

CONSTRUCTION PLANS FOR END OF SERVICE LIFE FORCE MAIN REPLACEMENT PACKAGE A: FM 28A/ PORT MANATEE / ORLANDO AVENUE

MANATEE COUNTY, FLORIDA

SEPTEMBER 2018

MANATEE COUNTY PROJECTS #6089380, #6089880, #6089780



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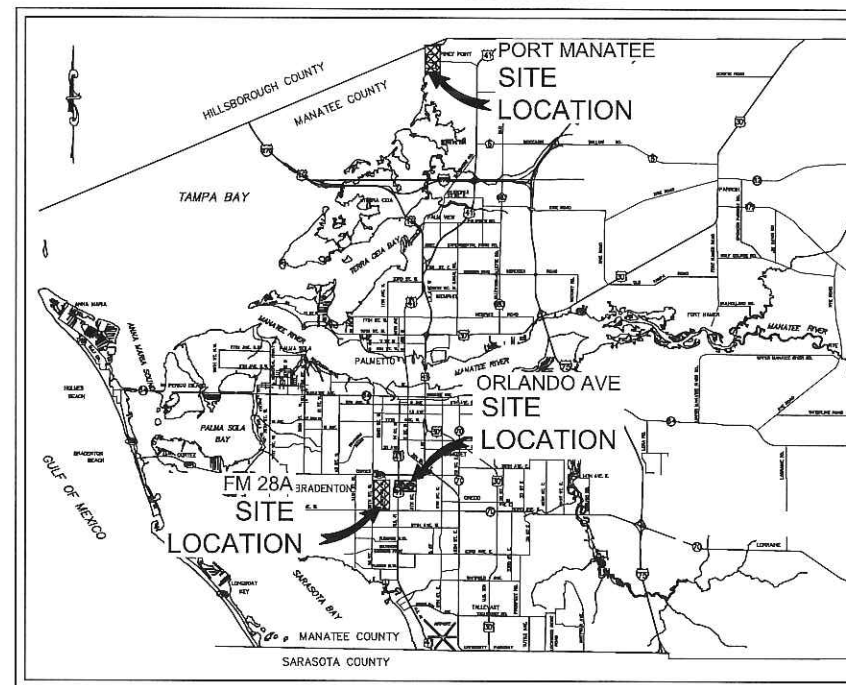
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PROJECT VICINITY MAP

N.T.S.

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PREPARED BY
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THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILES WILL BE PROVIDED TO AID IN THE SITE CONSTRUCTION STAKEOUT. ANY DISCREPANCIES FOUND BETWEEN AUTOCAD FILES AND SITE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO THAT STAKEOUT.

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William Wade Wood
LICENSED PROFESSIONAL SURVEYOR
STATE OF FLORIDA
DATE: Sept. 2018
KHA/PROJECT NO. 134405016
SHEET NUMBER 1

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GENERAL

1. ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS: MICHAEL STURN, P.E. AND CAN BE REACHED AT (941) 708-7450 X7332
2. IF THE CONTRACTOR WANTS A SITE VISIT PRIOR TO BIDDING, THESE SHALL BE ARRANGED THROUGH THE COUNTY'S PURCHASING DIVISION.
3. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY UTILITY AND TRANSPORTATION STANDARDS AND/OR FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" UNLESS OTHERWISE INDICATED ON THE PLANS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE, AND LOCAL AGENCIES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS THAT ARE NOT PROVIDED IN THE BID DOCUMENTS, AT NO ADDITIONAL COST TO THE OWNER.
5. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATION THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
6. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
7. THE CONTRACTOR SHALL NOTIFY SUNSHINE 811 (1-800-432-4770) AT LEAST 2 FULL BUSINESS DAYS PRIOR TO CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITIES FOR THE POSSIBLE RELOCATION OR THE TEMPORARY MOVEMENT OF ANY EXISTING UTILITIES WITHIN THE RIGHTS-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING UTILITIES FROM DAMAGE. EXPLORATORY EXCAVATION MAY BE REQUIRED PRIOR TO CONNECTION TO EXISTING UTILITIES.
8. NO WORK, EXCEPT FOR EMERGENCY TYPE, SHALL BE PERFORMED AFTER 7:00 PM AND BEFORE 7:00 AM. FOR ADDITIONAL PROJECT RESTRAINTS, REFER TO SECTION 01310 OF THE SPECIFICATIONS.
9. THE CONTRACTOR SHALL PROVIDE CERTIFIED RECORD DRAWINGS AS OUTLINED IN THE SPECIFICATIONS. RED-LINE DRAWINGS SHALL BE CURRENT WITH EACH PAY APPLICATION SUBMITTED AND WILL BE CHECKED AS PART OF THE PAY APPLICATION REVIEW PROCESS. PAYMENT WILL NOT BE MADE TO CONTRACTOR WITHOUT APPROVED RED-LINE DRAWINGS. THE MOST CURRENT SET OF RED-LINE DRAWINGS SHALL ALSO BE BROUGHT TO EACH MONTHLY PROGRESS MEETING.
10. THE CONTRACTOR SHALL INCLUDE IN HIS BID: BY-PASS PUMPING FACILITIES, PUMPS, FITTINGS, LABOR, ETC. AS NECESSARY, BASED ON METHOD AND SEQUENCE OF CONSTRUCTION TO COMPLETE ALL WORK WHILE MAINTAINING SEWER SERVICE OPERATIONS AT ALL TIMES.
11. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH A DETAILED CONSTRUCTION PHASING PLAN BASED ON THE CONNECTION SEQUENCING BELOW. EXISTING FORCE MAIN 28A, PORT MANATEE, AND ORLANDO AVENUE SHALL REMAIN IN SERVICE UNTIL ALL CONNECTIONS TO THE PROPOSED FORCE MAIN ARE COMPLETED.
12. ALL PROPOSED WORK SHALL BE COORDINATED WITH MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION.
13. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR REVIEW OF ALL PIPE CONNECTIONS, TRANSITIONS, AND SPECIAL APPURTENANCES PRIOR TO FABRICATION OR DELIVERY TO THE JOB SITE.
14. UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND PVC PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND PVC PIPE SHALL HAVE FLANGED JOINTS. ALL JOINTS SHALL BE FULLY RESTRAINED PER THE DETAILS IN THESE PLANS.
15. SANITARY SEWERS AND FORCEMAINS CROSSING OVER OR UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" 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 OR FORCE MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10" BETWEEN ANY TWO JOINTS. AS AN ALTERNATIVE, THE SEWER OR FORCE MAIN MAY BE PLACED IN A WATERTIGHT CASING PIPE, CONSISTENT WITH F.A.C. RULE 62-555.314.
16. ALL BELOW-GRADE FITTINGS 4-INCHES AND GREATER IN DIAMETER SHALL BE MECHANICAL JOINT DUCTILE IRON WITH PROTECTO 401 LINING FOR THEIR INTERIOR SURFACES AND COAL TAR ENAMEL COATING ON EXTERIOR SURFACES, AS NOTED IN SECTION 02815 OF SPECIFICATIONS.
17. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SECURE PROPERTY FOR STAGING MATERIALS AND EQUIPMENT.
18. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUIRE, OR ENTER INTO AGREEMENTS, FOR LANDS FOR LAY DOWN AREAS AND STAGING. THE COUNTY WILL COORDINATE AND ADVISE, TO HELP IDENTIFY POSSIBLE PARCELS. IT IS FINALLY THE CONTRACTOR'S RESPONSIBILITY TO SECURE THE NEEDED AREAS, AND THE COUNTY TAKE NO RESPONSIBILITY FOR DELAYS IN THIS REGARD.
19. COORDINATION AND PUBLIC INFORMATION FOR AND WITH AREA RESIDENTS ARE OF THE UTMOST IMPORTANCE. CONTRACTOR WILL INSURE ADHERENCE TO THE COUNTY'S NOISE ORDINANCE, HAZARD AND SAFETY, AND NUISANCE ABATEMENT DIRECTIONS, PLANS, OBJECTIONS AND ORDINANCES. THE ENGINEER WILL HAVE THE FINAL DISCRETION IN THIS REGARD, AS REPRESENTED ON-SITE BY THE COUNTY INSPECTOR AND ENGINEER'S STAFF.

SAFETY

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT, 90-96, 612, OF FLORIDA EFFECTIVE OCTOBER 1, 1990 AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY STANDARDS, 29 CFR 1926.650, SUBPART P, AS AMENDED. THE CONTRACTOR SHALL INCLUDE IN THE TOTAL BID PRICE ALL COSTS FOR COMPLIANCE WITH THESE REGULATIONS.
21. THE CONTRACTOR SHALL USE SHEET PILING, SHEETING, BRACING, ETC., AS REQUIRED IN ALL EXCAVATION AREAS AND CONFORM TO ALL OSHA REQUIREMENTS.
22. THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
23. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVIATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.

ENVIRONMENTAL

24. WHEN A BENTONITE SPILL OR FRACK-OUT OCCURS OR THERE IS A LOSS OF RETURN INDICATING EXCESSIVE SEEPAGE OR LOSS OF DRILLING FLUID, DRILLING MUST BE STOPPED UNTIL THE LOCATION OF THE SPILL IS IDENTIFIED. UNDER NO CIRCUMSTANCES WILL DRILLING CONTINUE WHEN A SPILL IS APPARENT.
25. ONCE LOCATED, THE BENTONITE SPILL MUST BE ISOLATED AND SEEPAGE INTO ANY NEARBY WATER BODIES WILL BE BLOCKED DEPENDING ON THE DEGREE OF THE SPILL. THE ISOLATED BENTONITE MUST BE REMOVED MANUALLY OR MECHANICALLY AND DISPOSED OF BY APPROPRIATE MEANS OR REUSED.
26. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY STORM WATER, EROSION, AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE FDP "FLORIDA STORM WATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL." IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT TO SURFACE DRAINS AND TO DITCHES DURING CONSTRUCTION.
27. STOCKPILES SHALL BE PROTECTED AT ALL TIMES BY ON-SITE DRAINAGE CONTROLS WHICH PREVENT EROSION OF THE STOCKPILED MATERIAL. CONTROL OF DUST FROM SUCH STOCKPILES IS REQUIRED, DEPENDING UPON THEIR LOCATION AND THE EXPECTED LENGTH OF TIME THE STOCKPILES WILL BE PRESENT. IN NO CASE SHALL ANY STOCKPILED MATERIAL REMAIN AFTER THIRTY (30) CALENDAR DAYS.
28. STORM WATER INLETS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED BY SEDIMENT TRAPS SUCH AS SECURED HAY BALES, SOD, STONE, ETC., WHICH SHALL BE MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS, AND WHICH MUST BE APPROVED BY THE ENGINEER BEFORE INSTALLATION. THIS WILL BE MAINTAINED TO PREVENT DEGRADATION OF THE WATERS OF THE COUNTY AND STATE.
29. SEDIMENT BASINS AND TRAPS, PERIMETER BERM, SEDIMENT BARRIERS, VEGETATIVE BUFFERS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT AND/OR PREVENT THE TRANSPORT OF SEDIMENT ONTO ADJACENT PROPERTIES, OR INTO EXISTING BODIES OF WATER, MUST BE INSTALLED, CONSTRUCTED, OR IN THE CASE OF VEGETATIVE BUFFERS, PROTECTED FROM DISTURBANCE, AS A FIRST STEP IN THE LAND ALTERATION PROCESS. SUCH SYSTEMS SHALL BE FULLY OPERATIVE BEFORE ANY OTHER DISTURBANCE OF THE SITE BEGINS. EARTHEN STRUCTURES INCLUDING BUT NOT LIMITED TO BERMS, EARTH FILTERS, DAMS OR DIKES SHALL BE STABILIZED AND PROTECTED FROM DRAINAGE DAMAGE OR EROSION WITHIN ONE (1) WEEK OF INSTALLATION.
30. ALL SWALES, DITCHES, AND CHANNELS LEADING FROM THE SITE SHALL BE PROTECTED FROM SILTATION AND EROSION DURING CONSTRUCTION AND BE SODDED WITHIN THREE (3) DAYS OF EXCAVATION.

31. SOIL DISPLACED BY CONSTRUCTION WILL BE REMOVED. EROSION CONTROL SHALL BE IMPLEMENTED IN AREAS WHICH ARE CONSIDERED ENVIRONMENTALLY SENSITIVE. EROSION CONTROL SYSTEMS SHALL BE REQUIRED FOR ALL WORK WITHIN JURISDICTIONAL AREAS. THESE SYSTEMS MAY INCLUDE STAKED HAY BALES, SILT SCREENS, FILTER FABRIC, AND TURBIDITY SCREENS.
32. ALL EROSION AND POLLUTION CONTROL DEVICES SHALL BE CHECKED REGULARLY, ESPECIALLY AFTER EACH RAINFALL AND SHALL BE CLEANED OUT AND/OR REPAIRED AS REQUIRED.
33. THE CONTRACTOR SHALL NOT ENTER UPON OR IN ANY WAY ALTER WETLAND AREAS THAT MAY BE ON OR NEAR THE CONSTRUCTION SITE. ALL WORK IN THE VICINITY OF OPEN WATER AND/OR WETLANDS IS TO BE PERFORMED IN COMPLIANCE WITH THE ENVIRONMENTAL REGULATIONS AND/OR PERMITS FOR THE SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES RESULTING FROM HIS VIOLATION OF ANY REGULATIONS OR PERMIT CONDITIONS.
34. CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
35. CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATE HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA.
36. CONTRACTOR TO COORDINATE WITH PSI REPRESENTATIVES, MICHAEL ROTHENBURG (813.917.0403) AND BEN MARSHALL (813.520.8275) DURING PORT MANATEE AND ORLANDO AVENUE CONSTRUCTION, FOR CONTAMINATED SOIL AND GROUNDWATER.
37. ALL PORT MANATEE CONTAMINATED SOIL AND GROUNDWATER CREATED BY DEWATERING WILL HAVE TO BE TREATED AND IF CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED AT ORLANDO AVENUE, CONTRACTOR TO COORDINATE WITH PSI REPRESENTATIVES.
38. CONTRACTOR SHALL BE AWARE THAT HIGH LEVELS OF HYDROGEN SULFIDE WERE FOUND AT THE NORTH END OF THE PORT MANATEE PROJECT LIMITS.

RIGHT-OF-WAY

39. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY RIGHT-OF-WAY, OTHER PUBLIC RIGHT-OF-WAYS OR EASEMENTS SHOWN ON THE DRAWINGS.
40. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNER MONUMENTS, PINS, AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
41. THE CONTRACTOR, PRIOR TO CONSTRUCTION AND RESTRICTING ANY TRAFFIC, MUST OBTAIN ANY REQUIRED RIGHTS-OF-WAY USE PERMITS AND A TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM OTHER GOVERNMENTAL AGENCIES HAVING RELEVANT JURISDICTION. ALL MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE CURRENT FLORIDA DEPARTMENT OF TRANSPORTATION "MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES". A TRAFFIC CONTROL PLAN SHALL BE SUPPLIED BY THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING, PER SPECIFICATIONS 01570.
42. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED STORM WATER STRUCTURES, PIPING, ENTRANCE PIPE AND HEADWALLS WHETHER SHOWN ON THE PLANS OR NOT. THE HEADWALLS SHALL BE REPLACED IN ACCORDANCE WITH F.D.O.T. STANDARDS, OR THE APPLICABLE JURISDICTION.
43. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD THE RIGHT-OF-WAY LINES, BASE LINES, BENCH MARKS (ELEV.), CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
44. THE CONTRACTOR SHALL COORDINATE THE CUTTING OF DRIVEWAYS WITH THE PROPERTY OWNER PRIOR. ALL DRIVEWAYS MUST BE IN PASSABLE CONDITION AT THE END OF THE WORK DAY AND FULLY RESTORED.
45. A RIGHT OF ENTRY AGREEMENT SHALL BE OBTAINED BY THE CONSTRUCTION MANAGER FROM THE PROPERTY OWNER BEFORE ANY DRIVEWAY CONSTRUCTION WORK IS DONE OUTSIDE OF THE RIGHT-OF-WAY OR EASEMENT.

UTILITIES

46. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC., WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE NOT BEEN LOCATED OR IDENTIFIED, MAY NOT BE IN THE EXACT LOCATION SHOWN OR RELOCATED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) THAT MAY AFFECT HIS WORK. ALL EXISTING UTILITIES TO BE EXTENDED, CROSSED OR CONNECTION POINTS SHALL BE EXPOSED PRIOR TO CONSTRUCTION TO VERIFY LOCATION AND ELEVATION. ANY DISCREPANCIES OR CONFLICTS FOUND SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR RESOLUTION.
47. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, WATER AND SEWER LINES, STORM DRAINS, UTILITIES, DRIVEWAYS, SIDEWALKS, SIGNS, MAIL BOXES, FENCES, TREES, LANDSCAPING, AND ANY OTHER IMPROVEMENT OR FACILITY IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED ITEM DUE TO HIS CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER THAN PRE-CONSTRUCTION CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
48. THE CONTRACTOR SHALL USE APPROPRIATE TECHNIQUES, AS APPROVED, RECOMMENDED OR OFFERED BY FLORIDA POWER AND LIGHT TO PREVENT UNDERMINING OF POWER POLES DURING CONSTRUCTION. IF HOLDING OF POWER POLES IS RECOMMENDED OR REQUIRED BY THE UTILITY, THE CONTRACTOR SHALL COORDINATE THIS ACTIVITY WITH THE UTILITY AND BEAR ALL RELATED COSTS.
49. ANY TEMPORARY SHUTDOWNS FOR MODIFICATIONS OF EXISTING UTILITY SYSTEMS THAT MUST REMAIN IN SERVICE DURING CONSTRUCTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE COORDINATED WITH AND APPROVED BY THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IT IS NOTED THAT TEMPORARY SHUTDOWNS MAY BE RESTRICTED TO CERTAIN HOURS AT ANY TIME OF THE DAY OR NIGHT AND WILL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.
50. FOR WORK BEING DONE ON EXISTING SANITARY SEWER LINES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FLOW OF ALL SEWAGE DURING CONSTRUCTION, WHICH MAY REQUIRE BY-PASS PUMPING AND/OR PUMPER TRUCKS. THE CONTRACTOR SHALL SUBMIT A DETAILED BY-PASS PUMPING PLAN PER SECTION 02720.
51. THE ELEVATIONS OF THE UTILITY SERVICES AND LATERALS HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTICIPATED SOIL COVERAGE. CONTRACTOR SHALL NOT RELY ON THIS INFORMATION FOR CONSTRUCTION, BUT SHALL BE RESPONSIBLE FOR FIELD LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL UTILITIES CROSSING THE PROPOSED FORCE MAIN. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT FORCE MAIN CONSTRUCTION, THE COST OF UTILITY ADJUSTMENTS NECESSARY TO ATTAIN DESIGN MINIMUM SEPARATION FOR UTILITIES CONFLICTING WITH THE CONSTRUCTION OF THE PROPOSED FORCE MAIN. INTERRUPTIONS OF ANY EXISTING UTILITY SERVICES SHALL BE NOTICED TO EFFECTED CUSTOMERS A MINIMUM OF 48 HOURS IN ADVANCE AND SHALL NOT EXCEED 4 HOURS IN DURATION.

RESTORATION

52. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS SHOWN OTHERWISE.
53. ALL DISTURBED GRASSSED AREAS SHALL BE SODDED UNLESS OTHERWISE INDICATED. THE TYPE OF SOD USED TO REPLACE OWNER MAINTAINED AREAS IN RIGHT-OF-WAY SHALL BE COORDINATED WITH THE PROPERTY OWNER.
54. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE OPERATION OF THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, PRIOR TO FINAL ACCEPTANCE, AT NO ADDITIONAL COST TO THE OWNER.
55. ASPHALT DRIVES THAT ARE CUT SHALL BE RESTORED PER SECTION 02513.
56. CONCRETE DRIVEWAYS OR SIDEWALKS THAT ARE CUT SHALL BE RESTORED TO MATCH EXISTING ACCORDING TO THE CURRENT EDITIONS OF THE F.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE DESIGN, SECTION 522, AND SECTION 310 OF THE F.D.O.T. DESIGN STANDARDS.
57. WHENEVER A PERMANENT ROADWAY SURFACE IS NOT REPLACED IMMEDIATELY AFTER BACKFILLING AND COMPACTION OF THE NEWLY INSTALLED PIPE LINE IN AREAS WHERE TRAFFIC MUST PASS, THE CONTRACTOR SHALL INSTALL A TEMPORARY SURFACE CONSISTING OF NINE INCHES OF COMPACTED LINE ROCK BASE AND A COAT OF ASPHALT EMULSION. PERMANENT ROADWAY REPAIR SHALL BE PERFORMED A MAXIMUM OF TWENTY-ONE CALENDAR DAYS AFTER THE INITIAL OPEN CUTTING.
58. RESTORATION OF CURBS, DRIVEWAYS, SIDEWALKS, AND PLACEMENT OF SOD SHALL BE COMPLETED WITHIN FORTY-FIVE CALENDAR DAYS OF INITIAL DISTURBANCE, OR TWENTY-ONE CALENDAR DAYS OF SUBSTANTIAL COMPLETION, WHICHEVER OCCURS FIRST.
59. ALL EXISTING FENCES DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AND REINSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER UNLESS SHOWN TO BE REMOVED ON CONSTRUCTION PLANS.
60. WHERE CONCRETE REPAIRS ARE NECESSARY AND EXPANSION OR CONTRACTION JOINTS ARE PRESENT, CONTRACTOR SHALL REMOVE AND REPLACE CONCRETE UP TO THE NEXT EXPANSION OR CONTRACTION JOINT.

CONSTRUCTION

61. THE EXHAUST SYSTEM OF ALL GASOLINE AND DIESEL ENGINES SHALL BE EQUIPPED WITH MUFFLERS THAT MEET THE EQUIPMENT MANUFACTURER'S REQUIREMENTS FOR NOISE SUPPRESSION. THE CONTRACTOR SHALL INSTALL NOISE ABATEMENT BARRIERS POSITIONED TO BREAK LINE-OF-SITE FROM THE NOISE SOURCE TO AFFECTED RESIDENCES, AS APPROVED BY THE ENGINEER.
62. NO MATERIAL SHALL BE STOCKPILED IN ROADWAYS. ALL DIRT AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE DAILY. ROADS SHALL BE SWEPT DAILY AS PART OF DAILY CLEAN UP.
63. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
64. INGRESS AND EGRESS TO ALL THE PROPERTIES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED AT ALL TIMES.
65. PRIOR APPROVAL WILL BE REQUIRED FOR REMOVAL OR TRIMMING OF ANY TREE WITHIN THE CONSTRUCTION AREA.
66. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY. DEWATERING IS REQUIRED TO 18" BELOW TRENCH BOTTOM.
67. ALL PIPING AND FITTINGS USED ON THIS PROJECT SHALL BE AS NOTED ON THE PLANS AND IN THE CONTRACT DOCUMENT AND SHALL BE INSTALLED TO THE LINES AND GRADES SHOWN ON THE PLANS AND PROFILES.
68. ALL PIPE SHALL BE COLOR CODED TO CONFORM TO MANATEE COUNTY STANDARDS.
69. ALL FITTINGS FOR PRESSURE CLASS-RATED PIPE SHALL BE RESTRAINED DUCTILE IRON. RESTRAINED LENGTHS OF PIPE SHALL ADHERE TO THE REQUIREMENTS AS SHOWN ON THE DETAIL SHEETS.
70. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE RECOMMENDED DEFLECTION.
71. ALL ROCKS OR STONES LARGER THAN SIX INCH DIAMETER SHALL BE REMOVED FROM THE BACKFILL MATERIAL. BACKFILL MATERIAL PLACED WITHIN ONE FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN TWO INCH DIAMETER.
72. ONLY MANATEE COUNTY UTILITY OPERATIONS STAFF ARE AUTHORIZED TO OPERATE VALVES AND PUMP STATIONS ON COUNTY OWNED AND MAINTAINED UTILITY SYSTEMS.
73. THE CONTRACTOR, PRIOR TO ANY TEMPORARY WATER SHUT-OFFS DURING WATER MAIN TIE-IN, ETC., SHALL NOTIFY THE AFFECTED RESIDENTS BY POSTING INFORMATIONAL SIGNS IN THE NEIGHBORHOOD AT LEAST TWO DAYS (48 HRS) PRIOR TO THE WATER SHUT-OFF. REFERENCE SECTION 01580, PARAGRAPH 1.03 OF THE SPECIFICATIONS. WHEN FEASIBLE, "DOOR HANGERS" SHALL BE DELIVERED TO AFFECTED RESIDENCES AT LEAST TWO DAYS (48 HRS) PRIOR TO WATER SHUT-OFF. FOR LARGE PROJECTS WITH HUNDREDS OF HOMES AFFECTED, THE CONTRACTOR SHALL ALSO MAKE EXTENSIVE USE OF THE MEDIA AND SHALL HAVE PRIOR CONTACT WITH HOMEOWNER'S ASSOCIATIONS AND THE RESPECTIVE CITY'S. WRITTEN NOTIFICATIONS SHALL ALSO BE FAXED TO THE TAMPA TRIBUNE, BRADENTON HERALD, AMI SUN, ISLANDER, SARASOTA HERALD TRIBUNE, WBRD RADIO, EMERGENCY COMMUNITY CENTERS, INSPECTIONS, WATER TREATMENT PLANT, WATER MANAGER, HELPLINE, CUSTOMER SERVICE, AND THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT.
74. ALL TEST POINT PIPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. A CORPORATION STOP PLUG SHALL BE INSTALLED AND THE CORPORATION STOP SHALL REMAIN IN PLACE.
75. ALL EXISTING MAINS THAT ARE BEING REPLACED SHALL BE ABANDONED IN PLACE UPON ACCEPTANCE AND ACTIVATION OF THE NEW MAINS. ABANDONED MAINS SHALL BE CUT AND CAPPED. REFER TO SECTION 02064 OF THE SPECIFICATIONS FOR CUT AND CAPPING ABANDONED PIPE.
76. FIELD CONDITIONS MAY NECESSITATE MINOR ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER.
77. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM THE MANATEE COUNTY UTILITIES DEPARTMENT (MCUD) OFFICE OF INDUSTRIAL COMPLIANCE PRIOR TO DEWATERING. COMPLETION OF A CONSTRUCTION DEWATERING AUTHORIZATION TO DISCHARGE APPLICATION IS REQUIRED. FILL OUT FORM AS COMPLETELY AS POSSIBLE AS MISSING INFORMATION DELAYS THE APPROVAL PROCESS.
78. THE MCUD OFFICE OF INDUSTRIAL COMPLIANCE WILL DETERMINE WHETHER A LETTER OF APPROVAL, A DISCHARGE AUTHORIZATION, OR A DISCHARGE PERMIT IS REQUIRED.
79. FOR SITES SUSPECTED OF CONTAMINATED GROUNDWATER MANATEE COUNTY WILL REQUIRE AN APPLICANT TO DEMONSTRATE THAT THE DISCHARGE MEETS THE MANATEE COUNTY SEWER USE ORDINANCE.
80. IF ANY RECLAIMED OR WATER MAINS INCLUDING SERVICE LINES ARE DAMAGED DURING CONSTRUCTION, THEY SHALL BE REPLACED FROM THE VALVE TO THE OTHER POINT OF CONNECTION OUTSIDE OF THE ROADWAY PER MANATEE COUNTY'S STANDARDS. SERVICES SHALL BE REPLACED FROM THE COLD STOP TO THE METER.

