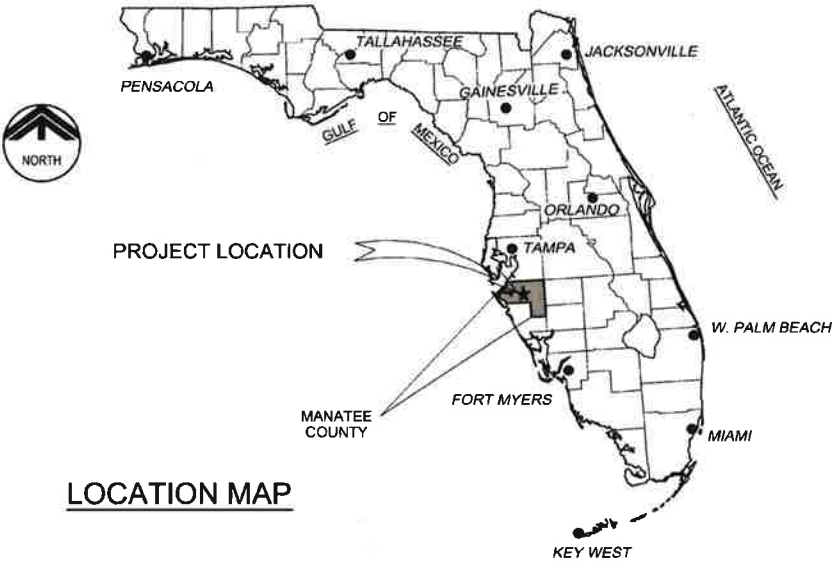


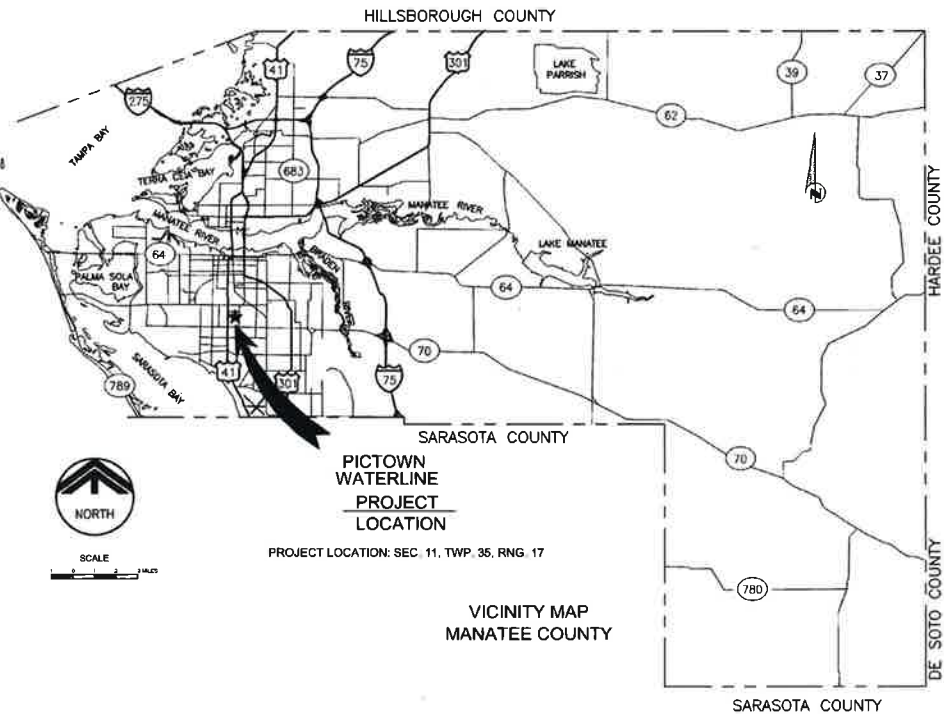
MANATEE COUNTY GOVERNMENT
PUBLIC WORKS DEPARTMENT
(MANATEE COUNTY, FLORIDA)

PIC TOWN WATERLINE REPLACEMENT (PHASE I)
MANATEE COUNTY PROJECT NO. 6074870

JULY 2016



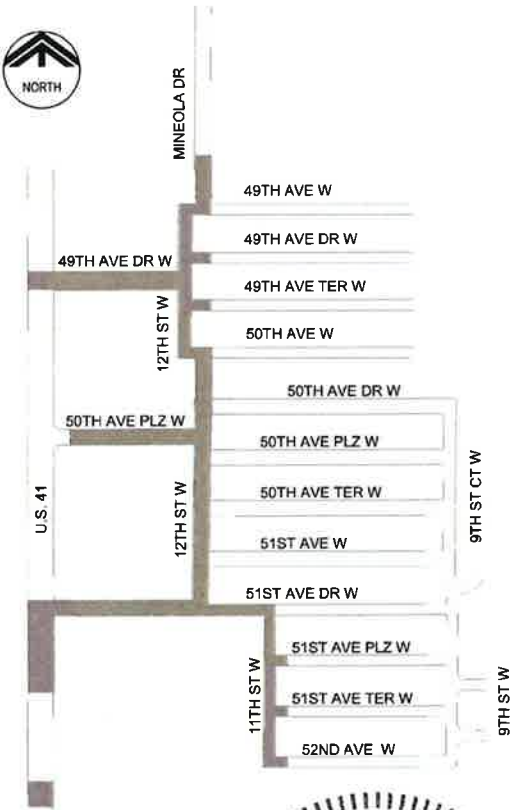
LOCATION MAP



PICTOWN
WATERLINE
PROJECT
LOCATION

PROJECT LOCATION: SEC. 11, TWP. 35, RNG. 17

VICINITY MAP
MANATEE COUNTY



CAROLLO ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

G. Dean Milton
ENGINEER OF RECORD
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PIPE SERVICE ABBREVIATIONS

| ABBREVIATION | DESCRIPTION | ABBREVIATION | DESCRIPTION |
|--------------|-------------------------------------------|--------------|-----------------------------------------|
| A: | | P: | |
| AA | AERATION or AIR | PA | PROCESS AIR |
| AC | ASPHALTIC CONCRETE | PF | PROCESS FEED |
| AHP | AIR, HIGH PRESSURE | PD | PLANT DRAIN |
| AIS | AIR, INSTRUMENT SUPPLY | PRW | PEACE RIVER WATER |
| ALM | ALUM | PW | POTABLE WATER |
| ALP | AIR, LOW PRESSURE PROCESS | PS | POLYMER SOLUTION |
| AS | ANTISCALANT | | |
| B: | | R: | |
| BW | FILTER BACKWASH DRAINAGE | RAW | RAW WATER |
| BWR | FILTER BACKWASH RETURN | RCY | RECIRCULATION - NEUTRALIZATION TANK |
| C: | | REC | RECYCLE |
| CA | COMPRESSED AIR | RD | ROOF DRAIN |
| CAUSTIC | CAUSTIC SOLUTION (CONCENTRATED OR DILUTE) | RJW | REJECT WATER |
| CD | CONDENSATE DRAIN | RW | RAW WATER |
| CDL | CHEMICAL DRAIN LINE | S: | |
| CEN | CENTRATE | SA-1 | SANITARY SEWER |
| CH | CHEMICAL | SA-2 | SAMPLING |
| CHDR | CHEMICAL DRAIN | SAN | SANITARY SEWER |
| CIP | HYDROCHLORIC ACID (5-10%) | SCM | SCUM |
| CLG | CHLORINE GAS | SD | STORM DRAIN |
| CLGV | CHLORINE GAS (VACUUM) | SDL | SUMP DRAIN LINE |
| CLS | CHLORINE SOLUTION WATER | SEW | SETTLED WATER |
| CM | CONCENTRATE MAKEUP | SFT | SOFT WATER |
| CR | CONCENTRATE RECYCLE | SLW | SEAL WATER LINE |
| CRJ | CONCENTRATE REJECT | SMP | SAMPLE |
| CSOL | CHEMICAL SUMP DRAIN LINE | SPD | SUMP PUMP DISCHARGE |
| CW | COLD WATER | SPW | SAMPLE WATER or SPRAY WATER |
| CWR | COOLING WATER RETURN | SRL | SCRUBBER RECIRCULATION LIQUID (CAUSTIC) |
| CWS | COOLING WATER SUPPLY | SRW | SERVICE WATER |
| D: | | SOF | SOFTENED WATER |
| DCT | DECANT | STW | STORM WATER |
| DL | DRAIN LINE | STB | SUBNATANT |
| DRN or D | DRAIN | SUP | SUPERNATANT |
| DR-1 | PLANT DRAIN | SW | SURFACE WASH |
| DR-2 | PLANT DRAIN | T: | |
| DR-3 | PLANT DRAIN | TSL | THICKENED SLUDGE |
| DR-4 | PLANT DRAIN | U: | |
| DW | DOMESTIC WATER (POTABLE) | UD | UNDERDRAIN |
| DW-2 | DOMESTIC WATER (POTABLE) | V: | |
| DW-3 | DOMESTIC WATER (POTABLE) | VT or V | VENT |
| E: | | VTR | VENT THROUGH ROOF |
| ECIP | HYDROCHLORIC ACID (20%) | W: | |
| EFF | EFFLUENT | WAW | POTABLE WATER |
| EXG | EXHAUST GAS | WE | WELL WATER |
| EUG | ELECTRICAL CONDUIT or DUCT BANK | WPS | WATER, PLANT SERVICE |
| EXH | EXHAUST | WW | WASHWATER (FILTER BACKWASH) |
| F: | | W2-1 | SERVICE WATER (NON POTABLE) |
| FA | FOUL AIR DUCT | W2-2 | SERVICE WATER (NON POTABLE) |
| FE | FILTER EFFLUENT | W2-3 | SERVICE WATER (NON POTABLE) |
| FF | FILTER FEED | W2-4 | SERVICE WATER (NON POTABLE) |
| FI | FILTER INFILTRANT | W2-5 | SERVICE WATER (NON POTABLE) |
| FIW | FINISHED WATER | | |
| FLT | FILTRATE | | |
| FLW | FILTER WASH WATER | | |
| FM | FORCE MAIN | | |
| FOF | FUEL LINE FILL | | |
| FOO | FUEL LINE OVERFLOW | | |
| FOR | FUEL OIL RETURN | | |
| FOS | FUEL OIL SUPPLY | | |
| FOV | FUEL LINE VENT | | |
| FP | FIRE PROTECTION EXTERIOR | | |
| FR | FILTER RINSE TO WASTE | | |
| FS | FINISH SURFACE | | |
| FW | FLUSHING WATER | | |
| G: | | | |
| G | GAS | | |
| GR | GRIT GREASE | | |
| GS | GRAVITY SEWER | | |
| H: | | | |
| HCL | HYDROCHLORIC ACID | | |
| HG | HYDROGEN GAS | | |
| HPW | HIGH PRESSURE WATER | | |
| HW | HOT WATER | | |
| HWR | HOT WATER RETURN | | |
| HWS | HOT WATER SUPPLY | | |
| I: | | | |
| INF | INFILTRANT | | |
| IRR | IRRIGATION WATER | | |
| L: | | | |
| LO | LUBRICATION OIL | | |
| LPA | LOW PRESSURE AIR | | |
| LPC | LOW PRESSURE CONDENSATE | | |
| LPS | LOW PRESSURE STEAM | | |
| N: | | | |
| NH3-1 | AMMONIA (NH3) GAS | | |
| NH3-2 | AMMONIA (NH3) GAS LOW PRESS. | | |
| NaOCI | SODIUM HYPOCHLORITE | | |
| NaOH | SODIUM HYDROXIDE SOLUTION | | |
| NTDR | NEUTRALIZATION TANK DRAIN LINE | | |
| O: | | | |
| OF | OVERFLOW | | |
| OSW | OFF - SPEC WATER | | |
| OSW - 1 | OFF - SPEC WATER | | |

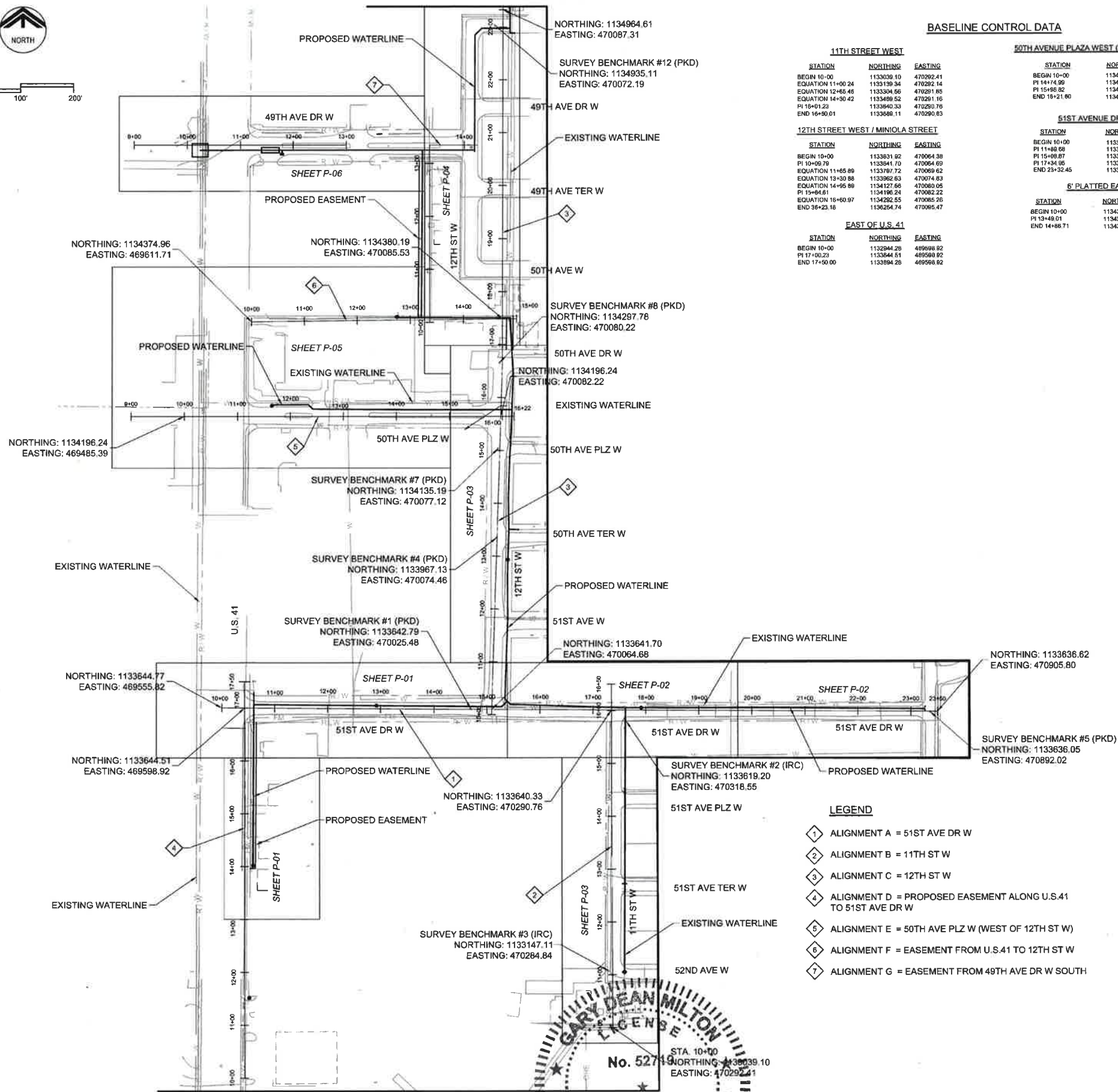
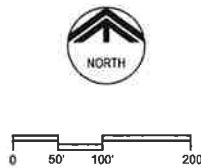
| ABBREVIATION | DESCRIPTION |
|--------------|----------------------------------------|
| A: | |
| & | AND |
| @ | AT (MEASUREMENT) |
| AM | AMPERE or AIR |
| ABS | ANCHOR BOLT or AERATION BASIN |
| AB | ACRYLONITRILE BUTADIENE STYRENE |
| AC | ASPHALTIC CONCRETE |
| ACB | AIR CIRCUIT BREAKER |
| ACU | AIR CONDITIONING UNIT |
| AD | ACCESS DOOR |
| ADD/L | ADDITIONAL |
| ADJ | ADJACENT |
| AED | AREA EQUIPMENT DRAIN |
| AER | AERATION |
| AF | AMPERE FRAME |
| AIL | AIR INTAKE LOUVER |
| AL | ALUMINUM |
| ALT | ALTERNATE |
| AM | AMMETER |
| ANNU | ANNUNCIATOR |
| APPROX | APPROXIMATELY |
| ARV | AIR RELEASE VALVE |
| AS | AMMETER SWITCH |
| AT | AMPERE TRIP |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AWG | AMERICAN WIRE GAUGE |
| AWTP | ADVANCED WASTEWATER TREATMENT PLANT |
| B: | |
| BAS | BASIN |
| BC | BACK OF CURB |
| BC | BOLT CIRCLE OR BRASS CAP |
| BD | BOARD |
| BL | BLIND FLANGE |
| BPF | BACK FLOW PREVENTER |
| BFV | BUTTERFLY VALVE |
| BKR | CIRCUIT BREAKER |
| BL | BITUMINOUS LINING |
| BLDG | BUILDING |
| BLKHD | BULKHEAD |
| BL | BLOWER |
| BM | BEAM |
| BM | BENCH MARK |
| B/C or BC | BEGINNING OF CURVE |
| BOD | BOTTOM OF DUCT |
| BOP | BOTTOM OF PIPE |
| BOT | BOTTOM |
| BPV | BACK PRESSURE VALVE |
| BPRV | BACK PRESSURE REGULATOR VALVE |
| BRG | BEARING |
| BS | BELL AND SPIGOT |
| BSMT | BASEMENT |
| RSP | BLACK STEEL PIPE |
| BU | BELL UP |
| CL or V | BALL VALVE |
| BW | BOTH WAYS |
| C: | |
| C | CLOSE, CHANNEL OR CONDUIT |
| C&G | CURB & GUTTER |
| CA | CONCRETE ANCHOR or COMBUSTION AIR |
| CB | CABINET |
| CB | CATCH BASIN |
| CBC & C | CIRCUIT BREAKER, CONTROLS & CONTACTORS |
| CC | CENTER OF CURVATURE |
| CC | CENTER TO CENTER |
| CEF | CEILING EXHAUST FAN |
| CEM | CEMENT |
| CF | CUBIC FEET |
| CFM | CUBIC FEET PER MINUTE |
| CFS | CUBIC FEET PER SECOND |
| CI | CAST IRON |
| CJ | CONTROL JOINT |
| CKD PL | CHECKERED PLATE |
| CKV | CHECK VALVE |
| CL or G | CENTER LINE |
| CL or C.L. | CHAIN LINK |
| CLG | CEILING |
| CLR | CLEAR, CLEARANCE |
| CM | CONCRETE MORTAR |
| CML&C | CEMENT MORTAR LINED AND COATED |
| CMU | CONCRETE MASONRY UNIT |
| CO | CLEAN OUT |
| COL | COLUMN |
| COMM | COMMUNICATIONS |
| CON | CONCENTRIC |
| CONC | CONCRETE |
| CONC REINF | CONCRETE REINFORCING |
| CONN | CONNECT OR CONNECTION |
| CONSTR | CONSTRUCTION |
| CONT | CONTINUOUS OR CONTINUATION |
| CONT | CONTROL PANEL |
| CPG | COUPLING |
| CPVC | CHLORINATED POLYVINYL CHLORIDE |
| CQ | COUNTER |
| CR | CONTROL RELAY |
| CS | CARBON STEEL or CHLORINE GA3 |
| CSK | COUNTERSINK (COUNTERSUNK) |
| CT | CURRENT TRANSFORMER |
| CTB | CONCRETE THRUST BLOCK |
| CTL | CONTROL |
| CTM | CURRENT TRANSMITTER |
| CTR | CENTER, CENTERED |
| CUP | COPPER PIPE |
| CV | CHECK VALVE |
| D: | |
| D | DIGITAL OR DISCRETE |
| DEW | DEWDRY |
| DAFT | DISSOLVED AIR FLOTATION FLOCCULANT |
| DAM | DAMPER |
| DBA | DEFORMED BAR ANCHOR |
| DBL | DOUBLE |
| DEG or ° | DEGREE |
| Delta or Δ | CENTRAL ANGLE |
| DEMO | DEMOLITION |
| DET | DETAIL |
| DF | DRINKING FOUNTAIN |
| DI | DUCTILE IRON |

