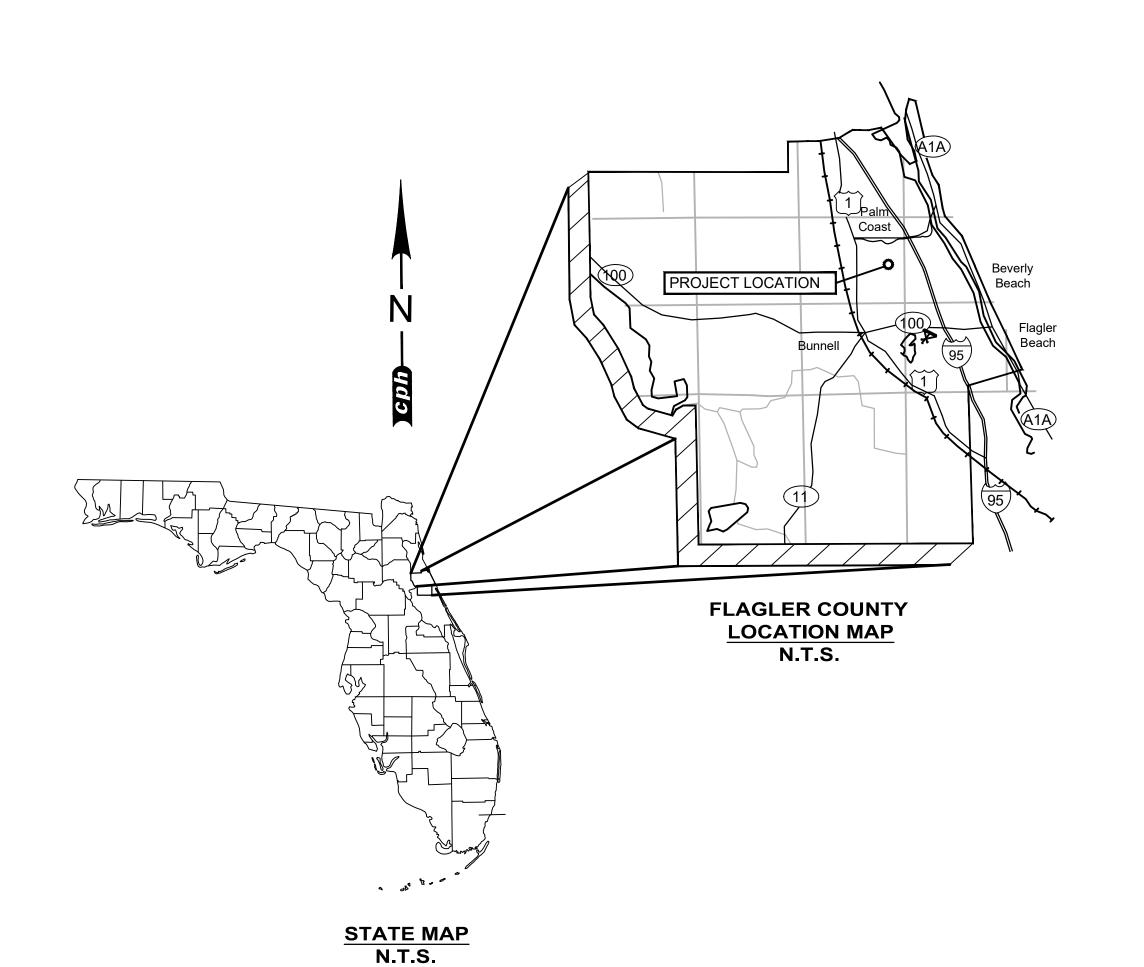
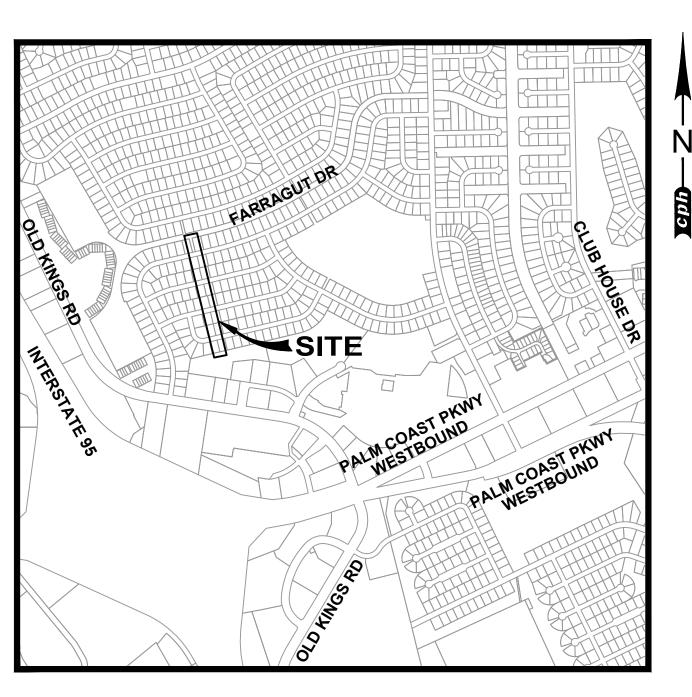
CITY OF PALM COAST

SECTION F DITCH REPLACEMENT

CITY OF PALM COAST, FLAGLER COUNTY, FLORIDA





VICINITY MAP 1" = 1000'

NOTICE

THIS SET OF PLANS IS NOT VALID FOR CONSTRUCTION PURPOSES WITHOUT BEING STAMPED "APPROVED FOR CONSTRUCTION BY CPH ENGINEERS, INC." PLANS WITHOUT THIS STAMP ARE GIVEN FOR INFORMATIONAL PURPOSES ONLY.

City Officials

MAYOR

Milissa Holland

COUNCIL MEMBERS

District 1: Robert Cuff District 2: Jack Howell

District 3: Nick Klufas District 4: Eddie Branoquinho

CITY MANAGER

Matthew Morton

PUBLIC WORKS DIRECTOR

Gerald Forte

City of Palm Coast

160 Lake Avenue Palm Coast, Florida 32164 Phone: 386.986.3748 Attn.: Mike Peel, P.E., C.F.M.

Engineer

CPH Engineers, Inc.

520 Palm Coast Pkwy Palm Coast, FL 32137 Phone: 386.445.6569 Fax: 386.447.8991 Attn. Jason R. Kellogg, P.E.

Survey

CPH Engineers, Inc.

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DRAWINGS

- **COVER SHEET GENERAL NOTES**
- **OVERALL PLAN AND**
 - **TYPICAL SECTIONS**
- **DEMOLITION AND SWPP PLAN** 4-5
- 6-9 **CROSS SECTIONS**
- 10-12 **IMPROVEMENTS PLAN AND**
- **PROFILE DETAILS** 13



(Lic. No. AA2600926) (L.B. No. 7143) Landscape Arch. (Lic. No. LC0000298)

Construction Management Traffic / Transportation

520 Palm Coast Pkwy SW - Palm Coast, FL 32137 Phone 386-445-6569 Fax 386-447-8991



JOB# P61244 DATE: MAY 2019



DEMOLITION

WHERE DEMOLITION OF EXISTING STRUCTURES IS INDICATED THE STRUCTURES AND APPURTENANCES SHALL BE REMOVED AS REQUIRED FOR NEW CONSTRUCTION. EXISTING STRUCTURES TO BE REMOVED SHALL BE REMOVED COMPLETELY.

- 2. THE CONTRACTOR SHALL PROVIDE FILL MATERIAL AS REQUIRED TO FILL AND GRADE THE SITE TO FINISHED GRADE ELEVATIONS INDICATED ON THE DRAWINGS. IN THE EVENT MATERIALS EXCAVATED FOR CONSTRUCTION ARE UNSUITABLE FILL MATERIALS THE CONTRACTOR SHALL ACQUIRE SUITABLE FILL MATERIAL FROM OFF SITE SOURCES AND TRANSPORT THE MATERIAL TO THE SITE AT NO ADDITIONAL COST TO THE CITY.
- 3. EXISTING SIDEWALKS AND PAVEMENT REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND.
- 4. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES WITH WWW.CALLSUNSHINE.COM (800) 432-4770.

PERMITS AND PERMIT REQUIREMENTS

1. OBTAIN ALL NECESSARY R/W UTILIZATION PERMITS FROM THE CITY OF PALM COAST PRIOR TO ANY CONSTRUCTION ACTIVITIES AND ANY LOCAL AGENCY PERMITS. THE CONTRACTOR SHALL BE EXPECTED TO REVIEW AND ABIDE BY ALL SRF REQUIREMENTS AND LIMITATIONS SET FORTH IN THE PERMITS.

TRAFFIC CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR PREPARING FULLY DETAILED MAINTENANCE—OF—TRAFFIC PLANS TO BE UTILIZED FOR TRAFFIC CONTROL OF VEHICLES AND PEDESTRIANS THROUGH THE CONSTRUCTION AREA. THE PREPARATION OF THESE PLANS MUST CONFORM TO ALL THE REQUIREMENTS IDENTIFIED ON THIS PLAN SHEET. THESE PLANS MUST BE PREPARED AND SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER WHO HAS THE NECESSARY TRAINING AND EXPERIENCE. THE ENGINEER WHO WILL PREPARE THE PLANS AND THE CONTRACTOR'S PERSONNEL WHO WILL ADMINISTER THE PLANS MUST MEET THE FDOT TRAINING REQUIREMENTS (FDOT TRAINING PROCEDURE #625—010—010A).

- 2. THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN "THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"

 (MUTCD) LATEST EDITION AND SERIES 600 OF THE FDOT "DESIGN STANDARDS" (LATEST EDITION) AT ALL TIMES.
- 3. TRAFFIC SHALL BE MAINTAINED ON PAVED SURFACES AT ALL TIMES. TEMPORARY TRAVEL LANES SHALL BE A MINIMUM WIDTH OF
- TRAFFIC CONDITIONS (ACCIDENTS AND OTHER UNFORESEEN CONDITIONS) MAY REQUIRE THE PROJECT ENGINEER TO RESTRICT OR REMOVE LANE CLOSURES OR CHANNELIZATIONS OR REVISE THE IMPLEMENTED MOT PLAN. THE CONTRACTOR SHALL RESPOND AND PROVIDE ADJUSTMENTS AS DIRECTED BY THE PROJECT ENGINEER WITHOUT DELAY UNDER THESE CONDITIONS. THE CONTRACTOR SHALL ALSO RESPOND WITHIN 30 MINUTES UPON NOTIFICATION BY THE PROJECT ENGINEER TO ANY REQUESTS FOR CORRECTION, IMPROVEMENT OR MODIFICATION TO THE TRAFFIC CONTROL PLAN AND/OR DEVICES.
- 5. ACCESS TO ALL PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.
- 6. EXISTING DRAINAGE SYSTEMS MUST BE MAINTAINED UNTIL THE NEW SYSTEM IS CONSTRUCTED AND FUNCTIONAL. TEMPORARY SWALES, CULVERTS, PIPES, ETC. ARE TO BE CONSTRUCTED WITHIN THE RIGHT—OF—WAY AS REQUIRED.
- 7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF STORM WATER FROM ROADWAYS UTILIZED FOR MAINTAINING TRAFFIC IN A MANNER APPROVED BY THE CITY ENGINEER.
- 8. ALL EXISTING PAVEMENT MARKINGS OUTSIDE THE LIMITS OF CONTRUCTION, THAT ARE ALTERED OR DAMAGED DURING CONSTRUCTION AS DETERMINED BY THE CITY'S AUTHORIZED REPRESENTATIVE, SHALL BE REPLACED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT, AT HIS/HER EXPENSE.
- 9. TRAFFIC CONTROLS SHALL BE IN ACCORDANCE WITH THE PROJECT PLANS, THE CURRENT EDITION OF THE FLORIDA D.O.T. DESIGN STANDARD (600 SERIES), THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS A MINIMUM CRITERIA. THE CONTRACTOR SHALL IMMEDIATELY REPAIR ALL POTHOLES THAT DEVELOP WITHIN THE PROJECT LIMITS AND WILL MAINTAIN A SUPPLY OF COLD MIX ON THE PROJECT SITE TO EXPEDITE THOSE REPAIRS.
- 10. NOTIFICATION OF LANE CLOSURES OR TEMPORARY DETOURS SHALL BE ACCOMPLISHED 14 WORKING DAYS PRIOR TO CLOSURE OR DETOUR BY SUBMITTING THE REQUIRED LANE CLOSURE FORM, SKETCHES, CALCULATIONS, AND OTHER DATA TO THE CITY ENGINEER.
- 11. THE TRAFFIC AND TRAVEL WAYS SHALL NOT BE ALTERED BY THE CONTRACTOR TO CREATE A WORK ZONE UNTIL ALL LABOR AND MATERIAL ARE AVAILABLE FOR THE CONSTRUCTION IN THAT AREA.
- 12. THE CONTRACTOR SHALL COVER WORK ZONE SIGNS WHEN CONDITIONS NO LONGER WARRANT THEIR USE.

