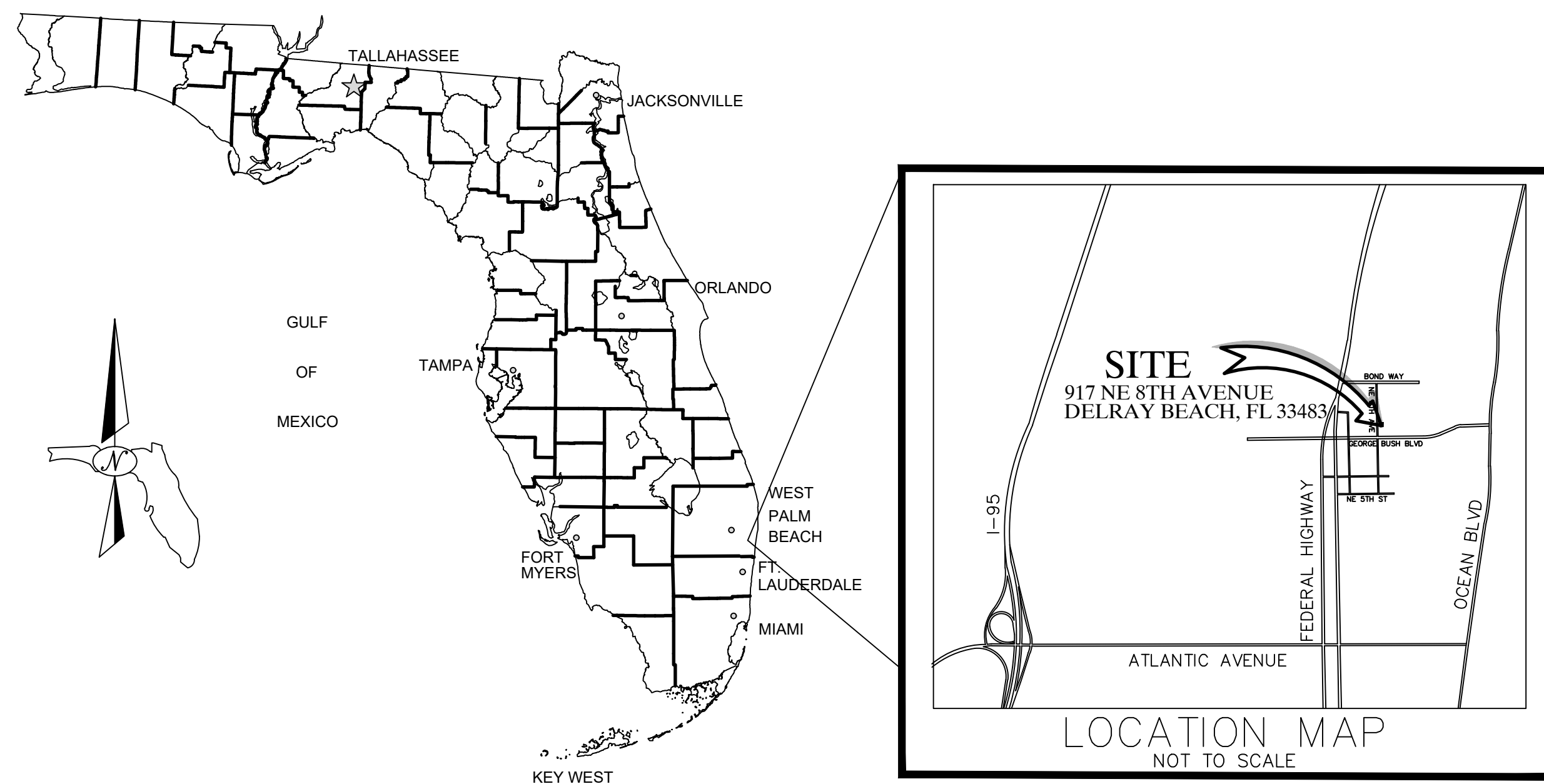


917 NE 8TH AVENUE
PROPOSED TOWNHOMES
DELRAY BEACH, FLORIDA 33483
CIVIL SITE PLAN PACKAGE



<u>SHEET</u>	<u>DESCRIPTION</u>
CS	Cover Sheet
PP-1	Pollution Prevention Plan
PD-1	General Notes Plan
PD-1A	Demolition Plan
PD-2	Paving & Grading Plan
PD-2A	Drainage Plan
PD-3	Pavement, Marking & Signage Plan
PD-4 to PD-6	Paving & Grading & Drainage Details
WS-1	Water Distribution, Sanitary Sewer and Utility Plan
WS-2,WS-3	Water Distribution, & Sanitary Sewer Details
WS-5	Composite Utility Plan

REV PER CITY COMMENTS	06/27/22	AUG
REV PER CITY COMMENTS	04/14/22	AUG
REVISIONS	DATE	BY
FILE 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
COVER SHEET

DATE	12/15/21
DRAWN BY	AJG
F.B./ PG.	----
SCALE	N.T.S.

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

JOB # 9638
SHT.NO. CS
OF 14 SHEETS

1. ALL DIMENSIONS SHOWN ON THESE DRAWINGS ARE SCALED DISTANCES. THE CONTRACTOR SHALL CONFIRM ALL MEASUREMENTS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY DISCREPANCY PRIOR TO PERFORMING THE WORK. ALL QUANTITIES SHALL BE PAID ON THE BASIS OF FIELD MEASUREMENTS OF COMPLETED WORK.
2. 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.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE SUCH EXAMINATIONS 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.
4. PROPOSED GRADES SHOWN IN PAVED AREAS REFER TO FINISH PAVEMENT GRADES.
5. PAVEMENT MARKING AND GEOMETRICS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM CONTROLLED SECTION DEVICES FOR STREETS AND HIGHWAYS AND PALM BEACH COUNTY TYPICAL NO. T-P-17.
6. ALL LOTS, ROADWAYS AND BORROW AREAS SHALL BE STRIPPED OF ALL DELETERIOUS (UNSUITABLE) MATERIALS AND REMOVALS SHALL BE DISPOSED WITHIN THE SITE.
7. A GRADING OF STRIPS INCLUDING THE REMOVAL OF ALL MATERIALS AND THE FINISHING OF ALL SHOULDERS, SUBGRADE PREPARATION, SWALES AND BACKSLOPES, IN ACCORDANCE WITH THE TYPE OF SECTIONS SHOWN HEREON SHALL BE INCLUDED IN THE BID PRICE FOR PAVING.
8. ANY EXISTING ROADWAY AND/OR UTILITY THAT IS DAMAGED BY THE CONTRACTOR SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE TO THE FULL DEPTH OF ALL EXISTING ORGANIC AND DELETERIOUS MATERIALS WITHIN THE RIGHT-OF-WAY AND UTILITIES AND DRAINAGE EASEMENT SHALL BE COMPLETELY REMOVED. NO MATERIALS OF F.D.O.T. CLASS A-5, A-6, OR A-8 SHALL BE ALLOWED.
9. 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 SPECIFICATIONS.
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. CONSTRUCTION SHALL BE SUBJECT 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 REPAIRED TO ORIGINAL 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 EXAMINED BY THE CONTRACTOR TO DETERMINE THE CONNECTION, AND WHERE EXISTING DRAINAGE SYSTEM INCLUDES DITCHES, SAID DITCHES SHALL BE CLEARED AND REWORKED, AS NECESSARY, TO CONDUCE 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.

18. WORK SHALL CONSIST OF THE COMPLETE REMOVAL AND DISPOSAL OF ALL BUILDINGS, TIMBER, BRUSH, STUMPS, ROOTS, RUBBISH, AND DEBRIS FROM ALL OTHER OBSTRUCTIONS WHICH ARE ON OR PROTRUDING THROUGH THE SURFACE OF THE EXISTING GROUND AND THE SURFACE OF EXCAVATED AREAS, AND OF ALL OTHER STRUCTURES AND OBSTRUCTIONS WHICH ARE FOUND TO EXIST, INCLUDING SEPTIC TANKS, BUILDING FOUNDATIONS, AND PIPES.
19. ROOTS AND OTHER DEBRIS SHALL BE REMOVED TO A DEPTH OF AT LEAST 3 FEET BELOW THE GROUND SURFACE, AND STUMPS WITHIN THE CONSTRUCTION AREA SHALL BE COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR.
20. EXISTING TREES TO REMAIN WHERE SO PROTECTED BY THE ENGINEER, SHALL BE TRIMMED, PRUNED, AND LEFT ALIVE.
21. PROPERTY OBSTRUCTIONS WHICH ARE TO REMAIN IN PLACE, SUCH AS BUILDINGS, SEWERS, DRAINS, WATER OR GAS PIPES, CONDUIITS, FENCES, WALLS, POSTS, ETC., SHALL BE PROTECTED BY THE CONTRACTOR 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 ENGINEER.

23. UTILIZATION OF MATERIAL IN SUBGRADE CONSTRUCTION SHALL BE IN ACCORDANCE WITH PLAN DETAILS OR AS DIRECTED BY THE ENGINEER.
24. A FACTORY TEST SHALL BE PERFORMED ON THE PROPOSED MATERIALS TO DETERMINE MAXIMUM DENSITY, MAXIMUM MOISTURE CONTENT AND MAXIMUM DENSITY OF THE MATERIAL—IN PLACE DENSITY TESTS OF THE FINISH SUBGRADE SHALL BE PERFORMED AT A FREQUENCY OF A MINIMUM OF ONE TEST FOR EACH 1000 SQ. FT. OF FINISHED AREA TO DETERMINE COMPLIANCE WITH THE DESIGN SPECIFICATIONS OF 100% OF MAX. DENSITY PER AASHTO T-99 TESTING METHODS.
25. SUBGRADE SHALL BE CONSTRUCTED TO A MINIMUM STRENGTH RATIO (LBR) OF 1.0 OF 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 CUT OFF OR REMOVED PRIOR TO THE SUBGRADE. THE FINISHED SURFACE OF THE SUBGRADE SHALL BE STRONG-LINED PRIOR TO PLACEMENT OF ROCK BASE TO VERIFY THAT THE SUBGRADE HAS BEEN CONSTRUCTED TO THE PROPER LINES, CROSS-SECTIONS AND ELEVATIONS WITHIN THE ALLOWED TOLERANCE OF 1/2" OF THE PROPOSED FINISH SUBGRADE ELEVATIONS.

1. IF DURING THE PROPOSED CONSTRUCTION/CROSSING ANY EXISTING PB COUNTY STORM DRAIN PIPE/STRUCTURES ARE AFFECTED IN ANY WAY PB COUNTY SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT 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 EOP TO EOP, LANE WIDTH, MIN. AND 50' IN EITHER DIRECTION.(THOROUGHFARE) AND 25' MIN. IN ALL OTHERS. TO LIKE OR BETTER THEN LIKE CONDITION AND TO EQUAL DIMENSIONS AS THE ADJACENT LANES.
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 50' TO 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 BETWEEN TWO SIDEWALKS; ONE FLAG IF THE POINT OF CONSTRUCTION IS LOCATED BETWEEN CONTROL JOINTS; NO PARTIAL JOINTS ACCEPTED. (PER SITUATION)

1. CONTRACTOR HAROLD REED AT 561 681-4326 BEFORE STARTING CONSTRUCTION PBCG-TRAFFIC IT WILL REMOVE FIBER OPTIC CABLES FROM THE ROAD OVER THE PAGES. CONTRACTOR MUST BE PLEASE PROVIDE 2 WEEKS ADVANCE NOTICE TO REMOVE FIBER OPTIC CABLE.
2. CONTRACTOR SHALL CONTRACT PALM BEACH COUNTY TRAFFIC OPERATIONS AT 561-233-3900 FORTY-EIGHT(48) HOURS PRIOR TO CONSTRUCTION IF ANY DAMAGE TO THE ROAD OR TRAFFIC SIGNALS ARE CAUSED.
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. EXCAVATION AROUND PBCG TRAFFIC SIGNALS WITH 6 FT. RADIUS FROM CENTER OF POLE. PLEASE SEE PBCG SIGNAL TYPICAL PAGE 1-5.3 (SHEET 8 OF 23).

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 contract.
 - 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 a manner that no damage occurs during shipping, handling and storage.
 - D. References:
 1. Solid concrete interlocking paving stones shall meet or exceed the requirements in ASTM C-936 Standard Specifications for Solid Concrete Interlocking Paving Units.