STANDARD ABBREVIATIONS

| ABBREVIATION | DESCRIPTION | ABBREVIATION | DESCRIPTION |
|--------------|------------------------------------------------|-------------------|--------------------------------------------------------------------------------|
| HOG | HOT-DIP GALVANIZED | P: | |
| HDW | HARDWARE | P | PAVEMENT, POLE or PAINTED |
| HERCP | HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE | PA | PIPE ANCHOR |
| HF | HOSE FAUCET | PB | PULL BOX |
| HGT | HEIGHT | PC | POINT OF CURVATURE |
| HH | HAND HOLE | PCC | PORTLAND CEMENT CONCRETE |
| HK | HOLE | PCCP | PRESTRESSED CONCRETE CYLINDER PIPE |
| HM | HOLLOW METAL | PD | POSITIVE DISPLACEMENT or PUMPED DRAIN |
| HMC | HARNESSED MECHANICAL COUPLING | PE | PLAIN END or POLYETHYLENE WRAPPED |
| HORIZ | HORIZONTAL | PERP | PERPENDICULAR |
| HP | HORSEPOWER or HIGH PRESSURE | PF | POWER FACTOR |
| HR | HANDRAIL | PFC | POWER FACTOR CAPACITOR |
| HTR | HEAT EXCHANGER | PFM | POWER FACTOR METER |
| HV | HOSE VALVE | PG | PRESSURE GAUGE |
| HVAC | HEATING, VENTILATION & AIR CONDITIONING | PI | PRESSURE INDICATOR or POINT OF INTERSECTION |
| HWL | HIGH WATER LEVEL | PL | PLATE or PROPERTY LINE |
| HxW | HEIGHT BY WIDTH | PLAS | PLASTER |
| HZ | HERTZ | PLC | PROGRAMMABLE LOGIC CONTROLLER |
| I: | | PLCS | PLACES |
| I | INSTRUMENTATION CONDUIT | PLM | POWER LOGIC MONITOR |
| ID | INSIDE DIAMETER or INSIDE DIMENSION | PLYWD | PLYWOOD |
| IE | INVERT ELEVATION | PAL | PANEL |
| IF | INSIDE FACE | PO | POLYURETHANE |
| IN or" | INCHES | POC | POINT OF CONNECTION |
| INJ | INJECTOR | POJ | PUSH ON JOINT |
| INST | INSTRUMENTATION | POS | POSITION |
| INSUL | INSULATED (INSULATION) | PR | PAIR |
| INVT | INVERT | PRC | POINT OF REVERSE CURVE |
| IP | IRON PIPE | PRH | PRIMARY |
| ISR | INTRINSICALLY SAFE RELAY | PRV | PRESSURE REGULATION VALVE |
| J: | | PS | PRESSURE SWITCH or PRESSURE SEWER |
| J | JUNCTION BOX | PSI | POUNDS PER SQUARE INCH |
| JST | JOIST | PSIG | POUNDS PER SQUARE INCH GAUGE |
| JT | JOINT | PT | POINT, POINT OF TANGENCY, POTENTIAL TRANSFORMER or PRESSURE TREATED PLUG VALVE |
| K: | | PV | POLYVINYL-CHLORIDE |
| KGV | KNIFE GATE VALVE | PVI | POINT OF VERTICAL INTERSECTION |
| KV | KILOVOLT | PVMT | PAVEMENT |
| KVA | KILOVOLT-AMPERE | Q: | |
| KW | KILOWATT | QTY | QUANTITY |
| KWH | KILOWATT-HOUR | R: | |
| L: | | R | REGISTER |
| L | ANGLE (STRUCTURAL) | RA | RETURN AIR |
| LAV | LAVATORY | RAD | RADIUS |
| LBS | POUNDS | RID | RADIUS TO DIAMETER |
| LF | LINEAL FEET | RIF | REACTOR AND/OR FILTER |
| LG | LONG | RHW | RIGHT-OF-WAY |
| LL | LIVE LOAD | RCB | REINFORCED CONCRETE BOX |
| LLV | LONG LEG VERTICAL | RCP | REINFORCED CONCRETE PIPE |
| LP | LOW POINT or LOW PRESSURE | RED | REDUCER |
| LP | LIGHT POLE | RDWD | REDWOOD |
| LPA | LOW PRESSURE AIR | REC | RECEPTACLE, RECYCLE |
| LR | LOW RADIUS | RECIRC | RECIRCULATING |
| LS | LIMIT SWITCH | REF | REFERENCE |
| LTG | LOW VOLTAGE SWITCHGEAR | REIN | REINFORCING |
| LTV | LAUNDRY TUBE | REJ | RUBBER EXPANSION JOINT |
| LTG | LIGHTING | REQD | REQUIRED |
| LVP | LOW VOLTAGE PROTECTION | RESIL | RESILIENT |
| LWL | LOW WATER LEVEL | REV | REVISION |
| M: | | RGM | RUBBER GASKET |
| MACH | MACHINED | RMJ | RESTRAINED MECHANICAL JOINT |
| MATL | MATERIAL | RP | RADIUS POINT |
| MAX | MAXIMUM | RPL | RECYCLE PRESSURIZATION LINE |
| MC | MECHANICAL COUPLING | RPM | REVOLUTIONS PER MINUTE |
| MCC | MOTOR CONTROL CENTER | RR | RETURN REGISTER |
| MECH | MECHANICAL | RTM | RUNNING TIME METER |
| MET | METAL | RWS | ROTARY WALL SWITCH |
| MFG | MANUFACTURING | S: | |
| MFRS | MANUFACTURER | S | SLOPE, SOUTH or SWITCH |
| MGD | MILLIONS OF GALLONS PER DAY | SA | SAMPLE or SUPPLY AIR |
| MG/L | MILLIGRAMS PER LITER | SC | SCORING JOINT OF CONCRETE POUR or SCREWED |
| MH | MANHOLE | SCD | SCUM DRAIN |
| MI | MALLEABLE IRON | SCFM | STANDARD CUBIC FEET PER MINUTE |
| MIN | MINIMUM | SCG | SLUICE GATE |
| MISC | MISCELLANEOUS | SCH | SCHEDULE |
| MIX | MIXER | SD | DUCT MOUNTED SMOKE DETECTOR |
| MJ | MECHANICAL JOINT | SEC | SECONDARY |
| MJDIP | DUCTILE IRON PIPE, MECHANICAL JOINT | SEC | SECOND |
| MARK | MARK | SECT | SECTION |
| MO | MASONRY OPENING | SEPP | SEPTAGE PUMP |
| MON | MONUMENT | SF | SUPPLY FAN |
| MS | MOP SINK | SG | SUPPLY GRILLE |
| MSG | MEDIUM VOLTAGE SWITCHGEAR | SH or SHR | SHOWER |
| MTR | METER | SHT | SHEET |
| MULL | MULLION | SIM | SIMILAR |
| N: | | SK | SKIMMINGS |
| N | NORTH | SLUC | SLUDGE SUCTON |
| NAT | NATURAL | SMP | SAMPLER |
| NCHO | NORMALLY CLOSED; HELD OPEN | SO | SOUTH |
| NDV | NEEDLE VALVE | SOL | SOLUTION |
| NEC | NATIONAL ELECTRICAL CODE | SP | SET POINT |
| NF | NEAR FACE | SPC | SPARE CONDUIT |
| NIC | NOT IN CONTACT | SPEC | SPECIFICATION |
| NO. or # | NUMBER | SPL | SPLASH |
| NOHC | NORMALLY OPEN; HELD CLOSED | SO | SQUARE |
| NOM | NOMINAL | SO FT | SQUARE FEET |
| NP | NATIONAL PIPE THREAD | SO INS | SQUARE INCHES |
| NPS | NOMINAL PIPE SIZE | SR | SUPPLY REGISTER |
| NTS | NOT TO SCALE | SSBS | SOLID STATE BYPASS STARTER |
| NWB | NON WATER BEARING | SST, SS or ST STL | STAINLESS STEEL |
| O: | | STA | STATION |
| OH | OVERHEAD | STD | STANDARD |
| OA | OUTSIDE AIR | STIFF | STIFFENER |
| OBVD | OPPOSITE BLADE VOLUME DAMPER | STIR | STIRRUPS |
| OC | ON CENTRAL | STL | STEEL |
| OD | OUTSIDE DIAMETER or OUTSIDE DIMENSION | STR | STRAINER |
| OF | OUTSIDE FACE | STRUCT | STRUCTURAL |
| OPNG | OPENING | SUC | SUCTION |
| OPP | OPPOSITE | SUPP | SUMP PUMP |
| | | SUPT | PIPE SUPPORT or SUPPORT |
| | | SUSP | SUSPENDED |
| | | SV | SOLENOID VALVE |

| ABBREVIATION | DESCRIPTION | ABBREVIATION | DESCRIPTION |
|-------------------|---------------------------------------------|--------------|-------------------------------------------|
| P: | | SW | SOLVENT WELD |
| PA | PAVEMENT, POLE or PAINTED | SWBD | SWITCHBOARD |
| PB | PIPE ANCHOR | SYM | SYMMETRICAL |
| PC | PULL BOX | SYN | SYNTHETIC |
| PCC | POINT OF CURVATURE | T: | |
| PCCP | PORTLAND CEMENT CONCRETE | T | TELEPHONE SERVICE OR TREAD |
| PD | PRESTRESSED CONCRETE CYLINDER PIPE | T&B | TOP AND BOTTOM |
| PE | POSITIVE DISPLACEMENT or PUMPED DRAIN | T/ | TOP OF |
| PERP | PLAIN END or POLYETHYLENE WRAPPED | TB | TERMINAL BOX or TELEPHONE BOX |
| PF | PERPENDICULAR | TC | TOP OF CURB |
| PFM | POWER FACTOR | TCC | TELEPHONE/COMMUNICATION CONDUIT |
| PFC | POWER FACTOR CAPACITOR | TD | TIME DELAY RELAY |
| PG | POWER FACTOR METER | TDH | TOTAL DYNAMIC HEAD |
| PI | PRESSURE GAUGE | TEL | TELEPHONE |
| PL | PRESSURE INDICATOR or POINT OF INTERSECTION | TEMP | TEMPERATURE |
| PLAS | PLATE or PROPERTY LINE | TEMPG | TEMPERATURE GAUGE |
| PLC | PLASTER | TF | TOP FLAT |
| PLCS | PROGRAMMABLE LOGIC CONTROLLER | TFMR | TRANSFORMER |
| PLM | PLACES | TG | TRANSFER GRILLE |
| PLWD | POWER LOGIC MONITOR | THK | THICK OR THICKENER |
| PNL | PLYWOOD | THM | TELEPHONE MANHOLE |
| PO | PANEL | TMP | TEMPERATURE |
| PO | POLYURETHANE | TOC | TOP OF CONCRETE |
| PCC | POINT OF CONNECTION | TOD | TOP OF DUCT |
| POJ | PUSH ON JOINT | TOP | TOP OF PIPE |
| PDS | POSITION | TOS | TOP OF SLAB, TOP OF STEEL |
| PR | PAIR | TOW | TOP OF WALL |
| PRC | POINT OF REVERSE CURVE | TRANS | TRANSOM |
| PRI | PRIMARY | TS | TUBE STEEL |
| PRV | PRESSURE REGULATION VALVE | TSTAT | THERMOSTAT |
| PRV | PRESSURE RELIEF VALVE | TWV | THREE WAY VALVE |
| PS | PRESSURE SWITCH or PRESSURE SEWER | TYP | TYPICAL |
| PSI | POUNDS PER SQUARE INCH | U: | |
| PSIG | POUNDS PER SQUARE INCH GAUGE | UC | UNDERCUT |
| PT | POINT, POINT OF TANGENCY, POTENTIAL | UH | UNIT HEATER |
| | TRANSFORMER OR PRESSURE TREATED | UN | UNLESS NOTED |
| PV | PLUG VALVE | UNO | UNLESS NOTED OTHERWISE |
| PVC | POLYVINYL CHLORIDE | URN | URNAL |
| PVI | POINT OF VERTICAL INTERSECTION | V: | |
| PVMT | PAVEMENT | V | VOLT or VENT |
| Q: | | VA | VALVE |
| QTY | QUANTITY | VAC | VACUUM or VOLT-AC |
| R: | | VB | VALVE BOX |
| R | REGISTER | VC | GROOVED COUPLING |
| RA | RETURN AIR | VCP | VITRIFIED CLAY PIPE |
| RAD | RADIUS | VERT | VERTICAL |
| R/D | RADIUS TO DIAMETER | VFD | VARIABLE FREQUENCY DRIVE |
| R/F | REACTOR AND/OR FILTER | VG | VACUUM GAUGE |
| R/W | RIGHT-OF-WAY | VIT | VITRIFIED |
| RCB | REINFORCED CONCRETE BOX | VM | VOLTMETER |
| RCP | REINFORCED CONCRETE PIPE | VOL | VOLUME |
| RED | REDUCER | VPI | VERTICAL POINT OF INTERSECTION |
| RDWD | REDWOOD | VS | VARIABLE SPEED or VOLTMETER SWITCH |
| REC | RECEPTACLE, RECYCLE | VSD | VARIABLE SPEED DRIVE |
| RECIRC | RECIRCULATING | VTR | VENT THRU ROOF |
| REF | REFERENCE | W: | |
| REFR | REFRIGERATING | W | WEST, WASHER, or WELDED |
| REJ | RUBBER EXPANSION JOINT | W/ | WITH |
| REQD | REQUIRED | W/O | WITHOUT |
| RESIL | RESILIENT | WA | WATTS |
| REV | REVISION | WB | WATER BEARING |
| RG | RUBBER GASKET | WC | WATER CLOSET |
| ROOM | ROOM | WCO | WALL CLEANOUT |
| RMJ | RESTRAINED MECHANICAL JOINT | WD | WOOD |
| RP | RADIUS POINT | WDW | WINDOW |
| RPL | RECYCLE PRESSURIZATION LINE | WEF | WALL EXHAUST FAN |
| RPM | REVOLUTIONS PER MINUTE | WFPJ | WATER FEATURE PUMP |
| RR | RETURN REGISTER | WH | WATER HEATER or WALL HYDRANT |
| RTM | RUNNING TIME METER | WI | WROUGHT IRON |
| RWS | ROTARY WALL SWITCH | WL | WALL LOUVER or WATER LEVEL |
| S: | | WM | WATER METER |
| S | SLOPE, SOUTH or SWITCH | WP | WEATHERPROOF or WORKING POINT |
| SAW | SIDEWALK | WS | WATER SURFACE or WATER STOP |
| SA | SAMPLE or SUPPLY AIR | WSE | WATER SURFACE ELEVATION |
| SC | SCORING JOINT OF CONCRETE POUR or SCREWED | WT | WALK THROUGH, WATER TIGHT or WARNING TAPE |
| SCD | SCUM DRAIN | WWF | WELDED WIRE FABRIC |
| SCFM | STANDARD CUBIC FEET PER MINUTE | X: | |
| SLICE | SLICE GATE | XFMR | TRANSFORMER |
| SCH | SCHEDULE | XP | EXPLOSION-PROOF |
| SD | DUCT MOUNTED SMOKE DETECTOR | Y: | |
| SEC | SECONDARY | YH | YARD HYDRANT |
| SEC | SECOND | YP | YARD PIPE |
| SECT | SECTION | | |
| SEPP | SEPTAGE PUMP | | |
| SF | SUPPLY FAN | | |
| SG | SUPPLY GRILLE | | |
| SH or SHR | SHOWER | | |
| SHT | SHEET | | |
| SIM | SIMILAR | | |
| SK | SKIMMINGS | | |
| SLSUC | SLUDGE SUCTION | | |
| SMP | SAMPLER | | |
| SO | SOUTH | | |
| SOL | SOLUTION | | |
| SP | SET POINT | | |
| SPC | SPARE CONDUIT | | |
| SPEC | SPECIFICATION | | |
| SPL | SPLASH | | |
| SQ | SQUARE | | |
| SQ FT | SQUARE FEET | | |
| SQ INS | SQUARE INCHES | | |
| SR | SUPPLY REGISTER | | |
| SSBS | SOLID STATE BYPASS STARTER | | |
| SST, SS or ST STL | STAINLESS STEEL | | |
| STA | STATION | | |
| STD | STANDARD | | |
| STIFF | STIFFENER | | |
| STIR | STIRRUPS | | |
| STL | STEEL | | |
| STR | STRAINER | | |
| STRUCT | STRUCTURAL | | |
| SUC | SUCTION | | |
| SUMP | SUMP PUMP | | |
| SUPT | PIPE SUPPORT or SUPPORT | | |
| SUSP | SUSPENDED | | |
| SV | SOLENOID VALVE | | |