EROSION AND SEDIMENT CONTROL

1. EROSION AND SILTATION CONTROL MEASURES ARE TO BE PROVIDED AND INSTALLED PRIOR TO COMMENCEMENT OFCONSTRUCTION.

SEDIMENT CONTROL CONSISTS OF BEST MANAGEMENT PRACTICES (BMPs) AS INDICATED ON THE PLANS. ADDITIONAL EROSION CONTROL

MEASURE SHALL BE INSTALLED IF DEEMED NECESSARY BY THE COPC INSPECTOR.

- 2. MAINTAIN TEMPORARY EROSION CONTROL SYSTEMS AS DIRECTED BY THE CITY TO CONTROL EROSION AND SILTATION DURING THE LIFE OF CONTRACT. THE CITY HAS AUTHORITY TO LIMIT SURFACE AREA OF ERODIBLE EARTH MATERIAL EXPOSED BY CLEARING AND GRUBBING, EXCAVATION, TRENCHING, BORROW AND EMBANKMENT OPERATIONS. THE CITY ALSO HAS AUTHORITY TO DIRECT CONTRACTOR TO PROVIDE IMMEDIATE PERMANENT OR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
- 3. CONTRACTOR SHALL RESPOND TO EROSION AND SEDIMENT CONTROL MAINTENANCE REQUIREMENTS OR IMPLEMENT ADDITIONAL MEASURES TO CONTROL EROSION ORDERED BY THE CITY WITHIN 48 HOURS OR SOONER IF REQUIRED AT NO ADDITIONAL COST TO THE CITY.
- 4. CONTRACTOR SHALL INCORPORATE PERMANENT EROSION CONTROL FEATURES INTO PROJECT AT EARLIEST PRACTICAL TIME TO MINIMIZE NEED FOR TEMP CONTROLS.
- 5. INSPECT EVERY TWO WEEKS AND AFTER RAIN EVENTS DURING CONSTRUCTION. REMOVE ANY SEDIMENT BUILD—UP. REPAIR AND REINSTALL ANY DAMAGED OR MISSING SEDIMENT CONTROL MEASURES. INSTALL ADDITIONAL MEASURES IF INSPECTION REVEALS ADDITIONAL SEDIMENTATION CONTROL IS NECESSARY.
- 6. AREAS TO BE PAVED SHALL BE TREATED WITH A BITUMINOUS PRIME COAT AND SANDED TO MINIMIZE EROSION, WHERE PAVING IS SCHEDULED TO OCCUR MORE THAN 48 HOURS AFTER INSTALLATION OF BASE COURSE. AREAS TO RECEIVE CONCRETE PAVING SHALL BE EITHER PROTECTED WITH A LAYER OF FDOT COARSE AGGREGATE MATERIAL OR SHALL BE PAVED WITHIN 48 HOURS OF INSTALLATION OF THE SUBGRADE. INSTALL FINAL SURFACE COURSES WITHIN 7 DAYS AFTER REMOVAL OF EXISTING PAVEMENT.

EXCAVATION, TRENCHING, AND FILL

1. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH
SAFETY ACT (FS 553.60-553.64) ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL
BE INCIDENTAL TO THE CONTRACT.

2. FIELD DENSITY TESTING FREQUENCIES:

A) ONE TEST FOR EACH 10,000 SQUARE FEET OR FRACTION THEREOF PER LIFT OF GENERAL BACKFILLING, MINIMUM 2 TESTS PER LAYER.

B) ONE TEST FOR EACH 100 SQUARE FEET OR FRACTION THEREOF OF BACKFILL AROUND AND UNDER STRUCTURES.

C) ONE TEST FOR EACH 300 LINEAL FEET OR FRACTION THEREOF PER LIFT OF GENERAL BACKFILLING IN THE PIPELINE TRENCH.

D) ONE TEST PER LIFT PER EACH CHANGE IN TYPE OF FILL

E.) ONE TEST PER 1000 SQUARE FEET OF PAVEMENT SUBGRADE, MINIMUM OF 2 TESTS. F.) TWO TESTS — ONE PER TRAVEL LANE — FOR EACH LIFT IN AREAS TO BE PAVED.

- 3. IT IS INTENDED THAT PREVIOUSLY EXCAVATED MATERIALS CONFORMING TO THE FOLLOWING REQUIREMENTS BE UTILIZED WHERE EVER POSSIBLE. A. ACCEPTABLE MATERIALS: AASHTO M145 CLASSIFICATION A-1, A-3, A-2-4, A-2-6; ASTM D2487 CLASSIFICATION GW, GP, GM, SM, SW, SP; UNLESS OTHERWISE DISAPPROVED WITHIN THE SOIL AND SUBSURFACE INVESTIGATION REPORTS. NO MORE THAN 12% OF ACCEPTABLE PASS THE #200 SIEVE. B. UNACCEPTABLE MATERIALS: AASHTO M145 CLASSIFICATION A-2-5, A-2-7, A-4, A-5, A-6, A-7, A-8; ASTM D2487 CLASSIFICATION GC, SC,ML, MH, CL, CH, OL, OH, PT; UNLESS OTHERWISE APPROVED WITHIN THE SOIL AND SUBSURFACE INVESTIGATION REPORTS.
- 4. PROVIDE BARRIERS, WARNING LIGHTS AND OTHER PROTECTIVE DEVICES AT ALL EXCAVATIONS.
- 5. SIDEWALKS, ROADS, STREETS, AND PAVEMENTS SHALL NOT BE BLOCKED OR OBSTRUCTED BY EXCAVATED MATERIALS, EXCEPT AS ALLOWED BY THE CITY, IN WHICH CASE ADEQUATE TEMPORARY PROVISIONS MUST BE MADE FOR SATISFACTORY TEMPORARY PASSAGE OF PEDESTRIANS AND VEHICLES. MINIMIZE INCONVENIENCE TO PUBLIC TRAVEL OR TO OCCUPANTS OF ADJOINING PROPERTY.
- 6. FURNISH, INSTALL, AND MAINTAIN, WITHOUT ADDITIONAL COMPENSATION, SHEETING, BRACING, AND SHORING SUPPORT REQUIRED TO KEEP EXCAVATIONS WITHIN THE PROPERTY OR EASEMENTS PROVIDED, TO SUPPORT THE SIDES OF THE EXCAVATION, AND TO PREVENT ANY MOVEMENT WHICH MAY DAMAGE ADJACENT PAVEMENTS OR STRUCTURES, DAMAGE OR DELAY THE WORK, OR ENDANGER LIFE AND HEALTH. VOIDS OUTSIDE THE SUPPORTS SHALL BE IMMEDIATELY FILLED AND COMPACTED.

<u>GRADING</u>

1. GRADING SHOWN ON THESE PLANS ARE PROVIDED TO THE CONTRACTOR TO EXPRESS THE GENERAL GRADING INTENT OF THE PROJECT. THE CONTRACTOR SHALL BE EXPECTED TO GRADE THE ENTIRE SITE TO PROVIDE POSITIVE DRAINAGE IN ALL AREAS THROUGHOUT THE SITE. SMOOTH TRANSITIONS SHALL BE PROVIDED BETWEEN CONTOURS OR SPOT ELEVATIONS AS SHOWN ON THE PLANS TO ACCOMPLISH THE OVERALL GRADING INTENT. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER FINAL GRADING HAS BEEN COMPLETED. CONTRACTOR SHALL NOTIFY THE CITY PRIOR TO DEMOBILIZATION OF GRADING EQUIPMENT TO DETERMINE THAT THE GRADING INTENT HAS BEEN ACHIEVED.

2. UNIFORMLY SMOOTH GRADE THE SITE. DEPRESSIONS FROM SETTLEMENT SHALL BE FILLED AND COMPACTED. TOPS OF EMBANKMENTS AND BREAKS SHALL BE ROUNDED. FINISHED SURFACES SHALL BE REASONABLY SMOOTH, COMPACTED, FREE FROM IRREGULAR SURFACE CHANGES AND COMPARABLE TO THE SMOOTHNESS OBTAINED BY BY BLADE-GRADER OPERATIONS.

3. SLOPE GRADES TO DRAIN AWAY TO STRUCTURES AT A MINIMUM OF 1/4—INCH PER FOOT FOR 10 FEET. FINISHED SURFACES ADJACENT TO PAVED AREAS AND WITHIN TEN FEET OF STRUCTURES SHALL BE WITHIN 1 INCH OF THE PROPOSED GRADE. ALL OTHER AREAS SHALL BE WITHIN THREE INCHES OF THE PROPOSED GRADE.

4. NEWLY GRADED AREAS SHALL BE PROTECTED FROM TRAFFIC AND EROSION. ALL SETTLEMENT OR WASHING AWAY THAT MAY OCCUR FROM ANY CAUSE PRIOR TO SEEDING OR ACCEPTANCE SHALL BE REPAIRED AND GRADES RE-ESTABLISHED TO THE REQUIRED ELEVATIONS AND SLOPES AT NO ADDITIONAL COST TO THE CITY.

PAVING, SIDEWALKS, AND CURBING

1. MATERIALS AND CONSTRUCTION METHODS FOR THE ROADWAY AND PAVING CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

2. ROADWAY PAVING, BASE, AND SUBGRADE THICKNESSES SHALL BE APPROVED BY THE CITY. MATERIAL STABILITY AND DENSITY REQUIREMENTS ARE AS FOLLOWS;

A. 2" TYPE S ASPHALTIC CONCRETE: MINIMUM STABILITY 1500 LBS, COMPACTED TO A MINIMUM OF 98% OF THE MARSHALL DESIGN DENSITY.

P. 8" LIMEDOCK DASE: MINIMUM LBB OF 100 BLACED IN 6" MAXIMUM LIFTS, COMPACTED TO A MINIMUM DENSITY OF 08% (

B. 8" LIMEROCK BASE: MINIMUM LBR OF 100, PLACED IN 6" MAXIMUM LIFTS, COMPACTED TO A MINIMUM DENSITY OF 98% OF THE MODIFIED PROCTOR DENSITY(AASHTO T-180). CONTRACTOR MAY SUBSTITUTE ASPHALT BASE COURSE TYPE 3 (MIN. STABILITY OF 1000 LBS) AT NO ADDITIONAL COST TO THE CITY, PROVIDED THE STRUCTURAL NUMBER EQUALS OR EXCEEDS THAT OF THE SPECIFIED LIMEROCK BASE.

C. 12" SUBGRADE: STABILIZE TO A MIN. LBR OF 40, COMPACT TO A MINIMUM DENSITY OF 98% OF THE MODIFIED PROCTOR DRY DENSITY (AASTHO T-180). CONTRACTOR MAY SUBSTITUTE LIMEROCK SUBGRADE (MIN. LBR OF 100) OR CONTROLLED LOW STRENGTH MATERIAL ("FLOWABLE FILL"). F'C(28 DAY) = 100-125 PSI, AT NO ADDITIONAL COST TO TO THE CITY PROVIDED STRUCTURAL NUMBER EQUALS OR EXCEEDS THAT OF THE SPECIFIED SUBGRADE

3. FIELD COMPACTION DENSITY, STABILITY, AND THICKNESS TESTING FREQUENCIES OF SUB-BASE, BASE, AND ASPHALT SHALL BE TESTED ONCE FOR EVERY 300 LINEAR FEET OF PAVING PER 24-FT WIDE STRIP, STAGGERED LEFT, CENTER AND RIGHT OF CENTERLINE. WHERE LESS THAN 300 LINEAR FEET OF SUB BASE, BASE AND ASPHALT ARE PLACED IN ONE DAY, PROVIDE MIN. OF ONE TEST FOR EACH DAY'S CONSTRUCTION AT A LOCATION DESIGNATED BY THE CITY. ASPHALT EXTRACTION GRADATION SHALL BE TESTED FROM GRAB SAMPLES COLLECTED ONCE EVERY 1800 SQUARE YARDS OF ASPHALT DELIVERED TO THE SITE (OR A MINIMUM OF ONCE PER DAY).

4. INSTALL SUBGRADE AND BASE COURSE MATERIALS WITHIN 48 HOURS OF THE REMOVAL/OPEN CUTTING OF EXISTING PAVEMENT CONSISTING OF STREETS, DRIVEWAYS OR SIDEWALK. INSTALL FINAL SURFACE COURSES WITHIN 14 DAYS AFTER REMOVAL OF EXISTING PAVEMENT.

5. AREAS TO RECEIVE ASPHALT SHALL RECEIVE EROSION CONTROL MEASURES NO LATER THAN 48 HOURS AFTER ACCEPTANCE OF BASE COURSE. TEMPORARY EROSION CONTROL CONSISTS OF PLACEMENT OF A BITUMINOUS PRIME COAT AND SANDING THE SURFACE. PERMANENT EROSION CONTROL CONSISTS OF PLACEMENT OF THE STRUCTURAL COURSE.

6. AREAS TO RECEIVE CONCRETE PAVING SHALL BE EITHER PROTECTED WITH A LAYER OF FDOT COARSE AGGREGATE MATERIAL OR SHALL BE PAVED WITHIN 48 HOURS OF ACCEPTANCE OF THE SUBGRADE.

SIGNS AND PAVEMENT MARKINGS

1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS — LATEST EDITION. STANDARD INDEX NO. 9535, 11860, 11862, 11865, 17302, 17346 AND 17349 APPLY. GENERALLY, ALL MARKINGS SHALL CONFORM TO THE FOLLOWING: 6" EDGE LINES, 6" LANE LINES, 6" SINGLE CENTERLINES AND 6" DOUBLE LINE PATTERNS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.

