

MD-WASD AS-BUILT CHECK LIST (GUIDE OF REQUIREMENTS)

This is a guide of the **most common** requirements to be reviewed by MD-WASD during the Final process in the acceptance of As-Built plans for Water, Sewer improvements that **are** available to Developers and Stakeholders as a guide to follow about the information required to be shown on any as-built submittal before final QA/QC by MD-WASD. For a complete set of requirements to be enforced by WASD please refer to the full requirements as set forth on the Water and Sewer Design & Construction Standards Part II: General Provisions; Division 1: General Requirements; Section Number 01 78 40 – (01725) Project As-Built/Record Drawings; the Standards Of Practice established in chapter 5J-17.050 through 5J-17.052, of the Florida Administrative Code, pursuant to Section 427.027, Florida Statutes. The link to said requirements will be available on E-Builder.

CONTRACTOR'S RESPONSIBILITY

- ALL JOBS SHALL BE SUBMITTED, SIGNED AND SEALED BY THE SURVEYOR IN CHARGE, SIGNATURE & SEAL MUST BE LEGIBLE IN ELECTRONIC FORMAT (SEE SECTION 5J-17.062 F.A.C.) (CONDITION FOR ACCEPTANCE).
- INTERCONNECTIONS, ABANDONMENTS, CUT AND PLUGS, ETC.; SHALL BE REFLECTED ON THE FINAL AS-BUILT/RECORD DRAWING AND RESUBMITTED WITHIN TEN (10) COUNTY CALENDAR DAYS AFTER A SUCCESSFUL TEST.
- FOR DONATION PROJECTS: A BILL OF MATERIALS (ON DEPARTMENT FORM) SHALL ALSO BE CERTIFIED AS CORRECT BY SIGNATURE AND PRESENTED AT THE TIME OF AS-BUILT SUBMISSION.
- QUANTITIES SHOWN ON THE BILL OF MATERIALS SHALL MATCH INSTALLED AND AS-BUILT QUANTITIES.

GENERAL

- IF AS-BUILT SUBMITTALS REVEALS EXCESSIVE ERRORS OR OMISSIONS, THE AS-BUILT/RECORD DRAWINGS SHALL BE DEEMED "**NON-REVIEWABLE**" (AS-BUILT NOT MEETING MD-WASD GENERAL REQUIREMENTS; SECTION NUMBER 01 78 40 – (01725) PROJECT AS-BUILT/RECORD DRAWINGS AND STANDARDS OF PRACTICE FOR PROFESSIONAL SURVEYORS AND MAPPERS AS PER CHAPTER 5J-17 F.A.C. **"IT WILL BE RETURNED TO SUBMITTER"**)
- "AS-BUILT" NUMBERS & ATLAS PAGE (ON ALL PAGES), WASD AGREEMENT # (DW, WB, DS, SB, E, ES, P, PS) & OR ANY NEW REPLACEMENT # BY E-BUILDER ON THE FORMAT REQUIRED BY MD-WASD.
- ALL PAGES NUMBERED, IDENTIFIED, AND INTER-RELATED.
- AS-BUILT PLAN SUBMITTAL CHECK LIST FORM COMPLETED BY SUBMITTER ON E-BUILDER.
- SUBMITTAL FORMAT: 24"X36".
- SEPARATE AS-BUILT PLANS FOR WATER AND SEWER.
- IF EASEMENT/S IS/ARE REQUIRED, THEN AS-BUILT PLANS AND SKETCH AND LEGAL NEEDS TO BE SUBMITTED AT THE SAME TIME.
- WATER AND SEWER EASEMENTS TO BE SUBMITTED AS SEPARATE DOCUMENT.
- "AS BUILT/RECORD" IN CAPITAL LETTERS (ALL PAGES).
- UNDERSIGNING P.S.M. OR P.L.S. NAME AND LICENSE NUMBER, SHALL BE IDENTIFIED ON THE FACE OF THE SURVEY

