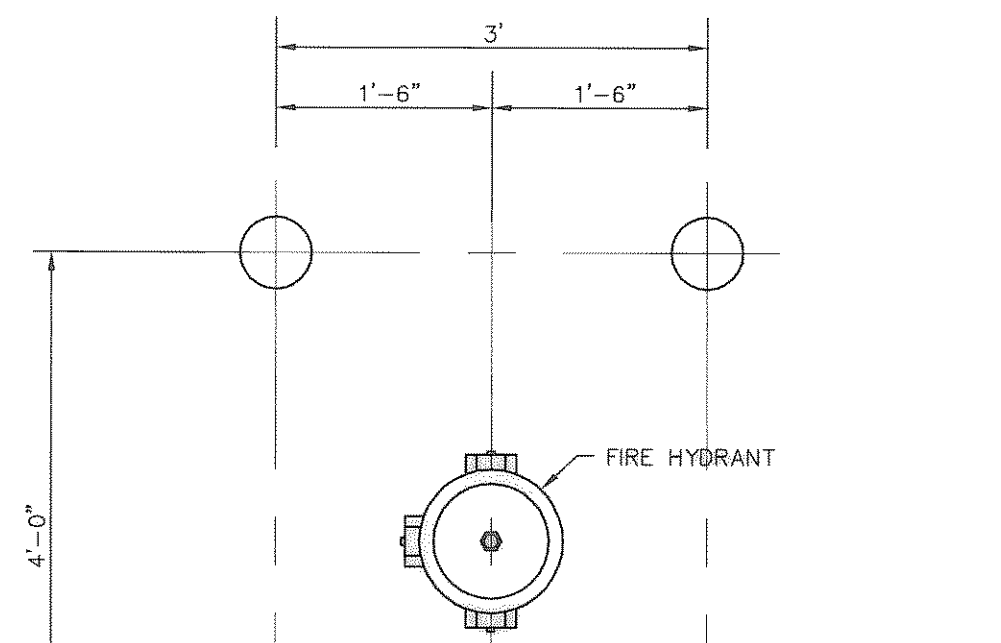


6"Ø STEEL PIPE W/CONCRETE FILL
6' LENGTH (3' ABOVE PAVING, 3' BELOW
PAVING) TO BE CASED IN 16"Ø PIER TO
DEPTH OF 1'-0" BELOW BOTTOM OF
PIPE USE 2"Øx12" THRU PIPE INTO
CONCRETE PIER. PIPES TO BE PAINTED

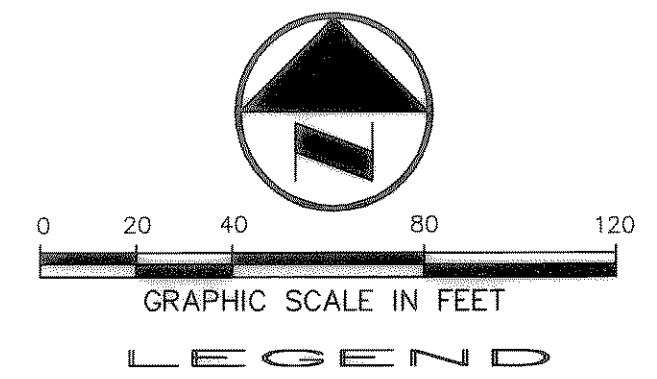


Fire Hydrant Guard Post Detail

NOT TO SCALE

R=930.00
L=50.51
Tan=25.26
Δ=3'06"42"

BENCHMARKS		
BM 1	"d" CUT SET IN CENTER OF A 12' HEADWALL ±2230' WEST OF E.F.M.549 AND ±70' NORTH OF E.S.H. 276	ELEV.=581.84
BM 2	"d" CUT FOUND IN CENTER OF 4' HEADWALL Ø NORTHEAST CORNER OF F.M.549 & S.H.276	ELEV.=592.75
BM 3	"d" CUT SET P.O.C. OF B.C. ON THE SOUTH END OF MEDIAN ON INNOVATION DR. AT THE INTERSECTION OF STATE HIGHWAY NO. 276.	ELEV.=599.49
BM 4	"d" CUT SET IN CENTER OF INLET ON THE EAST RIGHT OF WAY OF INNOVATION DR. ±80' SOUTH OF CENTERLINE OF DISCOVERY BLVD.	ELEV.=584.18
BM 5	"d" CUT SET ON THE EAST RIGHT OF WAY OF RESEARCH CIR. AT THE P.C. OF B.C. ON THE NORTH SIDE OF ENTRANCE.	ELEV.=599.84