2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC WITH RAISED PAVEMENT MARKERS (TYPE 911 - 4" X 4"). RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS AND FDOT INDEX NO. 17352.

3. INTERNAL SITE TRAFFIC SIGNS ARE NOT REQUIRED TO BE RETROREFLECTIVE.

R/W RESTORATION

1. ALL AREAS WITHIN THE RIGHT-OF-WAY SHALL BE FINISH GRADED WITH A SMOOTH TRANSITION INTO EXISTING GROUND, ALL NON-PAVED AREAS WITHIN THE R/W THAT ARE ADJACENT TO COMMON AREAS SHALL BE COMPLETELY SODDED FOLLOWING FINAL GRADING. NON-PAVED AREAS WITHIN THE R/W SHALL BE STABILIZED WITH SOD.

2. ALL DRAINAGE SWALES AND RETENTION/DETENTION POND AND LAKE SLOPES SHALL BE STABILIZED WITH SOD IMMEDIATELY AFTER FINAL GRADING, UNLESS OTHERWISE NOTED. OTHER DISTURBED AREAS SHALL BE STABILIZED WITH SEED AND MULCH AFTER FINAL GRADING AND PRIOR TO FINAL INSPECTION. ALL GRASSING (SEED OR SOD) SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY THE CITY.

AS-BUILT DRAWING REQUIREMENTS

ACTUAL MEASURED VERTICAL ELEVATION.

1. AS-BUILT DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR TO THE CITY PRIOR TO FINAL INSPECTION. UNLESS STATED OTHERWISE BY THE CITY, ALL AS-BUILT DATA SHALL BEAR THE SEAL AND SIGNATURE OF A FLORIDA LICENSED SURVEYOR AND SHALL BE DATED ACCORDINGLY.

2. AT THE COMPLETION OF THE WORK, DELIVER THE DRAWINGS DOCUMENTING AS—BUILT INFORMATION, MEASURED BY A LICENSED FLORIDA SURVEYOR, TO THE CITY IN GOOD CONDITION AND FREE FROM ANY EXTRANEOUS NOTATION. THE AS—BUILT INFORMATION SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

ALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING.

A. HORIZONTAL LOCATIONS AND VERTICAL ELEVATIONS FOR ALL UTILITY AND STORM STRUCTURES INCLUDING BUT NOT LIMITED TO MANHOLES, INLETS AND CLEANOUTS, INCLUDING STRUCTURE TOP AND INVERT ELEVATIONS.

B. DISTANCE ALONG PIPELINES BETWEEN STRUCTURES.
C. STORMWATER CONTROL STRUCTURE DIMENSIONS AND ELEVATIONS, INCLUDING ALL WEIRS, SLOTS, ORIFICES, GRATES AND SKIMMERS

D. STORMWATER CONVEYANCE SYSTEMS INCLUDING DIMENSIONS, ELEVATIONS, CONTOURS, AND CROSS SECTIONS.

E. HORIZONTAL LOCATIONS AND VERTICAL ELEVATIONS OF ALL UTILITY VALVES, FITTINGS, CONNECTION POINTS, ETC.

F. VERTICAL ELEVATIONS OF ALL PIPELINES AT CROSSINGS OF POTABLE WATER MAINS (WHETHER THE WATER MAIN IS EXISTING OR NEW) IN ORDER TO DOCUMENT THAT THE MINIMUM REQUIRED VERTICAL SEPARATION HAS BEEN MET.

G. HORIZONTAL AND VERTICAL DATA FOR ANY CONSTRUCTION THAT DEVIATES FROM THE APPROVED DRAWINGS.

H. WHERE THE PLANS CONTAIN SPECIFIC HORIZONTAL LOCATION DATA, SUCH AS STATION AND OFFSET, THE AS—BUILT DWGS ARE TO REFLECT THE ACTUAL HORIZONTAL LOCATION.

I. WHERE THE PLANS CONTAIN SPECIFIC VERTICAL ELEVATION DATA, THE AS—BUILT DRAWINGS ARE TO REFLECT THE

SITE PREPARATION

1. UNLESS OTHERWISE DIRECTED BY THE CITY, THE CONTRACTOR IS EXPECTED TO CONTAIN ALL CONSTRUCTION ACTIVITIES WITHIN THE PROPERTY, RIGHT OF WAY AND EASEMENTS AS INDICATED ON THE DRAWINGS. AT NO TIME SHALL THE CONTRACTOR DISTURB OR TRAVEL ON SURROUNDING PROPERTIES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. ANY REPAIR OR RECONSTRUCTION OF DAMAGED AREAS IN SURROUNDING PROPERTIES SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR. ALL COSTS FOR REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION SHALL BE PROVIDED.

2. STAKE OUT THE CONSTRUCTION, ESTABLISH LINES AND LEVELS, TEMPORARY BENCH MARKS, BATTER BOARDS, CENTERLINES, BASELINES AND REFERENCE POINTS FOR THE WORK AND VERIFY ALL DIMENSIONS RELATING TO INTERCONNECTION WITH EXISTING FEATURES, REPORT ANY INCONSISTENCIES IN THE PROPOSED GRADES, LINES AND LEVELS, DIMENSIONS AND LOCATIONS TO THE CITY PRIOR TO COMMENCING WORK.

3. PROTECT ALL TREES AND SHRUBS LOCATED OUTSIDE THE RIGHT-OF-WAY, EASEMENTS, AND OWNER SECURED PROPERTY, PARTICULARLY THOSE ADJACENT TO WORK AREAS.

4. TREES TO REMAIN IN THE CONSTRUCTION AREA SHALL BE BOXED, FENCED OR OTHERWISE PROTECTED. DO NOT PERMIT HEAVY EQUIPMENT OR STOCKPILES WITHIN BRANCH SPREAD.

5. AREAS TO RECEIVE CLEARING AND GRUBBING SHALL INCLUDE ALL AREAS TO BE OCCUPIED BY THE PROPOSED IMPROVEMENTS, AREAS FOR FILL AND SITE GRADING AND BORROW SITES REMOVE TREES OUTSIDE OF THESE AREAS ONLY AS INDICATED ON THE DRAWINGS OR AS APPROVED IN WRITING BY THE CITY.

6. CLEARING SHALL CONSIST OF REMOVING TREES AND BRUSH AND DISPOSAL OF OTHER MATERIALS THAT ENCROACH UPON OR OTHERWISE OBSTRUCT THE WORK.

7. GRUBBING SHALL CONSIST OF REMOVING AND DISPOSING OF STUMPS, ROOTS LARGER THAN 2" IN DIAMETER, AND MATTED ROOTS. REMOVE TO A DEPTH OF NOT LESS THAN 18" BELOW THE ORIGINAL SURFACE LEVEL OF THE GROUND.

8. EXERCISE EXTREME CARE DURING THE CLEARING AND GRUBBING OPERATIONS. DO NOT DAMAGE EXISTING STRUCTURES, PIPES OR UTILITIES.

9.ALL COMBUSTIBLE DEBRIS AND REFUSE FROM SITE PREPARATION OPERATIONS SHALL BE REMOVED TO LEGAL OFFSITE DISPOSAL AREAS.

UTILITY GENERAL NOTES

1. UTILITY DATA SHOWN ON THESE PLANS WAS LOCATED BY THE RESPECTIVE UTILITY, OR IS BASED ON UTILITY DRAWINGS, MAPS, OR FIELD RECONNAISSANCE.

2.THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CITY ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY THE CONTRACTOR SHALL NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATIONS OF THESE UTILITIES WITH THE OWNER OF THE PROPERTY. CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLANS OR LOCATED BY THE UTILITY COMPANY. ANY UTILITIES, WHETHER SHOWN ON THESE PLANS OR NOT, THAT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH THE CITY AND THE RESPECTIVE UTILITY COMPANY FOR RELOCATION OR PROPER INSTRUCTION.

3. THE CONTRACTOR SHALL CONTACT THE SUNSHINE STATE ONE CALL CENTER AT LEAST TWO AND NO MORE THAN FIVE WORKING DAYS PRIOR TO THE SPECIFIC CONSTRUCTION FOR FIELD LOCATION OF EXISTING UTILITIES. NOTE THAT NOT ALL UTILITIES PARTICIPATE IN THIS PROGRAM. THE CONTRACTOR SHOULD CONTACT ALL NON-PARTICIPATING UTILITIES SEPERATELY FOR FIELD LOCATION OF THEIR FACILITIES. PER FLORIDA STATUTE 553.851, THE CONTRACTOR IS REQUIRED TO NOTIFY THE GAS COMPANY TWO WORKING DAYS PRIOR TO STARTING EXCAVATION.

4.THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH EACH UTILITY AND ALL COSTS ASSOCIATED WITH THE PROTECTION OF EXISTING FACILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO COORDINATE NECESSARY RELOCATIONS OR OTHER CONSTRUCTION RELATED MATTERS WITH EACH UTILITY.

5.IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN IN SERVICE ALL EXISTING PIPING ENCOUNTERED DURING CONSTRUCTION UNLESS INDICATED ON THE DRAWINGS ANY PIPING WHICH CAN BE REMOVED DURING CONSTRUCTION WITHOUT UNDUE INTERRUPTION OF SERVICE MAY BE REMOVED AND REPLACED BY THE CONTRACTOR WITH PRIOR PERMISSION OF THE OWNER AND THE CITY.

6.TYPICAL DETAILS AS SHOWN ARE TO ILLUSTRATE THE ENGINEER'S INTENT AND ARE NOT PRESENTED AS A SOLUTION TO ALL CONSTRUCTION PROBLEMS ENCOUNTERED IN THE FIELD. THE CONTRACTOR MAY ALTER THE METHOD OF CONSTRUCTION TO SUIT FIELD CONDITIONS WITH PRIOR APPROVAL OF THE CITY.

7. FOR EACH RESPECTIVE PIPELINE CONSTRUCTION REQUIRED, THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION, DEPTH, AND ALIGNMENT OF ALL EXISTING PIPES, CABLES, ETC. TO BE CROSSED OR CONNECTED TO. ANY CHANGES TO EXISTING PIPES OR UTILITIES, INCLUDING BUT NOT LIMITED TO, DEPTH, ALIGNMENT, FITTINGS, BENDS COUPLINGS ETC. SHALL ONLY BE PERFORMED WITH PRIOR WRITTEN APPROVAL FROM THE CITY.

UTILITY SEPARATION REQUIREMENTS

1. THE HORIZONTAL SEPARATION BETWEEN NEW STORM PIPING AND EXISTING WATER MAINS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

A. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF THREE FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, VACUUM TYPE SANITARY SEWER AND RECLAIMED WATER MAIN.

B. THE OUTSIDE OF WATER MAINS SHALL BE A MINIMUM OF SIX FEET FROM THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN THE OUTSIDE OF WATER MAINS AND THE OUTSIDE OF GRAVITY SANITARY SEWERS CAN BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

2. THE VERTICAL SEPARATION BETWEEN WATER MAINS AND SANITARY AND STORM SEWER, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER MAINS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

A. WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED GRAVITY SANITARY SEWER, VACUUM TYPE SANITARY SEWER AND STORM SEWER SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OUTSIDE OF THE SEWER. WHERE IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER EXISTING OR PROPOSED GRAVITY SANITARY SEWER, VACUUM TYPE SANITARY SEWER, AND STORM SEWER, THEN THE WATER MAIN CAN CROSS UNDER THESE TYPES OF PIPELINE SYSTEMS PROVIDED TH OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE PIPELINE. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM VACUUM TYPE SANITARY SEWER OR STORM SEWER JOINTS AND AT LEAST SIX FEET FROM GRAVITY SANITARY SEWER JOINTS.

B. WHEREVER POSSIBLE, WATER MAINS SHALL CROSS OVER EXISTING OR PROPOSED RECLAIMED WATER MAINS, WASTEWATER FORCE MAINS AND STORMWATER FORCE MAINS, WHETHER THE WATER MAIN CROSSES OVER OR UNDER THESE TYPES OF PIPELINE SYSTEMS, THE OUTSIDE OF THE WATER MAIN SHALL BE AT LEAST TWELVE INCHES FROM THE OUTSIDE OF THE EXISTING OR PROPOSED RECLAIMED WATER MAIN, WASTE WATER FORCE MAIN AND STORMWATER FORCE MAIN. AT THE CROSSING, THE PROPOSED PIPE JOINTS SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM RECLAIMED WATER MAIN JOINTS AND STORMWATER FORCE MAIN JOINTS, AND AT LEAST SIX FEET FROM THE JOINTS OF WASTEWATER FORCE MAINS.

3. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SUCH THAT THE UNDERGROUND DRAIN (WEEP HOLE) IS AT LEAST:
A. THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER MAIN, OR VACUUM TYPE SANITARY SEWER.
B. SIX FEET FROM ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN.

C. TEN FEET FROM ANY ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM SUCH AS SEPTIC TANKS, DRAINFIELDS, AND GREASE TRAPS. ON SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.

