

**A. Prior to final acceptance by the Town of Addison.**

- 1) A Texas Registered Professional Engineer shall certify that the project was constructed in accordance with the plans and specifications approved by the Town of Addison.
- 2) The owner shall provide 1 reproducible set of as-builts (sealed and certified by a Texas Registered Engineer) and 2 blue line sets.
- 3) A one year 10% maintenance bond is required for the sanitary sewer line.
- 4) Contractor shall demonstrate that the sanitary sewer system meets the proper pressure and mandrel tests. In addition, the owner shall provide a VHS format video tape of the sanitary sewer.

**B. Prior to starting construction, the contractor shall contact the utility companies to locate existing facilities. These include but may not be limited to the following:**

- 1) Town of Addison
- 2) Lone Star Gas
- 3) Southwestern Bell
- 4) Street Cable
- 5) Planned Cable Systems
- 6) TUElectric

**C. Prior to beginning construction, the owner or his authorized representative shall convene a Pre-Construction Conference between the Town of Addison, Consulting Engineer, Contractor(s), Utility companies and any other affected parties. Notify Bruce Ellis 450-7847 at least 48 hours prior to beginning of construction.**

**D. Any existing pavement, curbs, and/or sidewalks damaged or removed will be repaired by the contractor at their expense.**

**E. Contractor shall obtain a right-of-way permit from the Town of Addison for working within the public right-of-way.**

**F. During construction, the owner shall provide a qualified geotechnical lab to perform materials testing during the construction, at the request of the Town of Addison.**

**G. The contractor shall submit material sheets to the Town of Addison for approval prior to incorporating materials into the job.**

**H. The utility contractor shall submit to the Town of Addison for approval a trench safety plan sealed by a registered professional engineer for the installation of utilities greater than five (5) feet in depth.**

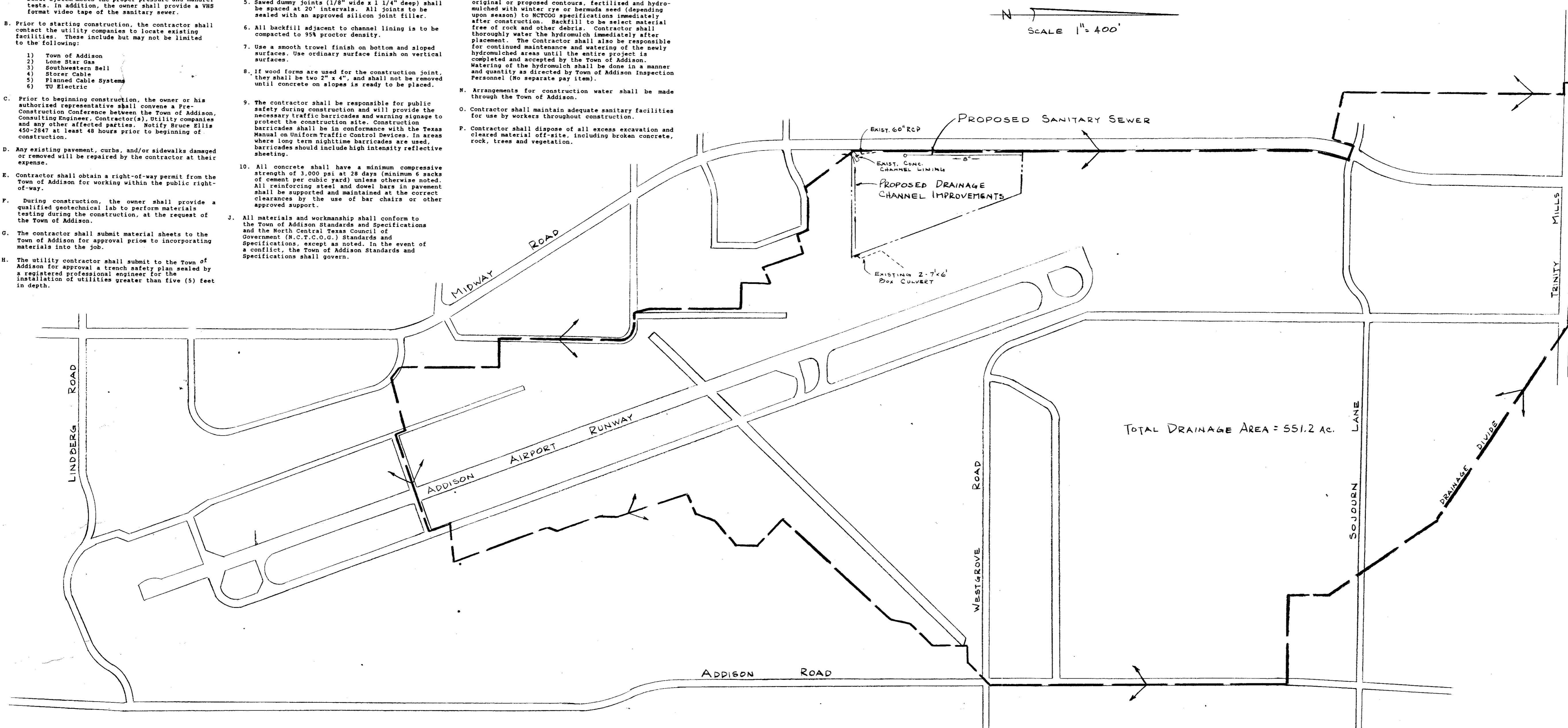
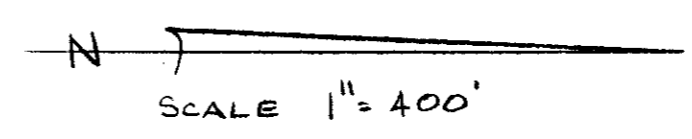
**I. Channel Notes**

1. No concrete shall be placed with water in the bottom. Base must be dry and clear of debris and mud. Rebar must be clean.
2. Transverse expansion joints must be provided at maximum 200' spacing or at end of days pour.
3. Construction joint shown for convenience only. Contractor may elect to construct channel monolithically.
4. Bar laps to be a minimum 30 bar diameters.
5. Sawed dummy joints (1/8" wide x 1 1/4" deep) shall be spaced at 20' intervals. All joints to be sealed with an approved silicon joint filler.
6. All backfill adjacent to channel lining is to be compacted to 95% proctor density.
7. Use a smooth trowel finish on bottom and sloped surfaces. Use ordinary surface finish on vertical surfaces.
8. If wood forms are used for the construction joint, they shall be two 2" x 4", and shall not be removed until concrete on slopes is ready to be placed.
9. The contractor shall be responsible for public safety during construction and will provide the necessary traffic barricades and warning signage to protect the construction site. Construction barricades shall be in conformance with the Texas Manual on Uniform Traffic Control Devices. In areas where long term nighttime barricades are used, barricades should include high intensity reflective sheeting.
10. All concrete shall have a minimum compressive strength of 3,000 psi at 28 days (minimum 6 sacks of cement per cubic yard) unless otherwise noted. All reinforcing steel and dowel bars in pavement shall be supported and maintained at the correct clearances by the use of bar chairs or other approved support.

