE WITH THE DESIGN SPECIFICATIONS OF 100% OF MAX. DENSITY PER AASHTO T-99 TESTING METHODS.
- 25. STABILIZED SUBGRADE SHALL HAVE A MINIMUM LIMEROCK BEARING RATIO (LBR) OF 40. THE COMPACTED SUBGRADE SHALL CONFORM TO THE LINES, GRADES, AND CROSS-SECTIONS SHOWN ON THE PLANS. ALL ROOTS, STUMPS, OR OBJECTIONABLE MATERIAL PRESENT ON, UNDER, OR PROTRUDING THROUGH THE SURFACE SHALL BE COMPLETELY REMOVED FROM THE SUBGRADE. THE FINISHED SURFACE OF THE SUBGRADE SHALL BE STRING-LINED PRIOR TO PLACEMENT OF ROCK BASE TO VERIFY THAT THE SUBGRADE HAS BEEN CONSTRUCTED TO THE PROPER LINES. CROSS-SECTIONS, AND ELEVATIONS WITHIN AN ALLOWABLE TOLERANCE OF 1/2" OF THE PROPOSED FINISH SUBGRADE ELEVATIONS.

PBC ROAD AND BRIDGE STANDARD NOTES:

1. IF DURING THE PROPOSED CONSTRUCTION/CROSSING ANY EXISTING PB COUNTY STORM DRAIN PIPE/STRUCTURES ARE AFFECTED IN ANY WAY PB COUNTY R&B REQUIRES FULL RESTORATION OF THE AFFECTED SYSTEM TO LIKE OR BETTER THEN LIKE CONDITION AND TO PB COUNTY/FDOT STANDARDS. 2. ALL AFFECTED ROADWAYS ARE TO BE RESTORED FROM ÉOP TO EOP, LANE WIDTH MIN, AND 50' IN EITHER DIRECTION. (THOROUGHFARE) AND 25' MIN. RESTORATION (NON-THOROUGHEARE). 3. IF ANY ADDITIONAL LANES ARE AFFECTED FOR ANY REASON DURING CONSTRUCTION, PB COUNTY R&B WILL REQUIRE THE ADDITIONAL LANES BE RESTORED TO LIKE OR BETTER THEN LIKE CONDITION AND TO EQUAL DIMENSIONS AS THE ADJACENT LANES. 4. IF PB COUNTY SIDEWALK / PATHWAY / C&G / AND OR ADA FACILITIES ARE AFFECTED PB COUNTY R&B WILL REQUIRE RESTORATION OF A MINIMUM OF 10' AND TO BE LIKE OR BETTER THEN LIKE CONDITION PER / FDOT / PB COUNTY STANDARDS. 5. SIDEWALKS WILL BE RESTORED BY REPLACING: TWO FLAGS IF THE POINT OF CONSTRUCTION IS LOCATED AT A CONTROL JOINT AND THREE FLAGS IF

THE POINT OF CONSTRUCTION IS LOCATED BETWEEN CONTROL JOINTS. NO PARTIAL JOINTS ACCEPTED. (PER SITUATION) PBC TRAFFIC STANDARD NOTES:

CONTACT HAROLD REED AT 561 681-4326 BEFORE STARTING CONSTRUCTION PBC-TRAFFIC ITS WILL REMOVE FIBER OPTIC CABLES FROM UNDERGROUND AND OVERHEAD FACILITIES PRIOR CONSTRUCTION. PLEASE PROVIDE 2 WEEKS ADVANCE NOTICE TO REMOVE FIBER OPTIC CABLE. 2. CONTRACTOR SHALL CONTACT PALM BEACH COUNTY TRAFFIC OPERATIONS AT 561-233-3900 FORTY-FIGHT(48) HOURS PRIOR TO CONSTRUCTION IF WORK IS BEING DONE WITHIN 10 FEET OF ANY SIGNAL EQUIPMENT. 3. DAMAGES TO LOOPS OR ANY SIGNAL EQUIPMENT CAUSED BY CONSTRUCTION OF THIS PROJECT MUST BE REPAIRED OR REPLACED TO ORIGINAL OR BETTER CONDITION AT NO COST TO PALM BEACH COUNTY 4. NO EXCAVATION AROUND PBC SIGNAL POLES WITHIN 6 FT. RADIUS FROM CENTER OF POLE. PLEASE SEE PBC SIGNAL TYPICAL PAGE T-5.3 (SHEET 8 OF 23).

- 26. LIMEROCK COMPOSITION THE FOLLOWING TESTS ARE REQUIRED ON THE LIMEROCK MATERIAL A. CHEMICAL COMPOSITION TEST TO DETERMINE THAT MATERIAL HAS A MINIMUM PERCENT CARBONATES OF 60%.
- CAN ACHIEVE AN LBR OF 100. C. SIEVE ANALYSIS TO INSURE THAT AT LEAST 97% (BY WEIGHT) OF THE MATERIAL SHALL PASS A 3-1/2" SIEVE AND MATERIAL SHALL BE GRADED UNIFORMLY DOWN TO DUST. THE FINE MATERIAL SHALL CONSIST ENTIRELY OF DUST OF FRACTURE. ALL CRUSHING OR BREAKING-UP WHICH MIGHT BE NECESSARY IN ORDER TO MEET SUCH SIZE REQUIREMENTS SHALL BE DONE BEFORE THE MATERIAL IS PLACED ON THE ROAD.

B. LIMEROCK BEARING RATIO TEST TO DETERMINE THAT MATERIAL

26. A PROCTOR TEST SHALL BE PERFORMED ON THE PROPOSED LIMEROCK MATERIAL TO DETERMINE THE MAXIMUM DENSITY OF THE MATERIAL. IN-PLACE DENSITY TESTS SHALL BE TAKEN AT A FREQUENCY OF AT LEAST ONE TEST FOR EVERY 7,000 SO FT OF PROPOSED PAVEMENT TO DETERMINE COMPLIANCE WITH THE DESIGN SPECIFICATIONS OF 98% OF

MAX. DENSITY PER AASHTO T-180 TESTING METHODS.

27. THE COMPACTED BASE SHALL CONFORM TO THE LINES, GRADES, AND CROSS-SECTION SHOWN ON THE PLANS. THE FINISH BASE SURFACE SHALL BE STRINGLINED OR CHECKED WITH A TEMPLATE TO VERIFY CONFORMANCE WITH THE PLAN GRADES WITHIN AN ALLOWABLE TOLERANCE OF 1/4" OF THE PROPOSED BASE ELEVATIONS. PRIME COAT SHALL BE APPLIED AT A RATE OF 0.25 GALLONS PER SQUARE YARD.

ASPHALTIC CONCRETE SURFACE COURSE:

- 28. TACK COAT A. PRIOR TO INSTALLATION OF THE OVERLAY, THE SURFACE OF THE EXISTING ASPHALT SHALL BE BROOMED TO REMOVE ALL LOOSE MATERIAL WHICH MIGHT INTERFERE WITH THE ADHESION OF THE EXISTING ASPHALT AND OVERLAY.
- B. A TACK COAT SHALL BE APPLIED TO THE TOP OF THE CLEAN ASPHALT SURFACE AT A RATE OF 0.10 GALLONS/SQ.FT. IN THE PRESENCE OF THE ENGINEER'S REPRESENTATIVE.
- 29. PRIME COAT SHALL BE APPLIED AT A RATE OF 0.25 GALLONS PER SQUARE YARD. PRIME AND TACK COAT FOR BASE SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF SECTION 300-1 THROUGH 300-7 OF F.D.O.T. STANDARDS SPECIFICATIONS.
- 30. ASPHALTIC CONCRETE SHALL CONFORM TO FLORIDA D.O.T. REQUIREMENTS OF TYPE S-1 AND S-3. CERTIFICATIONS OF THE ASPHALT MIX SHALL BE SUBMITTED BY THE ASPHALT PLANT TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
- 31. THE TEMPERATURE OF THE ASPHALT SHALL BE AT LEAST 230 DEGREES . DURING THE LAYING OPERATION. 32. THE THICKNESS OF THE FINISHED SURFACE COURSE SHALL BE CHECKED AT VARIOUS INTERVALS TO INSURE THE CONSTRUCTED SURFACE COURSE
- IS WITHIN 1/8" OF THE DESIGN THICKNESS (NO NEGATIVE TOLERANCE WILL BE ACCEPTABLE) 33. THE FINISHED SURFACE OF THE ASPHALT SHALL BE CHECKED WITH A STRAIGHT EDGE TO INSURE THAT THE LINE, GRADE, AND CROSS-SECTION OF THE FINISHED PAVEMENT SECTION IS IN CONFORMANCE WITH THE DESIGN PLANS. THE FINISHED SURFACE SHALL BE OF
- UNIFORM TEXTURE AND COMPACTION. THE SURFACE SHALL HAVE NO PULLED, TORN, OR LOOSENED PORTIONS AND SHALL BE FREE OF SEGREGATION, SAND, STREAKS, SAND SPOTS, OR RIPPLES. ALL AREAS OF THE SURFACE WHICH DOES NOT MEET THE FOREGOING REQUIREMENTS SHALL BE CORRECTED TO THE ENGINEER'S SATISFACTION.
- 34. ALL REPAIRS TO EXISTING PAVEMENT SHALL RECEIVE SAWCUT EDGE PRIOR TO RELAYING ASPHALT. UNDER PAVEMENT UTILITY PIPING OR WIRING LESS THAN FOUR (4) INCHES IN DIAMETER REQUIRES A SCHEDULE 40 PVC CASING PIPE WITH SAND BACKFILLS.
- 35. ALL PERMANENT CONTROL POINTS AND/OR REFERENCE MARKERS SHOWN ON PLAT SHALL BE RAISED TO FINAL GRADE IF LOCATED IN PAVEMENT OR CONCRETE. THESE POINTS AND REFERENCE MARKERS SHALL BE LOCATED AND NOTED ON THE PLAT.
- NOTIFICATION, TESTING 36. NOTIFICATION - THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE COUNTY AND UTILITIES 48 HOURS PRIOR TO SCHEDULING FIELD OBSERVATIONS AND SHALL SUPPLY ALL EQUIPMENT NECESSARY TO TEST THE COMPLETED WORK. CALL U.N.C.L.E. PRIOR TO ANY EXCAVATION
- 37. ALL DRAINAGE SYSTEMS SHALL BE PUMPED DOWN TO BELOW 1/3 OF THE DIAMETER OF THE PIPE (FROM THE INVERT) AND LAMPED AS A REQUIREMENT
- 38. GRATE AND RIM ELEVATION ARE BASED ON PROPOSED FINISHED GRADE. ADJUSTMENTS MAY BE NECESSARY DUE TO FIELD CONDITIONS. ADJUSTMENTS ARE TO BE MADE BY THE CONTRACTOR WHEN THE BASE COURSE IS IN PLACE OR SITE GRADING IS COMPLETE. COST OF ADJUSTING RIMS AND GRATES IS TO BE INCLUDED IN BASE BID.

SODDING:

- 39. WORK CONSISTS OF THE ESTABLISHING OF A STAND OF GRASS WITHIN THE AREAS CALLED FOR BY THE FURNISHING AND PLACING OF GRASS SOD AND FERTILIZING, WATERING, AND MAINTAINING SODDED AREAS SUCH AS TO ASSURE A HEALTHY STAND OF GRASS.
- 40. THE AREA OVER WHICH THE SOD IS TO BE PLACED SHALL BE SCARIFIED OR LOOSENED TO SUITABLE DEPTH. THE SOD SHALL BE PLACED ON THE PREPARED SURFACE WITH EDGES IN CLOSE CONTACT AND SHALL BE FIRMLY AND SMOOTHLY EMBEDDED BY LIGHT TAMPING WITH APPROPRIATE TOOLS. ON AREAS WHERE THE SOD MAY SLIDE DUE TO HEIGHT AND SLOPE, THE ENGINEER MAY DIRECT THAT THE SOD BE PEGGED WITH PEGS DRIVEN THROUGH THE SOD BLOCKS INTO FIRM EARTH AT SUITABLE INTERVALS.

SOLID CONCRETE INTERLOCKING PAVING STONE SPECIFICATIONS 1. DESCRIPTION:

- 1.1 GENERAL:
- A. Scope of Work: 1. Furnish and place sand bedding course. 2. Furnish and install concrete interlocking paving stones in the quality, shape, thickness and a color as specified.
- 3. Furnish and install all accessory items as required by the B. Related Work: 1. Furnish and install subgrade per Table 100.6 of the Palm Beach
- County Land Development Design Standards Manual. 2. Furnish and install base per Table 100.6 of the Palm Beach County Land Development Design Standards Manual. C. Product Handling: 1. Paving stones shall be delivered and unloaded at jobsite in such
- storage. D. References: 1. Solid concrete interlocking paving stones shall meet or exceed the requirements in ASTM C-936 Standard Specifications for

a manner that no damage occurs during shipping, handling and

II. MATERIALS: 2.1 SOLID CONCRETE INTERLOCKING PAVING STONES

with ASTM C-140.

shall be rejected.

Solid Concrete Interlocking Paving Units.

- A. Thickness, Color and Pattern: 1. Paving stone thickness shall be between 3-1/8" min - 4" max.. 2. All paving stones shall be colored through the full depth of paver and not just the surface.
- 3. A multi-colored paving stone pattern shall be used. B. Cementitious Materials: 1. Portland cements shall conform to ASTM C-150.
- C. Aggregates: 1. Aggregates shall conform to ASTM C-33 for normal weight concrete except that grading requirements shall not necessarily
- D. Other Materials: 1. Coloring pigments, air entraining agents, integral water repellents, finely ground silica, etc., shall conform to ASTM standard where applicable or shall be previously established as
- suitable for use in concrete. 1. At the time of delivery to the work site, the average compressive strength shall not be less than 8,000 psi with no individual unit strength less than 7,200 psi, with testing procedures in accordance
- F. Absorption: 1. The average absorption shall not be greater than 5% with no
- individual unit absorption greater than 7%. G. Proven Field Performance: 1. Satisfying field performance is indicated when paving stones similar in composition, and made with the same manufacturing equipment as those supplied to the purchaser, do not exhibit
- deterioration after one year. H. Visual Inspection: 1. All paving stones shall be sound and free of defects that would interfere with the proper placement of the paving stone or impair
- the strength or permanence of the construction 2. Minor cracks incidental to the usual methods of manufacture, or chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.
- I. Sampling and Testing: 1. The purchaser shall be accorded proper facilities to inspect and sample the paving stones at the place of manufacture from lots ready for delivery.
- 2. Paving stones will be sampled and tested in accordance with ASTM C-140. J. Rejection: 1. If the shipment fails to conform to the specified requirements, the manufacturer may sort it, and new test paving stones shall be

selected at random by the purchaser from the retained lot and tested

at the expense of the manufacturer. If the second set of test paving

stones fail to conform to the specified requirements, the entire lot

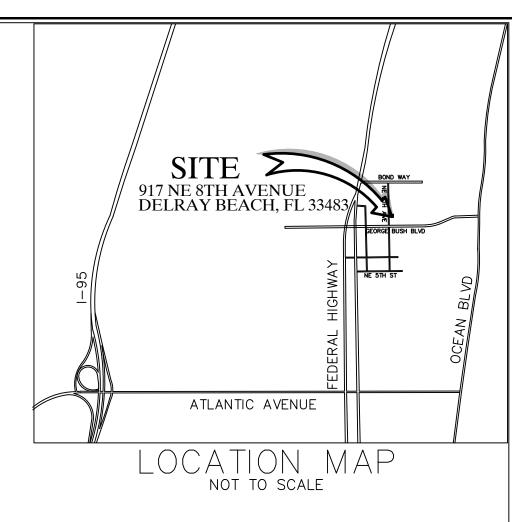
- 2.2 BEDDING COURSE:
- A. The bedding course shall be a well graded, clean, washed sand with 100% passing a 3/8" sieve size and a maximum of 3% passing
- a No. 200 sieve size. The use of mason sand shall not be approved. B. The bedding course shall be the responsibility of the paving
- A. All edges of the installed paving stones shall be restrained. The
- type of edge restraint, shall be approved at locations and to details noted on plans.