TRAFFIC CONTROL NOTES

81. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH F.D.O.T. DESIGN STANDARDS INDICES NO. 600, 603, 605, 611, 612, 613, 616, AND 660 DEPENDING ON THE OPERATION BEING PERFORMED. FOR ALL TWO-LANE WORK, TWO-WAY, WORK WITHIN TRAVEL LANE UTILIZE INDEX 603. FOR ALL TWO-LANE WORK, TWO-WAY, WORK NEAR INTERSECTION UTILIZE INDEX 605. FOR ALL MULTILANE WORK OUTSIDE SHOULDER UTILIZE INDEX NO. 611. FOR ALL MULTILANE WORK ON SHOULDER UTILIZE INDEX NO. 612. FOR ALL MULTILANE WORK WITHIN TRAVEL WAY MEDIAN OR OUTSIDE LANE UTILIZE INDEX NO. 613. FOR ALL MULTILANE WORK NEAR INTERSECTION MEDIAN OR OUTSIDE LANE UTILIZE INDEX NO. 616. FOR PEDESTRIAN CONTROL FOR CLOSURE OF SIDEWALK, UTILIZE FDOT INDEX NO. 660.
82. CONTRACTOR TO COORDINATE WITH ED HERNDON (941) 708-4436 AT FDOT FOR ALL WORK DONE ON A STATE FACILITY.
83. TO AVOID DISRUPTION DUE TO INCLEMENT WEATHER, THE CONTRACTOR SHOULD PERFORM ANY MILLING AND PAVING OPERATIONS DURING THE SAME WORK PERIOD.
84. ALL EXISTING PAVEMENT MARKINGS OUTSIDE THE CONSTRUCTION LIMITS THAT HAVE BEEN ALTERED BECAUSE OF CONSTRUCTION OPERATIONS SHALL BE REPLACED UPON THE COMPLETION OF THE PROJECT AT THE CONTRACTORS EXPENSE.
85. LANE CLOSURES SHALL OCCUR BETWEEN 8:00 P.M. AND 5:00 A.M., UNLESS LANE CLOSURE CALCULATIONS ARE PROVIDED AND APPROVED OR APPROVAL IS GRANTED BY THE DISTRICT PERMIT ENGINEER.
- THE CONTRACTOR SHALL SCHEDULE WORK OPERATIONS SO THAT ALL LANES CAN BE RE-OPENED TO TRAFFIC WITHIN A PERIOD OF 24 HOURS IN CASE OF AN EMERGENCY.
86. PEDESTRIANS, BICYCLES, AND WHEELCHAIRS: AT THE END OF EACH WORKDAY OR WHENEVER THE WORK ZONE BECOMES INACTIVE, ANY DROP-OFF ADJACENT TO A SIDEWALK SHALL BE BACKFILLED AT A SLOPE NOT TO EXCEED 1:4, OR SHALL BE PROTECTED IN ACCORDANCE WITH STANDARD INDEX 600.
87. PEDESTRIAN AND WHEELCHAIR TRAFFIC SHALL BE ACCOMMODATED UTILIZING STANDARD INDEX 660.
88. ONE PORTABLE VARIABLE MESSAGE SIGN SHALL BE USED IN ADVANCE OF EACH LANE CLOSURE. THE FOLLOWING ARE SUGGESTED MESSAGES TO USE IN THE APPROPRIATE SITUATIONS:
- MESSAGE 1
"RIGHT" OR "CENTER" OR "LEFT"
"LANE" "LANE" "LANE"
"CLOSED" "CLOSED" "CLOSED"
89. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF STORMWATER FROM ROADWAYS UTILIZED FOR TRAFFIC CONTROL IN A MANNER APPROVED BY THE ENGINEER.
90. AT THE END OF EACH WORKING DAY, TEMPORARY PAVEMENT MARKINGS AND TEMPORARY RPM'S SHALL BE INSTALLED PRIOR TO OPENING THE LANES UP FOR TRAFFIC.

91. ALL PAVEMENT MARKINGS, SIGNS, MARKERS, CHANNELIZATION REQUIRED TO PHASE WORK OR SHIFT TRAFFIC, SHALL UTILIZE INDICES FOR PLACEMENT.
92. THE CONTRACTOR SHALL RESTRICT THE OPERATIONS SO THAT THE FIRST LIFT OF ASPHALT IS PLACED ON THE SAME DAY THAT THE LANES ARE MILLED, BEFORE OPENING THE LANES TO TRAFFIC. INSTALL TEMPORARY PAVEMENT MARKINGS AFTER THE FIRST LIFT AND PRIOR TO OPENING.
93. MILLING AND RESURFACING SHALL BE ACCOMPLISHED DURING THE OFF-PEAK HOURS.
94. THE CONTRACTOR IS RESPONSIBLE TO RETIME THE TRAFFIC SIGNALS WITHIN THE PROJECT LIMITS (INCLUDING LIMITS OF WORK ZONE TRAFFIC CONTROL) THAT ARE POTENTIALLY AFFECTED DURING VARIOUS PHASES OF CONSTRUCTION. COORDINATE ALL SIGNAL RETIME EFFORTS MUKUNDA GOPALAKRISHNA, P.E., PTOE, COUNTY TRAFFIC ENGINEER, AT 941-749-3500, EXT. 7813.
95. CONTRACTOR TO MAINTAIN VEHICLE DETECTION IN OPERATION FOR LANES THAT WILL REMAIN OPEN. CONTRACTOR TO COORDINATE ALL VEHICLE DETECTION ISSUES WITH CLARKE DAVIS OF MANATEE COUNTY AT 941-708-7450, EXT. 7272 OR CLARKE.DAVIS@MYMANATEE.ORG
96. MAINTENANCE OF TRAFFIC AND ANY SIGNAL RETIMING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
97. ANY SIGNAL RETIMING REQUIRED FOR THE INTERSECTIONS IMPACTED BY THE PROJECT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. SIGNAL TIMING MODIFICATIONS TO BE SUBMITTED TO MANATEE COUNTY TRAFFIC DESIGN, ATTENTION MR. MUKUNDA GOPALAKRISHNA FOR REVIEW AND APPROVAL AT LEAST 15 WORKING DAYS BEFORE PROPOSED CHANGES. THIS DOES NOT GOVERN EMERGENCY SITUATIONS, PENDING THE APPROVAL OF THE ENGINEER.
98. A DETAILED MAINTENANCE OF TRAFFIC PLANS ARE TO BE SUBMITTED TO MANATEE COUNTY AND THE ENGINEER, BY THE CONTRACTOR, FOR REVIEW AND APPROVAL A MINIMUM OF 21 WORKING DAYS PRIOR TO PROPOSED IMPLEMENTATION.

ABBREVIATIONS

RJ	-	RESTRAINED JOINT	ST	-	STORM DRAIN
R/W	-	RIGHT-OF-WAY	EX	-	EXISTING
HDD	-	HORIZONTAL DIRECTIONAL DRILL	BT	-	BURIED TELEPHONE
RCP	-	REINFORCED CONCRETE PIPE	UC	-	UNDERGROUND CONDUIT
ARC	-	AIR RELEASE VALVE	DBC	-	DIRECT BURIED CABLE
HDPE	-	HIGH DENSITY POLYETHYLENE	FOC	-	FIBER OPTIC CABLE
PVC	-	POLYVINYL CHLORIDE	SS	-	SANITARY SEWER
NG	-	NATURAL GROUND	FM	-	FORCE MAIN
			WM	-	WATER MAIN
			RW	-	RECLAIM WATER MAIN
			EOP	-	ELLIPTICAL CONCRETE PIPE

KIMLEY HORN LEGEND

EX. FORCEMAIN	FM	FM	FM	FM
PROPOSED FORCEMAIN/ WATERMAIN	WM	WM	WM	WM
EX. WATERMAIN	WM-AB	WM-AB	WM-AB	
ABANDONED WATERMAIN				
EX. SANITARY SEWER	SS	SS	SS	
EX. STORM				

EX. BURIED TELEPHONE/FIBER	BT	BT	BT	
EX. FIBER OPTIC CABLE	FOC	FOC	FOC	
EX. DIRECT BURIED CABLE	DBC	DBC	DBC	
EX. UNDERGROUND CONDUIT	UC	UC	UC	
EX. OIL	OIL	OIL	OIL	
EX. BURIED ELECTRIC	BE	BE	BE	
EX. GAS	GAS	GAS	GAS	
EX. OVERHEAD UTILITIES	OHU	OHU		
EX. BURIED TV	BTV			

PROPOSED FULL ROADWAY RESTORATION	
PROPOSED SIDEWALK/ DRIVEWAY REPAIR	
PROPOSED CURB REPAIR	

PROPOSED MILLING AND RESURFACING	
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EX. CONCRETE DRIVEWAY	
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EX. ASPHALT DRIVEWAY	
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EX. BRICK DRIVEWAY	
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EX. SHELL DRIVEWAY	
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EX. INFILTRATION TRENCH	
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EX. GRAVEL/STONE	
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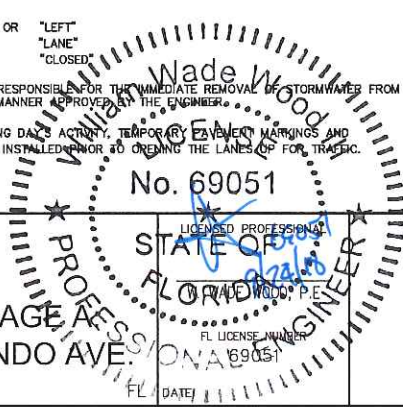


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END OF SERVICE LIFE - PACKAGE
FM 28A/ PORT MANATEE/ ORLANDO AVE.
MANATEE COUNTY



GENERAL NOTES

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FM 28A TEST HOLE DATA (OMNI COMMUNICATIONS REPORT, JOB #33-17-062)					
TEST HOLE	UTILITY	FIELD MARKING	GROUND EL. (FEET)	TOP OF PIPE (FEET)	NOTES PER OMNI REPORT
TH-01	4" PVC MULTI-DUCT COMMUNICATION	FOUND HUB AT GROUND LEVEL, NO LATH	18.49	13.99	ONE CONDUIT WAS BROKEN

NOTE: SUBSURFACE UTILITY ENGINEERING DATA PROVIDED BY OMNI COMMUNICATIONS, LLC, DATED DECEMBER 14, 2017.

PORT MANATEE TEST HOLE DATA (OMNI COMMUNICATIONS REPORT, JOB #33-17-027 AND #33-17-061)					
TEST HOLE	UTILITY	FIELD MARKING	GROUND EL. (FEET)	TOP OF PIPE (FEET)	NOTES PER OMNI REPORT
TH-01	30" OIL LINE	FOUND NAIL AND DISK MARKED TH-1	8.50	N/A	NO UTILITY DETECTED
TH-02	16" STEEL OIL LINE	FOUND NAIL AND DISK MARKED TH-2 C-3.10	8.71	5.61	UTILITY TYPE UNABLE TO BE VERIFIED, POSSIBLE OIL LINE
TH-03	6" STEEL UNKNOWN UTILITY	FOUND NAIL AND DISK MARKED TH-3 C-3.49	8.43	4.94	UTILITY TYPE UNABLE TO BE VERIFIED, RUSTY POOR CONDITION
TH-04	5' CONC CAP ON OIL LINE	FOUND NAIL AND DISK MARKED TH-4	8.49	1.09	FOUND TOP OF CONC CAP ON OIL LINE
TH-05	14" STEEL OIL LINE	FOUND HUB AT GROUND LEVEL W/ LATH MARKED TH-5 14" STEEL UNK C-5.54	6.70	1.16	UTILITY TYPE UNABLE TO BE VERIFIED, POSSIBLE OIL LINE
TH-06	OIL/GAS LINE	FOUND NAIL AND DISK MARKED TH-6	8.63	N/A	VAC AND PROBED SOUTH SIDE OF 16" UNK. POSSIBLE OIL AND GAS. NO LINES FOUND BESIDE OR BELOW.
TH-07	OIL/GAS LINE	FOUND NAIL AND DISK MARKED TH-7	8.71	N/A	VAC AND PROBED NORTH SIDE OF 16" UNK. POSSIBLE OIL AND GAS. NO OTHER LINES BESIDE OR BELOW.
TH-08	18" STEEL OIL LINE	FOUND NAIL WITH PINK FLAGGING AND OMNI DESCRIPTION PINK PAINT	8.40	5.60	FOUND 18" STEEL OIL LINE
TH-09	STEEL OIL LINE (SIZE UNKNOWN)	FOUND NAIL WITH PINK FLAGGING AND OMNI DESCRIPTION PINK PAINT	8.39	0.13	NOT ABLE TO VERIFY SIZE OF STEEL OIL LINE DUE TO WATER AND CAVE INS

NOTE: SUBSURFACE UTILITY ENGINEERING DATA PROVIDED BY OMNI COMMUNICATIONS, LLC, DATED DECEMBER 18, 2017.

ORLANDO AVE. TEST HOLE DATA (OMNI COMMUNICATIONS REPORT, JOB #33-17-028 AND #33-17-063)					
TEST HOLE	UTILITY	FIELD MARKING	GROUND EL. (FEET)	TOP OF PIPE (FEET)	NOTES PER OMNI REPORT
TH-01	2" PE GAS LINE	X-CUT W/ "C-1.55" MARKED ON CONC SWK FOR LOCATION	15.70	14.15	FOUND 2" PE GAS LINE
TH-02	4" PVC/STEEL WATERLINE	FOUND NAIL IN ASPH MARKED TH2, NO CUT POSTED	14.64	12.72	FOUND 4" PVC TO METAL WATERLINE
TH-03	6" ACP WATERLINE	FOUND HUB AT GROUND LEVEL W/ LATH MARKED "BH TH3 6" ACP WL C-1.54"	16.10	14.57	FOUND 6" ACP WATERLINE
TH-04	1" PE GAS LINE	FOUND HUB AT GROUND LEVEL W/ LATH MARKED "BH TH4 1" PE GAS C-1.20"	16.10	14.90	FOUND 1" PE GAS HAS YELLOW TRACE WIRE WITH IT
TH-05	2" PE GAS LINE	FOUND HUB AT GROUND LEVEL W/ LATH MARKED "BH TH5 2" PE GAS C-1.85"	15.70	13.85	FOUND 2" PE GAS
TH-06	2" PE GAS LINE	FOUND HUB AT GROUND LEVEL W/ LATH MARKED "BH TH6 2" PE GAS C-1.83"	15.60	13.77	FOUND 2" PE GAS LINE
TH-07	8" PVC WATERLINE	FOUND HUB AT GROUND LEVEL MARKED "BH TH7 8" WL PVC C-3.60"	16.00	12.40	FOUND 8" PVC WATERLINE
TH-08	WATERLINE	NOT FOUND OR MARKED IN FIELD BY OMNI	15.70	N/A	VAC AND PROBED BOTH SIDES OF WM 1-CALL MARKS (NOT FOUND). GPR NOT DETECTING - BAD GRID CONDITIONS. SHELL, HARD LAYERS. WILL TAKE VAC SOMETIME TO LOCATE.
TH-09	10" DIP FORCEMAIN	FOUND HUB AT GROUND LEVEL W/ LATH MARKED "BH TH9 10" DIP FM C-4.67"	15.60	10.93	FOUND 10" DIP FORCEMAIN
TH-10	2" PE GAS LINE	FOUND HUB AT GROUND LEVEL W/ LATH MARKED "BH TH10 2" PE GAS C-3.53"	15.60	12.07	FOUND 2" PE GAS
TH-11	10" DIP FORCEMAIN	FOUND NAIL IN ASPHALT	15.98	12.06	NO NOTES
TH-12	1-1/2" PE FIBER OPTIC CABLE	FOUND NAIL IN ASPHALT	15.87	13.17	NO NOTES
TH-13	10" DIP FORCEMAIN	FOUND NAIL IN ASPHALT	15.06	12.58	NO NOTES
TH-14	4" PVC WATERLINE	FOUND HUB AT GROUND LEVEL	15.74	14.20	NO NOTES
TH-15	WATERLINE	FOUND HUB AT GROUND LEVEL WITH LATH THAT INDICATED VAC TO 5' AND LANCED TO 10'. NO UTILITY FOUND.	16.31	N/A	NO DETECTION ON WATER LINE 810-GPR RD. CALL MARK LEONARD. 1 CALL MARKS NOT FOUND

NOTE: SUBSURFACE UTILITY ENGINEERING DATA PROVIDED BY OMNI COMMUNICATIONS, LLC, DATED DECEMBER 13, 2017.

SURVEY NOTES

FM 28A SITE CONTROL			
DESIGNATION	NORTHING	EASTING	ELEVATION (FEET)
BM-1	1129721.35	466405.00	18.14
BM-2	1129715.77	467401.42	18.33

THE FOLLOWING NGS VERTICAL CONTROL MONUMENT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS SHOWN HEREIN: "COB 1049" NAVD 1988 ELEVATION 23.94' A VALUE OF (+0.98') SHOULD BE APPLIED TO ALL ELEVATIONS FOR A CONVERSION TO NGVD 1929.

PORT MANATEE FM SITE CONTROL			
DESIGNATION	NORTHING	EASTING	ELEVATION (FEET)
BM-1	1199967.34	475749.05	8.83
BM-2	1200449.83	475838.48	7.11

THE FOLLOWING NGS VERTICAL CONTROL MONUMENT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS SHOWN HEREIN: "COB 1049" NAVD 1988 ELEVATION 23.94' A VALUE OF (+0.98') SHOULD BE APPLIED TO ALL ELEVATIONS FOR A CONVERSION TO NGVD 1929.

ORLANDO AVE. FM SITE CONTROL			
DESIGNATION	NORTHING	EASTING	ELEVATION (FEET)
BM-1	1136195.59	470368.61	16.35
BM-2	1136241.69	471733.45	16.13
BM-3	1136940.38	471979.23	15.63
BM-4	1136940.39	471979.21	15.62
BM-5	1137137.43	471941.22	17.12

THE FOLLOWING NGS VERTICAL CONTROL MONUMENT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS SHOWN HEREIN: "COB 1049" NAVD 1988 ELEVATION 23.94' A VALUE OF (+0.98') SHOULD BE APPLIED TO ALL ELEVATIONS FOR A CONVERSION TO NGVD 1929.

SURVEY LEGEND

EXISTING		ABBREVIATIONS	
BM	BENCH MARK	R/W	RIGHT OF WAY
CM	CONCRETE MONUMENT	CONC	CONCRETE
IP	IRON PIPE	ASPH	ASPHALT
IR	IRON ROD	DRWY	DRIVEWAY
HUB	HUB	SWK	SIDEWALK
N&D	NAIL & DISK ELEVATION	EP	EDGE OF PAVEMENT
PARCEL ID NO.	PARCEL ID NO.	BOC	BACK OF CURB
LOT NO.	LOT NO.		
GW	GUY WIRE		
PP	POWER POLE		
LP	LIGHT POLE		
MB	MAIL BOX		
SN	SIGN		
REF	REFLECTOR		
SPRK	SPRINKLER		
GM	GAS MARKER		
BFP	BACKFLOW PREVENTER		
BO	BLOW OFF VALVE		
FH	FIRE HYDRANT		
WV	WATER VALVE		
ARV	AIR RELEASE VALVE		
WM	WATER METER		
SMH	SANITARY SEWER MANHOLE		
SS	SANITARY SEWER CLEAN OUT		
SB#	SOIL BORING LOCATION		
TEL	TELEPHONE SERVICE BOX		
UB	UTILITY BOX		
UR	UTILITY RISER		
FD	FLOW DIRECTION		
GI	GRATE INLET		
MI	MITERED END SECTION		
SSM	STORM SEWER MANHOLE		

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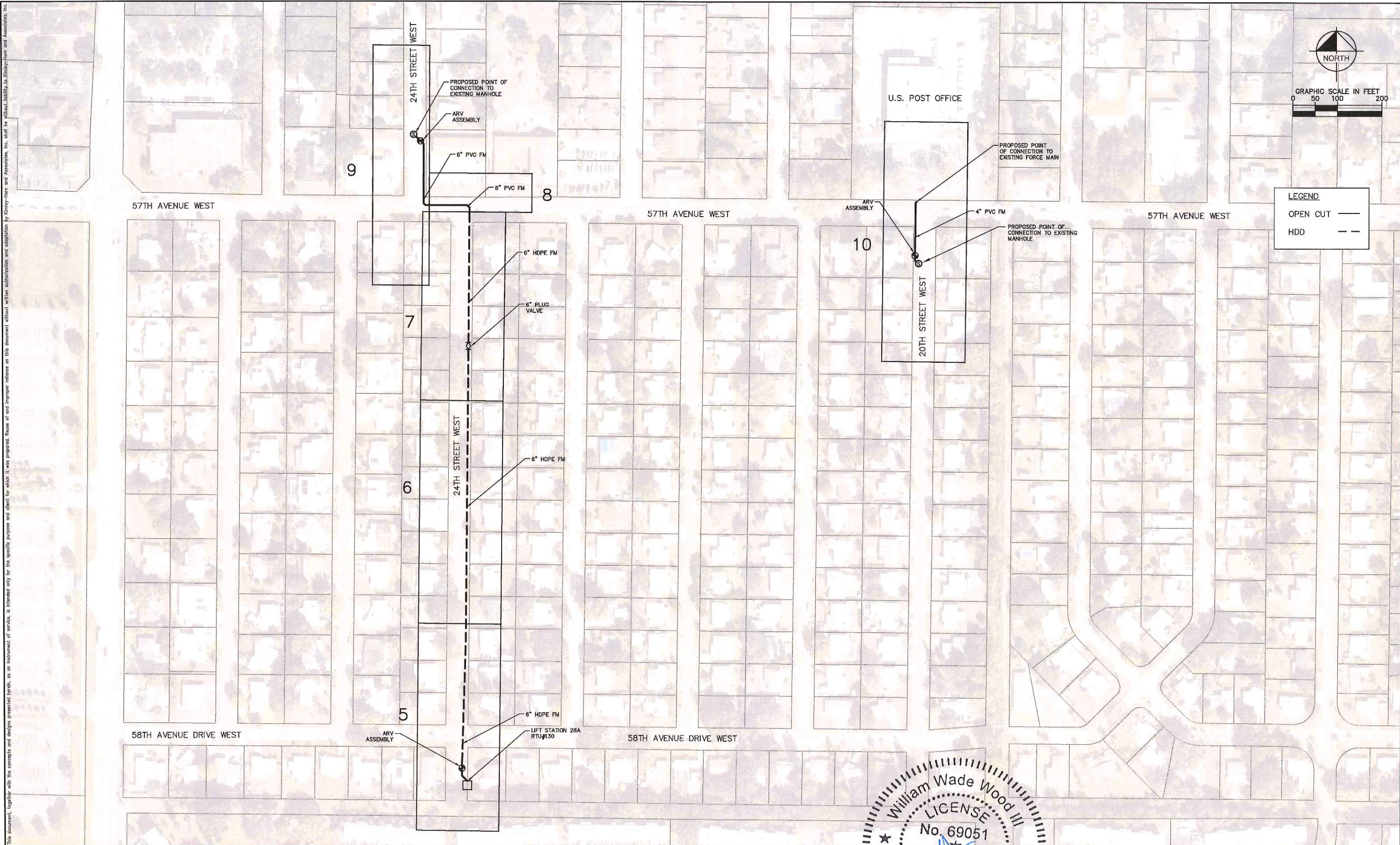
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SURVEY AND SUE NOTES

