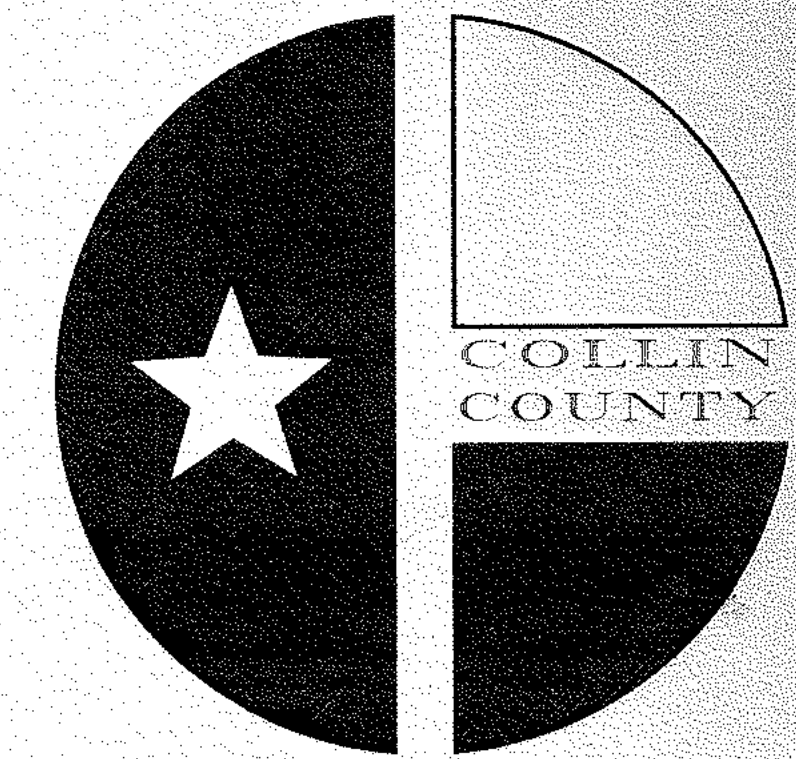


7B

# LUCAS WINNINGKOFF BRIDGE



## CITY OF LUCAS, TEXAS COLLIN COUNTY, TEXAS



LUCAS 12/99  
WINNINGKOFF BRIDGE 7B

### CITY OF LUCAS OFFICIALS

- ANDREA CALVE MAYOR
- BOB BARBER MAYOR PRO-TEM
- TOMMY MCDANEL PUBLIC WORKS MANAGER
- BEVERLY COVINGTON CITY SECRETARY
- LINDA SHOUP ADMINISTRATOR

### CITY COUNCIL OF LUCAS

- CHARLIE GAINES
- PHILLIP NOGUERE

## 1999 COLLIN COUNTY BOND PROGRAM DECEMBER, 1999

### COUNTY OF COLLIN OFFICIALS

- RON HARRIS COUNTY JUDGE
- PHYLLIS COLE COMMISSIONER, PCT. 1
- JERRY HOAGLAND COMMISSIONER, PCT. 2
- JOE JAYNES COMMISSIONER, PCT. 3
- JACK HATCHELL COMMISSIONER, PCT. 4
- RUBEN DELGADO, P.E. DIRECTOR OF ENGINEERING

### INDEX OF SHEETS

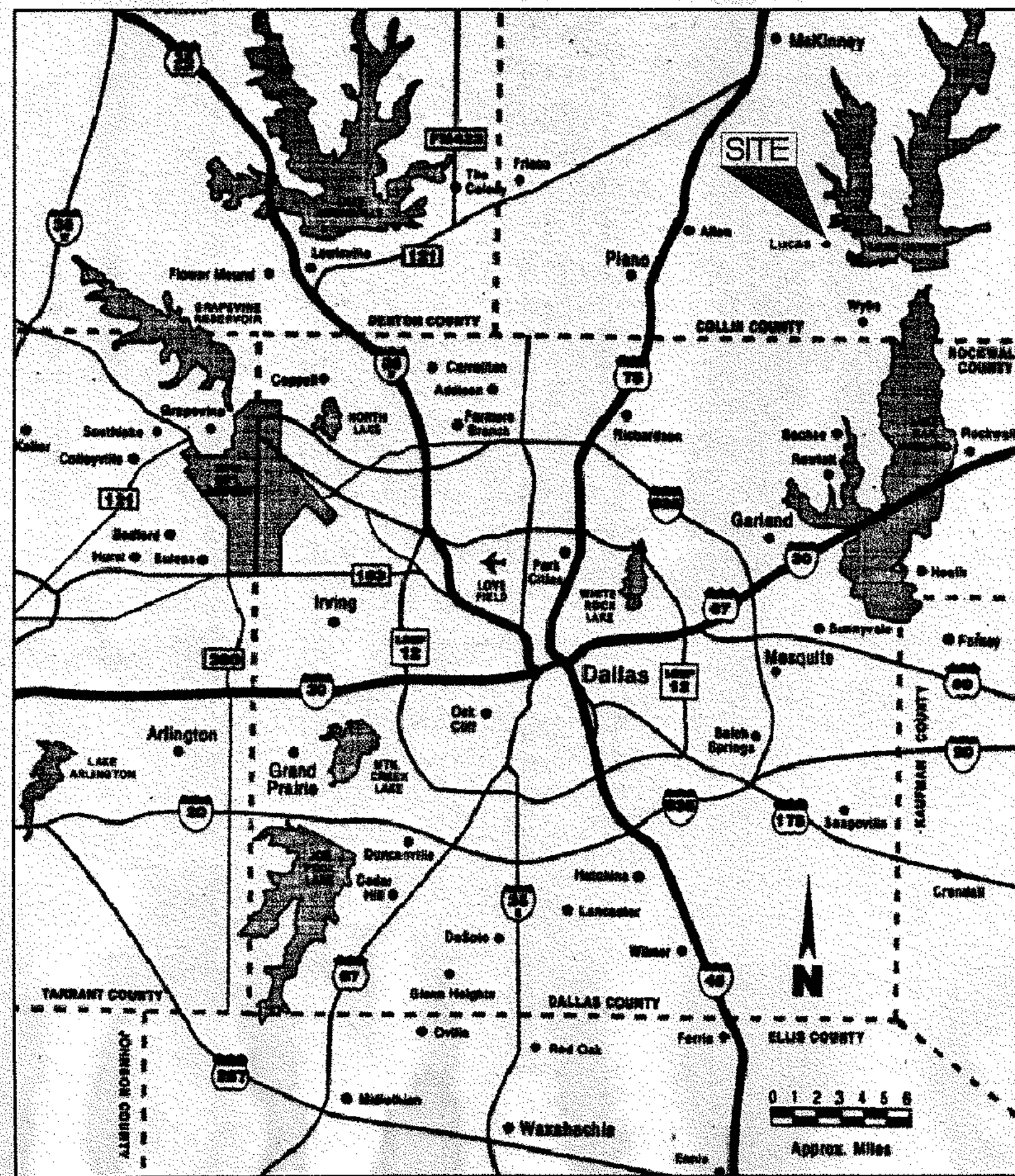
NO.	TITLE	NO.	TITLE
10	BRIDGE ABUTMENT & BENT ELEVATIONS	20	EXISTING AND PROPOSED ROAD CROSS SECTIONS NEAR FLOOD
11	40' CONCRETE SLAB & GIRDER SPANS	21	EXISTING AND PROPOSED STREAM CROSS SECTIONS
12	CONCRETE SLAB & GIRDER SPANS SUPPLEMENT	22	EXISTING AND PROPOSED STREAM
13	BRIDGE APPROACH SLAB - SHE	23	EXISTING AND PROPOSED STR
14	BRIDGE APPROACH SLAB - SH2	24	POSITION
15	META		
16	TRIP		

