GRINDER PUMP STATIONS SPECIFICATIONS

1.0 GENERAL

GENERAL DESCRIPTION: THE MANUFACTURER SHALL FURNISH COMPLETE FACTORY-BUILT AND TESTED GRINDER PUMP STATION(S), EACH CONSISTING OF GRINDER PUMP(S) SUITABLY MOUNTED IN A BASIN CONSTRUCTED OF FIBERGLASS OR HIGH DENSITY POLYETHYLENE (HDPE), ELECTRICAL QUICK DISCONNECT (NEMA 6), PUMP REMOVAL SYSTEM, SHUT-OFF VALVE, ANTI-SIPHON VALVE, AND CHECK VALVE ASSEMBLED WITHIN THE BASIN, ELECTRICAL ALARM/DISCONNECT PANEL, AND ALL NECESSARY INTERNAL WIRING AND CONTROLS. FOR EASE OF SERVICEABILITY, ALL PUMP MOTOR/GINDER UNITS SHALL BE OF LIKE TYPE AND HORSEPOWER THROUGHOUT THE SYSTEM.

MANUFACTURER: THE EQUIPMENT SPECIFIED SHALL BE A PRODUCT OF A COMPANY EXPERIENCED IN THE DESIGN AND MANUFACTURE OF GRINDER PUMPS FOR SPECIFIC USE IN LOW PRESSURE SEWAGE SYSTEMS. THE COMPANY SHALL SUBMIT DETAILED INSTALLATION AND USER INSTRUCTIONS FOR ITS PRODUCT; SUBMIT EVIDENCE OF AN ESTABLISHED SERVICE PROGRAM INCLUDING COMPLETE PARTS AND SERVICE MANUALS, AND BE RESPONSIBLE FOR MAINTAINING A CONTINUING INVENTORY OF GRINDER PUMP REPLACEMENT PARTS. THE MANUFACTURER SHALL PROVIDE A REFERENCE AND CONTACT LIST FROM THREE OF IT'S LARGEST CONTIGUOUS GRINDER PUMP INSTALLATIONS.

OPERATING CONDITIONS: THE PUMPS SHALL BE CAPABLE OF DELIVERING 15 GPM AGAINST A RATED TOTAL DYNAMIC HEAD OF 0 FEET (0 PSIG) AND 9 GPM AGAINST A RATED TOTAL DYNAMIC HEAD OF 138 FEET (60 PSIG). THE PUMP(S) MUST ALSO BE CAPABLE OF OPERATING AT NEGATIVE TOTAL DYNAMIC HEAD WITHOUT OVERLOADING THE MOTOR(S). UNDER NO CONDITIONS SHALL IN-LINE PIPING OR VALVING BE ALLOWED TO CREATE A FALSE APPARENT HEAD.

WARRANTY: THE GRINDER PUMP MANUFACTURER SHALL PROVIDE A PART(S) AND LABOR WARRANTY ON THE COMPLETE STATION AND ACCESSORIES, INCLUDING, BUT NOT LIMITED TO, PANEL AND REDUNDANT CHECK VALVE, FOR A PERIOD OF TWENTY-FOUR (24) MONTHS AFTER NOTICE OF OWNER'S ACCEPTANCE, BUT NO GREATER THAN TWENTY-SEVEN (27) MONTHS AFTER RECEIPT OF SHIPMENT. ANY DEFECTS FOUND DURING THE WARRANTY PERIOD WILL BE REPORTED TO THE MANUFACTURER BY THE OWNER.

2.0 PRODUCT

PUMP: THE PUMP SHALL BE A CUSTOM DESIGNED, INTERGAL, VERTICAL ROTOR, MOTOR DRIVEN, SOLIDS HANDLING PUMP OF THE PROGRESSING CAVITY TYPE WITH A SINGLE MECHANICAL SEAL. THE ROTOR SHALL BE THROUGH-HARDENED, HIGHLY POLISHED, PRECIPITATION HARDEDED STAINLESS STEEL. THE STATOR SHALL BE OF A SPECIFICALLY COMPOUNDED ETHYLENE PROPYLENE SYNTHETIC ELASTOMER. THE MATERIAL SHALL BE SUITED FOR DOMESTIC WASTE WATER SERVICE. ITS PHYSICAL PROPERTIES SHALL INCLUDE HIGH TEAR AND ABRASION RESISTANCE, GREASE RESISTANCE, WATER AND DETERGENT RESISTANCE, TEMPERATURE STABILITY, GOOD AGING PROPERTIES, AND OUTSTANDING WEAR RESISTANCE.