SHEET NUMBER

3



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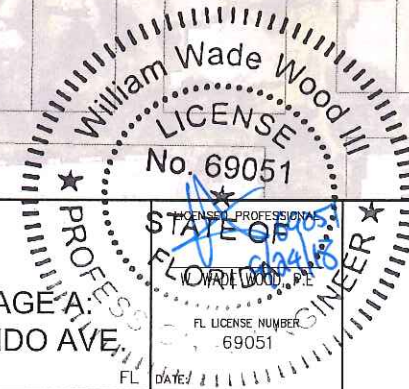
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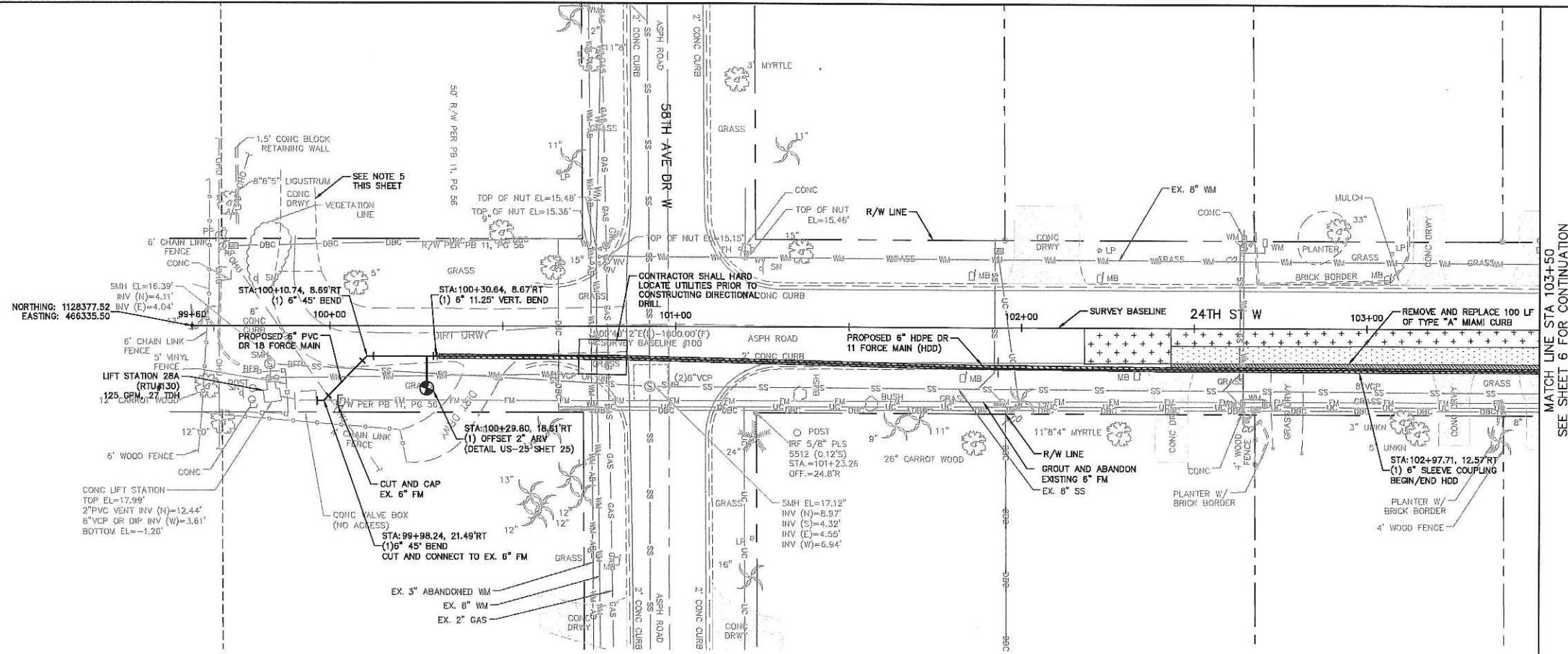
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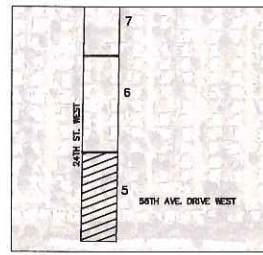
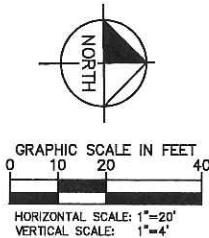
**FORCE MAIN 28A
 KEY SHEET**

SHEET NUMBER
4

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MATCH LINE STA 103+50
SEE SHEET 6 FOR CONTINUATION



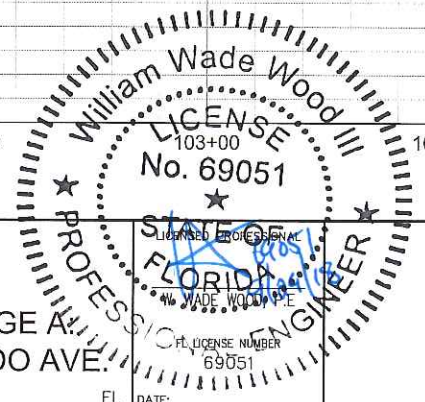
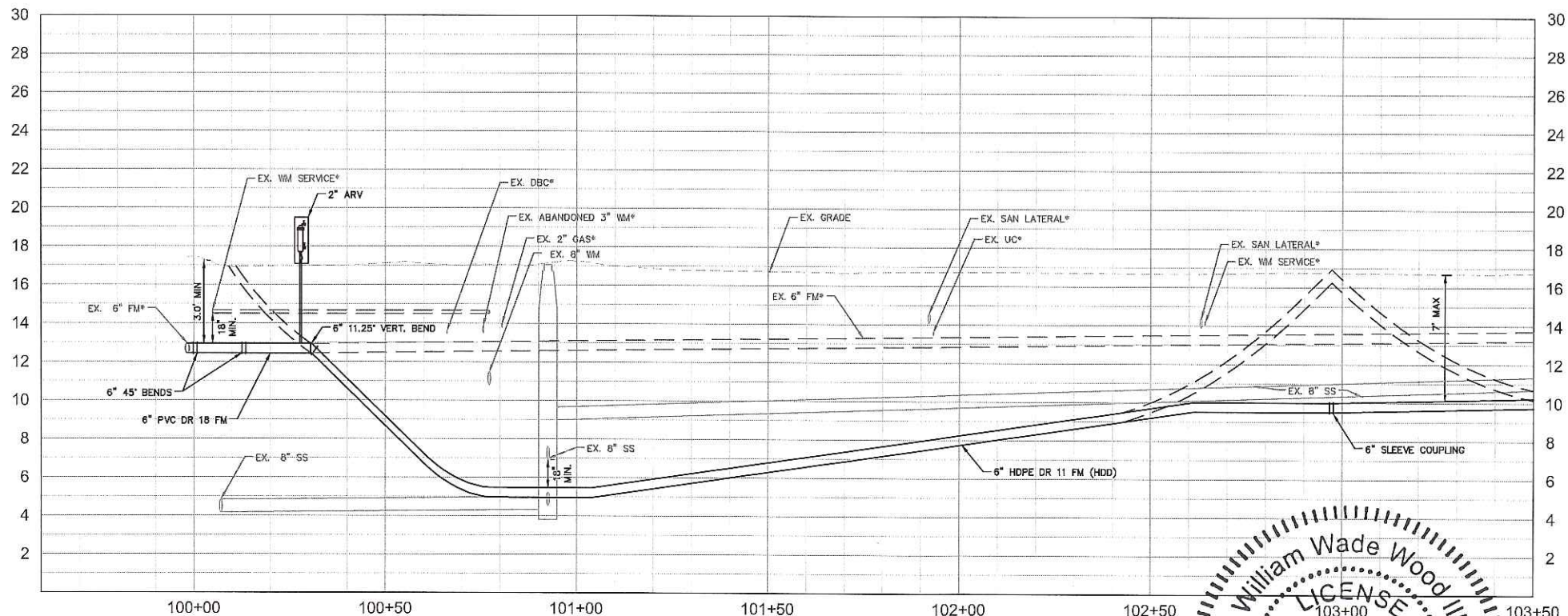
- LEGEND**
- SIDEWALK/DRIVEWAY RESTORATION
 - FULL ROADWAY RESTORATION
 - MILING AND RESURFACING
 - REMOVE & REPLACE CURB

- NOTES:**
- CONTRACTOR TO FOLLOW RESTRAINED LENGTHS SET IN RESTRAIN LENGTH DETAILS ON SHEET 25 & 26.
 - CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-621.300 AND 62-620 OF THE FLORIDA ADMINISTRATIVE CODE (FAC).
 - REFER TO DETAIL UG-12 SHEET 24 FOR COUNTY ROADWAY REPAIR REQUIREMENTS
 - EXISTING FORCE MAIN SHALL BE FLUSHED PRIOR TO GROUTING AFTER THE PROPOSED FORCE MAIN HAS BEEN PLACED INTO SERVICE.
 - CONTRACTOR SHALL PROVIDE ACCESS TO THE RESIDENTIAL DRIVEWAYS DURING CONSTRUCTION.

***NOTES:**
THE ELEVATIONS OF THE UTILITIES MARKED WITH AN ASTERISK (*) HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTICIPATED SOIL COVERAGE. CONTRACTOR SHALL NOT RELY ON THIS INFORMATION FOR CONSTRUCTION, BUT SHALL BE RESPONSIBLE FOR FIELD LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL UTILITIES CROSSING THE PROPOSED FORCE MAIN. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT FORCE MAIN CONSTRUCTION, THE COST OF UTILITY ADJUSTMENTS NECESSARY TO ATTAIN DESIGN MINIMUM SEPARATION FOR UTILITIES CONFLICTING WITH THE CONSTRUCTION OF THE PROPOSED FORCE MAIN. INTERRUPTIONS OF ANY EXISTING UTILITY SERVICES SHALL BE NOTICED TO EFFECTED CUSTOMERS A MINIMUM OF 48 HOURS IN ADVANCE AND SHALL NOT EXCEED 4 HOURS IN DURATION.

WHERE CONCRETE REPAIRS ARE NECESSARY AND EXPANSION JOINTS ARE PRESENT, CONTRACTOR TO REMOVE AND REPLACE CONCRETE UP TO THE NEXT EXPANSION JOINT; OTHERWISE, REPLACE CONCRETE AS NECESSARY.

GROUNDWATER / DEWATERING NOTE:
THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



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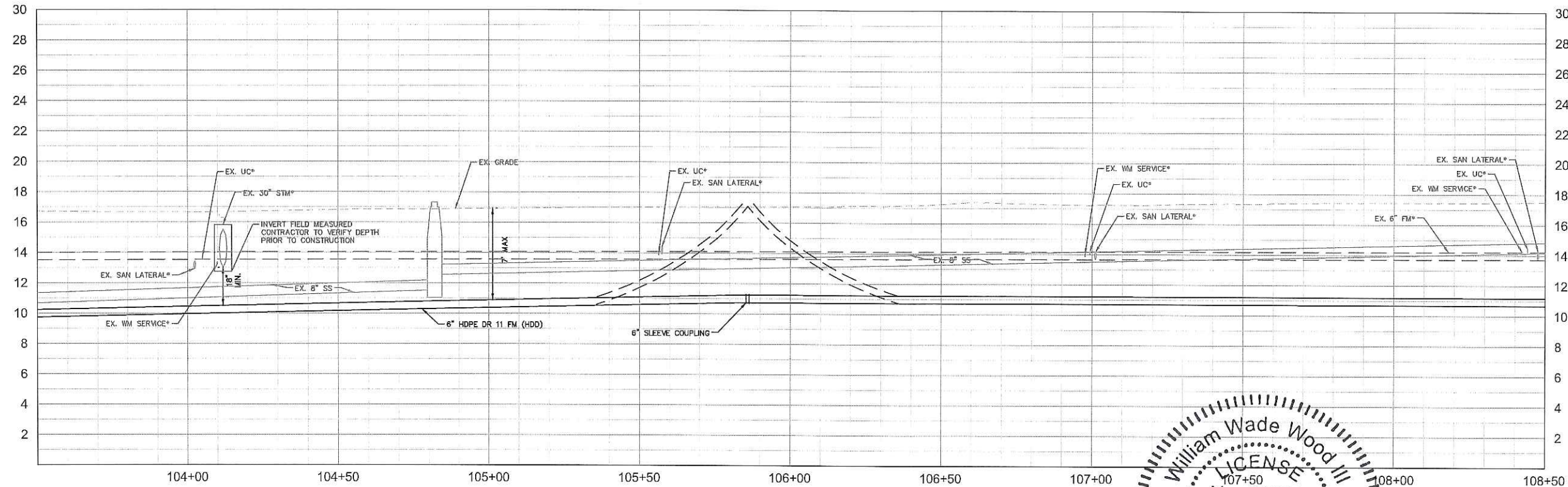
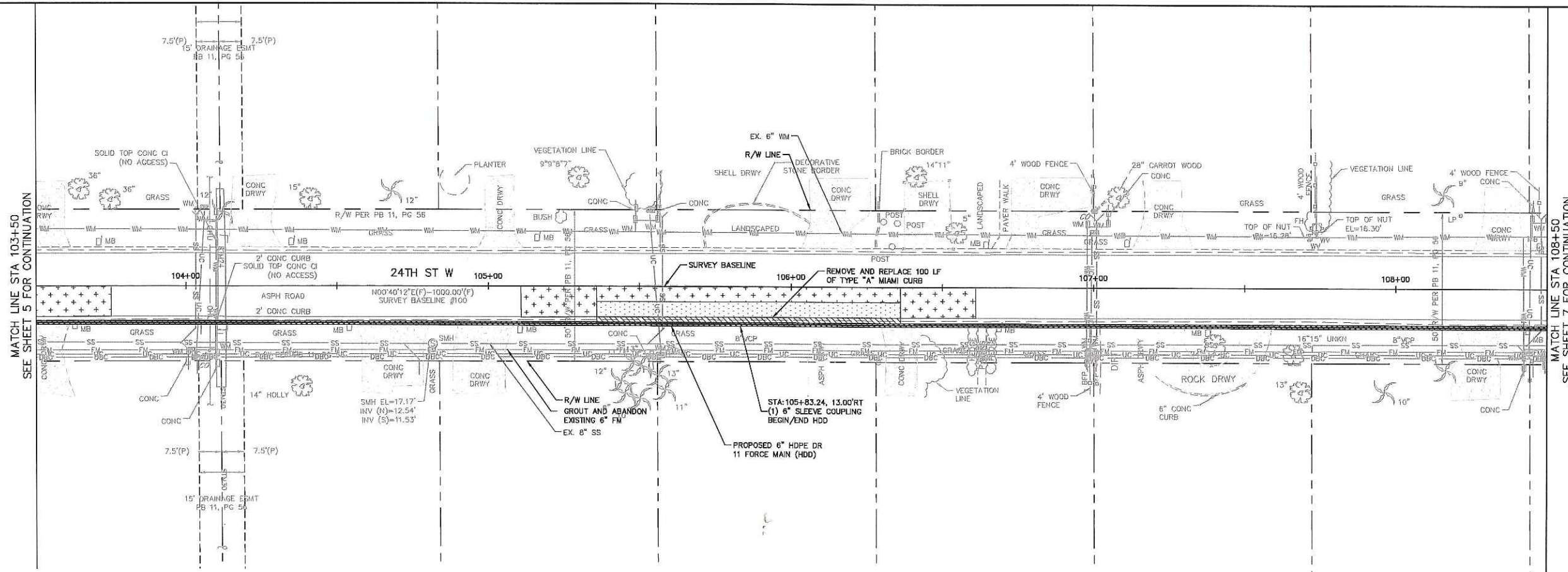
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CHECKED BY	WEW

Manatee County
END OF SERVICE LIFE - PACKAGE A
FM 28A/ PORT MANATEE/ ORLANDO AVE.
MANATEE COUNTY

**PLAN AND PROFILE
24TH STREET**

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*NOTES:
THE ELEVATIONS OF THE UTILITIES MARKED WITH AN ASTERISK (*) HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTICIPATED SOIL COVERAGE. CONTRACTOR SHALL NOT RELY ON THIS INFORMATION FOR CONSTRUCTION, BUT SHALL BE RESPONSIBLE FOR FIELD LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL UTILITIES CROSSING THE PROPOSED FORCE MAIN. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT FORCE MAIN CONSTRUCTION, THE COST OF UTILITY ADJUSTMENTS NECESSARY TO ATTAIN DESIGN MINIMUM SEPARATION FOR UTILITIES CONFLICTING WITH THE CONSTRUCTION OF THE PROPOSED FORCE MAIN. INTERRUPTIONS OF ANY EXISTING UTILITY SERVICES SHALL BE NOTICED TO EFFECTED CUSTOMERS A MINIMUM OF 48 HOURS IN ADVANCE AND SHALL NOT EXCEED 4 HOURS IN DURATION.

WHERE CONCRETE REPAIRS ARE NECESSARY AND EXPANSION JOINTS ARE PRESENT, CONTRACTOR TO REMOVE AND REPLACE CONCRETE UP TO THE NEXT EXPANSION JOINT; OTHERWISE, REPLACE CONCRETE AS NECESSARY.

GROUNDWATER / DEWATERING NOTE:
THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



SHEET NUMBER

6

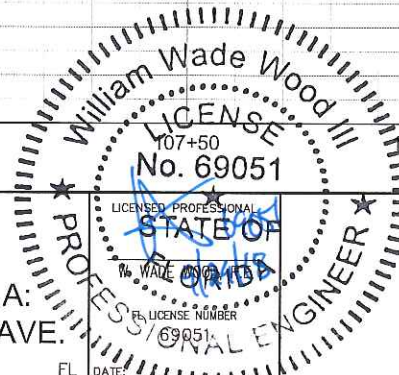
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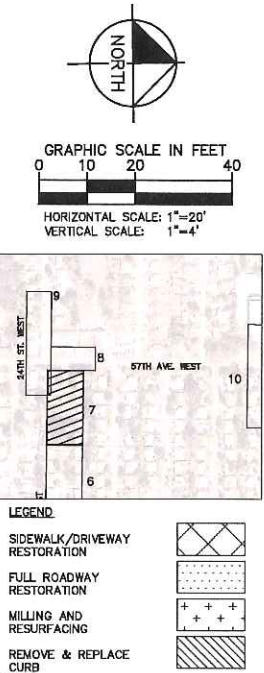
KHA PROJECT
148400016
DATE
9/20/2018
SCALE AS SHOWN
DESIGNED BY WWW
DRAWN BY LMB
CHECKED BY WEW



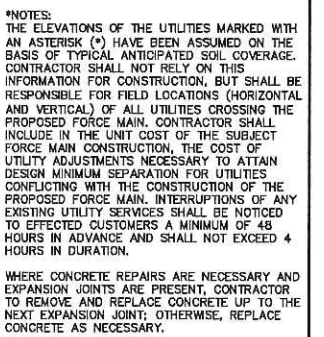
END OF SERVICE LIFE - PACKAGE A:
FM 28A/ PORT MANATEE/ ORLANDO AVE.
MANATEE COUNTY



PLAN AND PROFILE
24TH STREET



1. CONTRACTOR TO FOLLOW RESTRAINED LENGTHS SET IN RESTRAIN LENGTH DETAILS ON SHEET 25 & 26.
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3. REFER TO DETAIL UG-12 SHEET 24 FOR COUNTRY ROADWAY REPAIR REQUIREMENTS
4. EXISTING FORCE MAIN SHALL BE FLUSHED PRIOR TO GROUTING AFTER THE PROPOSED FORCE MAIN HAS BEEN PLACED INTO SERVICE.



GROUNDWATER /
DEWATERING NOTE:
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SHEET NUMBER |

7

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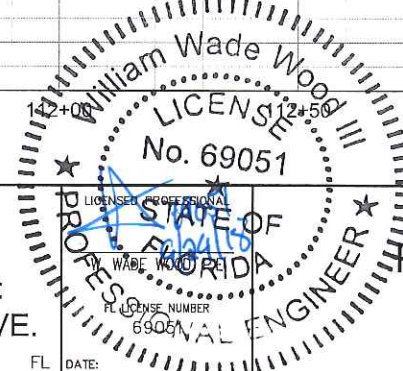
PHONE: 813-620-1460

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KHA PROJECT 148400016
DATE 9/20/2018
SCALE AS SHOWN
DESIGNED BY WWW
DRAWN BY LMB
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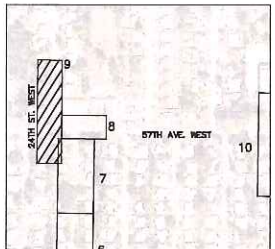
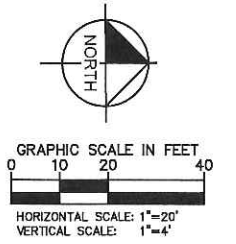
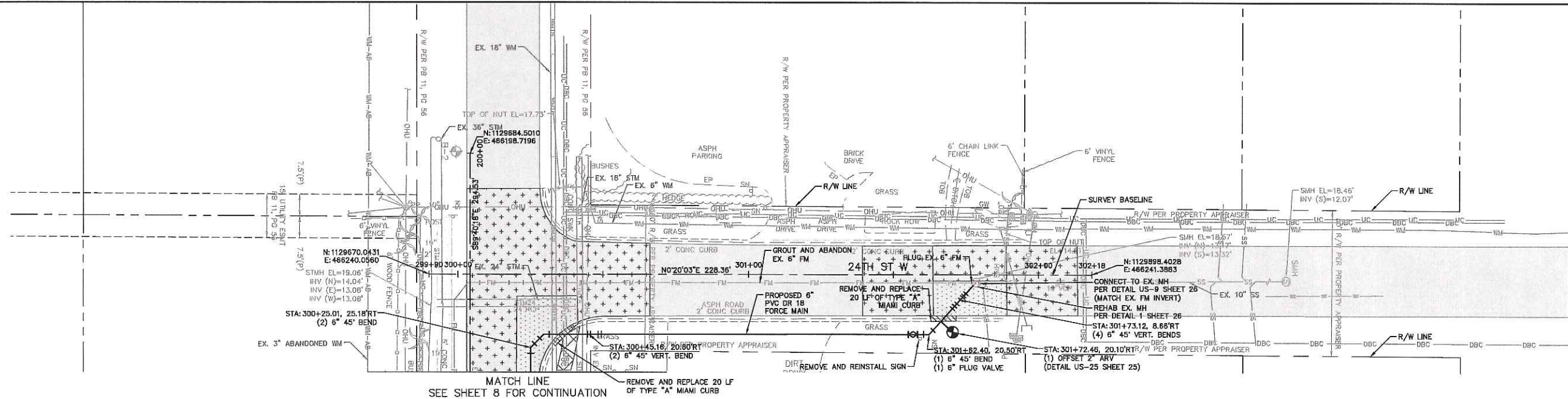
END OF SERVICE LIFE - PACKAGE A:
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MANATEE COUNTY



PLAN AND PROFILE 24TH STREET

FL DATE:

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- LEGEND
- SIDEWALK/DRIVEWAY RESTORATION
 - FULL ROADWAY RESTORATION
 - MILLING AND RESURFACING
 - REMOVE & REPLACE CURB
- NOTES:

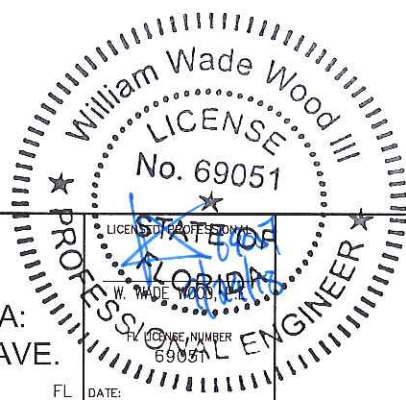
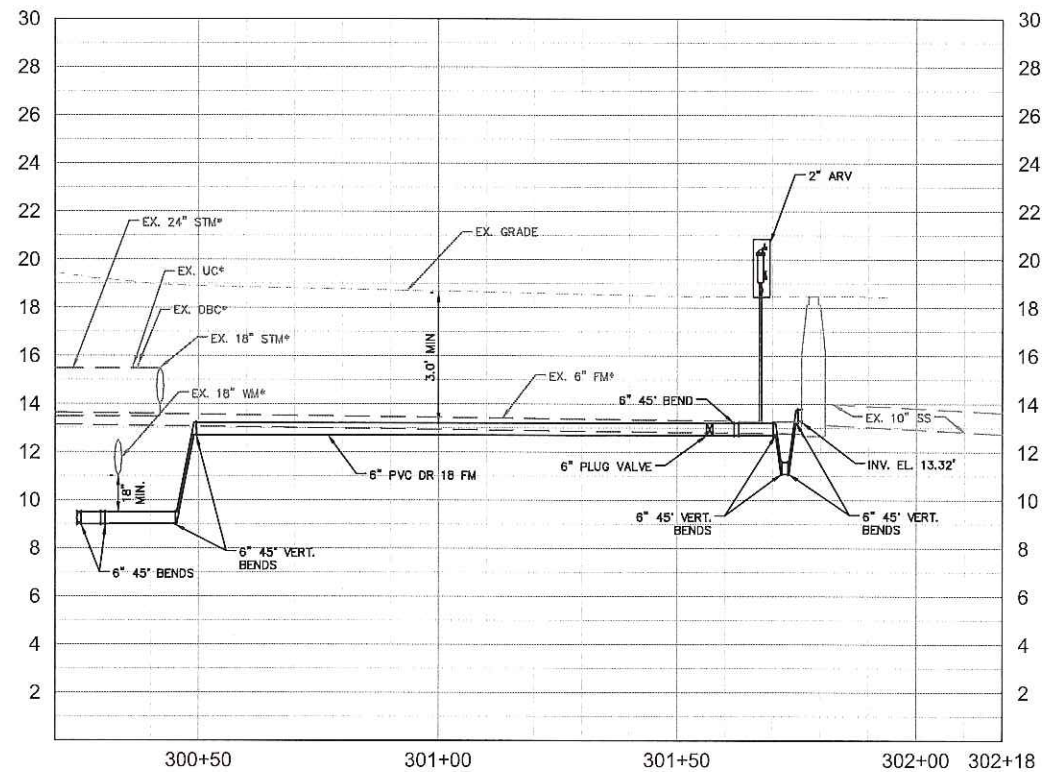
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GROUNDWATER / DEWATERING NOTE:

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PLAN AND PROFILE 24TH STREET (N)

SHEET NUMBER

9

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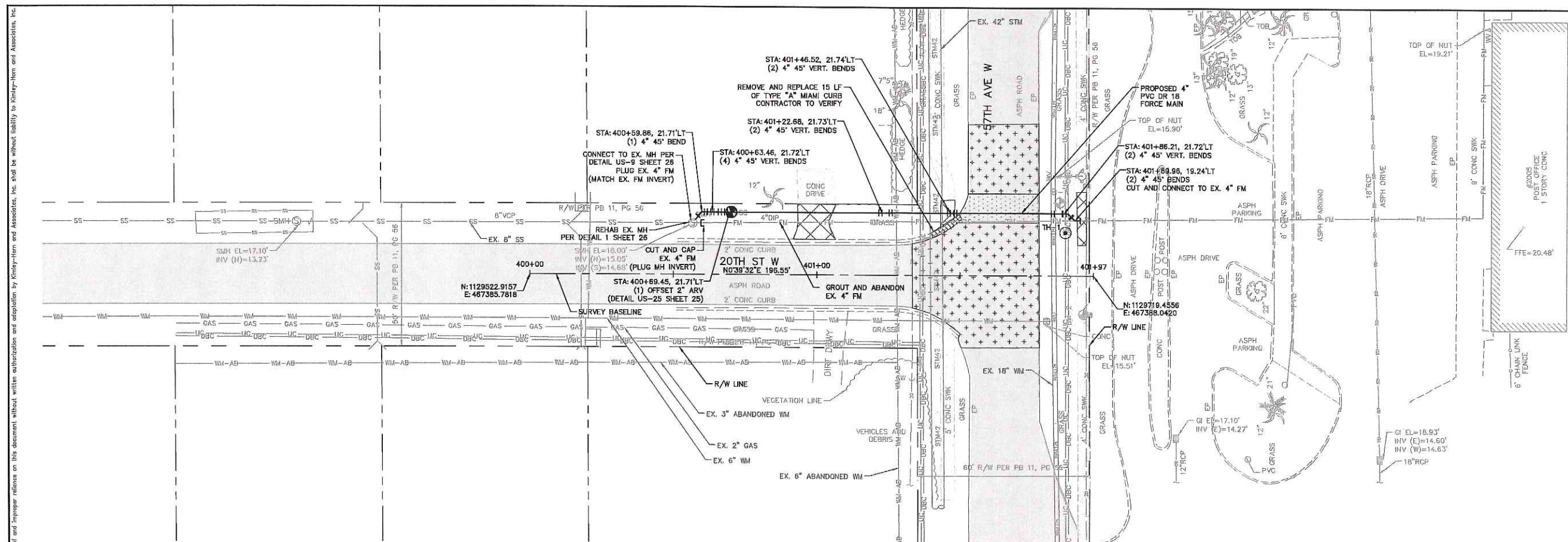
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KHA PROJECT
148400016
DATE
9/11/2018
SCALE AS SHOWN
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END OF SERVICE LIFE - PACKAGE A:
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MANATEE COUNTY

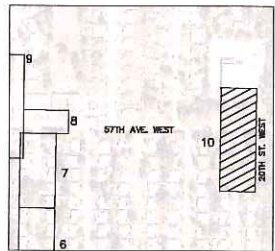
FL DATE:



GRAPHIC SCALE IN FEET



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=4'



LEGEND

SIDEWALK/DRIVEWAY

RESTORATION

FULL ROADWAY RESTORATION

MILLING AND

MILLING AND RESURFACING

REMOVE & REPLACE

CURB
NOTES:

1. CONTRACTOR TO FOLLOW RESTRAINED LENGTHS SET BY STRAIN LENGTH DETAILS ON SHEET 25 & 26.
2. CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-621.300 AND 62-620 OF THE FLORIDA ADMINISTRATIVE CODE (FAC).
3. REFER TO DETAIL UG-12 SHEET 24 FOR COUNTRY ROADWAY REPAIR REQUIREMENTS
4. EXISTING FORCE MAIN SHALL BE FLUSHED PRIOR TO GROUTING AFTER THE PROPOSED FORCE MAIN HAS BEEN PLACED INTO SERVICE.
5. CONTRACTOR SHALL NOT WORK ON POST OFFICE PROPERTY, AS THIS IS FEDERAL PROPERTY.

