

CONSTRUCTION PLANS
FOR
BASIN 16 GRAVITY SEWER REHABILITATION

MANATEE COUNTY, FLORIDA

OCTOBER 2020

MANATEE COUNTY PROJECT #6089980



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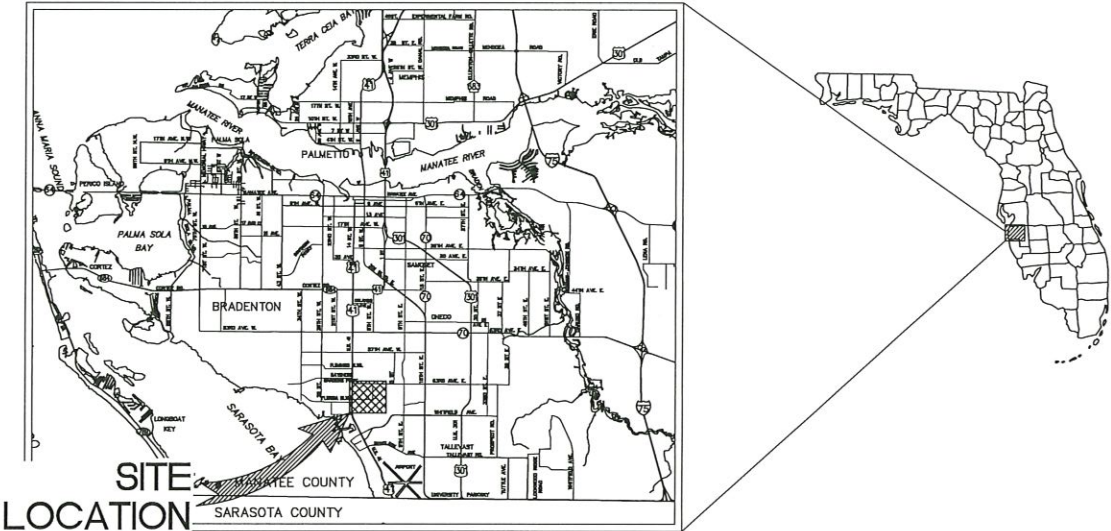
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PROJECT VICINITY MAP
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BID SUBMITTAL

PREPARED BY
Kimley»Horn

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THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILES SHALL BE FURNISHED 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 THE STAKEOUT.

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DATE: 10/21/2020
PROJECT NO. 6089980
SHEET NUMBER G-1

MICHAEL ANTHONY SEMAGO
FLORIDA LICENSE NUMBER 87501
PROFESSIONAL ENGINEER

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GENERAL

- ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS: MICHAEL STURM, P.E. AND CAN BE REACHED AT (941) 708-7450 X7332
- SITE VISITS ARE MANDATORY FOR ALL BIDDERS. THESE SITE VISITS CAN BE ARRANGED THROUGH THE PROJECT MANAGER.
- 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.
- 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. 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 SEWER SERVICE OPERATIONS AT ALL TIMES.
- THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH A DETAILED CONSTRUCTION PHASING PLAN BASED ON THE CONNECTION SEQUENCING BELOW, FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. EXISTING FORCE MAIN SHALL REMAIN IN SERVICE UNTIL ALL CONNECTIONS TO THE PROPOSED FORCE MAIN ARE CONSTRUCTED.
- 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 DUCTILE IRON PIPE SHALL HAVE PUSH-ON OR MECHANICAL JOINTS, AND ALL ABOVE GROUND DUCTILE IRON PIPE SHALL HAVE FLANGED JOINTS. ALL JOINTS SHALL BE FULLY RESTRAINED PER THE DETAILS IN THESE PLANS.
- 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.
- 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 02615 OF SPECIFICATIONS.
- IT SHALL BE THE CONTRACTORS 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 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.
- 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 FDEP "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, 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.
- 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. 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.
- 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/FDOT RIGHT-OF-WAY AND/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 A RIGHTS-OF-WAY USE PERMIT 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.
 - 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.
 - 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 TO CUT. ALL DRIVEWAYS WILL BE IN PASSABLE CONDITION AT THE END OF THE WORK DAY AND FULLY RESTORED PER SECTION 02575.
 - 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, 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.
- 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.
- 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.
- ALL MAINS TO BE ABANDONED IN PLACE SHALL BE GROUTED PER THE SPECIFICATIONS.
- 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

- 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 DISTURBED LANDSCAPING SHALL BE RESTORED TO PRECONSTRUCTION CONDITIONS. CONTRACTOR SHALL COORDINATE DETAILS WITH 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, AND SECTION 310 OF THE F.D.O.T. DESIGN STANDARDS AND PER MANATEE COUNTY PUBLIC WORKS 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 WITH A 10 FT MINIMUM FOR CURBS.

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 SWEPT 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.
- 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).
- 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.
- 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 (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.
- THE MCUD 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.

FDOT NOTES

ALL WORK PERFORMED WITHIN THE FDOT R/W SHALL CONFORM TO:

- FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION (2016) (A.K.A. STANDARD SPECS).
- FDOT DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE AND OPERATIONS ON THE STATE HIGHWAY SYSTEM, 2016, (A.K.A. STANDARD INDEX), COMPLIANCE WITH ALL APPLICABLE INDICES IS REQUIRED.
- FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY PLANS PREPARATION MANUAL, VOLUME 1, CHAPTERS 2 AND 25, (REVISED 2013).
- FLORIDA DEPARTMENT OF TRANSPORTATION FLEXIBLE PAVEMENT DESIGN MANUAL FOR NEW CONSTRUCTION AND PAVEMENT REHABILITATION, JANUARY 2015.
- ALL TRAFFIC STRIPES AND MARKINGS ARE TO BE LEAD FREE, NON-SOLVENT BASED THERMOPLASTIC. THE PERMITTEE SHALL FURNISH THE DEPARTMENT WITH THE MANUFACTURER'S CERTIFICATION THAT THE THERMOPLASTIC IS LEAD FREE.
- LANE CLOSURE MAY NEED TO BE ALTERED DEPENDING ON THE AREA THE WORK IS TAKING PLACE.

TRAFFIC CONTROL NOTES

- 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.
- CONTRACTOR TO COORDINATE WITH FDOT FOR ALL WORK DONE ON A STATE FACILITY.
- 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.
- LANE CLOSURES SHALL OCCUR BETWEEN 9:00 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.
- 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 UTILIZING STANDARD INDEX 660.
- 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"

- 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 PRIOR TO OPENING THE ROADWAY TO 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 WORK ZONE AREA IS PLACED ON THE SAME DAY THAT THE LANES ARE MILLED, BEFORE THE MILLING TO TRAFFIC. INSTALL TEMPORARY PAVEMENT MARKINGS TO RE-OPEN THE LANE 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 AARON BURKETT AT 941-708-7509 OR AARON.BURKETT@MANATEE.ORG
- CONTRACTOR TO MAINTAIN VEHICLE DETECTION IN OPERATION FOR LANES THAT WILL REMAIN OPEN. CONTRACTOR TO COORDINATE ALL VEHICLE DETECTION ISSUES WITH AARON BURKETT OF MANATEE COUNTY AT 941-708-7509 OR AARON.BURKETT@MANATEE.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 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.

- 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

- ALL WORK SCHEDULE SHALL BE COORDINATED WITH MANATEE COUNTY.

ABBREVIATIONS

RJ - RESTRAINED JOINT
R/W - RIGHT-OF-WAY
HDD - HORIZONTAL DIRECTIONAL DRILL
RCP - REINFORCED CONCRETE PIPE
ARV - AIR RELEASE VALVE
HDPE - HIGH DENSITY POLYETHYLENE
PVC - POLYVINYL CHLORIDE
ST - STORM DRAIN
EX - EXISTING
BT - BURIED TELEPHONE
SS - SANITARY SEWER
FM - FORCE MAIN
WM - WATER MAIN
RCLM - RECLAIM WATER MAIN
ECP - ELLIPTICAL CONCRETE PIPE

KIMLEY HORN LEGEND

PROPOSED GRAVITY
SEWER MAIN

EX. RECLAIM WATER

EX. FORCEMAIN

EX. WATERMAIN

EX. SANITARY SEWER

EX. STORM

EX. BURIED TELEPHONE/FIBER

EX. FIBER OPTICS

EX. BURIED ELECTRIC

EX. TV

EX. GAS

EX. TRAFFIC

FULL ROADWAY RESTORATION

CONCRETE RESTORATION

REMOVE AND REPLACE CURB

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

G-2

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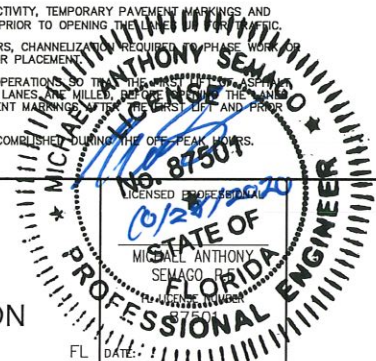
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148400038
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MANATEE COUNTY

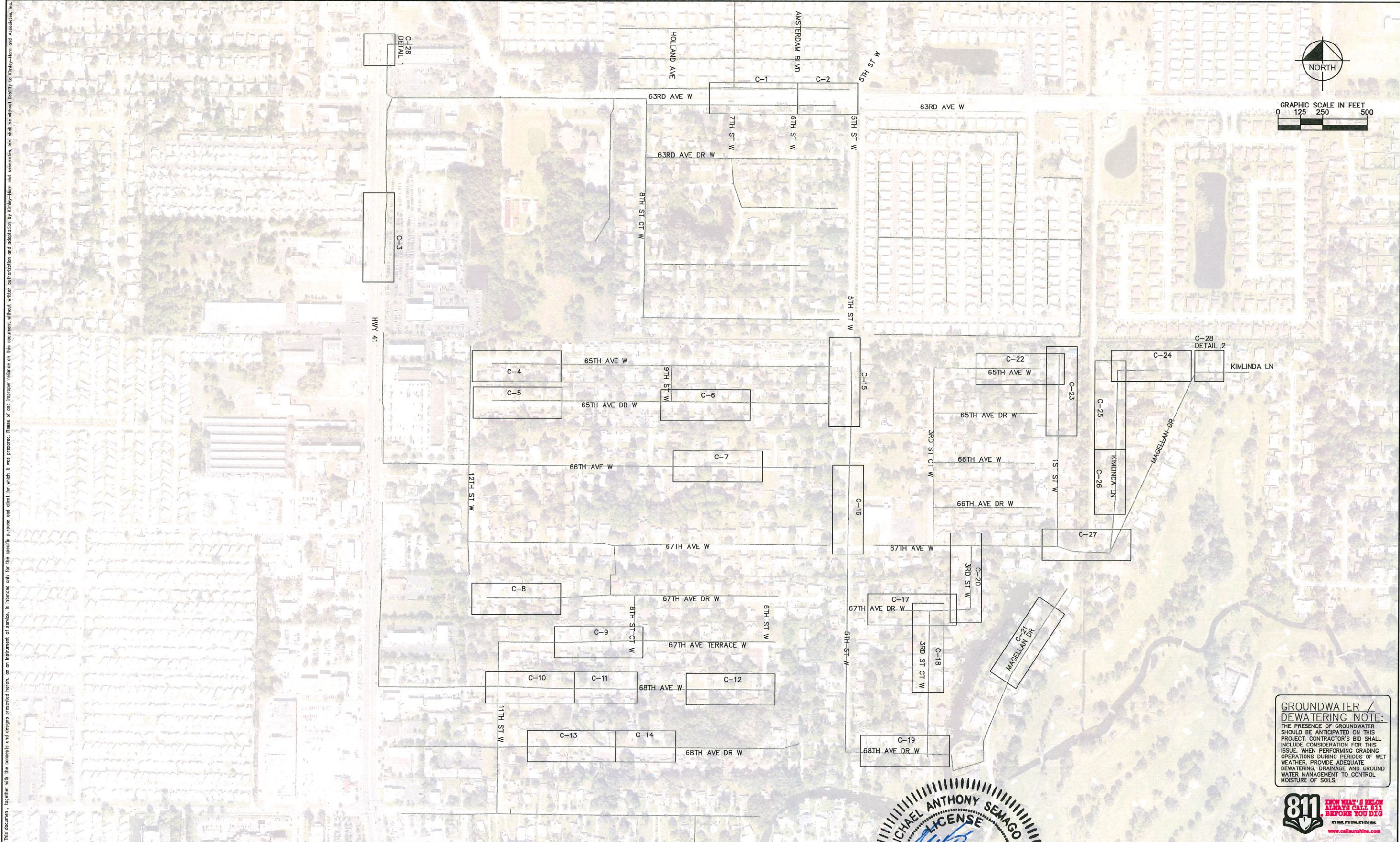


BASIN 16

GRAVITY SEWER REHABILITATION



GENERAL NOTES



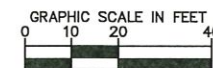
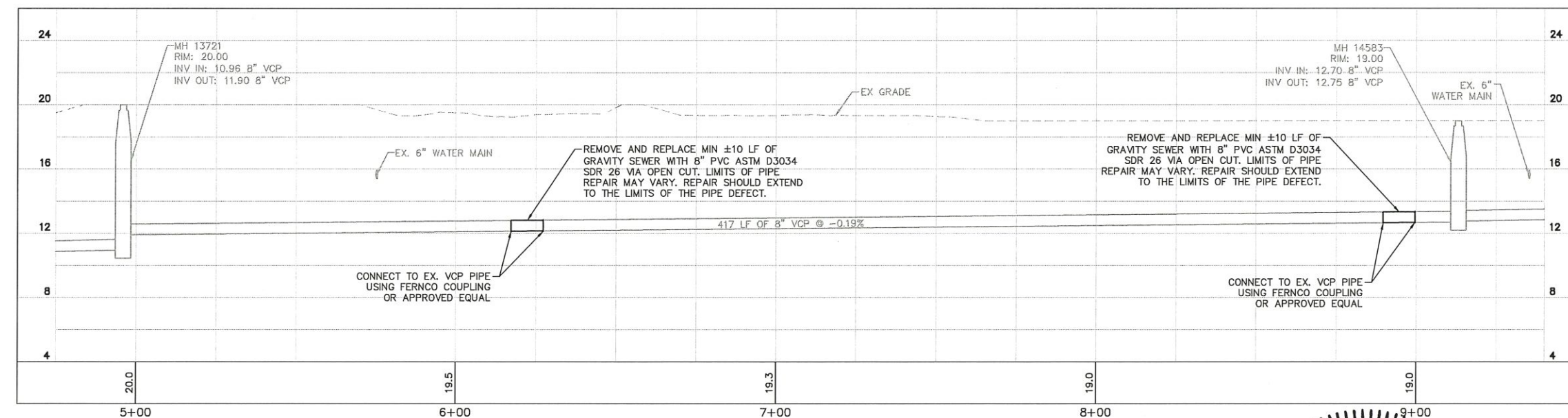
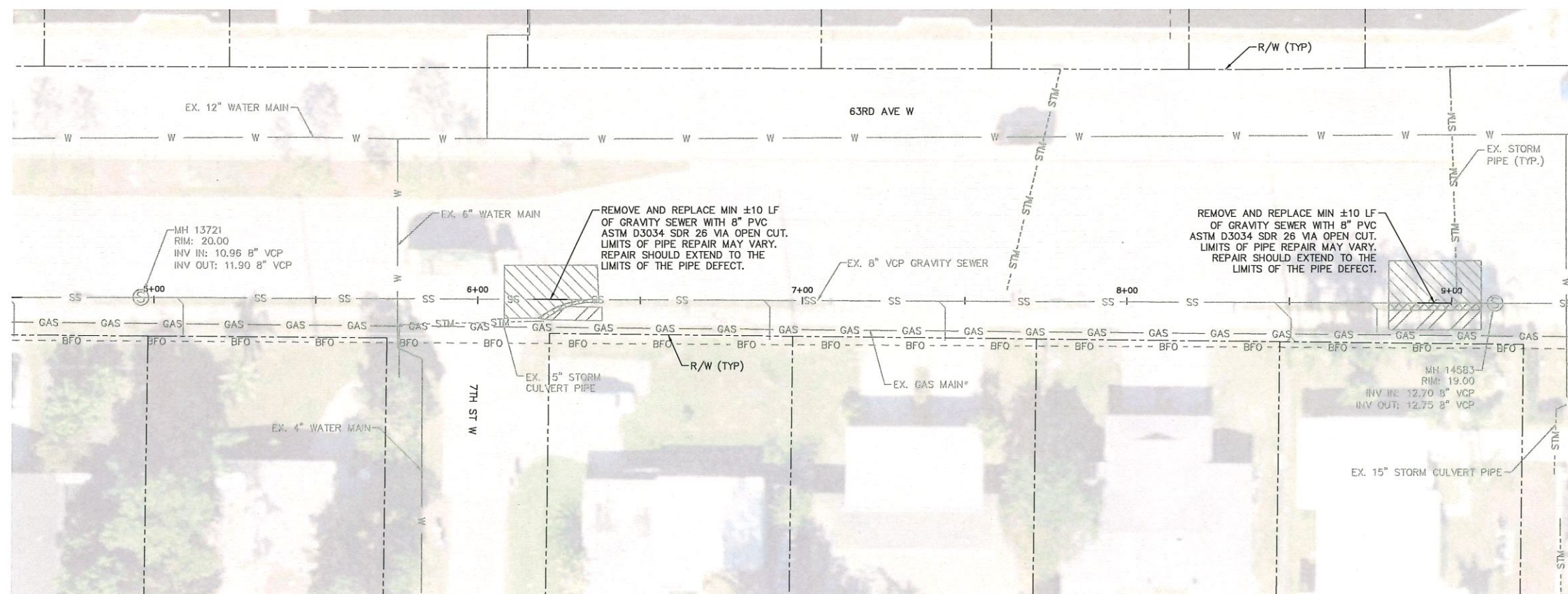
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G-3

KEY SHEET



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

LEGEND

FULL ROADWAY RESTORATION*

CONCRETE RESTORATION*

REMOVE AND REPLACE CURB*

* FINAL RESTORATION LIMITS SHALL BE DETERMINED BY THE COUNTY INSPECTOR FOLLOWING REHABILITATION WORK.