- LICENSE BUSINESS (NAME & L.B. #) AND RESPONSIBLE SURVEYOR (NAME & LS #) SHALL BE LISTED ON THE "SURVEY".
- TYPE OF SURVEY: AS-BUILT SURVEY AND/OR TOPOGRAPHIC SURVEY/ BOUNDARY SURVEY (PUMP STATION SITE).
- DATE OF DATA ACQUISITION (FIELD WORK DATE), DATE OF ALL REVISIONS, AND DATE OF THE SIGNED "SURVEY" SHALL APPEAR ON THE FACE OF THE DOCUMENT IN ALL PAGES.
- PROFESSIONAL LIABILITY COVERAGE NOTE.
- BELOW "AS-BUILT" TITLE ADD LABEL WITH SECTION TOWNSHIP & RANGE NUMBER.
- LOCATION MAP INDICATING SECTION NUMBER (OR PORTION THEREOF), TOWNSHIP, AND RANGE BASED ON THE UNDERLYING PLAT OR LEGAL DESCRIPTION.
- LOCATION MAP SCALE: 1"=300' (AT LEAST TWO (2) MAJOR INTERSECTING ROADS), ALSO STREETS NAMES NEAR THE AREA BEING SURVEYED TO BE SHOWN ON LOCATION MAP.
- BUILDING & FOLIO NUMBERS (FULL ADDRESS PREFERRED IF AVAILABLE).
- CERTIFICATION STATEMENT TO MD-WASD SHALL INCLUDE: AS-BUILT AND/OR BOUNDARY SURVEY WAS PREPARED IN ACCORDANCE WITH WASD SECTION NUMBER 01 78 40 – (01725) PROJECT AS-BUILT/RECORD DRAWINGS
- NORTH ARROW DIRECTION (ON ALL PLAN PAGES).
- FOR PROJECTS LOCATED WITHIN NEW SUBDIVISIONS: AS-BUILTS MUST BE ACCOMPANIED BY A COPY OF THE LATEST APPROVED T-PLAT OR FINAL PLAT.
- WHEN A PROJECT IS ALONG A COUNTY OR STATE ROAD THE LATEST RIGHT-OF-WAY MAP OR MAINTENANCE RIGHT-OF-WAY MAP AVAILABLE FROM FDOT SHALL BE PROVIDED.
- STREET NOMENCLATURE (PER PLAT OF RECORD AND/OR PER FIELD CONDITION WHEN IS DIFFERENT).
- CURRENT LEGAL DESCRIPTION OF PROPERTY REQUIRED.
- CURRENT PLAT OF RECORD (NAME, PLAT BOOK, PAGE, LOT, BLOCK AND/OR TRACT NUMBERS) FOR SUBJECT PROPERTY AND ADJOINING PROPERTIES. IF LAND IS NOT SUBDIVIDED, IT SHOULD BE INDICATED.
- BASIS OF BEARING FOR THE JOB PERFORMED NEEDS TO BE STATED.
- BASELINES MUST SHOW BEARINGS OR DEFLECTION ANGLES.
- DO NOT USE NEGATIVE STATIONING.
- CURVED BASELINES SHALL SHOW DELTA, RADIUS, CHORD AND ARC LENGTH, AND SHALL INCLUDE POINT OF CURVATURE (PC) AND POINT OF TANGENCY (PT) STATIONS AND/OR RADIAL BEARING.
- PIPELINE SHALL BE TIED TO A BASELINE THAT IS EASILY IDENTIFIED ON THE EXISTING OR PROPOSED RIGHT-OF-WAY. BASELINE SHALL NOT BE ON TOP OF THE MAIN EXCEPT FOR GRAVITY SEWERS INSTALLED ON CENTERLINES.
- STATIONING SHALL PROCEED FROM SOUTH TO NORTH AND/OR FROM WEST TO EAST.
- STATIONING STARTING WITH 10+00 AT A REFERENCE POINT (POC OR BEGINNING OF BASE LINE)
- STATIONS SHALL BE RUN ALONG BASELINES.
- STATIONING SHALL BE THE SAME AS SHOWN ON CONSTRUCTION DRAWINGS.
- ALL PERTINENT POINTS ALONG BASELINE SHALL HAVE THEIR STATIONING SHOWN.
- WHERE DIFFERENT STATIONING SYSTEMS CROSS, SHOW THE EQUATION STATION FOR THE COMMON POINT BETWEEN BASELINES.
- FOR WATER MAIN, SEWER MAIN AND GRAVITY SEWER, USE ONE CONTINUOUS STATIONING SYSTEM

