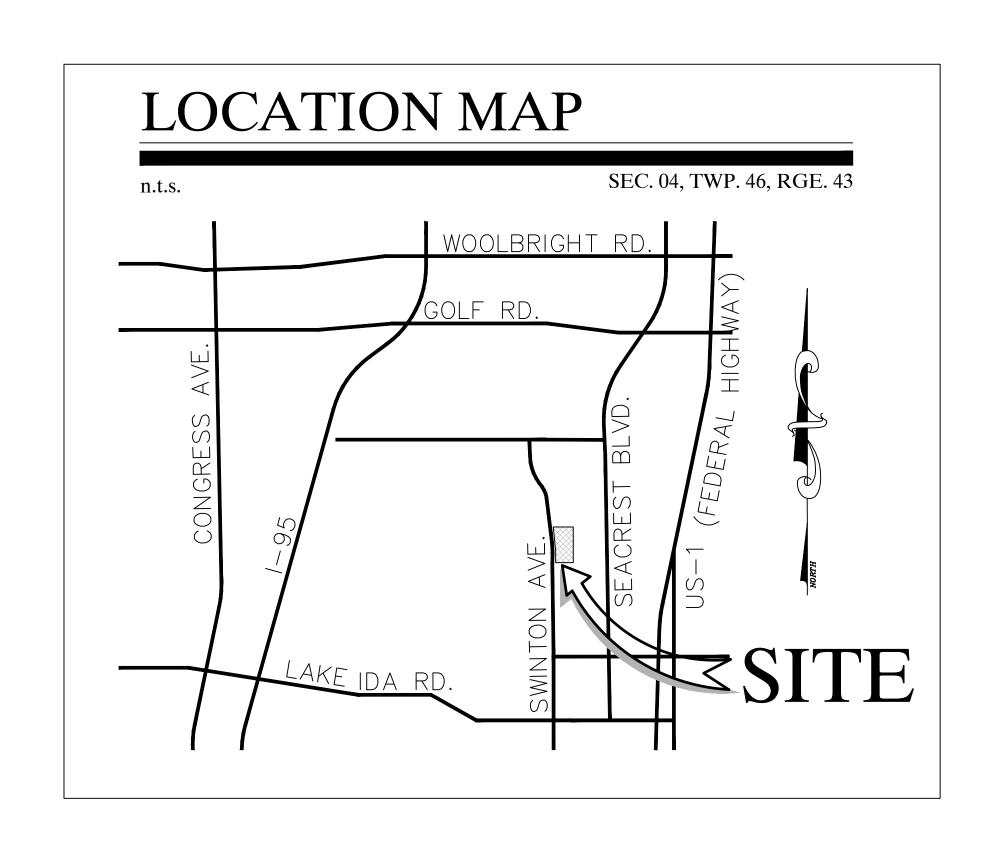
DELRAY RIDGE

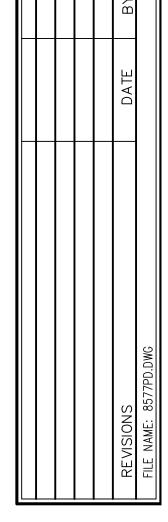
Delray Beach, Florida

PAVING, GRADING, & DRAINAGE PLANS & DETAILS



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PD-02	Paving, Grading, & Drainage Plan
PD-03	Signing & Pavement Marking Plan
PD-04 - PD-05	Grading Cross-Sections
PD-06 - PD-10	Paving, Grading, & Drainage Details
PD-11	Pollution Prevention Plan



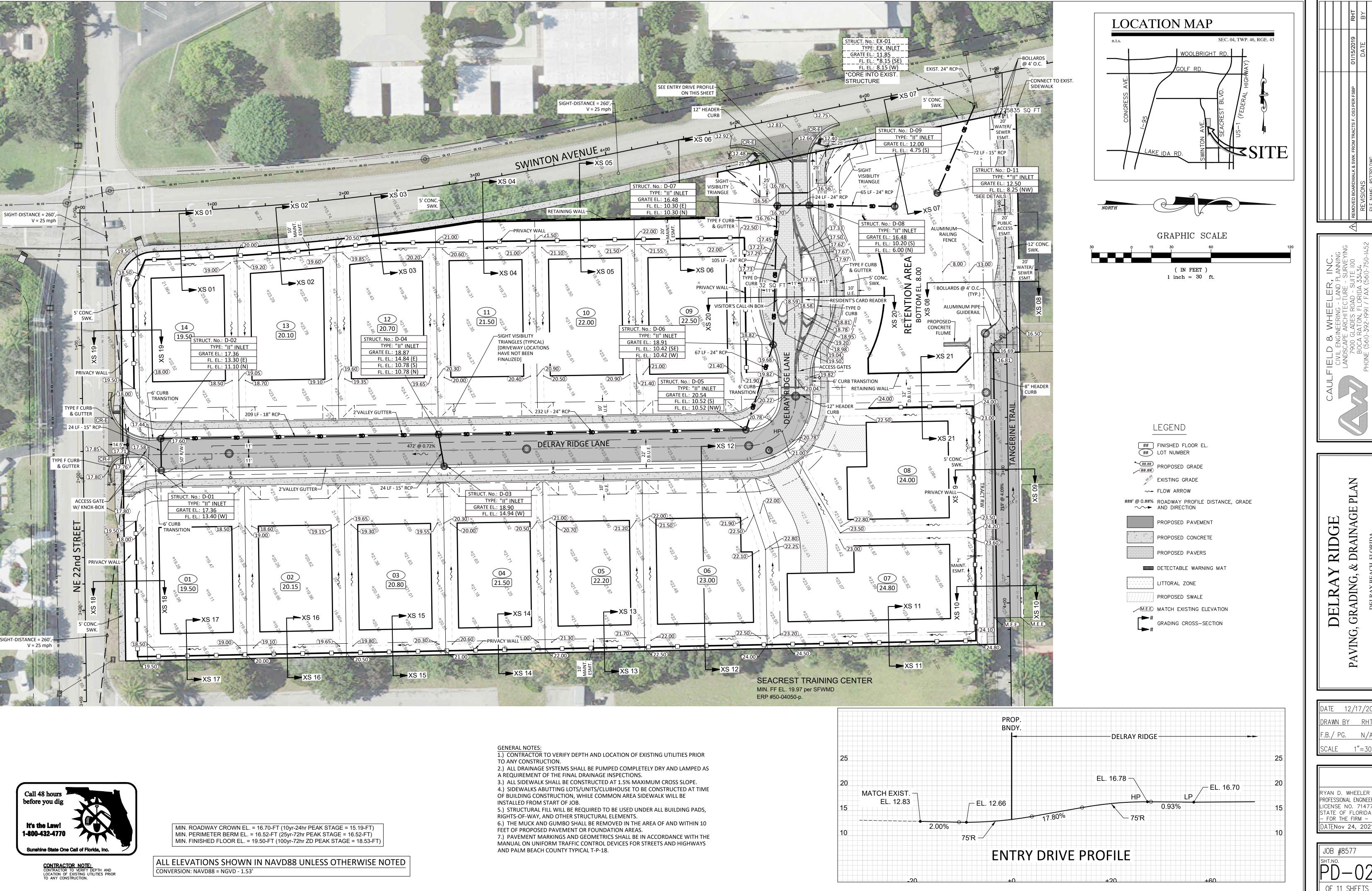


DELRAY RIDGE
COVER SHEET
DELRAY BEACH, FLORIDA

DATE 12/17/20
DRAWN BY RHT
F.B./ PG. N/A

RYAN D. WHEELER
PROFESSIONAL ENGINEER
LICENSE NO. 71477
STATE OF FLORIDA
– FOR THE FIRM –
DATENOV 24, 2021

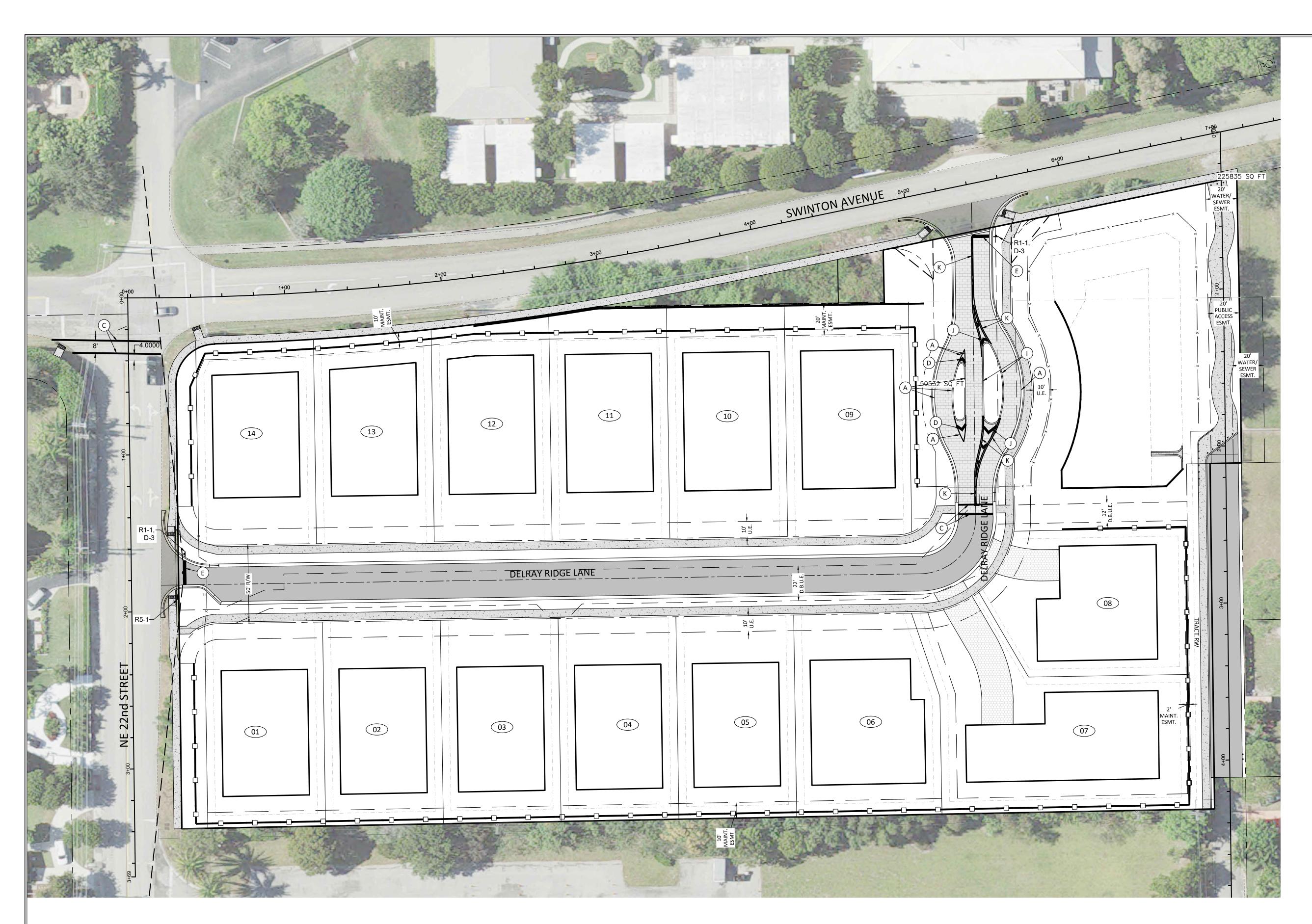


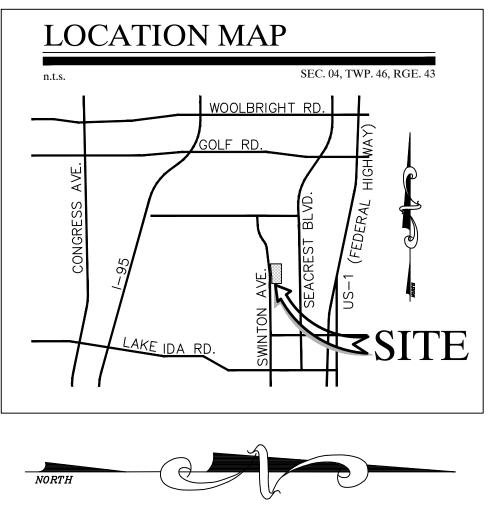


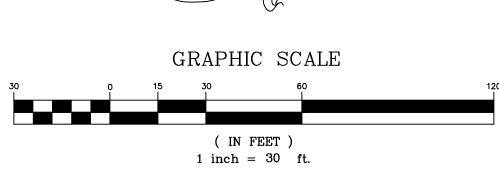
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RYAN D. WHEELER PROFESSIONAL ENGINEER ICENSE NO. 71477 STATE OF FLORIDA - FOR THE FIRM -







PAVEMENT MARKING LEGEND

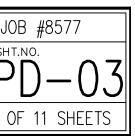
- E 24" SOLID WHITE
- H 6" WHITE SKIP (2'-4')
- J 18" SOLID YELLOW
- L 6" YELLOW SKIP (10'-30')
- N 6" YELLOW SKIP (2'- 4')
- P RPM BI-DIRECTIONAL AMBER/AMBER
- R FDP WHITE
- S FDP YELLOW



CONTRACTOR NOTE:
CONTRACTOR TO VERIFY DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION.

MIN. ROADWAY CROWN EL. = 16.70-FT (10yr-24hr PEAK STAGE = 15.19-FT)
MIN. PERIMETER BERM EL. = 16.52-FT (25yr-72hr PEAK STAGE = 16.52-FT)
MIN. FINISHED FLOOR EL. = 19.50-FT (100yr-72hr ZD PEAK STAGE = 18.53-FT)

ALL ELEVATIONS SHOWN IN NAVD88 UNLESS OTHERWISE NOTED CONVERSION: NAVD88 = NGVD - 1.53'



A - 6" SOLID WHITE B - 8" SOLID WHITE

C - 12" SOLID WHITE D - 18" SOLID WHITE

F - 6" WHITE - SKIP (10'-30')

G - 6" WHITE - SKIP (6'-10')

I - 6" SOLID YELLOW

K - 6" DOUBLE SOLID YELLOW

M - 6" YELLOW - SKIP (6'-10')

