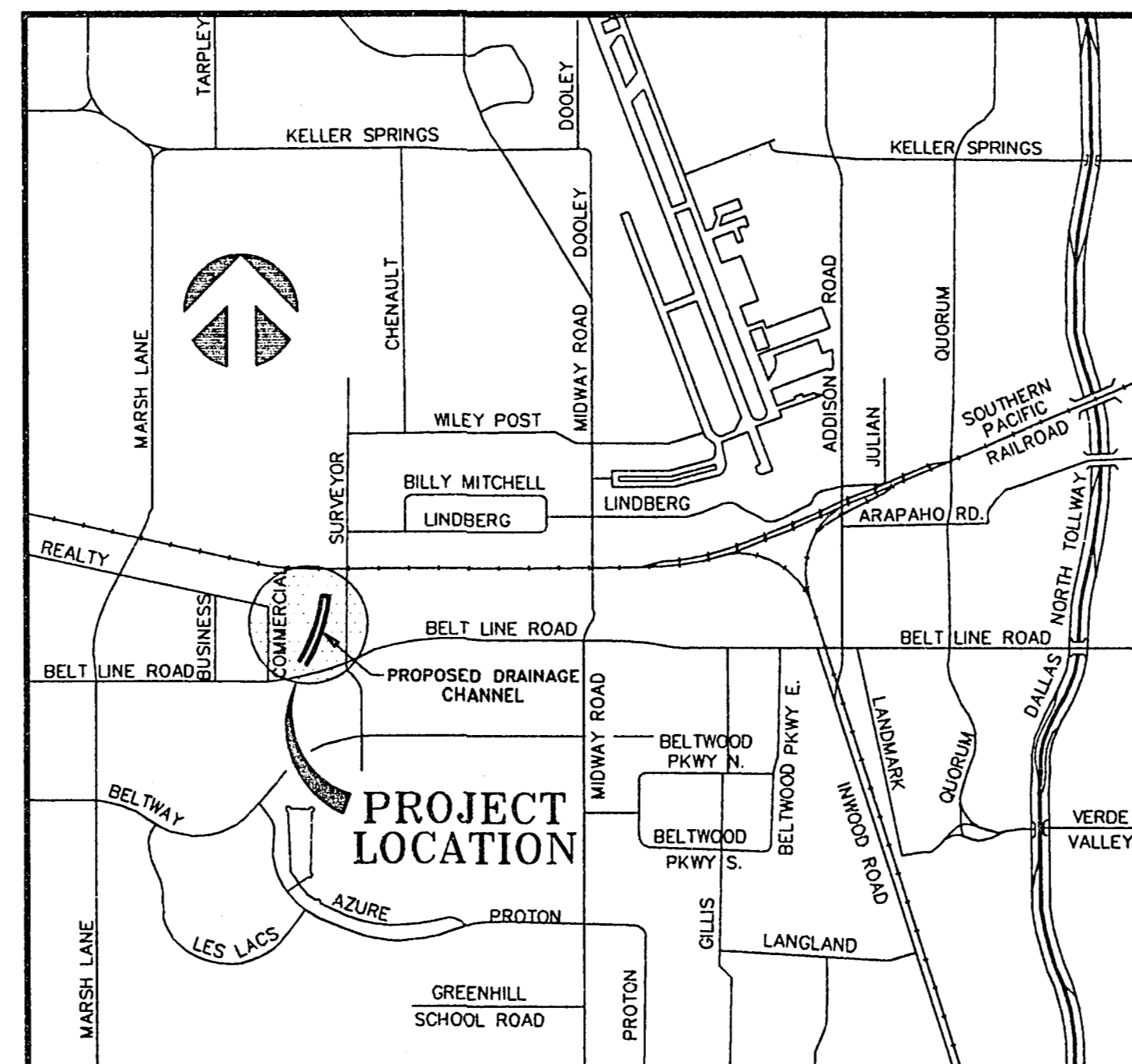


DRAINAGE IMPROVEMENTS FOR TU ELECTRIC/ADDISON BANK

TOWN OF ADDISON

INDEX OF DRAWINGS

TITLE SHEET	1
QUANTITY SUMMARY/GENERAL NOTES	2
DRAINAGE PLAN/PROFILE	3-4
DRAINAGE DETAILS	5-6
CROSS-SECTIONS	7



LOCATION MAP

N.T.S.

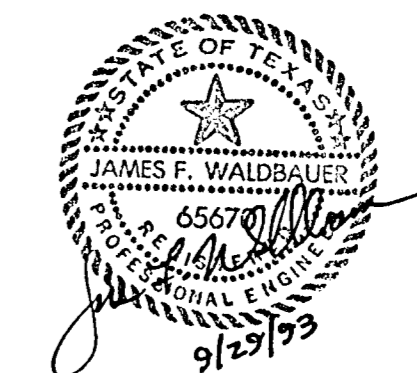
TOWN OF ADDISON ENGINEER

JOHN BAUMGARTNER, P.E.

EH&A PROJECT MANAGER

BRUCE GRANTHAM, P.E.

EH&A **Espey, Huston & Associates, Inc.**
Engineering & Environmental Consultants
13800 Montfort Drive, Suite 230
Dallas, Texas 75240 (214) 387-0771



E.H. & A. JOB NO. 14911

AUGUST 1993

Construction Set
Issued by
David Nighswan 12/10/93

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1.	Mobilization, Bonds and Insurance	L.S.	1
2.	Remove Existing Concrete Walk and Channel Side Slopes	S.Y.	390
3.	Unclassified Excavation	C.Y.	4,400
4.	10'x4.5' Reinforced Concrete Culvert Boxes (including Expanding Section)	C.Y.	99
5.	Reinforced Concrete Flared Wingwalls	C.Y.	4
6.	Reinforced Concrete Channel Lining (6") and Drop Structures	S.Y.	2,400
7.	Grouted Rip-Rap (12" Thick)	S.Y.	785
8.	Reinforced Concrete Flumes	S.Y.	16
9.	Standard "Y" Inlet	EA.	1
10.	24" RCP	L.F.	24
11.	Hydromulch	S.Y.	5,500

GENERAL NOTES

- 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.
- All locations of underground utility lines are approximate. Contractor shall notify all applicable utility companies 48 hours prior to construction so that underground lines can be marked.
 SOUTHWESTERN BELL TELEPHONE 464-4095
 TCI CABLEVISION OF DALLAS 288-7550
 LONE STAR GAS 931-1988
 TU ELECTRIC 323-8907
- 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.
- 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.
- The contractor is responsible for keeping streets, parking areas, sidewalks, etc., adjacent to the project free of mud and debris from construction.
- 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.
- The Town of Addison Public Works Department is to be notified 48 hours (2 working days) prior to any construction of paving and utilities in rights-of-way, easements and alleys.
- All disturbed earth areas are to be finish graded to original or proposed contours, fertilized and hydromulched with winter rye or bermuda seed (depending upon season) to NCTCOG 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).
- Arrangements for construction water shall be made through the Town of Addison.
- Contractor shall maintain adequate sanitary facilities for use by workers throughout construction.
- Contractor shall dispose of all excess excavation and cleared material off-site, including broken concrete, rock, trees and vegetation.
- All items associated with channel lining including gravel trench, weep holes, etc. shall be considered subsidiary to the unit price bid for concrete channel lining.

NO.	REVISION	BY	DATE

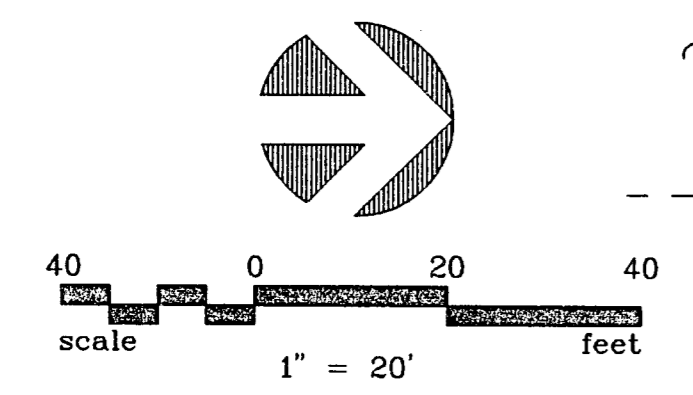
DESIGNED BY: J. WALDBAUER
 DRAWN BY: EH&A
 CHECKED BY: B. GRANTHAM
 SCALE: NO SCALE
 DATE: AUGUST, 1993
 FILE: \ADDBANK\QUANTITY



EH&A Espey, Huston & Associates, Inc.
 Engineering & Environmental Consultants
 13800 Montfort Drive, Suite 230
 Dallas, Texas 75240 (214) 387-0771

GENERAL NOTES AND QUANTITY SUMMARY SHEET
 TU ELECTRIC/ADDISON BANK DRAINAGE PROJECT
 for THE TOWN OF ADDISON

SHEET NO. 2
 OF 7 SHEETS
 JOB NO. 14911



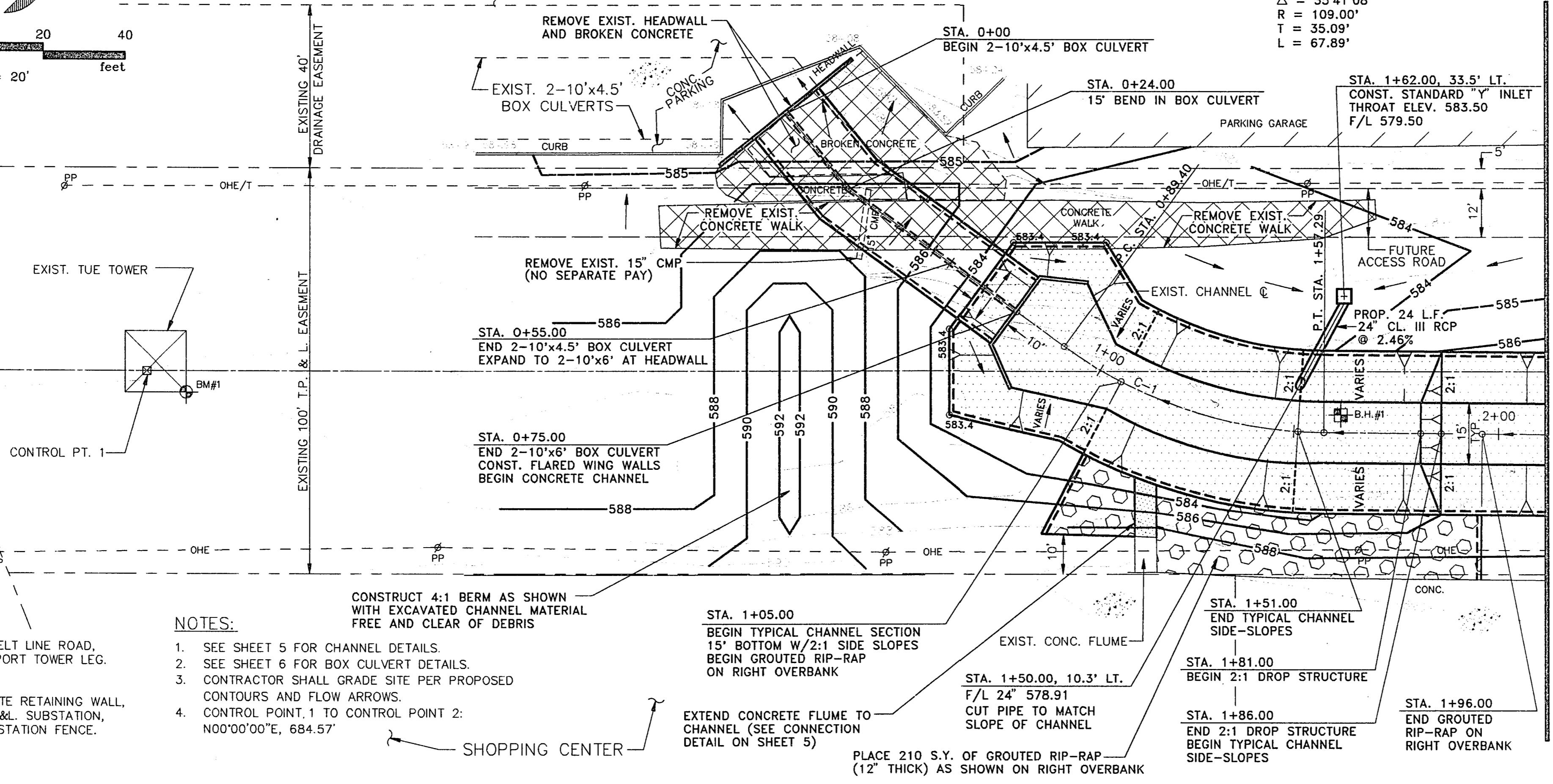
ADDISON NATIONAL BANK

CURVE DATA C-1
 $\Delta = 35^\circ 41' 08''$
 $R = 109.00'$
 $T = 35.09'$
 $L = 67.89'$

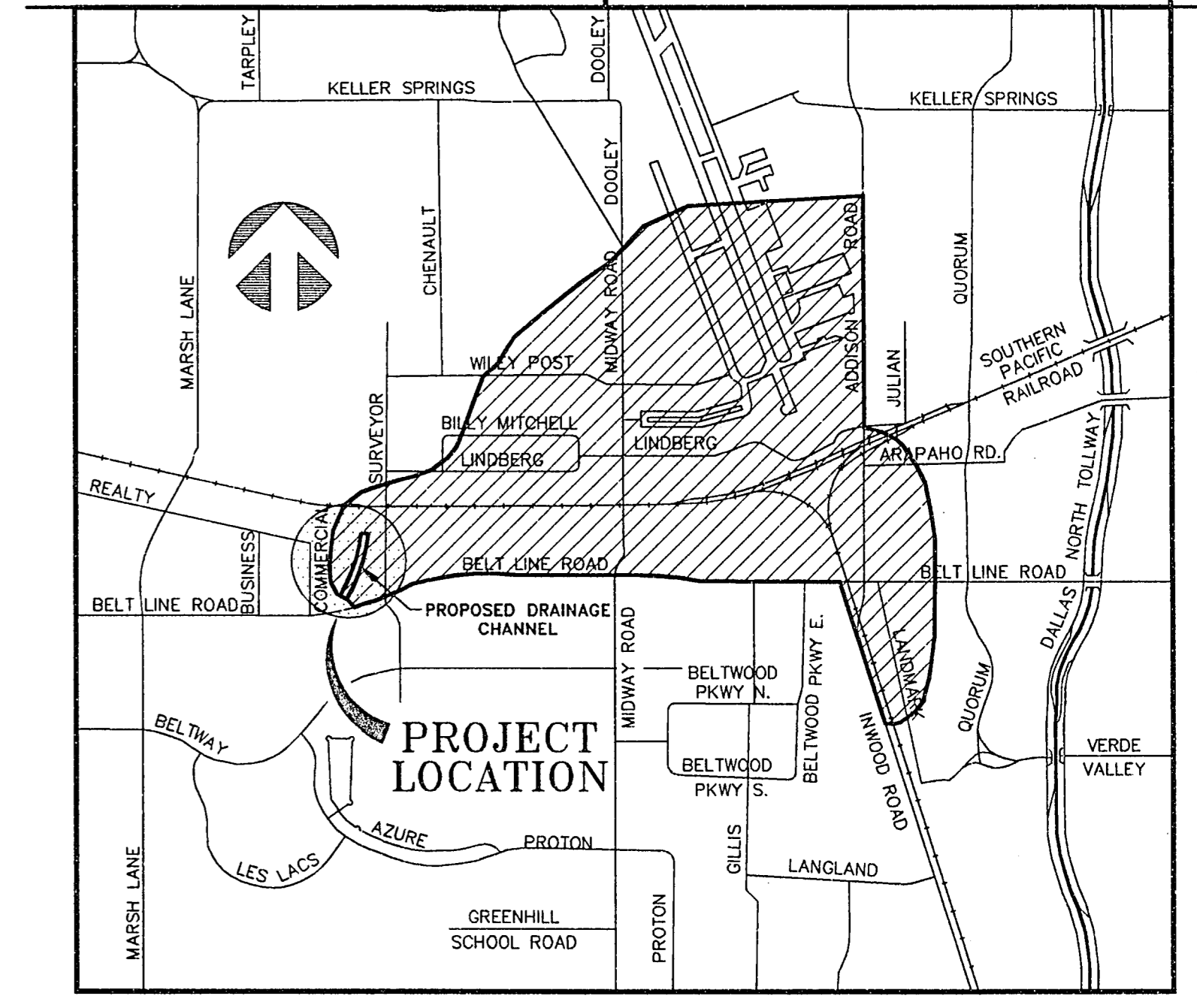
- LEGEND**
- EXISTING CONTOURS
 - - - PROPOSED CONTOURS
 - ⊕ BENCHMARK LOCATION
 - ⊙ BORE HOLE LOCATION
 - ▨ CONCRETE REMOVAL
 - ▩ PROPOSED CONCRETE
 - PROPOSED GROUDED RIP-RAP
 - ⊕ POWER POLE
 - DIRECTION OF FLOW