- LABEL WITH STATION AND OFFSET ALL VALVES, FITTINGS, SERVICES, OUTLETS, MANHOLES, DEFLECTION POINTS, POINT OF CONNECTION, UTILITIES CROSSING AND ANY OTHER COMPONENTS IN THE LINE.
- THE LABELS, STATIONS AND OFFSETS SHALL COINCIDE, PLAN AND PROFILE VIEW.
- ELEVATIONS:
 - VERTICAL CROSS SECTION ELEVATIONS VALUES TO BE SHOWN AT:
 - ELEVATIONS SHOULD BE REPORTED AT GROUND LEVEL OR FINISHED GRADE COINCIDENT WITH THE FOLLOWING: TOP OF PIPE AT ALL FITTINGS, PIPE DEFLECTIONS, CHANGES IN PIPE DIRECTIONS (VERTICAL & HORIZONTAL), ALL PIPE CROSSING INCLUDING ALL PIPELINES FROM WASD AS-BUILT RECORDS.
 - AT EVERY 100 FEET INTERVALS ALONG THE PIPELINE WITHIN THE ROW
 - AT EVERY 25 FEET IF WITHIN THE WASD FACILITIES.
 - ELEVATIONS ON ALL WASD LINES CROSSING ABOVE OR BELOW NEW LINES (FOUND OR AS PER AS-BUILT PLANS).
 - CLEARANCE WITH CROSSING UTILITIES NOTED.
- S.P.C. AT ALL FITTINGS, PIPE DEFLECTION, CHANGES IN PIPE DIRECTIONS, PIPE CROSSING.
- "PROPOSED" LABELS & INFORMATION SHOWN ON APPROVED DESIGN PLANS NOT TO BE SHOWN AN AS-BUILT PLANS.
- CONSTRUCTION, DESIGN AND OTHER GENERAL NOTES FROM APPROVED DESIGN PLANS NOT RELATED WITH THE AS-BUILT INFORMATION NOT TO BE INCLUDED ON AS-BUILT PLANS.
- EXISTING UNDERGROUND UTILITIES FROM WASD AS-BUILT RECORDS IN CONFLIT OR CROSSING THE NEW PIPELINE NEEDS TO BE SHOWN ON THE AS-BUILT PLANS (EVEN WHEN PIPELINES WERE NOT VISIBLE DURING FIELD WORK).
- ALL VISIBLE UTILITIES DISCOVERED DURING THE AS-BUILT PROCESS SHALL BE SHOWN ON THE AS-BUILT PLANS.
- ANY DEVIATION RESPECT TO THE PIPELINE ALIGNMENT AS PER DESIGN PLANS NEED TO BE SHOWN ON THE AS-BUILT PLANS.
- APPROVAL LETTER FROM E.O.R., INSPECTOR OR CONSTRUCTION MANAGER TO BE REQUIRED WHEN CHANGES FROM DESIGN PLANS ARE SHOWN ON AS-BUILT PLANS.
- HORIZONTAL SEPARATION AND VERTICAL CLEARANCE BETWEEN PIPELINES NEEDS TO BE REPORTED ON THE AS-BUILT PLANS. (MINIMUM DISTANCES APPLY).
- SCALES (DONATION PROJECTS):
 - HORIZONTAL: 1"=40' (MAX.).
 - VERTICAL: 1"= 4' (MAX.).
 - GRAPHIC SCALE ON ALL PAGES.
- DETAILS: SCALE & ORIENTATION NEEDED.
- PROJECT CONTROL LINES & BASELINES SHOULD BE FIELD RECOVERED & IDENTIFIED USING CUSTOMARY WASD SYMBOLS.
 - CENTER LINES.
 - MONUMENT LINE & BASE BUILDING LINES (CITY OF MIAMI PROJECTS).
 - SECTION LINES.
 - R/W LINES.
 - PROPERTY LINES.
 - BUILDING LINES.

- ABANDONED, RETIRED, AND/OR REMOVED FACILITIES INDICATED ON ALL PLAN VIEWS, INCLUDING ALL CUT AND PLUGS.
- IF CUTS AND PLUGS WERE MADE BY WASD FORCES IT MUST BE LABELED ACCORDINGLY.
- NEW FACILITIES TO BE DEPICTED USING SOLID BOLD LINES.
- EXISTING FACILITIES RECOVERED IN THE FIELD TO BE DEPICTED USING THIN-DASHED LINES.
- LEGEND & ABBREVIATIONS (INCLUDE USED SYMBOLS AND ABBREVIATIONS ONLY)
- NO PLUS OR MINUS (+/-) DIMENSIONS WILL BE ACCEPTED.
- DISPLAY UNITS USED FOR EACH HORIZONTAL AND VERTICAL ELEVATION AND/OR DIMENSION.
- VERIFY IF THE AS-BUILTS IS IN SUBSTANTIAL COMPLIANCE WITH DESIGN PLANS
- IF FIELD CHANGES EXIST, PROJECT INSPECTOR TO REVIEW AND NOTE, E.O.R. OR CONSTRUCTION MANAGER TO APPROVE CHANGES BEFORE AS-BUILT SUBMITTAL).
- IF PIPELINE IS REPORTED RETIRED SHALL BE FIELD VERIFIED (PROVIDED BY INSPECTOR).
- CHECK AS-BUILT VS. HISTORIC AS-BUILT IF DISPLAYED IN PLAN VIEW.

HORIZONTAL CONTROL STATE PLANE COORDINATES

- UNITS (U.S. SURVEY FOOT OR US FOOT).
- REFERENCED DATUM FOR ALL HORIZONTAL MEASUREMENTS (NAD 83/1990 ADJUSTMENT FLORIDA EAST ZONE (901) PREFERRED/ OR LATEST ADJUSTMENT).
- CONVERTED HORIZONTAL DATA (SPC) FROM DIFFERENT ADJUSTMENT YEAR TO BE PROVIDED.
- HORIZONTAL AND VERTICAL POSITIONAL ACCURACY OF IMPROVEMENTS DEPICTED SHALL BE STATED.
- GPS CONTROL POINT USED FOR HORIZONTAL CONTROL, TO BE PROVIDED INCLUDING DESCRIPTION & LOCATION.
- SHALL PROVIDE AVERAGE VALUES OF COLLECTED DATA OF THE CONTROL POINT USED AS REFERENCE TO ACHIEVE THE LEVEL OF ACCURACY STATED ON THE HORIZONTAL AND VERTICAL ACCURACY STATEMENT.
- THE DATA SHALL BE SUPPORTED WITH DOCUMENTATION DESCRIBING THE HORIZONTAL ACCURACY AND THE METHODOLOGY USED TO DETERMINE ACCURACY
- BASELINE SHOULD BE AN ACCEPTED, WELL MONUMENTED AND ESTABLISHED ALIGNMENTS (CENTERLINES, MONUMENT, LINES, SECTION LINES, PROPERTY LINES, ROW LINES).
- BASIS OF BEARING FOR THE BASELINE NEEDS TO BE PROVIDED.
- AT LEAST TWO (2) WELL-IDENTIFIED CONTROL POINTS WITHIN THE PROJECT TO BE ESTABLISHED TIE TO "RECOVERED" BASELINE.
- S.P.C. FOR EACH POINT OF CONNECTION AND POINT OF TERMINATION.

