RFP 22-010 New Life Way Force Main Extension



ADDENDUM #1 Questions & Answers

1) QUESTION:

What percentage of the bid bond is required?

ANSWER:

There is no bid bond requirement for this project. The performance and payment bonds will each be in an amount equal to 100% of the price specified in the contract.

2) QUESTION:

Bid Items 5 through 10 specify 4" DR11 HDPE force main installed via Directional Bore. Can 4" DR18 Fusible PVC® pipe be used as an "equal" to the specified HDPE pipe for the Directional Bore sections of the project?

ANSWER:

The requirement is for 4" DR11 HDPE. No other substitutions will be accepted.

3) QUESTION:

Would it be acceptable to substitute 4" HDPE DR11 green stripe pipe for most of the project? **ANSWER:**

The requirement is for 4" DR11 HDPE. No other substitutions will be accepted.

4) QUESTION:

Could you please provide the plans, specs and bid forms for this project?

ANSWER:

Plans and bid form attached. For specs, please refer to Section 3 (Technical Specifications) of the bid document.

5) QUESTION:

Do you have a planholder's list?

ANSWER:

There is no planholder's list available for this project.

ACKNOWLEDGEMENT

It is the vendor's responsibility to ensure their receipt of all addenda, and to clearly acknowledge all addenda within their initial bid or proposal response in the space provided on the Submittal Checklist included in the original solicitation document. Failure to do so may subject the bidder to disqualification.

CITY OF SEBRING FORCE MAIN **EXTENSION FROM GRAND PRIX DRIVE** SOUTHERLY TO NEW LIFE WAY

DIRECTIONAL BORE AND OPEN DITCH INSTALLATION OF A 4" FORCE MAIN FROM SOUTH OF GRAND PRIX DR. STA 0+85±, SAID STA. BEING THE STARTING POINT OF THIS PROJECT. THENCE SOUTHERLY ALONG THE WESTERLY R/W OF U.S. HWY. 27 APPROXIMATELY 1650 FEET TO SOUTH OF NEW LIFE WAY, TYING INTO AN EXISTING 4"
FORCE AS SHOWN ON PLANS, SAID ENDING STATION
BEING 17+35± WO# 22015, SEBRING, FLORIDA
HIGHLANDS COUNTY, FLORIDA. SECTIONS 23 TOWNSHIP
34S RANGE 28E.

-- ELEVATIONS SHOWN ARE A REPRESENTATION OF FIELD CONDITIONS AND IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY INFORMATION IN FIELD. THE INTENT FOR THE PROPOSED CONSTRUCTION IS TO CONSTRUCT THE FORCE MAIN

AND WATER LINE WITH A MINIMUM OF 3' OF COVER AND A MINIMUM OF 6' CLEAR BETWEEN THE WATER MAIN AND THE FORCE MAIN.

—THESE PLANS HAVE BEEN DRAWN TO DEPICT THE REQUIRED CONSTRUCTION WITHIN THE PROJECT AREA. IN CERTAIN CASES THE SIZE AND/OR LOCATION OF PROPOSED CONSTRUCTION HAS BEEN BLOWN UP TO SHOW ITEMS. THEREFORE, LOCATIONS ON THE DRAWINGS MAY NOT BE EXACT AND SHOULD NOT BE SCALED FOR CONSTRUCTION. THE PROPOSED FORCE MAIN AND WATER LINE WILL NEED TO BE CONSTRUCTED USING EXISTING SITE CONDITIONS AND CURRENT F.D.O.T.

CONSTRUCTION REQUIREMENTS AND REGULATIONS.

—THE UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS ARE
REPRESENTATIONAL ONLY. FIELD INVESTIGATION FOR EXACT LOCATIONS IS REQUIRED
AND WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 2016, SUPPLEMENTS AND SPECIAL PROVISIONS THERETO IF NOTED IN THE CONTRACT SPECIFICATIONS FOR THIS PROJECT.

AT LEAST 72 HOURS IN ADVANCE OF BEGINNING CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL CONTACT THE LOCAL MAINTENANCE FDOT ENGINEER'S OFFICE TO SECURE GENERAL USE PERMITS AND/OR OTHER PERMITS AS REQUIRED FOR WORKING WITHIN THE DEPARTMENT'S RIGHT-OF-WAY.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 1/1/16
FOR DESIGN STANDARDS MODIFICATIONS, CLICK ON "DESIGN STANDARDS" AT THE FOLLOWING WEB SITE: http://www.dot.state.fl.us/rddesign/

THE INFORMATION AND DESIGN SHOWN ON THESE DRAWINGS IS BASED ON THE BEST AVAILABLE INFORMATION PROVIDED FOR DESIGN. THE DRAWING IS TO SCALE AS MUCH AS POSSIBLE; HOWEVER NO MEASUREMENTS SHOULD BE MADE BY SCALING FROM THESE DRAWINGS AS SOME ITEMS MAY BE NOT TO SCALE FOR DRAWING CLARITY, ANY QUESTIONS OR CONFLICTS SHOULD BE BROUGHT TO THE ENGINEER IMMEDIATELY FOR CLARIFICATION OR RESOLUTION. POLSTON ENGINEERING INC. SHALL NOT BE RESPONSIBLE FOR ANY ERRORS MADE BY OTHERS CAUSED BY MAKING ASSUMPTIONS ABOUT THE PLANS OR ERRORS CAUSED BY SCALING THE PLANS. ALL CONSTRUCTION SHALL FOLLOW THE ACCEPTED SAFETY PROCEDURES AND CONSTRUCTION TECHNIQUES AS REQUIRED BY ANY APPLICABLE GOVERNMENT STANDARDS

PROJECT LOCATED WITHIN SECS. 23 TWP. 34S RGE. 28E HIGHLANDS COUNTY, FLORIDA STATE PROJECT # 09030-3524 BETWEEN MILE POST 7.976 TO 8.298 PROPOSED ±1650 L.F. OF 4" SEWER FORCE MAIN FORCE MAIN: 1650 LF TOTAL FORCE MAIN LENGTH BEING : 810 LF OF 4" DR-18 C-900 GREEN PVC 840 LF OF 4" SDR 11 H.D.P.E. DIR. BORE PIPE #1 MURPHY GAS STATION STA. 2+39 #2 STRIP MALL STA. 4+09 #3 VACANT AUTO SALES STA. 7+50 100 LF 120 LF 80 LF BORE #4 AMAZON SHEDS / McELROY'S PRODUCE STA. 10+11
BORE #5 HAYS AUTO / MRI IMAGING STA. 13+22 AND STA. 14+21
BORE #6 NEW LIFE WAY / TIE IN TO EXISTING 4" FM STA. 18+10 100 LF 190 LF 250 LF PROJECT: CITY OF SEBRING 4" FORCE MAIN EXTENSION

UTILITY PROVIDER: CITY OF SEBRING UTILITIES DEPARTMENT BOB BOGGUS 321 NORTH MANGO STREET

SEBRING, FL 33870 863-471-5112

ROGER DALE POLSTON, P.E. POLSTON ENGINEERING, INC. P.O. BOX 588 SEBRING, FL 33871-0588

ENGINEER:

SURVEYOR:

CONTRACTOR:

UTILITY NOTES:

(863) 385-5564 (863) 385-2462 FAX dale@polstonengineering.com

GARY L. GERMAINE GERMAINE SURVEYING, INC. 3803 KENILWORTH BLVD. SEBRING, FLORIDA 33870

813-385-6856 office@germainesurveying.com PROJECT WILL BE PUT OUT FOR BID

FDEP MATERIALS LIST: FORCE MAIN 1650 FEET TOTAL

ACCORDANCE WITH THE CURRENT F.D.O.T. STANDARD.