Basin Data:
 A = 436 ACRES
 $T_c = 45 \text{ min.}$
 $i_{100} = 4.8 \text{ in/hr}$
 C = 0.9
 $Q_{100} = (0.9)(4.8 \text{ in/hr})(436 \text{ ACRES})$
 $Q_{100} = 1884 \text{ CFS}$

BELT LINE ROAD



MATCH LINE STA. 2+11.70



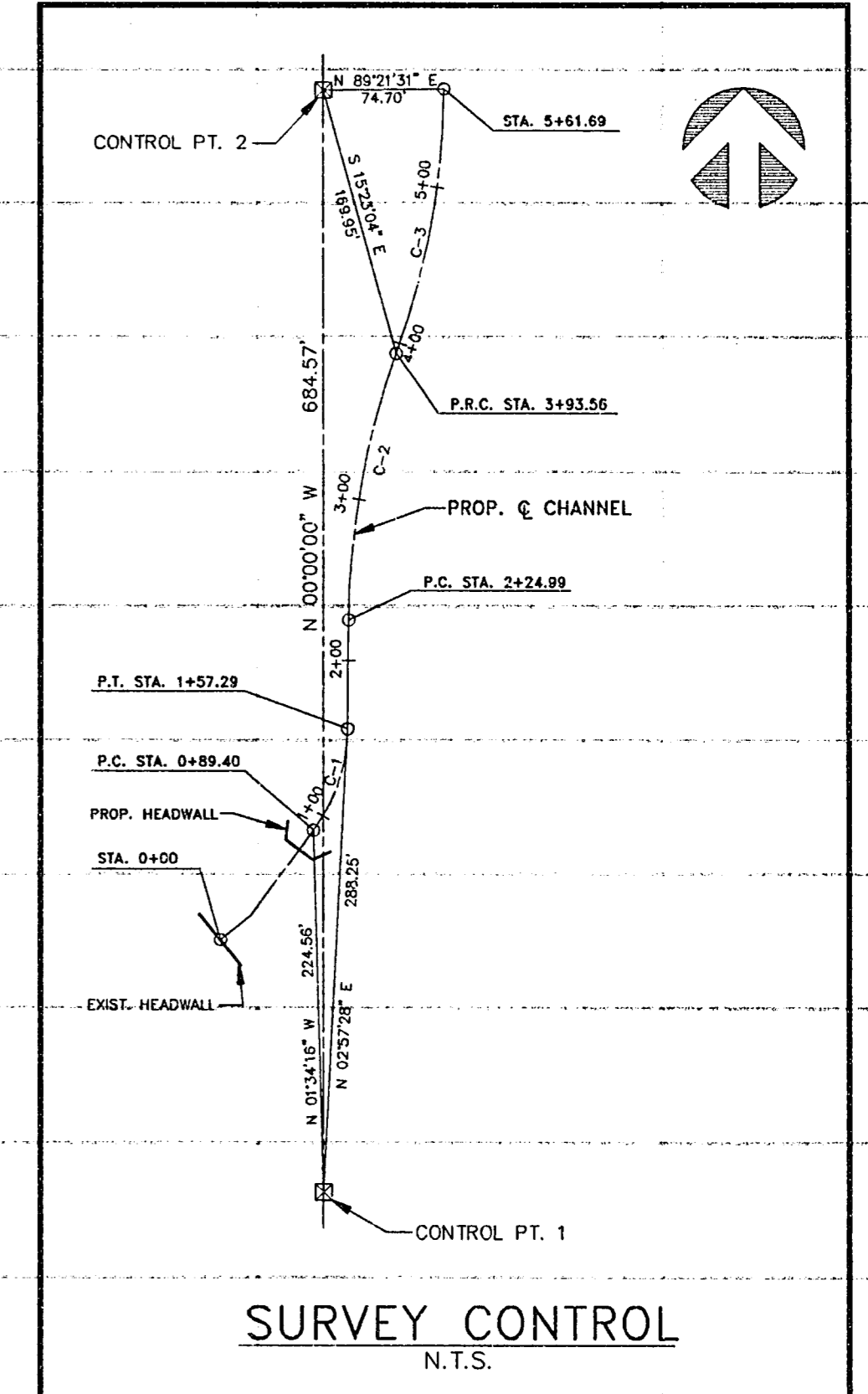
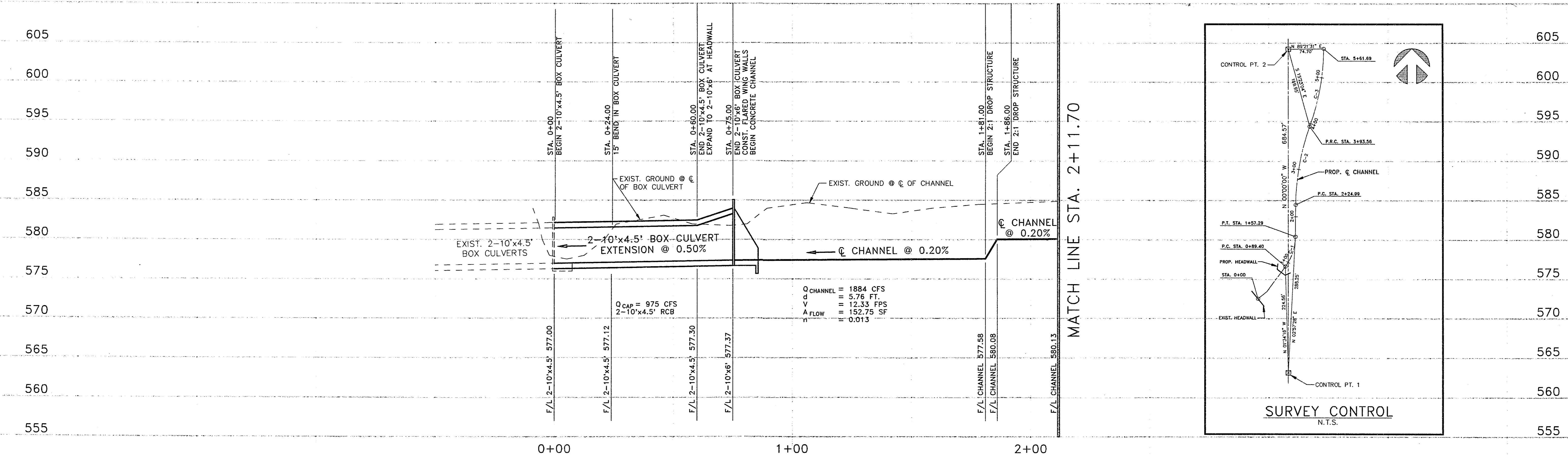
DRAINAGE AREA MAP
N.T.S.

BENCHMARKS

- BM#1 SET CUT "□" AT SOUTHERLY TOWER AT BELT LINE ROAD, ± AT NORTHEAST CORNER CONCRETE SUPPORT TOWER LEG. ELEV. 588.90
- BM#2 SET CUT "□" AT SOUTHERLY END CONCRETE RETAINING WALL, NORTH END OF SITE AT EAST SIDE OF T.P.&L. SUBSTATION, ± 40' SOUTH OF SOUTHEAST CORNER SUBSTATION FENCE. ELEV. 590.20

NOTES:

1. SEE SHEET 5 FOR CHANNEL DETAILS.
2. SEE SHEET 6 FOR BOX CULVERT DETAILS.
3. CONTRACTOR SHALL GRADE SITE PER PROPOSED CONTOURS AND FLOW ARROWS.
4. CONTROL POINT 1 TO CONTROL POINT 2: N00°00'00"E, 684.57'



SURVEY CONTROL
N.T.S.

NO.	REVISION	BY	DATE

DESIGNED BY: J. WALDBAUER
 DRAWN BY: EH&A
 CHECKED BY: B. GRANTHAM
 SCALE: 1"=20'H., 1"=6'V.
 DATE: AUGUST, 1993
 FILE: \ADDBANK\PP20A

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 13800 Montfort Drive, Suite 230
 Dallas, Texas 75240 (214) 387-0771

DRAINAGE PLAN & PROFILE
 TU ELECTRIC/ADDISON BANK
 DRAINAGE PROJECT
 for
 THE TOWN OF ADDISON

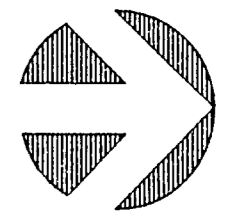
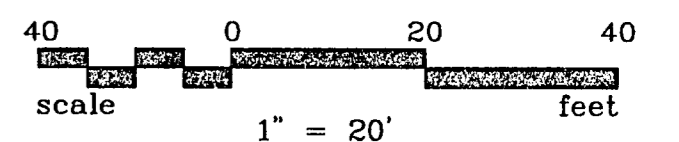
SHEET NO. 3
 OF 7 SHEETS
 JOB NO. 14911

MATCH LINE STA. 2+11.70

CURVE DATA C-2
 $\Delta = 19'19.02"$
 $R = 500.00'$
 $T = 85.09'$
 $L = 168.57'$

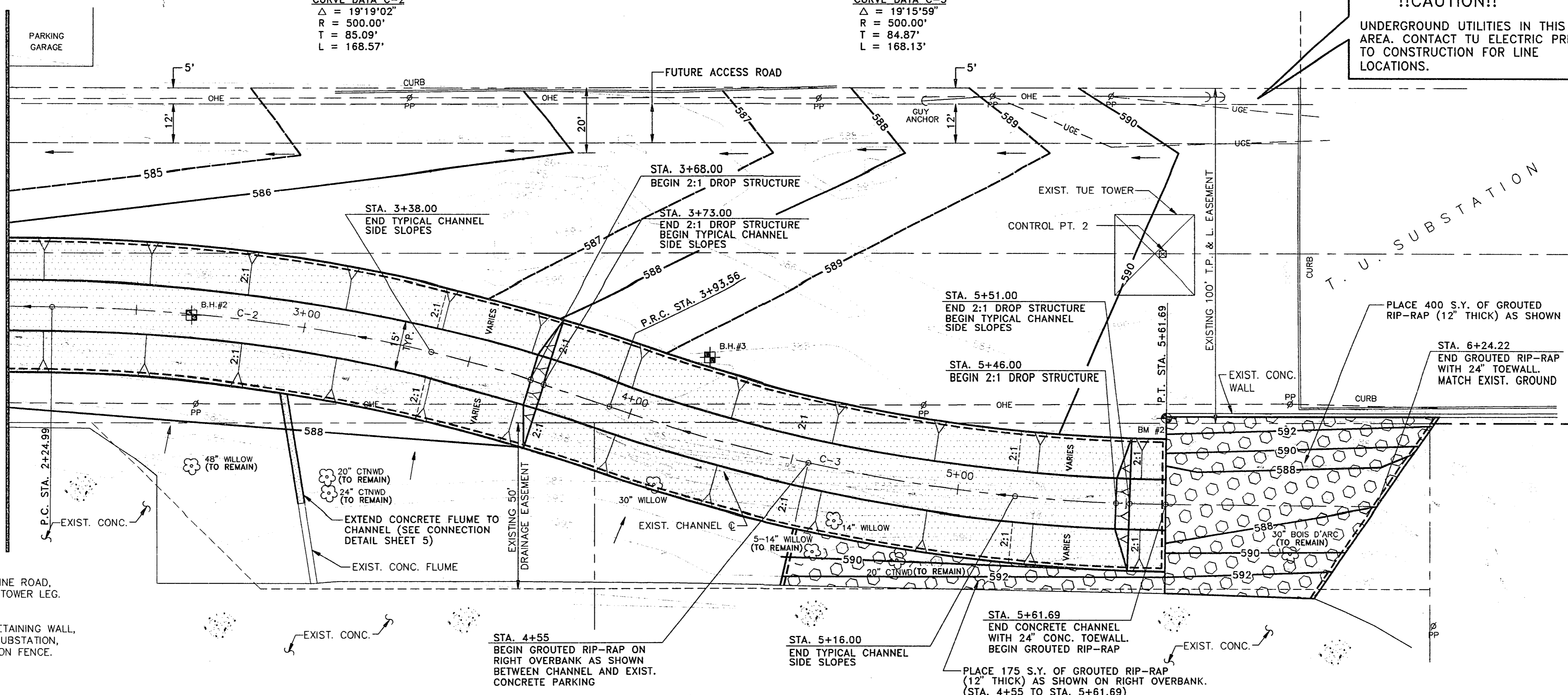
CURVE DATA C-3
 $\Delta = 19'15.59"$
 $R = 500.00'$
 $T = 84.87'$
 $L = 168.13'$

!!CAUTION!!
 UNDERGROUND UTILITIES IN THIS AREA. CONTACT TU ELECTRIC PRIOR TO CONSTRUCTION FOR LINE LOCATIONS.

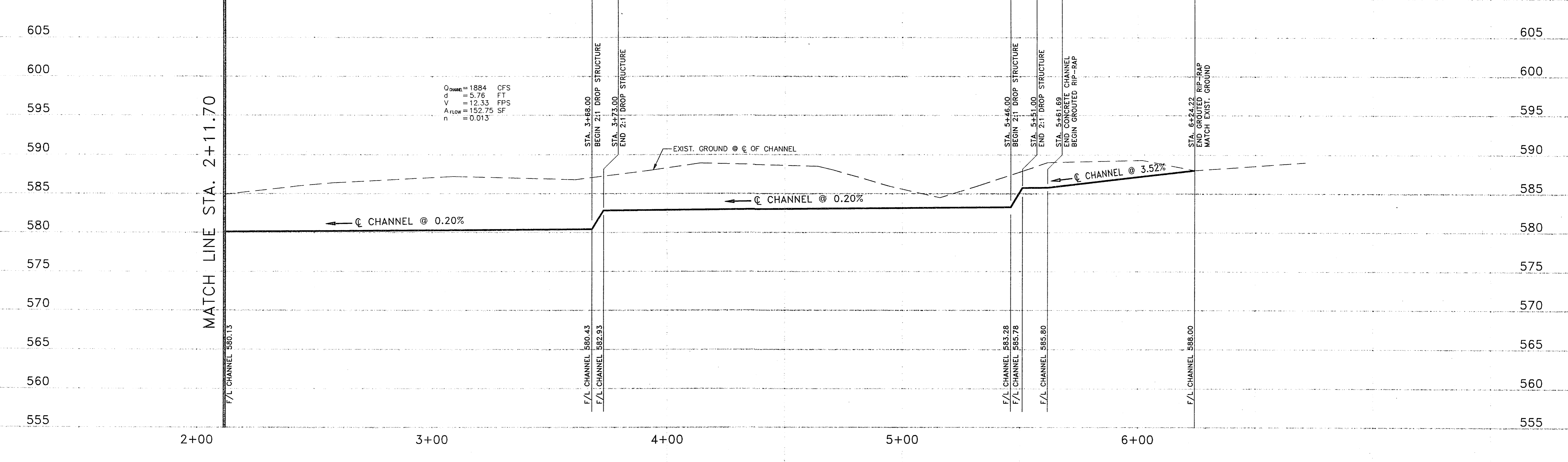


- NOTES:**
- SEE SHEET 5 FOR MISCELLANEOUS CHANNEL DETAILS.
 - CONTRACTOR SHALL MAKE EVERY EFFORT TO SAVE ALL TREES THAT ARE OUTSIDE LIMIT OF PROPOSED CONCRETE CHANNEL. CONTRACTOR SHALL TAKE EXTRA CARE IN AREAS OF RE-GRADING AND/OR PROPOSED GROUDED RIP-RAP TO SAVE TREES IN THESE AREAS.
 - CONTROL PT. 1 TO CONTROL PT. 2: $N00^{\circ}00'00"E, 684.57'$
- BENCHMARKS**
- BM#1 SET CUT "□" AT SOUTHERLY TOWER AT BELT LINE ROAD, ± AT NORTHEAST CORNER CONCRETE SUPPORT TOWER LEG. ELEV. 588.90
- BM#2 SET CUT "□" AT SOUTHERLY END CONCRETE RETAINING WALL, NORTH END OF SITE AT EAST SIDE OF T.P.&L. SUBSTATION, ± 40' SOUTH OF SOUTHEAST CORNER SUBSTATION FENCE. ELEV. 590.20

MATCH LINE STA. 2+11.70



- LEGEND:**
- EXISTING CONTOURS
 - 586 PROPOSED CONTOURS
 - BENCHMARK LOCATION
 - BORE HOLE LOCATION
 - PROPOSED GROUDED RIP-RAP
 - CONCRETE REMOVAL
 - PROPOSED CONCRETE
 - POWER POLE