III. CONSTRUCTION METHODS:

- 3.1 PREPARATION OF THE BASE COURSE:
- A. A suitable base shall be prepared as specified in Section B.2. of
- this specification. B. The base course shall be shaped to grade and cross section with
- allowable tolerance of 1/4". 3.2 CONSTRUCTION OF THE BEDDING COURSE:
- A. The finished base course shall be approved before the placement of the bedding course.
- B. The sand bedding course shall be spread evenly over the area to receive the paving stones and the screeded level to produce a 1'
- thickness when the paving stones have been placed and vibrated. C. The final elevation of paving stones should be nominally 1/4" to 3/8" higher than the adjacent curb, gutter, etc., to allow for free
- drainage from chamfers on paving stone edges. D. The bedding course shall not be disturbed, once screeded and leveled to the desired elevation.
- 3.3 INSTALLATION OF PAVING STONES: A. The paving stones shall be placed as shown on the drawings.
- B. The paving stones shall be placed in such a manner that the desired pattern is maintained and that no intentional space is left between the stones for maximum interlock
- C. String lines should be used to hold all patterns true. D. The gaps at the edge of the paving stone surface shall be filled with standard edge stone or with stones cut to fit. Cutting of concrete paving stone shall be accomplished to leave a clean edge to the traffic surface using a double—headed breaker or a masonry

saw. Whenever possible, no cut should result with a paving stone

- less than 1/3 of original dimension. E. Paving stones shall be vibrated into the bedding course using a
- plat vibrator capable of 3000 to 5000 pounds compaction force with the surface clean and the joints open. F. After vibration, clean, sharp sand containing at least 30% of 1/8" particles shall be spread over the paving stone surface, allowed to dry and vibrated into the joints with additional plate vibrator passes
- and brushing so as to completely fill the joints. G. Surplus material shall then be swept from the surface or left on the surface during construction to insure complete filling of joints
- during initial use. H. Upon completion of work covered in this section, the Contractor shall clean up all work areas by removing all debris, surplus
- material and equipment from the site. 1. Paver brick shall conform with Palm Beach County Land
- Development Design Standards Manual with the following
- A) Under II Material 2.1 # A.1, Paving stone thickness shall be 3 1/8" (min.) to 4" (max.)
- b) Under II Material 2.1 # A.3, The coloring shall be throughout the entire brick with the white and vellow conforming with F.D.O.T. Standard Specifications for Road and Bridge Construction (latest edition) section 710-4.7
- 2. Glass spheres to meet the requirements of sections 971-1 and 971-14 with retroflectivity to be not less than 300
- 3. When header curb is used to outline a crosswalk the curb shall be white concrete with glass beads in the white
- 4. The brick shall be pre—approved per project before installation by the Palm Beach County Traffic Engineering





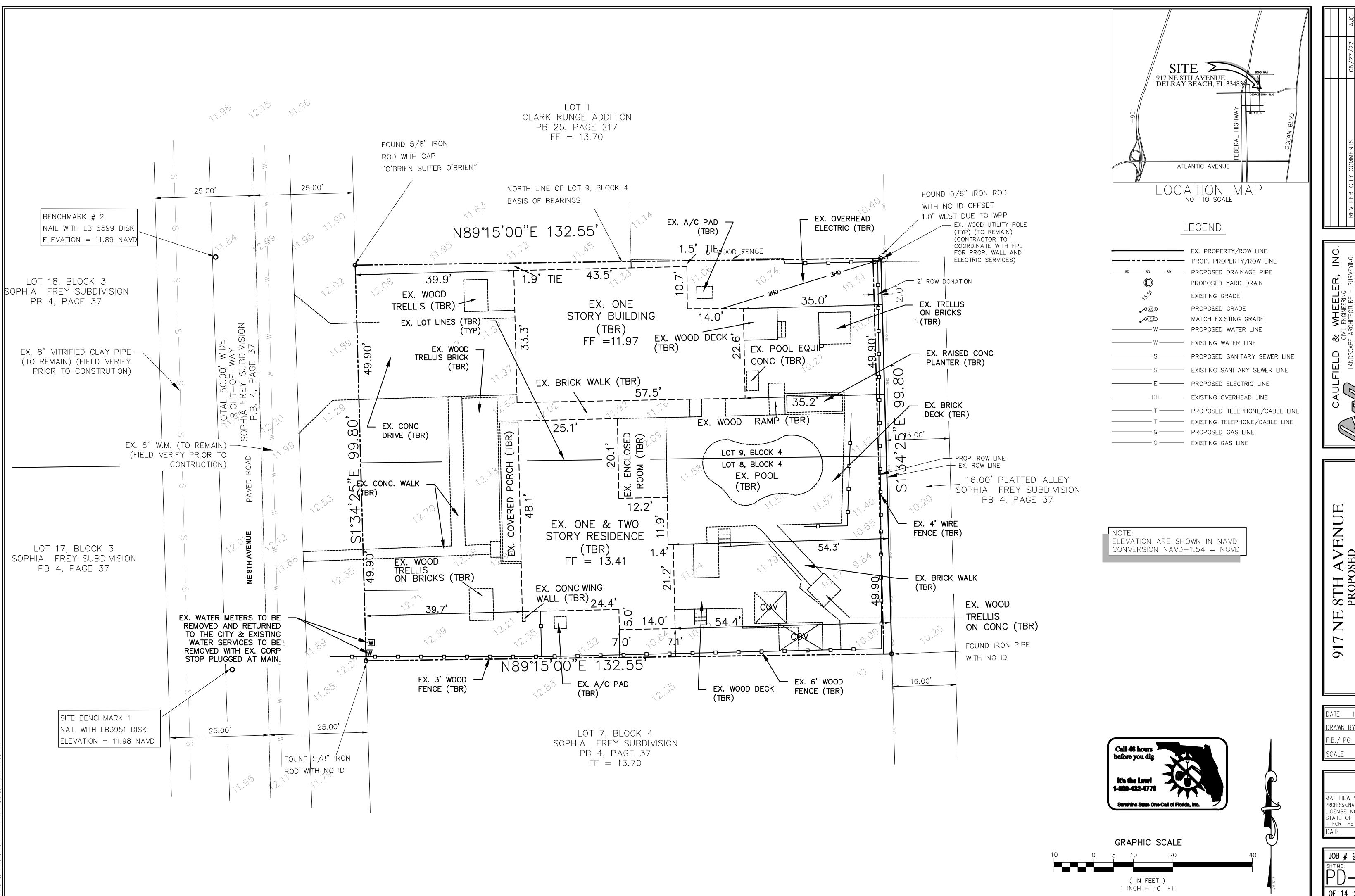
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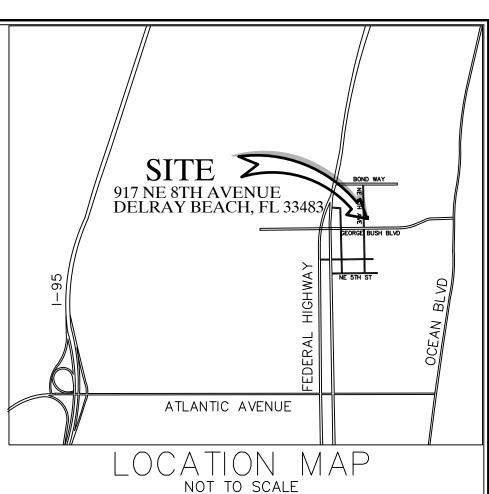
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PROFESSIONAL ENGINEER LICENSE NO. 8222 STATE OF FLORIDA - FOR THE FIRM -

MATTHEW V. KAHN

JOB # 9638



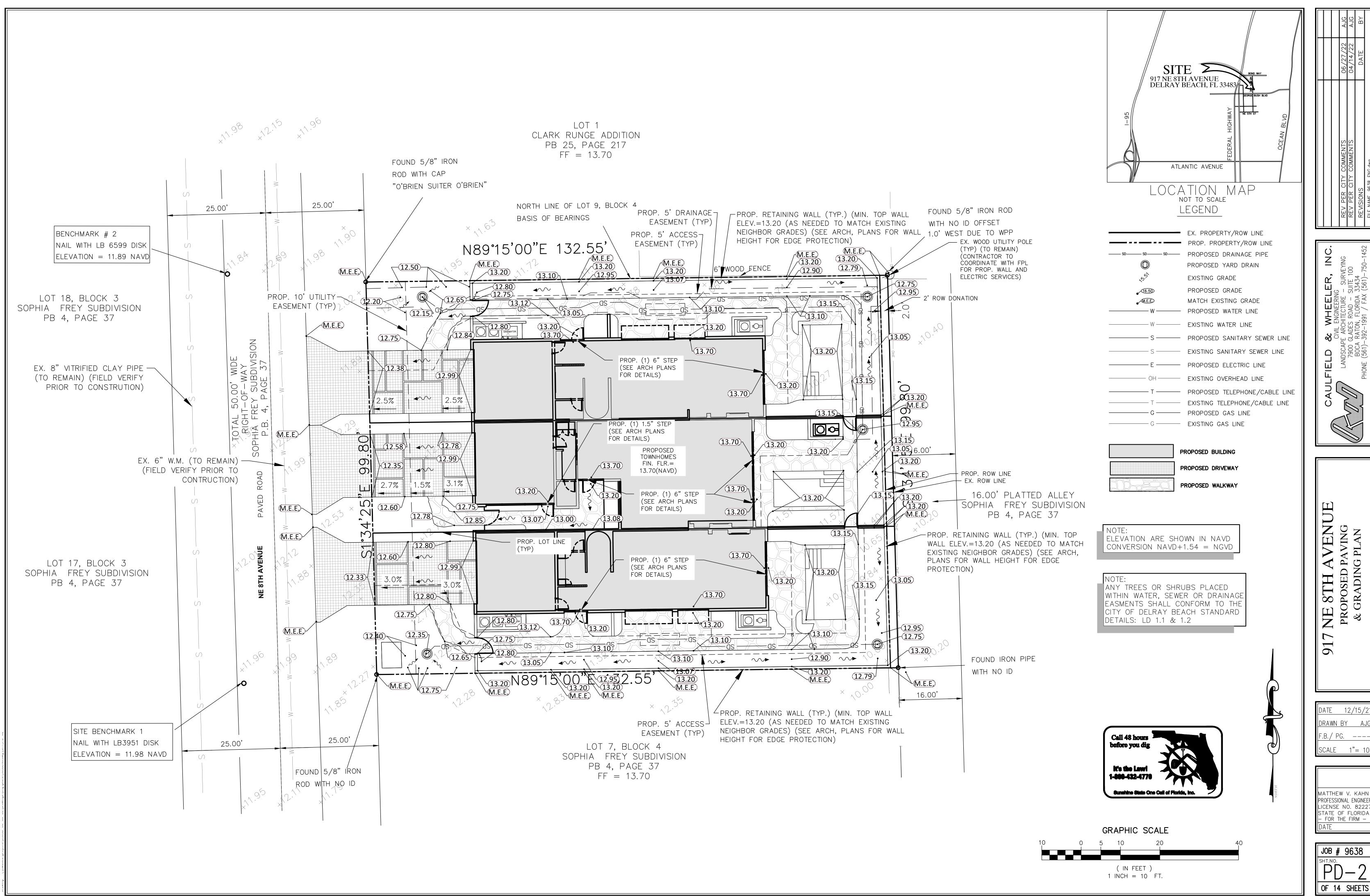


NE 8TH AVENUE PROPOSED DEMOLITION PLAN 91

DATE 12/15/2° DRAWN BY AJO F.B./ PG. ----SCALE 1"= 10

MATTHEW V. KAHN PROFESSIONAL ENGINEER LICENSE NO. 82227 STATE OF FLORIDA — FOR THE FIRM —

JOB # 9638 PD-1A OF 14 SHEETS



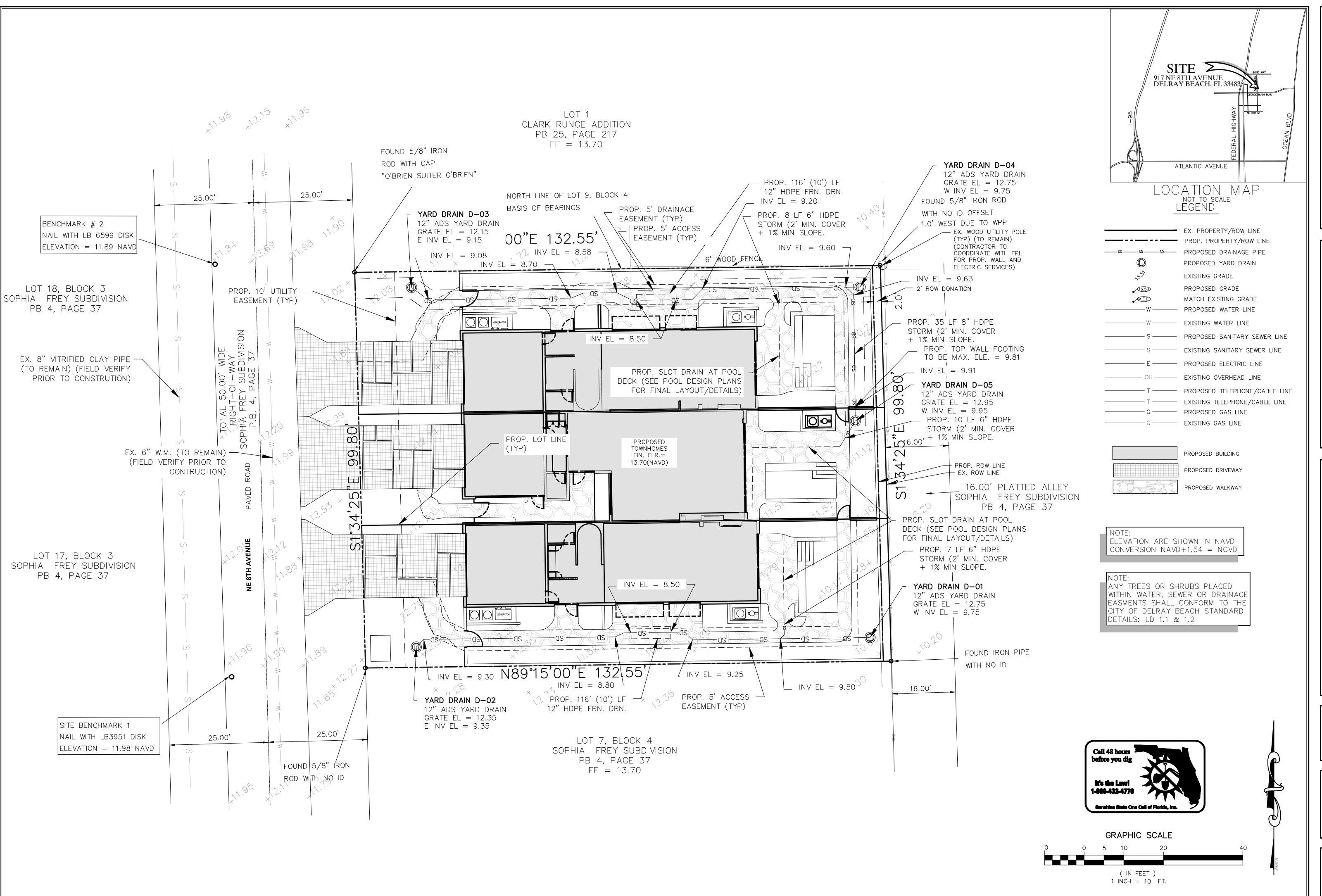
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NE 8TH AVENUE
PROPOSED PAVING
& GRADING PLAN

DATE 12/15/2° DRAWN BY AJO

MATTHEW V. KAHN PROFESSIONAL ENGINEER LICENSE NO. 82227 STATE OF FLORIDA — FOR THE FIRM —

JOB # 9638 PD-2 OF 14 SHEETS



V PER CITY COMMENTS

V PER CITY COMMENTS

VISIONS

NAME 9638_ENG.dwg

CAULFIELD & WHEELER, INC.