4" SDR 11 HDPE 840 FEET DR 18 PVC 810 FEET 4" GATE VALVES AIR RELEASE VALVES



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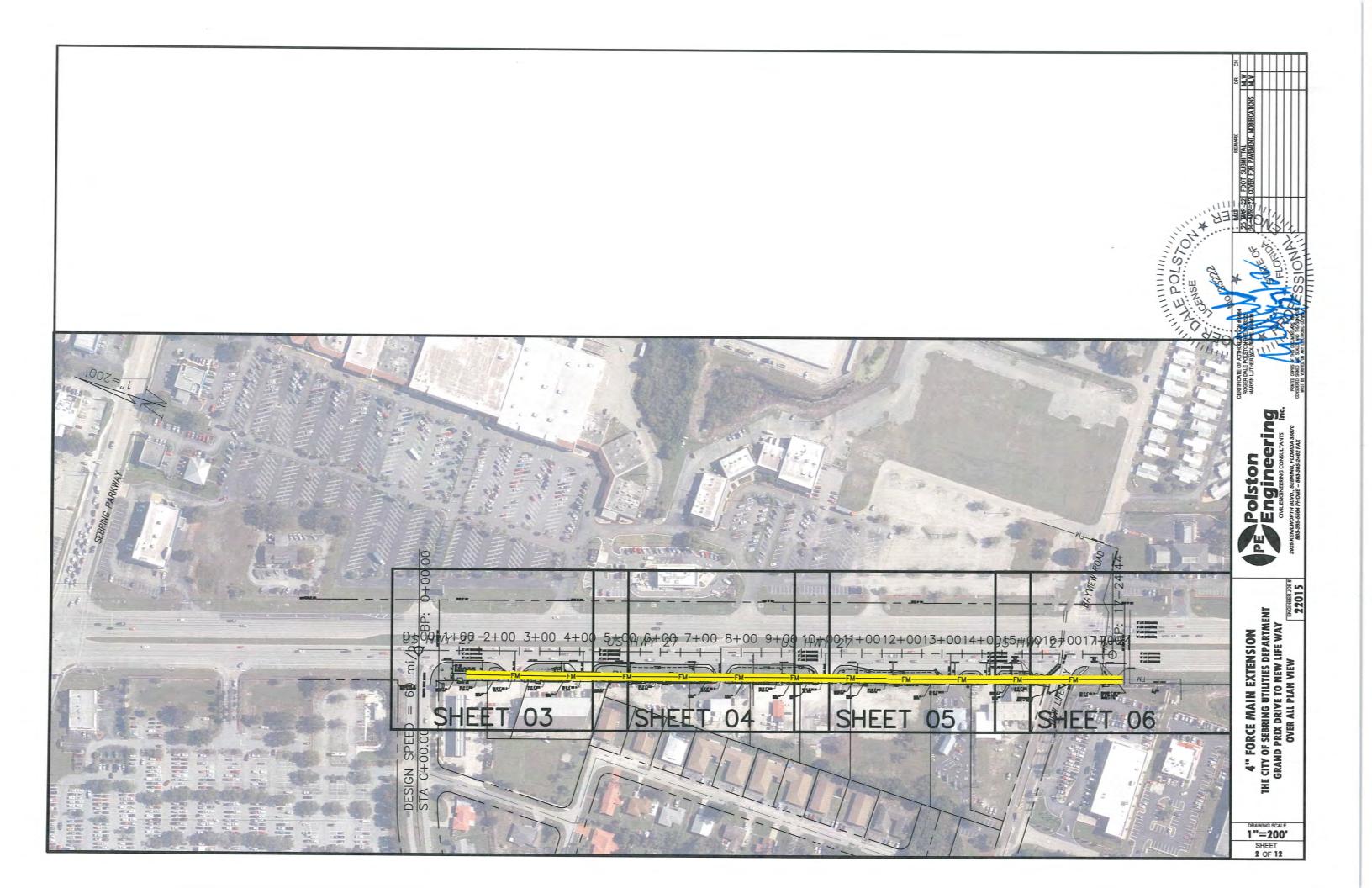
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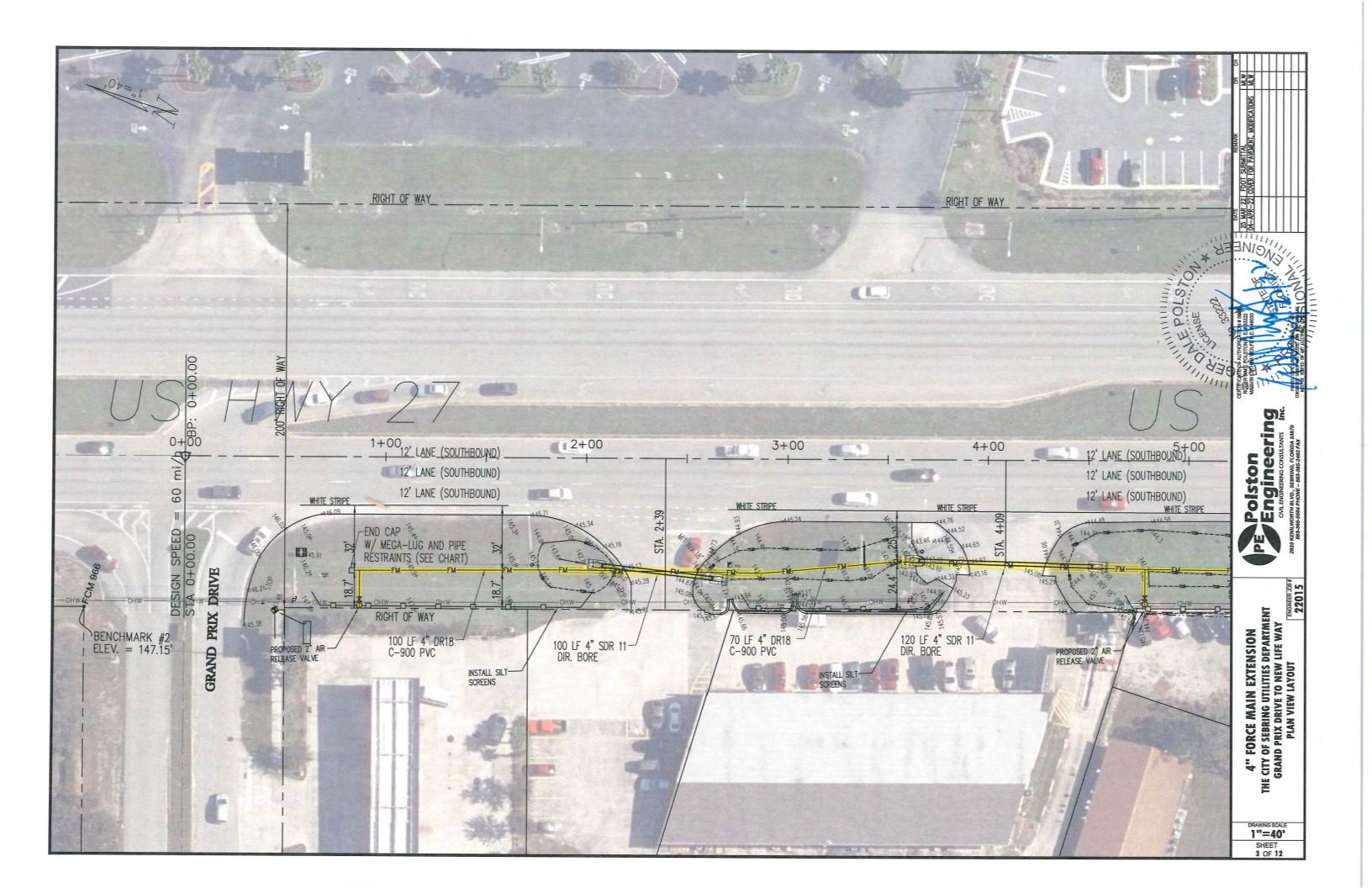
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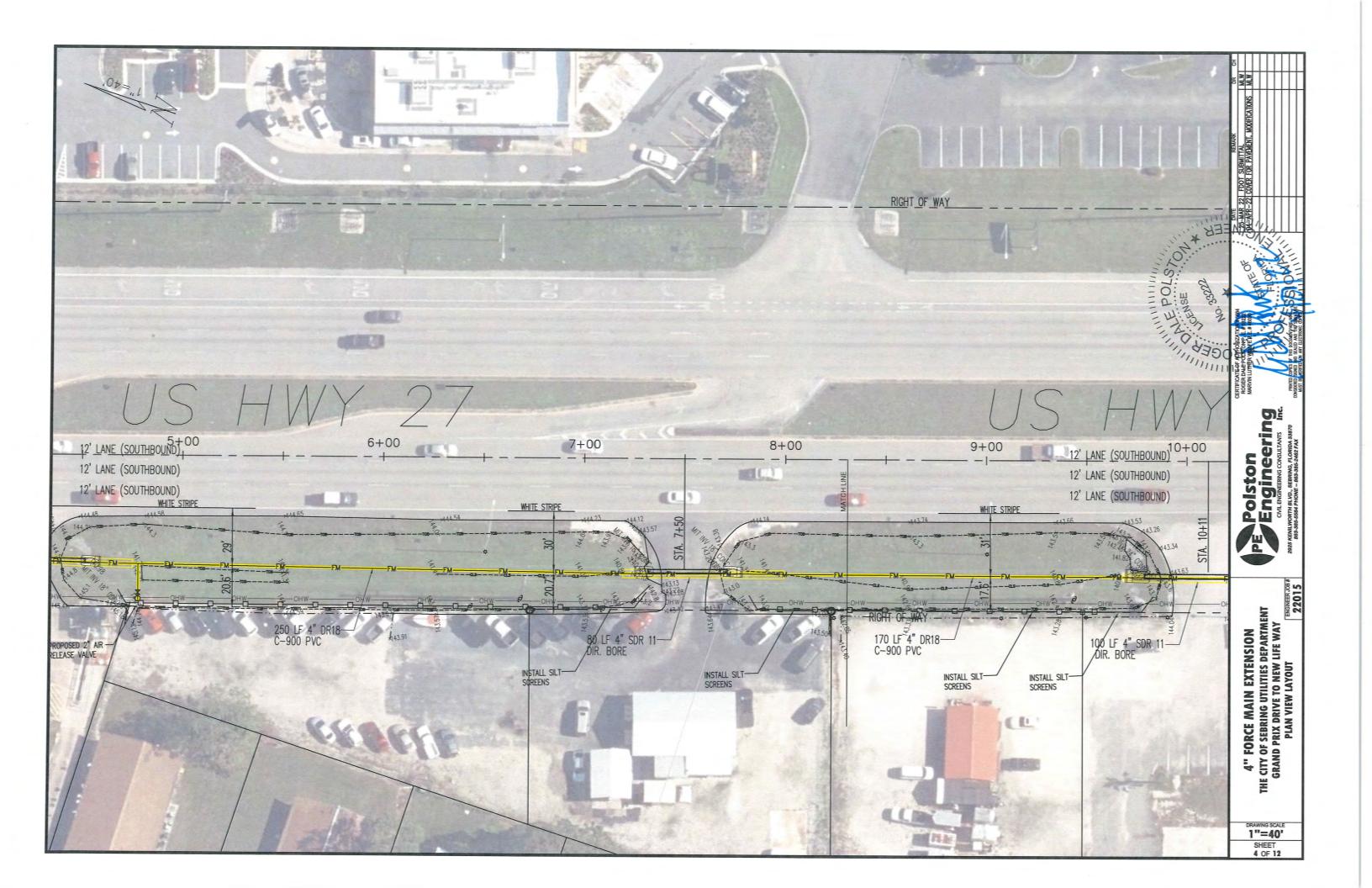
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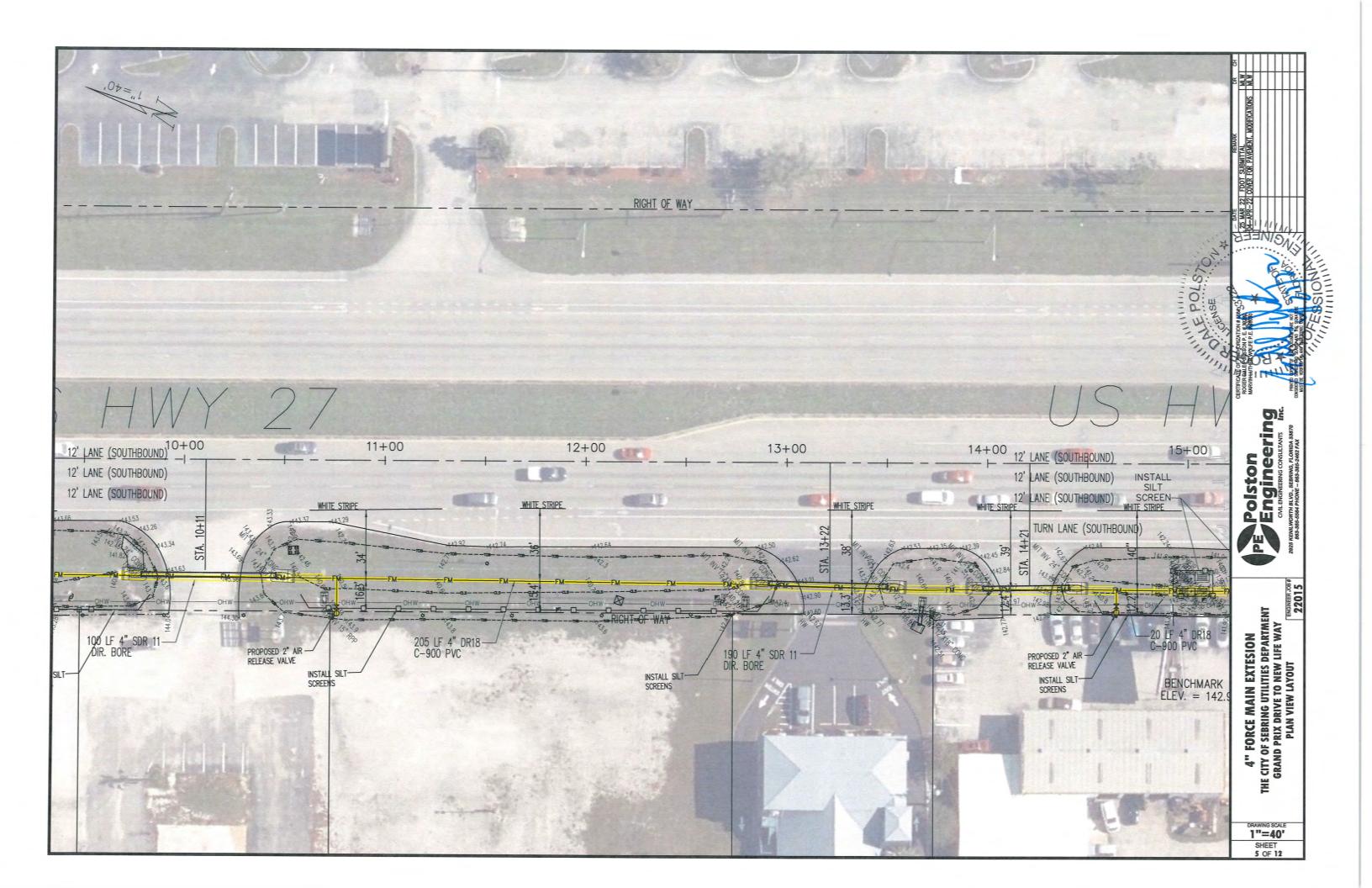
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DE SEBRING UTILITIES DEPARTMI
DE PRIX DRIVE TO NEW LIFE WAY
COVER SHEET OVERALL LAYOUT SHEET 3-6 PLAN VIEW LAYOUT SHEETS 7-9 DIRECTIONAL BORES 10 - 12GENERAL INFORMATION FDOT 612 MAINTENANCE OF TRAFFIC PLAN 4" FORCE MAIN E CITY OF SEBRING UTILI GRAND PRIX DRIVE TO --THE UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS ARE REPRESENTATIONAL ONLY. FIELD INVESTIGATION FOR EXACT LOCATIONS IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
--ALL DISTURBED PREVIOUSLY IMPROVED AREAS WILL BE COMPLETELY RESTORED TO ORIGINAL CONDITIONS, THIS INCLUDES SODDING, LANDSCAPING, IRRIGATION SYSTEMS, STRUCTURES, ETC.
--ALL CONSTRUCTION WITHIN THE F.D.O.T. RIGHT-OF-WAY IS TO BE IN ALWAYS CALL 811 TWO FULL BUSINESS DAYS BEFORE YOU DIG