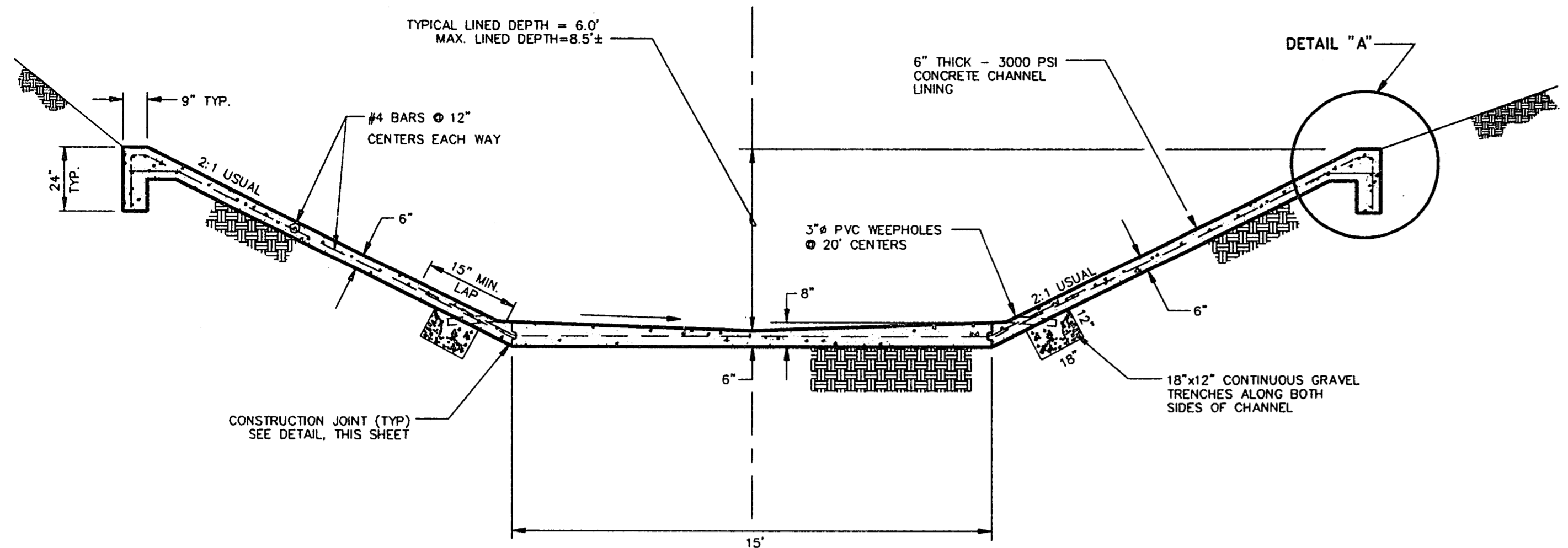
NO.	REVISION	BY	DATE

DESIGNED BY: J. WALDBAUER
 DRAWN BY: EH&A
 CHECKED BY: B. GRANTHAM
 SCALE: 1"=20'H., 1"=6'V.
 DATE: AUGUST, 1993
 FILE: \ADDBANK\PP20B

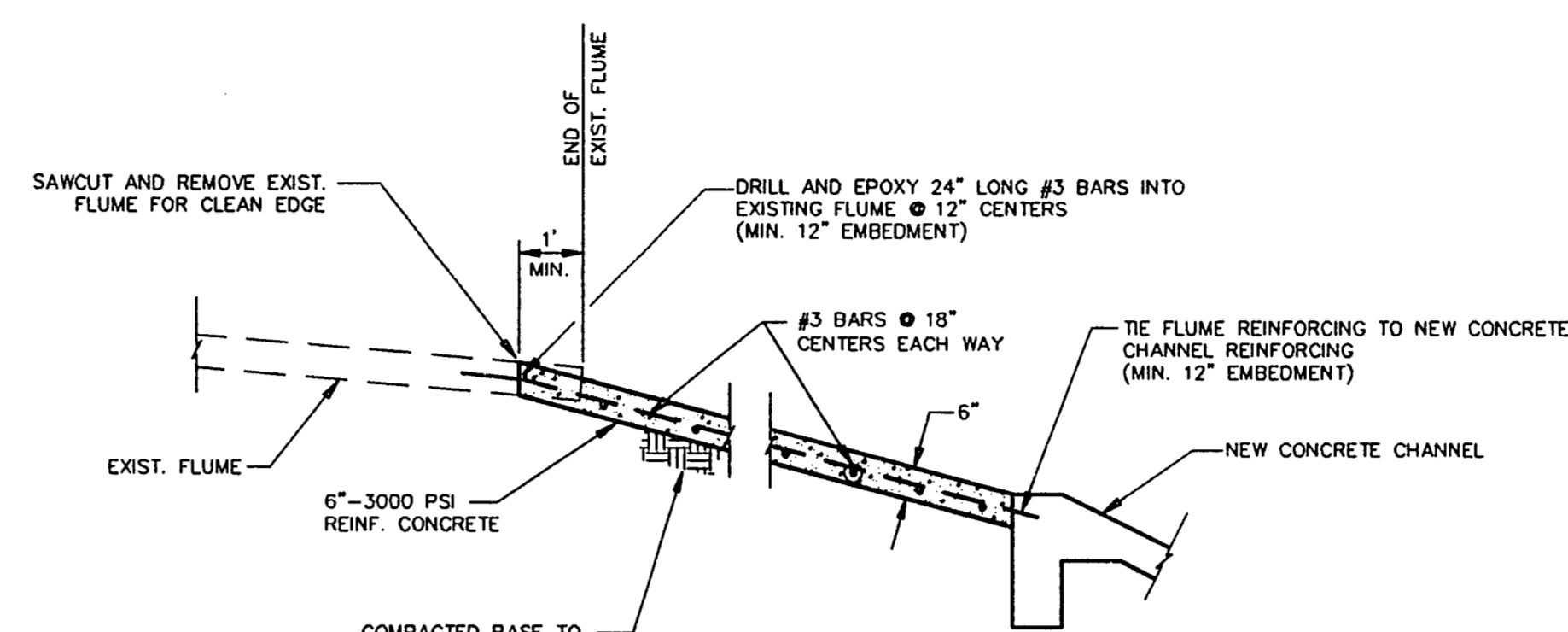
EHS&A Espey, Huston & Associates, Inc.
 Engineering & Environmental Consultants
 13800 Montfort Drive, Suite 230
 Dallas, Texas 75240 (214) 387-0771

DRAINAGE PLAN & PROFILE
 TU ELECTRIC/ADDISON BANK
 DRAINAGE PROJECT
 for
 THE TOWN OF ADDISON

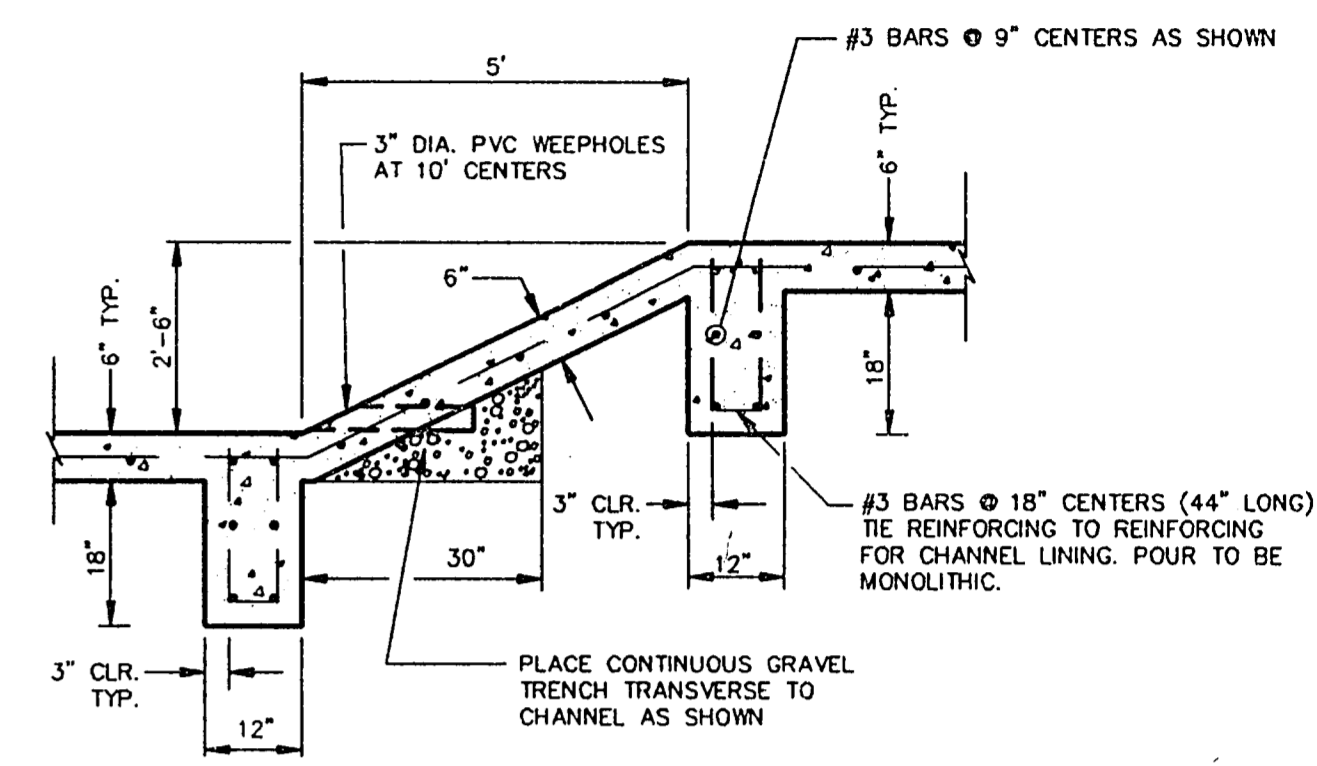
SHEET NO. 4
 OF 7 SHEETS
 JOB NO. 14911



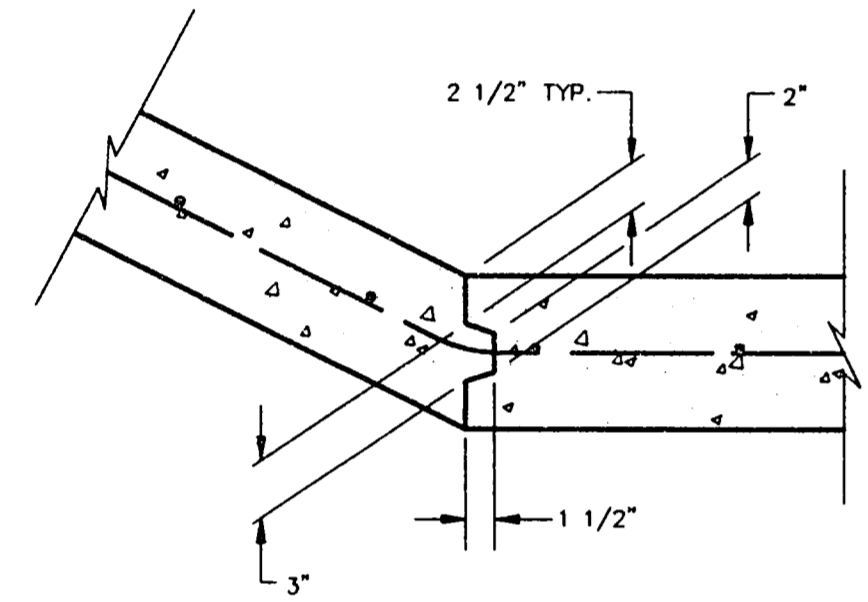
TYPICAL CHANNEL SECTION
N.T.S.



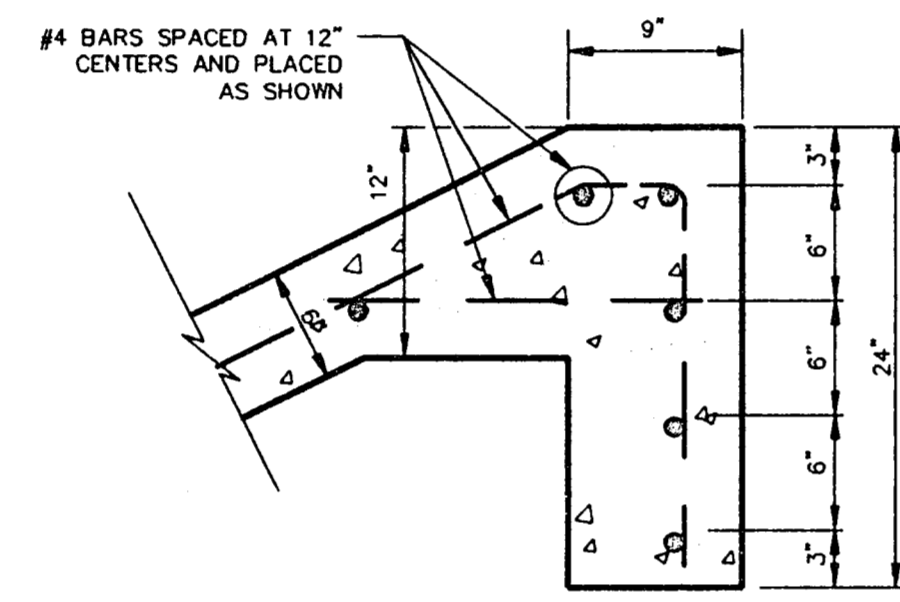
NEW FLUME SECTION
N.T.S.



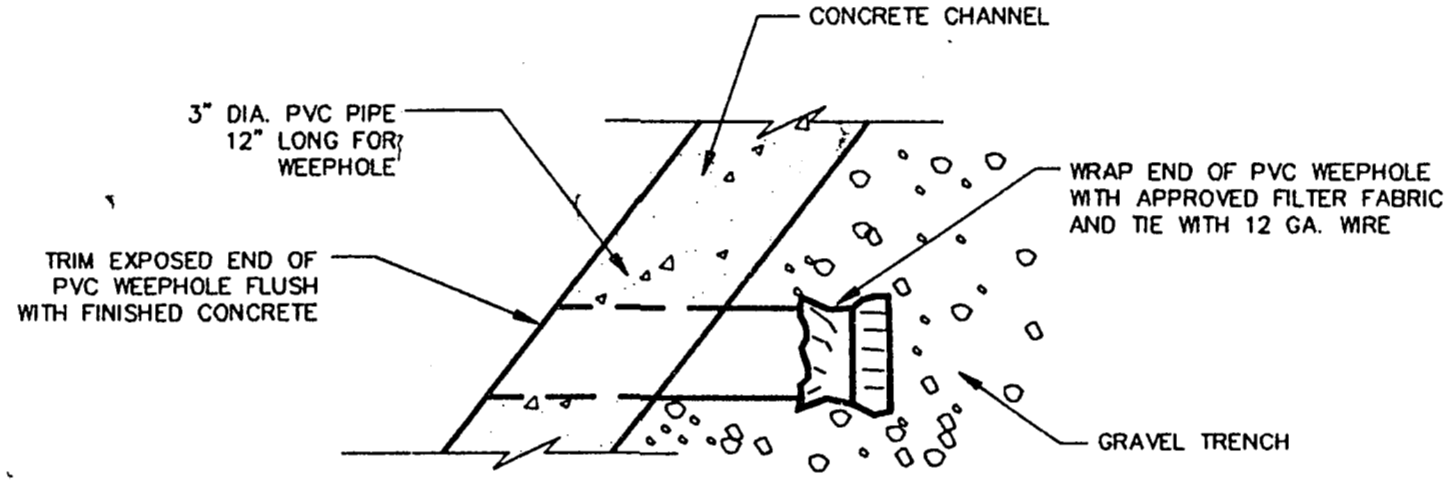
SECTION A-A
N.T.S.