NOTES:

1. CONTRACTOR SHALL EVALUATE SEWER LATERALS FOR POTENTIAL REHABILITATION. CONTRACTOR SHALL PROVIDE CCTV VIDEO OF SEWER LATERAL UP TO THE PROPERTY LINE FOR ENGINEER'S REVIEW PRIOR TO COMMENCING REHABILITATION WORK.
2. ANY WORK PERFORMED ON SEWER SYSTEM SHALL BE WITHIN THE RIGHT-OF-WAY. COUNTY APPROVAL IS REQUIRED PRIOR TO COMMENCING WORK IN PRIVATE PROPERTY.
3. REPLACEMENT OF SEWER LATERAL SHALL INCLUDE ALL WORK FROM THE POINT OF CONNECTION AT THE GRAVITY MAIN LINE TO THE CLEANOUT.
4. CONTRACTOR SHALL MAINTAIN GRAVITY SEWER FLOWS AT ALL TIMES DURING CONSTRUCTION
5. ALL POINT REPAIRS SHALL BE CONSTRUCTED TO MATCH EXISTING SLOPE

*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 REPAIR WORK AREA. CONTRACTOR SHALL INCLUDE IN THE UNIT COST OF THE SUBJECT CONSTRUCTION, THE COST OF UTILITIES ADJUSTMENTS NECESSARY TO COMPLETE THE REPAIR, 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:

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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C-1

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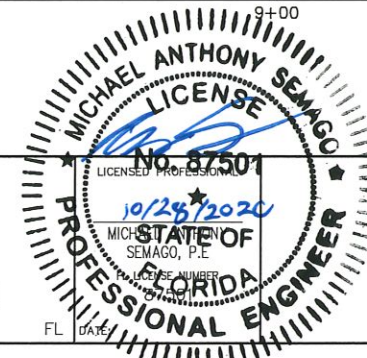
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GRAVITY SEWER REHABILITATION

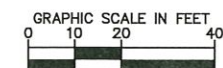
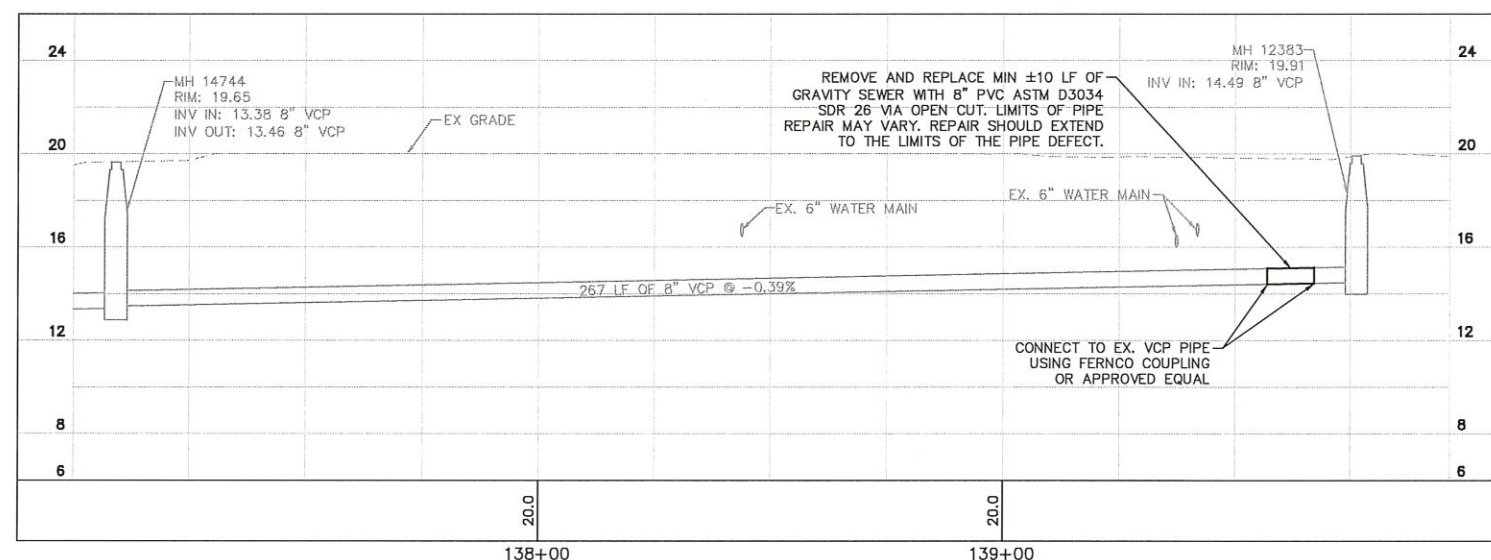
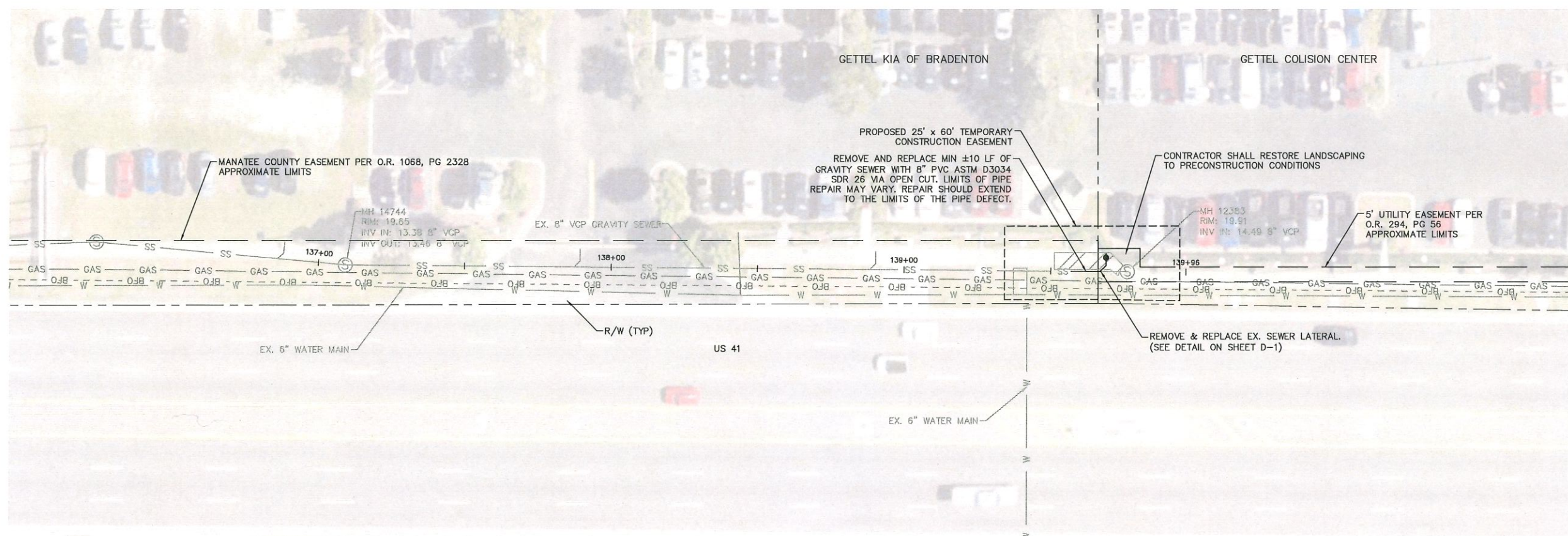
MANATEE COUNTY



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

LEGEND

FULL ROADWAY RESTORATION*

CONCRETE RESTORATION*

REMOVE AND REPLACE CURB*

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GROUNDWATER /
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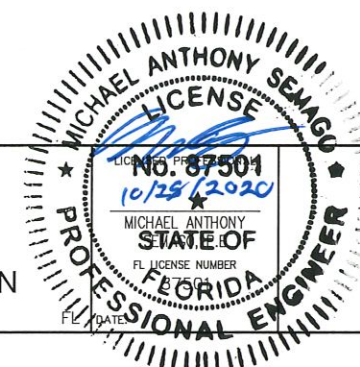
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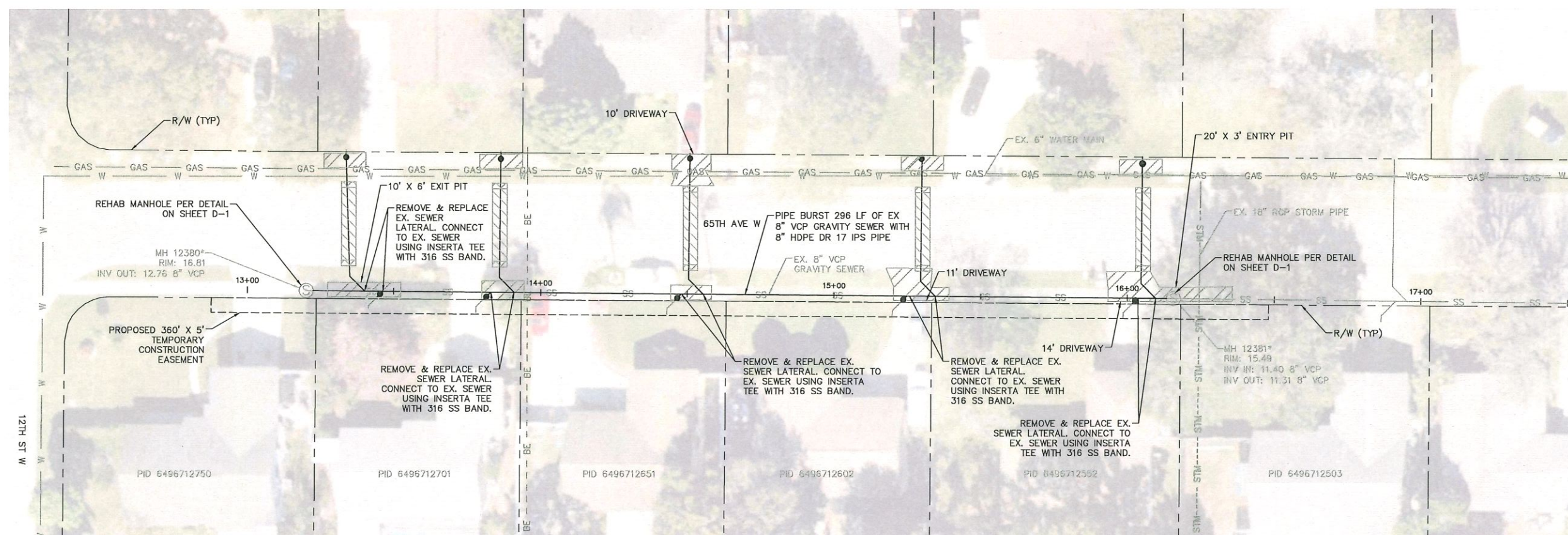
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MANATEE COUNTY



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GROUNDWATER /
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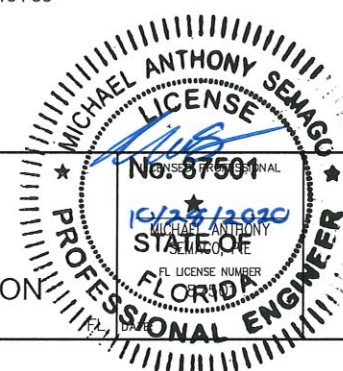
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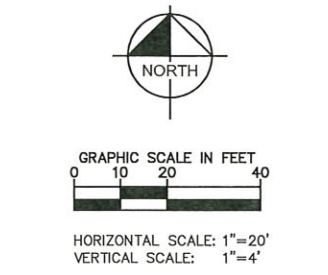
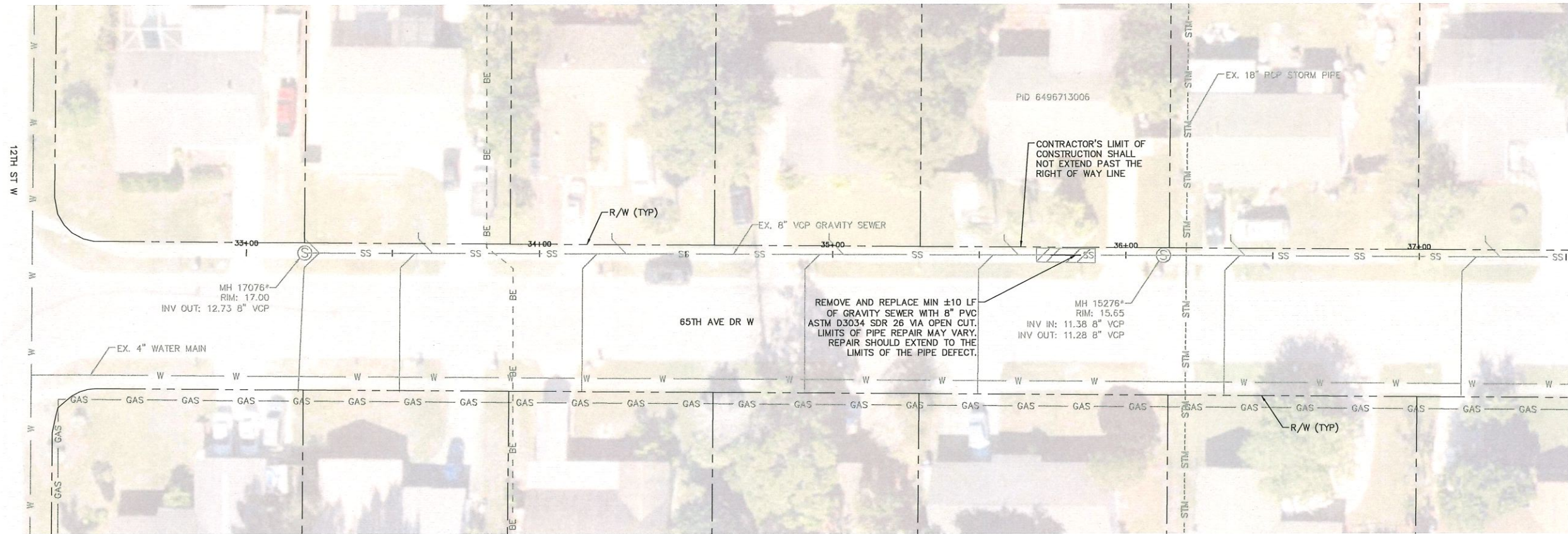
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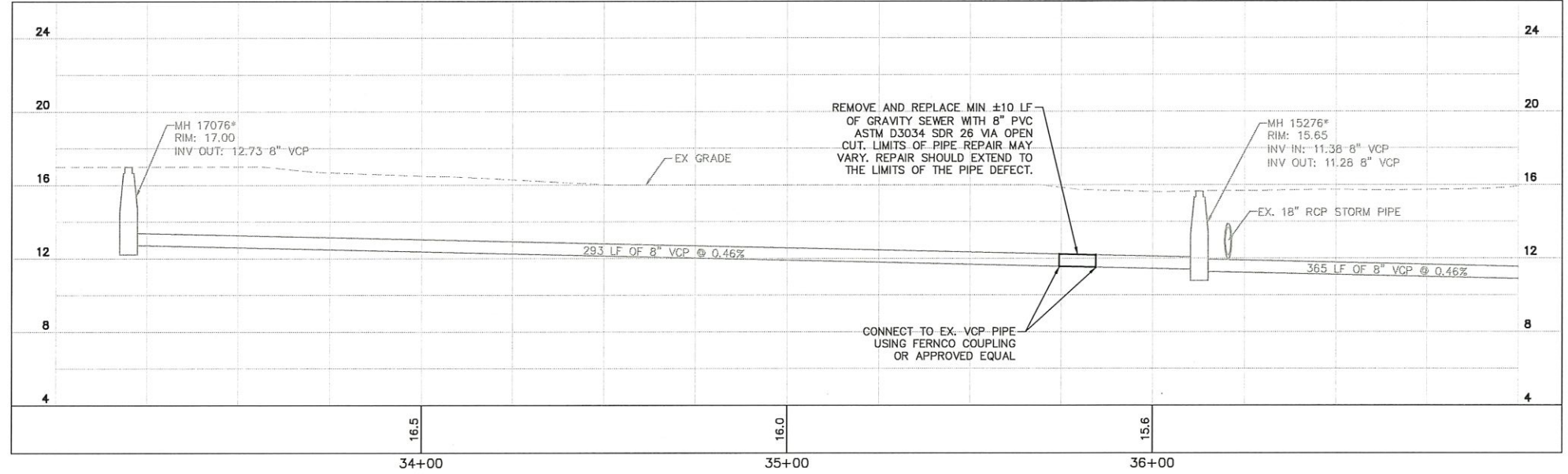
- LEGEND**
- FULL ROADWAY RESTORATION*
 - CONCRETE RESTORATION*
 - REMOVE AND REPLACE CURB*

- * FINAL RESTORATION LIMITS SHALL BE DETERMINED BY THE COUNTY INSPECTOR FOLLOWING REHABILITATION WORK.
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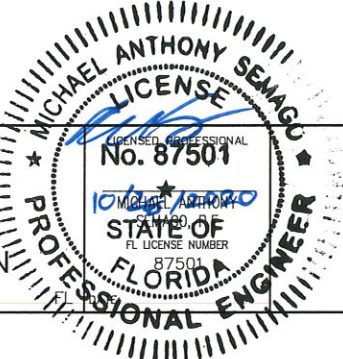
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Manatee County

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GRAVITY SEWER REHABILITATION

MANATEE COUNTY

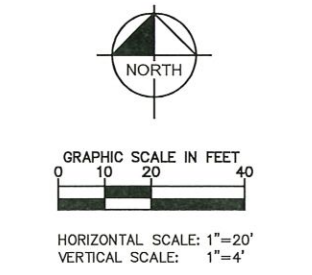
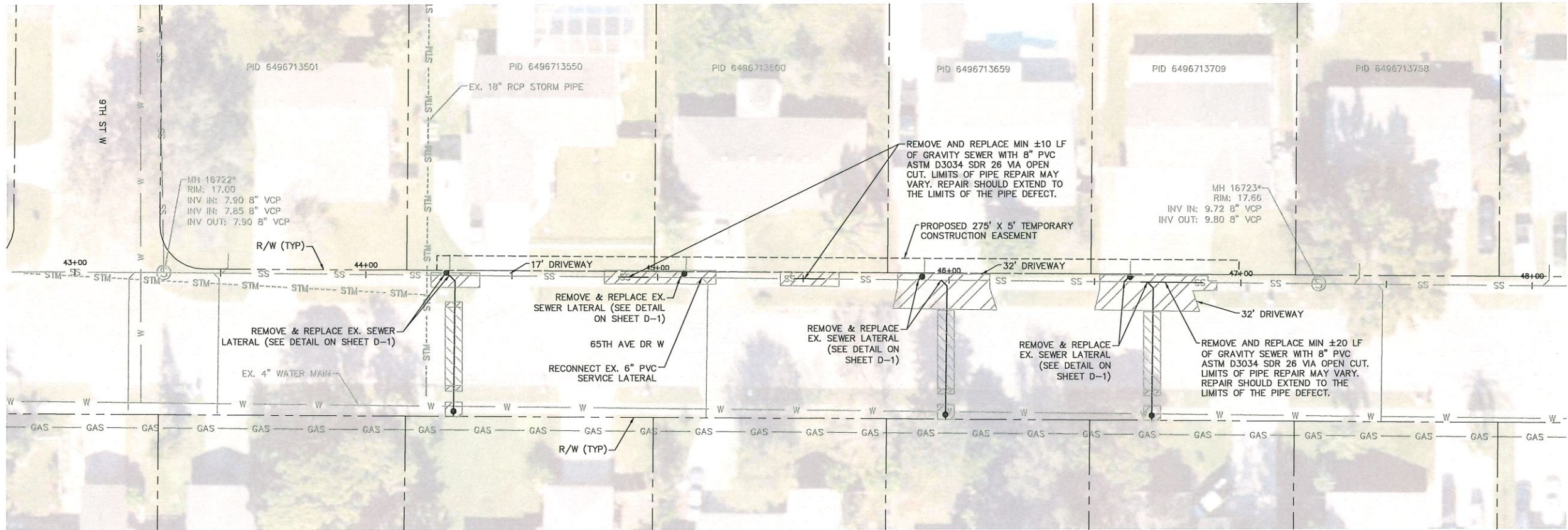


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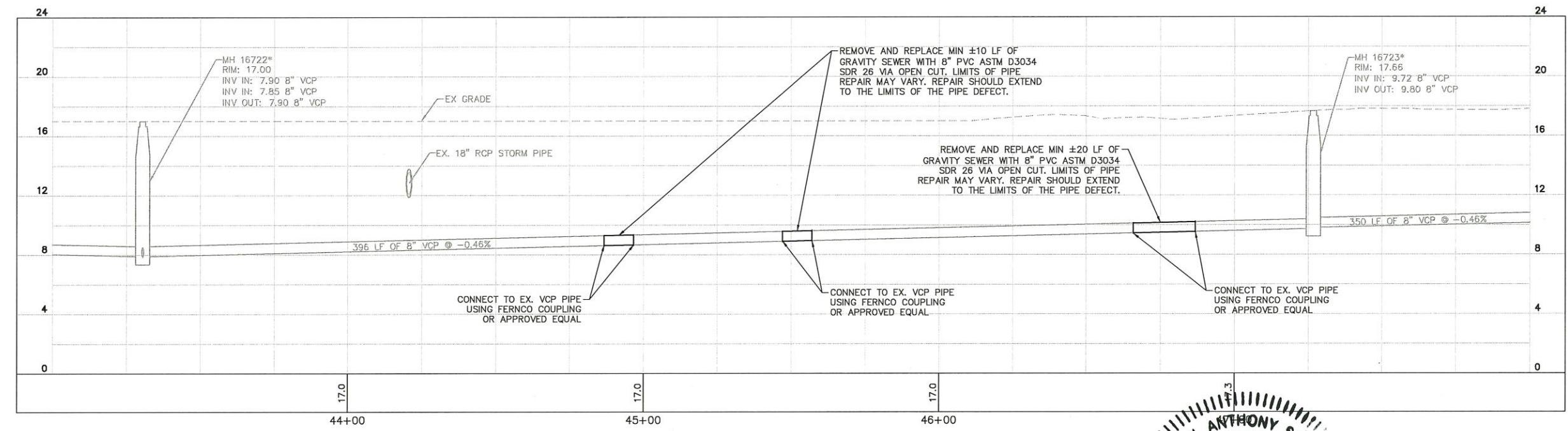
- LEGEND**
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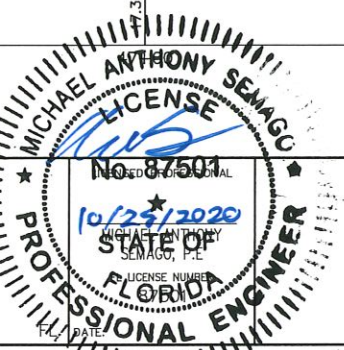
KHA PROJECT 148400038
DATE 10/14/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY ATH
CHECKED BY SNR

Manatee County

BASIN 16

GRAVITY SEWER REHABILITATION

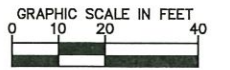
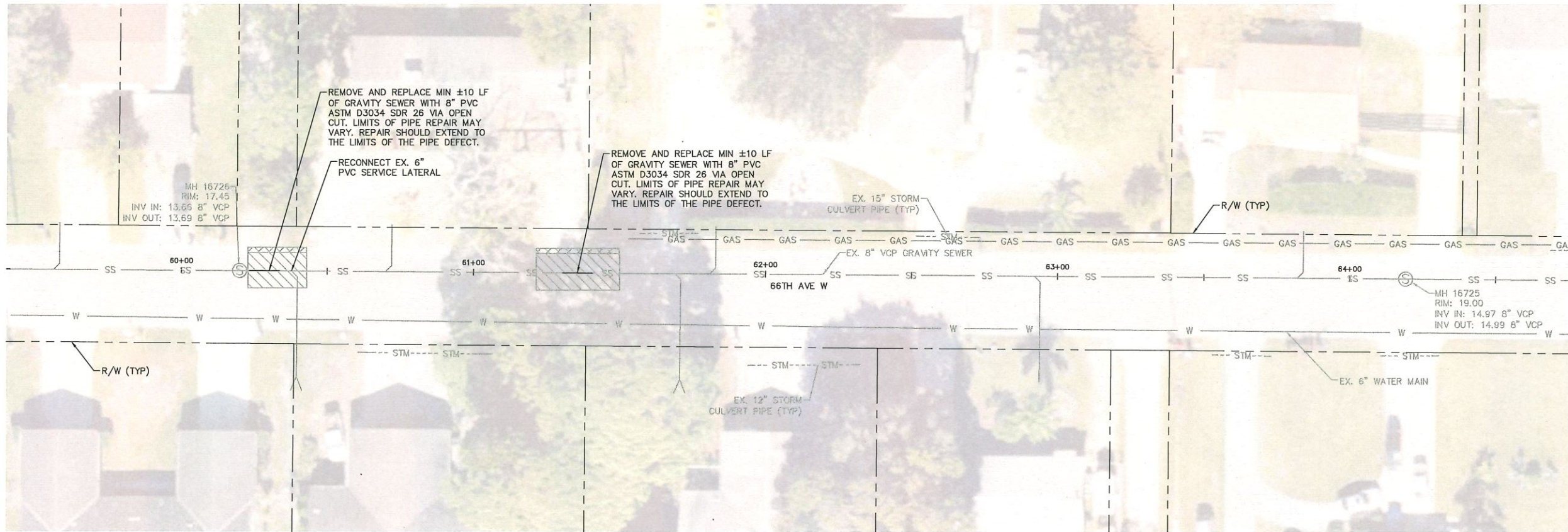
MANATEE COUNTY



PLAN AND PROFILE

SHEET NUMBER
C-6

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

LEGEND

- FULL ROADWAY RESTORATION*
- CONCRETE RESTORATION*
- REMOVE AND REPLACE CURB*

* FINAL RESTORATION LIMITS SHALL BE DETERMINED BY THE COUNTY INSPECTOR FOLLOWING REHABILITATION WORK.