**APPROVED FOR CONSTRUCTION**  
*George Colman* Date: 01-31-00

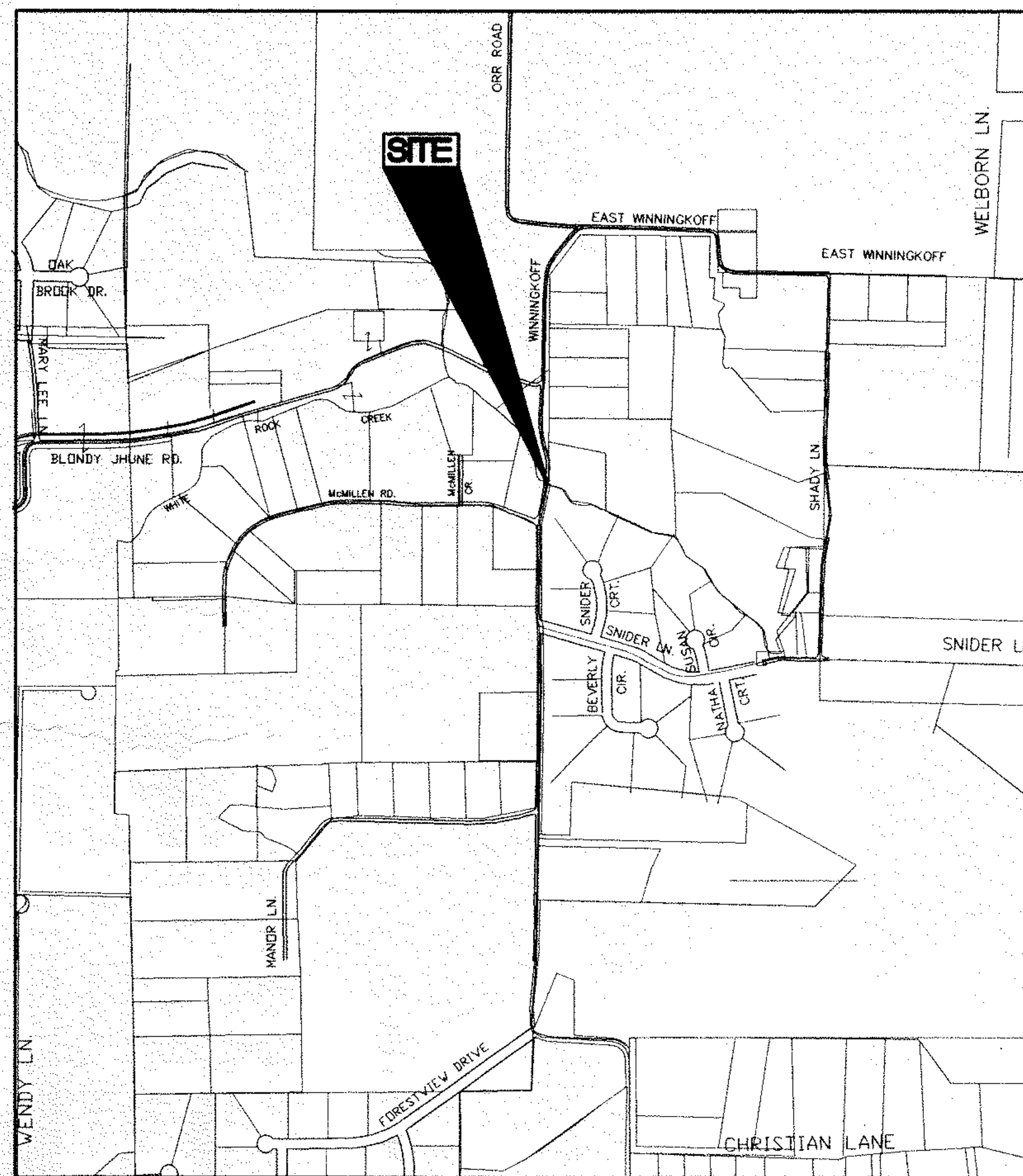
HUNTER ASSOCIATES, TEXAS, LTD.  
10000 W. HUNTER BLVD. SUITE 1000 FORT WORTH, TX 76116

PROJECT NUMBER: L99015E





REGIONAL LOCATION MAP



PROJECT LOCATION MAP

NOT TO SCALE

GENERAL NOTES

1. The original plans for this project were prepared on full size standard sheets (24"x36"). The specific scale for the individual units would be true only on the original tracing. Reproduced copies, reductions or other methods of printing may change or alter the scale. The Engineer is not responsible for scale dimensions utilized by others on these plans.
2. It shall be the Contractor's responsibility to verify locations, elevations and dimensions of adjacent and/or conflicting utilities in advance of construction in order that adjustments can be made to provide adequate clearances, if required. The Contractor shall preserve and protect public utilities at all times during construction. Any damage to utilities resulting from the Contractor's operations shall be restored at his expense. The Engineer shall be notified when proposed facility grades conflict with existing utility grades.
3. All concepts, ideas, designs, arrangements, and plans indicated or represented by these instruments, as outlined on the title sheet index, and by any addendums are owned by and are the property of HUNTER ASSOCIATES TEXAS, LTD. and were created and developed for the use on and in connection with the specified project. These concepts, ideas, designs, arrangements or plans shall not be used by any person, firm or corporation for any purpose whatsoever without the written permission and consent of HUNTER ASSOCIATES, TEXAS, LTD. of DALLAS, TEXAS.

CONSTRUCTION/ GENERAL NOTES:

Existing underground utilities shown (main lines; no lateral or services shown) obtained from available records and are approximate. Neither the owner nor the responsibility for utilities not shown or not in the location shown. The contractor shall locate and location of existing underground utilities prior to trenching and shall be responsible for any damage to utilities. The contractor shall be responsible for contacting all utility companies to determine if any excavation may be required.

The contractor shall familiarize himself with the site and surroundings. The contractor shall be responsible for any damage to existing structures, fences, plants, etc. caused by the contractor at his own expense.

CONCRETE NOTES

1. All structural concrete shall have a minimum 28-day compressive strength of 4000 p.s.i. and shall contain six (6) sacks of cement per cubic yard of concrete, unless otherwise noted.
2. ALL REINFORCING STEEL FOR THIS BRIDGE, INCLUDING DRILLED SHAFTS AND RAILING SHALL BE IN CONFORMANCE WITH ASTM A615, GRADE 60 EXCEPT STIRRUPS AND SPIRAL REINFORCEMENT SHALL BE ASTM A615, GRADE 40.
3. All concrete and reinforcing steel shall conform to current ACI code.
4. All wall steel shall have a minimum concrete cover of 2 1/2". All slabs shall have a minimum concrete cover of 2 1/2" on top and 3" on bottom.
5. All bar splices, corner dowels, and lap splices shall be staggered and shall be a minimum of 40 bar diameters or 30", whichever is greater.
6. All exposed corners shall be chamfered.
7. Horizontal construction joints will be staggered.

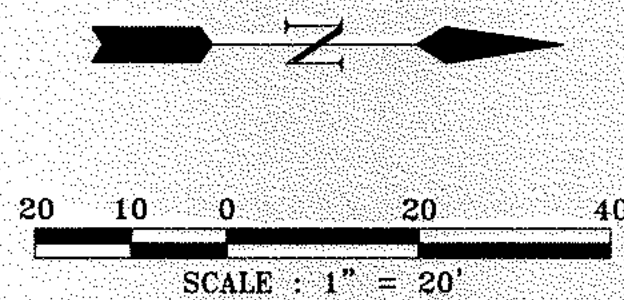
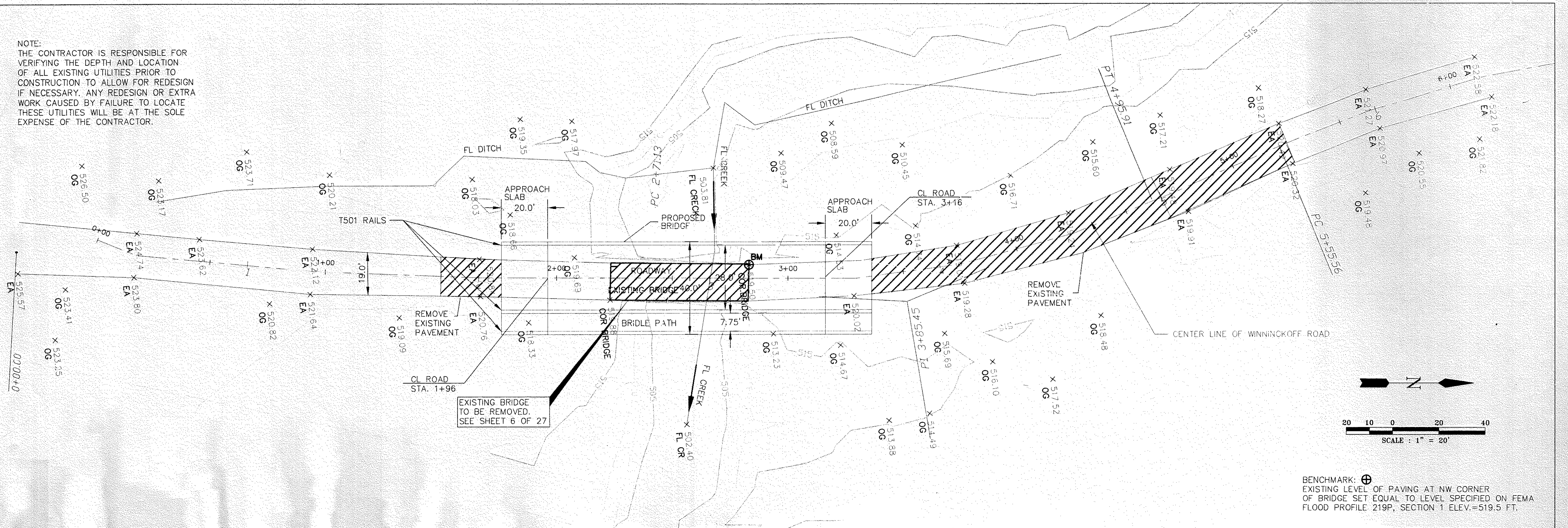
CITY OF LUCAS, TEXAS  
**LUCAS WINNINGKOFF BRIDGE**  
 LOCATION MAP AND  
 GENERAL NOTES

