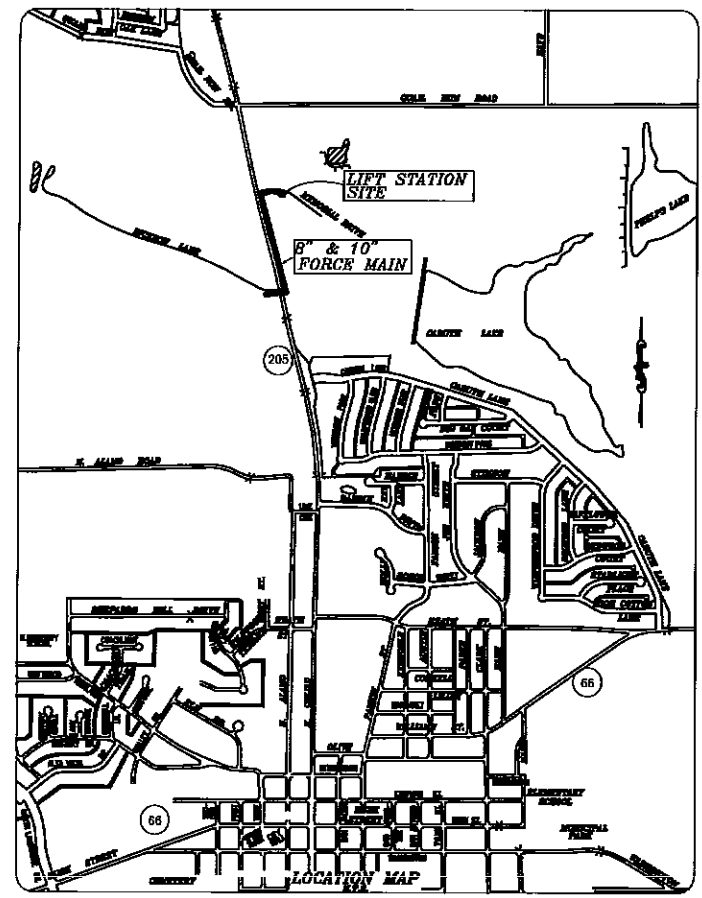
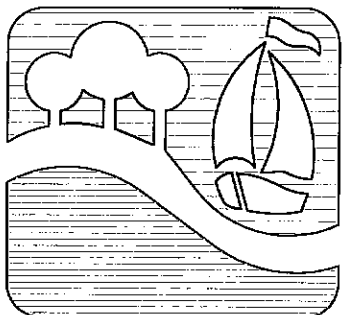


# QUAIL VALLEY RUN LIFT STATION & FORCE MAIN

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1. LIFT STATION DIMENSIONAL CONTROL PLAN
  2. LIFT STATION GRADING PLAN
  3. PUMP SPECIFICATIONS
  4. CONTROL PANEL & PROBE SPECIFICATIONS
  5. LIFT STATION DETAILS
  6. VALVE VAULT DETAIL
- FORCE MAIN PLAN & PROFILES
7. STA. 0+00 TO 9+00
  8. STA. 9+00 TO 18+00
  9. STA. 18+00 TO 21+2.37



OWNER :  
CONTINENTAL HOMES OF TEXAS  
621 WEST COLLEGE  
GRAPEVINE, TEXAS 76051  
817-481-7750

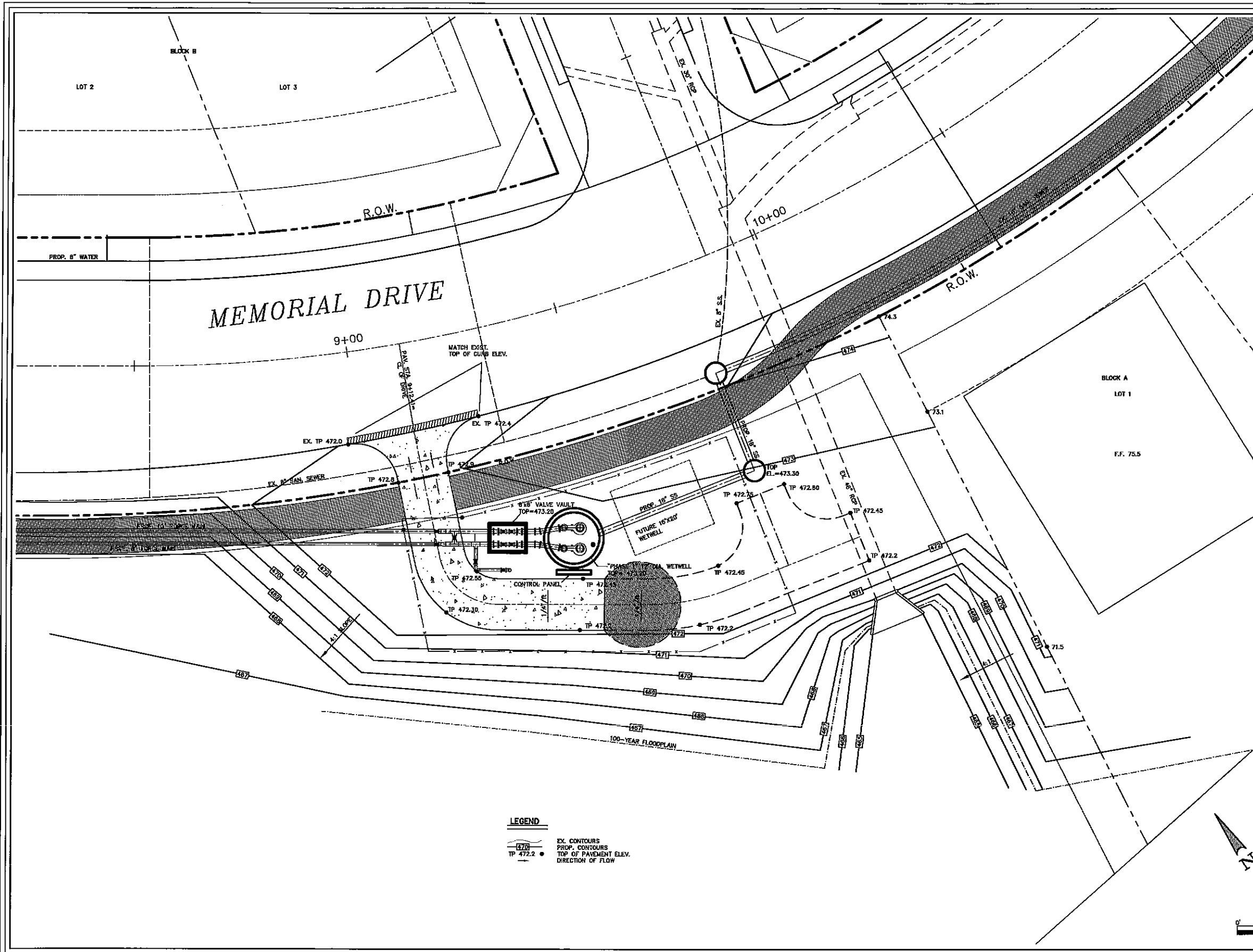
FEBRUARY 1, 2002

**Winkelmann & Associates, Inc.**

CONSULTING CIVIL ENGINEERS ■ SURVEYORS  
6750 HILLCREST PLAZA DRIVE, SUITE 100 (972) 490-7090  
DALLAS, TEXAS 75230 (972) 490-7099 FAX



PLOT TO 1"=10'



**LEGEND**  
 --- EX. CONTOURS  
 --- PROP. CONTOURS  
 ● TP 472.2 TOP OF PAVEMENT ELEV.  
 → DIRECTION OF FLOW

No.	DATE	REVISION	APPROVAL
1	02/01/2002	Issue for station layout per city comments	DFW

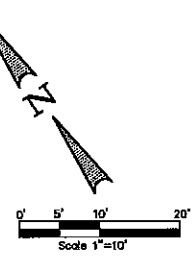
THESE CONSTRUCTION PLANS WERE PREPARED BY THE ENGINEER AND ARCHITECT SHOWN ON THESE PLANS. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THE BOARD OF PROFESSIONAL ENGINEERS AND ARCHITECTS OF THE STATE OF TEXAS. ENGINEER NO. 97446 ARCHITECT NO. 97446

**Winkelmann & Associates, Inc.**  
 CONSULTING CIVIL ENGINEERS & SURVEYORS  
 621 W. COLLAGE STREET  
 GRAPEVINE, TEXAS 76051  
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McCURRY SURVEY, ABSTRACT NO. 146  
 CITY OF ROCKWALL, TEXAS  
 ROCKWALL COUNTY, TEXAS  
 CONTINENTAL HOMES  
 621 W. COLLAGE STREET  
 GRAPEVINE, TEXAS 76051

**LIFT STATION GRADING PLAN**  
 QUAIL VALLEY RUN  
 CITY OF ROCKWALL, TEXAS

Scale: 1"=10'	Date: 02-01-02
Designed By: DFW	
Drawn By: JWB	
Checked By: DFW	
File: 32003po2.dwg	
Project No.: 32003.01(20)	



# PLOT TO 1" = 20'

## PHASE 1 PUMPS (2) - 6" CP-3127/433 Impeller/7.5 BHP

### REQUIREMENTS

Furnish and install 2 submersible non-clog wastewater pumps. Each pump shall be equipped with a 7.5 HP submersible electric motor connected for operation on 480 volts, 3 phase, 60 hertz, 7 wire service, with 40 feet submersible cable (SUBCAS) suitable for submersible pump applications. The power cable shall be sized according to NEC and IEC standards and have P-NSHA Approval. The pump shall be supplied with a mating cast iron 8 inch discharge connection and be capable of delivering 450 GPM at 33 TDH. Shut off head shall be 58 feet (minimum). Each pump shall be fitted with 25 feet of stainless steel lifting chain as specified by the manufacturer. The working load of the lifting system shall be 50% greater than the pump unit weight.