**J. All materials and workmanship shall conform to the Town of Addison Standards and Specifications and the North Central Texas Council of Government (N.C.T.C.O.G.) Standards and Specifications, except as noted. In the event of a conflict, the Town of Addison Standards and Specifications shall govern.**

**K. The contractor is responsible for keeping streets and sidewalks, etc., adjacent to the project free of mud and debris from construction.**

- L. Contractor shall assume responsibility for protection of public utilities in the construction of this project. All manholes, valve boxes, fire hydrants, etc., must be adjusted to proper line and grade by the contractor prior to and/or after placing of permanent paving. The contractor shall also be responsible for support of existing utility poles, street signs, etc., when excavating in the vicinity of such poles.
- M. All disturbed earth areas to be finish graded to original or proposed contours, fertilized and hydro-mulched with winter rye or bermuda seed (depending upon season) to MCTCOG specifications immediately after construction. Backfill to be select material free of rock and other debris. Contractor shall thoroughly water the hydromulch immediately after placement. The Contractor shall also be responsible for continued maintenance and watering of the newly hydromulched areas until the entire project is completed and accepted by the Town of Addison. Watering of the hydromulch shall be done in a manner and quantity as directed by Town of Addison Inspection Personnel (No separate pay item).
- N. Arrangements for construction water shall be made through the Town of Addison.
- O. Contractor shall maintain adequate sanitary facilities for use by workers throughout construction.
- P. Contractor shall dispose of all excess excavation and cleared material off-site, including broken concrete, rock, trees and vegetation.



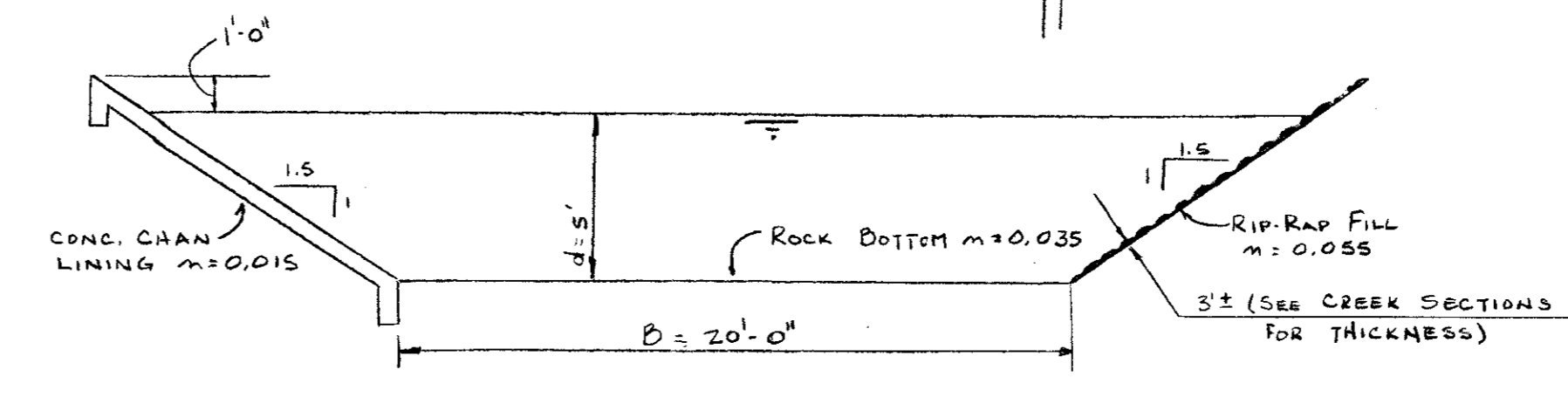
**DRAINAGE DESIGN CRITERIA**

$Q = CiA$   
 WHERE:  
 Q: 100 YEAR DESIGN FLOW FT<sup>3</sup>/SEC  
 C: RUNOFF COEFFICIENT IN/IN  
 I: RAINFALL INTENSITY, IN/HR  
 A: DRAINAGE AREA, AC.  
 TIME OF CONCENTRATION =  $15 + 4400 \frac{Q}{5 \text{ SEC}} + 1300 \frac{LF @ 8 \text{ SEC}}{5 \text{ SEC}}$   
 = 32.4 MIN.  
 $\therefore I_{100} = 5.54$   
 AVERAGE C = 0.58  
 DRAINAGE AREA = 551.2 AC.  
 $Q = 0.58 \cdot 5.54 \cdot 551.2$   
 $= 1771 \text{ FT}^3/\text{SEC.}$

**CHANNEL DESIGN CRITERIA**

$Q = 1.486 \frac{A R^{2/3} S^{1/2}}{n}$   
 WHERE: A: CROSS SECTIONAL AREA, FT<sup>2</sup>  
 R: HYDRAULIC RADIUS =  $\frac{A}{WP}$   
 WP: WETTED PERIMETER  
 S: SLOPE  
 n: ROUGHNESS COEFFICIENT  
 FOR DESIGN SECTION:  
 WP = 38  
 A = 137.5  
 R = 3.6184  
 S = 0.0156  
 n = 0.035 (AVE)  
 $Q = \frac{1.486 \cdot 137.5 \cdot (3.6184)^{2/3} \cdot (0.0156)^{1/2}}{0.035}$   
 $= 1769 \approx 1771 \text{ OK}$

VELOCITY =  $\frac{Q}{A}$   
 V = 12.9 FT/SEC.



**DESIGN SECTION**  
 SCALE 1" = 5'

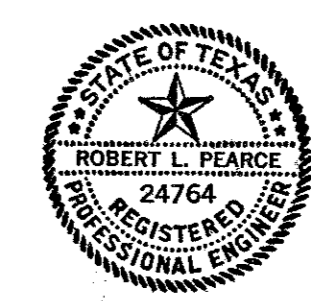
**GENERAL NOTES:**

1. CONTRACTOR SHALL LOCATE, UNCOVER, AND VERIFY ELEVATIONS OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
2. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE CITY OF ADDISON.
3. SANITARY SEWER PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM DESIGNATION D-2321-78. BELL HOLES SHALL BE EXCAVATED IN THE BEDDING MATERIAL TO ALLOW FOR UNOBSTRUCTED ASSEMBLY OF THE JOINT.
4. PVC PIPE TO MANHOLE CONNECTION SHALL BE MADE WITH SPECIAL COUPLINGS DESIGNED FOR THIS PURPOSE.
5. ROCK RIP-RAP SHALL HAVE THE FOLLOWING APPROXIMATE PERCENTAGES OF GRAVATION:  
 50% 2' TO 3' DIAMETER  
 35% 10" TO 2' DIAMETER  
 15% SMALLER THAN 10" DIAMETER

"AS BUILT"  
 2-14-94

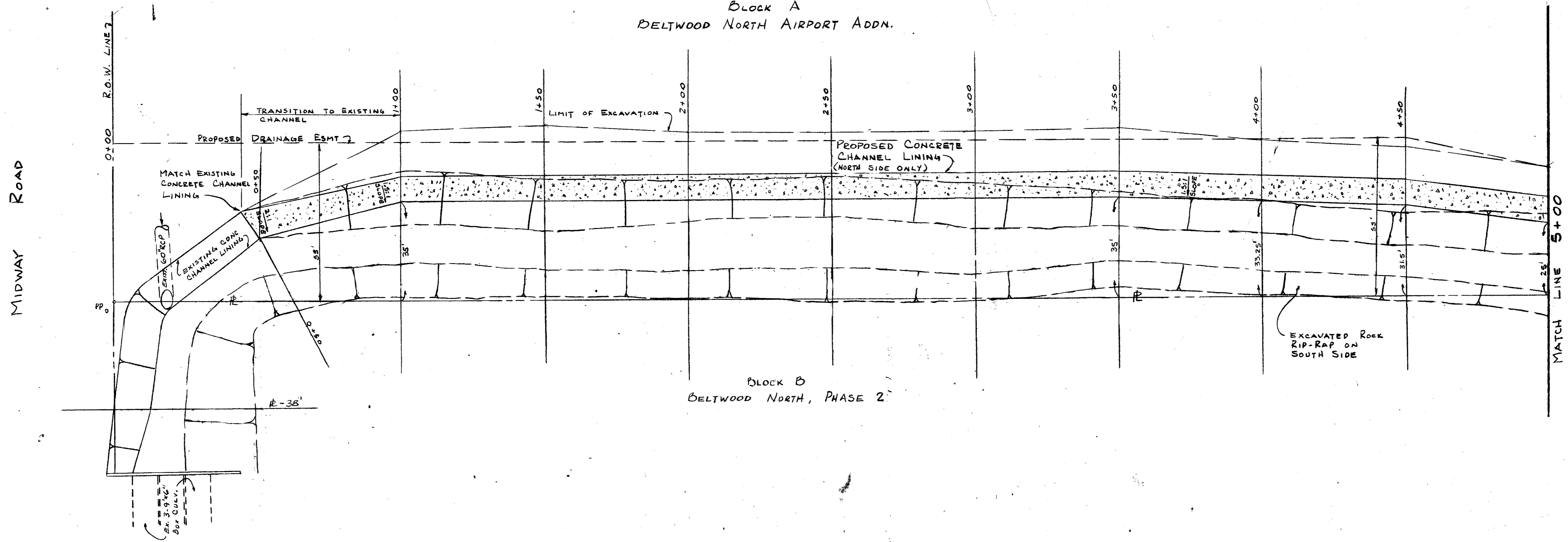
<b>DRAINAGE AREA MAP</b>					
BELTWOOD NORTH AIRPORT ADDN,					
MIDWAY ROAD					
TOWN OF ADDISON, TEXAS					

