
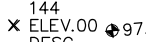






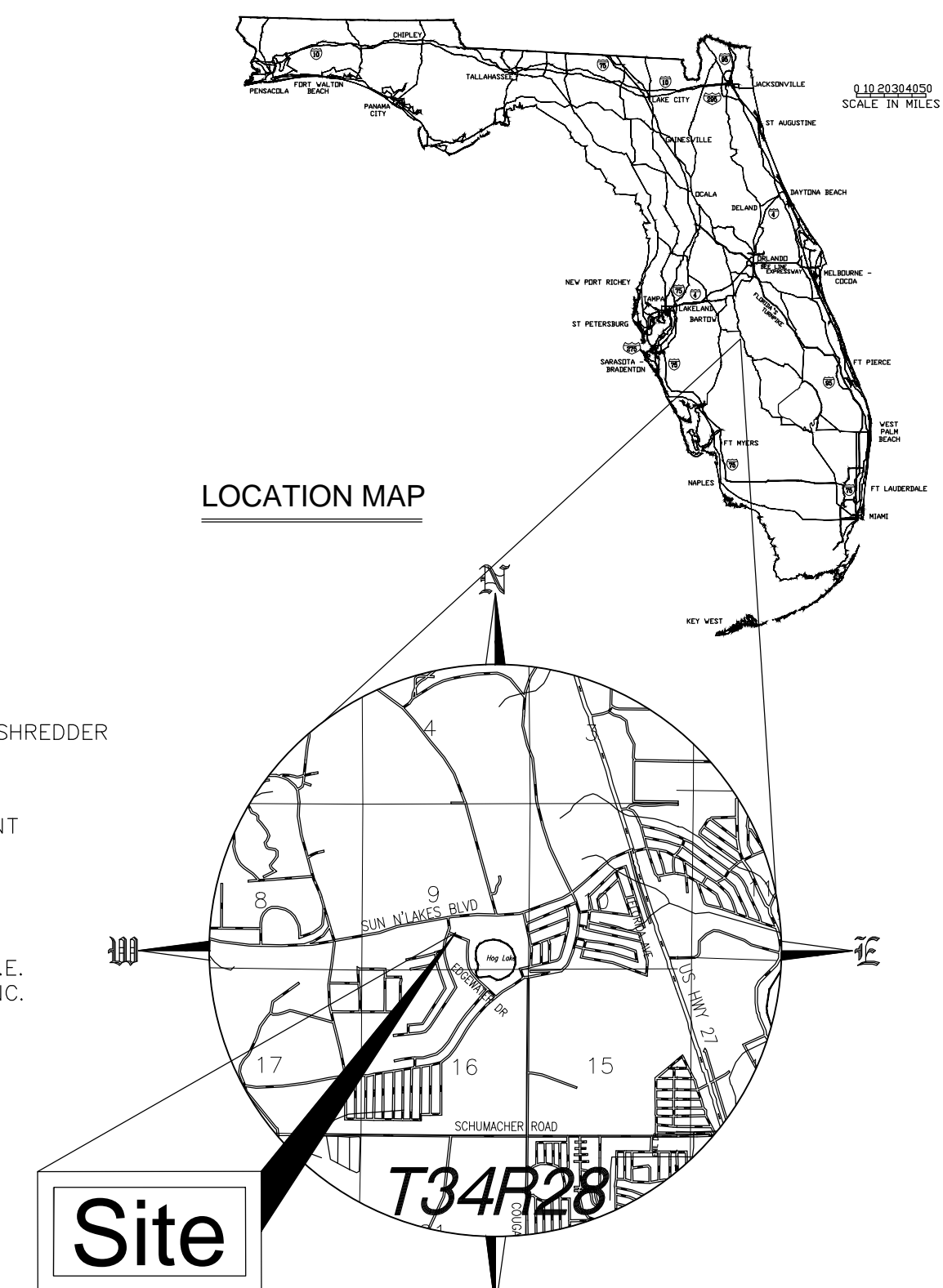
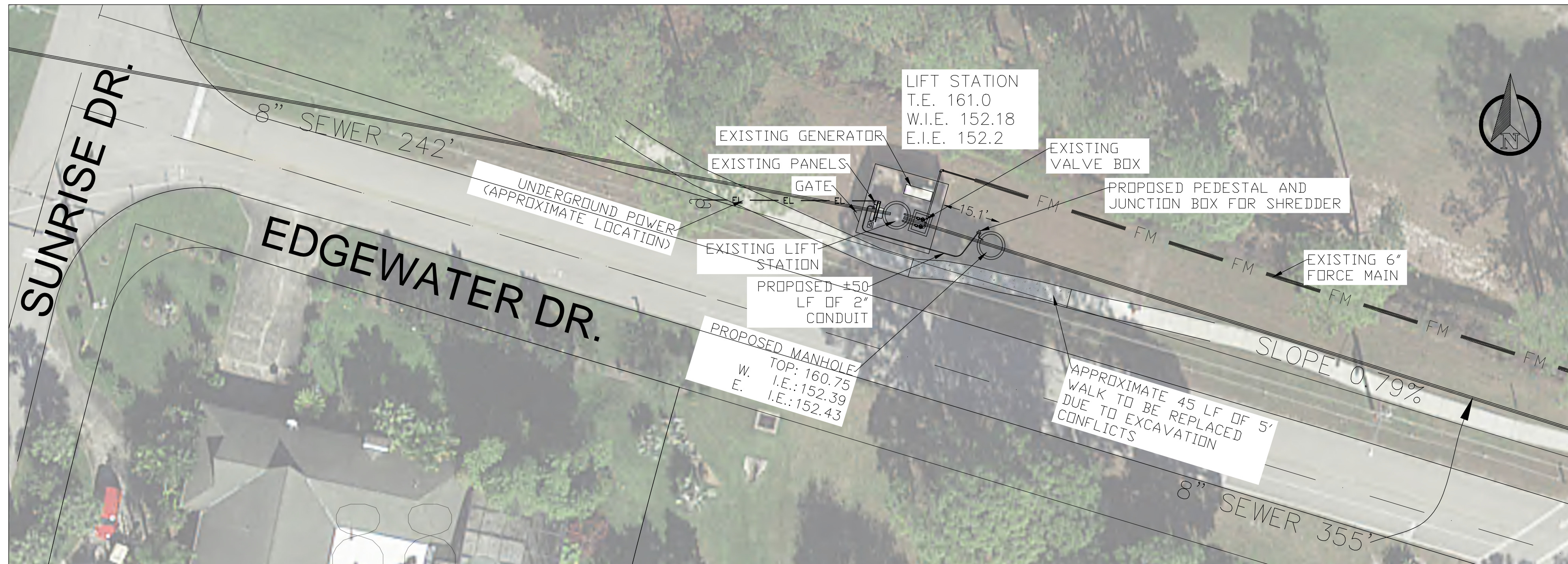


SUN 'N LAKE OF SEBRING  
IMPROVEMENT DISTRICT  
EDGEWATER  
SEWER SHREDDER

ABBREVIATIONS		SYMBOLS	
CE	CENTER LINE		DIRECTION OF WATER FLOW
EOP	EDGE OF PAVEMENT		EXISTING OR PROPOSED GRADE
R/W	RIGHT-OF-WAY		SOIL BORING LOCATION
SIR	SET IRON ROD		STREET LIGHT
FIR	FOUND IRON ROD		PROPOSED CATCH BASIN
SCM	SET CONCRETE MONUMENT		WATER VALVE
U&D	UTILITY AND DRAINAGE EASEMENT		EXISTING WATER POLE
RCP	REINFORCED CONCRETE PIPE		HYDRANT
HDPE	HIGH DENSITY POLYETHYLENE PIPE		
T.E.	TOP ELEVATION		
I.E.	INVERT ELEVATION		
TOS	TOE OF SLOPE		
FF	FINISHED FLOOR		
SHWL	SEASONAL HIGH WATER LEVEL		