### PUMP DESIGN

The pump(s) shall be automatically and firmly connected to the discharge connection, guided by no less than two guide bars extending from the top of the stator to the discharge connection. There shall be no need for personnel to enter the well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal to metal water-tight contact. Sealing of the discharge interface with a diaphragm, O-ring or profile gasket will not be acceptable. No portion of the pump shall bear directly on the sump floor.

### PUMP CONSTRUCTION

Major pump components shall be of gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of flow holes or other irregularities. All exposed nuts or bolts shall be AISI type 304 stainless steel construction. All metal surfaces coming into contact with the pumpage, other than stainless steel or brass, shall be protected by a factory applied epoxy coating of epoxy dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump.

Sealing design shall incorporate metal-to-metal contact between machined surfaces. Critical mating surfaces where water-tight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Fittings will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific torque limit.

Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, gaskets or other devices shall be used.

### COOLING SYSTEM

Motors are sufficiently cooled by the surrounding environment or pumped media. A water jacket is not required.

### CABLE ENTRY SEAL

The cable entry seal design shall preclude specific torque requirements to insure a watertight and submersible seal. The cable entry shall consist of a single cylindrical elastomer grommet, flanked by washers, all having a close tolerance fit against the cable outside diameter and the entry inside diameter and compressed by the body containing a strain relief function, separate from the function of sealing the cable. The assembly shall provide ease of changing the cable when necessary using the same entry seal. The cable entry junction chamber and motor shall be separated by a stator lead sealing gland or terminal board, which shall isolate the interior from foreign material coming across through the pump top. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable.

### MOTOR

The pump motor shall be a NEMA B design, induction type with a squirrel cage rotor, shell type design, housed in an air filled, water-tight chamber. The stator windings shall be insulated with moisture resistant Class H insulation rated for 180°C (356°F). The stator shall be insulated by the blade impregnation method using Class H monomer-free polyester resin resulting in a wetting fill factor of at least 95%. The stator shall be heat-shrink fitted into the cast iron stator housing. The use of multiple step dip and bake-type stator insulation process is not acceptable. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is not acceptable. The motor shall be designed for continuous duty handling pumped media at 40°C (104°F) and capable of up to 15 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of cast aluminum. Thermal switches set to open at 125°C (260°F) shall be embedded in the stator lead cable to monitor the temperature of each phase winding. These thermal switches shall be used in conjunction with and supplemental to external motor overheat protection and shall be connected to the control panel. The junction chamber containing the terminal board, shall be hermetically sealed from the motor by an elastomer compression seal. Connection between the cable conductors and stator leads shall be made with threaded compression type binding posts permanently affixed to a terminal board. The motor and the pump shall be protected by the same manufacturer.

The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of 1.15. The motor shall have a voltage tolerance of plus or minus 10%. The motor shall be designed for operation up to 40°C (104°F) ambient and with a temperature rise not to exceed 80°C. A performance chart shall be provided upon request showing curves for torque, current, power factor, input/output kW and efficiency. This chart shall also include data on starting and no-load characteristics.

The power cable shall be sized according to the NEC and IEC standards and shall be of sufficient length to reach the junction box without the need of any splices. The outer jacket of the cable shall be of resistant chloroprene rubber. The motor and cable shall be capable of continuous submersible underwater without loss of watertight integrity to a depth of 65 feet.

The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

### BEARINGS

The pump shaft shall rotate on two bearings. Motor bearings shall be permanently greased lubricated. The upper bearing shall be a single deep groove ball bearing. The lower bearing shall be a two row angular contact bearing to compensate for axial thrust and radial forces. Single row lower bearings are not acceptable.

### MECHANICAL SEAL

Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in an lubricant reservoir that hydrodynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating, corrosion resistant tungsten-carbide ring. The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary and one positively driven rotating, corrosion resistant tungsten-carbide seal ring. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment nor depend on direction of rotation for sealing. The position of both mechanical seals shall depend on the shaft. Mounting of the lower mechanical seal on the impeller hub will not be acceptable. For special applications, other seal face materials shall be available.

The following seal types shall not be considered acceptable nor equal to the dual independent seal specified: shaft seals without positively driven rotating members, or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces. No system requiring a pressure differential to offset pressure and to effect sealing shall be used.

Each pump shall be provided with an lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-lock seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. The motor shall be able to operate dry without damage while pumping under load.

Seal lubricant shall be FDA Approved, nontoxic.

### PUMP SHAFT

Pump and motor shaft shall be the same unit. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The pump shaft shall be AISI type 431 stainless steel.

If a shaft material of lower quality than 431 stainless steel is used, a shaft sleeve of 431 stainless steel is used to protect the shaft material. However, shaft sleeves only protect the shaft around the lower mechanical seal. No protection is provided for in the oil housing and above, therefore, the use of stainless steel sleeves will not be considered equal to stainless steel shafts.

### IMPELLER (for C - pumps)

The impeller(s) shall be of gray cast iron, Class 35B, dynamically balanced, double shrouded non-clogging design having a long throatlet without acute turns. The impeller(s) shall be capable of handling solids, fibrous materials, heavy sludge and other matter found in wastewater. When ever possible, a full vane, not vortex, impeller shall be used for maximum hydraulic efficiency, thus, reducing operating costs. Mass moment of inertia calculations shall be provided by the pump manufacturer upon request. Impeller(s) shall be retained with an Allen head bolt and shall be capable of passing a minimum 3 inch diameter solid. All impellers shall be coated with an epoxy dispersion zinc phosphate primer.

### WEAR RINGS (for C - pumps)

A wear ring system shall be used to provide efficient sealing between the volute and section inlet of the impeller. Each pump shall be equipped with a brass, or nitride rubber coated steel ring insert that is drive fitted to the volute inlet.

### VOLUTE (for C - pumps)

Pump volute(s) shall be single-piece gray cast iron, Class 35B, non-concentric design with smooth passages large enough to pass any solids that may enter the impeller. Minimum inlet and discharge size shall be as specified.

### IMPELLER (for N - pumps)

The impeller(s) shall be of gray cast iron, Class 35B, dynamically balanced, semi-open, multi-vane, back-swept, non-clog design. The impeller vane leading edges shall be mechanically seal-cleaned upon each rotation as they pass across a spiral groove located on the volute section which shall keep them clear of debris, maintaining an unobstructed leading edge. The impeller(s) vanes shall have screw-shaped leading edges that are bordered to R45 and shall be capable of handling solids, fibrous materials, heavy sludge and other matter found in waste water. The screw shape of the impeller inlet shall provide an inducing effect for the handling of sludge and rag-load wastewater. Impellers shall be locked to the shaft and shall be coated with epoxy resin primer.

### VOLUTE BOTTOM/INSERT RING (for N pumps)

The pump volute shall be of A48 Class 35B gray cast iron and shall have (a) integral spiral shaped cast groove(s) at the section of the volute. The internal volute bottom or insert ring shall provide effective sealing between the pump volute and the multi-vane, semi-open impeller. The sharp spiral groove(s) shall provide the shearing edge(s) across which each impeller vane leading edge shall scrape during its rotation in order to remain unobstructed. The clearance between the internal volute bottom and the impeller leading edges shall be adjustable.

### PROTECTION

All stators shall incorporate thermal switches in series to monitor the temperature of each phase winding. The thermal switches shall open at 125°C (260°F), stop the motor and activate an alarm.

A leakage sensor shall be available as an option to detect water in the stator chamber. The float leakage sensor (FLS) is a small float switch used to detect the presence of water in the stator chamber. When activated, the FLS will stop the motor and send an alarm both local and/or remote. USE OF VOLTAGE SENSITIVE SOLID STATE SENSORS AND TRIP TEMPERATURE ABOVE 125°C (260°F) SHALL NOT BE ALLOWED.

The thermal switches and FLS shall be connected to a Mini CAS (Control and Status) monitoring unit. The Mini CAS shall be designed to be mounted in any control panel.

Note: FLS not available in CZ/NZ configuration.

### MODIFICATIONS

1. Explosion-proof Pumps (X).
2. Warm Liquid Applications (WL).
3. Dry Pit Installations (DT).

Refer to the General Guide Specifications for additional information.