*NOTES:
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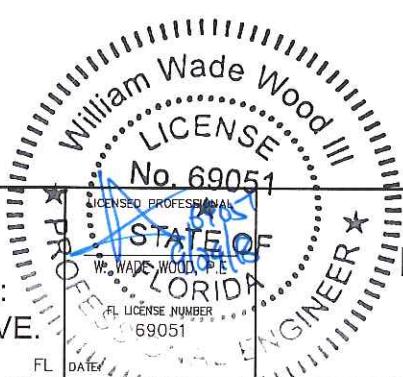
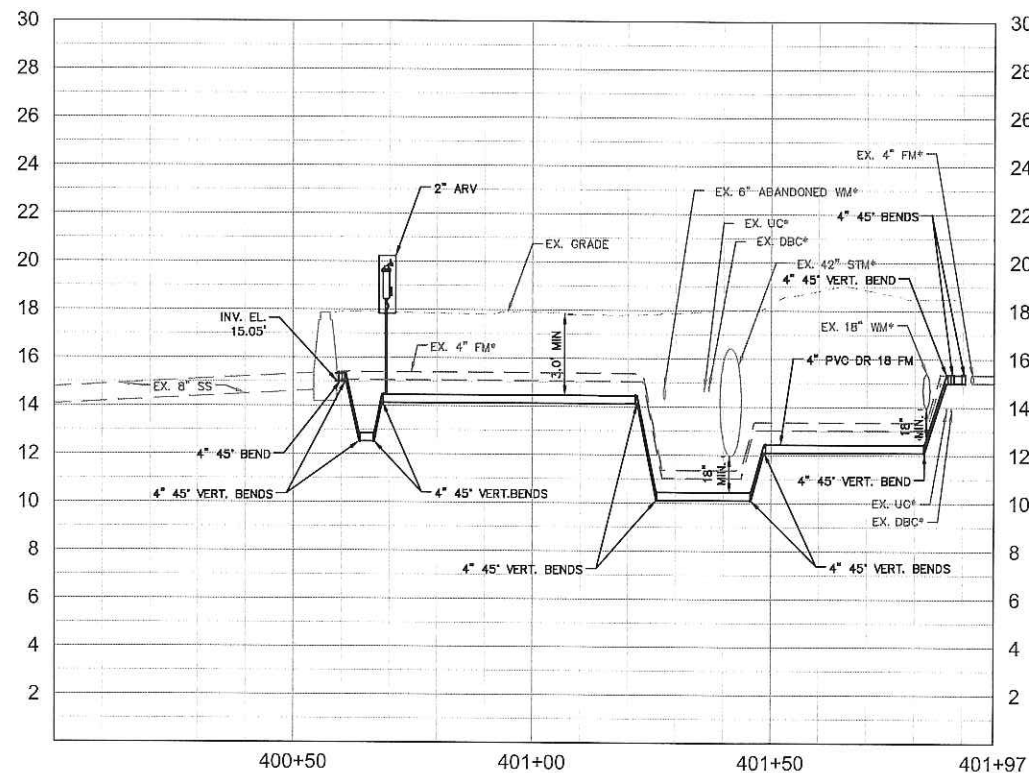
GROUNDWATER /
DEWATERING NOTE:

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SHEET NUMBER

10



PLAN AND PROFILE 20TH STREET

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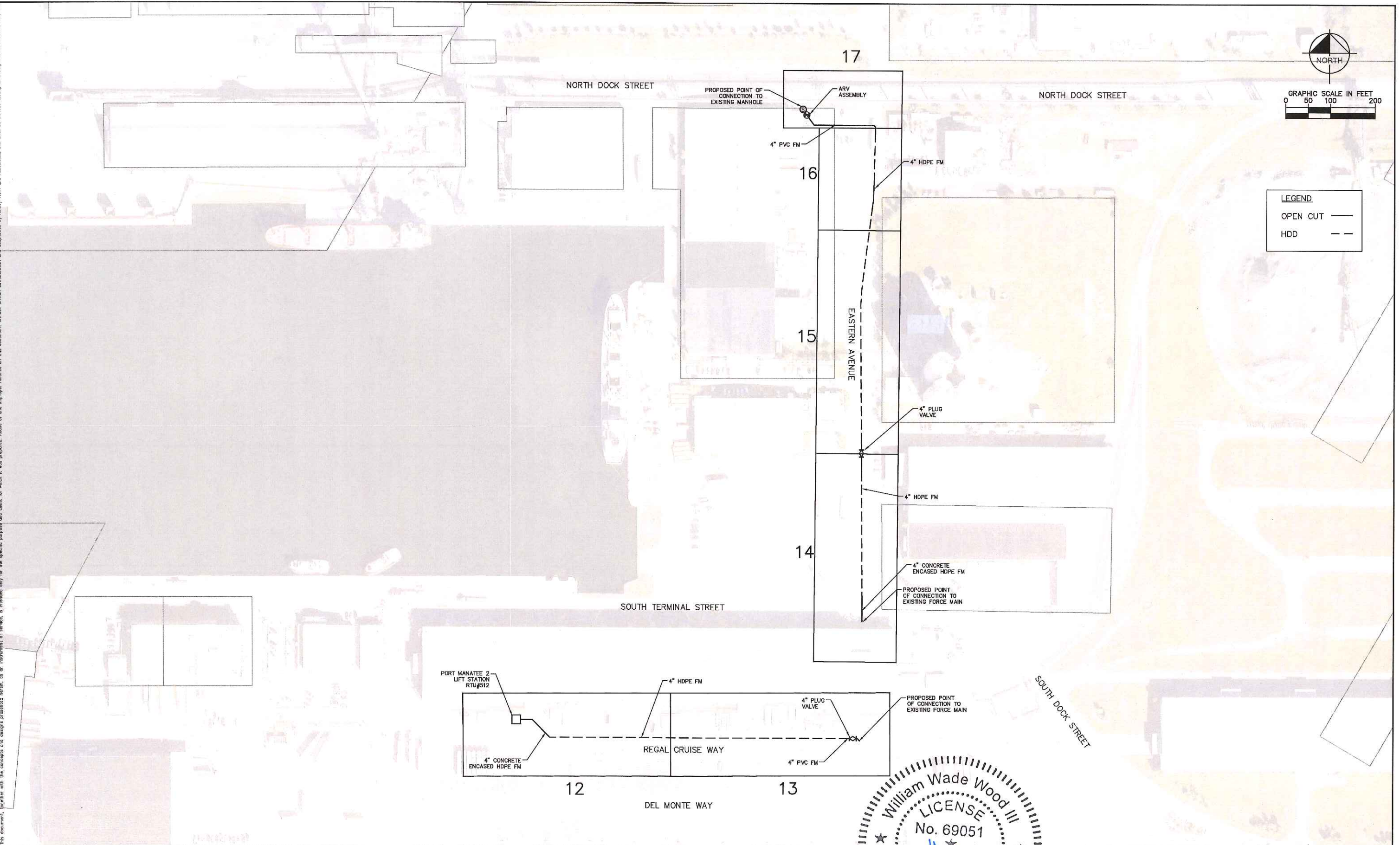
KHA PROJECT 148400016	
DATE 9/11/2018	
SCALE AS SHOWN	
DESIGNED BY	WWW
DRAWN BY	LMB
CHECKED BY	WEW



END OF SERVICE LIFE - PACKAGE A:
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SHEET NUMBER

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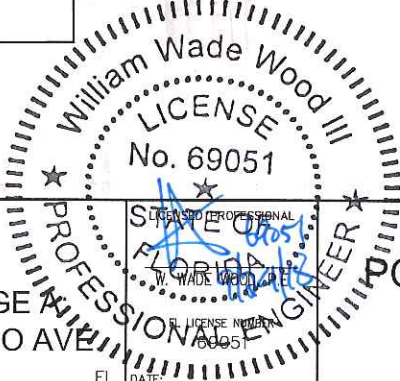


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KHA PROJECT	148400016
DATE	9/11/2018
SCALE	AS SHOWN
DESIGNED BY	WW
DRAWN BY	LMB
CHECKED BY	WEW



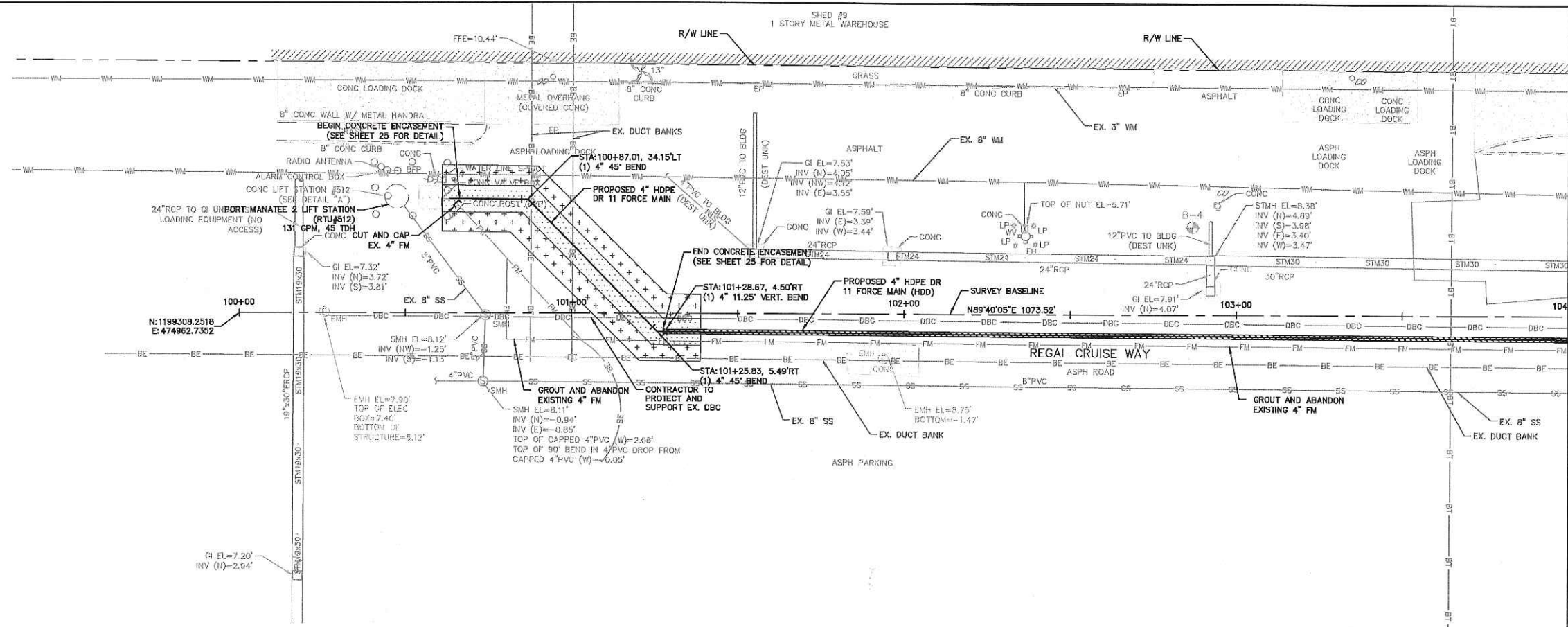
END OF SERVICE LIFE - PACKAGE A
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MANATEE COUNTY



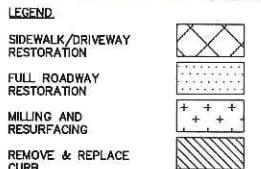
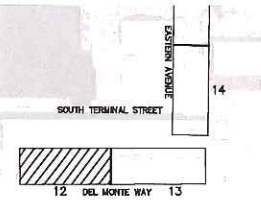
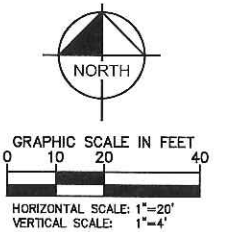
PORT MANATEE FORCE MAIN
KEY SHEET

SHEET NUMBER
11

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SEE SHEET 13 FOR CONTINUATION

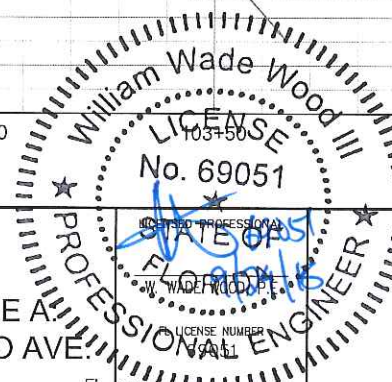
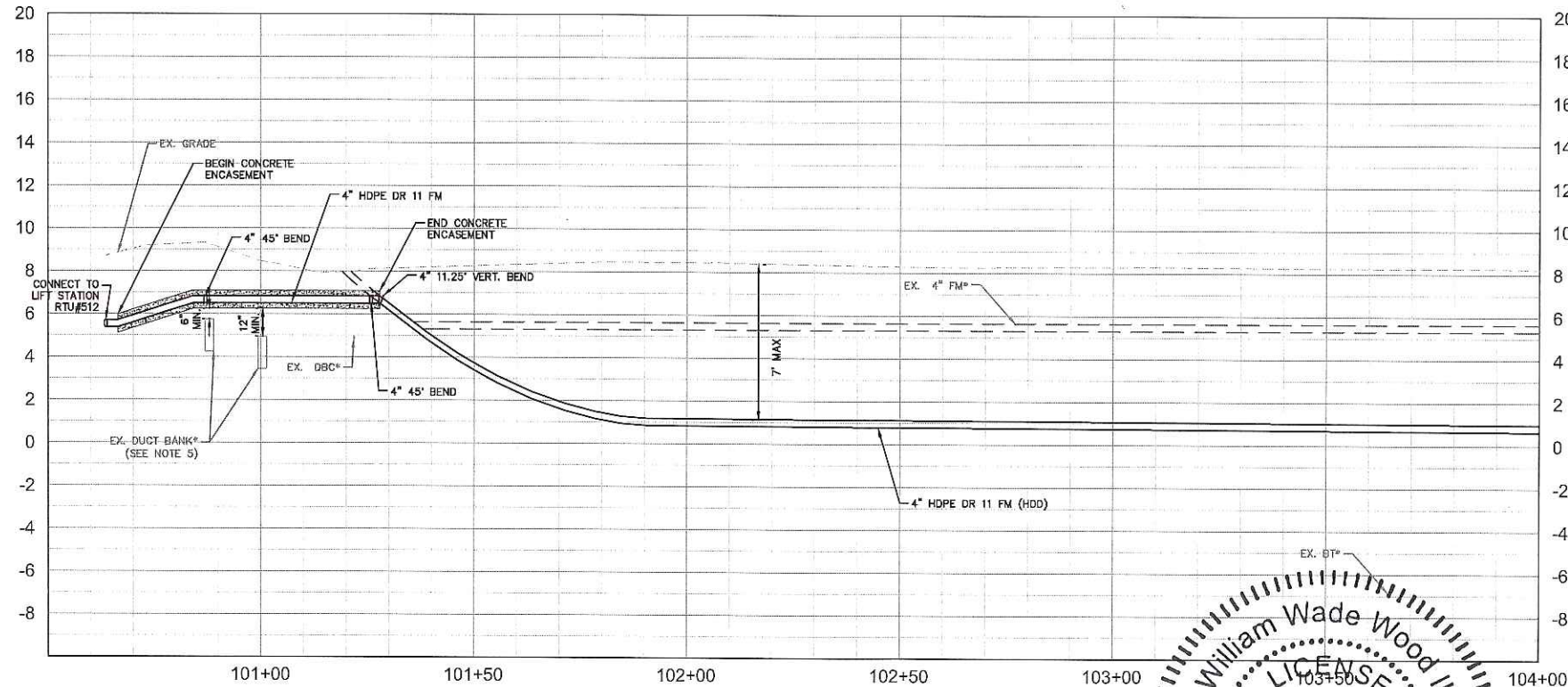


- NOTES:
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 - CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-821.300 AND 62-823 OF THE FLORIDA ADMINISTRATIVE CODE (FAC).
 - REFER TO DETAIL UC-12 SHEET 24 FOR COUNTY ROADWAY REPAIR REQUIREMENTS.
 - EXISTING FORCE MAIN SHALL BE FLUSHED PRIOR TO GROUTING AFTER THE PROPOSED FORCE MAIN HAS BEEN PLACED INTO SERVICE.
 - DEPTH OF FPL DUCT BANK IS ASSUMED BASED ON INFORMATION PROVIDED BY FPL. CONTRACTOR SHALL CONFIRM DEPTH PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL COORDINATE WITH PSI REPRESENTATIVES DURING CONSTRUCTION FOR GROUNDWATER SAMPLING. ALL GROUNDWATER WILL BE REQUIRED TO BE SAMPLED AND TREATED PRIOR TO DISPOSAL. ALL EXPOSED SOIL SHALL REMAIN ON SITE AND BE USED AS BACKFILL.
 - FOR PAVED AREAS ABOVE CONCRETE ENCASUREMENT, IF THE PROPER BASE CANNOT BE INSTALLED AT THE CORRECT THICKNESS, CONTRACTOR SHALL USE SP 12.5 STRUCTURAL ASPHALT IN 2-INCH LIFTS, THEN MILL AND RESURFACE PER THE COUNTY DETAILS.

*NOTES:
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GROUNDWATER / DEWATERING NOTE:
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No.	REVISIONS	DATE	BY

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KHA PROJECT 148400016
DATE 9/11/2018
SCALE AS SHOWN
DESIGNED BY WWW
DRAWN BY LMB
CHECKED BY WEW

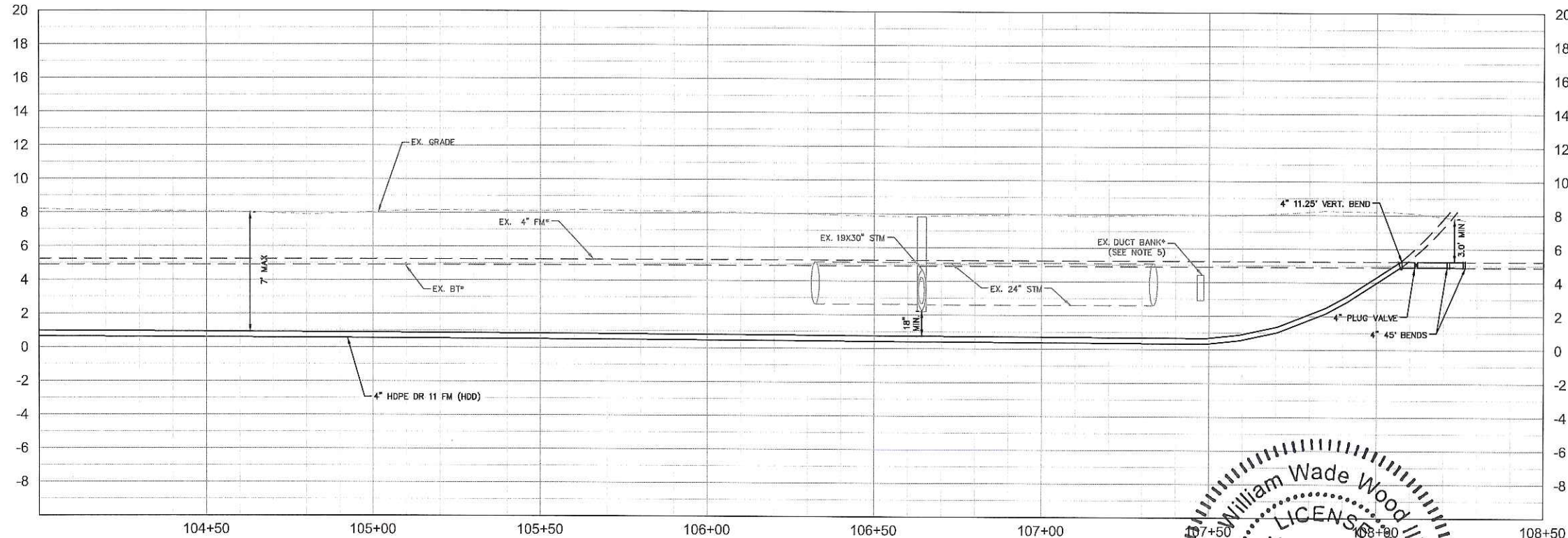
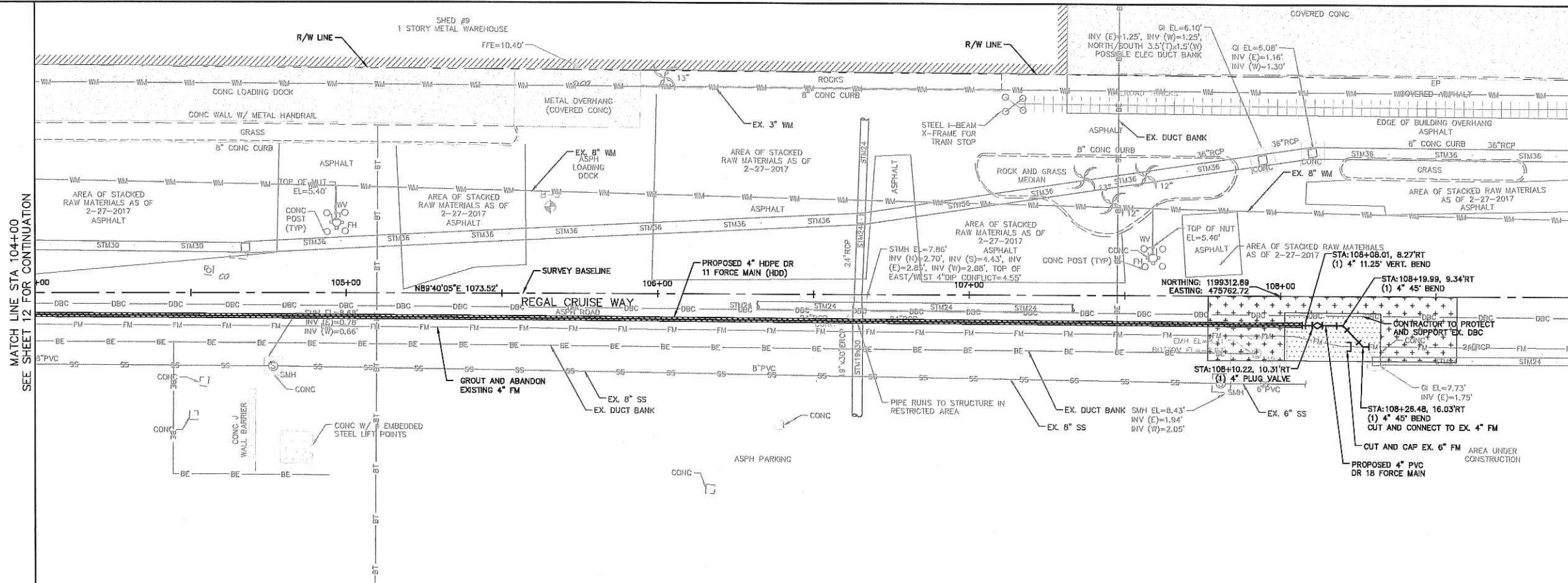
Manatee County
END OF SERVICE LIFE - PACKAGE A
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MANATEE COUNTY

PLAN AND PROFILE
REGAL CRUISE WAY

SHEET NUMBER

12

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NORTH

GRAPHIC SCALE IN FEET

0 10 20 40

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE: 1"=4'

LEGEND

- SIDEWALK/DRIVEWAY RESTORATION
- FULL ROADWAY RESTORATION
- MILLING AND RESURFACING
- REMOVE & REPLACE CURB

NOTES:

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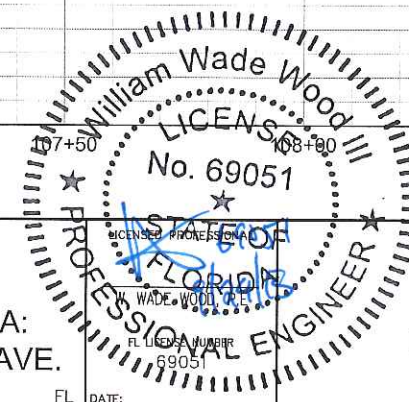
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No.	REVISIONS	DATE	BY