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
PEARCE & ASSO, INC.		Nov '93	1" = 400'		ON 93 003	1 OF 6



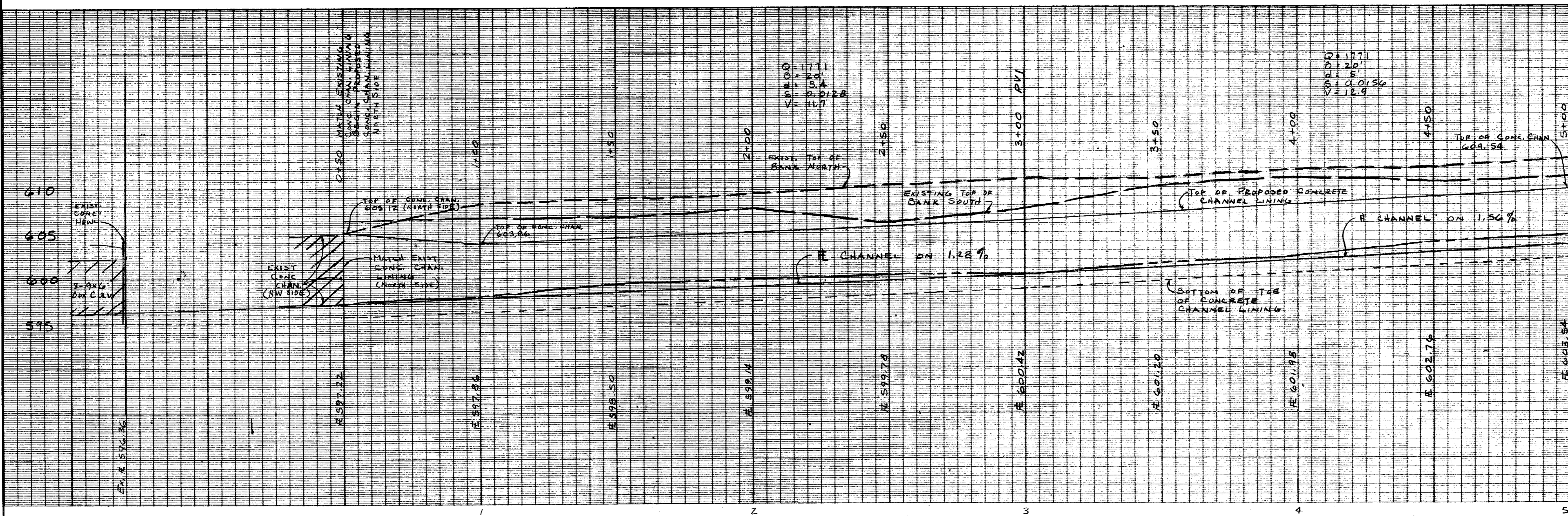
Robert L. Pearce  
 10-20-93

Block A  
BELTWOOD NORTH AIRPORT ADDN.