GRINDER: THE GRINDER SHALL BE PLACED IMMEDIATELY BELOW THE PUMPING ELEMENTS AND SHALL BE DIRECT-DRIVEN BY A SINGLE, ONE-PIECE STAINLESS STEEL MOTOR SHAFT. THE GRINDER IMPELLER ASSEMBLY SHALL BE SECURELY FASTENED TO THE PUMP MOTOR SHAFT. THE GRINDER WILL BE OF THE ROTATING TYPE WITH A STATIONARY HARDENED AND GROUND STAINLESS STEEL SHREDDING RING SPACED IN ACCURATE CLOSE ANNULAR ALIGNMENT WITH THE DRIVEN IMPELLER ASSEMBLY, WHICH SHALL CARRY TWO HARDENED TYPE 400 SERIES STAINLESS STEEL CUTTER BARS. THIS ASSEMBLY SHALL BE DYNAMICALLY BALANCED AND OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION OVER THE ENTIRE RANGE OF RECOMMENDED OPERATING PRESSURES. THE GRINDER SHALL BE CONSTRUCTED SO AS TO ELIMINATE CLOGGING AND JAMMING UNDER ALL NORMAL OPERATING CONDITIONS INCLUDING STARTING. SUFFICIENT VORTEX ACTION SHALL BE CREATED TO SCOUR TANK FREE OF DEPOSITS OR SLUDGE BANKS WHICH WOULD IMPAIR THE OPERATION OF THE PUMP. THESE REQUIREMENTS SHALL BE ACCOMPLISHED BY THE FOLLOWING, IN CONJUNCTION WITH THE PUMP:

1. THE GRINDER SHALL BE POSITIONED IN SUCH A WAY THAT SOLIDS ARE FED IN AN UPWARD FLOW DIRECTION.
2. THE INLET SHROUD SHALL HAVE A DIAMETER NO LESS THAN 5 INCHES.
3. AT MAXIMUM FLOW THE AVERAGE INLET VELOCITY MUST NOT EXCEED 0.2 FEET PER SECOND.
4. THE IMPELLER MECHANISM MUST ROTATE AT A NOMINAL SPEED OF NO GREATER THAN 1800 RPM.

THE GRINDER SHALL BE CAPABLE OF REDUCING ALL COMPONENTS IN NORMAL DOMESTIC SEWAGE, INCLUDING A REASONABLE AMOUNT OF "FOREIGN OBJECTS", SUCH AS PAPER, WOOD, PLASTIC, GLASS, RUBBER AND THE LIKE, TO FINELY-DIVIDED PARTICLES WHICH WILL PASS FREELY THROUGH THE PASSAGES OF THE PUMP AND THE 1-1/4" DIAMETER S/S DISCHARGE PIPING.

ELECTRIC MOTOR: AS A MAXIMUM, THE MOTOR SHALL BE A 1 HP, 1725 RPM, 240 VOLT 60 HERTZ, 1 PHASE, CAPACITOR START, BALL BEARING, SQUIRREL CAGE INDUCTION TYPE WITH A LOW STARTING CURRENT NOT TO EXCEED 30 AMPERES AND HIGH STARTING TORQUE OF 8.4 FOOT POUNDS. INHERENT PROTECTION AGAINST RUNNING OVERLOADS OR LOCKED ROTOR CONDITIONS FOR THE PUMP MOTOR SHALL BE PROVIDED BY THE USE OF AN AUTOMATIC-RESET, INTEGRAL THERMAL OVERLOAD PROTECTOR INCORPORATED INTO THE MOTOR. THIS MOTOR PROTECTOR COMBINATION SHALL HAVE BEEN SPECIFICALLY INVESTIGATED AND LISTED BY UNDERWRITERS LABORATORIES, INC., FOR THE APPLICATION.