KHA PROJECT
148400016
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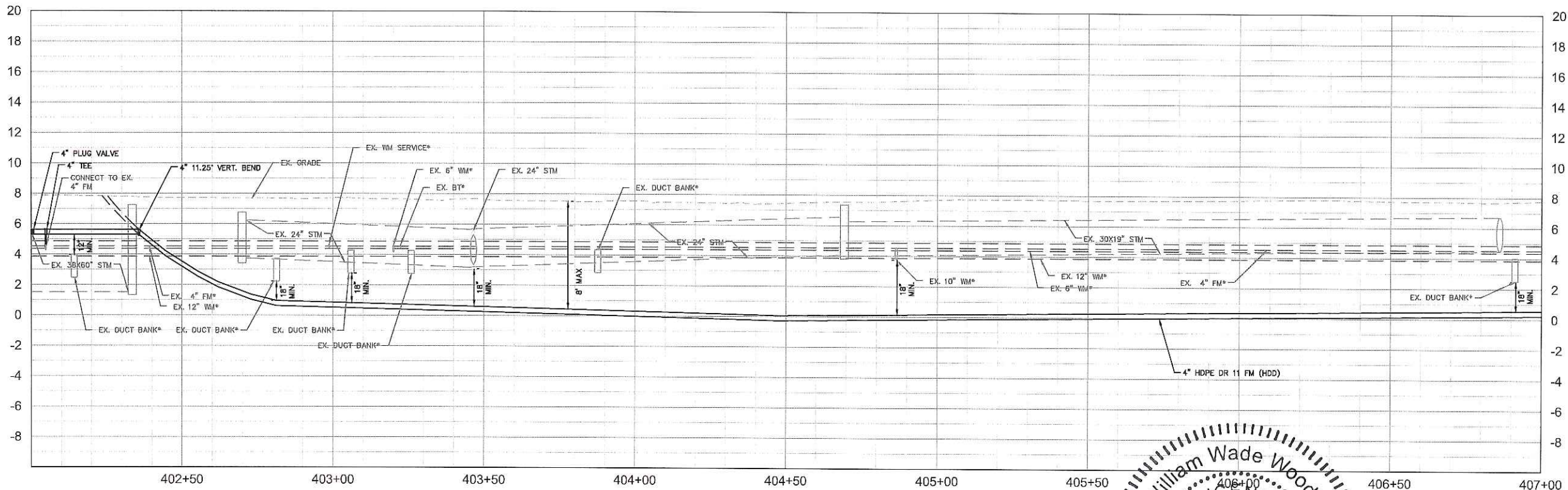
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MANATEE COUNTY

PLAN AND PROFILE
REGAL CRUISE WAY

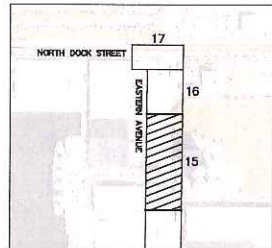
SHEET NUMBER
13

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MATCH LINE STA 402+00
SEE SHEET 14 FOR CONTINUATION



GRAPHIC SCALE IN FEET
0 10 20 40
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=4'



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SHEET NUMBER

15

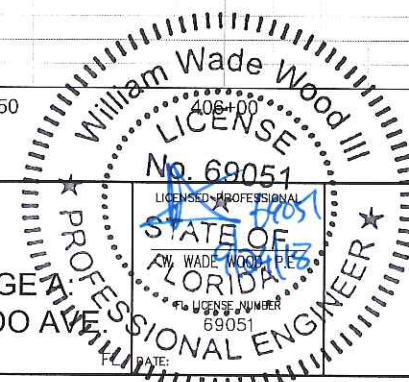
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KHA PROJECT
148400016
DATE
9/19/2018
SCALE AS SHOWN
DESIGNED BY WWW
DRAWN BY LMB
CHECKED BY WEW

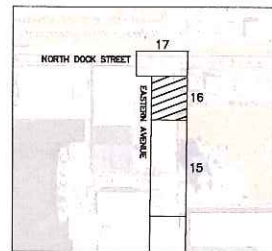
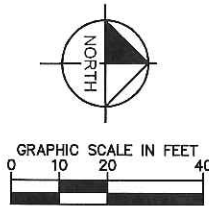
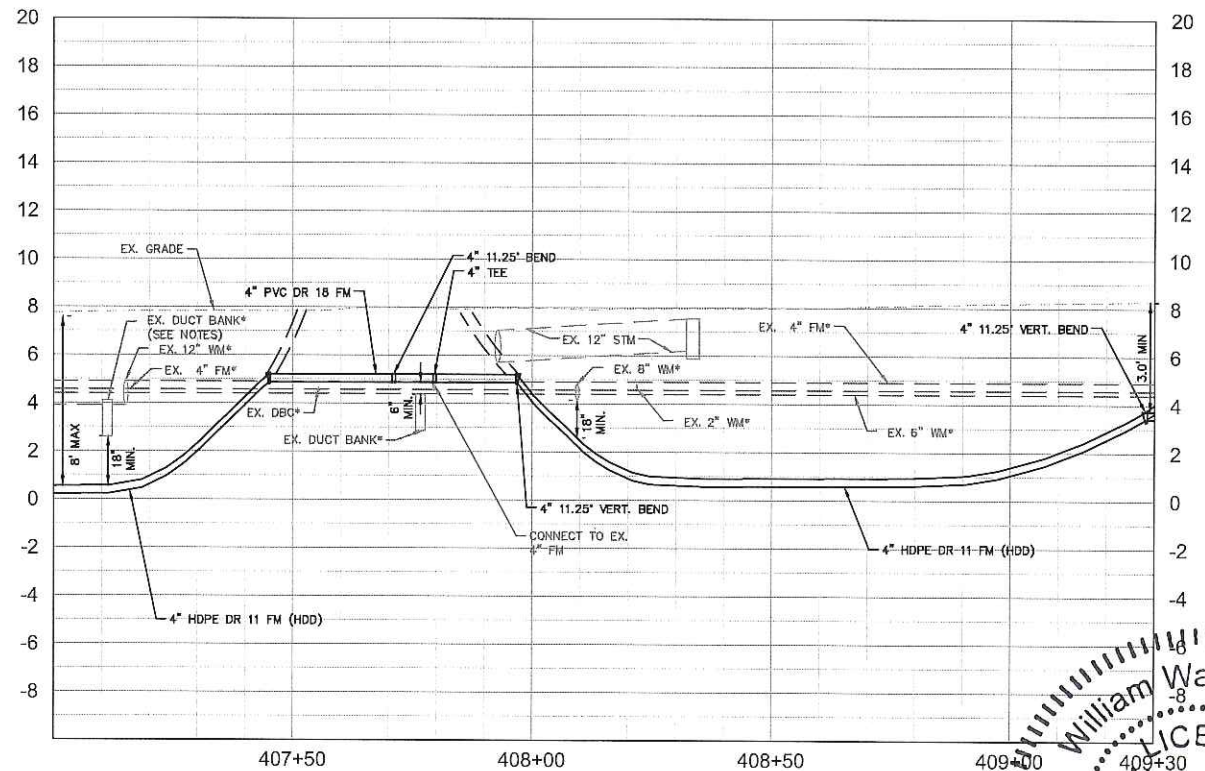
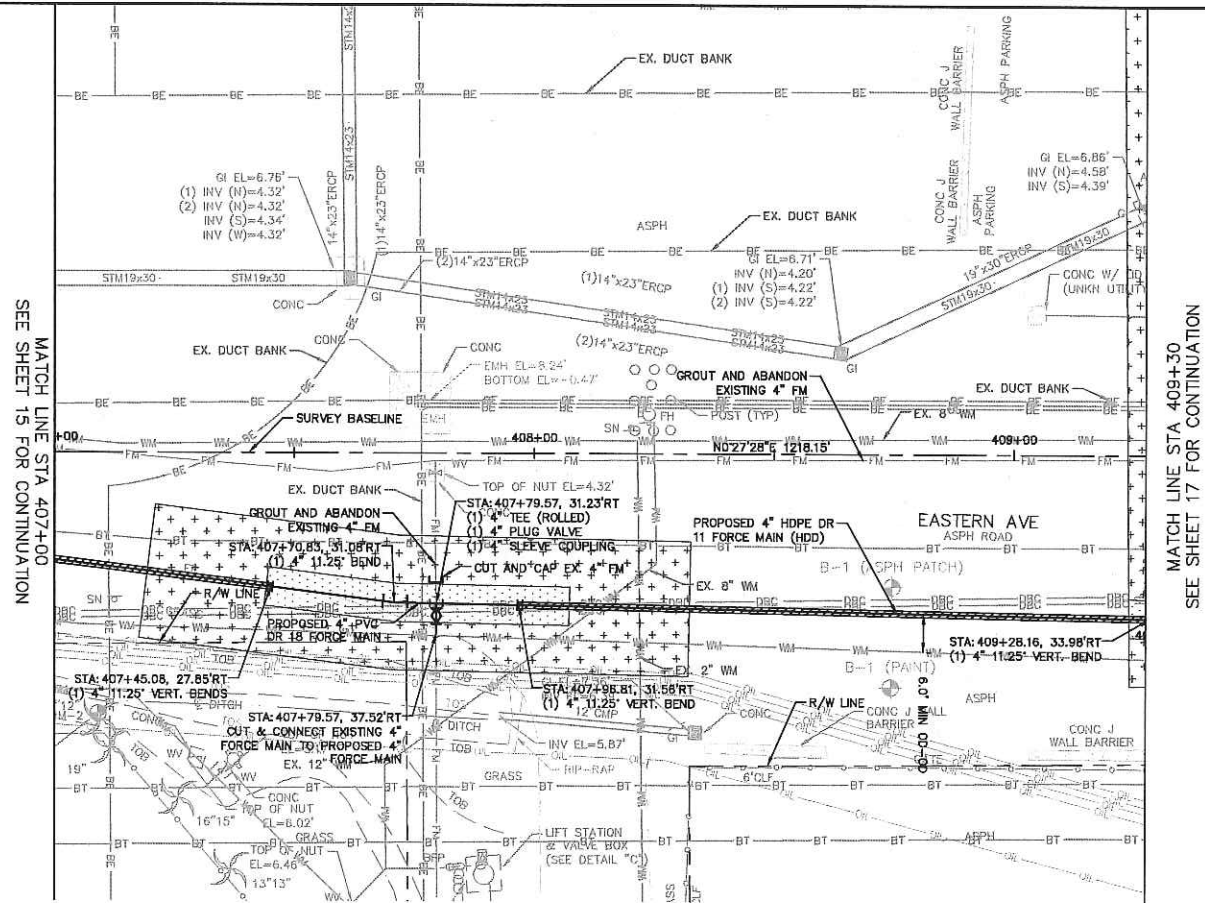


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FM 28A/ PORT MANATEE/ ORLANDO AVE
MANATEE COUNTY



PLAN AND PROFILE
EASTERN AVENUE

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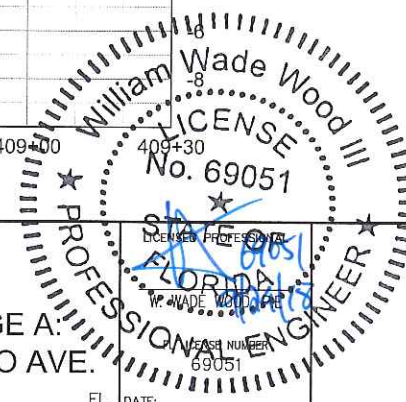
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SCALE AS SHOWN
DESIGNED BY WWW
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END OF SERVICE LIFE - PACKAGE A:
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MANATEE COUNTY

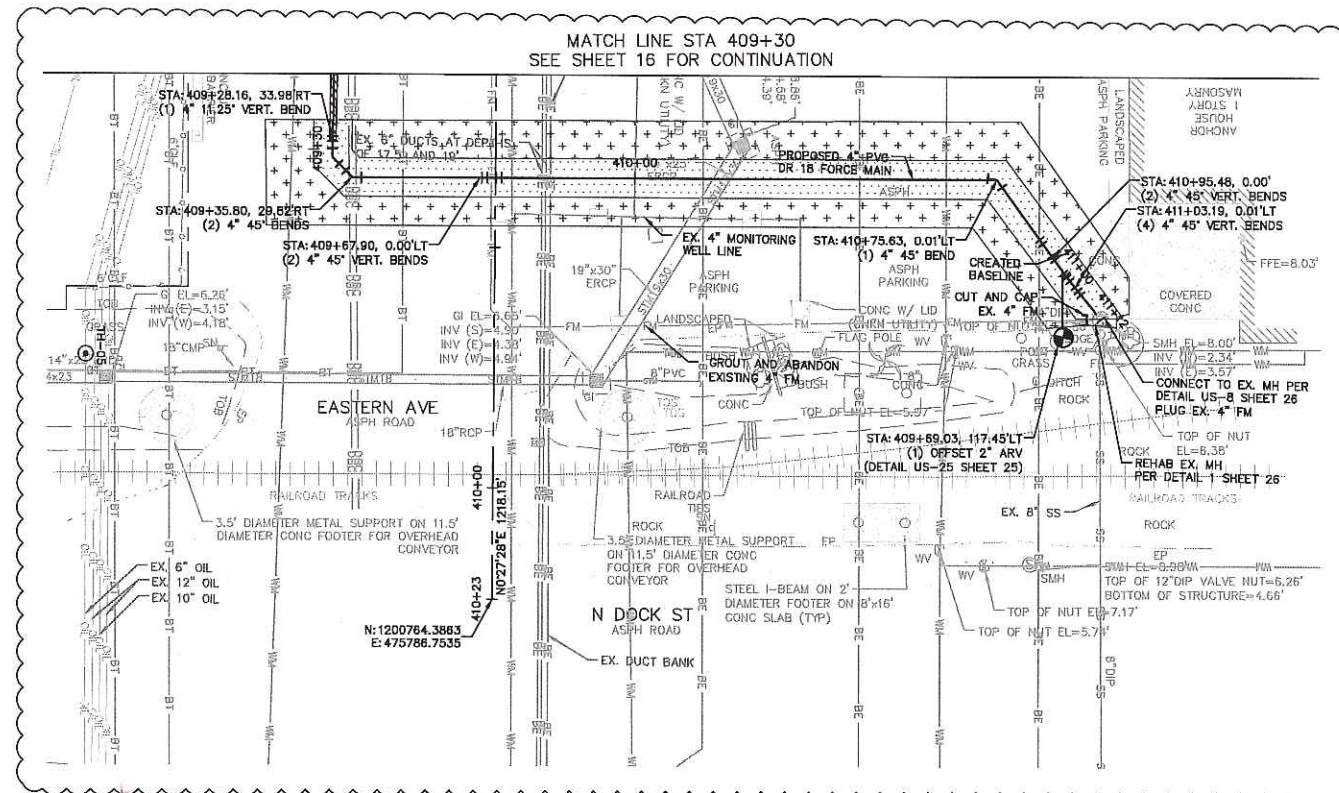


PLAN AND PROFILE
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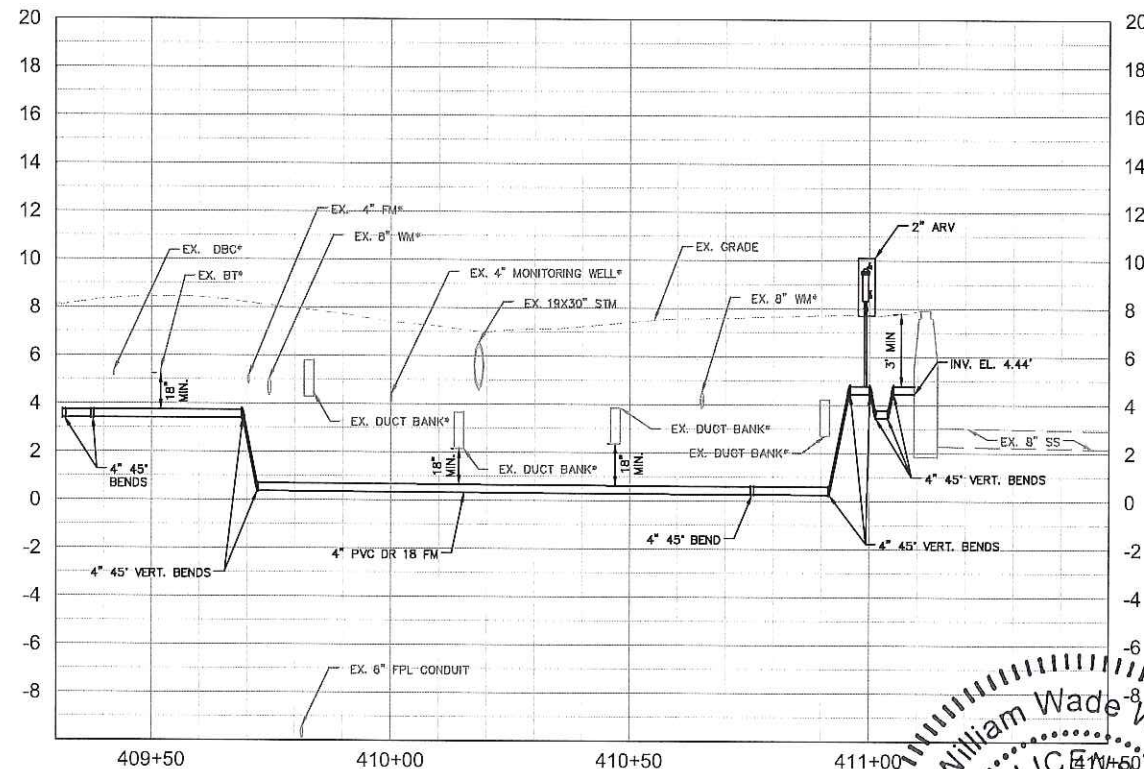
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16

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NOTE:
HIGH LEVELS OF HYDROGEN SULFIDE WERE DETECTED IN THIS GENERAL AREA. CONTRACTOR SHALL TAKE CAUTION WHEN EXCAVATING IN THIS AREA



GRAPHIC SCALE IN FEET
0 10 20 40
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=4'

LEGEND

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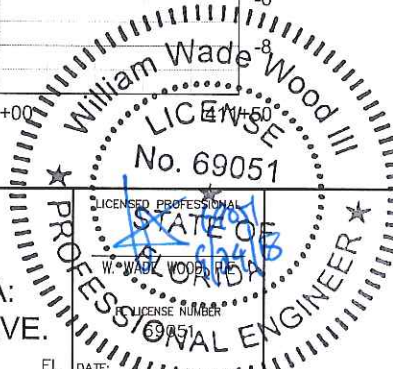
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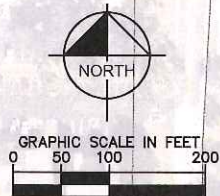
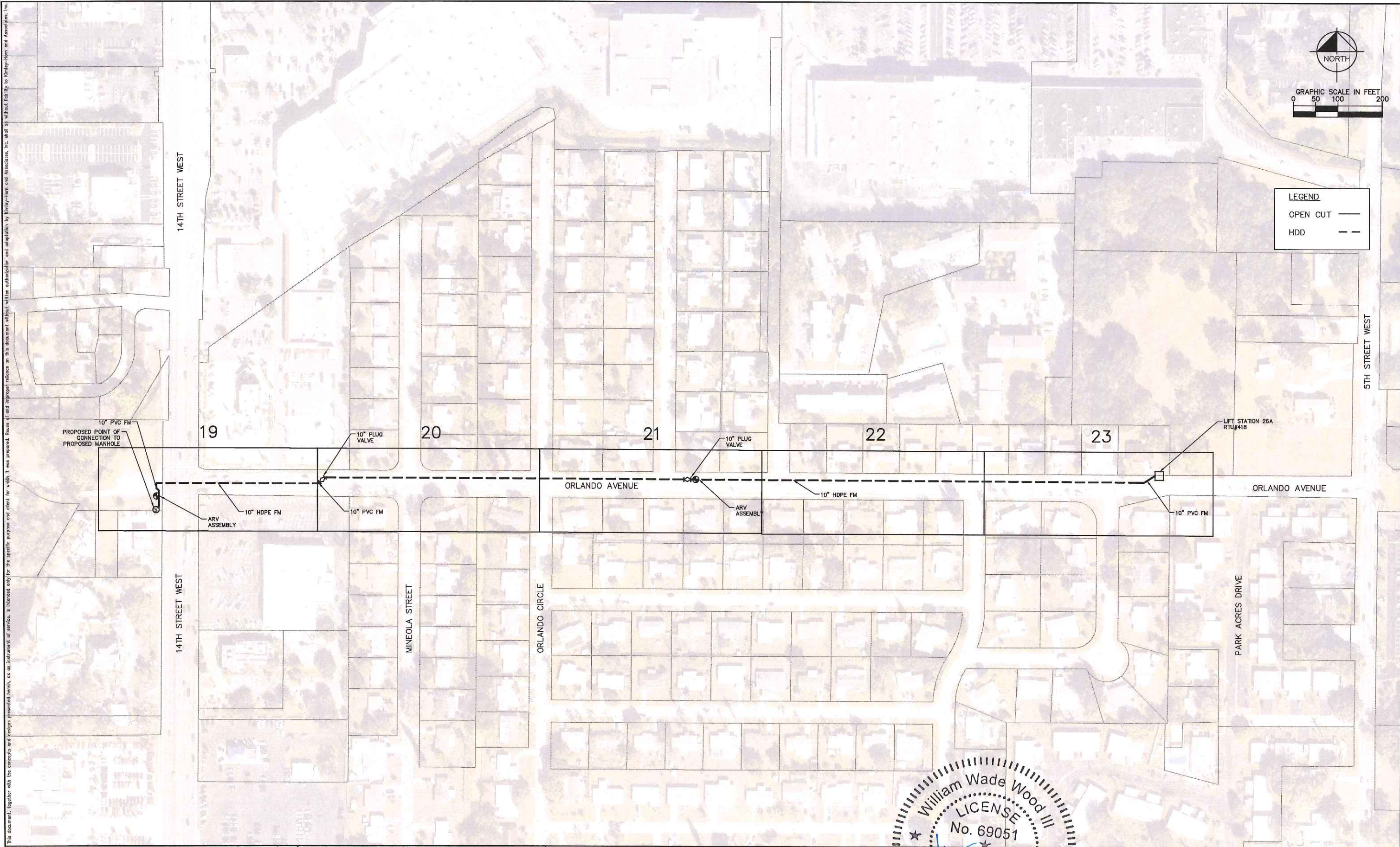
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MANATEE COUNTY



PLAN AND PROFILE
EASTERN AVENUE

SHEET NUMBER

17



LEGEND	
OPEN CUT	---
HDD	- - -

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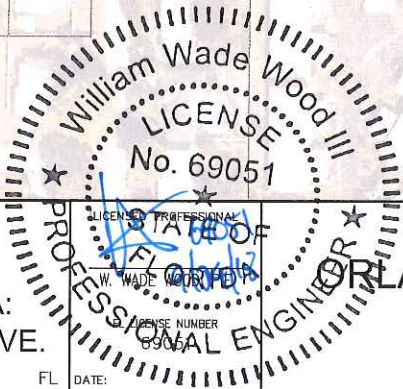


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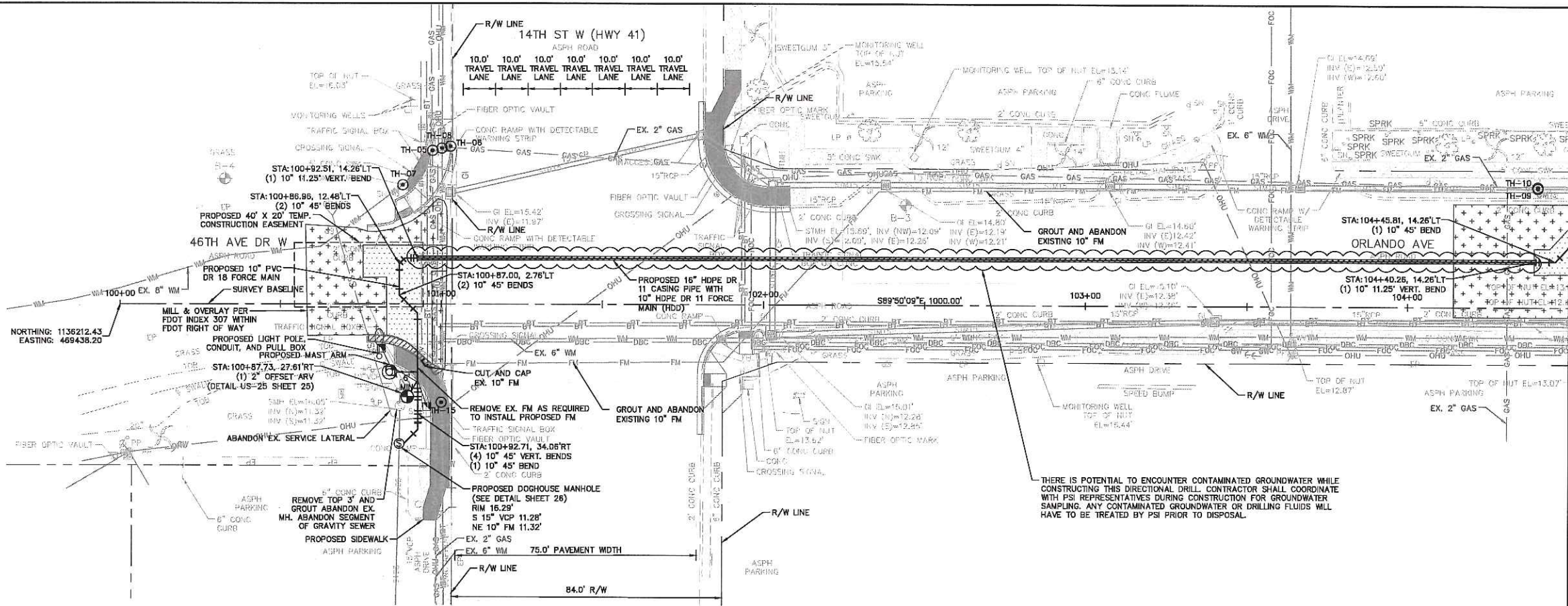
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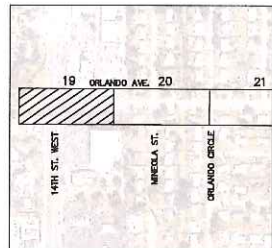
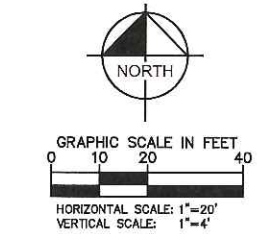
William Wade Wood III
LICENSE
No. 69051
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ORLANDO AVE. FORCE MAIN
KEY SHEET