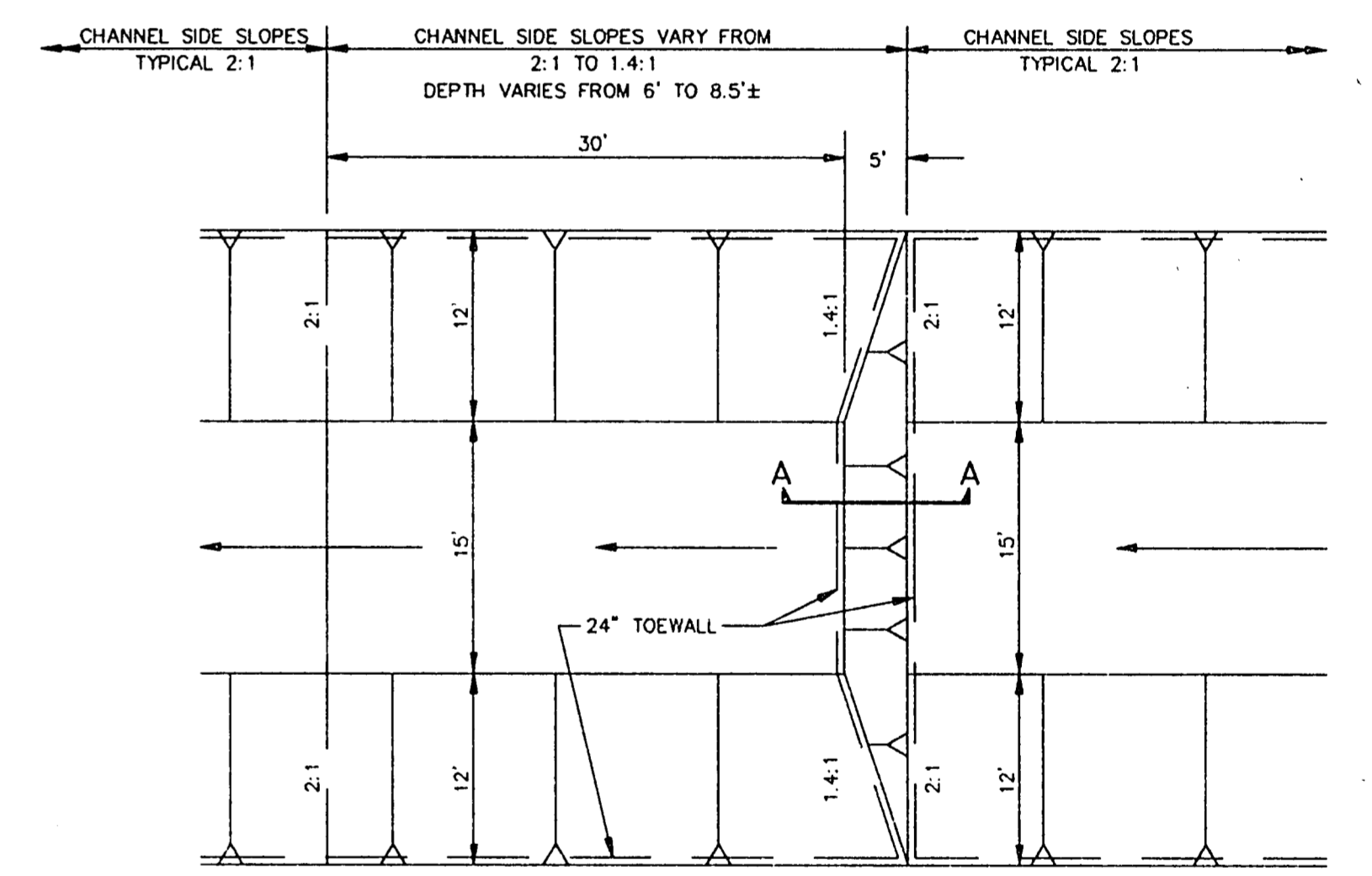
CHANNEL CONSTRUCTION JOINT
N.T.S.



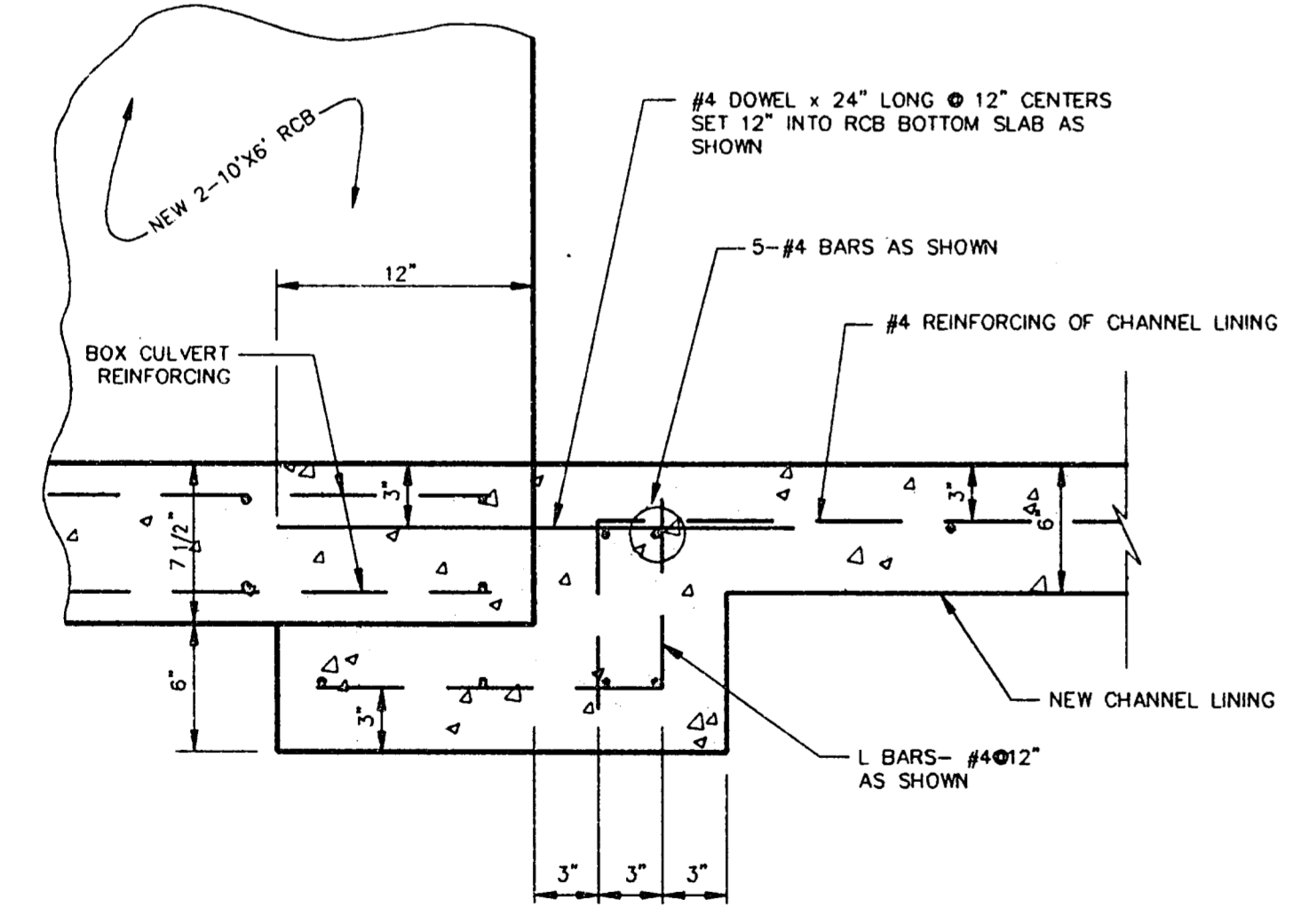
DETAIL "A"
N.T.S.



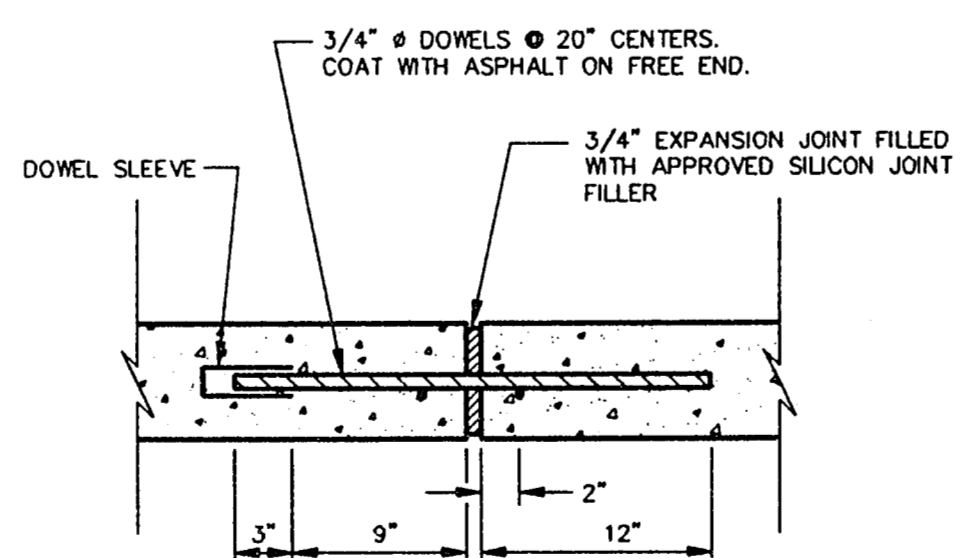
WEEPHOLE DETAIL
N.T.S.



PLAN

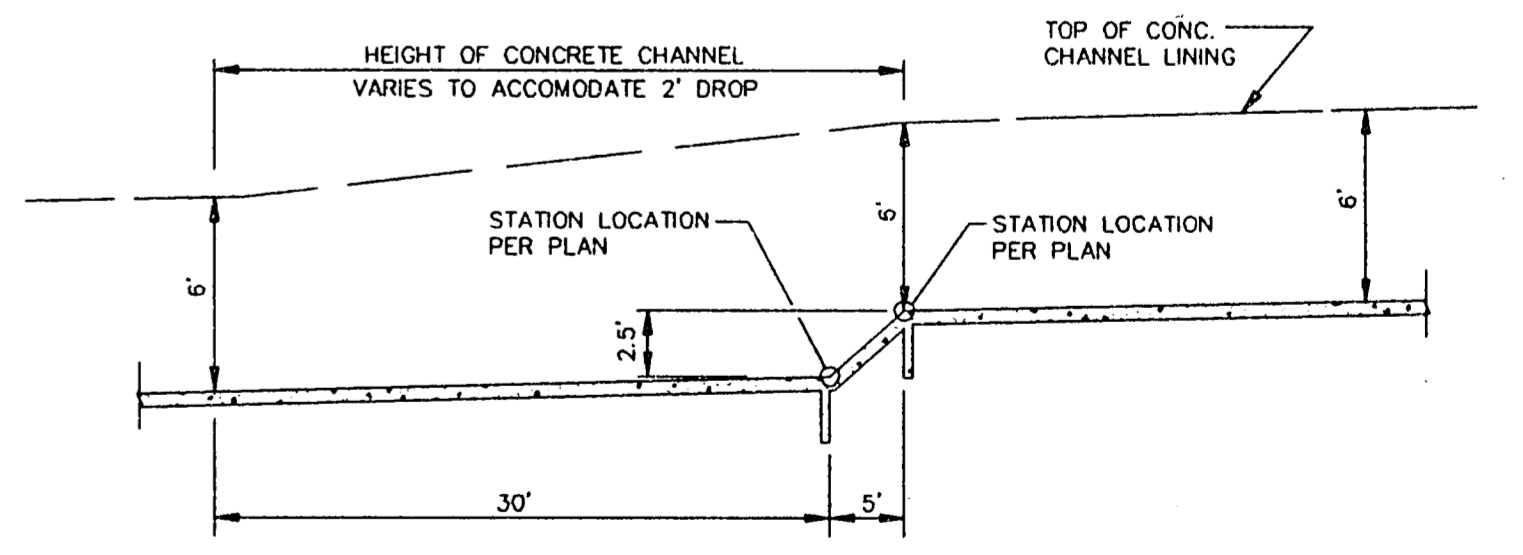


CHANNEL LINING TO BOX CULVERT SECTION
1 1/2" = 10'



CHANNEL TRANSVERSE EXPANSION JOINT
N.T.S.

- NOTES**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF ADDISON STANDARDS AND NCTCOG SPECIFICATIONS.
 - CONTRACTOR SHALL SUBMIT TO ENGINEER METHOD OF CHANNEL CONCRETE PLACEMENT PRIOR TO CONSTRUCTION. MONOLITHIC POUR OF CHANNEL BOTTOM AND SIDE SLOPES IS ACCEPTABLE. CONSTRUCTION JOINT INFORMATION IS SHOWN ONLY AS AN OPTION.
 - NO CONCRETE SHALL BE PLACED WITH WATER IN THE BOTTOM OF THE CHANNEL. BASE MUST BE DRY AND CLEAR OF DEBRIS AND MUD. REBAR MUST BE CLEAN.
 - TRANSVERSE EXPANSION JOINTS MUST BE PROVIDED AT MAXIMUM 200' SPACING OR AT END OF DAYS POUR.
 - CONSTRUCTION JOINT SHOWN FOR CONVENIENCE ONLY. CONTRACTOR MAY ELECT TO CONSTRUCT CHANNEL MONOLITHICALLY.
 - BAR LAPS TO BE A MINIMUM 30 BAR DIAMETERS.
 - 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. NO JOINTS SHALL OCCUR AT PROPOSED DROP STRUCTURES.
 - ALL BACKFILL ADJACENT TO CHANNEL LINING IS TO BE COMPACTED TO 95% PROCTOR DENSITY.
 - USE A SMOOTH TROWEL FINISH ON BOTTOM AND SLOPED SURFACES. USE ORDINARY SURFACE FINISH ON VERTICAL SURFACES.
 - IF WOOD FORMS ARE USED FOR THE CONSTRUCTION JOINT, THEY SHALL BE TWO 2"x4", AND SHALL NOT BE REMOVED UNTIL CONCRETE ON SLOPES IS READY TO BE PLACED.



PROFILE

CONCRETE DROP STRUCTURE
N.T.S.

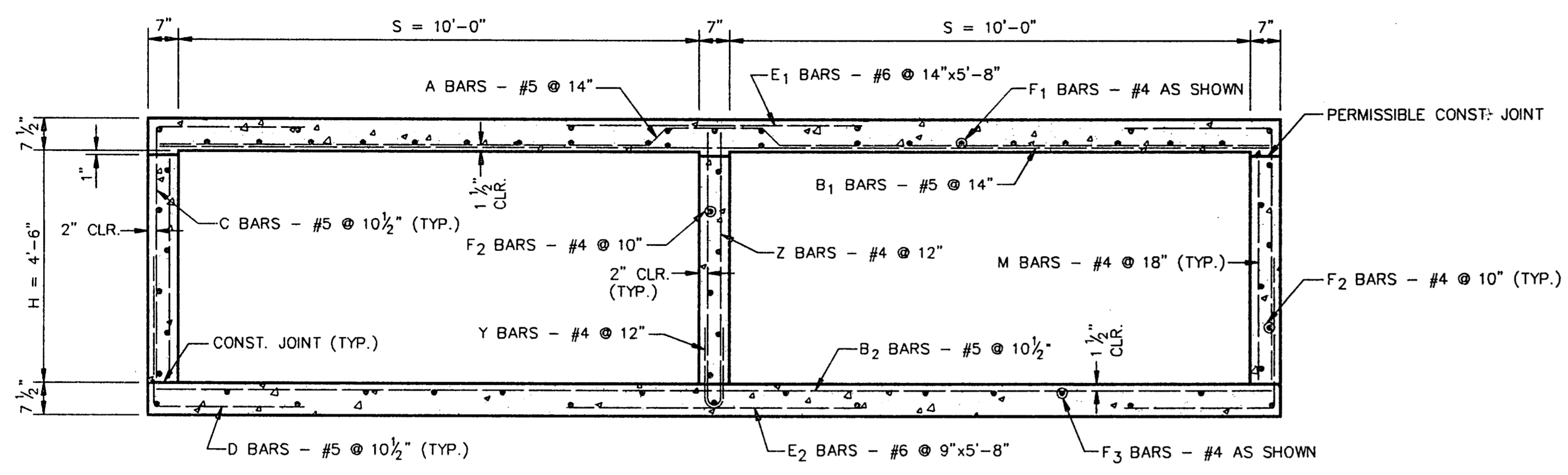
NO.	REVISION	BY	DATE

DESIGNED BY: J. WALDBAUER
 DRAWN BY: EH&A
 CHECKED BY: B GRANTHAM
 SCALE: AS NOTED
 DATE: AUGUST, 1993
 FILE: \ADDBANK\DETAILS1

