

CONSTRUCTION PLANS
FOR
HOLMES BOULEVARD
FORCE MAIN REPLACEMENT

MANATEE COUNTY, FLORIDA

JULY 2020

MANATEE COUNTY PROJECT #6041587



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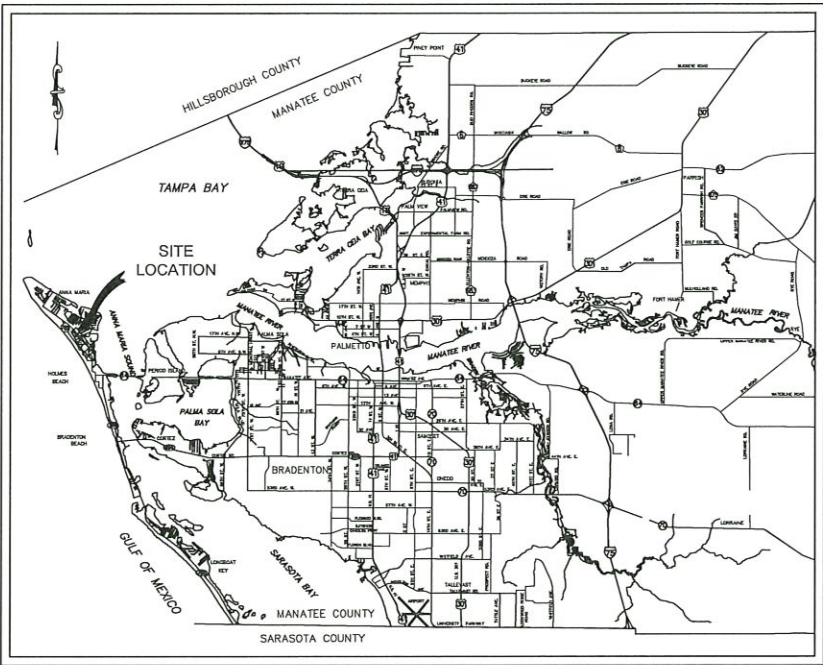
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PROJECT VICINITY MAP
N.T.S.

BID PLANS

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

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DATE: 11/13/2020
PROJECT NO. 6041587
SHEET NUMBER 1

STATE OF FLORIDA
MICHAEL ANTHONY SEMAGO
LICENSE NO. 67501
PROFESSIONAL ENGINEER

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GENERAL

- ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS: ROBERT HALBACH, P.E. AND CAN BE REACHED AT (941) 708-7450 X7329
- IF THE CONTRACTOR WANTS A SITE VISIT PRIOR TO BIDDING, THESE SHALL BE ARRANGED THROUGH THE COUNTY'S PURCHASING DIVISION.
- ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY UTILITY AND TRANSPORTATION STANDARDS AND/OR FDOT "STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION" UNLESS OTHERWISE INDICATED ON THE PLANS.
- 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.
- 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.
- 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.
- 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.
- NO WORK, EXCEPT FOR EMERGENCY TYPE, SHALL BE PERFORMED AFTER 7:00 PM AND BEFORE 7:00 AM, MONDAY THROUGH FRIDAY. CONTRACTOR SHALL ONLY WORK ALTERNATIVE WORK HOURS WITH COUNTY WRITTEN APPROVAL. FOR ADDITIONAL PROJECT RESTRAINTS, REFER TO SECTION 01310 OF THE SPECIFICATIONS.
- 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.
- 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 SERVICE OPERATION.
- ALL PROPOSED WORK SHALL BE COORDINATED WITH MANATEE COUNTY UTILITIES DEPARTMENT AT LEAST TWO WEEKS IN ADVANCE OF PROPOSED CONSTRUCTION.
- 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.
- UNLESS OTHERWISE INDICATED OR APPROVED, ALL BELOW GROUND FORCE MAINS SHALL BE PVC PIPE PUSH-ON AND ALL BELOW GROUND WATER MAIN SHALL BE DUCTILE IRON PIPE. PIPE SHALL BE FULLY RESTRAINED PER THE DETAILS IN THESE PLANS.
- ALL BELOW-GRADE FITTINGS 4-INCHES AND GREATER IN DIAMETER SHALL BE MECHANICAL JOINT DUCTILE IRON WITH AN APPROVED LINING FOR THEIR INTERIOR SURFACES AND COAL TAR ENAMEL COATING ON EXTERIOR SURFACES, AS NOTED IN SECTION 02615 OF SPECIFICATIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE PROPERTY FOR STAGING MATERIALS AND EQUIPMENT.
- 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.
- 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 ONSITE BY THE COUNTY INSPECTOR AND ENGINEER'S STAFF.

SAFETY

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT, 90-96, LAWS 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.
- THE CONTRACTOR SHALL USE SHEET PILING, SHEETING, BRACING, ETC., AS REQUIRED IN ALL EXCAVATION AREAS AND CONFORM TO ALL OSHA REQUIREMENTS.
- THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.

ENVIRONMENTAL

- WHEN A BENTONITE SPILL OR CRACK-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.
- 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.
- 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.
- 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. DEPEND 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.
- 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.
- SEDIMENT BASINS AND TRAPS, PERIMETER BERMS, 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. EARTHERN 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.

- 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.
- 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.
- ALL EROSION AND POLLUTION CONTROL DEVICES SHALL BE CHECKED REGULARLY, ESPECIALLY AFTER EACH RAINFALL AND SHALL BE CLEANED OUT AND/OR REPAIRED AS REQUIRED.
- 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.
- CONTRACTOR SHALL PROVIDE PROTECTIVE MATTING, FUEL CONTAINMENT AND ALL OTHER MATERIALS, EQUIPMENT AND LABOR TO PROTECT THE STAGING AREA DURING CONSTRUCTION.
- CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, SUBMIT A "FUELING SPILL PREVENTION PLAN" THAT SHALL CLEARLY INDICATE HOW FUEL SPILLS WILL BE PREVENTED WHEN FUELING BOTH WITHIN AND OUTSIDE OF THE STAGING AREA.

RIGHT-OF-WAY

- 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.
- 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.
- 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.
- 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 HEADWALL SHALL BE REPAIRED IN ACCORDANCE WITH F.D.O.T. STANDARDS, OR THE APPLICABLE JURISDICTION. PRE-CONSTRUCTION VIDEO SHALL CAPTURE THE CONDITION OF THE STORM WATER SYSTEM MENTIONED ABOVE.
- 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.
- 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.
- 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

- 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 EFFECT 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.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, WATER AND SEWER LINES, STORM DRAINS, UTILITIES, DRAINWAYS, 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.
- 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.
- 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.
- THE ELEVATIONS OF THE UTILITY SERVICES AND LATERALS HAVE BEEN ASSUMED ON THE BASIS OF TYPICAL ANTHROPATED SOIL CONDITIONS. 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/WATER 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
- ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS SHOWN OTHERWISE.
- ALL DISTURBED GRASSED 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.
- 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.
- ASPHALT DRIVES THAT ARE CUT SHALL BE RESTORED PER SECTION 02513.
- 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 OF THE F.D.O.T. DESIGN STANDARDS.
- 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 LIME 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.
- 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.

- 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.

- 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

- 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 BAFFLES POSITIONED TO BREAK LINE-OF-SITE FROM THE NOISE SOURCE TO AFFECTED RESIDENCES, AS APPROVED BY THE ENGINEER.
- NO MATERIAL SHALL BE STOCKPILED IN ROADWAYS. ALL DIRT AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE DAILY. ROADS SHALL BE SWEEP DAILY AS PART OF DAILY CLEAN UP.
- THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
- INGRESS AND EGRESS TO ALL THE PROPERTIES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED AT ALL TIMES.
- PRIOR APPROVAL WILL BE REQUIRED FOR REMOVAL OR TRIMMING OF ANY TREE WITHIN THE CONSTRUCTION AREA.
- THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY. DEWATERING IS REQUIRED TO 18" BELOW TRENCH BOTTOM.
- 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.
- ALL PIPE SHALL BE COLOR CODED TO CONFORM TO MANATEE COUNTY STANDARDS.
- 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.
- 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.
- 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.
- ONLY MANATEE COUNTY UTILITY OPERATIONS STAFF ARE AUTHORIZED TO OPERATE VALVES AND PUMP STATIONS ON COUNTY OWNED AND MAINTAINED UTILITY SYSTEMS.
- THE CONTRACTOR, PRIOR TO ANY TEMPORARY SHUT-OFFS DURING TIE-IN, ETC., SHALL NOTIFY THE AFFECTED RESIDENTS BY POSTING INFORMATIONAL SIGNS IN THE NEIGHBORHOOD AT LEAST TWO DAYS (48 HRS) PRIOR TO THE SHUT-OFF. REFERENCE SECTION 01580, PARAGRAPH 1.03 OF THE SPECIFICATIONS. WHEN FEASIBLE, "DOOR HANGERS" SHALL BE DELIVERED TO AFFECTED RESIDENTS AT LEAST TWO DAYS (48 HRS) PRIOR TO 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 SENT TO THE 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.
- 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.
- ALL EXISTING FORCE 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.
- FIELD CONDITIONS MAY NECESSITATE MINOR ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER.
- THE CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM THE MANATEE COUNTY UTILITIES DEPARTMENT (MCD) 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.
- THE MCD OFFICE OF INDUSTRIAL COMPLIANCE WILL DETERMINE WHETHER A LETTER OF APPROVAL, A DISCHARGE AUTHORIZATION, OR A DISCHARGE PERMIT IS REQUIRED.
- FOR SITES SUSPECTED OF CONTAMINATED GROUNDWATER MANATEE COUNTY WILL REQUIRE AN APPLICANT TO DEMONSTRATE THAT THE DISCHARGE MEETS THE MANATEE COUNTY SEWER USE ORDINANCE.
- 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

- TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH F.D.O.T. STANDARD PLAN INDICES NO. 600, 601, 602 603, 604, 605, AND 660 DEPENDING ON THE OPERATION BEING PERFORMED. FOR ALL TWO-LANE WORK, TWO-WAY, WORK OUTSIDE OF SHOULDER UTILIZE INDEX 102-601. FOR ALL TWO-LANE WORK, TWO-WAY, WORK ON SHOULDER UTILIZE INDEX 102-602. FOR ALL TWO-LANE WORK, TWO-WAY, WORK WITHIN TRAVEL LANE UTILIZE INDEX 102-603. FOR ALL TWO-LANE WORK, TWO-WAY, WORK WITHIN INTERSECTION UTILIZE INDEX 102-604. FOR ALL TWO-LANE WORK, TWO-WAY, WORK NEAR INTERSECTION UTILIZE INDEX 102-605. FOR PEDESTRIAN CONTROL FOR CLOSURE OF SIDEWALK, UTILIZE INDEX 102-660.
- TO AVOID DISRUPTION DUE TO INCLEMENT WEATHER, THE CONTRACTOR SHOULD PERFORM ANY MILLING AND PAVING OPERATIONS DURING THE SAME WORK PERIOD.
- 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.
- 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.
- PEDESTRIAN AND WHEELCHAIR TRAFFIC SHALL BE ACCOMMODATED WITHIN THE WORK ZONE INDEX 660.
- ONE PORTABLE VARIABLE MESSAGE SIGN SHALL BE USED TO ADVANCE TRAFFIC CLOSURE. THE FOLLOWING ARE SUGGESTED MESSAGES TO USE WITH THE APPROPRIATE OPERATIONS:

MESSAGE 1
"RIGHT" OR "CENTER" OR "LEFT"
"LANE" "LANE" "LANE"
"CLOSED" "CLOSED" "CLOSED"

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REMOVAL OF STORMWATER FROM ROADWAYS UTILIZED FOR TRAFFIC CONTROL IN A MANNER APPROVED BY THE ENGINEER.
- AT THE END OF EACH WORKING DAY'S ACTIVITY, TEMPORARY PAVEMENT MARKINGS AND TEMPORARY RPM'S SHALL BE INSTALLED PR-IOR TO OPENING THE LANES UP FOR TRAFFIC.
- ALL PAVEMENT MARKINGS, SIGNS, MARKERS, CHANNELIZATION REQUIRED TO PHASE WORK OR SHIFT TRAFFIC, SHALL UTILIZE INDICES FOR PLACEMENT.
- 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.
- MILLING AND RESURFACING SHALL BE ACCOMPLISHED DURING THE OFF-PEAK HOURS.
- 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 WITH MANATEE COUNTY TRAFFIC ENGINEERING, MUKUNDA GOPALAKRISHNA, P.E., PTOE, AT 941-749-3500, EXT. 7813.
- CONTRACTOR TO MAINTAIN VEHICLE DETECTION IN OPERATION FOR LANES THAT WILL REMAIN OPEN. CONTRACTOR TO COORDINATE ALL VEHICLE DETECTION ISSUES WITH MANATEE COUNTY TRAFFIC ENGINEERING, VISHAL S. KAKKAD, P.E., PTOE, AT 941-749-3500 EXT 7812 OR VISHAL.KAKKAD@MYMANATEE.ORG
- MAINTENANCE OF TRAFFIC AND ANY SIGNAL RETIMING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 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 ENGINEERING. 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.
- 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.

WORK SCHEDULE COORDINATION

- COORDINATE ALL LIFT STATION SHUT DOWNS WITH NICK WAGNER, 941-792-8811 X 5377 OR NICK.WAGNER@MYMANATEE.ORG
- COORDINATE ALL WATER MAIN TIE-INS WITH ROBBY PHILLIPS, 941-792-8811 X 5149 OR ROBBY.PHILLIPS@MYMANATEE.ORG. PROPOSED WORK INVOLVES MULTIPLE WATER MAIN ISOLATIONS WHICH ARE POSSIBLE WITH UPSTREAM AND DOWNSTREAM VALVES. CONTRACTOR SHALL COORDINATE WITH COUNTY OPERATIONS TO ISOLATE WATER MAINS.
- CONTRACTOR SHALL ABIDE BY ALL CITY OF HOLMES BEACH REGULATIONS AND RULES TO INCLUDE, BUT NOT LIMITED TO, WORK HOURS, CITY HOLIDAYS, NOISE REGULATIONS, TRAFFIC CONTROL, AND PROPERTY ACCESS. ANY VARIATION FROM THESE STANDARDS MUST BE APPROVED IN WRITING BY THE CITY OF HOLMES BEACH IN ADVANCE. CONTRACTOR SHALL APPLY FOR A RIGHT-OF-WAY PERMIT WITH CITY OF HOLMES BEACH PRIOR TO STARTING CONSTRUCTION. CONTACT LYNN BURNETT, 941-328-3775 OR CITYENGINEER@HOLMESBEACH.FL.GOV
- CONTRACTOR SHALL MAINTAIN VEHICULAR/PEDESTRIAN TRAFFIC ACCESS TO COMMERCIAL PROPERTIES AND ASSOCIATED PARKING LOTS, AND TO RESIDENTIAL PROPERTIES DURING CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE COUNTY PUBLIC OUTREACH MANAGER AND APPROVED COUNTY CONSULTANTS TO ADDRESS ANY COMPLAINTS.
- DOOR HANGERS SHALL BE PROVIDED TO ALL NEIGHBORS/BUSINESSES AFFECTED BY CONSTRUCTION AT LEAST 48 HOURS IN ADVANCE. DOOR HANGERS SHALL PROVIDE INFORMATION ON ESTIMATED DAYS OF IMPACT AND MITIGATION EFFORTS.

ABBREVIATIONS

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

KIMLEY HORN LEGEND

PROPOSED WATER/FORCE MAIN

EX. FORCE MAIN	
EX. WATER MAIN	
EX. SANITARY SEWER	
EX. STORM	
EX. BURIED TELEPHONE/FIBER	
EX. FIBER OPTIC CABLE	
EX. DIRECT BURIED CABLE	
EX. UNDERGROUND CONDUIT	
EX. BURIED ELECTRIC	
EX. GAS	
EX. RECLAIM WATER	
EX. OVERHEAD UTILITIES	
FULL ROADWAY RESTORATION	
SIDEWALK/ CONCRETE DRIVEWAY REPAIR	
BRICK DRIVEWAY RESTORATION	
SHELL DRIVEWAY RESTORATION	
MILLING AND RESURFACING	
INFILTRATION TRENCH REPLACEMENT	

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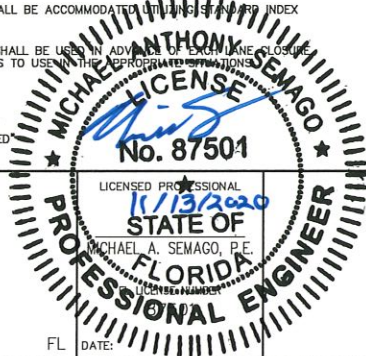
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GENERAL NOTES

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GENERAL NOTES

1. THE FOLLOWING NGS VERTICAL CONTROL MONUMENT WAS RECOVERED AND UTILIZED FOR THE ELEVATIONS INDICATED HEREIN: "GIS 100" PID AG9205 NAVD 1988 ELEVATION 2.56'
2. THIS SURVEY IS REFERENCED TO A PROJECTION OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE NAD 1983/2011 ADJUSTMENT).
3. THIS IS NOT A BOUNDARY SURVEY. TITLE WORK WAS NOT PROVIDED.
4. THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, RIGHTS--OF--WAY AND RESTRICTIONS OF RECORD, IF ANY.
5. THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC. IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.