- A. Thickness, Color and Pattern:
 - 1. Paving stone thickness shall be between $3\frac{1}{8}"$ 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 apply.
- 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.
- E. Compressive Strength:
 - 1. At the time of delivery to the work site, the average compressive strength shall be at least 8,000 psi with no individual unit strength less than 7,200 psi, with testing procedures in accordance with ASTM C-140.
- 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. Proven 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 including the usual methods of handling, 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 shall be rejected.

- A. TACK COAT
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 MIX DESIGN 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 F. DURING THE LAYING OPERATION.
 32. THE THICKNESS OF THE FINISHED SURFACE COURSE SHALL BE CHECKED FOR CONFORMANCE WITH THE THICKNESS OF THE CONSTRUCTED SURFACE COURSE IS WITHIN 1/8" OF THE DESIGN THICKNESS (NO NEGATIVE TOLERANCE WILL BE ACCEPTABLE).
 33. THE SURFACE SURFACING 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 COMPACTED TO 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 DO NOT MEET THE ABOVE LISTED REQUIREMENTS SHALL BE CORRECTED TO THE ENGINEER'S SATISFACTION.
 34. ALL REPAIRS TO EXISTING ASPHALT SHALL RECEIVE SAWCUT EDGE PRIOR TO RELAYING. UNDESIRABLE PATCHES, CRACKS, OR WRINKLE LESS THAN FOUR (4) INCHES IN DIAMETER REQUIRING A SCHEDULE 40 PVC CASING PIPE WITH SAND BACKFILLS.
 35. ALL PERMANENT CONTROL POINTS AND/OR REFERENCE MARKERS LOCATED ON PLAT SHALL BE RE-ESTABLISHED. ALL MARKERS 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 TESTING. ALL FIELD OBSERVATIONS AND TESTING TO TEST THE COMPLETED WORK SHALL UN.C.N.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 FOR DRAINAGE INSPECTION.
 38. GRATE AND RIM ELEVATION ARE BASED ON PROPOSED FINISHED GRADE. ADJUSTMENTS MAY BE NECESSARY DUE TO FIELD CONDITIONS. ADJUSTMENTS SHALL BE MADE TO THE GRATE AND RIM ELEVATION. THE GRATE IS IN PLACE OR SITE GRADING IS COMPLETE. COST OF ADJUSTING RIMS AND GRATES IS TO BE INCLUDED IN BASE BID.

36. NOTIFICATION - THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE COUNTY AND UTILITIES 48 HOURS PRIOR TO SCHEDULING FIELD OBSERVATIONS AND SHALL NOTIFY ALL EQUIPMENT NECESSARY TO TEST THE COMPLETED WORK.
 37. ALL PRIOR TO 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 OF THE FINAL DRAINAGE INSPECTION.
 38. GRADING AND RIM ELEVATIONS 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 PREPARED TO LOOSEN TO A 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 TAMING WITH APPROPRIATE TOOLS. ON AREAS WHERE THE SOD MAY SLIDE DUE TO HIGH SLOPE, THE ENGINEER MAY DIRECT THAT THE SOD BE PEGGED WITH PEGS DRIVEN THROUGH THE SOD BLOCKS INTO FIRM EARTH AT SUITABLE INTERVALS.

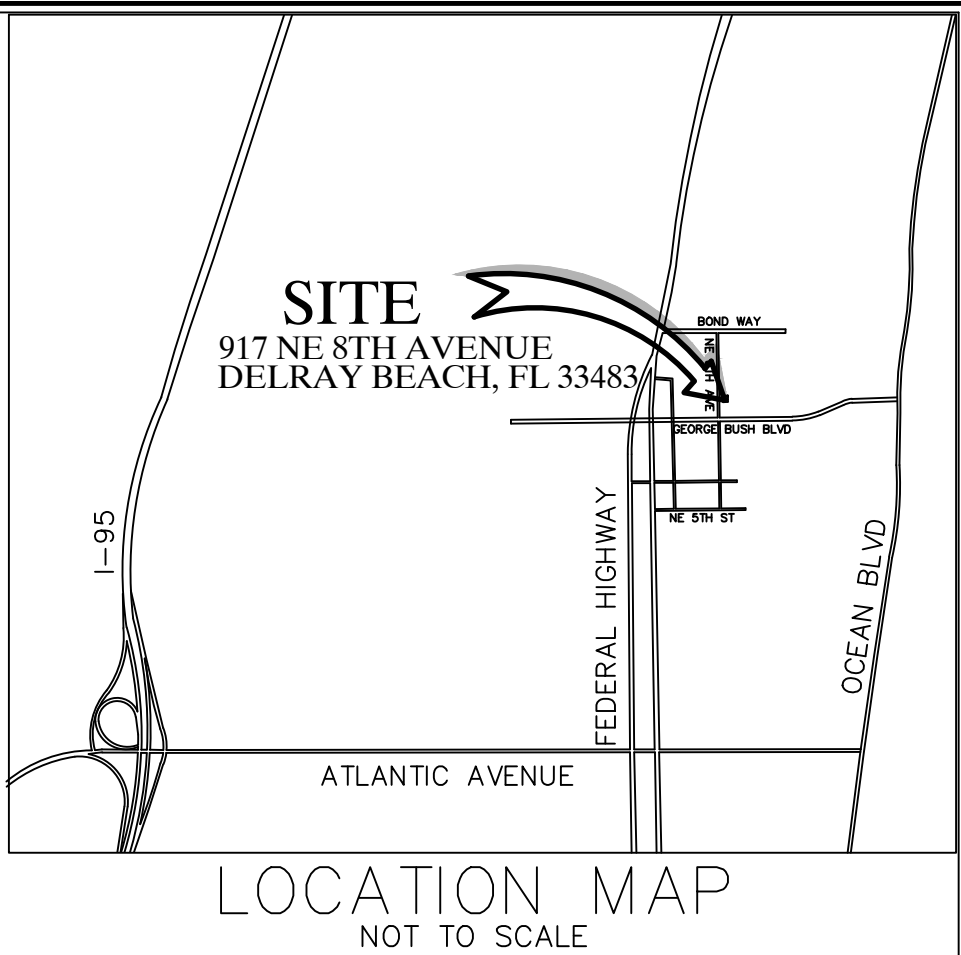
9. WORK CONSISTS OF THE ESTABLISHING OF A STAND OF GRASS WITHIN THE AREAS CALLED FOR BY THE FURNISHING AND PLACING OF GRASS SOD AND FERTILIZING, WATERING, AND MAINTAINING SODDED AREAS SUCH AS TO ASSURE A HEALTHY STAND OF GRASS.
10. OVER WHICH THE SOIL IS TO BE PLACED SHALL BE PLACED OR LOOSENEO TO SUITABLE DEPTH. THE SOD SHALL BE SCARRIFIED 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 DOWN THE SLOPE AND WHERE THERE IS A POSSIBILITY THAT THE SOD BE PEGGED WITH PEGS DURING THE SOD BLOCKS INTO FIRM EARTH AT SUITABLE INTERVALS.

- 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.

- 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 ¼".
- 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" depth of bedding. When the bedding has been placed and vibrated.
 - C. The final elevation of paving stones shall be nominally ¼" to 5/8" higher than the adjacent curb, gutter, etc., to allow for friction and change in elevation of the paving stone edges.
 - D. The bedding course shall not be disturbed, once screeded and leveled to the desired elevation.

- 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 and corner stones. 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 plate vibrator capable of 3000 to 5000 pounds compaction force with the surface clean and the joints open.
 - F. After vibration, joints will be covered with 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 vibrator 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 exceptions:
 - 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 yellow 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 971-1.4 shall be used with retroreflectivity to be not less than 300 milirandies.
 - When header curb is used to outline a crosswalk the curb shall be white concrete with glass beads in the white concrete.
 4. The brick shall be pre-approved per project before installation by the Palm Beach County Traffic Engineering Division.

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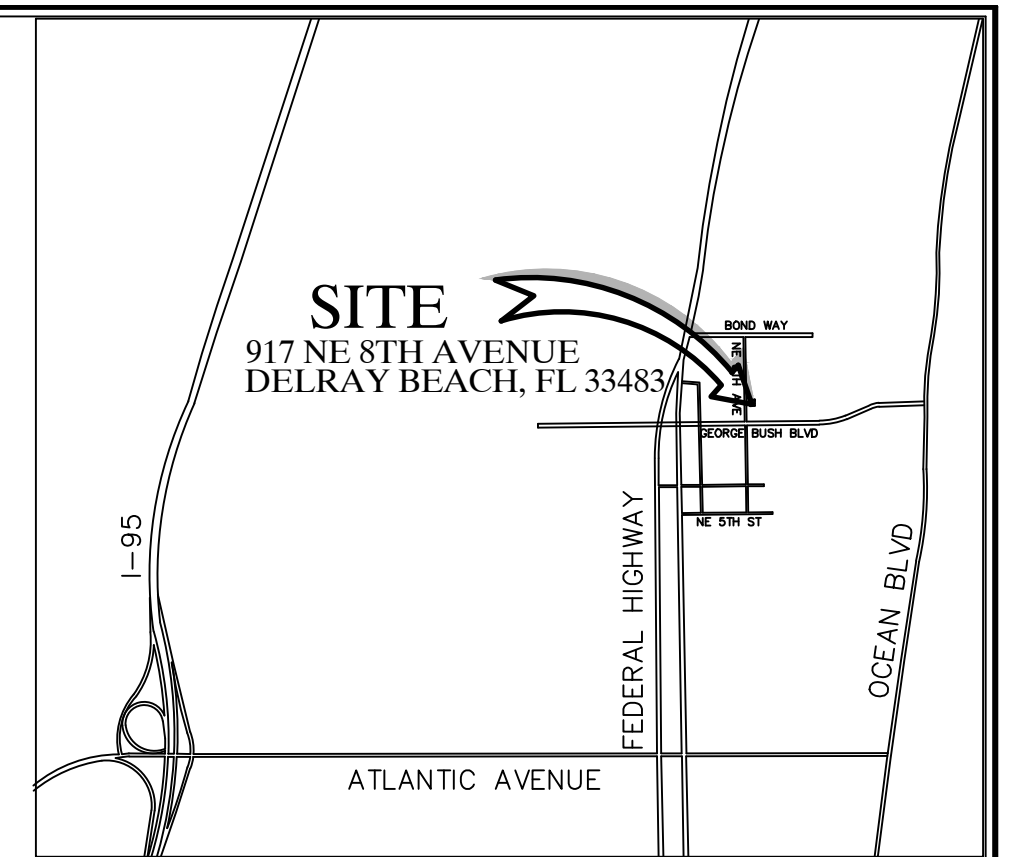
FIELD & WHEELER, INC.
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE — SURVEYING
7900 GLADES ROAD — SUITE 100
BOCA RATON, FLORIDA 33434
PHONE (561) 392-1991 / FAX (561) 750-1452

917 NE 8TH AVENUE
GENERAL NOTES PLAN

DATE	12/15/21
DRAWN BY	AJG
F.B./ PG.	----
SCALE	N.T.S.

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

JOB # 9638
SHT. NO. PD-1
OF 14 SHEETS



LOCATION MAP
NOT TO SCALE

REV PER CITY COMMENTS	06/27/22	AJG
REV PER CITY COMMENTS	04/14/22	AJG
REV PER CITY COMMENTS	DATE	BY
FILE NAME: 9638_ENC.dwg		

CAULFIELD & WHEELER, INC.