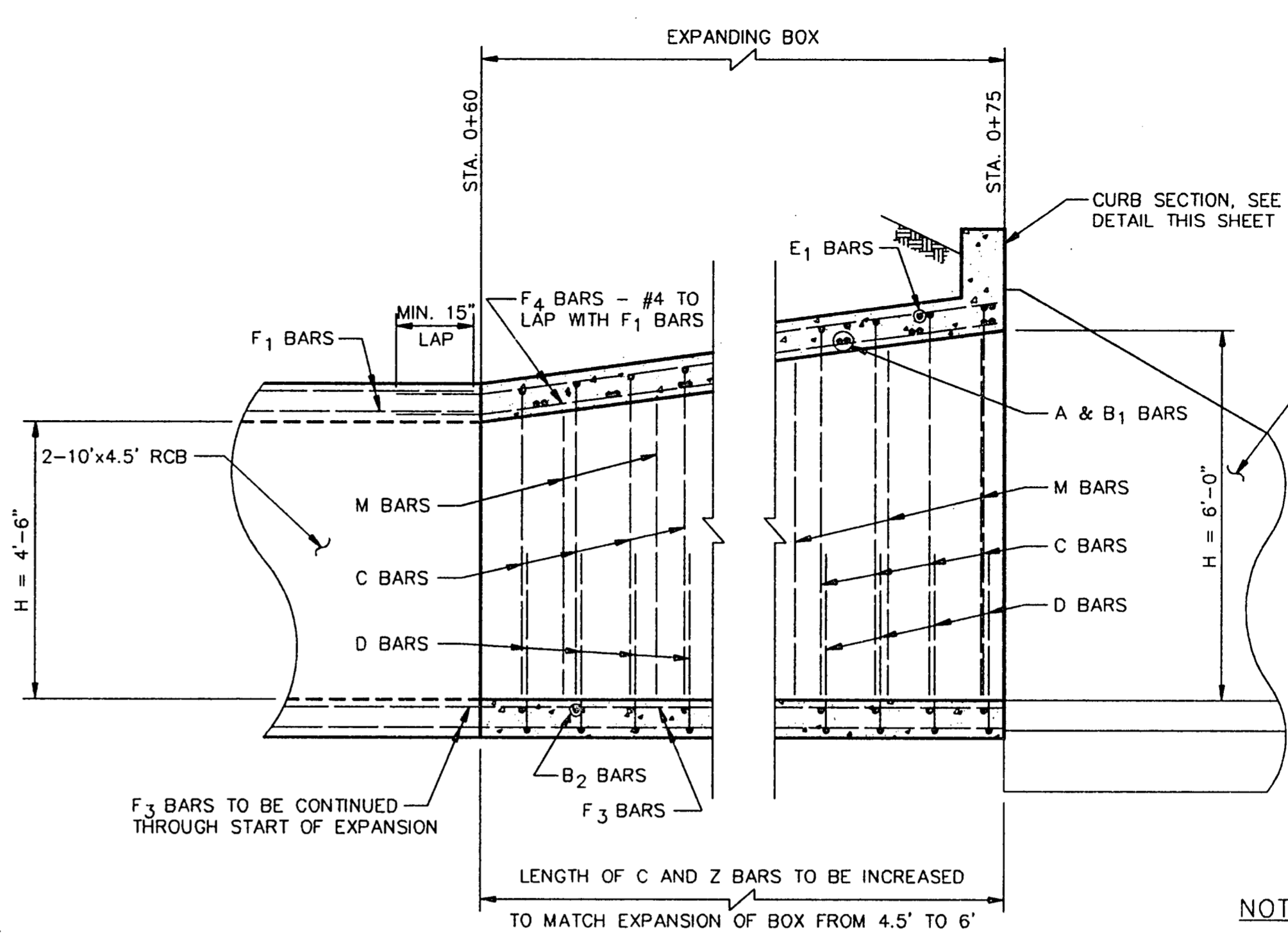
EH&A Espey, Huston & Associates, Inc.
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 13800 Montfort Drive, Suite 230
 Dallas, Texas 75240 (214) 387-0771

DRAINAGE DETAILS
 TU ELECTRIC/ADDISON BANK
 DRAINAGE PROJECT
 for
 THE TOWN OF ADDISON

SHEET NO. 5
 OF 7 SHEETS
 JOB NO. 14911

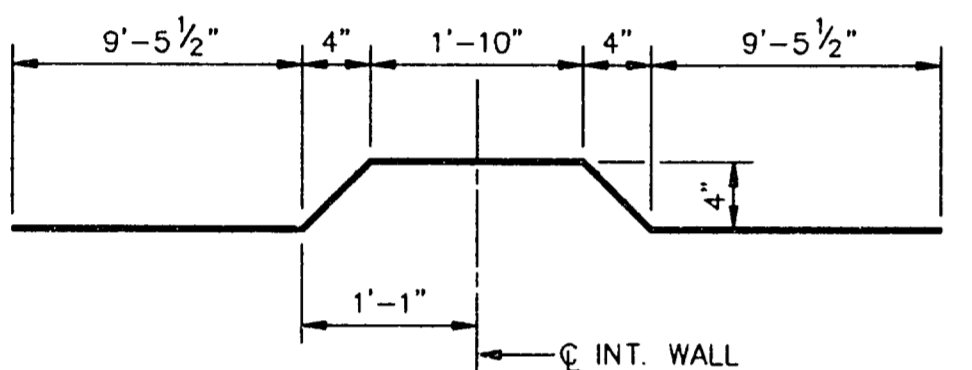


2-10'x4.5' BOX SECTION
SCALE: 1/2" = 1'-0"

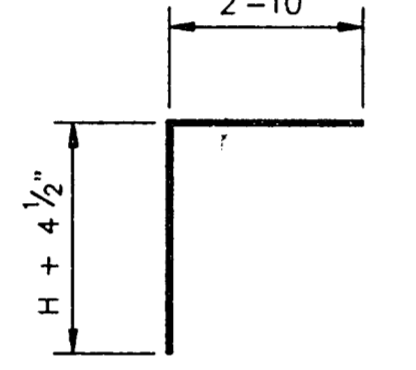


EXPANDING BOX WALL SECTION
2-10'x4.5' TO 2-10'x6'
SCALE: 1/2" = 1'-0"

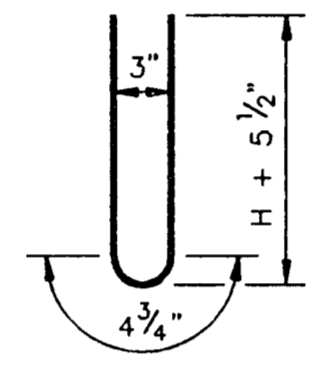
- NOTES:**
1. ALL EXPOSED EDGES SHALL BE CONSTRUCTED WITH A 3/4" CHAMFER.
 2. ALL REINFORCING TO BE GRADE 60.
 3. ALL BAR LAPS SHALL BE MINIMUM 30 BAR DIAMETERS.



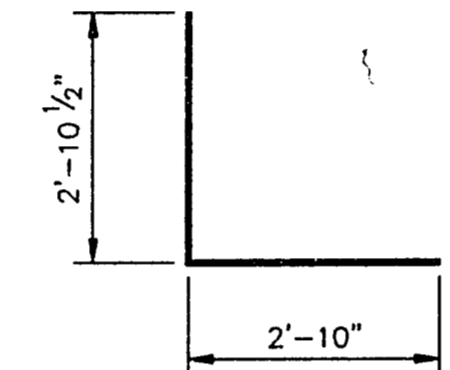
A BARS
N.T.S.



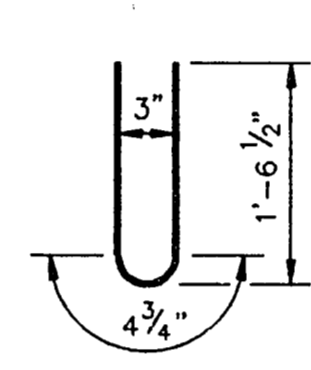
C BARS
N.T.S.



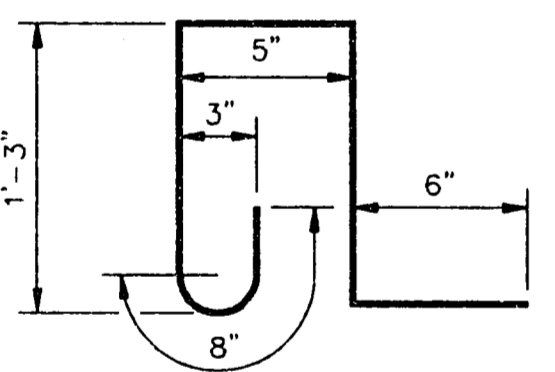
Z BARS
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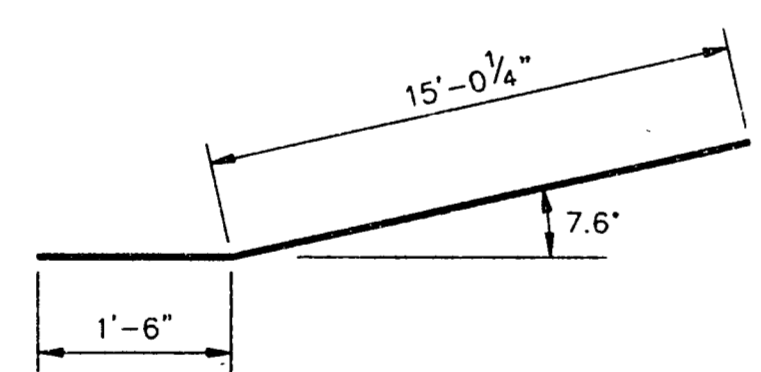
D BARS
N.T.S.



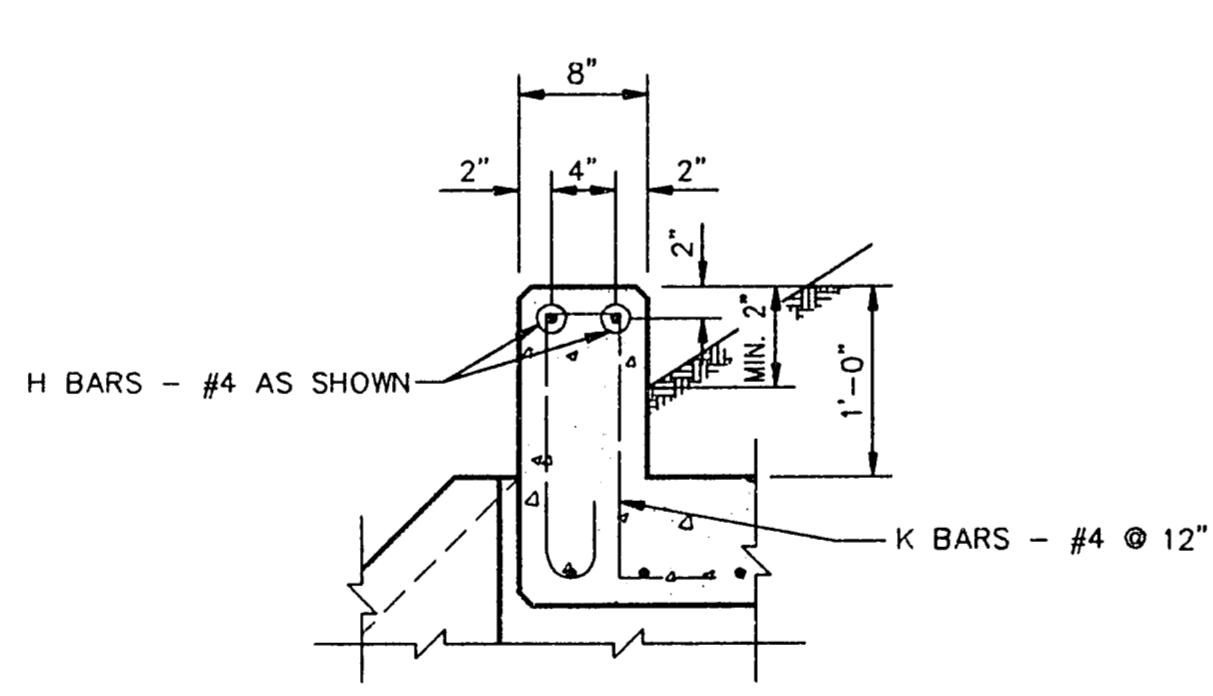
Y BARS
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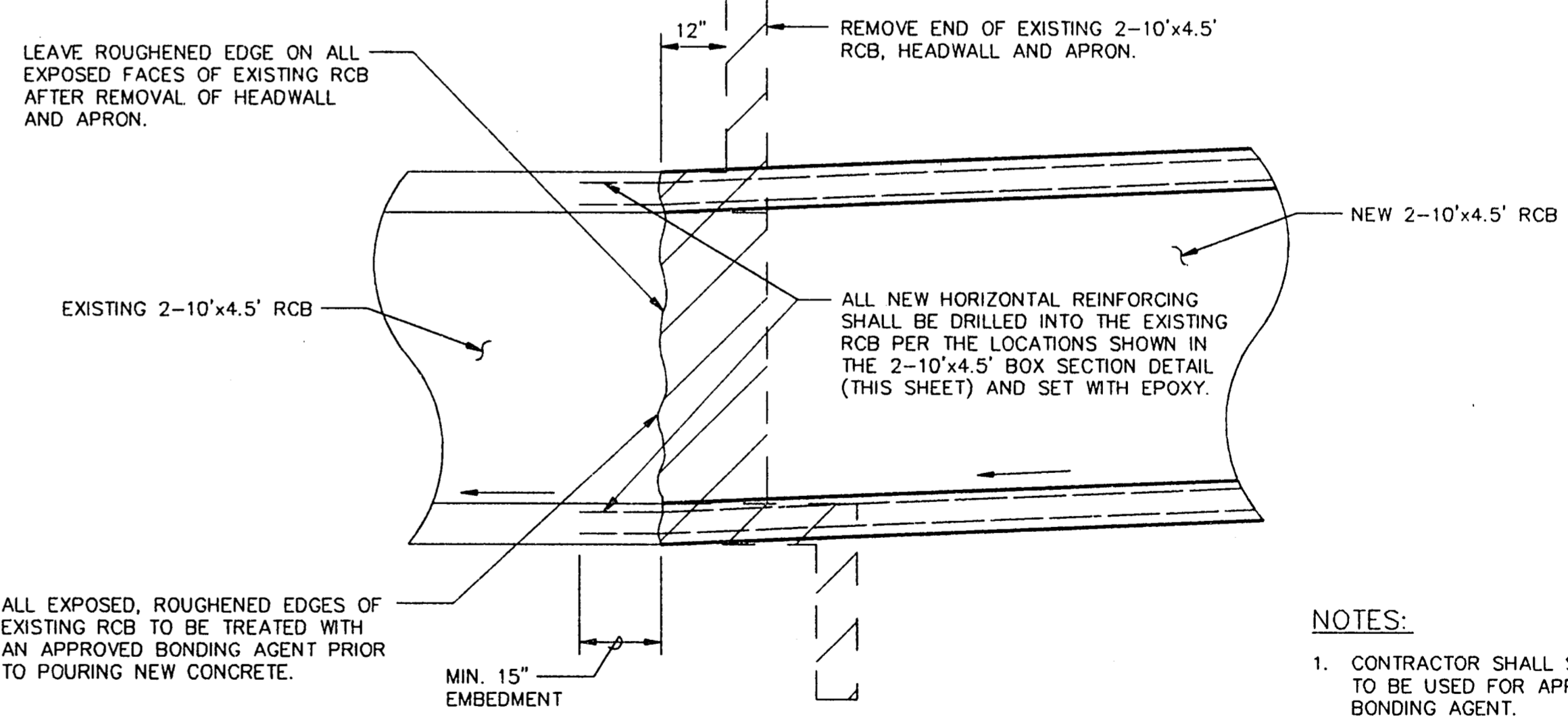
K BARS
N.T.S.



F4 BARS
N.T.S.



CURB SECTION
NOT TO SCALE

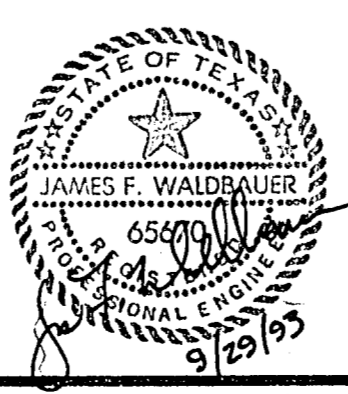


BOX CULVERT CONNECTION DETAIL
SCALE: 1/2" = 1'-0"

- NOTES:**
1. CONTRACTOR SHALL SUBMIT TO THE ENGINEER MATERIALS TO BE USED FOR APPROVAL. THIS INCLUDES EPOXY AND BONDING AGENT.
 2. CONTRACTORS BID PRICE FOR CUBIC YARD OF CONCRETE FOR NEW 2-10'x4.5' REINFORCED CONCRETE BOX CULVERT SHALL BE INCLUSIVE OF ALL INCIDENTALS NECESSARY FOR CONSTRUCTION. THERE SHALL BE NO SEPARATE PAY FOR BONDING AGENT, EPOXY, REINFORCING, ETC.