VERTICAL CONTROL (NGVD 29 OR NAVD88)

- UNITS (U.S. SURVEY FOOT OR U.S. FOOT)
- AS-BUILT/RECORD DRAWING SHALL USE THE SAME VERTICAL DATUM AS APPROVED DESIGN PLANS
- VERTICAL DATUM: NGVD 1929 (PREFERRED)
- NAVD 88 VERTICAL DATUM ACCEPTED WITH CONVERSION TABLE TO NGVD 1929 (TO BE PROVIDED ON EACH SHEET).

- FOR PROJECTS USING CITY OF MIAMI DATUM, PROVIDE A CONVERSION FACTOR ON EACH PAGE TO NGVD 1929 DATUM
- BENCHMARK USED: SOURCE, NAME/NUMBER, DESCRIPTION, DATUM & ELEVATION, LOCATION (AND CONVERSION IF APPLICABLE).
- THE DATA SHALL BE SUPPORTED WITH DOCUMENTATION DESCRIBING THE VERTICAL ACCURACY AND THE METHODOLOGY USED TO DETERMINE ACCURACY
- FEMA FLOOD INFORMATION (PUMP STATIONS OF WASD BUILDING FACILITIES).

ACCURACY

HORIZONTAL ACCURACY:

- THE HORIZONTAL STATED ACCURACY SHALL EXCEED 1 FOOT IN 7,500 FEET, A COMMONLY VALUE ACCEPTED FOR SUBURBAN AREAS.
- STATE THE HORIZONTAL DATUM USED.
- DETAILED DESCRIPTION OF THE CONTROL POINT(S) UPON WHICH THE SURVEY IS/ARE BASED.
- THE DATA SHALL BE SUPPORTED WITH DOCUMENTATION DESCRIBING THE HORIZONTAL ACCURACY AND THE METHODOLOGY USED TO DETERMINE ACCURACY.

VERTICAL ACCURACY:

- THE ELEVATIONS PROVIDED SHALL BE BASED ON A CLOSED LEVEL BETWEEN TWO-BENCHMARKS AND SHALL NOT EXCEED THE CALCULATED VALUE OF A CLOSURE IN FEET OF PLUS OR MINUS 0.05 FEET TIMES THE SQUARE ROOT OF THE DISTANCE IN MILES.
- STATE THE VERTICAL DATUM USED.
- DETAILED DESCRIPTION OF THE CONTROL UPON WHICH THE SURVEY ARE BASED.
- THE DATA SHALL BE SUPPORTED WITH DOCUMENTATION DESCRIBING THE VERTICAL ACCURACY AND THE METHODOLOGY USED TO DETERMINE ACCURACY.

EASEMENTS:

- EASEMENTS ARE REQUIRED FOR ANY INFRASTRUCTURE NOT IN THE PUBLIC RIGHT-OF-WAY.
- EASEMENTS SHALL BE CLEARLY SHOWN WITH SIZE, COORDINATES FOR EACH CORNER AND TIED TO THE PROPERTY LINE.
- THE EASEMENTS SHALL BE SEPARATE FOR WATER, SEWER, FORCE MAIN AND PUMP STATIONS.
- EXISTING EASEMENTS WITH OFFICIAL RECORD BOOK (O.R.B.) INFORMATION MUST BE SHOWN.
- IF THERE IS INSUFFICIENT SIDE CLEARANCE TO THE RIGHT-OF-WAY LINE FOR MAINTENANCE PURPOSES, THEN AN EASEMENT IS REQUIRED FOR A MAIN OR FIRE HYDRANT LOCATED IN THE PUBLIC RIGHT OF WAY,
- EASEMENT WITH 6' FOR WATER AND 7.5' FOR FORCE MAINS AND GRAVITY SEWER MAINS ON EACH SIDE AS MEASURED FROM THE CENTER OF THE PIPELINE (PIPES DIAMETER UP TO 16").
- EASEMENT LINES SHALL BE TIED TO THE CENTERLINE OF THE MAIN
- SHOW EASEMENT RELEASED WITH RECORDED INFORMATION OFFICIAL RECORD BOOK (O.R.B.) AND PAGE.

- TIE HYDRANTS TO RIGHT-OF-WAY (EASEMENT REQUIRED IF CLOSE TO RIGHT OF WAY LINE).
- TIE WATER METER TO RIGHT-OF-WAY (EASEMENT REQUIRED IF CLOSE TO RIGHT OF WAY LINE)