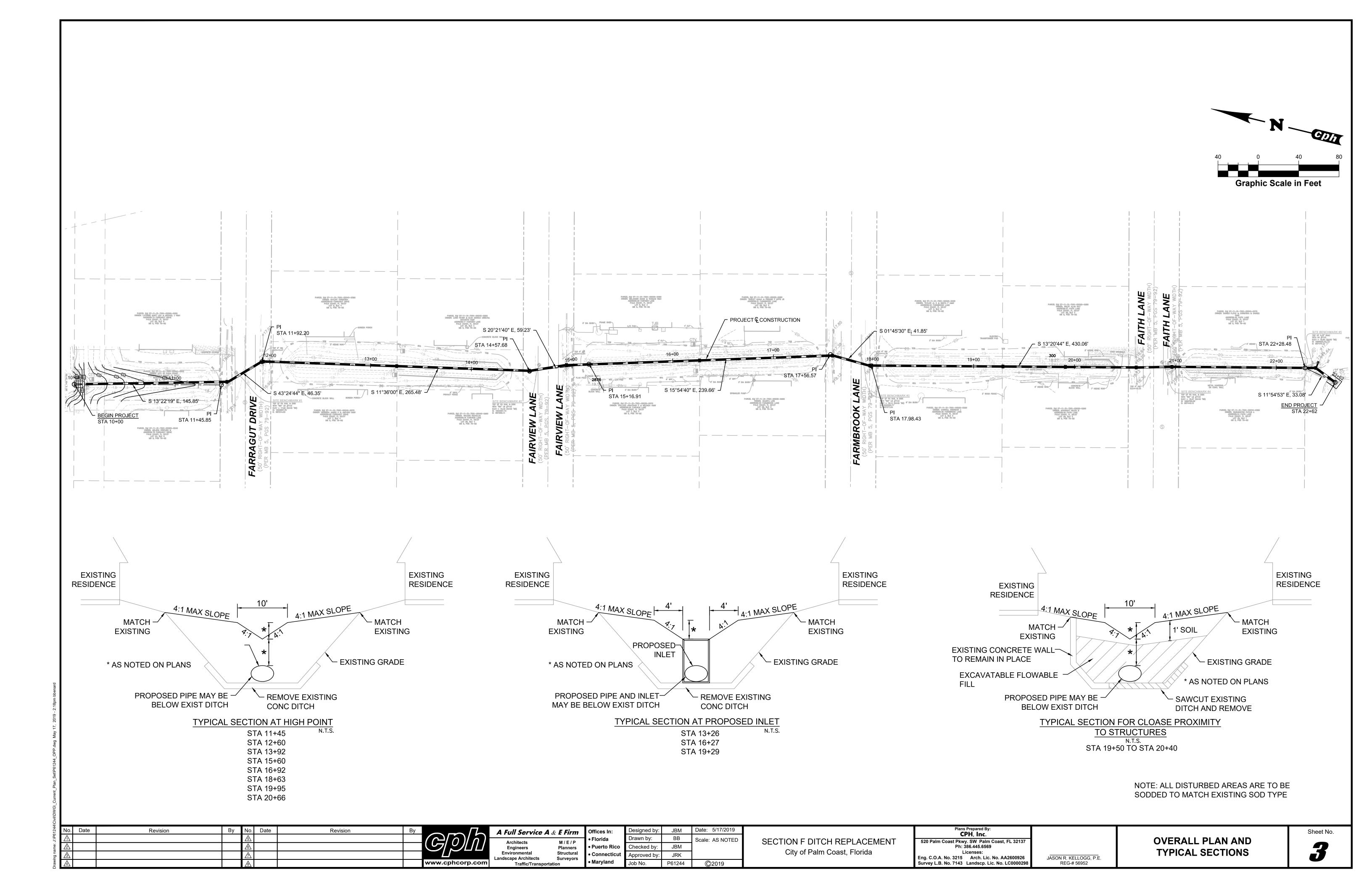
COMPACTION

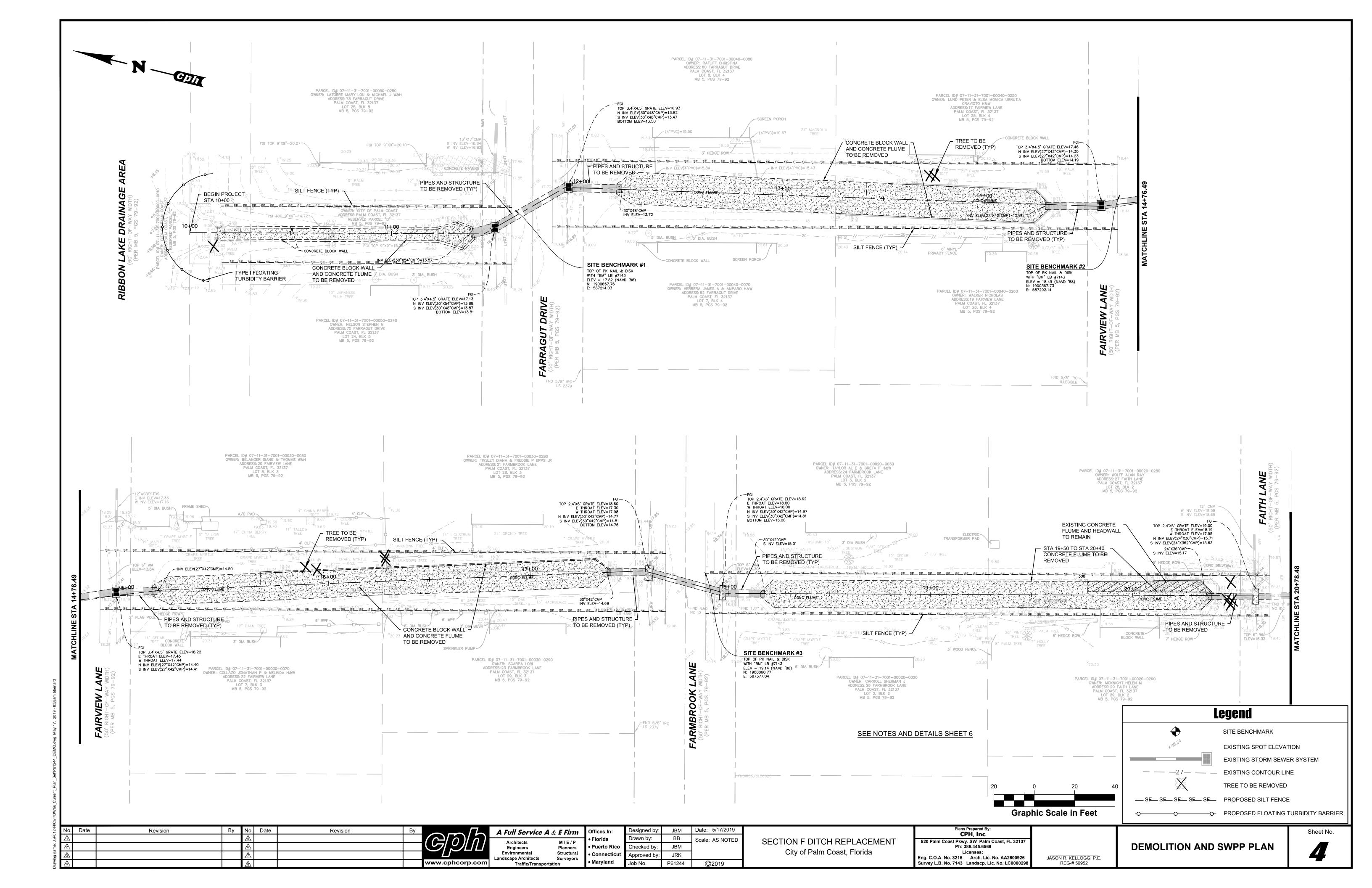
1. FILL MATERIALS PLACED UNDER PAVEMENT SHALL BE COMPACTED TO AT LEAST 98% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. ALL OTHER FILL AREAS ARE TO BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. FILL MATERIALS SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 12" LIFTS. THE CONTRACTOR SHALL PROVIDE THE CITY WITH ALL (PASSING AND FAILING) TEST RESULTS. RESULTS SHALL BE PROVIDED ON A TIMELY AND REGULAR BASIS PRIOR TO CONTRACTOR'S PAY REQUEST SUBMITTAL.

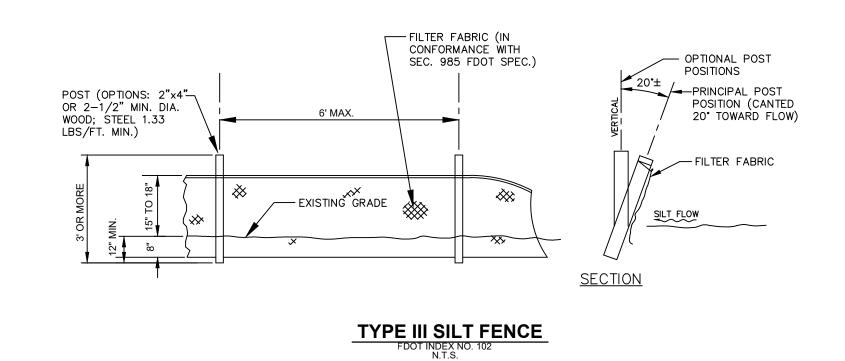
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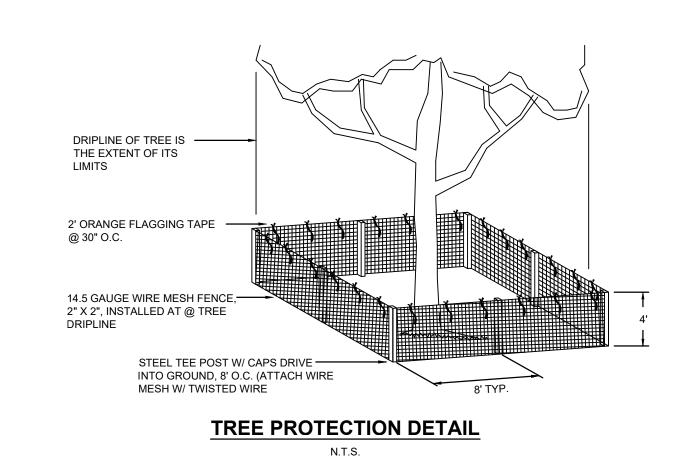
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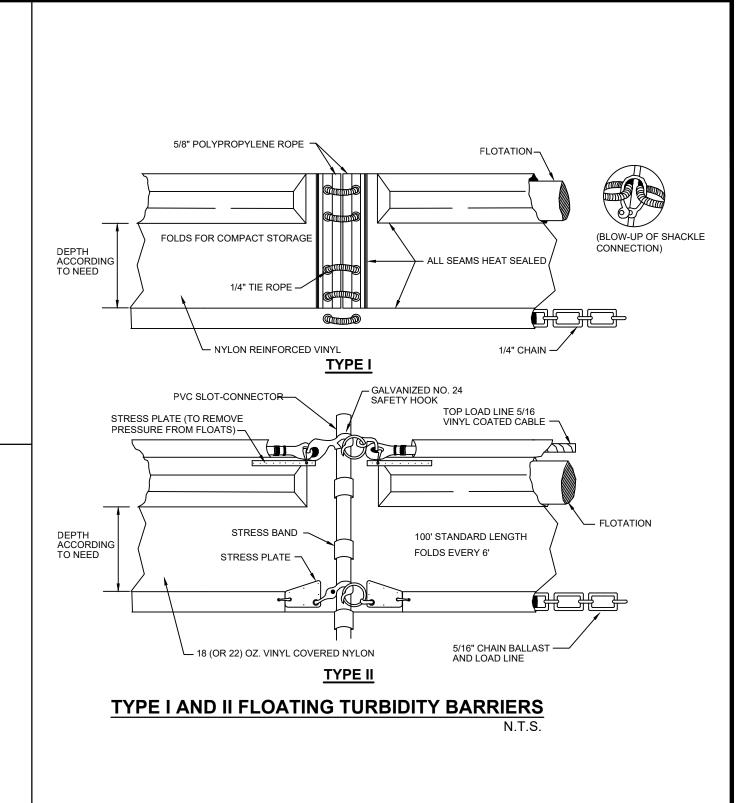
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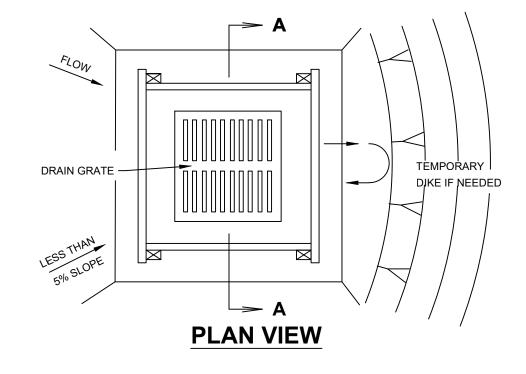


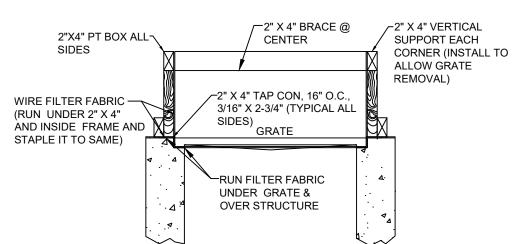












SECTION A - A

- NOTES:

 1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%).
- 2. THE TOP OF THE FRAME (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.
- 3. FASTEN FRAMING TO STRUCTURE TO ALLOW GRATE REMOVAL.
- 4. LEAVE EXPOSED EDGE TO ALLOW FOR PAVING TO GRADE

#2 REBARS, STEEL PICKETS, OR 2"X 2" HARD WOOD STAKES 1-6" TO 2" IN GROUND. BINDING WIRE OR TWINE FILTERED RUNOFF SEDIMENT LADEN RUNOFF							
PROPERLY INSTALLED HAY BALE (CROSS SECTION)							
(CROSS SECTION)							
1. EXCAVATE THE TRENCH. 2. PLACE AND STAKE HAY BALES. ANGLE FIRST STAKE TOWARD PREVIOUSLY LAID BALE WIDTH 3. WEDGE LOOSE HAY BETWEEN BALES. 4. BACKFILL AND COMPACT THE EXCAVATED SOIL.							
CONSTRUCTION OF HAY BALE BARRIER B B CONSTRUCTION OF HAY BALE BARRIER							
POINT "A" SHALL BE HIGHER THAN POINT "B"							
PROPER PLACEMENT OF HALE BALE BARRIER IN DRAINAGE WAY							
HAY BALE BARRIER							

LTER FABRIC INLET PROTECTION DETAI
N.T.S.