PROJECT: EDGEWATER MANHOLE & SHREDDER  
S 9, T 34S, R28E

OWNER: SUN 'N LAKE IMPROVEMENT  
DISTRICT  
5306 SUN 'N LAKE BLVD.  
SEBRING, FL 33872

ENGINEER: ROGER DALE POLSTON, P.E.  
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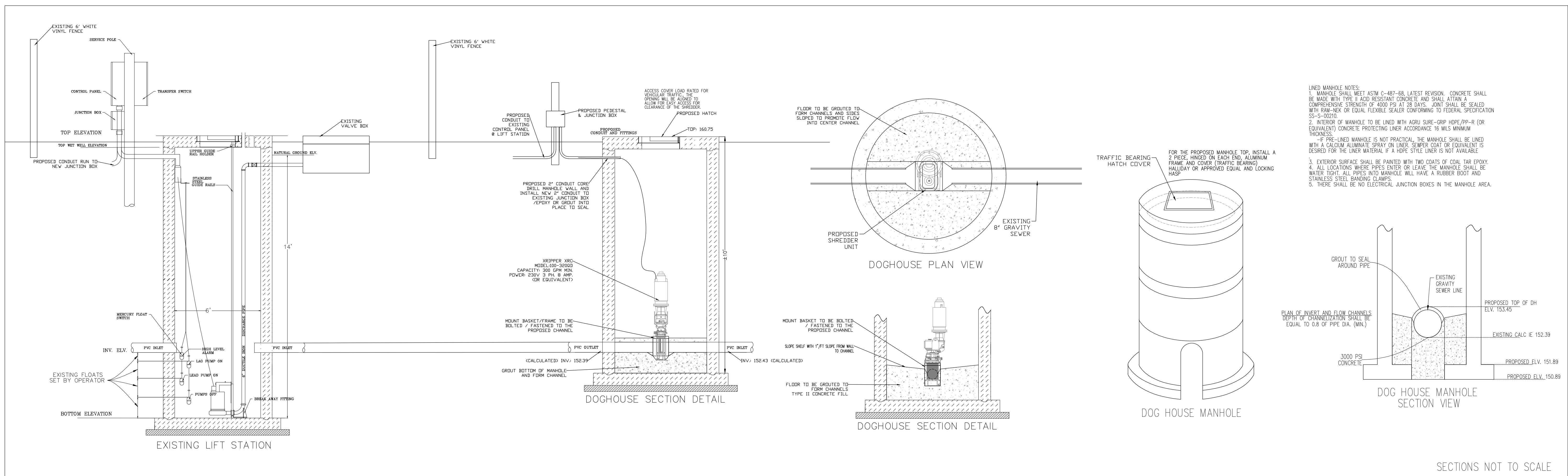
☐ PROPOSED MANHOLE

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ROGER DALE POLSTON P. E. # 33222  
MARVIN LUTHER WOLFE P.E. # 46030



**Polston  
Engineering** Inc. 

CIVIL ENGINEERING CONSULTANTS

2925 KENILWORTH BLVD., SEBRING, FLORIDA 33870  
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# SUN 'N LAKE IMPROVEMENT DISTRICT

## EDGEWATER LIFT STATION

### DOGHOUSE MANHOLE & SHREDDER

BID SET  
ORIGINAL SHEET SIZE: 24"x36"  
DRAWING SCALE  
**1" = 20'**  
SHEET  
**1 OF 3**



STANDARD NOTES:

PIPE SPECIFICATION: (PROVIDED IN CASE DAMAGE OCCURS, NO NEW PIPE PROPOSED)

- PIPE SPECIFICATION:
- SEWER MAINS -- 8" CLASS 160 (GASKET) SDR 35 PVC 1120 160 PSI @ 7.37' ASTM D-3034 GREEN COLOR
  - SERVICES -- 6" CLASS 160 (WHEN FEEDING 2 CONNECTIONS) SDR 35 PVC 1120 160 PSI @ 7.37' ASTM D-3034
  - 4" CLASS 160 (GASKET) SDR 35 PVC 1120 160 PSI @ 7.37' ASTM D-3034

GRAVITY LINES

NOTE: EACH SUBCONTRACTOR WILL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL UTILITIES EFFECTED BY HIS WORK.

INSTALLATION INSTRUCTIONS:

- THE CONTRACTOR 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 DISTRICT, COUNTY AND STATE R/W ARE TO BE RESTORED AND SODDED.
- THE CONNECTION TO THE SUN 'N LAKE UTILITIES SEWER COLLECTION SYSTEM WILL BE DONE TO THE SUN 'N LAKE UTILITIES SPECIFICATIONS UNDER THE UTILITY DEPARTMENT SUPERVISION REQUIREMENTS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ALL UTILITIES, ROADS AND STRUCTURES DAMAGED DURING THE CONSTRUCTION PHASE.

TESTING:

- ALL TESTS WILL REQUIRE THE PRESENCE OF THE ENGINEER, CONTRACTOR OR HIS DESIGNATED INSPECTOR AND A REPRESENTATIVE OF THE SUN 'N LAKE.
- ALSO PRESENT WILL BE A DESIGNATED INSPECTOR FROM THE SUN 'N LAKE UTILITIES.
- THE CONTRACTOR 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 SUN 'N LAKE UTILITIES SEWER COLLECTION SYSTEM.
- THE REACH OF THE SEWER TO BE TESTED SHALL BE FILLED WITH WATER TO AN ELEVATION OF AT LEAST 2 FEET ABOVE THE CROWN OF THE SEWER AT THE UPPER END OF THE REACH.
- THE AMOUNT OF WATER TO MAINTAIN THE SEWER IN A FULL CONDITION FOR 2 HOURS MINIMUM WILL BE MEASURED.
- THE LINE WILL NOT BE ACCEPTED SHOULD THE QUANTITY EXCEED 50 GPD/INCH DIA./MILE.
- ALL GRAVITY MAIN LINES WILL BE LAMPED AND A FULL WORK REQUIRED TO BE VISIBLE.

THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT TO PERFORM ALL TESTS.

WATER FOR TESTING SHALL BE POTABLE WATER PROVIDED BY THE CONTRACTOR FROM A SOURCE APPROVED BY THE PROJECT ENGINEER.

GRAVITY SEWER LINES SPECIFICATIONS:

1.00. MATERIALS: PIPES AND FITTINGS: ALL MAIN LINE PIPE, FITTINGS, AND SPECIALS SHALL BE OF ONE OF THE FOLLOWING MATERIALS:

1.01. POLYVINYLCHLORIDE PIPE: PLASTIC GRAVITY SEWER PIPE AND FITTINGS SHALL BE SMOOTH WALL POLYVINYLCHLORIDE (PVC) CONFORMING TO OR EXCEEDING THE PERFORMANCE REQUIREMENTS OF ASTM DESIGNATION D3034, SDR 35; ASTM F-789 FOR SIZES 4 INCHES TO 18 INCHES; PS-46; OR ASTM F-679 FOR SIZES 18 INCHES TO 27 INCHES DIAMETER. FOR SIZES 21 INCHES THROUGH 48 INCHES DIAMETER SEWER MAIN PROFILE WALL PVC WITH SMOOTH INTERIOR AND EXTERIOR IN ACCORDANCE WITH ASTM F-794 IS ACCEPTABLE.

1.02. DUCTILE IRON PIPE:

(A) DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI STANDARD A21.51. THE PIPE WALL THICKNESS SHALL BE NOT LESS THAN THAT REQUIRED BY A WORKING PRESSURE OF 150 PSI WITH TYPE 2 LAYING CONDITION AND 5 FEET COVER IN CONFORMANCE WITH ASTM STANDARD A746-76, LATEST REVISION.

(B) JOINTS FOR CAST IRON PIPE SHALL BE MECHANICAL OR PUSH-ON JOINTS CONFORMING TO ANSI STANDARD A21.11. PIPE INTERIOR SHALL HAVE A BITUMINOUS SEAL COAT OVER A CEMENT MORTAR LINING CONFORMING TO ANSI STANDARD A21.4. EXTERIOR OF PIPE SHALL HAVE A BITUMINOUS COATING.