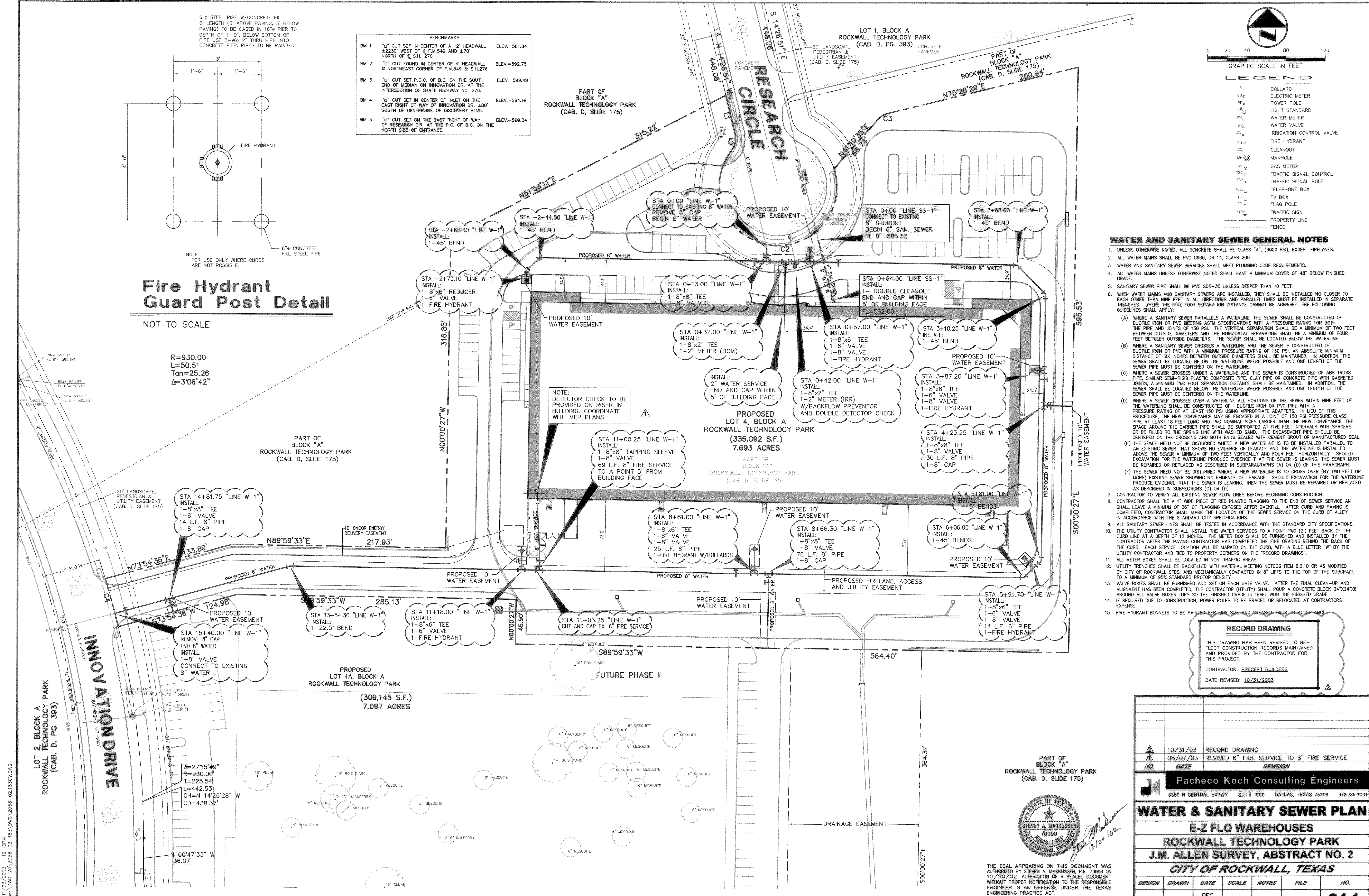


LEGEND

- B. BOLLARD
- EM. ELECTRIC METER
- PP. POWER POLE
- LS. LIGHT STANDARD
- WM. WATER METER
- WV. WATER VALVE
- ICV. IRRIGATION CONTROL VALVE
- FH. FIRE HYDRANT
- CL. CLEANOUT
- MH. MANHOLE
- GM. GAS METER
- TS. TRAFFIC SIGNAL CONTROL
- TS. TRAFFIC SIGNAL POLE
- TE. TELEPHONE BOX
- TV. TV BOX
- FP. FLAG POLE
- SI. SIGN
- PL. PROPERTY LINE
- FC. FENCE