HUNTER ASSOCIATES TEXAS, LTD.  
 ENGINEERS / ARCHITECTS

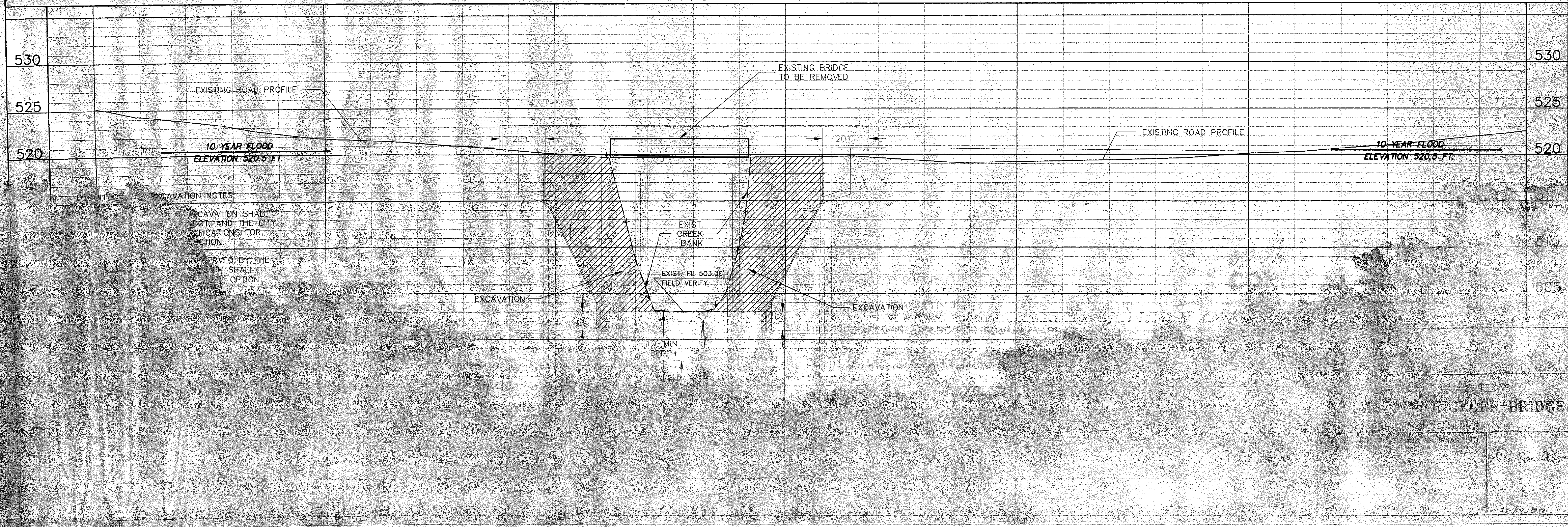
DATE: 12-99  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 SCALE: NOT TO SCALE  
 SHEET: 12 OF 26  
 12/17/99



NOTE:  
 THE CONTRACTOR IS RESPONSIBLE FOR  
 VERIFYING THE DEPTH AND LOCATION  
 OF ALL EXISTING UTILITIES PRIOR TO  
 CONSTRUCTION TO ALLOW FOR REDESIGN  
 IF NECESSARY. ANY REDESIGN OR EXTRA  
 WORK CAUSED BY FAILURE TO LOCATE  
 THESE UTILITIES WILL BE AT THE SOLE  
 EXPENSE OF THE CONTRACTOR.

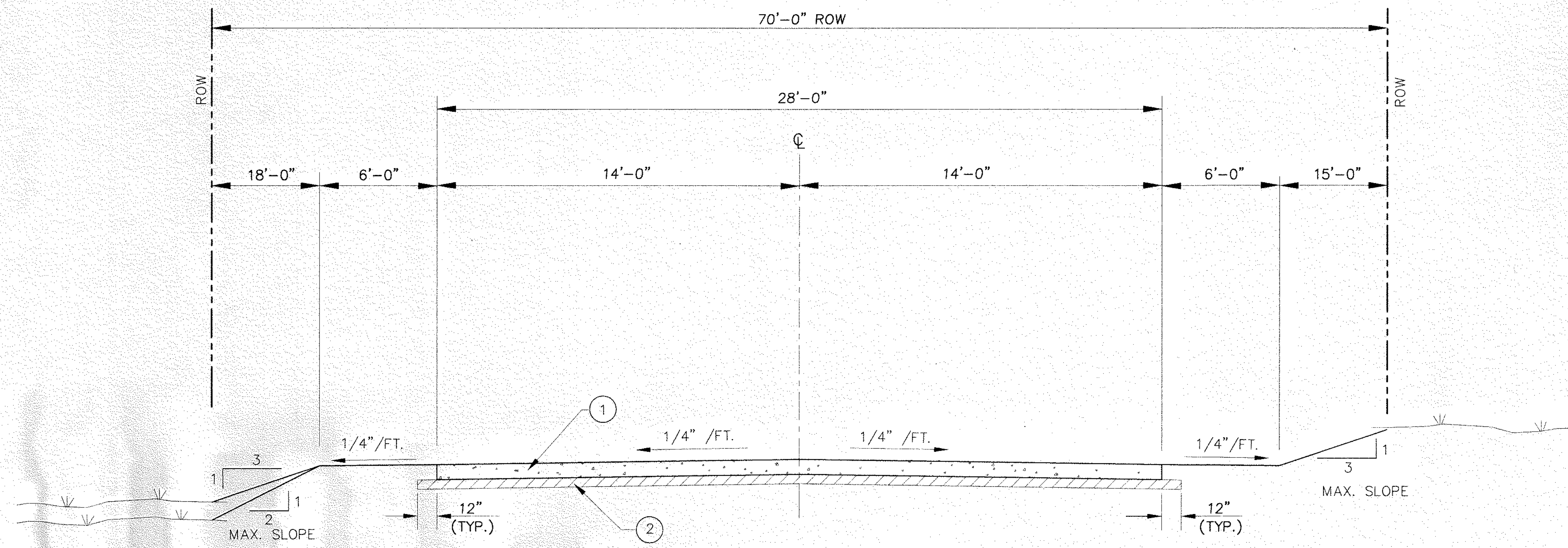


BENCHMARK: ⊕  
 EXISTING LEVEL OF PAVING AT NW CORNER  
 OF BRIDGE SET EQUAL TO LEVEL SPECIFIED ON FEMA  
 FLOOD PROFILE 219P, SECTION 1 ELEV.=519.5 FT.



COUNTY OF LUCAS, TEXAS  
**LUCAS WINNINGKOFF BRIDGE**  
 DEMOLITION  
 HUNTER ASSOCIATES TEXAS, LTD.  
 12/17/09

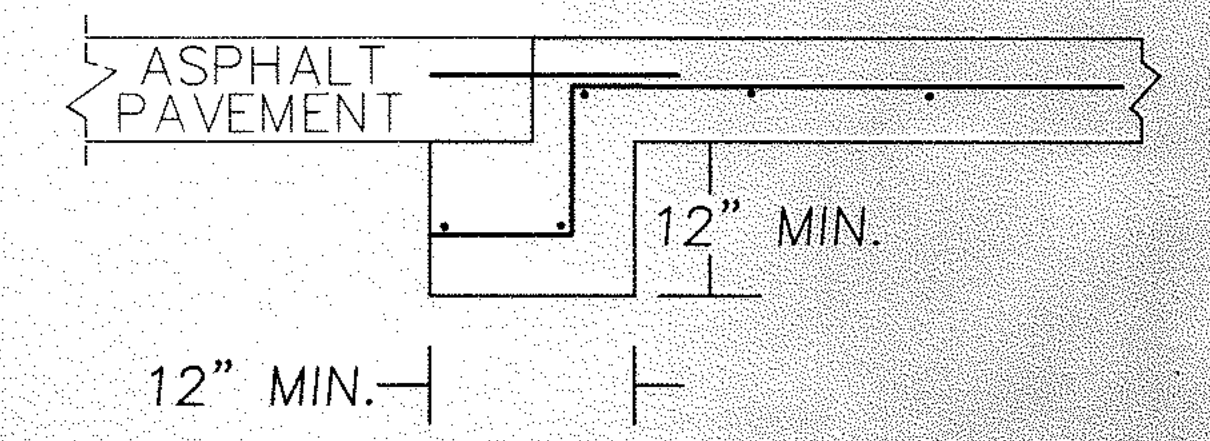




**TYPICAL PAVEMENT SECTION**  
NOT TO SCALE

**CONTRACTOR NOTES:**

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL UTILITY ADJUSTMENTS ON THIS PROJECT, AND TO SCHEDULE ALL CONSTRUCTION ACTIVITIES TO CLEAR THE VARIOUS LINES.
2. THE CONTRACTOR WILL BE FURNISHED A CONTROL LINE AND BENCHMARK ELEVATION DATUM FOR USE ON THIS PROJECT. ALL CONSTRUCTION STAKING WILL BE COMPLETED BY THE CONTRACTOR ON THIS JOB. THE DESIGN ENGINEER WILL ASSIST IN DETERMINATION WHERE CONFLICTS ARE FOUND IN UNDERGROUND UTILITIES ONLY IF THE CONTRACTOR HAS IDENTIFIED THE PROBLEM AND NEEDS HELP. THERE IS NO DIRECT RESPONSIBILITY FOR STAKING, CONSTRUCTION LAYOUT OR OTHER RELATED ITEMS.