TIE-IN POINTS

- ALL TIE-IN POINTS, WATER OR SEWER SHALL BE TIED TO THE BASELINE
- CLEARLY SHOW AND LABEL WHAT IS NEW AND WHAT IS EXISTING AT THE TIE-IN POINTS WITH THE WASD AS-BUILT/RECORD DRAWING NUMBER IDENTIFIED ON THE EXISTING MAIN.
- THE ENDS OF ALL SERVICES AND LATERALS SHALL BE FULLY LOCATED BY REFERENCE TO THE MAIN AND THE NEAREST PROPERTY LINE(S)
- SHOW ALL OUTLETS, STUB-OUTS, SEWER LATERAL, WATER SERVICE AND ANY OTHER RELEVANT INFORMATION. IDENTIFY THE SIZE, MATERIAL, LENGTH, DIRECTION AND ELEVATION (TOP OF PIPE FOR WATER AND FORCE MAIN, INVERT FOR GRAVITY SEWER).
- ON ALL PIPE FITTINGS OF 36-INCHES DIAMETER OR LARGER, INCLUDING TEES, BENDS, CROSSES, WYES AND BEVELS, STATION AND ELEVATION SHALL BE TAKEN AT THE END AND CENTER POINTS TO REFLECT THE TRUE ELEVATION AND ORIENTATION OF THE FITTING.
- SHOW PROFILE VIEW OF THE MAIN PIPELINE INSTALLATION ON THE SAME SHEET AS THE PLAN VIEW. STATIONING ON BOTH VIEWS SHALL BE ALIGNED TO FACILITATE AS-BUILT REVIEW.
- MANHOLE RIM AND VALVE BOX RIM ELEVATIONS SHALL BE SHOWN.
- SHOW ALL INVERT AND BOTTOM ELEVATIONS IN MANHOLES AND VALVE VAULTS OR BOXES.
- SHOW ALL INVERT AND BOTTOM ELEVATIONS TOGETHER WITH PIPE SIZE.
- INCLUDE PIPE MATERIAL, FOR EXISTING STRUCTURES HAVING PIPES WHICH CROSS THE PIPELINE BEING CONSTRUCTED WITHIN 250 FEET OF POINT OF CROSSING.
- LOCATION, ELEVATION, MATERIAL AND SIZE OF ALL CASINGS SHALL BE SHOWN.
- JACK AND BORING OR MICRO TUNNELING USED FOR CASING INSTALLATION:
 - LAUNCHING AND RECEIVING PITS LOCATION AND DIMENSIONS SHALL BE SHOWN.
- SHEETING AND PILING:
 - SHOW TYPES, SIZES
 - MEASURED AND COMPLETE LOCATIONS WITH DIMENSIONS OF:
 - TOP AND BOTTOM ELEVATIONS OF ALL SHEETING AND PILE CAPS,
 - TIE BACKS, ANCHORS, WHALERS, OR OTHER APPURTENANT STRUCTURES
 - SHEETING LEFT IN-PLACE SHALL BE SHOWN AND NOTED.
- WHERE SERVICE IS NOT AT A RIGHT ANGLE (90 DEGREES) TO MAIN LINE, TIE SERVICE WITH LENGTH OF OFFSET TO NEAREST PROPERTY LINE.

WATER AS-BUILT

- STATIONING AND OFFSETS:
 - AT EVERY DEFLECTION.
 - AT EVERY FITTING.
 - STATION LABELS @ 100' INTERVALS.
- LABEL FITTING, TYPE, SIZE & MATERIAL AND OTHER RELEVANT INFORMATION (PLAN AND PROFILE).
- POC (POINT OF CONNECTIONS) TIED IN, IN TWO (2) OPPOSITE DIRECTIONS TO A WELL-ESTABLISHED BASE LINE, CENTER LINE OR R/W LINE.