CIVIL ENGINEERING

LANDSCAPE ARCHITECTURE - SURVEYING
7900 GLADES ROAD - SUITE 100
BOCA RATON, FLORIDA 33434

PHONE (561)-392-1991 / FAX (561)-750-1452

917 NE 8TH AVENUE
PROPOSED
DRAINAGE PLAN
DELRAY BEACH, FLORIDA

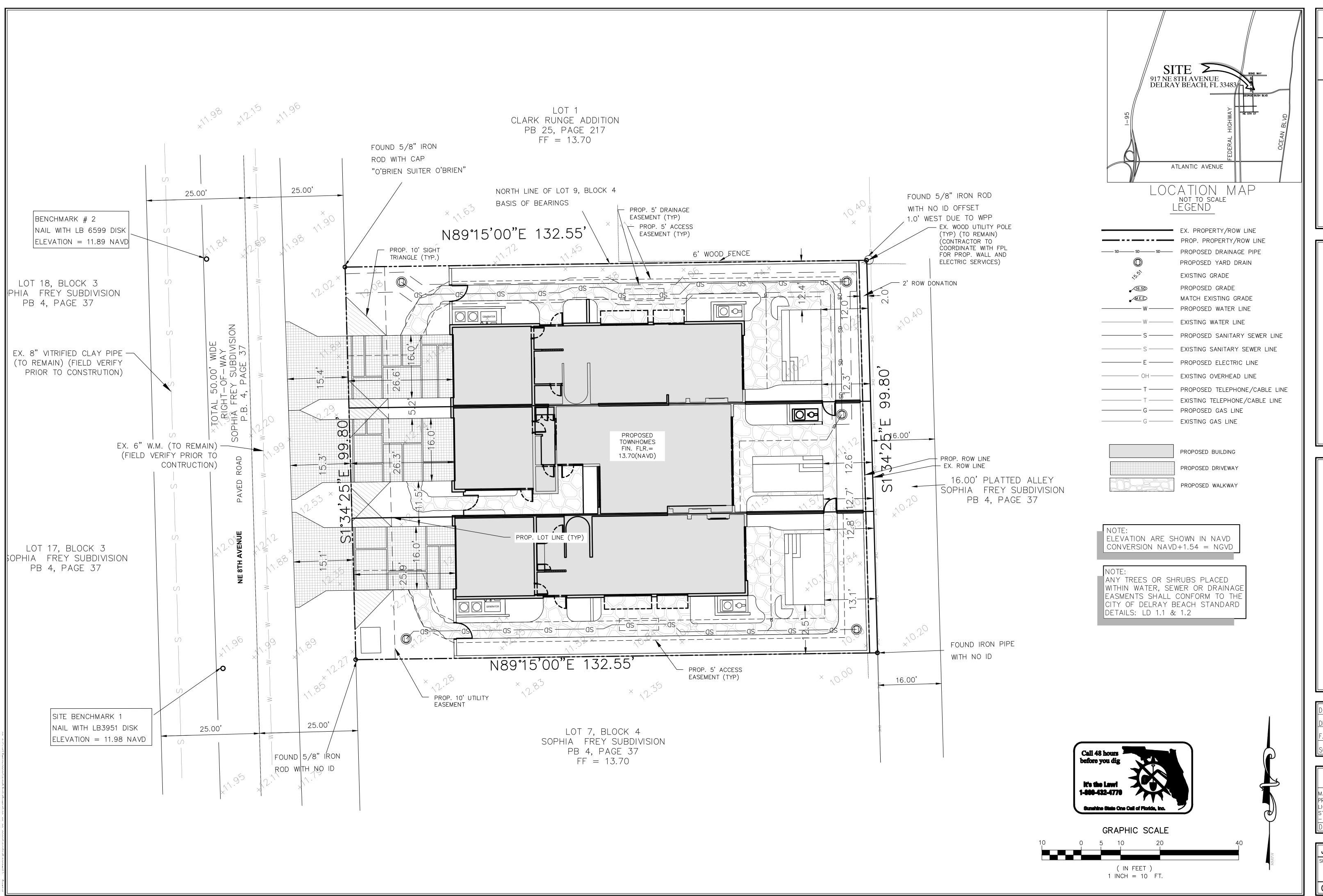
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F.B./ PG. ---
SCALE 1"= 10'

MATTHEW V. KAHN
PROFESSIONAL ENGINEER
LICENSE NO. 82227
STATE OF FLORIDA
– FOR THE FIRM –
DATE

JOB # 9638
SHT.NO.
PD—2A
OF 14 SHEETS



REV PER CITY COMMENTS 06/27/22
REV PER CITY COMMENTS 04/14/22
REVISIONS DATE

CAULFIELD & WHEELER, INC.

CIVIL ENGINEERING

CIVIL ENGINEERING

A 7900 GLADES ROAD - SUITE 100

BOCA RATON, FLORIDA 33434

PHONE (561)-392-1991 / FAX (561)-750-1452

917 NE 8TH AVENUE
PROPOSED
AVEMENT, MARKING & SIGNAGE PLA
DELRAY BEACH, FLORIDA

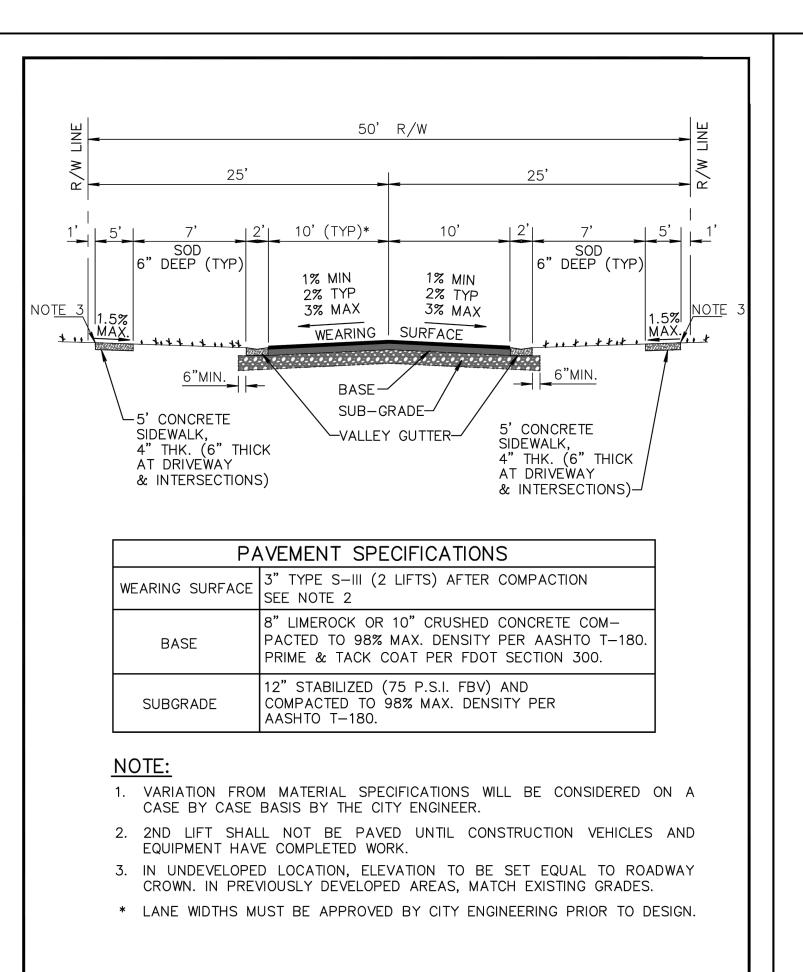
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F.B./ PG. ---
SCALE 1"= 10'

MATTHEW V. KAHN PROFESSIONAL ENGINEER LICENSE NO. 82227 STATE OF FLORIDA – FOR THE FIRM –

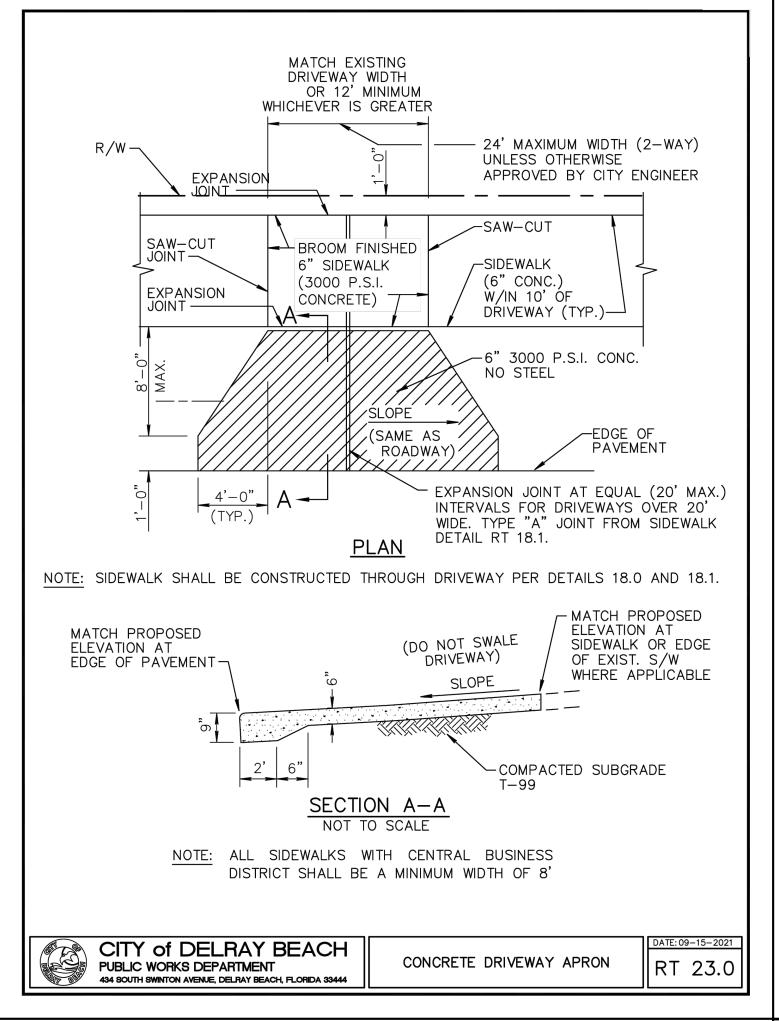
JOB # 9638
SHT.NO.
PD—3
OF 14 SHEETS

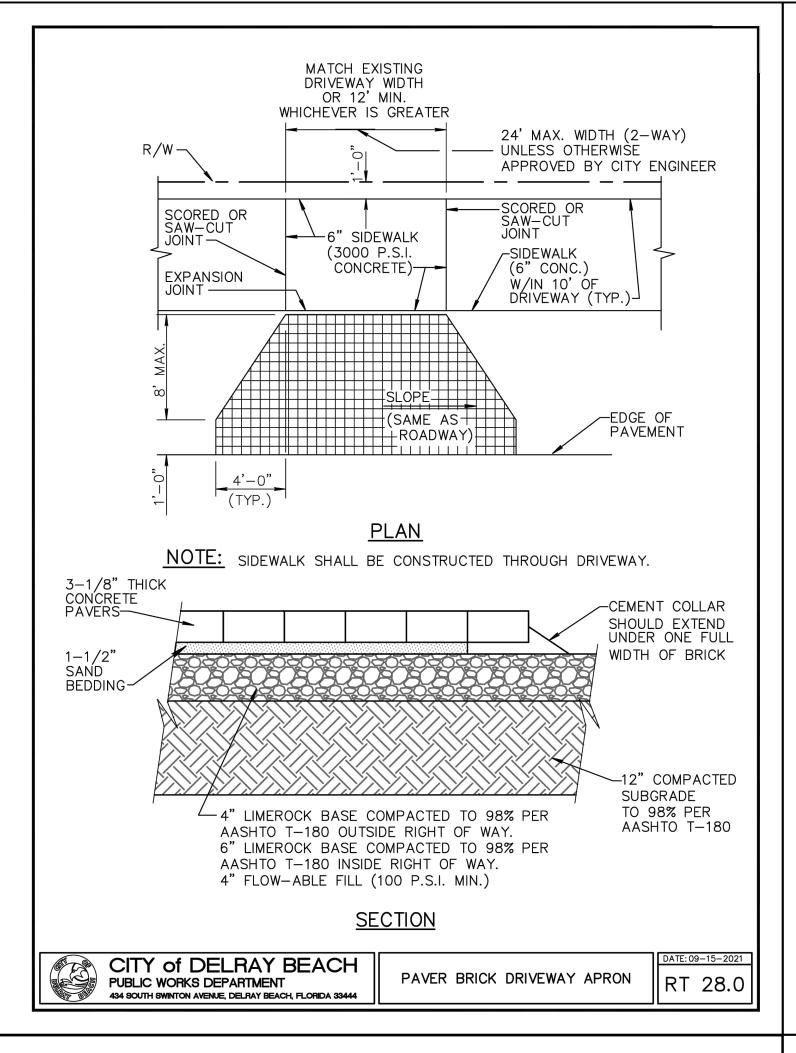


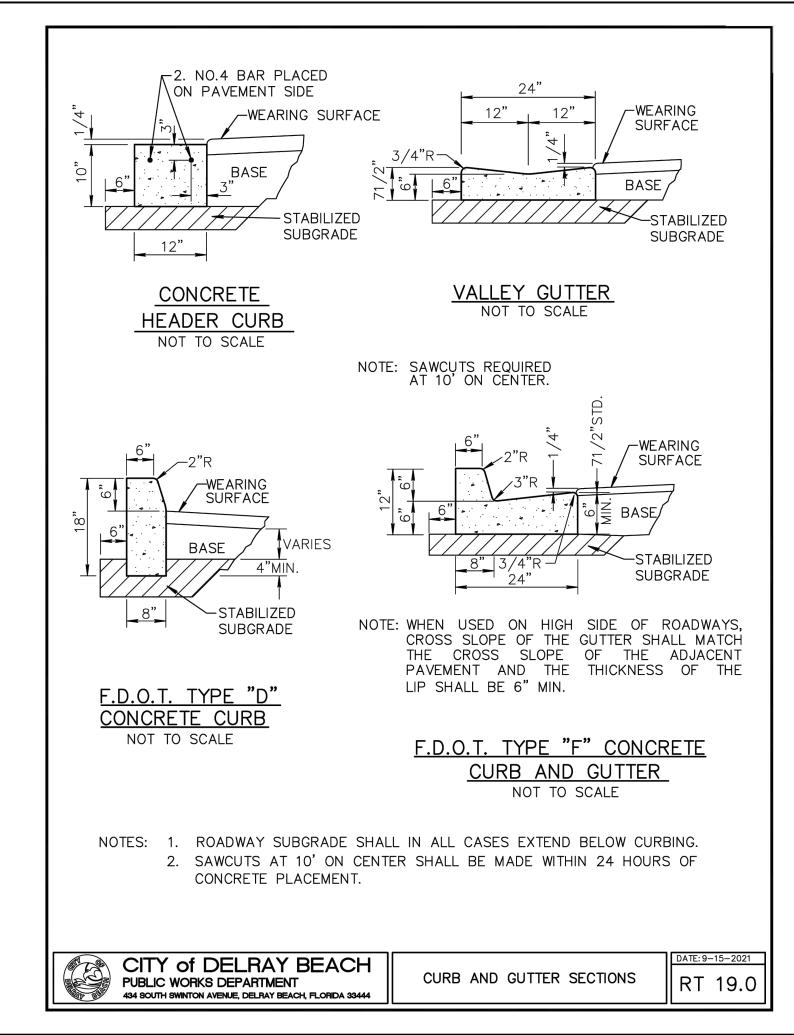
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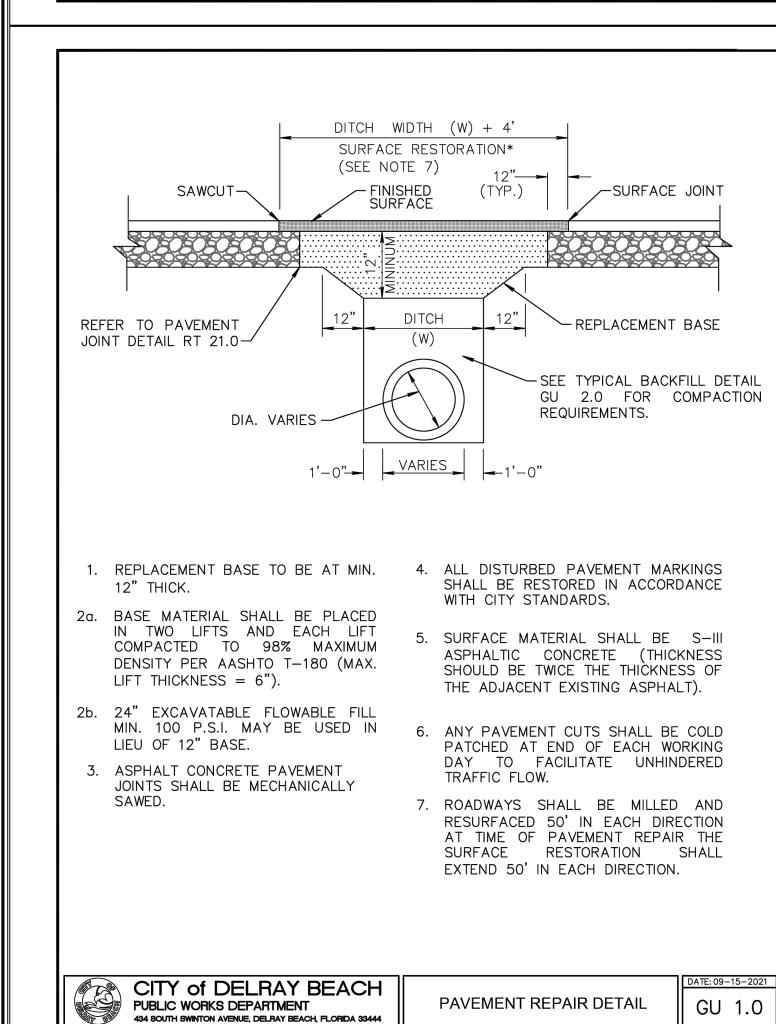
RT 1.0