No.	Date	Revision	Ву	No.	Date	Revision	Ву	
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2				<u></u>				i GI YUL
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4				<u></u>				www.cphcorp.co

Graphic Scale in Feet

Legend

— — —27— — EXISTING CONTOUR LINE

— SE_ SE_ SE_ SE_ PROPOSED SILT FENCE

SITE BENCHMARK

EXISTING SPOT ELEVATION

TREE TO BE REMOVED

EXISTING STORM SEWER SYSTEM

——O- PROPOSED FLOATING TURBIDITY BARRIER

A Full Service A & E Firm M/E/P Engineers Planners Structural Environmental Surveyors Landscape Architects Traffic/Transportation

Offices In: Puerto Ri Connecti Maryland

:	Designed by:	JBM	Date: 5/17/2019
	Drawn by:	BB	Scale: AS NOTED
Rico	Checked by:	JBM	
icut	Approved by:	JRK	
d	Job No.	P61244	©2019

SECTION F DITCH REPLACEMENT City of Palm Coast, Florida

Plans Prepared By: **CPH**, **Inc**. 520 Palm Coast Pkwy. SW Palm Coast, FL 32137 Ph: 386.445.6569 Eng. C.O.A. No. 3215 Arch. Lic. No. AA2600926 Survey L.B. No. 7143 Landscp. Lic. No. LC0000298

JASON R. KELLOGG, P.E.

REG-# 56952

DEMOLITION AND SWPP PLAN

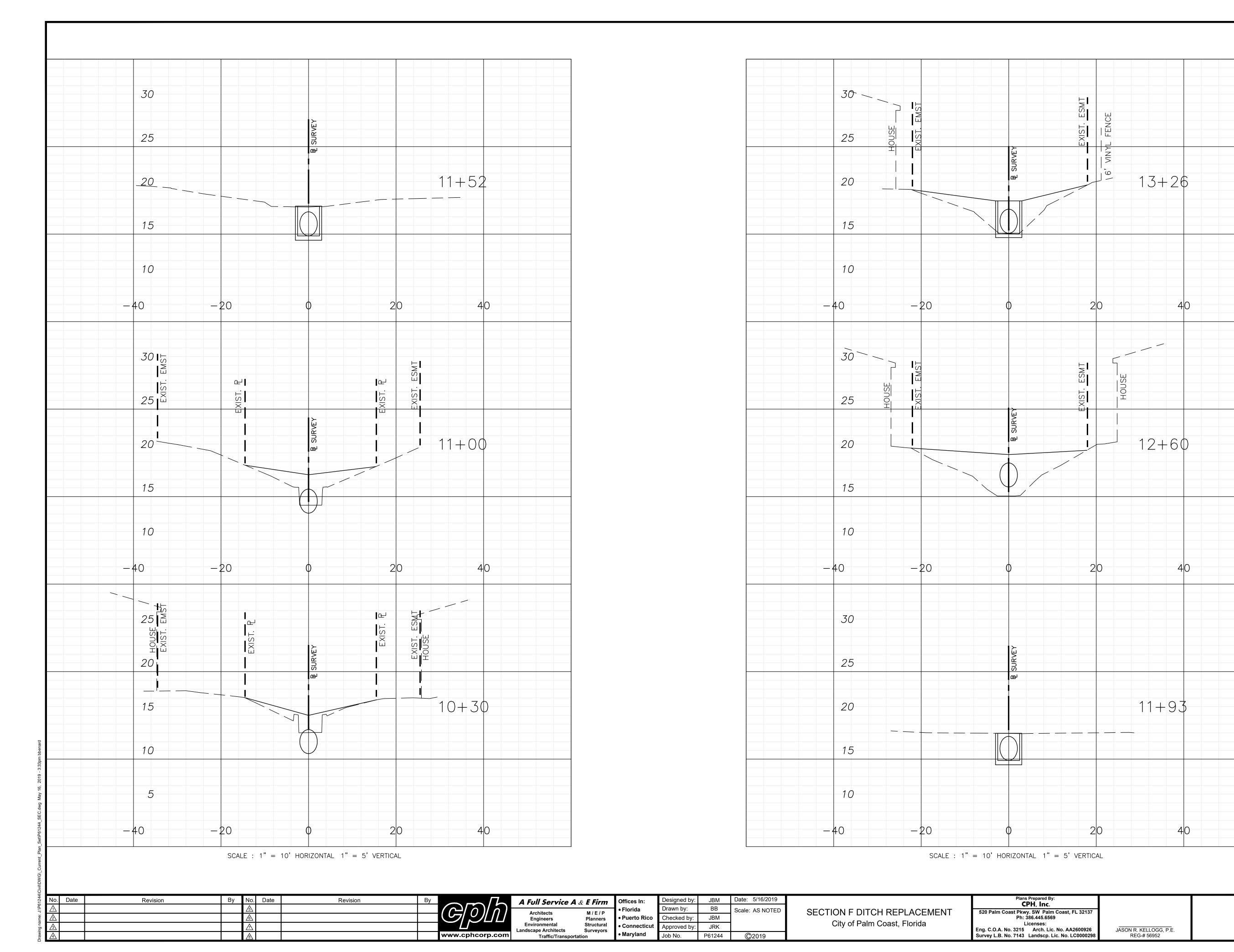
N.T.S.



GENERAL NOTES: 1. SILT FENCE SHALL BE PLACED AND INSPECTED BY THE CITY PRIOR TO ANY CONSTRUCTION. 2. CONTRACTOR TO COORDINATE WITH THE CITY ON ALL MOBILIZATION AND EQUIPMENT STORAGE LOCATIONS PRIOR TO ANY CONSTRUCTION. 3. CONTRACTOR TO PROVIDE THE CITY WITH PROJECT TRAFFIC CONTROL PLAN AND SCHEDULE OF ALL PHASES OF CONSTRUCTION PRIOR TO ANY CONSTRUCTION ACTIVITY. 4. TRAIL AND SIDEWALK CLOSURES MUST BE COORDINATED WITH THE CITY AND SCHEDULED. APPROPRIATE SIGNAGE AND TEMPORARY ACCESS/USE MUST BE PROVIDED BY THE CONTRACTOR AND APPROVED BY THE CITY PRIOR TO ANY CONSTRUCTION ACTIVITY.

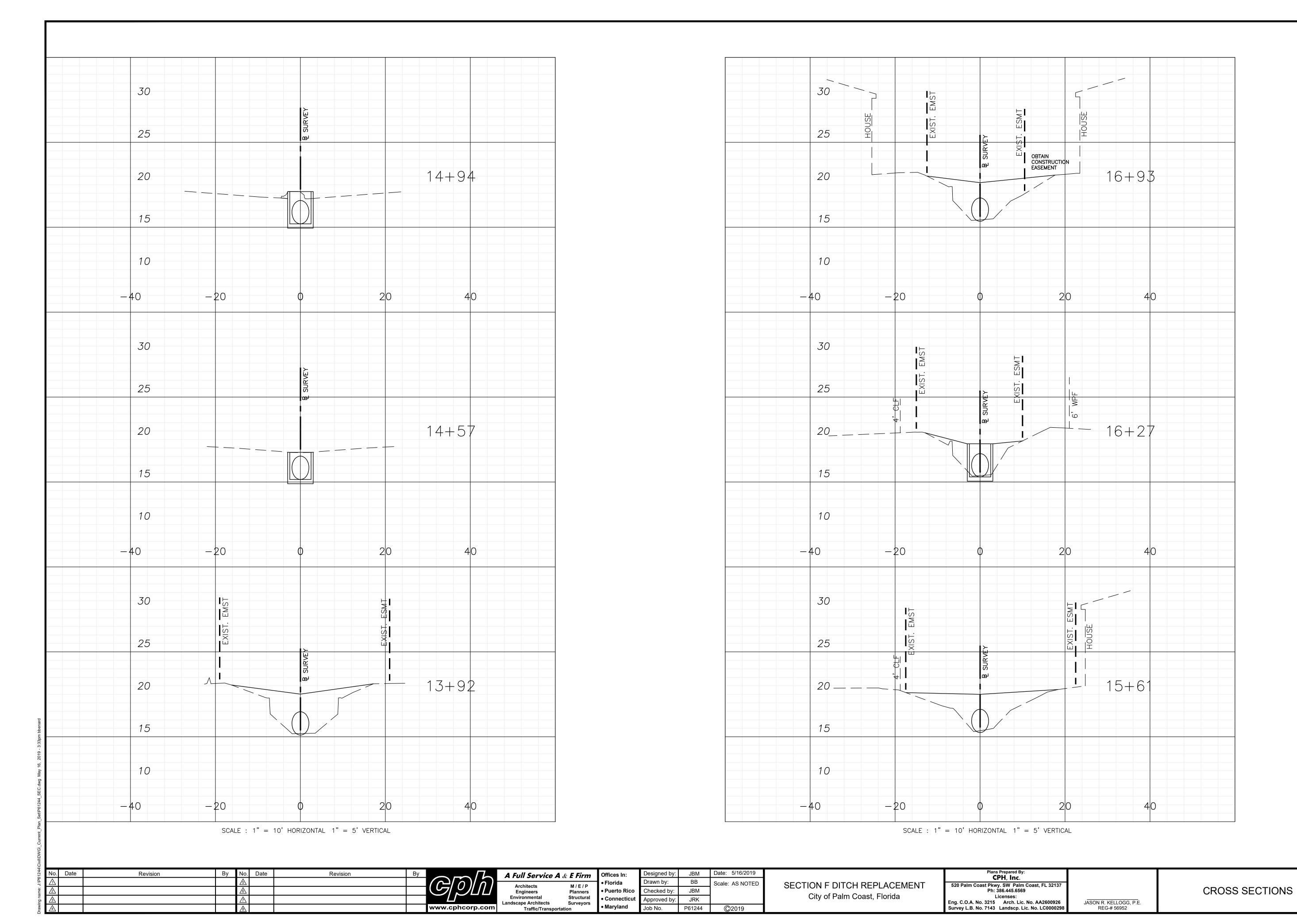
- 5. ALL UTILITY CONSTRUCTION AT PROPOSED STORM PIPING IS TO BE COORDINATED WITH THE
- 6. ALL DISTURBED AREAS ARE TO BE SODDED w/ BAHIA SOD.

CITY OF PALM COAST.