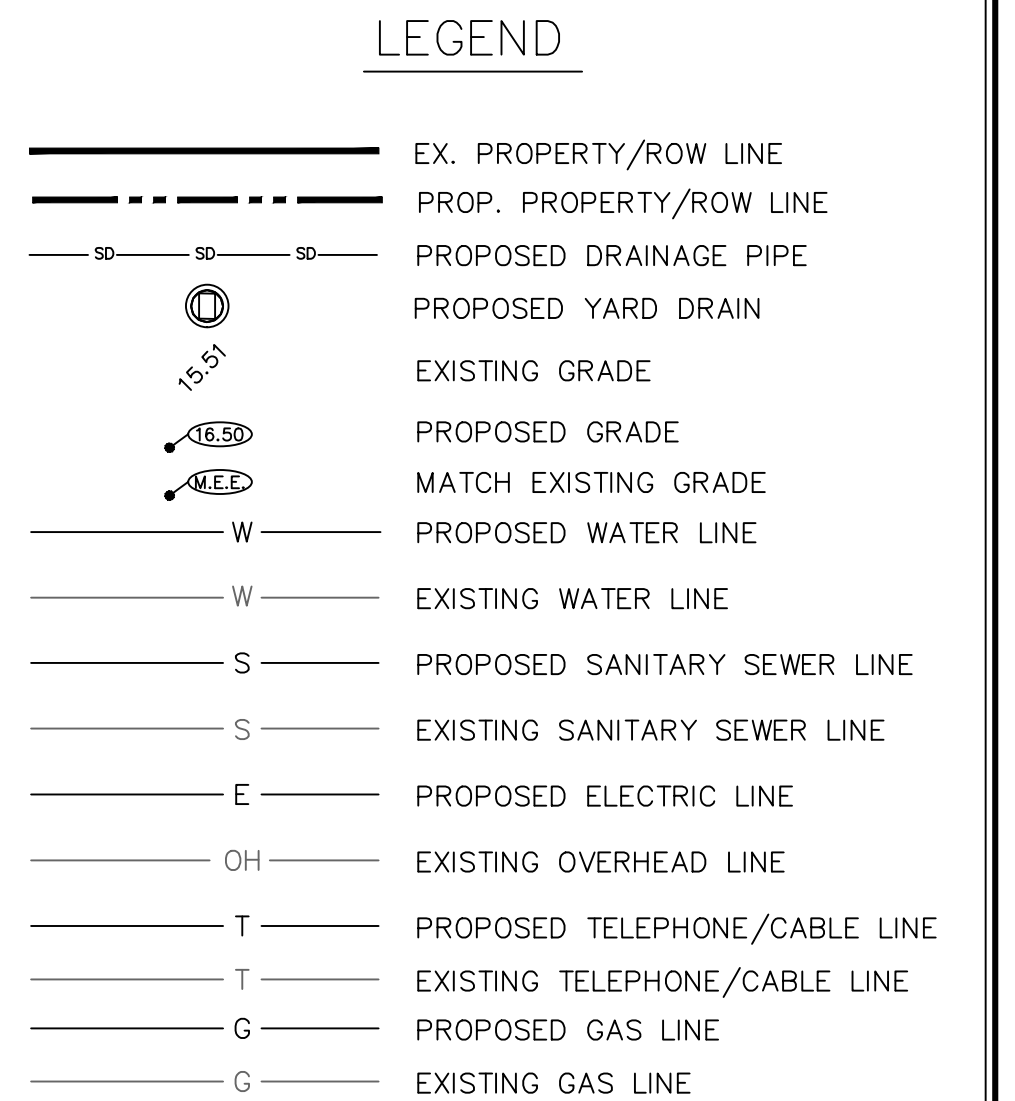
Civil Engineering
LANDSCAPE ARCHITECTURE — SURVEYING
7900 GLADES ROAD — SUITE 100
BOCA RATON, FLORIDA 33434
PHONE (561) 392-1991 / FAX (561)-750-1452

917 NE 8TH AVENUE
PROPOSED
DEMOLITION PLAN

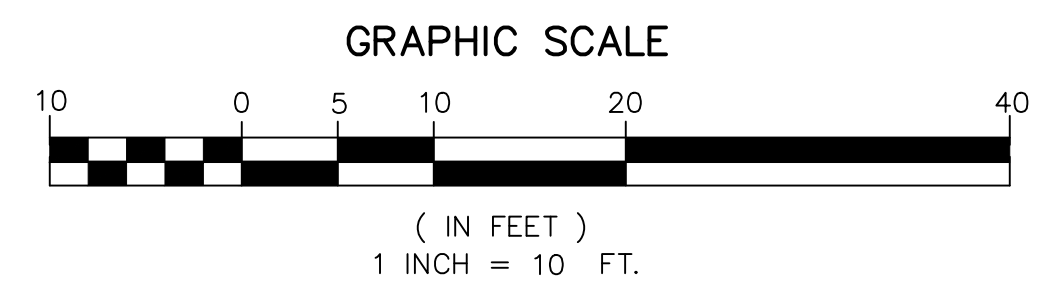
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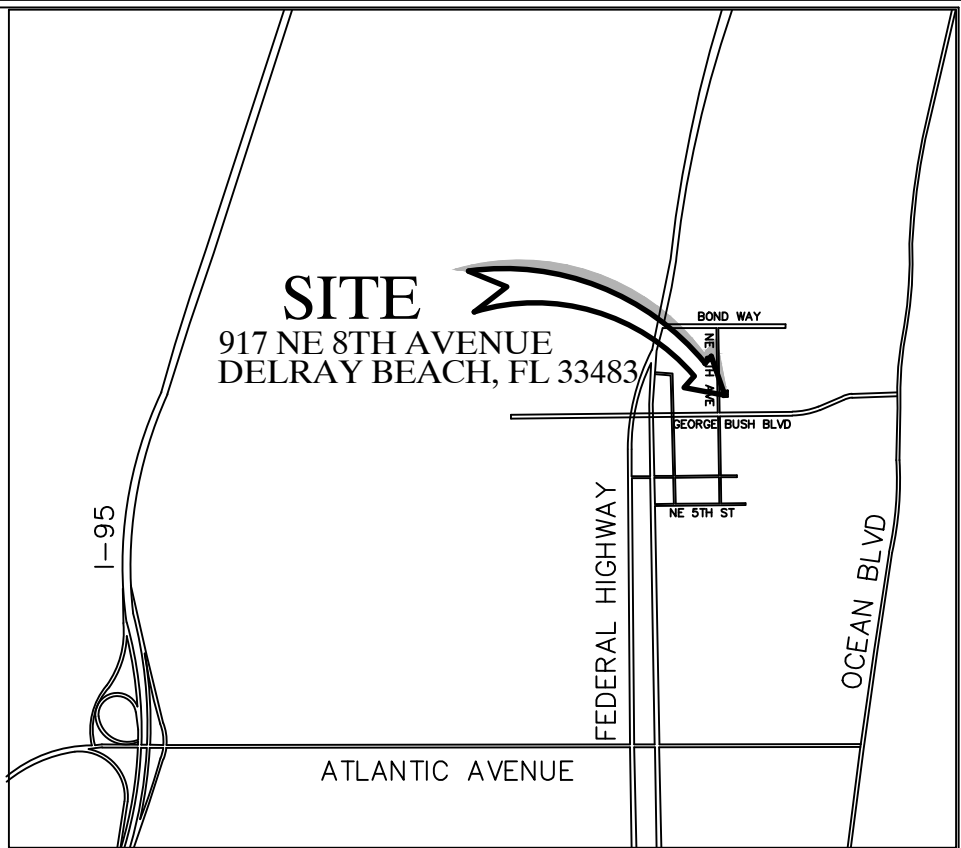
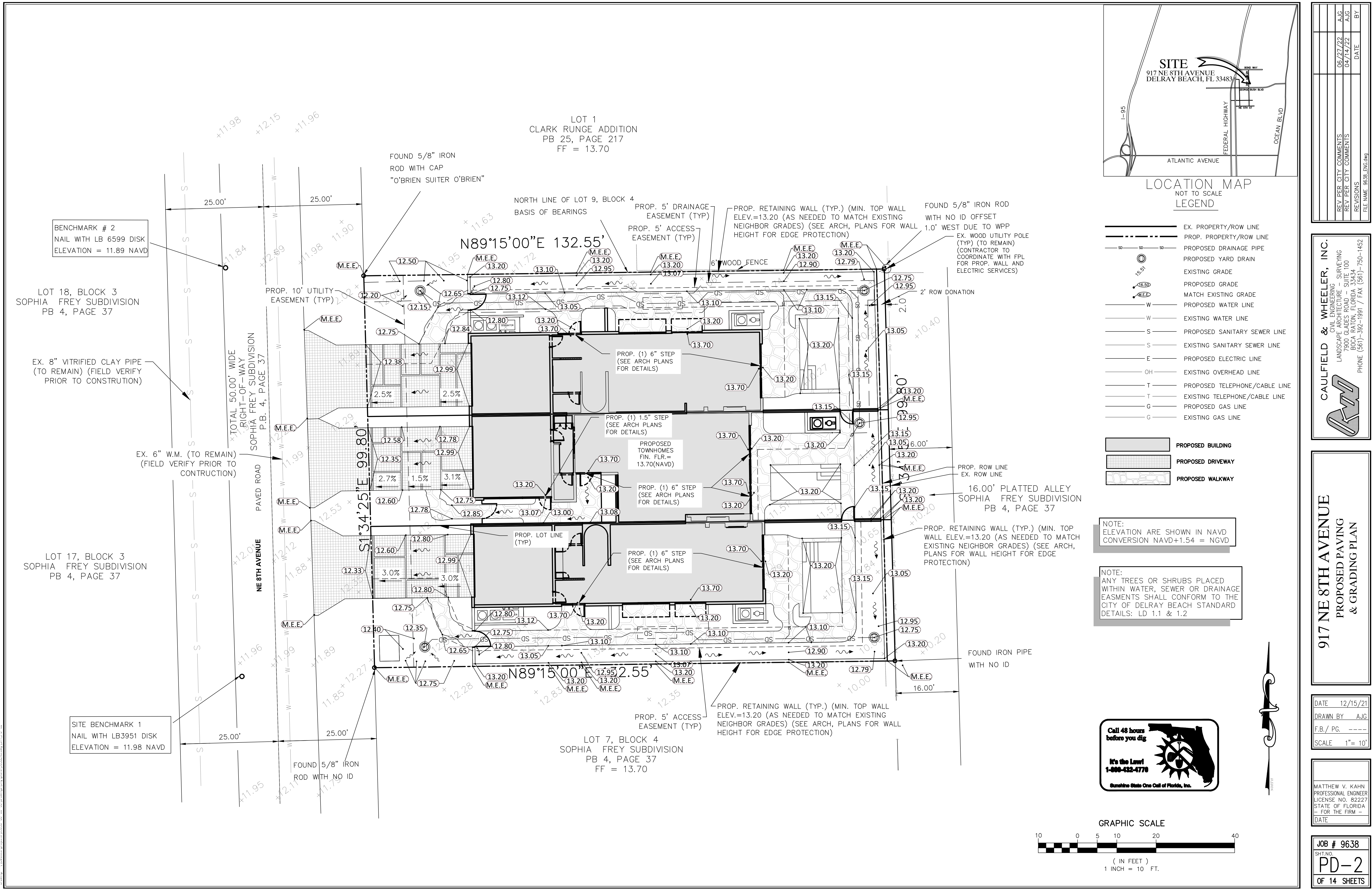
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JOB # 9638
HT.NO.
PD-1A
OF 14 SHEETS



NOTE:
ELEVATION ARE SHOWN IN NAVD
CONVERSION NAVD+1.54 = NGVD





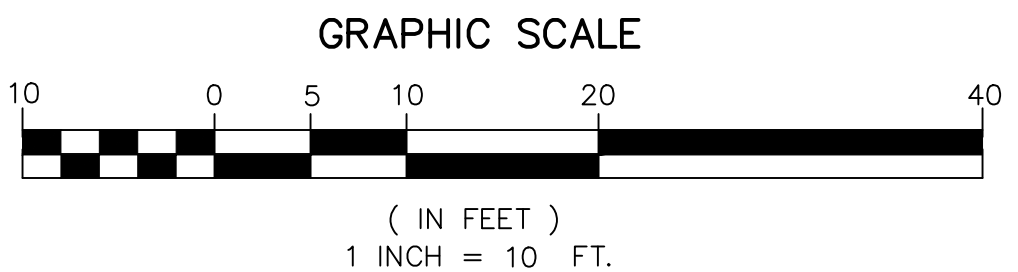
LOCATION MAP
NOT TO SCALE
LEGEND

- EX. PROPERTY/ROW LINE
- PROP. PROPERTY/ROW LINE
- PROPOSED DRAINAGE PIPE
- PROPOSED YARD DRAIN
- EXISTING GRADE
- PROPOSED GRADE
- MATCH EXISTING GRADE
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING SANITARY SEWER LINE
- PROPOSED ELECTRIC LINE
- EXISTING OVERHEAD LINE
- PROPOSED TELEPHONE/CABLE LINE
- EXISTING TELEPHONE/CABLE LINE
- PROPOSED GAS LINE
- EXISTING GAS LINE