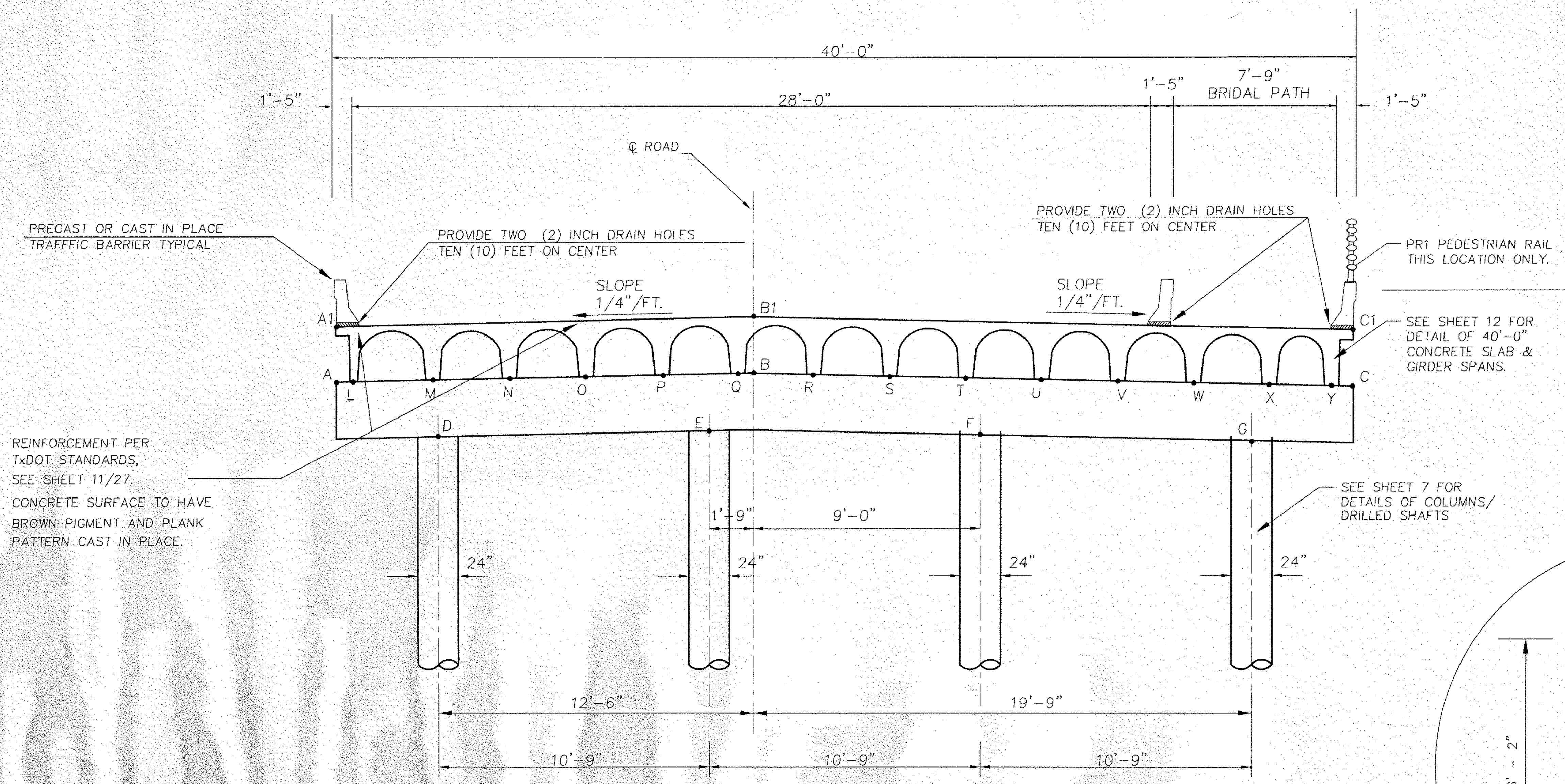
**TYPICAL PAVEMENT HEADER DETAIL**

**NOTES ON CONCRETE PAVEMENT:**

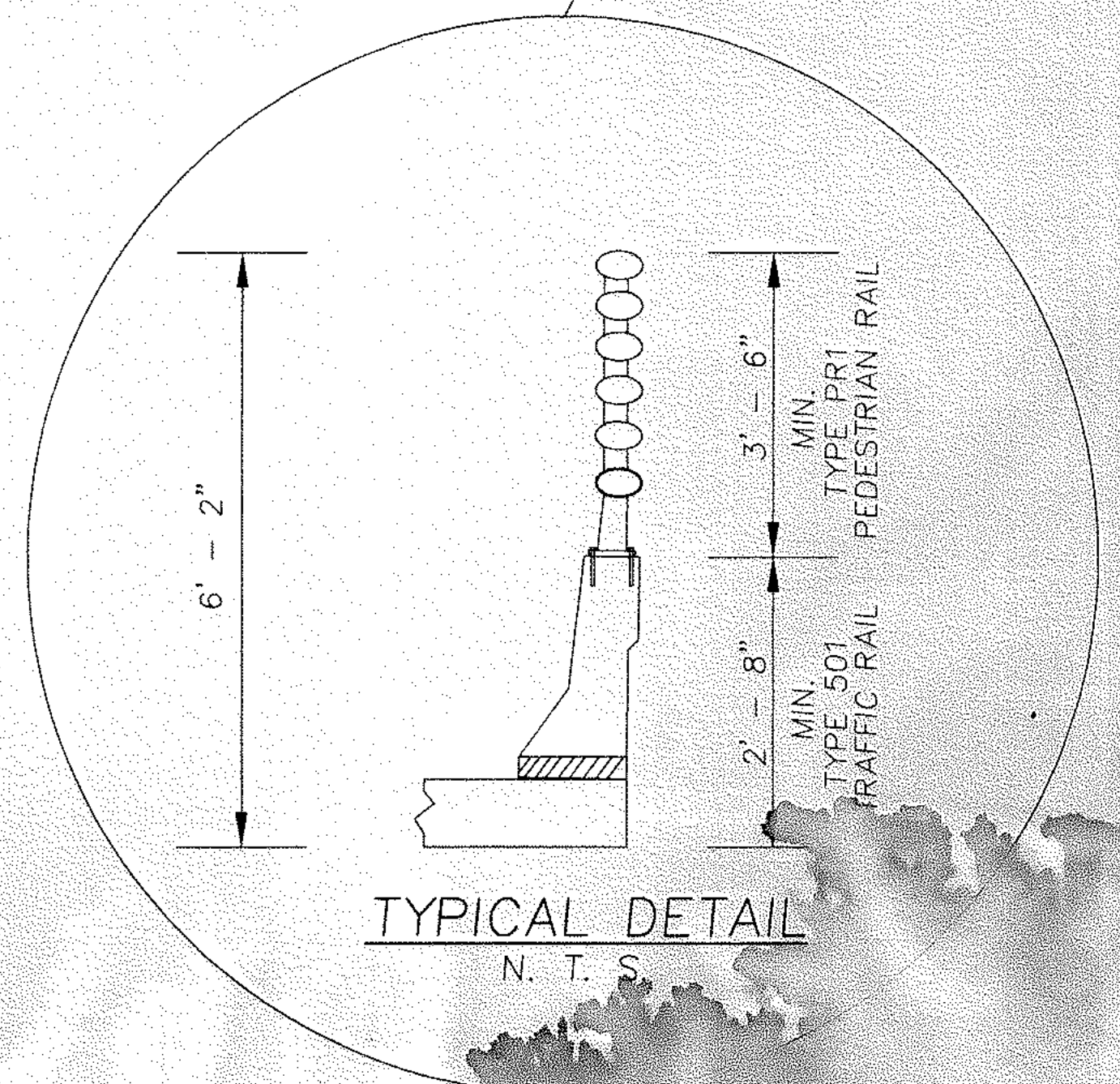
1. 8" THICK, 3,500 P.S.I. REINFORCED PAVEMENT, NO. 3 BARS @ 24 IN O.C. EACH WAY.
2. LIME STABILIZED SUBGRADE COMPACTED TO 95% TEX 113E. THE AMOUNT OF HYDRATED LIME SLURRY SHALL BE THAT WHICH REDUCES THE PLASTICITY INDEX OF THE TREATED SOIL TO BELOW 15. FOR BIDDING PURPOSES, ASSUME THAT THE AMOUNT OF LIME REQUIRED IS 32 LBS PER SQUARE YARD.
3. DEPTH OF LIME STABILIZED SUBGR.
4. (Faint text, likely related to subgrade preparation or curing requirements)