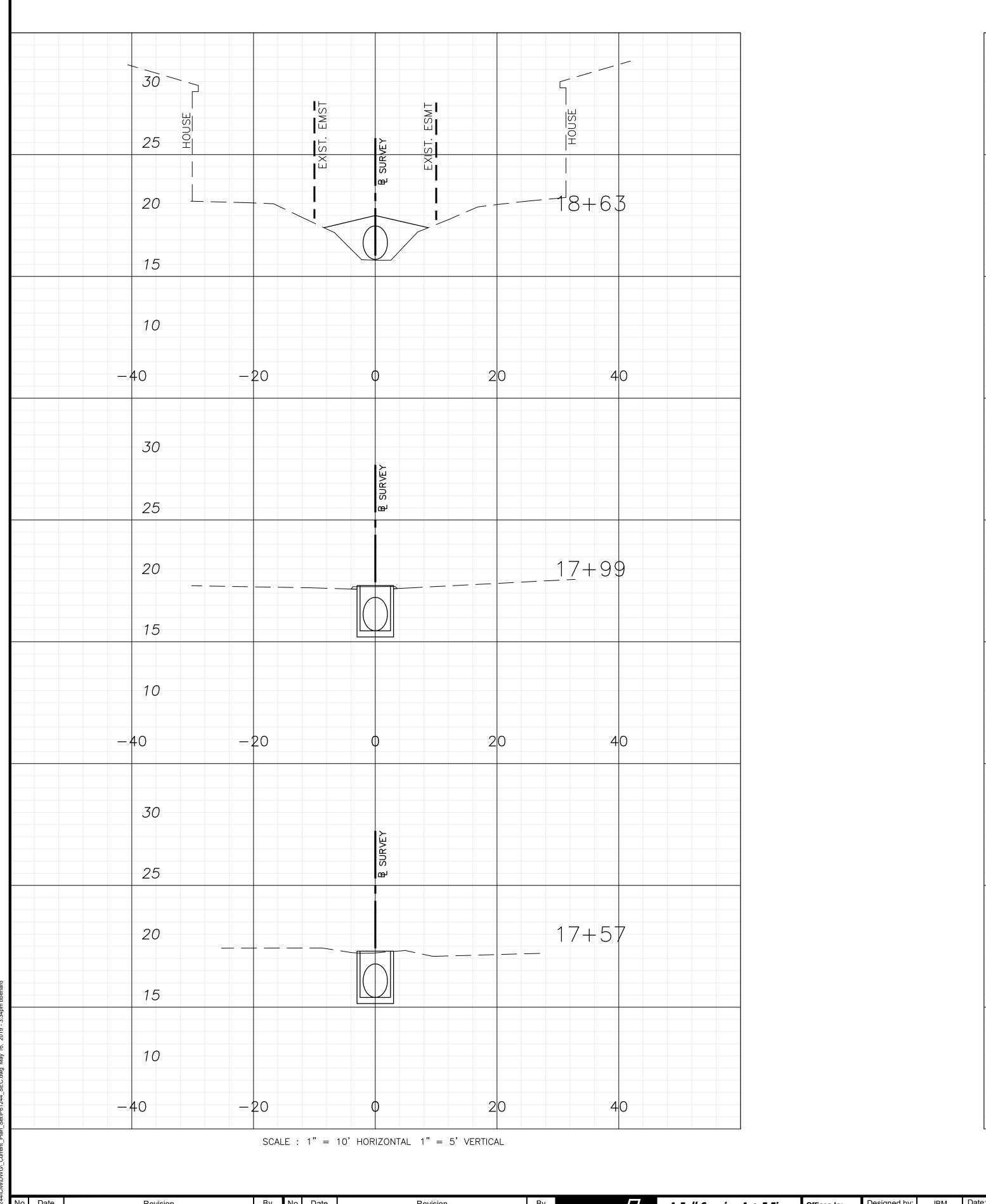


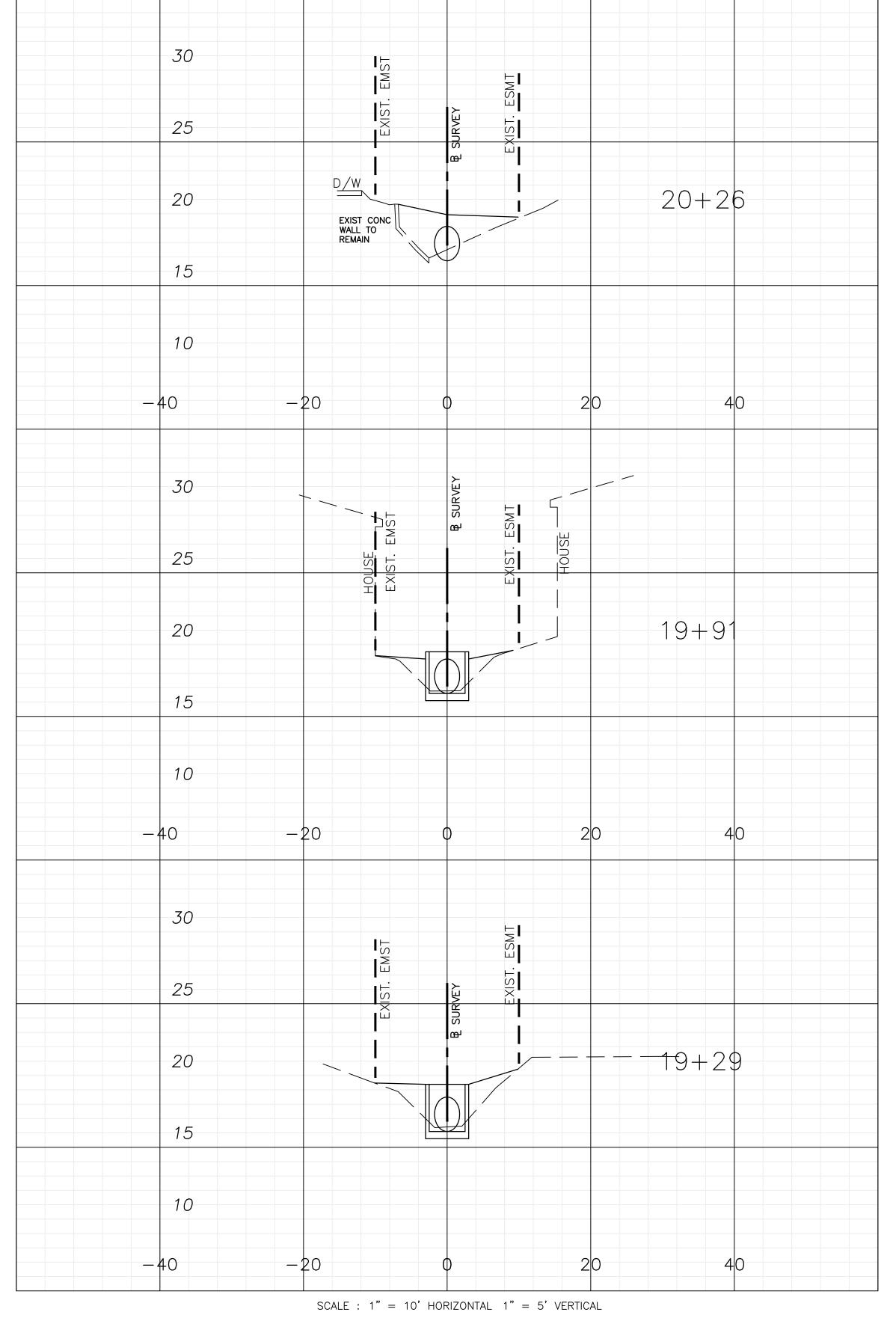
CROSS SECTIONS

Sheet No.



Sheet No.





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Traffic/Transportation Drawn by: BB Scale: AS NOTED M/E/P Puerto Rico Checked by: Planners Structural Surveyors Approved by: JRK www.cphcorp.com

Maryland

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SECTION F DITCH REPLACEMENT City of Palm Coast, Florida

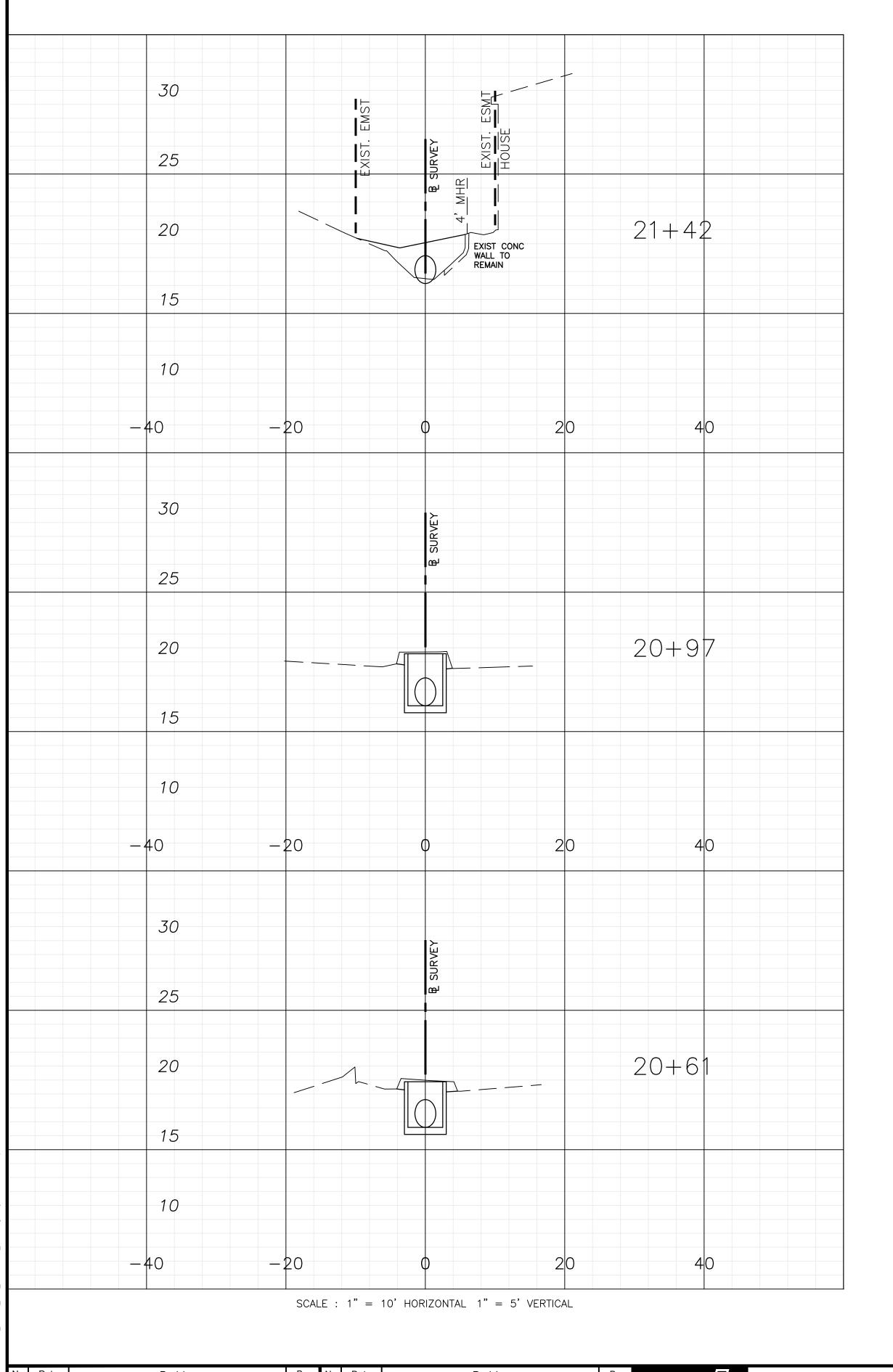
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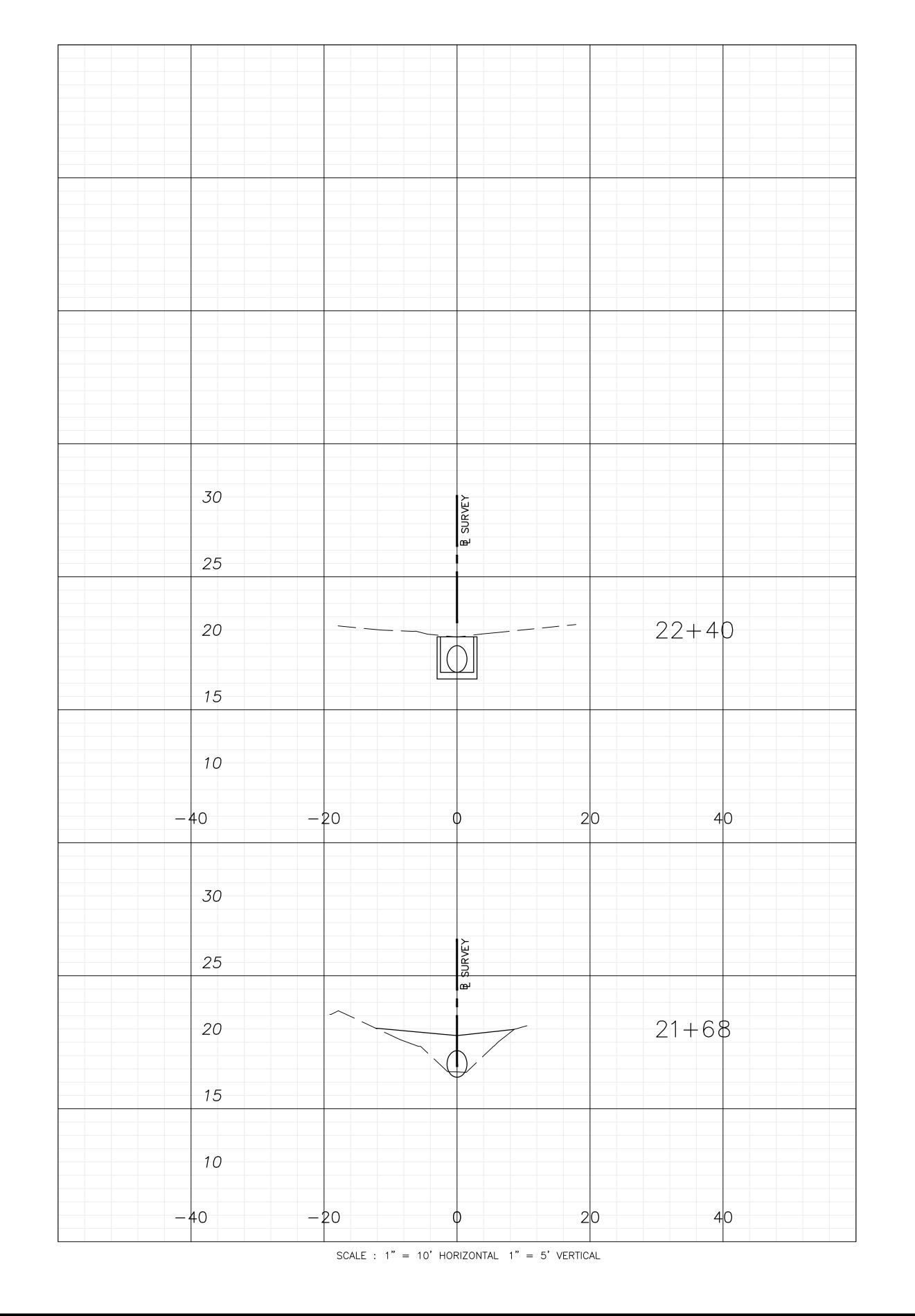
CPH, Inc.