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4. CONTRACTOR SHALL MAINTAIN GRAVITY SEWER FLOWS AT ALL TIMES DURING CONSTRUCTION
5. ALL POINT REPAIRS SHALL BE CONSTRUCTED TO MATCH EXISTING SLOPE

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No.	REVISIONS	DATE	BY

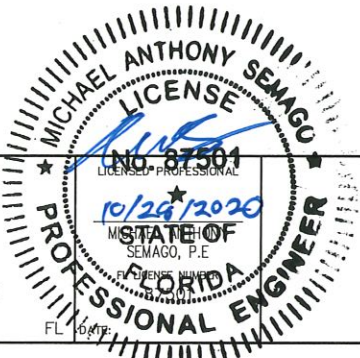
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Manatee County

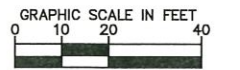
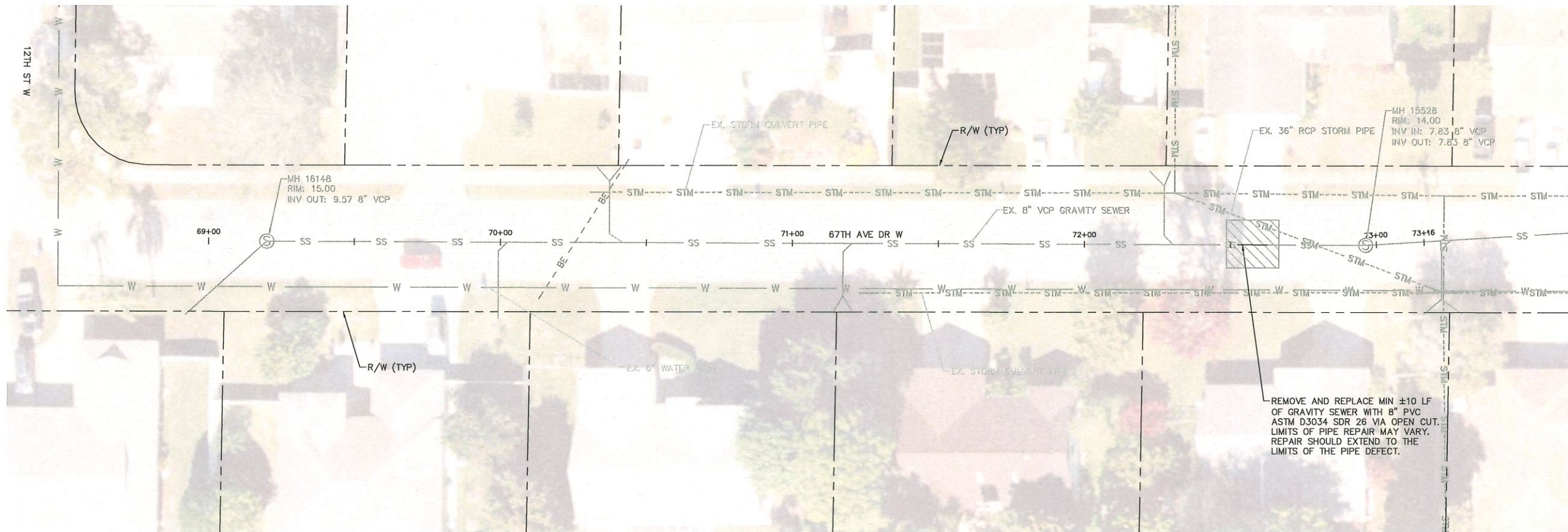
BASIN 16
GRAVITY SEWER REHABILITATION
MANATEE COUNTY



PLAN AND PROFILE

SHEET NUMBER
C-7

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

LEGEND

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- CONCRETE RESTORATION*
- REMOVE AND REPLACE CURB*

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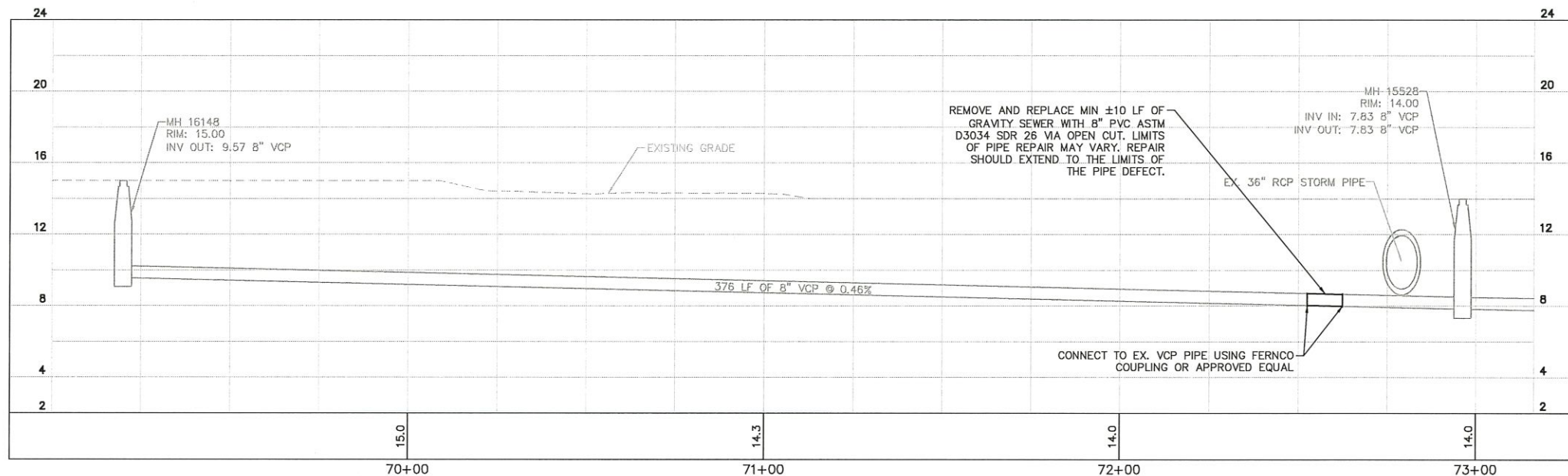
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Manatee County
BASIN 16
GRAVITY SEWER REHABILITATION
MANATEE COUNTY

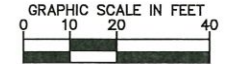
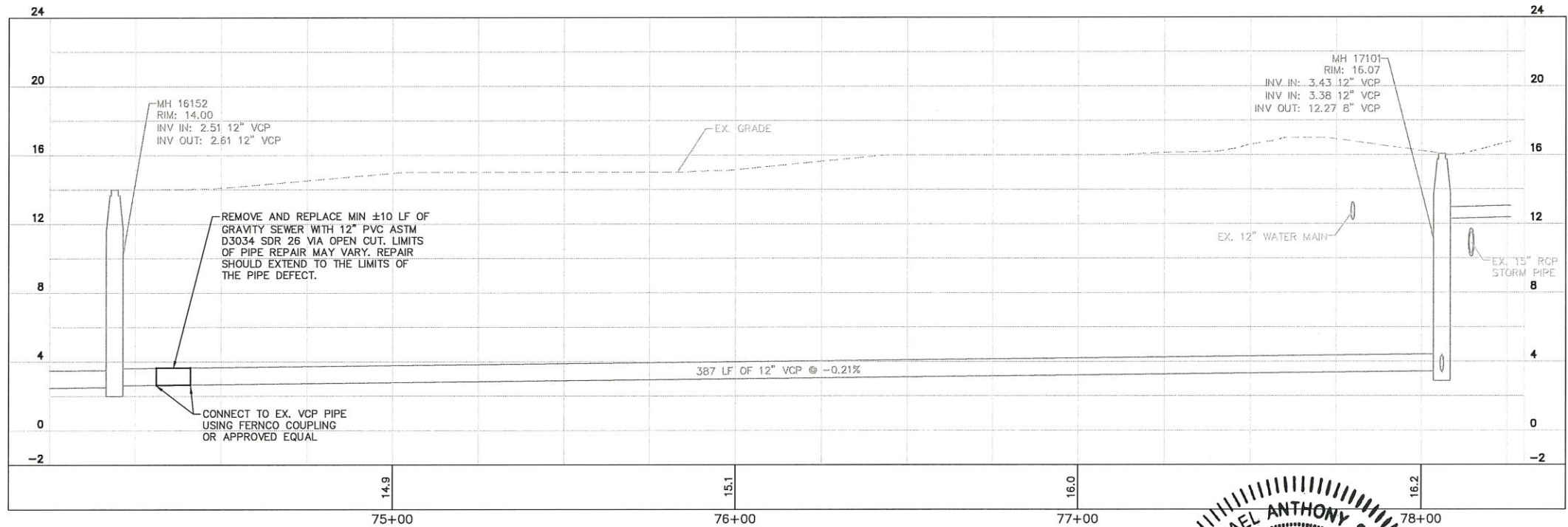
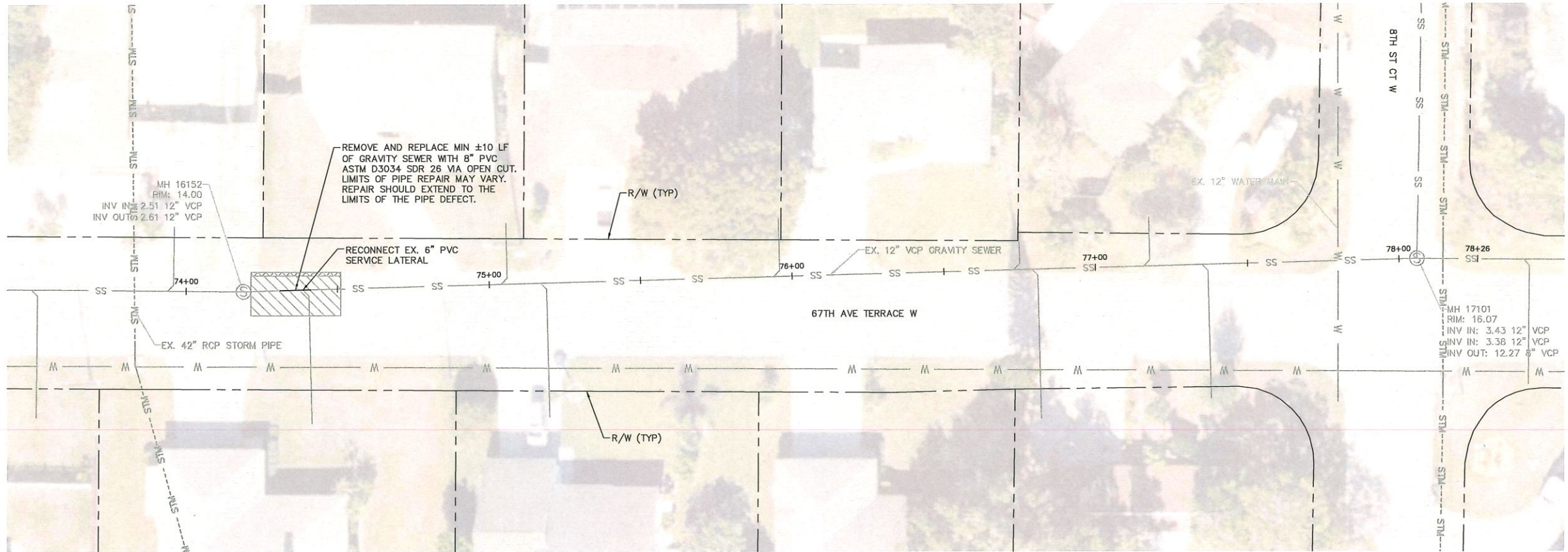


PLAN AND PROFILE

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C-8

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

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 - CONCRETE RESTORATION*
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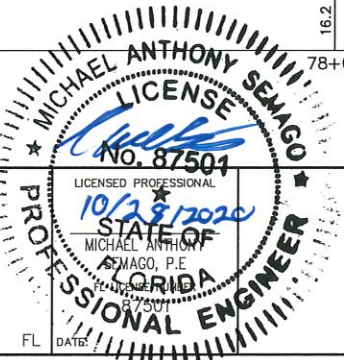
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KHA PROJECT	148400038
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Manatee County

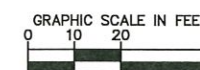
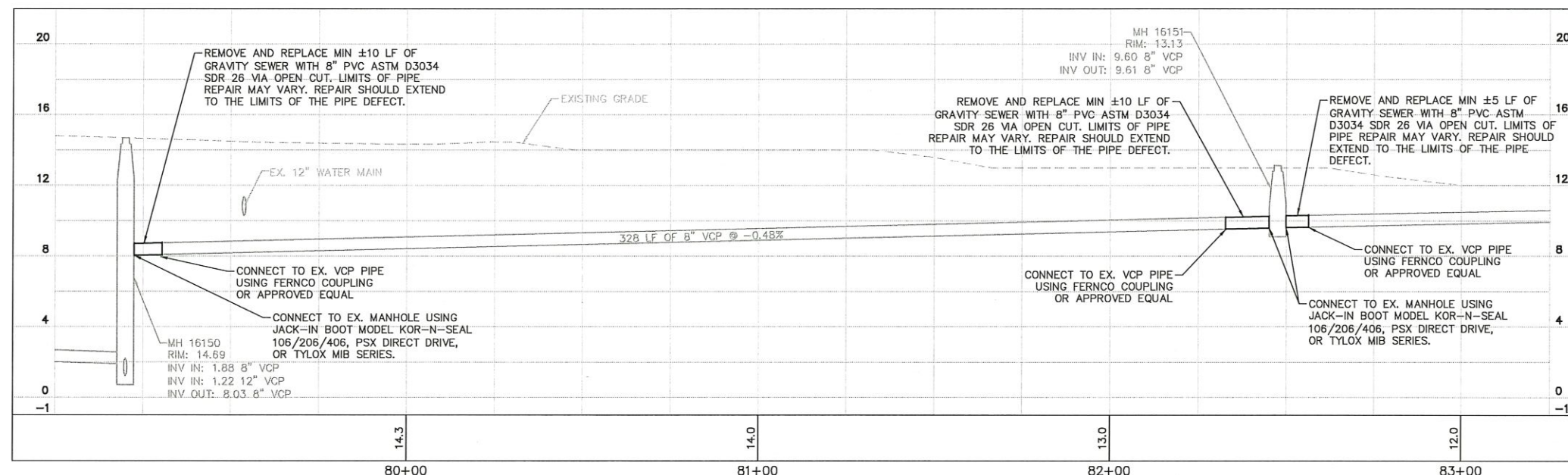
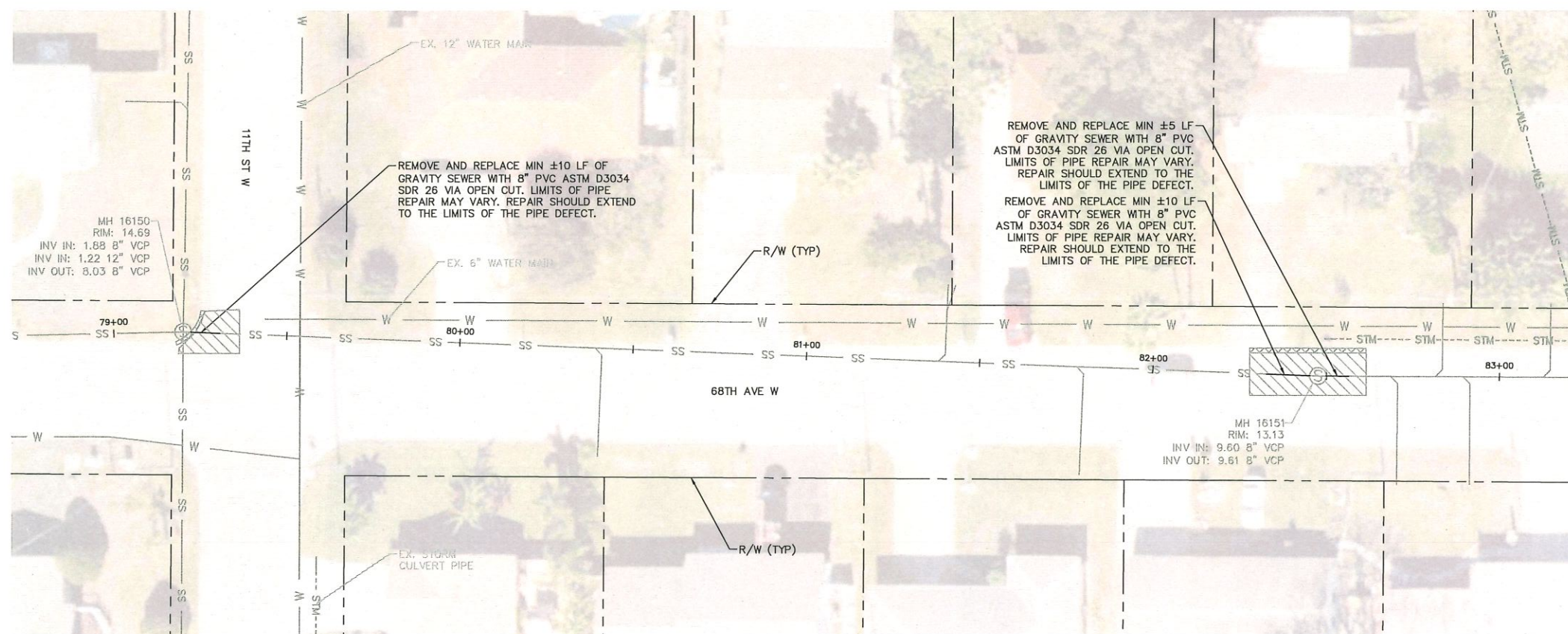
BASIN 16
GRAVITY SEWER REHABILITATION

MANATEE COUNTY



PLAN AND PROFILE

SHEET NUMBER
C-9



HORIZONTAL SCALE: 1"=
VERTICAL SCALE: 1"=

LEGEND

FULL ROADWAY RESTORATION

CONCRETE RESTORATION*

REMOVE AND REPLACE CURB*

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GROUNDWATER /
DEWATERING NOTE

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SHEET NUMBER

C-10

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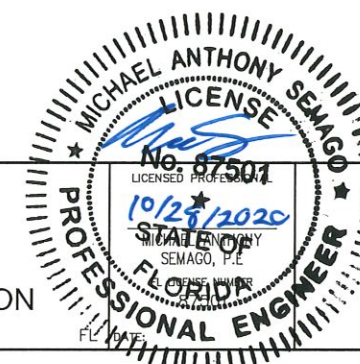
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KHA PROJECT 148400038
DATE 10/14/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY ATH
CHECKED BY SNR



BASIN 16
GRAVITY SEWER REHABILITATION
TEE COUNTY



PLAN AND PROFILE

FL DATE

Plan view of 68th Ave W showing sewer and water lines, manholes, and repair callouts. The drawing includes stationing from 84+00 to 87+00. Key features include:

- 68TH AVE W**: The main road alignment.
- EX. 8" VCP GRAVITY SEWER**: Existing sewer line.
- EX. 8" WATER MAIN**: Existing water main.
- EX. STORM CULVERT PIPE**: Existing storm culvert pipe.
- Manholes**: MH 15530 with RIM: 14.75, INV IN: 11.23 8" VCP, and INV OUT: 11.23 8" VCP.
- Repair Callouts**:
 - REMOVE AND REPLACE MIN ±10 LF OF GRAVITY SEWER WITH 8" PVC ASTM D3034 SDR 26 VIA OPEN CUT. LIMITS OF PIPE REPAIR MAY VARY. REPAIR SHOULD EXTEND TO THE LIMITS OF THE PIPE DEFECT.
 - REMOVE AND REPLACE MIN ±20 LF OF GRAVITY SEWER WITH 8" PVC ASTM D3034 SDR 26 VIA OPEN CUT. LIMITS OF PIPE REPAIR MAY VARY. REPAIR SHOULD EXTEND TO THE LIMITS OF THE PIPE DEFECT.
- Other Labels**: R/W (TYP), 84+00, 85+00, 86+00, 87+00, 8TH ST CT W.