CITY OF LUCAS, TEXAS  
**LUCAS BRIDGE**  
 BRIDGE 40 ROADWAY  
 TYPICAL PAVEMENT SECTION  
 ENGINEER: MONTE ASSOCIATES TEXAS, LTD.  
 DATE: 12-7-99  
 DRAWING NO: BRIDGEDET2.DWG  
 SCALE: AS SHOWN  
 12-7-99





**BRIDGE SECTION**  
SCALE : N.T.S.



GENERAL NOTES:

1. BRIDGE DESIGNED FOR HS 20-44 LIVE LOAD IN ACCORDANCE WITH 1983 AASHTO SPECIFICATIONS.
2. THE ENGINEER SHALL INSPECT THE DRILLING AND PLACING OF REINFORCING STEEL AND CONCRETE IN ALL DRILLED SHAFTS.
3. TEXAS DEPARTMENT OF TRANSPORTATION 1993 STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES SHALL GOVERN FOR THE CONSTRUCTION OF THIS BRIDGE EXCEPT AS NOTED.
4. ALL REINFORCING STEEL FOR THIS BRIDGE, INCLUDING DRILLED SHAFTS AND RAILING SHALL BE IN CONFORMANCE TO ASTM A615, GRADE 60 EXCEPT STIRRUPS AND SPIRAL REINFORCEMENT SHALL BE ASTM A615, GRADE 40.
5. SURFACE FINISH FOR THIS BRIDGE SHALL MEET TxDOT STANDARD 427. SURFACE AREA SHALL BE AS SHOWN.
6. ALL DRILLED SHAFTS SHALL BE LENGTH INDICATED OR LONGER IF NECESSARY TO MEET DESIGN DIMENSIONS.

CITY OF LUCAS, TEXAS  
**LUCAS BRIDGE**  
BRIDGE 40' ROADWAY  
VERTICAL CURVES STRUCTURAL DETAILS

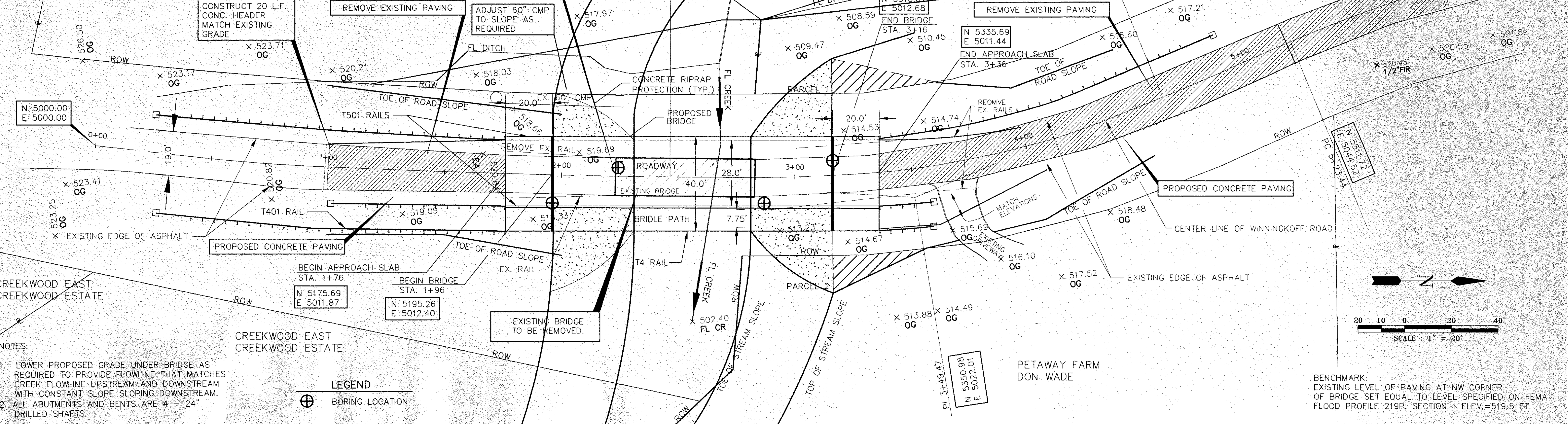
ENGINEER: GUYTON ASSOCIATES, TEXAS, LTD.  
ARCHITECT: GUYTON ASSOCIATES, TEXAS, LTD.

DATE: 12-7-99

12-7-99

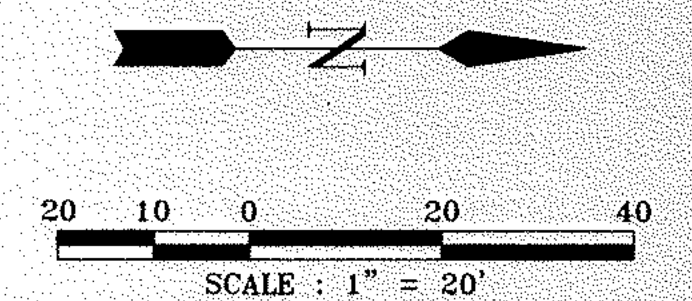


NOTE:  
THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO ALLOW FOR REDESIGN IF NECESSARY. ANY REDESIGN OR EXTRA WORK CAUSED BY FAILURE TO LOCATE THESE UTILITIES WILL BE AT THE SOLE EXPENSE OF THE CONTRACTOR.

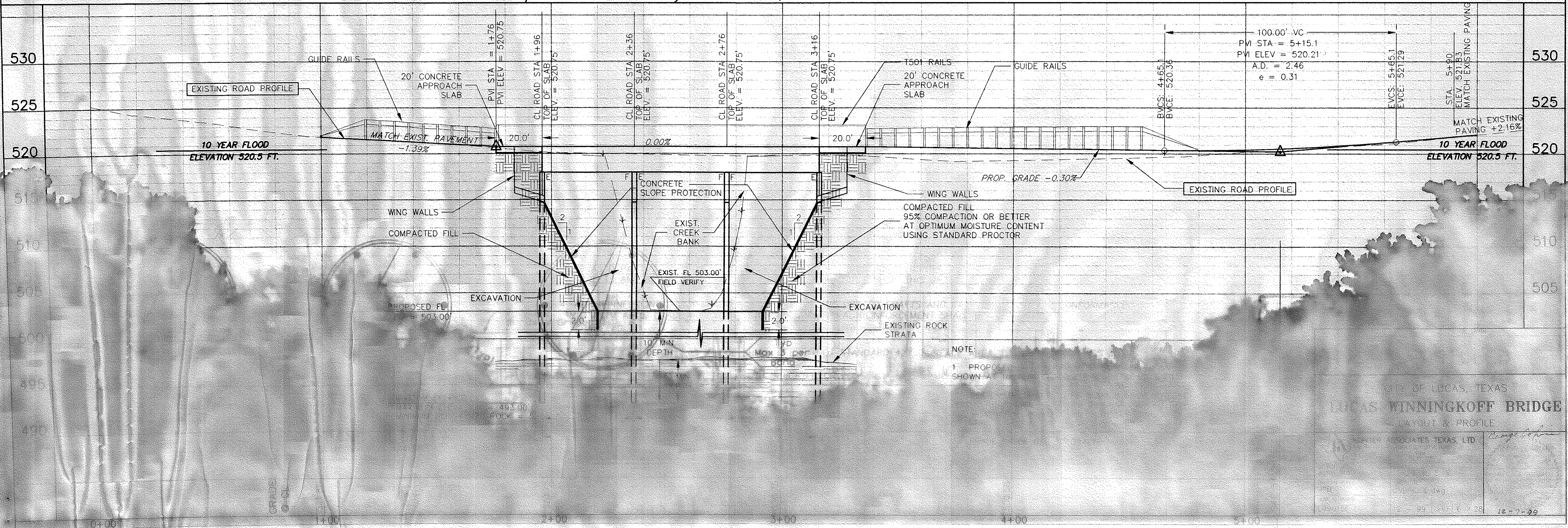


NOTES:  
1. LOWER PROPOSED GRADE UNDER BRIDGE AS REQUIRED TO PROVIDE FLOWLINE THAT MATCHES CREEK FLOWLINE UPSTREAM AND DOWNSTREAM WITH CONSTANT SLOPE SLOPING DOWNSTREAM.  
2. ALL ABUTMENTS AND BENTS ARE 4 - 24" DRILLED SHAFTS.