T - RPM BI-DIRECTIONAL WHITE/RED

U - RPM BI-DIRECTIONAL RED/YELLOW

F.B./ PG. N/A RYAN D. WHEELER

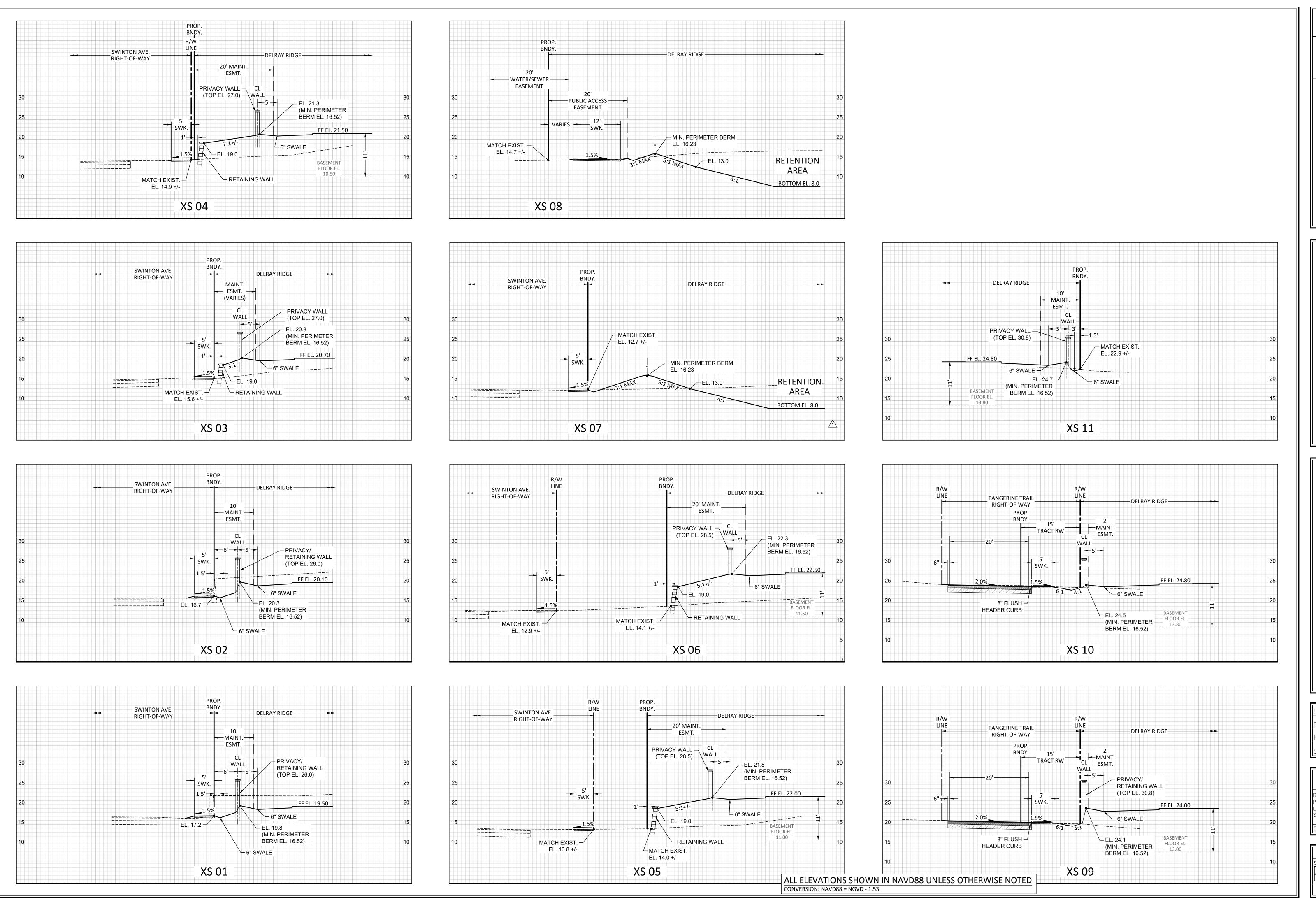
DATE 06/08/20

DRAWN BY RHT

RIDGE

DELRAY

PROFESSIONAL ENGINEER LICENSE NO. 71477 STATE OF FLORIDA – FOR THE FIRM – DATENov 24, 2021



REVISIONS
FILE NAME: 8577PD.DWG

REMOVED SWK. FROM TRACTS F, OS3 PER FSBP

01/15/2019

RHT

DATE

BY

CAULFIELD & WHEELER, INC.

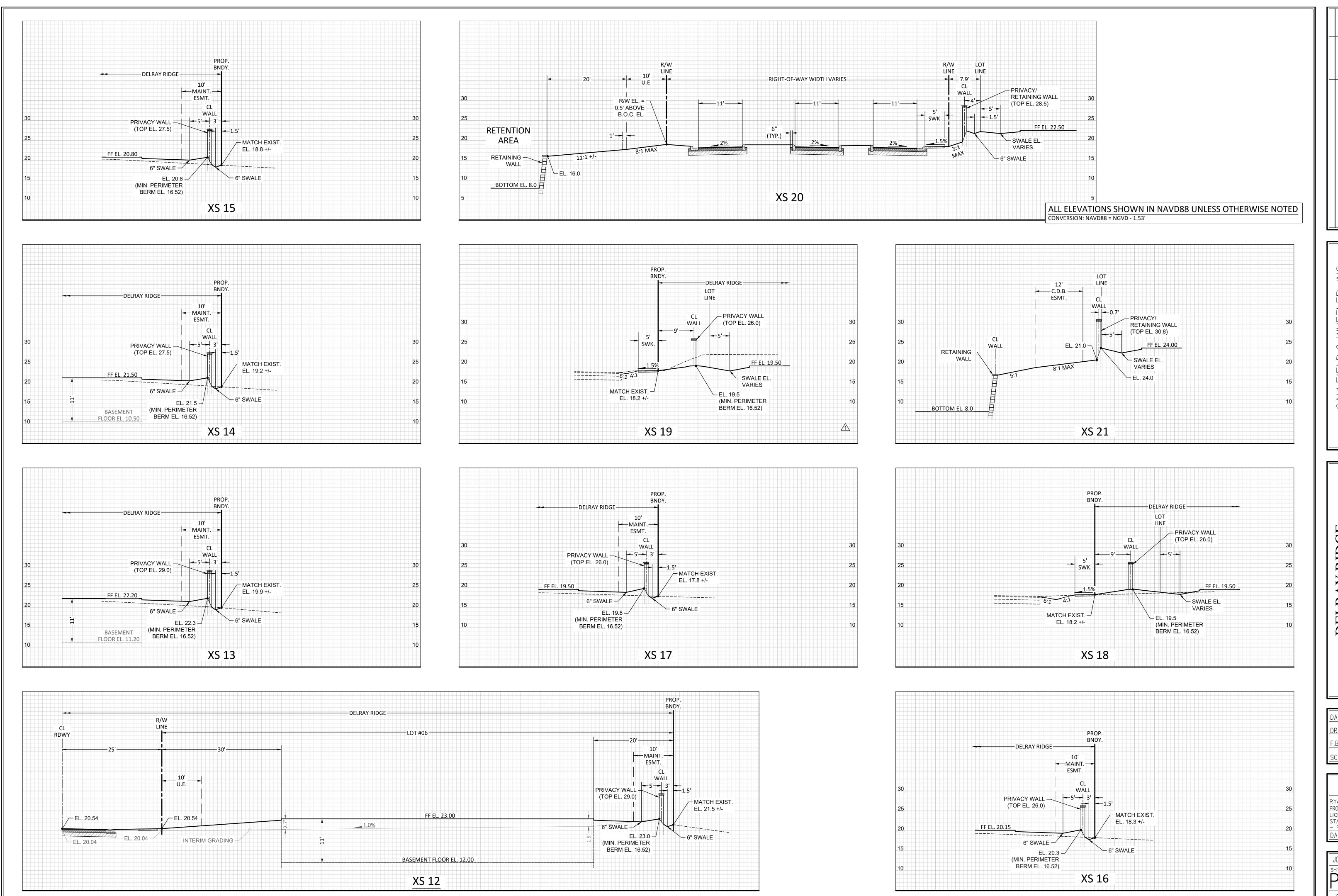
CIVIL ENGINEERING - LAND PLANNING
LANDSCAPE ARCHITECTURE - SURVEYING
7900 GLADES ROAD - SUITE 100
BOCA RATON, FLORIDA 33434
PHONE (561)-392-1991 / FAX (561)-750-1452

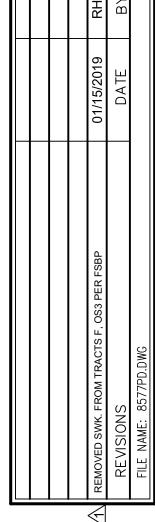
DELRAY RIDGE
ADING CROSS-SECTIONS

DATE 06/08/20
DRAWN BY RHT
F.B./ PG. N/A

RYAN D. WHEELER
PROFESSIONAL ENGINEER
LICENSE NO. 71477
STATE OF FLORIDA
– FOR THE FIRM –
DATENOV 24, 2021

JOB #8577
SHT.NO.
PD-04
OF 11 SHEETS





CAULFIELD & WHEELER, INC.

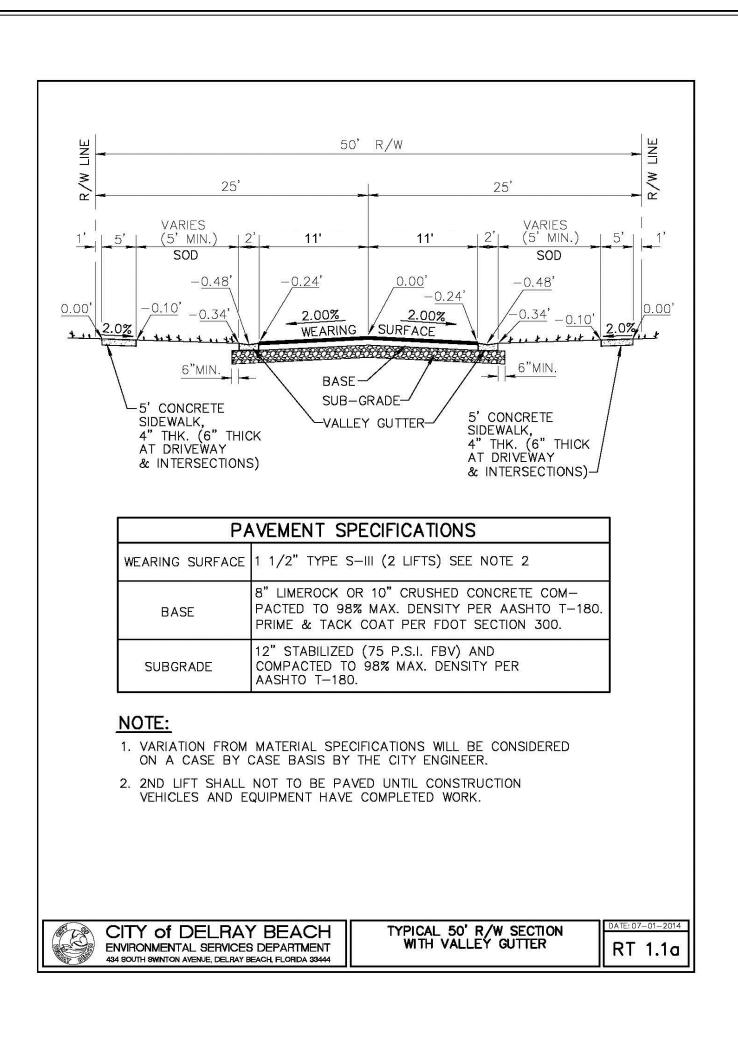
CIVIL ENGINEERING - LAND PLANNING
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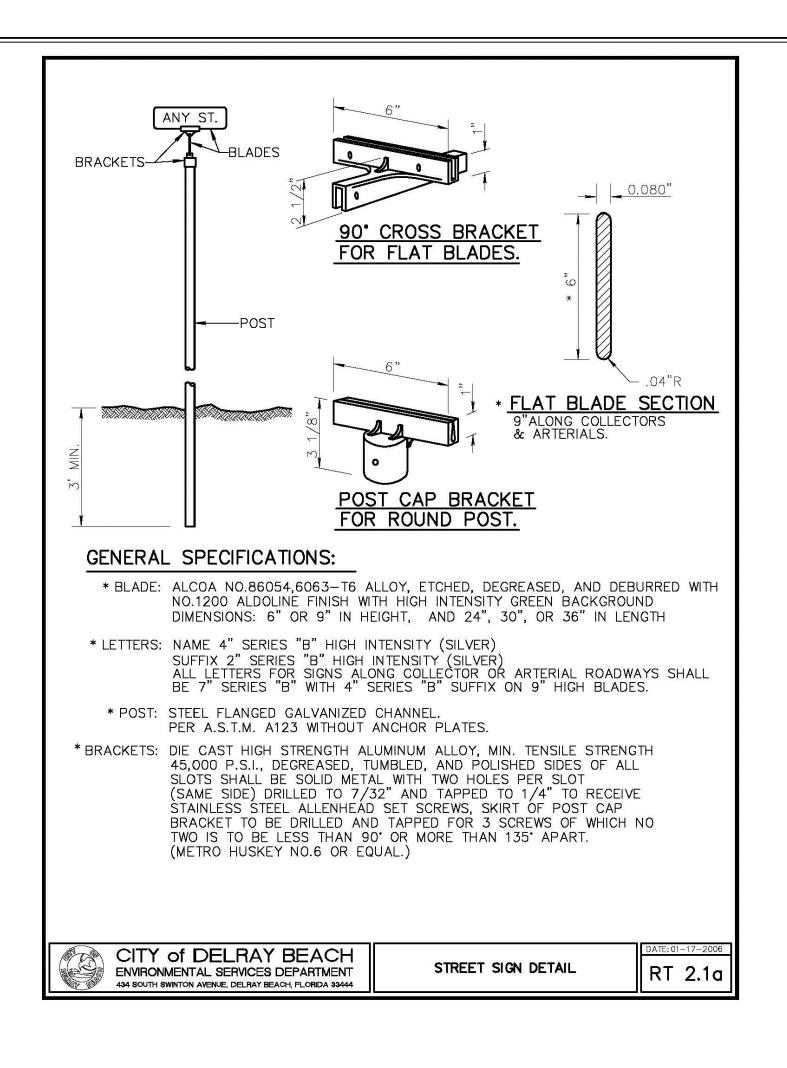
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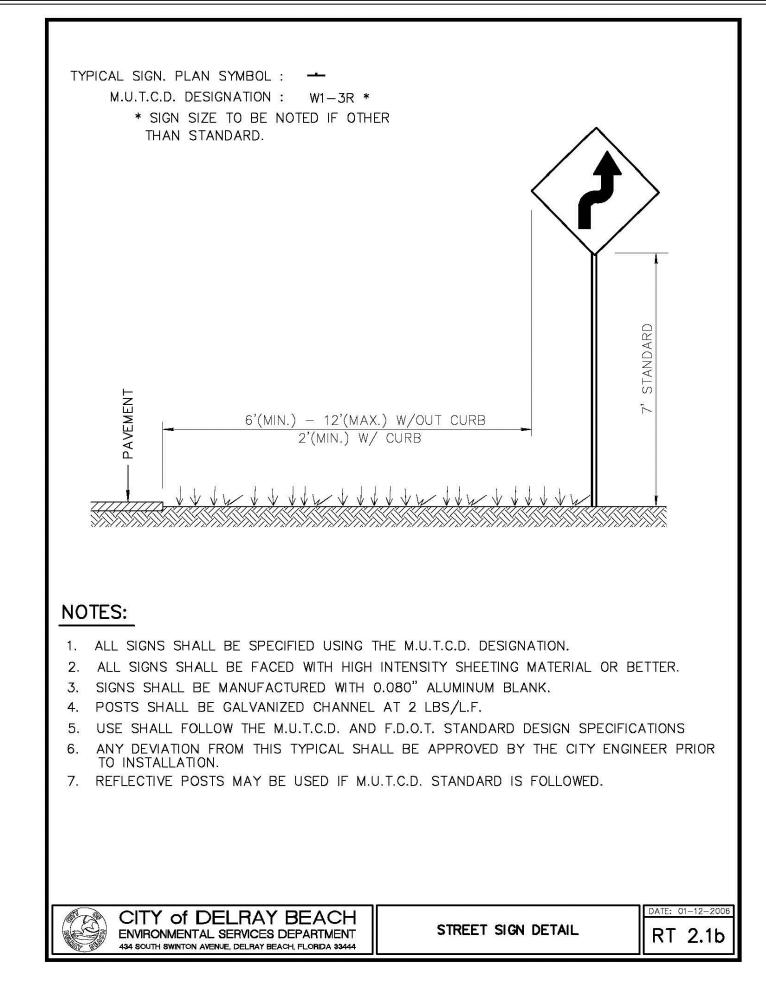
DATE 06/08/20
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SCALE N/A