- PROPOSED BUILDING
- PROPOSED DRIVEWAY
- PROPOSED WALKWAY

NOTE:
ELEVATION ARE SHOWN IN NAVD
CONVERSION NAVD+1.54 = NGVD

NOTE:
ANY TREES OR SHRUBS PLACED
WITHIN WATER, SEWER OR DRAINAGE
EASEMENTS SHALL CONFORM TO THE
CITY OF DELRAY BEACH STANDARD
DETAILS: LD 1.1 & 1.2



REV	PER	CITY COMMENTS	DATE	BY
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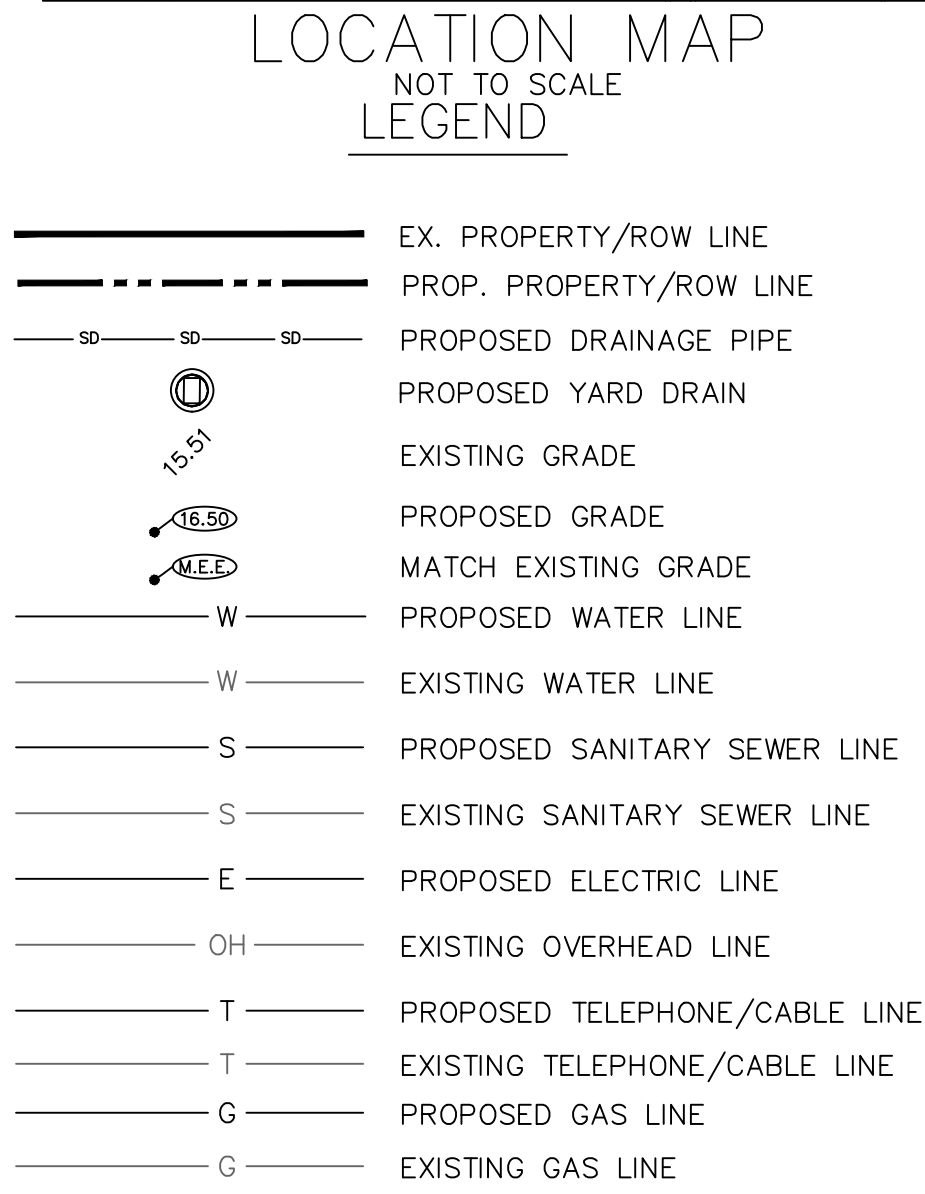
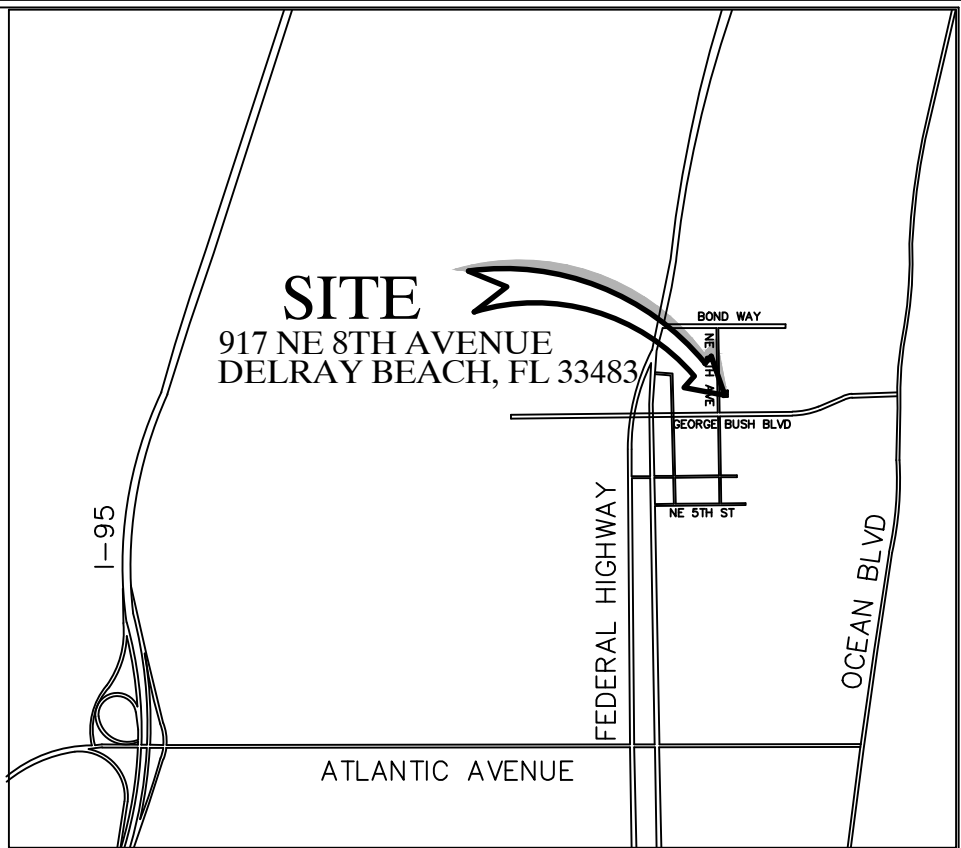
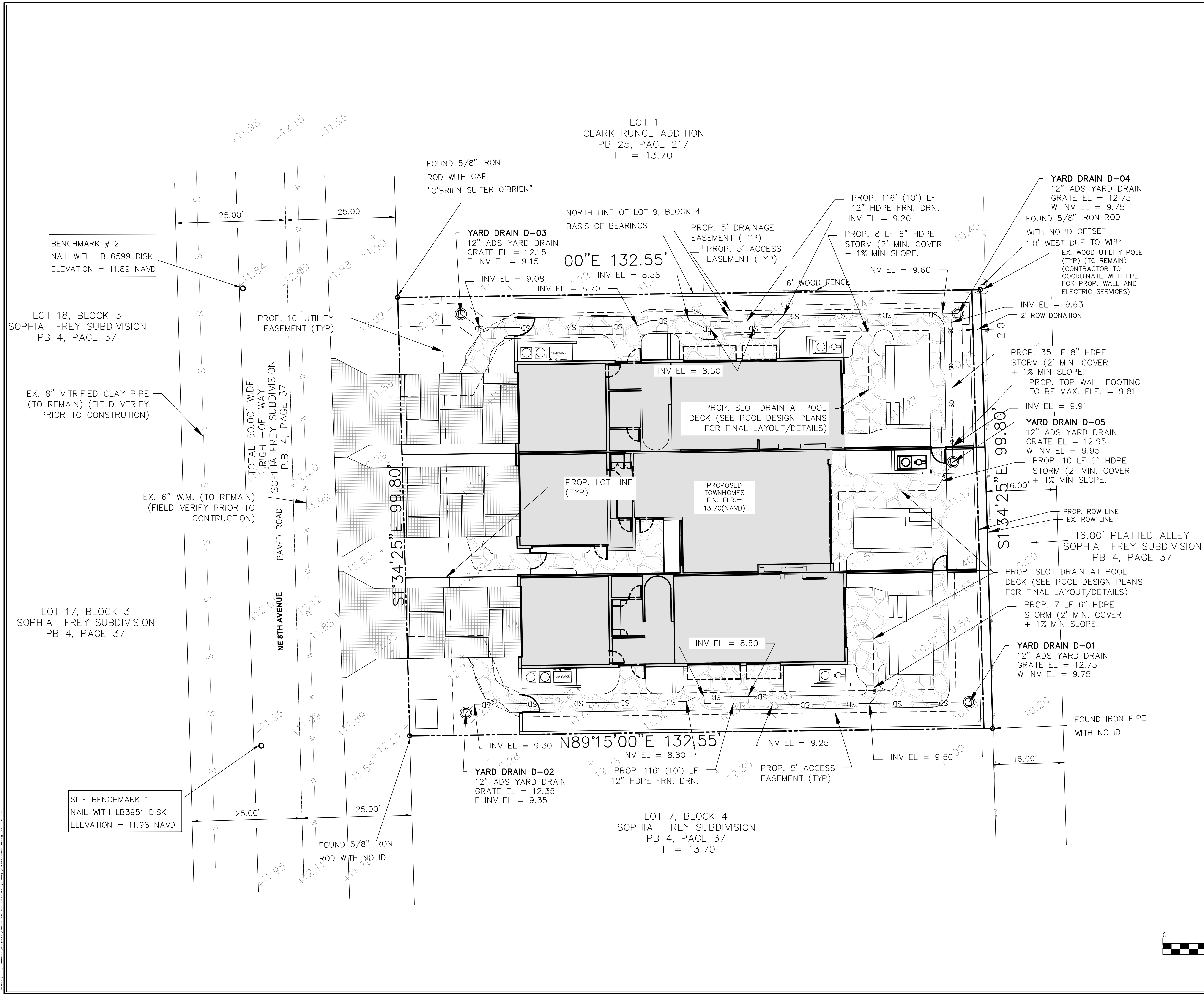
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7900 GLADES ROAD - SUITE 100
BOCA RATON, FLORIDA 33434
PHONE (561) 392-1981 / FAX (561) 750-1452

917 NE 8TH AVENUE
PROPOSED PAVING
& GRADING PLAN

DATE 12/15/21
DRAWN BY AUG
F.B./ PG. ----
SCALE 1" = 10'

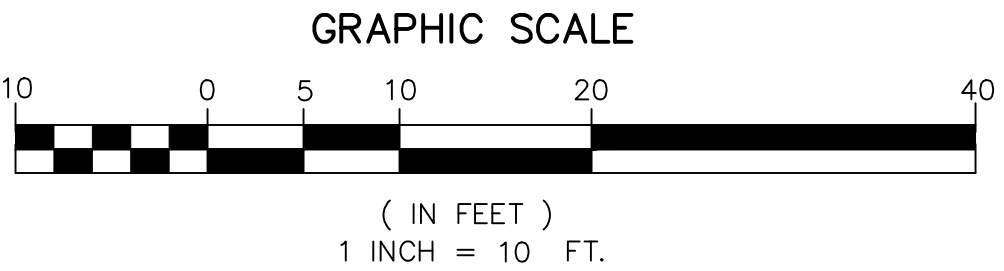
MATTHEW V. KAHN
PROFESSIONAL ENGINEER
LICENSE NO. 82227
STATE OF FLORIDA
FOR THE FIRM -
DATE

JOB # 9638
SHT. NO.
PD-2
OF 14 SHEETS



NOTE:
ELEVATION ARE SHOWN IN NAVD
CONVERSION NAVD+1.54 = NGVD

NOTE:
ANY TREES OR SHRUBS PLACED
WITHIN WATER, SEWER OR DRAINAGE
EASMENTS SHALL CONFORM TO THE
CITY OF DELRAY BEACH STANDARD
DETAILS: LD 1.1 & 1.2