Block B  
BELTWOOD NORTH, PHASE 2

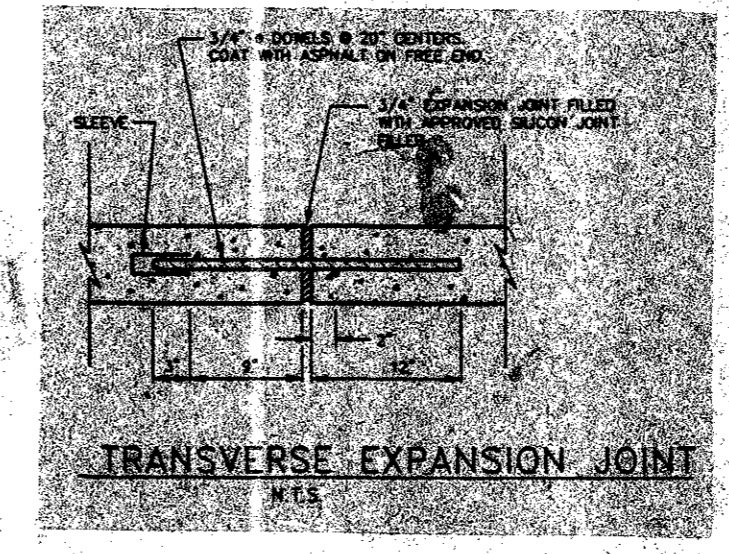
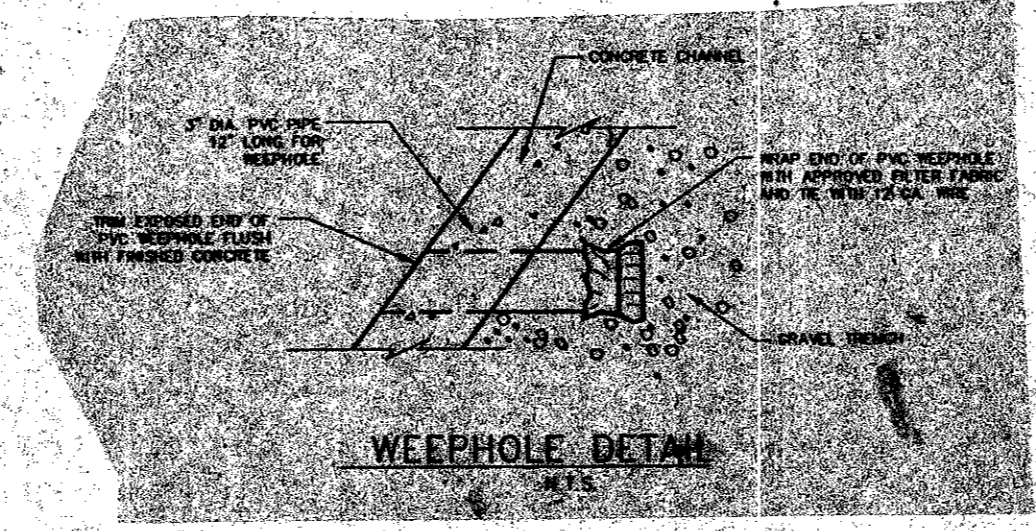
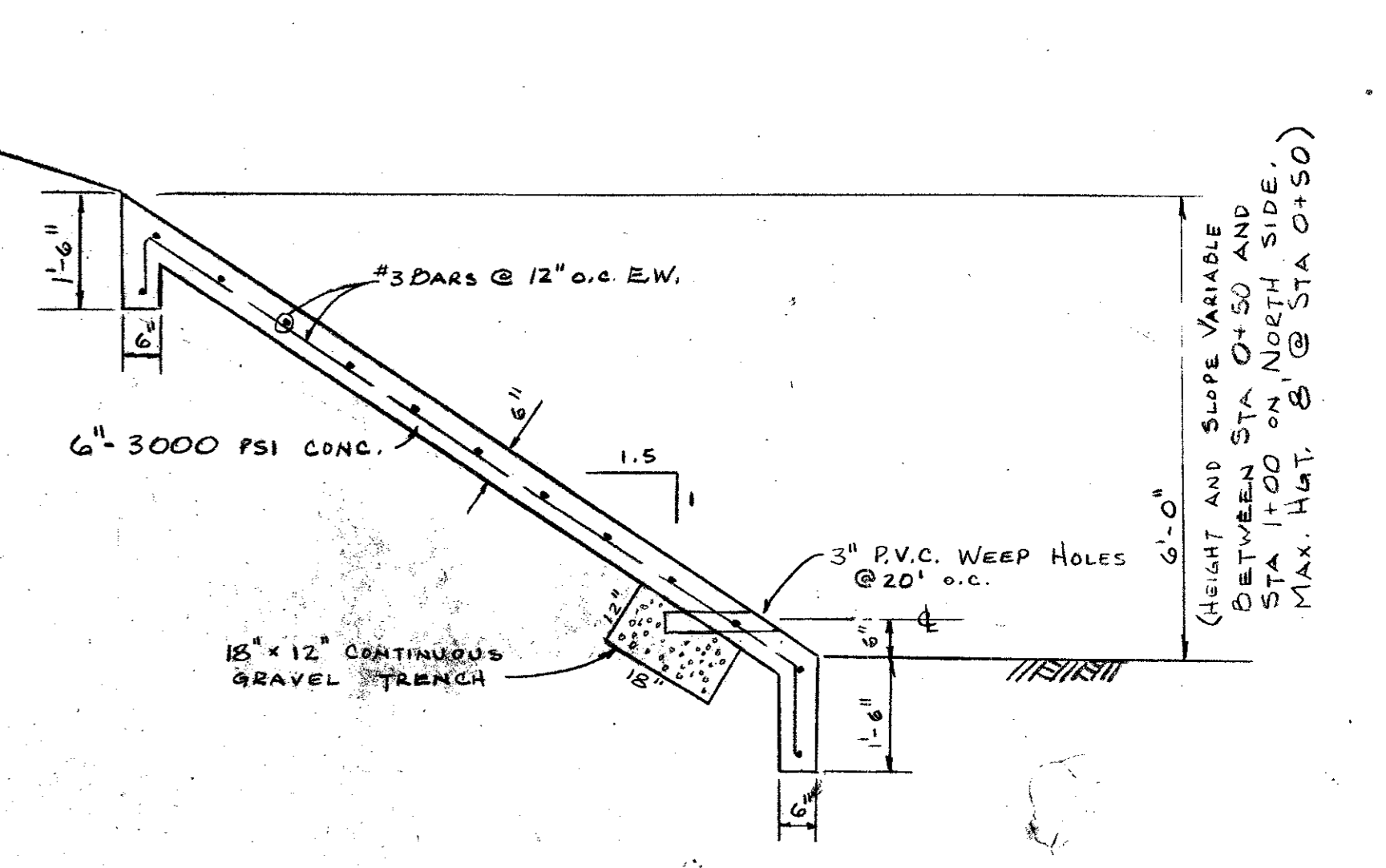
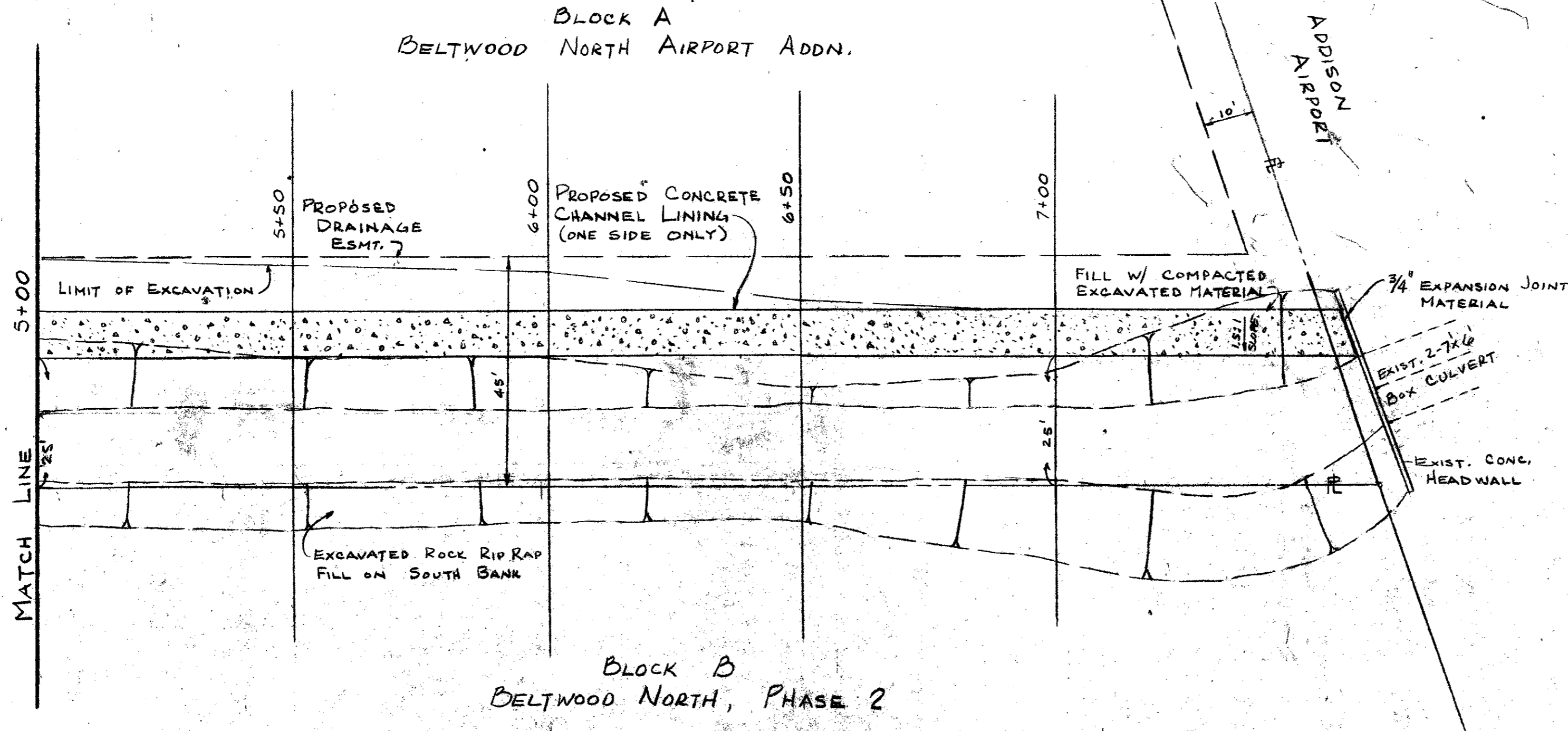
BM: OPERATING NUT OF FIRE HYDRANT  
AT SW CORNER OF SITE.  
ELEV. = 609.16