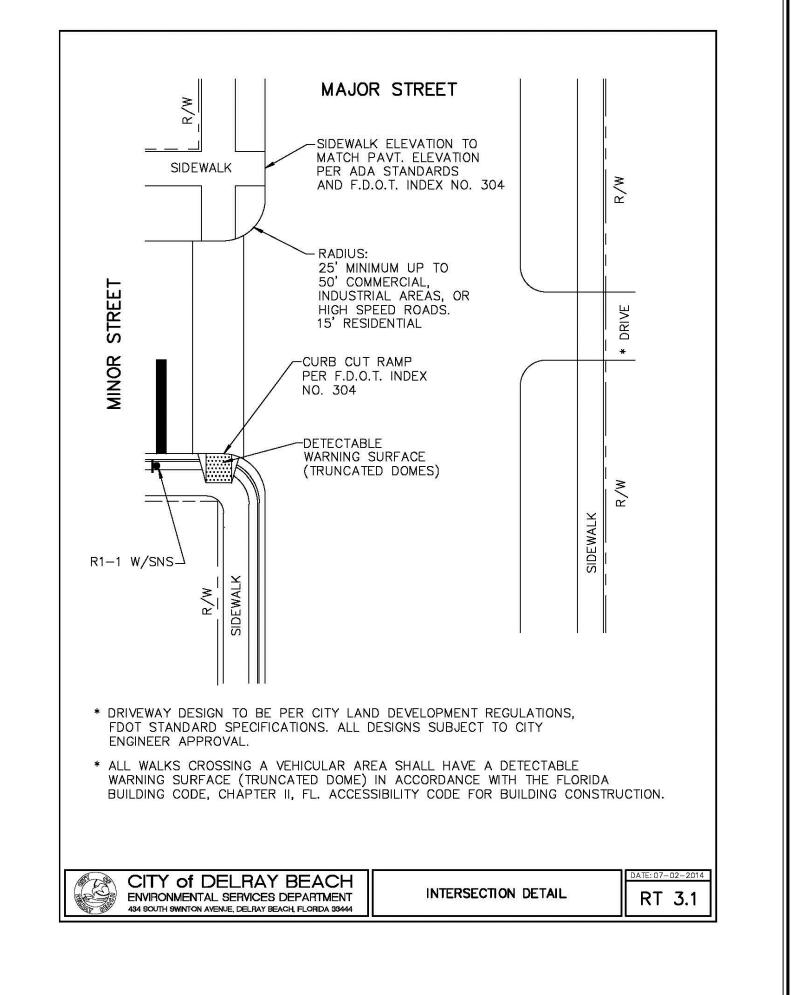
RYAN D. WHEELER
PROFESSIONAL ENGINEER
LICENSE NO. 71477
STATE OF FLORIDA
– FOR THE FIRM –
DATENOV 24, 2021

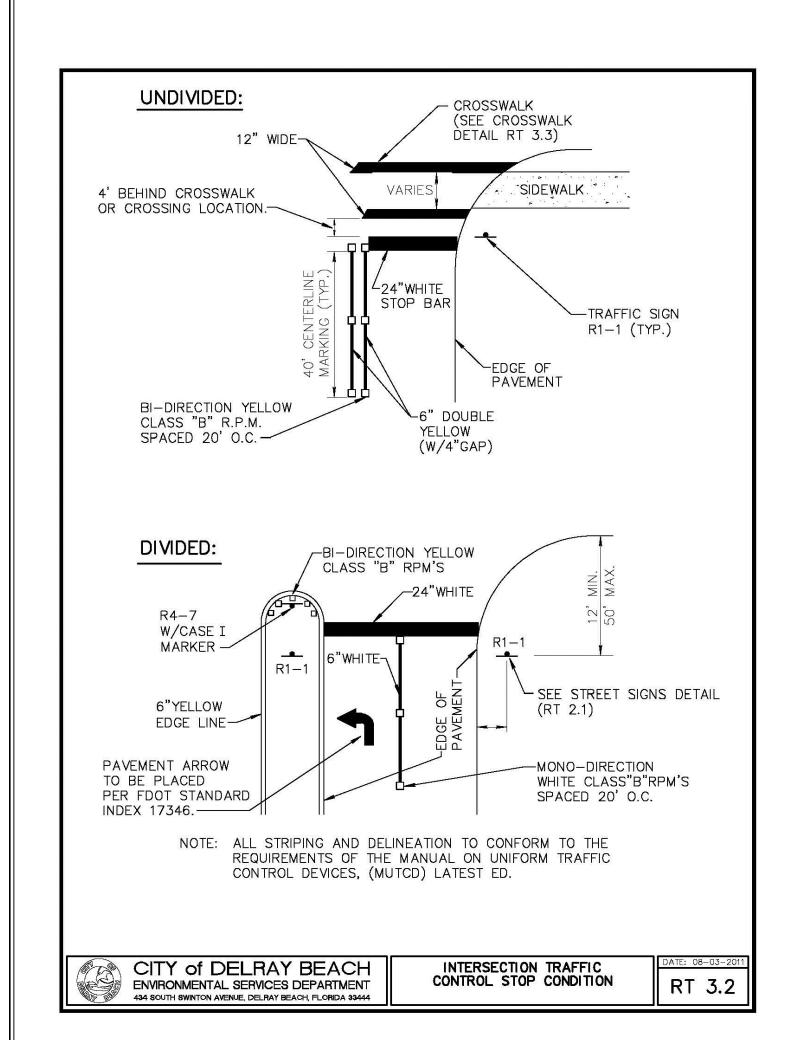
JOB #8577
SHT.NO.
PD-05
OF 11 SHEETS

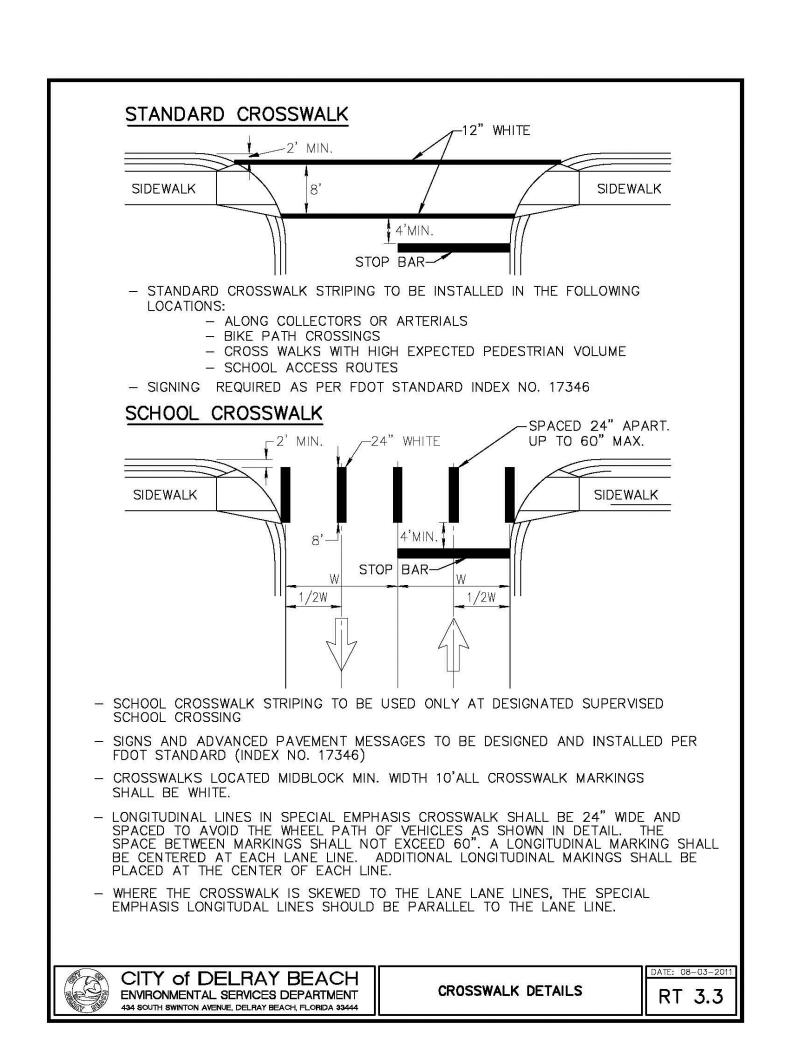


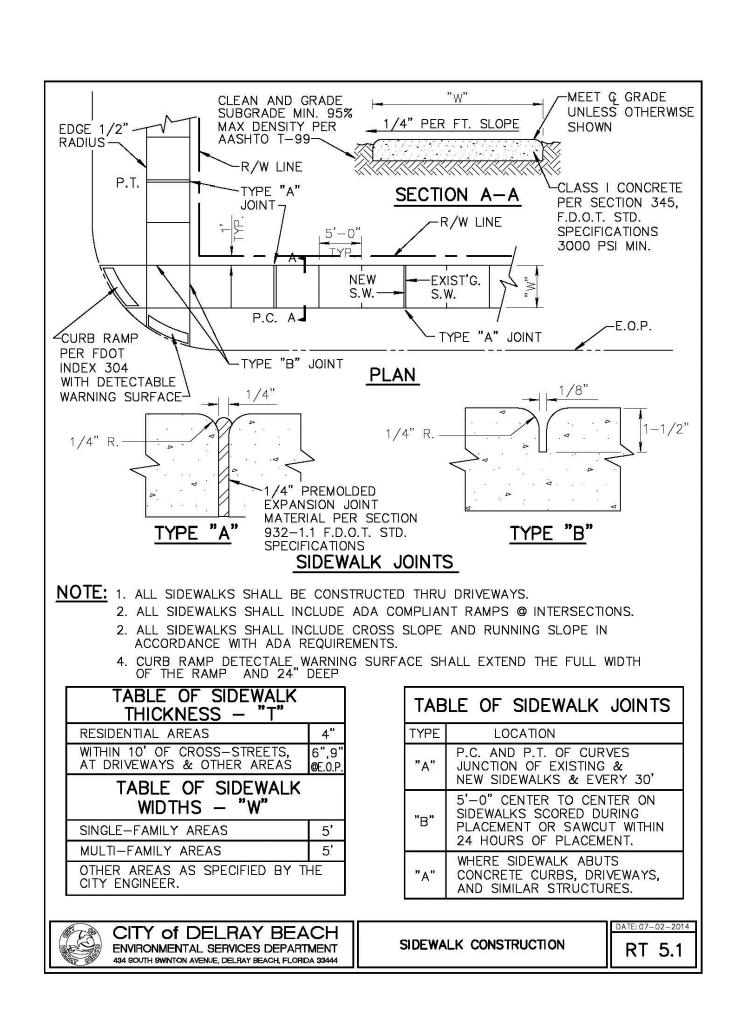


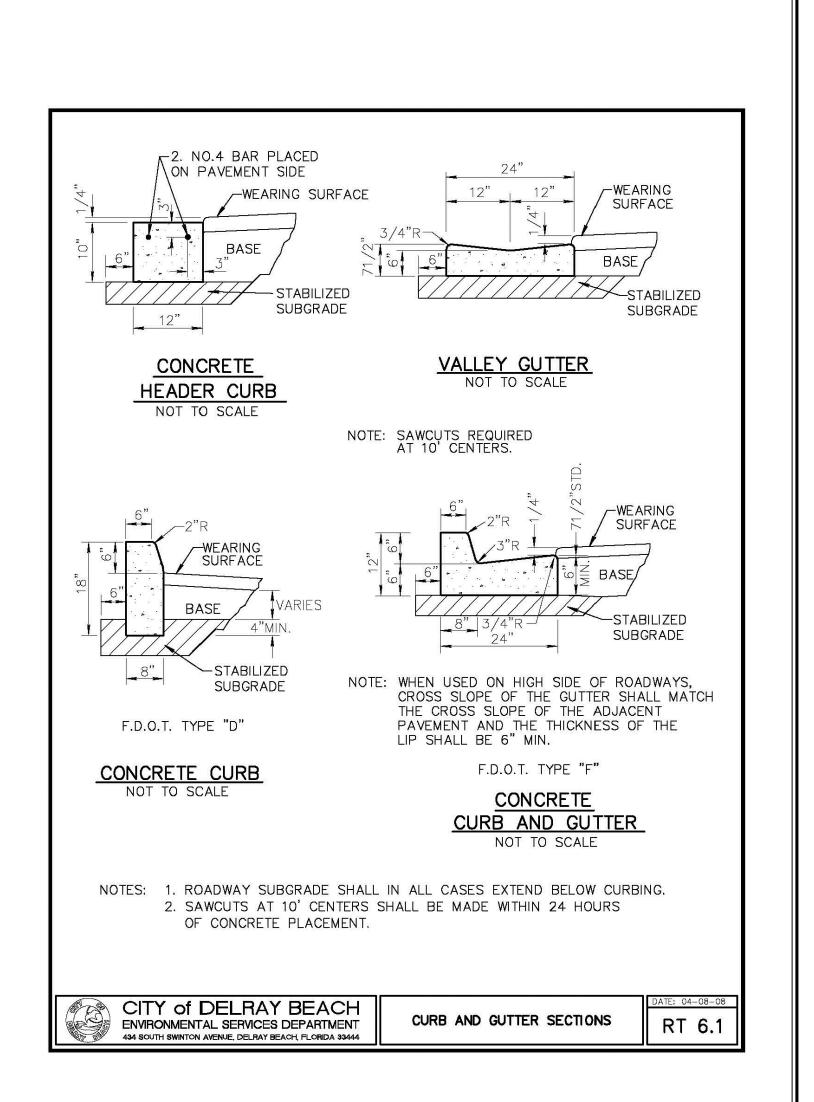


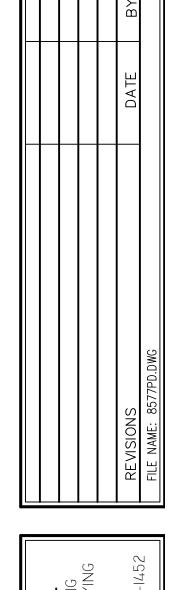












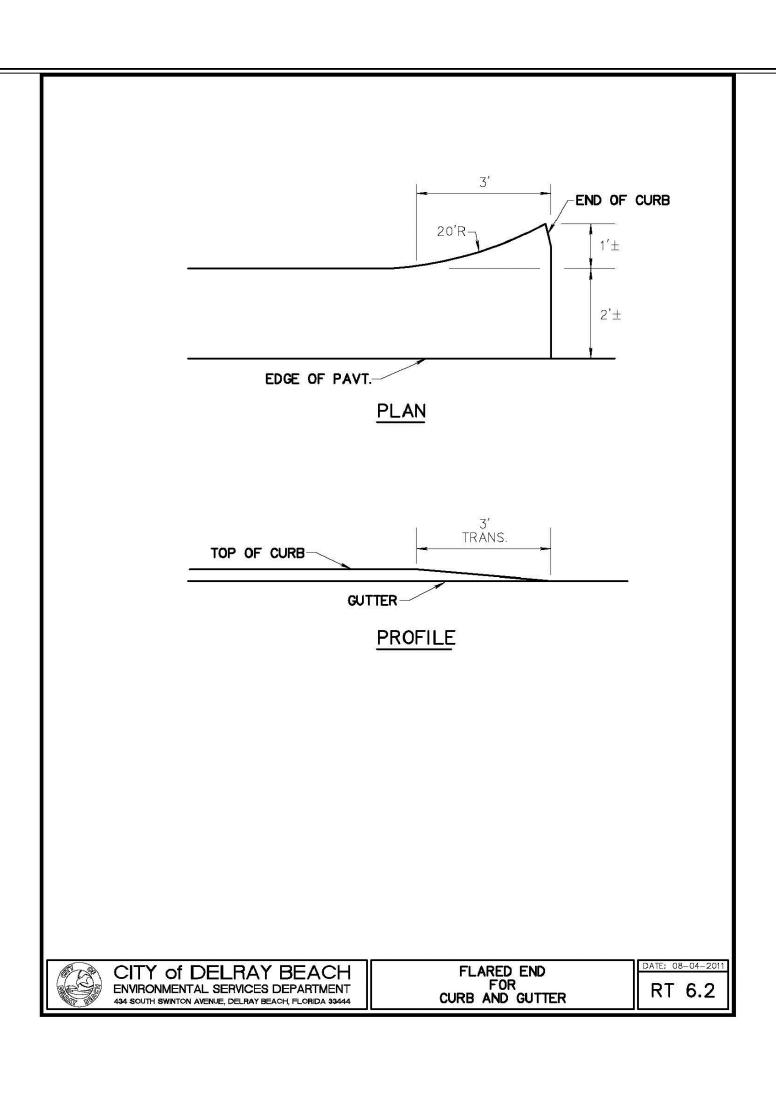
CAULFIELD & WHEELER, IN
CIVIL ENGINEERING - LAND PLAN
LANDSCAPE ARCHITECTURE - SUR
7900 GLADES ROAD - SUITE
BOCA RATON, FLORIDA 3343,
PHONE (561)-392-1991 / FAX (561)-

