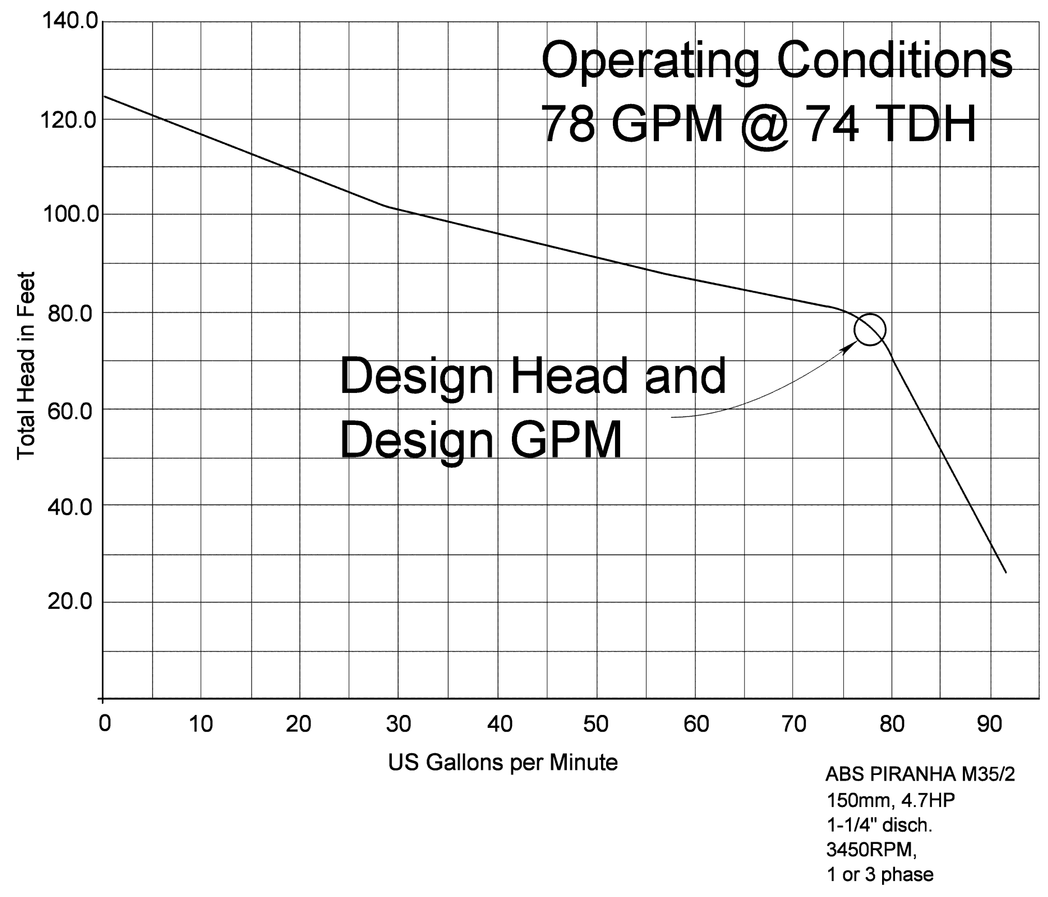
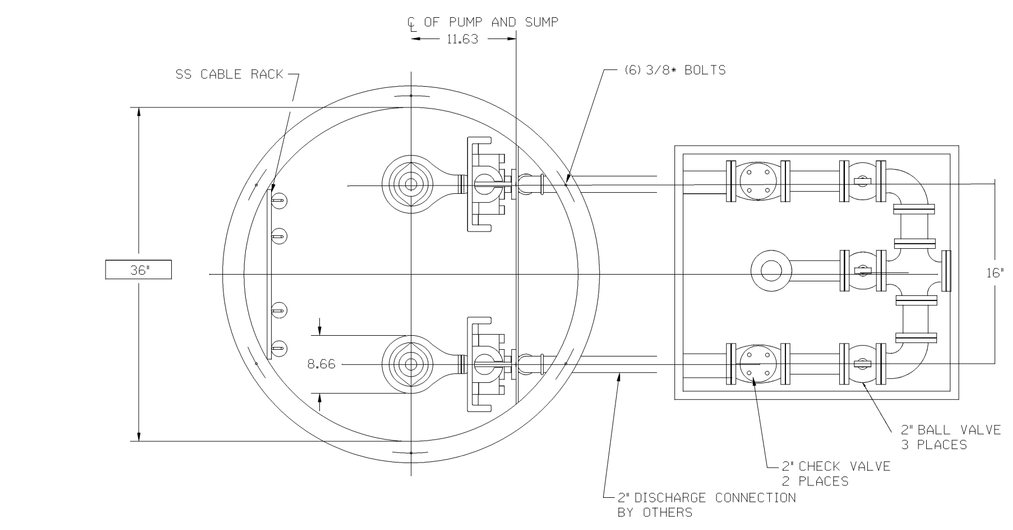