### MIX-FLUSH VALVE SPEC.

At least one pump in each sump shall be equipped with an automatically operating valve that will provide a mixing action within the sump at the start-up of the pumping cycle.

This valve shall be mounted directly on the pump volute and shall direct a portion of the pumpage into the sump to flush and re-suspend solids and grease by the turbulent action of its discharge. The turbulent action caused by the flow shall also provide some sump aeration benefits. The valve shall be mounted on the pump volute so that it can be removed from the sump along with the pump during normal and routine maintenance checks and shall be positioned on the volute to provide for non-clogging operation. The valve shall be equipped with an adjustable, wear-resistant discharge nozzle which shall be used to direct flow from the valve to optimize mixing action within the sump.

The valve shall not require any external power source or control to operate, neither electric nor pneumatic. The use of the external power source is not acceptable. The valve shall be suitable for use in Class I, Division 1 hazardous locations.

The valve shall open at the beginning of each pumping cycle and shall automatically close during pump operation after a pre-selected time of operation. The valve shall operate automatically by differential pressure across the valve and shall be actuated through a self-contained hydraulic system which uses an environmentally safe fluid. A method of adjusting the valve operating time shall be provided.

NO.	DATE	REVISION	APPROVAL
1	02/01/2002	Initial pump selection per city comments	DFW

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THE CITY OF ROCKWALL, TEXAS, ENGINEER NO. 87448

Winkelmann & Associates, Inc.  
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ROCKWALL, TEXAS 75087  
(972) 962-2888 FAX

MECHURRY SURVEY, ABSTRACT NO. 146  
CITY OF ROCKWALL, TEXAS  
ROCKWALL COUNTY, TEXAS  
CONTINENTAL HOMES  
QUAL VALLEY RUN  
SECTION 10, TOWNSHIP 10N, RANGE 15E  
GRAPENW, TEXAS 76081

Scale : NTS Date : 02-01-02  
Designed By : DFW  
Drawn By : JWS  
Checked By : DFW  
File : 3200201200  
Project No. : 3200201200

**SHEET**  
OF

**PUMP SPECIFICATIONS**  
**SANITARY SEWER LIFT STATION**  
**QUAL VALLEY RUN**  
**CITY OF ROCKWALL, TEXAS**

# PLOT TO 1"=20'

### 1.0 General:

- 1.1 The control system shall be designed to operate the required number of pumps specified on the drawing at the power characteristics shown on the plans.
- 1.2 The control function shall provide for the operation of the pumps under normal conditions, and shall alternate the pumps on each pump down cycle to equalize the run time. In the event the incoming flow exceeds the pumping capacity of the lead pump, subsequent pumps shall automatically start to handle the increased flow. As the flow decreases, the pumps shall shut off at the elevations as shown on the plans.
- 1.3 Each pump shall be protected by thermal switches embedded in the motor windings. In the event of an overtemperature condition, the pumps shall shut down and remain inactive until the motor housing cools off.
- 1.4 The control shall function as described below. The equipment listed below is a guide and does not relieve the supplier from supplying a system that will function as required.

### 2.0 Mechanical:

- 2.1 The enclosure shall be a NEMA rated enclosure of the material noted on the drawings. The enclosure shall be a wall mount type with a minimum depth of 8" sized to adequately house all the components. The door gasket shall be rubber composition with a retainer to ensure a positive weatherproof seal. The door shall open a minimum of 180 degrees. The enclosure shall be sized to accommodate components required for future 75HP pumps.
- 2.2 A polished aluminum dead front shall be mounted on a continuous stainless steel hinge and shall contain cutouts for mounted equipment and provide protection of personnel from live internal wiring. Cutouts for breaker handles shall be provided to allow operation of breakers without entering the compartment. All control switches, indicator pilot lights, exposed time meters, duplex receptacles and other operational devices shall be mounted on the external surface of the dead front. The dead front shall open a minimum of 150 degrees to allow access to equipment for maintenance. A 3/4" break shall be formed around the perimeter of the dead front to provide rigidity.
- 2.3 The back plate shall be manufactured of 12-gauge sheet steel and be finished with a primer coat and two [2] coats of baked on white enamel. All hardware mounted to the sub-panel shall be accomplished with machine thread topped holes. Sheet metal screws are not acceptable. All devices shall be permanently identified using approved nomenclature. Use of DYMID type labels is not acceptable.

### 3.0 Electrical:

- 3.1 The panel power distribution shall include all necessary components and be completely wired with stranded copper conductors rated at 90 degrees c. All conductor terminations shall be as recommended by the device manufacturer.
- 3.2 All circuit breakers shall be heavy-duty thermal magnetic or motor circuit protectors similar and equal to SQUARE D type IAL. Each motor breaker shall be adequately sized to meet the pump motor operating characteristics and shall have a minimum of 10,000 amps interrupting capacity for 230 VAC and 14,000 amps at 480 VAC. The control circuit and the duplex receptacles shall individually be controlled by heavy-duty breakers.
- 3.2.1 Circuit breakers shall be indicating type, providing "on-off-trip" positions of the operating handle. When the breaker is tripped automatically, the handle shall assume a middle position indicating "trip".
- 3.2.2 Thermal magnetic breakers shall be quick-make and quick-break on manual and automatic operation and have inverse time characteristics assured through the use of bimetallic tripping elements supplemented by a magnetic trip.
- 3.2.3 Breakers shall be designed so that an overload on one pole automatically trips and opens all legs. Field installed handle line shall not be acceptable.
- 3.3 Motor starters shall be open frame, across the line NEMA rated with individual overload protection in each leg. Motor starter contact and coil shall be replaceable from the front of the starter without removing from its mounted position. Overload factors shall be block type, utilizing melting alloy spindles, and shall have visual trip indication. Overload shall be sized for the full load ampere draw of the pumps. Definite purpose contactors, fractional size starters and horsepower rated contactors or relays shall not be acceptable.
- 3.4 Control transformers shall be provided to provide the 120 VAC and/or 24 VAC for control circuits. Transformers shall be fused on the primary and secondary circuits. The secondary shall be grounded.
- 3.5 A lightning-arrestor protector with fail-safe warning lights on each phase to indicate loss of protection on the individual phases shall be provided. The device shall be solid state with a response time of less than 5 nanoseconds with withstanding surge capacity of 8500 amperes. Unit shall be instant recovery, long life and have no holdover currents.
- 3.6 A line voltage rated, adjustable phase reactor shall be installed to sense low voltage, loss of power, reversed phasing and loss of a phase. Control circuit shall de-energize upon sensing any of the faults and shall automatically restore service upon return to normal power.
- 3.7 The electrical power supply to the lift station shall be sized to accommodate the future 75 HP pumps.
- 3.8 An external power breaker shall be installed capable of being connected to the portable generators operated by the City of Rockwall. The breaker shall be sized to accommodate the power required to operate the future 75 HP pumps.

### 4.0 Alarm System:

- 4.1 The alarm light shall be a weatherproof, shatterproof, red light fixture with a 40-watt bulb to indicate alarm conditions. The alarm light shall be turned on by the alarm level.
- 4.2 The alarm horn shall be mounted on the exterior of the cabinet. The alarm horn shall provide a signal of not less than 90dB at 10 feet. An alarm silence switch shall deactivate the alarm horn; however, the alarm light will flash until the alarm condition ceases to exist. At that time the alarm reset function will reset for normal operation.

### 5.0 CONTROL SYSTEM:

- 5.1 The controller shall provide multiple LED indicators to indicate pump operation, pump faults, attention sequence and alarm conditions.
- 5.2 The unit shall provide a RS232C and RS485/RS485 communication links for down loading of logged data for telemetry use.
- 5.2.1 All settings, parameters and controls will be fully accessible via the communications port or front keypad.
- 5.2.2 The units shall be capable of being networked on an RS485 twisted pair line so that a multiple number of units can be fully controlled and monitored.
- 5.2.3 The unit shall be capable of interfacing directly with a single iso-9000 radio or modem.
- 5.3 An integrated software package shall be supplied that will provide the system monitoring, pump logic and control, station protection and event logging. The software package shall be a modular suite of self-integrating building blocks that shall incorporate Modbus protocol and be compatible with the plant processing and pump controller requirements. The modular building blocks shall incorporate: (1) real time operator interface, (2) a historical data management and reporting function, (3) a maintenance management system that compile equipment information, schedules preventative maintenance, develops work orders, tracks inventory/purchasing and maintains a logbook by individual operators and technicians.

### 6.0 Ancillary Equipment:

- 6.1 A green run pilot indicator shall be mounted on the dead front door.
- 6.2 An elapsed time meter shall be mounted on the dead front door. The meter shall operate on 120 VAC, shall indicate in hours [6 digits] and tenths and shall be non-resettable.
- 6.3 The contractor shall provide a Souda (radio wave) unit to City of Rockwall requirements.