(C) OTHER PIPE MATERIALS AND MANUFACTURER INCLUDING VITRIFIED CLAY PIPE, EXTERIOR CORRUGATED, ASBESTOS CONCRETE, AND CONCRETE, WILL NOT GENERALLY BE ACCEPTABLE FOR USE IN WASTEWATER COLLECTION SYSTEMS.

(D) ALL ABOVE GROUND PIPE AND FITTINGS SHALL BE DUCTILE IRON.

1.03. MANHOLES, PRECAST CONCRETE: PRECAST MANHOLES SHALL MEET THE GENERAL REQUIREMENTS AS SPECIFIED HEREIN.

(A) DETAILS AND SHOP DRAWINGS OF EACH MANHOLE, PROPOSED TO BE FURNISHED SHALL BE SUBMITTED TO AND APPROVED BY THE PROJECT ENGINEER PRIOR TO THE MANUFACTURE OF THE UNITS. MANHOLES WHICH ARE NOT MANUFACTURED IN COMPLIANCE WITH THE APPROVED SHOP DRAWINGS AND THESE SPECIFICATIONS MAY BE REJECTED.

(B) THE DESIGN AND MANUFACTURE OF THE MANHOLES, AND SPECIAL PIPES CONSTRUCTION AT MANHOLES, SHALL CONFORM TO THESE SPECIFICATIONS.

(C) IN ADDITION TO THE GENERAL REQUIREMENTS, PRECAST MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION C478-75 AND THE FOLLOWING MODIFICATIONS THEREOF:

(1) THE MINIMUM SHELL THICKNESS SHALL BE 8 INCHES;

(2) CEMENT TO BE USED IN PRECAST MANHOLES SHALL BE TYPE II, 4000 PSI AOD RESISTANT CEMENT USED FOR SANITARY CONSTRUCTION;

(3) JOINTS WHOSE POSITIONS IN THE COMPLETE CONSTRUCTION ARE BELOW THE WATER TABLE SHALL BE COMPRESSION TYPE, NEOPRENE GASKET JOINT OF A DESIGN APPROVED BY THE ENGINEER;

(4) LIFTING HOLES THROUGH THE STRUCTURES ARE PERMITTED, HOWEVER, ALL HOLES SHALL BE COMPLETELY SEALED WITH HYDRAULIC CEMENT;

(5) THE DESIGN OF THE STRUCTURE SHALL INCLUDE A PRECAST BASE OF NOT LESS THAN 8 INCHES IN THICKNESS, AND POURED MONOLITHICALLY WITH THE BOTTOM SECTIONS OF THE MANHOLE WALLS.

(6) ALL GROUT USED FOR SEALING AROUND THE PIPE OPENINGS SHALL BE OF TYPE ACCEPTABLE TO THE PROJECT ENGINEER DESIGNED FOR USE IN WATER; ALL OPENINGS AND JOINTS SHALL BE SEALED WATERTIGHT;

(7) PRECAST MANHOLE TOPS, IF USED, SHALL TERMINATE AT SUCH ELEVATIONS AS WILL PERMIT LAYING UP TO A MINIMUM OF 12 INCHES OF CLAY BRICK UNDER THE MANHOLE FRAME TO MAKE ALLOWANCE FOR FUTURE ST GRADE ADJUSTMENT;

(8) DROP CONNECTIONS, WHERE REQUIRED ON PRECAST MANHOLES, SHALL BE MANUFACTURED WITH THE MANHOLE ELEMENTS AT THE CASTING YARD; THE MANUFACTURER SHALL SUBMIT THE METHOD OF DROP MANHOLE CONSTRUCTION; AND

(9) STAINLESS STEEL INFLOW COVERS TO BE PROVIDED FOR ALL MANHOLES.

(C) MANHOLE CASTING: CASTING FOR MANHOLE FRAMES, COVERS, STEPS, AND OTHER ITEMS SHALL CONFORM TO ANSI DESIGNATION A 48-74, CLASS 30. CASTINGS SHALL BE TRUE TO THE DIMENSIONS AND FREE OF POURING FAULTS AND OTHER DEFECTS IN POSITIONS WHICH WOULD IMPAIR THEIR STRENGTH OR OTHERWISE MAKE THEM UNFIT FOR THE SERVICE INTENDED. THE SEALING SURFACES BETWEEN FRAMES AND COVERS SHALL BE MACHINED TO BE TRUE. NO PLUGGING OR FILING WILL BE ALLOWED. LIFTING OR "PICK" HOLES SHALL BE PROVIDED, BUT SHALL NOT PENETRATE THE COVER. CASTING PATTERNS SHALL CONFORM TO THOSE SHOWN OR INDICATED ON THE DRAWINGS. THE WORDS SANITARY SEWER, CONFINED SPACE, SUN 'N LAKE AND YEAR SHALL BE CAST IN ALL MANHOLE COVERS. ALL MANHOLE FRAMES AND COVERS SHALL BE TRAFFIC RATED. MANHOLE CASTINGS SHALL BE OF U.S. MANUFACTURE.

(C) CEMENT MORTAR: CEMENT MORTAR FOR MANHOLE CONSTRUCTION SHALL BE 1 PART CEMENT AND 3 PARTS CLEAN SHARP SAND TO WHICH HYDRATED LIME MAY BE ADDED IN THE AMOUNT NOT TO EXCEED 10% OF THE AMOUNT OF CEMENT BY VOLUME. IT SHALL BE MIXED DRY AND THEN WETTED TO PROPER CONSISTENCY FOR USE. NO MORTARS THAT HAVE STOOD FOR MORE THAN 1 HOUR SHALL BE USED.

2.00. 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 HAZARDS.

(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 THAN 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 PIPE BEDDING PROTECTING 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.

(F) LATERALS SHOULD BE A MINIMUM OF 30"-36" BELOW FINISH GRADE. FOUR INCH (4") SINGLE, SIX INCH (6") DOUBLE FOR RESIDENTIAL/COMMERCIAL APPLICATIONS. FOUR INCH (4") CLEAN OUT TO GRADE AT PROPERTY LINE.

2.02. PIPE HANDLING:

(A) THE INTERIOR OF ALL PIPE SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATERIAL BEFORE BEING LOWERED IN THE TRENCH AND SHALL BE KEPT CLEAN DURING THE LAYING OPERATIONS BY MEANS OF PLUG OR OTHER APPROVED METHODS.

(B) PIPE LAYING SHAL WITH SPIGOT ENDS POINTING IN THE DIRECTION OF FLOW. BEFORE PIPE IS JOINED, GASKETS SHALL BE CLEANED OF ALL DIRT AND STONES AND OTHER FOREIGN MATERIAL. THE SPIGOT ENDS OF THE PIPE SHALL BE LUBRICATED LIGHTLY WITH A LUBRICANT SPECIFIED BY THE PIPE MANUFACTURER AND APPROVED BY THE PROJECT ENGINEER. SUFFICIENT PRESSURE SHALL BE APPLIED TO THE PIPE SO AS TO PROPERLY SEAT THE SPOCKET IN THE BELL OF THE PIPE. ALL PIPE SHALL BE LAD STRAIGHT, TRUE TO THE LINES AND GRADES SHOWN ON THE PLANS, IN EACH MANHOLE SECTION.

(C) UNDER NO CIRCUMSTANCES SHALL PIPE BE LAD IN WATER, AND NO PIPE SHALL BE LAD WHEN TRENCH CONDITIONS OR THE WEATHER IS UNSUITABLE FOR SUCH WORK EXCEPT BY PERMISSION OF THE PROJECT ENGINEER. AT ALL TIMES WHEN WORK IS NOT IN PROGRESS, THE EXPOSED ENDS OF ALL PIPES SHALL BE FULLY PROTECTED BY A BOARD OR OTHER APPROVED STOPPER TO PREVENT EARTH OR OTHER SUBSTANCES FROM ENTERING THE PIPE.

(D) ANY PIPE WHICH IS DISTURBED OR FOUND TO BE DEFECTIVE AFTER LAYING SHALL BE TAKEN UP AND RELAD OR REPLACED.