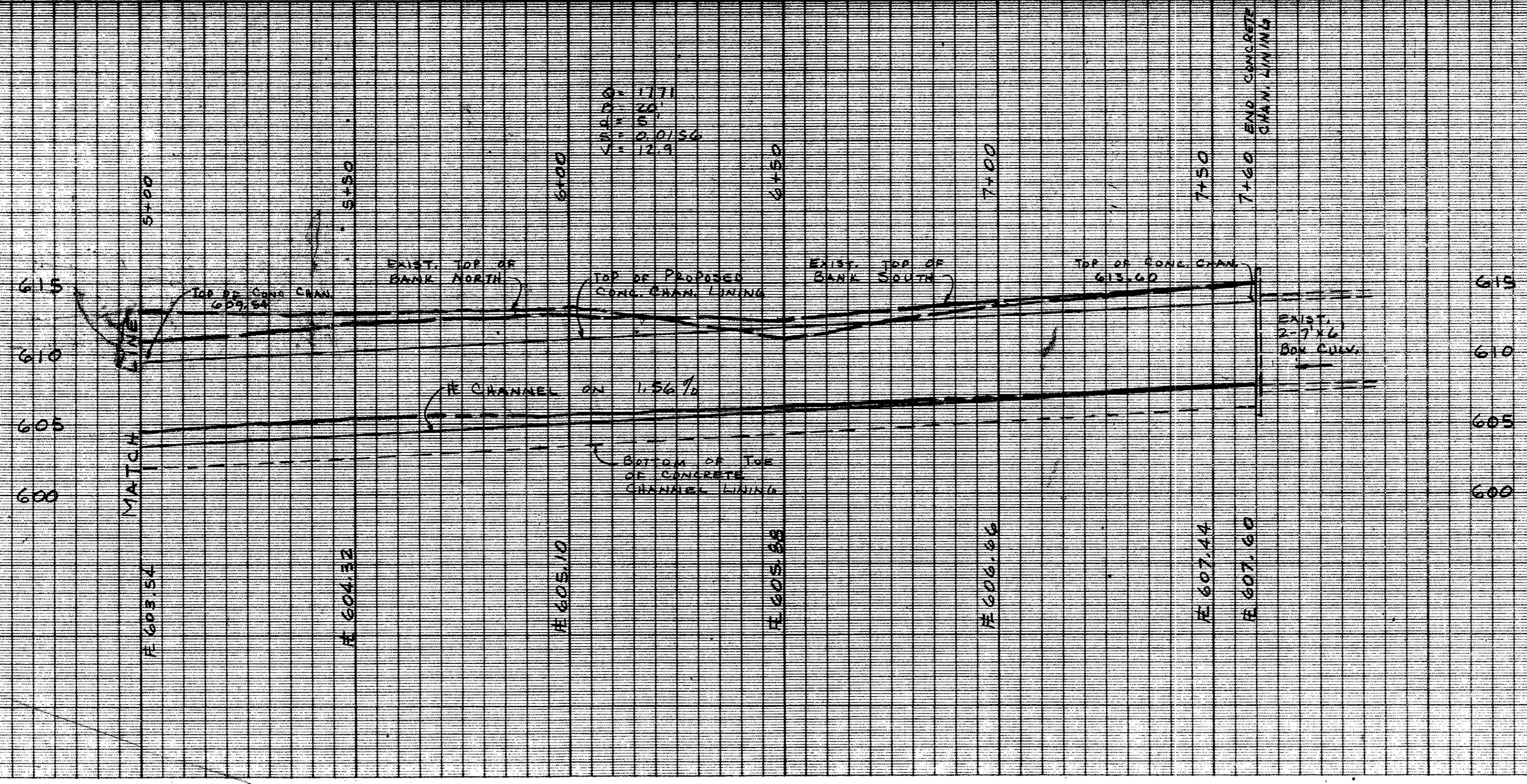
"As BUILT"  
2-11-94  
Plot 2 Power  
10.20.93

CREEK IMPROVEMENTS					
BELTWOOD NORTH AIRPORT ADDN.					
MIDWAY ROAD					
TOWN OF ADDISON, TEXAS					
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE NO.
PEARCE & ASSO., INC.		Nov '93	1" = 20' H 1" = 6' V		0.N.93-003 2 OF 6

SCALE 1" = 20'



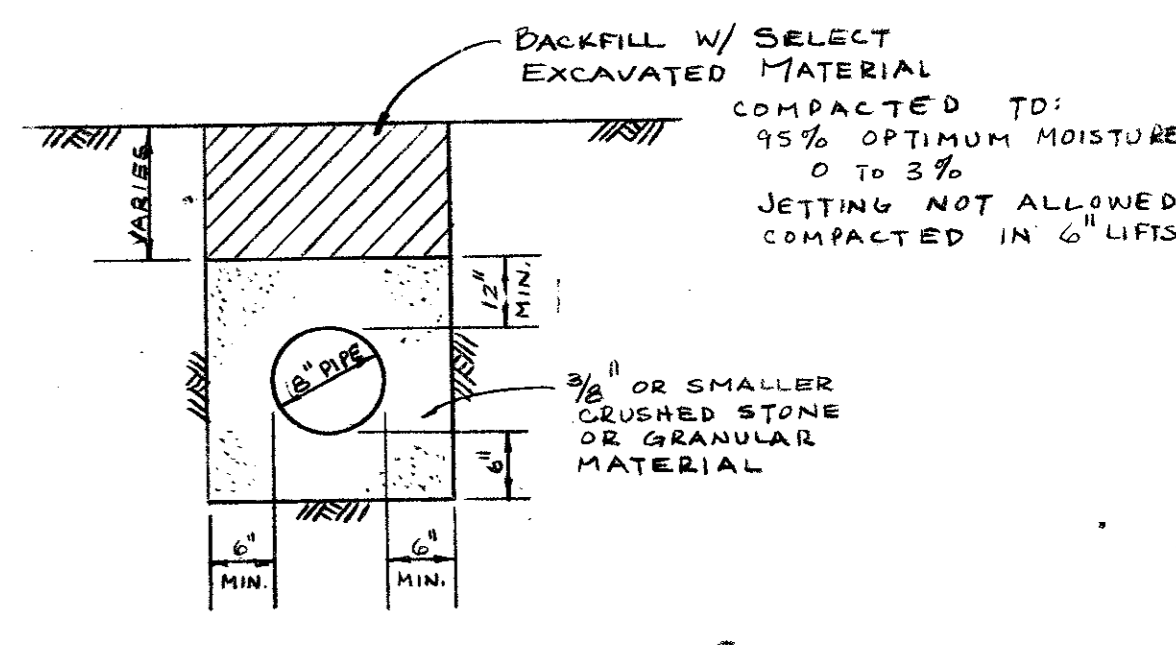
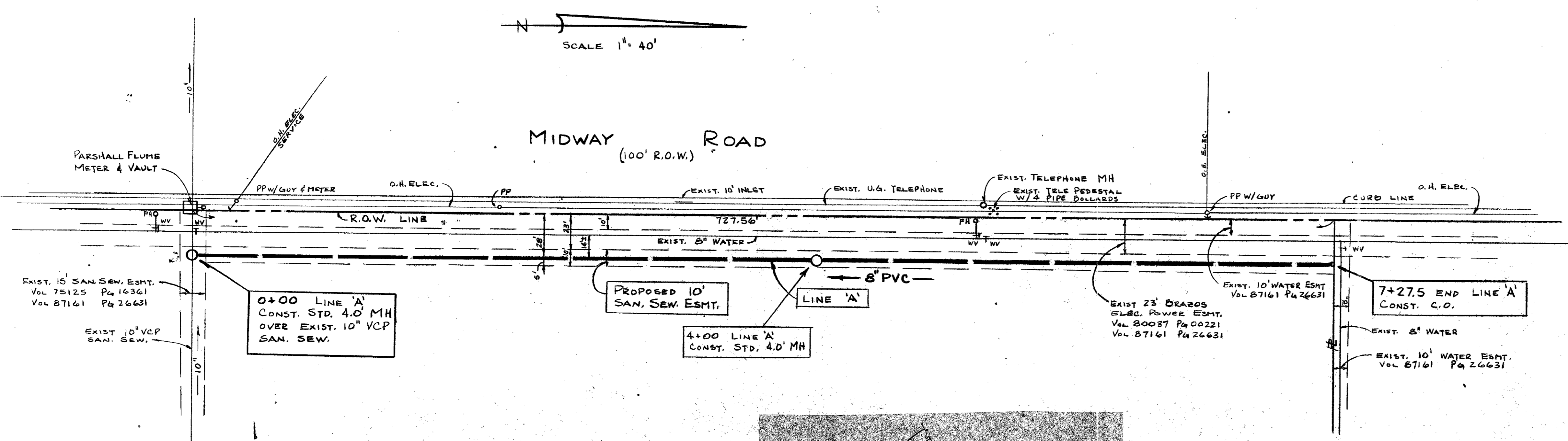
BM: OPERATING NUT. OF FIRE HYDRANT AT SW CORNER OF SITE  
ELEV. = 609.16