SEE DRAWING NO P-04 FOR SAMPLE POINT ON MINEOLA DR.



BASELINE CONTROL DATA

| 11TH STREET WEST | | |
|-------------------|------------|-----------|
| STATION | NORTHING | EASTING |
| BEGIN 10+00 | 1133039.10 | 470282.41 |
| EQUATION 11+00.24 | 1133139.34 | 470282.14 |
| EQUATION 12+00.46 | 1133304.66 | 470291.86 |
| EQUATION 14+30.42 | 1133488.52 | 470291.16 |
| PI 15+01.23 | 1133640.33 | 470290.76 |
| END 16+00.01 | 1133688.11 | 470290.83 |

| 12TH STREET WEST / MINIOLA STREET | | |
|-----------------------------------|------------|-----------|
| STATION | NORTHING | EASTING |
| BEGIN 10+00 | 1133631.82 | 470064.38 |
| PI 10+09.79 | 1133841.70 | 470064.69 |
| EQUATION 11+05.88 | 1133767.72 | 470059.62 |
| EQUATION 12+00.88 | 1133962.63 | 470074.83 |
| EQUATION 14+05.88 | 1134127.66 | 470080.05 |
| PI 15+04.61 | 1134196.24 | 470082.22 |
| EQUATION 16+00.97 | 1134282.55 | 470085.26 |
| END 16+23.18 | 1134264.74 | 470085.47 |

| EAST OF U.S. 41 | | |
|-----------------|------------|-----------|
| STATION | NORTHING | EASTING |
| BEGIN 10+00 | 1132944.28 | 469598.82 |
| PI 17+00.23 | 1133644.51 | 469598.92 |
| END 17+00.00 | 1133894.28 | 469598.82 |

50TH AVENUE PLAZA WEST (West of 12th Street)

| STATION | NORTHING | EASTING |
|--------------|------------|-----------|
| BEGIN 10+00 | 1134196.24 | 469485.39 |
| PI 14+14.99 | 1134196.24 | 469960.35 |
| PI 15+00.82 | 1134196.24 | 470082.22 |
| END 15+21.80 | 1134196.24 | 470107.00 |

51ST AVENUE DRIVE WEST

| STATION | NORTHING | EASTING |
|--------------|------------|-----------|
| BEGIN 10+00 | 1133644.77 | 469555.82 |
| PI 11+00.88 | 1133843.62 | 469745.90 |
| PI 15+00.87 | 1133641.70 | 470064.69 |
| PI 17+34.95 | 1133640.33 | 470080.76 |
| END 23+32.45 | 1133636.73 | 470068.25 |

6' PLATTED EASEMENT

| STATION | NORTHING | EASTING |
|--------------|------------|-----------|
| BEGIN 10+00 | 1134374.96 | 469611.71 |
| PI 13+48.01 | 1134378.51 | 469600.70 |
| END 14+06.71 | 1134380.33 | 470069.39 |

SITE HORIZONTAL/VERTICAL CONTROL

| 11TH STREET WEST | | | | |
|------------------|-------------|-------------------|------------|-----------|
| NUMBER | DESCRIPTION | STATION/OFFSET | NORTHING | EASTING |
| 3 | IRC # 7203 | 11+07.96 7.28' L | 1133147.06 | 470284.84 |
| 2 | IRC # 7203 | 15+70.97 21.73' R | 1133619.15 | 470318.55 |

| 51ST AVENUE DRIVE WEST | | | | |
|------------------------|-------------|-------------------|------------|-----------|
| NUMBER | DESCRIPTION | STATION/OFFSET | NORTHING | EASTING |
| 1 | PKD # 7203 | 14+68.66 0.86' L | 1133642.78 | 470025.48 |
| 2 | IRC # 7203 | 17+82.87 21.02' R | 1133619.15 | 470318.65 |

| 9TH STREET WEST | | | | |
|-----------------|-------------|------------------|------------|-----------|
| NUMBER | DESCRIPTION | STATION/OFFSET | NORTHING | EASTING |
| 5 | PKD # 7203 | 15+96.97 3.79' R | 1133636.05 | 470062.02 |

| 12TH STREET WEST | | | | |
|------------------|-------------|------------------|------------|-----------|
| NUMBER | DESCRIPTION | STATION/OFFSET | NORTHING | EASTING |
| 4 | PKD # 7203 | 13+35.36 0.51' L | 1133667.13 | 470074.46 |
| 7 | PKD # 7203 | 15+03.43 3.16' L | 1134135.19 | 470077.12 |
| 8 | PKD # 7203 | 16+56.18 5.06' L | 1134287.78 | 470080.22 |

| 48TH AVENUE WEST | | | | |
|------------------|-------------|-------------------|------------|-----------|
| NUMBER | DESCRIPTION | STATION/OFFSET | NORTHING | EASTING |
| 12 | PKD # 7203 | 23+03.48 15.03' L | 1134855.11 | 470072.19 |

SITE CALIBRATION DATA

| DESIGNATION | NORTHING | EASTING |
|-------------|------------|-----------|
| M 080 | 1128710.76 | 478876.34 |
| M 081 | 1143115.24 | 478965.28 |
| M 082 | 1143105.22 | 462891.59 |
| MANA RESET | 1138650.97 | 484186.48 |

LEGEND

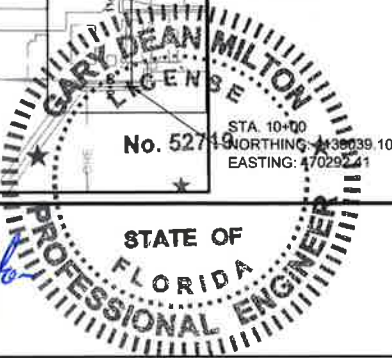
BACTERIOLOGICAL SAMPLING POINT

GENERAL NOTES

- THESE PLANS DO NOT REFLECT A TRUE BOUNDARY OR RIGHT-OF-WAY SURVEY. THE LOCATION OF THE STREET RIGHT-OF-WAY LINES SHOWN ARE APPROXIMATE AND HAVE BEEN BASED ON INFORMATION CONTAINED IN THE SUBDIVISION PLATS, RIGHT-OF-WAY MAPS ON RECORD IN MANATEE COUNTY AND TOPOGRAPHIC DATA COLLECTED ALONG EACH OF THE RIGHTS-OF-WAY. CONSEQUENTLY, THE RIGHT-OF-WAY LINES SHOWN ARE NOT INTENDED TO INDICATE THE EXACT BOUNDARIES.
- THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD, IF ANY.
- TITLE WORK WAS NOT PROVIDED FOR THIS SURVEY.
- THE BEARINGS INDICATED HEREIN ARE A PROJECTION OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE NAD 1983/1990).
- THE ELEVATIONS SHOWN HEREIN HAVE BEEN BASED ON THE FOLLOWING TWO BENCHMARKS CONTAINED IN MANATEE COUNTY BENCH RUN # 4: AN "X" CUT ON THE TOP OF A CURB ON THE NORTH SIDE OF 53RD AVENUE WEST AND 39' WEST OF THE CENTERLINE OF 3RD STREET WEST (N.G.V.D. 1929 ELEVATION 18.948'), AN "X" CUT ON THE TOP OF A CURB ON THE NORTH SIDE OF 53RD AVENUE EAST AT THE EXTENDED CENTERLINE INTERSECTION OF 6TH STREET EAST AND SAID NORTHERLY CURB LINE (N.G.V.D. 1929 ELEVATION 20.770').
- THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC. IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.
- THE UTILITIES LISTED BELOW WERE PROVIDED FOR THIS SITE BY "SUNSHINE STATE ONE CALL" ON FEBRUARY 25, 2009: TECO/PEOPLES GAS COMPANY CONTACT: CHRIS COLEMAN 941 915 8915 VERIZON FLORIDA INC. CONTACT: DARRELL DAWSON 813 753 8171 FLORIDA POWER & LIGHT BRIGHT HOUSE NETWORKS MANATEE COUNTY UTILITY OPERATIONS CONTACT: JOHN GARDNER MANATEE COUNTY TRANSPORTATION DEPARTMENT

LEGEND

- ALIGNMENT A = 51ST AVE DR W
- ALIGNMENT B = 11TH ST W
- ALIGNMENT C = 12TH ST W
- ALIGNMENT D = PROPOSED EASEMENT ALONG U.S.41 TO 51ST AVE DR W
- ALIGNMENT E = 50TH AVE PLZ W (WEST OF 12TH ST W)
- ALIGNMENT F = EASEMENT FROM U.S.41 TO 12TH ST W
- ALIGNMENT G = EASEMENT FROM 49TH AVE DR W SOUTH



| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
| | | | |
| | | | |
| | | | |
| | | | |

| | |
|-------------------|-----------------------------------------------------------------------|
| DESIGNED GDM | G. DEAN MILTON, P.E. BOARD OF PROFESSIONAL ENGINEERS NO.: 52719 |
| DRAWN DVP | <i>G. Dean Milton</i> |
| CHECKED EP | DATE 12/16/2016 |
| DATE JULY 2016 | PROJECT ENGINEER |

FILENAME: Last Saved By: dpm 6-06-16 08:49am C:\Users\dpm\Desktop\Typ\PIC\7880E10-01-G-03 XREFS: 3624bdr; 7880E10-01-010-100; 7880E10-01-010-900; 7880E10-01-010-200



| MANATEE COUNTY | |
|------------------------------------------|--|
| PIC TOWN WATERLINE REPLACEMENT (PHASE I) | |
| KEY PLAN | |

| | |
|----------------------------------------------------------|---------------------|
| VERIFY SCALES | JOB NO. 7880E.10 |
| BAR IS ONE INCH ON ORIGINAL DRAWING | DRAWING NO. G-03 |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | |

GENERAL

1. ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS TAHA ATAYA AND CAN BE REACHED AT (941) 708-7450; EXT. 7329
2. SITE VISITS ARE MANDATORY FOR ALL BIDDERS. THESE SITE VISITS CAN BE ARRANGED THROUGH THE PROJECT MANAGER.
3. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY UTILITY AND TRANSPORTATION STANDARDS AND/OR FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION". IF THERE ARE ANY CONFLICTS BETWEEN THE PLANS/SPECIFICATIONS AND THE STANDARDS, THE REQUIREMENTS OF THE STANDARDS TAKE PRECEDENCE.
4. HORIZONTAL DATUM WAS BASED ON NORTH AMERICAN DATUM (NAD) OF 1983 (1990 ADJUSTMENT, FLORIDA STATE PLANE, WEST ZONE).
5. 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.
6. EXISTING UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN LOCATED FROM THE BEST AVAILABLE SURVEY DATA AND RECORDS AND THEIR LOCATIONS MUST ONLY BE CONSIDERED AS APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE PLANS AND ANY OTHER UTILITIES WHICH MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION. CALL FLORIDA SUNSHINE STATE ONE CALL CENTER AT 1-800-432-4770. ALL COORDINATION AND REQUIRED UTILITY COMPANY TEMPORARY PROTECTION SHALL ALL BE AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE UNINTERRUPTION OF SERVICE AND REPLACEMENT OF DAMAGED UTILITIES. UTILITY COMPANIES WITH LOCATED FACILITIES WITHIN THE PROJECT AREA INCLUDE: TECO/PEOPLES GAS CO., VERIZON FLORIDA INC., FLORIDA POWER & LIGHT, BRIGHTHOUSE NETWORKS, MANATEE COUNTY.
7. THE CONTRACTOR'S WORK SHALL BE SCHEDULED BETWEEN 7:00 AM AND 7:00 PM WITH A MAXIMUM OF 10 HOURS PER DAY AND 5 DAYS PER WEEK. SHOULD THE CONTRACTOR REQUIRE MORE WORK HOURS TO MAINTAIN THE CONTRACT SCHEDULE, A REQUEST SHALL BE SUBMITTED IN WRITING TO THE ENGINEER STATING THE REASON WHY AND HOW MANY ADDITIONAL HOURS ARE NEEDED. ALSO, THE CONTRACTOR SHALL REQUEST IN WRITING TO THE ENGINEER WITH A MINIMUM OF 72 HOURS ADVANCE NOTICE OF ANY PLANS FOR WORKING ON ANY WEEKEND DAYS OR OBSERVED NATIONAL HOLIDAYS. SHOULD THE ENGINEER APPROVE THE REQUEST FOR ADDITIONAL HOURS, THE CONTRACTOR SHALL REIMBURSE THE OWNER FOR ACTUAL COSTS FOR RESIDENT INSPECTION INCURRED DURING THE ADDITIONAL HOURS APPROVED. THE HOURLY RATE FOR THESE ADDITIONAL HOURS WILL BE \$90.00 PER HOUR.