NO.	REVISION	BY	DATE

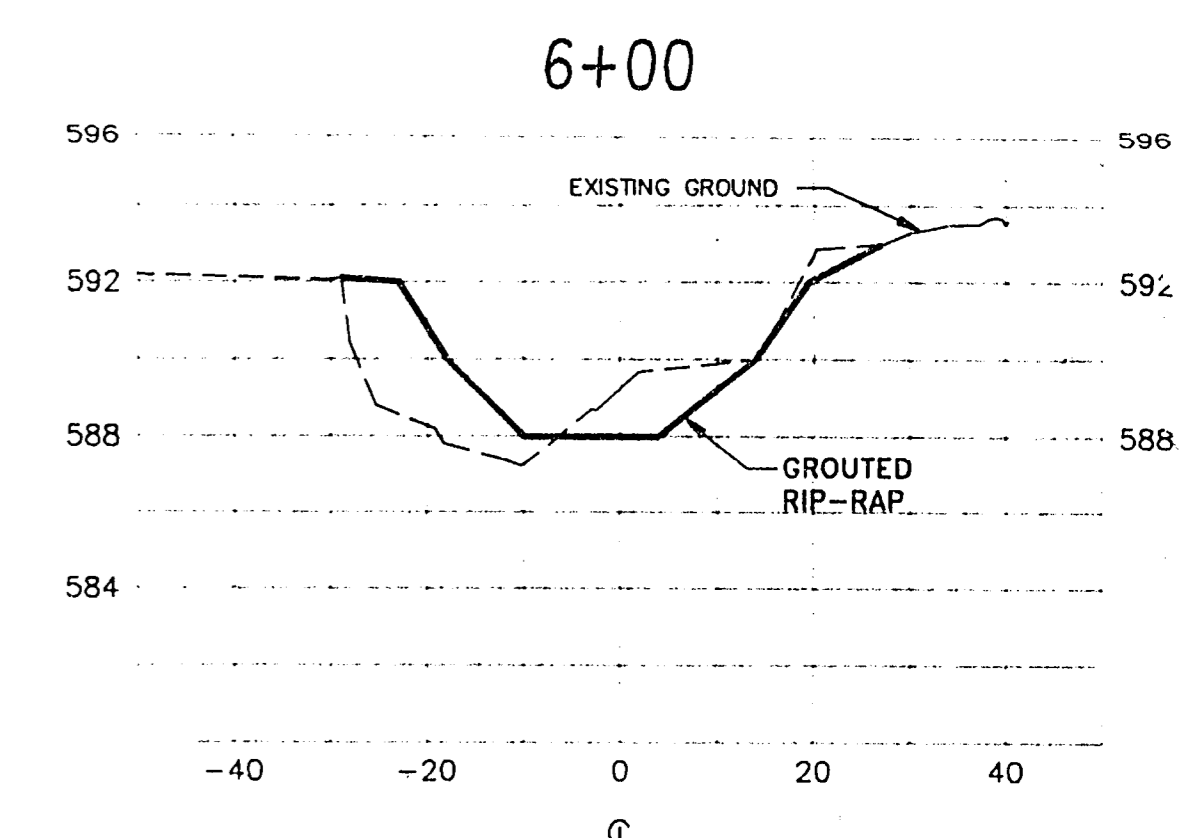
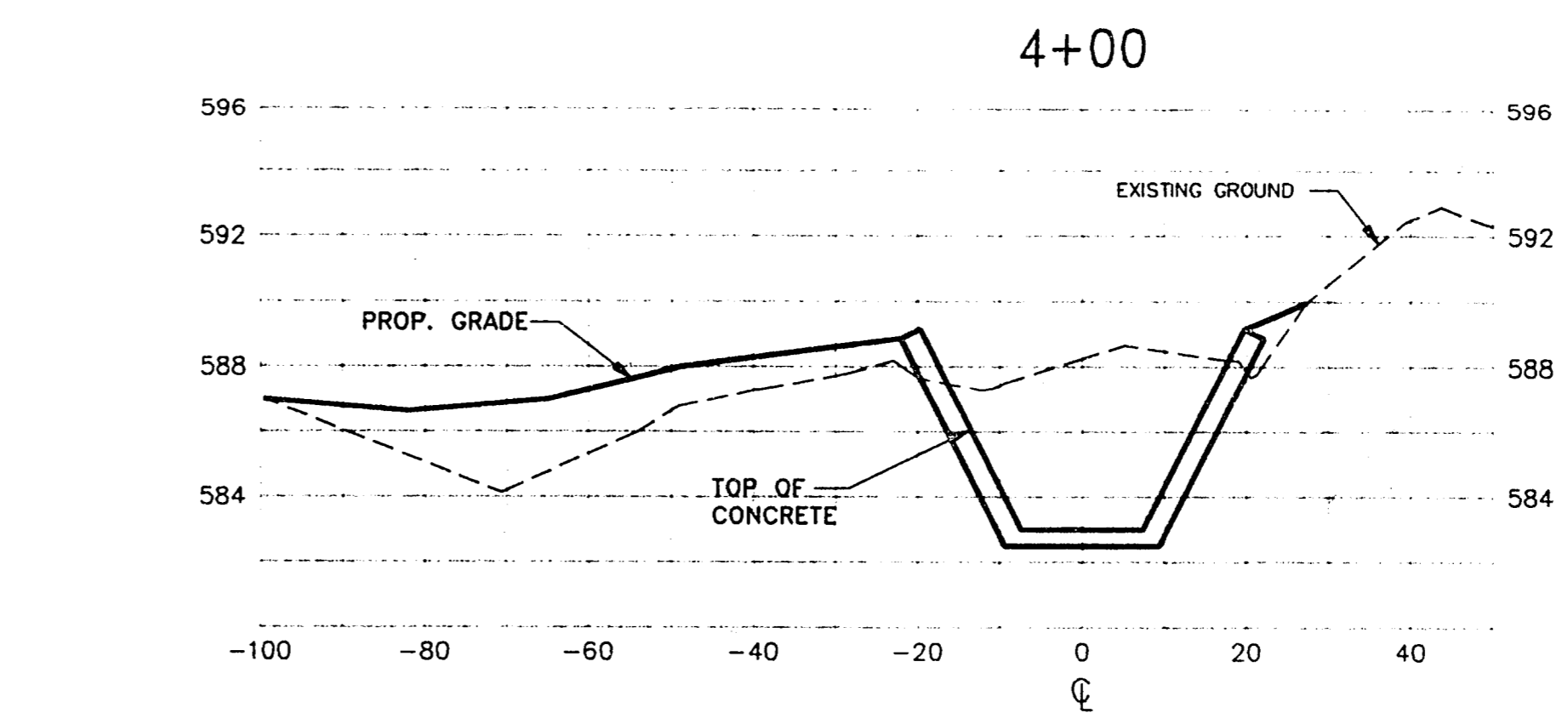
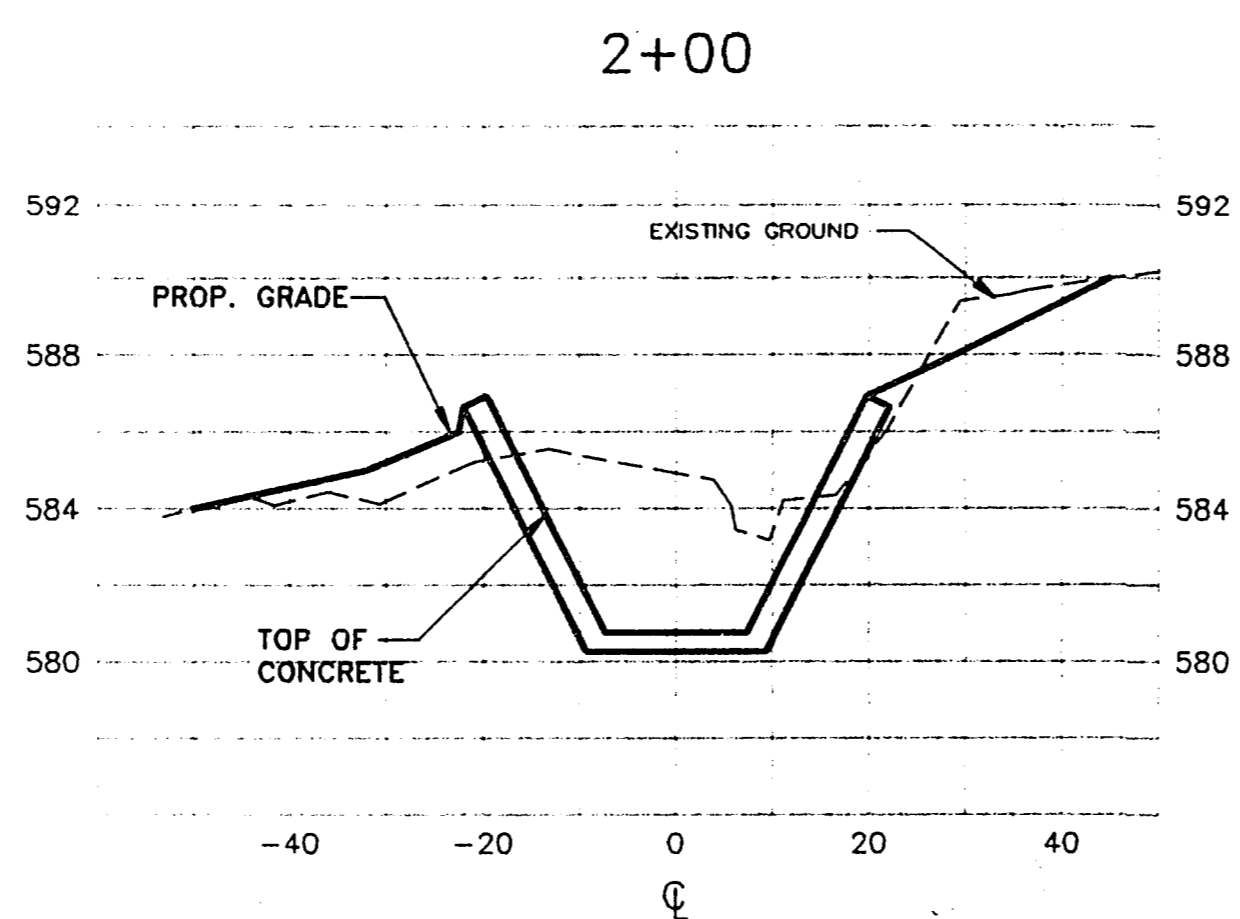
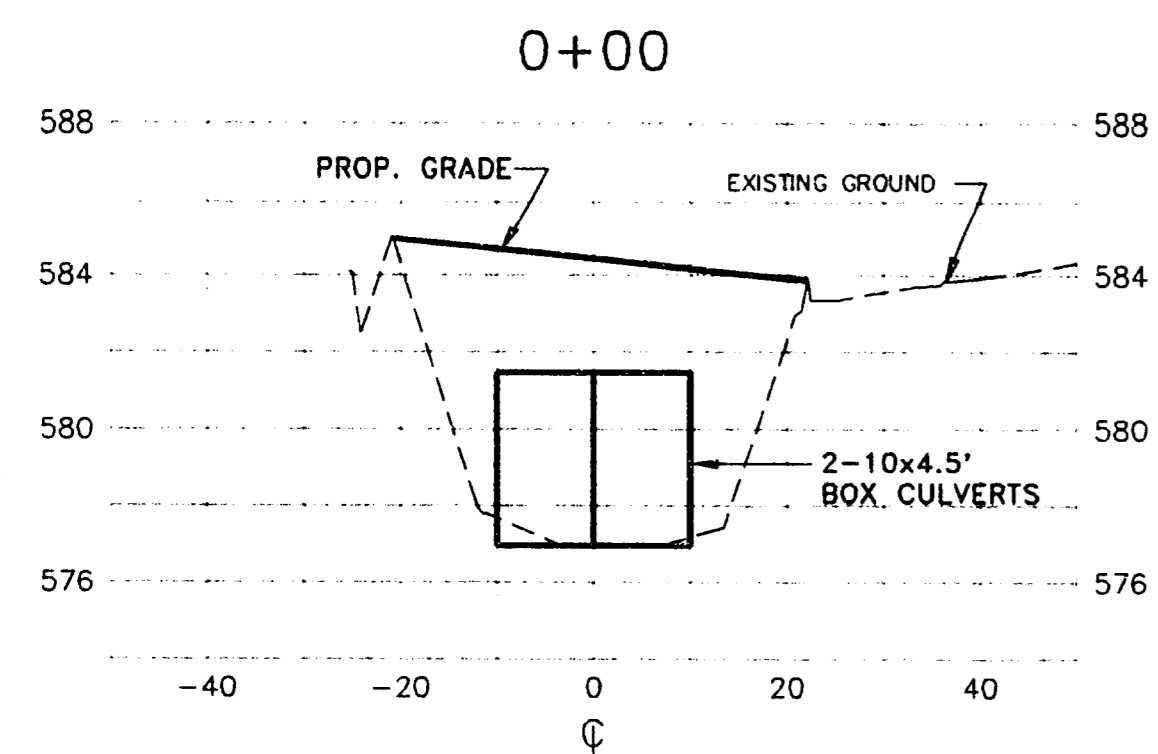
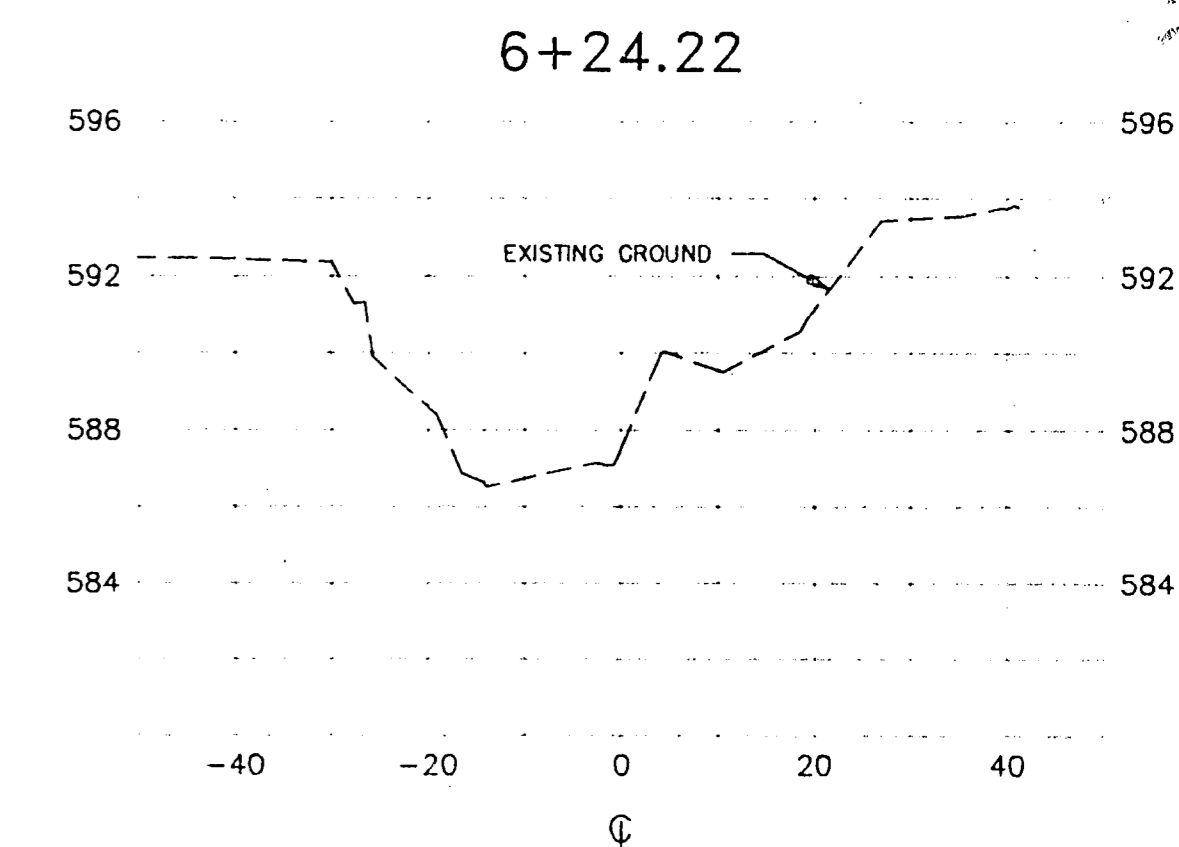
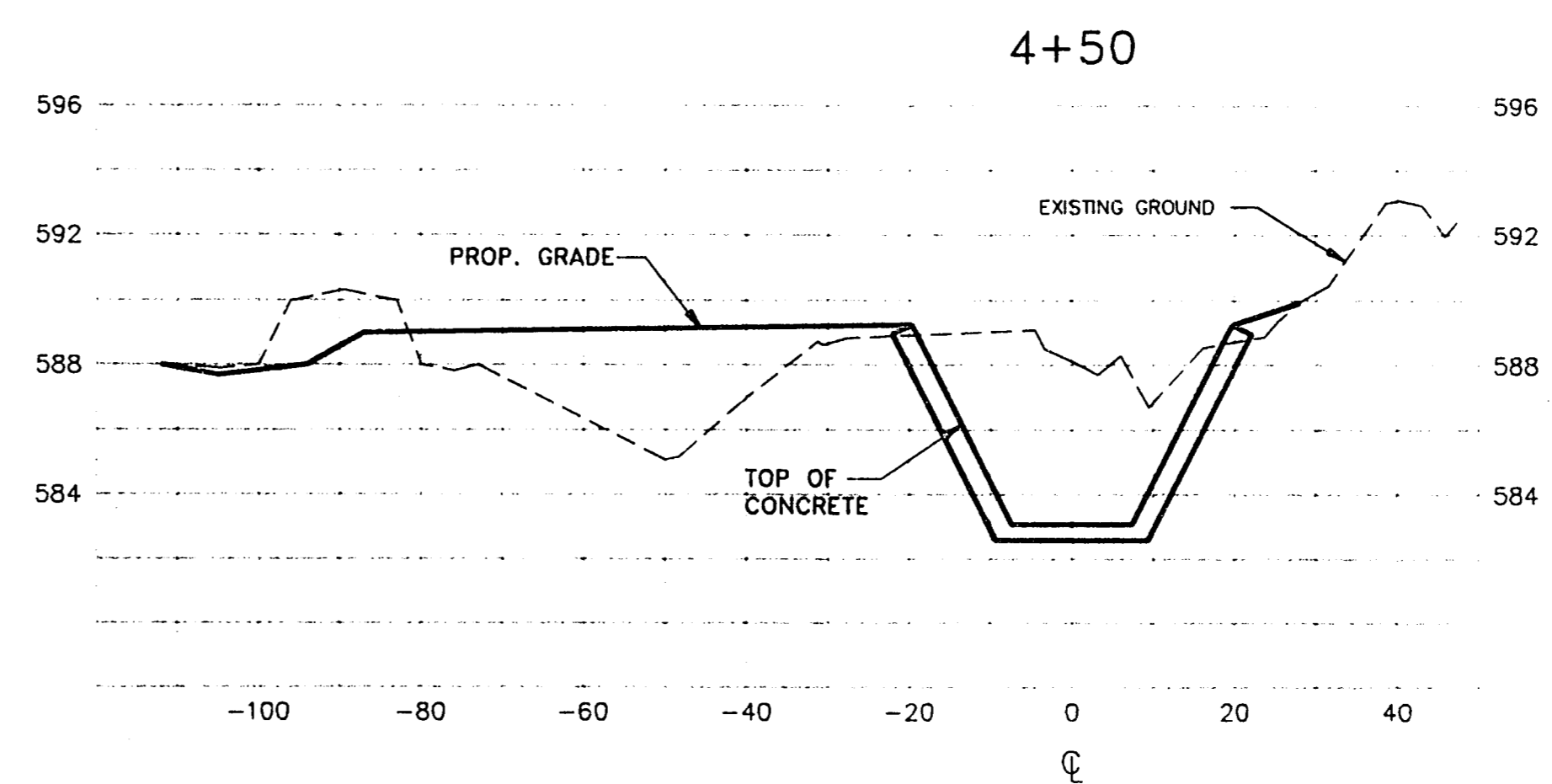
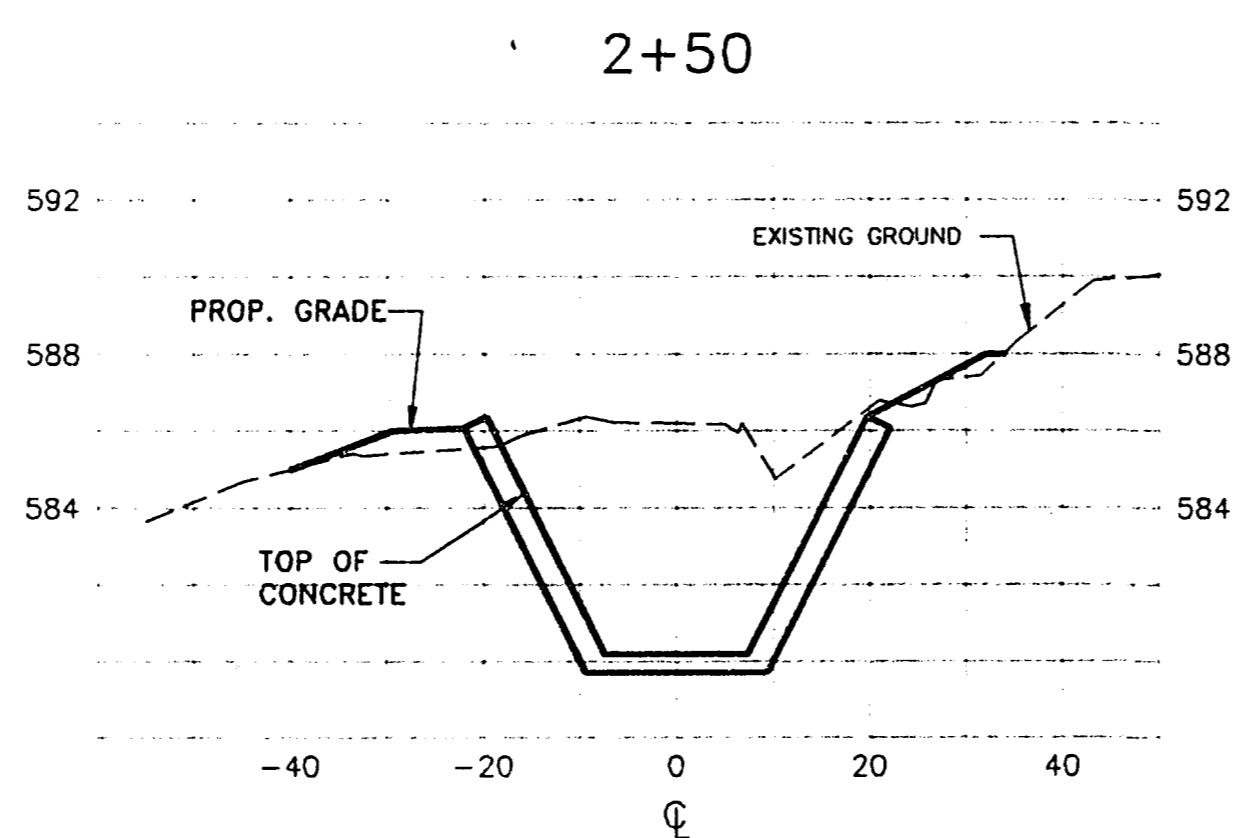
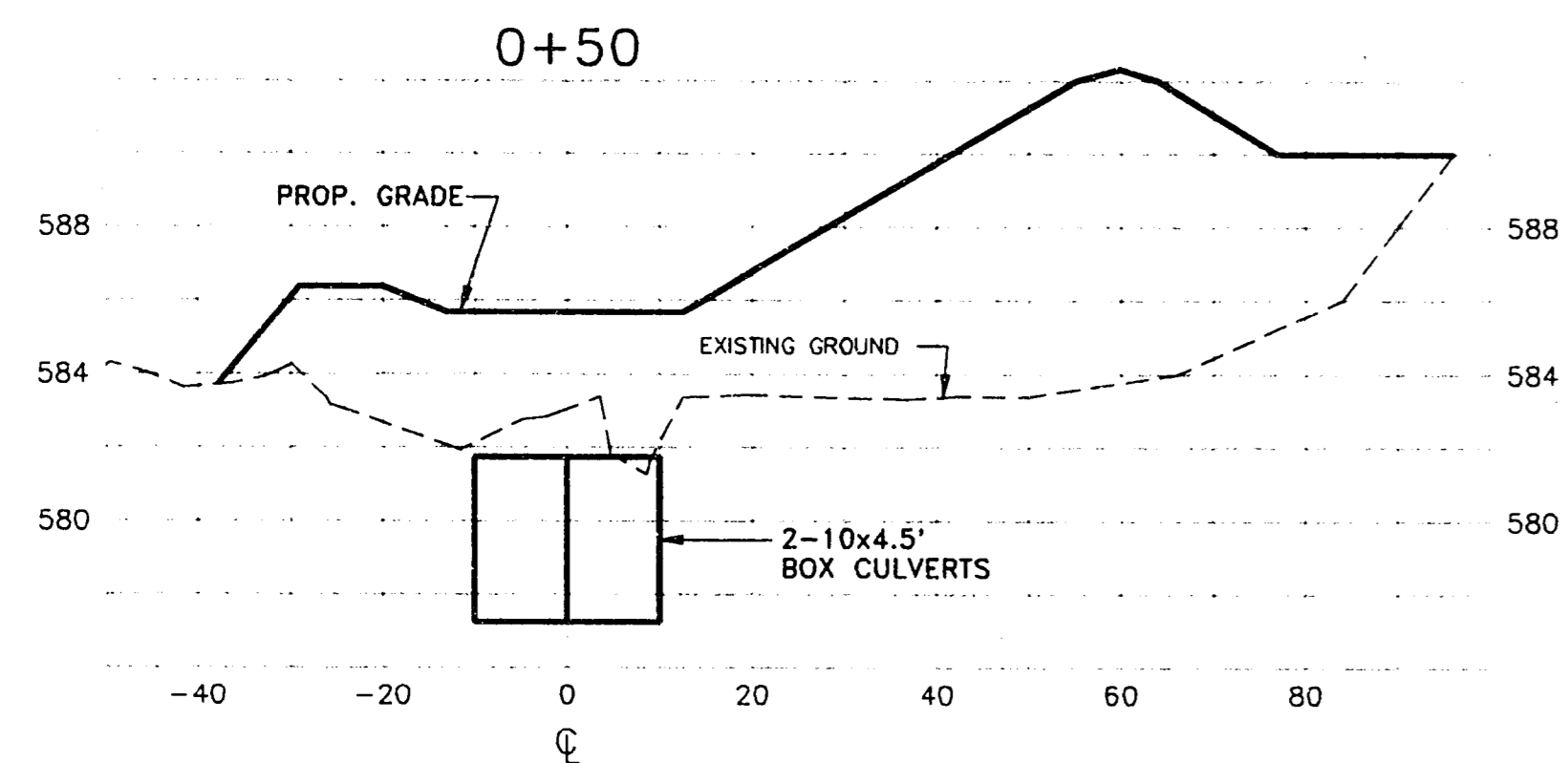