WITH VALLEY GUTTER



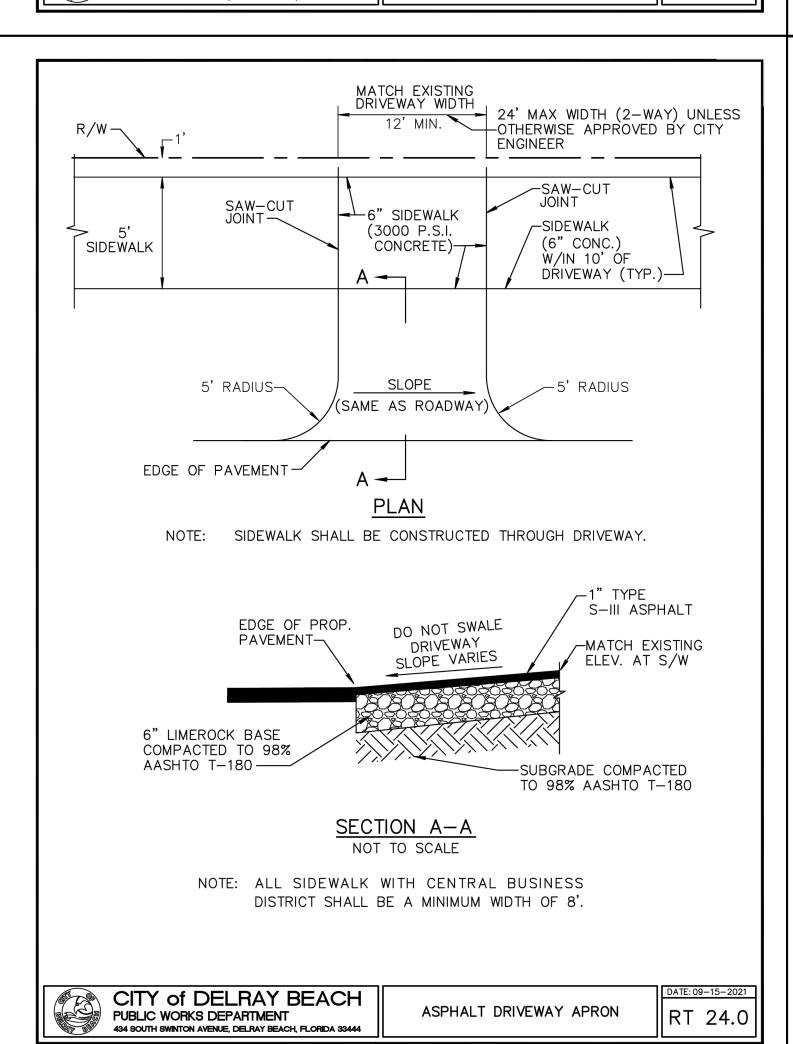


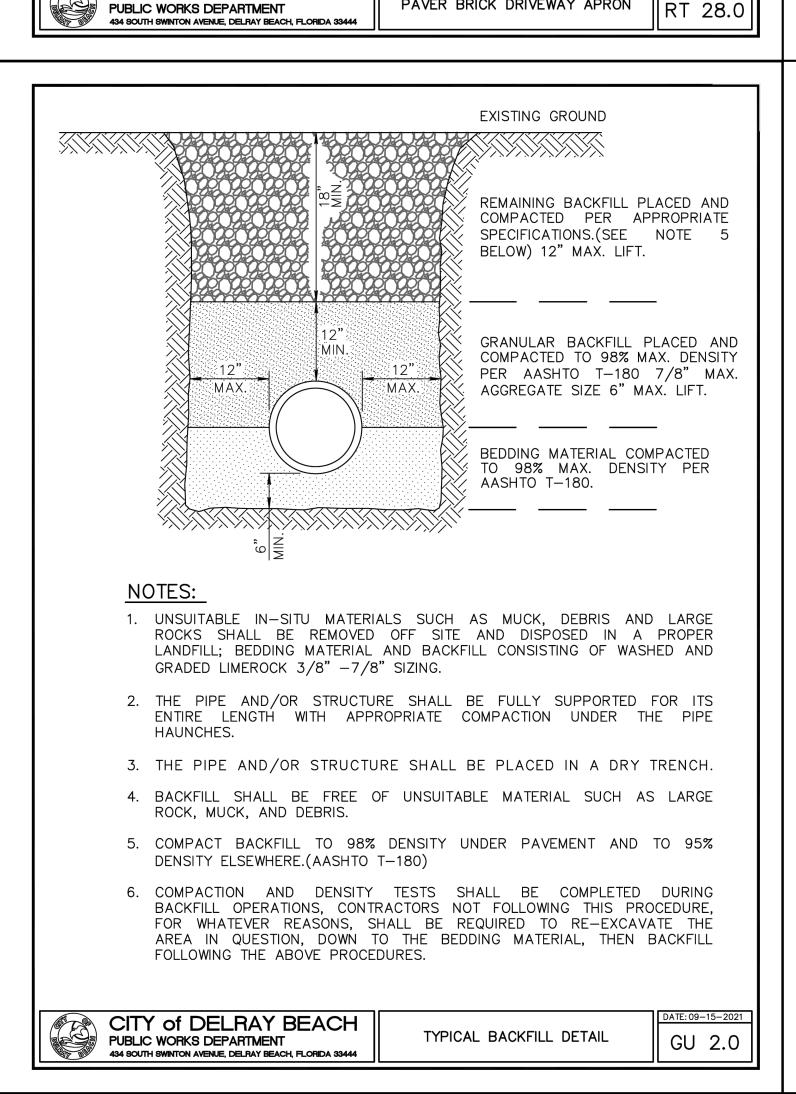


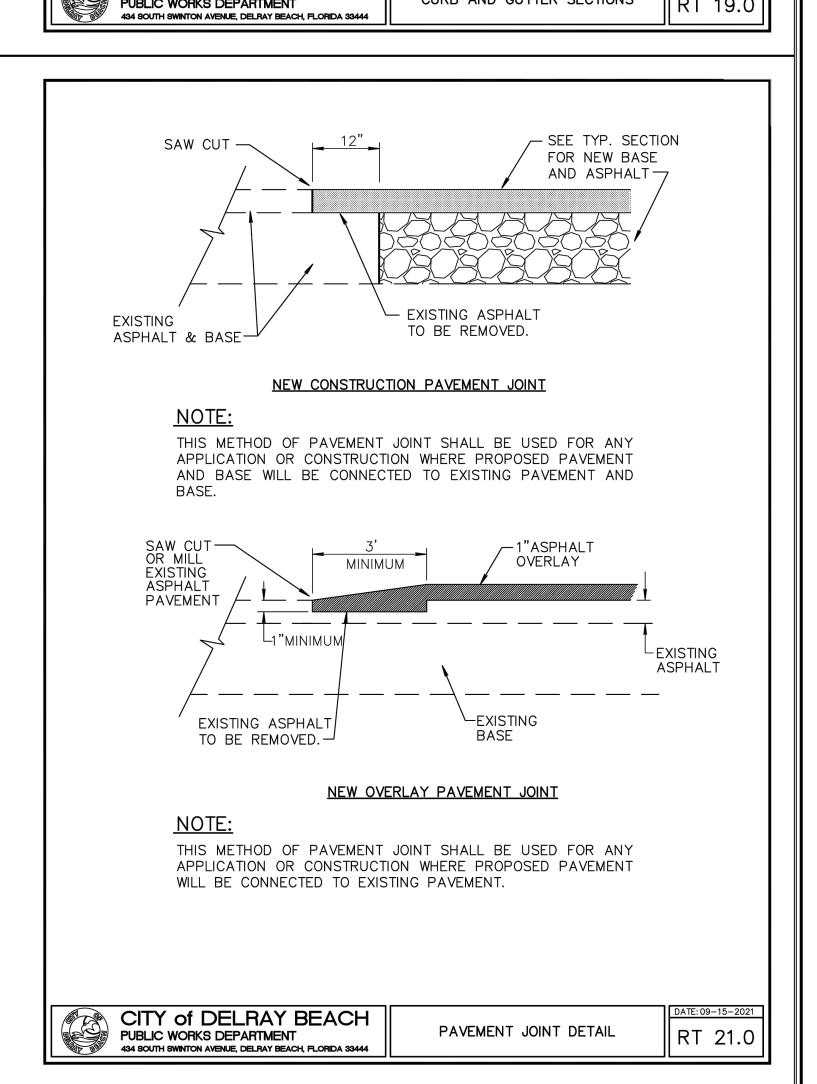


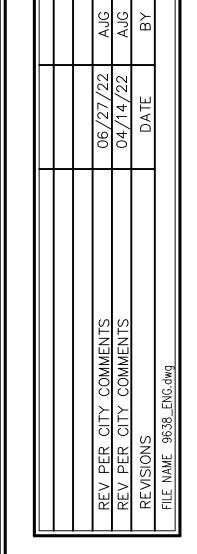
CITY of DELRAY BEACH

PUBLIC WORKS DEPARTMENT









CAULFIELD & WHEELER, INC.

CIVIL ENGINEERING

CIVIL ENGINEERING

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ROCA RATON, FLORIDA 33434

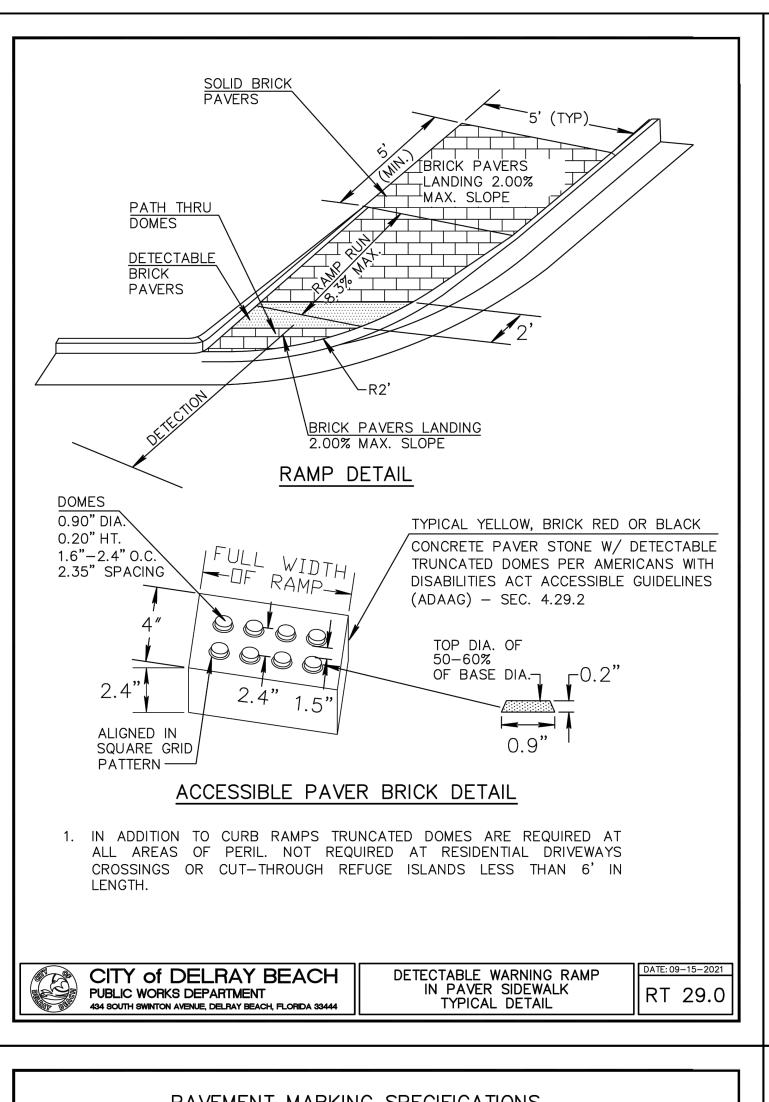
PHONE (561)-392-1991 / FAX (561)-750-1452

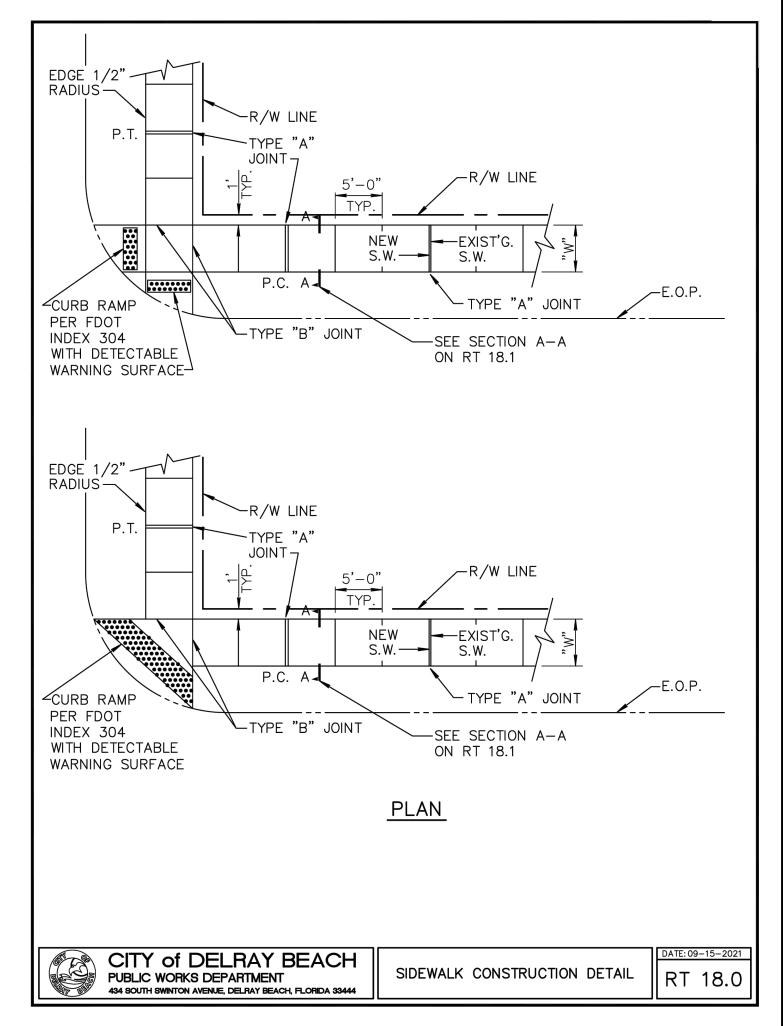
917 NE 8TH AVENUE PAVING, GRADING, & DRAINAGE DETAILS