MECHANICAL SEAL: THE CORE SHALL BE PROVIDED WITH A MECHANICAL SHAFT SEAL TO PREVENT LEAKAGE BETWEEN THE MOTOR AND THE PUMP. THE SEAL SHALL HAVE A STATIONARY CERAMIC SEAT AND CARBON ROTATING SURFACE WITH THE FACES PRECISION LAPPED AND HELD IN POSITION BY A STAINLESS STEEL SPRING.

TANK & INTEGRAL ACCESSWAY: (MODELS 2012 & 2014) HIGH DENSITY POLYETHYLENE CONSTRUCTION. THE TANK SHALL BE MADE OF ROTATIONALLY MOLDED HIGH DENSITY POLYETHYLENE, WITH A MELT INDEX OF 2.0 GRAMS/10 MINUTES OR LOWER TO ASSURE HIGH ENVIRONMENTAL STRESS CRACKING RESISTANCE. THE TANK SHALL HAVE A NOMINAL THICKNESS OF ½". ALL SEAMS CREATED DURING TANK CONSTRUCTION ARE TO BE THERMALLY WELDED AND FACTORY TESTED FOR LEAK TIGHTNESS. TANK WALL AND BOTTOM MUST WITHSTAND THE PRESSURE EXERTED BY SATURATED SOIL LOADING AT MAXIMUM BURIAL DEPTH. ALL STATION COMPONENTS MUST FUNCTION NORMALLY WHEN EXPOSED TO MAXIMUM EXTERNAL SOIL AND HYDROSTATIC PRESSURE. THE TANK SHALL BE FURNISHED WITH ONE EPDM GROMMET (SDR 35 OR SDR 40) FITTING TO ACCEPT A 4.50" OD DWV PIPE. TANK CAPACITIES SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS. THE ACCESSWAY SHALL BE AN INTEGRAL EXTENSION OF THE WET WELL ASSEMBLY AND INCLUDE A LOCKABLE COVER ASSEMBLY PROVIDING LOW PROFILE MOUNTING AND WATERTIGHT CAPABILITY. ACCESSWAY DESIGN AND CONSTRUCTION SHALL FACILITATE FIELD ADJUSTMENT OF STATION HEIGHT IN INCREMENTS OF 4" OR LESS WITHOUT THE USE OF ANY ADHESIVES OR SEALANTS REQUIRING CURE TIME BEFORE INSTALLATION CAN BE COMPLETED. THE STATIONS SHALL HAVE ALL NECESSARY PENETRATIONS MOLDED IN AND FACTORY SEALED. NO FIELD PENETRATIONS SHALL BE ACCEPTABLE. ALL DISCHARGE PIPING SHALL BE CONSTRUCTED OF 304 SERIES STAINLESS STEEL AND TERMINATE OUTSIDE THE ACCESSWAY BULKHEAD WITH A STAINLESS STEEL BALL VALVE RATED FOR 200 PSI WOG. THE BULKHEAD PENETRATION SHALL BE FACTORY INSTALLED AND WARRANTED BY THE MANUFACTURER TO BE WATERTIGHT. THE ACCESSWAY SHALL INCLUDE A SINGLE NEMA 6 ELECTRICAL QUICK DISCONNECT FOR ALL POWER AND CONTROL FUNCTIONS, FACTORY INSTALLED WITH ACCESSWAY PENETRATIONS WARRANTED BY THE MANUFACTURER TO BE WATERTIGHT. THE ACCESSWAY SHALL ALSO INCLUDE A 2 INCH PVC VENT TO PREVENT SEWAGE GASES FROM ACCUMULATING IN THE TANK.