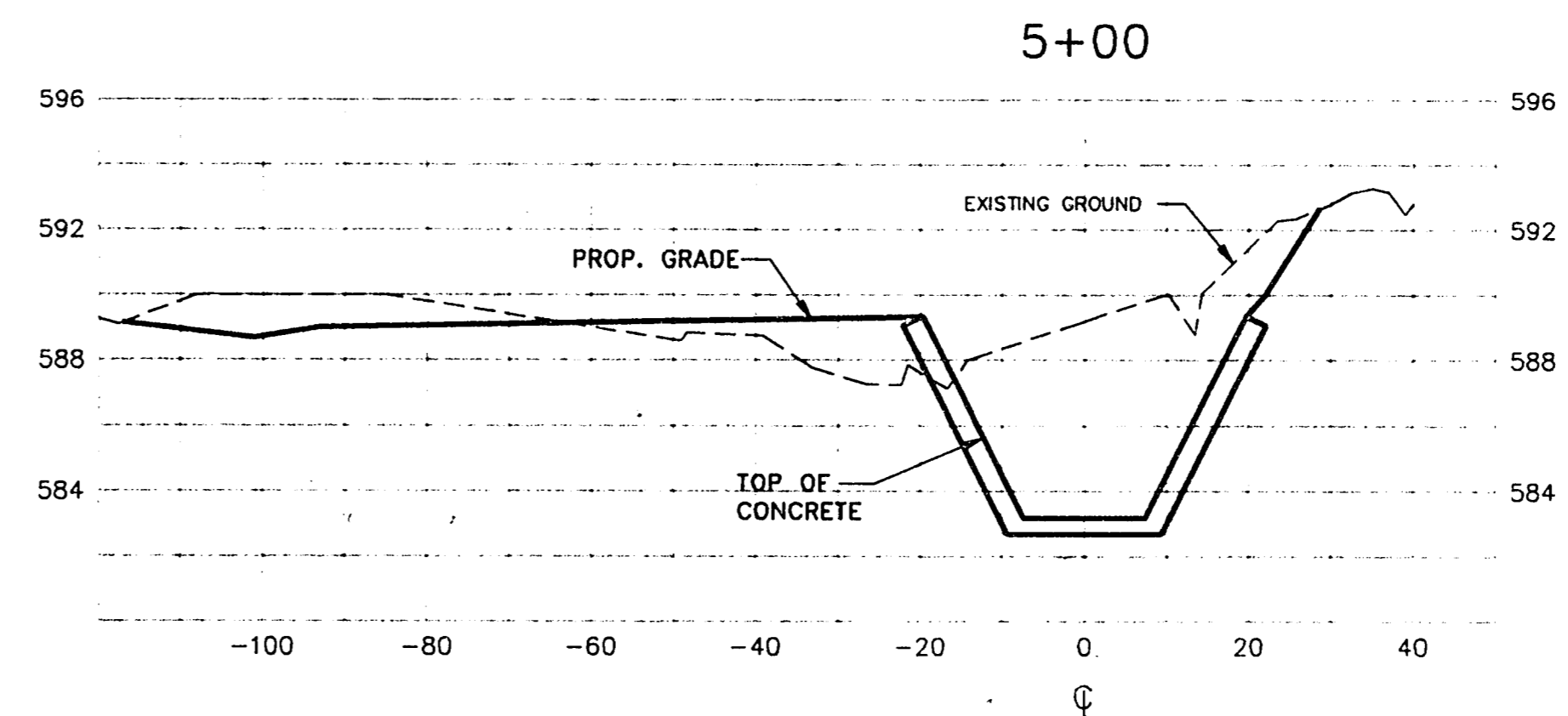
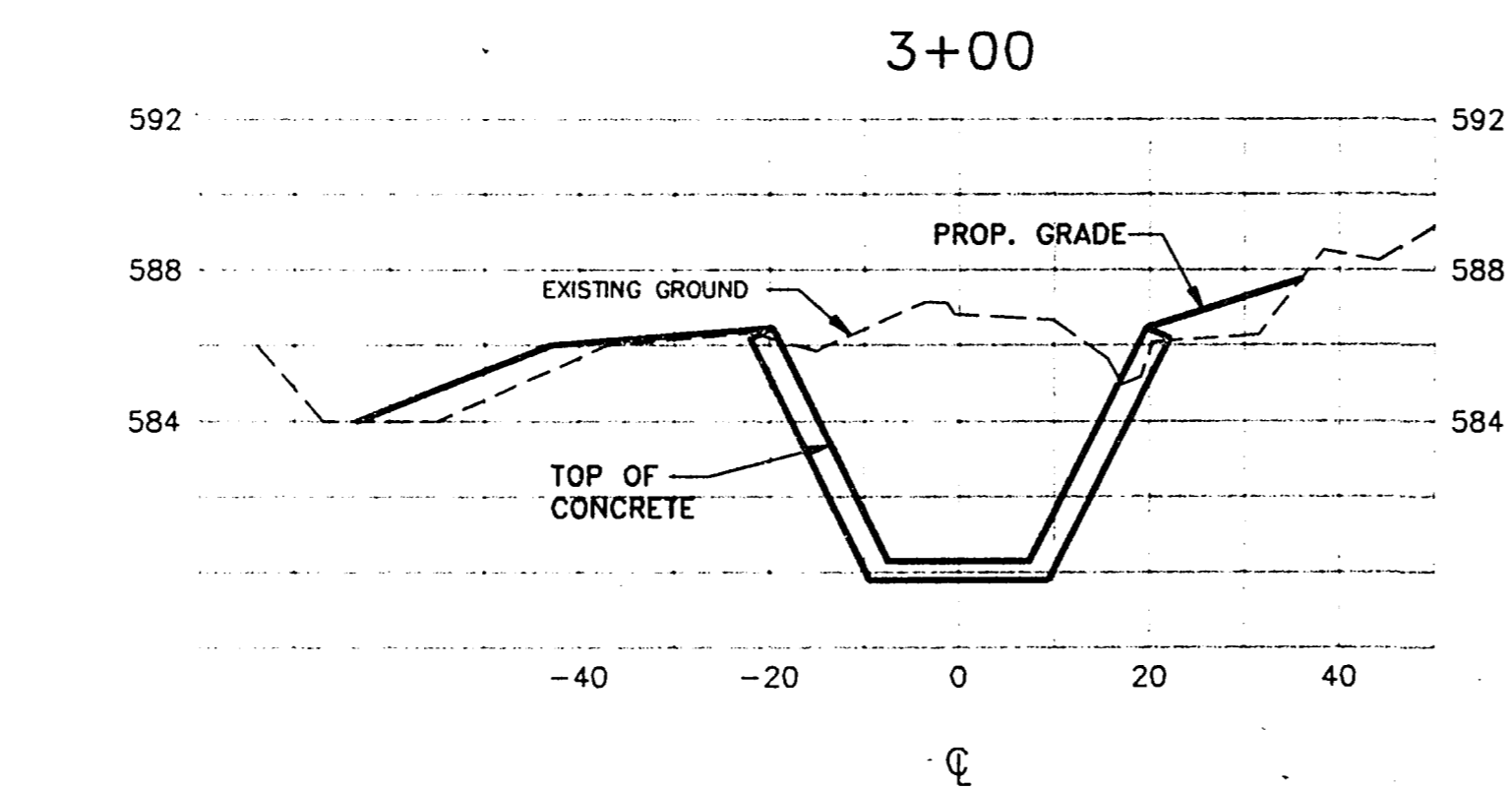
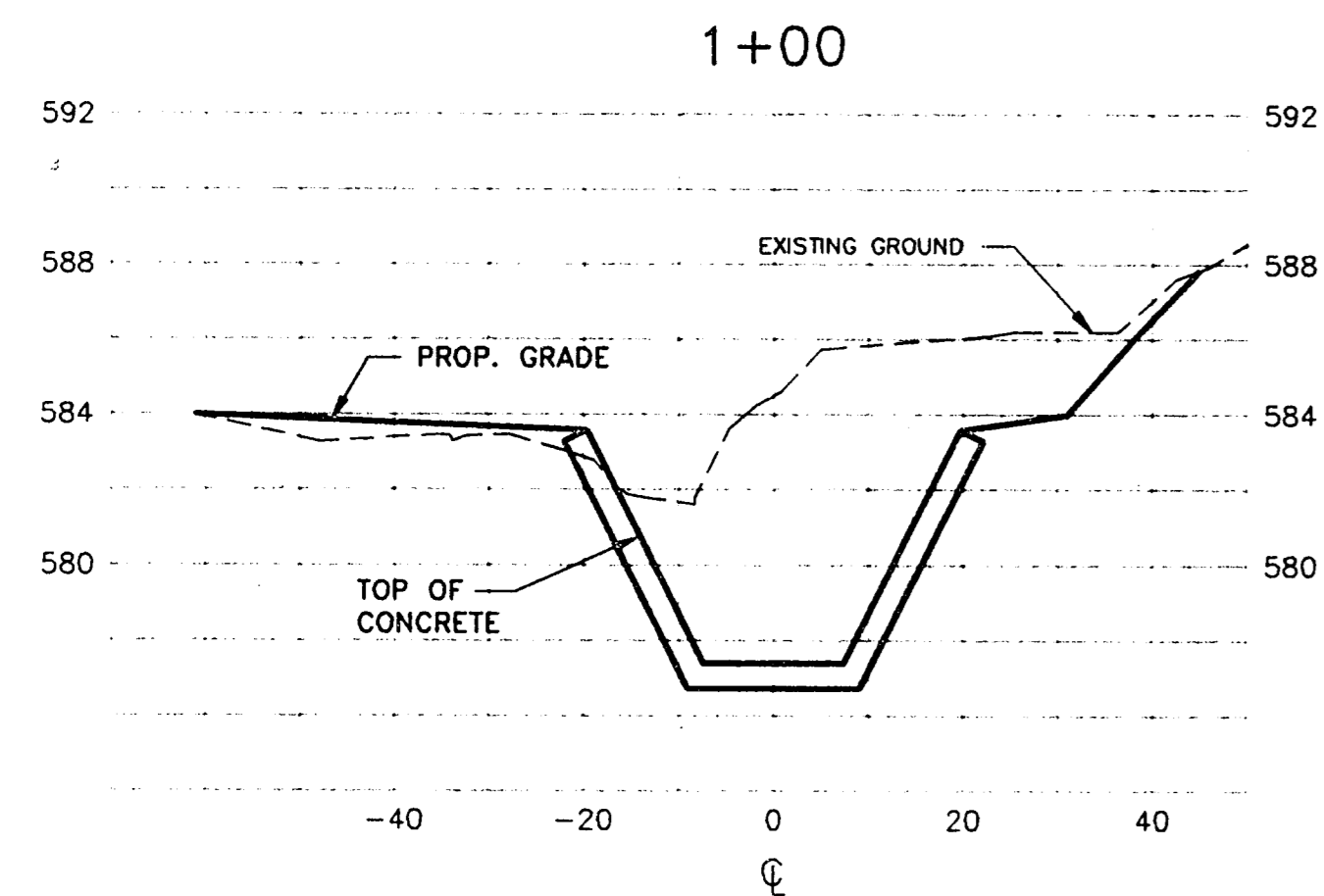
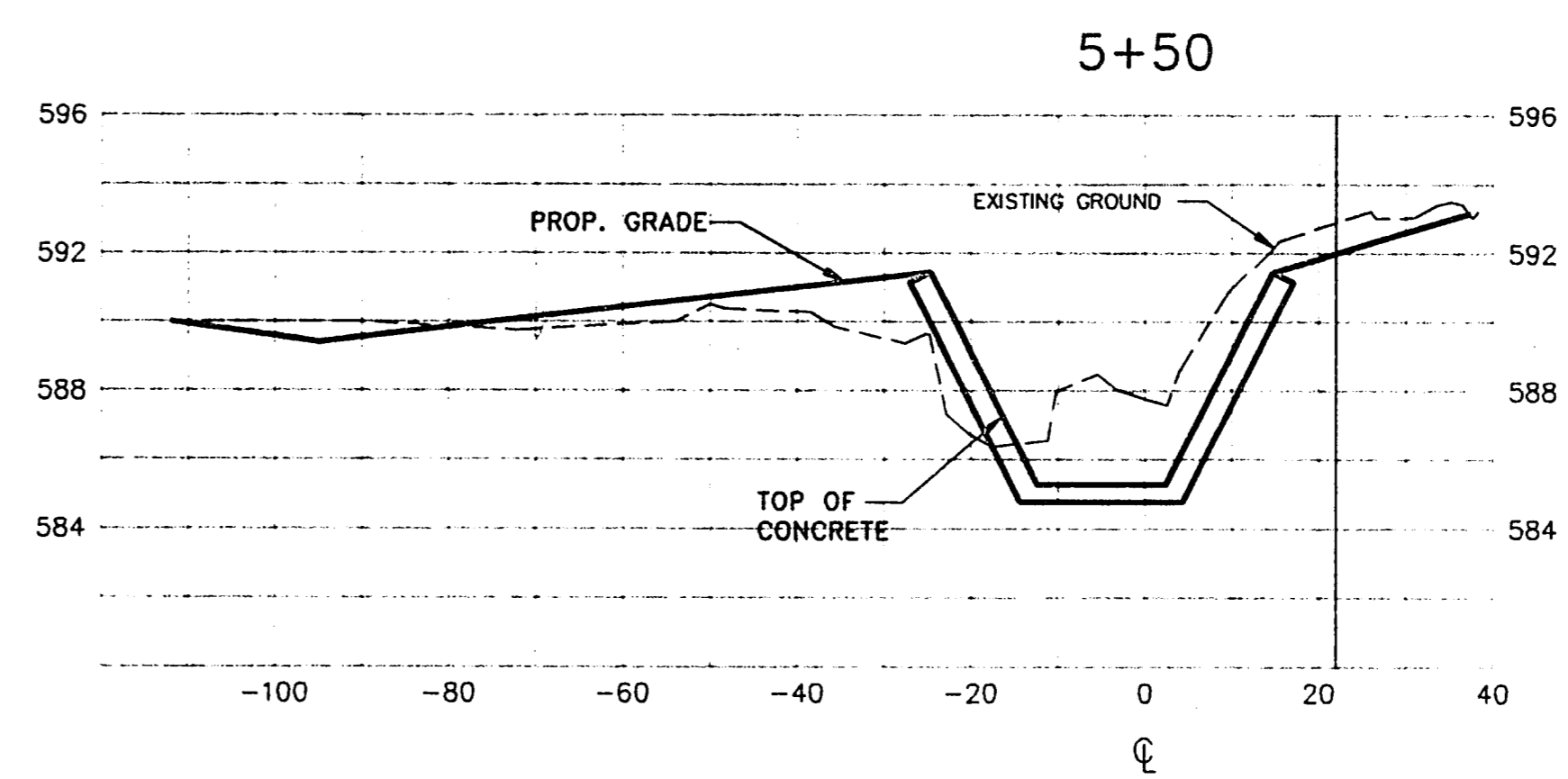
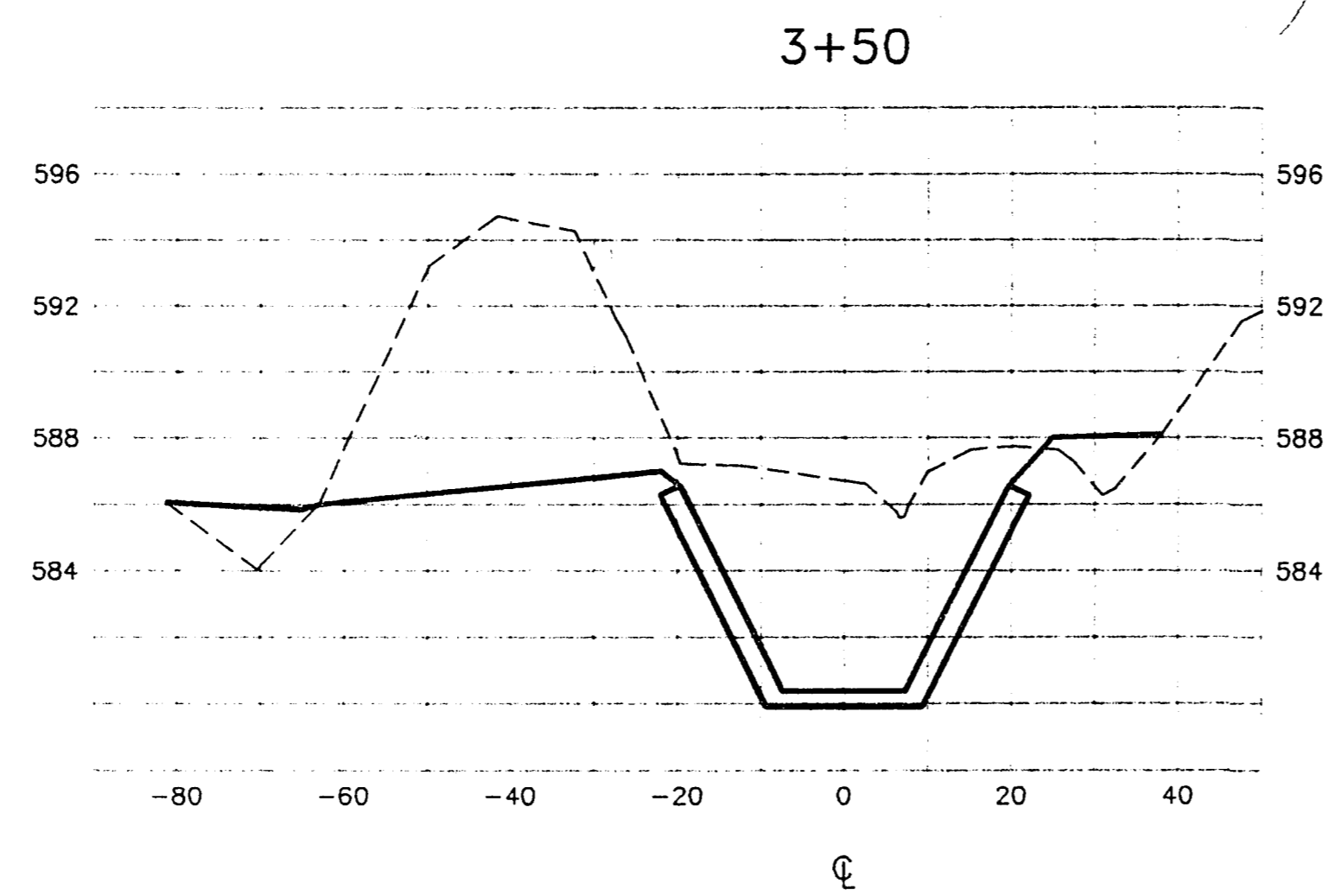
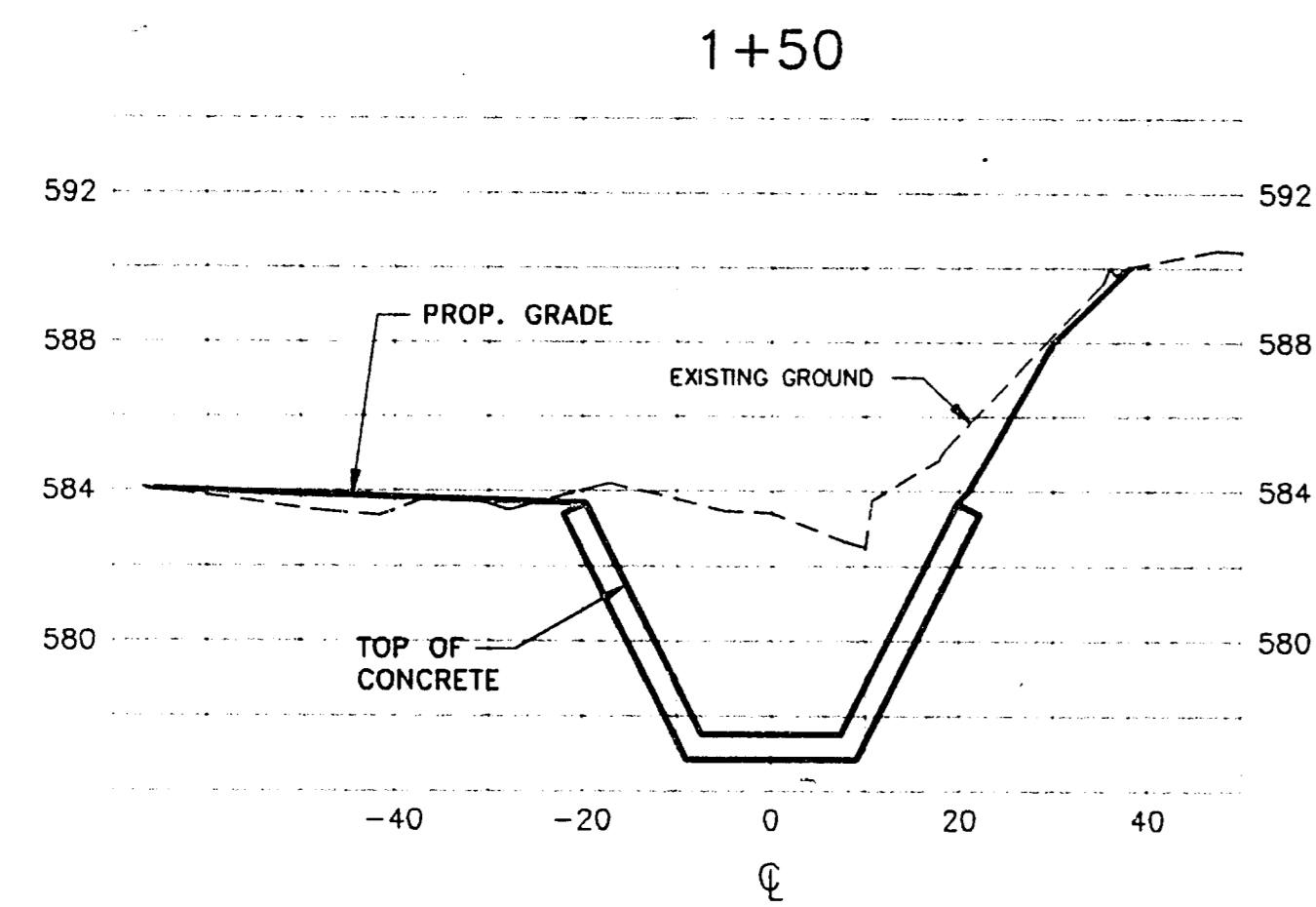
DESIGNED BY: J. WALDBAUER
 DRAWN BY: EH&A
 CHECKED BY: B. GRANTHAM
 SCALE: AS SHOWN
 DATE: AUGUST, 1993
 FILE: \ADDBANK\DETAILS2