SAFETY

8. 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 OF COMPLIANCE WITH THESE REGULATIONS.
9. THE CONTRACTOR SHALL USE SHEET PILING, SHEETING, BRACING, ETC., AS REQUIRED IN ALL EXCAVATION AREAS AND CONFORM TO ALL OSHA REQUIREMENTS.
10. THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
11. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVIATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.
12. THE CONTRACTOR SHALL PROVIDE PROPER WARNING SIGNS, BARRICADES, TEMPORARY FENCING AND OTHER APPROPRIATE SAFETY DEVICES DURING THE EXECUTION OF THE WORK TO PROVIDE PUBLIC PROTECTION AND SAFETY.

ENVIRONMENTAL

13. 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.
14. 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.
15. 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.
16. 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.
17. 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.

18. SEDIMENT BASINS AND TRAPS, PERIMETER BERMS, SEDIMENT BARRIERS, VEGETATIVE BUFFERS, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT AND/OR PREVENT THE TRANSPORT OF SEDIMENT ONTO ADJACENT PROPERTIES, OR INTO EXISTING BODIES OF WATER, MUST BE INSTALLED, CONSTRUCTED, OR IN THE CASE OF VEGETATIVE BUFFERS, PROTECTED FROM DISTURBANCE, AS A FIRST STEP IN THE LAND ALTERATION PROCESS. SUCH SYSTEMS SHALL BE FULLY OPERATIVE BEFORE ANY OTHER DISTURBANCE OF THE SITE BEGINS. EARTHERN STRUCTURES INCLUDING BUT NOT LIMITED TO BERMS, EARTH FILTERS, DAMS OR DIKES SHALL BE STABILIZED AND PROTECTED FROM DRAINAGE DAMAGE OR EROSION WITHIN ONE (1) WEEK OF INSTALLATION.
19. ALL SWALES, DITCHES, AND CHANNELS LEADING FROM THE SITE SHALL BE PROTECTED FROM SILLTATION AND EROSION DURING CONSTRUCTION AND BE SODDED WITHIN THREE (3) DAYS OF EXCAVATION.
20. 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.
21. ALL EROSION AND POLLUTION CONTROL DEVICES SHALL BE CHECKED REGULARLY, ESPECIALLY AFTER EACH RAINFALL AND SHALL BE CLEANED OUT AND/OR REPAIRED AS REQUIRED.
22. 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 VIOLATIONS OF ANY REGULATIONS OR PERMIT CONDITIONS.
23. FOR MORE INFORMATION, SEE THE EROSION CONTROL DETAIL SHEET INCLUDED IN THE PLANS.

RIGHT OF WAY

24. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY/FDOT RIGHT-OF-WAY AND/OR EASEMENTS SHOWN ON THE DRAWINGS.
25. 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.
26. 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.
27. 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.
28. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD THE RIGHT-OF WAY LINES, BASELINES, BENCH MARKS (ELEV.), CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
29. 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.
30. A RIGHT OF ENTRY AGREEMENT SHALL BE OBTAINED BY THE PROJECT MANAGER FROM THE PROPERTY OWNER BEFORE ANY DRIVEWAY CONSTRUCTION WORK IS DONE OUTSIDE OF THE RIGHT-OF-WAY OR EASEMENT.

UTILITIES

31. 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 IMPROVEMENT, 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 LOCATIONS AND ELEVATION. ANY DISCREPANCIES OR CONFLICTS FOUND SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR RESOLUTION.
32. 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.
33. 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.
34. ANY TEMPORARY SHUTDOWNS FOR MODIFICATIONS OF EXISTING UTILITIES THAT MUST REMAIN IN SERVICE DURING CONSTRUCTION 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 THE DISCRETION OF THE DAY OR NIGHT AND WILL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.

35. 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.

RESTORATION

36. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS SHOWN OTHERWISE.
37. 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.
38. 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.
39. ASPHALT DRIVES THAT ARE CUT SHALL BE RESTORED PER SECTION 02513.
40. 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.
41. WHENEVER A PERMANENT ROADWAY SURFACE IS NOT PLACED 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.
42. 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.

CONSTRUCTION

43. 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, AT THE DIRECTION OF THE ENGINEER DUE TO RESIDENTIAL COMPLAINTS, INSTALL NOISE ABATEMENT BAFFLES POSITIONED TO BREAK LINE-OF-SITE FROM THE NOISE SOURCE TO AFFECTED RESIDENCES AS APPROVED BY THE ENGINEER.
44. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM ROAD PAVEMENTS, DRIVEWAYS, SIDEWALKS AND DRAINAGE SWALES AND EXISTING PATTERNS RESTORED AT THE COMPLETION OF WORK EACH DAY.
45. ALL FILL AND ROAD MATERIALS EXCAVATED SHALL BE DISPOSED OF IN ACCORDANCE WITH THE SPECIFICATIONS.
46. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATION ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
47. INGRESS AND EGRESS TO ALL THE PROPERTIES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED AT ALL TIMES.
48. PRIOR APPROVAL WILL BE REQUIRED FOR REMOVAL OF ANY TREE WITHIN THE CONSTRUCTION AREA.
49. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY AND SHALL PROVIDE ALL NECESSARY SHEETING, SHORING AND BRACING TO PROTECT ADJACENT STRUCTURES, UTILITIES AND PAVEMENT OR TO MINIMIZE TRENCH WIDTH ALL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
50. 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.
51. ALL TRENCHING FOR NEW WATERLINES SHALL BE PER MANATEE COUNTY AS NOTED BELOW
52. ALL PIPE SHALL BE COLOR CODED TO CONFORM TO MANATEE COUNTY STANDARDS.
53. ALL PIPE AND FITTINGS SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER AND ALL PIPE JOINTS SHALL BE RESTRAINED WHERE REQUIRED.
54. RESTRAIN PIPE LENGTHS PER DETAILS UG-8 TYP, UG-9 TYP, AND UG-10 TYP
55. 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.
56. 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.
57. ONLY MANATEE COUNTY UTILITY OPERATIONS STAFF ARE AUTHORIZED TO OPERATE VALVES ON COUNTY OWNED AND MAINTAINED UTILITY SYSTEMS.


58. THE CONTRACTOR, PRIOR TO ANY TEMPORARY WATER SHUT-OFFS DURING WATER MAIN TIE-IN, ETC., SHALL NOTIFY THE AFFECTED RESIDENTS BY POSTING INFORMATIONAL SIGNS IN THE NEIGHBORHOOD AT LEAST TWO DAYS (48 HRS) PRIOR TO THE WATER SHUT-OFF. REFERENCE SECTION 01580, PARAGRAPH 1.03 OF THE SPECIFICATIONS. WHEN FEASIBLE, "DOOR HANGERS" SHALL BE DELIVERED TO AFFECTED RESIDENCES AT LEAST TWO DAYS (48 HRS) PRIOR TO WATER SHUT-OFF. FOR LARGE PROJECTS WITH HUNDREDS OF HOMES AFFECTED, THE CONTRACTOR SHALL ALSO MAKE EXTENSIVE USE OF THE MEDIA AND SHALL HAVE PRIOR CONTACT WITH HOMEOWNER'S ASSOCIATIONS. WRITTEN NOTIFICATIONS SHALL ALSO BE FAXED TO THE TAMPA TRIBUNE, BRADENTON HERALD, SARASOTA HERALD TRIBUNE, WRBO RADIO, EMERGENCY COMMUNITY CENTERS, INSPECTIONS, WATER TREATMENT PLANT, WATER MANAGER, HELPLINE, CUSTOMER SERVICE, AND THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT.
59. 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.
60. ALL EXISTING MAINS THAT ARE BEING REPLACED SHALL BE ABANDONED IN PLACE UPON ACCEPTANCE AND ACTIVATION OF THE NEW MAINS, UNLESS OTHERWISE NOTED. ABANDONED MAINS SHALL BE CUT, FILLED WITH GROUT, AND CAPPED. REFER TO SECTION 02064 OF THE SPECIFICATIONS FOR GROUTING OF ABANDONED PIPE.
61. WATER MAINS CROSSING OVER OR UNDER SANITARY SEWERS, FORCE MAINS, AND RECLAIMED WATER LINES SHALL BE LAID PER CURRENT EDITION OF "10 STATE STANDARDS" AND MANATEE COUNTY UTILITY STANDARDS UNLESS NOTED OTHERWISE ON THE PLANS.
62. FIELD CONDITIONS MAY NECESSITATE MINOR ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER.
63. CONTRACTOR SHALL PREPARE RECORD DRAWINGS IN ACCORDANCE WITH CURRENT MANATEE COUNTY UTILITY STANDARDS AT NO COST TO OWNER. RECORD DRAWINGS SHALL BE SEALED BY A SURVEYOR LICENSED BY THE STATE OF FLORIDA. RECORD DRAWING REQUIREMENTS SHALL BE STRICTLY ENFORCED. COST OF RECORD DRAWINGS CONSIDERED PROJECT CLOSE OUT DOCUMENTS. FINAL RETAINAGE TO BE WITHHELD UNTIL RECORD DRAWINGS ARE APPROVED BY MANATEE COUNTY PUBLIC WORKS DEPARTMENT.
64. CONTRACTOR SHALL PERFORM AND SUBMIT PRE-CONSTRUCTION VIDEO PER SECTION 01380 PRIOR TO ANY OTHER FIELD WORK.
65. ALL WATER METERS/BOXES SHALL BE SET UP TO THE ROW LINE AS SHOWN ON EXISTING METER BOXES SHALL BE REPLACED WITH NEW.

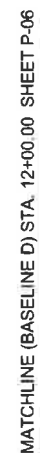
BASIC CONSTRUCTION SEQUENCE:

1. INSTALL NEW WATER LINES, SERVICES AND APPURTENANCES.
2. CONNECT NEW WATER LINES TO EXISTING.
3. PRESSURE TEST AND BACTERIAL TEST NEW WATER LINES.
4. RELOCATE AND/OR RECONNECT EXISTING WATER SERVICES.

LEGEND


| | | | |
|-----------|-----------------------|-----|--------------------------|
| ● | IRON ROD | ⊙ | SANITARY SEWER MANHOLE |
| ○ | IRON PIPE | ○ | SANITARY SEWER CLEAN-OUT |
| ■ | CONCRETE MONUMENT | ⊕ | STORM SEWER MANHOLE |
| PKD | PK NAIL W/DISC | □ | STORM INLET |
| IRC | IRON ROD W/CAP | ○ | DRAINAGE PIPE |
| ⊙ | BENCHMARK | ▤ | GRATE INLET |
| PARCEL ID | # 5866600109 (TYP.) | ▤ | MITERED END SECTION |
| 12 16' | SPOT ELEVATION (TYP.) | ⊙ | FIRE HYDRANT |
| R | RADIUS | ⊙ | WATER VALVE |
| R/W | RIGHT OF WAY | ⊙ | WATER METER |
| Conc | CONCRETE | ⊙ | UTILITY POLE |
| Asph | ASPHALT | ⊙ | GUY WIRE |
| INV | INVERT | ⊙ | LIGHT POLE |
| TOB | TOP OF BANK | ⊙ | TELEPHONE UTILITY |
| ⊙ | PALM TREE | ⊙ | GAS UTILITY |
| ⊙ | OAK TREE | ⊙ | ELECTRICAL UTILITY |
| ⊙ | PINE TREE | ⊙ | MAIL BOX |
| ⊙ | TREE | ⊙ | SIGN |
| —UG— | UNDERGROUND UTILITY | —○— | CHAIN LINK FENCE |
| —○— | WOOD FENCE | | |

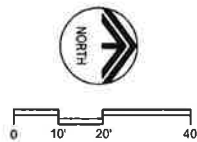
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|---------------------------------------------------------------------------------------------------------------------------------|------|----|-------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------|--|----------------------------------------------------------|---------------------|
| | | | | DESIGNED GDM | G. DEAN MILTON, P.E. BOARD OF PROFESSIONAL ENGINEERS NO.: 52719 C. Dean Milton DATE: 12/10/2014 PROJECT ENGINEER | STATE OF FLORIDA PROFESSIONAL ENGINEER |  | MANATEE COUNTY | | VERIFY SCALES | JOB NO. 7880E.10 |
| | | | | DRAWN DVP | | | | PIC TOWN WATERLINE REPLACEMENT (PHASE I) | | BAR IS ONE INCH ON ORIGINAL DRAWING | DRAWING NO. |
| | | | | CHECKED EP | | | | | | 0 1" | G-04 |
| | | | | DATE JULY 2016 | | | | | | IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | |
| REV | DATE | BY | DESCRIPTION | GENERAL NOTES | | | | | | | |
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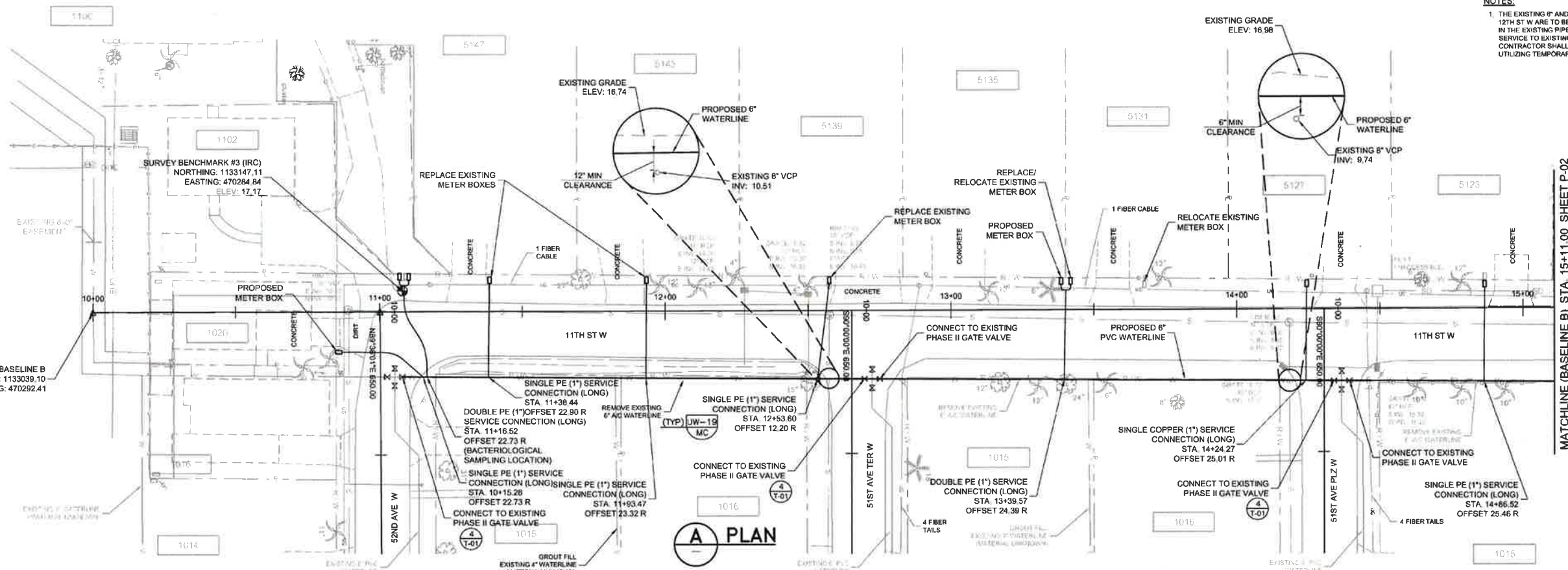
A PLAN

A circular professional engineer seal for Gary Dean Milton. The outer ring contains the text "GARY DEAN MILTON" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. Inside the ring, the word "LICENSE" is at the top and "STATE OF FLORIDA" is at the bottom, also separated by two stars. In the center of the seal, the license number "No. 52719" is printed. A horizontal line with a star in the middle bisects the seal. A blue ink signature is visible on the left side, overlapping the seal.