(E) TRANSPORTATION: CARE SHALL BE TAKEN DURING TRANSPORTATION OF THE PIPE THAT IT IS NOT CUT, KINKED OR OTHERWISE DAMAGED.

(F) HANDLING PIPE LENGTHS: ROPES, FABRIC, OR RUBBER PROTECTED SUNGOS AND STRAPS SHALL BE USED WHEN HANDLING PIPES.

(G) STORAGE:

(1) PIPES SHALL BE STORED ON LEVEL GROUND, PREFERABLY TURF OR SAND, FREE OF SHARP OBJECTS WHICH COULD DAMAGE THE PIPE.

(2) STACKING OF THE POLYVINYLCHLORIDE PIPE SHALL BE LIMITED TO A HEIGHT THAT WILL NOT CAUSE EXCESSIVE DEFORMATION OF THE BOTTOM LAYERS OF PIPES UNDER THE ANTICIPATED TEMPERATURES AND CONDITION.

(3) WHEN NECESSARY, DUE TO GROUND CONDITIONS, THE PIPE SHALL BE STORED ON WOODEN SLEEPERS, SPACED SUITABLY AND OF SUCH WIDTH AS NOT TO ALLOW DEFORMATION OF PIPE AT THE POINT OF CONTACT WITH THE SLEEPER OR BETWEEN SUPPORTS.

(4) THE HANDLING OF THE JOINTED PIPE LINE SHALL BE IN SUCH A MANNER THAT THE PIPE IS NOT DAMAGED BY DRAGGING IT OVER SHARP AND CUTTING OBJECTS. SECTIONS OF THE PIPES WITH DEEP CUTS AND GOUGES SHALL BE REMOVED.

(5) CARE SHALL BE EXERCISED WHEN LOWERING PIPE INTO THE TRENCH TO PREVENT DAMAGE TO OR TWISTING OF THE PIPE.

(6) POLYVINYLCHLORIDE PIPE CONNECTED TO HEAVY FITTINGS, MANHOLES, AND RIGID STRUCTURES SHALL BE SUPPORTED IN SUCH A MANNER THAT NO SUBSEQUENT RELATIVE MOVEMENT BETWEEN THE PIPE AND THE JOINT WITH THE RIGID STRUCTURES IS POSSIBLE.

2.03. ADDITIONAL WORK:

(A) CONCRETE INVERTS: ALL MANHOLE INTERIOR BOTTOMS SHALL BE SHAPED WITH TRUE INVERTS. INVERTS SHALL BE OF CONCRETE MORTAR CONSTRUCTION, AS SPECIFIED HEREIN.

(B) ADDITIONAL ITEMS OF CONSTRUCTION, SUCH AS CLEANOUTS, TERMINAL LAMPHOLES, SPECIAL MANHOLES, AND OTHER ITEMS NECESSARY FOR THE COMPLETE INSTALLATION OF THE SYSTEM SHALL CONFORM TO SPECIFIC DETAILS ON THE DRAWINGS AND SHALL BE CONSTRUCTED OF FIRST-CLASS MATERIALS CONFORMING TO THE APPLICABLE PORTIONS OF THE SPECIFICATIONS.

(C) CONNECTIONS TO EXISTING MANHOLES AND PIPE STUBS SHALL BE MADE WITHOUT PERMANENT DAMAGE TO THE EXISTING STRUCTURE. THE INVERT CHANNELS SHALL BE REPAIRED, IF NECESSARY, AND RECONSTRUCTED TO PROVIDE FOR SMOOTH FLOW. PIPE OPENING IN THE EXISTING MANHOLE WALLS SHALL BE MADE WATERTIGHT WITH AN APPROVED GROUT.

3.00. QUALITY TESTING/INSPECTIONS:

3.01. IT IS IMPERATIVE THAT ALL SEWERS AND APPURTENANCES BE BUILT PRACTICALLY WATERTIGHT AND THAT THE CONTRACTOR ADHERE RIGIDLY TO THE SPECIFICATIONS FOR MATERIALS AND WORKMANSHIP. SEWAGE MAY NEED TO BE PUMPED FOR DISPOSAL AND SPECIAL CARE AND ATTENTION MUST BE PAID TO SECURING WATERTIGHT CONSTRUCTION. UPON COMPLETION, THE SEWER, OR SECTION THEREOF, WILL BE TESTED AND GAUGED AND IF LEAKAGE IS ABOVE THE ALLOWABLE LIMITS SPECIFIED, THE SEWER WILL BE REJECTED.

3.02. ON COMPLETION OF EACH BLOCK OR SECTION OF SEWER, OR SUCH OTHER TIMES AS THE PROJECT ENGINEER MAY DIRECT, THE BLOCK OR SECTION OF SEWER IS TO BE CLEANED, TESTED, AND INSPECTED. EACH SECTION OF THE SEWER IS TO SHOW, EXAMINATION FROM EITHER END, A FULL CIRCLE OF LIGHT BETWEEN MANHOLES.

3.03. EACH MANHOLE, OR OTHER APPURTENANCES TO THE SYSTEM ALSO SHALL BE OF THE SPECIFIED SIZE AND FORM, BE WATERTIGHT, READY AND SUBSTANTIALLY CONSTRUCTED, WITH THE TOP SET PERMANENTLY TO EXACT POSITION AND GRADE.

3.04. ALL REPAIRS SHOWN NECESSARY BY THE INSPECTION ARE TO BE MADE. BROKEN OR CRACKED PIPE REPLACED, ALL DEPOSITS REMOVED AND THE SEWER LEFT TRUE TO LINE AND GRADE, EXTERIORLY CLEAN AND READY TO USE.

3.05. ALL WASTEWATER COLLECTION SYSTEMS SHALL BE TESTED BY INFILTRATION/EXFILTRATION AS DESCRIBED BELOW.

(A) THE ALLOWABLE LIMITS OF INFILTRATION, EXFILTRATION, OR LEAKAGE FOR THE ENTIRE SYSTEM OR ANY PORTION THEREOF, INCLUDING HOUSE SERVICE LINES, SHALL NOT EXCEED A RATE OF 0.1 GALLONS PER FOOT OF PIPE PER 24 HOURS FOR ALL SIZES OF PIPE THROUGHOUT THE SYSTEM. THE ALLOWABLE LIMITS OF INFILTRATION OR EXFILTRATION OF MANHOLES SHALL NOT EXCEED A RATE OF 2 GALLONS PER MANHOLE PER 24 HOURS.