520 Palm Coast Pkwy. SW Palm Coast, FL 32137
Ph: 386.445.6569 Licenses:
Eng. C.O.A. No. 3215 Arch. Lic. No. AA2600926
Survey L.B. No. 7143 Landscp. Lic. No. LC0000298 JASON R. KELLOGG, P.E. REG-# 56952

CROSS SECTIONS







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Date: 5/16/2019 JBM Drawn by: BB Scale: AS NOTED Checked by: JBM Approved by: JRK P61244 ©2019

SECTION F DITCH REPLACEMENT City of Palm Coast, Florida

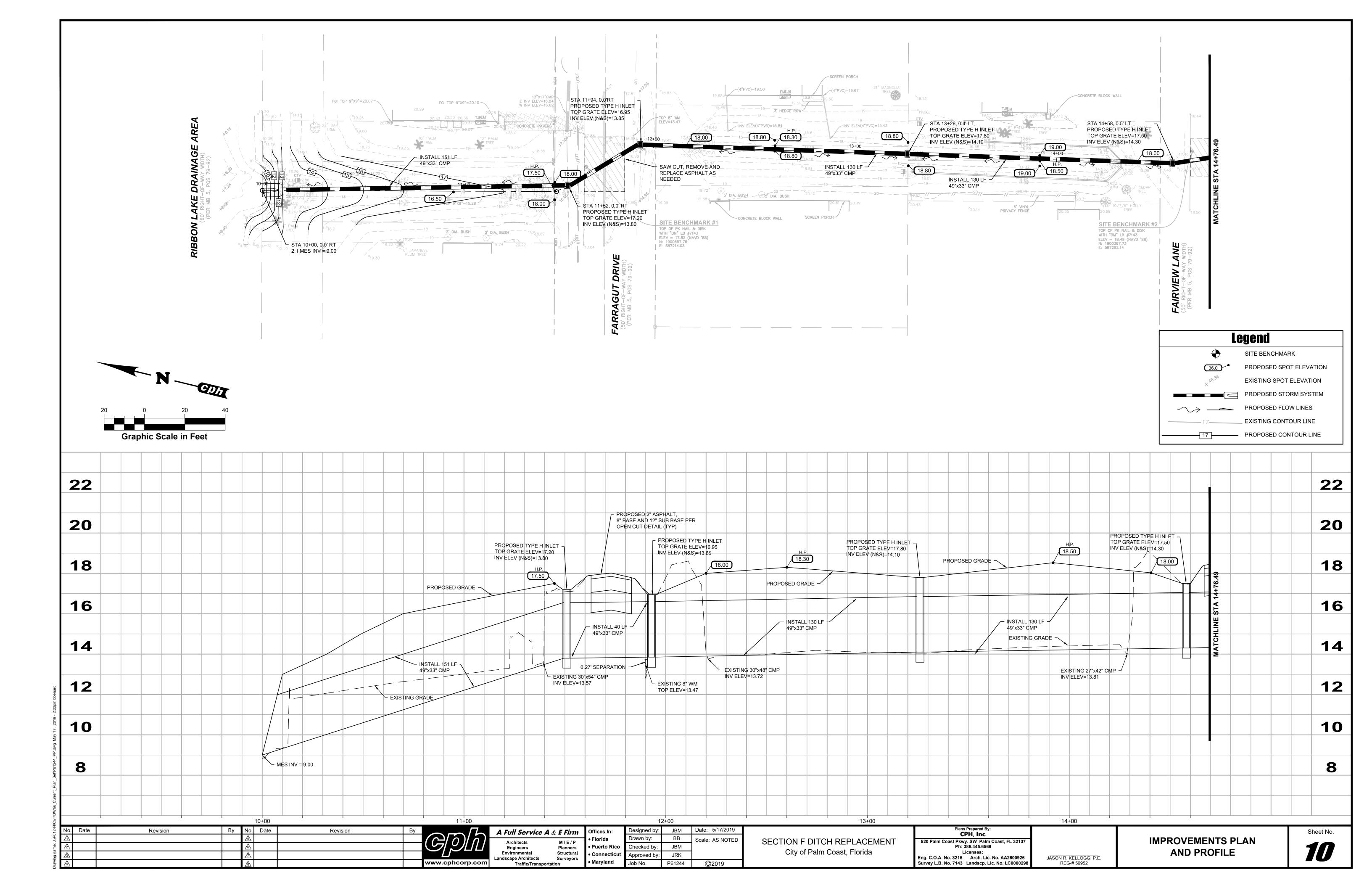
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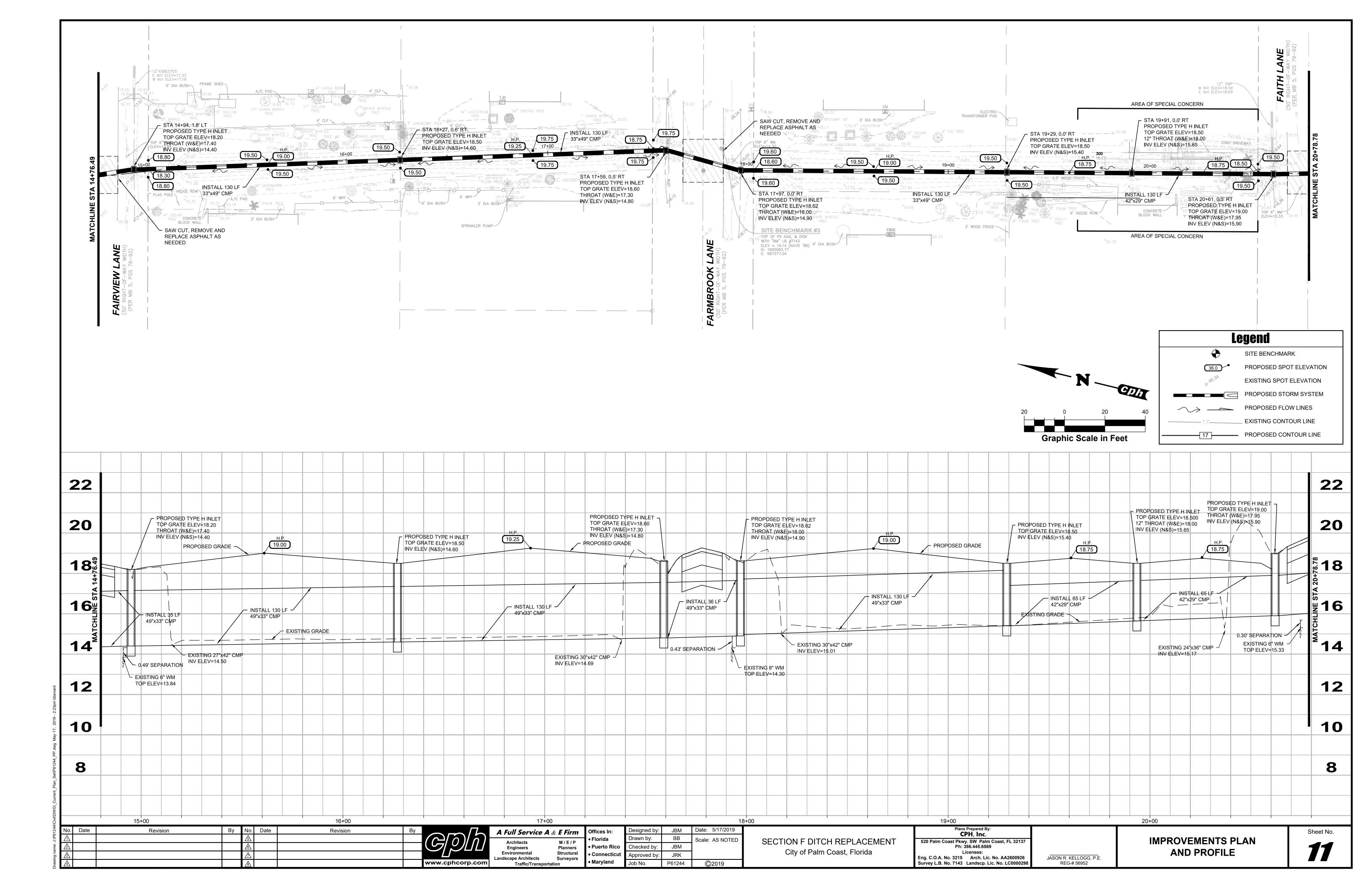
CPH, Inc.

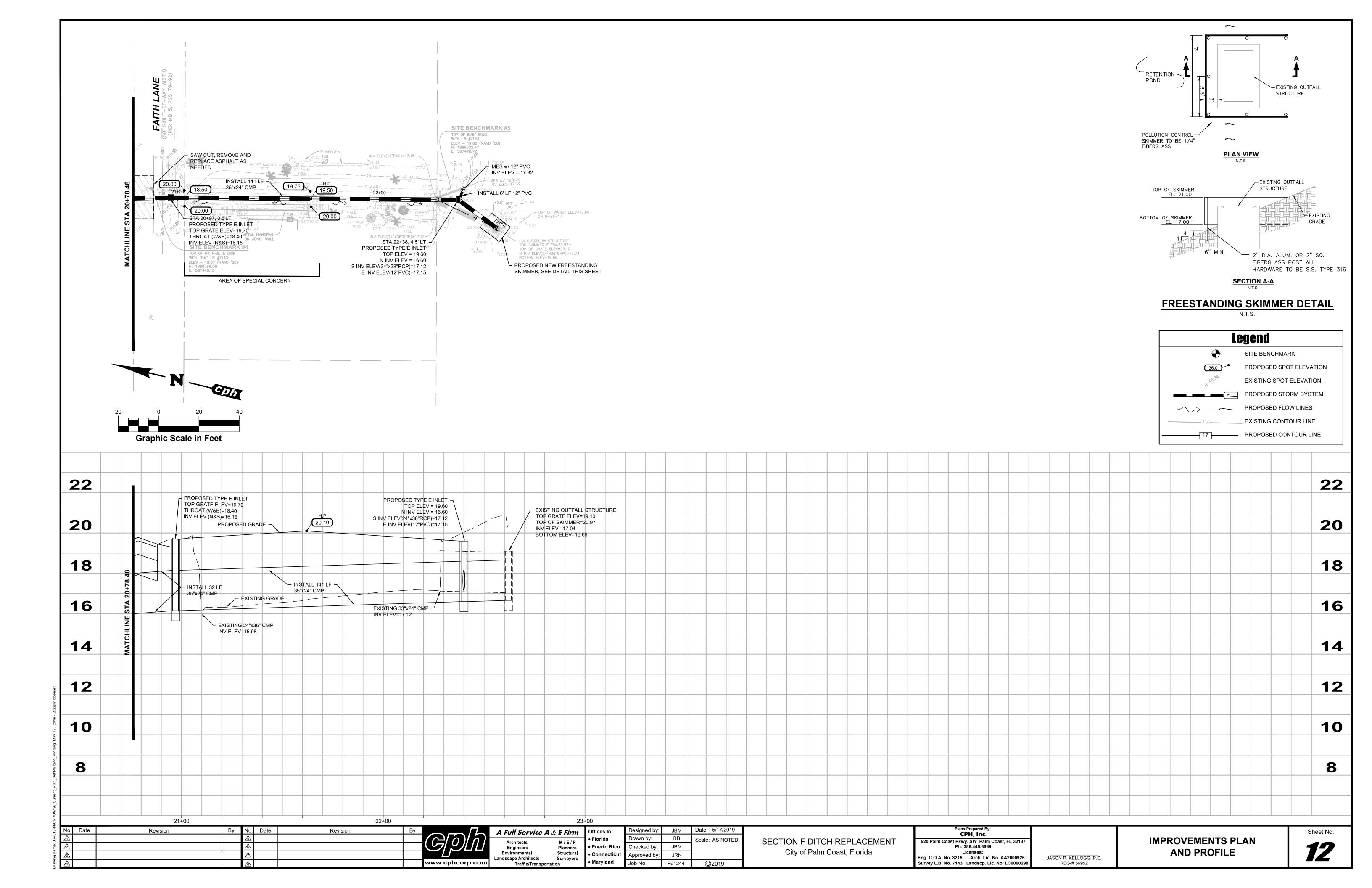
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CROSS SECTIONS









- 4" CONCRETE SLAB - TOOLED JOINTS @ 5' 1. 3/4"x4" PREMOLDED EXPANSION MATERIALS AROUND P.P. OR OTHER STRUCTURES IN WALK. - 4" P.C. CONCRETE 2. EXPANSION JOINTS MAXIMUM DISTANCE = 100', USED 3/4"x4" SECTION A-A PREMOLDED EXPANSION MATERIAL 3. CONTRACTION JOINTS MAXIMUM DISTANCE = 21', SAW CUT 2"

CONCRETE SIDEWALK DETAIL

4'-4"

PLAN

DEEP AND FILL WITH HOT POURED SEALER.

5. MINIMUM 3,000 P.S.I. CONCRETE REQUIRED.

GRATE-2" CL.