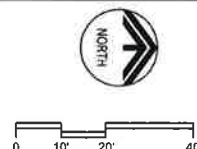
| | |
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| <p>VERIFY SCALES</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p> <p>0  1"</p> <p>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY</p> | <p>JOB NO. 7880E 10</p> <p>DRAWING NO. P-01</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|



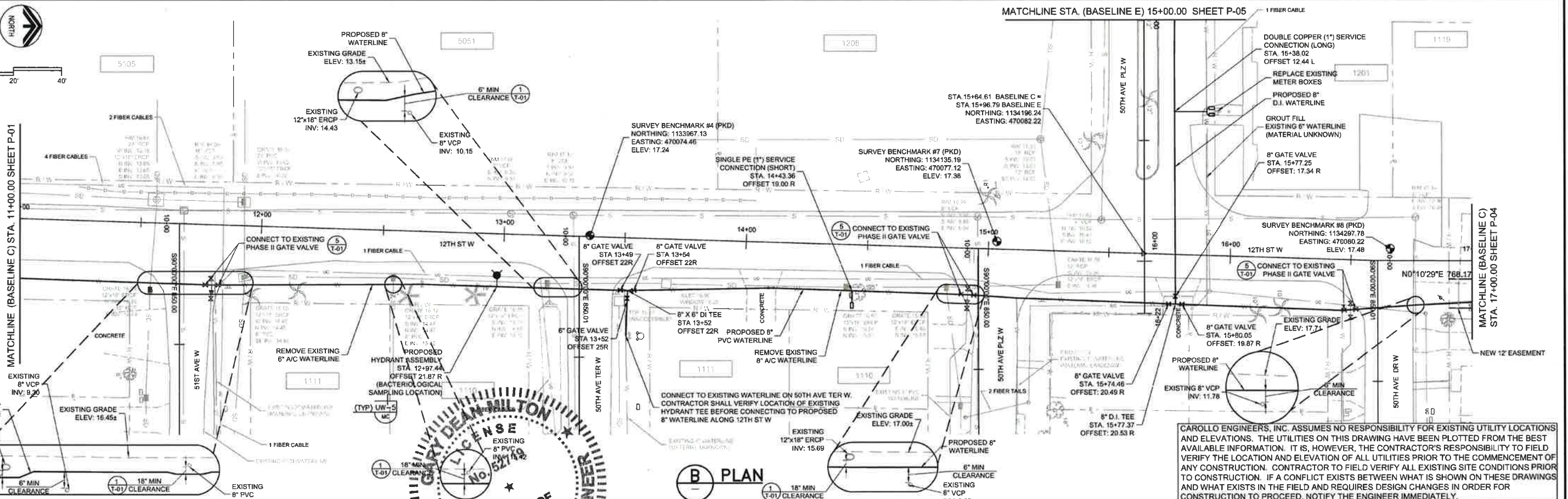
STA 10+00.00 BASELINE B
NORTHING: 1133039.10
EASTING: 470292.41



NOTES:
1. THE EXISTING 6" AND 8" WATERLINES ALONG 11TH ST W AND 12TH ST W ARE TO BE REPLACED WITH 6" AND 8" PVC OR DI PIPING IN THE EXISTING PIPE TRENCH. CONTRACTOR TO MAINTAIN WATER SERVICE TO EXISTING RESIDENCES DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE TEMPORARY PIPING TO WATER SERVICES UTILIZING TEMPORARY JUMPER CONNECTIONS PER UW-21 TYP



MATCHLINE (BASELINE C) STA. 11+00.00 SHEET P-01



CAROLLO ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

| REV | DATE | BY | DESCRIPTION |
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DESIGNED GDM
DRAWN DVP
CHECKED EP
DATE JULY 2016
PROJECT ENGINEER
G. DEAN MILTON, P.E.
BOARD OF PROFESSIONAL ENGINEERS NO.: 52719
DATE: 12/10/2016





carollo
Engineers...Working Wonders With Water™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

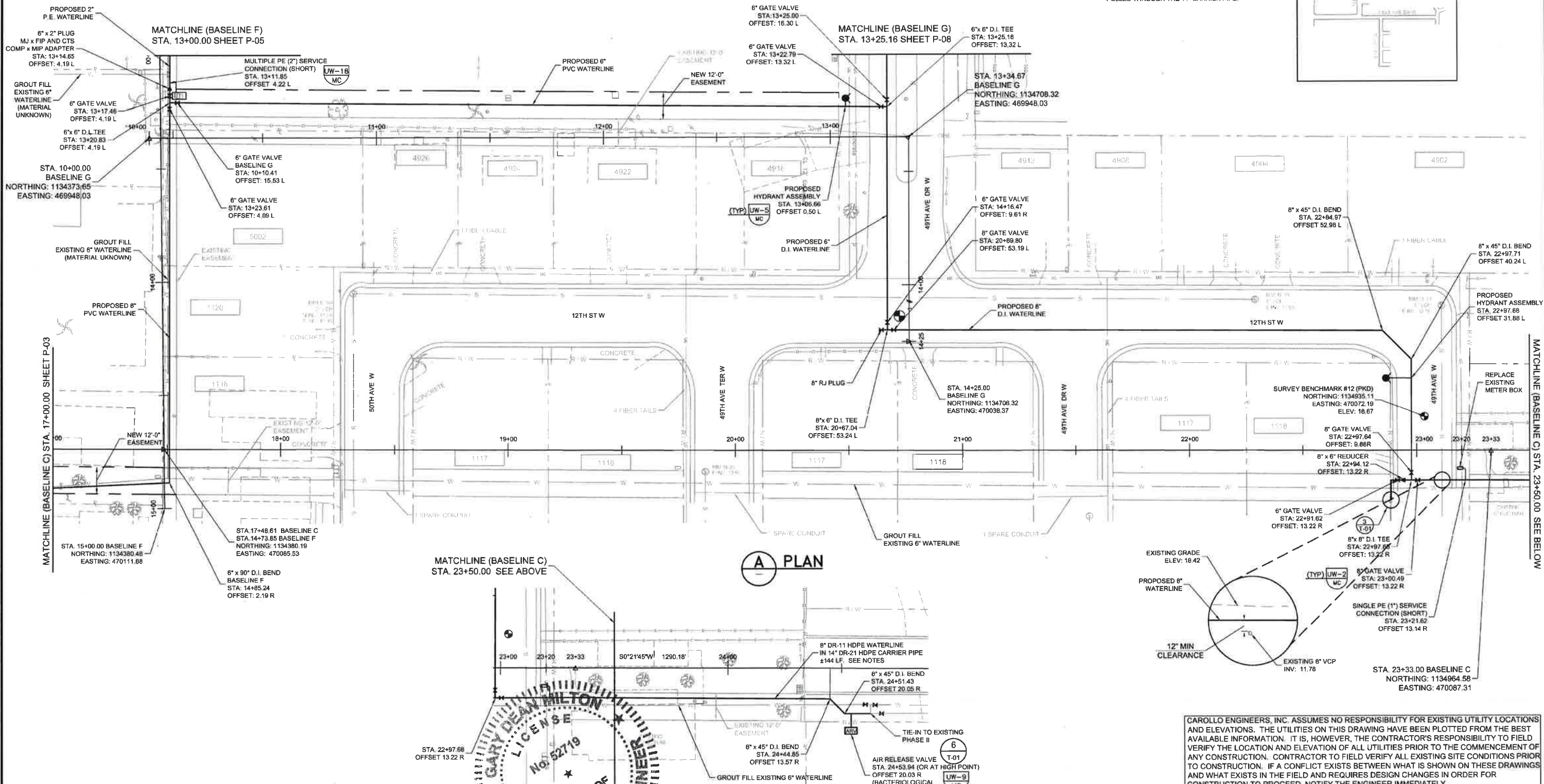
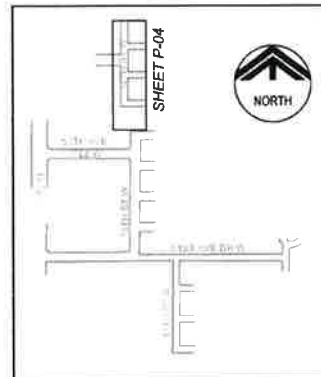
MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE I)
WATERLINE PLAN (11TH ST W & 12TH ST W)
BASELINE B STA. 10+00.00 TO 15+11.00
BASELINE C STA. 11+00.00 TO 17+00.00
BASELINE E STA. 15+00.00 TO 16+22.00

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0" = 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
JOB NO. 7880E-10
DRAWING NO. P-03

NOTES:



- PERFORM HORIZONTAL DIRECTIONAL DRILL SIMILAR TO 
- TRANSITION FROM HDPE TO D.I. PER 
- CONTRACTOR TO REPLACE CONCRETE CURB ALONG 12TH SE W AND 49TH AVE W AS REQUIRED TO INSTALL 8" DI WATERLINE.
- THE 14" DR-21 HDPE CARRIER PIPE AND 8" DR-11 HDPE WATERLINE MUST BE PULLED SEPARATELY. CONTRACTOR MUST DEMONSTRATE THAT THE 8" HDPE CAN BE PULLED THROUGH THE 14" CARRIER PIPE.

KEY

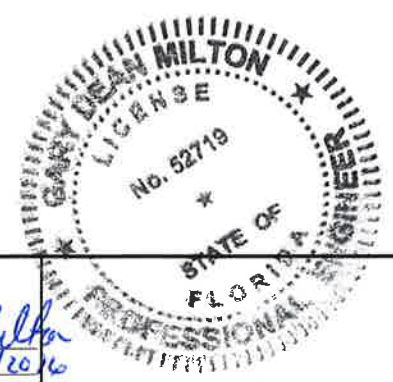
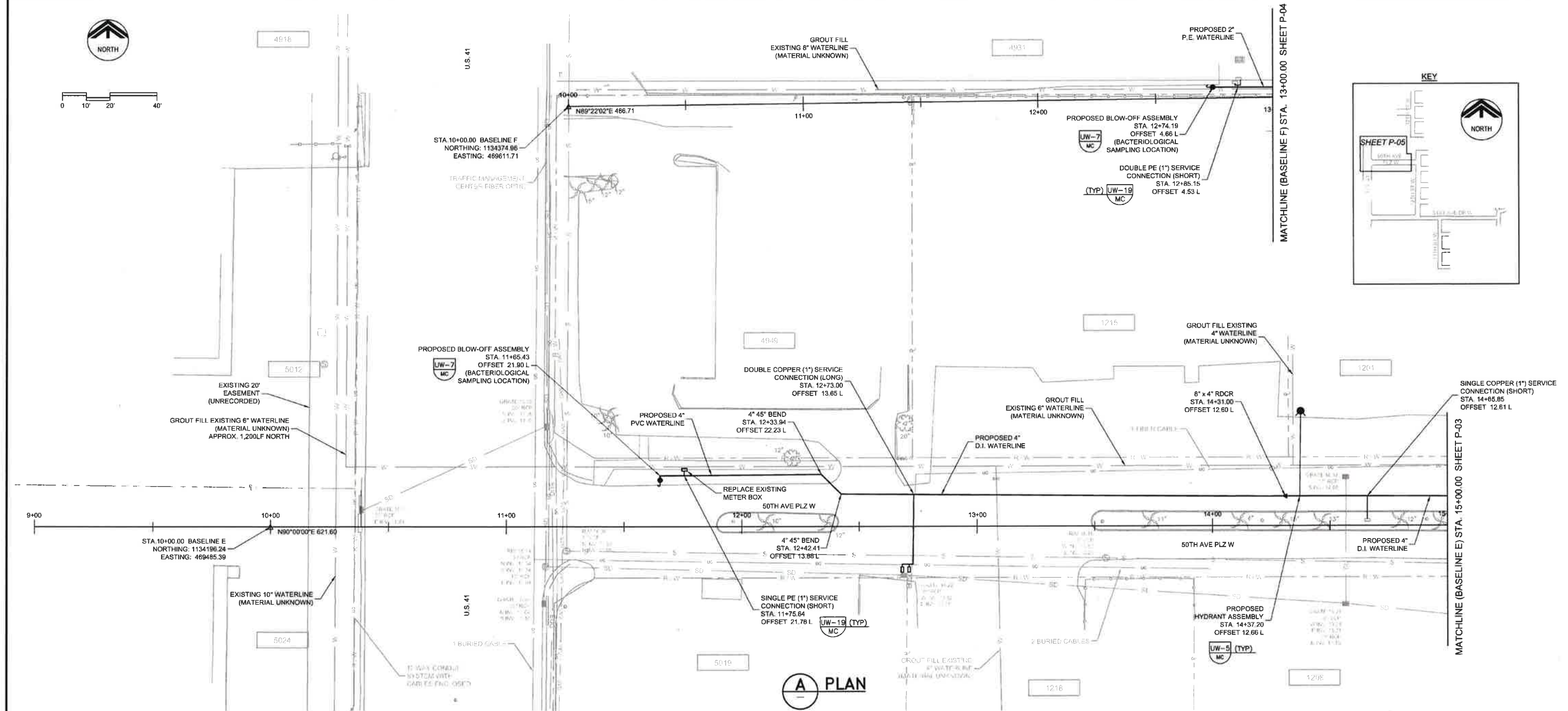
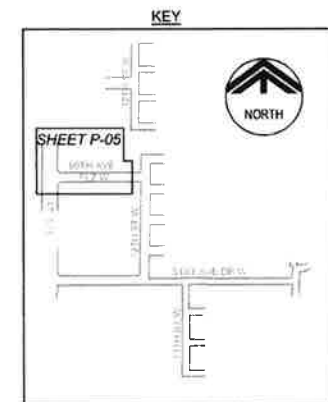
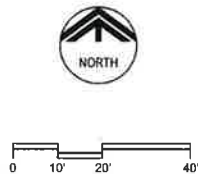


PLAN

CAROLLO ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

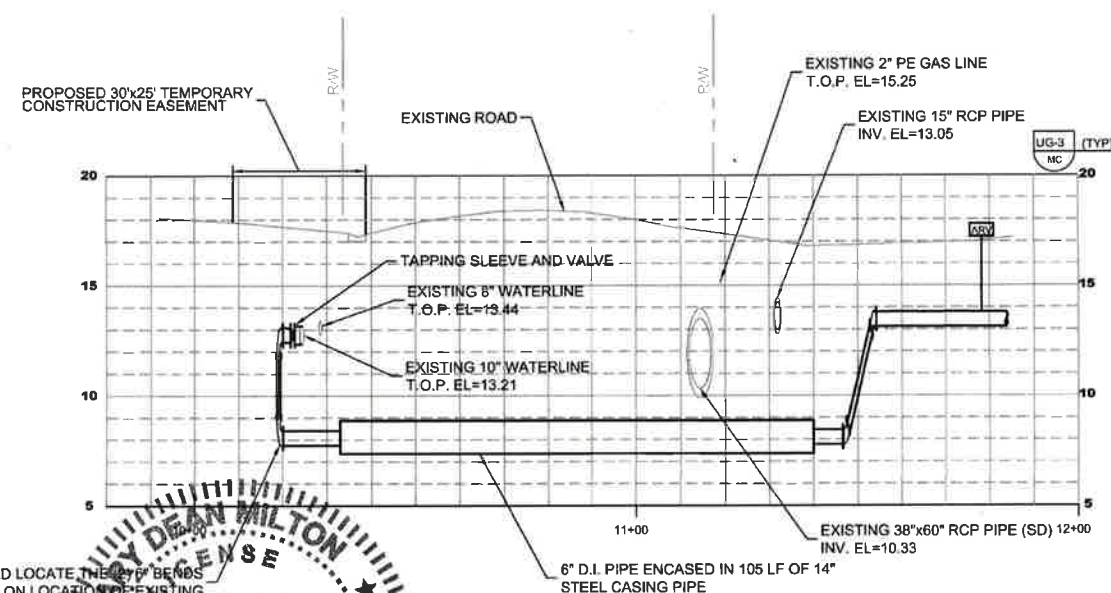
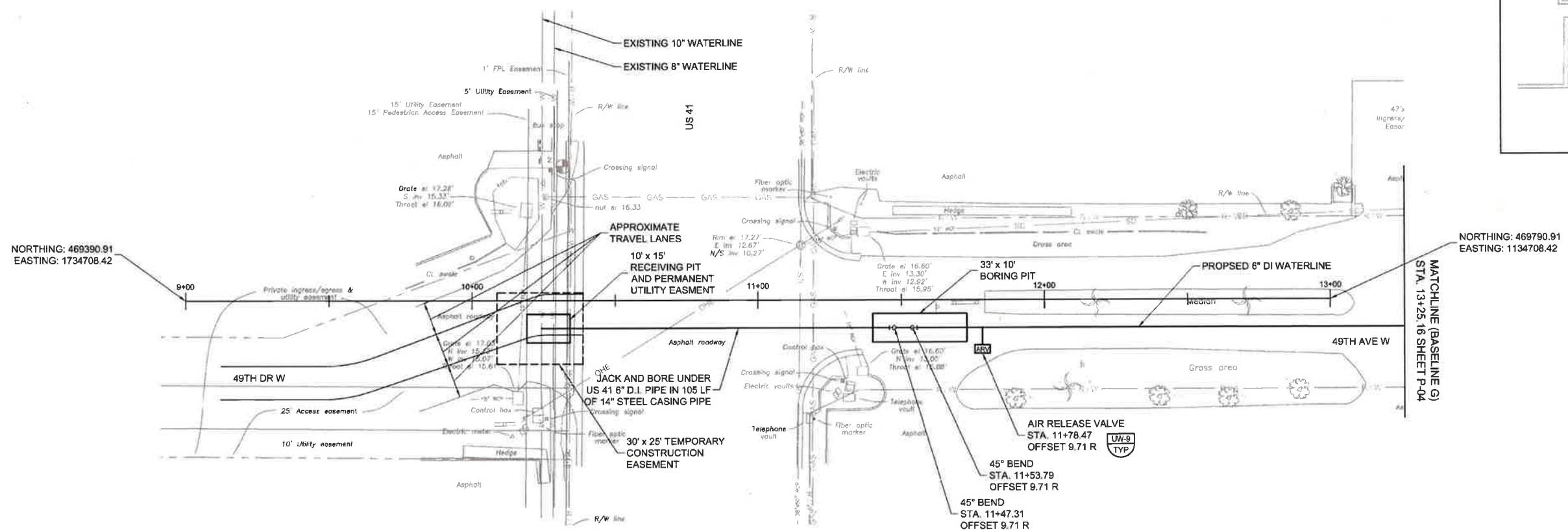
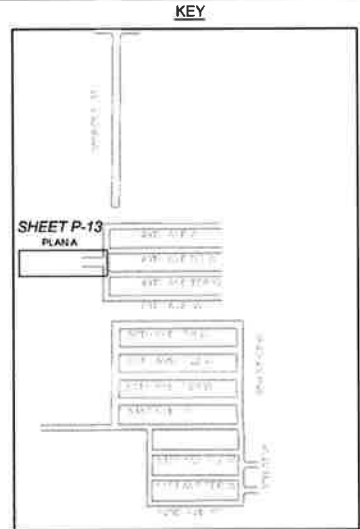
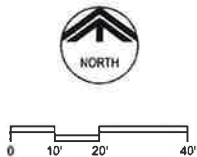
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| | | | | DESIGNED GDM | | G. DEAN MILTON, P.E. BOARD OF PROFESSIONAL ENGINEERS NO.: 52719 | |  |  | | MANATEE COUNTY | | VERIFY SCALES | JOB NO. 7880E10 |
| | | | | DRAWN DVP | | <i>G. Dean Milton</i> | | | Engineers...Working Wonders With Water™ | | PIC TOWN WATERLINE REPLACEMENT (PHASE I) | | BAR IS ONE INCH ON ORIGINAL DRAWING | DRAWING NO. |
| | | | | CHECKED EP | | DATE: <u>12/16/2016</u> | | | 401 NORTH CATTLEMEN ROAD, SUITE 306 SARASOTA, FL 34232 PHONE: (941) 371-9832 FAX: (941) 371-9873 CA 00008571 | | WATERLINE PLAN (12TH ST W) BASELINE C STA. 17+00.00 TO 23+35.00 BASELINE F STA. 13+25.00 TO 15+00.00 | | 0 1" | P-04 |
| | | | | DATE JULY 2016 | | PROJECT ENGINEER | | | | | | | IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | |
| REV | DATE | BY | DESCRIPTION | | | | | | | | | | | |
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CAROLLO ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