SITE CONTROL

DESIGNATION	NORTHING	EASTING	ELEVATION	DESCRIPTION	STATION	OFFSET
1	1156410.66	422776.93	2.81'	ND (LB 7203)	50+19.94	17.05' LT
2	1156091.67	422971.59	2.39'	ND (LB 7203)	53+92.47	10.54' RT
3	1155779.25	423241.97	2.25'	ND (LB 7203)	58+05.07	11.15' LT
4	1155382.58	423543.01	2.19'	ND (LB 7203)	63+03.08	5.44' LT
5	1154966.10	423769.24	2.66'	IRC (LB 7203)	67+76.05	16.68' RT
6	1154561.78	424046.18	2.75'	ND (LB 7203)	100+12.73	6.95' LT
10	1154170.70	424222.76	2.38'	IRC (LB 7203)	76+92.52	17.37' RT
11	1153902.70	424360.98	2.49'	ND (LB 7203)	79+95.21	12.03' LT
12	1153526.78	424426.10	2.42'	ND (LB 7203)	83+77.02	12.84' LT
13	1153497.54	424793.08	2.85'	ND (LB 7203)	94+17.72	14.42' RT
14	1155095.09	423891.84	2.62'	ND (LB 7203)	122+18.86	5.96' RT
15	1155119.47	424282.59	2.10'	ND (LB 7203)	126+09.59	18.35' LT

LEGEND

- BM

SITE CONTROL POINT
- IRON PIPE FOUND
- IRON ROD FOUND
- CONCRETE MONUMENT FOUND
- GRATE INLET
- MITERED END SECTION
- STORM MANHOLE
- MAILBOX
- GAS MARKER
- BOLLARD
- CLEANOUT
- PP

SIGN
- WOOD UTILITY POLE
- CONCRETE UTILITY POLE
- GUY WIRE
- WATER METER
- WATER VALVE
- SANITARY MANHOLE
- FIRE HYDRANT
- BACKFLOW PREVENTER
- COMMUNICATION MARKER
- UTILITY RISER
- UTILITY HANDHOLE
- R/W RIGHT--OF--WAY
- ND NAIL W/ DISC
- IRC IRON ROD W/ CAP
- PINE
- PALM
- TREE

UTILITY LOCATION			
DESIGNATION	GRADE	DESCRIPTION	TOP UTILITY EL
VVH 1	2.70'	2" PVC WL (MANCO)	0.93'
VVH 2	2.93'	2" PE FOC (VERIZON)	0.38'
VVH 3	2.87'	1.25" PE BT (VERIZON)	0.25'
VVH 4	2.32'	6" DIP WM (MANCO)	-1.19'
VVH 5	2.30'	(1) 4" PVC BT & (1) 2" PE BT (VERIZON)	0.44'
VVH 6	2.54'	16" DIP FM (MANCO)	-0.39'
VVH 7	2.38'	(1) 4" PVC BT & (1) 2" PE BT (VERIZON)	0.36'
VVH 8	2.26'	16" DIP FM (MANCO)	-2.32'
VVH 9	2.12'	16" DIP WM (MANCO)	-0.74'
VVH 10	2.24'	1.25" PE FOC (VERIZON)	-0.06'
VVH 11	2.53'	4" DIP WM (MANCO)	0.39'
VVH 12	2.84'	4" DIP WM (MANCO)	-0.43'
VVH 13	2.29'	(1) 1.5" PE BT, (1) 2" PE BT, & (1) 3" PE BT (VERIZON)	0.36'
VVH 14	2.65'	2" GAS MAIN (MANCO)	-0.20'
VVH 15	2.49'	2" GAS MAIN (MANCO)	0.29'
VVH 16	2.30'	2" PVC GAS MAIN (MANCO)	1.13'
VVH 17	2.02'	2" PVC WL (MANCO)	0.29'
VVH 18	2.44'	6" DIP WM (MANCO)	-1.51'
VVH 19	2.34'	6" DIP WM (MANCO)	-4.66'
VVH 20	1.77'	2" PE GAS MAIN (MANCO)	-3.38'
VVH 21	1.79'	4" A/C WM (MANCO)	-0.46'
VVH 22	1.93'	1.5" STEEL WL (MANCO)	1.07'
VVH 23	1.87'	(1) 2" PE GAS MAIN & (1) 4" PE GAS MAIN (MANCO)	0.27'

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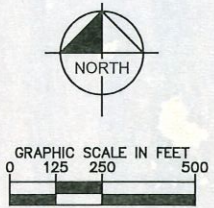
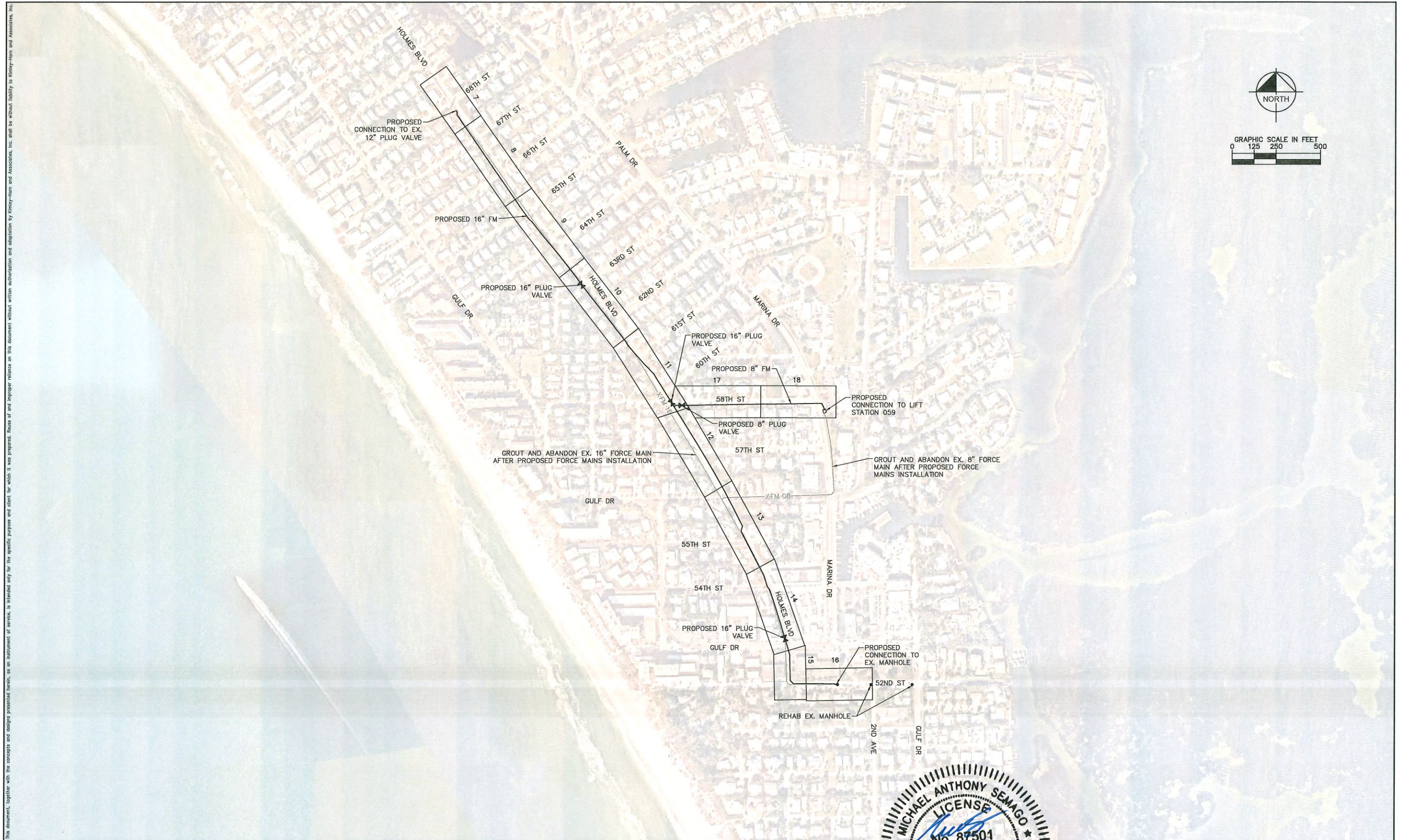
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SURVEY & SUE NOTES

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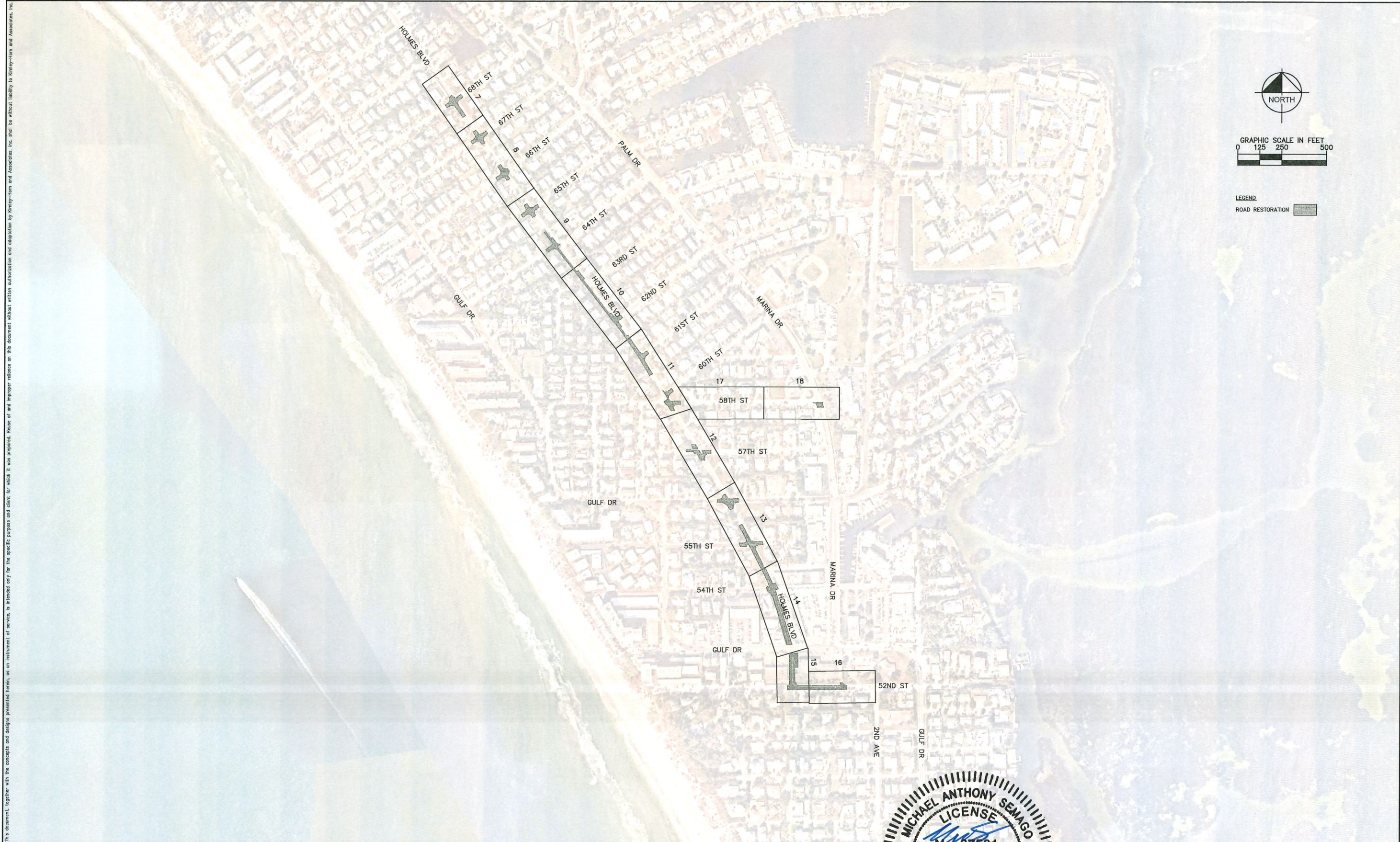
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KEY SHEET

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MANATEE COUNTY

PROFESSIONAL ENGINEER
FLORIDA
11/13/2020
MICHAEL ANTHONY SEMAGO
LICENSE NO. 87504
STATE OF FLORIDA

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ROAD RESTORATION KEY SHEET

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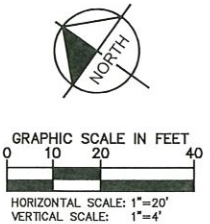
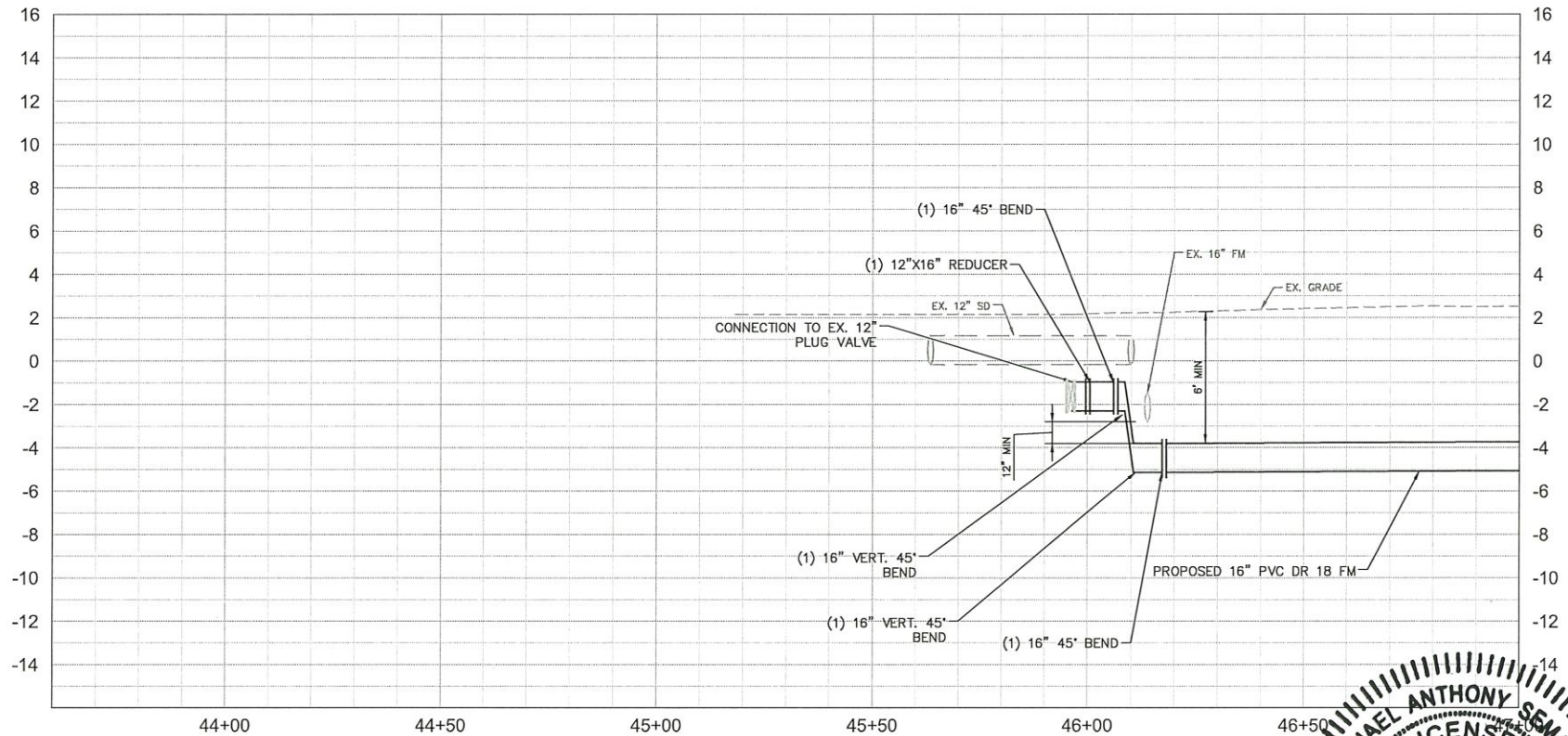
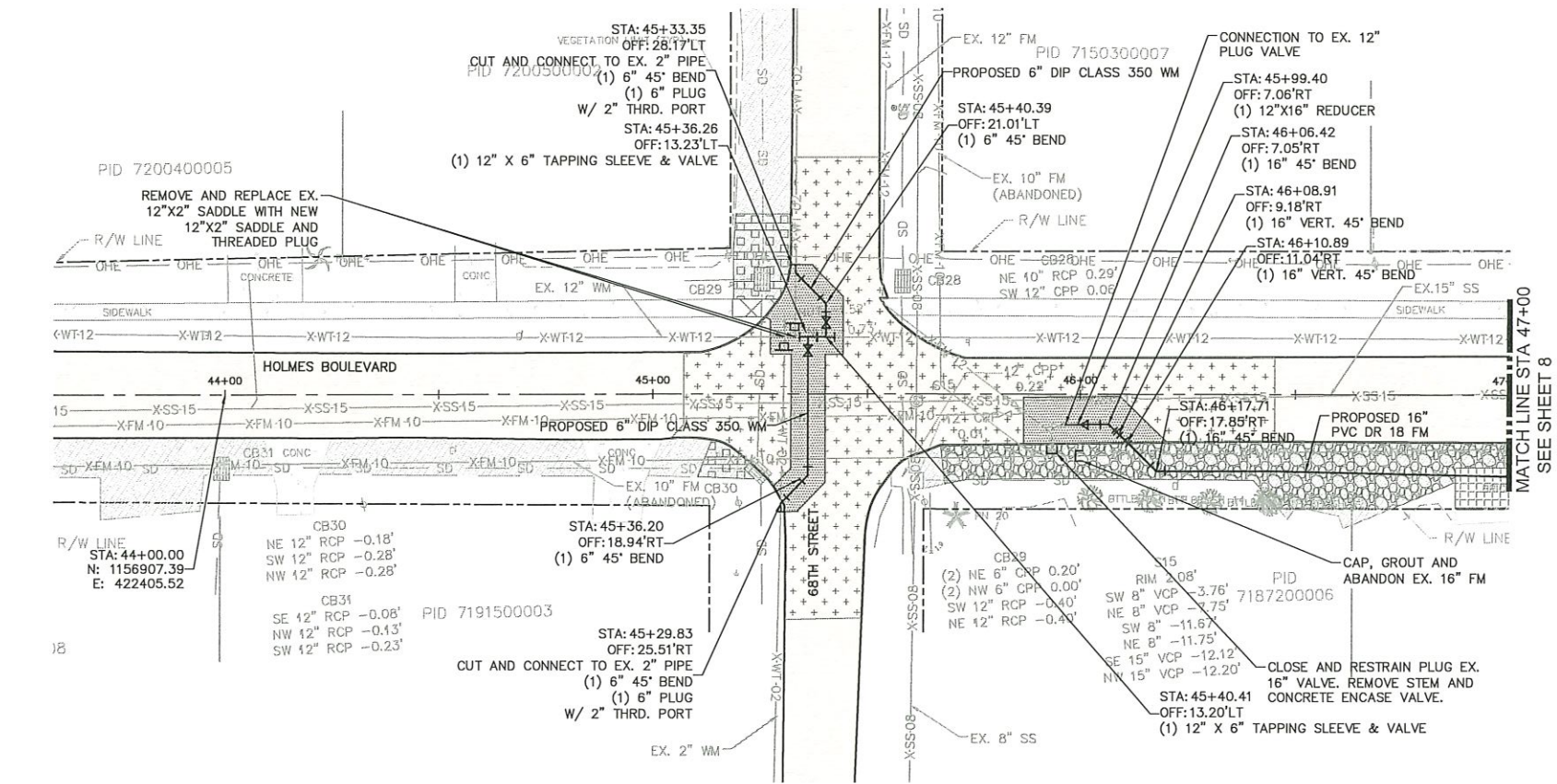
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PROJECT LOCATION MAP