WATER AND SANITARY SEWER GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ALL CONCRETE SHALL BE CLASS "A", (3000 PSI), EXCEPT FIRELANES.
2. ALL WATER MAINS SHALL BE PVC C900, DR 14, CLASS 200.
3. WATER AND SANITARY SEWER SERVICES SHALL MEET PLUMBING CODE REQUIREMENTS.
4. ALL WATER MAINS UNLESS OTHERWISE NOTED SHALL HAVE A MINIMUM COVER OF 48" BELOW FINISHED GRADE.
5. SANITARY SEWER PIPE SHALL BE PVC SDR-35 UNLESS DEEPER THAN 10 FEET.
6. WHEN WATER MAINS AND SANITARY SEWERS ARE INSTALLED, THEY SHALL BE INSTALLED NO CLOSER TO EACH OTHER THAN NINE FEET IN ALL DIRECTIONS AND PARALLEL LINES MUST BE INSTALLED IN SEPARATE TRENCHES. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING GUIDELINES SHALL APPLY:
 - (A) WHERE A SANITARY SEWER PARALLELS A WATERLINE, THE SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON OR PVC MEETING ASTM SPECIFICATIONS WITH A PRESSURE RATING FOR BOTH THE PIPE AND JOINTS OF 150 PSI. THE VERTICAL SEPARATION SHALL BE A MINIMUM OF TWO FEET BETWEEN OUTSIDE DIAMETERS AND THE HORIZONTAL SEPARATION SHALL BE A MINIMUM OF FOUR FEET BETWEEN OUTSIDE DIAMETERS. THE SEWER SHALL BE LOCATED BELOW THE WATERLINE.
 - (B) WHERE A SANITARY SEWER CROSSES A WATERLINE AND THE SEWER IS CONSTRUCTED OF DUCTILE IRON OR PVC WITH A MINIMUM PRESSURE RATING OF 150 PSI, AN ABSOLUTE MINIMUM DISTANCE OF SIX INCHES BETWEEN OUTSIDE DIAMETERS SHALL BE MAINTAINED. IN ADDITION, THE SEWER SHALL BE LOCATED BELOW THE WATERLINE WHERE POSSIBLE AND ONE LENGTH OF THE SEWER PIPE MUST BE CENTERED ON THE WATERLINE.
 - (C) WHERE A SEWER CROSSES UNDER A WATERLINE AND THE SEWER IS CONSTRUCTED OF ABS TRUSS PIPE, SIMILAR SEMI-RIGID PLASTIC COMPOSITE PIPE, CLAY PIPE OR CONCRETE PIPE WITH GASKETED JOINTS, A MINIMUM TWO FOOT SEPARATION DISTANCE SHALL BE MAINTAINED. IN ADDITION, THE SEWER SHALL BE LOCATED BELOW THE WATERLINE WHERE POSSIBLE AND ONE LENGTH OF THE SEWER PIPE MUST BE CENTERED ON THE WATERLINE.
 - (D) WHERE A SEWER CROSSES OVER A WATERLINE ALL PORTIONS OF THE SEWER WITHIN NINE FEET OF THE WATERLINE SHALL BE CONSTRUCTED OF DUCTILE IRON OR PVC PIPE WITH A PRESSURE RATING OF AT LEAST 150 PSI USING APPROPRIATE ADAPTERS. IN LIEU OF THIS PROCEDURE, THE NEW CONVEYANCE MAY BE ENCASED IN A JOINT OF 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE FEET INTERVALS WITH SPACERS OR BE FILLED TO THE SPRING LINE WITH WASHED SAND. THE ENCASEMENT PIPE SHOULD BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEAL.
 - (E) THE SEWER NEED NOT BE DISTURBED WHERE A NEW WATERLINE IS TO BE INSTALLED PARALLEL TO AN EXISTING SEWER THAT SHOWS NO EVIDENCE OF LEAKAGE AND THE WATERLINE IS INSTALLED ABOVE THE SEWER. A MINIMUM OF TWO FEET VERTICALLY AND FOUR FEET HORIZONTALLY SHOULD EXCAVATION FOR THE WATERLINE PRODUCE EVIDENCE THAT THE SEWER IS LEAKING. THE SEWER MUST BE REPAIRED OR REPLACED AS DESCRIBED IN SUBPARAGRAPHS (A) OR (D) OF THIS PARAGRAPH.
 - (F) THE SEWER NEED NOT BE DISTURBED WHERE A NEW WATERLINE IS TO CROSS OVER (BY TWO FEET OR MORE) EXISTING SEWER SHOWING NO EVIDENCE OF LEAKAGE. SHOULD EXCAVATION FOR THE WATERLINE PRODUCE EVIDENCE THAT THE SEWER IS LEAKING, THEN THE SEWER MUST BE REPAIRED OR REPLACED AS DESCRIBED IN SUBSECTIONS (C) OR (D).
7. CONTRACTOR TO VERIFY ALL EXISTING SEWER FLOW LINES BEFORE BEGINNING CONSTRUCTION.
8. CONTRACTOR SHALL TIE A 1" WIDE PIECE OF RED PLASTIC FLAGGING TO THE END OF SEWER SERVICE AN SHALL LEAVE A MINIMUM OF 36" OF FLAGGING EXPOSED AFTER BACKFILL. AFTER CURB AND PAVING IS COMPLETED, CONTRACTOR SHALL MARK THE LOCATION OF THE SEWER SERVICE ON THE CURB OF ALLY IN ACCORDANCE WITH THE STANDARD CITY SPECIFICATIONS.
9. ALL SANITARY SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE STANDARD CITY SPECIFICATIONS.
10. THE UTILITY CONTRACTOR SHALL INSTALL THE WATER SERVICES TO A POINT TWO (2) FEET BACK OF THE CURB LINE AT A DEPTH OF 12 INCHES. THE METER BOX SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AFTER THE PAVING CONTRACTOR HAS COMPLETED THE FINE GRADING BEHIND THE BACK OF THE CURB. EACH SERVICE LOCATION WILL BE MARKED ON THE CURB, WITH A BLUE LETTER "W" BY THE UTILITY CONTRACTOR AND TIED TO PROPERTY CORNERS ON THE "RECORD DRAWINGS".
11. ALL METER BOXES SHALL BE LOCATED IN NON-TRAFFIC AREAS.
12. UTILITY TRENCHES SHALL BE BACKFILLED WITH MATERIAL MEETING NCTCOG ITEM 6.2.10 OR AS MODIFIED BY CITY OF ROCKWALL STDS. AND MECHANICALLY COMPACTED IN 8" LIFTS TO THE TOP OF THE SUBGRADE TO A MINIMUM OF 95% STANDARD PROTOR DENSITY.
13. VALVE BOXES SHALL BE FURNISHED AND SET ON EACH GATE VALVE. AFTER THE FINAL CLEAN-UP AND ALIGNMENT HAS BEEN COMPLETED, THE CONTRACTOR (UTILITY) SHALL POUR A CONCRETE BLOCK 24"x24"x6" AROUND ALL VALVE BOXES TOP TO THE FINISHED GRADE IS TO BE LEVeled WITH THE FINISHED GRADE.
14. IF REQUIRED DUE TO CONSTRUCTION, POWER POLES TO BE BRACED OR RELOCATED AT CONTRACTORS EXPENSE.
15. FIRE HYDRANT BONNETS TO BE PAINTED PER LINE SIZE AND GREASED PRIOR TO ACCEPTANCE.