CHECK VALVE: THE PUMP DISCHARGE SHALL BE EQUIPPED WITH A FACTORY INSTALLED, GRAVITY OPERATED, FLAPPER-TYPE INTEGRAL CHECK VALVE BUILT INTO THE STAINLESS STEEL DISCHARGE PIPING. THE CHECK VALVE WILL PROVIDE A FULL-PORTED PASSAGEWAY WHEN OPEN, AND SHALL INTRODUCE A FRICTION LOSS OF LESS THAN 6 INCHES OF WATER AT MAXIMUM RATED FLOW. WORKING PARTS WILL BE MADE OF A 300 SERIES STAINLESS STEEL AND FABRIC REINFORCED SYNTHETIC ELASTOMER TO ENSURE CORROSION RESISTANCE, DIMENSIONAL STABILITY, AND FATIQUE STRENGTH. A NON-METALLIC HINGE SHALL BE AN INTEGRAL PART OF THE FLAPPER ASSEMBLY PROVIDING A MAXIMUM DEGREE OF FREEDOM TO ASSURE SEATING EVEN AT A VERY LOW BACK PRESSURE. THE VALVE BODY SHALL BE INJECTION MOLDED PART MADE OF GLASS FILLED PVC. EACH GRINDER PUMP STATION SHALL ALSO INCLUDE ONE SEPARATE CHECK VALVE FOR INSTALLATION IN THE 1 ¼" SERVICE LATERAL BETWEEN THE GRINDER PUMP STATION AND THE SEWER MAIN, PREFERABLY NEXT TO THE CURB STOP.

CORE UNIT: THE GRINDER PUMP STATION SHALL HAVE CARTRIDGE TYPE EASILY REMOVABLE CORE ASSEMBLIES CONTAINING PUMP, MOTOR, GRINDER, ALL MOTOR CONTROLS, CHECK VALVE, ANTI-SIPHON VALVE, ELECTRICAL QUICK DISCONNECT AND WIRING. THE WATERTIGHT INTEGRITY OF EACH CORE UNIT, SHALL BE ESTABLISHED BY 100% FACTORY TEST AT A MINIMUM OF 5 PSIG.

CONTROLS: ALL NECESSARY CONTROLS SHALL BE LOCATED IN THE TOP HOUSING OF THE CORE UNIT. THE TOP HOUSING WILL BE ATTACHED WITH STAINLESS STEEL FASTENERS.
NON-FOULING WASTE WATER LEVEL DETECTION FOR CONTROLLING PUMP OPERATION SHALL BE ACCOMPLISHED BY MONITORING THE PRESSURE CHANGES IN AN INTEGRAL AIR-BELL LEVEL SENSOR CONNECTED TO A PRESSURE SWITCH. THE LEVEL DETECTION DEVICE SHALL HAVE NO MOVING PARTS IN DIRECT CONTACT WITH THE WASTE WATER. HIGH-LEVEL SENSING WILL BE ACCOMPLISHED IN A MANNER DETAILED ABOVE BY A SEPARATE AIR-BELL SENSOR AND PRESSURE SWITCH OF THE SAME TYPE. TO ASSURE RELIABLE OPERATION OF THE PRESSURE SENSITIVE SWITCHES, EACH CORE SHALL BE EQUIPPED WITH A BREATHER ASSEMBLY, COMPLETE WITH A SUITABLE MEANS TO PREVENT ACCIDENTAL ENTRY OF WATER INTO THE MOTOR COMPARTMENT. THE GRINDER PUMPER WILL BE FURNISHED WITH A LENGTH OF 6 CONDUCTOR 14 GAUGE, TYPE SJOW CABLE, PRE-WIRED AND WATERTIGHT TO MEET UL REQUIREMENTS.