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|---------------------------------------------------------------------|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <div>REV</div> <div>DATE</div> <div>BY</div> <div>DESCRIPTION</div> | | | | <div>DESIGNED</div> <div>GDM</div> <div>DRAWN</div> <div>DVP</div> <div>CHECKED</div> <div>EP</div> <div>DATE</div> <div>JULY 2016</div> | | <div>G. DEAN MILTON, P.E.</div> <div>BOARD OF PROFESSIONAL ENGINEERS NO. 52719</div> <div><i>G. Dean Milton</i></div> <div>DATE 12/16/2016</div> <div>PROJECT ENGINEER</div> | | <div>carollo</div> <div>Engineers...Working Wonders With Water™</div> <div>401 NORTH CATTLEMEN ROAD, SUITE 306</div> <div>SARASOTA, FL 34232</div> <div>PHONE: (941) 371-9832 FAX: (941) 371-9873</div> <div>CA 00008571</div> | | <div>MANATEE COUNTY</div> <div>PIC TOWN WATERLINE REPLACEMENT (PHASE I)</div> <div>WATERLINE PLAN (50TH AVE PLZ W)</div> <div>BASELINE F STA. 10+00.00 TO 13+25.00</div> <div>BASELINE E STA. 10+00.00 TO 15+00.00</div> | | <div>VERIFY SCALES</div> <div>BAR IS ONE INCH ON ORIGINAL DRAWING</div> <div>0 1"</div> <div>IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY</div> | <div>JOB NO.</div> <div>7880E.10</div> <div>DRAWING NO.</div> <div>P-05</div> |
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- NOTES:**
- IF CONTRACTOR DAMAGES OR DISTURBS THE SOUTHBOUND CURB LANE OF US41 TO CONNECT TO THE EXISTING WATERLINE, THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND ROAD REPAIR IN ACCORDANCE WITH FDOT.
 - ALL WORK IN FDOT RIGHT-OF-WAY SHALL COMPLY WITH AND MEET ALL FDOT STANDARDS AND REQUIREMENTS.
 - PAVEMENT REPAIR NOT SHOWN FOR CLARITY.
 - CONTRACTOR TO PERFORM SOFT DIGS AS REQUIRED TO CONFIRM LOCATION OF EXISTING UTILITIES.

LEGEND

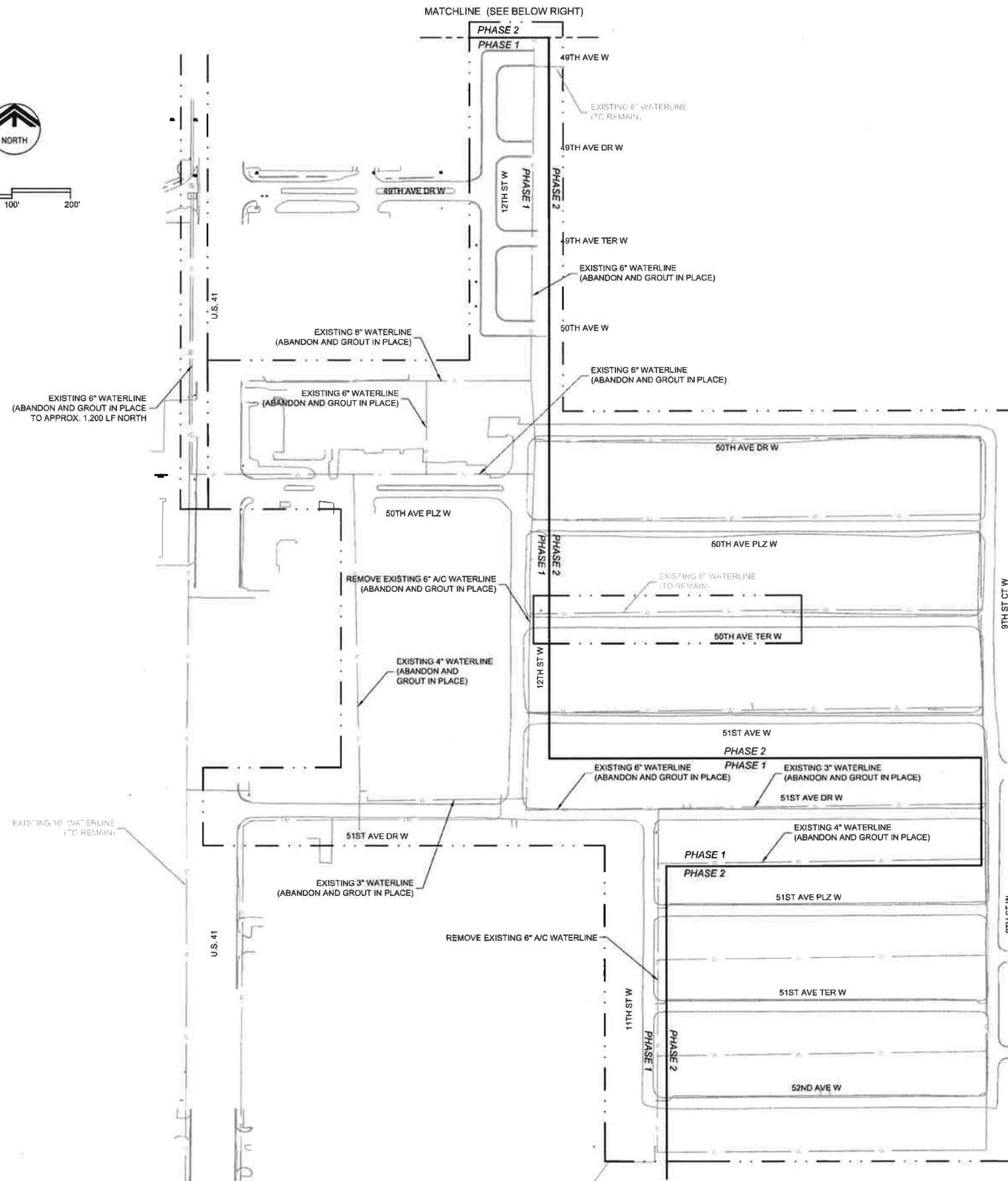
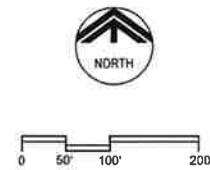
These standard abbreviations can be found herein.

| | | | |
|--------|----------------|-----|------------------|
| STA | STATION | NUT | TOP OF VALVE NUT |
| OS | OFFSET | NG | NATURAL GROUND |
| EL | ELEVATION | NFS | NOT FINAL SET |
| T.O.P. | TOP OF PIPE | | |
| RIM | VALVE BOX RIM | | |
| STORZ | 5" STORZ VALVE | | |

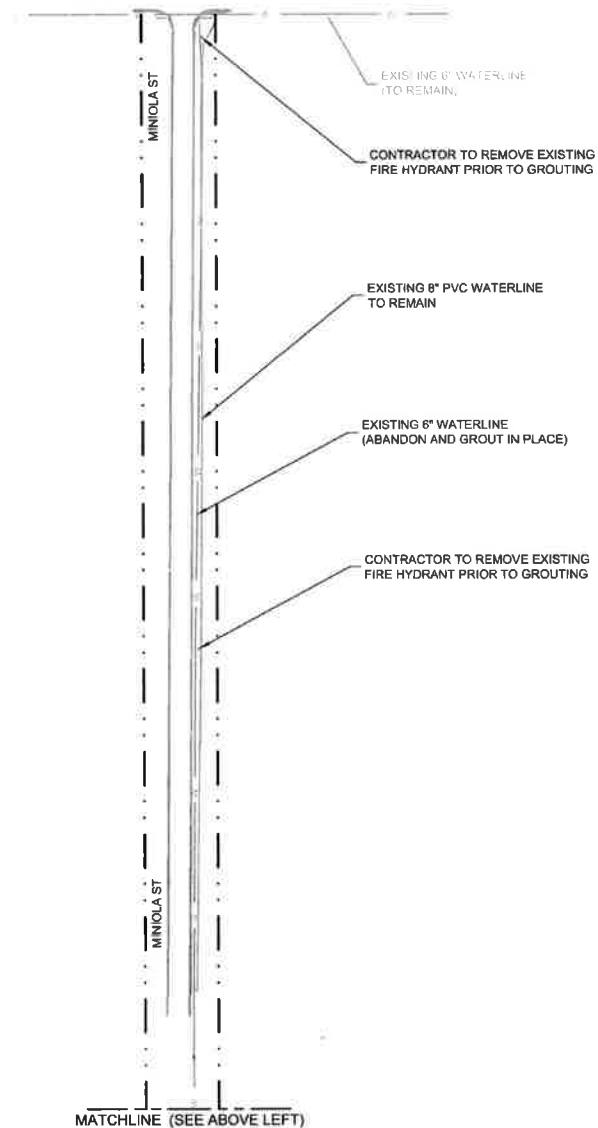
CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

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| REVISIONS | | | | DESIGNED GDM | G. DEAN MILTON, P.E. BOARD OF PROFESSIONAL ENGINEERS NO. 52719 <i>C. Dean Milton</i> DATE: 12/16/2016 PROJECT ENGINEER | | carollo Engineers...Working Wonders With Water™ 401 NORTH CATTLEMAN ROAD, SUITE 306 SARASOTA, FL 34232 PHONE: (941) 371-9832 FAX: (941) 371-9873 CA 00008571 | MANATEE COUNTY | | VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | JOB NO. 7880E.10 DRAWING NO. P-06 | |
| DRAWN DVP | | | | CHECKED EP | | | | PIC TOWN WATERLINE REPLACEMENT (PHASE I) | | WATERLINE PLAN (49TH AVE DR W) | | |
| DATE JULY 2016 | | | | | | | | | | | | |
| DESCRIPTION | | | | | | | | | | | | |

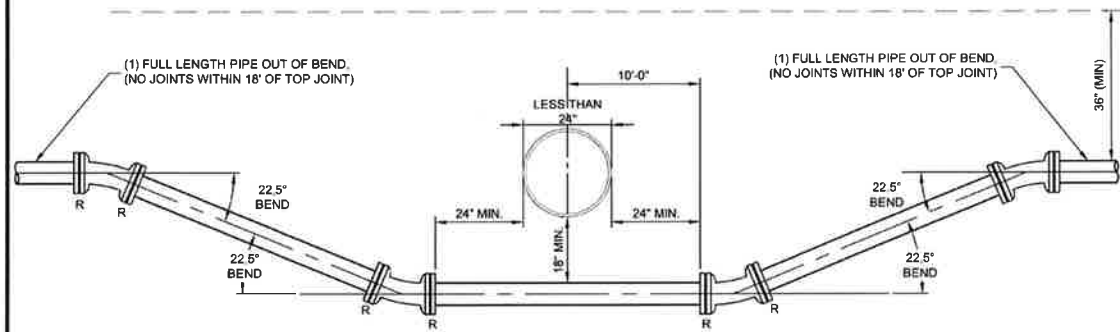
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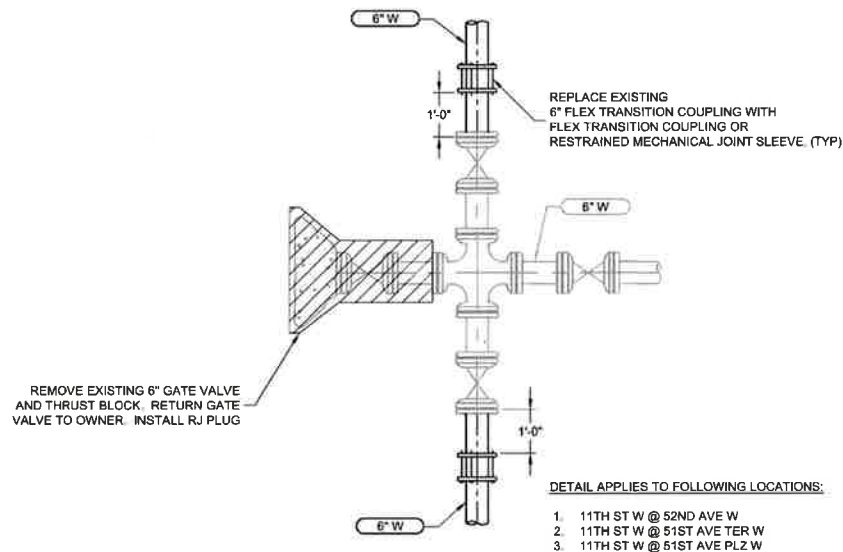
- NOTES:**
- ALL EXISTING WATERLINE WITHIN LIMITS TO BE ABANDONED IN PLACE AND GROUTED UNLESS OTHERWISE NOTED.
- PHASE 2 (PROJECT NO. 6074870) WAS COMPLETED IN 2011. RECORD DRAWINGS ARE AVAILABLE FROM MANATEE COUNTY UTILITIES RECORDS DEPT.
- ALL ABOVE GROUND FEATURES INCLUDING HYDRANTS, METERS, VALVE AND METER BOXES, PADS, VAULTS, ETC., SHALL BE REMOVED AS REQUIRED BY MANATEE COUNTY'S PUBLIC WORKS UTILITY STANDARDS.