LEGEND  
⊕ BORING LOCATION



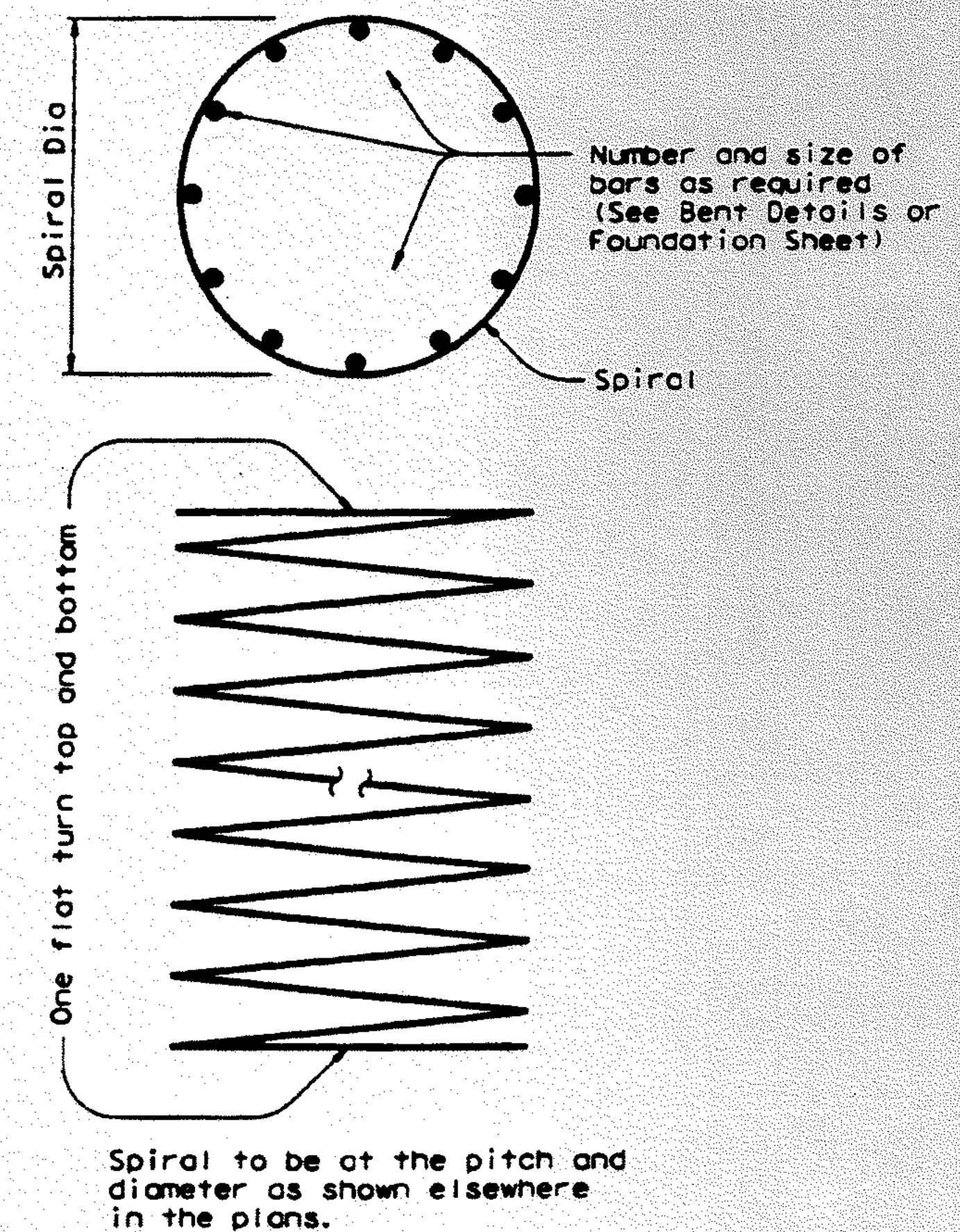
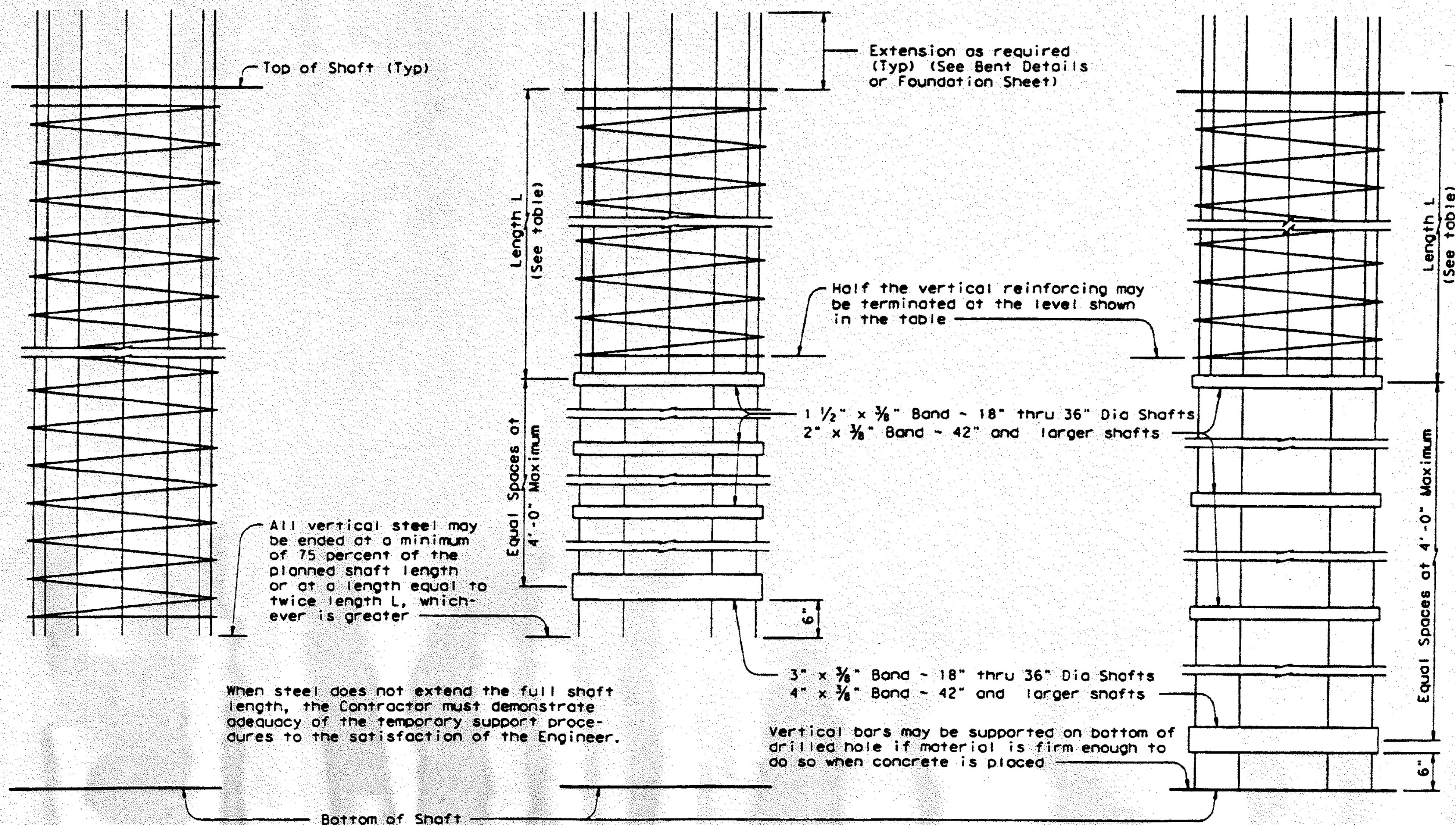
BENCHMARK:  
EXISTING LEVEL OF PAVING AT NW CORNER OF BRIDGE SET EQUAL TO LEVEL SPECIFIED ON FEMA FLOOD PROFILE 219P, SECTION 1 ELEV.=519.5 FT.



NOTE:  
1. PROPOSED GRADE SHOWN

CITY OF LUCAS, TEXAS  
**LUCAS WINNINGKOFF BRIDGE**  
 LAYOUT & PROFILE  
 ENGINEER: [Signature]  
 DATE: 12-7-92





**SPIRAL DETAIL**

**GENERAL NOTES:**

At the Contractor's option, any or all drilled shafts may be constructed using these details in lieu of the drilled shaft details shown elsewhere in the plans.