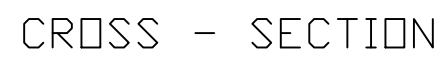
REV	DATE	BY
06/23/22	AUG	
04/14/22	AUG	
REV PER CITY COMMENTS	REVISIONS	
FILE NAME: 9638_ENG.dwg		

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

DATE	12/15/21
DRAWN BY	AUG
F.B./ PG.	----
SCALE	1" = 10'

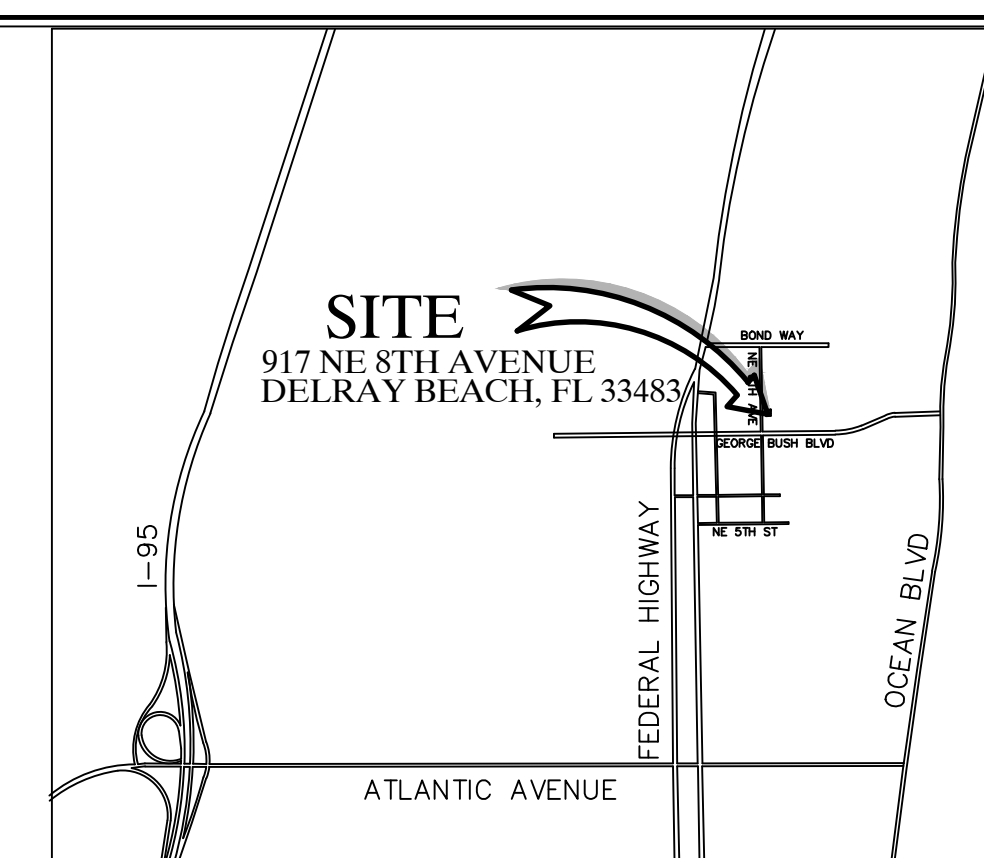
MATTHEW V. KAHN
PROFESSIONAL ENGINEER
LICENSE NO. 82227
STATE OF FLORIDA
- FOR THE FIRM -
DATE

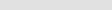
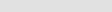


1. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT CONTAMINATION OF THE TRENCH BY SAND, SILT, OR OTHER MATERIAL.
2. THE CONTRACTOR SHALL INSTALL
 - A. PERFORATED RCP IN ACCORDANCE WITH F.DOT. REQUIREMENTS.
 - B. CORRUGATED ALUMINUM IN ACCORDANCE WITH F.DOT. REQUIREMENTS.
3. NO PIPE PERFORATIONS 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.

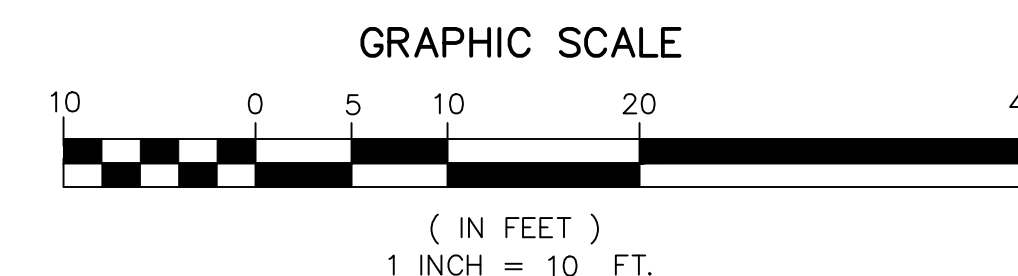
N.T.S.

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



 PROPOSED BUILDING
 PROPOSED DRIVEWAY
 PROPOSED WALKWAY

NOTE:
ANY TREES OR SHRUBS PLACED
WITHIN WATER, SEWER OR DRAINAGE
EASMENTS SHALL CONFORM TO THE
CITY OF DELRAY BEACH STANDARD
DETAILS: LD 1.1 & 1.2



JOB # 9638
SHT. NO.
WS-1
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 COVER.
- DUCTILE IRON PIPE (DIP) FOR FORCE MAINS SHALL BE CLASS 350 WITH 401 EPOXY LINED IN ACCORDANCE WITH AWWA C550.
- 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.
- 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:

$$L = \frac{SD\sqrt{P}}{148,000}$$

WHERE:

L = ALLOWABLE LEAKAGE (GALLONS PER HOUR)
S = PIPE LENGTH (FEET)
D = NOMINAL DIAMETER OF PIPE (INCHES)
P = AVERAGE TEST PRESSURE (PSI)

- 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 & PRIMED OR 1ST LIFT OF ASPHALT PLACED.
- 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.
- 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
404 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PRESSURE PIPE NOTES

PP 1.0

DATE: 09-15-2021

MINIMUM LENGTHS OF PIPE (FT) TO BE RESTRAINED

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

RESTRAIN PIPE ONE BELL PAST MINIMUM DISTANCE



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

PIPE RESTRAINT TABLE
PRESSURE PIPE
(SHEET 1 OF 2)

PP 2.0

DATE: 09-15-2021

NOTES:

- THE DATA IN THE PREVIOUS TABLE IS BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPESAND
TEST PRESSURE150 PSI, 200 PSI FOR PIPES LARGER THAN 24"
DEPTH OF BURY3'
TRENCH TYPE3'
SAFETY FACTOR1.5
VERTICAL OFF-SET3'
MINIMUM PIPE LENGTHS
ALONG TEE RUN5'
- THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON PIPE AND PVC PIPE.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- RESTRAINED PIPE LENGTHS FOR VALVES APPLY TO PIPE ON BOTH SIDES OF VALVES
- THE PREVIOUS TABLE SHALL SERVE AS A GENERAL DESIGN GUIDE ONLY. IT IS THE ENGINEER OF RECORD'S RESPONSIBILITY TO JUSTIFY AND DOCUMENT ANY DEVIATIONS FROM THE PIPE LENGTHS SPECIFIED IN THE PREVIOUS TABLE.
- SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1 (LATEST EDITION) AND DIPRA RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2 (LATEST EDITION).
- RESTRAINED JOINTS SHALL EXTEND ONE JOINT BEYOND MINIMUM LENGTH REQUIRED.

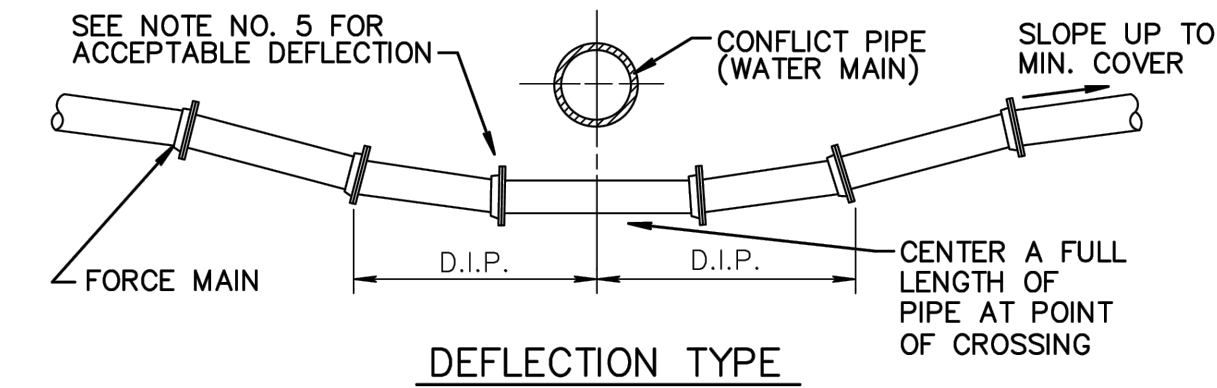
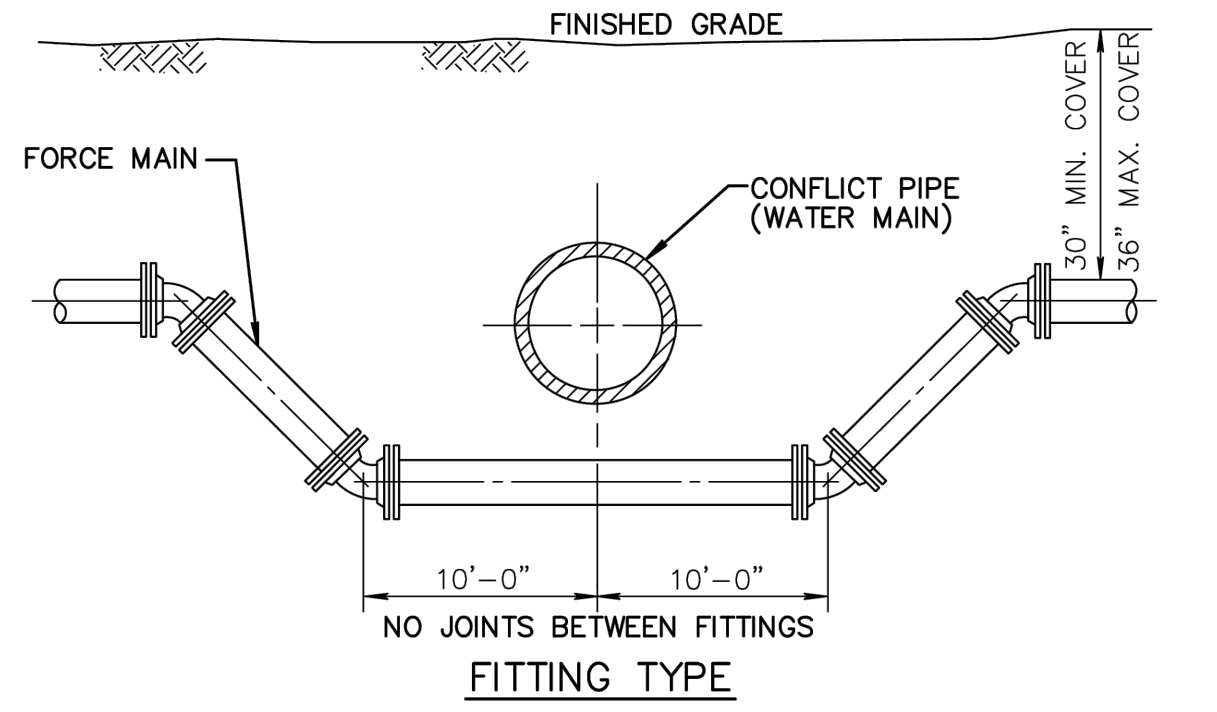


CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
404 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PIPE RESTRAINT TABLE
PRESSURE PIPE
(SHEET 2 OF 2)

PP 2.1

DATE: 09-15-2021



NOTES:

- THERE SHALL BE IN ALL CASES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER MAINS AND FORCE MAINS.
- WHEREVER POSSIBLE WATER MAINS SHALL PASS OVER FORCE MAINS OR STORM SEWERS.
- FITTINGS SHALL BE RESTRAINED WITH MECHANICAL JOINT RESTRAINTS.
- THE DEFLECTION TYPE CROSSING IS PREFERRED.
- DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.
- REFER TO TYPICAL RESTRAINING DETAIL PP 2.0 AND 2.1