HORIZONTAL SCALE: 1"=20'
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REMOVE AND REPLACE CURB*

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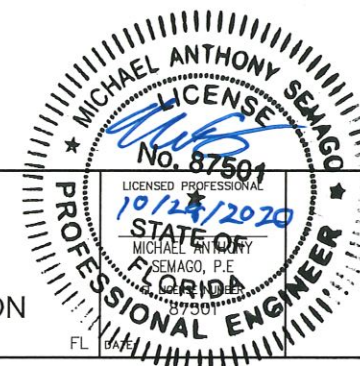
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Manatee
County
FLORIDA

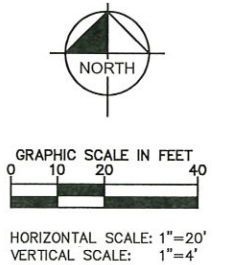
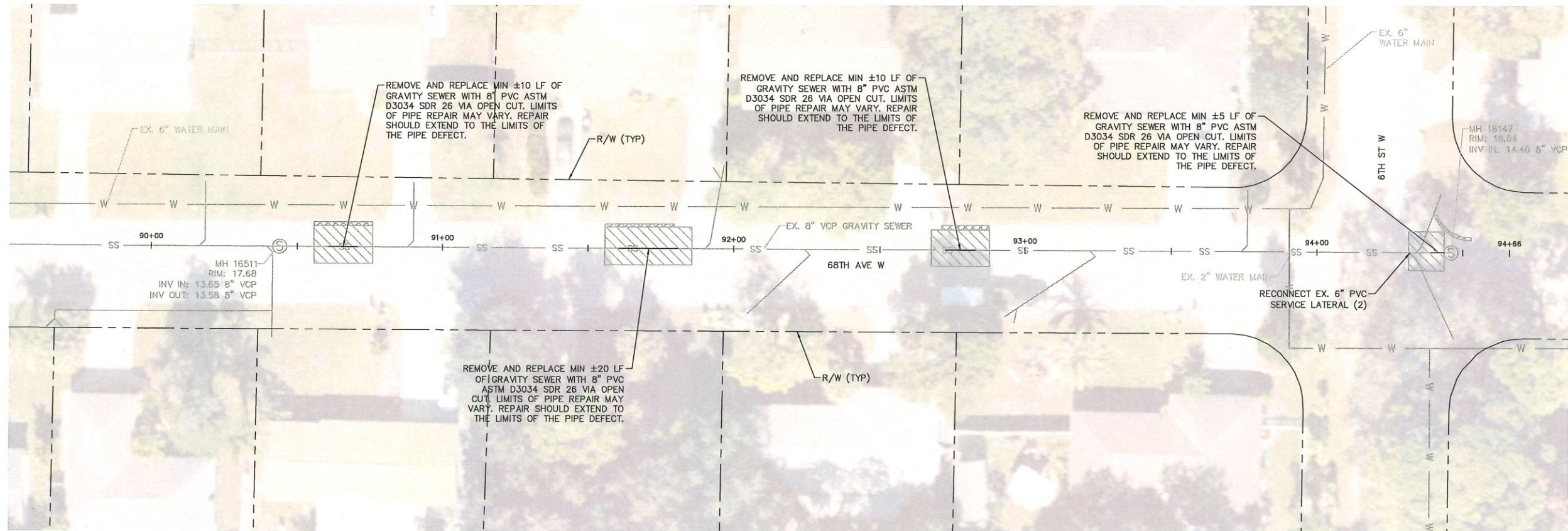
MANATEE COUNTY



PLAN AND PROFILE

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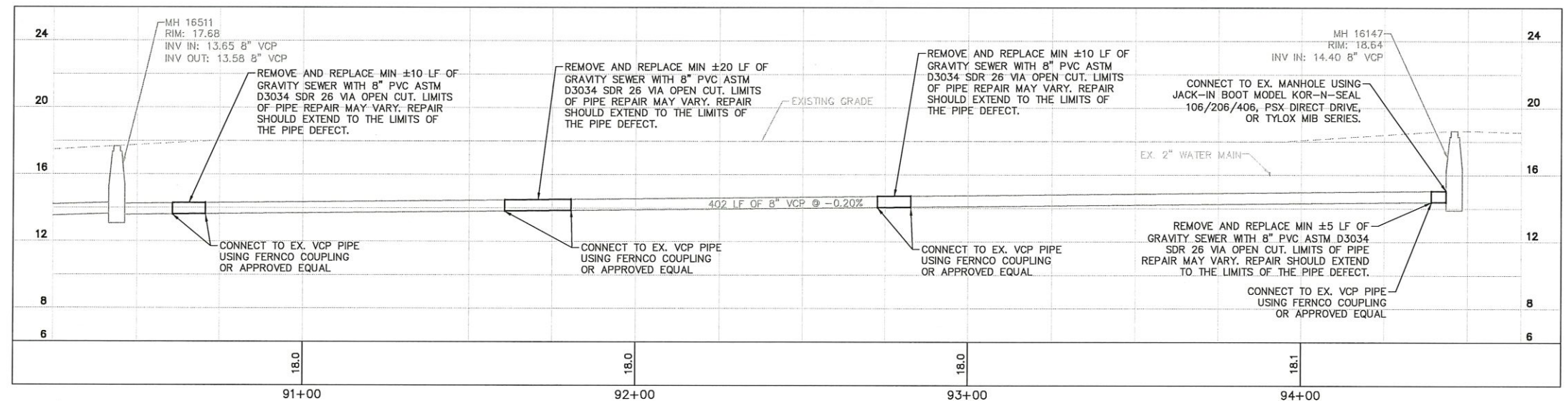
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Manatee County
FLORIDA

BASIN 16
GRAVITY SEWER REHABILITATION
MANATEE COUNTY

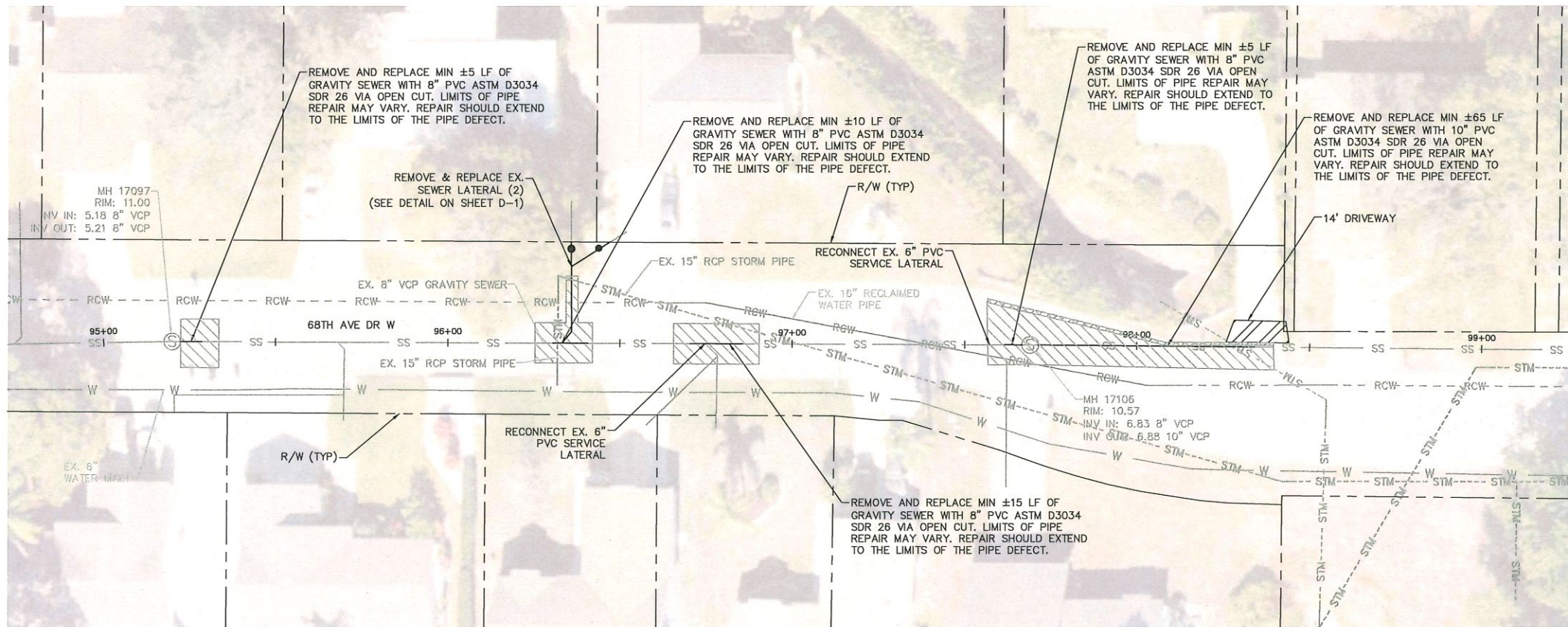
MICHAEL ANTHONY SEMAGO
LICENSE
No. 07501
10/28/2020
MICHAEL ANTHONY
STATE OF
FLORIDA
FLORIDA
PROFESSIONAL ENGINEER

DATE

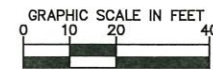
PLAN AND PROFILE

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C-12

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SEE SHEET C-14



- LEGEND**
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 - CONCRETE RESTORATION*
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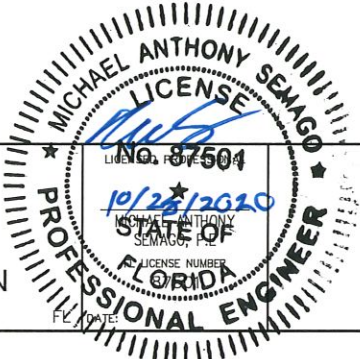
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Manatee County

BASIN 16

GRAVITY SEWER REHABILITATION

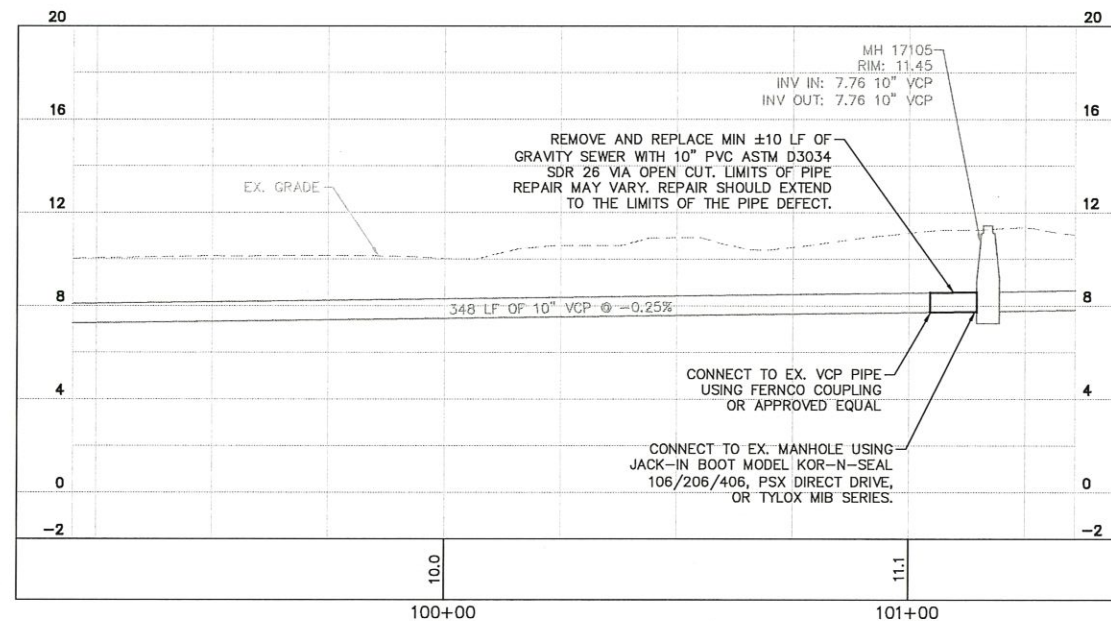
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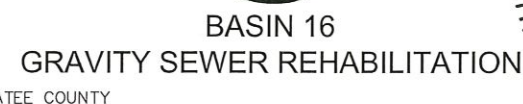
PLAN AND PROFILE

SHEET NUMBER
C-13

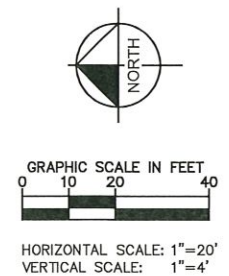
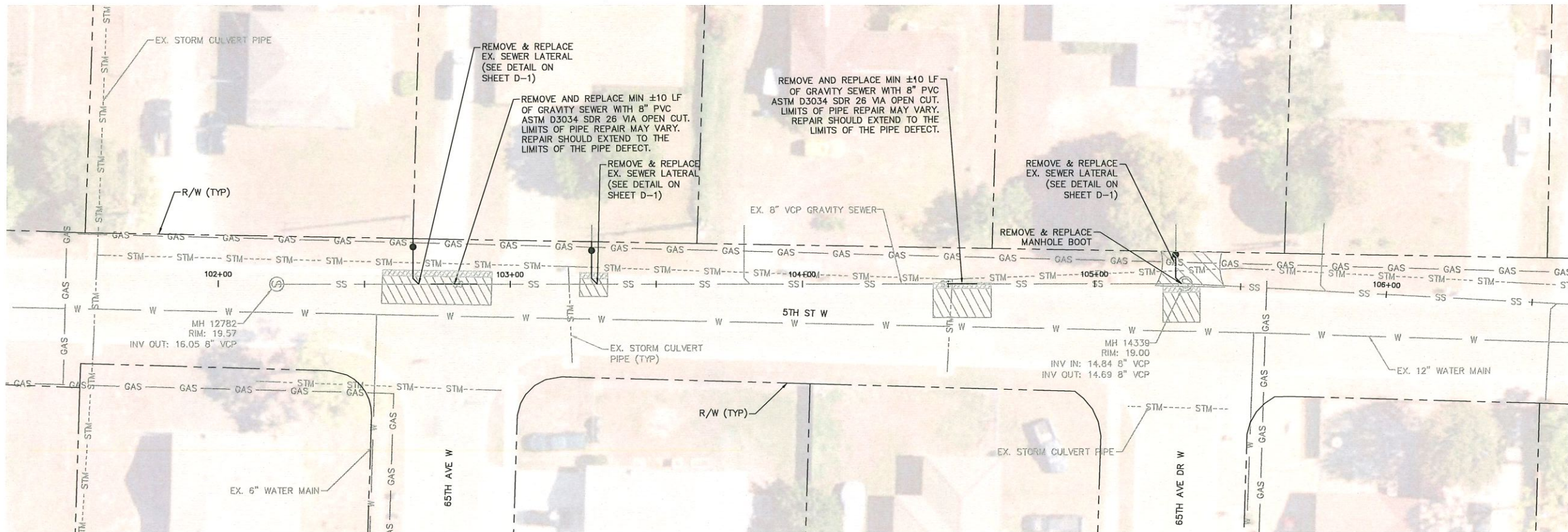
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- LEGEND**
- FULL ROADWAY RESTORATION* [diagonal hatching]
 - CONCRETE RESTORATION* [cross-hatching]
 - REMOVE AND REPLACE CURB* [diagonal hatching]

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Manatee County

BASIN 16

GRAVITY SEWER REHABILITATION

MANATEE COUNTY

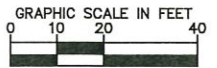
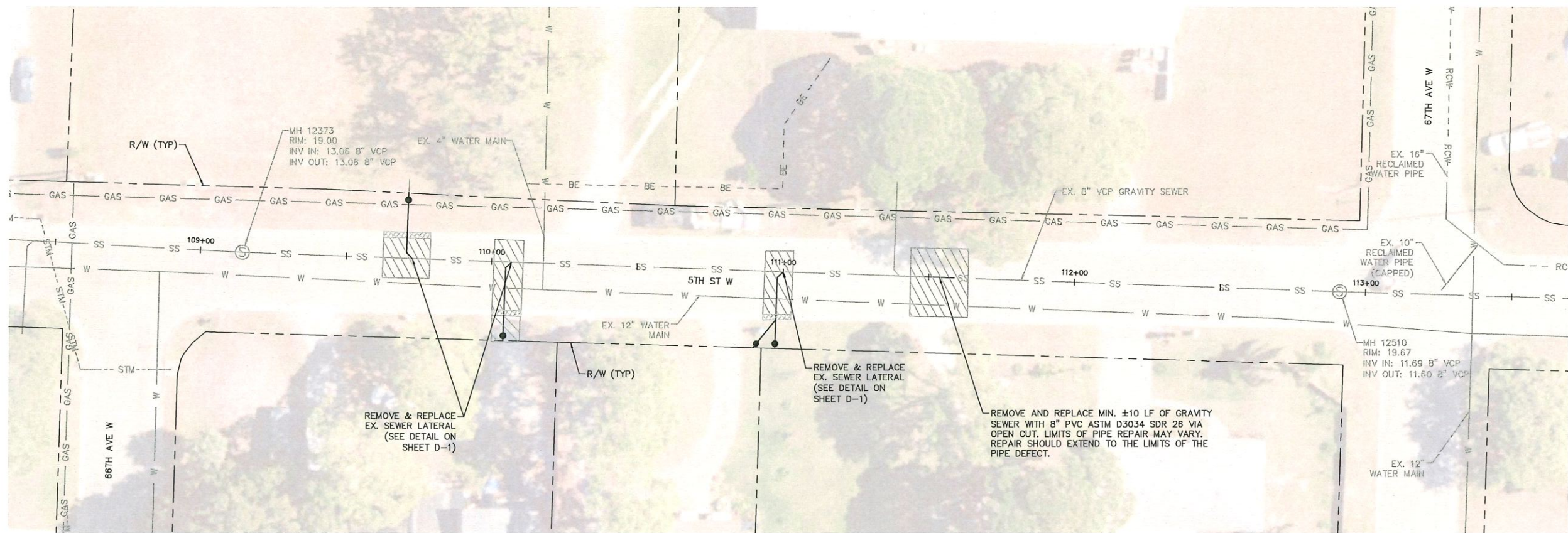


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HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=4'

LEGEND

- FULL ROADWAY RESTORATION*
- CONCRETE RESTORATION*
- REMOVE AND REPLACE CURB*

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SHEET NUMBER

C-16

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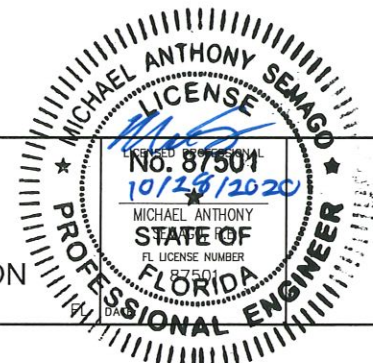
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BASIN 16

GRAVITY SEWER REHABILITATION

MANATEE COUNTY




PLAN AND PROFILE

Sanitary sewer layout plan for 67th Ave Dr W. The plan shows a series of manholes (MH 14613, MH 13954) and pipe segments (8" VCP, 8" VCP). Key features include:

- Manhole 14613:** RIM: 19.00, INV OUT: 13.14 8" VCP.
- Manhole 13954:** RIM: 17.67, INV IN: 11.99 8" VCP, INV OUT: 4.73 8" VCP, INV OUT: 3.67 8" VCP.
- 67th Ave Dr W:** The main sewer line runs horizontally across the plan.
- 3rd St Ct W:** A vertical sewer line intersecting the main line.
- EX. 8" VCP GRAVITY SEWER:** A segment of existing sewer pipe.
- EX. 6" WATER MAIN:** A segment of existing water main.
- Callouts:**
 - REMOVE AND REPLACE MIN ±10 LF OF GRAVITY SEWER WITH 8" PVC ASTM D3034 SDR 26 VIA OPEN CUT. LIMITS OF PIPE REPAIR MAY VARY. REPAIR SHOULD EXTEND TO THE LIMITS OF THE PIPE DEFECT.
 - REMOVE AND REPLACE MIN ±5 LF OF GRAVITY SEWER WITH 8" PVC ASTM D3034 SDR 26 VIA OPEN CUT. LIMITS OF PIPE REPAIR MAY VARY. REPAIR SHOULD EXTEND TO THE LIMITS OF THE PIPE DEFECT.
 - SEE REPAIR DETAILS ON SHEET C-18.