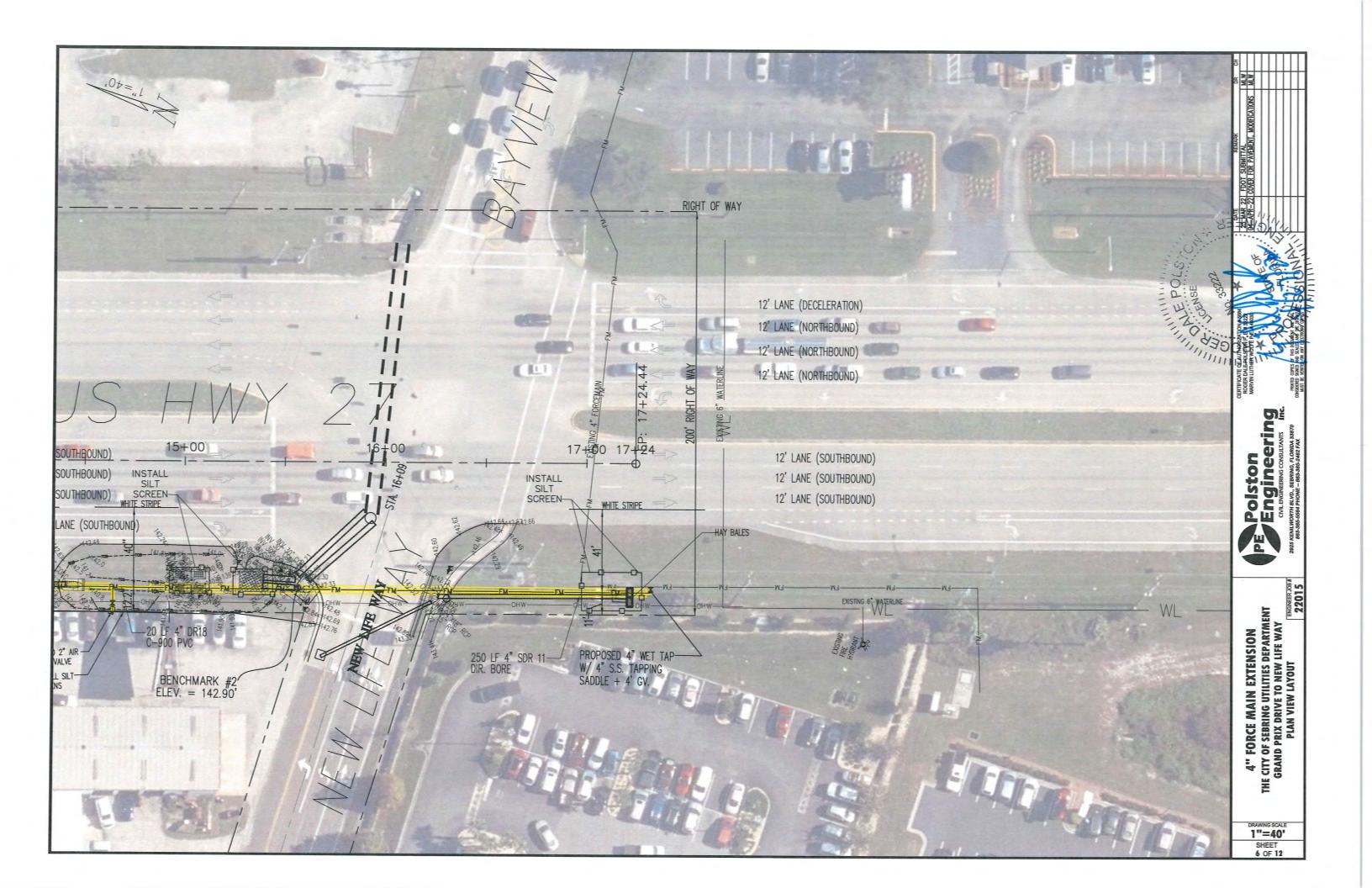
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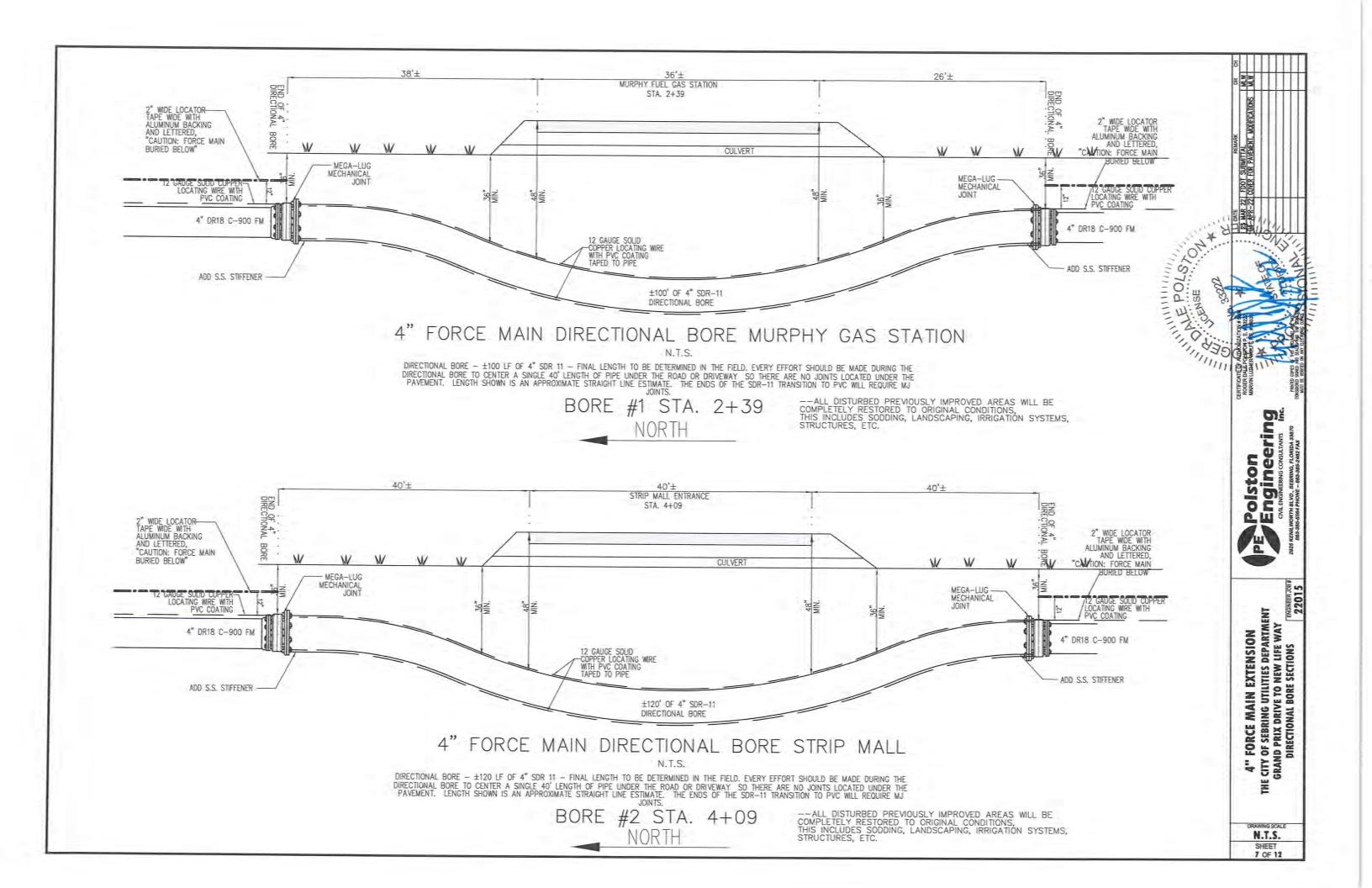