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- NOTES:
- CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON SHEET 21
 - CONTRACTOR SHALL INSTALL THRUST BLOCK ON ALL CONNECTIONS TO EXISTING PIPE PER DETAIL UC-7 ON SHEET 20

- LEGEND:
- OPEN CUT
 - SIDEWALK/CONCRETE DRIVEWAY RESTORATION
 - BRICK DRIVEWAY RESTORATION
 - SHELL RESTORATION
 - FULL ROADWAY RESTORATION
 - MILLING AND RESURFACING
 - INFILTRATION TRENCH REPLACEMENT

*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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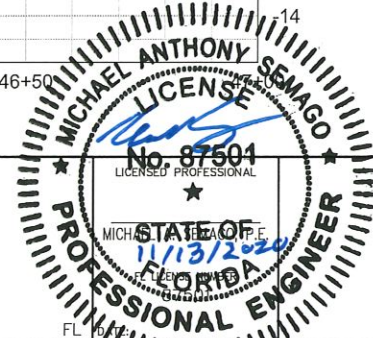
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MANATEE COUNTY

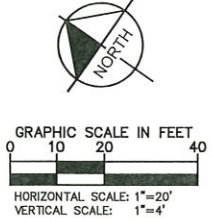
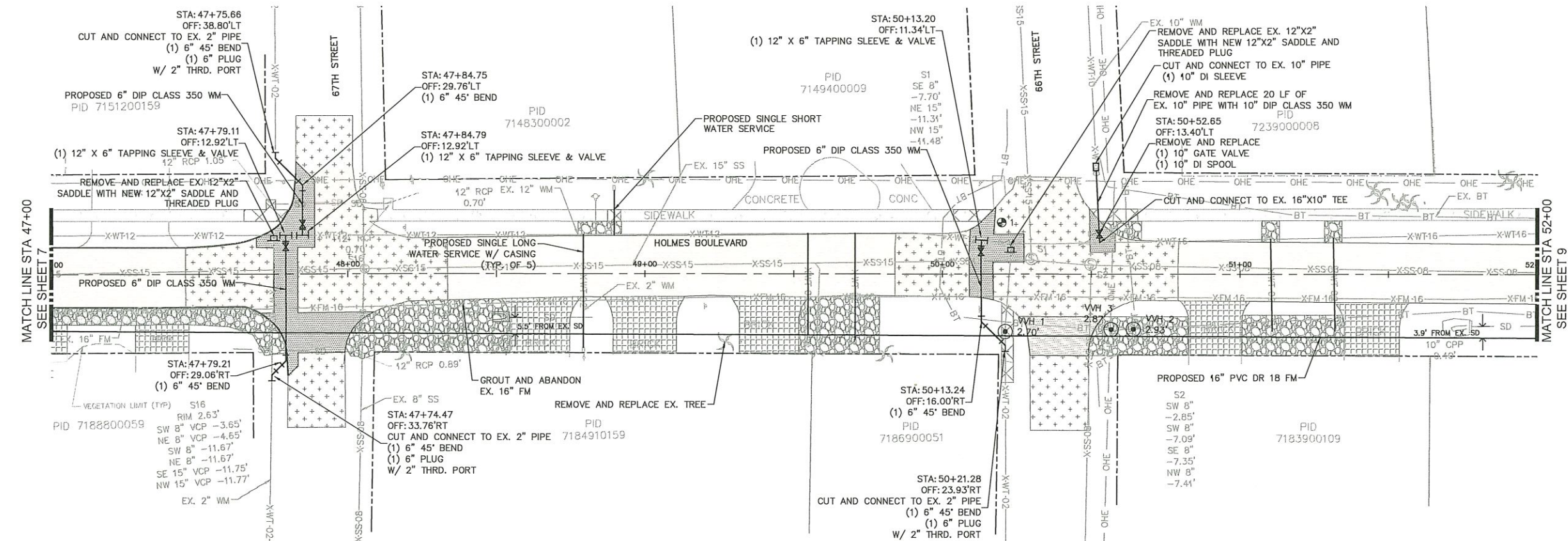


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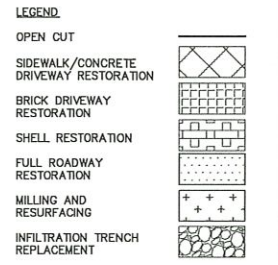
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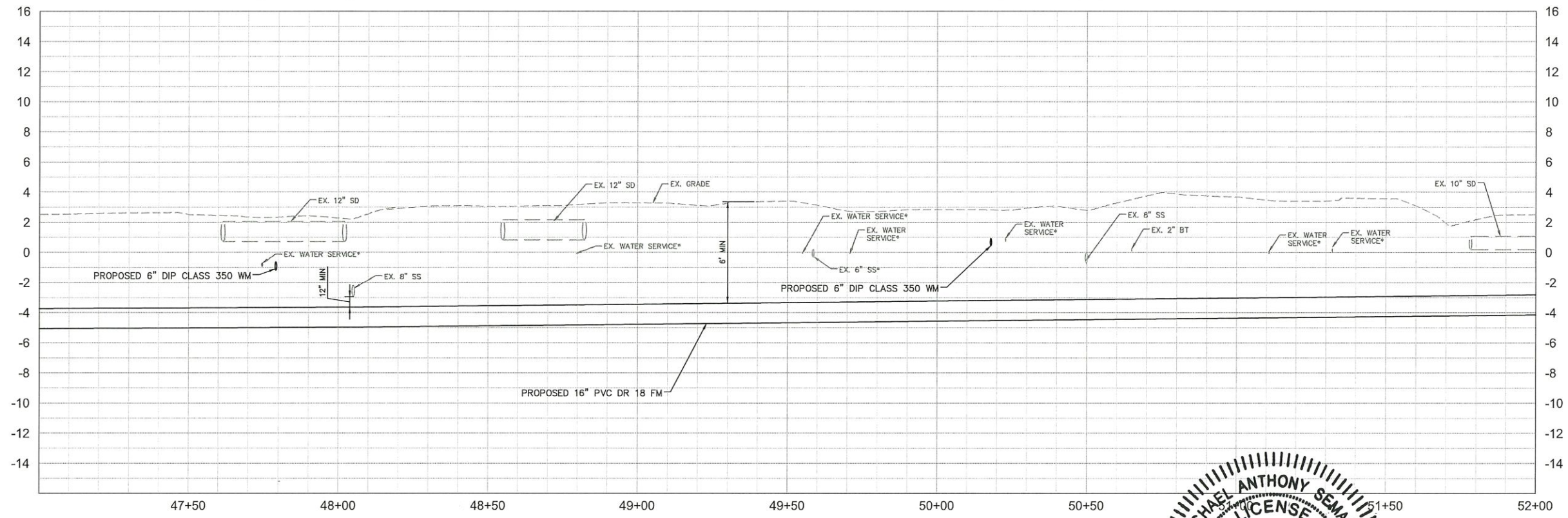


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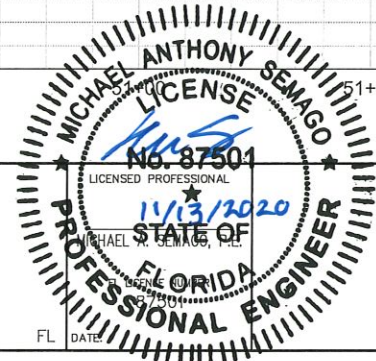
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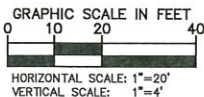


HOLMES BOULEVARD FORCE MAIN REPLACEMENT



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- LEGEND
- OPEN CUT
 - SIDEWALK/CONCRETE DRIVEWAY RESTORATION
 - BRICK DRIVEWAY RESTORATION
 - SHELL RESTORATION
 - FULL ROADWAY RESTORATION
 - MILLING AND RESURFACING
 - INFILTRATION TRENCH REPLACEMENT

*NOTES:
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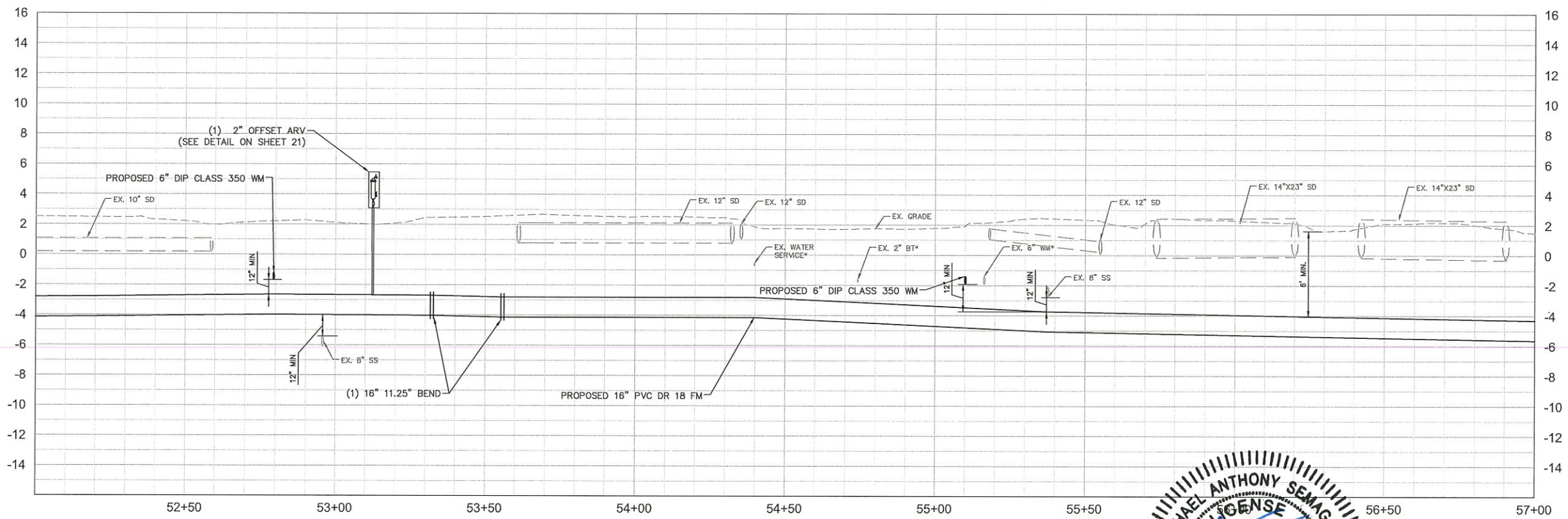
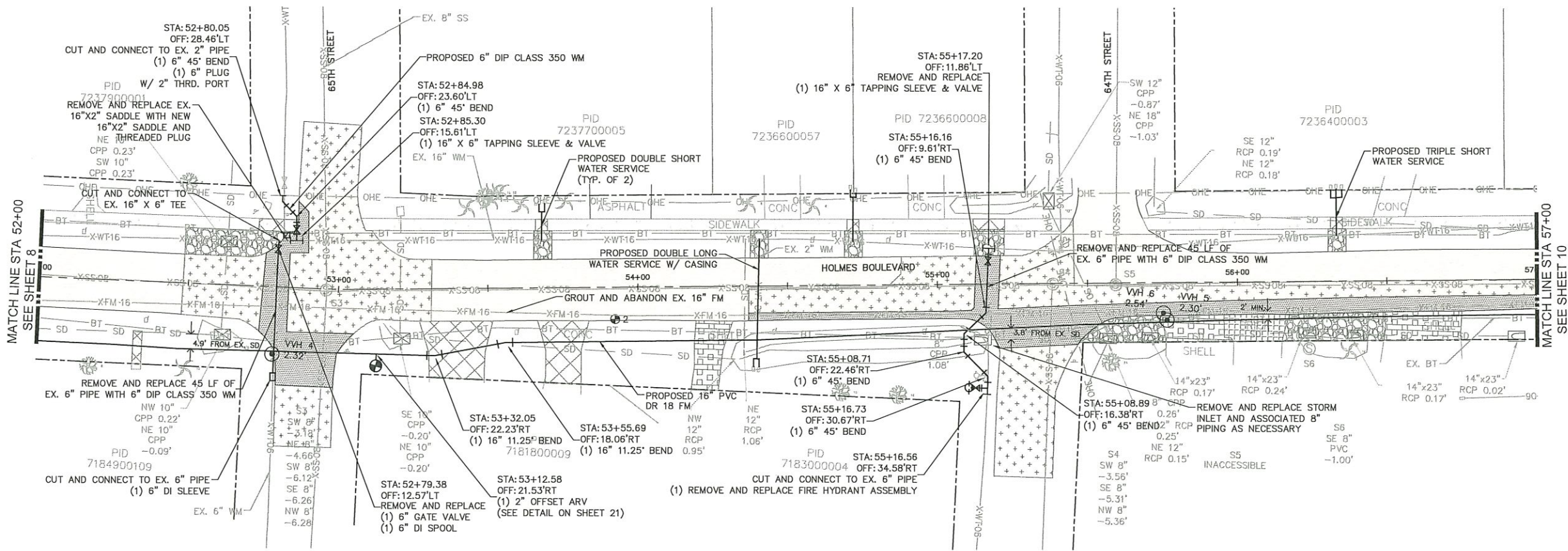
GROUNDWATER / DEWATERING NOTE:

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SHEET NUMBER

9



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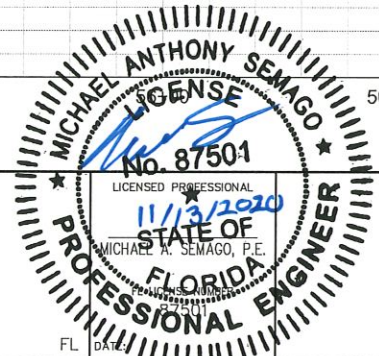
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KHA PROJECT	148400036
DATE	7/16/2020
SCALE	AS SHOWN
DESIGNED BY	MAS
DRAWN BY	JVM
CHECKED BY	WEW

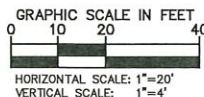
Manatee County

HOLMES BOULEVARD FORCE MAIN REPLACEMENT

MANATEE COUNTY



PLAN & PROFILE
STA 52+00 - 57+00



- NOTES:
1. CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON SHEET 21
 2. CONTRACTOR SHALL INSTALL THRUST BLOCK ON ALL CONNECTIONS TO EXISTING PIPE PER DETAIL UG-7 ON SHEET 20

LEGEND

OPEN CUT	
SIDEWALK/CONCRETE DRIVEWAY RESTORATION	
BRICK DRIVEWAY RESTORATION	
SHELL RESTORATION	
FULL ROADWAY RESTORATION	
MILLING AND RESURFACING	
INFILTRATION TRENCH REPLACEMENT	

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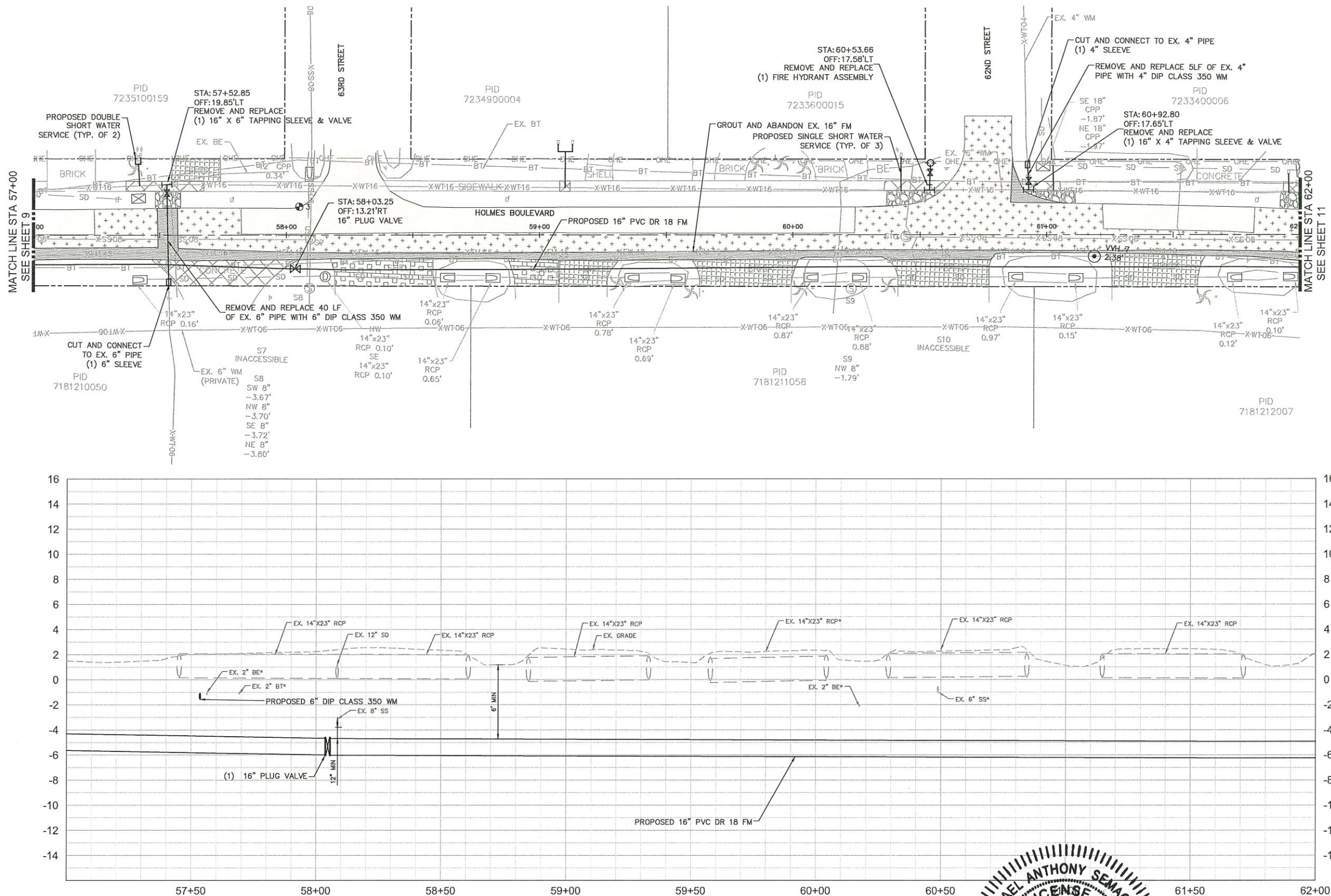
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SHEET NUMBER