ALARM/DISCONNECT PANEL: EACH GRINDER PUMP STATION SHALL INCLUDE A NEMA 3R, UL LISTED ALARM/DISCONNECT PANEL SUITABLE FOR A WALL OR POLE MOUNTING. THE NEMA 3R ENCLOSURE SHALL BE MANUFACTURED OF THERMOPLASTIC TO ASSURE CORROSION RESISTANCE. THE ENCLOSURE SHALL INCLUDE A HINGED, PAD LOCKABLE COVER, SECURED DEAD FRONT AND COMPONENT KNOCKOUTS. THE ENCLOSURE SHALL NOT EXCEED 7.5"W x 8.75"H x 3.75"D. FOR EACH CORE, THE PANEL SHALL CONTAIN ONE (1) -15 AMP, DOUBLE POLE CIRCUIT BREAKER FOR THE POWER CIRCUIT AND ONE (1) 15 AMP SINGLE POLE CIRCUIT BREAKER FOR THE ALARM CIRCUIT. THE PANEL SHALL CONTAIN TERMINAL BLOCKS, INTEGRAL POWER BUS, PUSH TO RUN FEATURE AND A COMPLETE ALARM CIRCUIT. THE ALARM/DISCONNECT PANEL SHALL INCLUDE THE FOLLOWING FEATURES: AUDIO & VISUAL ALARM, PUSH TO RUN SWITCH, AND HIGH LEVEL (REDUNDANT) PUMP STARTING CONTROL. THE ALARM SEQUENCE IS TO BE AS FOLLOWS:

1. WHEN LIQUID LEVEL IN THE SEWAGE WETWELL RISES ABOVE THE ALARM LEVEL, VISUAL AND AUDIO ALARMS WILL BE ACTIVATED. THE CONTACTS ON THE ALARM PRESSURE SWITCH WILL CLOSE. THE REDUNDANT PUMP STARTING SYSTEM WILL BE ENERGIZED.
2. THE AUDIO ALARM MAY BE SILENCED BY MEANS OF THE EXTERNALLY MOUNTED, PUSH TO SILENCE BUTTON.
3. VISUAL ALARM REMAINS ILLUMINATED UNTIL THE SEWAGE LEVEL IN THE WET-WELL DROPS BELOW THE "OFF" SETTING OF THE ALARM PRESSURE SWITCH.

THE VISUAL ALARM LAMP SHALL BE INSIDE A RED FLUTED LENS AT LEAST 2-5/8" IN DIAMETER AND 1-11/16" IN HEIGHT. VISUAL ALARM SHALL BE MOUNTED TO THE TOP OF THE ENCLOSURE IN SUCH A MANNER AS TO MAINTAIN NEMA 3R RATING. FOR DUPLEX UNITS, IN ADDITION TO THE ABOVE, TWO HIGH LEVEL INDICATOR LIGHTS SHALL BE MOUNTED BEHIND THE ACCESS COVER. DURING A HIGH LEVEL ALARM CONDITION THE APPROPRIATE LIGHT WILL ILLUMINATE TO INDICATE WHICH PUMP CORE REQUIRES SERVICING. THE AUDIO ALARM SHALL BE A PRINTED CIRCUIT BOARD IN CONJUNCTION WITH AN 86 DB BUZZER WITH QUICK MOUNTING TERMINAL STRIP MOUNTED IN THE INTERIOR OF THE ENCLOSURE. THE AUDIO ALARM SHALL BE CAPABLE OF BEING DEACTIVATED BY THE DEPRESSING A PUSH-TYPE SWITCH IS ENCAPSULATED IN A WEATHERPROOF SILICONE BOOT AND MOUNTED ON THE BOTTOM OF THE ENCLOSURE. THE ENTIRE ALARM/DISCONNECT PANEL AS MANUFACTURED, SHALL BE LISTED BY UNDERWRITERS LABORATORIES, INC.

SERVICEABILITY: THE GRINDER PUMP CORE UNIT SHALL HAVE TWO LIFTING HOOKS COMPLETE WITH NYLON LIFT-OUT HARNESS CONNECTED TO ITS TOP HOUSING TO FACILITATE EASY CORE REMOVAL WHEN NECESSARY. ALL MECHANICAL AND ELECTRICAL CONNECTIONS MUST PROVIDE EASY DISC-CONNECT ACCESSIBILITY FOR CORE UNIT REMOVAL AND INSTALLATION. A PUSH TO RUN FEATURE WILL BE PROVIDED FOR FIELD TROUBLE SHOOTING. ALL MOTOR CONTROL COMPONENTS SHALL BE MOUNTED ON A READILY REPLACEABLE BRACKET FOR EASE OF FIELD SERVICE.