### 7.0 Miscellaneous:

- 7.1 A final as built drawing encapsulated in mylar shall be attached to the inside of the front door. A list of all legends shall be included.
- 7.2 All component parts in the control panel shall be permanently marked and identified as they are indicated on the drawing. Marking shall be on the back plate adjacent to the component. All control conductors shall be identified with wire numbers at each end as close as practical to the end of conductor.
- 7.3 All panels shall be tested to the power requirements as shown on the plans to assure proper operation of all the components. Each control function shall be activated to check for proper indication.
- 7.4 All equipment shall be guaranteed for a period of three (3) years from date of shipment. The guarantee is effective against all defects in workmanship and/or defective component. The warranty is limited to replacement or repair of the defective equipment.
- 7.5 The manufacturer shall be a UL 508 listed shop for industrial control systems and shall provide evidence of such on request from the engineer or using authority.

### FLOATS

- 1.1 The station shall be equipped with a liquid level sensor system, consisting of four floats and all associated cables and hardware.
- 1.2 For the City of Rockwall, the liquid level system shall be a Modcon 812 PLD for this station.

1	02/01/2002	Initial control panel submittals per city comments	DFW	APPROVAL
THE SEAL REPRESENTS AN ILLUSTRATION OF THE CITY OF ROCKWALL, TEXAS. THE SEAL WAS APPROVED BY THE CITY OF ROCKWALL, TEXAS, IN 1974.				
Winkelmänn & Associates, Inc. CONSULTING CIVIL ENGINEERS & SURVEYORS 627 W. COLLAGE STREET GRAPEVINE, TEXAS 75049 (972) 462-2288				

McCurry Survey, Abstract No. 146  
 CITY OF ROCKWALL, TEXAS  
 ROCKWALL COUNTY, TEXAS  
 CONTINENTAL HOMES  
 627 W. COLLAGE STREET  
 GRAPEVINE, TEXAS 75049

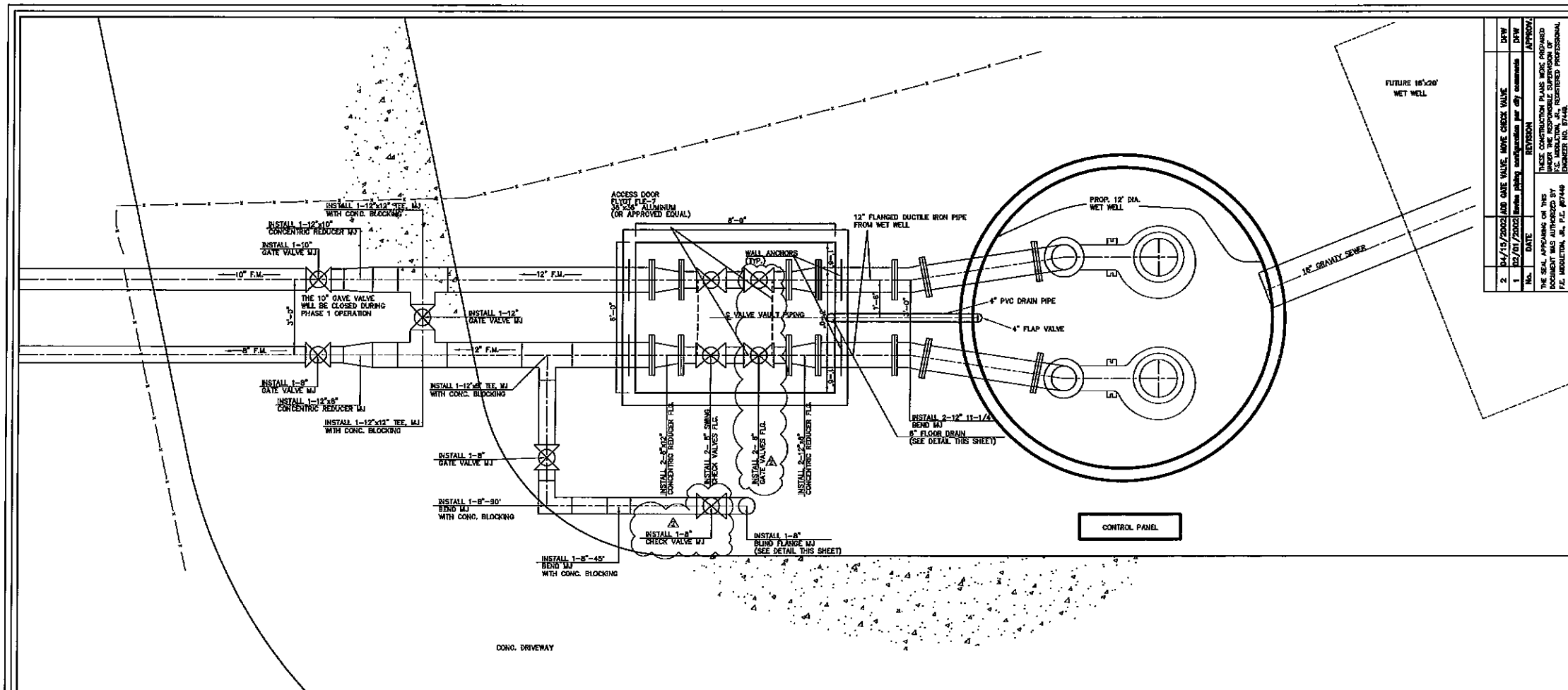
CONTROL PANEL AND FLOAT SPECIFICATIONS  
 SANITARY SEWER LIFT STATION  
 QUAIL VALLEY RUN  
 CITY OF ROCKWALL, TEXAS

Scale:	NTS	Date:	02-01-02
Designed By:	DFW	Drawn By:	JWB
Checked By:	DFW	File:	32003p04.dwg
Project No.:	32003(01)R01		

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 6



PLOT TO 1"=2'

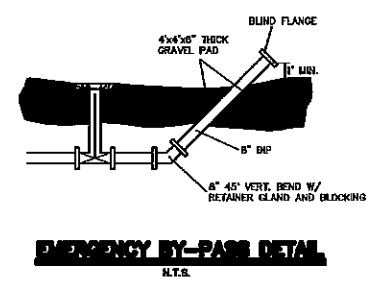
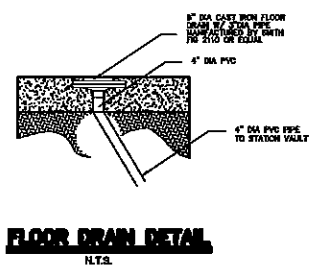
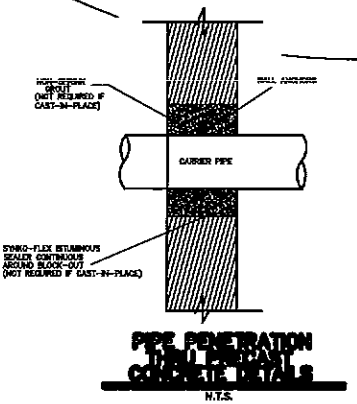


**GENERAL NOTES**

1. ALL PIPE AND FITTINGS TO BE DUCTILE IRON CLASS B2 UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL NOTIFY THE ELECTRICIAN AT LEAST ONE WEEK PRIOR TO BEGINNING CONSTRUCTION FOR TEMPORARY/PERMANENT ELECTRICAL SERVICE.
3. ALL EXCESS EXCAVATION AND SPILL MATERIAL SHALL BE DISPOSED OF ON-SITE BY THE CONTRACTOR.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN MEAT AND ACCURATE PLANS OF RECORD.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS BEFORE CONSTRUCTION BEGINS.
6. LIFT STATION WET WELL TO UNDERGO A 24 HOUR LEAKAGE TEST (1/4" DROP IN WATER LEVEL ALLOWABLE AFTER 24 HOURS WITH WET WELL FALLO TO THE TOP).
7. IF SECTION OF EXCAVATION IS UNSUPPORTED OR OTHERWISE UNSUITABLE FOR THE LIFT STATION AND VALVE VAULT, PLACE SUFFICIENT CRUSHED STONE TO FORM SUITABLE FOUNDATION.
8. PAINT SYSTEM FOR ALL EXPOSED PIPES AND VALVES:
  - A. SAND BLAST TO SSPG-SP9 COMMERCIAL BLAST
  - B. ONE (1) MIL. COAT OF POLYAMINE EPOXY
  - C. ONE (2) MIL. COAT OF ALIPHATIC URETHANE
9. ALL MJ FITTERS TO HAVE RECTANGULAR GLANDS.
10. CONTRACTOR TO PROVIDE THRUST BLOCKING AS REQUIRED.

**PRECAST STRUCTURES SPECIFICATIONS**

1. DESIGN LOADINGS ON ALL PRECAST CONCRETE STRUCTURES:
  - A. UNIFORM VERTICAL LOAD ON SLABS
  - B. UNIFORM VERTICAL LINE LOAD ON SLABS - 100 PSF
  - C. EQUIVALENT LATERAL SOIL PRESSURE - 125 PSF
2. PRECAST CONCRETE STRUCTURES DESIGN TO BE SEALED BY A PROFESSIONAL ENGINEER.
3. ALL CONCRETE FOR PRECAST MEMBERS TO MEET MCTDOD SPECIFICATIONS 7.3.2.
4. ALL CONCRETE STRUCTURES EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
5. ALL TOP OPENINGS WILL REQUIRE CORNER BARS.