SECTION

TOP

TYPE E INLET DETAIL

1'-5"

- EYE BOLTS

SEE INDEX 201

- #4 BARS @ 12"

CTRS.

- 2 1/2"

4. SAW CUT JOINTS WITHIN 24 HOURS.

SANITARY GRAVITY, FORCE MAIN, REUSE MAIN, STORM SEWER, & POTABLE WATER MAIN SEPARATION NOTES & SOLUTIONS

1. HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS. WASTEWATER OR STORMWATER FORCEMAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. A. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE INSTALLED TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. B. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE INSTALLED TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET. AND PREFERABLY TEN FEET. BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

C. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE INSTALLED TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS INSTALLED AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

D. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE INSTALLED TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

2. VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCEMAINS, AND RECLAIMED WATER PIPELINES.

A. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE INSTALLED SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO INSTALL THE WATER MAIN ABOVE THE OTHER PIPELINE.

B. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE—TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE INSTALLED SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO INSTALL THE WATER MAIN ABOVE THE OTHER PIPELINE.

C. AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS A AND B ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE—TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

3. NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SUCH THAT THE UNDERGROUND DRAIN (WEEP HOLE) IS AT LEAST: A. THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER MAIN OR VACUUM TYPE SANITARY SEWER.

B. SIX FEET AWAY FROM ANY EXISTING OR PROPOSED GRAVITY SANITARY SEWER AND WASTEWATER FORCE MAIN C. TEN FEET FROM ANY ON SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM SUCH AS SEPTIC TANKS, DRAINFIELDS, AND GREASE TRAPS. ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS DO NOT INCLUDE PACKAGE SEWAGE TREATMENT FACILIITIES AND PUBLIC WASTEWATER TREATMENT FACILITIES.

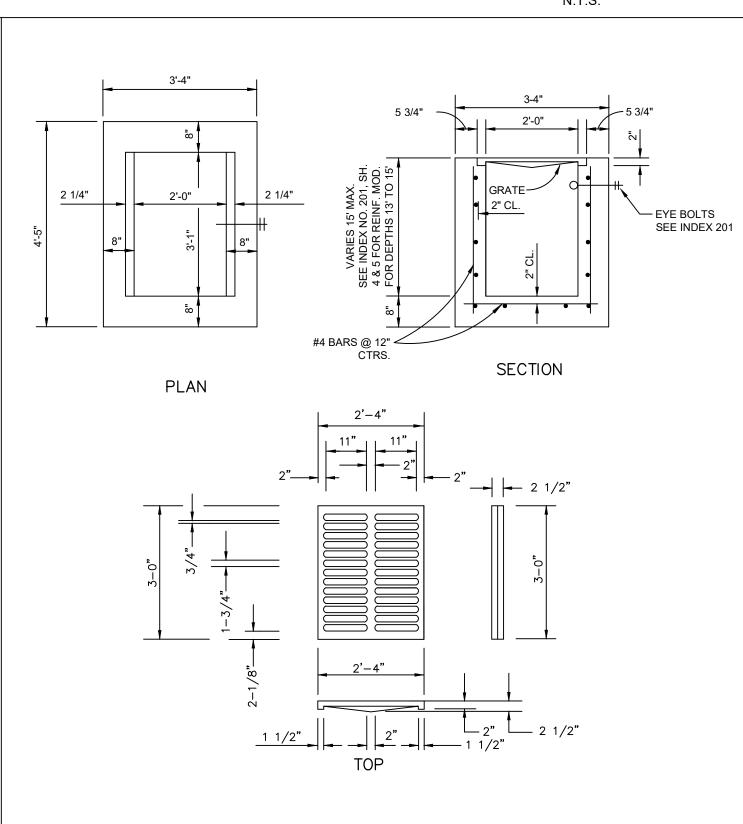
4. NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

5. WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE.

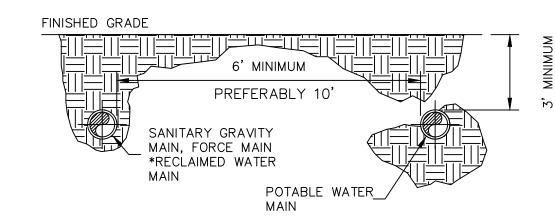
*RECLAIMED WATER MAIN NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

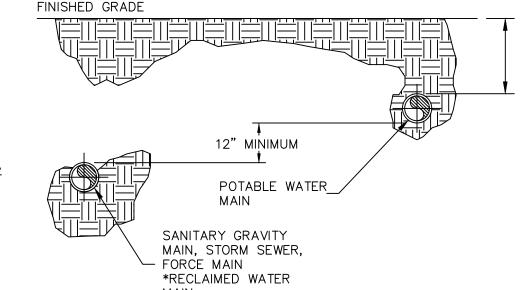
** RECLAIMED WATER MAIN REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C

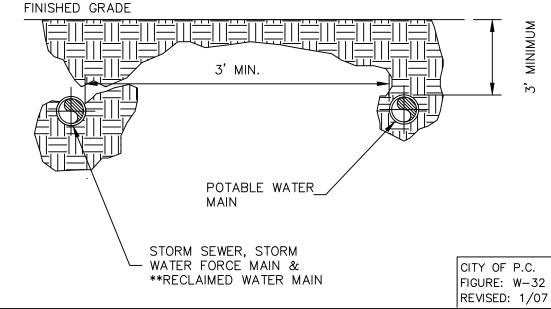
UTILITY SEPARATION DETAIL



TYPE H INLET DETAIL







NEW ASPHALT PAVEMENT

TRENCH | WIDTH

PORTLAND CEMENT

CONCRETE PATCH

TOP OF CONCRETE PATCH

TO BE 1 1/2" BELOW TOP

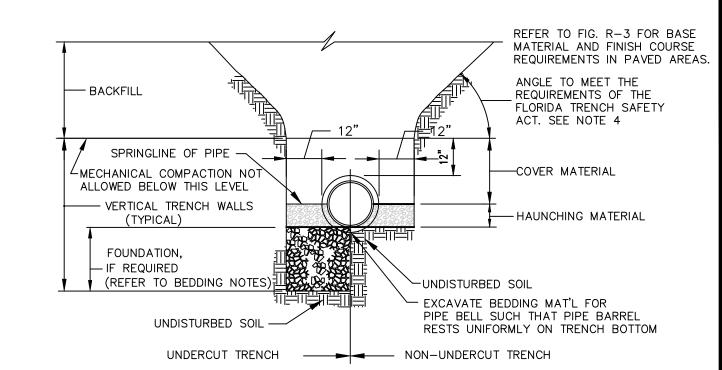
WITH TYPE S-3 ASPHALT.

PAVEMENT

OF EXISTING SURFACE.

FILL REMAINING 1 1/2"

UTILITY PIPE



1. BEDDING NOTES:

TYPICAL DETAIL-OPEN CUT

A. NORMALLY APPROVED CLEAN BACKFILL MATERIAL WILL BE USED AS A 4-INCH TYPICAL BEDDING UNDER THE PIPE. HOWEVER, WHERE UNSTABLE OR UNSITABLE MATERIAL EXISTS FOR BEDDING, AS DETERMINED BY THE UTILITY INSPECTOR AND / OR DESIGN ENGINEER, A SUFFICIENT DEPTH OF THE UNSTABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH NOT LESS THAN 6-INCHES NOR MORE THAN 24-INCHES OF ONE OF THE FOLLOWING MATERIALS: (1) APPROVED CLEAN BACKFILL (FROM ADJACENT AREA)

(2) FDOT SIZE 6 AGGREGATE (3/8-INCH TO 3/4-INCH) 3) CRUSHED SHELL AS REQUIRED TO IMPLEMENT A STABLE BEDDING FOR THE PIPE. B. BEDDING COMPACTION OF 95 PERCENT IS REQUIRED WHERE CLEAN BACKFILL MATERIAL IS USED. WHEN USING

CRUSHED SHELL OR GRAVEL AS BACKFILL, HAND TAMPING IS REQUIRED. C. IF SOLID HARDPAN IS ENCOUNTERED AT THE TRENCH BOTTOM, AND NO UNDERCUT (EXCLUDING TEETH DEPTH) HAS BEEN MADE IN THE HARDPAN, NO COMPACTION IS REQUIRED ON THE MATERIAL USED TO BRING THE EXCAVATION TO THE TRENCH BOTTOM.

D. ALL ASPECTS OF THIS BEDDING WORK WILL BE DETERMINED BY THE UTILITY INSPECTOR

2. PERCENT COMPACTION:

COMPACTION REQUIREMENTS LISTED BELOW ARE IN PERCENTAGES OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR AASHTO T-180 (ASTM D-1557) UNLESS OTHERWISE SPECIFICALLY APPROVED. A. 95 PERCENT FOR PIPE BEDDING, EXCEPT FOR THE VARIOUS

EXCEPTIONS LISTED IN THE BEDDING NOTES IN WHICH NO FORMAL

COMPACTION TEST IS REQUIRED. B. BAR TAMP HAUNCHING MATERIAL

95 PERCENT FOR COVER MATERIAL. (6-INCH LIFTS) D. 95 PERCENT FOR BACKFILL IN NON-ROADWAY AREAS. (12-INCH

E. 98 PERCENT FOR BACKFILL IN ROADWAY AREAS. (12-INCH LIFTS)

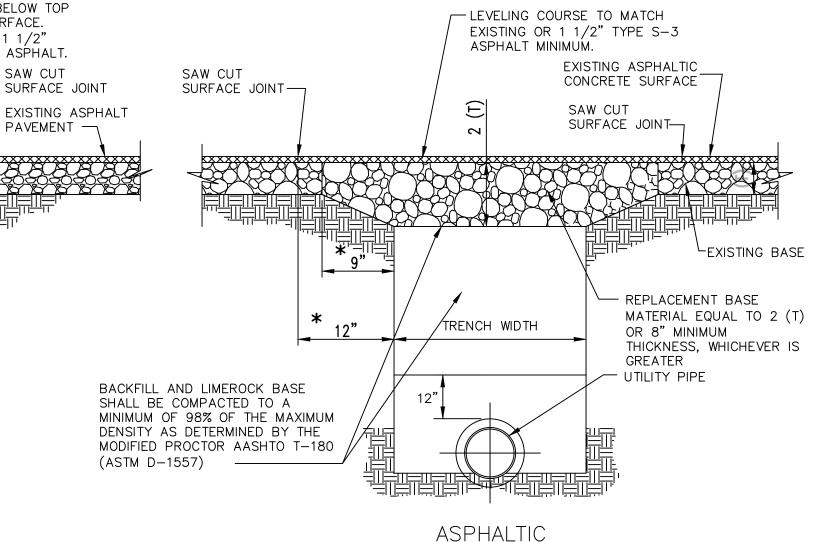
TESTING FREQUENCY:

LOCATION OF TESTING STATIONS WILL BE RANDOMLY SELECTED AND WITHIN THE FOLLOWING MINIMUM FREQUENCIES: BACKFILL: ONE (1) TEST PER 300 LINEAR FEET OR PORTION THEROF. TYPICAL ELEVATIONS OF TEST POINTS WILL BE EVERY TWO (2) FEET, STARTING ONE FOOT ABOVE TOP OF PIPE. THE PERCENT (%) OF MAXIMUM DENSITY LISTED ABOVE ARE MINIMUMS AND MAY BE INCREASED AT THE DIRECTION OF THE UTILITY INSPECTOR AND / OR DESIGN ENGINEER.

4. IF ANGLE CANNOT BE MET DUE TO TIGHT WORKING CONDITIONS, TRENCH SHALL BE SHEETED OR A TRENCH BOX UTILIZED.

PIPE BEDDING & TRENCHING DETAIL

CITY OF P.C. FIGURE: R-4 REVISED: 7/1



CONCRETE PATCH

NOTES:

6x6x1.4x1.4 WWF -

* THESE DIMENSIONS

APPLY AT TOP OF

TRENCH EXCAVATION

TRENCH WALL-

- 1. ALL PUBLIC ROADS AND PAVED DRIVE CROSSINGS SHALL BE BACKFILLED WITH COMMON FILL MATERIAL AND TOPPED WITH AT LEAST 8" IN THICKNESS OF LIMEROCK BASE COURSE MATERIAL DURING CONSTRUCTION OF UTILITY TRENCH.
- 2. IN AREAS WHERE ABOVE DETAILS DEVIATE FROM COUNTY AND/OR CITY STANDARDS, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS AND LABOR TO CONFORM TO SAID
- 3 ALL EXCAVATIONS SHALL COMPLY WITH THE TRENCH SAFETY ACT (F.S. 553.60 THRU 553.64, LAWS OF FLORIDA). LATEST EDITION.

STANDARD ROADWAY OPEN-CUT DETAIL

CITY OF P.C. FIGURE: R-3 REVISED: 3/09

Revision Revision

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SECTION F DITCH REPLACEMENT City of Palm Coast, Florida

Plans Prepared By CPH, Inc. 520 Palm Coast Pkwy. SW Palm Coast, FL 32137 Ph: 386.445.6569 Eng. C.O.A. No. 3215 Arch. Lic. No. AA2600926 Survey L.B. No. 7143 Landscp. Lic. No. LC000029

DETAILS JASON R. KELLOGG, P.E. REG-# 56952

Sheet No. 13