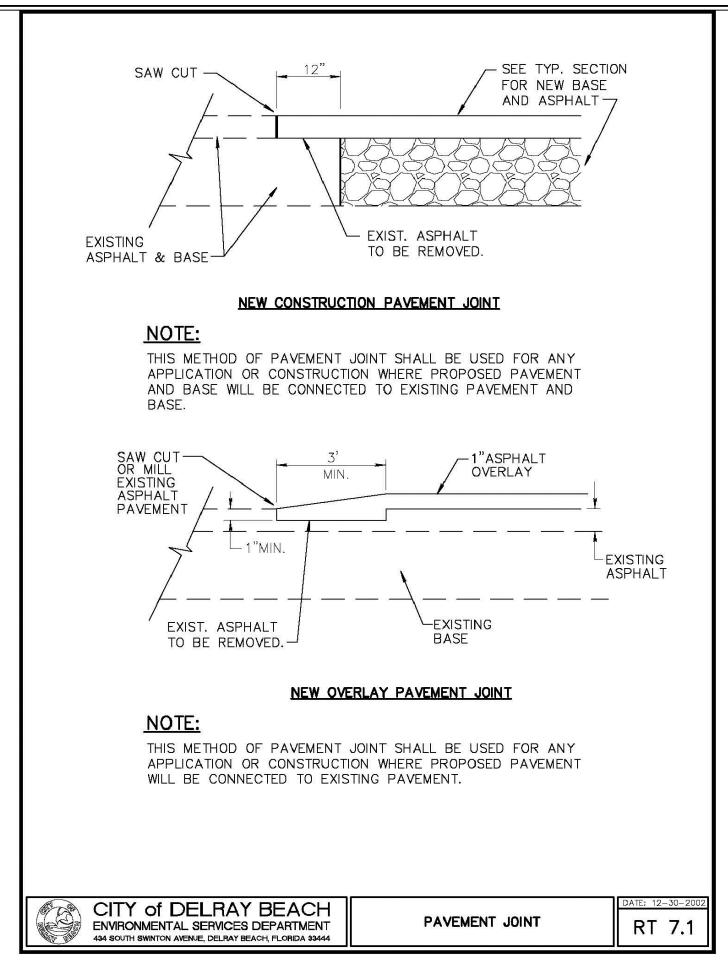
DELRAY RIDGE IG, GRADING, & DRAINAGE DETAILS

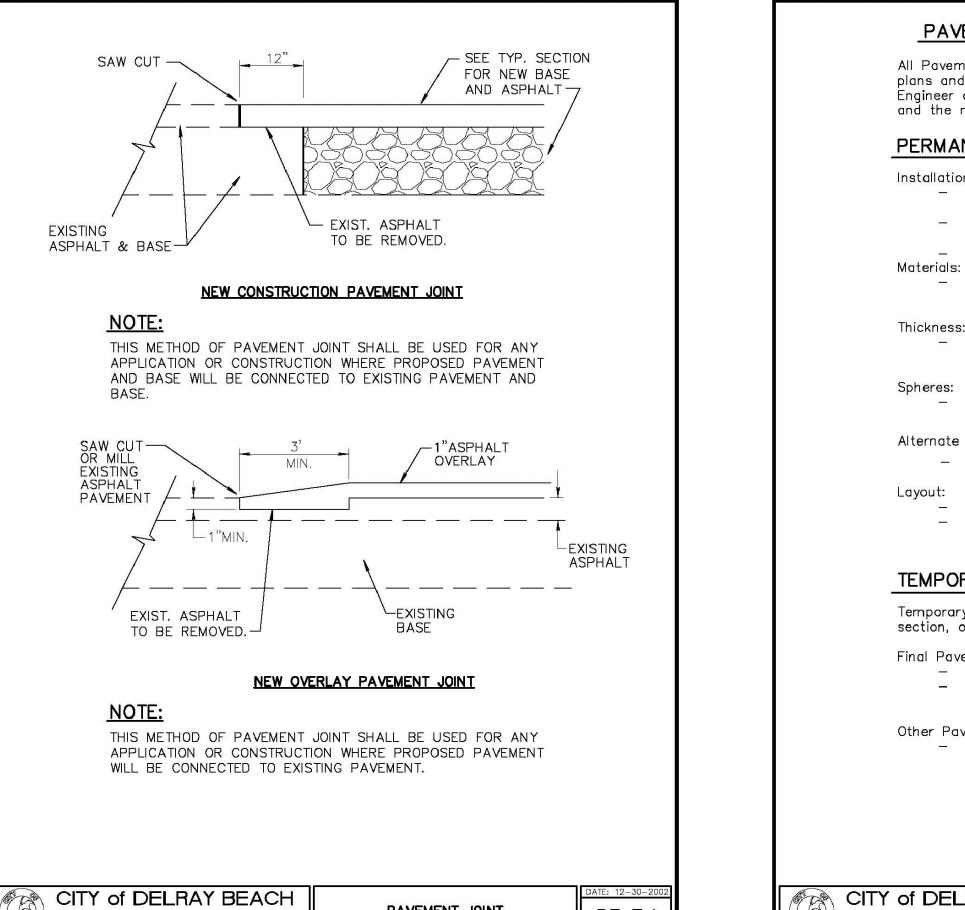
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F.B./ PG. N/A

RYAN D. WHEELER
PROFESSIONAL ENGINEER
LICENSE NO. 71477
STATE OF FLORIDA
– FOR THE FIRM –
DATENOV 24, 2021

JOB #8577
SHT.NO.
PD-06
OF 11 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
 - All materials shall be alkyd or hydrocarbon
 - thermoplastic meeting all FDOT specifications.

Thickness:

All markings shall be installed to yield 90 mils of material measured above the pavement surface.

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

TEMPORARY MARKINGS

final 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.

CITY of DELRAY BEACH ENVIRONMENTAL SERVICES DEPARTMENT

434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PAVEMENT MARKING SPECIFICATIONS DATE: 12-30-20 (SHEET 1 OF 2) RT 8.1a

CITY of DELRAY BEACH ENVIRONMENTAL SERVICES DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

ALL PAVEMENT MARKINGS

RAISED PAVEMENT MARKERS

hours of darkness.

OTHER NOTES

All paved surfaces shall be properly marked prior to the

centerlines, spaced at 20' or 40'.

by the City Engineer prior to use.

All Materials within right—of—way shall be

R.P.M.s shall be installed on all lane lines and

R.P.M.s shall be a 4 x 4 type class "B" marker meeting F.D.O.T. specifications and shall be approved

R.P.M.'s shall be installed using alkyd thermoplastic on asphalt and epoxy on concrete.

thermoplastic and per F.D.O.T. specifications.

Pavement marking within private parking lots may

for all stop bars adjacent to public rifqt-of-way.

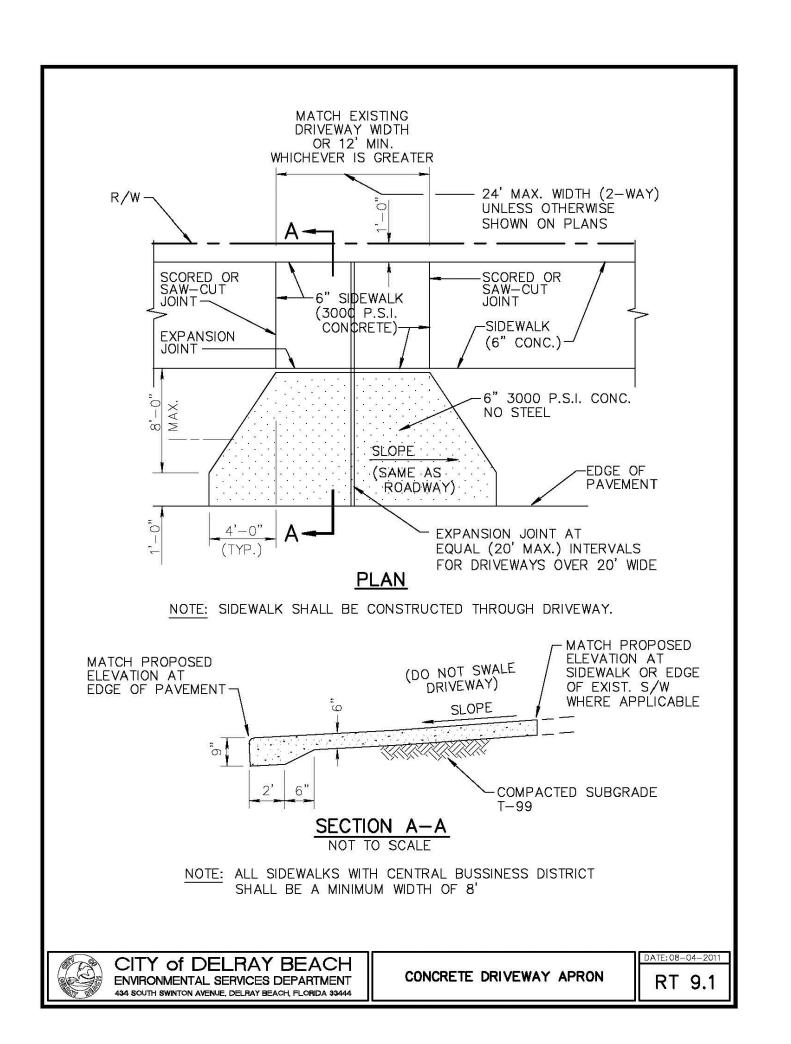
be painted according to F.D.O.T. specifications, except

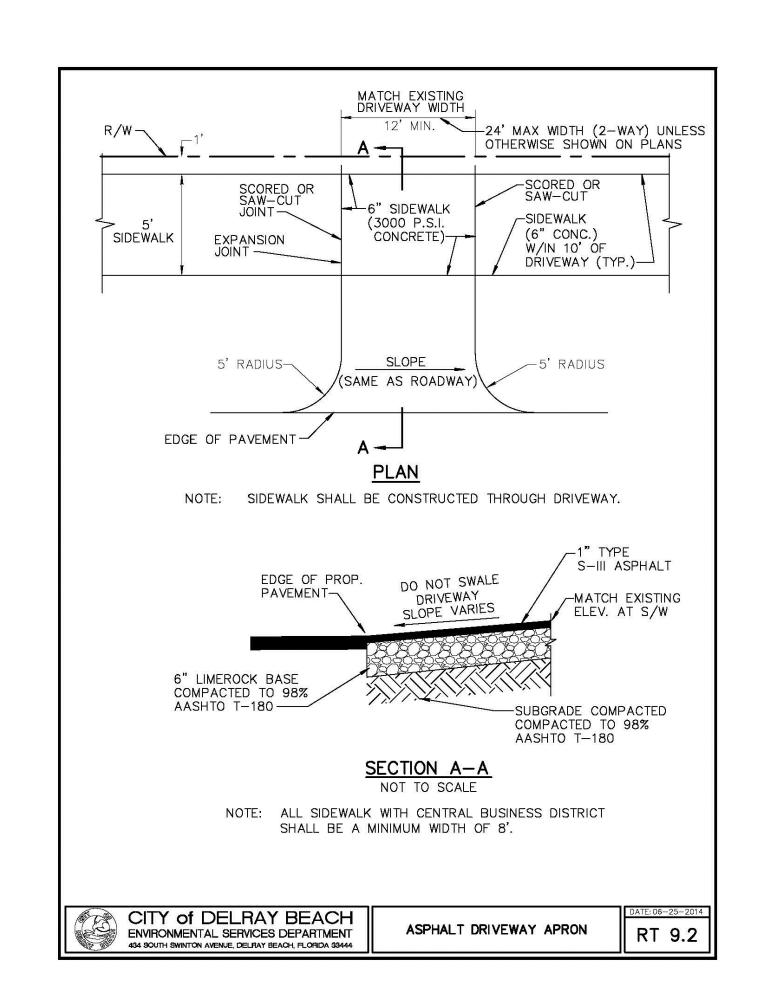
PAVEMENT MARKING SPECIFICATIONS (SHEET 2 OF 2)