- OFF SETS IDENTIFIED AND DIMENSIONED RELATIVE TO BASE LINE.
- ELEVATIONS (VERTICAL CONTROL):
 - AT 100' INTERVALS ON FACILITY AND ON FINISHED GRADE.
 - AT EVERY CHANGE ON FINISHED GRADE.
 - AT EVERY DEFLECTION (HORIZONTAL AND VERTICAL) OR AT EVERY CHANGE IN DIRECTION.
 - EVERY FITTING, POINT OF CONNECTION & POINT OF TERMINATION.
- UTILITIES CROSSING:
 - TYPE OF FACILITY.
 - SIZE & MATERIAL OF PIPE.
 - TOP OR INVERT OF PIPES ELEVATIONS.
 - CLEARANCE (ON PROFILE): ACTUAL MEASUREMENTS WHEN CROSSING SUBJECT UTILITY.
 - UTILITY POLES, ADJACENT TO THE MAIN.
 - OVERHEAD WIRES CROSSING THE MAIN AND OTHER APPURTENANCES ALONG THE MAIN.
- STATE PLANE COORDINATES (SPC) ON EVERY VISIBLE FITTING, INCLUDING, BUT NOT LIMITED TO:
 - MAIN VALVES, AIR RELEASE VALVES (A.R.V) AND FLUSHING VALVE OUTLETS (F.V.O.).
 - BENDS, WATER SAMPLING POINTS, HYDRANTS, SERVICE LINES BACKFLOW PREVENTERS.
 - POINT OF CONNECTION, POINT OF TERMINATION, CENTER OF METER BOX, CUT & PLUG.
 - TWO POINTS ON RISE AND DROP OF FIRE LINE ASSEMBLY.
- LINES THAT ARE ABANDONED IN PLACE, OUT OF SERVICE OR REMOVED SHALL BE CLEARLY IDENTIFIED (DASHED AND BOLD LINE TYPE).
- ON THE AS-BUILT/RECORD DRAWINGS TO INCLUDE CUT AND PLUG LOCATIONS, PIPE MATERIAL AND EXISTING AS-BUILT LOCATION.
- INCLUDE THE EXISTING AS-BUILT/RECORD DRAWING NUMBERS.
- IF CUTS AND PLUGS WERE MADE BY WASD FORCES IT MUST BE LABELED ACCORDINGLY.
- INCLUDE A STATEMENT ON SURVEYOR NOTES INDICATING WORK PERFORMED BY THE CONTRACTOR UNDER THE DEPARTMENT'S LICENSED OPERATOR SUPERVISION.
- MECHANICAL RESTRAINTS SHALL BE IDENTIFIED ON THE AS-BUILT/RECORD DRAWING. THE RESTRAINT SYSTEM USED SHALL BE IDENTIFIED.
- LARGE DIAMETER CONCRETE TRANSMISSION MAINS 42-INCHES AND LARGER SHALL SHOW EACH PIPE JOINT WITH STATION AND PIPE LENGTH.
- IF AN ASSET IS AUTHORIZED TO BE REUSED, CLEARLY SHOW THAT ASSET, SUCH AS A FIRE HYDRANT, IS BEING REUSED.
- PIPELINE MUST BE IDENTIFIED BY TYPE OF PIPE MATERIAL, MANUFACTURER, TYPE OF JOINT AND TYPE OF JOINT RESTRAINT.
- RECORDING OF DATA FOR ADJACENT, PARALLELING, UTILITIES SHALL ONLY BE REQUIRED FOR LINES WHICH COME WITHIN THREE FEET OF THE OUTSIDE (BUT NOT LESS THAN THE MINIMUM REQUIRED PER FAC 62-555.314 OF THE PIPE BEING INSTALLED.
- DISTANCES FROM MAIN TO ALL VALVES, FIRE HYDRANTS AND METER BOXES SHALL BE SHOWN.
- TIE HYDRANTS AND WATER METERS TO RIGHT-OF-WAY (EASEMENT WILL BE REQUIRED IF CLOSE TO RIGHT OF WAY LINE)
- LABEL WATER SERVICE AS EITHER DOUBLE, SINGLE, IRRIGATION, AND SO ON, BASED ON TYPE OF SERVICE, INCLUDING DIAMETER AND MATERIAL.

- LOCATION OF ALL AIR RELEASE VALVES AND TOP OF PIPE ELEVATION, IDENTIFYING IF THE AIR RELEASE VALVES ARE AUTOMATIC OR MANUAL.
- VALVES MUST BE IDENTIFIED BY SIZE, TYPE, AND END CONDITION. MANUFACTURER'S NAME
- NUMBER OF TURNS REQUIRED TO OPEN OR CLOSE THE VALVE SHALL BE PROVIDED FOR VALVES 16 INCH OR LARGER

**AS-BUILT/RECORD DRAWINGS FOR WATER AND SEWER FORCE MAINS SHALL
ADDITIONALLY INCLUDE THE FOLLOWING:**

- SEPARATE PROFILES FOR GRAVITY AND FORCE MAINS.
- PLAN VIEW SHOWING SIZE, MATERIAL, OFFSET OF MAIN, DEFLECTIONS (IF ANY), STATIONS AND OFFSETS OF SERVICES, HYDRANTS AND FITTINGS AT THE MAIN; AND AT MAIN, DEFLECTIONS (IF ANY) AND THE END OF THE SERVICE LINE.
- PROFILE SHOWING GROUND AND TOP OF PIPE ELEVATION EVERY 100 FEET, MAXIMUM, AND AT ANY CHANGE IN GRADE (WITH CORRESPONDING STATION) AND AT EVERY FITTING. SHOW SIZE AND MATERIAL OF PIPE, ALL FITTINGS AND EXTEND OF RESTRAINED PIPE WITH STATIONS. THE STATIONING SYSTEM SHALL BE THE SAME AS THAT USED IN THE PLAN VIEW.
- DISTANCES FROM MAIN TO ALL VALVES, FIRE HYDRANTS AND METER BOXES SHALL BE SHOWN.
- TIE HYDRANTS TO RIGHT-OF-WAY.
- THE PSM SHALL RUN-OUT RIGHT-OF-WAY LINES.
- ALL "ASSEMBLY DETAIL" SHALL BE PROVIDED FOR ALL TURBO METER INSTALLATIONS AND FOR ALL METERS GREATER THAN FOUR (4) INCHES.
- LABEL WATER SERVICE AS EITHER DOUBLE, SINGLE, IRRIGATION, ETC., BASED ON TYPE OF SERVICE, INCLUDING DIAMETER AND MATERIAL.
- WHEN METER BANKS ARE USED, SHOW TYPICAL DETAIL WITH SIZE OF SERVICE LINE, MATERIAL AND TYPE OF SERVICES.
- LOCATION OF ALL AIR RELEASE VALVES AND TOP OF PIPE ELEVATION.
- IDENTIFYING IF THE AIR RELEASE VALVES ARE AUTOMATIC OR MANUAL.
- FOR VALVES 16 INCH OR LARGER SHALL BE PROVIDED:
 - MUST BE IDENTIFIED BY SIZE, TYPE, AND END CONDITION.
 - MANUFACTURER'S NAME
 - NUMBER OF TURNS REQUIRED TO OPEN OR CLOSE THE VALVE