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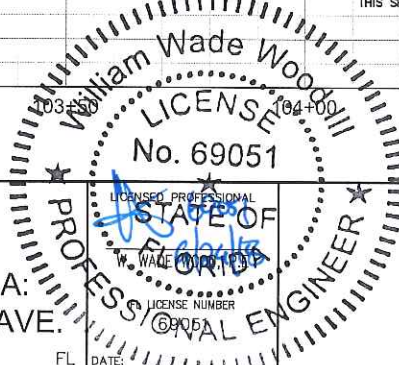
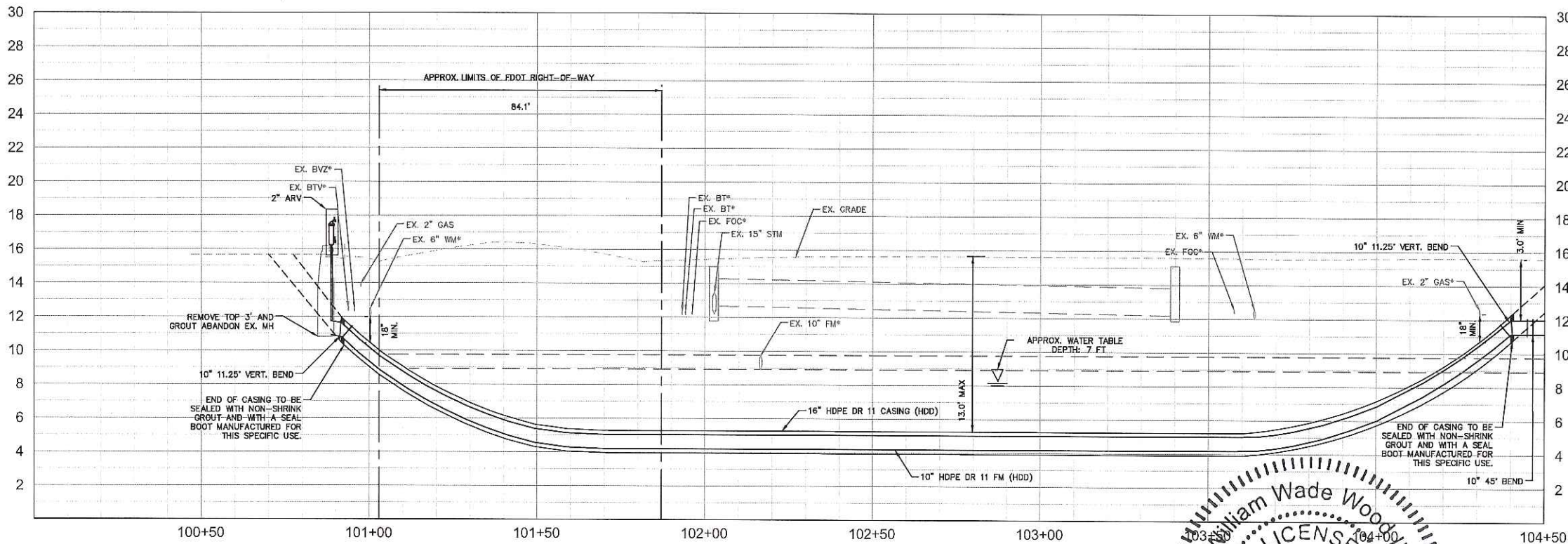
MATCH LINE STA 104+50
SEE SHEET 20 FOR CONTINUATION



LEGEND
SIDEWALK/DRIVEWAY RESTORATION
FULL ROADWAY RESTORATION
MILLING AND RESURFACING
REMOVE & REPLACE CURB
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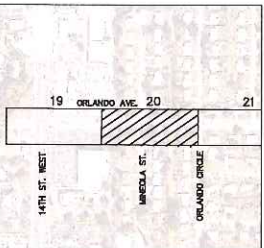
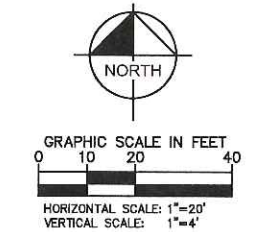
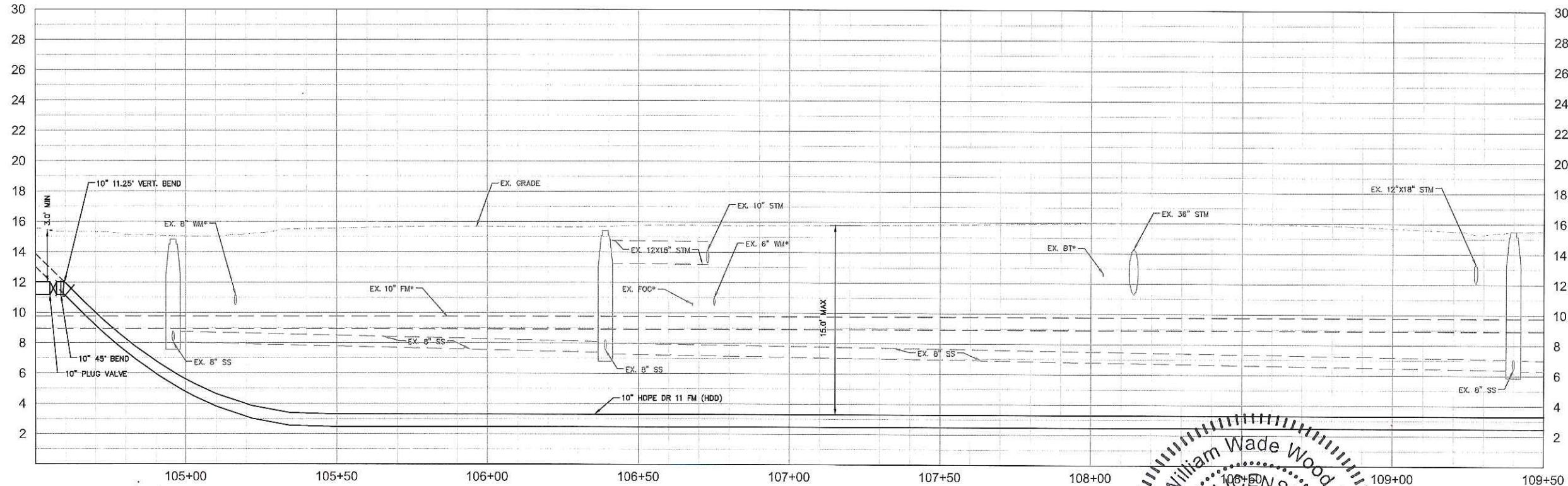
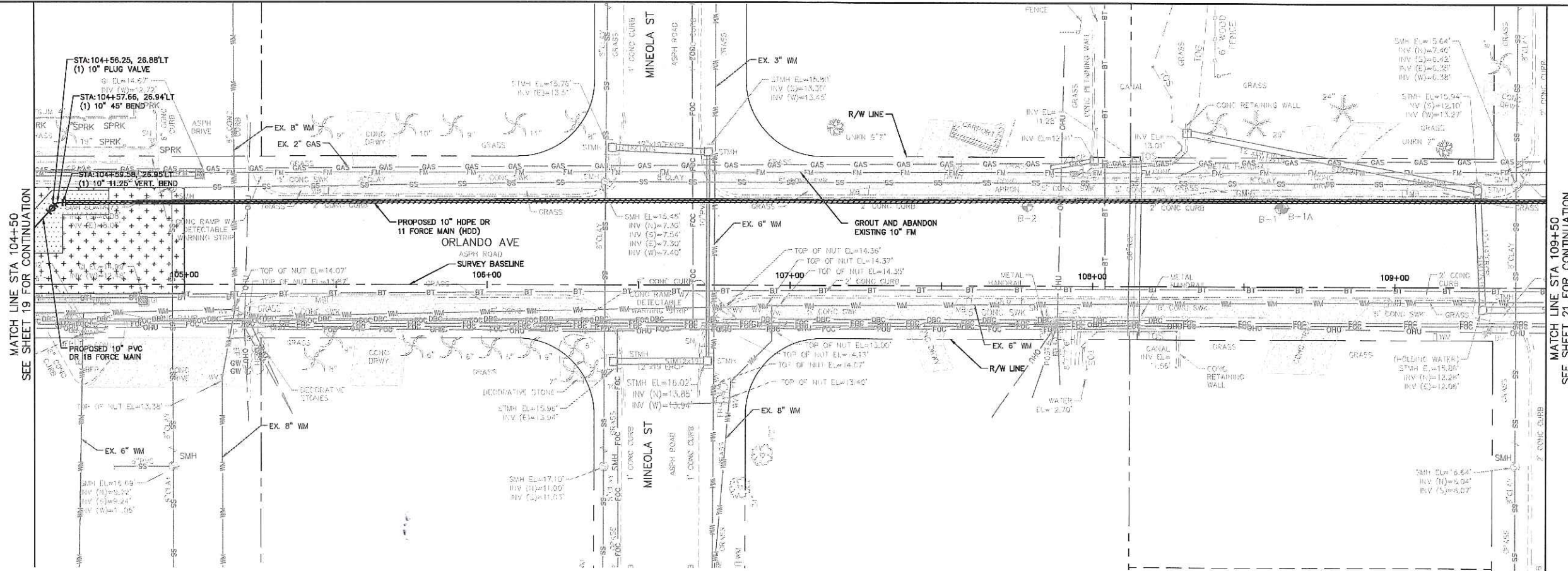
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PLAN AND PROFILE
ORLANDO AVENUE

SHEET NUMBER

19

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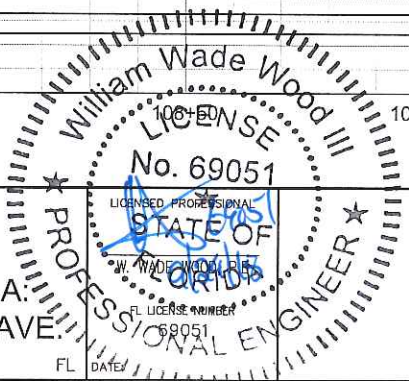
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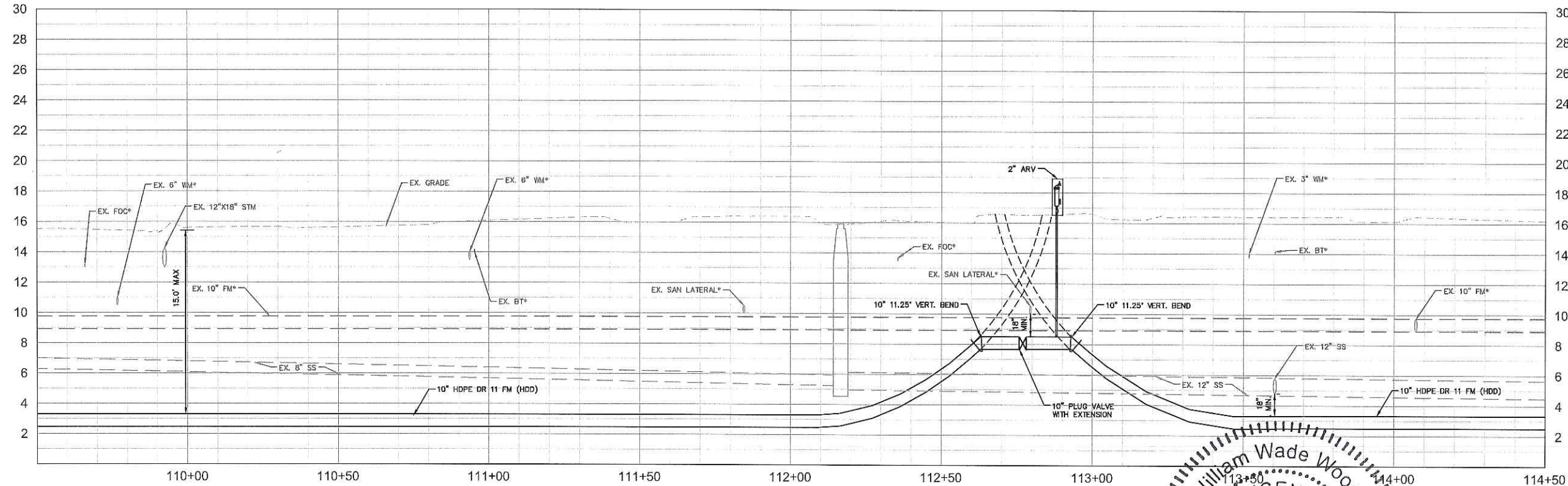
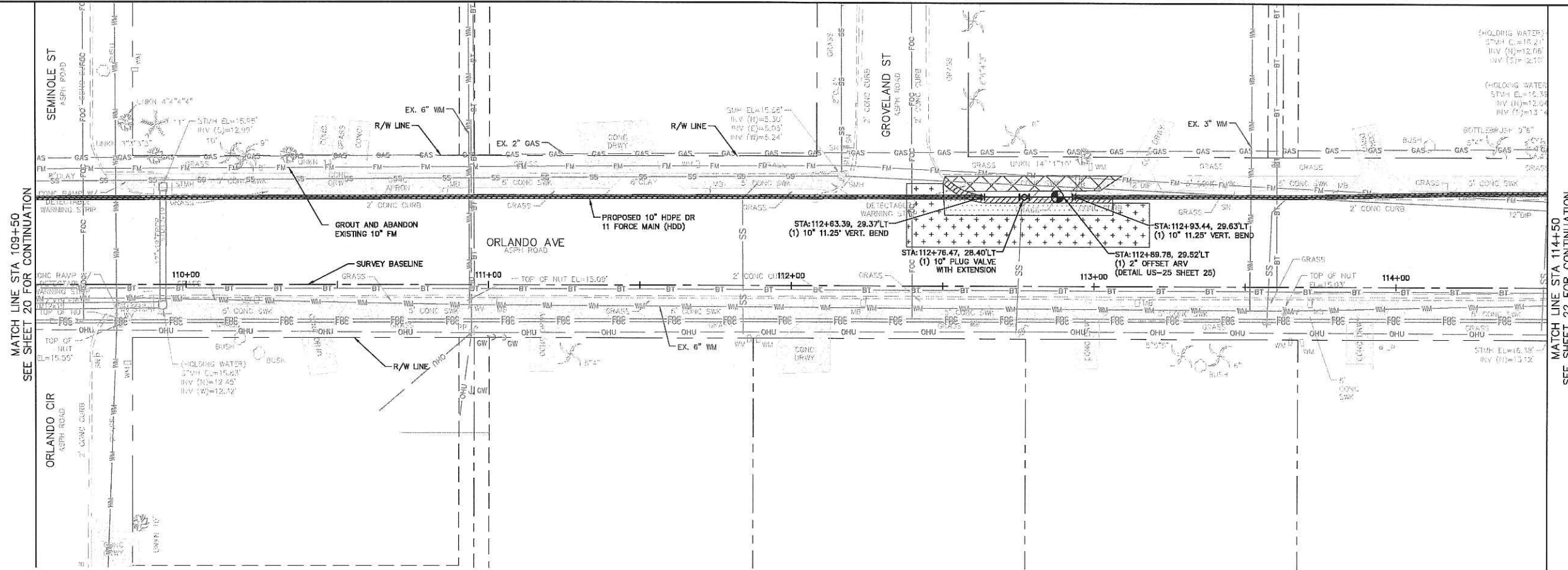
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SCALE AS SHOWN
DESIGNED BY WWW
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**PLAN AND PROFILE
ORLANDO AVENUE**

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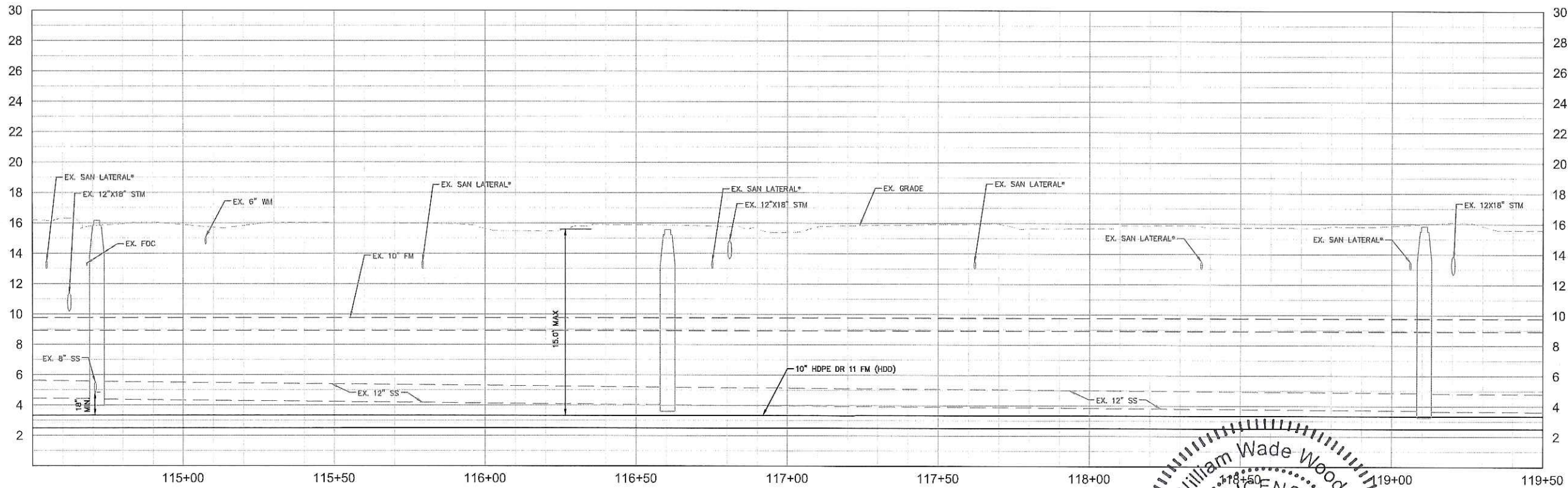
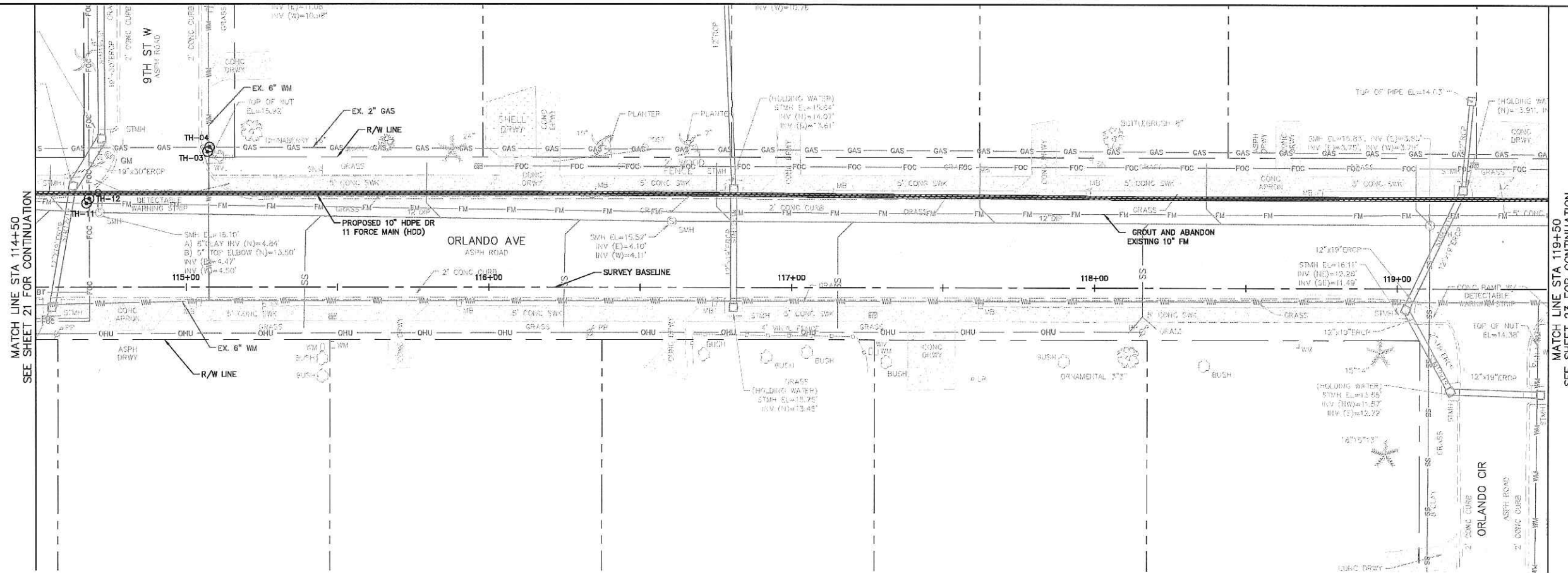
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PROFESSIONAL ENGINEER

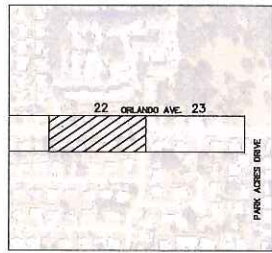
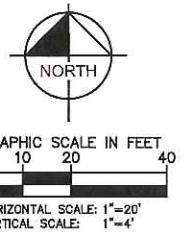
PLAN AND PROFILE ORLANDO AVENUE

SHEET NUMBER 21

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MATCH LINE STA 119+50
SEE SHEET 23 FOR CONTINUATION



*NOTES:
THE ELEVATIONS OF THE UTILITIES MARKED WITH AN ASTERISK (*) HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTICIPATED SOIL COVERAGE. CONTRACTOR SHALL NOT RELY ON THIS INFORMATION FOR CONSTRUCTION, BUT SHALL BE RESPONSIBLE FOR FIELD LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL UTILITIES CROSSING THE PROPOSED FORCE MAIN. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT FORCE MAIN CONSTRUCTION, THE COST OF UTILITY ADJUSTMENTS NECESSARY TO ATTAIN DESIGN MINIMUM SEPARATION FOR UTILITIES CONFLICTING WITH THE CONSTRUCTION OF THE PROPOSED FORCE MAIN. INTERRUPTIONS OF ANY EXISTING UTILITY SERVICES SHALL BE NOTICED TO EFFECTED CUSTOMERS A MINIMUM OF 48 HOURS IN ADVANCE AND SHALL NOT EXCEED 4 HOURS IN DURATION.
WHERE CONCRETE REPAIRS ARE NECESSARY AND EXPANSION JOINTS ARE PRESENT, CONTRACTOR TO REMOVE AND REPLACE CONCRETE UP TO THE NEXT EXPANSION JOINT; OTHERWISE, REPLACE CONCRETE AS NECESSARY.

GROUNDWATER / DEWATERING NOTE:
THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.

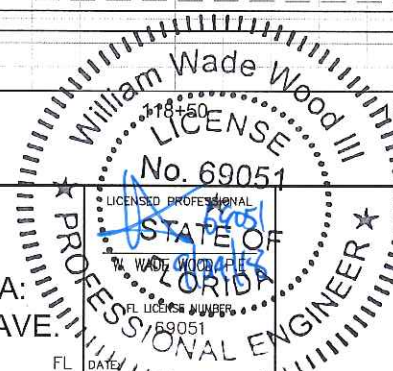


Kimley-Horn
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KHA PROJECT
148400016
DATE
9/20/2018
SCALE AS SHOWN
DESIGNED BY WWW
DRAWN BY LMB
CHECKED BY WEW



END OF SERVICE LIFE - PACKAGE A:
FM 28A/ PORT MANATEE/ ORLANDO AVE.
MANATEE COUNTY

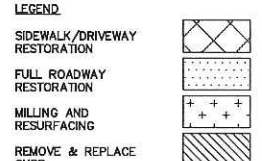
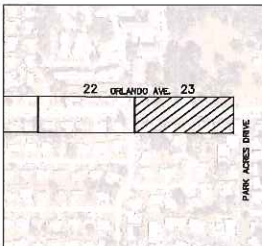
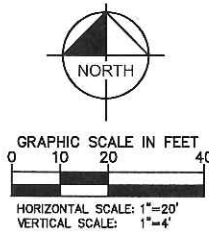
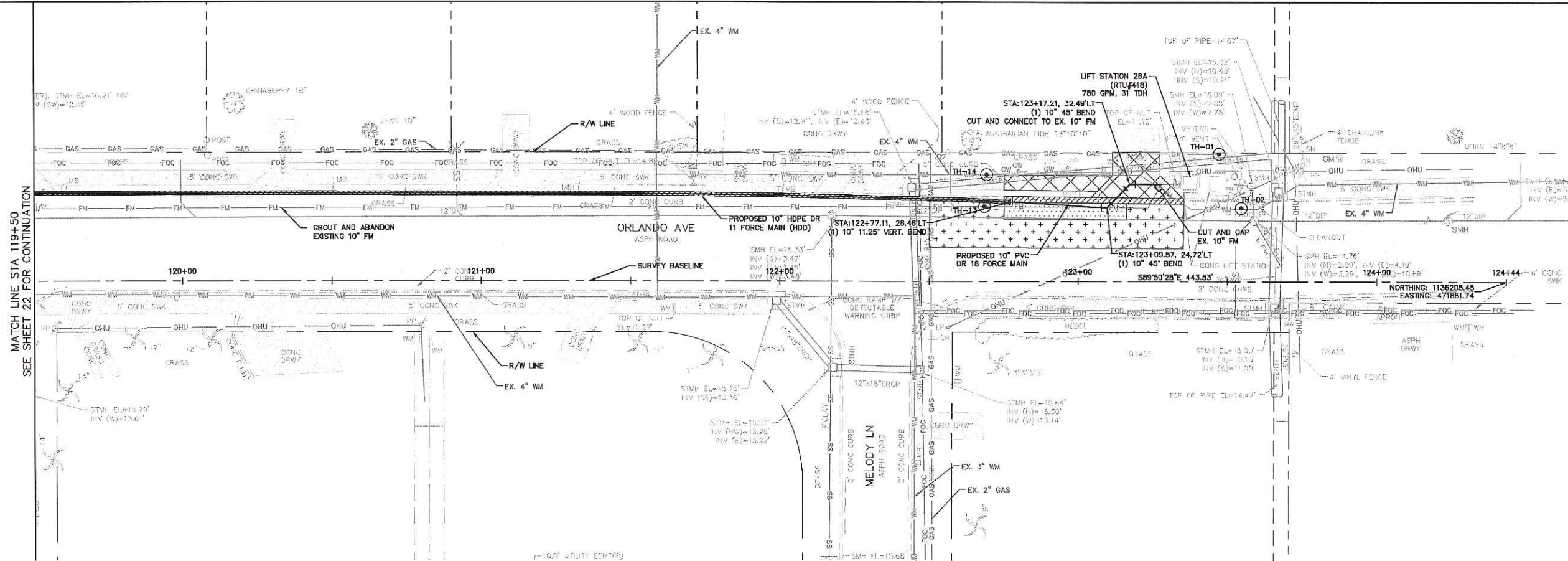


PLAN AND PROFILE
ORLANDO AVENUE

SHEET NUMBER

22

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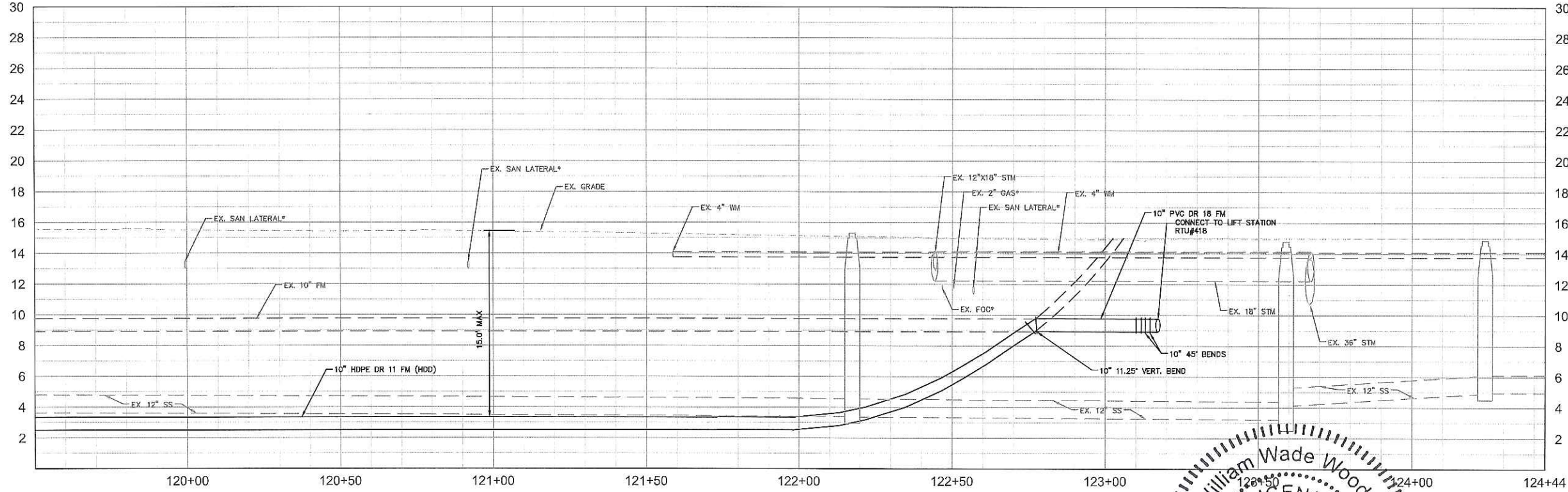


- NOTES:
1. CONTRACTOR TO FOLLOW RESTRAINED LENGTHS SET IN RESTRAIN LENGTH DETAILS ON SHEET 25 & 26.
 2. CONSTRUCTION DEWATERING SHALL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO CHAPTERS 62-621.300 AND 62-620 OF THE FLORIDA ADMINISTRATIVE CODE (FAC).
 3. REFER TO DETAIL UG-12 SHEET 24 FOR COUNTY ROADWAY REPAIR REQUIREMENTS.
 4. EXISTING FORCE MAIN SHALL BE FLUSHED PRIOR TO GROUTING AFTER THE PROPOSED FORCE MAIN HAS BEEN PLACED INTO SERVICE.
 5. CONTRACTOR TO COORDINATE WITH PSI REPRESENTATIVES DURING CONSTRUCTION. ALL GROUNDWATER CREATED BY DEWATERING WILL HAVE TO BE TREATED.