EH&A Espey, Huston & Associates, Inc.
 Engineering & Environmental Consultants
 13800 Montfort Drive, Suite 230
 Dallas, Texas 75240 (214) 387-0771

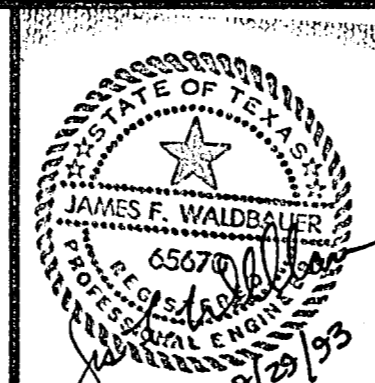
DRAINAGE DETAILS
 TU ELECTRIC/ADDISON BANK
 DRAINAGE PROJECT
 for
 THE TOWN OF ADDISON

SHEET NO. 6
 OF 7 SHEETS
 JOB NO. 14911



NO.	REVISION	BY	DATE

DESIGNED BY: J WALDBAUER
 DRAWN BY: EH&A
 CHECKED BY: B GRANTHAM
 SCALE: 1"=20'H; 1"=5'V
 DATE: AUGUST 1993
 FILE: \ADDBANK\XSEC1



EH&A Espey, Huston & Associates, Inc.
 Engineering & Environmental Consultants
 13800 Montfort Drive, Suite 230
 Dallas, Texas 75240 (214) 387-0771

CHANNEL CROSS-SECTIONS
 TU ELECTRIC/ADDISON BANK DRAINAGE PROJECT
 for THE TOWN OF ADDISON

SHEET NO. 7
 OF 7 SHEETS
 JOB NO. 14914