NOTE: DETECTOR CHECK TO BE PROVIDED ON RISER IN BUILDING, COORDINATE WITH MEP PLANS

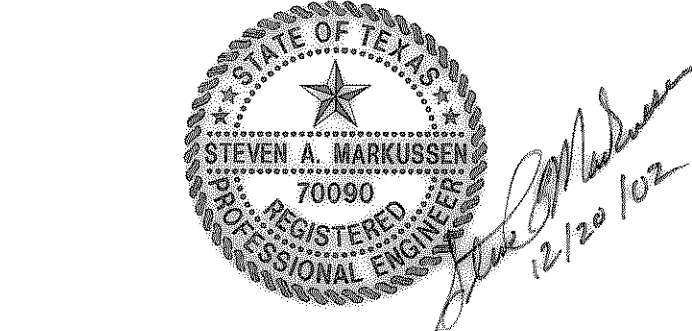
RECORD DRAWING
THIS DRAWING HAS BEEN REVISED TO REFLECT CONSTRUCTION RECORDS MAINTAINED AND PROVIDED BY THE CONTRACTOR FOR THIS PROJECT.
CONTRACTOR: PRECEPT BUILDERS
DATE REVISED: 10/31/2003

NO.	DATE	REVISION
1	10/31/03	RECORD DRAWING
2	08/07/03	REVISED 6" FIRE SERVICE TO 8" FIRE SERVICE

Pacheco Koch Consulting Engineers
8350 N CENTRAL EXPWY SUITE 1000 DALLAS, TEXAS 75206 972.235.3031

WATER & SANITARY SEWER PLAN
E-Z FLO WAREHOUSES
ROCKWALL TECHNOLOGY PARK
J.M. ALLEN SURVEY, ABSTRACT NO. 2
CITY OF ROCKWALL, TEXAS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
CJE	RRL	DEC 2002	1"=40'			C4.1



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FRED MITCHELL
11/03/2003 12:00PM
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