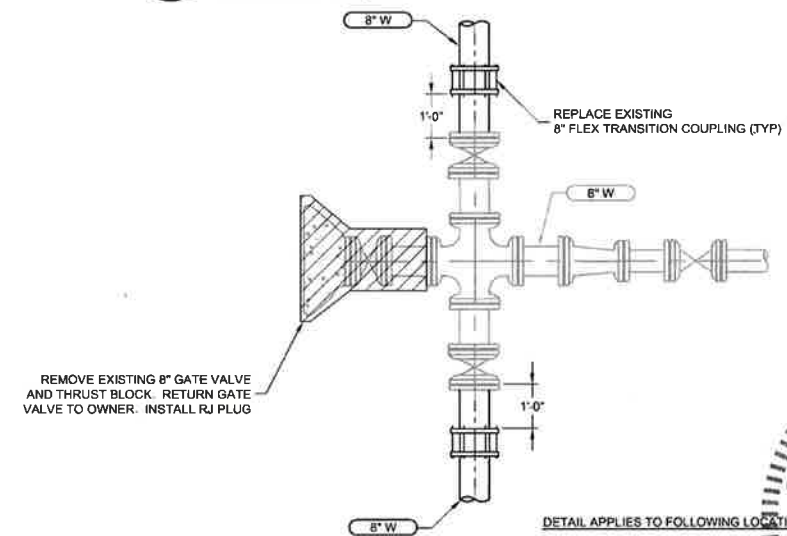
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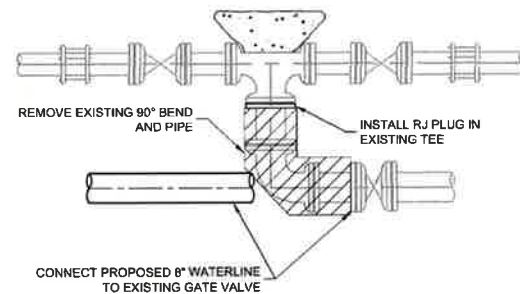
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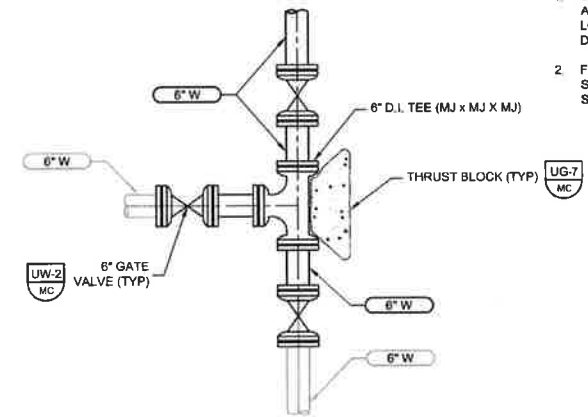
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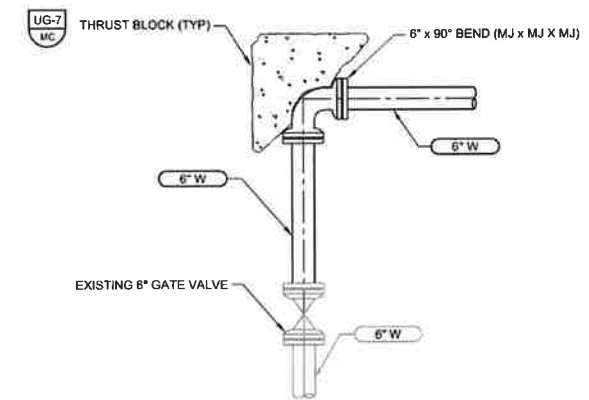
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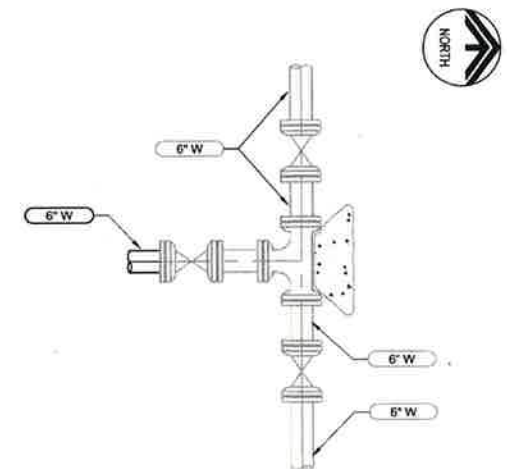
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3 DETAIL - NEW 6" WATERLINE TIE-IN
SCALE: 1/2" = 1'-0"
FILE: 7880E10-01-110-403.DWG



7 DETAIL - NEW 6" WATERLINE TIE-IN
SCALE: 1/2" = 1'-0"
FILE: 7880E10-01-110-403.DWG

NOTES:

- CONTRACTOR SHALL NOTE THAT THE EXISTING WATERLINES ARE ASBESTOS CONCRETE PIPE (ACP) AND SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR ALTERING AND DISPOSING OF ACP MATERIALS.
- FLEX TRANSITION COUPLING (A.C.P. ROUGH BARREL BY D.I.) WITH 316 STAINLESS STEEL RESTRAINING HARNESS (MINIMUM CENTER SLEEVE LENGTH OF 12").



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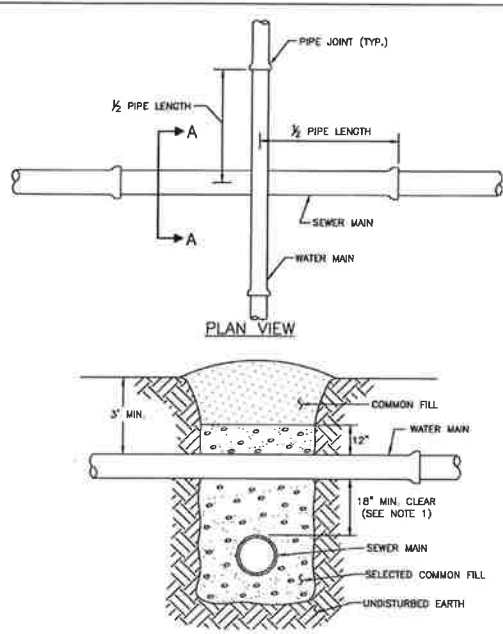
MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE I)
WATERLINE DETAILS

VERIFY SCALES
JOB NO. 7880E-10
DRAWING NO. T-01
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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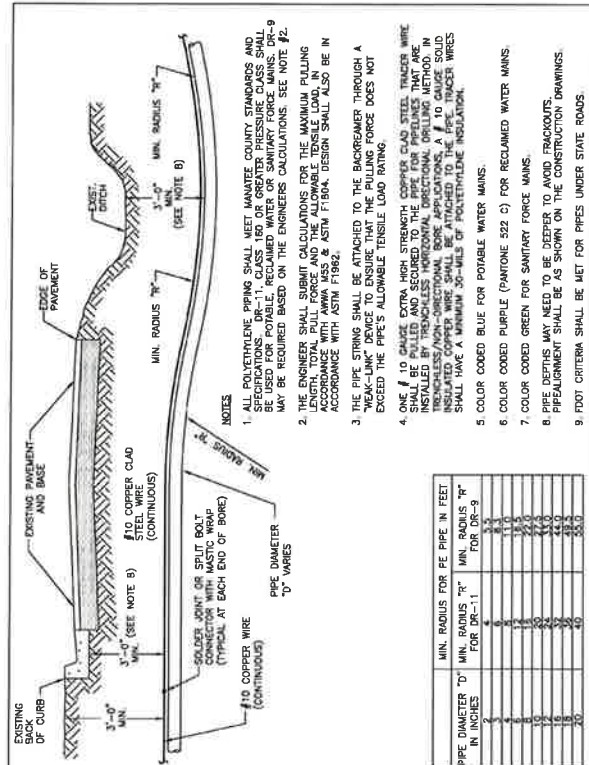
DESIGNED GDM
DRAWN DVP
CHECKED EP
DATE JULY 2016
PROJECT ENGINEER

G. DEAN MILTON, P.E.
BOARD OF PROFESSIONAL ENGINEERS NO. 52719
DATE 12/16/2016
PROJECT ENGINEER

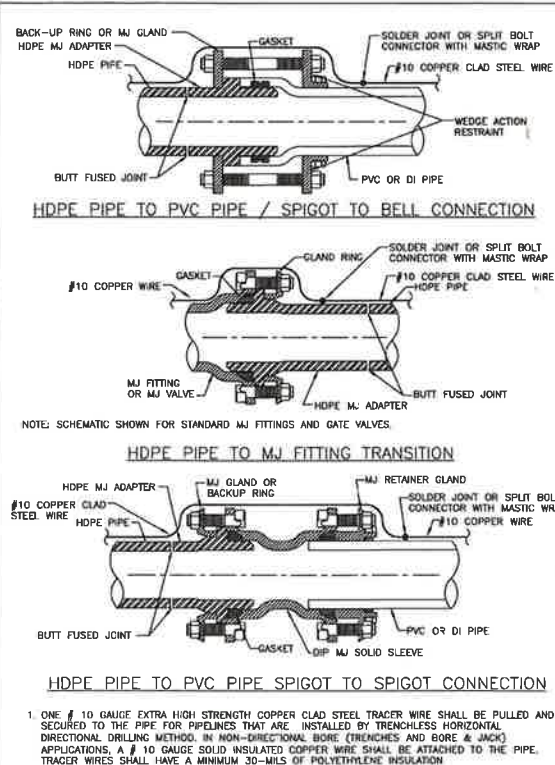


- NOTES:**
- CLEARANCE MAY BE REDUCED TO 6" FOR GRAVITY SEWER WHERE WATER MAIN IS DUCTILE IRON OR 3" FOR FORCE MAIN WHERE FORCE MAIN IS ENCASED A MINIMUM OF 10" EACH SIDE OF CROSSING.
 - WHERE NO ENCASEMENT IS REQUIRED, PIPE SECTIONS SHALL BE FULL-LENGTH AND SHALL BE ADJUSTED HORIZONTALLY SO THAT THE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

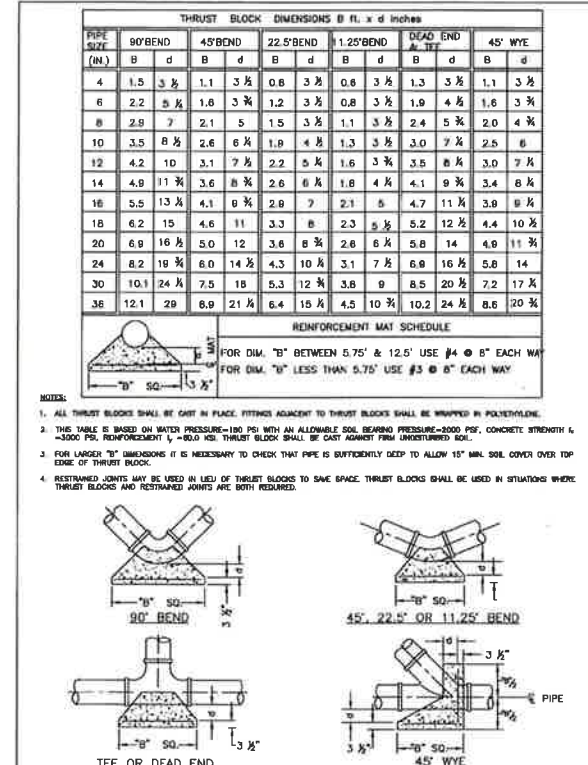
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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TYPICAL NEW WATER & SEWER LINE CROSSING | UG-2 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 102 |



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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | DIRECTIONAL BORE ROADWAY CROSSING | UG-4 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 104 |



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



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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | CONCRETE THRUST BLOCKS | UG-7 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 107 |

| MAIN PIPE SIZE | HORIZ. BENDS | | | TEES | | REDUCERS | | PLUGS & VALVES |
|----------------------|--------------|-----|-------|------|--------|----------|--------|----------------|
| | 90° | 45° | 22.5° | SIZE | LENGTH | SIZE | LENGTH | |
| 24 | 80 | 38 | 18 | K16 | 111 | K16 | 111 | 214 |
| 20 | 78 | 32 | 16 | K14 | 101 | K14 | 101 | 184 |
| 16 | 66 | 27 | 13 | K12 | 91 | K12 | 91 | 151 |
| 12 | 52 | 22 | 10 | K10 | 81 | K10 | 81 | 118 |
| 10 | 44 | 18 | 8 | K8 | 71 | K8 | 71 | 100 |
| 8 | 37 | 15 | 7 | K6 | 61 | K6 | 61 | 83 |
| 6 | 29 | 12 | 6 | K4 | 51 | K4 | 51 | 63 |
| 4 | 21 | 8 | 4 | K2 | 41 | K2 | 41 | 45 |

- NOTES:**
- RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
 - ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
 - ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
 - PIPE SIZES ARE GIVEN IN INCHES.
 - RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
 - LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
 - THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
 - RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

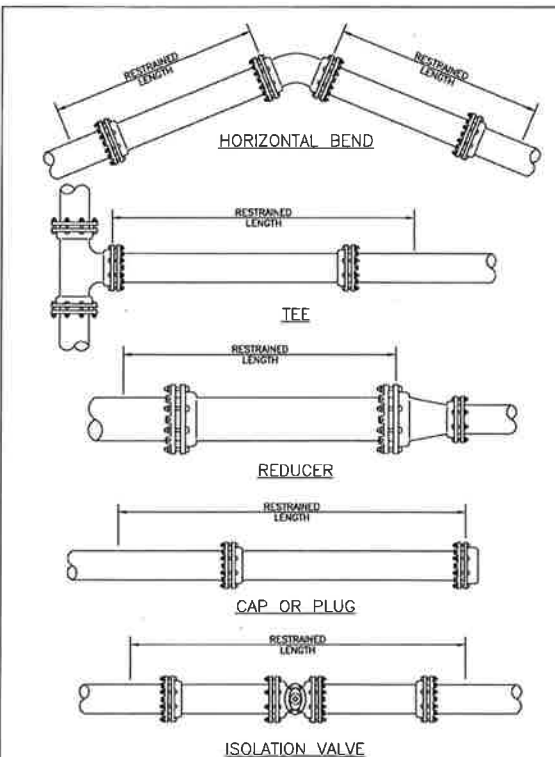
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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | RESTRAINED LENGTHS FOR PVC PIPE | UG-8 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 108 |

| MAIN PIPE SIZE | HORIZ. BENDS | | | TEES | | REDUCERS | | PLUGS & VALVES |
|----------------------|--------------|-----|-------|------|--------|----------|--------|----------------|
| | 90° | 45° | 22.5° | SIZE | LENGTH | SIZE | LENGTH | |
| 36 | 142 | 58 | 28 | K24 | 181 | K24 | 181 | 453 |
| 30 | 124 | 51 | 25 | K20 | 161 | K20 | 161 | 381 |
| 24 | 108 | 44 | 21 | K16 | 141 | K16 | 141 | 327 |
| 20 | 92 | 38 | 18 | K14 | 121 | K14 | 121 | 280 |
| 16 | 77 | 32 | 15 | K12 | 101 | K12 | 101 | 231 |
| 12 | 61 | 25 | 12 | K10 | 81 | K10 | 81 | 181 |
| 10 | 52 | 22 | 10 | K8 | 71 | K8 | 71 | 153 |
| 8 | 44 | 18 | 8 | K6 | 61 | K6 | 61 | 128 |
| 6 | 34 | 14 | 7 | K4 | 51 | K4 | 51 | 98 |
| 4 | 24 | 10 | 5 | K2 | 41 | K2 | 41 | 69 |

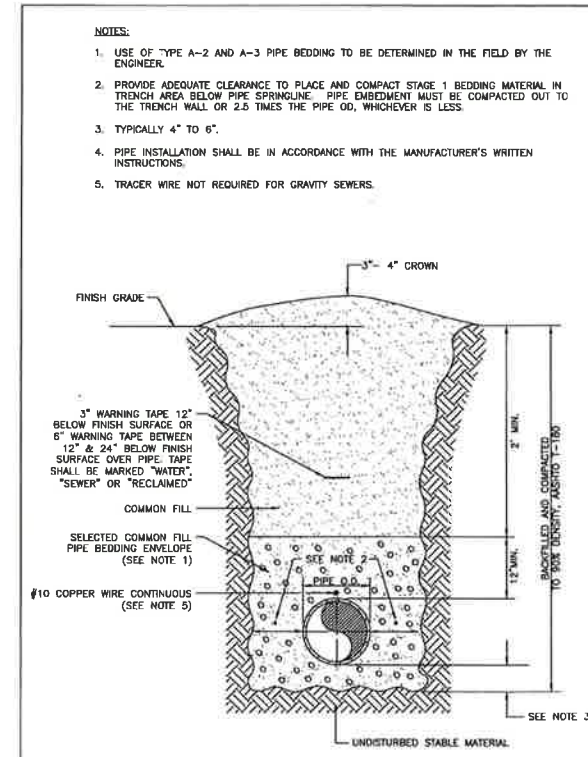
| MAIN PIPE SIZE | HORIZ. BENDS | | | TEES | | REDUCERS | | PLUGS & VALVES |
|----------------------|--------------|-----|-------|------|--------|----------|--------|----------------|
| | 90° | 45° | 22.5° | SIZE | LENGTH | SIZE | LENGTH | |
| 36 | 100 | 42 | 20 | K24 | 141 | K24 | 141 | 188 |
| 30 | 86 | 37 | 18 | K20 | 121 | K20 | 121 | 162 |
| 24 | 75 | 31 | 15 | K16 | 101 | K16 | 101 | 135 |
| 20 | 65 | 27 | 13 | K14 | 81 | K14 | 81 | 116 |
| 16 | 54 | 22 | 11 | K12 | 71 | K12 | 71 | 86 |
| 12 | 43 | 18 | 8 | K10 | 61 | K10 | 61 | 75 |
| 10 | 37 | 15 | 7 | K8 | 51 | K8 | 51 | 63 |
| 8 | 30 | 13 | 6 | K6 | 41 | K6 | 41 | 53 |
| 6 | 24 | 10 | 5 | K4 | 31 | K4 | 31 | 41 |
| 4 | 17 | 7 | 3 | K2 | 21 | K2 | 21 | 29 |

NOTE:
SEE RESTRAINED LENGTHS FOR POLY-WRAPPED DETAIL THROUGH 8 THAT ARE ALSO APPLIED TO RESTRAINED LENGTHS FOR DIP.