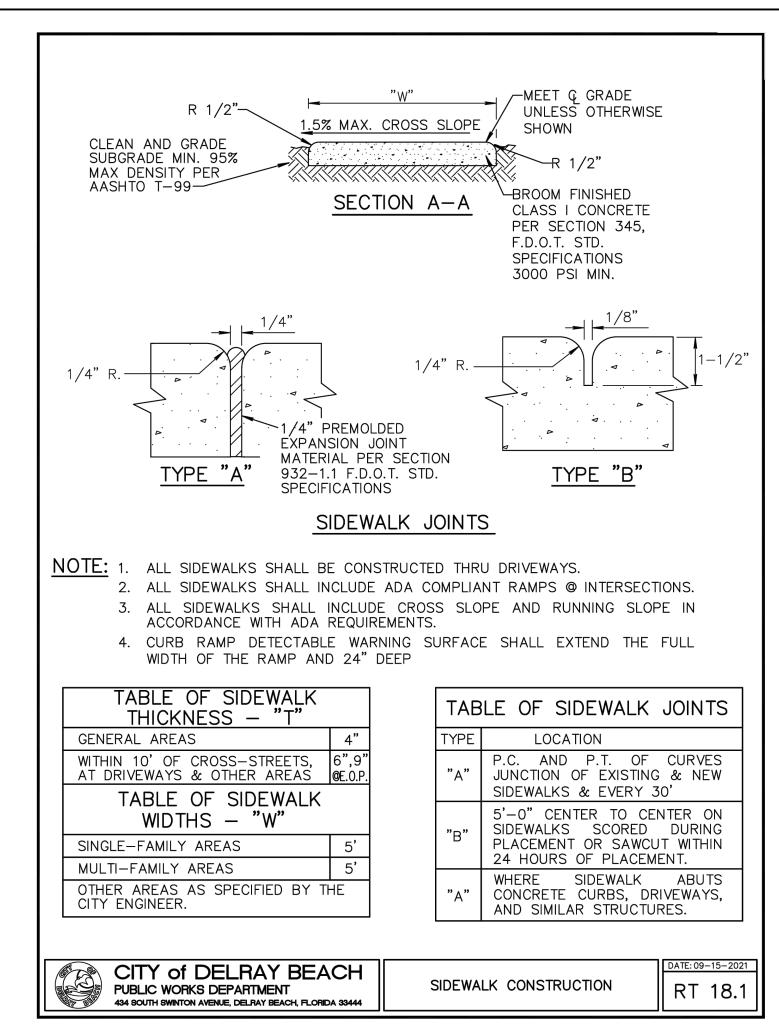
DATE 12/15/21
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F.B./ PG. --SCALE N/A

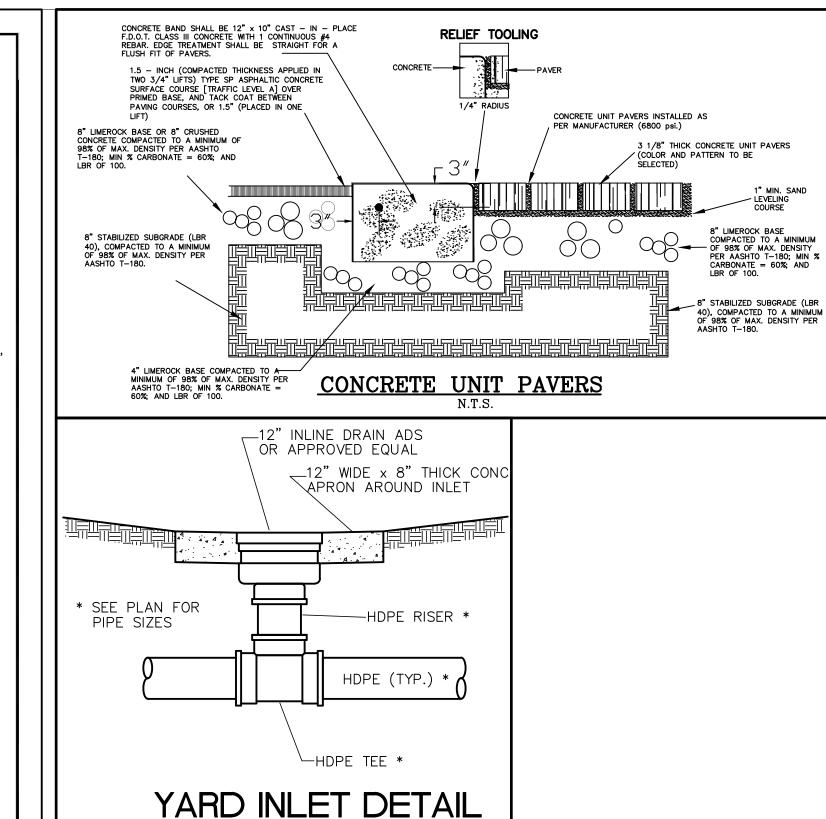
MATTHEW V. KAHN
PROFESSIONAL ENGINEER
LICENSE NO. 82227
STATE OF FLORIDA
– FOR THE FIRM –
DATE

JOB # 9638
SHT.NO.
PD-4
OF 14 SHEETS



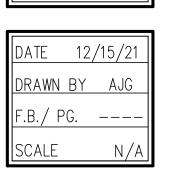








917 NE 8TH AVENUE PAVING, GRADING, & DRAINAGE DETAILS



MATTHEW V. KAHN PROFESSIONAL ENGINEER LICENSE NO. 82227 STATE OF FLORIDA - FOR THE FIRM -

JOB # 9638 OF 14 SHEETS

PAVEMENT MARKING SPECIFICATIONS

All Pavement markings to be installed per these typicals, plans and specifications, and as directed by the City Engineer and shall conform to the requirements of F.D.O.T. and the manual on uniform traffic control devices, (MUTCD).

PERMANENT MARKINGS

Installation:

 All markings shall be installed by the extruded Markings shall be free of weaves, bows, drips, drags,

and other degrading items. Chalk shall be used for all layout markings

Materials: All materials shall be alkyd or hydrocarbon thermoplastic meeting all FDOT specifications.

Thickness:

of material measured above the pavement surface.

All markings shall be installed to yield 90 mils

Spheres:

Reflective glass sheres are to be applied to all stripes and markings per FDOT specifications.

Alternate Material:

STAYMARK marking tape, or equivalent may be used, as approved or directed by the City Engineer.

Layout:

Layout shall be made using marking chalk. It is recommended that marking layout be inspected by the City Engineer prior to the placement of final markings.

TEMPORARY MARKINGS

Temporary markings may be used only as specified in this section, or as approved or directed by the City Engineer.

Final Pavement Surface:

 Only foil backed marking tape is allowed. All tape shall be totally removed concurrent with permanent marking placement.

Other Pavement Surfaces:

 Intermediate pavement surfaces may be marked with FDOT approved materials, designs, and specifications.

PUBLIC WORKS DEPARTMENT

CITY of DELRAY BEACH PAVEMENT MARKING SPECIFICATIONS PUBLIC WORKS DEPARTMENT (SHEET 1 OF 2)

CITY of DELRAY BEACH
PAVEMENT MARKING SPECIFICATIONS
PUBLIC WORKS DEPARTMENT

PAVEMENT MARKING SPECIFICATIONS
(SHEET 2 OF 2)

PATE: 09-15-20

PATE: 09-15-20 RT 22.0 PUBLIC WORKS DEPARTMENT

ALL PAVEMENT MARKINGS

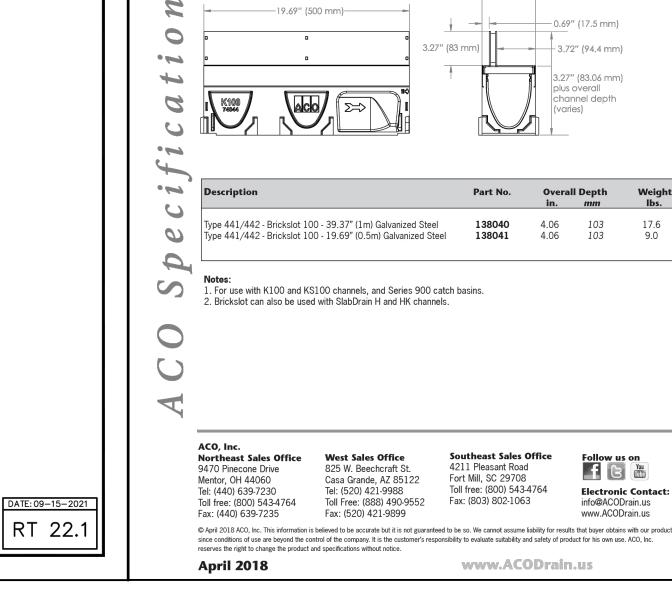
All paved surfaces shall be properly marked prior to the hours of darkness.

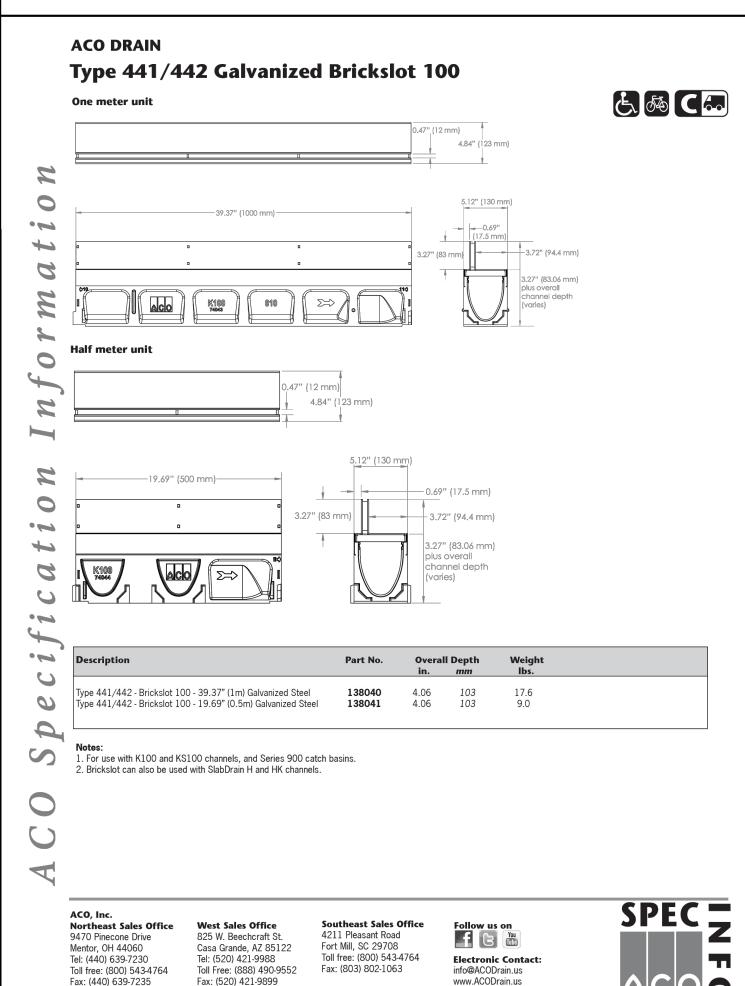
RAISED PAVEMENT MARKERS

- R.P.M.s shall be installed on all lane lines and centerlines, spaced at 20' or 40'.
- R.P.M.s shall be a 4 x 4 type class "B" marker meeting F.D.O.T. specifications and shall be approved by the City Engineer prior to use.
- R.P.M.'s shall be installed using alkyd thermoplastic on asphalt and epoxy on concrete.

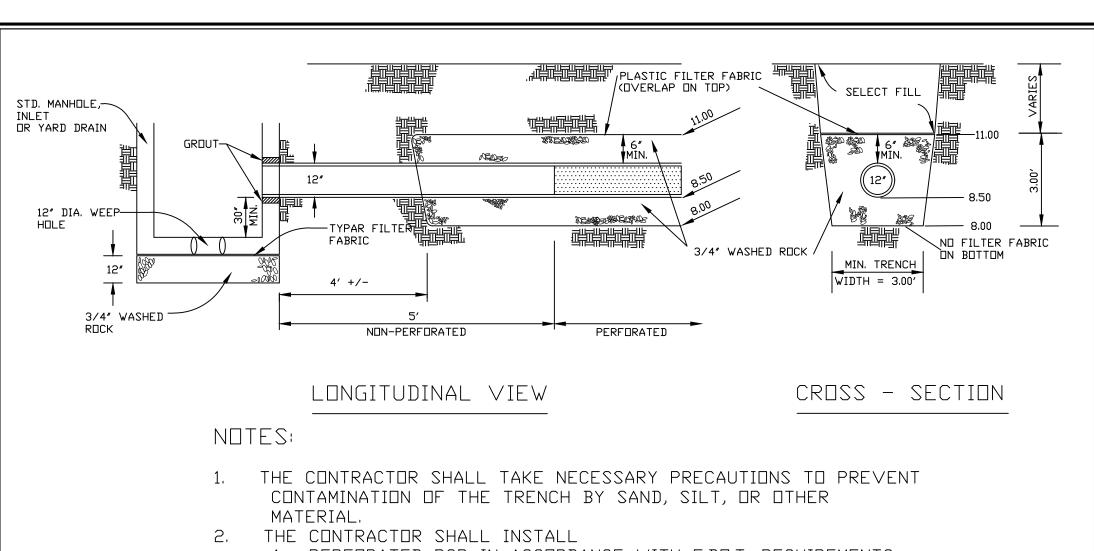
OTHER NOTES

- All Materials within right—of—way shall be thermoplastic and per F.D.O.T. specifications.
- Pavement marking within private parking lots may be painted according to F.D.O.T. specifications, except for all stop bars adjacent to public right—of—way.





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- A. PERFORATED RCP IN ACCORDANCE WITH F.DO.T. REQUIREMENTS. B. CORRUGATED ALUMINUM IN ACCORDANCE WITH F.DO.T. REQUIREMENTS.
- 3. NO PIPE PERFORATIONS FOR THE FIRST 5 FEET FROM THE INLET OR
- MANHOLE.
- 4. PIPE PERFORATIONS SHALL BE PER FDOT REQUIREMENTS
- 5. SEE DETAILS OF MANHOLE AND/OR INLET FOR CONSTRUCTION DETAILS OF SAME.
- 6. PLASTIC FILTER FABRIC SHALL CONFORM TO D.O.T. SECTION 985 OR APPROVED EQUAL.
- 7. PRIOR TO BACKFILLING ANY DRAINAGE STRUCTURES, THE CITY ENGINEERING DEPARTMENT SHALL BE GIVEN 24 HOURS NOTICE IN ORDER TO SCHEDULE AN INSPECTION OF THE FACILITY.

FRENCH DRAIN DETAIL

N.T.S.

REV PER CITY COMMENTS 06/27/22 REV PER CITY COMMENTS 04/14/22 REVISIONS DATE FILE NAME 9358_ENG.dwg			AJG	AJG	ВҮ		
REV PER CITY COMMENTS REV PER CITY COMMENTS REVISIONS FILE NAME 9358_ENG.dwg			06/27/22	04/14/22	DATE		
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CAULFIELD & WHEELER, INC.