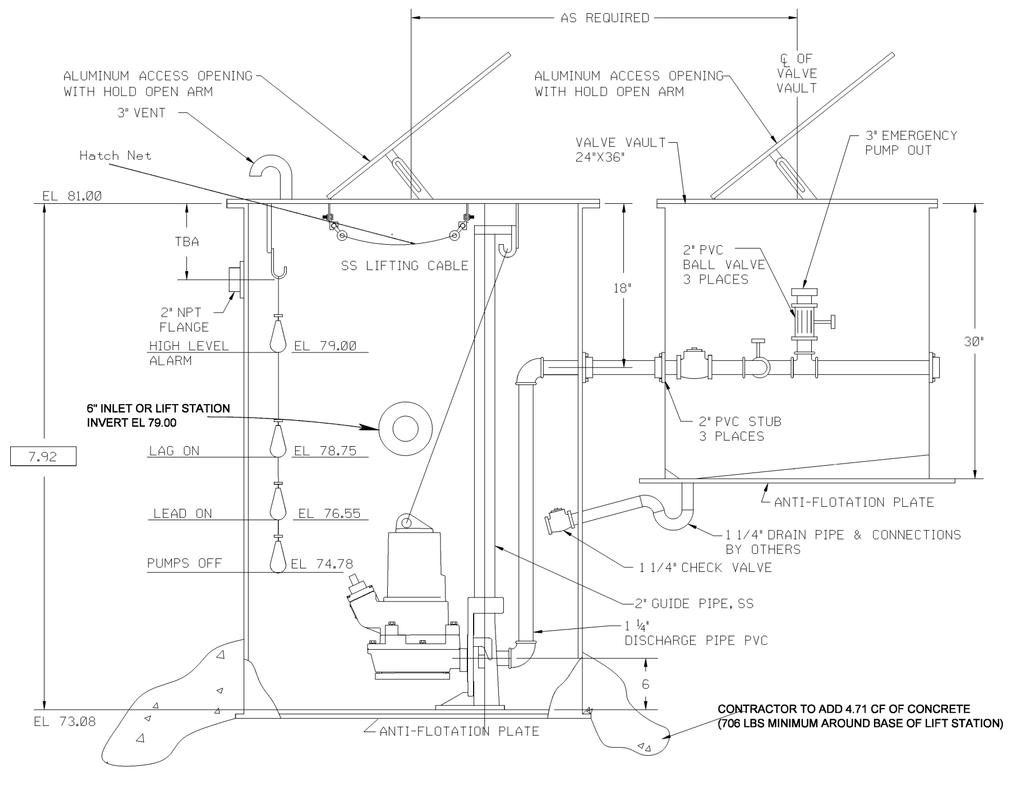