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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | RESTRAINED LENGTHS FOR DIP | UG-9 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 109 |



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



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

Last Created By: 6-03-18 02:18pm dpm

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| DESIGNED GDM | G. DEAN MILTON, P.E. BOARD OF PROFESSIONAL ENGINEERS NO. 52719 |
| DRAWN DVP | C. Dean Milton |
| CHECKED EP | 12/16/2016 |
| DATE JULY 2016 | PROJECT ENGINEER |



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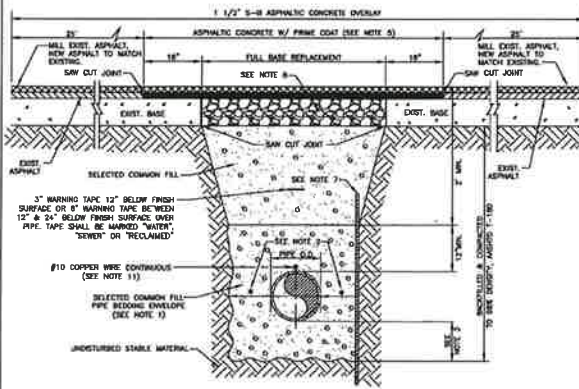
MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE I)
TYPICAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

JOB NO.
7880E-10
DRAWING NO.
T-02

NOTES:

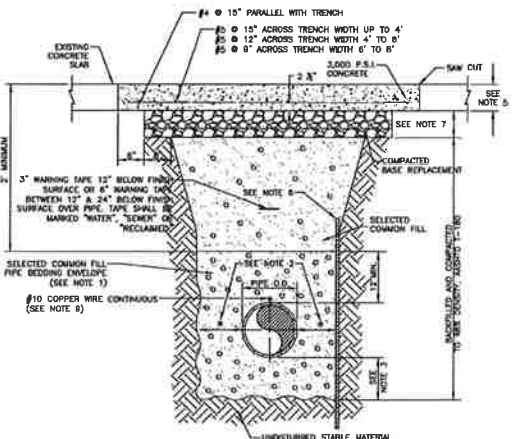
- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
- TYPICALLY 4" TO 6".
- PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER.
- MILL 25' BACK FROM TRENCH SAW CUT. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCREPANCY "BUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
- SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
- BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
- TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
- RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FOOT STANDARDS, LATEST EDITION.
- TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
- NOTES 5 THRU 10 ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING | UG-12 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 112 |

NOTES:

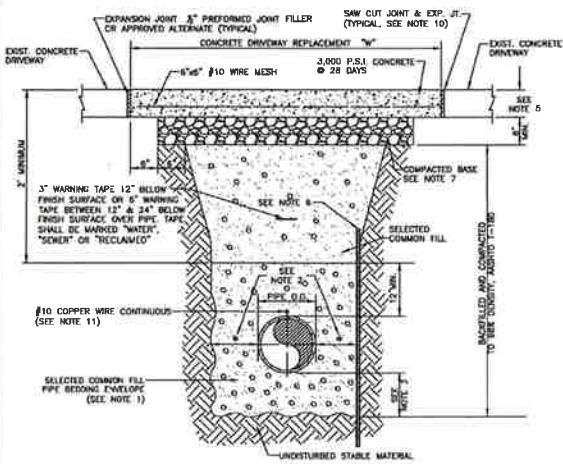
- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
- TYPICALLY 4" TO 6".
- PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.
- SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
- BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
- TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
- TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
- NOTES 5 THRU 10 ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING | UG-13 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 113 |

NOTES:

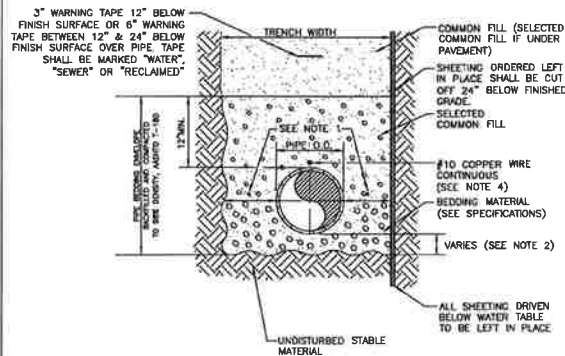
- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
- TYPICALLY 4" TO 6".
- PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
- SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
- BASE SHALL BE COMPACTED 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
- DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
- IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (8" WIDE AND 18" DEEP) AFTER THE CONCRETE HAS SET.
- IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
- TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



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

NOTES:

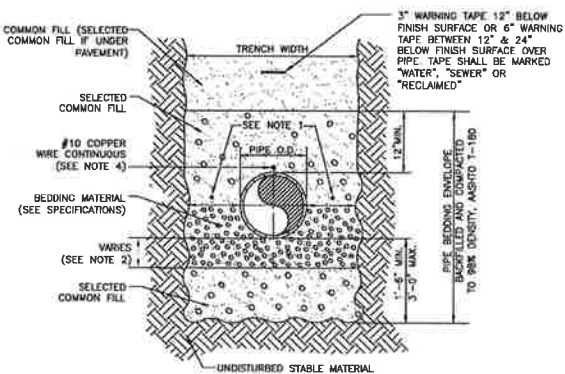
- PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
- TYPICALLY 4" TO 6".
- PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN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



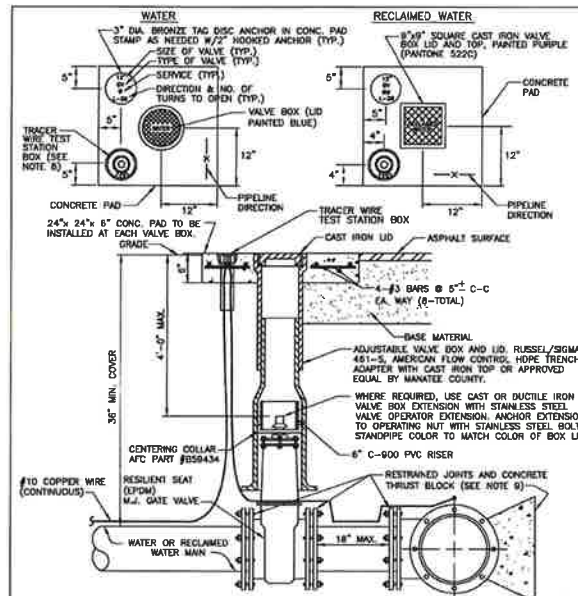
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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TRENCH WITH TYPE A-2 PIPE BEDDING | UG-15 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 115 |

NOTES:

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

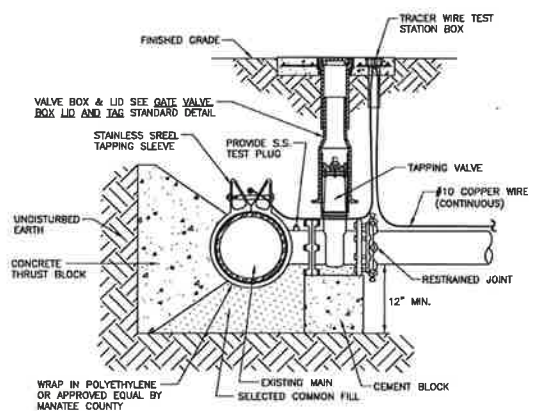


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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TRENCH WITH TYPE A-3 PIPE BEDDING | UG-16 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 116 |



- WATER VALVE SHALL BE INSTALLED INTO THE EXISTING CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" AND A 1/8" X 1/4" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FLOORING FROM THE DISC TO THE VALVE.
- ALL EXISTING AND PROPOSED VALVE NOTICES SHALL BE ADJUSTED TO PROPOSED SPACES AS DETERMINED IN THE FIELD.
- WATER VALVES SHALL NOT BE PLACED IN UNDEVELOPED AREAS.
- PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE USED.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1/2".
- FOR VALVES 18" AND LARGER, USE BUTTERFLY VALVE.
- PIPELINE DIRECTION TO BE INDICATED BY A TRACER WIRE LOCATED WITHIN 200 FEET OF A WATER SERVICE, BELOW-GRASS, OR OTHER EXISTING WATER MAIN. THE TRACER WIRE SHALL BE LOCATED WITHIN 200 FEET OF A WATER SERVICE, BELOW-GRASS, OR OTHER EXISTING WATER MAIN. THE TRACER WIRE SHALL BE LOCATED WITHIN 200 FEET OF A WATER SERVICE, BELOW-GRASS, OR OTHER EXISTING WATER MAIN.
- WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEEL".
- TO REMOVE & TAP ON EXISTING MAIN, CONTRACTOR SHALL FIRST LOCATE MAIN BY TAPPING OR JACKING UNDER VEHICLE TRAFFIC, USE PROPER CARE TO NOT DAMAGE EXISTING MAIN, THEN TAP ON MAIN.

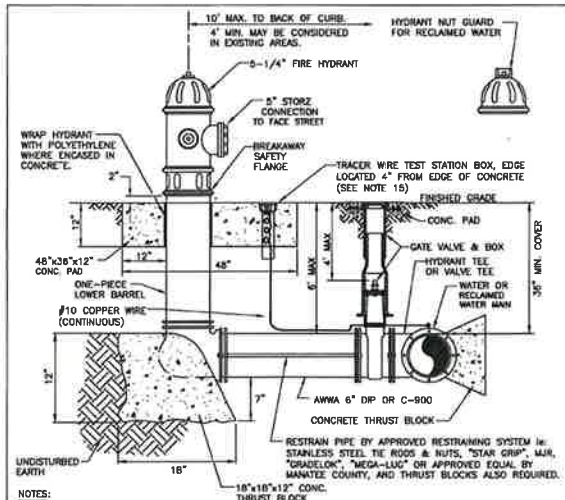
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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | GATE VALVE AND THRUST BLOCK | UW-2 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 120 |



NOTES:

- PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 60 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER OR 150 PSI FOR FORCE MAIN.
- ALL FITTINGS TO BE WRAPPED WITH 20 MIL VISQUEEN AT THRUST BLOCK.
- ALL TAPS ON CONCRETE WATER MAINS AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
- ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
- CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO LOWER TAPPING MACHINE INTO THE HOLE.
- WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEEL".
- TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TAPPING SLEEVE AND VALVE | UW-4 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 122 |



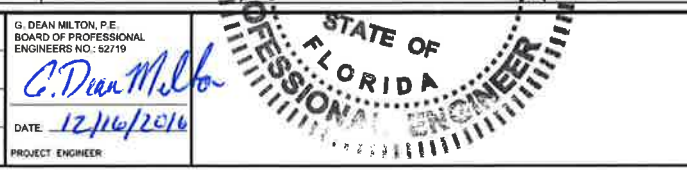
NOTES:

- WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
- FIRE HYDRANTS SHALL BE A MINIMUM OF 6" OFF EDGE OF PAVEMENT AND 10' MAX. FROM BACK OF CURB WHERE POSSIBLE AND WHERE SIDEWALK IS TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT-OF-WAY LINE.
- HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER AND PURPLE (PANTONE 522C) FOR RECLAIMED WATER. HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION.
- FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
- FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
- FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
- BASED REFLECTIVE PAVEMENT MARKER (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER. SHALL BE INSTALLED AT CENTERLINE OF PAVEMENT ADJACENT TO EACH HYDRANT.
- PRECAST CONCRETE THRUST BLOCKS & PADS SHALL NOT BE USED.
- ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER.
- FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
- IN-LINE VALVES SHALL BE LOCATED AT HYDRANT TEES.
- HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER MAIN UNLESS OTHERWISE APPROVED.
- THERE MUST BE A CLEARANCE OF 7 1/2 FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ALL ABOVE-GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC., PER THE FLORIDA FIRE PREVENTION CODE.
- SEE STANDARD DETAIL GATE VALVE, BOX, LID AND TAG.
- SHOULD THE FIRE HYDRANT CONCRETE PAD OVERLAP THE SIDEWALK, THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.

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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | FIRE HYDRANT ASSEMBLY | UW-5 |
| REV. BY CLB/BR | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 123 |

FILENAME: Last Saved By: JNewberry 5-15-15 03:07pm C:\Users\jnewberry\Desktop\Typ\PC17880E10-01-T-03 XREFS: 3824db; 7880E10-01-110-401 UG-2 W; UG-13 W; UG-14 W; UG-15 W; UG-16 W; UW-2 W; UW-4 W; UW-5 W

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|-------------------|----------------------------------------------------------------------|
| DESIGNED GDM | G. DEAN MILTON, P.E. BOARD OF PROFESSIONAL ENGINEERS NO. 52719 |
| DRAWN DVP | C. Dean Milton |
| CHECKED EP | DATE: 12/16/2014 |
| DATE JULY 2016 | PROJECT ENGINEER: |



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| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | PIC TOWN WATERLINE REPLACEMENT (PHASE I) | VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY |
| TYPICAL DETAILS | | JOB NO. 7880E.10 | DRAWING NO. T-03 |


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|--------------------------------------------------|---------------|------------------------------------------------------|--------|
| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | 2" BLOW-OFF ASSEMBLY FOR 10" MAINS AND SMALLER | UW-7 |
| REV. BY CLB/KE | DATE 11/10 | MAY 10, 2011 DATE OF APPROVAL | PAGE 1 |

| | | | |
|--------------------------------------------------|---------------|-------------------------|----------|
| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | MULTIPLE METER VAULT | UW-18 |
| REVIEW CLB/GRR | DATE 11/10 | | |
| MAY 10, 2011 DATE OF APPROVAL | | | PAGE 136 |

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|--------------------------------------------------|---------------|-------------------------------|-----------------------|
| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TYPICAL SERVICE CONNECTION | UW-19 PAGE 137 |
| REV BY CLB/BR | DATE 11/10 | | |
| MAY 10, 2011 DATE OF APPROVAL | | | |

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|--------------------------------------------------|---------------|----------------------------------|----------|
| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | TEMPORARY JUMPER CONNECTION | UW-21 |
| REV BY WT/KE | DATE 05/11 | MAY 10, 2011 DATE OF APPROVAL | PAGE 139 |

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|--------------------------------------------------|---------------|-------------------------|---------|
| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | JACK & BORE CROSSING | UG-3 |
| REV. BY CUB/BR | DATE 11/10 | | |
| MAY 10, 2011 DATE OF APPROVAL | | | PAGE 10 |

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|----------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------|-------|
|  MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | 1 1/2" x 2" METER AND BACKFLOW PREVENTER | UW-13 |
| REV. BY 6/5/10 | DATE 6/1/10 | | |

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|--------------------------------------------------|-------|------------------------------------------------------------|-----------------------|
| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | METER BOX ASSEMBLY FOR 5/8" X 3/4", 3/4" & 1" METERS | UW-17 PAGE 135 |
| REV. BY | DATE | | |
| CLB/BR | 11/10 | | |
| MAY 10, 2011 DATE OF APPROVAL | | | |

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|--------------------------------------------------|-------|-----------------------------------------------------------------------------------|------|
| MANATEE COUNTY PUBLIC WORKS DEPARTMENT | | ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR 12-INCH AND SMALLER WATER MAINS | UW-9 |
| REV/JY | DATE | | |
| CUB/XE | 11/10 | | |
| MAY 10, 2011 DATE OF APPROVAL | | PAGE 127 | |

[illegible]

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|-------------------|------------------------------------------------------------------------|
| DESIGNED GDM | G. DEAN MILTON, P.E. REGISTERED PROFESSIONAL ENGINEERS NO. 62219 |
| DRAWN DVP | <i>G. Dean Milton</i> |
| CHECKED EP | |
| DATE JULY 2016 | DATE: <i>12/16/2016</i> |
| | PROJECT ENGINEER |