OHSA CONFINED SPACE: ALL MAINTENANCE TASKS FOR THE GRINDER PUMP STATION MUST BE POSSIBLE WITHOUT ENTRY OF THE GRINDER PUMP STATION (AS PER OHSA 1910.146 PERMIT-REQUIRED CONFINED SPACES). "ENTRY MEANS THE ACTION BY WHICH A PERSON PASSES THROUGH AN OPENING INTO A PERMIT-REQUIRED CONFINED SPACE. ENTRY INCLUDES ENSUING WORK ACTIVITIES IN THAT SPACE AND IS CONSIDERED TO HAVE OCCURRED AS SOON AS ANY PART OF THE ENTRANT'S BODY BREAKS THE PLANE OF AN OPENING INTO THE SPACE."

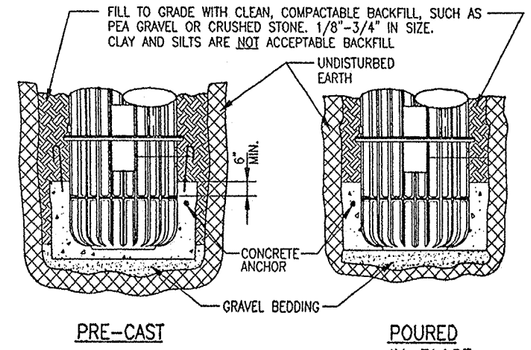
SAFETY: THE GRINDER PUMP SHALL BE FREE FROM ELECTRICAL AND FIRE HAZARDS AS REQUIRED IN A RESIDENTIAL ENVIRONMENT. AS EVIDENCE OF COMPLIANCE WITH THIS REQUIREMENT, THE COMPLETELY ASSEMBLED AND WIRED GRINDER PUMP STATION SHALL BE LISTED BY UNDERWRITERS LABORATORIES, INC., TO BE SAFE AND APPROPRIATE FOR THE INTENDED USE. THE GRINDER PUMP SHALL MEET ACCEPTED STANDARDS FOR PLUMBING EQUIPMENT FOR USE IN OR NEAR RESIDENCES, SHALL BE FROM NOISE, ODOR, OR HEALTH HAZARDS, AND SHALL HAVE BEEN TESTED BY AN INDEPENDENT LABORATORY TO CERTIFY ITS CAPABILITY TO PERFORM AS SPECIFIED IN EITHER INDIVIDUAL OR LOW PRESSURE SEWER SYSTEM APPLICATIONS. AS EVIDENCE OF COMPLIANCE WITH THIS REQUIREMENT, THE GRINDER PUMP SHALL BEAR THE SEAL OF NSF INTERNATIONAL.