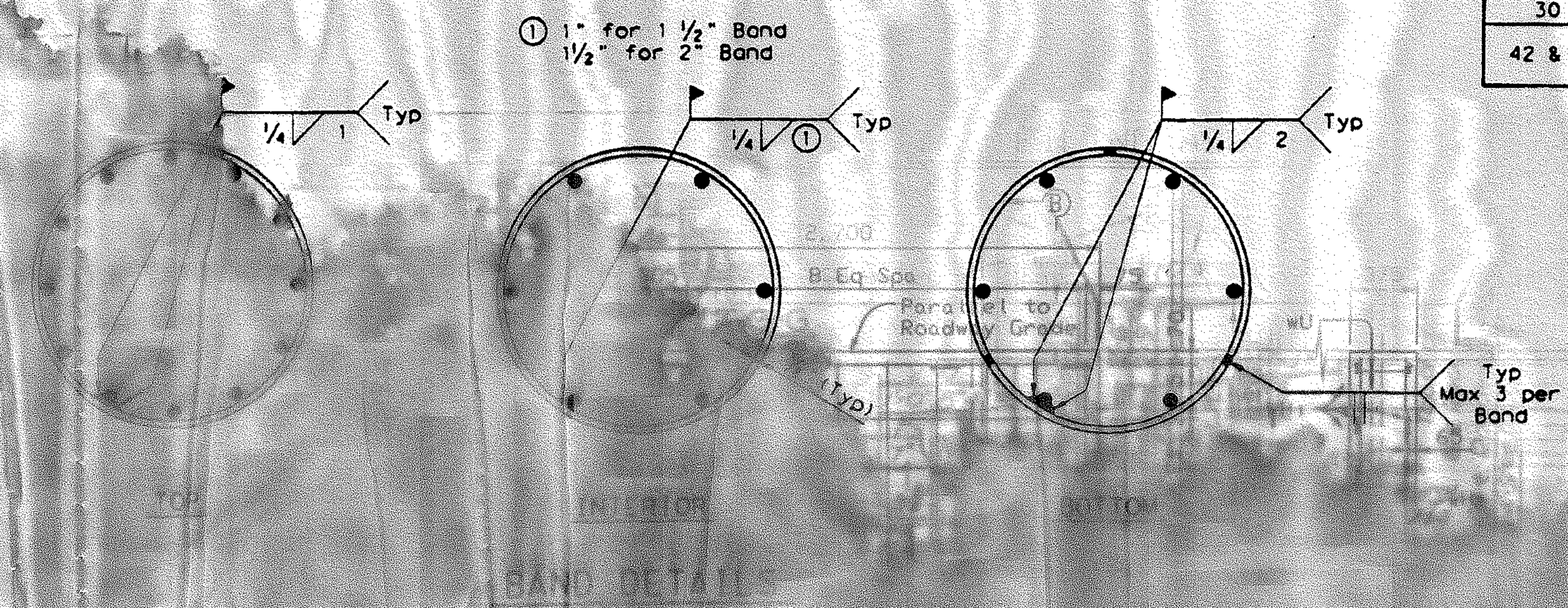
These details shall not be applied to single column bents supported by a single shaft, or to overhead sign bridge towers supported by a single shaft, or to high mast illumination pole foundations. Unless otherwise noted, all drilled shafts on stream crossings and any others specifically noted in the plans shall have full reinforcement and be excluded from applications of these details.

All welded bands and reinforcing steel, including that projecting the required amount from the top of the shaft, shall not be paid for directly, but shall be subsidiary to the bid item, "Drilled Shaft Foundations".

Tack welding of spiral to main steel will not be allowed in the upper 15' of drilled shaft.

**ELEVATIONS**

LENGTH L		
Drilled Shaft Diameter (Inches)	Length L (Feet)	Note
18 & 24	24	The length L is measured from top of shaft, natural ground, or finished ground, whichever results in the longer length of full reinforcement.
30 & 36	30	
42 & larger	10 Shaft Diameters	



**CORNER DETAIL**

Department of Transportation  
Division (Bridge)