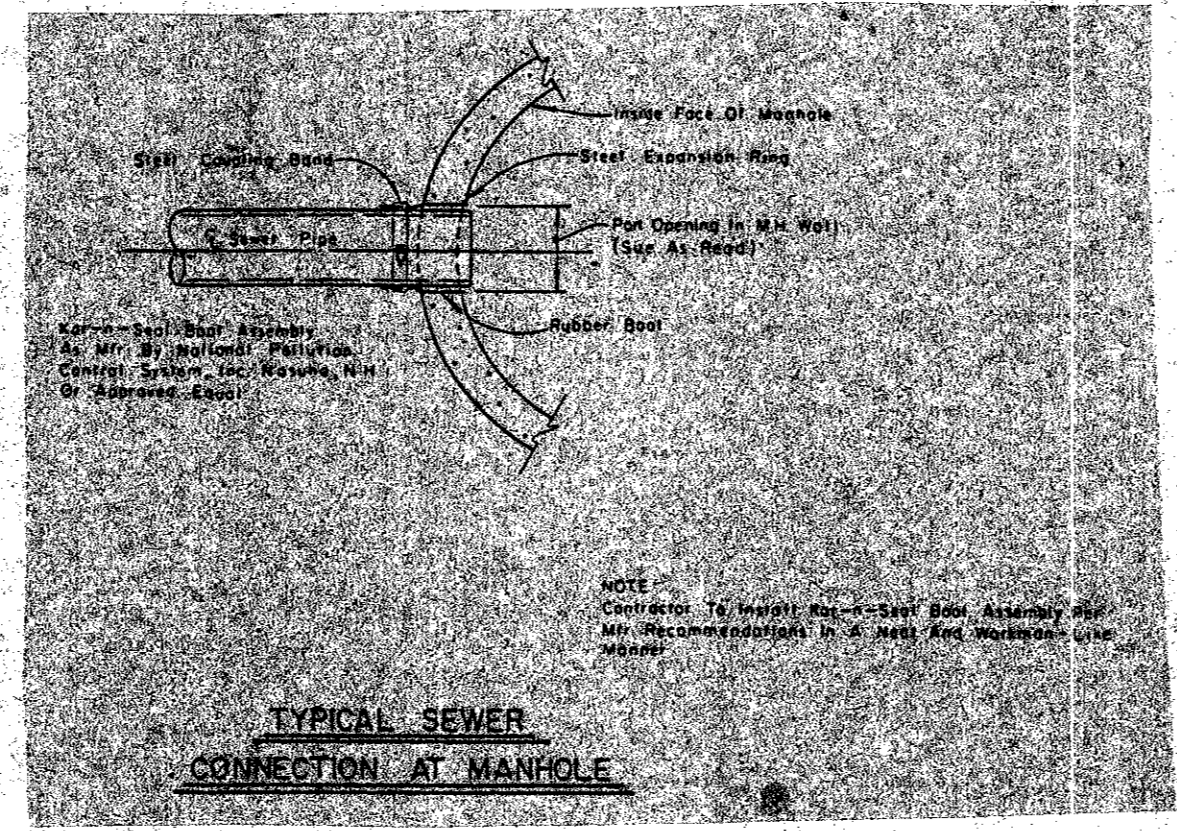
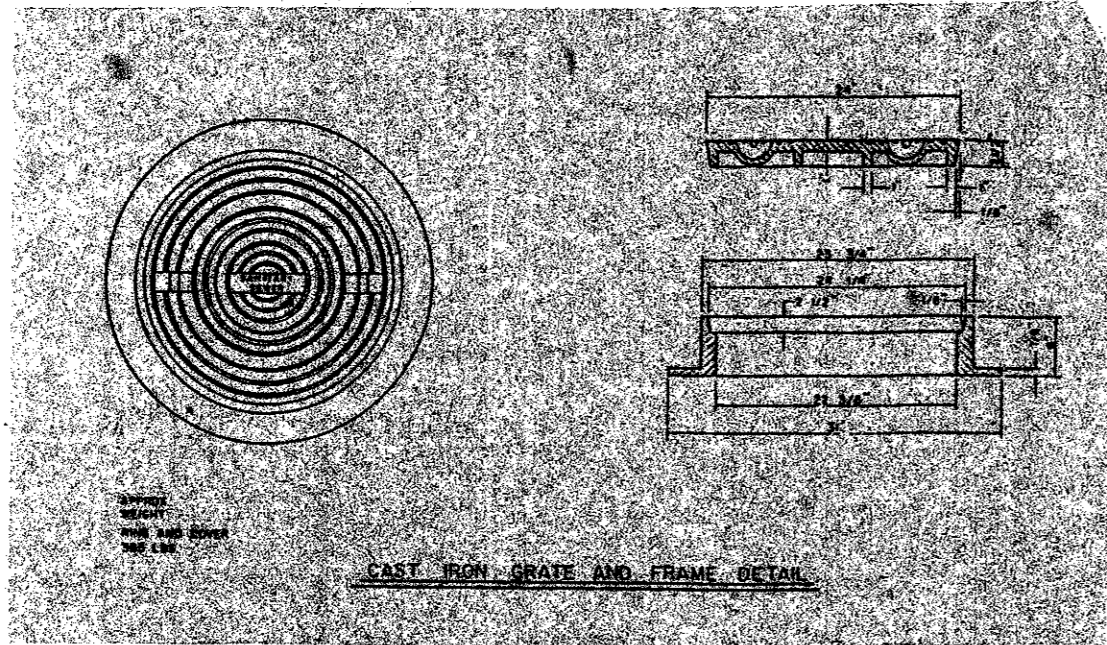
PA 10-20-93