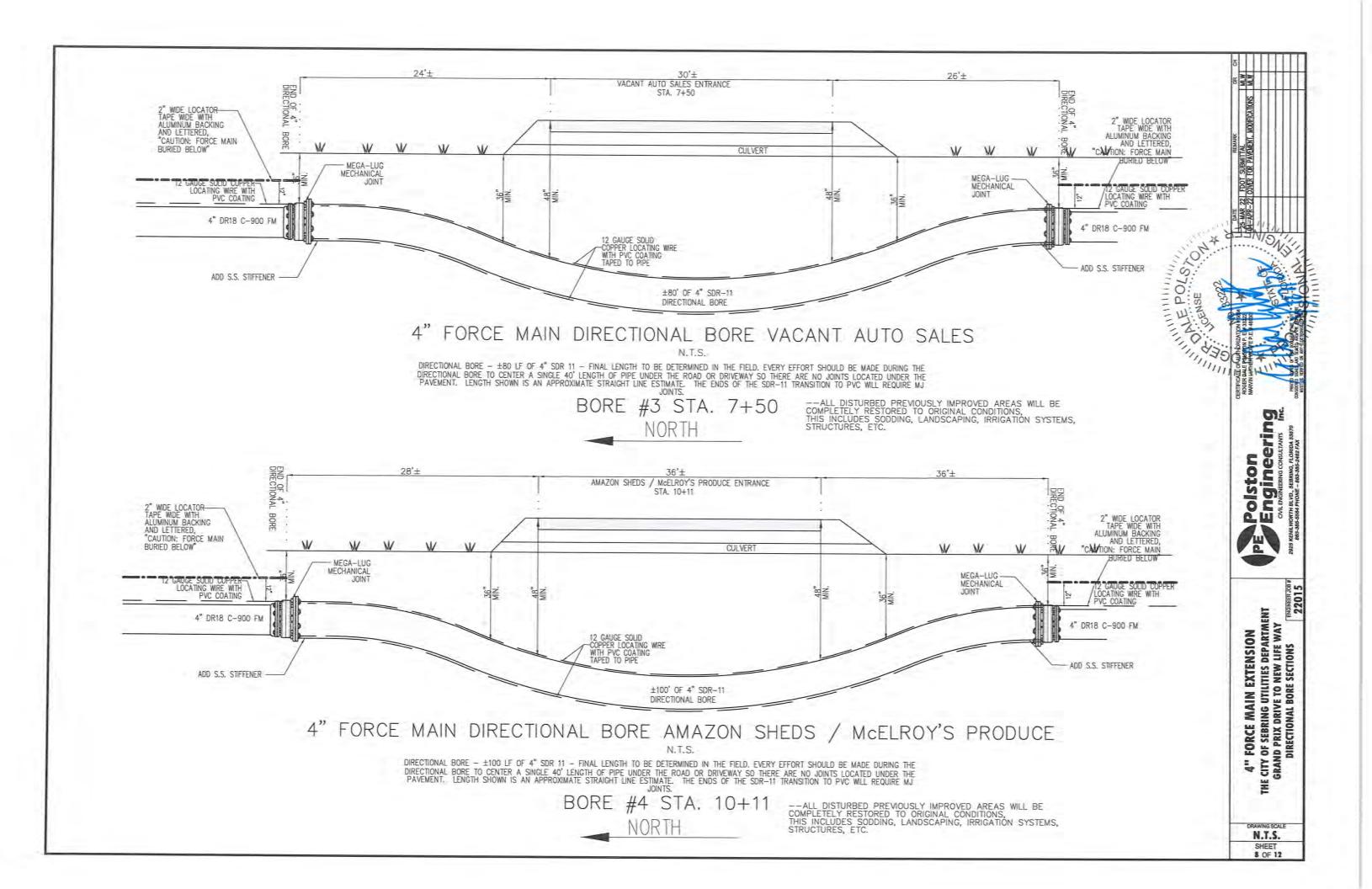


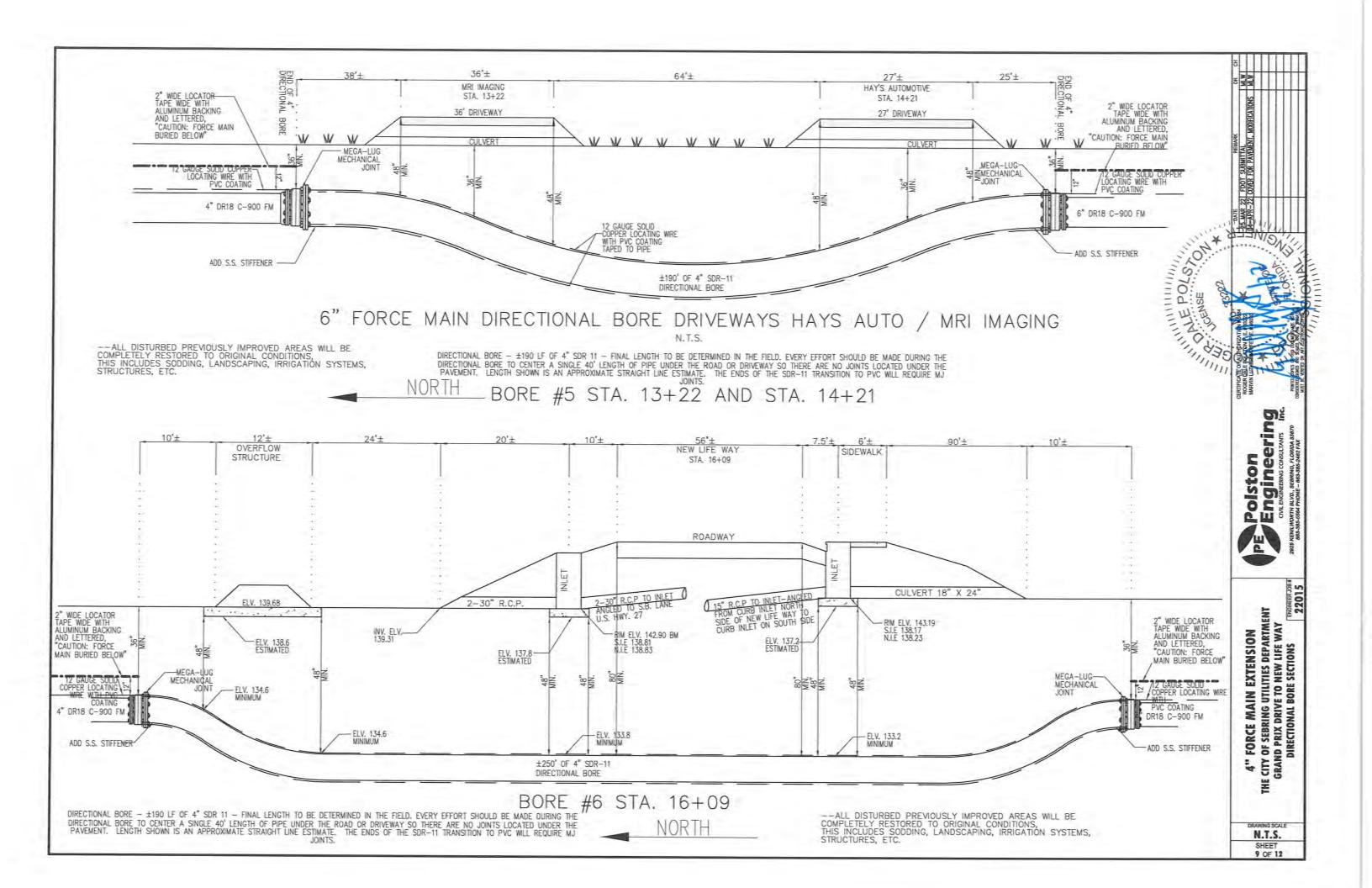


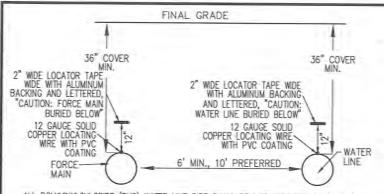












--ALL POLYVINYLCHLORIDE (PVC) WATER LINE PIPE SHALL BE LAID WITH METAL LOCATOR TAPE BURIED ONE FOOT ABOVE AND PARALLEL TO THE PIPE CENTERLINE. THE LOCATOR TAPE SHALL BE AT LEAST 2 INCHES WIDE WITH ALLUMINUM BACKING AND SHALL BE

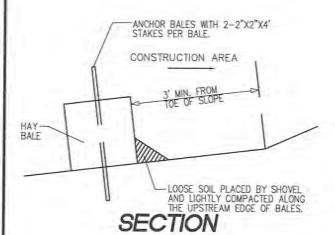
LETTERED, "CAUTION: WATER LINE BURIED BELOW".

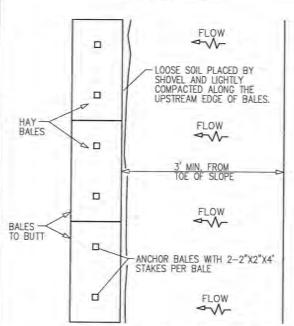
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LETTERED, "CAUTION: FORCE MAIN BURIED BELOW!

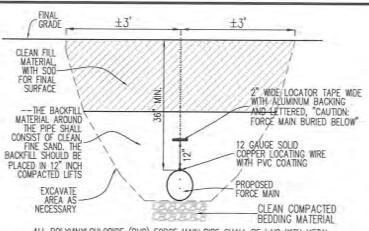
—ALL POLYMNYLCHLORIDE (PVC) PIPE SHALL BE LAID WITH A 12 GAUGE SOLID COPPER LOCATING WIRE WITH PVC COATING BURIED ON TOP OF THE PIPE. WIRE AND INSTALLATION SHALL MEET NATIONAL ELECTRICAL CODE FEDERAL SPECIFICATION J—C—308.

WATER LINE - FORCE MAIN SEPARATION





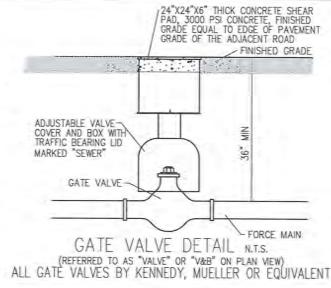
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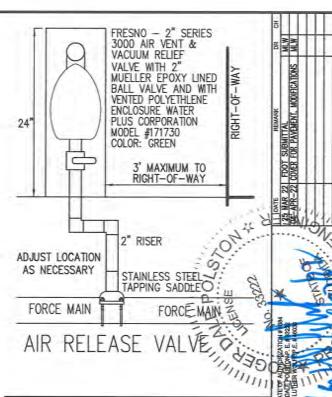


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TYPICAL OPEN CUT FORCE MAIN IN OPEN TERRAIN DETAIL

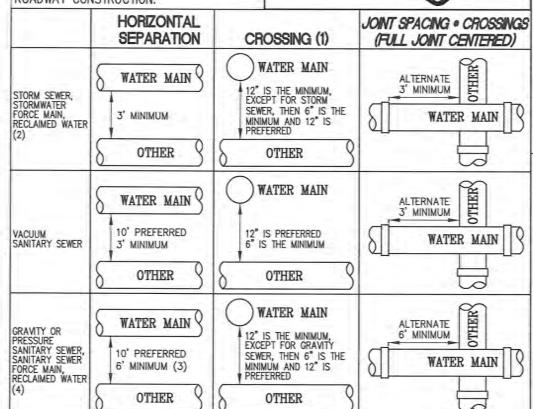




CONSTRUCTION NOTE: ALL CONSTRUCTION WITHIN THE RIGHT-OF-WAY IS TO BE IN ACCORDANCE WITH THE CURRENT CITY OF SEBRING MUNICODE STANDARD SPECIFICATIONS FOR ROADWAY CONSTRUCTION.

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(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. MINIMUM SEPARATION IS 12 INCHES. WHEN WATER MAIN MUST BE BELOW OTHER PIPE THE

(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. (3) 3 FEET FOR GRAWITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER. (4) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

OR AS REQUIRED TO SUPPORT SILT SCREEN CONSTRUCTION AREA -2x2 WOODEN STAKE - SILT SCREEN 2x2 WOODEN STAKE GROUND LEVE GROUND LEVEL 4" BELOW GROUND 14

FRONT VIEW SILT FENCES

THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND REMOVING TEMPORARY SILT FENCES, IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS, THESE SPECIFICATIONS, THE DETAILS AS SHOWN ON THE DRAWINGS AND THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS.

SECTION

SILT FENCES WILL BE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) TYPE III AS DESCRIBED IN FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 102, WITH FILTER FABRIC CONFORMING TO SECTION 985, FDOT STANDARD SPECIFICATIONS.

IN ALL CASES THE FILTER FABRIC WILL BE SECURELY ANCHORED TO THE GROUND OR BURIED IN THE GROUND SO THAT IT WILL NOT BE PUSHED UP BY THE EXPECTED RUNOFF. THE ATTACHMENT TO EXISTING TREES WILL

THE CONTRACTOR SHALL, AT HIS EXPENSE, PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETED AND ACCEPTED. IF SUCH EROSION CONTROL FEATURES MUST BE RECONSTRUCTED DUE TO CONTRACTOR'S NEGLIGENCE OR CARELESSNESS OR, IN THE CASE OF TEMPORARY EROSION CONTROL FEATURES, FAILURE BY CONTRACTOR TO INSTALL PERMANENT EROSION CONTROL FEATURES AS SCHEDULED, SUCH REPLACEMENT SHALL BE AT CONTRACTOR'S EXPENSE.

SILT FENCES MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION AND MUST BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

SILT/TURBIDITY SCREENS

Polston
Final Engineering
Crut. Engineering CONSULTANTS Inc. 世

4" FORCE MAIN EXTENSION
THE CITY OF SEBRING UTILITIES DEPARTMENT
GRAND PRIX DRIVE TO NEW LIFE WAY
GENERAL INFORMATION
220