Furnish two ABS heavy duty submersible effluent pumps. Pumps shall be connected to the discharge piping when lowered onto the discharge connection by one 4" dia. 304SS rail. Pump shall be centrifugal type

Each pump shall be equiped with two seals. The lower shall be mechanical type with silicon carbide faces. The oil chamber shall be fitted with a moisture probe extending from the bottom of the motor housing into the oil chamber. The pump motor shall be air filled and have class "F" insulated moisture resistant windings. Bimetallic thermal switches shall be imbedded into each phase of the winding to sense high temperature. Float holder and upper guide rail brackets shall be made with 316SS only.

The fiberglass basin shall be manufactured from commercial grade polyster resin. The complete wet well shall have a dynamic loading of 16,000ft-lbs and shall not deflect vertically downward more than a 1/4" at the point of load application when loaded to 24,000lbs.
The fiberglass valve vault shall be 48"round x14' deep and meet the requirements for incindental traffic H-10 loading as established by ASSHTO. The compression strength shall be at least 11,000psi.

Float switches shall be UL listed type "S-RotoFloat" manufactured by Anchor Scientific, Inc. with 30 feet of STO PVC cable.

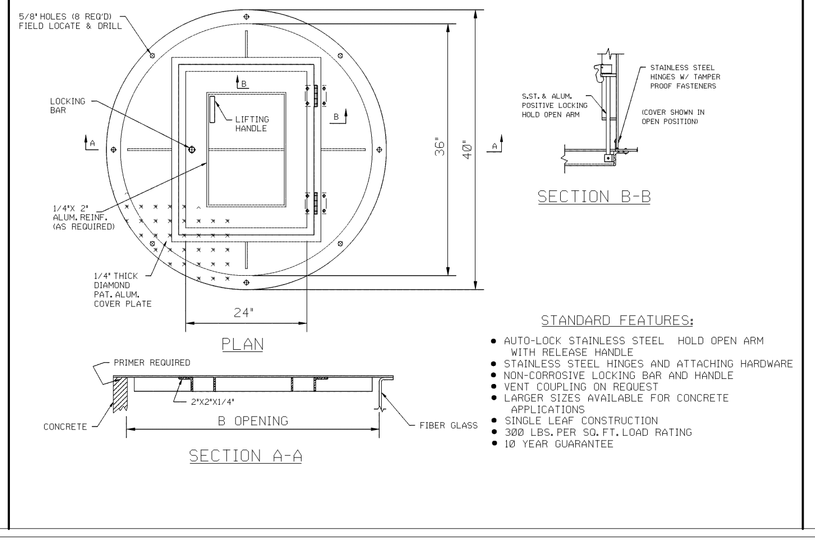
Pump Model:ABS PIRANHA M35/2 Impeller Dia:6"

No. Pumps: 2 Motor HP: 4.7

Discharge: 1- ¼ " RPM: 3450

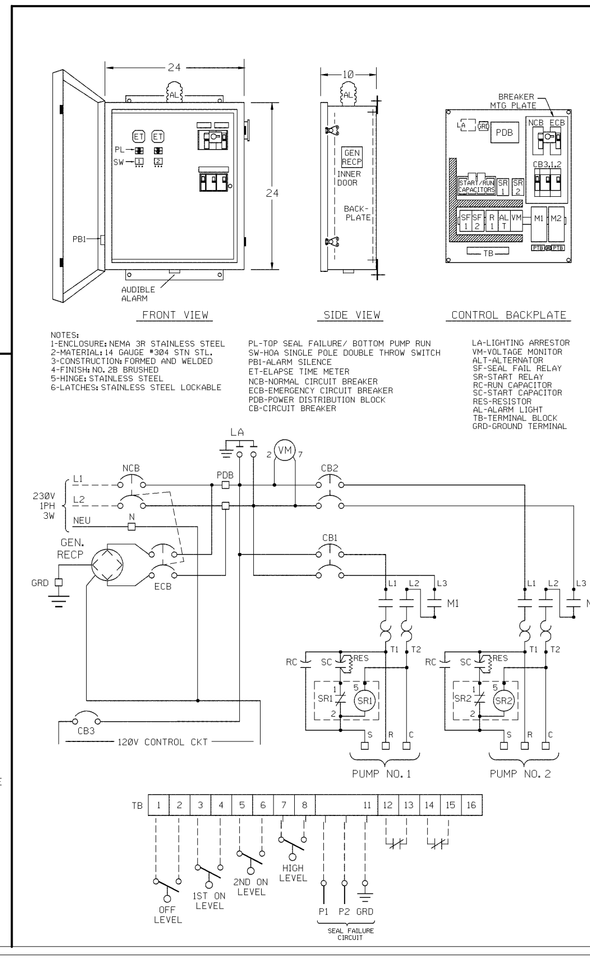
Design Flow: 78 GPM Voltage: 230

Design TDH: 74 FT Phase: 3



STANDARD FEATURES:

- AUTO-LOCK STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- NON-CORROSIVE LOCKING BAR AND HANDLE
- VENT COUPLING ON REQUEST
- LARGER SIZES AVAILABLE FOR CONCRETE APPLICATIONS
- SINGLE LEAF CONSTRUCTION
- 300 LBS. PER SQ. FT. LOAD RATING
- 10 YEAR GUARANTEE



FORCE MAIN NOTES:

1.) ALL PIPING SHALL HAVE A MINIMUM OF 36" COVER FROM TOP OF PIPE.