"As BUILT"  
2-14-94

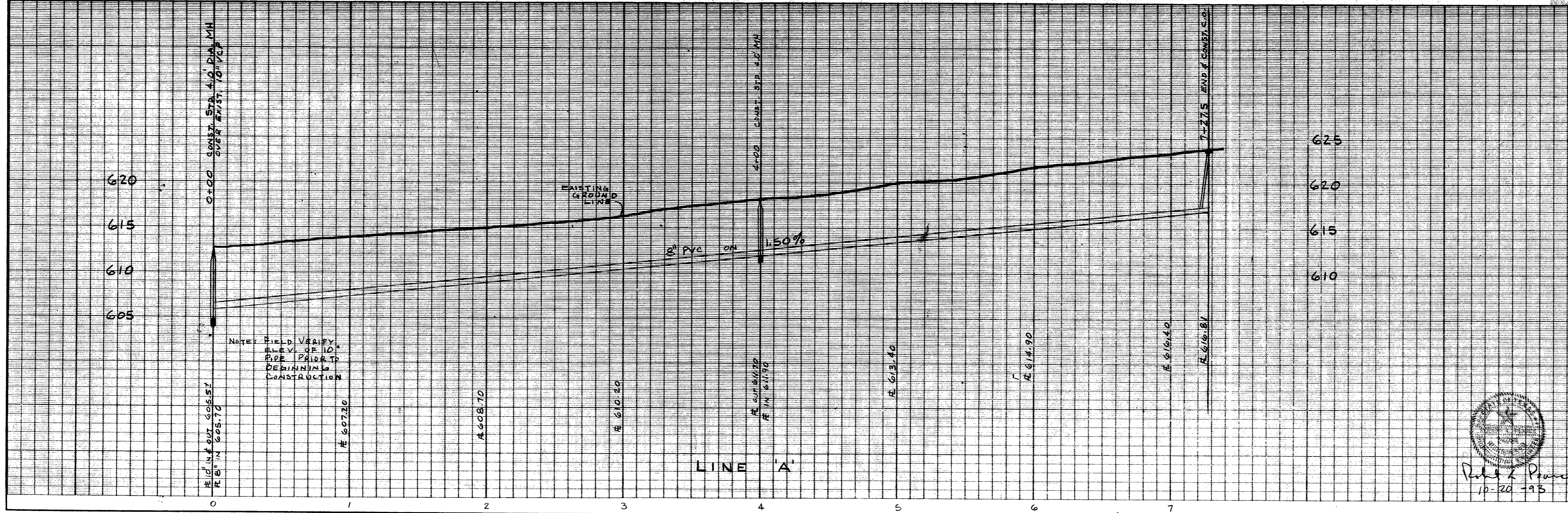
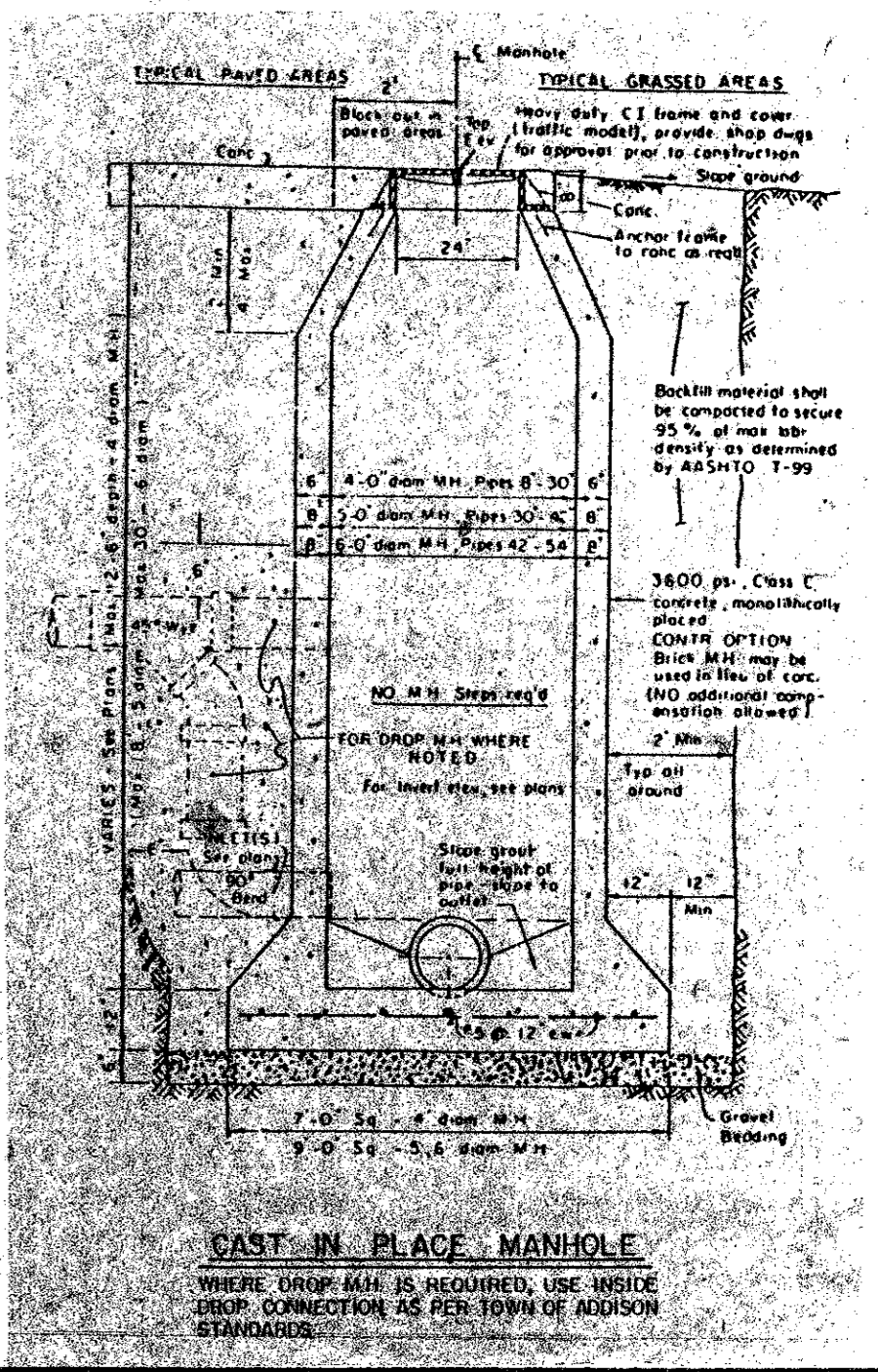
CREEK IMPROVEMENTS					
BELTWOOD NORTH AIRPORT ADDN.					
MIDWAY ROAD					
TOWN OF ADDISON, TEXAS					
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE NO.
PA	PA	Nov '93	1" = 20' H 1" = 61 V		ON. 93-003 3 OF 6