RAWING SCALE N.T.S. SHEET

10 OF 12

SPECIFICATION: SEWER FORCE MAIN FORCE MAINS -4", 6", 8", 10"AND 12" AWWA APPROVED C-900 PVC DR 18 ASTM D1784 (GREEN COLOR) DIRECTIONAL BORE PIPE-4 & 6" AWWA POLY-PIPE SDR 11. AWWA C-906 ASTM D 3350 GREEN STRIPED FOR SEWER 4" AND LARGER- CLASS 250 (MINIMUM) DUCTILE IRON MEG-A-LUG ACCESSORIES FITTINGS TAPPING SLEEVE STAINLESS STEEL, JCM 432 1. ALL PIPE MATERIAL WILL BE AWWA OR ASTM STANDARD. 2. ALL FORCE MAIN 4" - 12" WILL BE AWWA C-900 DR 18. 3. ALL POLYETHYLENE PIPE FOR PIPE SIZES 1/2" TO 3" SHALL MEET THE REQUIREMENTS OF AWWA C-901 4. POLYETHYLENE PIPE SIZES 4" TO 63" SHALL MEET THE REQUIREMENTS OF AWWA C-906. 5. ALL MEGA-LUG RESTRAINTS WILL BE DOMESTIC EBAA ONLY 6. ALL MATERIALS WILL BE FROM THE CITY OF SEBRING APPROVED MATERIALS LIST. ALL FITTINGS WILL BE MEGA-LUG. NOTE: EACH SUBCONTRACTOR WILL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL UTILITIES EFFECTED BY HIS WORK. INSTALLATION INSTRUCTIONS: -- THE SUBCONTRACTOR WILL BE RESPONSIBLE FOR TAKING ALL STEPS NECESSARY INCLUDING SHORING TO INSURE THE INTEGRITY OF THE ALL EXISTING PAVEMENTS, UTILITIES AND STRUCTURES AND BE RESPONSIBLE FOR REPLACEMENT OR REPAIR OF ANY DAMAGE CAUSED BY OR RELATED TO CONSTRUCTION OF WATERLINE. --THE PIPE SHALL BE BEDDED IN COMPACTED CLEAN SAND WITH ALL ORGANIC MATTER AND DEBRIS REMOVED. --BACK FILL SHALL BE OF SIMILAR MATERIAL AND PLACED BY HAND AND COMPACTED BY TAMPING TO AT LEAST 12" OVER THE TOP OF THE PIPE. --ALL FILL TO BE CLEAN SAND AND TO BE PLACED IN APPROXIMATE 12" LAYERS AND IS TO BE COMPACTED BY ROLLING OR TAMPING. --PIPE IS TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS, USING THE MANUFACTURER SPECIFIED JOINT LUBRICANTS AND CEMENTS IF REQUIRED. --ALL DISTURBED AREAS WITHIN THE CITY, COUNTY AND STATE R/W ARE TO BE RESTORED AND SODDED.
--THE CONNECTION TO THE CITY OF SEBRING UTILITIES SEWER COLLECTION SYSTEM WILL BE DONE TO THE CITY OF SEBRING UTILITIES SPECIFICATIONS UNDER THE UTILITY DEPARTMENT SUPERVISION REQUIREMENTS. --THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ALL UTILITIES, ROADS AND STRUCTURES DAMAGED DURING THE DIRECTIONAL BORE OR JACK AND BORE CONSTRUCTION PHASE. TESTING: --ALL TESTS WILL REQUIRE THE PRESENCE OF THE ENGINEER, CONTRACTOR OR HIS DESIGNATED INSPECTOR. -- ALSO PRESENT WILL BE A DESIGNATED INSPECTOR FROM THE CITY OF SEBRING UTILITIES.
-- THE SUBCONTRACTOR SHALL TAKE ALL PRECAUTIONS TO SECURE A WATERTIGHT SEWER LINE UNDER ALL CONDITIONS. --ALL VISIBLE DAMAGE FLAWS SHALL BE REPAIRED OR REPLACED REGARDLESS OF THE OUT COME OF ANY TESTING PERFORMED. -TEST SHALL BE PERFORMED PRIOR TO CONNECTION TO THE CITY OF SEBRING UTILITIES SEWER COLLECTION SYSTEM. FORCE MAIN LINES: -- THE FORCE MAIN LINES SHALL BE TESTED UNDER A HYDROSTATIC PRESSURE OF 150 PSI FOR AT LEAST 2 HOURS. THE SUBCONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT TO PERFORM ALL TESTS. 1) ALL COMPONENTS OF THE FORCE MAIN SYSTEM, INCLUDING FITTINGS, SERVICES, CONNECTIONS, AND VALVES SHALL BE HYDROSTATIC TESTED. SPECIFIC DISTRIBUTION SYSTEM COMPONENTS INCLUDING FITTINGS AND VALVES, SHALL REMAIN UNCOVERED UNTIL TESTED AND APPROVED, PROVIDED, HOWEVER, THAT PIPE TRENCHES UNDER TRAVELED STREETS OR ROADS UNCOVERED UNTIL TESTED AND APPROVED, PROVIDED, HOWEVER, THAT PIPE TRENCHES UNDER TRAVELED STREETS OR ROADS MAY BE BACKFILLED WITH THE PERMISSION OF THE PROJECT ENGINEER. NO TESTING SHALL BE DONE UNTIL ALL CONCRETE THRUST BLOCKING IS IN PLACE AND SET. IF HIGH EARLY STRENGTH CONCRETE IS USED, TESTING MAY BE CONDUCTED 48 HOURS AFTER THE CONCRETE IS PLACED; OTHERMISE, THRUST BLOCK CONCRETE MUST CURE 5 DAYS BEFORE PRESSURE TESTING COMMENCES. IN TESTING, THE PART OF THE SYSTEM UNDER TEST SHALL BE FILLED WITH POTABLE WATER AND SUBJECTED TO A SUSTAINED PRESSURE OF 150 PSI. THE PIPING SHALL BE TESTED IN SECTIONS, THEREBY TESTING EACH VALVE FOR SECURE CLOSURE. WHILE THE SYSTEM IS BEING FILLED, AIR SHALL BE CAREFULLY AND COMPLETELY EXHAUSTED. IF PERMANENT AIR VENTS ARE NOT LOCATED AT ALL HIGH POINTS, THE CONTRACTOR SHALL INSTALL CORPORATION STOPS OR FITTINGS AND VALVES AT SUCH POINTS SO THE AIR CAN BE EXPELLED AS THE PIPE SYSTEM IS SLOWLY FILLED WITH WATER. 2) TEST PRESSURE SHALL BE MAINTAINED BY PUMPING FOR AT LEAST TWO HOURS AND UNTIL ALL SECTIONS UNDER TEST HAVE BEEN CHECKED FOR EVIDENCE OF LEAKAGE. RATE OF LOSS SHALL NOT EXCEED THAT SPECIFIED BELOW. "ALLOWARI F LIMITS FOR LEAKAGE". VISIBLE LEAKS SHALL BE CORRECTED REGARDLESS OF TOTAL LEAKAGE SHOWN BY TEST. 3) THE SYSTEM AS A WHOLE, OR ANY PART, SHALL BE TESTED PRIOR TO CONSTRUCTION OF ANY SUBDIVISION ROADWAY OR PAVEMENT OVER THE WATER SYSTEM. 4) THE SYSTEM AS A WHOLE, OR ANY PART, SHALL BE RETESTED AFTER COMPLETION OF BACKFILLING WHEN IT IS BELIEVED NECESSARY, AS DIRECTED BY THE PROJECT ENGINEER. THE SYSTEM SHALL ALSO BE RETESTED UPON COMPLETION OF SUBDIVISION ROADWAY OR OTHER PAVEMENT CONSTRUCTION THAT IS CONSTRUCTED OVER THE WATER SYSTEM. 5) ALL PUMPS, GAUGES, AND MEASURING DEVICES SHALL BE FURNISHED, INSTALLED, AND OPERATED BY THE CONTRACTOR AND ALL SUCH EQUIPMENT AND DEVICES AND THEIR INSTALLATION SHALL BE APPROVED BY THE PROJECT ENGINEER. ALL PRESSURES AND LEAKAGE TESTING SHALL BE DONE IN THE PRESENCE OF A REPRESENTATIVE OF THE ENGINEER. 6) WATER FOR TESTING SHALL BE POTABLE WATER PROVIDED BY THE CONTRACTOR FROM A SOURCE APPROVED BY THE PROJECT ENGINEER. THE HYDROSTATIC PRESSURE TESTS SHALL BE PERFORMED AS SPECIFIED AND NO INSTALLATION, OR SECTION THEREOF, WILL BE ACCEPTABLE UNTIL THE LEAKAGE IS LESS THAN THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FORMULA: L = N*D*1P 7400 IN WHICH, L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR N = APPROXIMATE NUMBER OF JOINTS IN THE SECTION OF MAIN BEING TESTED D = PIPE DIAMETER; IN INCHES P = THE AVERAGE TEST PRESSURE DURING THE TEST, IN GAUGE PSI

DIRECTIONAL BORE PIPE SPECIFICATIONS: 4" SDR 11 HDPE ASTM D3350 AND ASTM F-714 GREEN STRIPE POLYETHYLENE PE3408 HDPF FORCE MAIN

NOTE: SDR 11 HDPE WILL BE USED FOR ALL DIRECTIONAL BORES

DIRECTIONAL BORE NOTES FOR FORCE MAIN: -BEFORE ANY CONSTRUCTION IS STARTED, THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES AND VERIFYING EXACT

LOCATION AND ELEVATION OF UTILITIES NOT LIMITED TO TELEPHONE, WATER, SEWER, GAS AND CABLE.

-DURING DIRECTIONAL BORE OPERATION, THE CONTRACTOR (AT HIS EXPENSE, IF REQUIRED) MUST HAVE A REPRESENTATIVE OF EACH UTILITIES ON SITE AS A PREVENTATIVE MEASURE IN THE EVENT OF RUPTURE OF ANY UTILITIES SERVICES. IN LIEU OF A REPRESENTATIVE FROM THE UTILITY A NOTARIZED DOCUMENT FROM THE UTILITY STATING A REPRESENTATIVE IS NOT NEEDED ON SITE WILL BE ACCEPTABLE.

-ANY ITEMS GOVERNING THE CONSTRUCTION NOT COVERED IN THE PLANS AND SPECIFICATIONS WILL BE GOVERNED BY THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, "UTILITY ACCOMMODATION MANUAL", LATEST EDITION, DOCUMENT NUMBER 710-020, THE MAINTENANCE ENGINEER, OR HIS REPRESENTATIVE

-ALL PERMITS FOR CONSTRUCTION WILL BE POSTED ON SITE

-THE ACTUAL CROSSING OPERATION SHALL BE ACCOMPLISHED DURING DAYLIGHT HOURS.

-ANY ALTERATION OR WAIVER MUST BE APPROVED BY THE HIGHLANDS COUNTY ENGINEER AND THE ENGINEER OF RECORD. --***TWO (2) 12 GAUGE TRACER WIRES WILL BE TAPED ON THE H.D.P.E. DIRECTIONAL BORE AS PER DESIGN STANDARD 555-4.2. -ERECTION OF INSTALLATION OF APPROPRIATE SAFETY AND WARNING DEVICES IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORTATION MANUAL ON M.V.T.C.D. PRIOR TO BEGINNING WORK.

-SDR 11 WILL BE FLUSHED WITH CLEAN WATER AND BOTH ENDS CAPPED

*** NOTE: ALL CROSSINGS OF WATER LINES OVER SEWER LINE AND/OR STORM DRAINS WILL HAVE A 18" VERTICAL SEPARATION OR:

WATER LINE WILL BE ENCASED WITH CONCRETE 10' BOTH SIDES OF CROSSING.

2.) SEWER LINE WILL BE ENCASED AIR TIGHT WITH PVC 10' BOTH SIDES OF CROSSING.

SDR-11 FORCE MAIN DIRECTIONAL PIPE:

-THE SDR-11 FORCE MAIN PIPE SHALL BE TESTED UNDER A HYDROSTATIC PRESSURE OF 150 PSI FOR AT LEAST 2 HOURS PRIOR TO CONNECTING TO THE SEWER SYSTEM.

-THE FORCE MAIN SDR-11 PIPE SHALL BE FLUSHED WITH CLEAN WATER PRIOR TO CONNECTION TO THE SEWER SYSTEM.

TESTING H.D.P.E. DIRECTIONAL BORE AND OPEN TRENCHING HDPE PIPE: -THE H.D.P.E. PIPING SHOULD BE PRESSURE TESTED BEFORE BEING PUT INTO SERVICE. AFTER ALL FREE AIR IS REMOVED FROM THE TEST SECTION, RAISE THE PRESSURE AT A STEADY RATE TO THE REQUIRED PRESSURE. THE PRESSURE IN THE SECTION SHALL BE MEASURED AS CLOSE AS POSSIBLE TO THE LOWEST POINT OF THE TEST SECTION.

-TEST PRESSURE SHOULD NOT EXCEPTION THE TEST PRESSURE OF THE PIPE OR THE LOWEST RATED COMPONENT IN

THE SYSTEM. INITIALLY, THE PIPE SHOULD BE RAISED TO TEST PRESSURE AND ALLOWED TO STAND WITHOUT MAKEUP PRESSURE FOR A SUFFICIENT TIME TO ALLOW FOR EXPANSION OF THE PIPE. THIS USUALLY OCCURS WITHIN 2-3 HOURS. AFTER EQUILIBRIUM IS ESTABLISHED, THE TEST SECTION IS PRESSURIZED TO 1.5 TIMES OPERATING PRESSURE, THE PUMP IS TURNED OFF, AND THE FINAL TEST PRESSURE IS HELD FOR 2 HOURS

-POLYETHYLENE PIPE HOLDS PRESSURE BY DEVELOPING STRESS IN ITS WALLS. THIS PROCESS CONTINUES THROUGHOUT THE TEST PERIOD, AND THE PIPE INCREASES SLIGHTLY IN DIAMETER. PRESSURE DROP WILL OCCUR DUE TO CONTINUED EXPANSION OF THE PIPE DURING THE SECOND PHASE OF THE TEST. A DROP IN PRESSURE DURING THE TEST PHASE IS COMMON AND DOES NOT PROVE WITH ABSOLUTE CERTAINTY THAT A LEAK OR FAILURE IS PRESENT IN THE SYSTEM. POLYETHYLENE PIPE IS TESTED BY MEASURING THE "MAKE UP" WATER REQUIRED TO RETURN THE SECTION TO TEST PRESSURE. ALLOWABLE AMOUNTS OF MAKEUP WATER FOR EXPANSION DURING THE PRESSURE TEST ARE SHOWN IN THE TABLE BELOW. IF THE PRESSURE IS NOT RETURNED WITHIN THE ALLOWABLE VOLUME OF WATER, THE TEST FAILS. IF THERE ARE NO VISUAL LEAKS OR SIGNIFICANT PRESSURE DROPS DURING THE FINAL TEST PERIOD, THE

NOTE: UNDER NO CIRCUMSTANCES SHALL THE TOTAL TIME UNDER THE TEST EXCEED EIGHT (8) HOURS AT 1.5 TIMES THE PRESSURE RATING OF THE LOWEST RATED COMPONENT IN THE SYSTEM. IF THE TEST IS NOT COMPLETED DUE TO LEAKAGE, EQUIPMENT FAILURE, ETC., THE TEST SECTION SHALL BE ALLOWED TO "RELAX" FOR EIGHT (8) HOURS PRIOR TO THE NEXT TEST.