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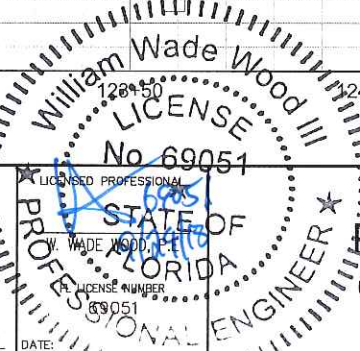


No.	REVISIONS	DATE	BY

Kimley»Horn
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PHONE: 813-620-1460
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT	148400016
DATE	9/20/2018
SCALE	AS SHOWN
DESIGNED BY	WWW
DRAWN BY	LMB
CHECKED BY	WEW

Manatee County
END OF SERVICE LIFE - PACKAGE A:
FM 28A/ PORT MANATEE/ ORLANDO AVE.
MANATEE COUNTY

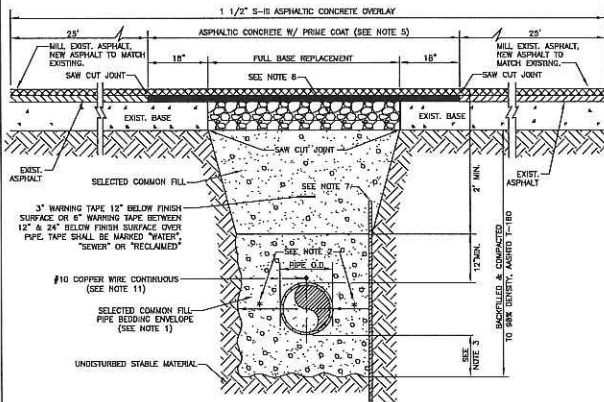


PLAN AND PROFILE
ORLANDO AVENUE

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NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER.
6. MILL 2" BACK FROM TRENCH SAW CUT. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. BUT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
8. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FOOT STANDARDS, LATEST EDITION.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
12. NOTES 5, THRU 10, ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-12
REV. BY	DATE	MAY 10, 2011 DATE OF APPROVAL		
WRT/RE	03/11			
			PAGE 11	

GENERAL NOTES:

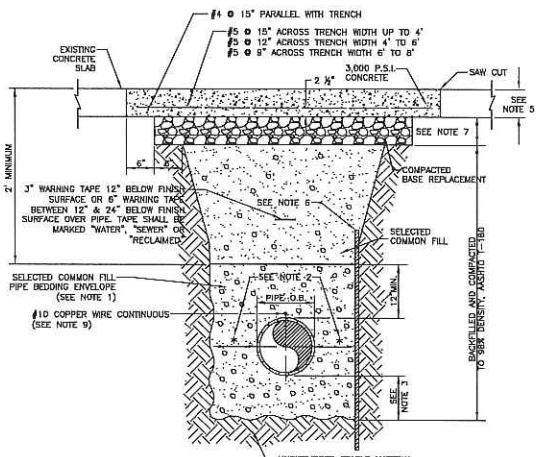
1. SIDEWALK SHALL BE CONSTRUCTED A MINIMUM OF 4" THICK, USING 3000 PSI CONCRETE. WHERE SIDEWALK ADJACENT TO DRIVEWAY, THE MINIMUM SHALL BE 6" OF CLASS 1 CONCRETE REINFORCED WITH 6"x6" #10 WIRE MESH.
* SEE SHEETS #101.2 & 101.3.
2. ALL SIDEWALKS SHALL BE CONSTRUCTED TO THE SPECIFICATIONS OF THE MANATEE COUNTY LAND DEVELOPMENT CODE, SECTION 722. A MINIMUM (5) FOOT WIDE SIDEWALK SHALL BE INSTALLED ALONG THE NORTH AND WEST SIDES OF ALL NEW LOCAL STREETS WHICH ARE CONSTRUCTED IN CONJUNCTION WITH A NEW RESIDENTIAL DEVELOPMENT. A SIDEWALK A MINIMUM OF (5) FEET IN WIDTH SHALL BE INSTALLED ON BOTH SIDES OF ALL THOROUGHFARES. REFER TO F.D.O.T. ROADWAY AND TRAFFIC STANDARDS, LATEST REVISION FOR CURB CUT RAMP SPECIFICATIONS.
3. THE CONCRETE SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL NOT BE MORE THAN 1/4" UNDER A TEN FOOT STRAIGHTEDGE, NOR MORE THAN 1/8" ON A FIVE-FOOT TRAVERSE SECTION. THE EDGE OF THE SIDEWALK SHALL BE CAREFULLY FINISHED WITH AN EDGING TOOL HAVING A RADIUS OF 1/2".
4. EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE SIDEWALKS AND THE CURB OR DRIVEWAY OR AT FIXED OBJECTS AND SIDEWALK INTERSECTIONS SHALL BE 1/2" MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO M153 OR AASHTO M213. FOR LONG JOINTS, AN EXPANSION JOINT SHALL BE PLACED AT INTERVALS NOT TO EXCEED 120'.
5. CONTRACTION JOINTS:
OPEN TYPE JOINTS
OPEN TYPE CONTRACTION JOINTS SHALL BE FORMED BY STAKING A METAL BULKHEAD IN PLACE AND DEPOSITING THE CONCRETE ON BOTH SIDES. AFTER THE CONCRETE HAS SET SUFFICIENTLY TO PRESERVE THE WIDTH AND THE SHAPE OF THE JOINT, THE BULKHEAD SHALL BE REMOVED. AFTER THE SIDEWALK HAS BEEN FINISHED OVER THE JOINT, THE SLOT SHALL BE FINISHED WITH A TOOL HAVING A 1/2" RADIUS.
SAWED JOINTS
A SLOT APPROXIMATELY 3/16" WIDE AND NOT LESS THAN 1" DEEP AT 10' CENTERS SHALL BE CUT WITH A CONCRETE SAW AFTER THE CONCRETE HAS SET.
6. SIDEWALKS ALONG OTHER STREETS SHALL BE CONSTRUCTED AND DEDICATED AS REQUIRED BY THE APPROVING AUTHORITY WHEN NECESSARY TO CONTINUE AN EXISTING OR PROPOSED SIDEWALK.
7. HANDICAP RAMPS SHALL MEET FLORIDA ACCESSIBILITIES STANDARDS, AND SECTIONS 301.0, 301.1 AND 301.2.
8. ALL SIDEWALKS ON R/W WITHIN 10' OF AN EXISTING OR PROPOSED TREE THAT WILL EXCEED 6" IN DIAMETER AT MATURITY SHALL BE 5" THICK AND CONTAIN 2-#3 REBAR CENTERED VERTICALLY AND SPACED 3' ON CENTER. PALMS ARE NOT CONSIDERED TREES.

*NOTE: FOR COMPLETE SIDEWALK DETAILS, SEE F.D.O.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 5 AND INDEX 310, SHEETS 1 & 2.

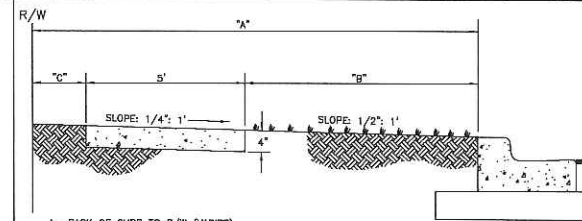
MANATEE COUNTY TRANSPORTATION DEPARTMENT		SIDEWALKS GENERAL NOTES		301.0
REV. BY	DATE	REV. BY	DATE	
CLB/BR	6/12/07	CLB/BR	6/12/07	
DATE OF B.O.C.C. APPROVAL		DATE OF B.O.C.C. APPROVAL		PAGE 102

NOTES:

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3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
8. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
9. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
10. NOTES 5, THRU 8, ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.

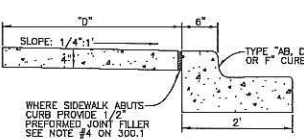


MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-1
REV. BY	DATE		
CLB/BR	11/10		
	MAY 10, 2011		
	DATE OF APPROVAL		
		PAGE	

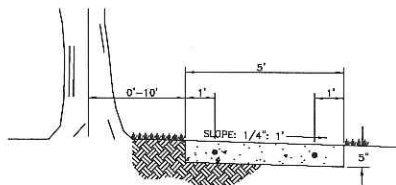


A= BACK OF CURB TO R/W (VARIES)
B= UNPAVED AREA (VARIES). REFER TO F.D.O.T. GREEN BOOK, TABLE 3-12, LATEST REVISION.
C= VARIES, SEE 401 SERIES

TYPICAL SIDEWALK LOCATION



ALTERNATE SIDEWALK LOCATION

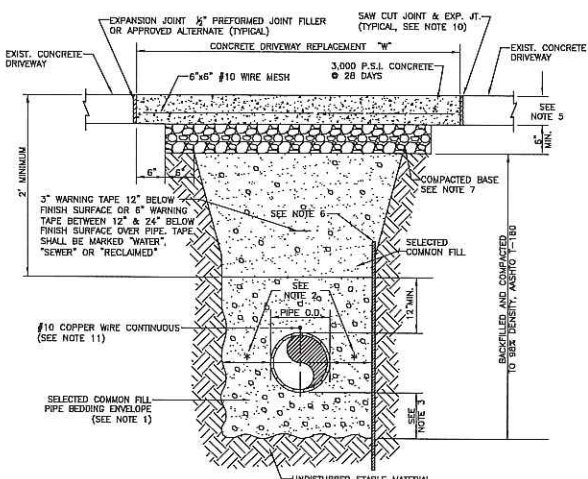


SIDEWALK LOCATION CLOSE TO TREES

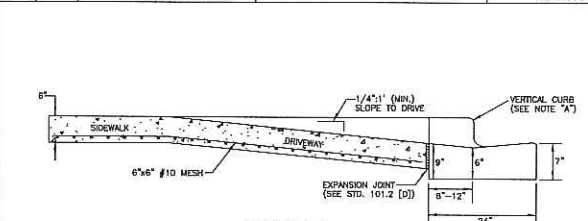
MANATEE COUNTY TRANSPORTATION DEPARTMENT		SIDEWALK REQUIREMENTS		301.1
REV. BY	DATE	REV. BY	DATE	
CLB/BR	6/12/07	CLB/BR	6/12/07	
DATE OF B.O.C.C. APPROVAL		DATE OF B.O.C.C. APPROVAL		PAGE 102

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3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
8. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
9. IF THE DRIVEWAY IS 12" OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (3/4" WIDE AND 1/2" DEEP) AFTER THE CONCRETE HAS SET.
10. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

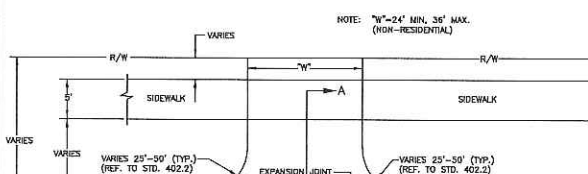


MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING	UG-14
REV. BY	DATE		
CLB/BR	11/10		
MAY 10, 2011			
DATE OF APPROVAL			PAGE 114



A= BACK OF CURB TO R/W (VARIES)
B= UNPAVED AREA (VARIES). REFER TO F.D.O.T. GREEN BOOK, TABLE 3-12, LATEST REVISION.
C= VARIES, SEE 401 SERIES

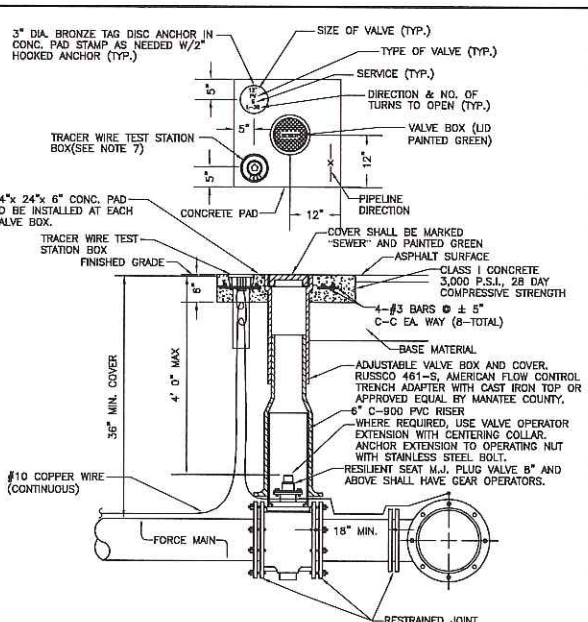
SECTION A-A



PLAN VIEW

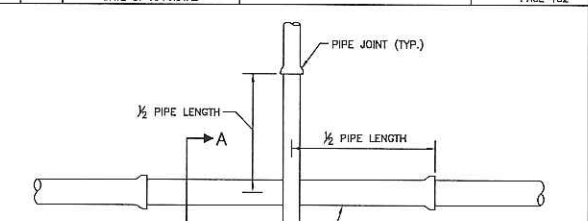
- A) IF REPLACING VERTICAL CURB AND GUTTER, REPLACE WITH MIAMI CURB AND GUTTER.
* NO CHANGE WITH 3' VALLEY CROSSING.
- B) SIDEWALK, CONSTRUCT WITH 6" CONCRETE, 6"x6" #10 MESH, 3000 PSI AT 28 DAYS.
- C) DRIVEWAY CONSTRUCTED WITH 6" CONCRETE WITH 6"x6" #10 MESH, 3000 PSI AT 28 DAYS.
- D) EXPANSION JOINT 1/2" PREFORMED JOINT FILLER PER FOOT SECTION 932-1.1 OR APPROVED ALTERNATE.
* IF DRIVE IS WIDER THAN 12', ADD JOINTS AT 10' CENTERS.
- E) 5' SIDEWALK ON LOCAL STREETS, 5' SIDEWALK ON THOROUGHFARES.
(MIXED USE PATHS MAY REQUIRE 8' SIDEWALKS PER LAND DEVELOPMENT CODE.)

MANATEE COUNTY TRANSPORTATION DEPARTMENT		COMMERCIAL & INDUSTRIAL DRIVE		101.3
REV. BY	DATE	REV. BY	DATE	
CLB/BR	6/12/07	CLB/BR	6/12/07	
DATE OF B.O.C.C. APPROVAL		DATE OF B.O.C.C. APPROVAL		PAGE 102

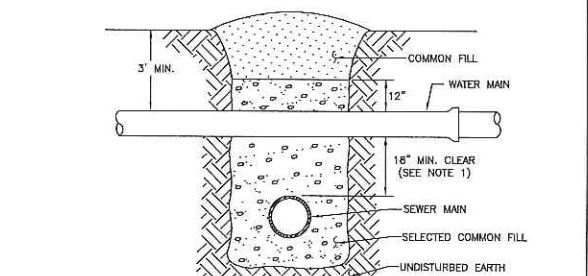


1. "SV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A GREEN DISC WITH "SV" AND A 1/8"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (FT.) FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
6. PLUG VALVES SHALL NOT BE USED AS A TAPPING GATE VALVE. WHERE AN EXISTING FORCE MAIN IS TO BE TAPPED, USE A TAPPING GATE VALVE PER THE TAPPING SLEEVE AND VALVE DETAIL.
7. TEST BOX TO BE BINGHAM & TAYLOR P200NFG OR EQUAL FOR NORMAL YARD SERVICE. WHERE VALVE WILL BE IN STREET OR UNDER VEHICLE TRAFFIC, USE P252RD CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		PLUG VALVE, BOX, COVER AND TAG	US-12
BY	DATE		
DOM	11/10		
MAY 10, 2011			
DATE OF APPROVAL			PAGE 152



PLAN VIEW



SECTION A-A

1. CLEARANCE MAY BE REDUCED TO 6" FOR GRAVITY SEWER WHERE WATER MAIN IS DUCTILE IRON OR 3" FOR FORCE MAIN WHERE FORCE MAIN IS ENCASED A MINIMUM OF 10' EACH SIDE OF CROSSING.
2. WHERE NO ENCASEMENT IS REQUIRED, PIPE SECTIONS SHALL BE FULL-LENGTH AND SHALL BE ADJUSTED HORIZONTALLY SO THAT THE CROSSING IS AT EACH PIPE SECTION'S MIDPOINT UNLESS THE VERTICAL CLEARANCE.
3. REFER TO THE JACK & BORE CROSSING DETAIL FOR CASING AND SPACER REQUIREMENTS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYPICAL NEW WATER & SEWER LINE CROSSING		UG-2
REV. BY	DATE	REV. BY	DATE	
CLB/BR	11/10	CLB/BR	11/10	
MAY 10, 2011		MAY 10, 2011		PAGE 102
DATE OF APPROVAL		DATE OF APPROVAL		

**GROUNDWATER /
DEWATERING NOTE:**
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KHA PROJECT
148400016
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CHECKED BY WEW

**Manatee
County
FLORIDA**

END OF SERVICE LIFE - PACKAGE A:
FM 28A/ PORT MANATEE/ ORLANDO AVE.
MANATEE COUNTY

**Manatee County
FLORIDA**
No. 69051
STATE OF
FLORIDA
LICENSED PROFESSIONAL
ENGINEER
69051
DATE

CONSTRUCTION DETAILS

SHEET NUMBER

24

EXISTING PAVEMENT AND BASE

EDGE OF PAVEMENT

EXIST. DITCH

#10 COPPER CLAD STEEL WIRE (CONTINUOUS)

SOIL JOINT OR SPLIT BOLT CONNECTOR WITH MASTIC WRAP (TYPICAL AT EACH END OF BORE)

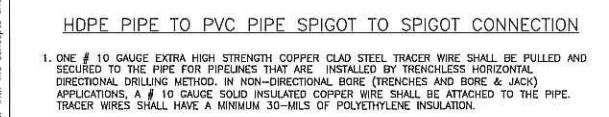
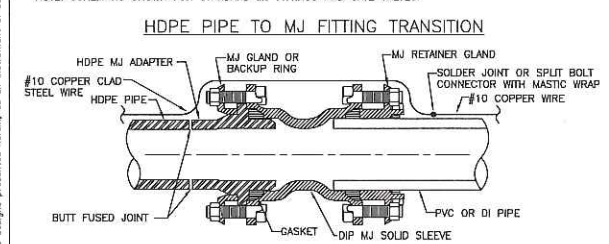
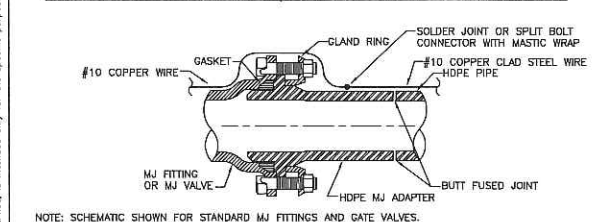
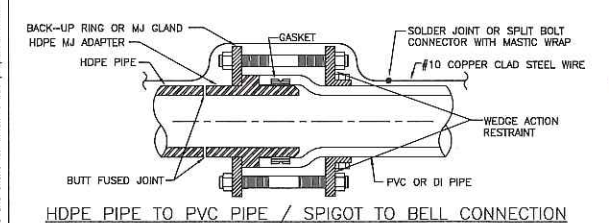
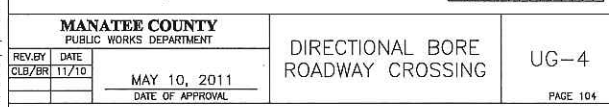
#10 COPPER WIRE (CONTINUOUS)

PIPE DIAMETER "D" VARES

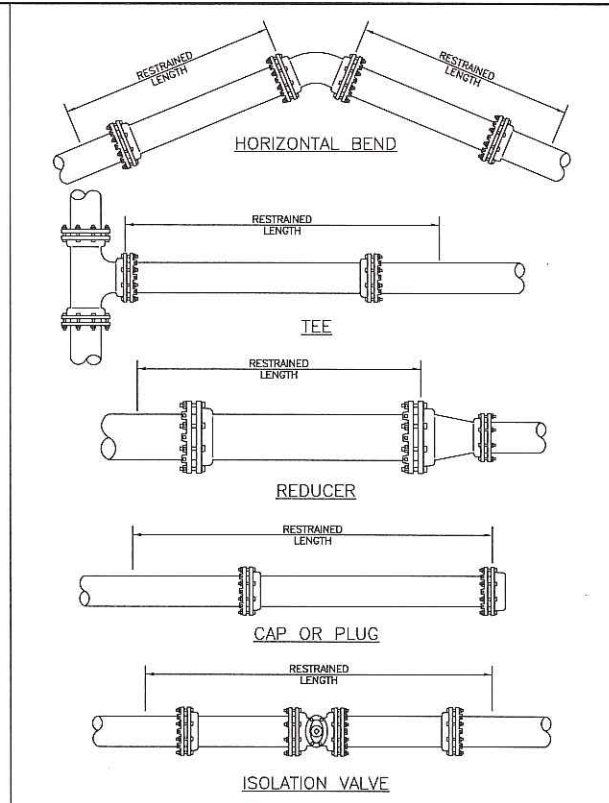
MIN. RADIUS "R"

NOTES:

1. ALL POLYETHYLENE PIPING SHALL MEET MANITOWA COUNTY STANDARDS AND SPECIFICATIONS. DR-11, CLASS 160 OR GREATER PRESSURE CLASS SHALL BE REQUIRED FOR POTABLE, RECLAIMED WATER OR SANITARY FORCE MAINS. DR-9 MAY BE USED BASED ON THE ENGINEERS CALCULATIONS. SEE NOTE #2.
2. THE ENGINEER SHALL SUBMIT CALCULATIONS FOR THE MAXIMUM PULLING TENSILE LOAD TO BE APPLIED TO THE PIPE IN ORDER TO EXCEED THE ALLOWABLE TENSILE LOAD RATING. ACCORDANCE WITH ANNA MS & ASTM F1862. DESIGN SHALL ALSO BE IN ACCORDANCE WITH ASTM F1862.
3. THE PIPE STRING SHALL BE ATTACHED TO THE BACKREAMER THROUGH A "WEAK-LINK" DEVICE TO ENSURE THAT THE PULLING FORCE DOES NOT EXCEED THE PIPE'S ALLOWABLE TENSILE LOAD RATING.
4. ONE #10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PRELIMINARY IDENTIFICATION. THIS WIRE SHALL BE IDENTIFIED BY MARKING IT WITH RED TAPE OR WHITE TAPE. NON-TRENCHLESS/NON-DIRECTIONAL BORE APPLICATIONS, A #10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.
5. COLOR CODED BLUE FOR POTABLE WATER MAINS.
6. COLOR CODED PURPLE (PANTONE 522 C) FOR RECLAIMED WATER MAINS.
7. COLOR CODED GREEN FOR SANITARY FORCE MAINS.
8. PIPE DEPTHS MAY NEED TO BE DEEPER TO AVOID FRACKINGS. IDENTIFICATION SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
9. FOOT COUNTER SHALL BE MET FOR PIPES UNDER STATE ROADS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT		HDPE TO PVC OR DI PIPE ADAPTER	UG-6 PAGE 106
REV BY CLB/BR	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL			

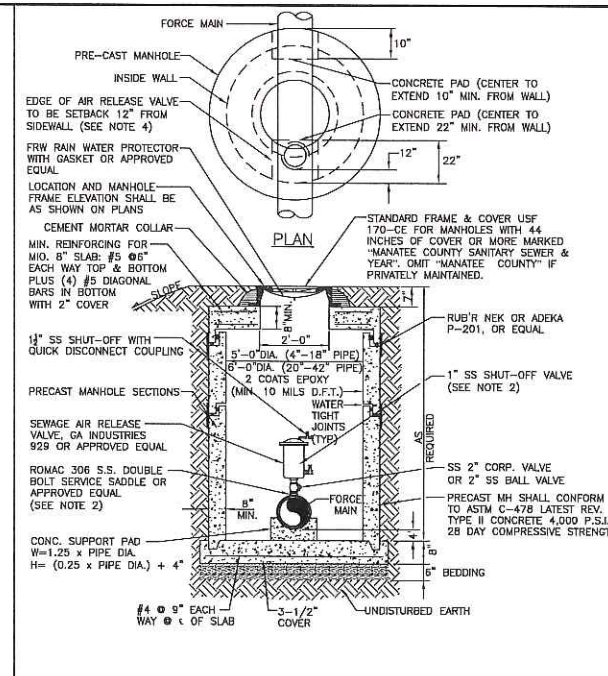


MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PIPE	UG-10 PAGE 110
REV. BY CLB/BR	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL			

[illegible]

1. RESTRAIN 11.25' BENDS 50% OF LENGTH FOR 22.5' BENDS.
2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH ANNA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.
9. IF FITTING TYPE OR PIPE SIZE IS NOT SHOWN, REFER TO THE ADDITIONAL RESTRAIN LENGTHS DETAIL FOR SECONDARY REFERENCE ON SHEET 28.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		RESTRAINED LENGTHS FOR PVC PIPE	UG-8 PAGE 108
REV# CLB/BR	DATE 11/10		
MAY 10, 2011			
DATE OF APPROVAL			



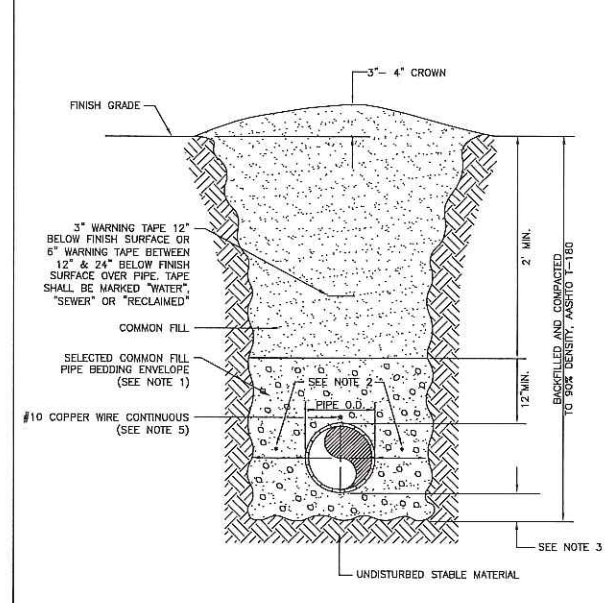
NOTES:

1. AIR RELEASE VALVES WHERE REQUIRED ON 4" AND LARGER FORCE MAINS.
2. AIR TO BE SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR FORCE MAIN SIZE.
3. SERVICE SADDLE, NIPPLES AND CORROSION BALL VALVE SHALL BE STAINLESS STEEL.
4. FOR MANHOLES WITH LESS THAN 44 INCHES OF COVER FROM TOP-OF-PIPE TO TOP-OF-FRAME, FRAME & COVER TO BE 32-INCH PAXMEX WITH 32 INCH OPENING. OFFSET AIR 7.5 INCHES FROM CENTER OF OPENING. MINIMUM ALLOWABLE BALL VALVE IS 36 INCHES.
5. ALL PIPE PENETRATING MANHOLE SHALL HAVE RESILIENT PIPE TO MANHOLE SEALS PER ASTM-923.
6. FINAL GRADE TO BE SLOPED AWAY FROM MANHOLE.