EMBEDMENT DETAIL - SANITARY SEWER



BM: OPERATING N.D.T. OF FIRE HYDRANT AT SW CORNER OF SITE ELEV. 609.16



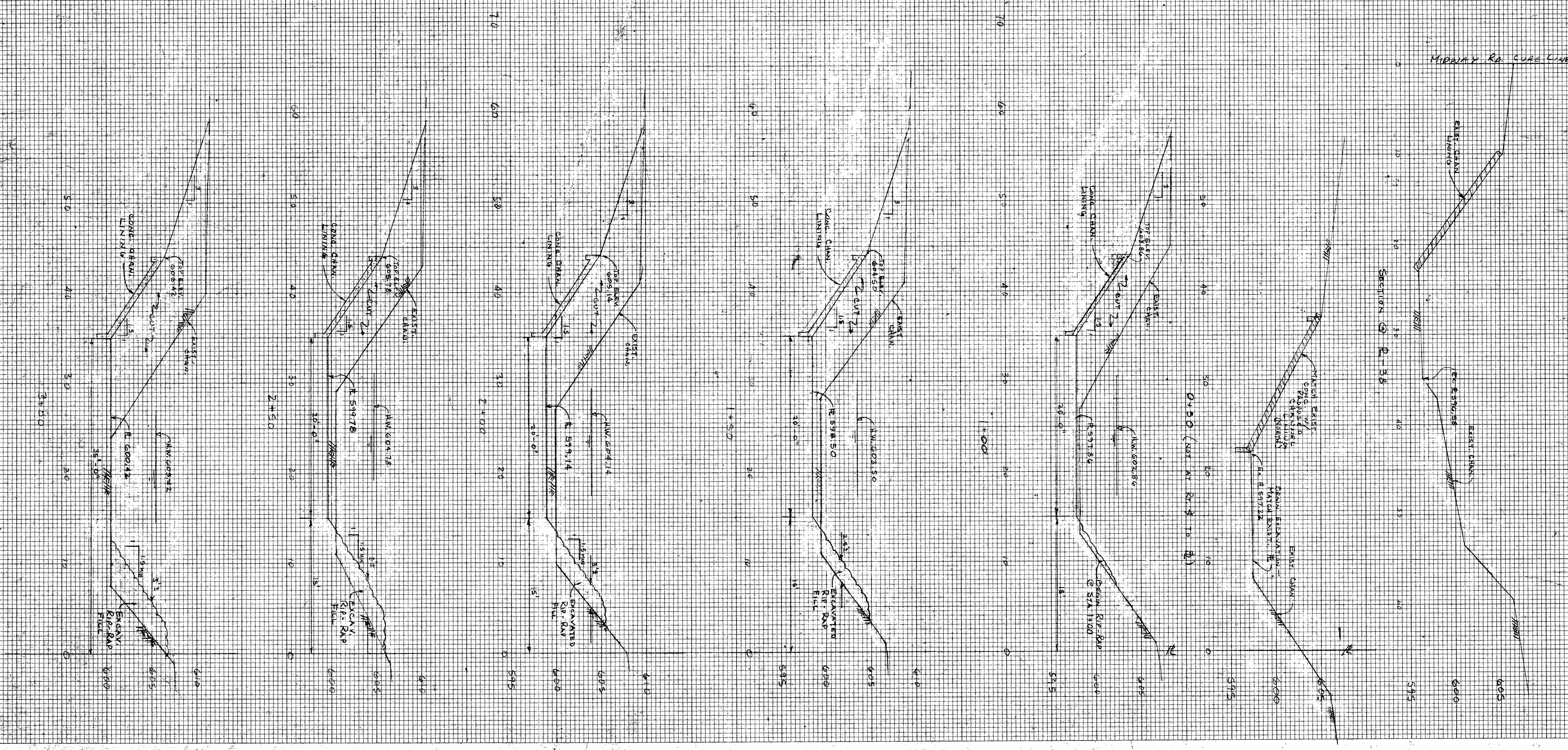
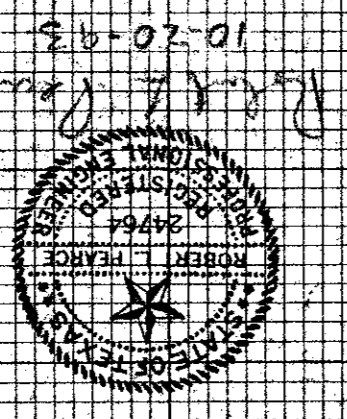
"AS BUILT" 2-14-94

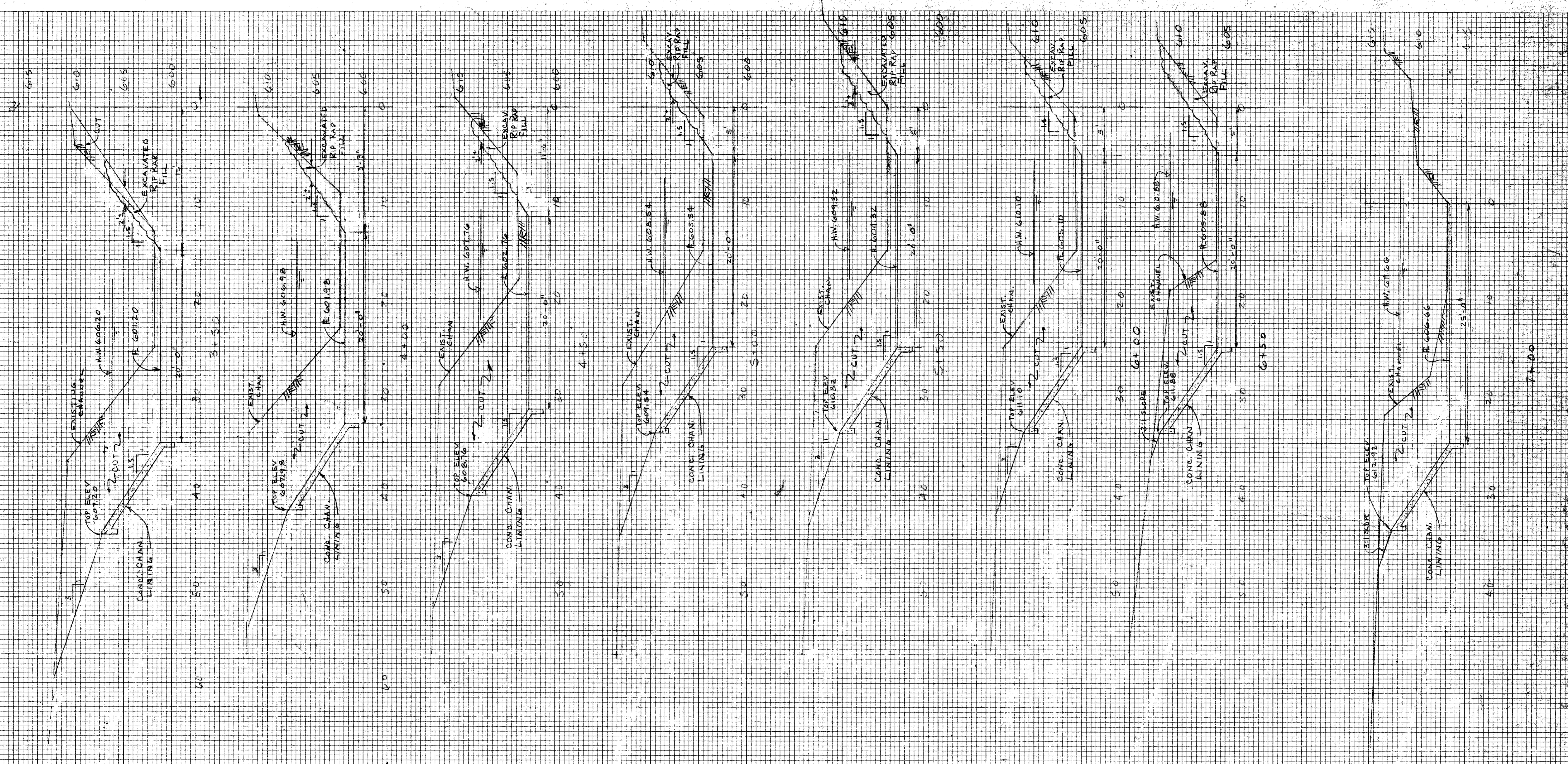
SANITARY SEWER IMPROVEMENTS  
BELTWOOD NORTH AIRPORT ADDN.  
MIDWAY ROAD  
TOWN OF ADDISON, TEXAS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
PA	PA	Nov '93	1" = 40' H 1" = 6' V		O.N.93-003	4 OF 6

Paul & Patricia  
10-20-93

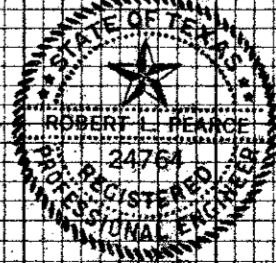
As Built  
"As Built"  
CREEK SECTIONS  
Bellwood North Airport Road,  
Midway Road,  
Town of Addison, Texas





"As Built"  
2-11-94

CREEK SECTIONS  
DELMWOOD NORTH AIRPORT ADDN.  
MIDWAY ROAD  
TOWN OF ADDISON, TEXAS



Robert L. Pappas  
10-20-93

SCALE 1"=5'

Nov '93

SHEET 6 OF 6