GRAPHIC SCALE IN FEET



A horizontal scale bar with tick marks at 0, 10, 20, and 40 feet. The bar is divided into alternating black and white segments: a black segment from 0 to 10, a white segment from 10 to 20, a black segment from 20 to 30, and a white segment from 30 to 40.

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

LEGEND

FULL ROADWAY RESTORATION*

CONCRETE RESTORATION*

REMOVE AND REPLACE CURB*

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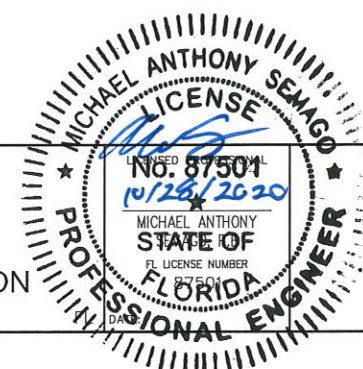
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BASIN 16

GRAVITY SEWER REHABILITATION

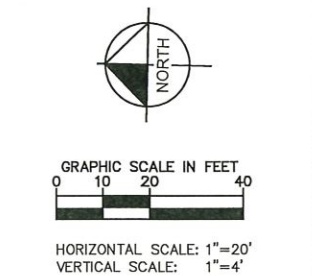
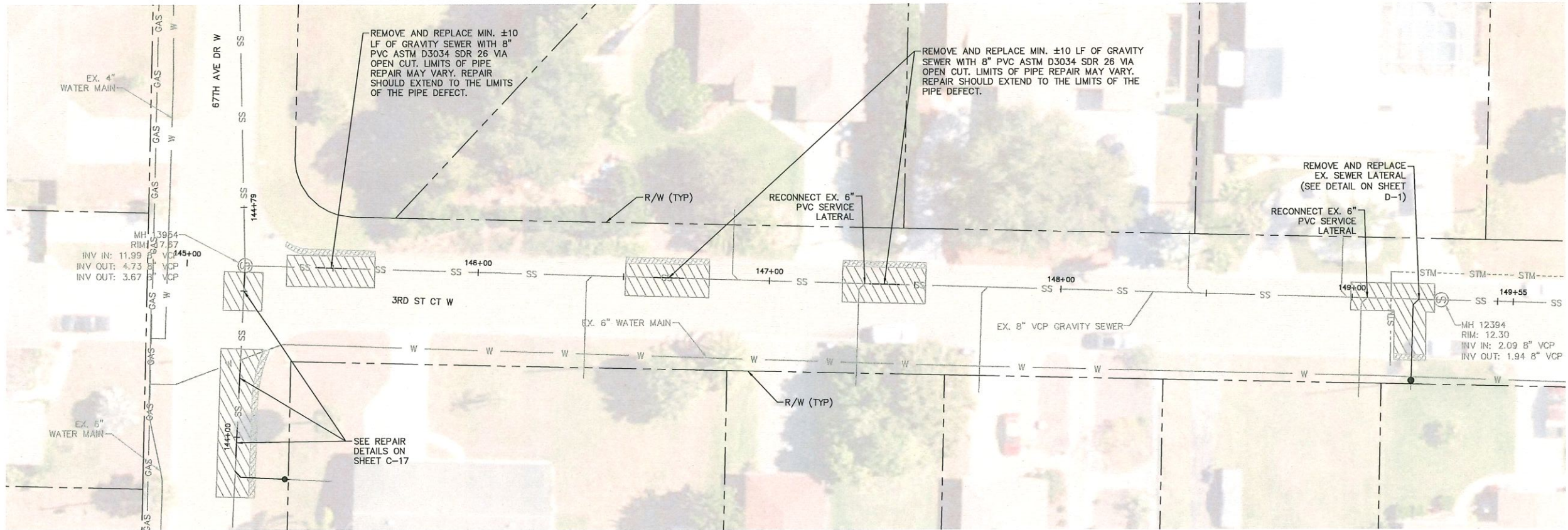
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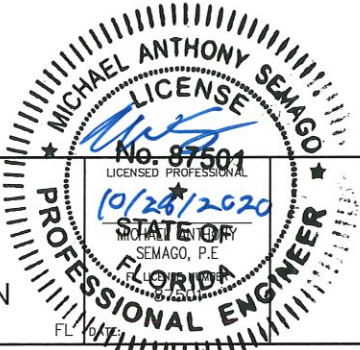


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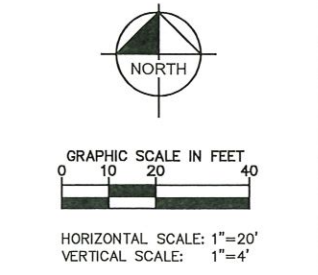
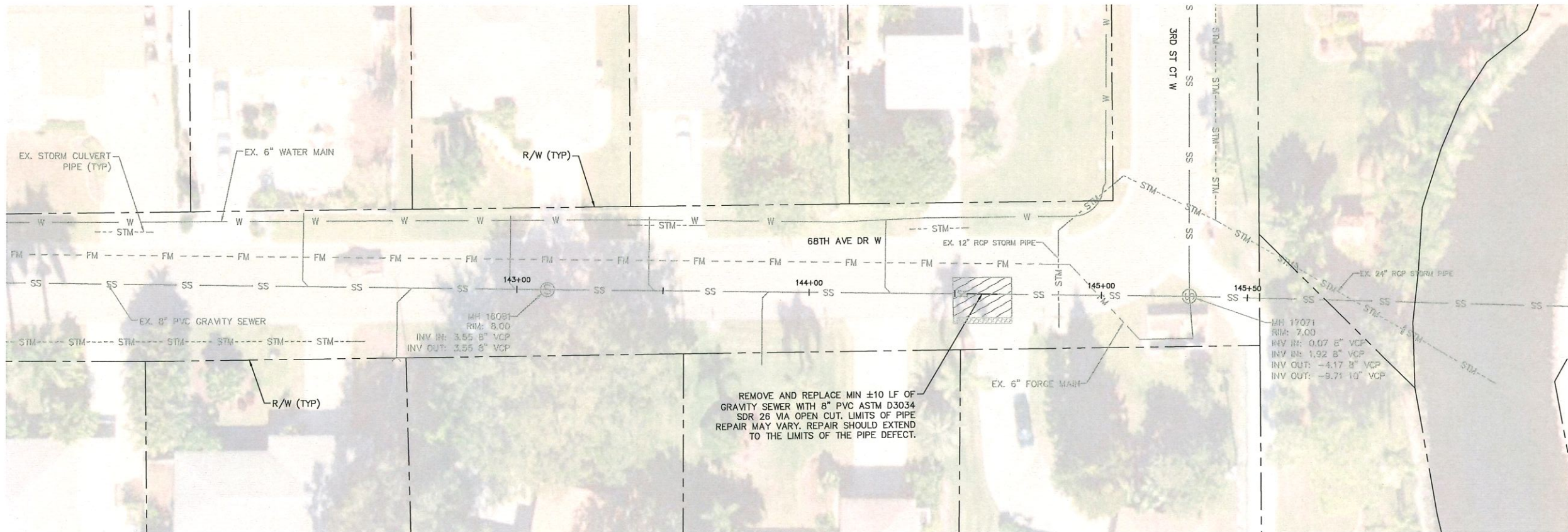
BASIN 16
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PLAN AND PROFILE

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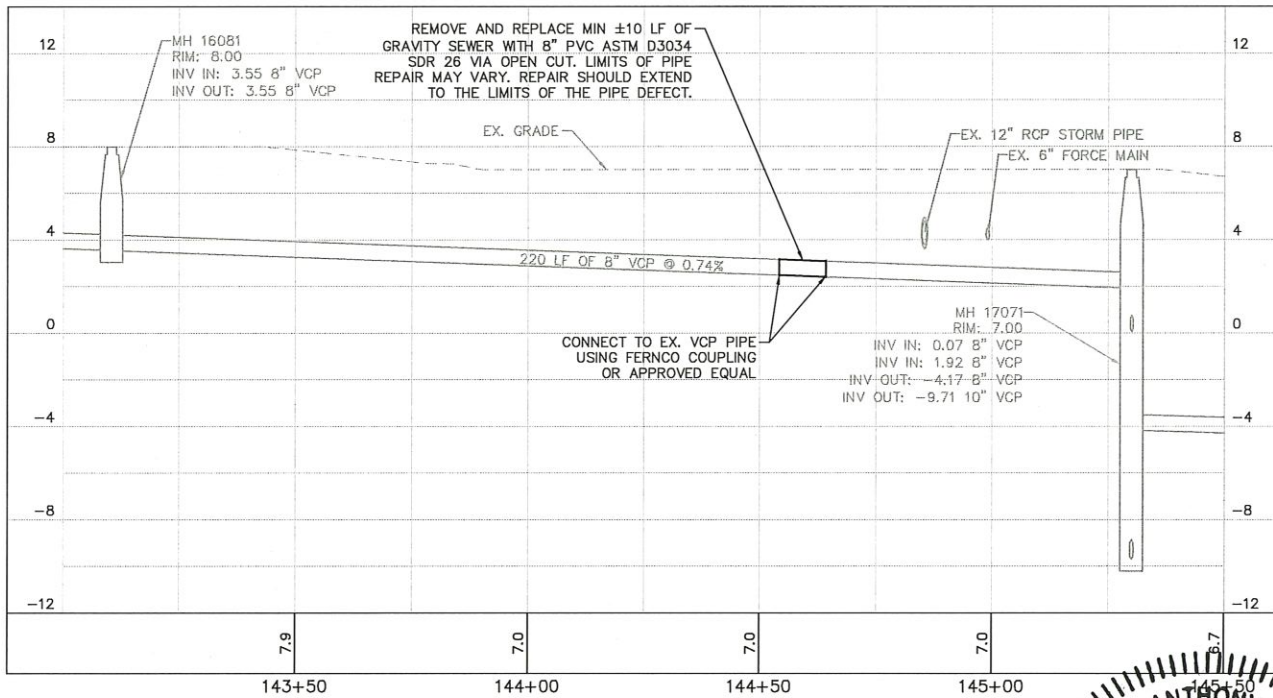


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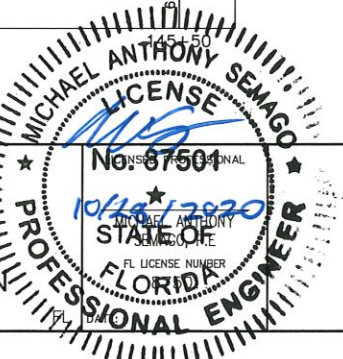
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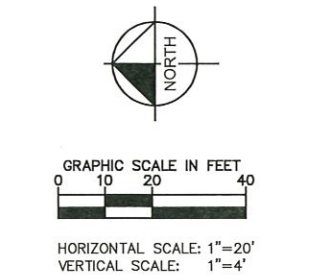
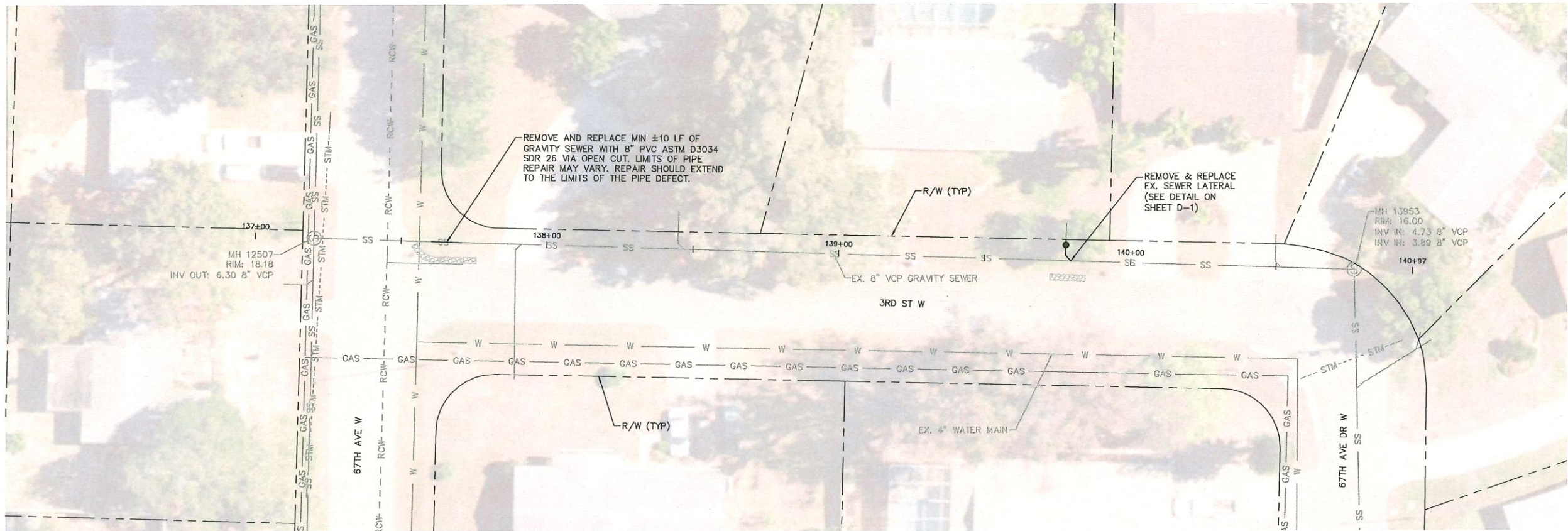
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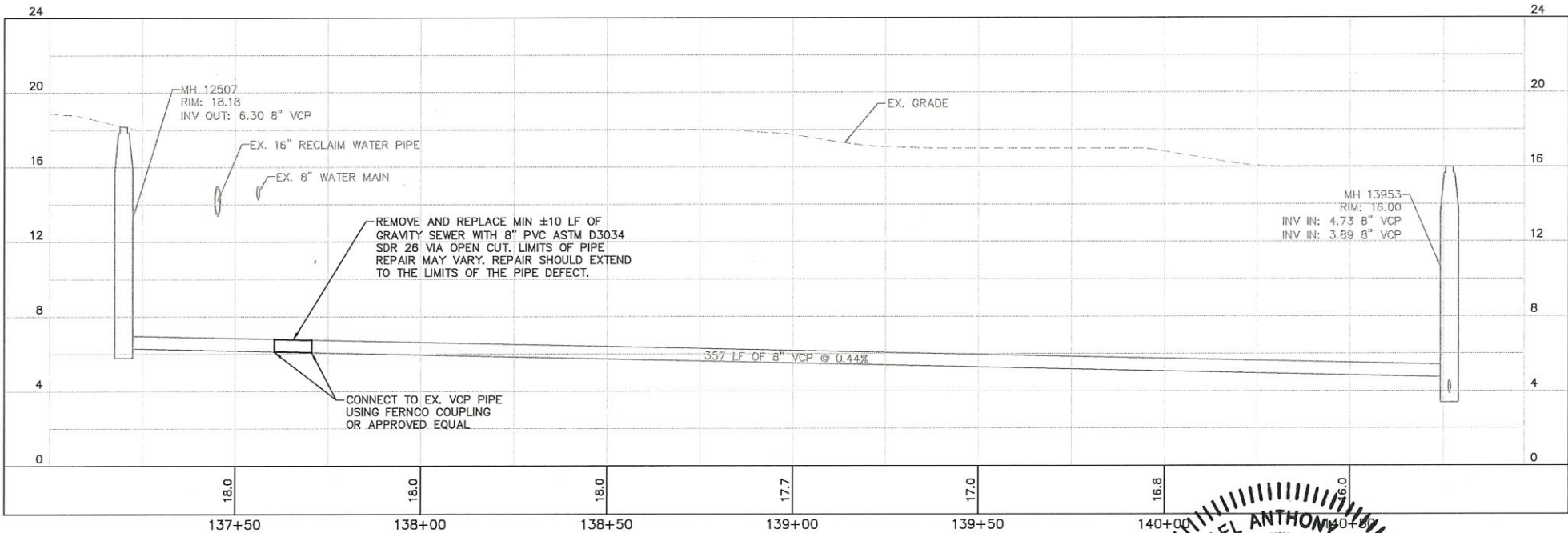
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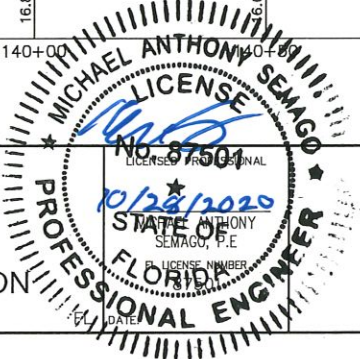
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KHA PROJECT	148400038
DATE	10/14/2020
SCALE	AS SHOWN
DESIGNED BY	MAS
DRAWN BY	ATH
CHECKED BY	SNR

Manatee County
FLORIDA

BASIN 16
GRAVITY SEWER REHABILITATION

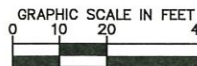
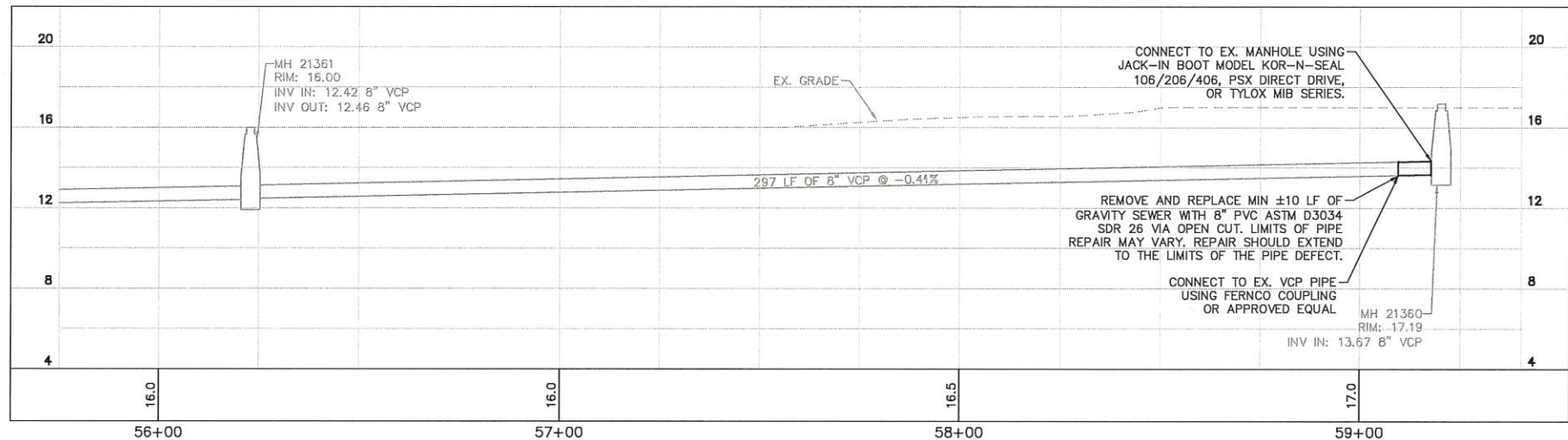
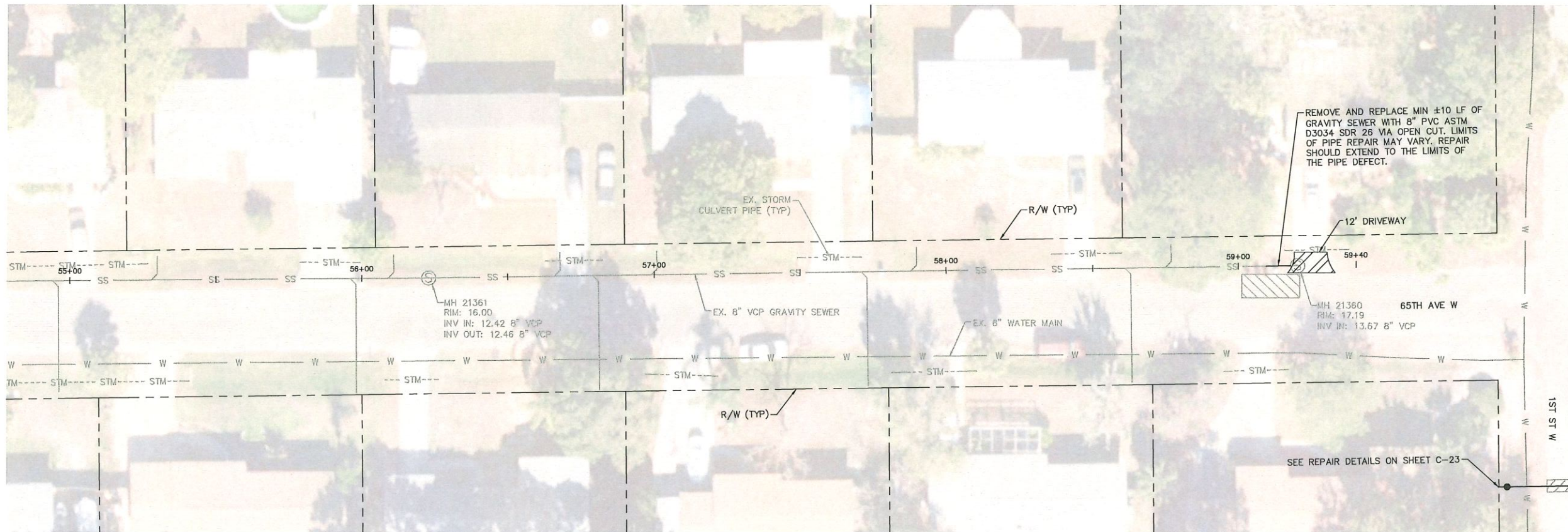
MANATEE COUNTY



PLAN AND PROFILE

SHEET NUMBER
C-20

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

LEGEND

- FULL ROADWAY RESTORATION*
- CONCRETE RESTORATION*
- REMOVE AND REPLACE CURB*

* FINAL RESTORATION LIMITS SHALL BE DETERMINED BY THE COUNTY INSPECTOR FOLLOWING REHABILITATION WORK.