CIVIL ENGINEERING

LANDSCAPE ARCHITECTURE - SURVEYING
7900 GLADES ROAD - SUITE 100

BOCA RATON, FLORIDA 33434

PHONE (561)-392-1991 / FAX (561)-750-1452

917 NE 8TH AVENUE PAVING, GRADING, & DRAINAGE DETAILS

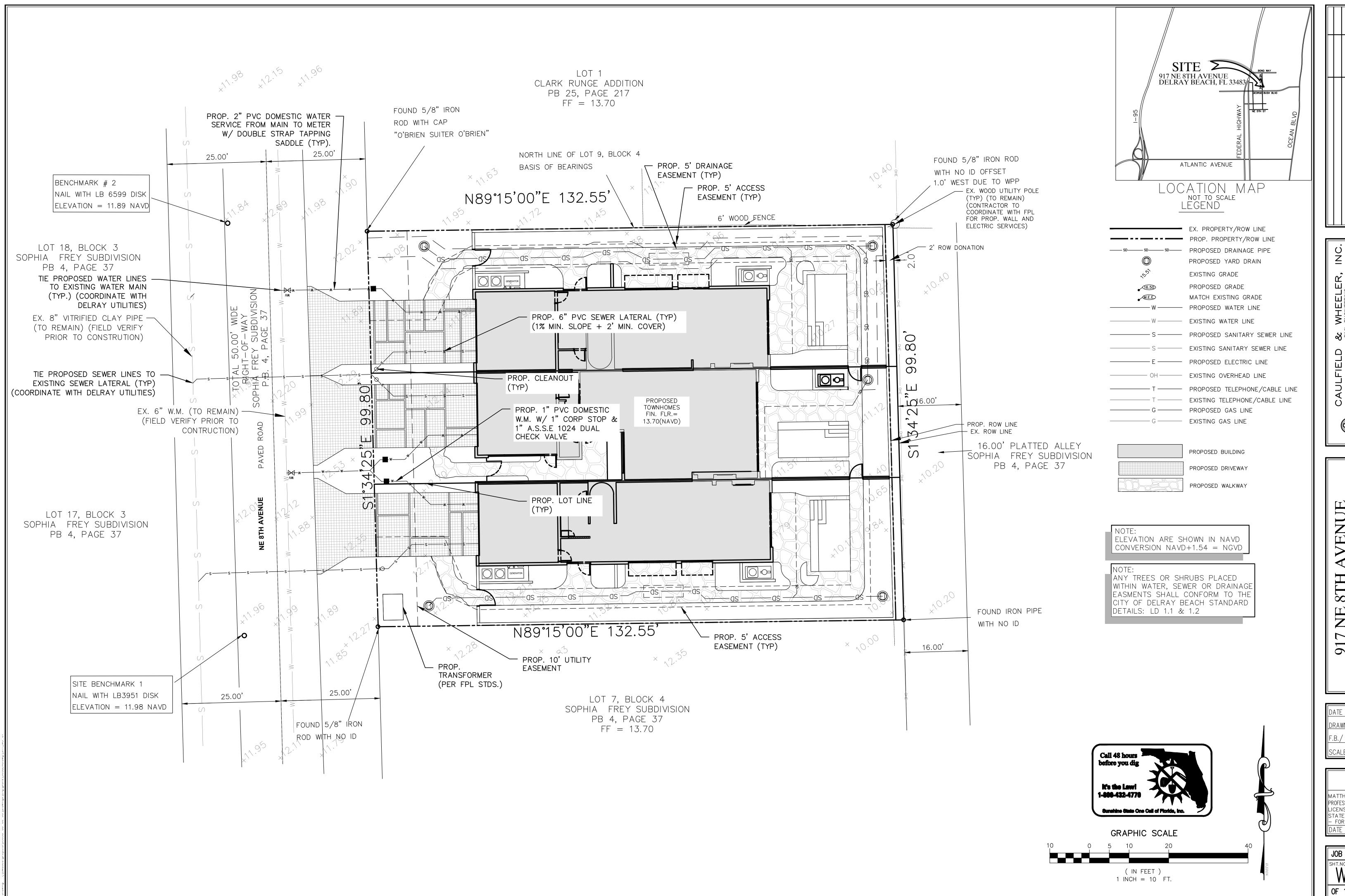
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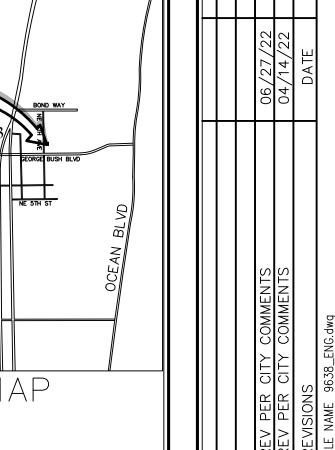
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F.B./ PG. ----

MATTHEW V. KAHN
PROFESSIONAL ENGINEER
LICENSE NO. 82227
STATE OF FLORIDA
– FOR THE FIRM –
DATE

JOB # 9638
SHT.NO.
PD-6
OF 14 SHEETS





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ON, FLORIDA 33434
-1991 / FAX (561)-7. FIELD AUL

AVENUE

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& UTILITY PLAN

CH, FLORIDA 917 NE 8TH /
PROPOSED WATER I
SANITARY SEWER &
DELRAY BEACH

DATE 12/15/2° DRAWN BY AJ F.B./ PG. ----SCALE 1"= 10'

MATTHEW V. KAHN PROFESSIONAL ENGINEER LICENSE NO. 82227 STATE OF FLORIDA - FOR THE FIRM -

JOB # 9638 OF 14 SHEETS

PRESSURE PIPE NOTES:

- FOR PIPE SIZES 4"-8" THERE SHALL BE 30" MINIMUM COVER FROM FINISHED GRADE TO TOP OF PIPE, FOR PIPE SIZE 10" AND LARGER THERE SHALL BE 36" MINIMUM
- 2.a. DUCTILE IRON PIPE (DIP) FOR FORCE MAINS SHALL BE CLASS 350 WITH 401 EPOXY LINED IN ACCORDANCE WITH AWWA C550.
- 2.b. DUCTILE IRON PIPE (DIP) FOR WATER MAINS SHALL BE CLASS 350 IN ACCORDANCE WITH AWWA C151 (ANSI A21.51), AND SHALL HAVE AN INTERNAL LINING OF CEMENT MORTAR IN ACCORDANCE WITH AWWA C104/ A21.4.
- C-900 PVC PRESSURE PIPE MAY BE USED IN LIEU OF DIP WATER MAIN WITH METAL TAPE AND WIRE ABOVE THE PIPE.
- 4. ALL FITTINGS FOR FORCE MAIN SHALL BE CLASS 350 DUCTILE IRON WITH MECHANICAL JOINTS AND 401 EPOXY LINING.
- WATER MAIN VALVES 12 INCHES AND SMALLER SHALL BE RESILIENT-SEAL WEDGE GATE VALVES IN ACCORDANCE WITH AWWA C509. WATER MAIN VALVES LARGER THAN 12 INCHES SHALL BE BUTTERFLY VALVES IN ACCORDANCE WITH AWWA C504. SEWAGE FORCE MAIN VALVES SHALL BE RESILIENT-SEAL PLUG VALVES IN ACCORDANCE WITH AWWA C517.
- ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING, AND DISINFECTION MUST COMPLY WITH CITY AND LOCAL GOVERNMENTAL REGULATIONS AND STANDARDS.
- WATER AND FORCE MAINS SHALL BE PIGGED A MINIMUM OF TWO TIMES, AND ADDITIONALLY, IF REQUIRED BY ENGINEER OF RECORD, AS WELL AS, PRESSURE TESTED FOR A PERIOD OF NOT LESS THAN TWO HOURS AT 150 PSI IN ACCORDANCE WITH ANSI/AWWA C600 LATEST STANDARDS. ALLOWABLE LEAKAGE SHALL BE DETERMINED AS FOLLOWS:

148,000

L = ALLOWABLE LEAKAGE (GALLONS PER HOUR) S = PIPE LENGTH (FEET)

- D = NOMINAL DIAMETER OF PIPE (INCHES) P = AVERAGE TEST PRESSURE (PSI)
- 8. RESTRAINTS SHALL BE PROVIDED AT ALL FITTINGS AS SHOWN ON PP 2.0 AND 2.1 PRIOR TO ANY TESTING UNDER FUTURE PAVEMENT, ROCK SHALL BE FINISHED &
- PIG SIZE SHALL BE PIPE DIAMETER PLUS 2" OR NEXT LARGER DIAMETER. NO PROPOSED STRUCTURES SHALL BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 10-FEET FROM ANY EXISTING OR PROPOSED WATER OR FORCE MAINS.
- 12. LINE STOPS SHALL BE INSTALLED A MINIMUM OF 3 PIPE LENGTHS FROM LOCATION OF PIPE REMOVED AND PROVIDE NECESSARY JOINT RESTRAINTS.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444	

PRIMED OR 1ST LIFT OF ASPHALT PLACED.

PRESSURE PIPE NOTES

PP 1.0

MINIMUM LENGTHS OF PIPE (FT) TO BE RESTRAINED

	PIPE SIZE								
FITTING TYPE		4"	6"	8"	10"	12"	16"	20"	24"
90° HORIZ. BEND		14	20	25	30	35	45	54	62
45° HC	RIZ. BEND	6	8	11	13	15	19	22	26
22.5° H	ORIZ. BEND	3	4	5	6	7	9	11	12
11.25° H	IORIZ. BEND	1	2	3	3	4	4	5	6
90° VERT.	UPPER BEND	55	79	103	125	147	189	228	266
OFFSET	LOWER BEND	22	38	49	59	69	88	106	123
45° VERT.	UPPER BEND	22	32	42	51	60	77	93	109
OFFSET	LOWER BEND	10	14	19	23	28	35	43	50
22.5° VERT.	UPPER BEND	7	12	17	21	26	34	42	49
OFFSET	LOWER BEND	2	4	6	8	10	14	17	21
11.25° VERT.	UPPER BEND	3	4	6	9	11	15	19	22
OFFSET	LOWER BEND	1	1	1	2	3	5	7	8
PLUG (DEAD END)	32	45	59	70	83	107	129	151
INLIN	E VALVE	32	45	59	70	83	107	129	151
	4" X ø"	23							
	6" X ø"	21	35						
	8" X ø"	18	34	47					
TEE (BRANCH	10" X ø"	16	32	46	58				
RESTRAINT)	12" X ø"	13	30	44	57	69			
,	16" X ø"	7	26	41	55	67	90		
	20" X ø"	1	21	38	52	65	88	109	
	24" X ø"	1	16	34	49	62	86	108	129
REDUCER (LARGER PIPE RESTRAINT)	6" X ø"	23							
	8" X ø"	38	25						
	10" X ø"	57	43	24					
	12" X ø"	72	60	44	41				
	16" X ø"	99	90	78	75	45			
	20" X ø"	123	116	107	105	81	45		
	24" X ø"	146	140	132	131	111	82	45	

RESTRAIN PIPE ONE BELL PAST MINIMUM DISTANCE

20' D.I.P. MIN.

10'-0"

10'-0"

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

SANITARY/STORM SEWER MAIN-

PIPE RESTRAINT TABLE PRESSURE PIPE (SHEET 1 OF 2

DUCTILE IRON PIPE

AS NECESSARY

PP 2.0

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT

INSTALLATION CONDITIONS:

SOIL TYPE .

REQUIRED.

TEST PRESSURE

DEPTH OF BURY

SAFETY FACTOR

VERTICAL OFF-SET

ALONG TEE RUN ..

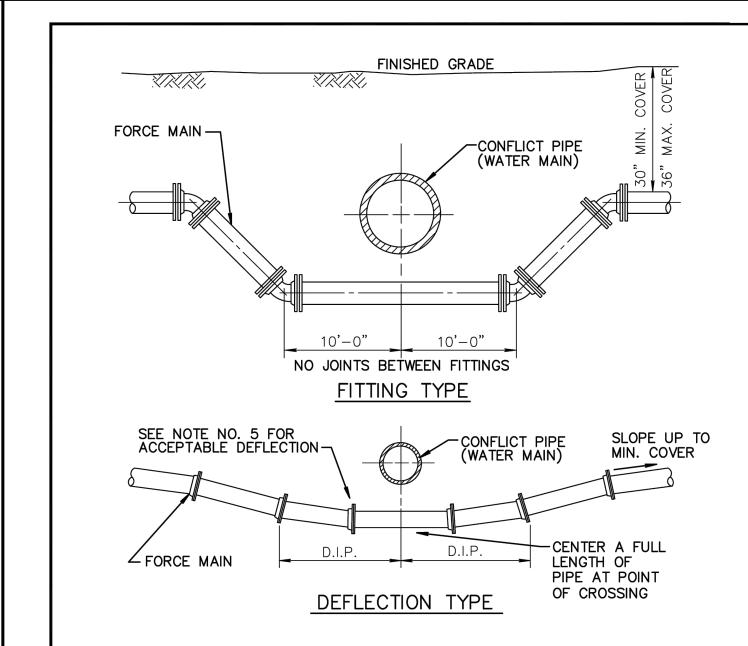
MINIMUM PIPE LENGTHS

PIPE, RELEASE 3.2 (LATEST EDITION).

TRENCH TYPE

PIPE RESTRAINT TABLE (SHEET 2 OF 2

PP 2.1



NOTES:

- 1. THERE SHALL BE IN ALL CASES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER MAINS AND FORCE MAINS.
- 2. WHEREVER POSSIBLE WATER MAINS SHALL PASS OVER FORCE MAINS OR STORM SEWERS.
- 3. FITTINGS SHALL BE RESTRAINED WITH MECHANICAL JOINT RESTRAINTS.
- 4. THE DEFLECTION TYPE CROSSING IS PREFERRED.
- 5. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.

**MAY BE FURNISHED IN TWO PIECES SCREWED TOGETHER TO

6. REFER TO TYPICAL RESTRAINING DETAIL PP 2.0 AND 2.1

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

BOX COMPLETE

EXTENSION IN

INCHES

19-22 27-32 27-37

33-43

39 - 50

39 - 60

62-82

7 5/16

5 3/4

5 1/4 DROP LID VARIABLE SKIRT

DEPTHS

7 5/8

7 3/8

6 3/8

|<u>|</u>====|

| |====#/

|||==≡||

|E===|

6 3/4

7 3/16

TOP

NOTE: LOCKING LIDS WILL NOT BE ACCEPTED.

145

MAKE THE LENGTH REQUIRED.

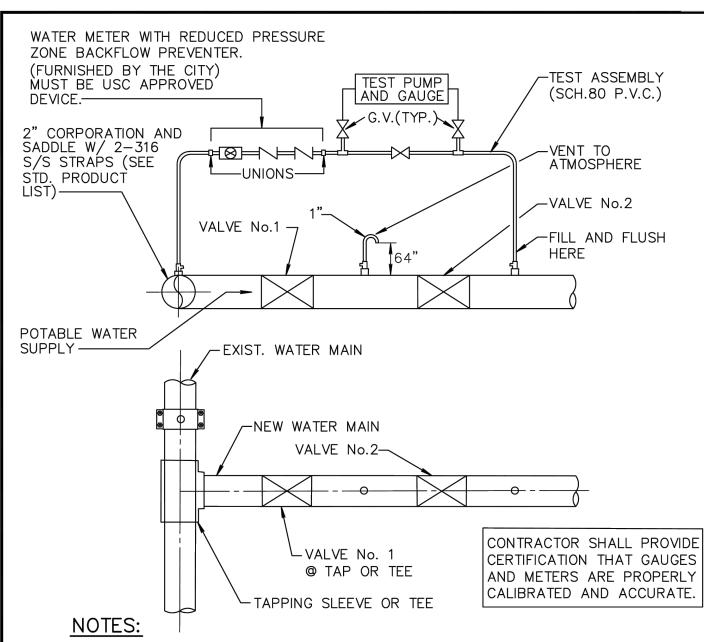
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PRESSURE PIPE CONFLICT TABLE

**60

PP 3.0



- BOTH VALVES SHALL BE KEPT CLOSED UNTIL FILLING, FLUSHING, AND BACTERIOLOGICAL TESTING IS COMPLETED AND APPROVED.
- GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST CITY SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING
- AFTER RELEASE FROM THE HEALTH DEPARTMENT, BOTH VALVES TO BE LEFT OPEN WITH VALVE BOX INSTALLED ON BOTH VALVES.
- PRESSURE TEST PUMP MAY CONNECT TO SERVICE LINE, FIRE HYDRANTS OR BLOWOFF. NO EXTRA TAPS ARE PERMITTED SOLELY FOR TESTING PURPOSES UNLESS PRECEEDING ARE NOT PRESENT IN TEST SECTION.
- TAPPING SADDLE OR SLEEVE (PER CURRENT CITY PRODUCT LIST) IS REQUIRED ON EXISTING MAIN.
- 7. SETUP FOR ALL DOUBLE VALVE CONNECTIONS TO INCLUDE ATMOSPHERE VENTS AS SHOWN ABOVE.
- OUTLET ON VENT TO ATMOSPHERE A MINIMUM 24" ABOVE EXISTING

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT

FILL & FLUSH DETAIL

PW 1.0

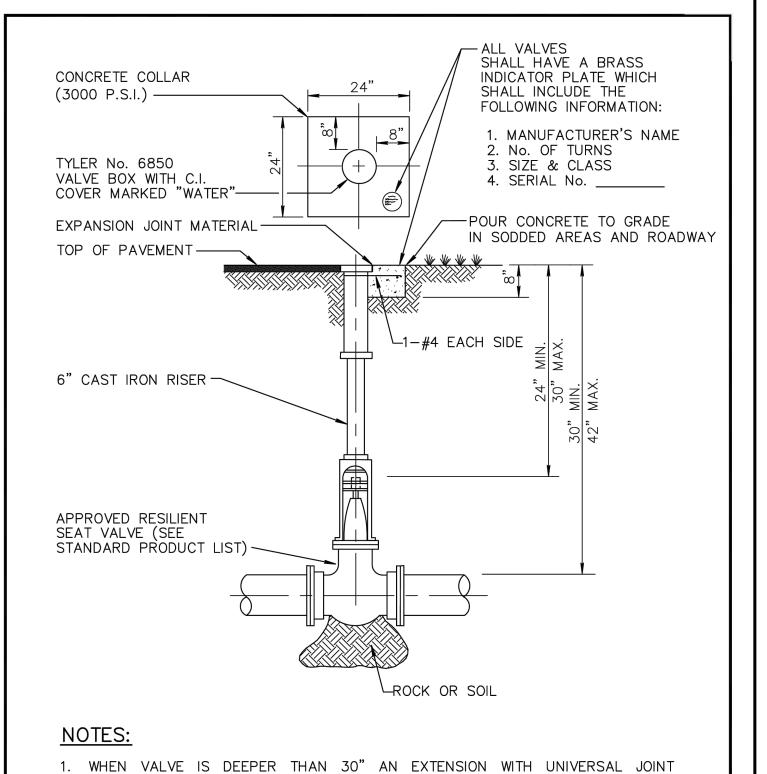
NOTES: STORM AND SANITARY SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE

- PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND WATER MAIN JOINTS ARE EQUIDISTANT FROM POINT OF CROSSING WITH NO LESS THAN (10) FEET BETWEEN ANY TWO JOINTS AND BOTH PIPES SHALL BE D.I.P., ALTERNATIVE TO SEWER PIPES CROSSING OVER A WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STARTED ABOVE, SHALL BE REQUIRED AND BOTH PIPES SHALL BE CLASS 350 D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- MAINTAIN (10) FEET HORIZONTAL DISTANCE BETWEEN WATER MAIN AND STORM OR SANITARY ŠEWER MAIN, AS A MINIMUM.
- FORCE MAIN CROSSING WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE OUTSIDE OF THE WATER MAIN WITH WATER MAIN CROSSING OVER FORCE MAIN.
- SEWER SERVICE LATERALS SHALL CROSS UNDER WATERMAINS WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES. IF EIGHTEEN (18) INCHES VERTICAL SEPARATION CANNOT BE MAINTAINED, THEN THE WATERMAIN SHALL BE D.I.P. AND THE SANITARY LATERAL C-900 SDR18 OR BETTER AND THE MINIMUM SEPARATION SHALL BE SIX (6) INCHES.
- WHEN IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER THE SEWER SERVICE LATERAL A MINIMUM VERTICAL SEPARATION OF AT LEAST TWELVE (12) INCHES MUST BE MAINTAINED. THE WATERMAIN SHALL BE D.I.P. AND THE SEWER`LÁTERAL SHALL BE C-900 SDR-18 OR BETTER.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

WATER MAIN & SEWER CONFLICTS

I PW 2.0



1. THE DATA IN THE PREVIOUS TABLE IS BASED UPON THE FOLLOWING

2. THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON PIPE AND PVC PIPE.

3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.