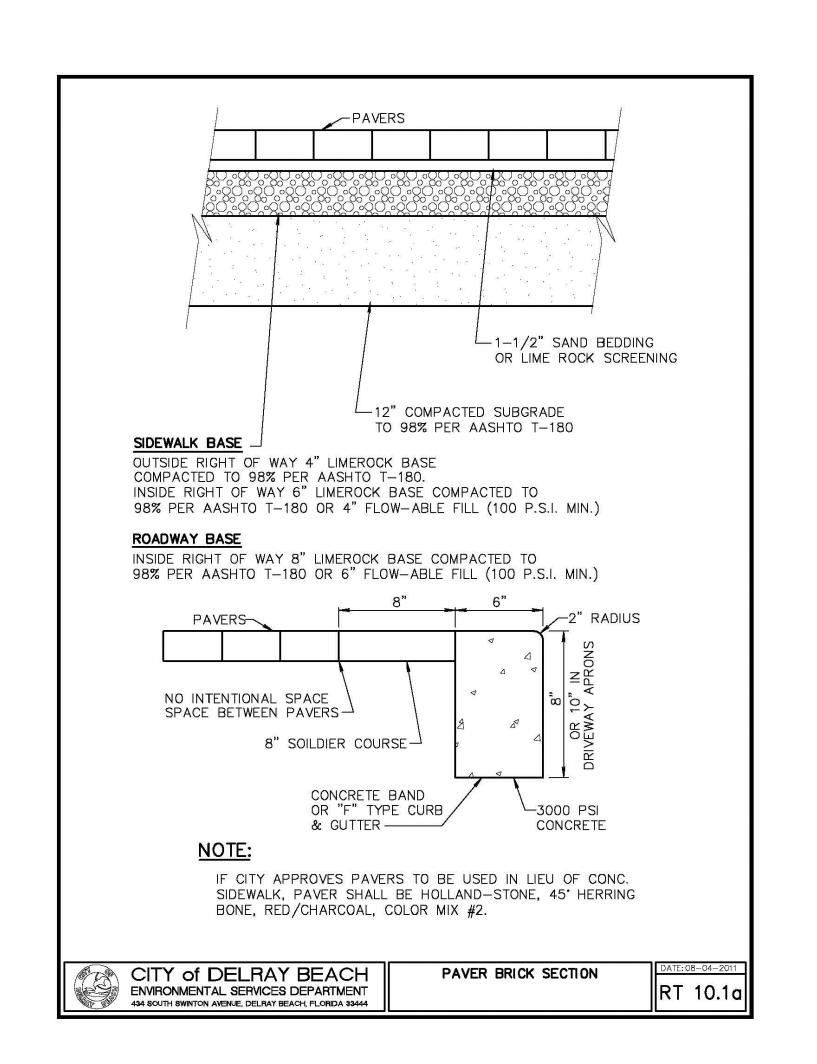
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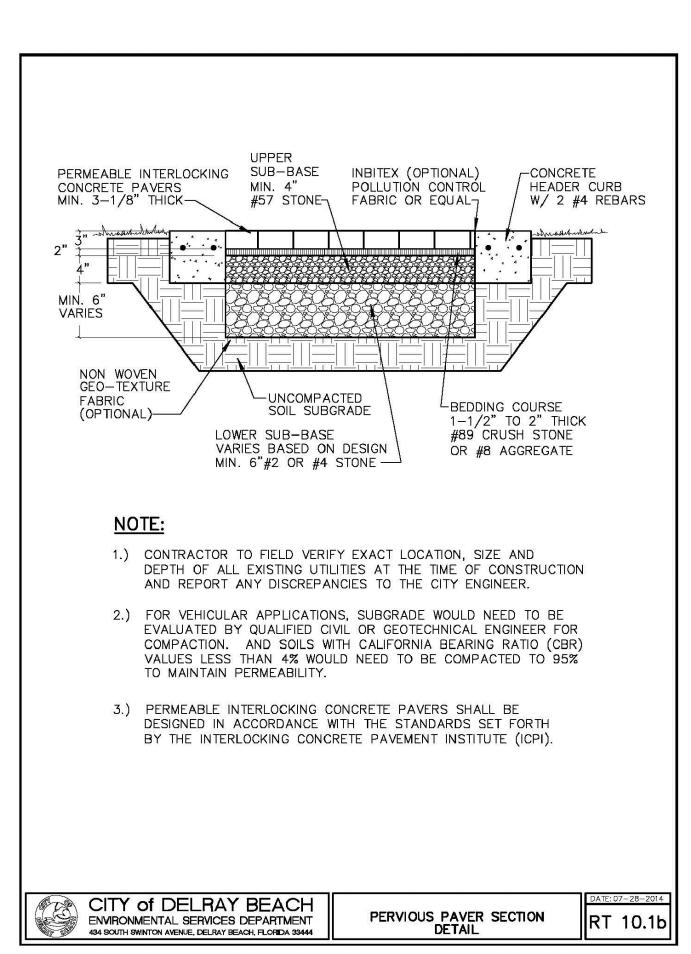
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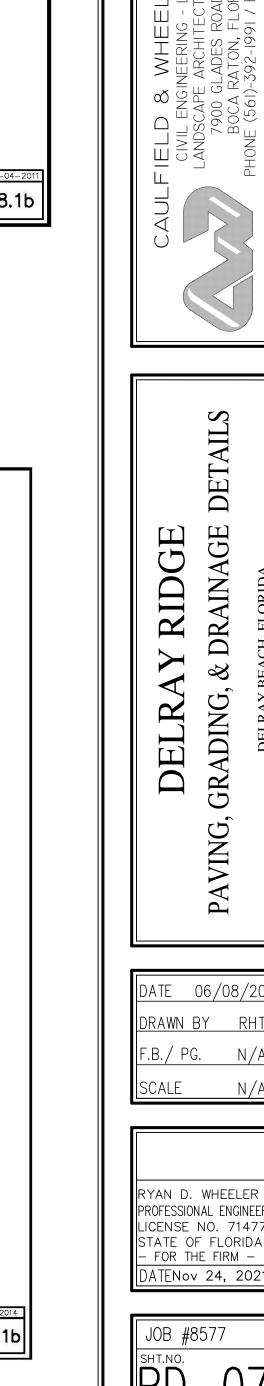
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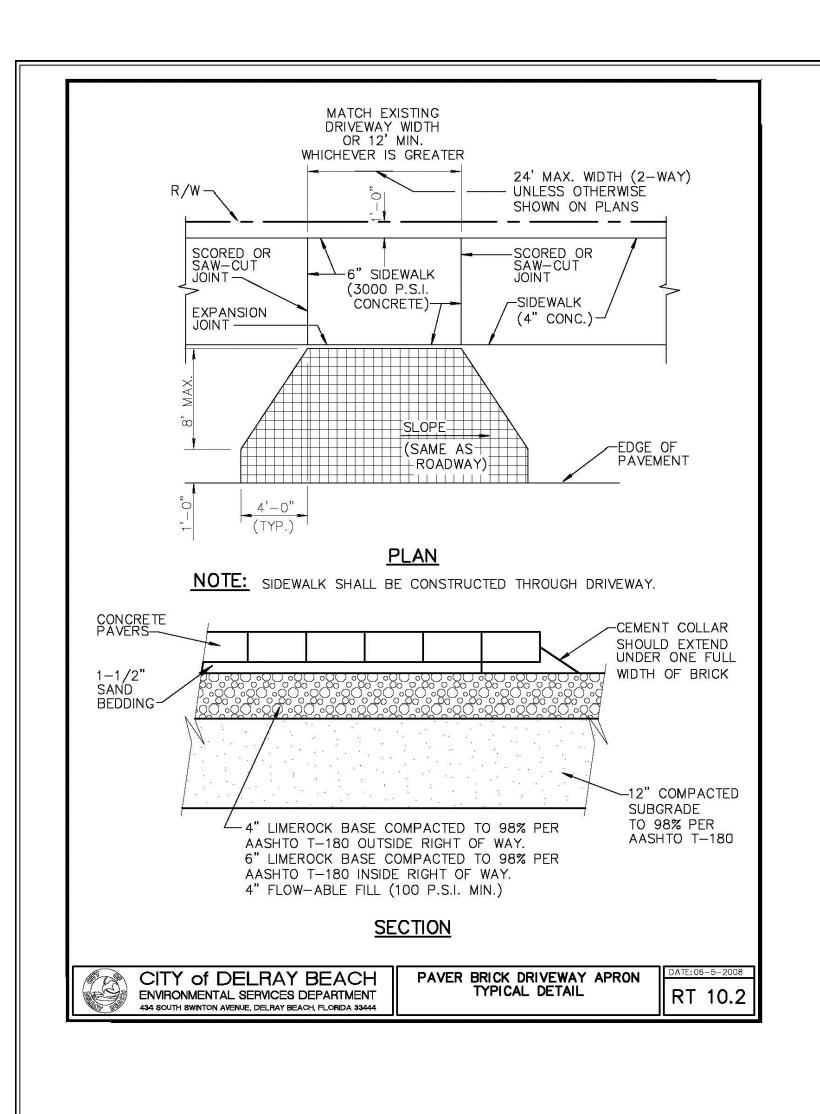


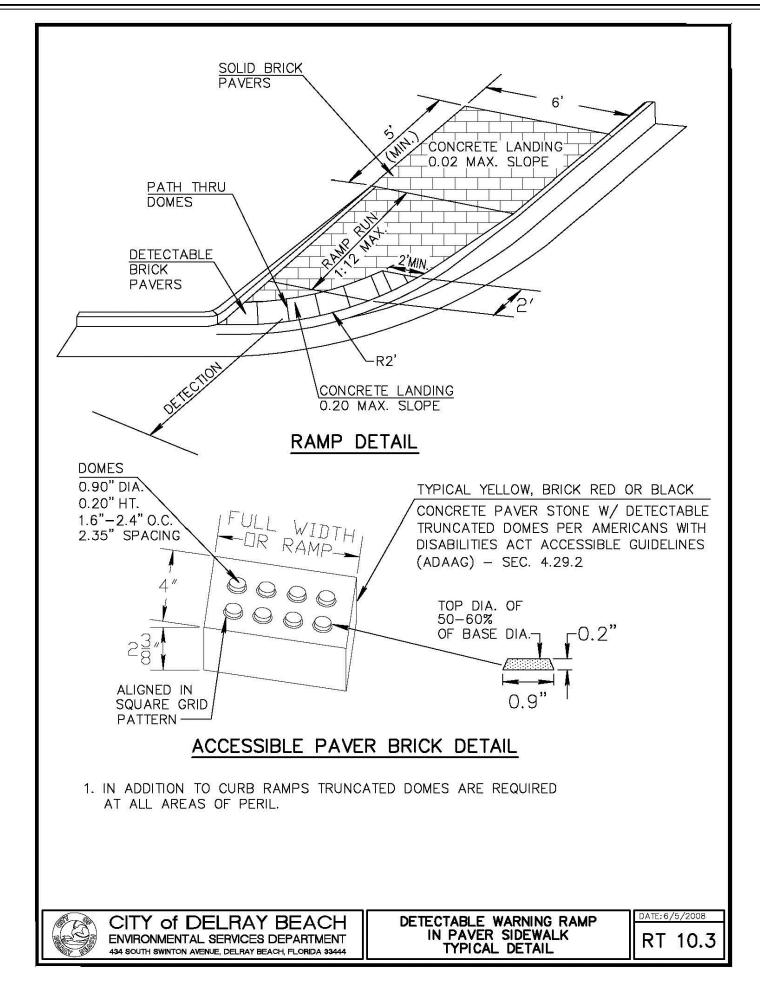


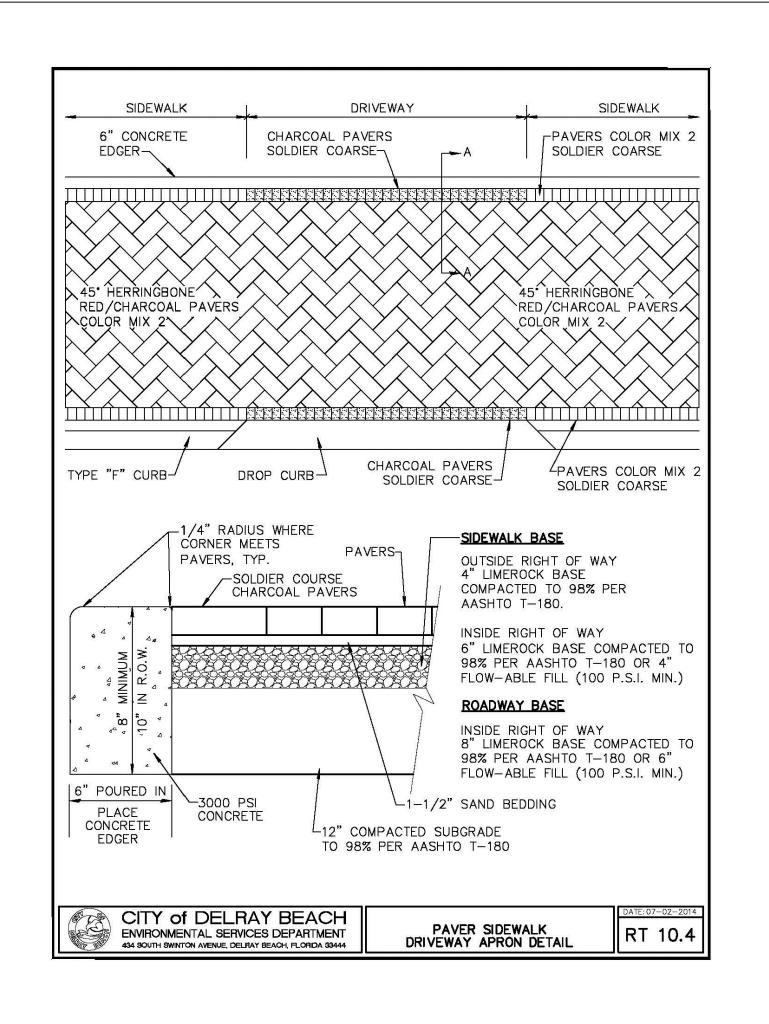


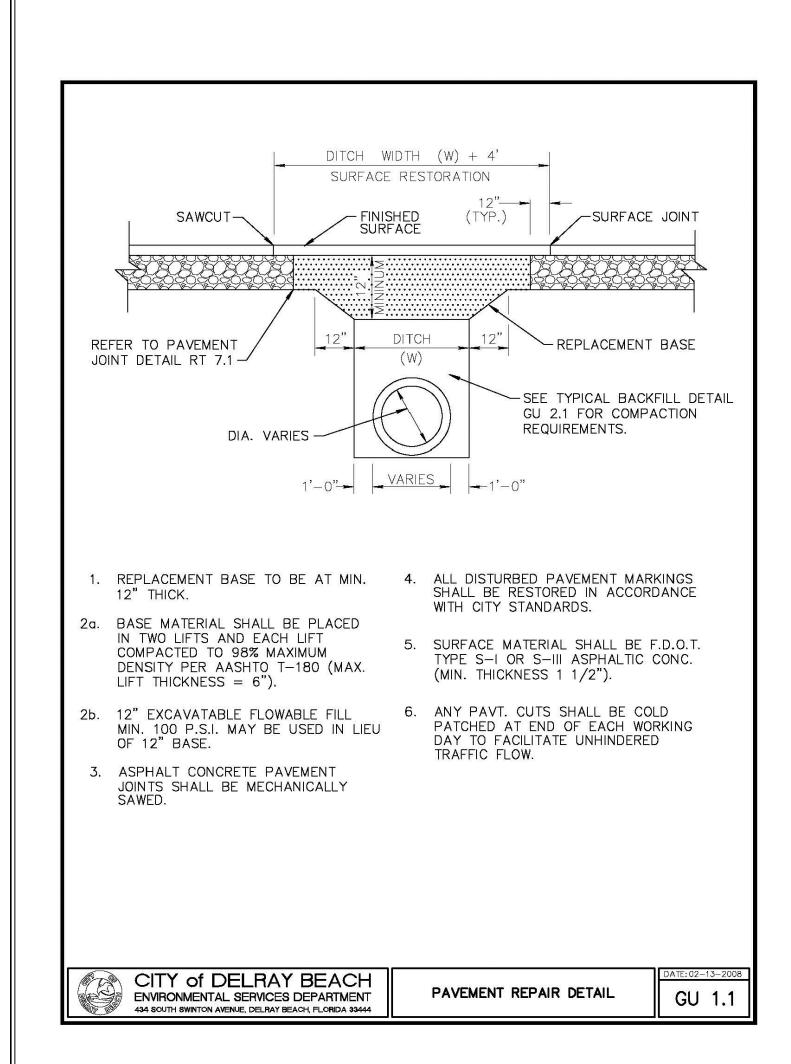


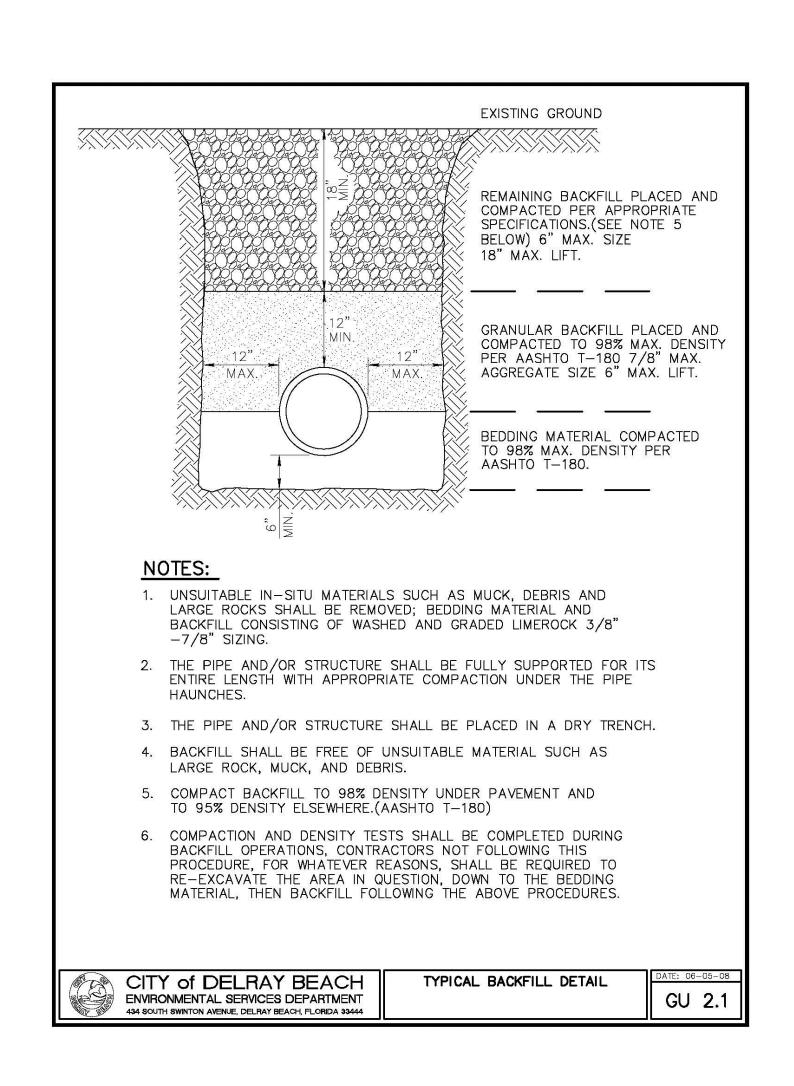
RYAN D. WHEELER PROFESSIONAL ENGINEER ICENSE NO. 71477