10



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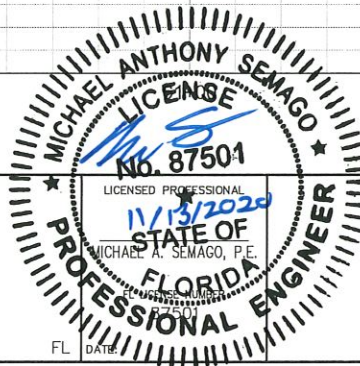
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148400036
DATE
7/16/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY JVM
CHECKED BY WEW

MANATEE COUNTY

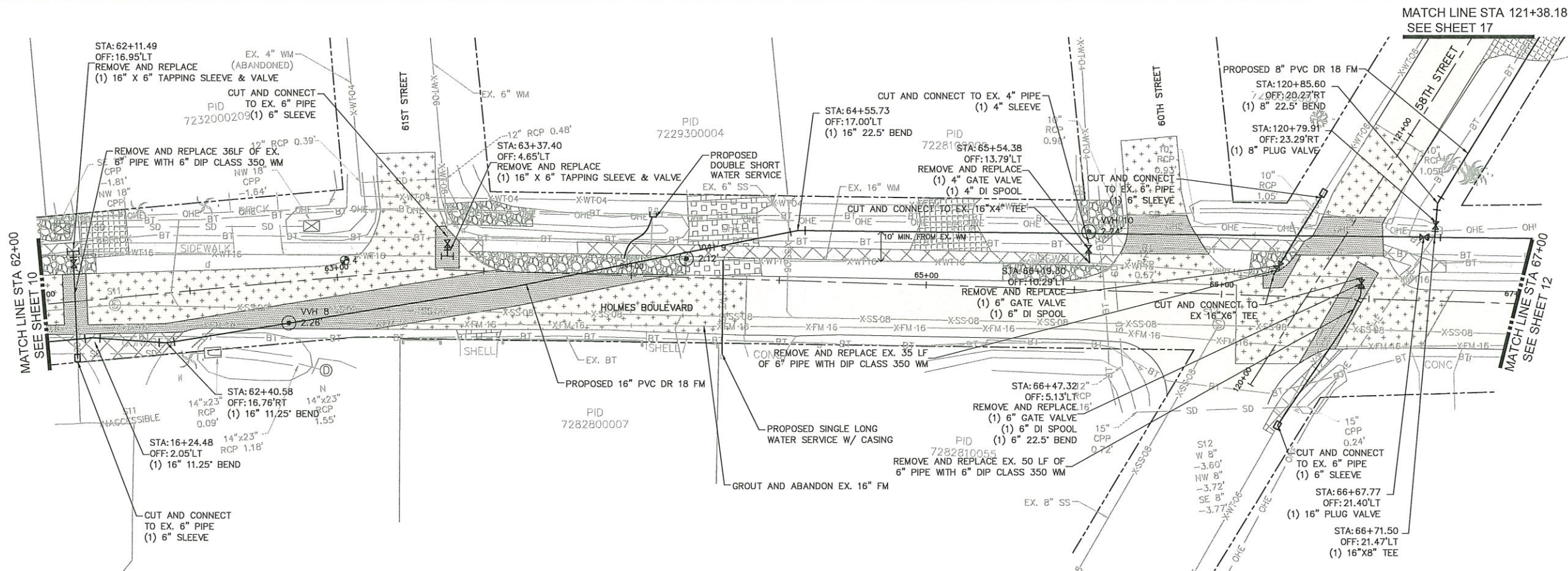


HOLMES BOULEVARD FORCE MAIN
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PLAN & PROFILE
STA 57+00 - 62+00

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- NOTES:
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- LEGEND
- OPEN CUT
 - SIDEWALK/CONCRETE DRIVEWAY RESTORATION
 - BRICK DRIVEWAY RESTORATION
 - SHELL RESTORATION
 - FULL ROADWAY RESTORATION
 - MILLING AND RESURFACING
 - INFILTRATION TRENCH REPLACEMENT

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SHEET NUMBER

11

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KHA PROJECT 148400036
DATE 7/16/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY JVM
CHECKED BY WEW

Manatee County

HOLMES BOULEVARD FORCE MAIN REPLACEMENT

MANATEE COUNTY

MICHAEL ANTHONY SEMAGO

LICENSE No. 87501

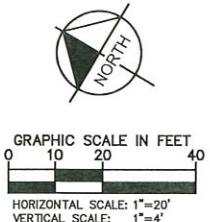
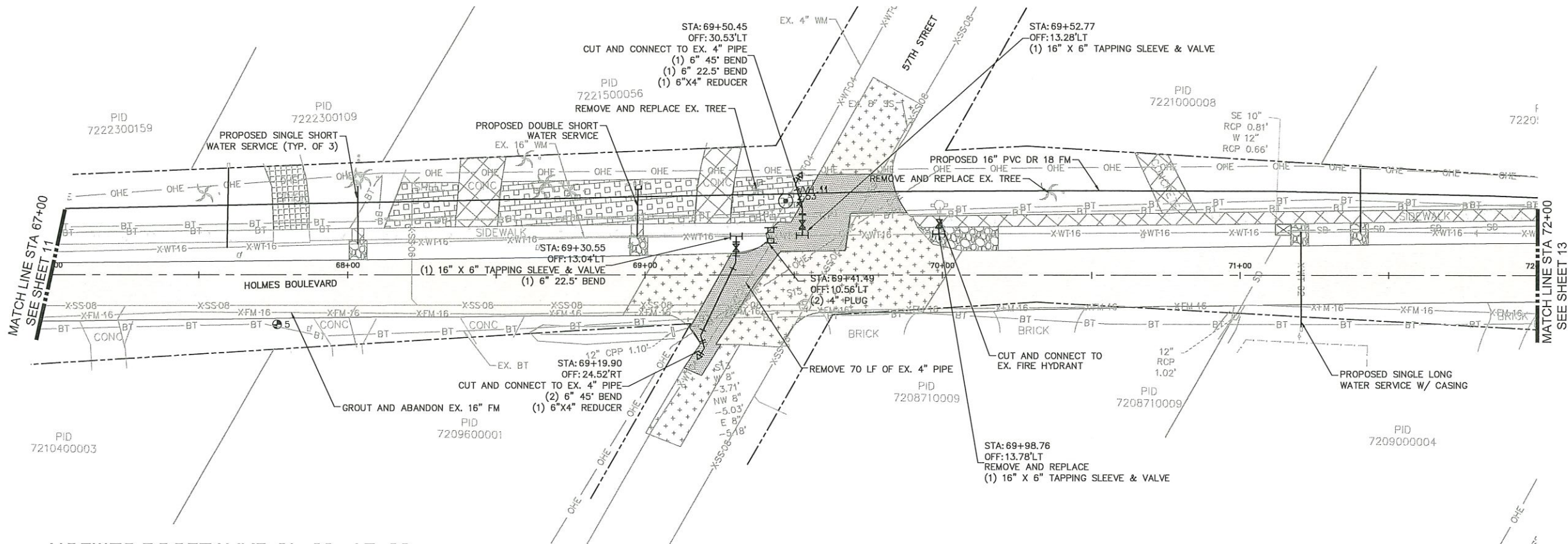
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STATE OF FLORIDA

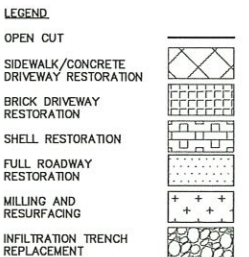
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SHEET NUMBER

12

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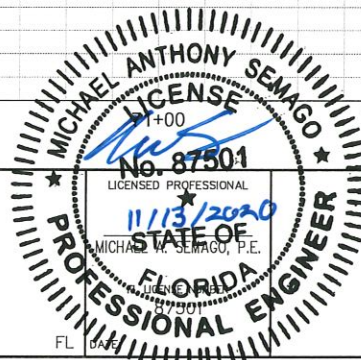
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KHA PROJECT
148400036
DATE
7/16/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY JWM
CHECKED BY WEW



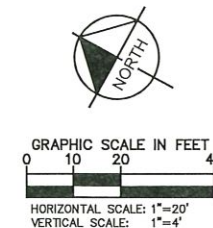
HOLMES BOULEVARD FORCE MAIN
REPLACEMENT

MANATEE COUNTY










PLAN & PROFILE
STA 67+00 72+00

No.	REVISIONS	DATE	BY



- NOTES:
1. CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON SHEET 21
 2. CONTRACTOR SHALL INSTALL THRUST BLOCK ON ALL CONNECTIONS TO EXISTING PIPE PER DETAIL UG-7 ON SHEET 20

LEGEND

- | | |
|--|---|
| OPEN CUT |  |
| SIDEWALK/CONCRETE DRIVEWAY RESTORATION |  |
| BRICK DRIVEWAY RESTORATION |  |
| SHELL RESTORATION |  |
| FULL ROADWAY RESTORATION |  |
| MILLING AND RESURFACING |  |
| INFILTRATION TRENCH REPLACEMENT |  |

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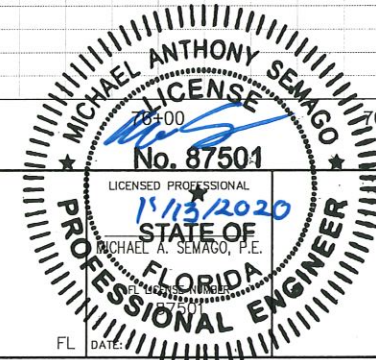
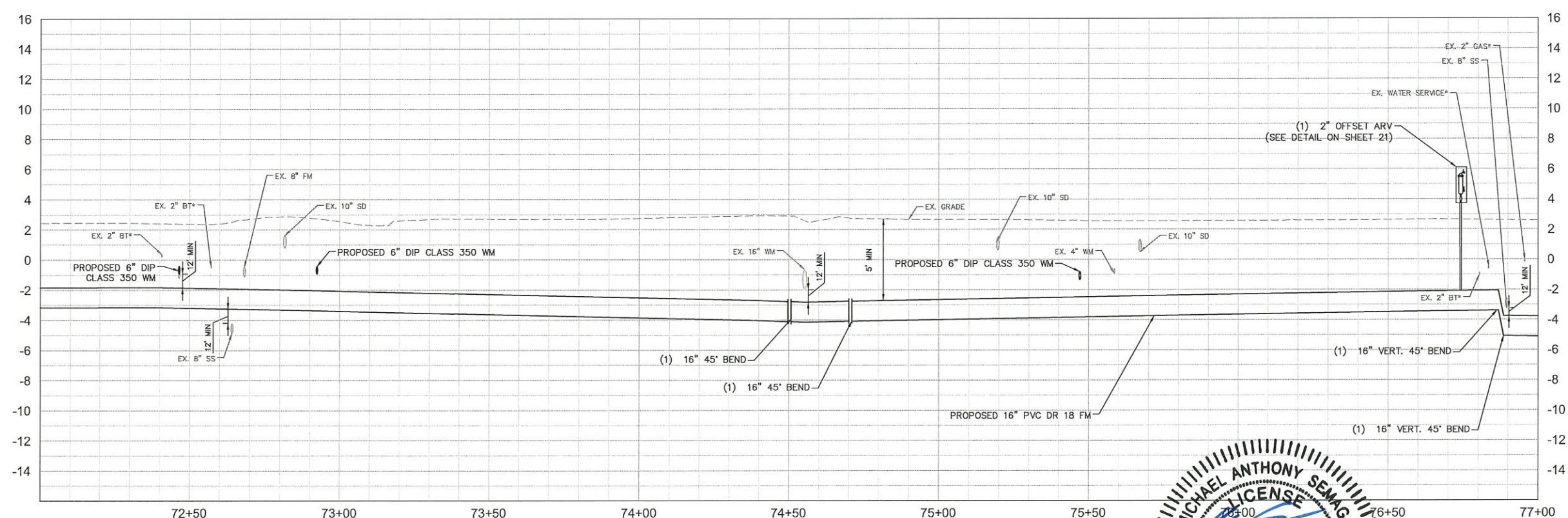
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DEWATERING, DRAINAGE AND GROUND
WATER MANAGEMENT TO CONTROL
MOISTURE OF SOILS.



SHEET NUMBER

13



PLAN & PROFILE
STA 72+00 - 77+00

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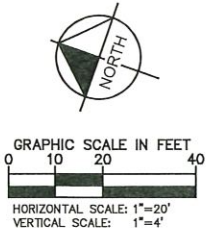
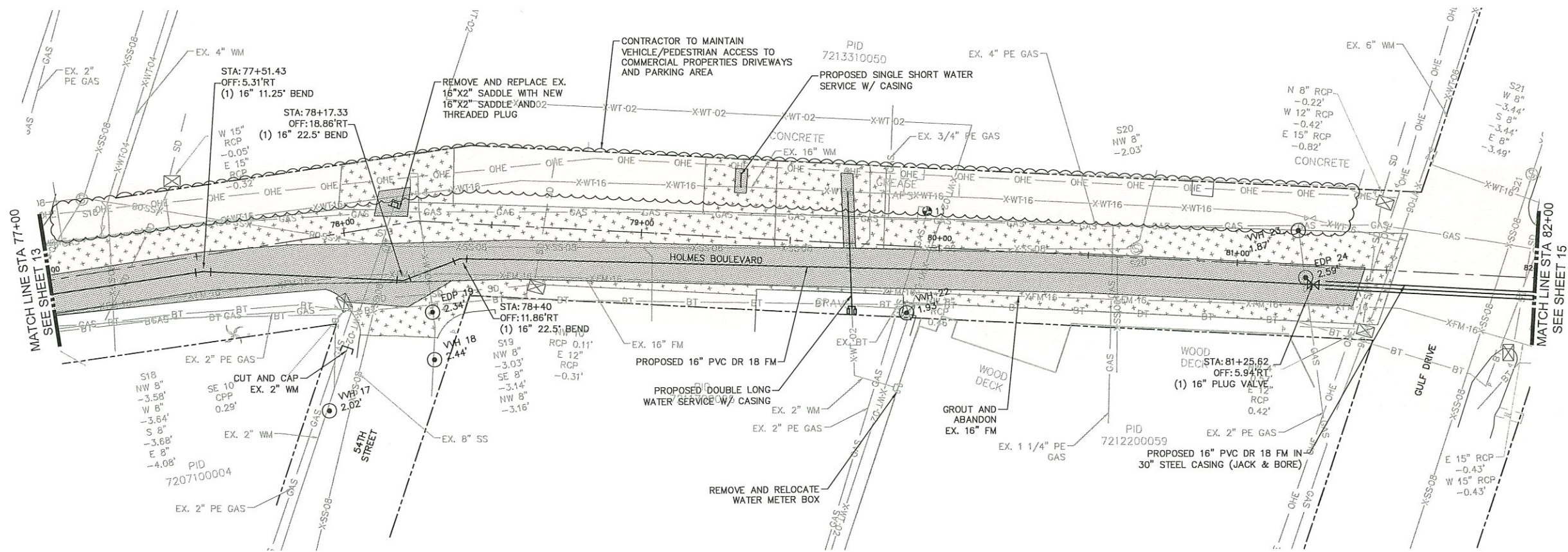
KHA PROJECT 148400036
DATE 7/16/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY JVM
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HOLMES BOULEVARD FORCE MAIN REPLACEMENT

MANATEE COUNTY

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LEGEND

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SIDEWALK/CONCRETE DRIVEWAY RESTORATION	
BRICK DRIVEWAY RESTORATION	
SHELL RESTORATION	
FULL ROADWAY RESTORATION	
MILLING AND RESURFACING	
INFILTRATION TRENCH REPLACEMENT	

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SHEET NUMBER

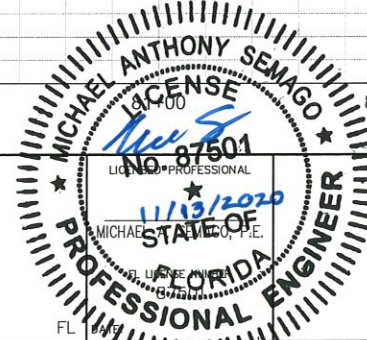
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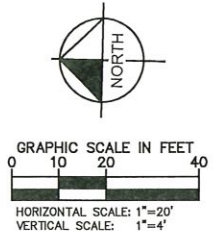
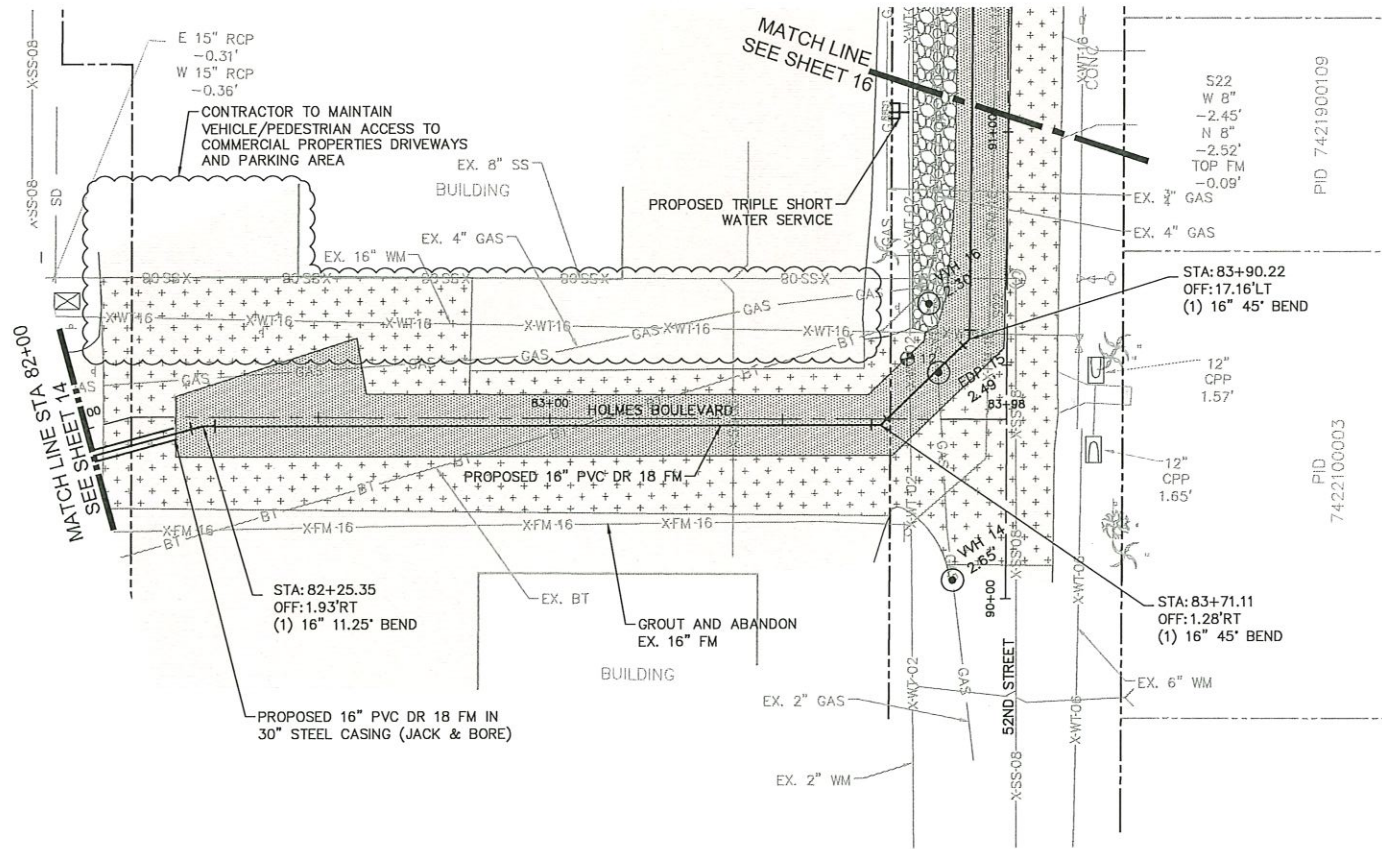
KHA PROJECT
1484000.36
DATE
7/14/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY JWM
CHECKED BY WEW