REV	DATE	DESCRIPTION
2	04/15/2020	ADD 12\"/>
1	02/01/2020	REVISIONS FOR CITY COMMENTS
0	DATE	DESCRIPTION

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McCURRY SURVEY, ABSTRACT NO. 146  
 CITY OF ROCKWALL  
 ROCKWALL COUNTY, TEXAS

CONTINENTAL HOMES  
 QUAIL VALLEY RUN  
 GRAPEVINE, TEXAS 75041

**VALVE VAULT DETAIL**  
 SANITARY SEWER LIFT STATION  
 QUAIL VALLEY RUN  
 CITY OF ROCKWALL, TEXAS

Scale: 1"=2'  
 Date: 4-3-20  
 Designed By: DFW  
 Drawn By: MK  
 Checked By: DFW  
 File: 3200306.dwg  
 Project No.: 3200306RD

**SHEET**  
 OF

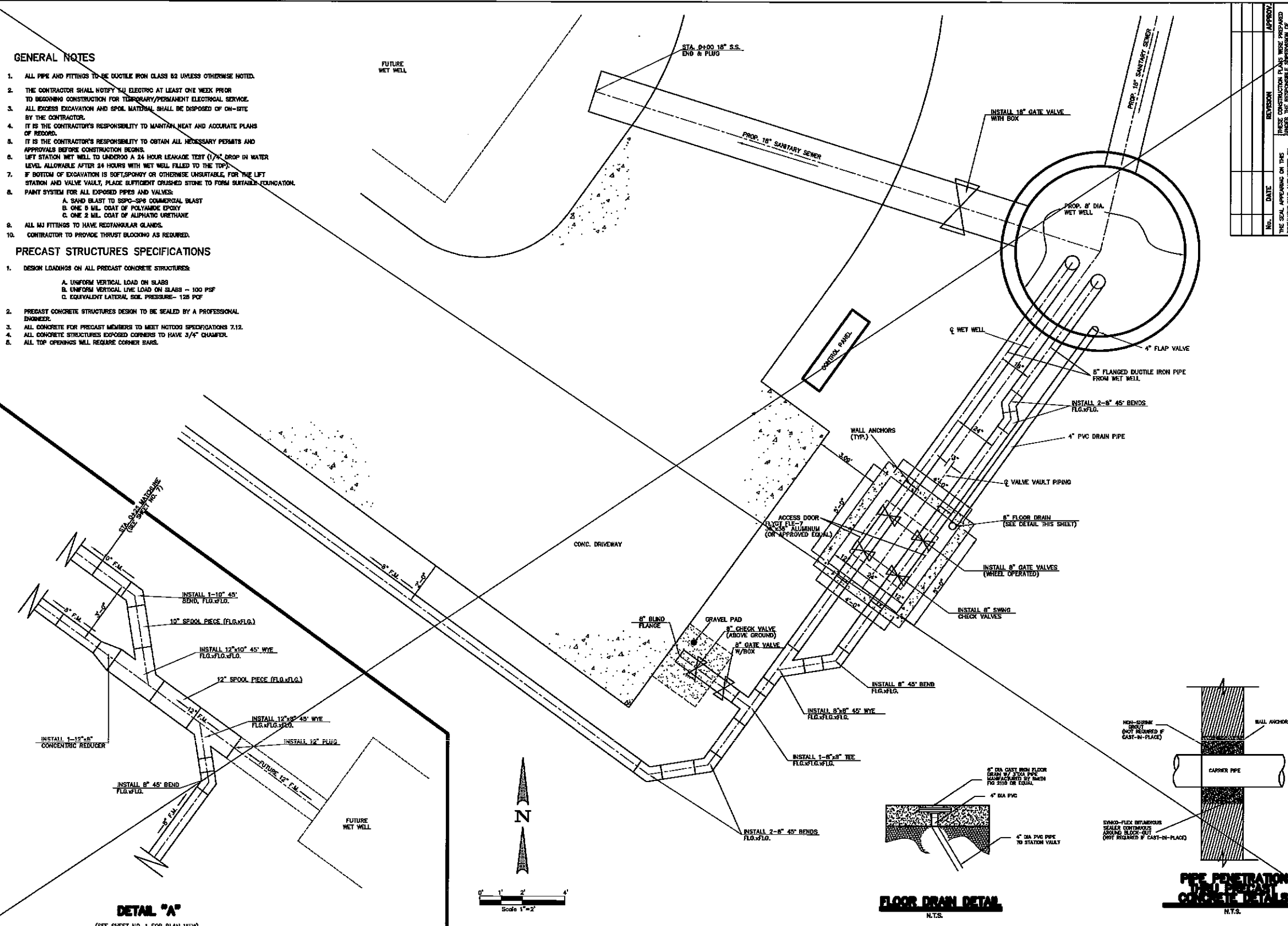
PLOT TO 1" = 2'

**GENERAL NOTES**

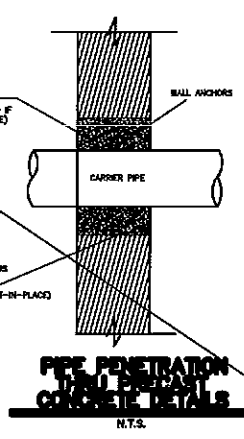
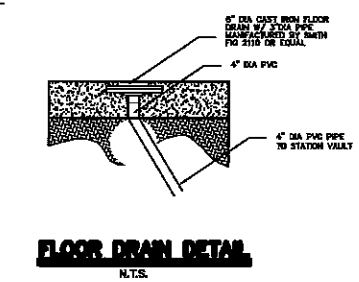
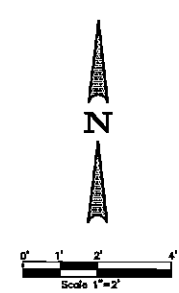
1. ALL PIPE AND FITTINGS TO BE DUCTILE IRON CLASS B2 UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL NOTIFY THE ELECTRIC AT LEAST ONE WEEK PRIOR TO BEGINNING CONSTRUCTION FOR TEMPORARY/PERMANENT ELECTRICAL SERVICE.
3. ALL EXCESS EXCAVATION AND SPILL MATERIAL SHALL BE DISPOSED OF ON-SITE BY THE CONTRACTOR.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN NEAT AND ACCURATE PLANS OF RECORD.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS BEFORE CONSTRUCTION BEGINS.
6. LIFT STATION WET WELL TO UNDERGO A 24 HOUR LEAKAGE TEST (1/4" DROP IN WATER LEVEL ALLOWABLE AFTER 24 HOURS WITH WET WELL FILLED TO THE TOP).
7. IF BOTTOM OF EXCAVATION IS SOFT, SPONGY OR OTHERWISE UNSUITABLE FOR THE LIFT STATION AND VALVE VAULT, PLACE SUFFICIENT CRUSHED STONE TO FORM SUITABLE FOUNDATION.
8. PAINT SYSTEM FOR ALL EXPOSED PIPES AND VALVES:
  - A. SAND BLAST TO SSPC-SP6 COMMERCIAL BLAST
  - B. ONE (1) MIL. COAT OF POLYURETHANE EPOXY
  - C. ONE (2) MIL. COAT OF ALIPHATIC URETHANE
9. ALL IN FITTINGS TO HAVE RECTANGULAR GLANDS.
10. CONTRACTOR TO PROVIDE THRUST BLOCKING AS REQUIRED.

**PRECAST STRUCTURES SPECIFICATIONS**

1. DESIGN LOADINGS ON ALL PRECAST CONCRETE STRUCTURES:
  - A. UNIFORM VERTICAL LOAD ON SLABS
  - B. UNIFORM VERTICAL LINE LOAD ON SLABS - 100 PSF
  - C. EQUIVALENT LATERAL SOIL PRESSURE - 125 PCF
2. PRECAST CONCRETE STRUCTURES DESIGN TO BE SEALED BY A PROFESSIONAL ENGINEER.
3. ALL CONCRETE FOR PRECAST MEMBERS TO MEET HOTCHOK SPECIFICATIONS 7.12.
4. ALL CONCRETE STRUCTURES EXPOSED CORNERS TO HAVE 3/4" CHAMFER.
5. ALL TOP OPENINGS WILL REQUIRE CORNER BARS.