RESTRAINED JOINT SERIES 1300 JOINT RESTRAINER ANGLE OF THE FOLLOWING JOINTS MUST BE DIRECTION CHANGE RESTRAINED IN ALL APPLICATIONS: F.) CAPS A.) BEND - INLET AND OUTLET F.) PLUGS B.) TEE - OUTLET BRANCH G.) ALL JOINTS ON HYDRANT RUNOUTS C.) WYE - OUTLET BRANCH D.) OFFSETS - INLET AND OUTLET

		PI	PE SIZE		
FITTING TYPE	4" OR LESS	6"	8"	10"	12"
TEE BRANCH LEG	18'	40"	67'	90"	113'
90' BEND	24'	33'	45'	55'	64'
45' BEND	18'	18'	21'	24'	26'
ALL OTHER BENDS	18'	18'	20'	20"	20'
END OF DIRECTIONAL BORE	18'	18'	20'	20"	20'
VALVE	20'	25'	33	39"	46'
DEAD ENDS	45'	62'	76'	90'	113

THRUST RESTRAINING TABLE

ALL VALVES AND FITTINGS SHALL BE RESTRAINED AGAINST THRUST FROM 150 PSI TEST PRESSURE BY USING FLANGED OR "MEGALUG" TYPE CONNECTORS. ALL PIPE JOINTS LYING WITHIN THE LISTED MINIMUM DISTANCE OF ANY FITTING OR VALVE SHALL ALSO BE RESTRAINED. WHEN CASINGS (CARRY PIPE) FALL WITHIN THE MINIMUM DISTANCE FROM A FITTING, RESTRAIN ALL JOINTS INSIDE THE CASING (CARRY PIPE) IN ADDITION TO THE REQUIRED MINIMUM LENGTH OF BURIED PIPE.

WHEN A FITTING WITH A LESSER THRUST RESTRAINING LENGTH FALLS WITHIN A LONGER THRUST RESTRAINING REQUIREMENT, THEN BOTH RESTRAINED LENGTHS ARE REQUIRED TO BE MET. A FITTING PLACED WITHIN THE THRUST RESTRAINING LENGTH OF ANOTHER FITTING WILL NOT REDUCE THE LENGTH OF THE LONGER THRUST RESTRAINING LENGTH REQUIREMENT.

THE CHART ABOVE DESCRIBES THE MINIMUM LENGTH OF PIPE THAT SHALL BE CONTINUOUSLY RESTRAINED ON BOTH SIDES OF DIFFERENT TYPES AND SIZES OF FITTINGS. IF THE JOINT FALLS AT THE LENGTH DESIGNATED IN THE CHART THAT JOINT WILL BE RESTRAINED. THE THRUST RESTRAINING LENGTHS REQUIRED BY THE MANUFACTURE OF THRUST JOINT RESTRAINT USED WILL SUPERSEDE THESE LENGTHS IF LONGER.

DEAD END VALVES FOR FUTURE EXPANSION WILL BE RESTRAINED BACK TO THE FITTING

ALL	OWANCE FOR EXI GALLONS/100 FEE	PANSION (U.S.	DR CH	M M	
	NOMINAL PIPE SIZE (INCHES)	2 HOUR TEST			ATIONS	
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	4	0.25		ž	NA I	
	6	0.60		KEMA		
	8	1.0			PAY	
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PRIX DRIVE TO NEW LIFE WAY
GENERAL INFORMATION EXTENSION MAIN FORCE 4" FOF E CITY OF GRAND PI

AWING SCALE

1"=40" SHEET 11 OF 12

2.01 POLYETHYLENE PIPING MATERIAL: THE PIPE AND FITTINGS SHALL BE MADE OF HIGH DENSITY, EXTRA HIGH MOLECULAR WEIGHT (EHMW)
POLYETHYLENE WITH A STANDARD THERMOPLASTIC MATERIAL DESIGNATION CODE OF PE3408 AND HAVING A CELL CLASSIFICATION OF 345464E PER
ASTM D3350. THE MOLECULAR WEIGHT CATEGORY SHALL BE EXTRA HIGH (25,000 TO 1,500,000) AS PER THE GEL PERMEATION CHROMATOGRAPHY
DETERMINATION PROCEDURE WITH A TYPICAL VALUE OF 300,000 TO 330,000. THE PIPE WILL BE THE COLOR GREEN AND SHALL MEET THE UTILITY

LOCATION AND COORDINATION COUNCIL "UNIFORM COLOR CODE," FOR SEWER AND DRAIN LINES, PER APWA/LCC STANDARDS COMMITTEE.

2.02 THE POLYETHYLENE PIPE MANUFACTURER SHALL PROVIDE CERTIFICATION THAT THE STRESS REGRESSION TESTING HAS BEEN PERFORMED ON THE SPECIFIC PRODUCT. THE SAID CERTIFICATION SHALL INCLUDE A STRESS LIVE CURVE PER ASTM D2837. THE STRESS REGRESSION TESTING SHALL HAVE BEEN PERFORMED IN ACCORDANCE WITH ASTM D2837, AND THE MANUFACTURER SHALL PROVIDE A PRODUCT SUPPLYING A MINIMUM HYDROSTATIC DESIGN BASIS (HDB) OF 1,600 PSI AS DETERMINED BY ASTM D2837.

2.03 THE MATERIAL SHALL BE LISTED BY THE PLASTICS PIPE INSTITUTE (PPI), A DIVISION OF THE SOCIETY OF THE PLASTICS INDUSTRY IN PPI TR-4. THE PIPE MATERIAL SHALL HAVE A HYDROSTATIC DESIGN BASIS OF 1600 PSI AT 730F AND 800 PSI AT 1400F. THE PPI LISTING SHALL BE IN THE NAME OF THE PIPE MANUFACTURER AND TESTING AND VALIDATION OF SAMPLES OF THE PIPE MANUFACTURER'S PRODUCTION PIPE SHALL BE BASED UPON ASTM D2837 AND PPI TR-3.

2.04 THE MANUFACTURER'S CERTIFICATION SHALL STATE THAT THE PIPE WAS MANUFACTURED FROM ONE SPECIFIC RESIN IN COMPLIANCE WITH THESE SPECIFICATIONS. THE CERTIFICATE SHALL STATE THE SPECIFIC RESIN USED AND ITS SOURCE.

2.05 HDPE PIPE MANUFACTURED FROM MATERIALS MEETING THE SPECIFICATIONS OF THIS SECTION SHALL HAVE AN ENVIRONMENTAL STRESS CRACK RESISTANCE OF NO FAILURES IN 10,000 HRS. (ESCR: FO>10,000) WHEN TESTED IN ACCORDANCE WITH ASTM F1248.

2.06 PIPE AND FITTINGS SHALL BE MANUFACTURED FROM MATERIAL MEETING THE REQUIREMENTS OF THIS SECTION. PIPE SUPPLIED UNDER THIS SECTION OF THIS SECTION. PIPE SUPPLIED UNDER THIS SECTION OF THIS SECTION.

2.06 PIPE AND FITTINGS SHALL BE MANUFACTURED FROM MATERIAL MEETING THE REQUIREMENTS OF THIS SECTION. PIPE SUPPLIED UNDER THIS SPECIFICATION SHALL HAVE A NOMINAL IPS (IRON PIPE SIZE) OUTSIDE DIAMETER UNLESS OTHERWISE SPECIFIED. THE DIMENSION RATIO (DR) AND PRESSURE RATING OF THE PIPE AT 73* SHALL MATCH THE FOLLOWING UNLESS NOTED OTHERWISE ON THE DRAWINGS:

DR 7.3 - 250 PSI DR 15.5 - 110 PSI DR 26 - 65 PSI DR 19 - 200 PSI DR 15.5 - 110 PSI DR 26 - 65 PSI DR 11 - 160 PSI DR 17 - 100 PSI DR 32.5 - 50 PSI DR 11 - 160 PSI DR 17 - 100 PSI DR 32.5 - 50 PSI DR 32.5 - 50

MANUFACTURER RECOMMENDED PROCEDURES.

2.10 THE MANUFACTURER SHALL PROVIDE FUSION TRAINING. THE CONTRACTOR (ACTUAL INSTALLERS) AND THE ONSITE JOINT INSPECTOR SHALL BE

TRAINED BY THE MANUFACTURER OR MANUFACTURER'S AUTHORIZED REPRESENTATIVE.

2.11 IT WILL NOT BE PERMITTED TO JOIN UNLIKE DR'S TO ONE ANOTHER. TRANSITION FROM UNLIKE SDR'S SHALL BE ACCOMPANIED BY MECHANICAL COUPLINGS CAPABLE OF IDENTICAL PRESSURE RATINGS OR MACHINED POLYETHYLENE NIPPLES WHERE A THICKER WALL POLYETHYLENE HAS BEEN MATCHED TO THE COMPANION PIPE WALL.

2.12 MECHANICAL JOINING SYSTEMS: POLYETHYLENE PIPE AND FITTINGS SHALL BE CONNECTED BY MEANS OF A POLYETHYLENE FLANGE ADAPTER AND BACKUP RING. THE POLYETHYLENE FLANGE ADAPTER WILL BE OF THE SAME SPECIFICATIONS AS THE LIGHTVIEW EXCEPT WILL BE MADE FROM BLACK PLATE STOCK. THIS METHOD IS ALSO APPROVED TO JOIN TO ANOTHER PIPING SYSTEM OR VALVES. MECHANICAL COMPRESSION COUPLINGS OR FULL CIRCLE ENCASEMENT CLAMPS MAY BE USED DEPENDING ON THE TEST SPECIFICATIONS.

2.13 MECHANICAL COUPLINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MECHANICAL COUPLING MANUFACTURER'S RECOMMENDED

2.14 EQUIPMENT: THE FUSION EQUIPMENT AND OPERATOR SHALL BE REQUIRED TO DEMONSTRATE SUCCESSFUL FIELD EXPERIENCE. REGARDING FUSION OVER 36" CAPABILITY, THE FUSION UNIT SHALL BE REQUIRED FOR A PERIOD OF FIVE YEARS AND THE FUSION OPERATOR SHALL HAVE PIPE SIZE EXPERIENCE OF THE SAME SIZE PIPE ON THIS PROJECT FOR FIVE YEARS OR LONGER.

3.0DUCTILE IRON PIPE

DUCTILE IRON PIPE SHALL MEET THE REQUIREMENTS OF ANSI SPECIFICATIONS A21.51, AWWA C151. PIPE WALL THICKNESS SHALL CONFORM TO A
MINIMUM OF CLASS 50 WITH 350 PSI WORKING PRESSURE. EXTERIOR OF PIPE SHALL HAVE BITUMINOUS COATING. INTERIOR OF PIPE SHALL BE
POLYTINED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND BE RESISTANT TO THE CORROSIVE ELEMENTS NORMALLY FOUND IN MUNICIPAL

WASTE WATER 4.0 AIR RELEASE VALVE UNIT:

4.0 AIR RELEASE VALVE UNIT:
AS SHOWN ON THE PLANS.
5.0 TESTS, INSPECTION, AND REPAIRS:
5.0 TESTS, INSPECTION, AND REPAIRS:
5.0 TESTS, INSPECTION, AND REPAIRS:
5.0 ALL MATERIALS SHALL BE TESTED IN ACCORDANCE WITH THE APPLICABLE FEDERAL, ASTM, OR AWWA SPECIFICATION AND THE BASIS FOR REJECTION SHALL BE AS SPECIFIED THEREIN. CERTIFIED COPIES OF THE TESTS SHALL BE SUBMITTED WITH EACH SHIPMENT OF MATERIAL.
5.0.2 ALL MATERIALS WILL BE SUBJECT TO INSPECTION AND APPROVED BY THE PROJECT ENGINEER AFTER DELIVERY AND NO BROKEN, CRACKED, MISSHAPPIN, IMPERFECTLY COATED, OR OTHERWISE DAMAGED, OR UNSATISFACTORY MATERIAL SHALL BE USED.
5.0.3 ALL MATERIAL FOUND DURING THE PROGRESS OF THE WORK TO HAVE CRACKS, FLAWS, OR OTHER DEFECTS SHALL BE REJECTED AND PROMPTLY REMOVED FROM THE SITE.
5.0.4 IF DAMAGE OCCURS TO ANY PIPE, FITTINGS, VALVES HYDRANTS, OR WATER MAIN ACCESSORIES IN HANDLING, THE DAMAGE SHALL BE IMMEDIATELY BROUGHT TO THE PROJECT ENGINEER'S ATTENTION. THE PROJECT ENGINEER SHALL PRESCRIBE CORRECTIVE REPAIRS, OR REJECTION OF THE DAMAGE ITEMS.