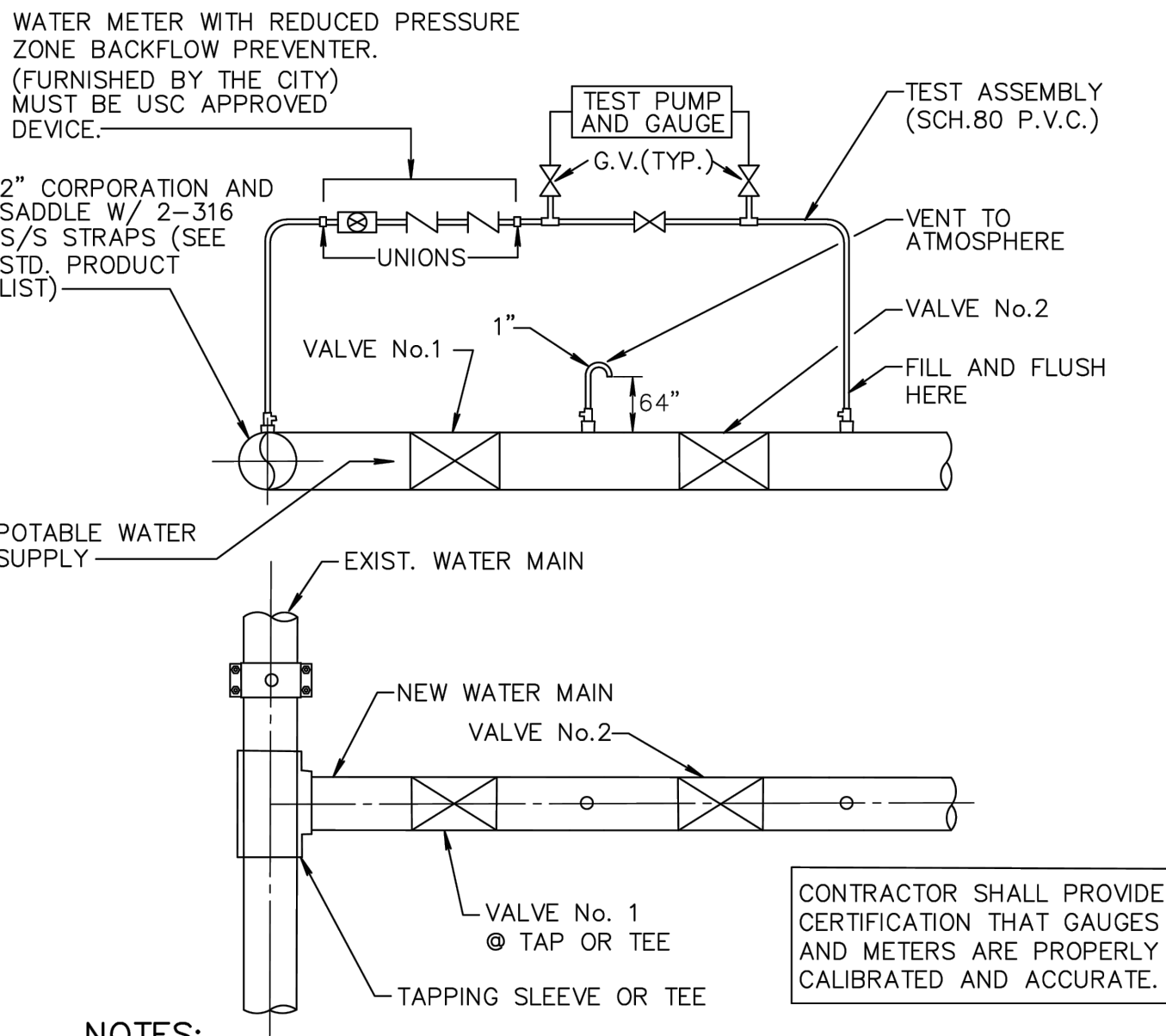


CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
404 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PRESSURE PIPE CONFLICT TABLE

PP 3.0

DATE: 09-15-2021



NOTES:

- 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 PRECEDING ARE NOT PRESENT IN TEST SECTION.
- TAPPING SADDLE OR SLEEVE (PER CURRENT CITY PRODUCT LIST) IS REQUIRED ON EXISTING MAIN.
- SETUP FOR ALL DOUBLE VALVE CONNECTIONS TO INCLUDE ATMOSPHERE VENTS AS SHOWN ABOVE.
- OUTLET ON VENT TO ATMOSPHERE A MINIMUM 24" ABOVE EXISTING GRADE.

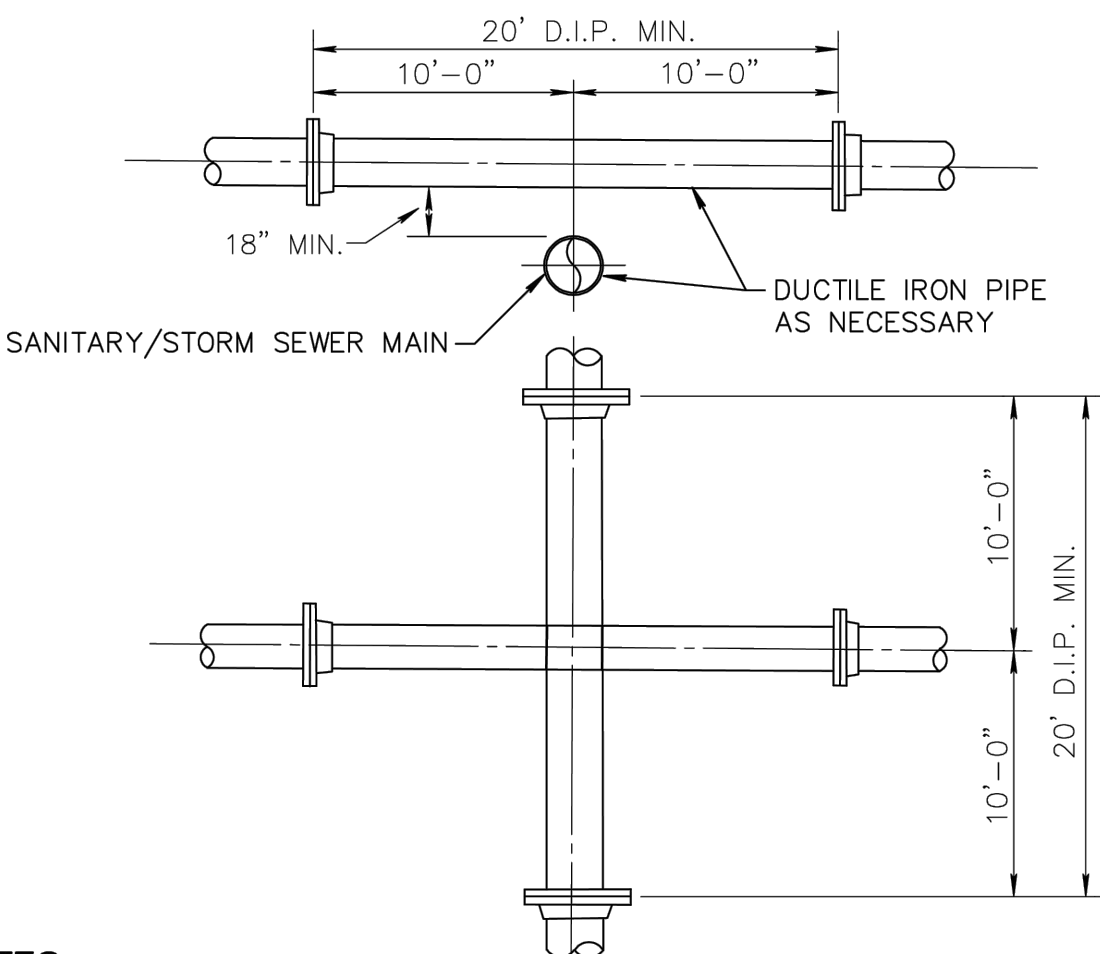


CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
404 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

FILL & FLUSH DETAIL

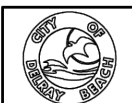
PW 1.0

DATE: 09-15-2021



NOTES:

- STORM AND SANITARY SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO 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. AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO 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 SEWER 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 LATERAL SHALL BE C-900 SDR-18 OR BETTER.

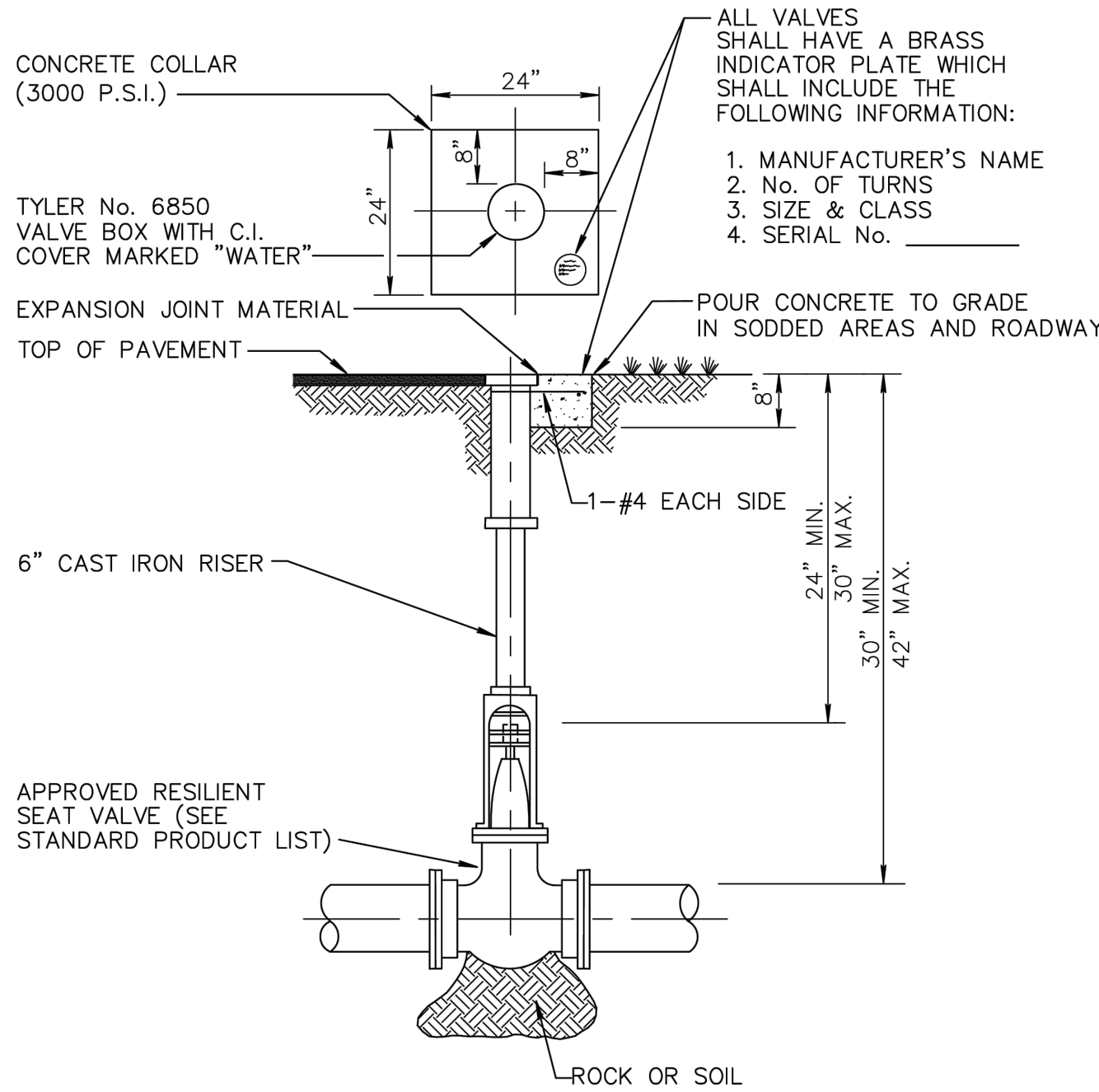


CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
404 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

WATER MAIN & SEWER CONFLICTS

PW 2.0

DATE: 09-15-2021



NOTES:

- WHEN VALVE IS DEEPER THAN 30" AN EXTENSION WITH UNIVERSAL JOINT 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.
- 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
404 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