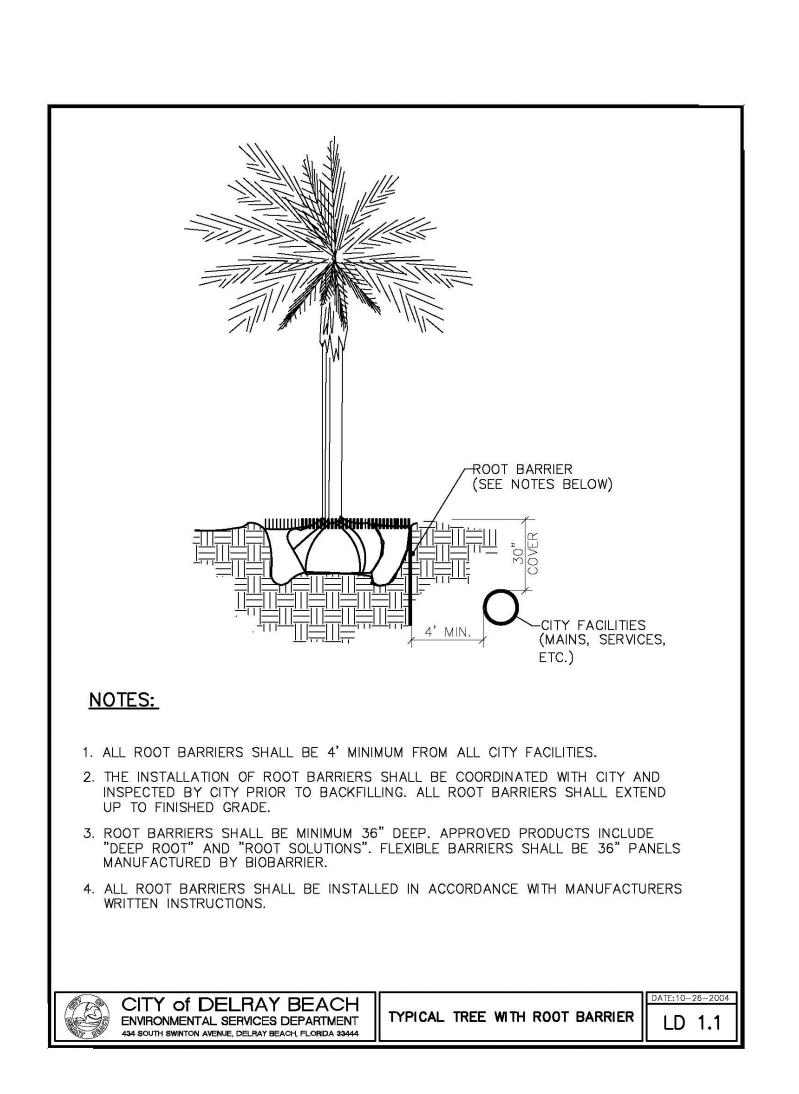


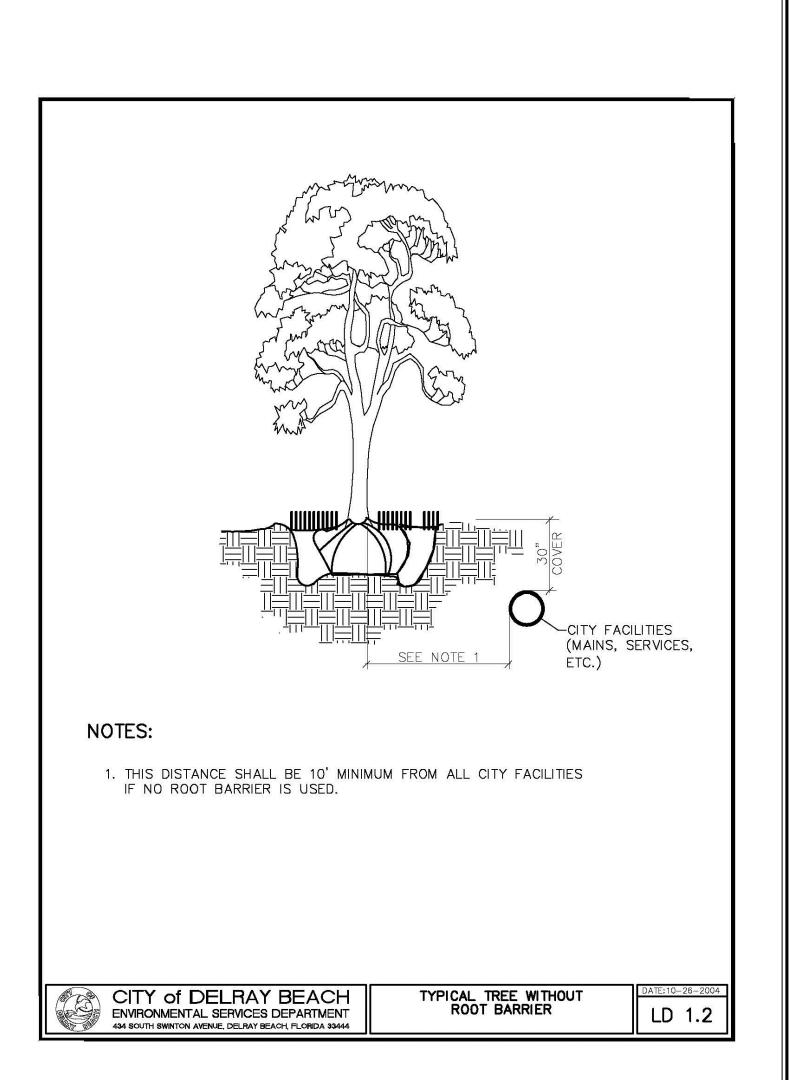


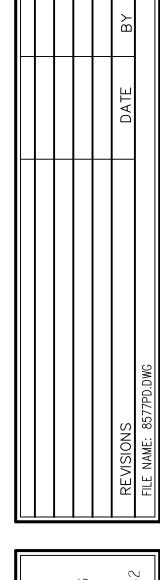












CAULFIELD & WHEELER, INC.

CIVIL ENGINEERING - LAND PLANNING
LANDSCAPE ARCHITECTURE - SURVEYING
7900 GLADES ROAD - SUITE 100
BOCA RATON, FLORIDA 33434
PHONE (561)-392-1991 / FAX (561)-750-1452

DELRAY RIDGE
AVING, GRADING, & DRAINAGE DETAILS

DATE 06/08/20
DRAWN BY RHT
F.B./ PG. N/A
SCALE N/A

RYAN D. WHEELER
PROFESSIONAL ENGINEER
LICENSE NO. 71477
STATE OF FLORIDA
– FOR THE FIRM –
DATENOV 24, 2021

JOB #8577
SHT.NO.
PD-08
OF 11 SHEETS

GENERAL NOTES PAVING, GRADING & DRAINAGE

- 1. 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 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 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.
- 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 TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND PALM BEACH COUNTY TYPICAL NO. T-P-18.
- 6. ALL LOTS, ROADWAYS AND BORROW AREAS SHALL BE STRIPPED OF ALL DELETERIOUS (UNSUITABLE) MATERIALS AND MATERIALS SHALL BE DISPOSED WITHIN THE SITE.
- 7. 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.
- 8. 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. THE MUCK AND GUMBO SHOULD BE REMOVED IN THE AREA OF AND WITHIN 10 FEET OF PROPOSED PAVEMENT OR FOUNDATION AREAS.
- 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. 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 LEFT 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 ENGINEER.

SUB-GRADE:

- 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.

- 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%. B. LIMEROCK BEARING RATIO TEST TO DETERMINE THAT MATERIAL 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.
- 27. 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 SQ.FT. OF PROPOSED PAVEMENT TO DETERMINE COMPLIANCE WITH THE DESIGN SPECIFICATIONS OF 98% OF MAX. DENSITY PER AASHTO T-180 TESTING METHODS.
- 28. 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.

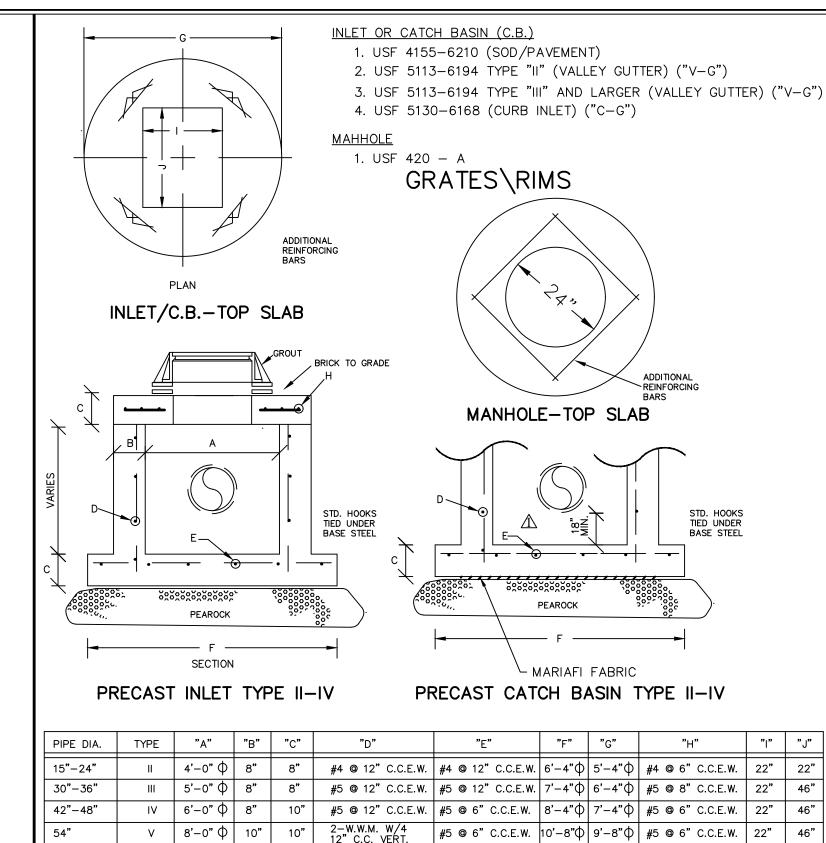
ASPHALTIC CONCRETE SURFACE COURSE:

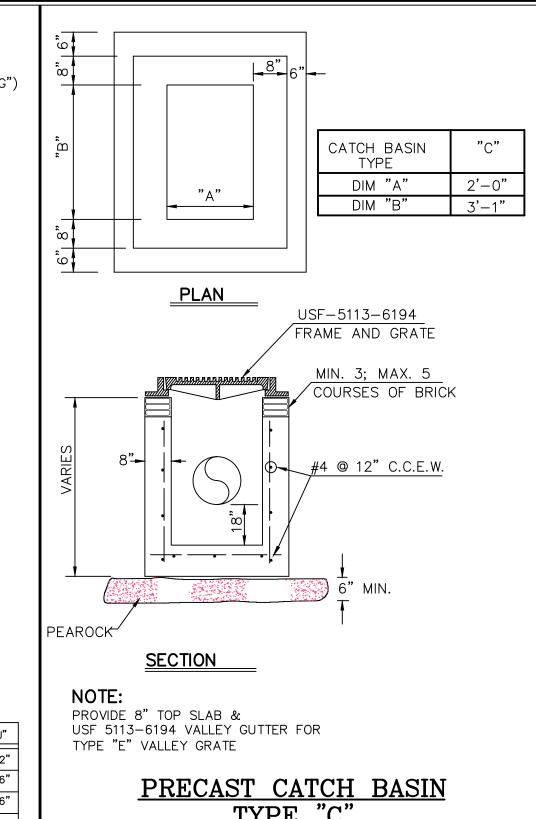
- 29. TACK COAT A. PRIOR TO INSTALLATION OF THE OVERLAY, THE SURFACE OF THE EXISTING ASPHALT SHALL BE BROOMED TO REMOVE ALL LOOSE MATERIAL WHICH MIGHT INTERFERE WITH THE ADHESION OF THE EXISTING ASPHALT AND OVERLAY. B. A TACK COAT SHALL BE APPLIED TO THE TOP OF THE CLEAN ASPHALT SURFACE AT A RATE OF 0.10 GALLONS/SQ.FT. IN THE PRESENCE OF THE ENGINEER'S REPRESENTATIVE.
- 30. 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.
- 31. 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.
- 32. THE TEMPERATURE OF THE ASPHALT SHALL BE AT LEAST 230 DEGREES F. DURING THE LAYING OPERATION.
- 33. 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).
- 34. 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.
- 35. 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.
- 36. 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.

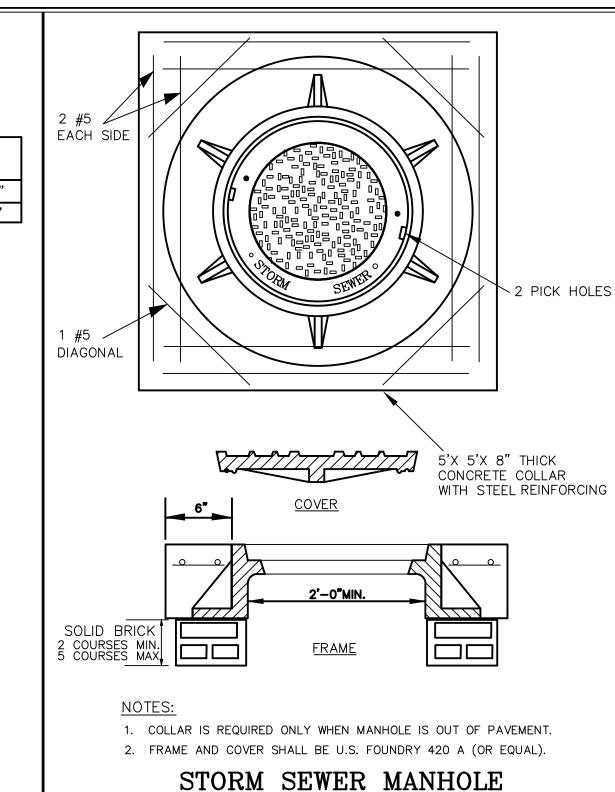
NOTIFICATION. TESTING

- 37. 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.
- 38. 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.
- 39. 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.

- 40. 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.
- 41. 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.







TYPE "C"

FRAME AND COVER

-ELEVATIONS SHOWN ARE IN NAVD 88 DATUM

-ALL DRAINAGE SYSTEMS SHALL BE PUMPED COMPLETELY DRY AND LAMPED AS A REQUIREMENT OF THE FINAL DRAINAGE INSPECTIONS.

> Pavement marking and geometric shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways", and "Palm Beach County" typical No. T-P-18 (Or latest version).

PERMANENT MARKINGS

- All markings shall be installed by the extruded method. - Markings shall be free of weaves, bows, drips, drags, and
- other degrading items. Chalk shall be used for all layout markings

 All materials shall be alkyd thermoplastic meeting all State specifications.

Thickness:

- All markings shall be installed to yield 90 mils of material measured above the pavement surface.

 Reflective beads are to be installed per FDOT specifications on all markings.

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 Palm Beach County Engineer.

Final Pavement Surface:

Only foil backed marking tape is allowed.

marking placement.

- All tape shall be totally removed concurrent with permanent

Other Pavement Surfaces: Intermediate pavement surfaces may be marked with FDOT

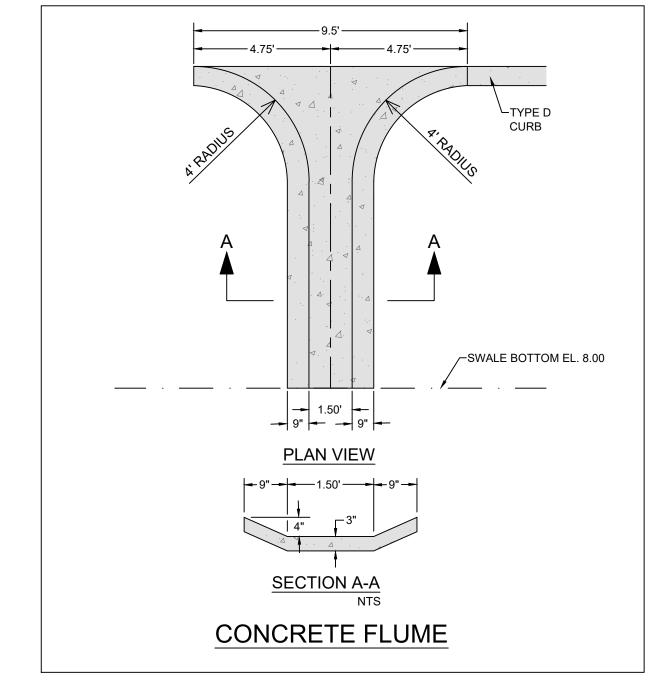
approved materials, designs, and specifications.