4. RESTRAINED PIPE LENGTHS FOR VALVES APPLY TO PIPE ON BOTH SIDES OF

5. THE PREVIOUS TABLE SHALL SERVE AS A GENERAL DESIGN GUIDE ONLY. IT IS

6. SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC

DEVIATIONS FROM THE PIPE LENGTHS SPECIFIED IN THE PREVIOUS TABLE.

THE ENGINEER OF RECORD'S RESPONSIBILITY TO JUSTIFY AND DOCUMENT ANY

PIPE, RELEASE 3.1 (LATEST EDITION) AND DIPRA RESTRAINT FOR DUCTILE IRON

RESTRAINED JOINTS SHALL EXTEND ONE JOINT BEYOND MINIMUM LENGTH

.150 PSI, 200 PSI FOR PIPES LARGER THAN 24"

- SHALL BE REQUIRED TO BRING OPERATING NUT 24"-30" BELOW FINISHED GRADE EXTENSION BOLTS & NUTS SHALL BE 316 STAINLESS STEEL. A 316 STAINLESS STEEL CENTERING PLATE SHALL ALSO BE REQUIRED.
- 2. AT DEAD END OR WHERE MAIN LINES CHANGE DIRECTION, VALVES SHALL BE RESTRAINED USING MECHANICAL JOINT RESTRAINTS, TIE RODS, OR OTHER RESTRAINT APPROVED BY UTILITIES DEPARTMENT (NO THRUST BLOCKS ALLOWED).

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT

TYPICAL GATE VALVE DETAIL 4" THRU 12"

PW 3.0

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

BOX COMPLETE

CAST IRON VALVE BOXES FOR TEMPORARY DEADENDS TWO PIECE

8 1/8

58 AND 59

EXTENSION

HEIGHT INCREASE

10 1/4

4

PW 4.0

====

60 EXTENSION

24

FIT SERIES 6860 THREE-

PIECE VALVE BOXES.

THESE EXTENSIONS ALSO

HEIGHT ITEM INCREASE

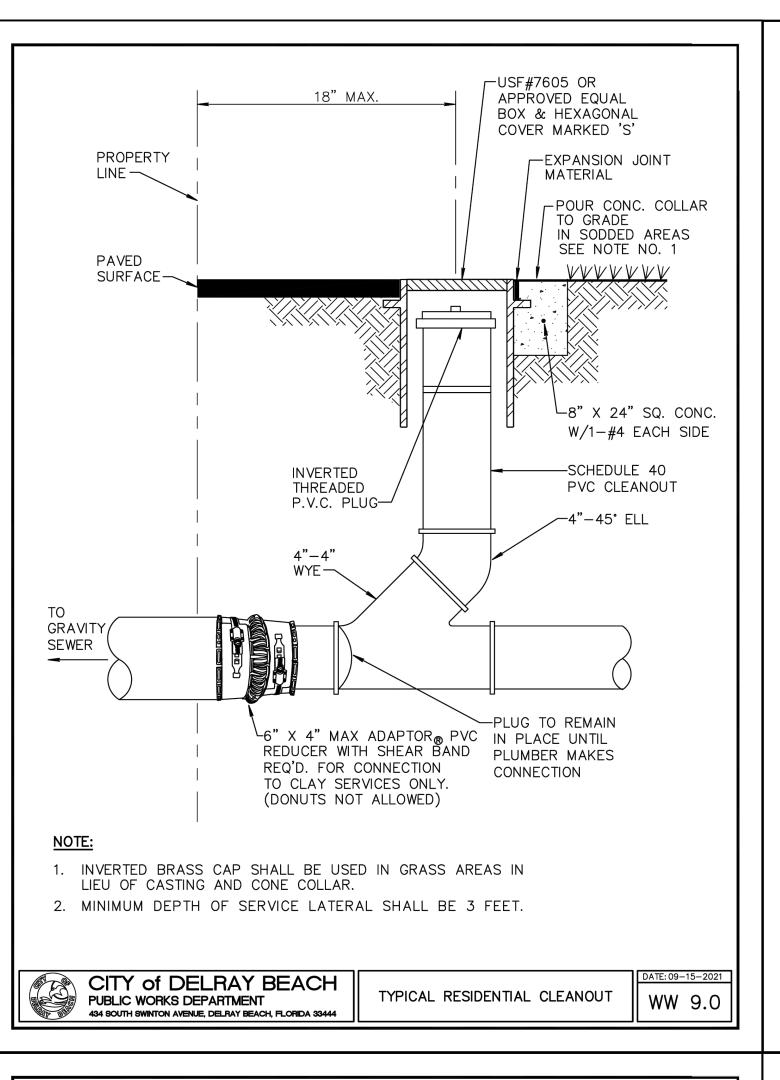
OF 14 SHEETS

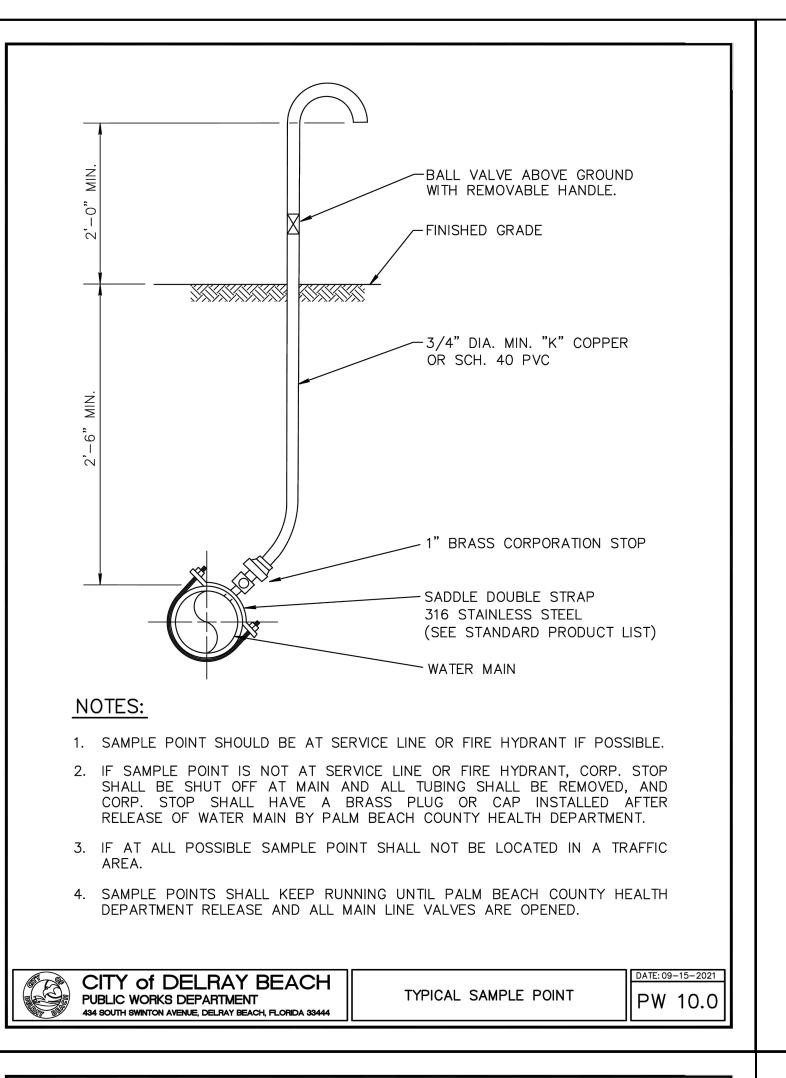
STH AVENUE ISTRIBUTION SEWER DETA ربا

RAWN BY B./ PG. ---

MATTHEW V. KAHN PROFESSIONAL ENGINEER LICENSE NO. 82227 STATE OF FLORIDA - FOR THE FIRM -

JOB # 9638





CUSTOMER SIDE

STD. 316 S/S U-BOLT,

AT "U" BOLTS

NUTS AND WASHERS

-WRAP PIPE W/ NEOPRENE

USC APPROVED

6" PIPE NIPPLE

CONCRETE

_

- COLUMN

-BALL VALVES

BACKFLOW PREVENTER

— PIPE SUPPORT (TYP.

(SEE DETAIL BELOW)

METER SIDE

ELEVATION

PIPE SUPPORT DETAIL

2. ABOVE GRADE PIPING SHALL BE BRASS OR TYPE "L" COPPER OR BRASS TUBING.

4. USC APPROVED RPZ BACKFLOW PREVENTER IS REQUIRED IN ACCORDANCE WITH

5. USC APPROVED RPZ BACKFLOW PREVENTER IS REQUIRED FOR ALL COMMERCIAL

CITY OF DELRAY BEACH CODE OF ORDINANCES TITLE V, CHAPTER 52.83.

PROPERTIES AND ALL RESIDENTIAL PROPERTIES WITH FIRE SPRINKLER SYSTEMS.

BALL VALVES -

TYPE L COPPER

TYPE L COPPER

OR BRASS —

PIPE

6" PIPE NIPPLE —

6" DIA.

CONCRETE

The state of the s

__

2" X 2" X 1/4" THK.

6" DIA.

CONCRETE

1. FOR ALL SERVICES LESS THAN OR EQUAL TO 2" DIA.

3. ALL COPPER JOINTS SHALL BE MADE WITH 95/5 SOLDER

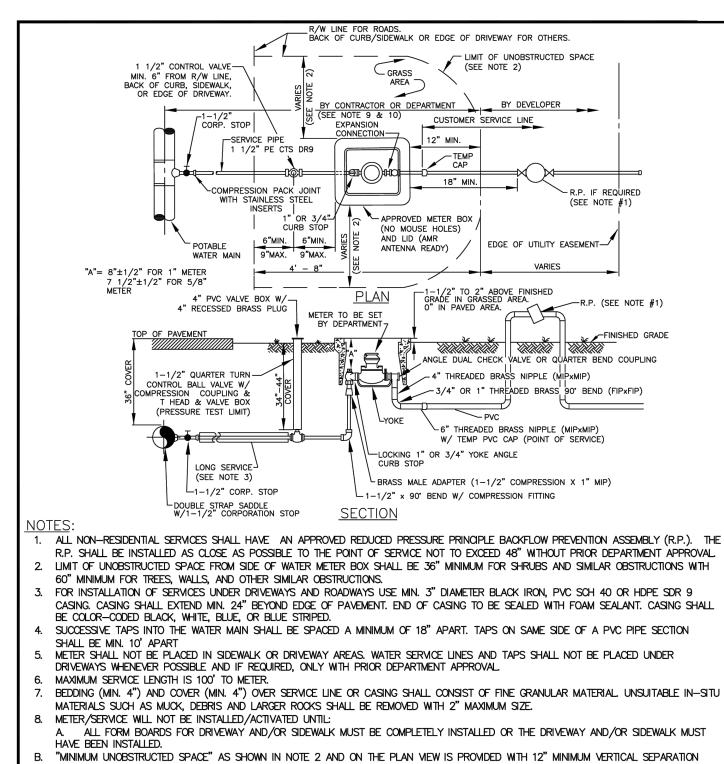
COLUMN-

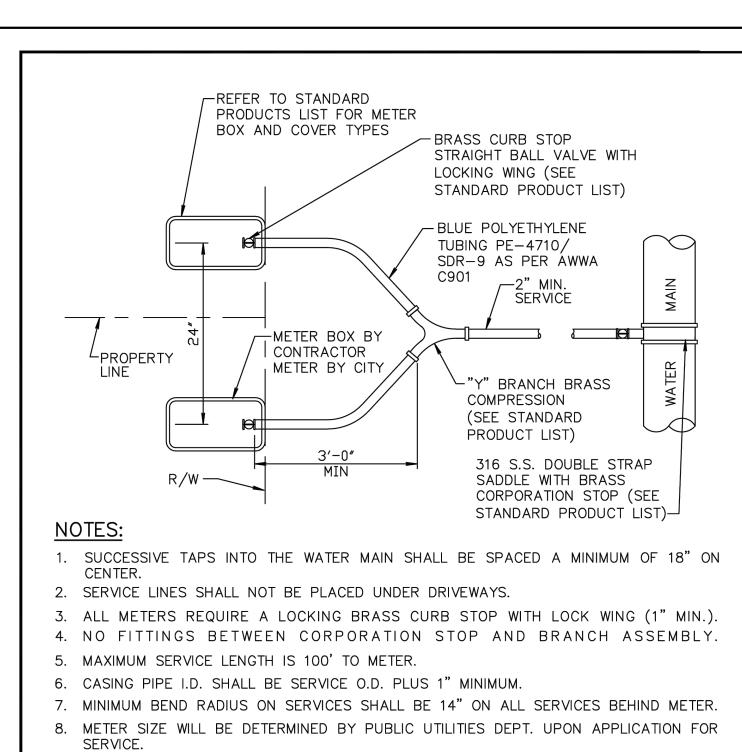
S/S NUT AND

BOLT (TYP)

ALUM. ANGLE -

COLUMN-





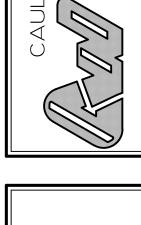
9. ALL VALVES TO BE BALL VALVES.

10. METER BOX SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR. ABOVE CONFIGURATION APPLIES TO PLACEMENT AT SINGLE FAMILY RESIDENCES. FOR

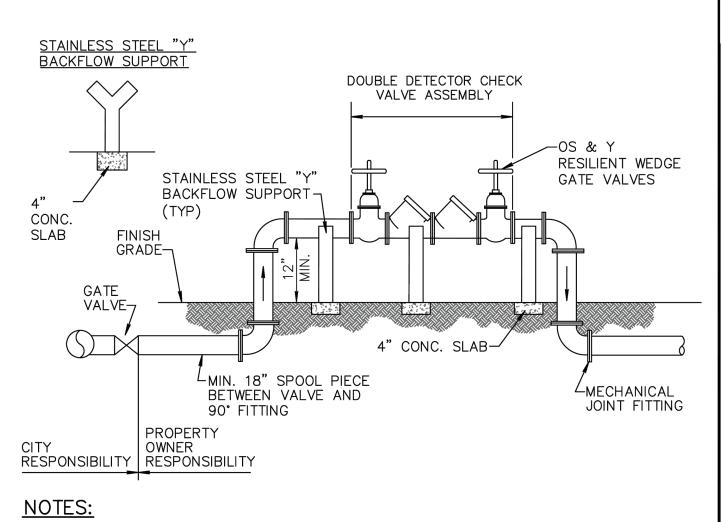
DOUBLE SERVICES PLACED AT MULTI-FAMILY RESIDENCES THE TWO SERVICES SHALL BE PLACED WITHIN A DOUBLE METER BOX.