2.) PIPE SHALL BE SDR25 UNLESS OTHERWISE NOTED.

3.) CONNECTIONS ARE TO BE RUBBER COMPRESSION RING, THREADED OR SOLVENT RING

4.) INSTALL A #14 GA. COPPER WIRE, ATTACHED TO PIPE BY ADEQUATE ADHESIVE.

5.) ALL SEWER FORCE MAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS.

6.) WHERE WATER & SANITARY SEWER FORCE MAINS CROSS WITH LESS THAN 18" VERTICAL CLEARANCE OR THE FORCE MAIN IS ABOVE THE WATER MAIN, THE SANITARY SEWER WILL BE 20 FEET OF EITHER:
   A) DUCTILE IRON PIPE, CENTERED ON POINT OF CROSSING
   B) CONCRETE VITRIFIED CLAY; OR
   C) PVC PIPE UPGRADED TO WATER MAIN STANDARDS AND PRESSURE TESTED.

SEWER SYSTEM NOTES:

1.) ALL SANITARY SEWER COLLECTION/TRANSMISSION CONSTRUCTION SHALL BE IN ACCORDANCE WITH RULE 62-604 OF THE FLORIDA ADMINISTRATIVE CODE.

2.) NEW PUMP STATIONS SHALL BE ENCLOSED WITH A FENCE OR OTHER SECURITY MEASURE TO KEEP ANIMALS AND UNAUTHORIZED PERSONS FROM HAVING ACCESS TO THE FACILITY.

3.) ALL SANITARY SEWER PIPING SHALL BE PVC MEETING ASTM DESIGNATION D-3034 SDR35 SPECS. AND BE 8" MINIMUM SIZE BETWEEN MANHOLES.

4.) ALL CONNECTIONS ARE TO BE RUBBER COMPRESSION RING, THREADED OR SOLVENT WELD.

5.) PROVIDE A # 10 GA. COPPER WIRE, ATTACHED TO THE PIPE BY ADEQUATE ADHESIVE.

6.) PROVIDE METALIZED IDENTIFICATION TAPE, 4 MIL MINIMUM THICKNESS, WITH 1/2 MIL METALLIC FOIL CORE, 3" WIDE, INSTALLED PARALLEL WITH PIPE 18" ABOVE & 12" BELOW FINAL GRADE.

7.) DISSIMILAR MATERIALS SHALL BE JOINED USING SUITABLE COUPLINGS WHICH COMPLY WITH CURRENT ASTM SPECIFICATIONS.

8.) SEWER PIPES AND FORCE MAINS SHALL CROSS BELOW WATER PIPES UNLESS THERE IS NO ALTERNATIVE.

9.) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE - TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM - TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE, HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OUTSIDE OF THE OTHER PIPELINE.
AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE - TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610.

10.) SANITARY SEWER MANHOLES SHALL BE PRECAST CONSTRUCTION IN ACCORDANCE WITH ASTM C-478 SPECS, WITH PREFORMED FLEXIBLE JOINT SEAL, RAMNECK OR EQUAL, MIN. WALL THICKNESS SHALL BE 8". INTERIOR SURFACES TO HAVE TWO COTS OF KOPPERS BITUMASTIC 300M OR APPROVED EQUAL APPLIED AT THE RATE OF 120 SqFt. PER GALLON PER COAT MINIMUM, EXTERIOR SURFACES TO HAVE TWO COATS KOPPERS BITUMASTIC BLACK SOLUTION, OR APPROVED EQUAL, APPLIED AT THE RATE OF 375 Sq.Ft. PER GALLON PER COAT. SURFACE PREP & PAINT APPLICATION TO COMPLY WITH MANUFACTURERS RECOMMENDATION.

11.) SANITARY SEWER MANHOLES FRAMES AND COVERS SHALL BE GRAY CAST IRON, CONFORMING TO ASTM DESIGNATION A-48, CLASS 30 AND BE U.S. FOUNDARY MODEL 420-C OR APPROVED EQUAL.

12.) ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.

13.) TRENCHES SHALL BE BACK FILLED WITH CLEAN GRANULAR MATERIAL IN MAX. 1' LIFTS WITH A MINIMUM COMPACTION OF 98 PERCENT (AASHTO-T180) IN PAVED AREAS AND 90 PERCENT IN UNPAVED AREAS.