NOTES:

1. CONTRACTOR SHALL EVALUATE SEWER LATERALS FOR POTENTIAL REHABILITATION. CONTRACTOR SHALL PROVIDE CCTV VIDEO OF SEWER LATERAL UP TO THE PROPERTY LINE FOR ENGINEER'S REVIEW PRIOR TO COMMENCING REHABILITATION WORK.
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GROUNDWATER / DEWATERING NOTE:

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SHEET NUMBER

C-22

Kimley»Horn

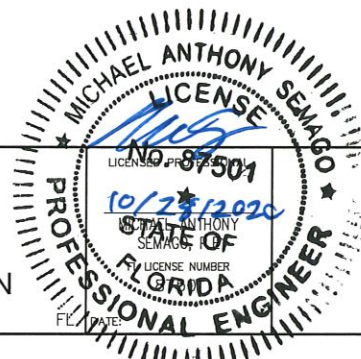
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SCALE AS SHOWN
DESIGNED BY MAS
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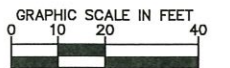
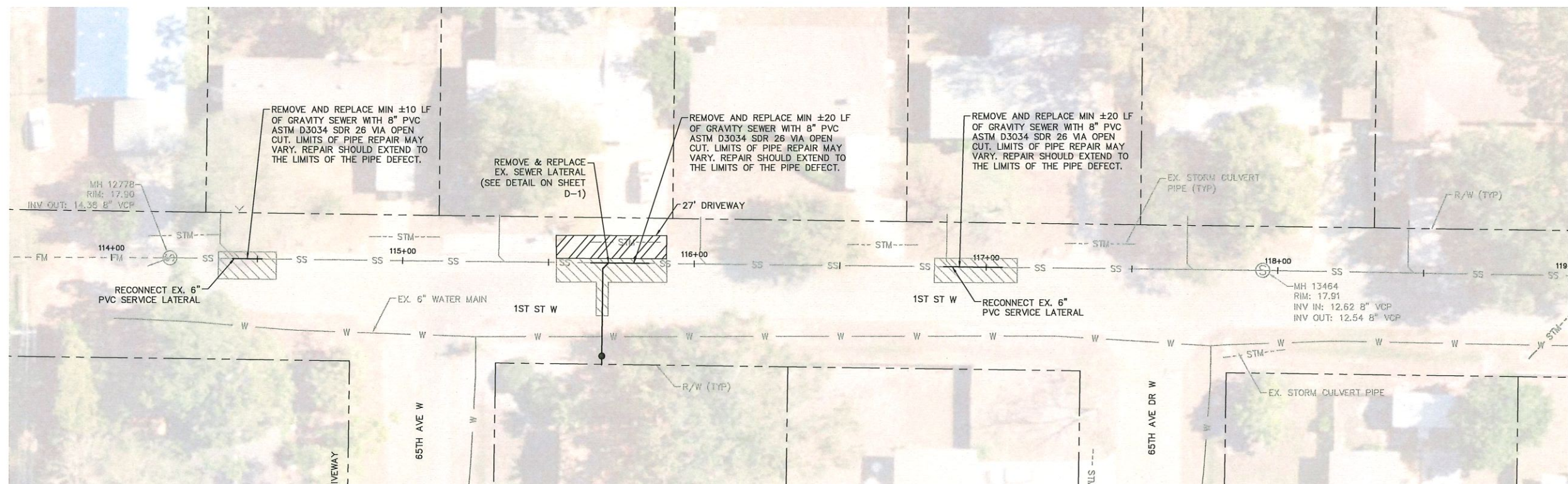


BASIN 16
GRAVITY SEWER REHABILITATION

MANATEE COUNTY



PLAN AND PROFILE



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

LEGEND

FULL ROADWAY RESTORATION*

CONCRETE RESTORATION*

REMOVE AND REPLACE CURB*

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SHEET NUMBER

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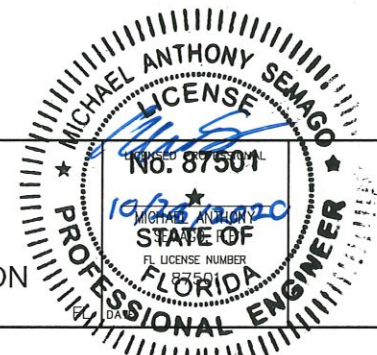
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BASIN 16

GRAVITY SEWER REHABILITATION

MANATEE COUNTY

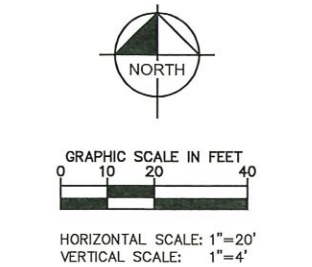
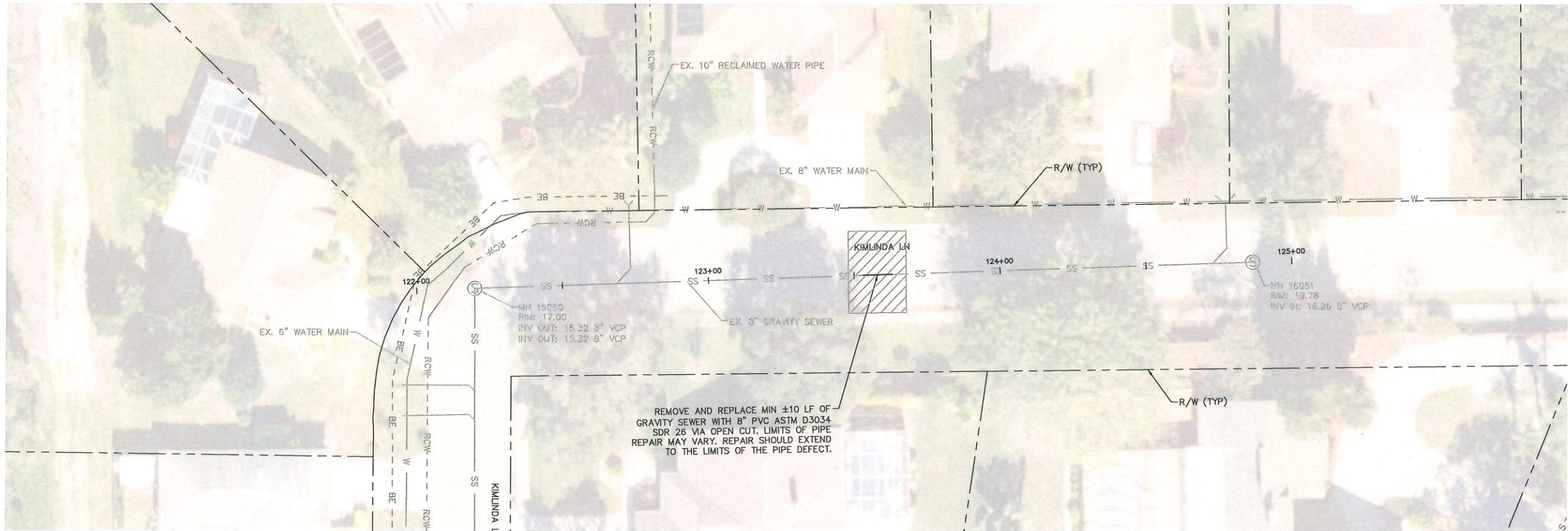


PLAN AND PROFILE

No.	REVISIONS	DATE	BY

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- LEGEND
- FULL ROADWAY RESTORATION* [diagonal hatching]
 - CONCRETE RESTORATION* [cross-hatching]
 - REMOVE AND REPLACE CURB* [dotted pattern]

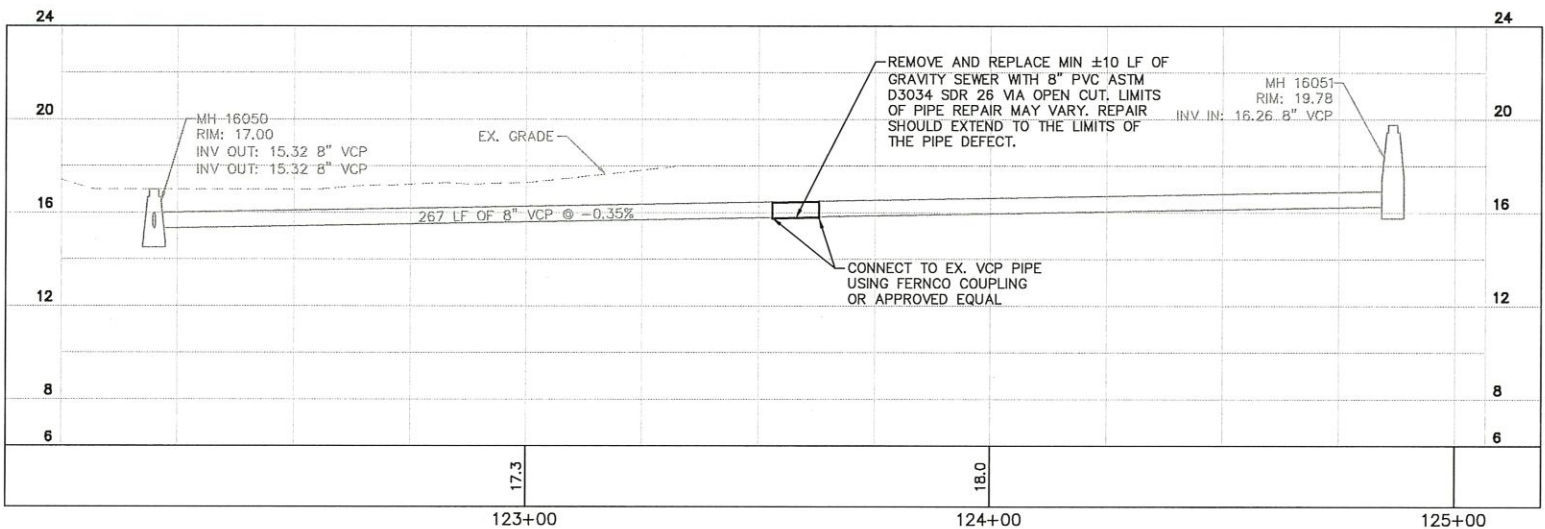
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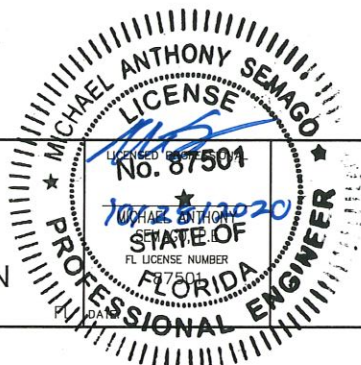


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MANATEE COUNTY



BASIN 16
GRAVITY SEWER REHABILITATION

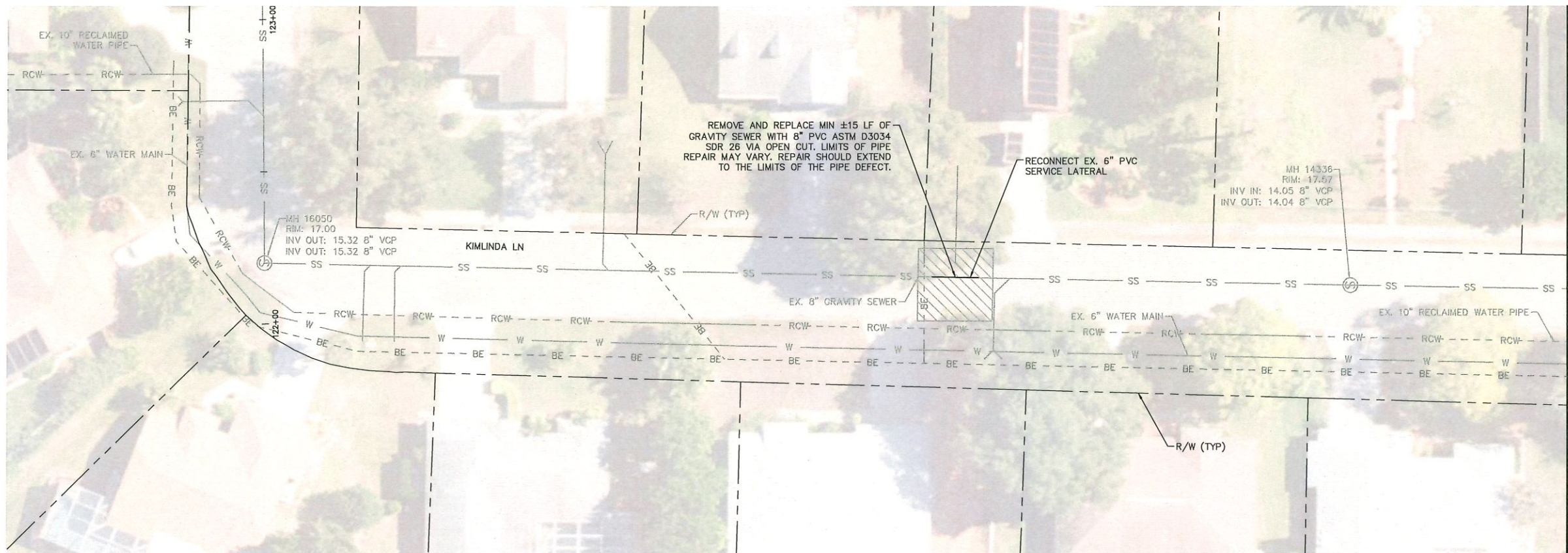


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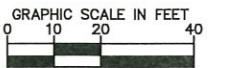
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SEE SHEET C-26



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

LEGEND

- FULL ROADWAY RESTORATION*
- CONCRETE RESTORATION*
- REMOVE AND REPLACE CURB*

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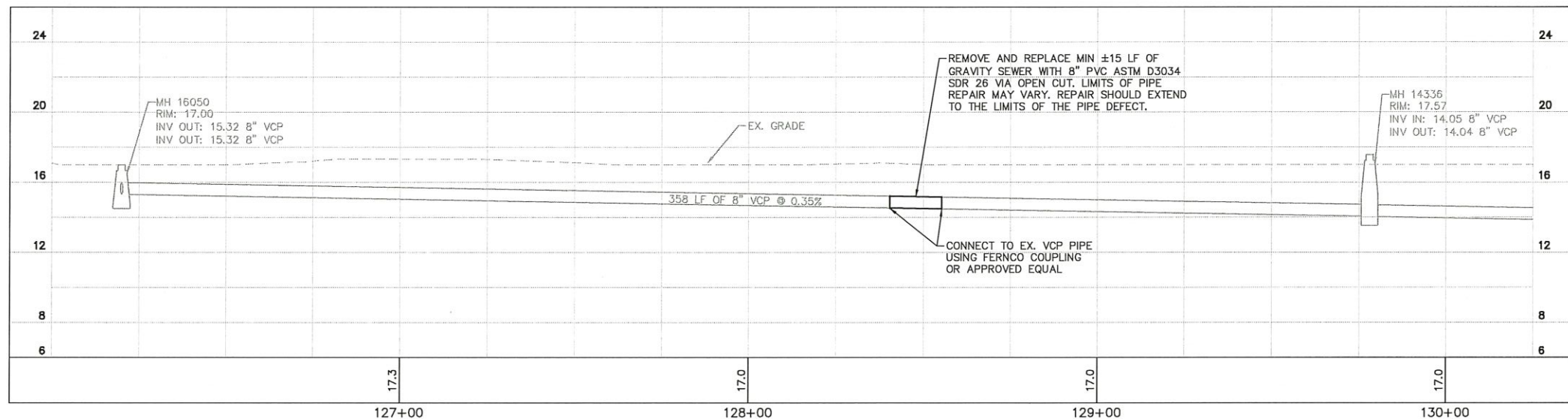
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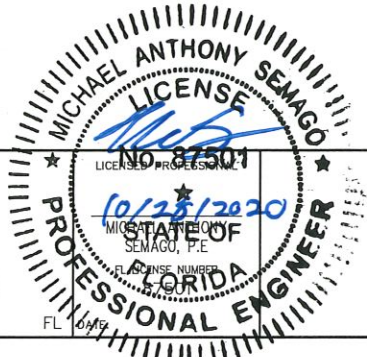


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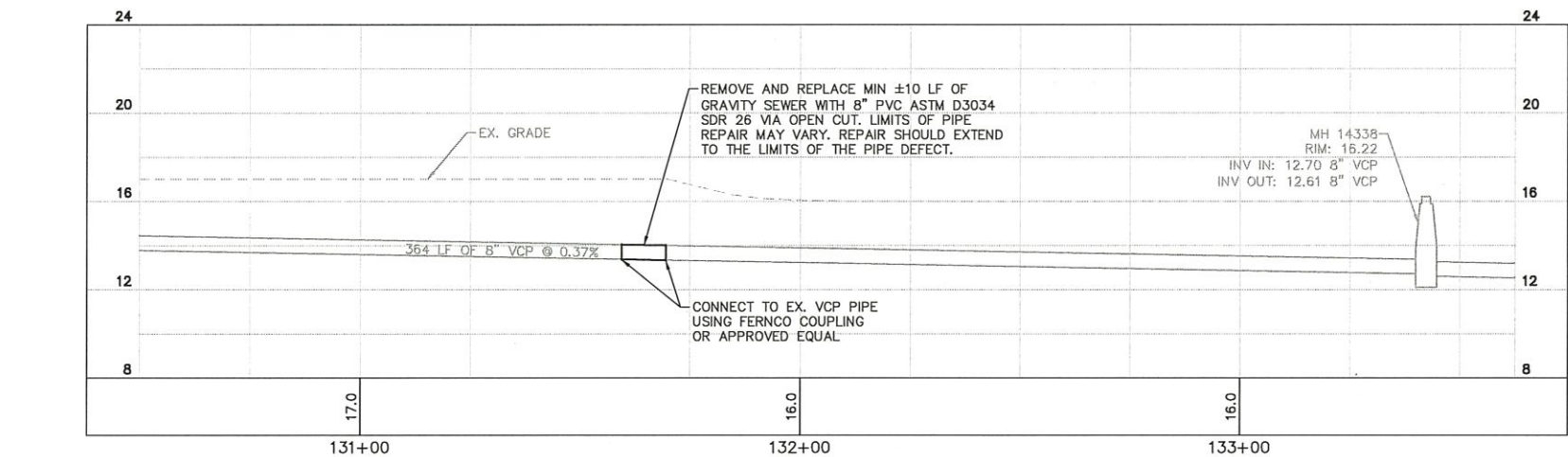
Manatee County
BASIN 16
GRAVITY SEWER REHABILITATION
MANATEE COUNTY