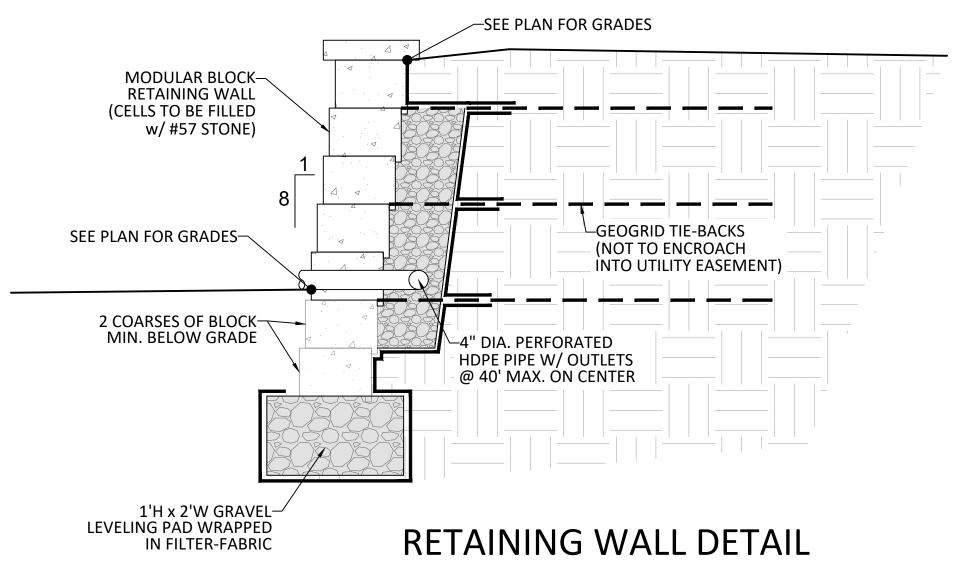
ALL PAVEMENT MARKINGS

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 FDOT specifications and shall be approved by the Engineer prior to
- R.P.M.'s shall be installed using alkyd thermoplastic on asphalt and epoxy on concrete.







DET

DATE 06/08/2 DRAWN BY RH .B./ PG.

RYAN D. WHEELER PROFESSIONAL ENGINEE LICENSE NO. 71477 STATE OF FLORIDA - FOR THE FIRM -DATENov 24, 202

JOB #8577

I. 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.

II. MATERIALS:

2.1. SOLID CONCRETE INTERLOCKING PAVING STONES:

A. Thickness, Color and Pattern:

- 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
- 3. A multi-colored paving stone pattern shall be used

B. Cementitious Materials:

1. Portland cements shall conform to ASTM C-150.

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 not be less than 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. 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 shall be rejected.

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 stone installer.

2.3 EDGE RESTRAINT:

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 $\frac{1}{4}$ ".

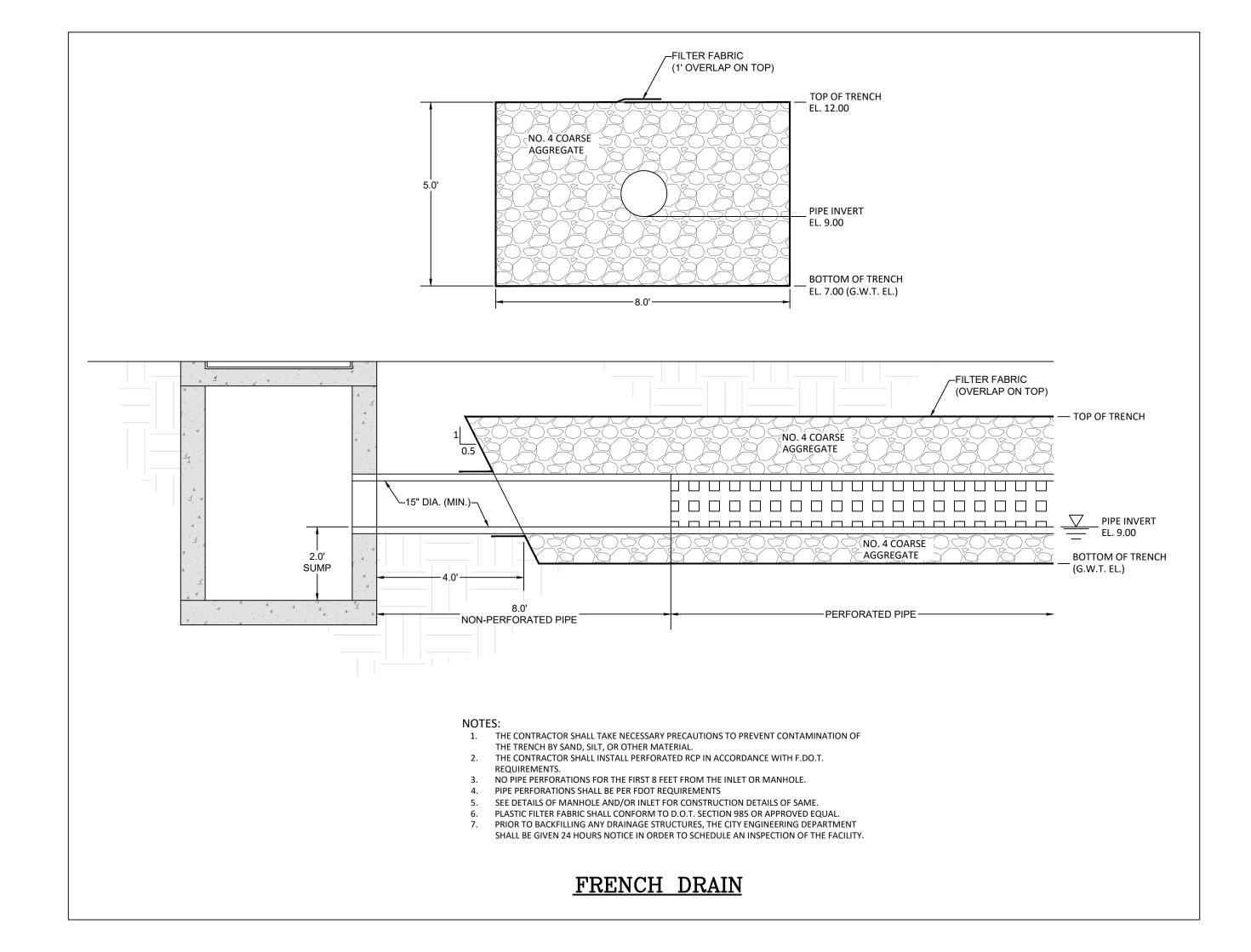
3.2 CONSTRUCTION OF THE BEDDING COURSE:

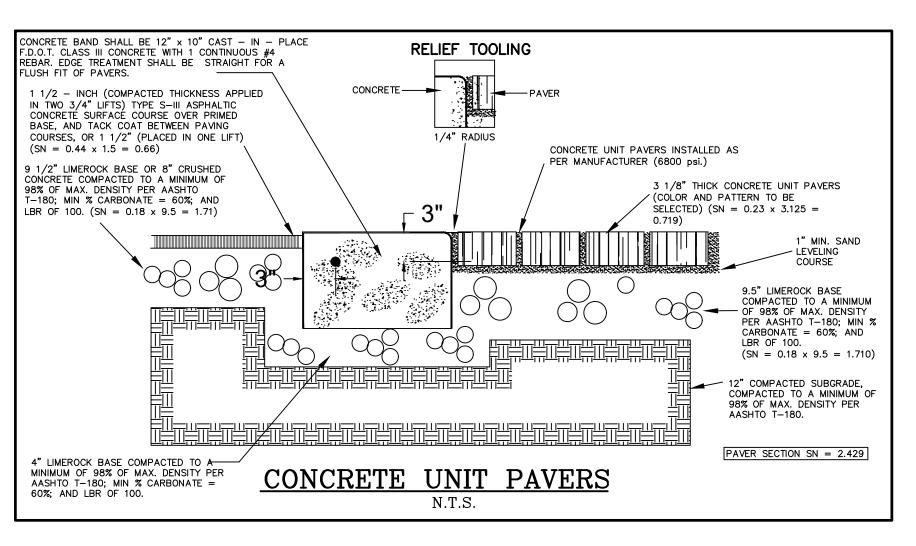
A. The finished base course shall be approved before the placement of the bedding course.

- 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 $\frac{1}{4}$ " to $\frac{3}{8}$ " 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.
- 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.
- 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 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 971-14 with retroflectivity to be not less than 300 minicandles.
- 3. 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.

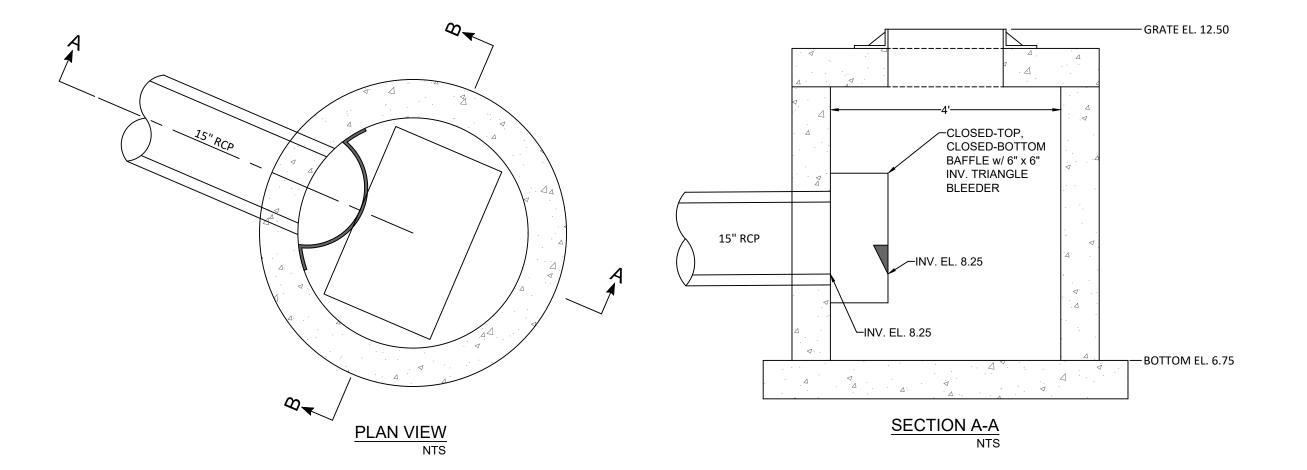


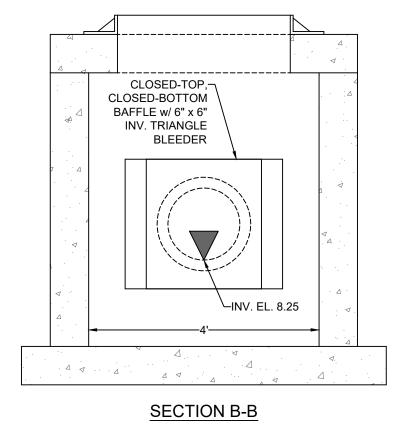


NOTES:

-ELEVATIONS SHOWN ARE IN NAVD 88 DATUM

-ALL DRAINAGE SYSTEMS SHALL BE PUMPED COMPLETELY DRY AND LAMPED AS A REQUIREMENT OF THE FINAL DRAINAGE INSPECTIONS.





CONTROL STRUCTURE (D-11) DETAILS

DET X ADING, DE

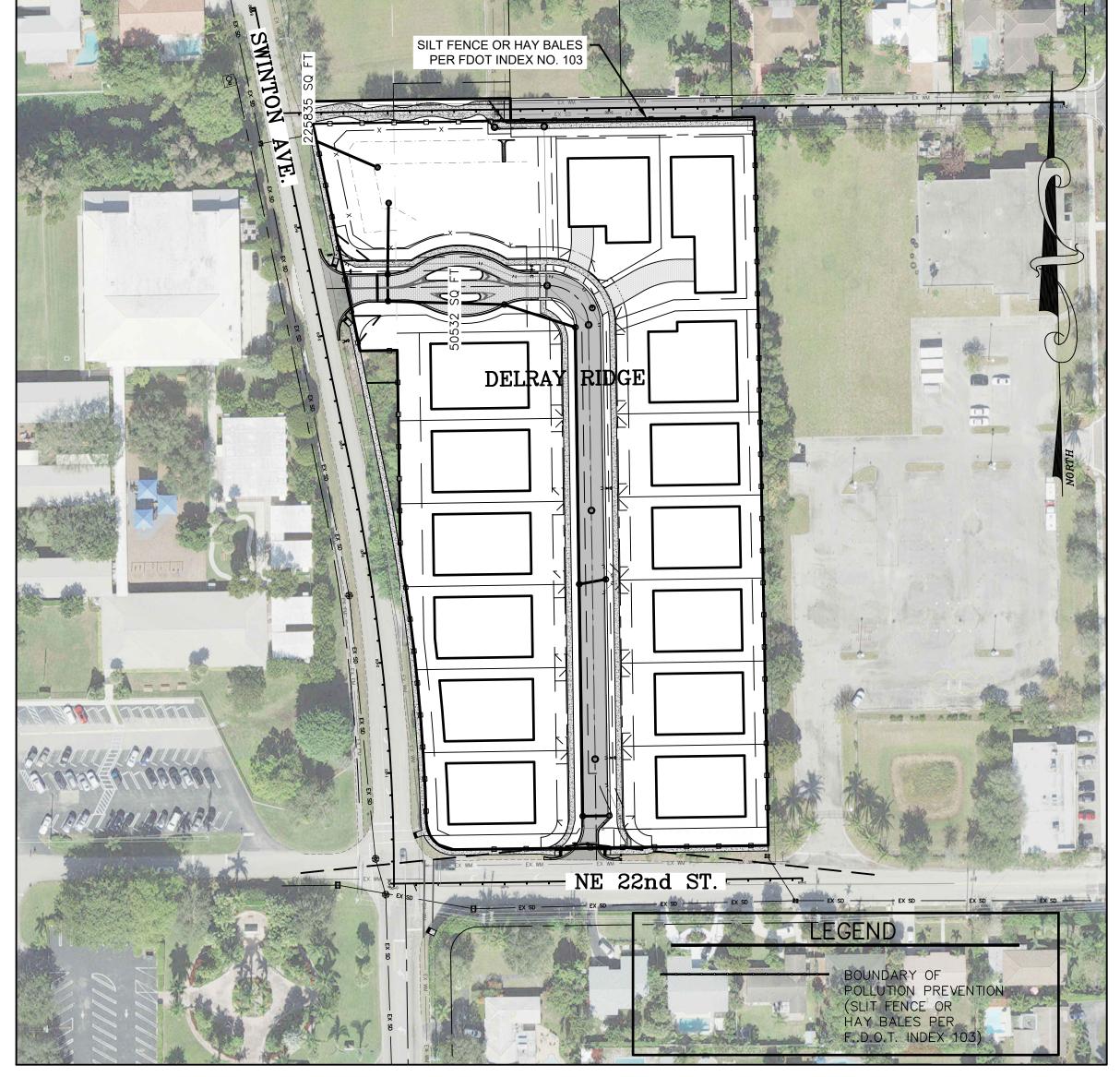
DATE 06/08/20 DRAWN BY RH F.B./ PG. N/

RYAN D. WHEELER PROFESSIONAL ENGINEER LICENSE NO. 71477 STATE OF FLORIDA - FOR THE FIRM -DATENOV 24, 2021

DEFINITIONS

- COUNTY PALM BEACH COUNTY
- 2. CONTRACTOR UTILITY CONTRACTOR AND ALL UTILITY SUBCONTRACTORS
- 3. ENGINEER ENGINEER RESPONSIBLE FOR INSPECTION AND CERTIFICATION