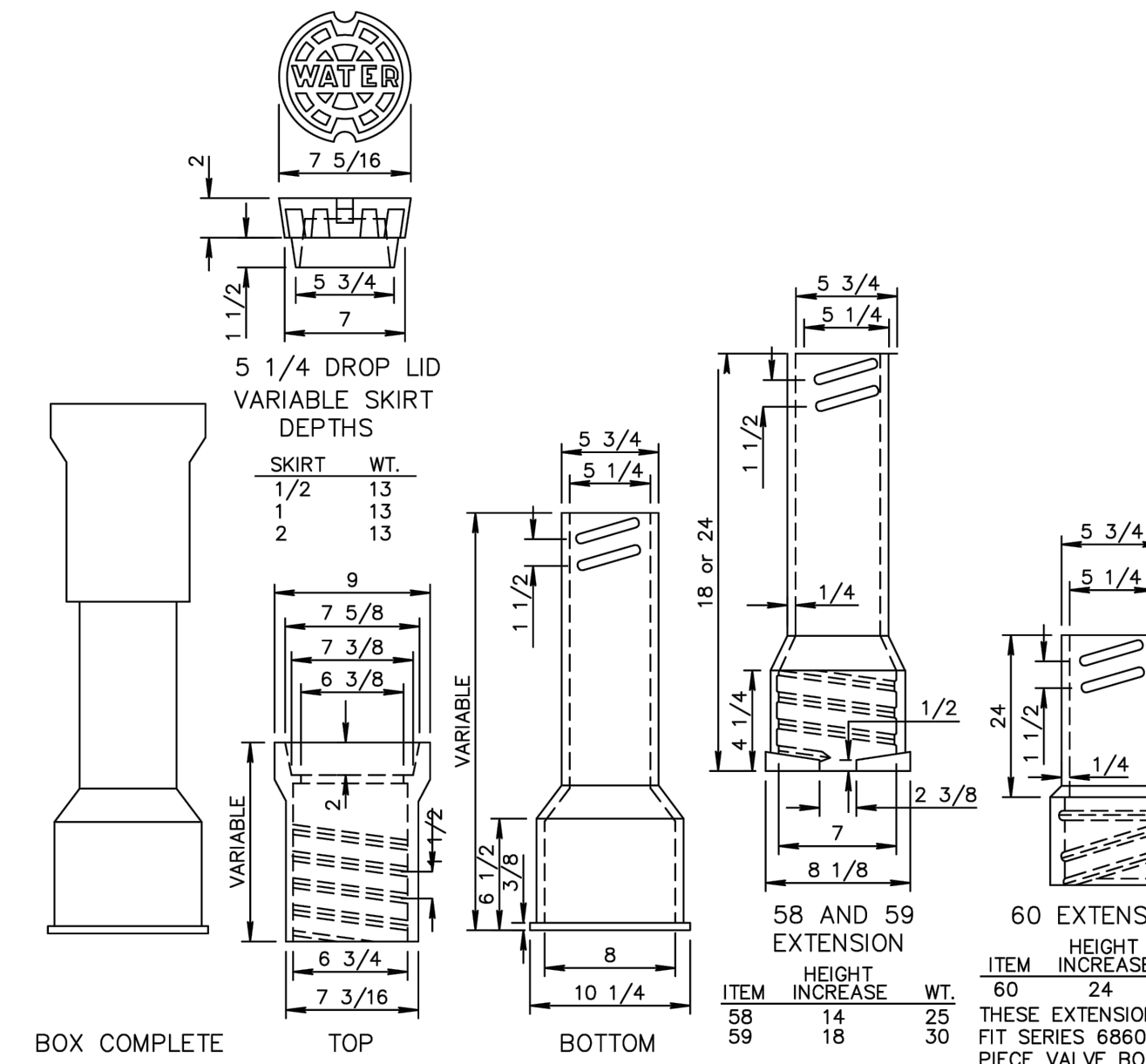
TYPICAL GATE VALVE DETAIL
4" THRU 12"

PW 3.0

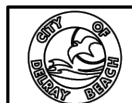
DATE: 09-15-2021

ITEM	BOX COMPLETE EXTENSION IN INCHES	WT.	TOP SECTION W/LID LENGTH	WT.	BOTTOM LENGTH	WT.	PIECES PER PKG.
461-S	19-22	60	10	35	15	25	15
462-S	27-32	70	10	35	24	35	15
562-S	27-37	80	16	45	24	35	20
563-S	33-43	88	16	45	30	40	20
564-S	39-50	90	16	45	36	45	20
662-S	36-52	105	26	65	30	40	20
664-S	39-60	110	26	65	36	45	20
666-S	51-71	135	26	65	**48	70	20
668-S	62-82	145	26	65	**60	80	20

**MAY BE FURNISHED IN TWO PIECES SCREWED TOGETHER TO MAKE THE LENGTH REQUIRED.



NOTE: LOCKING LIDS WILL NOT BE ACCEPTED.



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

CAST IRON VALVE BOXES FOR TEMPORARY DEADENDS TWO PIECE

PW 4.0

DATE: 09-15-2021

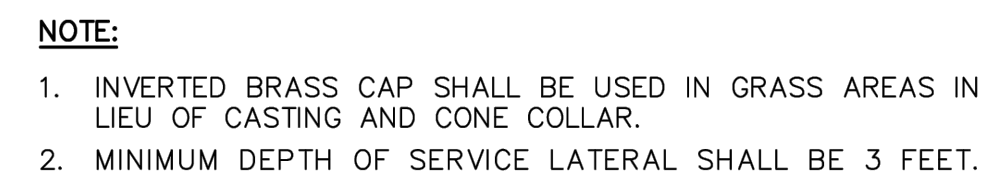
REV	PER	CITY COMMENTS	DATE
06/27/22	AJG		
04/14/22	AJG		
DATE	BY		

CAULFIELD & WHEELER, INC.
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LANDSCAPE ARCHITECTURE - SURVEYING
7900 GLADES ROAD - SUITE 100
BOCA RATON, FLORIDA 33434
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917 NE 8TH AVENUE
WATER DISTRIBUTION &
SANITARY SEWER DETAILS
DELRAY BEACH, FLORIDA

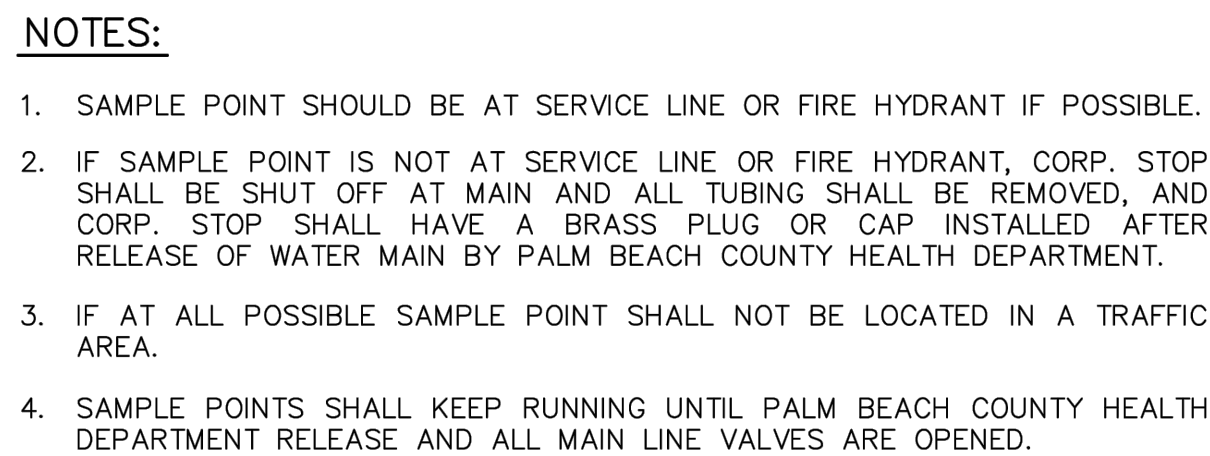
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DRAWN BY	AJG
F.B./ PG.	----
SCALE	N/A

MATTHEW V. KAHN
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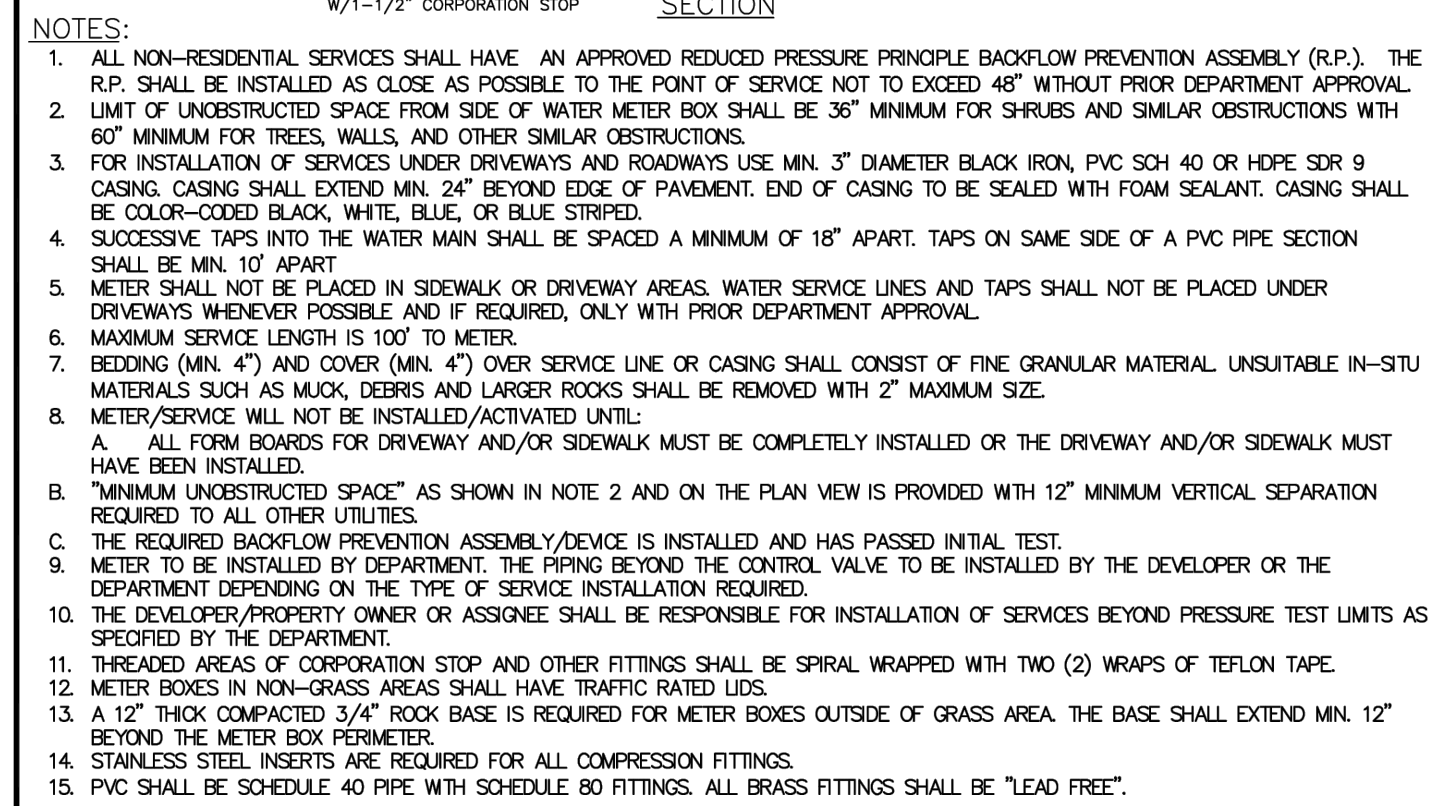