PLAN AND PROFILE

SHEET NUMBER
C-25

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C-26

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CHECKED BY SNR



Manatee
County
FLORIDA

MICHAEL ANTHONY SEMAGO

LICENSE

M. Semago

LICENSE NO. 87501

10/23/2020

MICHAEL ANTHONY SEMAGO

STATE OF FLORIDA

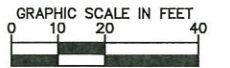
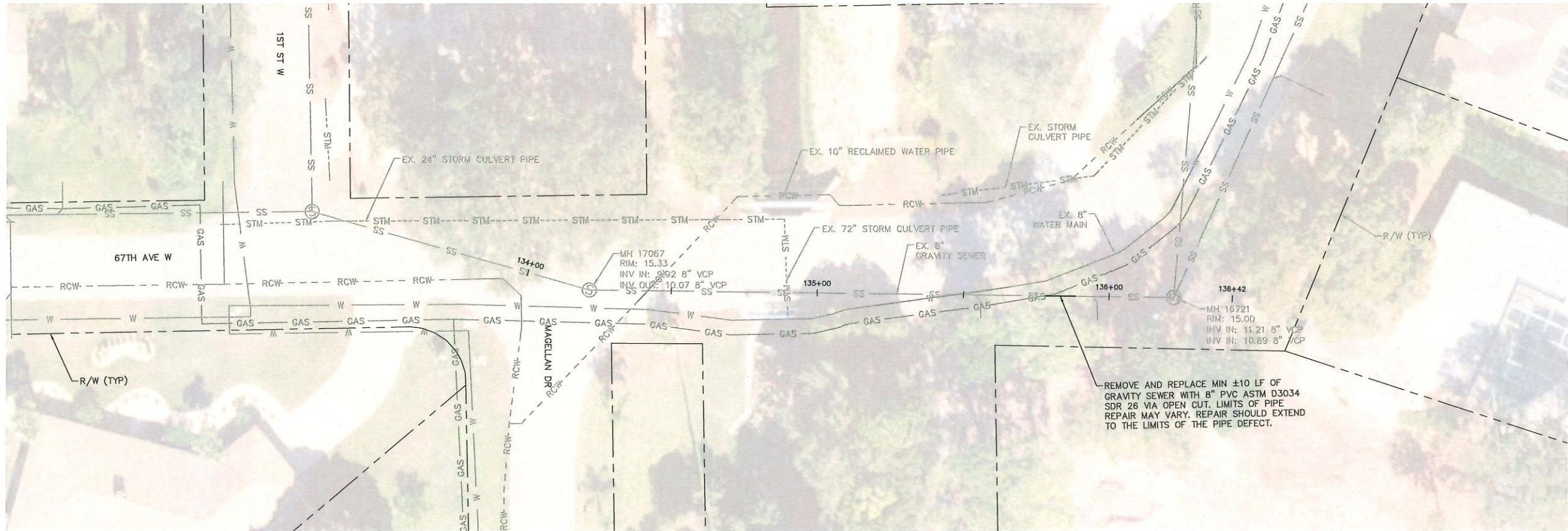
LICENSE NUMBER

PROFESSIONAL ENGINEER

DATE:

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HORIZONTAL SCALE: 1"=20'
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LEGEND

- FULL ROADWAY RESTORATION*
- CONCRETE RESTORATION*
- REMOVE AND REPLACE CURB*

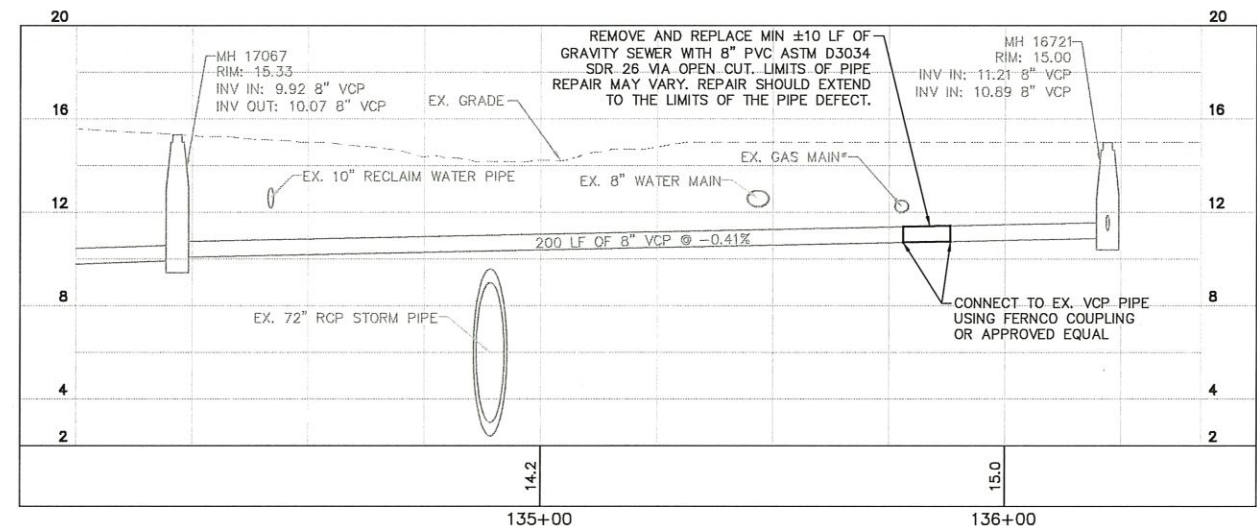
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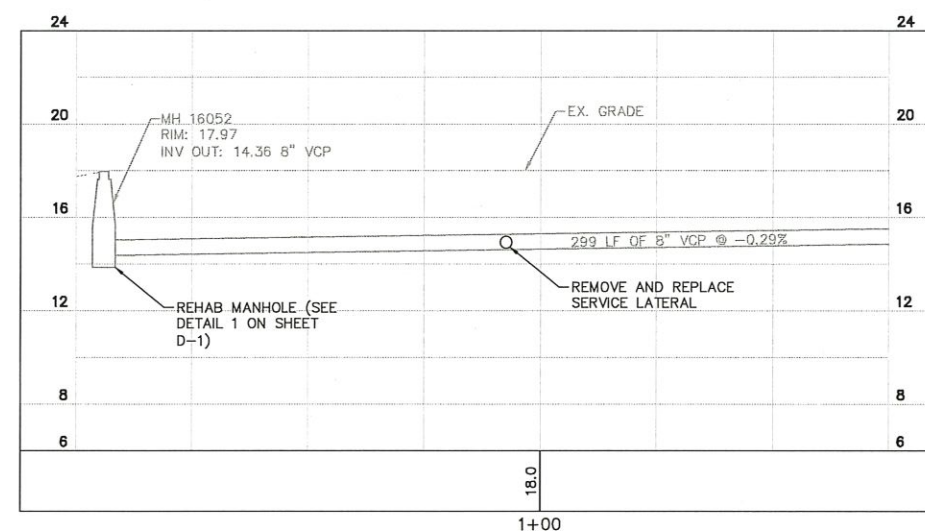
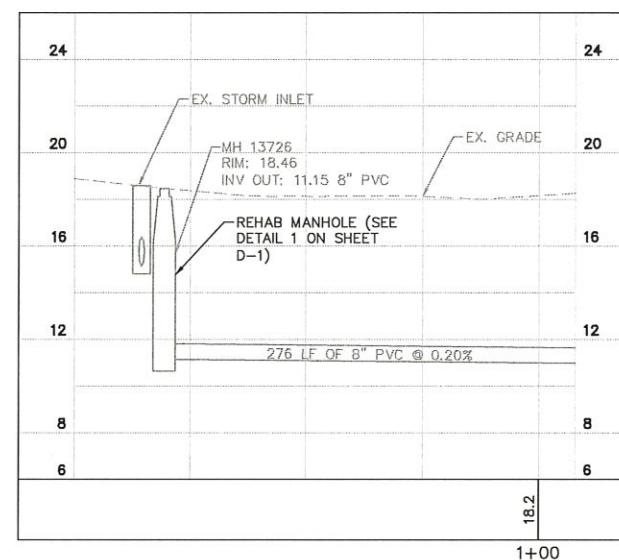
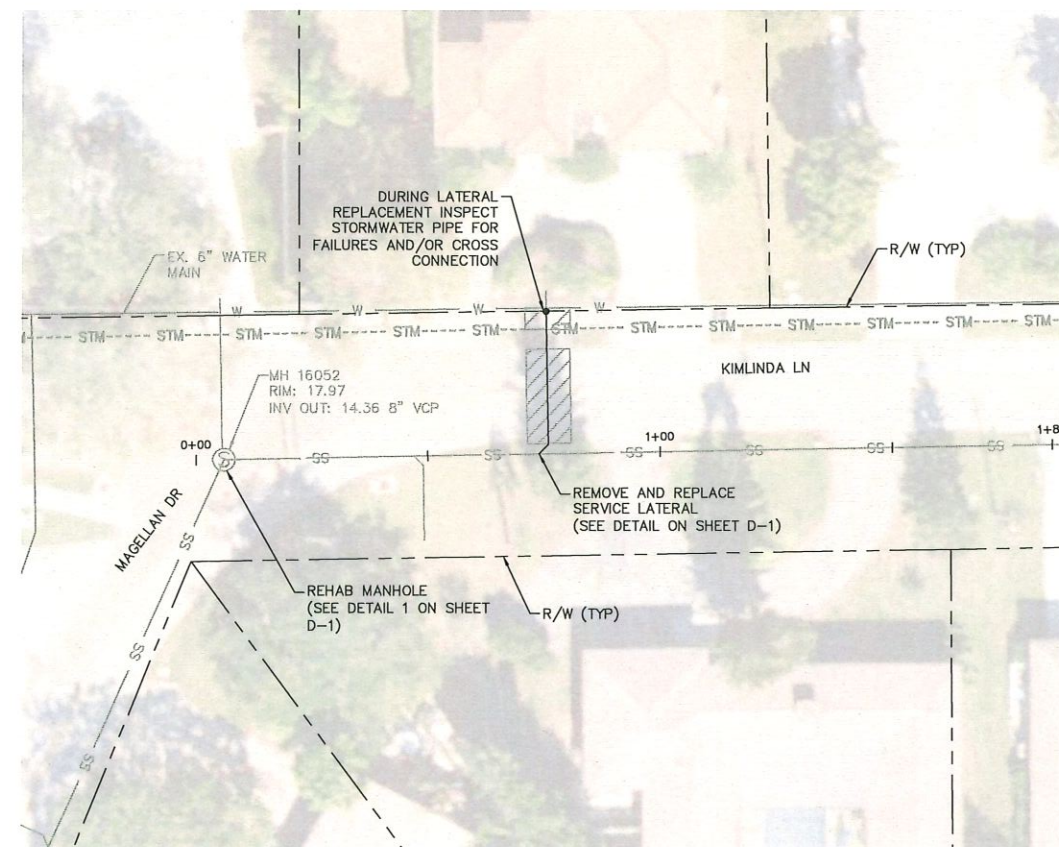
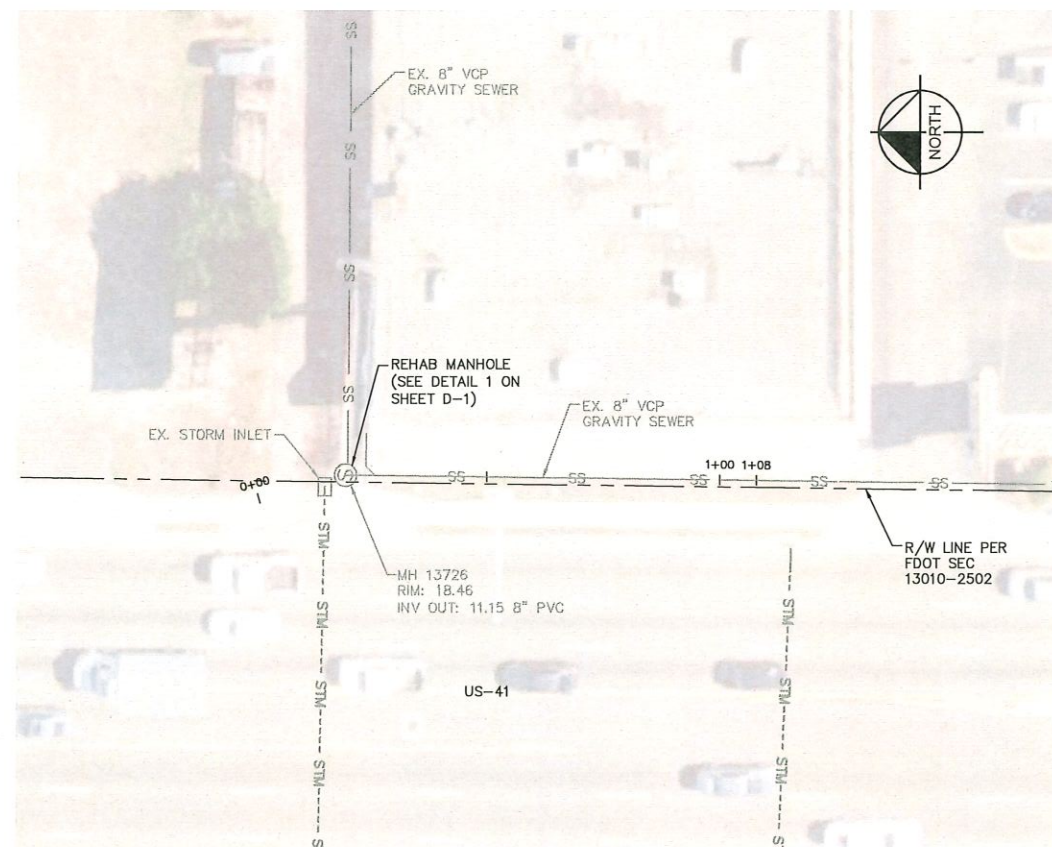
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Manatee County
BASIN 16
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MANATEE COUNTY




MICHAEL ANTHONY SEMAGO
LICENSE
No. 87501
10/28/2020
STATE OF FLORIDA
PROFESSIONAL ENGINEER

PLAN AND PROFILE

SHEET NUMBER
C-27



LEGEND

FULL ROADWAY RESTORATION*	
CONCRETE RESTORATION*	
REMOVE AND REPLACE CURB*	

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MANATEE COUNTY



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FLORIDA

BASIN 16

GRAVITY SEWER REHABILITATION

DETAIL 2
CONCRETE

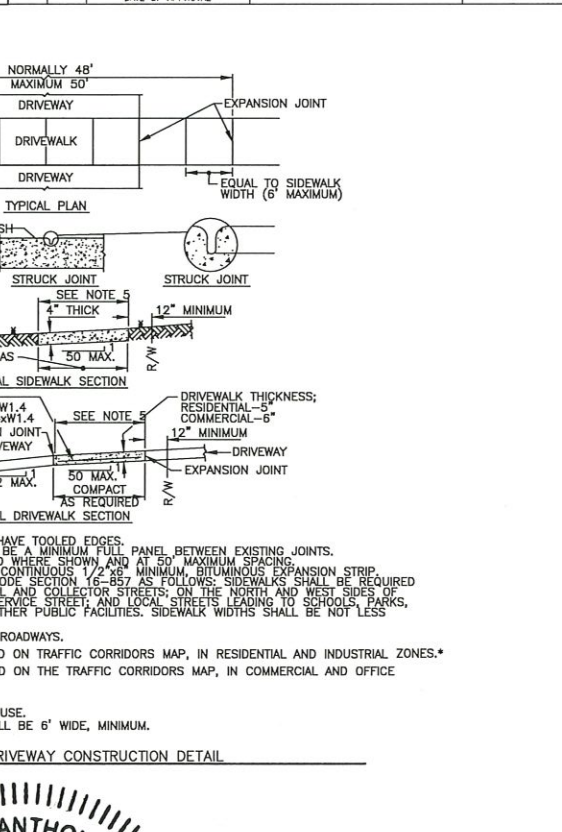
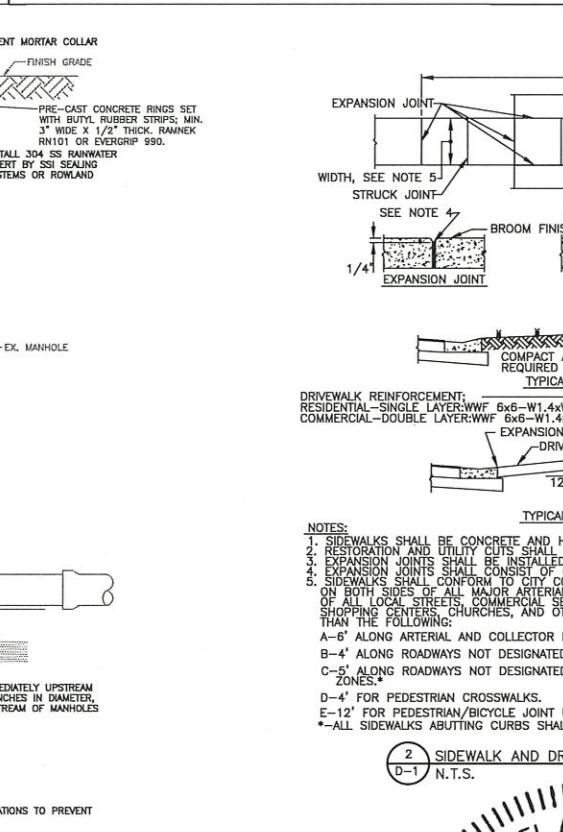
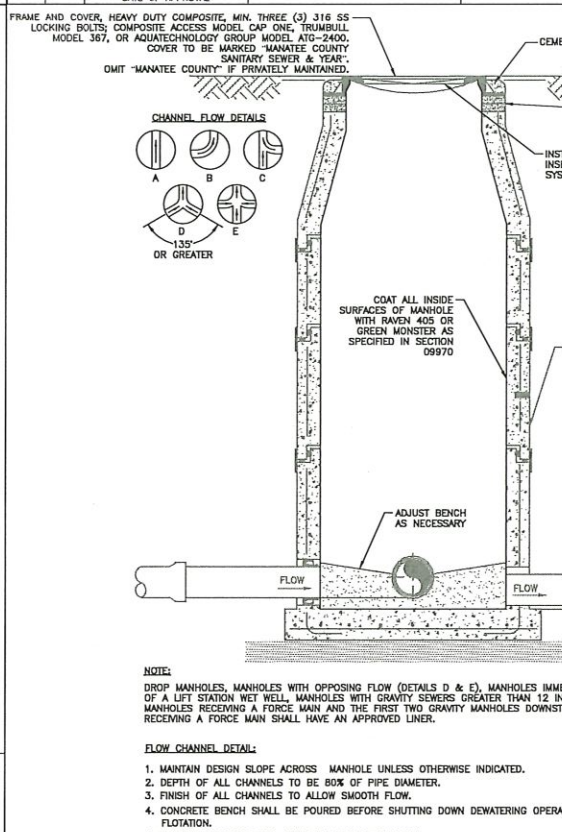
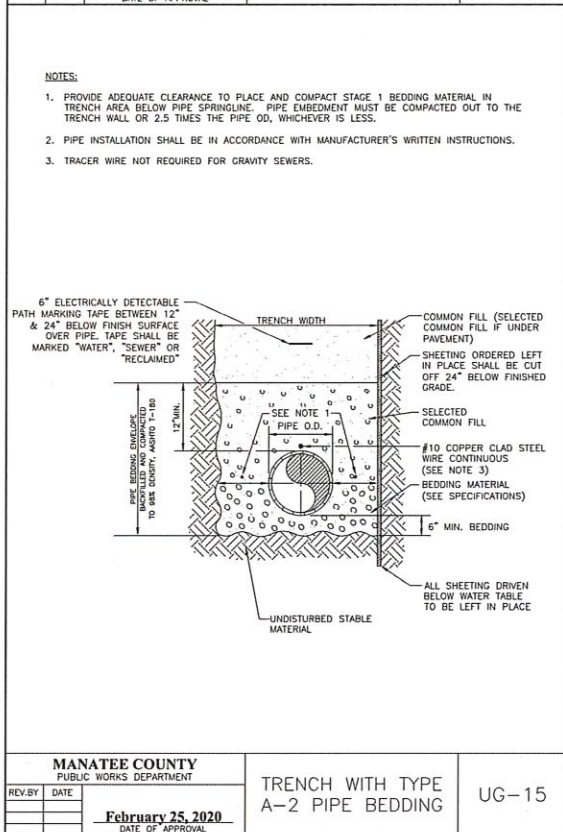
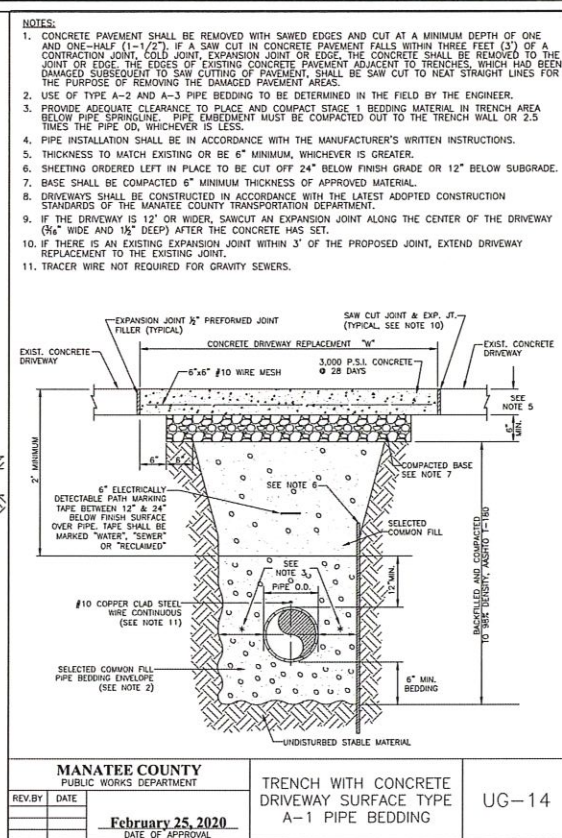
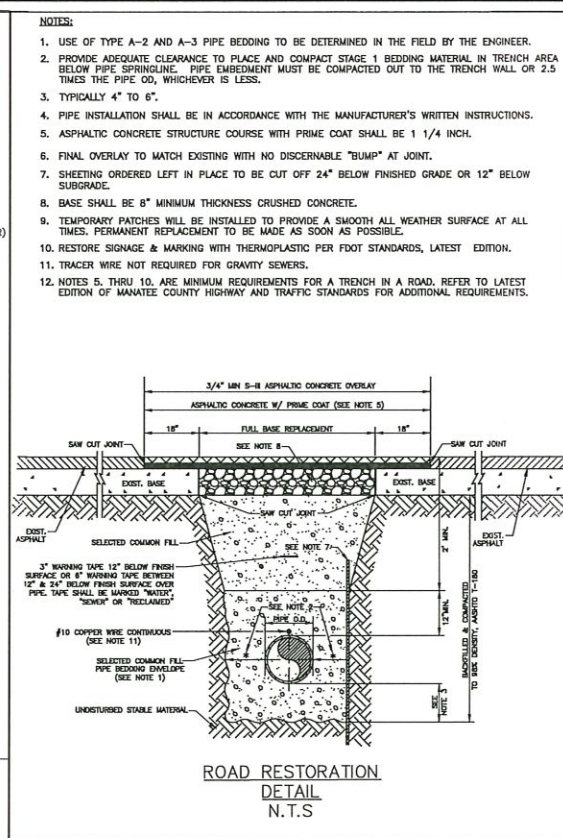
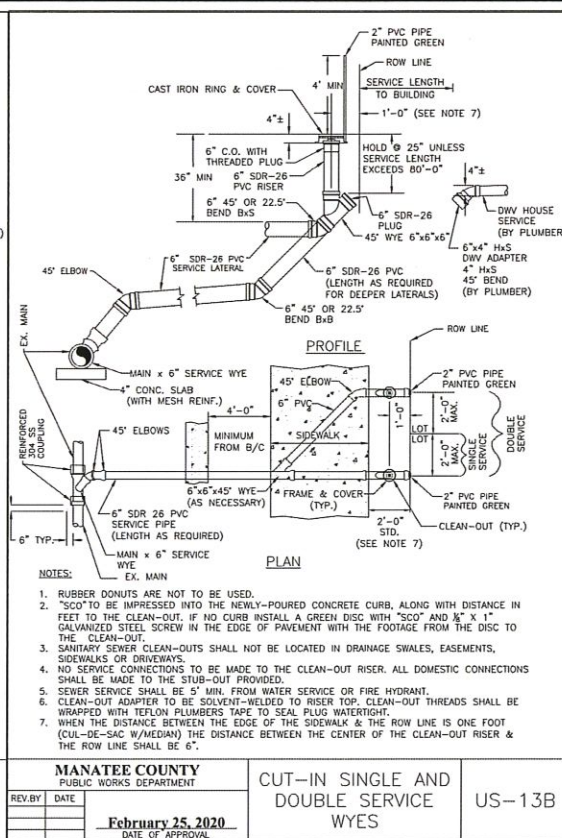
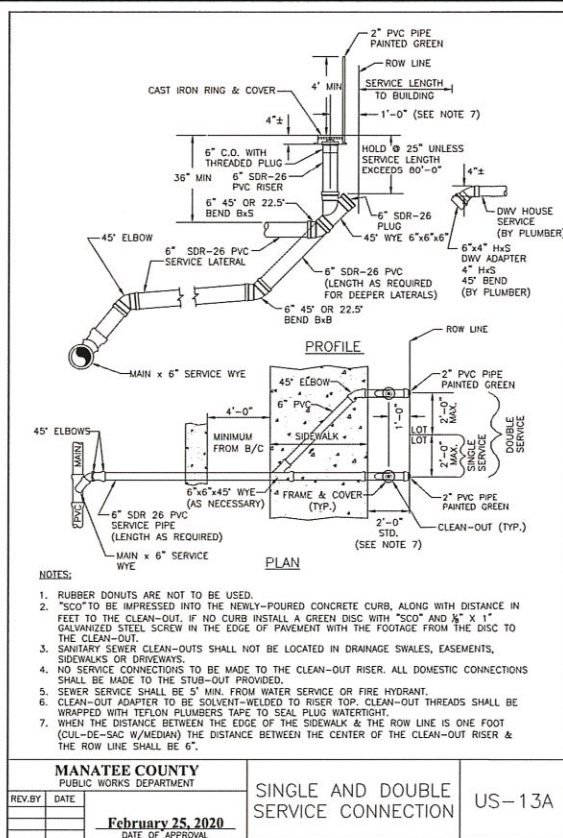
MICHAEL ANTHONY SEMAGO
LICENSE
1425
No: 87501
142512020
MICHAEL ANTHONY
STATE OF
FLORIDA
FL LICENSE NUMBER
DATE