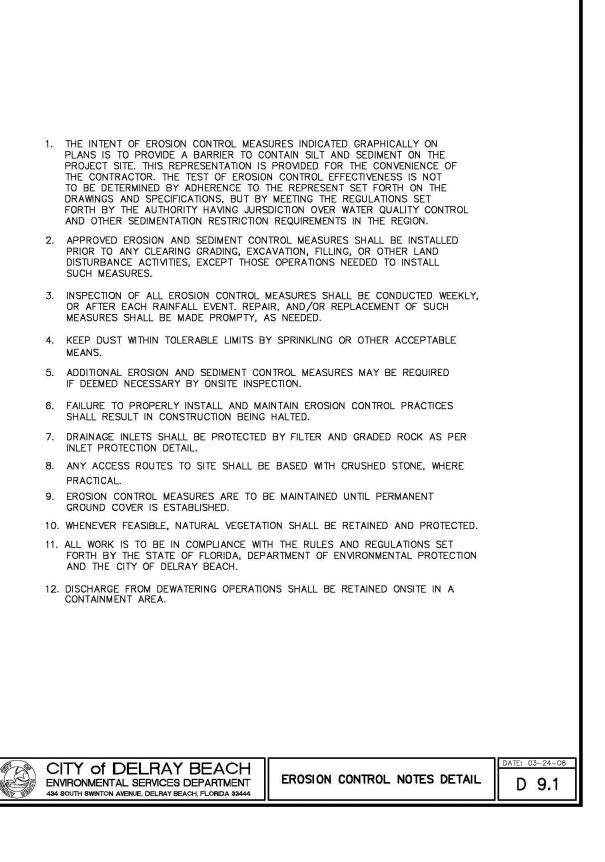
- 1. A PRE-CONSTRUCTION MEETING IS TO BE HELD PRIOR TO DELIVERY OF MATERIALS AND INITIATION OF ANY WATER AND SEWER CONSTRUCTION.
 THE MEETING SHALL BE ATTENDED BY THE COUNTY, CONTRACTOR, SUBCONTRACTORS, ENGINEER AND OTHER INTERESTED PARTIES.
- 2. ANY REVISIONS TO THE APPROVED PLANS MUST BE APPROVED BY THE COUNTY PRIOR TO THE PRE-CONSTRUCTION MEETING.
- 3. A MINIMUM OF THREE (3) COPIES OF THE CURRENT APPROVED PRODUCT LIST AND ALL NECESSARY SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO SCHEDULING THE PRE—CONSTRUCTION MEETING. ALL PIPE MANUFACTURERS SHALL SUBMIT THREE (3) COPIES OF AN AFFIDAVIT THAT THE PIPE AND COATINGS WERE MANUFACTURED IN ACCORDANCE WITH AWWA C151/A21.51—91.
- 4. ALL APPLICABLE PERMITS MUST BE OBTAINED WITH COPIES PROVIDED TO THE COUNTY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 5. THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION DOCUMENTS ON SITE AT ALL TIMES.
- 6. ALL MATERIALS SUPPLIED SHALL CONFORM TO PRODUCT LIST AND SHOP DRAWINGS AS APPROVED BY THE COUNTY PRIOR TO CONSTRUCTION. ALL REQUESTS FOR MATERIAL SUBSTITUTION SHALL BE APPROVED PRIOR TO DELIVERY OF THESE MATERIALS TO THE JOB SITE.
- 7. THE LOCATION OF THE EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IF OTHER UTILITIES (NOT SHOWN ON THE PLAN) EXIST WITHIN THE AREA OF CONSTRUCTION. SHOULD THERE BE UTILITY CONFLICTS, THE CONTRACTOR SHALL INFORM THE COUNTY AND NOTIFY THE RESPECTIVE UTILITY OWNER TO RESOLVE THE UTILITY CONFLICTS AND THE UTILITY ADJUSTMENTS AS REQUIRED.
- 8. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY, AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS OF ALL OTHER UTILITY FACILITIES.
- 10. THE CONTRACTOR SHALL SCHEDULE INSPECTIONS AND TESTS WITH THE COUNTY A MINIMUM OF 24 HOURS IN ADVANCE.
- 11. CONTRACTOR SHALL NOT DISTURB EXISTING COUNTY MAINS OR STRUCTURES WITHOUT THE PRESENCE OF A COUNTY INSPECTOR. COUNTY UTILITY SYSTEM VALVES AND APPURTENANCES MAY ONLY BE OPERATED BY COUNTY PERSONNEL.
- 12. FACILITIES PROPOSED HEREIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS. DEVIATIONS FROM THE APPROVED PLANS MUST BE APPROVED IN ADVANCE BY THE COUNTY.
- 13. UPON COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL ACCEPTANCE OF THE WORK, A FINAL INSPECTION SHALL VERIFY PROPER ADHERENCE TO ALL FACETS OF THE PLANS AND SPECIFICATIONS.
- 14. PAVING, DRAINAGE AND TRAFFIC CONSTRUCTION SHALL CONFORM TO FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND DESIGN STANDARDS, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND PALM BEACH COUNTY TYPICAL No. T-P-18 UNLESS SHOWN OTHERWISE.
- 15. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED LAND SURVEYOR, REGISTERED IN THE STATE OF FLORIDA, AND SUBMITTED BY THE CONTRACTOR TO THE COUNTY.
- 16. PRIOR TO COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553-851 FOR PROTECTION OF UNDERGROUND GAS PIPE LINES.
- 17. CONTRACTOR SHALL NOTIFY SUNSHINE STATE ONE (1-800-432-4770) 48 HOURS IN ADVANCE OF CONSTRUCTION.
- 18. GRADES SHOWN ON PLANS ARE FINISHED GRADES. THE CONTRACTOR SHALL BE REQUIRED TO ADJUST EXISTING SANITARY SEWER MANHOLE TOPS AND VALVE BOX COVERS TO FINISHED GRADE.
- 19. CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES DURING CONSTRUCTION AND SHALL BE REQUIRED TO PROVIDE ALL BARRICADES, LIGHTING, SIGNAGE AND FLAGMEN AS NECESSARY TO PROVIDE FOR THE SAFETY OF THE PUBLIC IN THE WORK AREA. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC MAINTENANCE PLAN PRIOR TO CONSTRUCTION.
- 20. EXISTING BASE MATERIAL THAT IS REMOVED DURING CONSTRUCTION SHALL NOT BE USED IN THE CONSTRUCTION OF NEW LIMEROCK BASE.
- 21. ALL VEGETATION, DEBRIS, CONCRETE OR OTHER UNSUITABLE MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE IN AN AREA AT THE CONTRACTORS EXPENSE.
- 22. CONTRACTOR SHALL UTILIZE CONSTRUCTION METHODS AND DEVICES, SUCH AS TURBIDITY SCREENS, CURTAINS AND FLOATING SILT BARRIERS WHERE NECESSARY IN ORDER TO COMPLY WITH ALL STATE AND LOCAL WATER QUALITY STANDARDS.
- 23. ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE CLASS III, UNLESS OTHERWISE NOTED.
- 24. ALL PAVED SURFACES SHALL BE PROPERLY MARKED PRIOR TO HOURS OF DARKNESS. PERMANENT PAVEMENT MARKING STALLS SHALL BE LAID OUT USING MARKING CHALK. LAYOUT TO BE REVIEWED BY THE COUNTY PRIOR TO PLACEMENT OF FINAL MARKING.
- 25. EMBANKMENT (FILL) AND EXCESS MATERIAL REQUIRED FOR ROADWAY RECONSTRUCTION AND UTILITY INSTALLATIONS SHALL BE SUPPLIED AND/OR DISPOSED OF BY THE CONTRACTOR. ALL COSTS ASSOCIATED WITH EARTHWORK REQUIREMENTS TO COMPLETE THE ROADWAY RECONSTRUCTION AND UTILITY IMPROVEMENTS SHALL BE INCLUDED IN THE COSTS OF OTHER APPROPRIATE PAY ITEMS.
- 26. CONTINUITY OF WATER AND SEWER SERVICE TO COUNTY UTILITY CUSTOMERS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THIS PROJECT. IF A BREAK IN SERVICE IS UNAVOIDABLE TO ACCOMMODATE CONNECTION OF NEW FACILITIES, IT SHALL BE SCHEDULED FOR OFF PEAK HOURS WITH THE COUNTY. DETERMINATION OF SERVICE BREAK REQUIREMENT WILL BE MADE BY THE COUNTY.
- 27. SITE INFORMATION BASED ON A SURVEY PREPARED BY: CAULFIELD & WHEELER, INC.
- 28. RELOCATION OF UTILITY POLES AND GAS PIPE LINES SHALL BE COORDINATED BY THE CONTRACTOR WITH FLORIDA POWER AND LIGHT, AND FLORIDA PUBLIC UTILITIES, RESPECTIVELY. EACH UTILITY HAS BEEN NOTIFIED THAT THEY WILL BE REQUIRED TO RELOCATE THEIR UTILITIES.

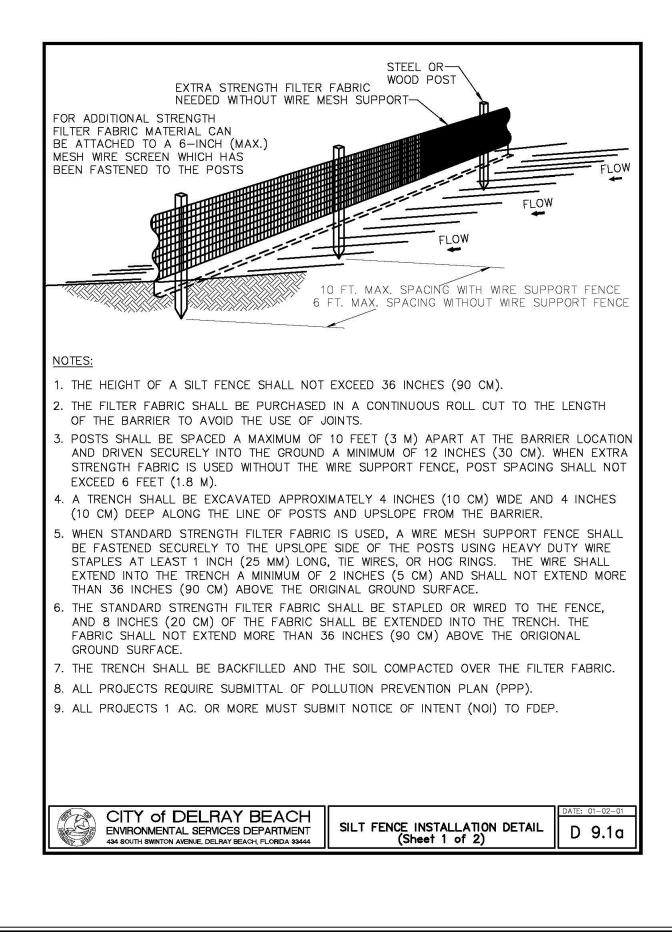


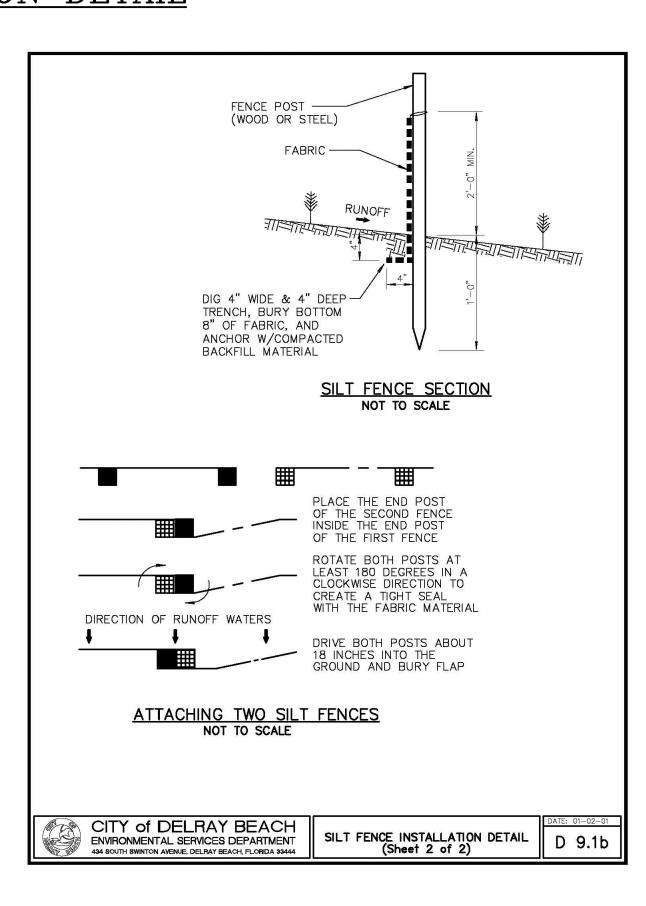
WITHOUT FRAME AND GRATE ∽WIRE SUPPORT - MOULD 6x6", 5/5 GA. 49 #/100 SQ. FT. WELD WIRE SUPPORT. EXTEND 6" MIN. AT SIDES TO FRAME AND GRATE BACKFILL AFTER -INSTALLATION OF INLET FILTER NOT TO SCALE 1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM. 2. CONTRACTOR TO REMOVE FABRIC JUST PRIOR TO PAVING. 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 INLET FILTER DETAIL ENVIRONMENTAL SERVICES DEPARTMENT 434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

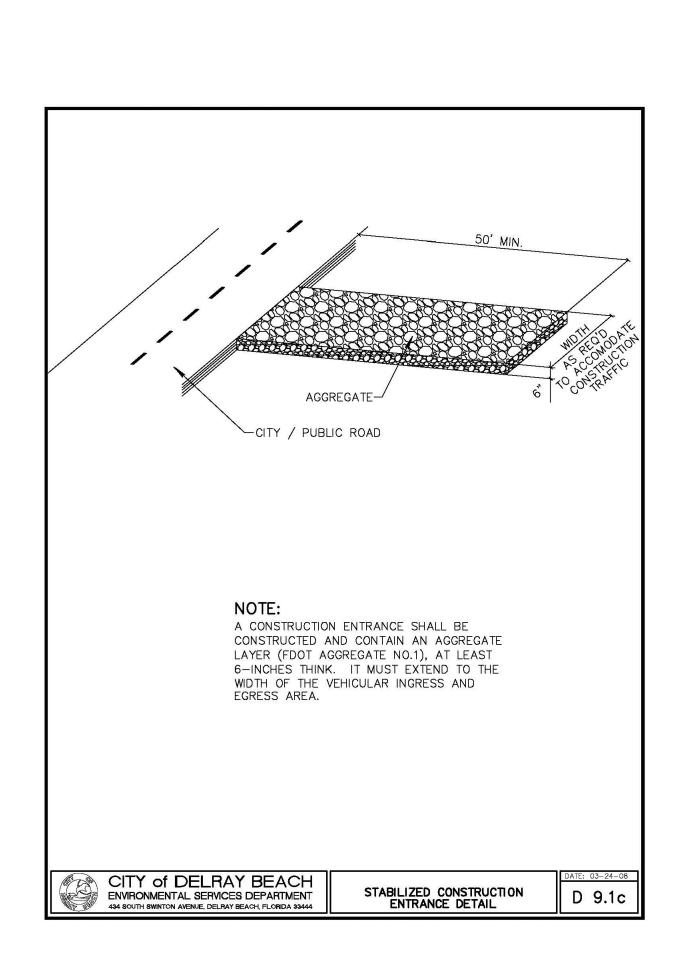
-INLET FILTER INSTALLATION

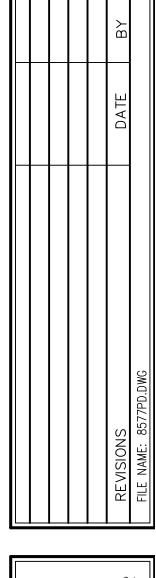
POLLUTION PREVENTION DETAIL











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

DELRAY RIDGE
OLLUTION PREVENTION PLAN

DATE 06/08/20
DRAWN BY RHO

F.B./ PG. N/A

SCALE N/A

RYAN D. WHEELER
PROFESSIONAL ENGINEER
LICENSE NO. 71477
STATE OF FLORIDA
– FOR THE FIRM –
DATENOV 24, 2021

JOB #8577
SHT.NO.
PD-11
OF 11 SHEETS