THE DAMAGE ITEMS. 6.00 CONSTRUCTION

6.01 EXCAVATING THE TRENCH:

A) AS A GENERAL RULE, DO NOT OPEN THE TRENCH TO FAR AHEAD OF THE PIPE LAYING SO AS TO: AVOID POSSIBLY FLOODING THE TRENCH, REDUCE OR ELIMINATE PUMPING OR SHEETING, REDUCE CAVING CAUSED BY GROUND WATER, REDUCE POTENTIAL WORKMEN AND TRAFFIC HAZARD.

B) THE TRENCH WIDTH AT THE GROUND SURFACE MAY VARY WITH AND DEPEND UPON THE DEPTH, TYPE OF SOILS AND POSITION OF SURFACE STRUCTURES. THE MINIMUM CLEAR WIDTH OF THE TRENCH IN THE PIPE ZONE SHOULD BE ONE FOOT GREATER THAT THE OUTSIDE DIAMETER OF THE PIPE. THE MAXIMUM CLEAR WIDTH OF THE TRENCH AT THE TOP OF THE PIPE SHOULD NOT EXCEED A WIDTH EQUAL TO THE PIPE DIAMETER PLUS TWO FEET. IF THE ABOVE DEFINED TRENCH WIDTHS MUST BE EXCEEDED OR IF THE PIPE IS INSTALLED IN A COMPACTED EMBANKMENT, PIPE EMBEDMENT SHOULD BE COMPACTED TO A POINT OF AT LEAST 2.5 PIPE DIAMETERS ON BOTH SIDES OF THE PIPE OR TO THE TRENCH WALLS, WHICHEVER IS LESS.

C) MINIMUM COVER FOR THE TOP OF THE PIPE IS 36 INCHES BELOW THE FINISHED GRADE.

D) THE TRENCH BOTTOM SHOULD BE SMOOTH AND FREE FROM LARGE STONES, ROCKS OR LARGE DIRT CLODS. EXCAVATION OF BELLS SHOULD BE PROVIDED SO THAT THE PIPE IS UNIFORMLY SUPPORTED ALONG ITS LENGTH. USUALLY, LOOSE MATERIAL LEFT BY THE EXCAVATOR ON THE TRENCH BOTTOM WILL BE ADEQUATE FOR BEDDING THE PIPE BARREL AND PROVIDING FULL SUPPORT. WHEN ROCK OR OTHER NON-CUSHIONING MATERIAL IS ENCOUNTERED, EXCAVATION SHALL BE EXTENDED TO 6 INCHES BELOW THE OUTSIDE BOTTOM OF THE PIPE AND A BEDDING CUSHION OF SAND OR OTHER SELECTED BACKFILL USED AS THE PIPE BED.

6.02 PIPE LAYING: A) WATER SHALL NOT BE ALLOWED IN THE TRENCHES WHILE THE PIPES ARE BEING LAID AND/OR TESTED. THE CONTRACTOR SHALL NOT OPEN UP MORE TRENCH THAN THE AVAILABLE PUMPING FACILITIES ARE ABLE TO DEWATER TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR DISPOSING OF ALL WATER SO AS NOT TO INJURE OR INTERFERE WITH THE NORMAL DRAINAGE OF THE TERRITORY IN WHICH HE IS WORKING. IN NO CASE SHALL PIPELINES BE USED AS DRAINS FOR SUCH WATER, AND THE ENDS OF THE PIPE SHALL BE KEPT PROPERLY AND ADEQUATELY BLOCKED DURING CONSTRUCTION BY THE USE OF APPROVED STOPPERS AND NOT BY IMPROVISED EQUIPMENT. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT THE ENTRANCE OF MUD, SAND, OR OBSTRUCTING MATTER INTO THE PIPELINES. IF ON COMPLETION OF THE WORK, ANY SUCH MATERIAL HAS ENTERED THE PIPELINES, IT MUST BE CLEANED AS DIRECTED BY THE ENGINEER SO THAT THE ENTIRE SYSTEM WILL BE LEFT CLEAN AND UNOBSTRUCTED. B) CLEANLINESS: THE INTERIOR OF THE PIPE SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER BEFORE BEING GENTLY LOWERED INTO THE TRENCH AND SHALL BE KEPT CLEAN DURING THE LAYING OPERATIONS BY MEANS OF PLUGS OR OTHER APPROVED METHODS. DURING SUSPENSION OF WORK FOR ANY REASON AT ANY TIME, A SUITABLE STOPPER SHALL BE PLACED IN THE END OF THE PIPE LAST LAID TO PREVENT MUD OR OTHER FOREIGN MATERIAL FROM ENTERING THE PIPE.

CO GRADING IS EITHER COMPLETED OR PROPOSED AT TIME OF PIPE INSTALLATION. WHEN A GRADE OF SLOPE IS SHOWN ON THE DRAWINGS, BATTER BOARDS WITH STRING LINE PARALLELING DESIGN GRADE, OR OTHER PREVIOUSLY APPROVED MEANS, SHALL BE USED BY THE CONTRACTOR TO ASSURE CONFORMANCE TO REQUIRED GRADE. ALL PIPE SHALL BE LAID WITHIN A PIPE DIAMETER OF LINES AND GRADES INDICATED.

D) PIPE JOINT DEFLECTION: WHENEVER IT IS DESIRABLE TO DEFLECT PIPE, THE AMOUNT OF DEFLECTION SHALL NOT EXCEED THE FOLLOWING MAXIMUM LIMITS: A) FOR DUCTILE IRON PIPE, AWAY STANDARD C900; B) FOR PVC PIPE, NO DEFLECTION IS ALLOWED AT THE JOINTS, AND LONGITUDINAL DEFLECTION IS LIMITED TO THE MAXIMUM SHOWN IN AWAY PUBLICATION M23. ADDITIONALLY, JOINT DEFLECTION FOR DUCTILE IRON PIPE SHALL NOT EXCEED THE MAXIMUM ALLOWED BY THE MANUFACTURER.

E) PVC PIPE STORAGE: POLYVINYLCHLORIDE PIPE EXTERIOR MAY BE DAMAGED BY PROLONGED EXPOSURE TO DIRECT SUNLIGHT AND THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS DURING STORAGE AND INSTALLATION TO AVOID THIS DAMAGE. PIPE SHALL BE STORED UNDER COVER AND SUFFICIENT BACKFILL TO SHIELD FROM THE SUN SHALL BE PLACED AS THE PIPE IS INSTALLED.

F) JOINT COMPOSINDS NO SILIBBILID PACE LIGHT COMPOSIND CHARLED BY 1957.

F) JOINT COMPOUNDS: NO SULPHUR BASE JOINT COMPOUND SHALL BE USED.

02: G) ANCHORS: CONCRETE THRUST BLOCKS SHALL BE PLACED AT ALL BENDS, TEES, PLUGS, AND OTHER FITTINGS TO PROVIDE LATERAL SUPPORT.
THRUST BLOCKS SHALL CONFORM TO THE DETAILS SHOWN ON THE ILLUSTRATIVE STANDARDS. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF
2500 PSI AFTER 28 DAYS, AND SHALL HAVE A MINIMUM CURING TIME OF 3 DAYS. THE POURED CONCRETE SHALL BE LEFT EXPOSED FOR A MINIMUM,
OF 24 HOURS BEFORE BACKFILLING AND NOT MORE THAN 48 HOURS.

H) JOINTS: THE JOINTS OF ALL PIPELINES SHALL BE MADE ABSOLUTELY TIGHT. THE PARTICULAR JOINT SHALL BE APPROVED BY THE PROJECT IN ENGINEER PRIOR TO INSTALLATION. WHERE SHOWN ON PLANS OR WHERE, IN THE OPINION OF THE PROJECT ENGINEER, SETTLEMENT OR VIBRATION'S LIKELY TO OCCUR, ALL PIPE JOINTS SHALL BE BOLTED, OR RETAINED ACCORDINGLY.

MECHANICAL JOINTS. SHALL BE BULIED, OR RETAINED ACCORDINGLY.

MECHANICAL JOINTS SHALL BE HELD TYPE BY EBAA, AND SHALL BE LAID AND JOINTED IN FULL CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.

NAME OF THE PARTY J) PUSH-ON JOINTS: PUSH-ON JOINTS SHALL BE MADE IN STRICT, COMPLETE COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
LUBRICANT, IF REQUIRED, SHALL BE AN INERT, NONTOXIC, WATER SOLUBLE COMPOUND INCAPABLE OF HARBORING, SUPPORTING, OR CULTURING
BACTERIAL LIFE. MANUFACTURER'S RECOMMENDATIONS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL BEFORE WORK IS BEGUN. MANUFACTURER. THE PARTICULAR JOINTS: THE JOINTS OF ALL PIPELINES SHALL BE MADE IN CONFORMITY WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER. THE PARTICULAR JOINT USED SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

L) SANITARY SEWERS AND FORCE MAINS SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL CLEARANCE WITH PARALLEL POTABLE WATER LINES, AND 18 INCHES VERTICAL CLEARANCE WHEN CROSSING. CONCRETE ENCASEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON THE DRAWINGS USING 2500 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE. ENCASEMENT SHALL BE CONSTRUCTED WHERE:

1) THE WATER LINE CROSSES UNDER, OR AT A DEPTH WHICH PROVIDES LESS THAN 18 INCHES CLEAR DISTANCE BETWEEN PIPES WHEN CROSSING OVER SEWER LINES; ENCASEMENT SHALL EXTEND A MINIMUM OF TEN FEET ON EACH SIDE OF THE POINT OF CROSSING; OR

2) THE ENGINEER SHALL ORDER THE LINE ENCASED.

THE POINTS OF BEGINNING AND ENDING OF PIPE ENCASEMENT SHALL BE NOT MORE THAN 6 INCHES FROM A PIPE JOINT TO PROTECT THE PIPE FROM CRACKING DUE TO UNEVEN SETTLEMENT OF ITS FOUNDATION, OR THE EFFECTS OF SUPERIMPOSED LIVE LOADS.

CLASS I CONCRETE (MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI) ENCASEMENT, SHALL BE REQUIRED FOR BOTH GRAVITY SEWER MAINS AND FORCE MAINS WHEN THE ABOVE CRITERIA FOR SEPARATION OF WATER AND SEWER LINES CANNOT BE MAINTAINED.

M) FLUSHING: ALL SEWER MAINS SHALL BE FLUSHED TO REMOVE ALL SAND AND OTHER FOREIGN MATTER. THE VELOCITY OF THE FLUSHING WATER SHALL BE AT LEAST 4 FEET PER SECOND. FLUSHING SHALL BE TERMINATED AT THE DIRECTION OF THE ENGINEER. THE CONTRACTOR SHALL DISPOSE OF THE FLUSHING WATER WITHOUT CAUSING A NUISANCE OR PROPERTY DAMAGE.

DEWATERING NOTES:

PART 1: GENERAL 1.01 DESCRIPTION

A. SCOPE OF WORK: THE WORK TO BE PERFORMED UNDER THIS SECTION SHALL INCLUDE FURNISHING ALL EQUIPMENT AND LABOR NECESSARY TO REMOVE STORM OR SUBSURFACE WATERS FROM EXCAVATION AREAS IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH AND AS SHOWN ON THE DRAWINGS. 1.02 QUALITY ASSURANCE

A. THE DEWATERING OF ANY EXCAVATION AREAS AND THE DISPOSAL OF THE WATER SHALL BE IN STRICT ACCORDANCE WITH THE LATEST REVISION OF ALL LOCAL AND STATE GOVERNMENT RULES AND REGULATIONS:

PART 2: PRODUCTS (NOT APPLICABLE)
PART 3: EXECUTION
3.01 DEWATERING

A. CONTRACTOR SHALL PROVIDE ADEQUATE EQUIPMENT FOR THE REMOVAL OF STORM OR SUBSURFACE WATERS WHICH MAY ACCUMULATE IN THE EXCAVATION.