PLAN AND PROFILE

SHEET NUMBER

C-28

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of any information contained herein without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



GROUNDWATER / DEWATERING NOTE:

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

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No.	REVISIONS	DATE	BY

Kimley»Horn

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PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
148400038
DATE
10/14/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY ATH
CHECKED BY SNR

Manatee County

BASIN 16

GRAVITY SEWER REHABILITATION

MANATEE COUNTY

MICHAEL ANTHONY SEMCO

LICENSE

PROFESSIONAL ENGINEER

FLORIDA

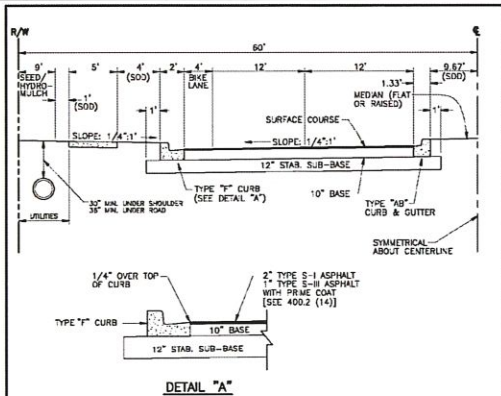
DETAILS I

D-1

SHEET NUMBER

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MANATEE COUNTY PUBLIC WORKS MANUAL
PART 3 - HIGHWAY & TRAFFIC STANDARDS



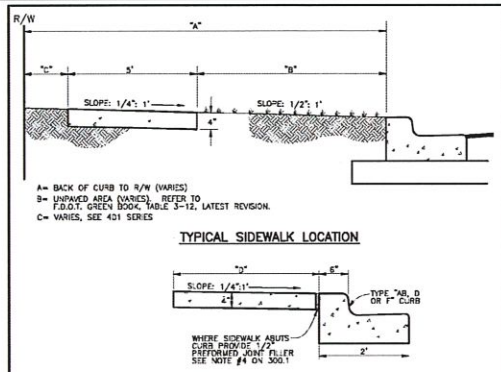
NOTES:

- Asphaltic concrete surface course shall be 2" Type S-I and 1" Type S-II. Two lifts of asphalt shall be required. A performance bond shall be required if the second lift is delayed beyond initial road acceptance.
 - 10" base course 850 lbs. per sq. yd. limestone compacted to 98% T180 AASHTO, or 8" soil cement.
 - 12" stabilized sub-base shall meet blended with sandy sub-grade minimum LBR 60, 98% T180 AASHTO.
 - Median is to be sodded.
 - See section 201.0 for curb and gutter types.
 - Laboratory tests are required to substantiate structural section design. Specifications shown on this sheet are minimum requirements.
 - No portion of pipe to be into sub-base.
 - Sodding to be installed per section 400.1 (8).
 - When the first 2 lanes of an ultimate 4-lane road is approved, the outside 2 lanes shall be constructed first. In addition, left turn lanes must be constructed at all intersections at the time of initial construction unless exempted by the Transportation Director.
- * Or approved equal, meeting same structural number.

MANATEE COUNTY TRANSPORTATION DEPARTMENT		TYPICAL 4-LANE DIVIDED ROADWAY	401.2
REV. BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	

[05/15]

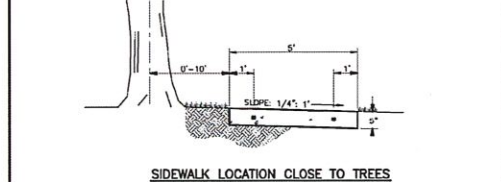
MANATEE COUNTY PUBLIC WORKS MANUAL
PART 3 - HIGHWAY & TRAFFIC STANDARDS



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

D = SIDEWALK WIDTH SHALL BE 6" STANDARD, WHERE WALK ALONGS TYPE "AB, D OR F" CURB, WHERE SPEED LIMIT IS 25 MPH OR LESS, WIDTH CAN BE 5'-6".

* SEE SHEET 300.1 "GENERAL NOTES" FOR FURTHER INFORMATION

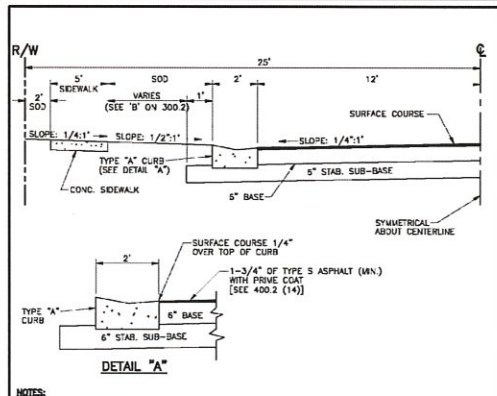


MANATEE COUNTY TRANSPORTATION DEPARTMENT		SIDEWALK REQUIREMENTS	301.1
REV. BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	

[05/15]

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MANATEE COUNTY PUBLIC WORKS MANUAL
PART 3 - HIGHWAY & TRAFFIC STANDARDS



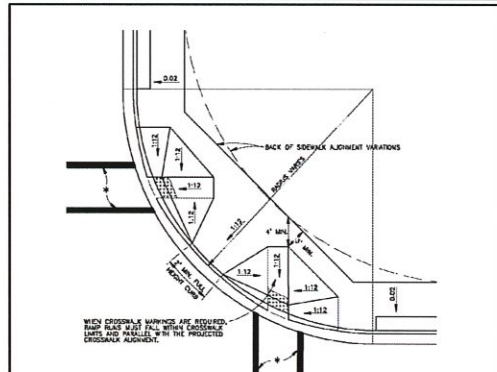
NOTES:

- Asphaltic concrete surface course shall be laid in two lifts. The first lift shall be 1" Type S-I or S-II. The second lift shall be 3/4" Type S-II. A performance bond shall be required if the second lift is delayed beyond acceptance of the road.
 - Base course shall consist of 4-1/2" compacted sand asphalt base (1200 lbs. slab) or 8" Colosolchutes shall compacted to 98% AASHTO T-180 density LBR 100 or 8" soil cement.
 - 8" stabilized sub-base shall meet blended with sandy sub-grade minimum LBR 40, 98% T180 AASHTO.
 - On new construction, sanitary sewer may be placed on centerline of R/W if desired. All laterals to be installed at the same time as sanitary sewer main line.
 - See section 201.0 for curb and gutter types.
 - No portion of drainage pipe shall be closed in sub-base. 12" minimum cover is required on storm drain.
 - Sidewalk shall be 1' or 2' inside R/W line, with 2' preference. To be constructed per section 300.1
 - Laboratory tests are required to substantiate structural section design. Specifications shown on this sheet are minimum requirements.
 - If sidewalks are not required, only 2" of sod is required back of curb. Hydromulch balance of right-of-way.
 - Sodding shall be installed per section 400.1 (8)
- * Or approved equal, meeting same structural number.

MANATEE COUNTY TRANSPORTATION DEPARTMENT		LOCAL URBAN RESIDENTIAL	401.8
REV. BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	

[05/15]

MANATEE COUNTY PUBLIC WORKS MANUAL
PART 3 - HIGHWAY & TRAFFIC STANDARDS



* COORDINATE WITH AND CONFIRMATION WITH MOST RECENT EDITION OF F.O.D.T. INDEX NO. 12344 AND 12345.

- CURB CUT RAMP ARE TO BE LOCATED AS SHOWN ON PLANS.
- SEE SHEETS # 300.1 "GENERAL NOTES" & # 301.2 "HANDICAPPED RAMP" SHEET 2 FOR FURTHER REQUIREMENTS.
- RADIUS OF CURB VARIES AS FOLLOWS:
 - 25' RAD. LOCAL STREET WITH ALLEY.
 - 25' RAD. LOCAL STREET WITH LOCAL STREET.
 - 35' RAD. LOCAL STREET WITH THOROUGHFARE OR COLLECTOR.
 - 50' RAD. THOROUGHFARE WITH THOROUGHFARE.
- CURB RADIUS SHOULD BE A MINIMUM OF 50' WHERE INDUSTRIAL AND BUS TRAFFIC (50 OR MORE) IS ANTICIPATED ON LOWER CLASSIFICATION ROADWAYS.
- BOTH LOCATION OPTIONS FOR HANDICAPPED RAMP ARE SHOWN. ENGINEER MAY SELECT EITHER, WHICHEVER FITS THE SITUATION.

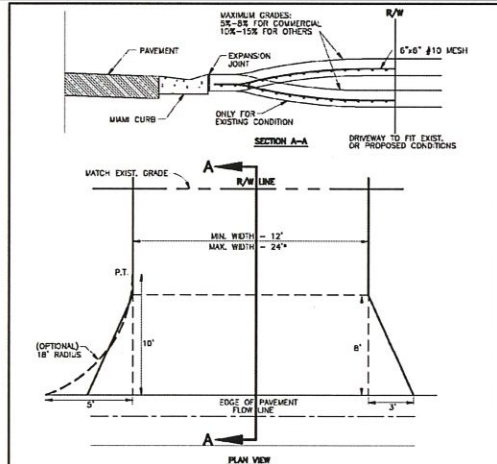
NOTE: FOR COMPLETE HANDICAP, PUBLIC SIDEWALK AND CURB RAMP DETAILS, SEE F.O.D.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 8.

MANATEE COUNTY TRANSPORTATION DEPARTMENT		HANDICAPPED RAMP SHEET 1	302.1
REV. BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	

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MANATEE COUNTY PUBLIC WORKS MANUAL
PART 3 - HIGHWAY & TRAFFIC STANDARDS



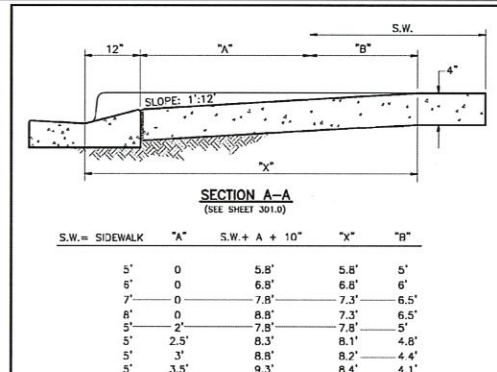
* For driveways that can demonstrate the need for additional width, the width may not be greater than the LESSER of:
a) 30' total at the R/W line
b) 30% of the front footage as defined on the survey (or field measurement, 30' min.)

- CONSTRUCT WITH 6" REINFORCED CONCRETE 3000 PSI @ 28 DAYS, 6"x6" #10 WIRE MESH FROM BACK OF CURB - TO R/W LINE.
- DRIVEWAYS ADJACENT TO A PAVED ROADWAY MUST HAVE THE APRON CONSTRUCTED IN COMPLIANCE WITH THE NOTE (A) ON PREVIOUS PAGE (STD. 101.0).
- MAINTAIN EXISTING DRAINAGE FLOWLINES FOR PIPING SPECIFICATIONS REFER TO F.O.D.T. STANDARD SPECIFICATIONS SECTION 430. SEE NOTE 4, PAGE 100.1. SEE SECTION 200- DRAINAGE (STD. 300.0, 202.5). SEE STD. 102.2. NO CHANGE WITH 3' VALLEY CROSSINGS - SEE STD. 201.0, 201.1, 201.2, 201.4, 201.5, 201.6.
- EXPANSION JOINT 2" PREFORMED JOINT FILLER OR APPROVED ALTERNATE, DRIVES WIDER THAN 12' (BEYOND FLARE) PLACE JOINT ON 10' CENTER.
- LATERAL ALIGNMENT 45 DEGREES FOR DOUBLE DRIVE PER LOT, 90 DEGREES FOR SINGLE DRIVE, OFF CENTER LINE.

MANATEE COUNTY TRANSPORTATION DEPARTMENT		URBAN DRIVES	101.1
REV. BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	

[05/15]

MANATEE COUNTY PUBLIC WORKS MANUAL
PART 3 - HIGHWAY & TRAFFIC STANDARDS



NOTE: FOR COMPLETE HANDICAP, PUBLIC SIDEWALK AND CURB RAMP DETAILS, SEE F.O.D.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 8.

- CURB CUT RAMP ARE TO BE LOCATED AS SHOWN ON PLANS.
- SEE SHEETS # 300.1 "GENERAL NOTES" & # 301.2 "HANDICAPPED RAMP" SHEET 2 FOR FURTHER REQUIREMENTS.
- RADIUS OF CURB VARIES AS FOLLOWS:
 - 25' RAD. LOCAL STREET WITH ALLEY.
 - 25' RAD. LOCAL STREET WITH LOCAL STREET.
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 - 50' RAD. THOROUGHFARE WITH THOROUGHFARE.
- CURB RADIUS SHOULD BE A MINIMUM OF 50' WHERE INDUSTRIAL AND BUS TRAFFIC (50 OR MORE) IS ANTICIPATED ON LOWER CLASSIFICATION ROADWAYS.
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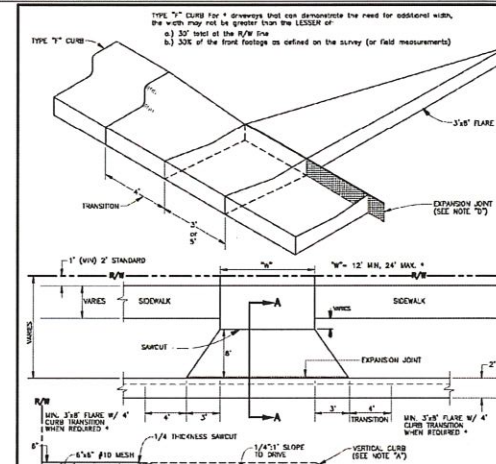
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MANATEE COUNTY TRANSPORTATION DEPARTMENT		HANDICAPPED RAMP SHEET 2	302.2
REV. BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	

[05/15]

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MANATEE COUNTY PUBLIC WORKS MANUAL
PART 3 - HIGHWAY & TRAFFIC STANDARDS



* For driveways that can demonstrate the need for additional width, the width may not be greater than the LESSER of:
a) 30' total at the R/W line
b) 30% of the front footage as defined on the survey (or field measurement, 30' min.)

- REMOVE TYPE "T" CURB AND GUTTER, REPLACE WITH WAVE CURB AND GUTTER.
* NO CHANGE WITH 3' VALLEY CROSSING.
- REMOVE EXISTING SIDEWALK, REPLACE WITH 6" CONCRETE, 6"x6" #10 WIRE MESH 3000 PSI @ 28 DAYS.
- DRIVEWAY CONSTRUCTED WITH 6" CONCRETE WITH 6"x6" #10 WIRE MESH 3000 PSI @ 28 DAYS.
- EXPANSION JOINT 1/2" PREFORMED JOINT FILLER PER FOOT SECTION 832-1.1 OR APPROVED ALTERNATE.
- 5' SIDEWALK ON LOCAL STREET, 5' SIDEWALK ON THOROUGHFARE. WALKED USE PATHS MAY REQUIRE 8' SIDEWALKS PER LAND DEVELOPMENT CODE.
- SAMPLE 1/4" THICKNESS MINIMUM ON 10' CENTERS. IF DRIVE IS WIDER THAN 12', ADD JOINTS AT 10' CENTERS.

MANATEE COUNTY TRANSPORTATION DEPARTMENT		CURB CUT & TRANSITION W/ T-FLARE FOR RESIDENTIAL DRIVES	101.2
REV. BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	

[05/15]

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**GROUNDWATER /
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PHONE: 727-547-3999
WWW.KIMLEY-HORN.COM CA 00000696

KHA PROJECT
148400038
DATE
10/14/2020
SCALE AS SHOWN
DESIGNED BY MAS
DRAWN BY ATH
CHECKED BY SNR
MANATEE COUNTY

Manatee County
BASIN 16
GRAVITY SEWER REHABILITATION

MICHAEL ANTHONY SEMAGO
LICENSE
No. 87501
10/13/2020
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FLORIDA
LICENSE NUMBER
PROFESSIONAL ENGINEER

DETAILS II

SHEET NUMBER

D-2