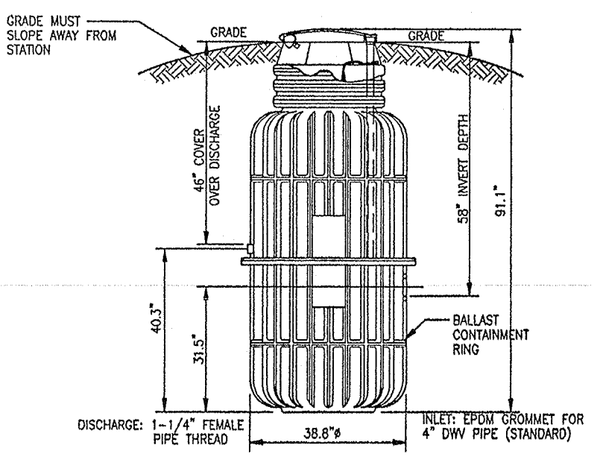
3.0 EXECUTION

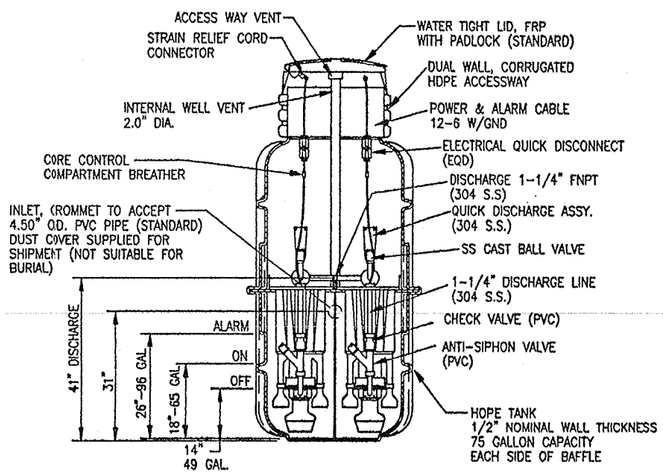
FACTORY TEST: EACH GRINDER PUMP SHALL BE SUBMERGED AND OPERATED FOR 5 MINUTES (MINIMUM). INCLUDED IN THIS PROCEDURE WILL BE THE TESTING OF ALL ANCILLARY COMPONENTS SUCH AS, THE ANTI-SIPHON VALVE, CHECK VALVE, DISCHARGE LINE, LEVEL SENSORS AND EACH UNIT'S DEDICATED CONTROLS. ALL FACTORY TESTS SHALL INCORPORATE EACH OF THE ABOVE LISTED ITEMS. ACTUAL APPURTENANCES AND CONTROLS WHICH WILL BE INSTALLED IN THE FIELD, SHALL BE PARTICULAR TO THE TESTED PUMP ONLY. A COMMON SET OF APPURTENANCES AND CONTROLS FOR ALL PUMPS WILL NOT BE ACCEPTABLE. CERTIFIED TEST RESULTS SHALL BE AVAILABLE UPON REQUEST SHOWING THE OPERATION OF EACH GRINDER PUMP AT TWO (2) DIFFERENT POINTS ON IT'S CURVE, WITH THE MAXIMUM PRESSURE NO LESS THAN 60 PSI. THE ENGINEER RESERVES THE RIGHT TO INSPECT SUCH TESTING PROCEDURES WITH REPRESENTATIVES OF THE OWNER, AT THE GRINDER PUMP MANUFACTURER'S FACILITY. ALL COMPLETED STATIONS SHALL BE FACTORY LEAK TESTED TO ASSURE THE INTEGRITY OF ALL JOINTS, SEAMS AND PENETRATIONS. ALL NECESSARY PENETRATIONS SUCH AS INLETS, DISCHARGE FITTINGS AND CABLE CONNECTORS SHALL BE INCLUDED IN THIS TEST ALONG WITH THEIR RESPECTIVE SEALING MEANS (GROMMETS, GASKET ETC.).

DELIVERY: ALL GRINDER PUMP UNITS WILL BE DELIVERED TO THE JOB SITE, 100% COMPLETELY ASSEMBLED, INCLUDING TESTING, READY FOR INSTALLATION. GRINDER PUMP UNITS WILL BE INDIVIDUALLY MOUNTED ON WOODEN PALLETS.