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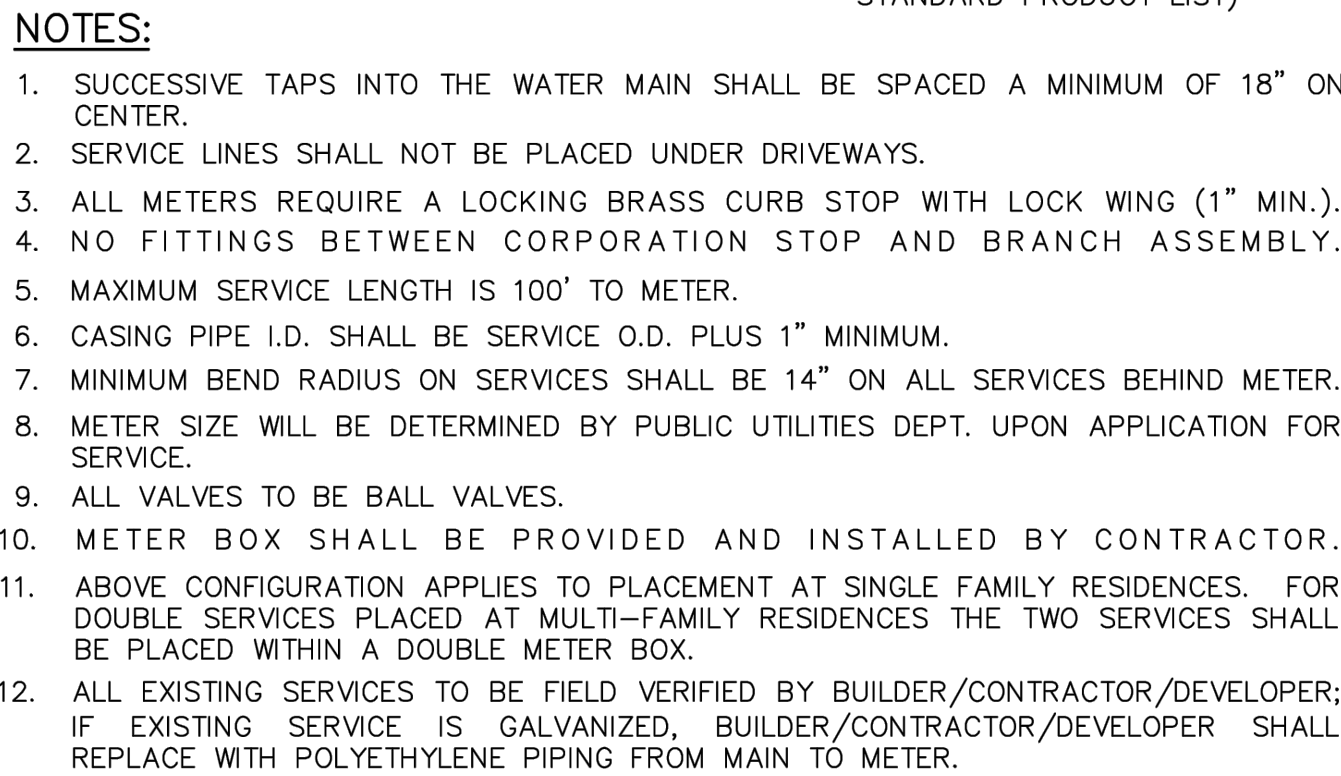
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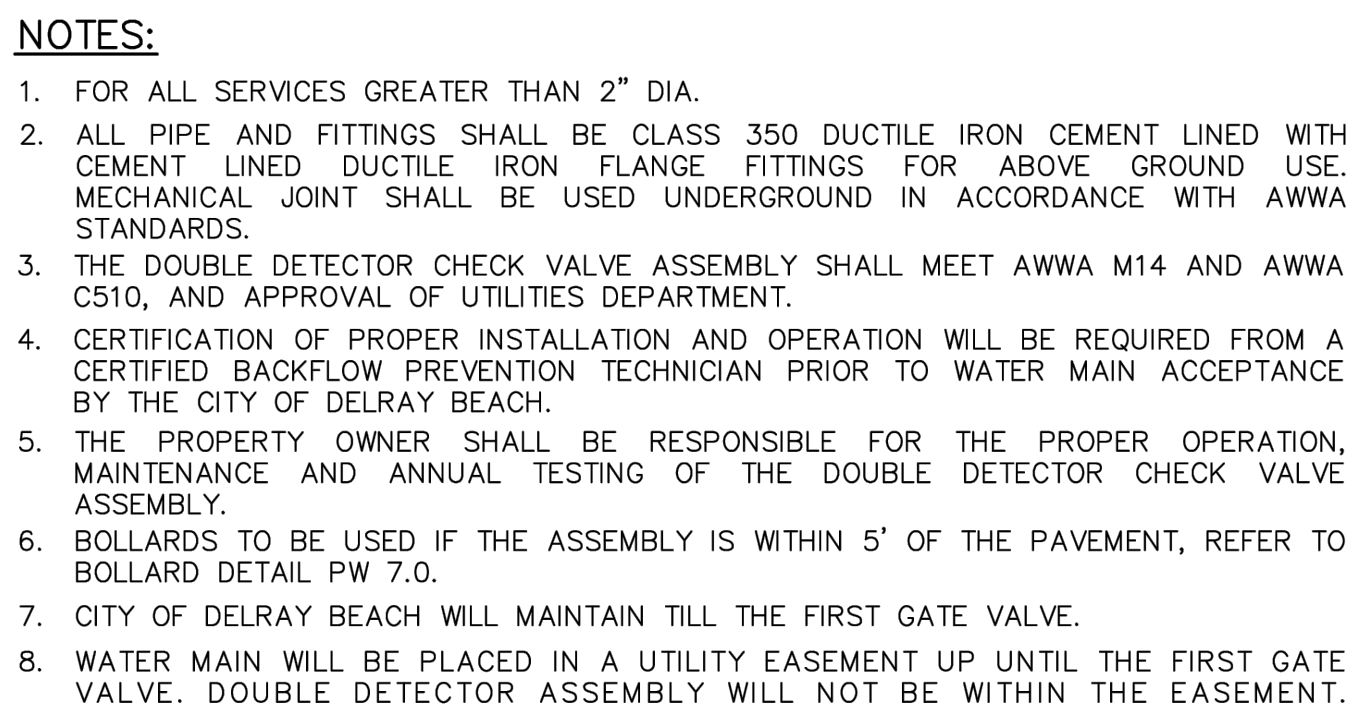
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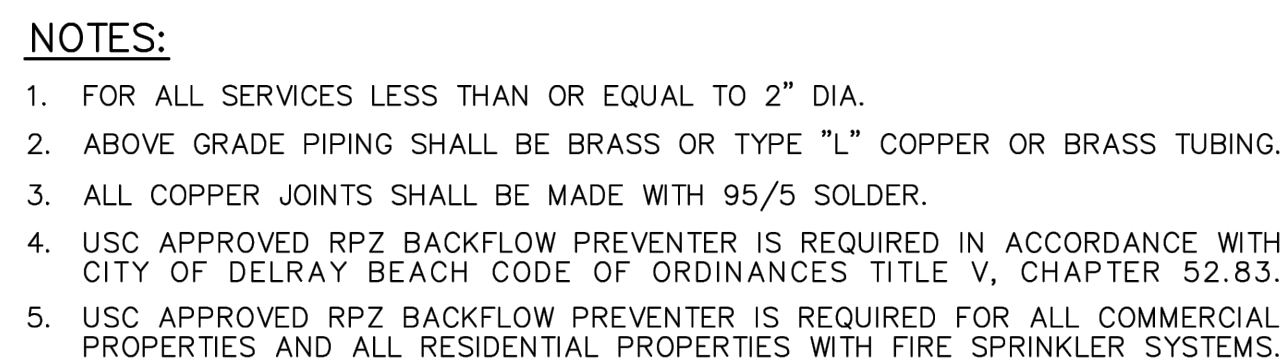
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DATE: 09-15-2021
PW 15.0



DATE: 09-15-2021
PW 16.0



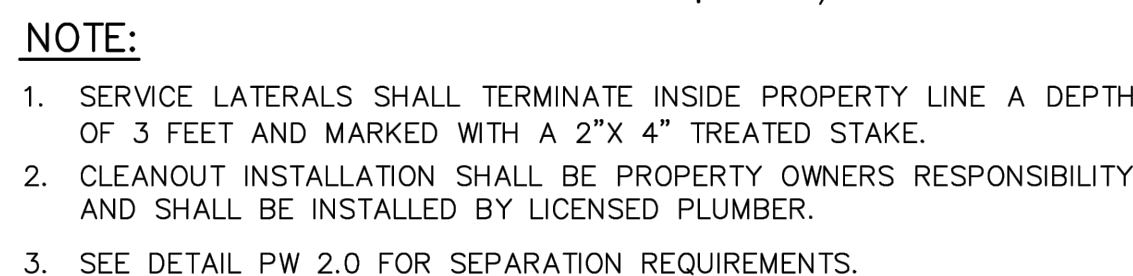
DATE: 09-15-2021
PW 17.0

1. ALL MANHOLES SHALL BE INSPECTED BY THE ENGINEER BEFORE PLACEMENT AND SURFACE TREATMENT.
2. ALL OPENINGS IN PRECAST MANHOLES SHALL BE CAST AT TIME OF MANUFACTURE. CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE ENTRY ONLY.
3. ALL MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE.
4. (PVC) GRAVITY SEWER PIPE SHALL CONFORM TO ASTM D 3034, SDR 35, LATEST REVISIONS, WITH PUSH ON RUBBER GASKET JOINTS.
5. (DIP) GRAVITY SEWER PIPE SHALL BE CLASS 350, 401 EPOXY LINED OR AS OTHERWISE APPROVED BY UTILITIES DEPARTMENT.
6. NO SERVICE CONNECTIONS, WYES, SERVICES OR VALVES WILL BE PERMITTED IN RESIDENTIAL DRIVEWAYS.
7. MANHOLE FRAMES SHALL BE ATTACHED TO THE PRECAST STRUCTURE WITH A MINIMUM OF 3/4" 304 STAINLESS STEEL BOLT NUTS AND WASHERS. FRAMES SHALL BE SEALED WITH A MINIMUM OF TWO 1/2" BEADS OF RAM-NEK CAULKING.
8. TRENCHES SHALL BE DE-WATERED TO ENABLE PIPE AND APPURTENANCES TO BE 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 EQUIVALENT). BACKFILLING OF UTILITY TRENCHES WILL NOT BE ALLOWED UNTIL INSPECTED BY THE ENGINEER.
10. BACKFILL MATERIAL FOR SEWER MAIN AND LINES SHALL BE NON-COHESIVE, NON PLASTIC MATERIAL, FREE OF ALL DEBRIS , LUMPS AND ORGANIC MATTER. BACKFILL MATERIAL SHALL BE 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.
11. 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.
12. 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.
13. 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 & PRIOR TO 1ST LIFT OF ASPHALT. A PLAN AND PROFILE 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.
14. EACH LINE SEGMENT SHALL BE LAMPED TO DETERMINE PROPER ROUNDNESS.
15. 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.
16. AT THE END OF THE ONE (1) YEAR WARRANTY PERIOD THE DEVELOPER/CONTRACTOR WILL 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.
17. NO PROPOSED STRUCTURES SHALL BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 10- FEET FROM ANY EXISTING OR PROPOSED SANITARY SEWER FACILITY.
18. ANY PIPE INTRODUCED INTO AN EXISTING MANHOLE MUST HAVE CARBOLINE BUTASTIC 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.
19. ANY REHABILITATION TO AN EXISTING MANHOLE MUST BE INTERNALLY STRIPPED AND LINED WITH SEWPER COAT OR APPROVED EQUAL.



DATE: 09-15-2021

WW 1.0



DATE: 09-15-2021

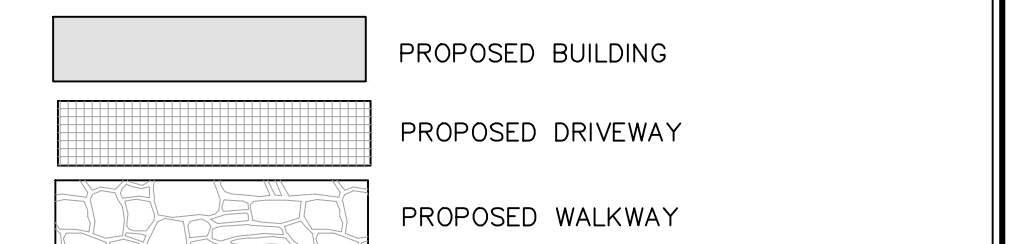
WW 8.0



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

DATE	12/15/21
DRAWN BY	AJG
SHEET NO. / PG.	----
SCALE	1" = 10'

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



NOTE:
ANY TREES OR SHRUBS PLACED
WITHIN WATER, SEWER OR DRAINAGE
EASMENTS SHALL CONFORM TO THE
CITY OF DELRAY BEACH STANDARD
DETAILS: LD 1.1 & 1.2