SEWER AS-BUILT

- SEPARATE PROFILES FOR GRAVITY AND FORCE MAINS
- PLAN SHOWING MANHOLE NUMBERS AND STATIONS SIZE & MATERIAL OF PIPE
- DISTANCE BETWEEN MANHOLES INCLUDING SLOPE IN PERCENTAGE.
- THE SIZE, MATERIAL, STATION, AND LENGTHS OF LATERALS SHALL ALSO BE SHOWN.
- STATIONING SHALL BE IN ACCORDANCE WITH THE APPROVED PERMIT PLANS.
- PROFILE SHOWING MANHOLE NUMBERS (AS PER PLAN), RIM ELEVATIONS, INVERT ELEVATIONS (IN AND OUT) FOR EACH MANHOLE INCLUDING PIPE DIRECTIONS, LENGTH AND SLOPE.
- PIPES WITH A SLOPE LESS THAN THE MINIMUM RECOMMENDED BY (RER/DERM) SHALL NOT BE ACCEPTED.

- STATIONS AND OFFSETS OF ALL WYES AND TEES FOR LATERALS AND LOCATION OF CLEANOUTS WITH DISTANCE TO PROPERTY LINE OR RIGHT-OF-WAY
- CONNECTIONS TO EXISTING SEWER COLLECTION SYSTEMS WITH FLOW DIRECTION TO BE SHOWN.
- SHOW PROFILE FOR SEWER LATERALS CROSSING UTILITIES, WITH INVERT ELEVATIONS AT MAIN, AT CROSSINGS, AT CHANGE IN DIRECTION AND AT CLEAN OUT, INCLUDING SLOPE, CLEARANCE AT CROSSING AND STATION.
- WHEN CONNECTING A NEW MAIN OR LATERAL TO AN EXISTING MAIN, SHOW DISTANCE AND INVERT ELEVATIONS OF DOWNSTREAM AND UPSTREAM EXISTING MANHOLES
- LINES THAT ARE ABANDONED IN PLACE, OUT OF SERVICE OR REMOVED SHALL BE CLEARLY IDENTIFIED (DASHED AND BOLD LINE TYPE).
- LABEL TYPE, SIZE & MATERIAL OF FACILITIES:
- OFF SETS IDENTIFIED AND DIMENSIONED
- STATE PLANE COORDINATES (SPC) ON EVERY FITTING, INCLUDING, BUT NOT LIMITED TO:
 - MAINS
 - MANHOLES (NUMBERED)
 - LATERALS
 - SLOPES (GRAVITY): EXPRESSED IN % AND DIRECTION INDICATED
 - FITTINGS (FORCE MAIN)
- OFF SETS IDENTIFIED AND DIMENSIONED
- STATE PLANE COORDINATES (SPC) ON EVERY FITTING, INCLUDING, BUT NOT LIMITED TO:
 - MAN/HOLES
 - POINT OF CONNECTION
 - POINT OF TERMINATION
 - LATERAL POINT OF CONNECTION
 - LATERAL CLEANOUT
 - STATIONING - GRAVITY:
 - STARTING WITH 10+00 AT A REFERENCE POINT (DOWNSTREAM MANHOLE OR BEGINNING OF BASE LINE) DO NOT USE NEGATIVE STATIONING.
 - AT EVERY MANHOLE
 - AT EVERY LATERAL
- ELEVATIONS – GRAVITY
 - TOP OF RIM ELEV.
 - INVERTS ELEVATIONS AND PIPE DIRECTION LABELED (NORTH, SOUTH, EAST, WEST)
 - EXISTING FACILITIES - POINT OF CONNECTION
 - STATIONING - FORCE MAIN:
 - AT EVERY FITTING
- ELEVATIONS - FORCE MAIN:
 - AT 100' INTERVALS
 - AT EVERY CHANGE IN FINISHED GRADE
 - AT EVERY CHANGE IN DIRECTION
 - EVERY DEFLECTION (HORIZONTAL OR VERTICAL)
 - AT EXISTING FACILITIES
 - AT OTHER UTILITIES WHEN CROSSING ABOVE
- UTILITY CROSSINGS:

- TYPE OF FACILITY
- MATERIAL OF PIPE OR CONDUIT
- TOP OF PIPES ELEVATIONS OR INVERT OF PIPES ELEVATIONS
- CLEARANCE (ACTUAL MEASUREMENTS WHEN CROSSING ABOVE SUBJECT UTILITY)