B. IF SUBSURFACE WATER IS ENCOUNTERED, CONTRACTOR SHALL UTILIZE SUITABLE EQUIPMENT TO ADEQUATELY DEWATER THE EXCAVATION SO THAT IT WILL

BE DRY FOR WORK AND PIPE LAYING. A WELLPOINT SYSTEM OR OTHER ENGINEER APPROVED DEWATERING METHOD SHALL BE UTILIZED IF NECESSARY TO

MAINTAIN THE EXCAVATION IN A DRY CONDITION FOR PREPARATION OF THE TRENCH BOTTOM AND FOR PIE LAYING.

C. DEWATERING BY TRENCH PUMPING WILL NOT BE PERMITTED IF MIGRATION OF FINE GRAINED NATURAL MATERIAL FROM BOTTOM, SIDE WALLS OR BEDDING

D. IN THE EVENT THAT SATISFACTORY DEWATERING CANNOT BE ACCOMPLISHED DUE TO SUBSURFACE CONDITIONS OR WHERE DEWATERING COULD DAMAGE EXISTING STRUCTURES, CONTRACTOR SHALL OBTAIN THE ENGINEER'S APPROVAL OF WET TRENCH CONSTRUCTION OR PROCEDURE BEFORE COMMENCING

A. WATER PUMPED FROM THE TRENCH OR OTHER EXCAVATION SHALL BE DISPOSED OF IN STORM SEWERS HAVING ADEQUATE CAPACITY, CANALS OR SUITABLE DISPOSAL PITS.

B. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL PERMITS REQUIRED TO DISCHARGE THE WATER AND SHALL PROTECT WATERWAYS FROM TURBIDITY

DURING THE OPERATION.

C. IN AREAS WHERE ADEQUATE DISPOSAL SITES AREA NOT AVAILABLE, PARTIALLY BACKFILLED TRENCHES MAY BE USED FOR WATER DISPOSAL ONLY WHEN THE CONTRACTOR'S PLAN FOR TRENCH DISPOSAL IS APPROVED IN WRITING BY THE ENGINEER. THE CONTRACTOR'S PLAN SHALL INCLUDE TEMPORARY CULVERTS, BARRICADES AND OTHER PROTECTIVE MEASURES TO PREVENT DAMAGE TO PROPERTY OR INJURY TO ANY PERSON OR PERSONS.

D. NO FLOCDING OF STREETS, ROADWAYS, DRIVEWAYS OR PRIVATE PROPERTY WILL BE PERMITTED. ENGINES DRIVING DEWATERING PUMPS SHALL BE EQUIPPED.

TRACER WIRE REQUIREMENTS: TRACER WIRE FOR BURIED PIPE:

-SHALL BE (#12 AWG) HIGH-STRENGTH COPPER-CLAD STEEL CONDUCTOR (HS-CCS), INSULATED WITH A 30 MIL, HIGH-DENSITY, HIGH MOLECULAR WEIGHT POLYETHYLENE (HDPE) INSULATION, AND RATED FOR DIRECT BURIAL USE AT 30 VOLTS. HS-CCS CONDUCTOR MUST BE A 21% CONDUCTIVITY FOR LOCATING PURPOSES, BREAK LOAD 250# MINIMUM.

TRACER WIRE FOR DIRECTIONAL DRILLING/BORING

-SHALL BE #12 AWG (0.0808" DIAMETER) HARD DRAWN, HIGH CARBON 1055 GRADE STEEL, SOLID EXTRA-HIGH-STRENGTH COPPER-CLAD STEEL CONDUCTOR (EHS-CCS), INSULATED WITH A 45 MIL, HIGH-DENSITY, HIGH MOLECULAR WEIGHT POLYETHYLENE (HDPE) INSULATION, AND RATED FOR DIRECT BURIAL USE AT 30 VOLTS. EHS-CCS CONDUCTOR MUST BE AT 21% CONDUCTIVITY FOR LOCATE PURPOSES. BREAK LOAD OF 1150 LBS.

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MARCH EZEDOT SUBMITTAL
APR-22 COVER FOR PAYEMENT, MODIFICATIONS

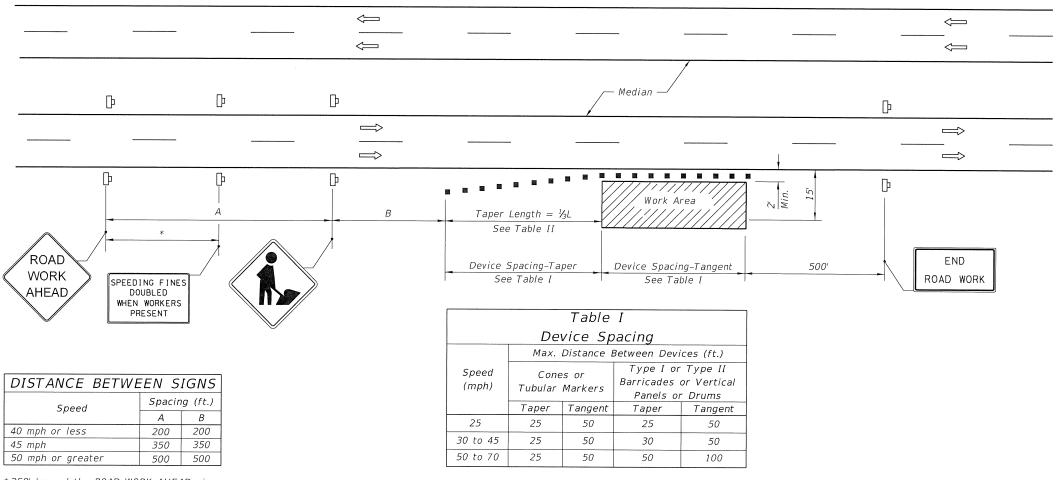
CHOOSEC

4" FORCEMAIN EXTENSION
HE CITY OF SEBRING UTILITIES DEPARTMENT
GRAND PRIX DRIVE TO NEW LIFE WAY
GENERAL INFORMATION
7.20

DRAWING SCALE N.T.S.

THE

SHEET



* 250' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

GENERAL NOTES

- 1. When a high volume of work vehicles are entering and leaving the Work Area at speeds slower than 10 MPH below the posted speed, place an MOT-5-06 sign in the ROAD WORK AHEAD sign location and shift the ROAD WORK AHEAD sign upstream 500 ft.
- 2. This TCZ plan also applies to work performed in the median more than 2' but less than 15' from the edge of travelway.
- 3. When work is being performed on a multilane undivided roadway the signs normally mounted in the median (as shown) shall be omitted.
- 4. WORKERS signs to be removed or fully covered when no work is being performed.
- 5. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign.
- 6. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
- 7. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES

- 1. Signs and channelizing devices may be omitted if all of the

Тар	Taper Length - Show				
Speed		⅓L (ft.)		Nahaa	
(mph)	8'	10'	12'	Notes	
	Shldr.	Shldr.	Shldr.		
25	28	35	42		
30	40	50	60	$L = \frac{WS^2}{}$	
35	55	68	82	60	
40	72	90	107		
45	120	150	180		
50	133	167	200		
55	147	183	220		
60	160	200	240	L=WS	
65	173	217	260		
70	187	233	280		

minimum shoulder width.

 $\frac{1}{3}$ L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

SYMBOLS

Work Area

- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification + Direction of Traffic

≥ DESCRIPTION:

- following conditions are met:
- a. Work operations are 60 minutes or less.
- b. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

LAST REVISION 11/01/17

FDOT

FY 2020-21 STANDARD PLANS

MULTILANE, WORK ON SHOULDER

INDEX 102-612

SHEET 1 of 1

BID SHEET

4" FORCE MAIN FROM GRAND PRIX DRIVE TO SOUTH NEW LIFE WAY WO# 22015 SEBRING, FLORIDA

THE CITY OF SEBRING UTILITIES DEPARTMENT

TASK	ITEM DESCRIPTION	ADDITIONAL INFORMATION	QUANTITY	UNIT	UNIT COST	ITEM COST
1	Mobilization			LS	\$	\$
2	Construction Surveying & Staking, including As-Built /AutoCad CD / Drawings			LS	\$	\$
3	Installation 4" DR18 C-900 Force Main	Open Ditch Installation	±810	LF	\$	\$
4	Installation 4" SDR 11 HDPE Force Main	See Below for Dir. Bores	±840	LF		
5	4" SDR 11 HDPE Force Main Directional Bore W/ (2) S.S. Stiffeners & (2) 4" MJ Sleeve + (1) End Cap.	1 DIR. BORE #1 Driveway Sta. 2+39 Murphy Gas Station	± 100 LF	LS	\$	\$
6	4" SDR 11 HDPE Force Main Directional Bore W/ (2) S.S. Stiffeners & (2) 4" MJ Sleeves PVC to HDPE	1 DIR. BORE #2 Driveway Sta. 4+09 Strip Mall	± 120 LF	LS	\$	\$
7	4" SDR 11 HDPE Force Main Directional Bore W/ (2) S.S. Stiffeners & (2) 4" MJ Sleeves PVC to HDPE	1 DIR BORE #3 Driveway Sta. 7+50 Vacant Auto Sales	± 80 LF	LS	\$	\$
8	4" SDR 11 HDPE Force Main Directional Bore W/ (2) S.S. Stiffeners & (2) 4" MJ Sleeves PVC to HDPE	1 DIR BORE #4 Driveway Sta. 10+11 Amazon Sheds / McElroy's Produce	± 100 LF	LS	\$	\$
9	4" SDR 11 HDPE Force Main Directional Bore W/ (2) S.S. Stiffeners & (2) 4" MJ Sleeves PVC to HDPE	1 DIR BORE #5 Driveway Sta. 13+22 and 14+21 Hays Auto / MRI Imaging	± 190 LF	LS	\$	\$
10	4" SDR 11 HDPE Force Main Directional Bore W/ (2) S.S. Stiffeners & (2) 4" MJ Sleeves PVC to HDPE	1 DIR BORE Driveway Sta. 18+10 New Life Way / Tie in to Existing 4" FM (See Tie In Below)	± 250 LF	LS	\$	\$
11	2" Metal Locator Tape (FM)		±850	LF	\$	\$
12	12 Gauge Solid Copper Locating Wire	Double Wire For DIR. BORE	±2500	LF	\$	\$
1 1 4 1	Wet Tap (4") Tie In to Existing 4" FM- 4" S.S. Tapping Saddle W/ 4" Gate Valve, Two (2) 45° Bends, one (1) in line Check Valve, all fittings having Mega Lug and pipe bell restraints will be required (See Chart)		1	LS	\$	\$
14	De Watering / By Pass Pumping		1	LS	\$	\$
	2" Air Release Valve Assemblies Including Fittings + above ground enclosures		4	EA	\$	\$
16	R/W RESTORATION AND SODDING		±3,235	SY	\$	\$
17	Slit Screens / Hay Bales	±1280 LF OF SILT SCREENS			\$	\$
18	M.O.T.	Signage / Traffic Control			\$	\$
19	PRESSURE TESTING				\$	\$
20	BONDS & INSURANCE			LS	\$	\$
	TOTAL					\$

Note: All fittings to be mechanical Joint type with EBAA Mega Lug. All HDPE connections will require stainless steel stiffeners. All HDPE joints will need to be fused by a currently certified fuser. The Underground Contractor will verify all quantities and add any missing materials to his bid for a 100% complete project. All staking will be under the direct supervision of a Licensed Professional Land Surveyor. Force main will need to be staked in the County R/W and verified by Highlands County prior to installation. The Licensed Professional Land Surveyor will issue 5 signed and sealed As-Built Survey's along with an Auto-Cad format As-Built drawing on CD showing all utility improvements to the Engineer of Record after completion of the project.