Manatee County
HOLMES BOULEVARD FORCE MAIN REPLACEMENT
MANATEE COUNTY



PLAN & PROFILE
STA 77+00 - 82+00

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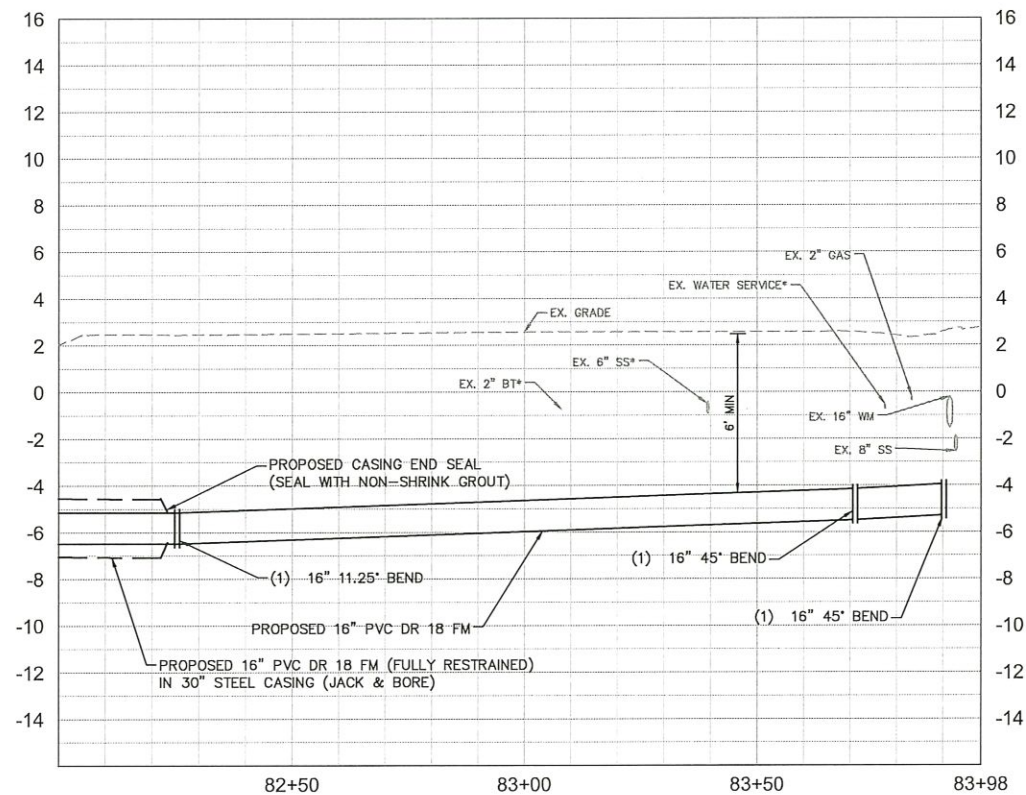
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LEGEND

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SIDEWALK/CONCRETE DRIVEWAY RESTORATION	
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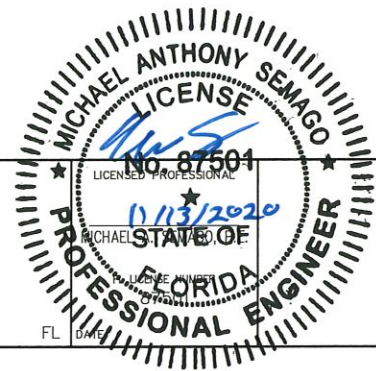


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KHA PROJECT	148400036
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SCALE	AS SHOWN
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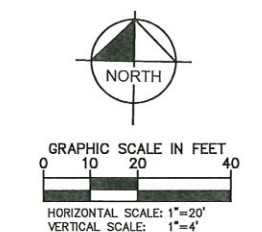
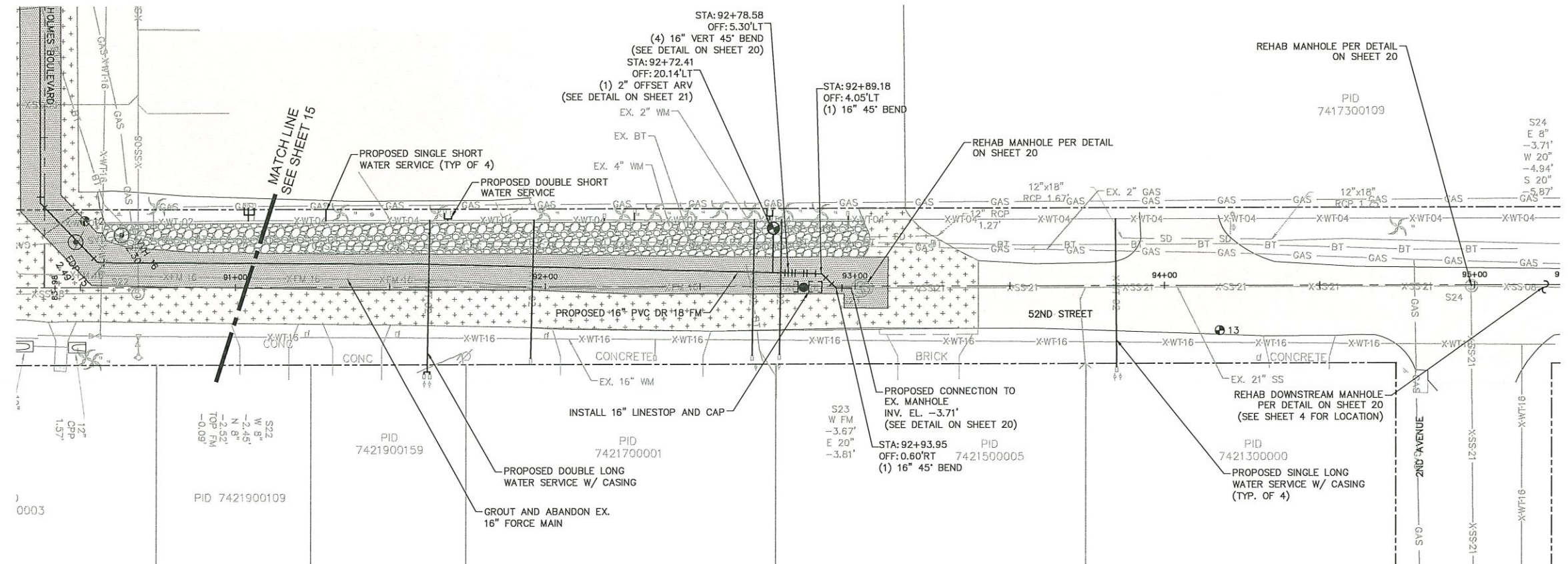
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MANATEE COUNTY



PLAN & PROFILE
STA 82+00 - 83+98

SHEET NUMBER
15

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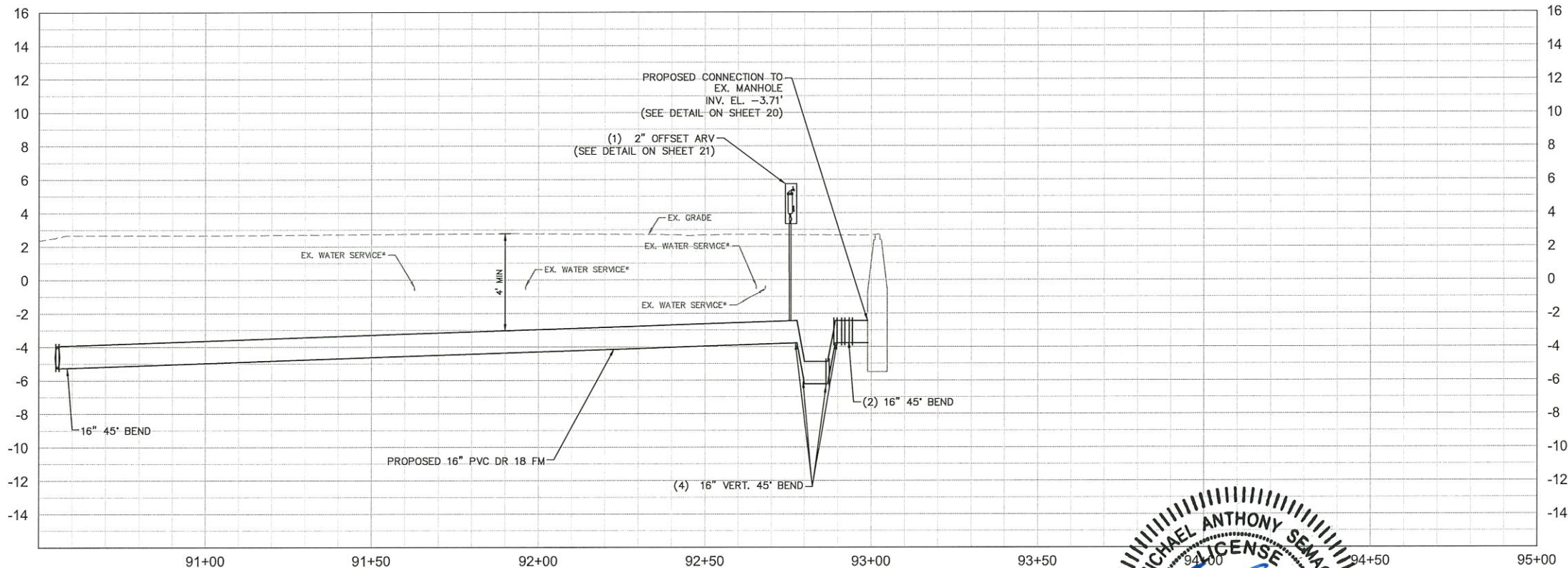


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KHA PROJECT	148400036
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Manatee County

HOLMES BOULEVARD FORCE MAIN REPLACEMENT

MANATEE COUNTY

MICHAEL ANTHONY SEMAGO

FLORIDA

PROFESSIONAL ENGINEER

No. 87501

11/13/2020

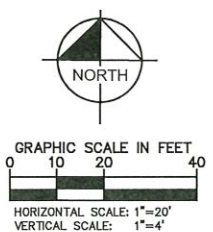
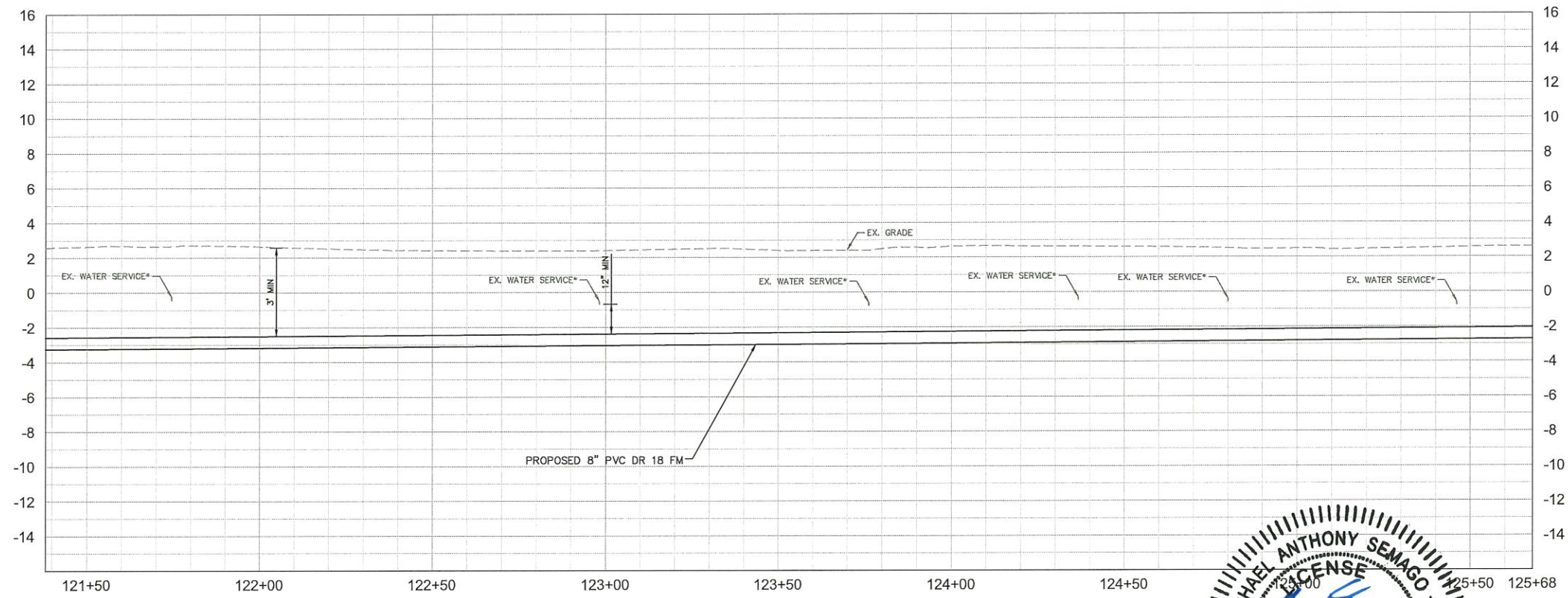
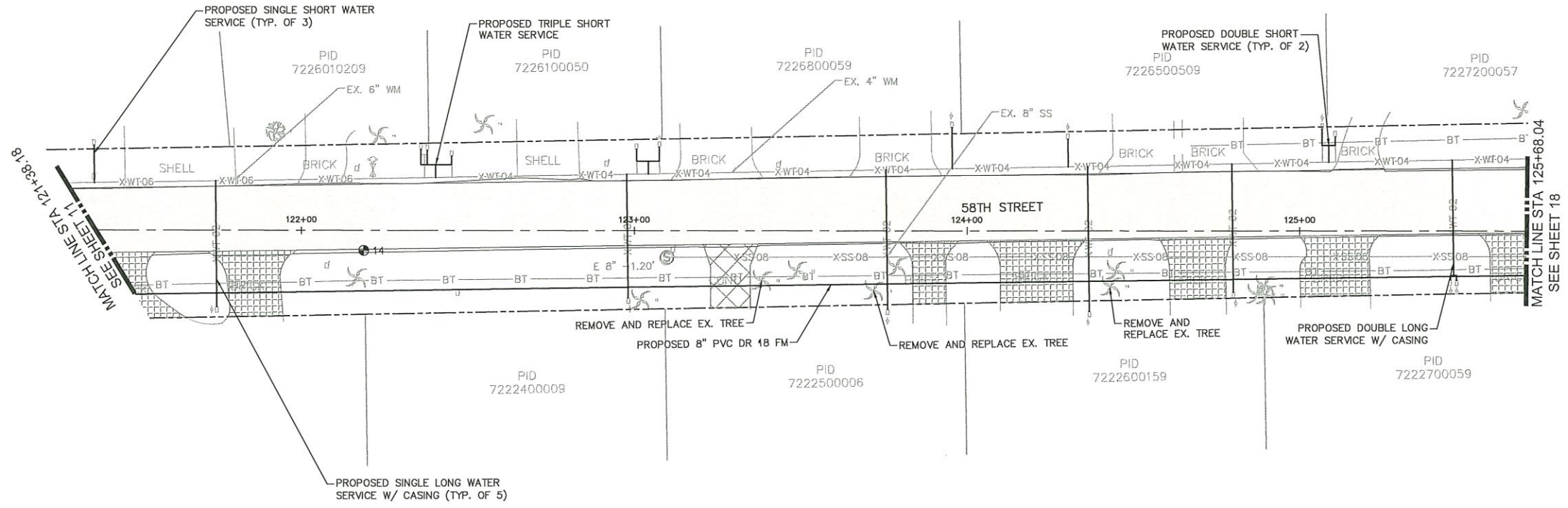
STATE OF FLORIDA

DATE

PLAN & PROFILE
STA 91+26 - 95+00

SHEET NUMBER
16

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- NOTES:
1. CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON SHEET 21
 2. CONTRACTOR SHALL INSTALL THRUST BLOCK ON ALL CONNECTIONS TO EXISTING PIPE PER DETAIL UG-7 ON SHEET 20

- LEGEND
- OPEN CUT
 - SIDEWALK/CONCRETE DRIVEWAY RESTORATION
 - BRICK DRIVEWAY RESTORATION
 - SHELL RESTORATION
 - FULL ROADWAY RESTORATION
 - MILLING AND RESURFACING
 - INFILTRATION TRENCH REPLACEMENT

*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.