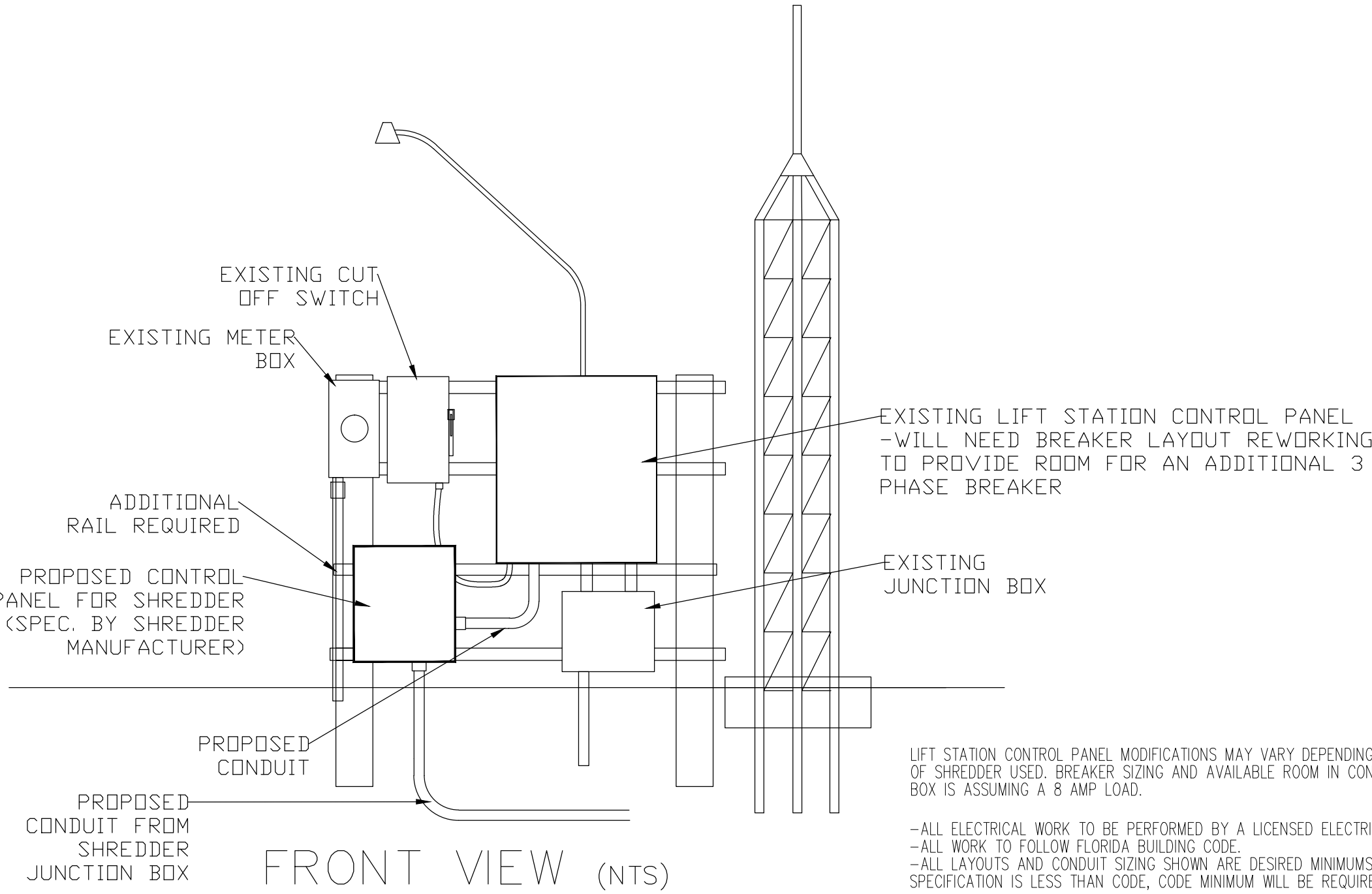
(B) INFILTRATION, IF TAKEN BETWEEN ANY TWO ADJACENT MANHOLES, SHALL NOT EXCEED 0.1 GALLON PER 24 HOURS PER FOOT OF SEWER FOR ALL SIZES AND ALL LOCATIONS. THIS TESTING OF LINES BETWEEN ADJACENT MANHOLES WILL NOT BE REQUIRED EXCEPT TO LOCALIZE THE POSITION OF A LEAK IN A PORTION OF THE SYSTEM THAT EXCEEDS THE ALLOWABLE LEAKAGE LIMIT OR AS DIRECTED BY THE PROJECT ENGINEER.

(C) ANY PART OR ALL OF THE SYSTEM MAY BE TESTED FOR INFILTRATION OR EXFILTRATION, AS DIRECTED BY THE PROJECT ENGINEER. PRIOR TO TESTING FOR INFILTRATION, THE SYSTEM SHALL BE PUMPED OUT SO THAT NORMAL INFILTRATION OR EXFILTRATION SHALL BE DETERMINED BY PUMPING INTO OR OUT OF CALIBRATED DRUMS, OR BY OTHER APPROVED METHODS.

(D) THE EXFILTRATION TEST WILL BE CONDUCTED BY FILLING ONE PORTION OF THE SYSTEM BEING TESTED WITH WATER TO A LEVEL WHICH WILL PROVIDE A MINIMUM HEAD ON A SERVICE LATERAL CONNECTED TO THE PORTION OF 2 FEET; OR IN THE EVENT THERE ARE NO SERVICE LATERALS IN THE TEST PORTION, A MINIMUM DIFFERENCE IN ELEVATION BETWEEN THE CROWN OF THE HIGHEST PORTION OF THE SEWER AND THE TEST WATER LEVEL OF 5 FEET.

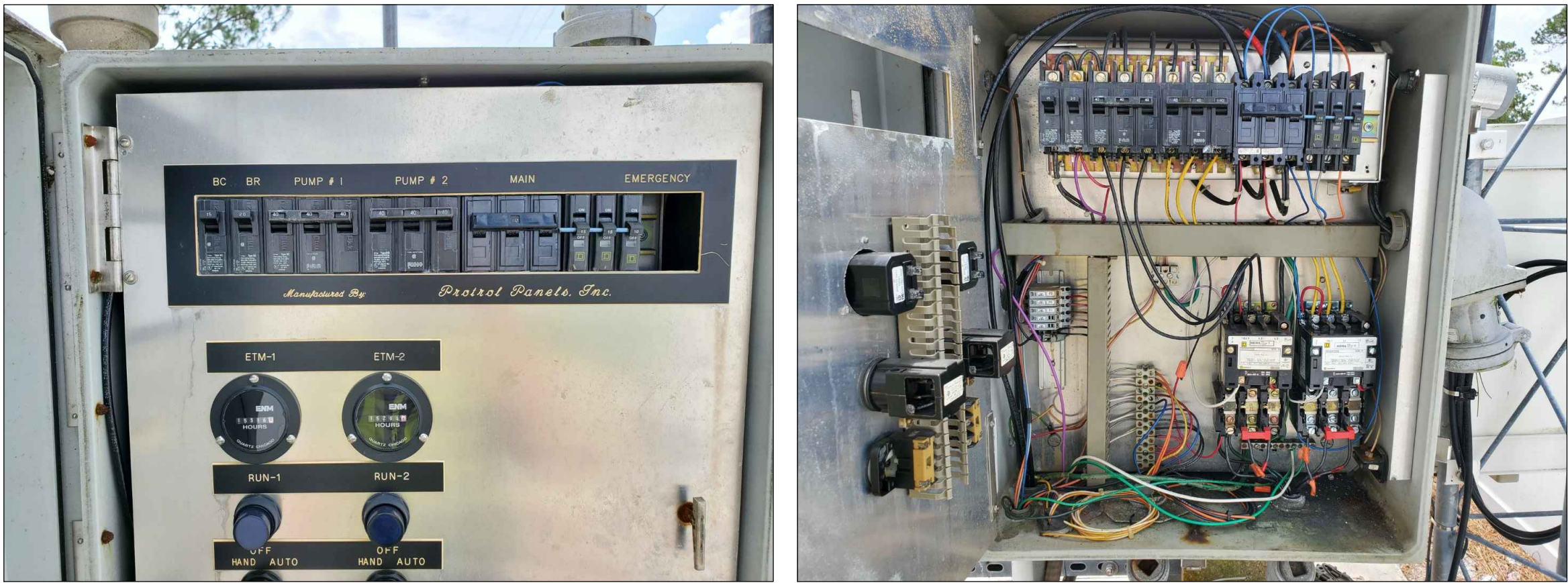
(E) TESTS SHALL BE CONDUCTED ON PORTIONS OF THE SYSTEM NOT EXCEEDING 3 MANHOLE RUNS OR MORE THAN 1000 FEET OF MAIN SEWER, OR AS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. TESTS SHALL BE RUN CONTINUOUSLY FOR 3 HOURS. WHEN INFILTRATION OR EXFILTRATION EXCEEDS THE ALLOWABLE LIMITS ALSO SPECIFIED HEREIN, THE DEFECTIVE PIPE, JOINTS, OR OTHER PAULTY CONSTRUCTION SHALL BE LOCATED AND REPAIRED. IF THE DEFECTIVE PORTIONS CANNOT BE LOCATED, AS MUCH OF THE WORK AS IS NECESSARY WILL BE REMOVED AND RECONSTRUCTED IN ORDER TO CONFORM TO THE SPECIFIED ALLOWABLE LIMITS. TESTING SHALL BE PERFORMED AS THE JOB PROGRESSES AND SHALL BE STARTED AFTER NO MORE THAN 2000 FEET OF PIPE IS LAID.

THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS, AND CONDUCT ALL TESTING REQUIRED, UNDER THE DIRECTION OF THE PROJECT ENGINEER.



LIFT STATION CONTROL PANEL MODIFICATIONS MAY VARY DEPENDING ON THE MODEL OF SHREDDER USED, BREAKER SIZING AND AVAILABLE ROOM IN CONTROL PANEL BOX IS ASSUMING A 8 AMP LOAD.

- ALL ELECTRICAL WORK TO BE PERFORMED BY A LICENSED ELECTRICIAN.
- ALL WORK TO FOLLOW FLORIDA BUILDING CODE.
- ALL LAYOUTS AND CONDUIT SIZING SHOWN ARE DESIRED MINIMUMS. IF ANY SPECIFICATION IS LESS THAN CODE, CODE MINIMUM WILL BE REQUIRED.



EXISTING CONTROL PANEL

SCOPE OF WORK

1. INSTALL NEW DOG-HOUSE MANHOLE UPSTREAM FROM EXISTING LIFT STATION. DEWATERING WILL BE REQUIRED FOR THE EXCAVATION OF THE MANHOLE LOCATION.
2. THE EXISTING GRAVITY SYSTEM IS ACTIVE AND SHOULD REMAIN IN OPERATION DURING THE ENTIRETY OF CONSTRUCTION. BYPASS PUMPING MAY BE REQUIRED IF CONSTRUCTION TIME EXCEEDS VOLUME IN THE UPSTREAM MANHOLE.
3. THE PROPOSED MANHOLE SHALL HAVE A LIFT STATION STYLE HATCH TOP IN ORDER TO BE ABLE TO ACCESS THE PROPOSED SHREDDER UNIT.
4. THE BOTTOM OF THE PROPOSED MANHOLE SHALL HAVE A CAST IN PLACE CHANNEL THAT INCORPORATES THE FLOW BEING DIRECTED INTO THE PROPOSED SHREDDER UNIT. THE BASE/MOUNT FOR THE SHREDDER UNIT SHALL BE BOLTED OR FASTENED WITHIN THE PROPOSED CHANNEL FOLLOWING MANUFACTURER GUIDELINES.
5. THE NEW MANHOLE SHALL BE LINED EITHER WITH A CAST IN HDPE LINER OR A CALCIUM ALUMINATE TYPE LINER (SEWPERCOAT OR EQUIVALENT). EPOXY OR POLYUREA OR ANY FLEXIBLE SPRAY ON LINER SYSTEM WILL NOT BE ALLOWED. THIS MANHOLE WILL BE EXPOSED TO WATER TABLE PRESSURES.
6. A CONDUIT SHALL BE PROVIDED TO RUN THE POWER OUT OF THE MANHOLE TO THE PROPOSED PEDESTAL MOUNT JUNCTION BOX JUST OUTSIDE OF THE MANHOLE. THIS JUNCTION BOX SHALL BE CONNECTED VIA CONDUIT TO THE CONTROL BOX FOR THE SHREDDER UNIT. THE CONTROL BOX SHALL BE SUPPLIED BY THE SHREDDER MANUFACTURER AND INCLUDED AS PART OF THE CONTRACTORS BID. IT CAN BE UP TO THE CONTRACTOR'S ELECTRICIAN TO DETERMINE THE BEST PLACEMENT FOR THE CONTROL PANEL/BOX. IDEALLY IT WILL BE ADJACENT TO THE EXISTING LIFT STATION CONTROLS.
7. THE EXISTING CONTROL PANEL WILL NEED TO BE MODIFIED TO FIT AN ADDITIONAL BREAKER FOR THE SHREDDER CONTROL PANEL. THE NEW CONTROL PANEL WILL THEN NEED TO BE CONNECTED VIA CONDUIT TO THE EXISTING CONTROL PANEL.
8. THE CONTRACTOR SHALL SUPPLY ALL LABOR AND MATERIALS FOR A COMPLETE TURN-KEY PRODUCT.
9. ALL APPLICABLE TESTING AND STARTUP SHOULD BE INCLUDED WITH THE CONTRACTORS PROPOSAL.

THIS WORK REQUIRES A LICENSED UNDERGROUND CONTRACTOR AND A LICENSED ELECTRICIAN.

CERTIFICATE OF AUTHORIZATION # 5884  
ROGER DALE POLSTON P. E. # 39322  
MARVIN LUTHER WOLFE P. E. # 46030



SUN 'N LAKE IMPROVEMENT DISTRICT  
EDGEWATER LIFT STATION  
DOGHOUSE MANHOLE & SHREDDER

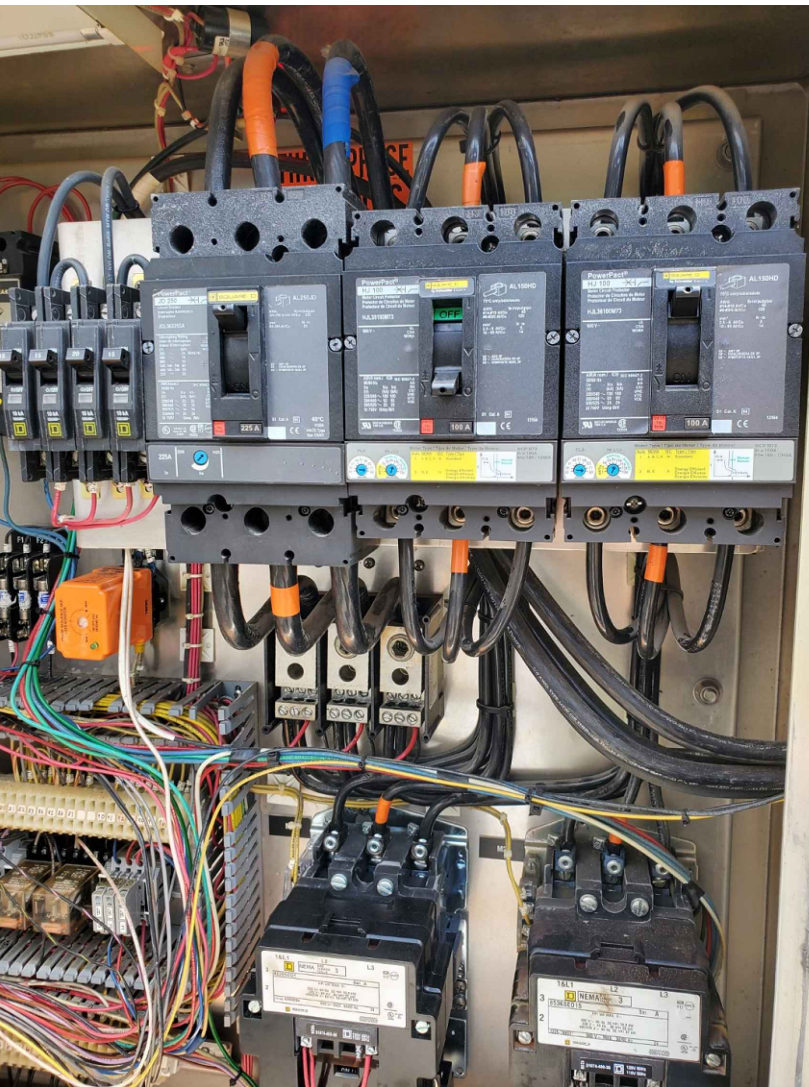
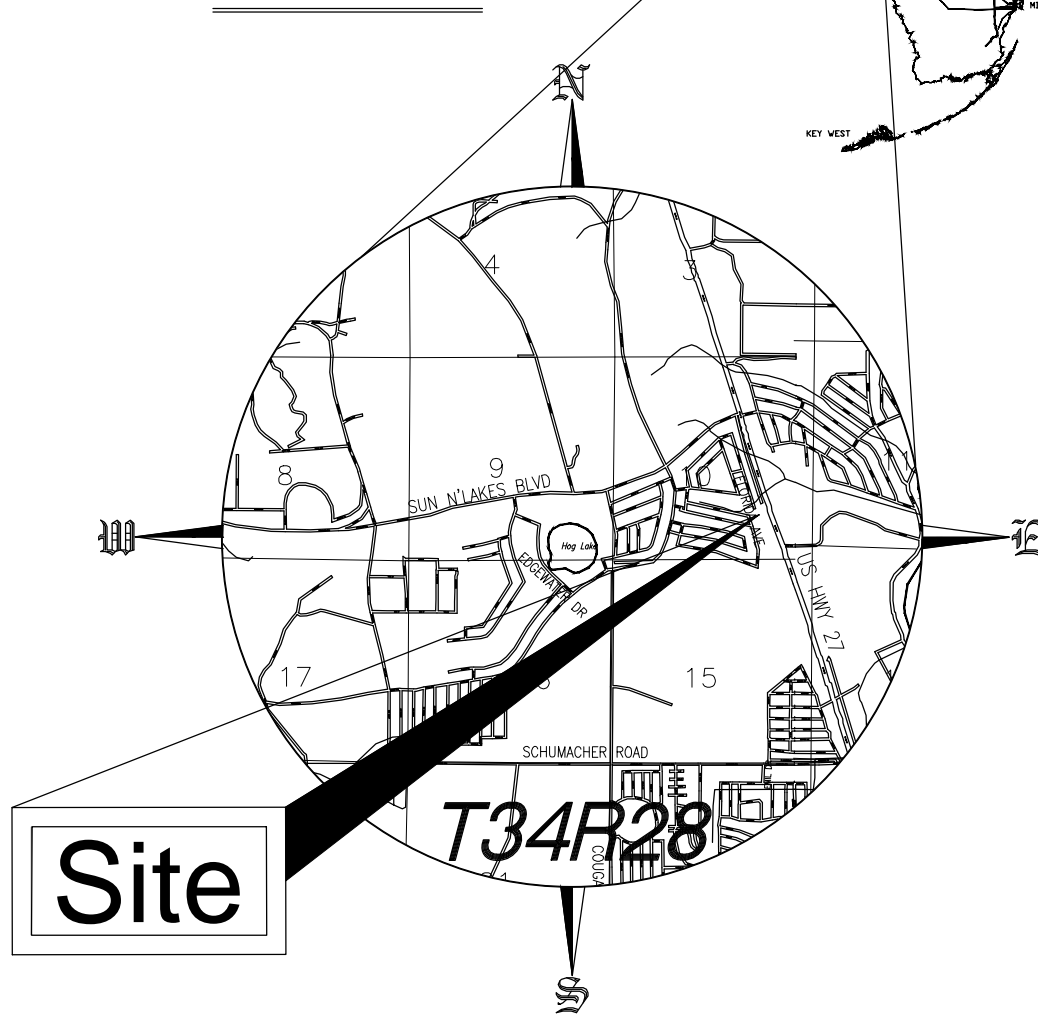
ENGINEER JOB #  
20165