PUMP STATION & OTHER INFRASTRUCTURE

- PUMP STATION TOPOGRAPHIC AND BOUNDARY SURVEY SIGNED AND SEALED BY FLORIDA REGISTERED PROFESSIONAL SURVEYOR AND MAPPER.
- ALL INFORMATION REQUIRED OF A BOUNDARY SURVEY SUCH AS:
 - PROPERTY CORNERS,
 - SETBACKS
 - DIMENSION OF THE STRUCTURES AND APPURTENANCES, ETC.
 - INCLUDE THE LEGAL DESCRIPTION OF PUMP STATION SITE AND/OR OTHER FACILITIES.
 - EASEMENTS AND RIGHTS-OF-WAY ABUTTING THE PUMP STATION SITE AND LOCATION OF ALL SURFACE FACILITIES.
 - ALL UTILITIES WITHIN PUMP STATION PROPERTY SHALL BE PROPERLY SHOWN, ALONG WITH THEIR ASSOCIATED ELEVATION AND CLEARANCE.
 - HORIZONTAL AND VERTICAL LOCATIONS OF ALL FITTINGS, DEFLECTIONS, OR AT ANY SIGNIFICANT CHANGE OF DIRECTION, AND AT A MAXIMUM 25- FOOT INTERVALS FOR ON-SITE
 - PLAN AND VERTICAL CROSS-SECTION OF THE STATION SHOWING AND IDENTIFYING THE PIPING AND MECHANICAL LAYOUT.
 - ELEVATIONS FOR TOP OF WET AND DRY WELLS, BOTTOM OF WET WELL, PIPE INVERTS, FINISH FLOOR ELEVATION, ETC.
 - FEMA FLOOD ZONE AND ELEVATION SHALL BE SHOWN ON THE COVER SHEET.
 - ELECTRICAL AS-BUILT/RECORD DRAWING CONTROL AND RISER/ONE-LINE POWER SCHEMATIC DIAGRAMS, RTU WIRING DIAGRAM AND ALL OTHER ELEVATION AND ANY OTHER ELECTRICAL DETAILS.
 - ENGINEERING REPORT AS TO THE PUMP MANUFACTURER, SIZE, CAPACITY (TDH), PEAK DESIGN CAPACITY (IN GPM) AND BILL OF MATERIALS (FOR DONATION PROJECTS).
 - THE MECHANICAL, STRUCTURAL AND ELECTRICAL RECORD DRAWINGS ARE TO BE PREPARED AND EACH SHEET MUST BE SIGNED AND SEALED BY THE ENGINEER OF RECORD OR A DESIGNATED FLORIDA REGISTERED PROFESSIONAL ENGINEER,
 - THE COVER SHEET SHALL INCLUDE THE STATEMENT AS SHOWN ON SECTION 01 78 40 (01725) PAGE 14 FOR PUMP STATIONS
 - S.P.C. FOR EACH PUMP STATION PROPERTY CORNER(NAD83(90) OR LATEST ADJUSTMENT.
 - FEMA FLOOD ZONE AND ELEVATION DATUM AS PER FEMA MAPS (CONVERSION MAY APPLY FROM NAVD29 TO NAVD 88)
 - PLAN VIEW, PROFILE, AND SLOPE (%) FOR NEW MANHOLE-PIPE-WELL CONNECTIONS
 - SHOW SETBACKS AND DIMENSIONS OF THE STRUCTURES AND APPURTENANCES.
 - TIE ABOVE GROUND STRUCTURES TO THE PUMP STATION PROPERTY LINE
 - MECHANICAL PLANS:
 - WET WELL
 - VALVE VAULT

- FUEL TANK WHEN APPICABLE
- ELECTRICAL PLANS
 - CONTROL PANEL
 - POWER/CONTROL
 - WIRING SCHEDULE
- STRUCTURAL PLANS
 - FOUNDATION/SUPPORT FOR ELECTRICAL CABINETS AND RACKS
 - CONCRETE SLAB
 - FUEL TANK CONCRETE FOUNDATION WHEN APPICABLE
 - EMERGENCY GENERATOR BUILDING FLOOR PLAN WHEN APPICABLE
 - ROOF PLAN WHEN APPLICABLE

PHASING OF PROJECTS

- PHASING OF PROJECTS MUST BE APPROVED BY THE DEPARTMENT AND SUCH APPROVAL COMMUNICATED TO THE INSPECTIONS UNIT. WHERE PHASING IS APPROVED THE FOLLOWING ADDITIONAL REQUIREMENTS FOR AS-BUILT/RECORD DRAWINGS SHALL APPLY:
- THE PHASE NUMBER MUST APPEAR PROMINENTLY ON EACH SHEET.
- A PROMINENT PHASE LINE SHALL BE DRAWN AT THE JUNCTURES OF THE SUBMITTED PHASE WITH ANY PREVIOUS OR SUBSEQUENT PHASES. THE PHASE LINE SHALL BE LABELED AND THE PHASE NUMBERS ON EITHER SIDE OF IT IDENTIFIED.
- WORK IN PREVIOUS OR SUBSEQUENT PHASES SHALL BE "HATCHED" OUT OR DASHED IN PLAN AND PROFILE AND LABELED "NOT A PART" TO CLEARLY ELIMINATE IT FROM THE AS_BUILT/RECORD DRAWINGS.
- CLEARLY SHOW WHAT IS PART OF THE PRESENT PHASE AND WHAT IS PART OF PREVIOUS OR SUBSEQUENT PHASES AT THE TIE-IN POINTS OR PHASE LINES.
- UNLESS OTHERWISE AUTHORIZED, PHASES SHALL END AT A VALVE FOR WATER AND FORCE MAINS, AND AT A MANHOLE FOR GRAVITY SEWERS