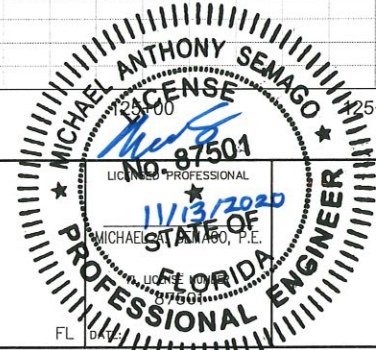


No.	REVISIONS	DATE	BY

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KHA PROJECT
148400036
DATE
7/14/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY JWM
CHECKED BY WEW

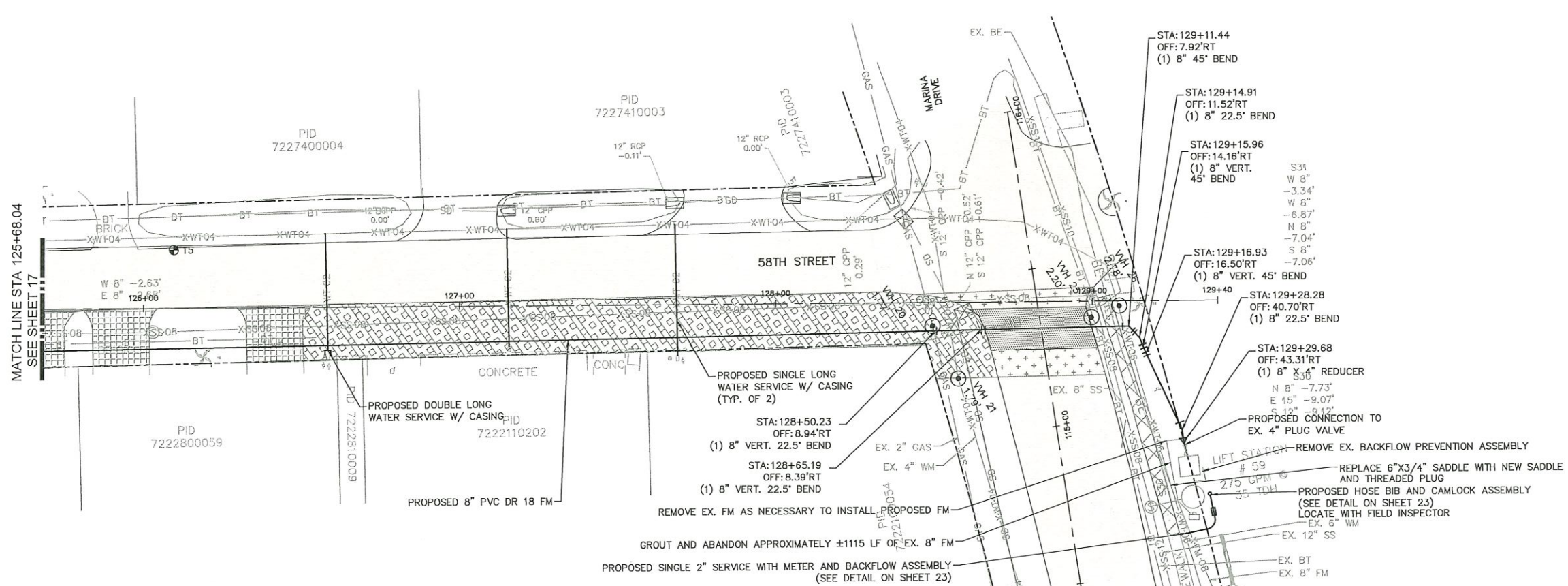
HOLMES BOULEVARD FORCE MAIN REPLACEMENT
MANATEE COUNTY



PLAN & PROFILE
STA 121+38 - 125+68

SHEET NUMBER
17

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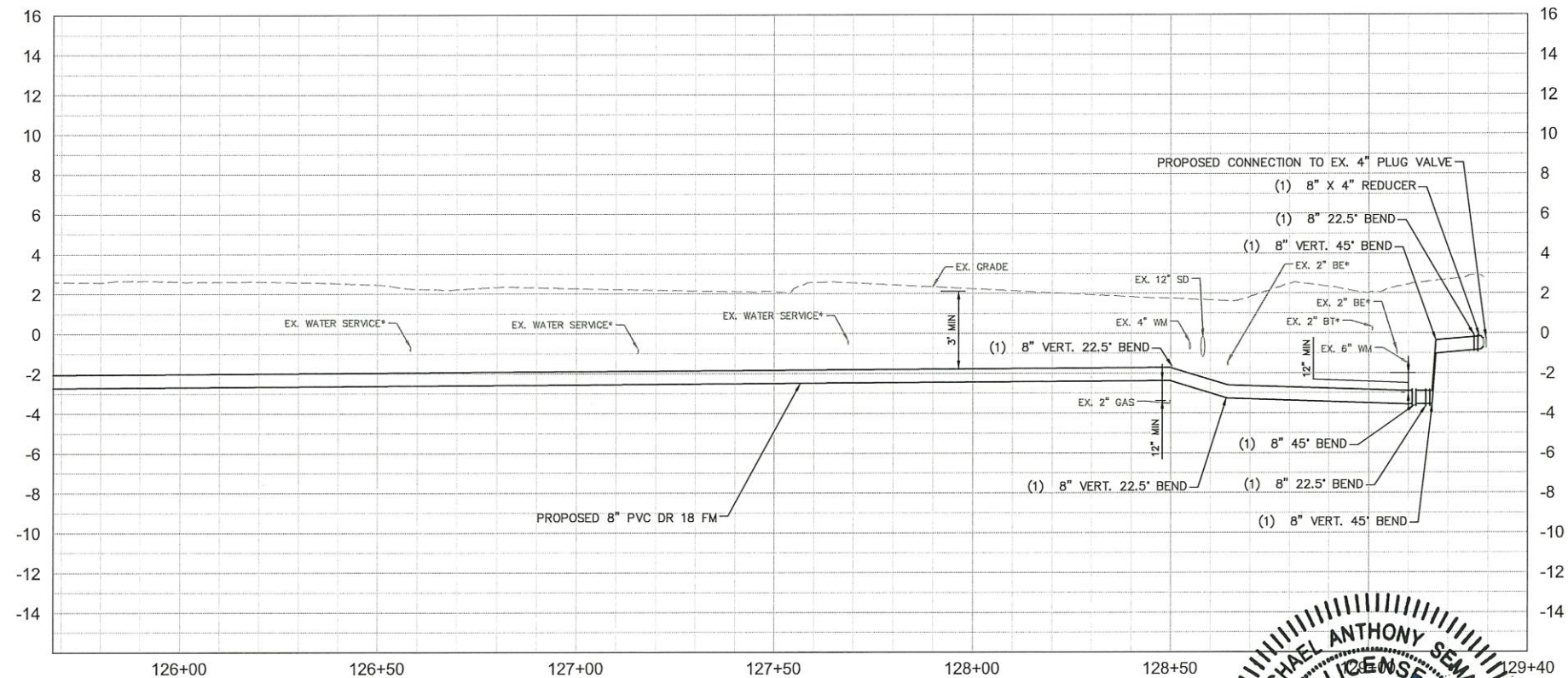
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- CONTRACTOR SHALL RESTRAIN PIPE PER RESTRAIN LENGTHS TABLE ON SHEET 21
 - CONTRACTOR SHALL INSTALL THRUST BLOCK ON ALL CONNECTIONS TO EXISTING PIPE PER DETAIL UG-7 ON SHEET 20

LEGEND

OPEN CUT	
SIDEWALK/CONCRETE DRIVEWAY RESTORATION	
BRICK DRIVEWAY RESTORATION	
SHELL RESTORATION	
FULL ROADWAY RESTORATION	
MILLING AND RESURFACING	
INFILTRATION TRENCH REPLACEMENT	

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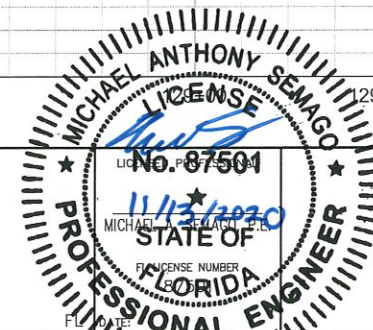
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KHA PROJECT
148400036
DATE
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CHECKED BY WEW



HOLMES BOULEVARD FORCE MAIN
REPLACEMENT

MANATEE COUNTY



PLAN & PROFILE
STA 125+68 - 129+40

SHEET NUMBER

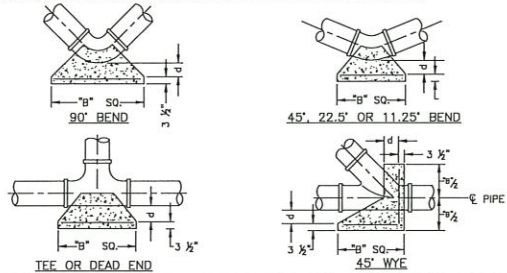
18

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THRUST BLOCK DIMENSIONS B ft. x d inches												
PIPE SIZE (IN.)	90° BEND		45° BEND		22.5° BEND		1.25° BEND		DEAD END & TEE		45° WYE	
	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 1/2	1.1	3 1/2	0.8	3 1/2	0.6	3 1/2	1.3	3 1/2	1.1	3 1/2
6	2.2	5 1/2	1.6	5 1/2	1.2	5 1/2	0.8	5 1/2	1.9	4 1/2	1.6	3 3/4
8	2.9	7	2.1	5	1.5	3 1/2	1.1	3 1/2	2.4	5 1/2	2.0	4 1/4
10	3.5	8 1/2	2.6	6 1/2	1.9	4 1/2	1.3	3 1/2	3.0	7 1/2	2.5	6
12	4.2	10	3.1	7 1/2	2.2	5 1/2	1.6	3 1/2	3.5	8 1/2	3.0	7 1/2
14	4.9	11 1/2	3.6	8 1/2	2.6	6 1/2	1.8	4 1/2	4.1	9 1/2	3.4	8 1/2
16	5.5	13 1/2	4.1	9 1/2	2.9	7	2.1	5	4.7	11 1/2	3.9	9 1/2
18	6.2	15	4.6	11	3.3	8	2.3	5 1/2	5.2	12 1/2	4.4	10 1/2
20	6.9	16 1/2	5.0	12	3.6	8 1/2	2.6	6 1/2	5.8	14	4.9	11 1/2
24	8.2	19 1/2	6.0	14 1/2	4.3	10 1/2	3.1	7 1/2	6.9	16 1/2	5.8	14
30	10.1	24 1/2	7.5	18	5.3	12 1/2	3.8	9	8.5	20 1/2	7.2	17 1/2
36	12.1	29	8.9	21 1/2	6.4	15 1/2	4.5	10 1/2	10.2	24 1/2	8.6	20 1/2

REINFORCEMENT MAT SCHEDULE												
FOR DIM. "B" BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY												
FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY												

- NOTES:
- ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
 - THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF. CONCRETE STRENGTH f_c =3000 PSI, REINFORCEMENT f_s =60,000 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
 - FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
 - RESTRAINED JOINTS MAY BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. HOWEVER, WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE CALLED OUT/ILLUSTRATED IN THE DETAILS, BOTH SHALL BE INSTALLED.

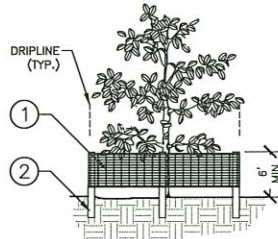


MANATEE COUNTY PUBLIC WORKS DEPARTMENT	
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	DATE OF APPROVAL

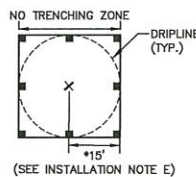
CONCRETE THRUST BLOCKS
UG-7

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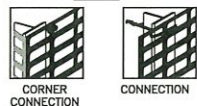
FORCE MAIN CONNECTION TO EX. PORTLAND CONCRETE MANHOLE (3-6 FEET DEEP)
US-7A



ELEVATION



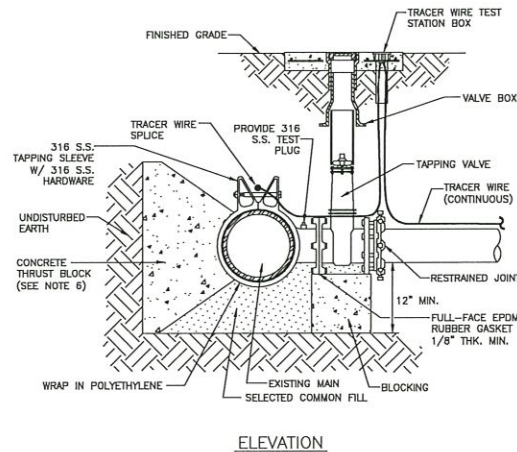
PLAN



1 TREE PROTECTION FENCING
ELEVATION / PLAN

- 1 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONNED 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:
- 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.
 - POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.
 - SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).
 - SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONNED PLASTICS). WOOD STRIPS MAY ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.
 - 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.

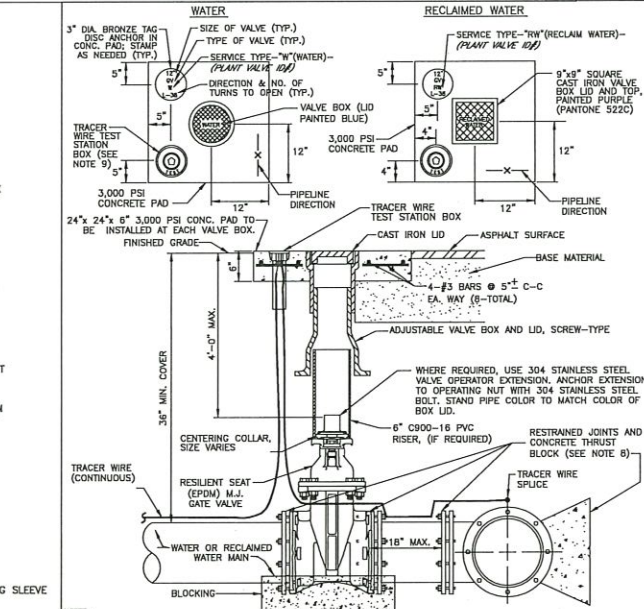


ELEVATION

- NOTES:
- PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER.
 - ALL FITTINGS TO BE WRAPPED WITH 20 MIL POLYETHYLENE WRAP AT THRUST BLOCK.
 - ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
 - ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
 - CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
 - WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES".
 - TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.
 - SEE SECTION 1.1.1 TAPPING SLEEVES AND VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

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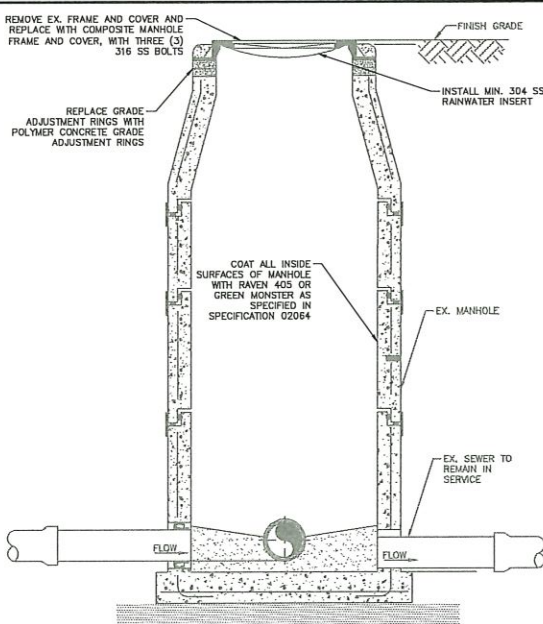
TAPPING SLEEVE AND VALVE (WATER/RECLAIM)
UW-3



- NOTES:
- "W" or "RW" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "W" OR PURPLE DISC WITH "RW" USING A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE POINTING FROM THE DISC TO THE VALVE.
 - ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
 - VALVES SHALL NOT BE PLACED IN HANDCAPPED WALKS, CURBS, OR OUTLETS.
 - PRECAST CONCRETE PADS SHALL NOT BE USED.
 - ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
 - PIPELINE DIRECTION TO BE IMPRESSED INTO NEWLY-POURED CONCRETE PAD.
 - TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE RIG.
 - WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES".
 - USE NON-FRAGRANT PAINTED BOXES FOR NORMAL HAND SERVICE. WHERE VALVE WILL BE IN STREET OR PARKING UNDER VEHICLE TRAFFIC, USE TRAFFIC PAINTED BOXES. WHERE POSSIBLE, LOCATE TRACER WIRE TESTING STATION OUTSIDE OF TRAVEL LANE OR IN MEDIAN, CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.
 - THE BRASS TAG SHALL HAVE A PLANT VALVE ID# WHEN VALVES ARE INSTALLED WITHIN THE COUNTY TREATMENT PLANT LIMITS. THE PLANT VALVE ID# SHALL BE SHOWN ON THE CONSTRUCTION PLANS AND RECORD DRAWINGS.
 - REFER TO SECTION 1.1.1 GATE VALVES IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

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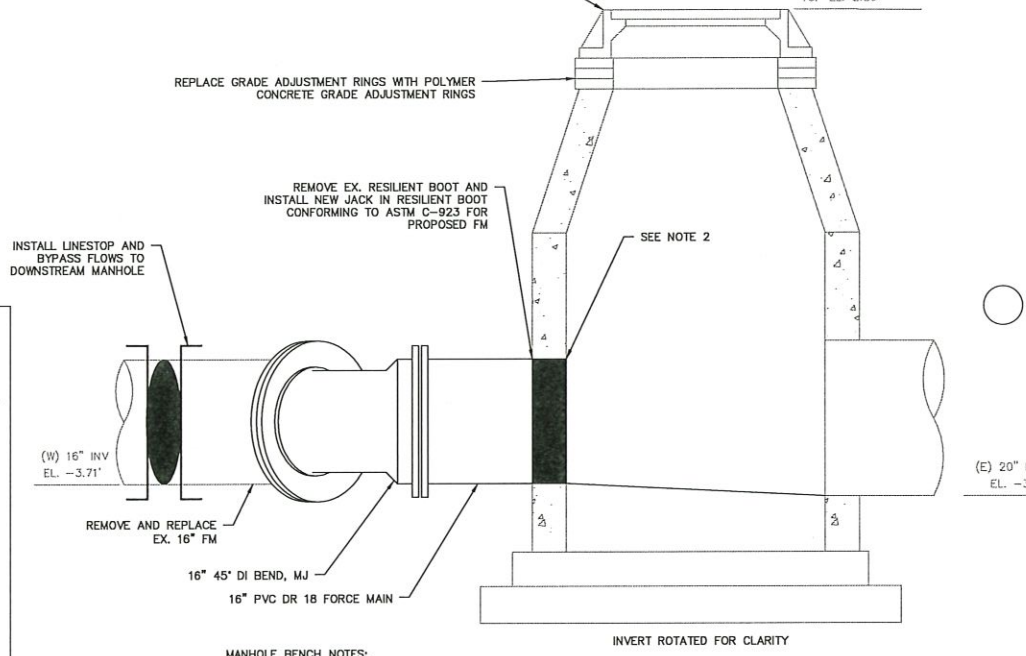
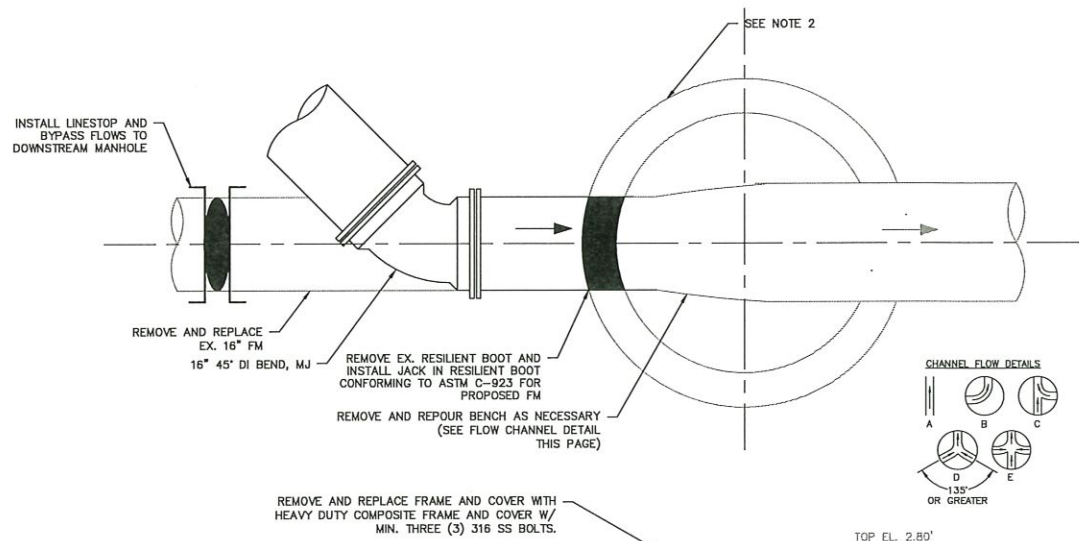
GATE VALVE, BOX, LID AND TAG
UW-2



- NOTES:
- 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.