14.) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET, AND TO FURNISH COPIES OF THE REPORTS TO THE ENGINEERING DEPARTMENT.

15.) PRIOR TO PLACING IN SERVICE, MANHOLES SHALL BE INSPECTED AND TESTED FOR WATER TIGHTNESS OR DAMAGE. AIR TESTING SHALL CONFORM TO THE PROCEDURES DESCRIBED IN ASTM C-1244.

16.) ALL FLEXIBLE PIPE SHALL BE TESTED FOR DEFLECTION AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS TO PERMIT STABILIZATION. REQUIREMENTS FOR TESTING ARE;
   1) NO PIPE SHAL EXCEED A DEFLECTION OF 5%
   2) USING A RIGID BALL OR MANDREL FOR THE TEST WITH A DIAMETER OF NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE, DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATION, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS MANUFACTURED.
   3) TEST IS PERFORMED WITHOUT MECHANICAL PULLING DEVICES.

17.) OVERALL SYSTEM LEAKAGE SHALL NOT EXCEED 200 GALLONS PER INCH OF PIPE PER MILE PER DAY. THE CONTRACTOR SHALL PERFORM INFILTRATION OR EXFILTRATION LEAKAGE TEST WITH A MINIMUM POSITIVE HEAD OF 12 FEET.

18.) PRESSURE TEST FORCE MAINS TO 150 PSI.

19.) ALL SEWER CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE CITY'S SPECIFICATIONS.

STATION NOTES:

1.) LIFT STATION SHALL BE EQUIPPED WITH A BATTERY BACKUP SYSTEM FOR ALARMS AND ALARM SYSTEMS. PART II C. [RSWF-45]

2.) AS AN ALTERNATE TO THE BATTERY BACKUP SYSTEM THE PUMP STATION ALARMS SHALL BE TELEMETERED TO THE HOME OF THE RESPONSIBLE PERSON IN CHARGE OF THE LIFT STATOIN DURING OFF-DUTY HOURS.

3.) PUMP MOTOR POWER CORDS WILL BE FLEXIBLE AND SERVICEABLE UNDER CONDITIONS OF EXTRA HARD USAGE AND MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE FOR FLEXIBLE CORDS IN WASTEWATER PUMP STATIONS.

4.) GROUND FAULT INTERRUPTON PROTECTION WILL BE USED TO DE-ENERGIZE THE CIRCUIT IN THE EVENT OF ANY FAILURE IN THE ELECTRICAL INTEGRITY OF THE CABLE.

5.) POWER CORD TERMINAL FITTINGS WILL BE CORROSION-RESISTANT AND CONSTRUCTED IN A MANNER TO PREVENT THE ENTRY OF MOISTURE INTO THE CABLE, PROVIDED WITH STRAIN RELIEF APPURTENANCES, AND DESIGNED TO FACILITATE FIELD CONNECTING.

6.) THE PUMP STATION WILL BE EQUIPPED WITH AN ALARM SYSTEM WHICH ACTIVATES IN CASES OF POWER FAILURE, SUMP PUMP FAILURE, UNAUTHORIZED ENTRY, OR ANY CASE OF PUMP STATION MALFUNCTION.

7.) SUITABLE DEVICES FOR MEASURING WASTEWATER FLOW WILL BE PROVIDED AT THE PUMP STATION. ELAPSED TIME METERS USED IN CONJUNCTION WITH ANNUAL PUMPING RATE TESTS MAY BE ACCEPTABLE FOR PUMP STATIONS WITH A DESIGN PEAK HOURLY FLOW UP TO 1200 GPM PROVIDED SUFFICIENT METERING IS CONFIGURED TO MEASURE THE DURATION OF INDIVIDUAL AND SIMULTANEOUS PUMP OPERATION.

8.) LIFT STATION WILL REMAIN UNDER PRIVATE OWNERSHIP AND MAINTENENCE.

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SHEET TITLE: FORCE MAIN DETAILS

PROJECT: GATEWAY CENTER FOR THE ARTS

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DATE: 12/21/07

SCALE: N/A

FILE NAME: FMDETAILS09.DGN

PROJECT NO.: 07-629

SHEET NO.: 8 OF 11