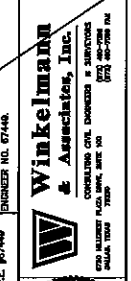


**DETAIL \*A\***  
(SEE SHEET NO. 1 FOR PLAN VIEW)



NO.	DATE	REVISION	APPROVED

THESE CONSTRUCTION PLANS WERE PREPARED BY THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THE STATE OF TEXAS. REGISTERED PROFESSIONAL ENGINEER NO. 67446



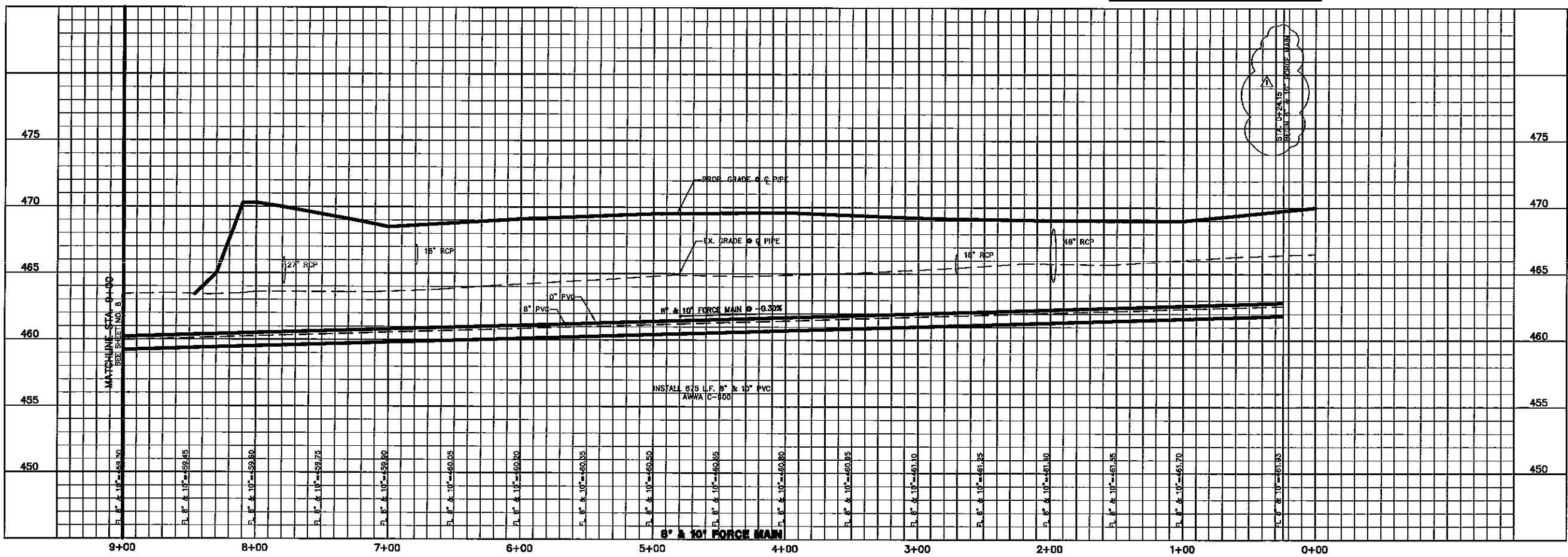
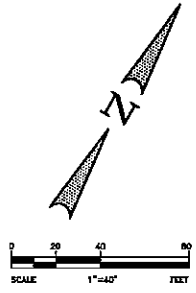
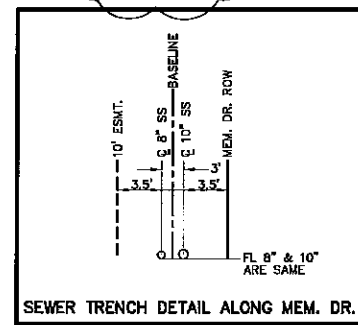
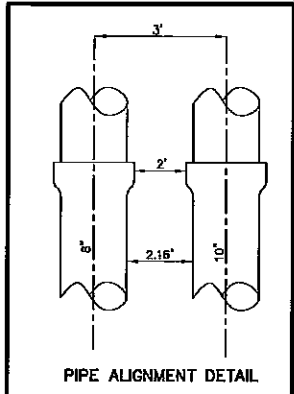
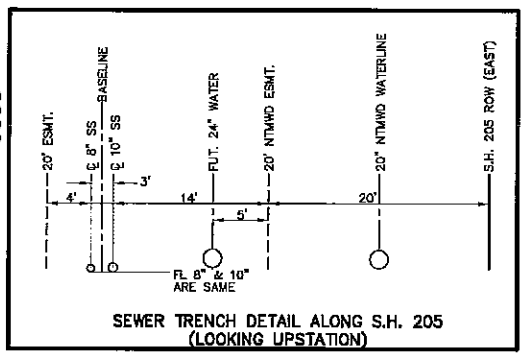
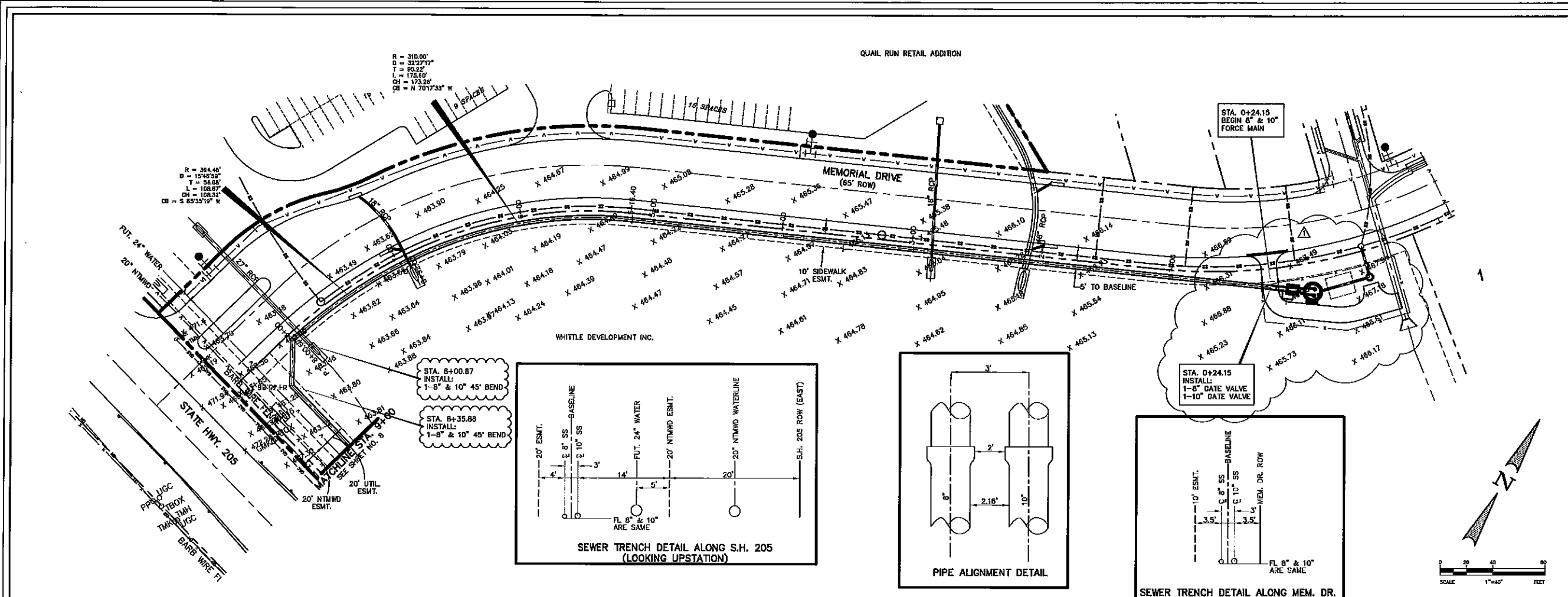
McCURRY SURVEY ABSTRACT NO. 148  
CITY OF ROCKWALL, TEXAS  
CONTINENTAL HOMES  
827 W. COLLAGE STREET  
GRAPEVINE, TEXAS 76051

**VALVE VAULT DETAIL**  
SANITARY SEWER LIFT STATION  
QUAL VALLEY RUN  
CITY OF ROCKWALL, TEXAS

Scale : 1"=2'  
Drawn By : JWB  
Checked By : JWB  
File : 32003906.dwg  
Project No. : 32003.01020

SHEET  
1 OF 1





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THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY F.E. MIDDLETON, JR., P.E. #67449