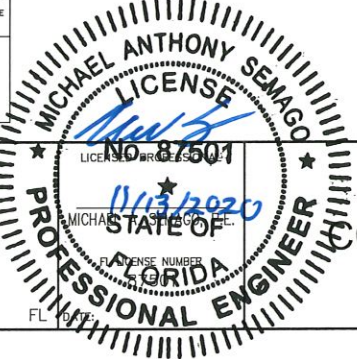
- FLOW CHANNEL DETAIL:
- MAINTAIN DESIGN SLOPE ACROSS MANHOLE UNLESS OTHERWISE INDICATED.
 - DEPTH OF ALL CHANNELS TO BE BOX OF PIPE DIAMETER.
 - FINISH OF ALL CHANNELS TO ALLOW SMOOTH FLOW.
 - CONCRETE BENCH SHALL BE POURED BEFORE SHUTTING DOWN DEWATERING OPERATIONS TO PREVENT FLOATION.
 - BRICK MAY BE USED TO BUILD UP CONCRETE BENCH.
 - MINIMUM ANGLE BETWEEN INLET AND OUTLET PIPING IS 90 DEGREES.

1 MANHOLE REHAB DETAIL



MANHOLE #S23 FORCE MAIN CONNECTION DETAIL

- MANHOLE BENCH NOTES:
- MANHOLE SHALL BE COATED PER COUNTY SPECIFICATION 02064 (REFER TO DETAIL 1 SHEET 20)
 - INSTALL REMOVABLE JACK-IN RESILIENT CONNECTOR BOOT PER ASTM C-923 TO CREATE LEAK-FREE CONNECTION FOR PROPOSED PIPE. GROUT AS NECESSARY.



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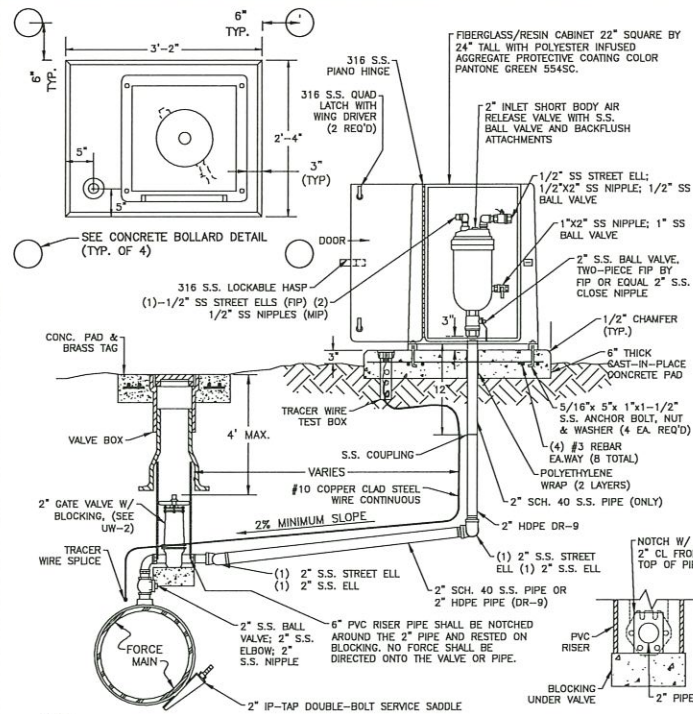
HOLMES BOULEVARD FORCE MAIN
REPLACEMENT

MANATEE COUNTY

CONSTRUCTION DETAILS

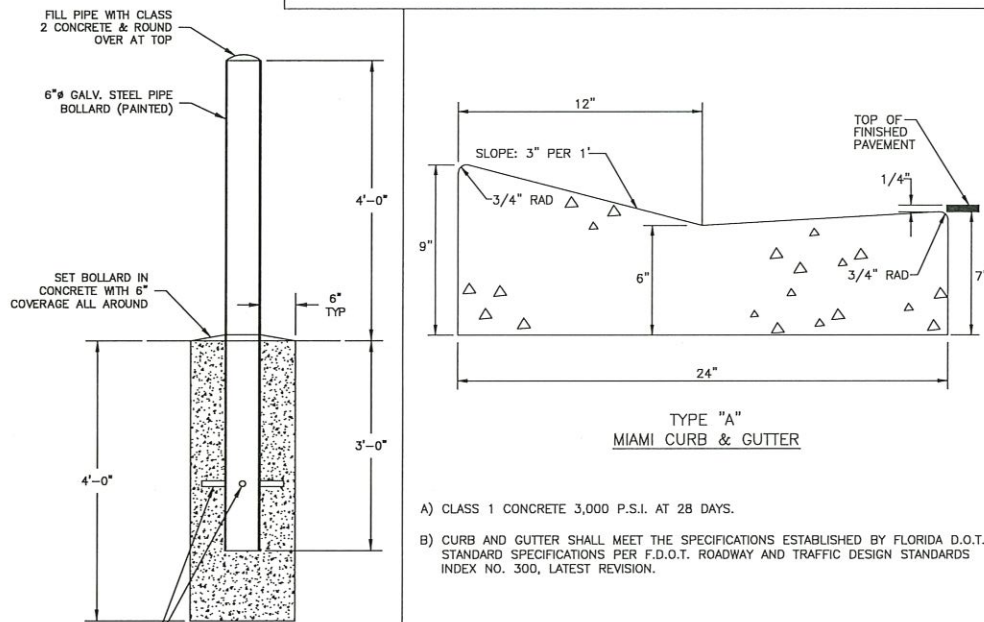
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1. AIR RELEASE VALVES TO BE ABOVE-GROUND INSTALLATIONS, UNLESS IMPRACTICAL. INSTALLATIONS MAY BE BELOW-GROUND ONLY WHERE APPROVED AND SPECIFICALLY INDICATED ON THE PLAN.
 2. AIR RELEASE VALVES TO BE INSTALLED AT HIGH POINTS, OR WHERE AIR WOULD BE ENTRAPPED, ALONG 4\"/>

ABOVEGROUND AIR RELEASE ASSEMBLY FOR FORCE MAINS



- 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.

CONCRETE FILLED BOLLARD DETAILS
N.T.S.

MANATEE COUNTY
TRANSPORTATION DEPARTMENT
REV. BY DATE
6/12/07
DATE OF B.O.C.C. APPROVAL

TYPE A
MIAMI
CURB & GUTTER
201.1

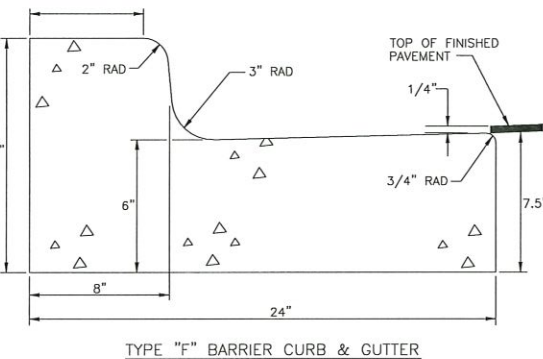
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR C900-16 PVC PIPE (DR-18)

MAIN PIPE SIZE	HORIZ. BENDS	TEES				REDUCERS				PLUGS & VALVES
		90°	45°	22.5°	SIZE	90°	45°	22.5°	SIZE	
24	90	38	18	12	K24	K24	K24	K24	K24	214
20	78	32	16	10	K20	K20	K20	K20	K20	184
16	66	27	13	8	K16	K16	K16	K16	K16	151
12	52	22	10	6	K12	K12	K12	K12	K12	118
10	44	18	9	5	K10	K10	K10	K10	K10	100
8	37	15	7	4	K8	K8	K8	K8	K8	83
6	29	12	6	3	K6	K6	K6	K6	K6	63
4	21	8	4	2	K4	K4	K4	K4	K4	45

- NOTES:
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 AWWA 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 UG-10 RESTRAINED LENGTHS FOR PIPE.
 9. ALL RESTRAINED JOINT HARDWARE SHALL CONFORM TO 1.11.17 OF THE PUBLIC WORKS UTILITIES STANDARDS MANUAL.
 10. ALL THREE "LEGS" OF TEES SHALL BE RESTRAINED PER THE STATED LENGTH IN THE TABLE.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT
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RESTRAINED
LENGTHS FOR PVC
PIPE
UG-8



- 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.

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6/12/07
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TYPE F
CURB & GUTTER
201.2

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

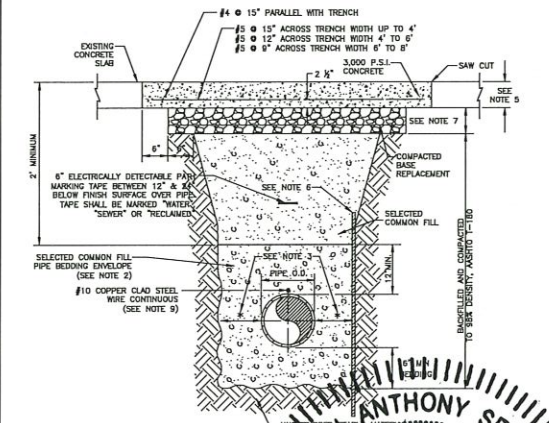
MAIN PIPE SIZE	HORIZ. BENDS	TEES				REDUCERS				PLUGS & VALVES
		90°	45°	22.5°	SIZE	90°	45°	22.5°	SIZE	
36	142	59	28	16	K36	K36	K36	K36	K36	453
30	124	51	25	14	K30	K30	K30	K30	K30	391
24	106	44	21	12	K24	K24	K24	K24	K24	327
20	92	38	18	10	K20	K20	K20	K20	K20	280
16	77	32	15	8	K16	K16	K16	K16	K16	231
12	61	25	12	6	K12	K12	K12	K12	K12	181
10	52	22	10	5	K10	K10	K10	K10	K10	153
8	44	18	9	4	K8	K8	K8	K8	K8	128
6	34	14	7	3	K6	K6	K6	K6	K6	98
4	24	10	5	2	K4	K4	K4	K4	K4	69

- NOTE:
1. SEE UG-8, RESTRAINED LENGTHS FOR PVC PIPE DETAIL FOR NOTES 1 THROUGH 9 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT
REV. BY DATE
February 25, 2020
DATE OF APPROVAL

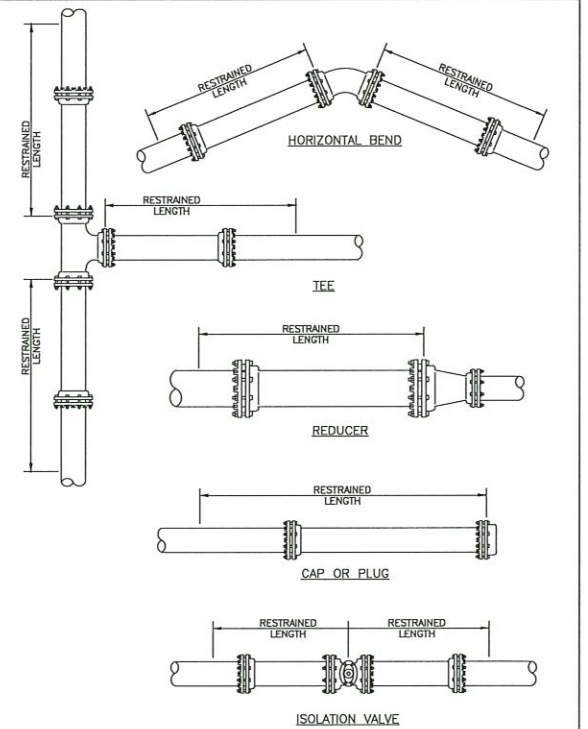
RESTRAINED
LENGTHS FOR DIP
UG-9

- NOTES:
1. CONCRETE PAVEMENT SHALL BE REMOVED WITH SAWED EDGES AND CUT AT A MINIMUM DEPTH OF ONE AND ONE-HALF (1-1/2)". IF A SAW CUT IN CONCRETE PAVEMENT FALLS WITHIN THREE FEET (3') OF A CONTRACTION JOINT, COLD JOINT, EXPANSION JOINT OR EDGE, THE CONCRETE SHALL BE REMOVED TO THE JOINT OR EDGE. THE EDGES OF EXISTING CONCRETE PAVEMENT ADJACENT TO TRENCHES, WHICH HAD BEEN DAMAGED SUBSEQUENT TO SAW CUTTING OF PAVEMENT, SHALL BE SAW CUT TO NEAT STRAIGHT LINES FOR THE PURPOSE OF REMOVING THE DAMAGED PAVEMENT AREAS.
 2. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 3. 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.
 4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 5. THICKNESS TO MATCH EXISTING OR BE 8" 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 CRUSHED CONCRETE, 8" MIN. THICKNESS, LBR ≥150.
 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 3 THRU 8 ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



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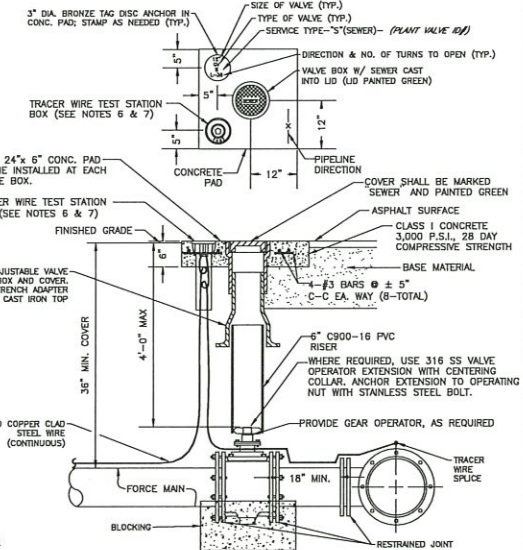
TYPE F
CURB & GUTTER
201.2



- NOTE:
1. SEE DETAIL UG-8 RESTRAINED LENGTHS FOR PVC PIPE FOR NOTES 1 THROUGH 9 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR PIPE.