12. ALL EXISTING SERVICES TO BE FIELD VERIFIED BY BUILDER/CONTRACTOR/DEVELOPER; IF EXISTING SERVICE IS GALVANIZED, BUILDER/CONTRACTOR/DEVELOPER SHALL REPLACE WITH POLYETHYLENE PIPING FROM MAIN TO METER.





PW 15.0



1. FOR ALL SERVICES GREATER THAN 2" DIA.

2. ALL PIPE AND FITTINGS SHALL BE CLASS 350 DUCTILE IRON CEMENT LINED WITH CEMENT LINED DUCTILE IRON FLANGE FITTINGS FOR ABOVE GROUND USE. MECHANICAL JOINT SHALL BE USED UNDERGROUND IN ACCORDANCE WITH AWWA STANDARDS

3. THE DOUBLE DETECTOR CHECK VALVE ASSEMBLY SHALL MEET AWWA M14 AND AWWA C510, AND APPROVAL OF UTILITIES DEPARTMENT.

4. CERTIFICATION OF PROPER INSTALLATION AND OPERATION WILL BE REQUIRED FROM A CERTIFIED BACKFLOW PREVENTION TECHNICIAN PRIOR TO WATER MAIN ACCEPTANCE BY THE CITY OF DELRAY BEACH. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER OPERATION,

MAINTENANCE AND ANNUAL TESTING OF THE DOUBLE DETECTOR CHECK VALVE 6. BOLLARDS TO BE USED IF THE ASSEMBLY IS WITHIN 5' OF THE PAVEMENT, REFER TO

BOLLARD DETAIL PW 7.0.

7. CITY OF DELRAY BEACH WILL MAINTAIN TILL THE FIRST GATE VALVE.

8. WATER MAIN WILL BE PLACED IN A UTILITY EASEMENT UP UNTIL THE FIRST GATE VALVE. DOUBLE DETECTOR ASSEMBLY WILL NOT BE WITHIN THE EASEMENT

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

DOUBLE DETECTOR CHECK VALVE

IPW 16.0

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

REDUCED PRESSURE ZONE BACKFLOW PREVENTER PW 17.0

GRAVITY SEWER NOTES

REQUIRED TO ALL OTHER UTILITIES.

SPECIFIED BY THE DEPARTMENT.

BEYOND THE METER BOX PERIMETER.

MANHOLES SHALL BE INSPECTED BY THE ENGINEER BEFORE PLACEMENT AND SURFACE ALL OPENINGS IN PRECAST MANHOLES SHALL BE CAST AT TIME OF MANUFACTURE

CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE ENTRY ONLY. ALL MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE.

THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST

15. PVC SHALL BE SCHEDULE 40 PIPE WITH SCHEDULE 80 FITTINGS. ALL BRASS FITTINGS SHALL BE "LEAD FREE".

DEPARTMENT DEPENDING ON THE TYPE OF SERVICE INSTALLATION REQUIRED.

14. STAINLESS STEEL INSERTS ARE REQUIRED FOR ALL COMPRESSION FITTINGS.

CITY of DELRAY BEACH

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

PUBLIC WORKS DEPARTMENT

METER TO BE INSTALLED BY DEPARTMENT. THE PIPING BEYOND THE CONTROL VALVE TO BE INSTALLED BY THE DEVELOPER OR THE

11. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE.

12. METER BOXES IN NON-GRASS AREAS SHALL HAVE TRAFFIC RATED LIDS.

13. A 12" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED FOR METER BOXES OUTSIDE OF GRASS AREA. THE BASE SHALL EXTEND MIN. 12"

THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR INSTALLATION OF SERVICES BEYOND PRESSURE TEST LIMITS AS

POTABLE WATER SERVICE SINGLE 1" METER INSTALLATION DETAIL

PW 12.0

(PVC) GRAVITY SEWER PIPE SHALL CONFORM TO ASTM D 3034, SDR 35, LATEST REVISIONS, WITH PUSH ON RUBBER GASKET JOINTS.

(DIP) GRAVITY SEWER PIPE SHALL BE CLASS 350, 401 EPOXY LINED OR AS OTHERWISE ÀPPROVED BY UTILITIES DEPARTMENT.

NO SERVICE CONNECTIONS, WYES, SERVICES OR VALVES WILL BE PERMITTED IN RESIDENTIAL DRIVEWAYS. MANHOLE FRAMES SHALL BE ATTACHED TO THE PRECAST STRUCTURE WITH A MINIMUM O

TWO 3/4" 316 STAINLESS STEEL BOLTS, NUTS AND WASHERS. FRAMES SHALL BE SEALED WITH A MINIMUM OF TWO 1/2" BEADS OF RAM-NEK CAULKING TRENCHES SHALL BE DE-WATERED TO ENABLE PIPE AND APPURTENANCES TO INSTALLED FREE OF WATER ON UNDISTURBED SOIL. IF UNSUITABLE SUBSURFACE MATERIAL

IS ENCOUNTERED, EXCAVATE EXTRA 6" AND BACKFILL WITH 3/4" GRAVEL 9. PVC SHALL BE LAID IN STRICT CONFORMANCE TO MANUFACTURER'S SPEC (JOHNS MANVILLE RING TITE PVC PIPE INSTALLATION GUIDE OR EQUAL). BACKFILLING OF UTILITY

TRENCHES WILL NOT BE ALLOWED UNTIL INSPECTED BY THE ENGINEER BACKFILL MATERIAL FOR SEWER MAIN AND LINES SHALL BE NON—COHESIVE, NON PLASTIC MATERIAL FREE OF ALL DEBRIS , LUMPS AND ORGANIC MATTER. BACKFILL MATERIAL PLACED WITHIN ONE (1) FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN TWO (2) INCHES IN DIAMETER (1" FOR PVC PIPE) AND NO STONES

LARGER THAN SIX (6) INCHES IN DIAMETER WILL BE PERMITTED IN ANY BACKFILL ALL EXCAVATION IN EXISTING RIGHT OF WAY SHALL BE BACKFILLED AND STABILIZED AT THE END OF EACH DAY TO PERMIT PEDESTRIAN AND VEHICULAR TRAFFIC PRIOR TO THE CONTRACTOR LEAVING THE SITE.

WHERE SEWER IS NOT WITHIN PUBLIC R/W, IT IS TO BE LOCATED IN A 12' UTILITY EASEMENT. CITY MAINTENANCE RESPONSIBILITY IS MANHOLE TO MANHOLE ONLY.

UPON COMPLETION OF THE WORK AND PRIOR TO PLACEMENT OF ASPHALT A VISUAL INSPECTION BY THE ENGINEER SHALL BE MADE OF THE COMPLETED SYSTEM ALONG WITH A LOW PRESSURE AIR TEST, AFTER ROCK BASE FINISHED & PRIMED. OR 1ST LIFT O ASPHALT PLACED. AFTER ALL OTHER TESTING HAS BEEN COMPLETED, A CD VIDEO RECORDING SHALL BE MADE BY THE CONTRACTOR AND APPROVED BY THE ENGINEER BEFORE THE LENGTHS ARE ACCEPTED FOR MAINTENANCE.

4. EACH LINE SEGMENT SHALL BE LAMPED TO DETERMINE PROPER ROUNDNESS.

COMPLETE "AS BUILT" INFORMATION RELATIVE TO MANHOLES, VALVES, SERVICES FITTINGS PIPE LENGTHS, INVERTS AND SLOPES SHALL BE ACCURATELY RECORDED & SUBMITTED TO THE ENGINEER CITY SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR.

AT THE END OF THE ONE (1) YEAR WARRANTY PERIOD THE DEVELOPER/CONTRACTOR WIL T.V. INSPECT, AIR TEST EVERY JOINT, AND CHECK MANHOLE JOINTS AND CONNECTIONS TO DETERMINE IF REPAIRS ARE NECESSARY BEFORE THE WARRANTY BOND IS RELEASED.

NO PROPOSED STRUCTURES SHALL BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 10-FEET FROM ANY EXISTING OR PROPOSED SANITARY SEWER FACILITY.

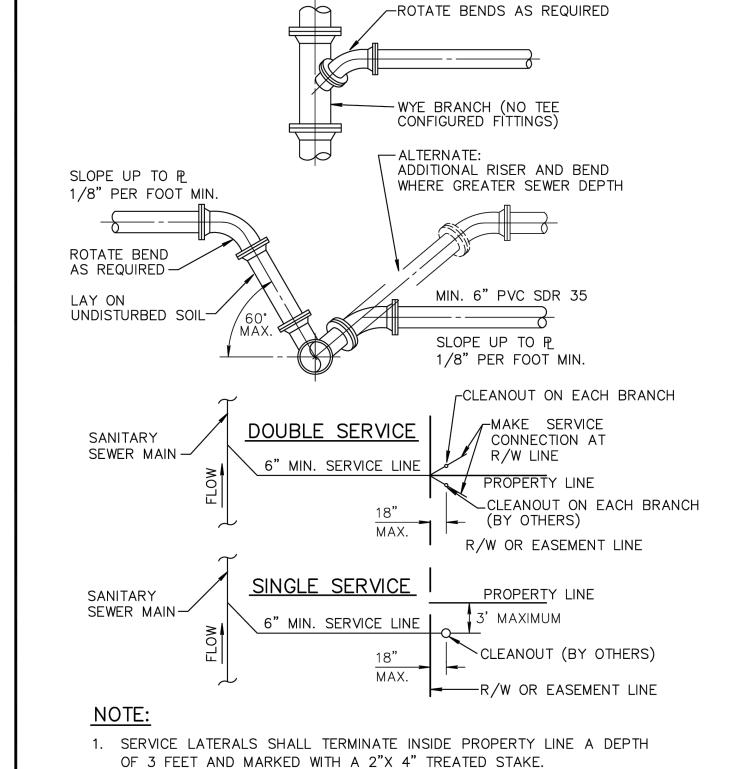
ANY PIPE INTRODUCED INTO AN EXISTING MANHOLE MUST HAVE CARBOLINE BITUMASTIC 300M OR APPROVED EQUAL APPLIED EXTERNALLY WITHIN A MINIMUM 2—FOOT RADIUS OF OPENING AND THE ENTIRE MANHOLE MUST HAVE SEWPER COAT OR APPROVED EQUAL APPLIED INTERNALLY

ANY REHABILITATION TO AN EXISTING MANHOLE MUST BE INTERNALLY STRIPPED AND LINED WITH SEWPER COAT OR APPROVED EQUAL.

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 3344

GRAVITY SEWER NOTES

WW 1.0



OF 3 FEET AND MARKED WITH A 2"X 4" TREATED STAKE.

2. CLEANOUT INSTALLATION SHALL BE PROPERTY OWNERS RESPONSIBILITY AND SHALL BE INSTALLED BY LICENSED PLUMBER.

3. SEE DETAIL PW 2.0 FOR SEPARATION REQUIREMENTS

CITY of DELRAY BEACH PUBLIC WORKS DEPARTMENT

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

SEWER SERVICE CONNECTION

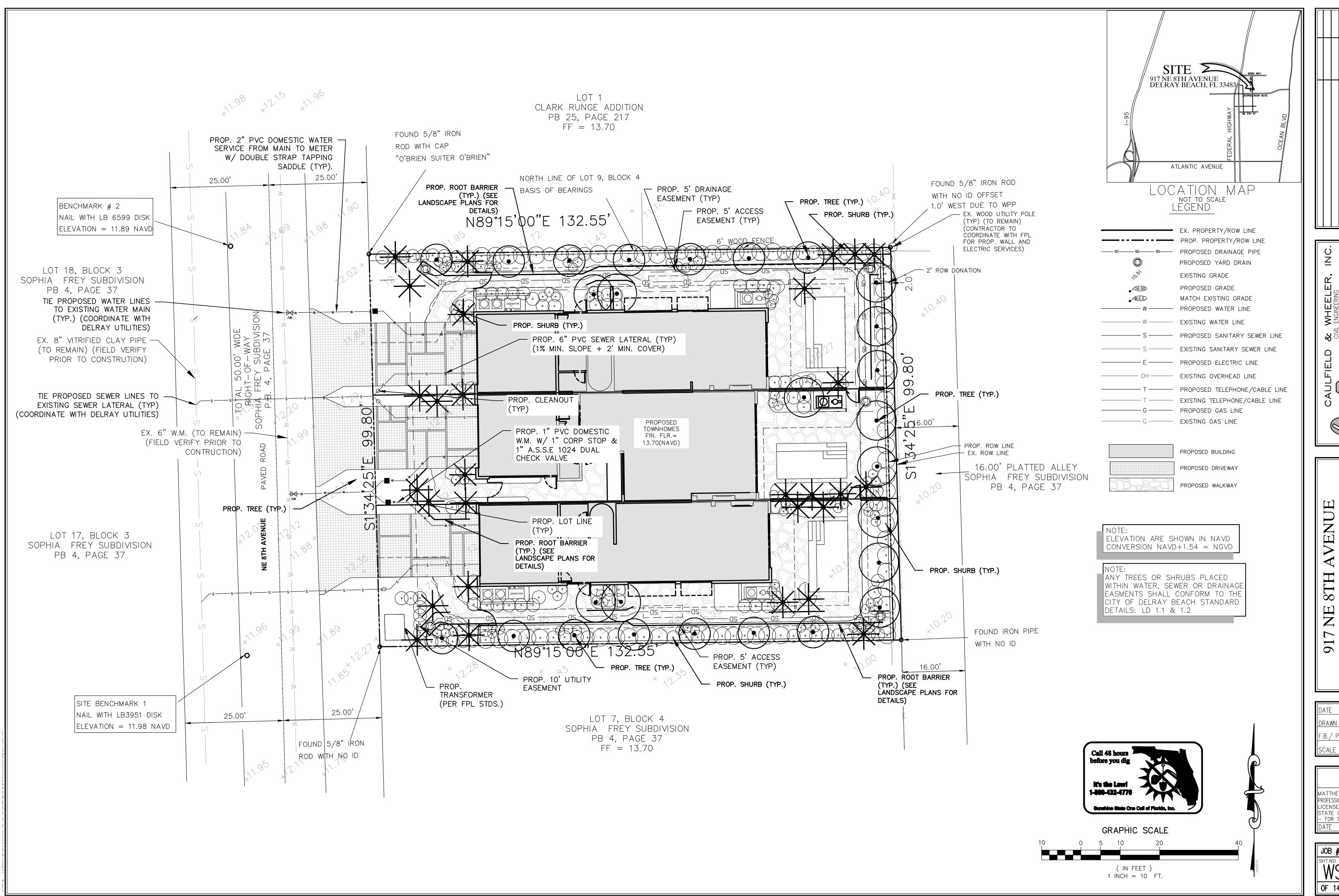
WW 8.0

JOB # 9638 OF 14 SHEETS

VENUE NORT STRIBUTION & SEWER DETAI EAV DIS ZXX, 24 LAY /ATEK NITA

12/15/2 RAWN BY B./ PG. ---

MATTHEW V. KAHN PROFESSIONAL ENGINEER ICENSE NO. 82227 STATE OF FLORIDA - FOR THE FIRM -



AULFIELD & WHEELER, INC.

CIVIL ENGINEERING

CIVIL ENGINEERING

CIVIL ENGINEERING

CIVIL ENGINEERING

REV PER OR

ROCA RATON, FLORIDA 33434

PHONE (561)—392—1991 / FAX (561)—750—1452

FILE NAME 96

917 NE 8TH AVENUE
PROPOSED COMPOSITE
UTILITY PLAN
DELRAY BEACH, FLORIDA

DATE 12/15/21

DRAWN BY AJG

F.B./ PG. ---
SCALE 1"= 10'

MATTHEW V. KAHN
PROFESSIONAL ENGINEER
LICENSE NO. 82227
STATE OF FLORIDA
– FOR THE FIRM –

JOB # 9638
SHT.NO.
WS-5
OF 14 SHEETS