NO.	DATE	REVISION	FEM APPROV.
1.	2-5-02	REVISED VAULT & MIRELL LOCATIONS	



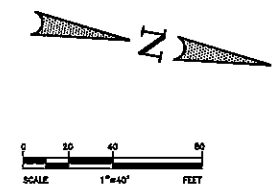
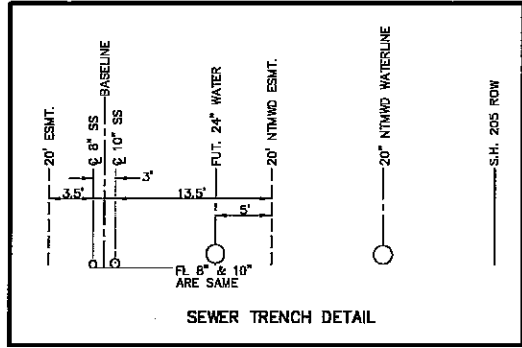
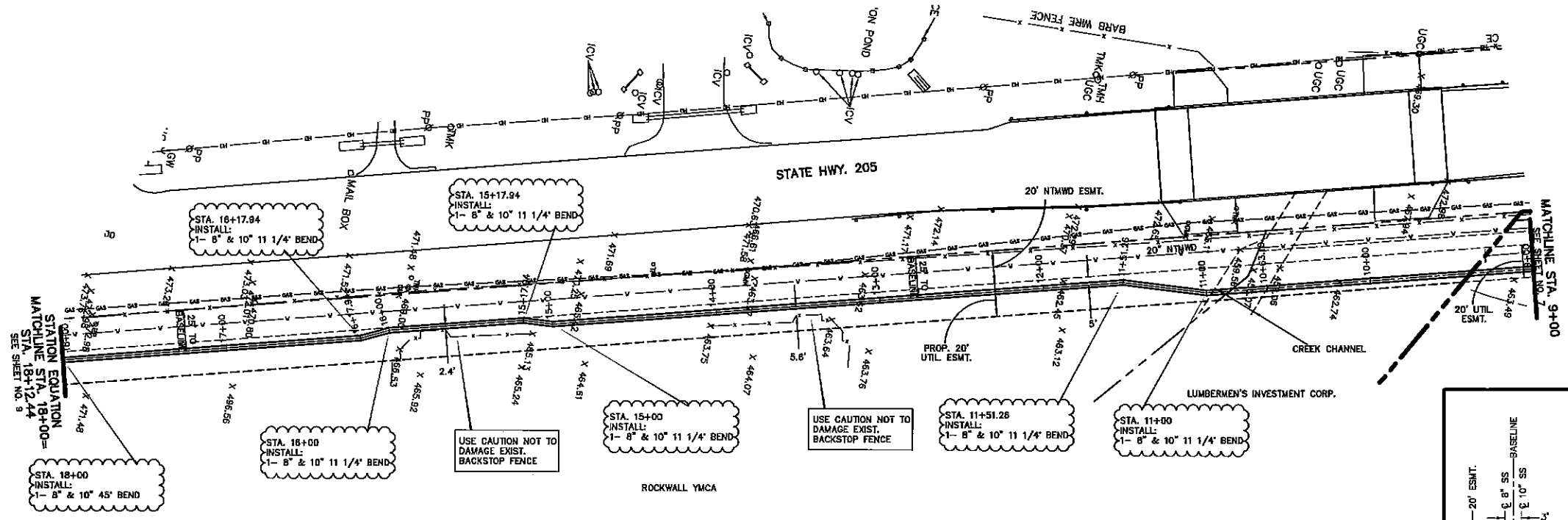
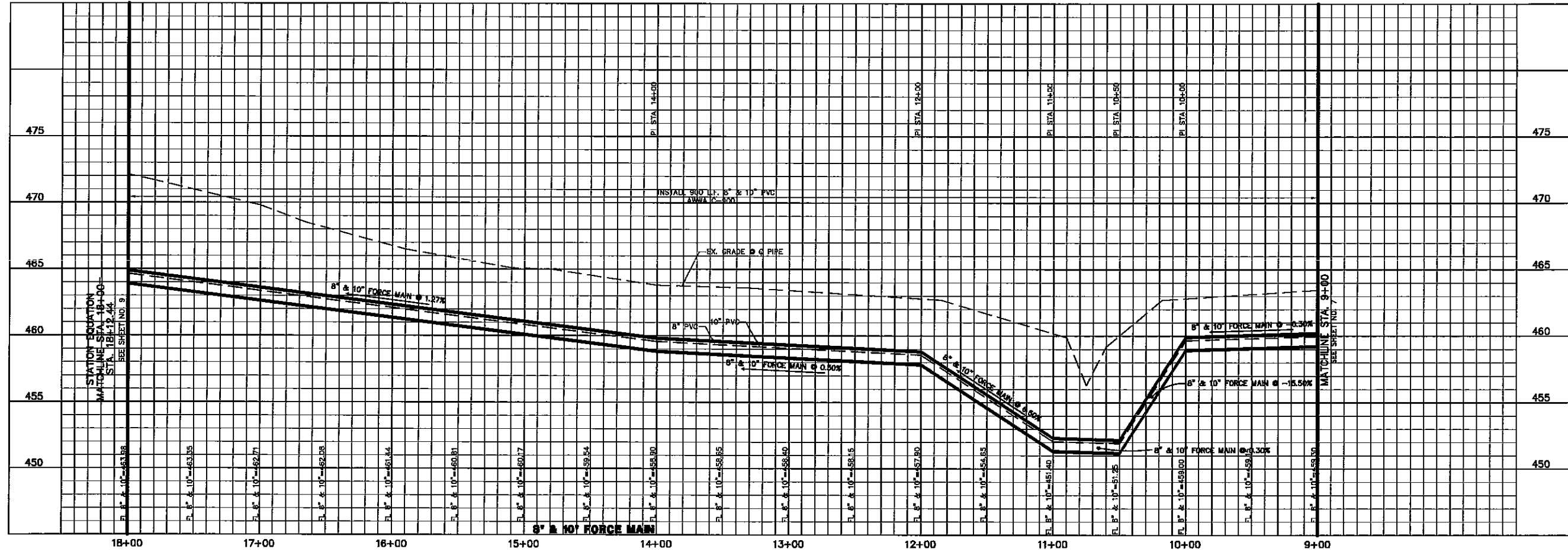
**Winkelmann & Associates, Inc.**  
 CONSULTING CIVIL ENGINEERS & ARCHITECTS  
 6700 HALLMARK PLAZA, SUITE 100  
 DALLAS, TEXAS 75230  
 (972) 467-7882 FAX

McCurry Survey Abstract No. 146  
 CITY OF ROCKWALL  
 ROCKWALL COUNTY, TEXAS  
 CONTINENTAL HOMES  
 621 W. COLLEGE STREET  
 GRAPEVINE, TEXAS 76051

**QUAL VALLEY RUN FORCE MAIN  
 PLAN & PROFILE  
 STA. 0+00 TO 9+00**

Scale: 1"=40'  
 Date: 2-5-02  
 Designed By: MK  
 Drawn By: MK  
 Checked By: FEM  
 File: 3200SSSDWG | View:  
 Project No.: 32003.01

0  
 1  
 2



THESE CONSTRUCTION PLANS WERE PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A REGISTERED PROFESSIONAL ENGINEER NO. 67449.

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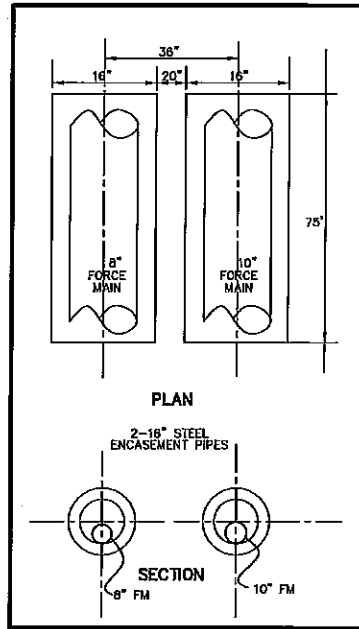
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 Date: 11-27-01  
 Designed By: MK  
 Drawn By: MK  
 Checked By: FEM  
 File: 32003552.DWG View:  
 Project No.: 32003.01

**QUAIL VALLEY RUN FORCE MAIN  
 PLAN & PROFILE  
 STA. 9+00 TO 18+00**

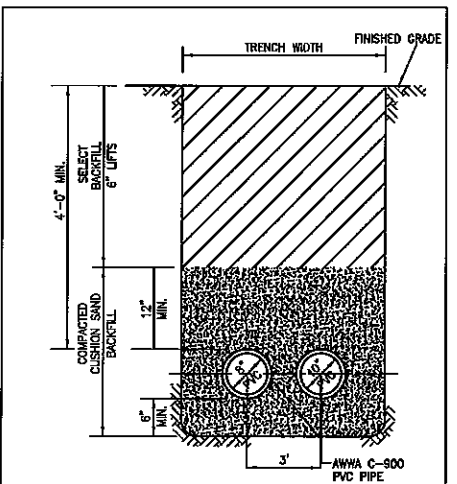
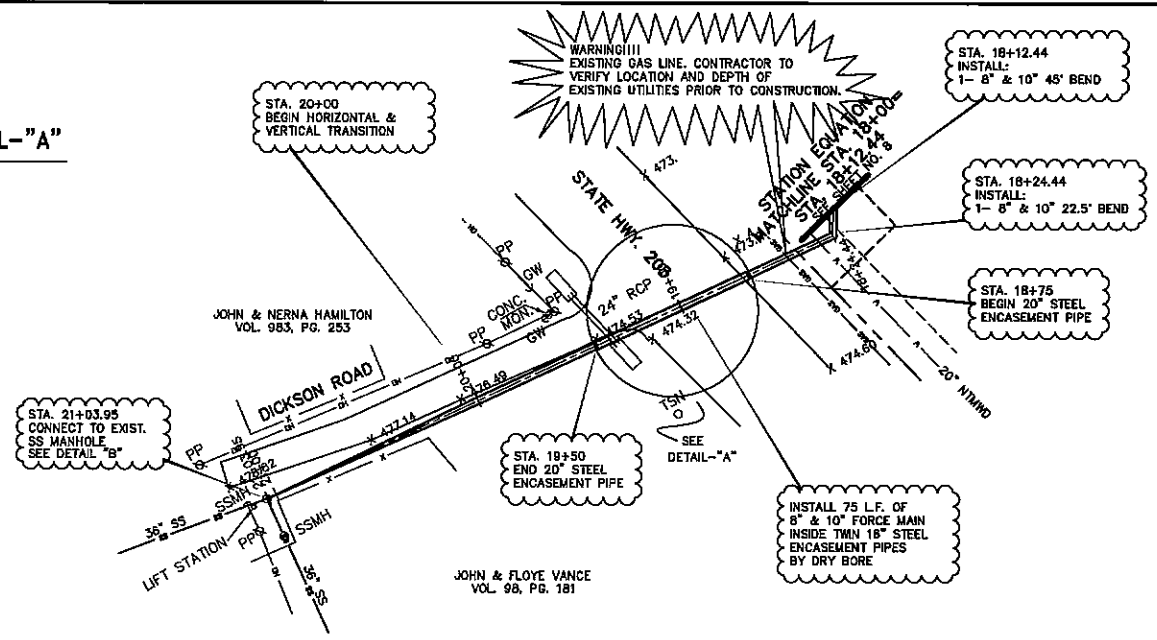
McCURRY SURVEY, ABSTRACT NO. 146  
 QUAIL VALLEY, ROCKWALL, TEXAS  
 CONTINENTAL HOMES  
 521 W. COLLEGE STREET  
 GRAPEVINE, TEXAS 76031