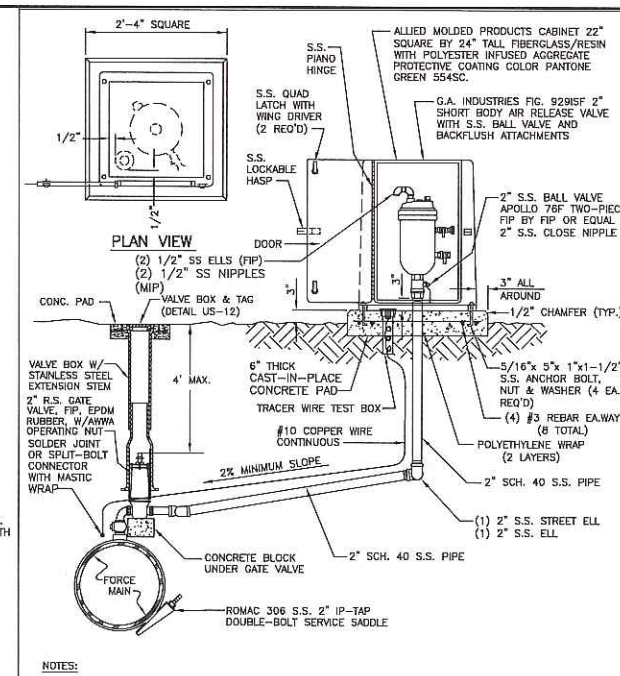
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		BELOW GRADE AIR RELEASE VALVE FOR FORCE MAINS	US-10
REV. BY CLB/KE	DATE 11/10		
MAY 10, 2011 DATE OF APPROVAL			
			PAGE 150

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 6".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

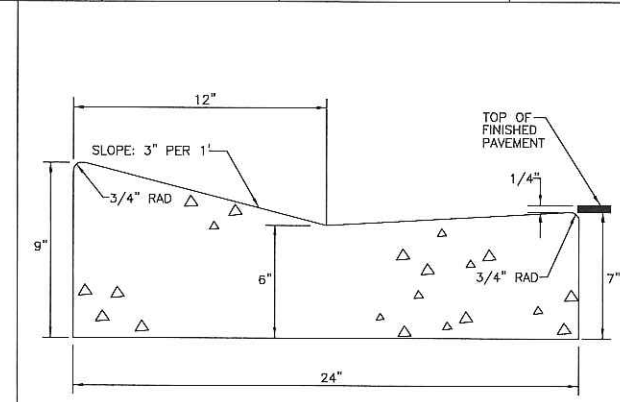


MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
REV/BY	DATE		
WRT/KE	03/11		
	MAY 10, 2011 _____ DATE OF APPROVAL		
			PAGE 111



1. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED, ALONG A' AND LARGER FORCE MAINS.
2. FORCE MAIN VERTICAL ALIGNMENT TO BE DESIGNED SUCH THAT THE MINIMUM NUMBER OF REQUIRED AIR RELEASE VALVES ARE INSTALLED.
3. ALL INCIDENTAL FITTINGS AND HARDWARE TO BE STAINLESS STEEL.
4. ALL PIPE THREADS TO BE SEALED AIR TIGHT.
5. VENT PIPE TO BE LAD ACCURATELY ON SLOPE, WITHOUT HIGH OR LOW POINTS.
6. AIR RELEASE VALVES TO BE IN BELOW-GROUND INSTALLATIONS UNLESS IMPRACTICAL. INSTALLATIONS MAY BE ABOVE-GROUND ONLY WHERE APPROVED AND SPECIFICALLY INDICATED ON THE PLAN.
7. CONCRETE PAD SHALL BE TYPE I CONCRETE W/ 3,000 P.S.I., 28 DAY COMPRESSIVE STRENGTH.

8. <u>DATE VALVE BUILT</u> <u>DATE VALVE BUILT</u> STANDARD DETAIL. CENTERING COLLAR IS NOT REQUIRED ON 2" GATE VALVES.			
MANATEE COUNTY PUBLIC WORKS DEPARTMENT		ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR FORCE MAINS	US-25
REV. BY	DATE		
CLB/KE	11/10		
MAY 10, 2011			
DATE OF APPROVAL			PAGE 165

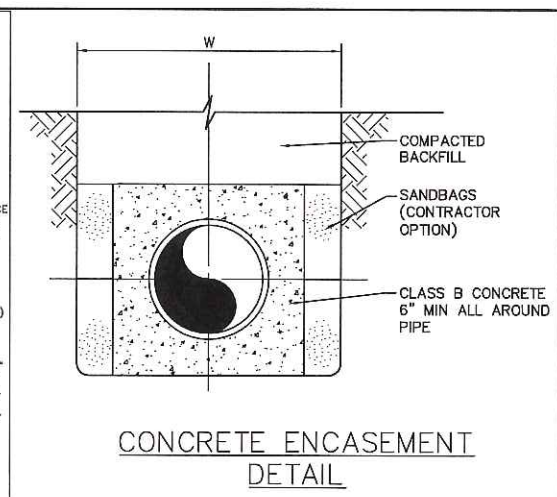


TYPE "A"
MIAMI CURB & GUTTER

A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.

B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

MANATEE COUNTY TRANSPORTATION DEPARTMENT REV. BY: _____ DATE: _____ _____ _____ _____		William Wade Wood LICENSE No. 69051 TYPE A MIAMI CURB & GUTTER DATE OF B.O.C.C. APPROVAL: _____	201.1
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**GROUNDWATER /
DEWATERING NOTE:**
THE PRESENCE OF GROUNDWATER
SHOULD BE ANTICIPATED ON THIS
PROJECT. CONTRACTOR'S BID SHALL
INCLUDE CONSIDERATION FOR THIS
ISSUE. WHEN PERFORMING GRADING
OPERATIONS DURING PERIODS OF WET
WEATHER, PROVIDE ADEQUATE
DEWATERING, DRAINAGE AND GROUND
WATER MANAGEMENT TO CONTROL
MOISTURE OF SOILS.

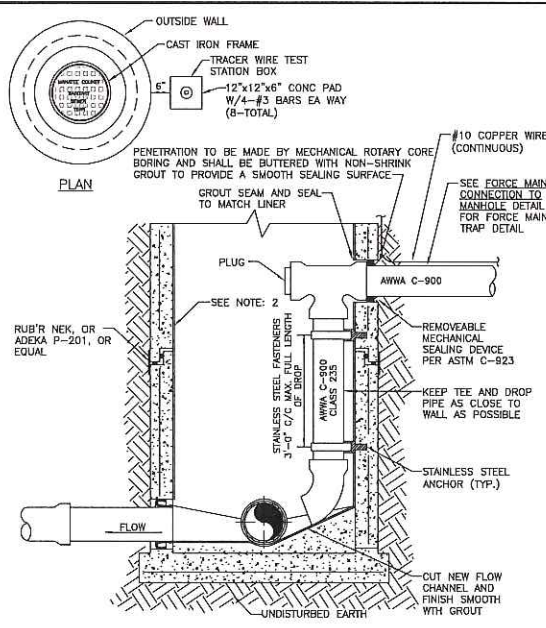
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SECTION DETAILS	SHEET NUMBER 25
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NOTES:

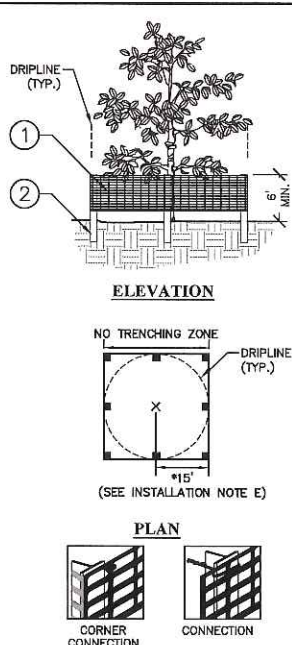
1. ALL FITTINGS SHALL BE AWWA C-907. DROP PIPE SHALL BE AWWA C-900 (CLASS 235, OR 18).
2. THIS IS AN INTERCEPT MANHOLE AND MUST BE LINED WITH AN APPROVED LINER. APPROVED SPRAY-ON LINERS MAY BE USED FOR EXISTING MANHOLES. REFER TO SECTION 1 OF THE MANATEE COUNTY UTILITY STANDARDS.
3. INSIDE DROP MANHOLES ARE REQUIRED WHEN THE VERTICAL DISTANCE BETWEEN THE LOWEST EXISTING MANHOLE INVERT AND THE HIGHEST PIPE INVERT IS 2'-0" OR GREATER.
4. ALL HARDWARE AND FASTENERS SHALL BE STAINLESS STEEL.
5. TRAP IS REQUIRED IN FORCE MAIN BEFORE ENTERING MANHOLE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		FORCE MAIN RETROFIT FOR INSIDE-DROP CONNECTION	US-8
REV. BY DATE	DATE OF APPROVAL		PAGE 148
11/18	MAY 10, 2011		

FITTING TYPE	PIPE SIZE																200psi
	4"	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"	42"	48"	54"	60"	72"	
90° HORIZ. BEND	17	24	31	37	43	55	60	66	76	119	136						
45° HORIZ. BEND	8	10	13	16	18	23	25	28	32	49	56						
22.5° HORIZ. BEND	4	5	7	8	9	11	12	13	15	24	27						
11.25° HORIZ. BEND	2	3	4	4	5	6	6	7	8	12	14						
UPPER BEND	38	53	70	84	99	115	140	153	179	285	330						
LOWER BEND	38	53	70	84	99	115	140	153	179	285	330						
45° VERT. OFFSET	16	22	29	35	41	53	58	64	74	118	137						
UPPER BEND	4	6	7	9	10	13	14	15	18	29	33						
LOWER BEND	4	6	7	9	10	13	14	15	18	29	33						
22.5° VERT. OFFSET	8	11	14	17	20	26	28	31	36	57	68						
UPPER BEND	2	3	4	4	5	6	7	8	9	14	16						
LOWER BEND	2	3	4	4	5	6	7	8	9	14	16						
11.25° VERT. OFFSET	4	6	7	9	10	13	14	15	18	29	33						
UPPER BEND	1	1	1	2	3	3	4	4	5	7	8						
LOWER BEND	1	1	1	2	3	3	4	4	5	7	8						
PLUG/ IN-LINE VALVE	38	53	70	84	99	115	140	153	179	285	330						
TEE (BRANCH RESTRAINT)	4"x 4"	20	-	-	-	-	-	-	-	-	-						
	6"x 4"	11	35	-	-	-	-	-	-	-	-						
	8"x 4"	2	29	51	-	-	-	-	-	-	-						
	10"x 4"	1	22	46	65	-	-	-	-	-	-						
	12"x 4"	1	15	41	61	79	-	-	-	-	-						
	16"x 4"	1	1	30	52	72	107	-	-	-	-						
	18"x 4"	1	1	24	47	68	104	120	-	-	-						
	20"x 4"	1	1	18	42	64	101	117	133	-	-						
	24"x 4"	1	1	5	32	55	95	112	128	158	-						
	30"x 4"	1	1	1	15	42	84	103	120	152	193	-					
	36"x 4"	1	1	1	1	26	73	93	111	144	187	226	-				
	8"x 8"	28	-	-	-	-	-	-	-	-	-						
	10"x 8"	50	30	-	-	-	-	-	-	-	-						
	12"x 8"	88	52	28	-	-	-	-	-	-	-						
	16"x 8"	117	107	93	75	54	-	-	-	-	-						
	18"x 8"	131	122	110	95	76	29	-	-	-	-						
	20"x 8"	146	138	126	113	96	54	29	-	-	-						
	24"x 8"	173	166	157	146	132	98	77	54	-	-						
	30"x 8"	279	272	262	251	237	201	179	155	100	-						
	36"x 8"	325	320	312	303	291	262	245	225	181	100	-					

*PER DIPRA, AS THE BEND ANGLE APPROACHES 90°, LATERAL MOVEMENT OF THE OUTER LEGS APPROACHES ZERO. FOR THIS CONDITION, RESTRAIN ALL PIPE BETWEEN THE FITTINGS AND RESTRAIN THE OUTER LEGS AS DEAD ENDS.

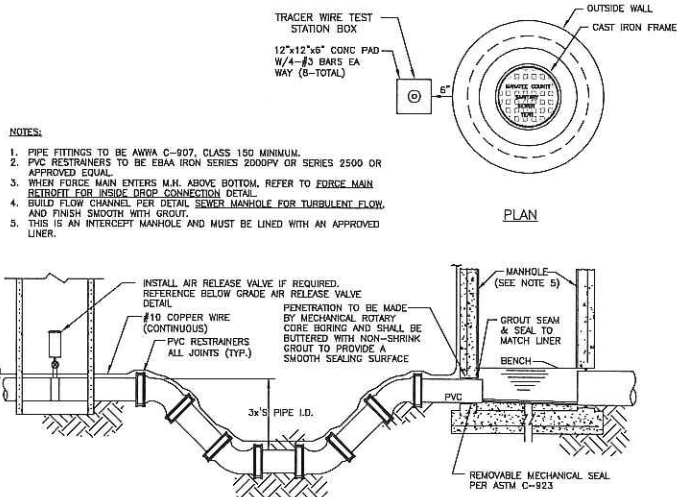
ADDITIONAL RESTRAIN LENGTHS DETAIL FOR PVC



2 TREE PROTECTION FENCING ELEVATION / PLAN

26

1. 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONVED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
2. 8' TALL METAL "T" POSTS OR 2" x 2" x 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.
- INSTALLATION NOTES:
- A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS. METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.
- B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE: A 8' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.
- C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).
- D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONVED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.
- E. FOR PIPELINE CONSTRUCTION ADJACENT TO TREES: EXAMPLE: DIVIDE 30" TRUNK DIAMETER BY 2. (30/2=15) EXCAVATION SHALL BE PROHIBITED WITHIN 15' OF THE TRUNK OR THE LIMITS OF THE DRIPLINE, WHICHEVER IS GREATER.
- NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.



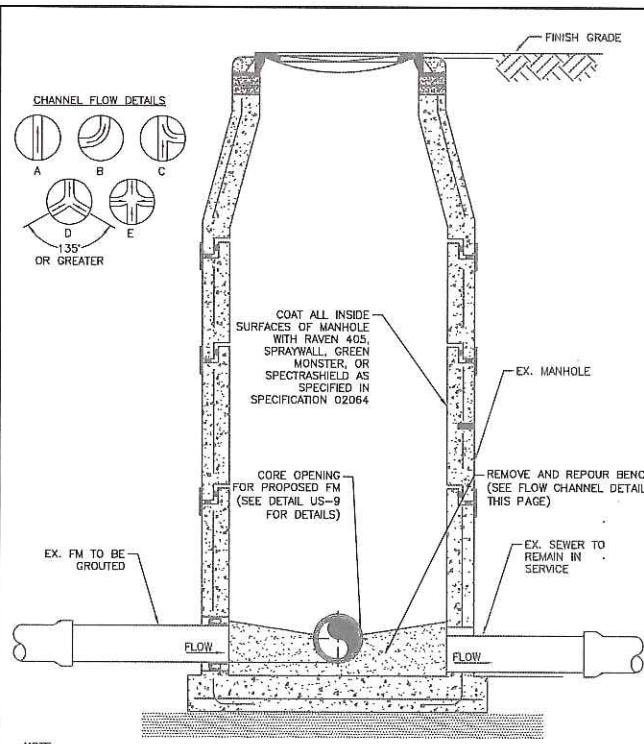
NOTES:

1. PIPE FITTINGS TO BE AWWA C-907, CLASS 150 MINIMUM.
2. PVC RESTRAINTS TO BE EBAA IRON SERIES 2000PV OR SERIES 2500 OR APPROVED EQUAL.
3. WHEN FORCE MAIN ENTERS M.H. ABOVE BOTTOM, REFER TO FORCE MAIN RETROFIT FOR INSIDE DROP CONNECTION DETAIL.
4. GUIDED FLOW CHANNEL PER DETAIL SEWER MANHOLE FOR TURBULENT FLOW, AND FINISH SMOOTH WITH GROUT.
5. THIS IS AN INTERCEPT MANHOLE AND MUST BE LINED WITH AN APPROVED LINER.

(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 7.1.2)

NOTES:

1. THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
 - SOIL TYPE-SF
 - TEST PRESSURE-150/200 PSI
 - TRENCH TYPE-3
 - SAFETY FACTOR-1.5
 - MINIMUM PIPE LENGTH ALONG TEE RUN-5'
 - DEPTH OF BURY-3' VERTICAL OFFSET-3'
2. THE RESTRAINED PIPE LENGTHS APPLY TO PVC PIPE.
3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
4. RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF FITTINGS.
5. CONTRACTOR TO REFER TO MANATEE COUNTY DETAIL UG-8 FOR PVC RESTRAINT LENGTHS. IF FITTING TYPE OR PIPE SIZE IS NOT SHOWN, REFER TO THIS DETAIL FOR SECONDARY REFERENCE.
6. RESTRAINED JOINTS SHALL EXTEND ONE JOINT BEYOND MIN. LENGTH REQUIRED.



NOTE:

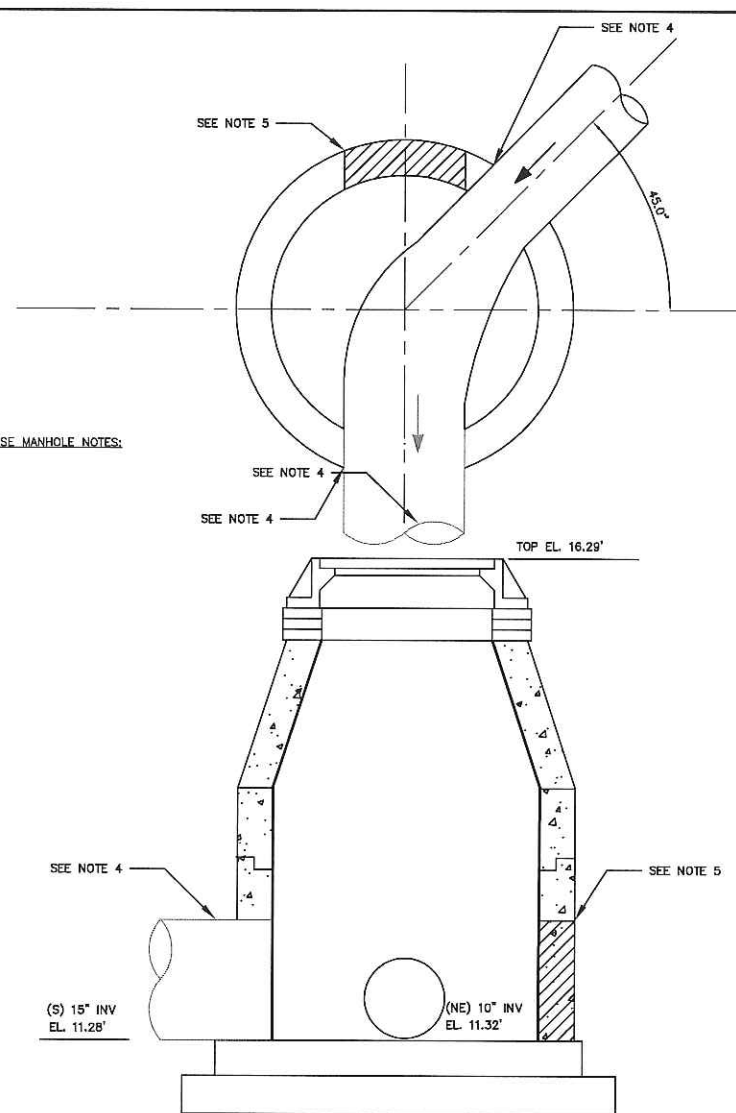
DROP MANHOLES, MANHOLES WITH OPPOSING FLOW (DETAILS D & E), MANHOLES IMMEDIATELY UPSTREAM OF A LIFT STATION WET WELL, MANHOLES WITH GRAVITY SEWERS GREATER THAN 12 INCHES IN DIAMETER, MANHOLES RECEIVING A FORCE MAIN AND THE FIRST TWO GRAVITY MANHOLES DOWNSTREAM OF MANHOLES RECEIVING A FORCE MAIN SHALL HAVE AN APPROVED LINER.

FLOW CHANNEL DETAIL:

1. MAINTAIN DESIGN SLOPE ACROSS MANHOLE UNLESS OTHERWISE INDICATED.
2. DEPTH OF ALL CHANNELS TO BE 80% OF PIPE DIAMETER.
3. FINISH OF ALL CHANNELS TO ALLOW SMOOTH FLOW.
4. CONCRETE BENCH SHALL BE POURED BEFORE SHUTTING DOWN DEWATERING OPERATIONS TO PREVENT FLOTATION.
5. BRICK MAY BE USED TO BUILD UP CONCRETE BENCH.
6. MINIMUM ANGLE BETWEEN INLET AND OUTLET PIPING IS 90 DEGREES.

1 MANHOLE REHAB DETAIL

26

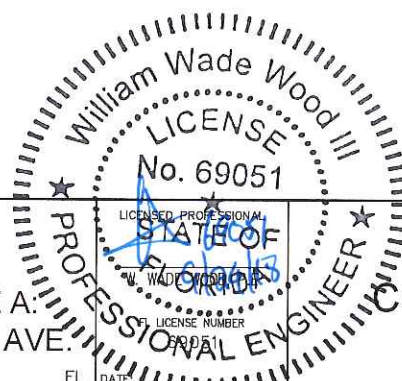


DOGHOUSE MANHOLE DETAIL - ORLANDO AVE.

1. REFER TO DETAIL US-9 FOR FORCE MAIN CONNECTION.
2. MANHOLE SHALL BE COATED PER COUNTY SPECIFICATION 02064.
3. OPENING IN PRECAST MANHOLES ARE TO BE 4" MINIMUM TO 8" MAXIMUM LARGER THAN THE OUTSIDE DIAMETER FOR THE EXISTING PIPE.
4. MORTAR AND BRICK TO CLOSE OPENING AROUND AND BELOW EXISTING PIPE.
5. CONTRACTOR SHALL PLUG AND GROUT INVERT TO BE ABANDONED.

GROUNDWATER / DEWATERING NOTE:

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR THIS ISSUE. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.



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KHA PROJECT 148400016
DATE 9/19/2018
SCALE AS SHOWN
DESIGNED BY WWW
DRAWN BY LMB
CHECKED BY WEW

END OF SERVICE LIFE - PACKAGE A
FM 28A/ PORT MANATEE/ ORLANDO AVE.

MANATEE COUNTY

FL

DATE

CONSTRUCTION DETAILS

SHEET NUMBER

26