BID SET  
ORIGINAL SHEET SIZE: 24"x36"  
DRAWING SCALE  
**N.T.S.**  
SHEET  
2 OF 3

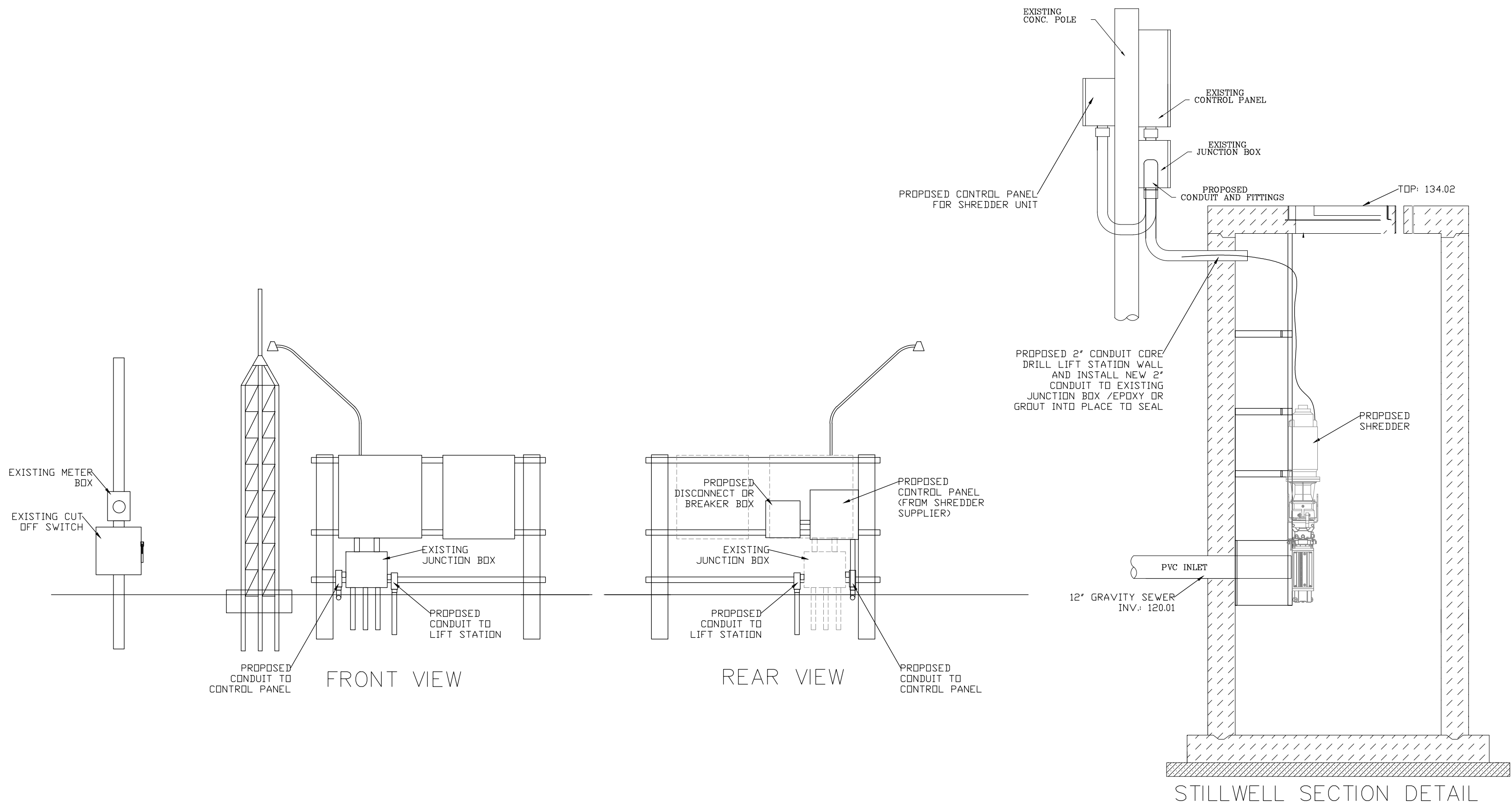
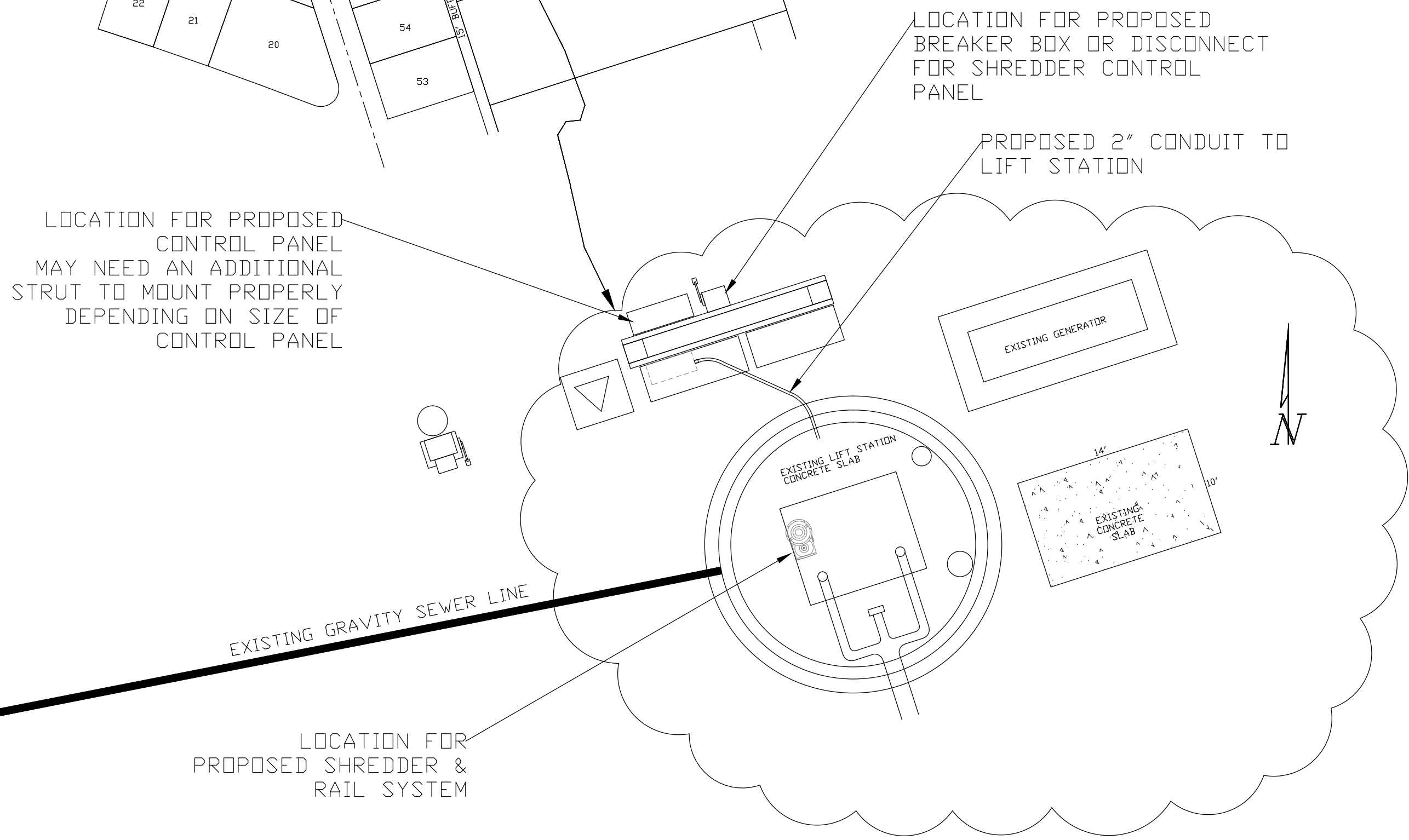