INSTALLATION: EARTH EXCAVATION AND BACKFILL ARE SPECIFIED UNDER SITE WORK, BUT ARE ALSO TO BE DONE AS A PART OF THE WORK UNDER THIS SECTION, INCLUDING ANY NECESSARY SHEETING AND BRACING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HANDLING GROUND WATER TO PROVIDE A FIRM, DRY SUBGRADE FOR THE STRUCTURE, AND SHALL GUARD AGAINST FLOTATION OR OTHER DAMAGE RESULTING FROM GENERAL WATER OR FLOODING. THE GRINDER PUMP STATIONS SHALL NOT BE SET INTO THE EXCAVATION UNTIL THE INSTALLATION PROCEDURES AND EXCAVATION HAVE BEEN APPROVED BY THE ENGINEER. REMOVE PACKING MATERIAL. USERS INSTRUCTIONS MUST BE GIVEN TO THE OWNER. HARDWARE SUPPLIED WITH THE UNIT, IF REQUIRED, WILL BE USED AT INSTALLATION. THE BASIN WILL BE SUPPLIED WITH A STANDARD 4" INLET GROMMET (4.50" OD) FOR CONNECTING THE INCOMING SEWER LINE. APPROPRIATE INLET PIPING MUST BE USED. THE BASIN MAY NOT BE DROPPED, ROLLED OR LAID ON ITS SIDE FOR ANY REASON. INSTALLATION SHALL BE ACCOMPLISHED SO THAT 1" TO 4" OF ACCESSWAY, BELOW THE BOTTOM OF THE LID, EXTENDS ABOVE THE FINISHED GRADE LINE. THE FINISHED GRADE SHALL SLOPE AWAY FROM THE UNIT. THE DIAMETER OF THE HOLE MUST BE LARGE ENOUGH TO ALLOW FOR THE CONCRETE ANCHOR. A 6" INCH (MINIMUM) LAYER OF NATURALLY ROUNDED AGGREGATE, CLEAN AND FREE FLOWING, WITH PARTICLE SIZE OF NOT LESS THAN 1/8" OR MORE THAN 3/4" SHALL BE USED AS BEDDING MATERIAL UNDER EACH UNIT. A CONCRETE ANTI-FLOTATION COLLAR, AS DETAILED ON THE DRAWINGS, AND SIZED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS, SHALL BE REQUIRED AND SHALL BE PRE-CAST TO THE GRINDER PUMP OR POURED IN PLACE. EACH GRINDER PUMP STATION WITH ITS PRECAST ANTI-FLOTATION COLLAR SHALL HAVE A MINIMUM OF THREE (3) LIFTING EYES FOR LOADING AND UNLOADING PURPOSES. THE UNIT SHALL BE LEVELED, AND FILLED WITH WATER, TO THE BOTTOM OF THE INLET, TO HELP PREVENT THE UNIT FROM SHIFTING WHILE THE CONCRETE IS BEING POURED. THE CONCRETE MUST BE MANUALLY VIBRATED TO ENSURE THERE ARE NO VOIDS. IF IT IS NECESSARY TO POUR THE CONCRETE TO A LEVEL HIGHER THAN THE INLET PIPING, AN 8" SLEEVE IS REQUIRED OVER THE INLET PRIOR TO THE CONCRETE BEING POURED. THE CONTRACTOR WILL PROVIDE AND INSTALL A FOUR (4) FOOT PIECE OF FOUR INCH SCH. 40 PVC PIPE WITH WATER TIGHT CAP, TO STUB-OUT THE INLET FOR THE PROPERTY OWNERS' INSTALLATION CONTRACTOR, AS DEPICTED ON THE CONTRACT DRAWINGS. THE ELECTRICAL ENCLOSURE SHALL BE FURNISHED, INSTALLED AND WIRED TO THE GRINDER PUMP STATION BY THE CONTRACTOR. AN ALARM DEVICE IS REQUIRED ON EVERY INSTALLATION, THERE SHALL BE NO EXCEPTIONS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE ENGINEER TO COORDINATE WITH THE INDIVIDUAL PROPERTY OWNER(S) TO DETERMINE THE OPTIMUM LOCATION FOR THE "ALARM/DISCONNECT PANEL." THE CONTRACTOR SHALL MOUNT THE ALARM DEVICE IN A CONSPICUOUS LOCATION, AS PER NATIONAL AND LOCAL CODES. THE ALARM/DISCONNECT PANEL WILL BE CONNECTED TO THE GRINDER PUMP STATION BY A LENGTH OF SIX (6) CONDUCTOR 12 GAUGE TC TYPE CABLE AS SHOWN ON THE CONTRACT DRAWINGS. THE POWER AND ALARM CIRCUITS MUST BE ON SEPARATE POWER CIRCUITS.







SANITARY GRINDER PUMP STATION
NOT TO SCALE

ALABAMA PROFESSIONAL ENGINEER REGISTERED NO. 12772 1/23/2003 LAND SURVEYOR T. R. ALLEN

wassweiler ARCHITECT 334 221 9736

Revisions	Date		

VA REGIONAL OFFICE
345 PERRY HILL ROAD
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Approved:	Drawing Title: GRINDER PUMP STATION DETAILS & NOTES	Project Title: PREFABRICATE METAL STORAGE BUILDING	Date: 1 Jan 2003
Approved:			Project No. 322VB3034
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