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RESTRAINED
LENGTHS FOR PIPE
UG-10



- NOTES:
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 1/4\"/>

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VALVE, BOX,
COVER AND TAG
US-11

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KHA PROJECT
148400036
DATE
7/14/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY JWM
CHECKED BY WEW



HOLMES BOULEVARD FORCE MAIN
REPLACEMENT

MANATEE COUNTY

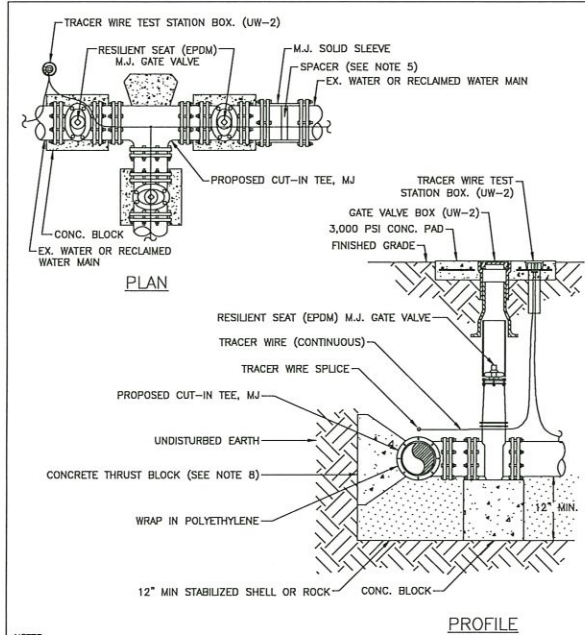


CONSTRUCTION DETAILS

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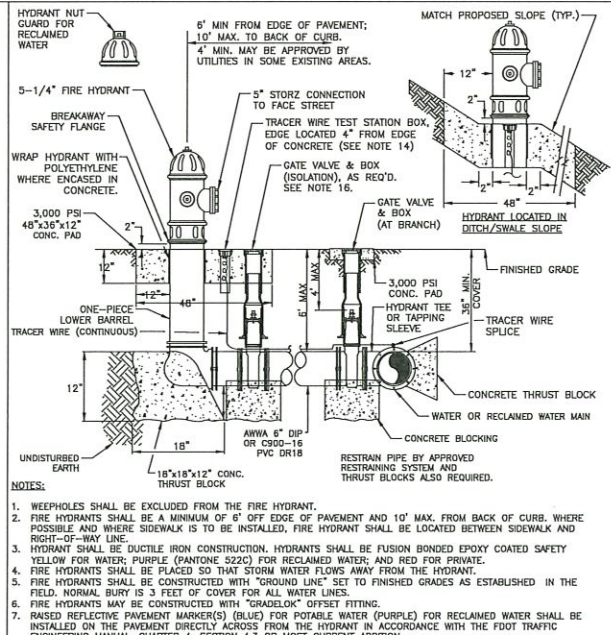
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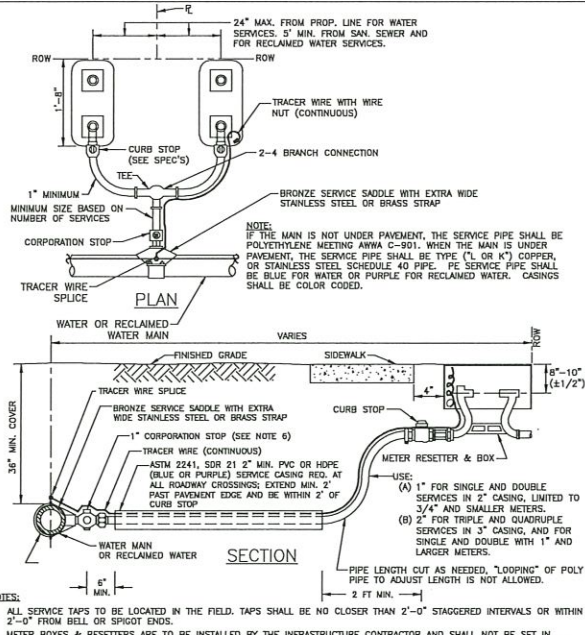
- NOTES:
1. ALL FITTINGS TO BE WRAPPED WITH 20 MIL POLYETHYLENE WRAP AT THRUST BLOCK.
 2. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.
 3. WATER VALVES SHALL BE INSTALLED ON ALL SIDES OF TEES AND CROSSES, UNLESS INLINE VALVES ON THAT LEG WITHIN 200 FEET.
 4. RESTRAINED JOINTS MUST EXTEND FROM TEE FULL LENGTH SPECIFIED FOR VALVES.
 5. SPACER IS REQUIRED IF A GAP EXISTS. SPACER NOT TO EXCEED OVER 30% OF SLEEVE WIDTH.
 6. IN ASBESTOS CONCRETE PIPE (ACP) APPLICATIONS TWO COUPLINGS ARE REQUIRED. ALL FITTINGS INCLUDING COUPLINGS SHALL BE SUPPORTED WITH CONCRETE BLOCKING TO PREVENT SETTLEMENT.
 7. ALL EXISTING RESTRAINING SHALL BE MODIFIED AND OR RE-INSTATED AS NECESSARY, TO MEET THE RESTRAINT REQUIREMENT FOR VALVES.
 8. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES".

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		CUT-IN TEE	UW-4
REV. BY	DATE		
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	DATE OF APPROVAL		



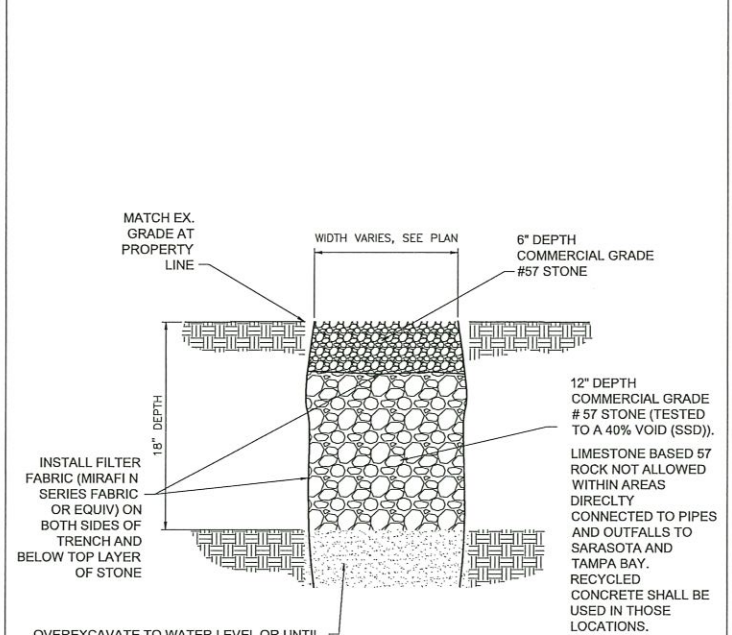
- NOTES:
1. WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
 2. FIRE HYDRANTS SHALL BE A MINIMUM OF 6' OFF EDGE OF PAVEMENT AND 10' MAX. FROM BACK OF CURB, WHERE POSSIBLE AND WHERE SIDEWALK IS TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT-OF-WAY LINE.
 3. HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION. HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER, PURPLE (PANTONE 522C) FOR RECLAIMED WATER, AND RED FOR PRIVATE.
 4. FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
 5. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
 6. FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GRADELOCK" OFFSET FITTING.
 7. RAISED REFLECTIVE PAVEMENT MARKER(S) (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER SHALL BE INSTALLED ON THE PAVEMENT DIRECTLY ACROSS FROM THE HYDRANT IN ACCORDANCE WITH THE FDOT TRAFFIC ENGINEERING MANUAL, CHAPTER 4, SECTION 4.3 OR MOST CURRENT ADDITION.
 8. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
 9. FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
 10. IN-LINE VALVES SHOULD BE LOCATED AT HYDRANT TEES.
 11. HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER OR RECLAIMED MAIN.
 12. THERE MUST BE A CLEARANCE OF 7 1/2 FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ABOVE GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC. PER THE FLORIDA FIRE PREVENTION CODE.
 13. SEE STANDARD DETAIL UW-2 GATE VALVE BOX, LID AND TAG.
 14. SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP A SIDEWALK, THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.
 15. IF A HYDRANT IS LOCATED ON THE SLOPE OF A DITCH OR SWALE, THE CONCRETE PAD SHALL CONFORM TO THE FINISH GRADE/SLOPE. THE CONCRETE PAD SHALL BE LEVEL 2-INCHES BEHIND & IN FRONT OF THE HYDRANT.
 16. AT THE DISCRETION OF THE COUNTY AN ADDITIONAL ISOLATION GATE VALVE SHALL BE ADDED, WHEN A PHYSICAL BARRIER IS PRESENT, (I.E. ROADWAY, FENCE, WALL, BERM ETC), BETWEEN THE BRANCH GATE VALVE AND THE HYDRANT.
 17. SEE SECTION 1.11 HYDRANTS IN THE PUBLIC WORKS UTILITY STANDARDS MANUAL FOR FURTHER DETAILS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		FIRE HYDRANT ASSEMBLY	UW-5
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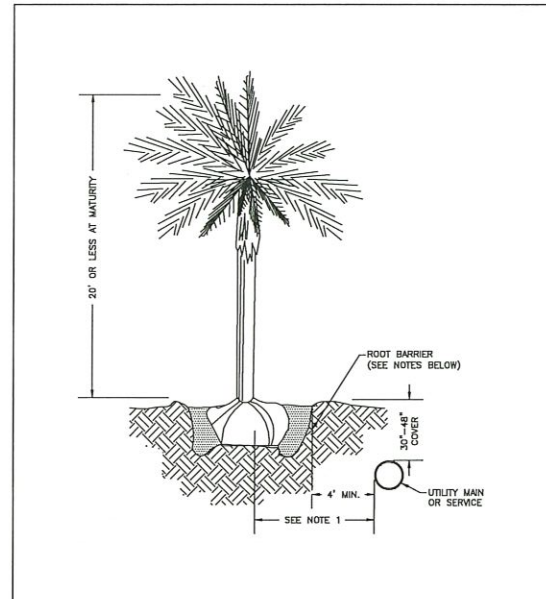
- NOTES:
1. ALL SERVICE TAPS TO BE LOCATED IN THE FIELD. TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVALS OR WITHIN 2'-0" FROM BELL OR SPOUT ENDS.
 2. METER BOXES & RESETTERS ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS. WITH PRIOR APPROVAL BY COUNTY, METER BOXES WITH LOCKABLE LIDS MAY BE LOCATED IN SIDEWALKS.
 3. "WM" OR "RW" TO BE IMPRESSED INTO THE NEWLY POURED CONCRETE CURB ALONG WITH DISTANCE IN FEET TO THE METER. IF NO CURB, INSTALL A BLUE DISC WITH "WM" OR A PURPLE DISC WITH "RW" AND A 1/8" x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
 4. COLOR CODED TRACER WIRE SHALL BE INSTALLED WITH WATER AND RECLAIMED MAIN AND ALL SERVICES. SERVICE WIRE SHALL BE CONNECTED TO THE TRACER WIRE ALONG THE MAIN. ON DOUBLE SERVICES, WHEN SECOND METER IS OVER 8 FT APART, TWO TRACER WIRES SHALL BE INSTALLED, ONE FOR EACH METER.
 5. WATER AND RECLAIMED WATER SERVICE LINES TO BE 5" MINIMUM FROM SEWER SERVICE PIPES.
 6. FOR 2" SERVICES REPLACE CORPORATION STOP WITH 2" RESILIENT WEDGE FIP GATE VALVE W/BOX, LID & TAG.
 7. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE ROW IS ONE FOOT (CUL-DE-SAC W/MEDIAN) A 10'-FOOT-WIDE PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOT, ADJACENT TO THE ROW.
 8. TEMPORARY RESIDENTIAL USE CAN BE PROVIDED BY CONTACTING THE UTILITY CUSTOMER SERVICE. SEE DETAIL UW-19.
 9. SERVICE TUBING SHALL NOT BE CRIMPED OR KINKED TO RE-ADJUST CURB STOP LOCATION.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYPICAL SERVICE CONNECTION	UW-21
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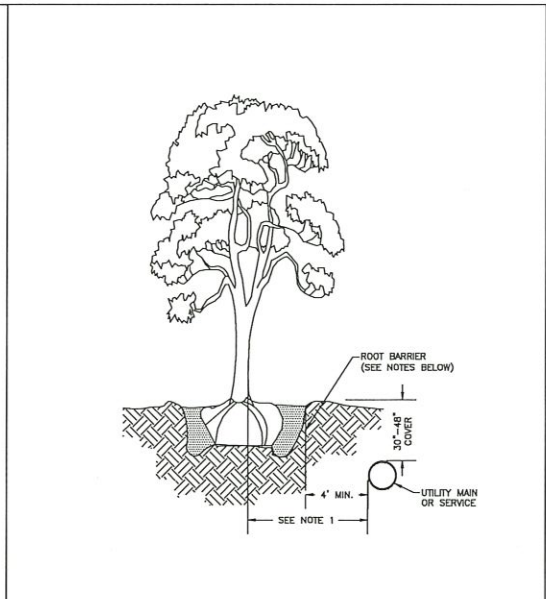
HEAVY DUTY INFILTRATION TRENCH
NTS

DRAWN BY:	DATE:	CITY OF BRADENTON BEACH PUBLIC WORKS STANDARD DETAIL 1.04
LTB	7-2016	
REVISION NO.	SCALE:	
1	NTS	



- NOTES:
1. THIS DISTANCE SHALL BE 7" MINIMUM WITH ROOT BARRIER AND 10" MINIMUM IF NO ROOT BARRIER IS USED.
 2. ALL ROOT BARRIERS SHALL BE 4" MINIMUM FROM ALL MAINS AND SERVICES.
 3. THE INSTALLATION OF ROOT BARRIERS SHALL BE COORDINATED WITH MANATEE COUNTY AND INSPECTED BY MANATEE COUNTY PRIOR TO BACKFILLING. ALL ROOT BARRIERS SHALL EXTEND UP TO FINISHED GRADE.
 4. ROOT BARRIERS SHALL BE A FLEXIBLE PANEL BARRIER, A MINIMUM 36" DEEP.
 5. ALL ROOT BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYP. SMALL TREE OR PALM TREE WITH ROOT BARRIER	UG-19
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- NOTES:
1. THIS DISTANCE SHALL BE 10" MINIMUM WITH ROOT BARRIER AND 15" MINIMUM IF NO ROOT BARRIER IS USED.
 2. ALL ROOT BARRIERS SHALL BE 4" MINIMUM FROM ALL MAINS AND SERVICES.
 3. THE INSTALLATION OF ROOT BARRIERS SHALL BE COORDINATED WITH MANATEE COUNTY AND INSPECTED BY MANATEE COUNTY PRIOR TO BACKFILLING. ALL ROOT BARRIERS SHALL EXTEND UP TO FINISHED GRADE.
 4. ROOT BARRIERS SHALL BE MINIMUM 36" DEEP. FLEXIBLE BARRIERS SHALL BE 36" PANELS.
 5. ALL ROOT BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.
 6. LARGE PALM TREES INCLUDE ROYAL, WASHINGTONIAN, BISMARK AND SIMILAR SIZED SPECIES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		TYP. CANOPY TREE, LARGE PALM OR EXOTIC TREE WITH ROOT BARRIER	UG-20
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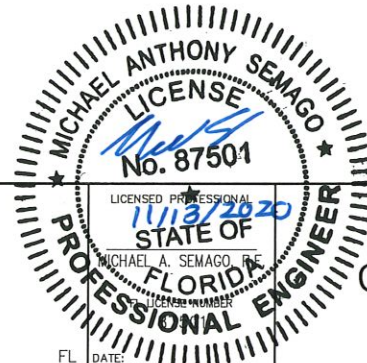
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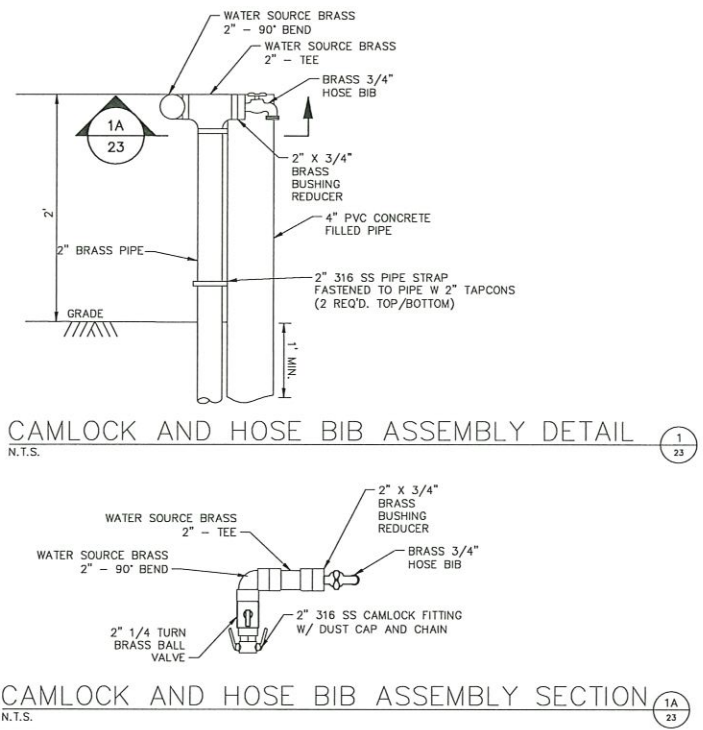
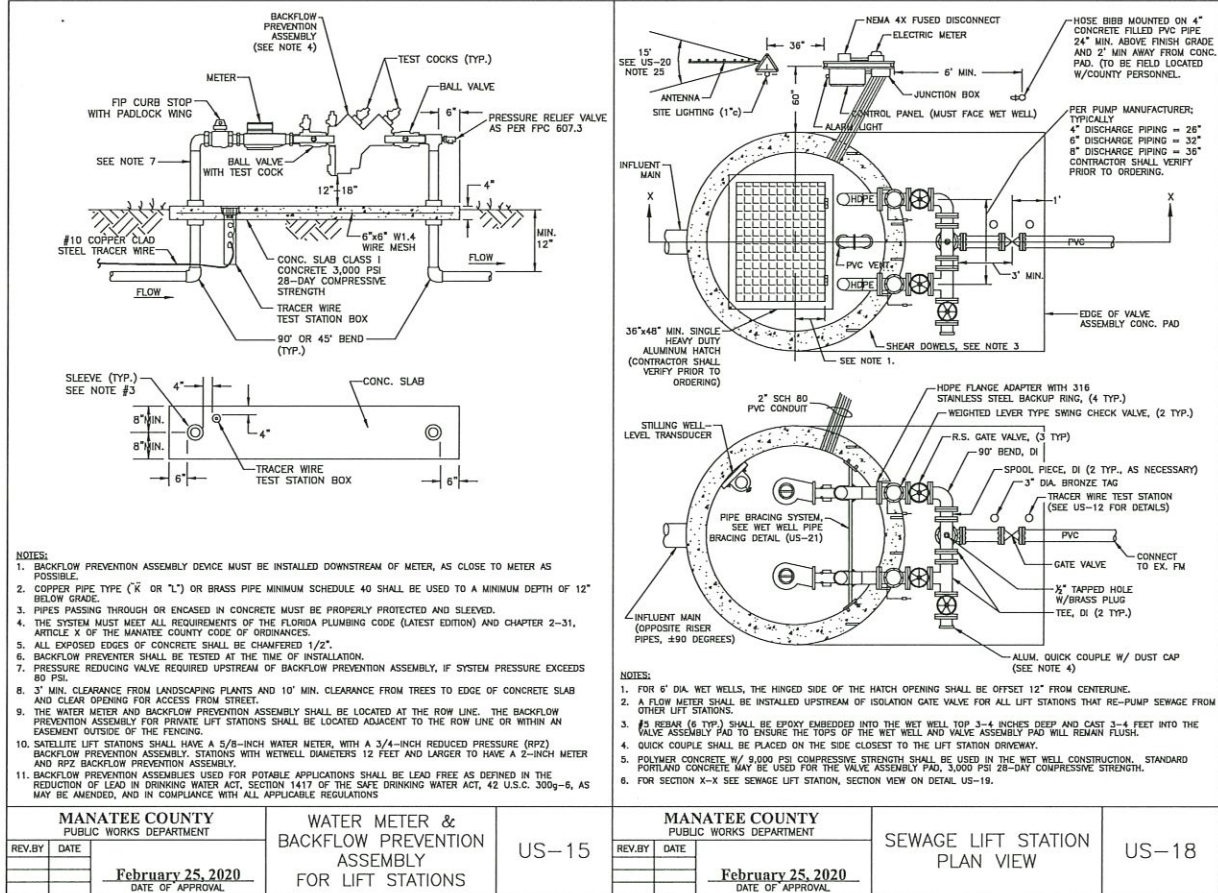


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