SUN 'N LAKE OF SEBRING  
IMPROVEMENT DISTRICT  
NAVARRE  
LIFT STATION SHREDDER

LOCATION MAP



CONTROL PANEL MAIN BREAKERS AND TIE IN LOCATION



SCOPE OF WORK

1. REMOVE EXISTING BASKET AND BASKET RAILING SYSTEM FROM THE INSIDE OF THE LIFT STATION INNER WALL.
2. PREP THE WALL SURFACE BY CLEANING OR PRESSURE WASHING THE AREAS FOR THE NEW ANCHOR BOLTS. THIS WILL ALSO INCLUDE GRINDING OR SAW CUTTING ANY INTERFERING EXISTING ANCHOR BOLTS THAT WERE HOLDING THE EXISTING RAILING SYSTEM. USE COAL TAR EPOXY OR EQUIVALENT TO SEAL OFF THE OLD ANCHOR BOLTS AND OR HOLES THAT MAY HAVE BEEN MADE DURING RAILING REMOVAL.
3. FOLLOWING INSTRUCTIONS BY THE SHREDDER MANUFACTURER, INSTALL THE RAILING SYSTEM USING PROPER STAINLESS WEDGE ANCHORS. SEALANT SHOULD BE APPLIED AROUND THE ANCHOR WHERE IT MEETS THE EXISTING LINER SYSTEM TO PREVENT SEWAGE OR GAS INTRUSION.
4. THE RAILING INSTALLATION MAY REQUIRE TRIMMING OF THE GRAVITY SEWER PIPE IF IT IS EXTENDING TOO FAR INTO THE PROPOSED SHREDDER MOUNTING SYSTEM. REFER TO MANUFACTURER REQUIREMENTS.
5. A NEW 2" CONDUIT SHALL BE INSTALLED AND RAN TO THE EXISTING JUNCTION BOX FROM THE EXISTING LIFT STATION. IT SHALL BE CORE DRILLED AND SEALED TO THE LIFT STATION. AN ADDITIONAL CONDUIT SHALL BE RAN FROM THE EXISTING JUNCTION BOX TO THE PROPOSED CONTROL PANEL FOR THE SHREDDER UNIT. THE CONTROL PANEL SHALL BE PROVIDED BY THE SHREDDER MANUFACTURER AND BE INSTALLED BY THE CONTRACTOR. THE CONTRACTOR MAY PROVIDE A SEPARATE JUNCTION BOX IN LIEU OF CONNECTING TO THE EXISTING JUNCTION BOX.
6. INSTALLATION OF THE CONTROL PANEL FOR THE SHREDDER WILL REQUIRE AN ELECTRICIAN. A NEW MOUNTING CHANNEL MAY BE REQUIRED TO ACCOMMODATE THE NEW CONTROL PANEL. POWER FOR THE PROPOSED CONTROL PANEL MAY BE CONNECTED TO THE EXISTING LIFT STATION CONTROL PANEL. IT WILL NEED A NEW SEPARATE DISCONNECT OR BREAKER BOX TO BE ABLE TO CUT POWER TO THE CONTROL PANEL. THESE ITEMS AND ADEQUATE CONDUIT AND WIRING ARE TO BE PROVIDED BY THE CONTRACTOR.
7. ANY ALTERNATE EQUIVALENT SHREDDER UNITS SHOULD HAVE SPECIFICATIONS CHECKED FOR FITMENT AND POWER REQUIREMENTS. ANY ADDITIONAL POWER OR SIZING REQUIREMENTS WILL BE UP TO THE CONTRACTOR TO ACCOUNT FOR.

SHREDDER SPECIFICATION: (OR EQUIVALENT)  
VOGLER/ANG X-RIPPER PART XRC100-480QD ASSEMBLY:  
RIPPER ..... (MODEL XRC100-480QD)  
RIPPER ROTOR ..... HIGH WEAR RESISTANT SPECIAL STEEL 5.5 MM  
MECHANICAL SEALS ..... CARTRIDGE SINGLE - BLOCK RING SS304, CR203 /DURONITE  
CARTRIDGE O-RINGS ..... NBR  
WEAR PLATE MATERIAL ..... HIGH WEAR RESISTANT SPECIAL STEEL  
MOTOR MOUNTING ..... WALL MOUNT, ROUND, 4500 MM / 177.2 INCH  
DRIVE TYPE ..... IMMERSEBLE GEARBOX + MOTOR  
MOTOR PART NUMBER ..... US M0609  
GEARBOX PART NUMBER ..... US G06016  
MOTOR ..... EMO2 3 HP, 230 V, 60 HZ, 1760 RPM, ±8 AMP  
MOTOR FRAME SIZE ..... IEC 112  
MOTOR ENCLOSURE ..... IMMERSEBLE (RUN DRY IN AIR)  
GEARBOX ..... NORD SKS220 31.63 RATIO, 55.12 RPM  
VOGLER/ANG CONTROL PANEL ..... PC - 3 HP, 230 V, NEMA 4X RIPPER POLYCARBONATE ENCLOSURE

INCLUDE START UP SERVICE  
REQUIRED CAPACITY.....700 GPM

SECTIONS NOT TO SCALE

CERTIFICATE OF AUTHORIZATION # 5884  
ROGER DALE POLSTON P.E. # 39222  
MARVIN LUTHER WOLFE P.E. # 46030



SUN 'N LAKE IMPROVEMENT DISTRICT  
NAVARRE LIFT STATION  
SHREDDER

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