NO. DATE REVISION APPROV.

**Winkelmann & Associates, Inc.**  
 CONSULTING CIVIL ENGINEERS & SURVEYORS  
 1000 W. CAMPBELL STREET, SUITE 100  
 DALLAS, TEXAS 75241  
 (972) 241-7300 FAX

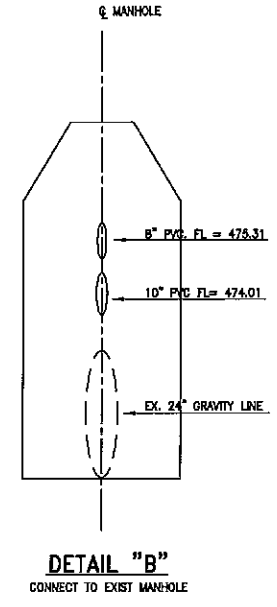


DETAIL-"A"

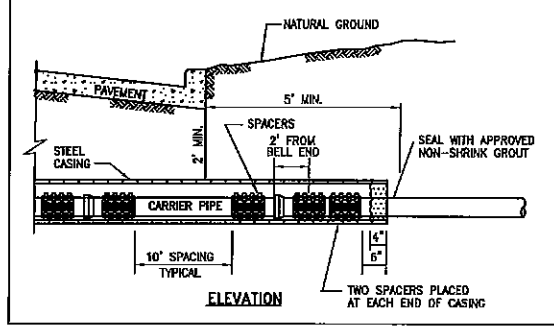


PVC PIPE BEDDING & BACKFILL

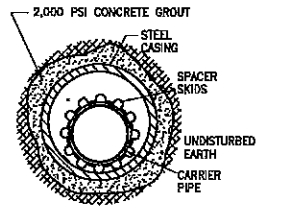
- NOTES
- NO A.C. PIPE ALLOWED.
  - LINE SIZES GREATER THAN 6" SHALL BE C-900 CLASS 150 (DR-18) PVC.
  - COMPACT BACKFILL IN 6" LIFTS TO 95% PROCTOR DENSITY WITHIN THE RIGHT-OF-WAY AND GOX IN ALL OTHER AREAS.
  - SPACER HEIGHT SHALL BE 2.35"
  - MANTAIN 10" SPACING (TYPICAL) BETWEEN SPACERS.
  - SEE THE PLAN/PROFILE FOR BEGINNING AND ENDING STATIONS.
  - PRESSURE 2,000 PSI CONCRETE GROUT BETWEEN CASING AND SURROUNDING EARTH.
  - CASING IS REQUIRED WHEN CROSSING STREETS LARGER THAN A COLLECTOR STREET.



DETAIL "B"

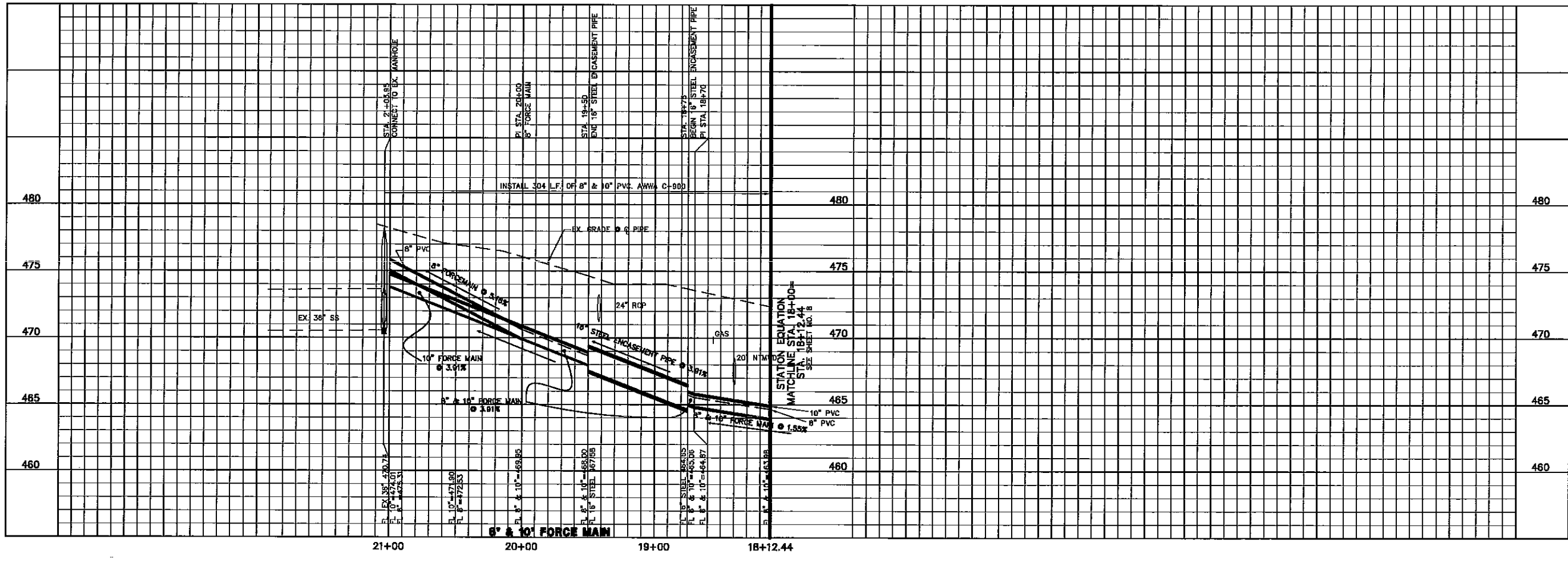


CARRIER PIPE	NOMINAL CASING	MIN. WALL THICKNESS (IN.)
6"	12"	0.11
8"	14"	0.15
10"	16"	0.18
12"	18"	0.20



- NOTES
- SPACERS SHALL BE RADI HIGH DENSITY POLYETHYLENE AS MANUFACTURED BY RECON PIPE CORP., OR APPROVED EQUAL.
  - SPACER HEIGHT SHALL BE 2.35"
  - MANTAIN 10" SPACING (TYPICAL) BETWEEN SPACERS.
  - SEE THE PLAN/PROFILE FOR BEGINNING AND ENDING STATIONS.
  - PRESSURE 2,000 PSI CONCRETE GROUT BETWEEN CASING AND SURROUNDING EARTH.
  - CASING IS REQUIRED WHEN CROSSING STREETS LARGER THAN A COLLECTOR STREET.

STEEL PIPE MAIN ENCASMENT



THESE CONSTRUCTION PLANS WERE PREPARED BY F.E. MIDDLETON, JR., REGISTERED PROFESSIONAL ENGINEER NO. 67448.

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Winkelmann & Associates, Inc.  
CONSULTING CIVIL ENGINEERS & SURVEYORS  
DALLAS, TEXAS 75229  
(972) 497-7888 FAX

MCCURRY SURVEY, ABSTRACT NO. 146  
ROCKWALL COUNTY, TEXAS  
CONTINENTAL HOMES  
621 W. COLLEGE STREET  
GRAPEVINE, TEXAS 76051

QUAIL VALLEY RUN FORCE MAIN  
PLAN & PROFILE  
STA. 18+00 TO 21+12.37

Scale: 1"=40'  
Date: 3-7-02  
Designed By: MK  
Drawn By: MK  
Checked By: FEM  
File: 3200SS3DWG View:  
Project No.: 32003.01