**OPTIONAL DRILLED SHAFT REINFORCING**

ODSR SHEET 7 OF 28

NO.	DATE	BY	CHKD	REV	DATE	BY	CHKD

FEDERAL AID PROJECT NO. \_\_\_\_\_

STATE PROJECT NO. \_\_\_\_\_

COUNTY \_\_\_\_\_

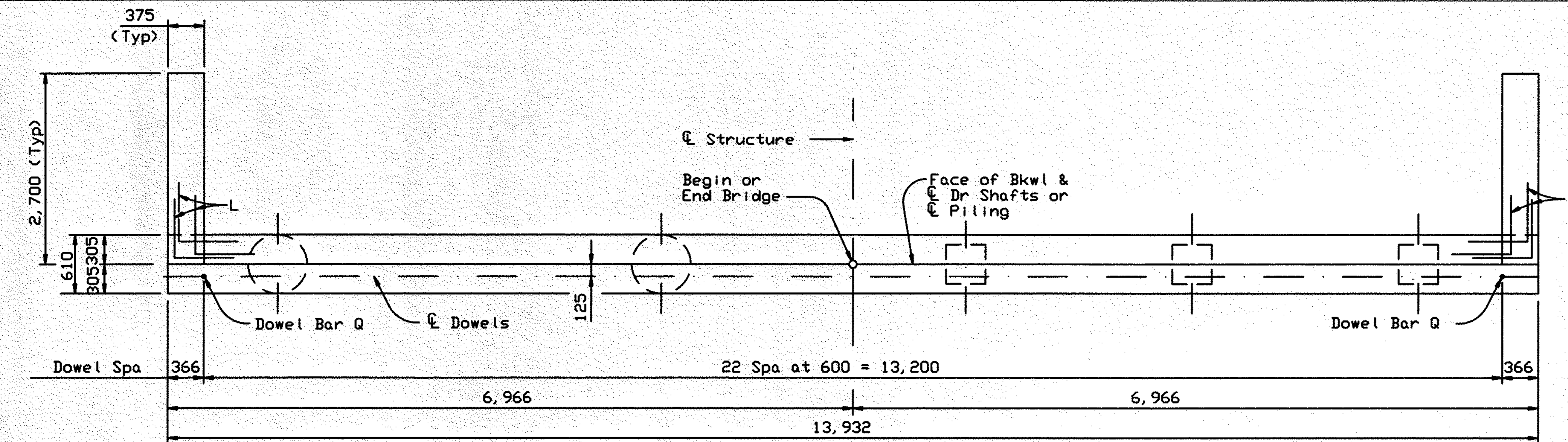
CONTRACT NO. \_\_\_\_\_

SECTION \_\_\_\_\_

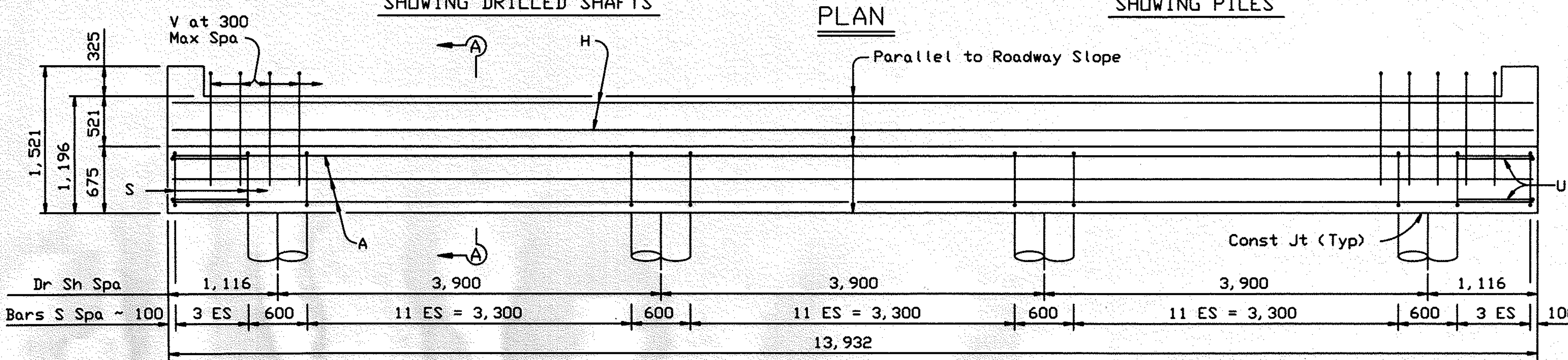
JOB \_\_\_\_\_

HIGHWAY \_\_\_\_\_

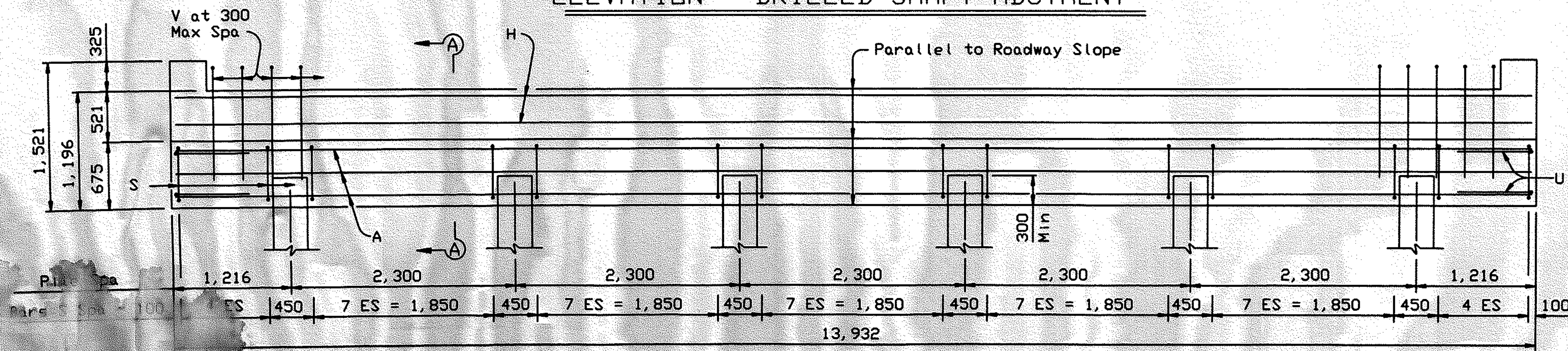




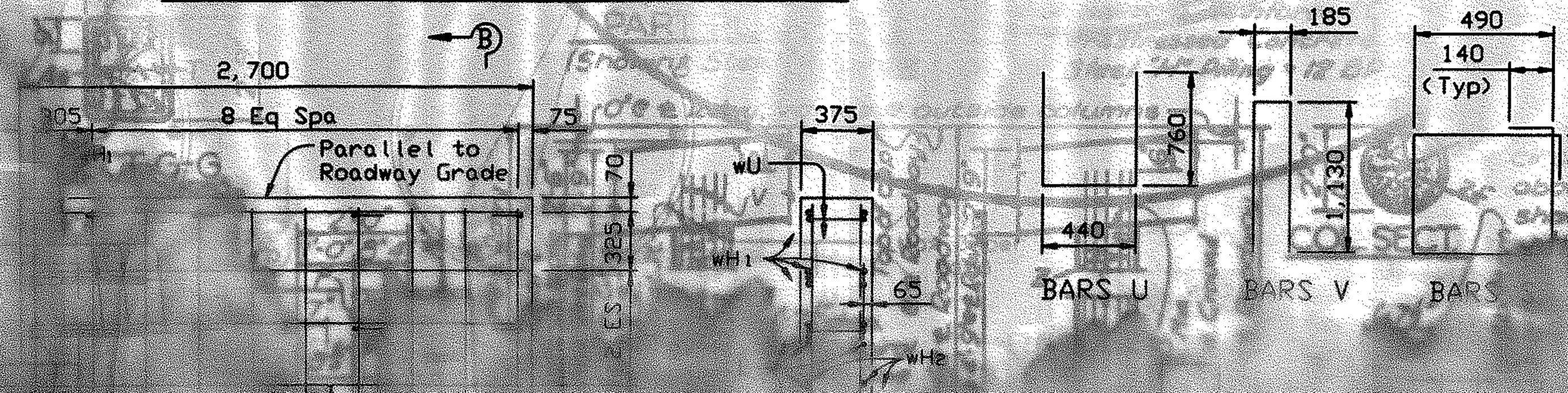
SHOWING DRILLED SHAFTS PLAN SHOWING PILES



ELEVATION ~ DRILLED SHAFT ABUTMENT

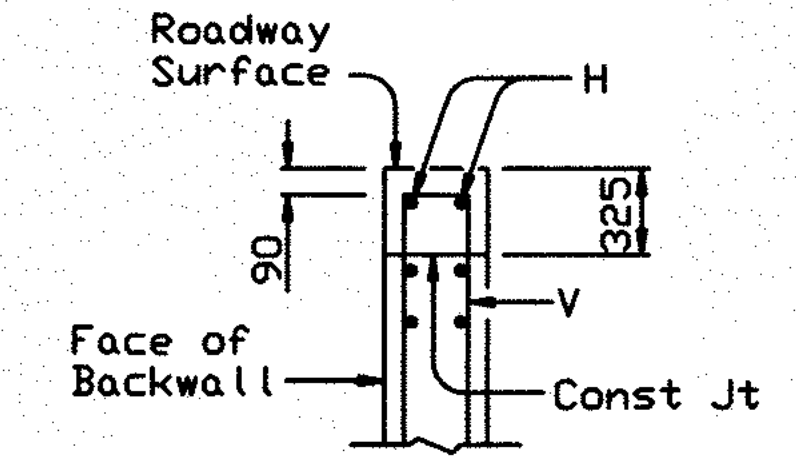


ELEVATION ~ PILING ABUTMENT



SECTION B-B

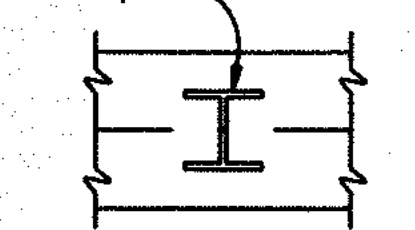
TABLE OF ESTIMATED QUANTITIES											
DRILLED SHAFT ABUT					PILING ABUTMENT						
Bar	No.	Size	Length	Mass	Bar	No.	Size	Length	Mass		
A	6	#11	13,630	647	A	6	#11	13,630	647		
H	4	#5	13,830	86	H	4	#5	13,830	86		
L	20	#6	1,200	54	L	20	#6	1,200	54		
Q	23	#6	450	23	Q	23	#6	450	23		
S	44	#5	2,320	158	S	50	#5	2,320	180		
U	4	#6	1,960	18	U	4	#6	1,960	18		
V	45	#5	2,450	171	V	45	#5	2,450	171		
wH1	12	#6	2,600	70	wH1	12	#6	2,600	70		
wH2	16	#6	2,900	104	wH2	16	#6	2,900	104		
wU	20	#4	550	11	wU	20	#4	550	11		
wV	40	#5	1,390	86	wV	40	#5	1,390	86		
Reinforcing Steel				kg	1,428	Reinforcing Steel				kg	1,450
Class 'C' Concrete				m <sup>3</sup>	10.8	Class 'C' Concrete				m <sup>3</sup>	10.8



BACKWALL DETAIL

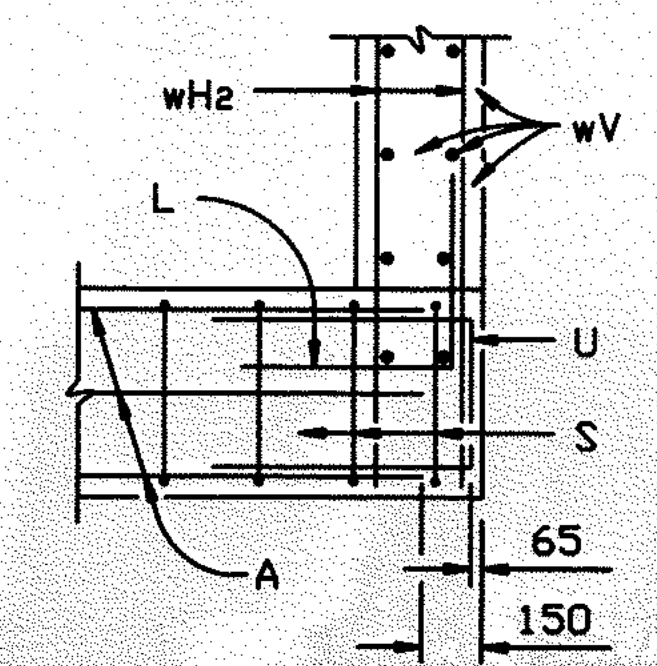
③ Without Approach Slab

Steel H piling (extend a min of 300 mm into cap)



PART PLAN OF CAP

(SHOWING STEEL 'H' PILING)



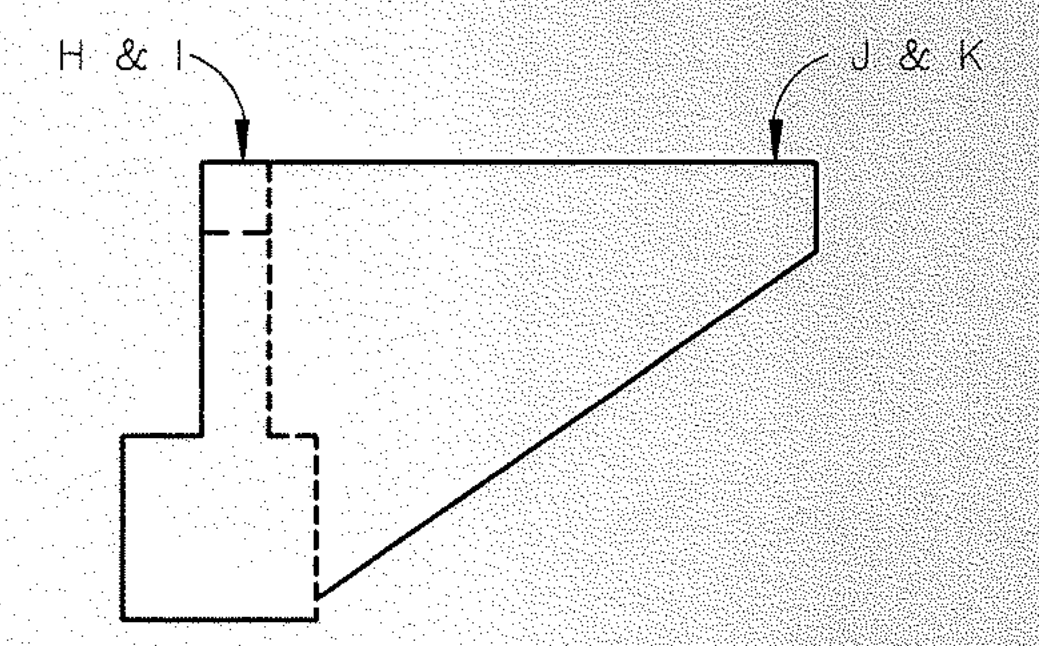
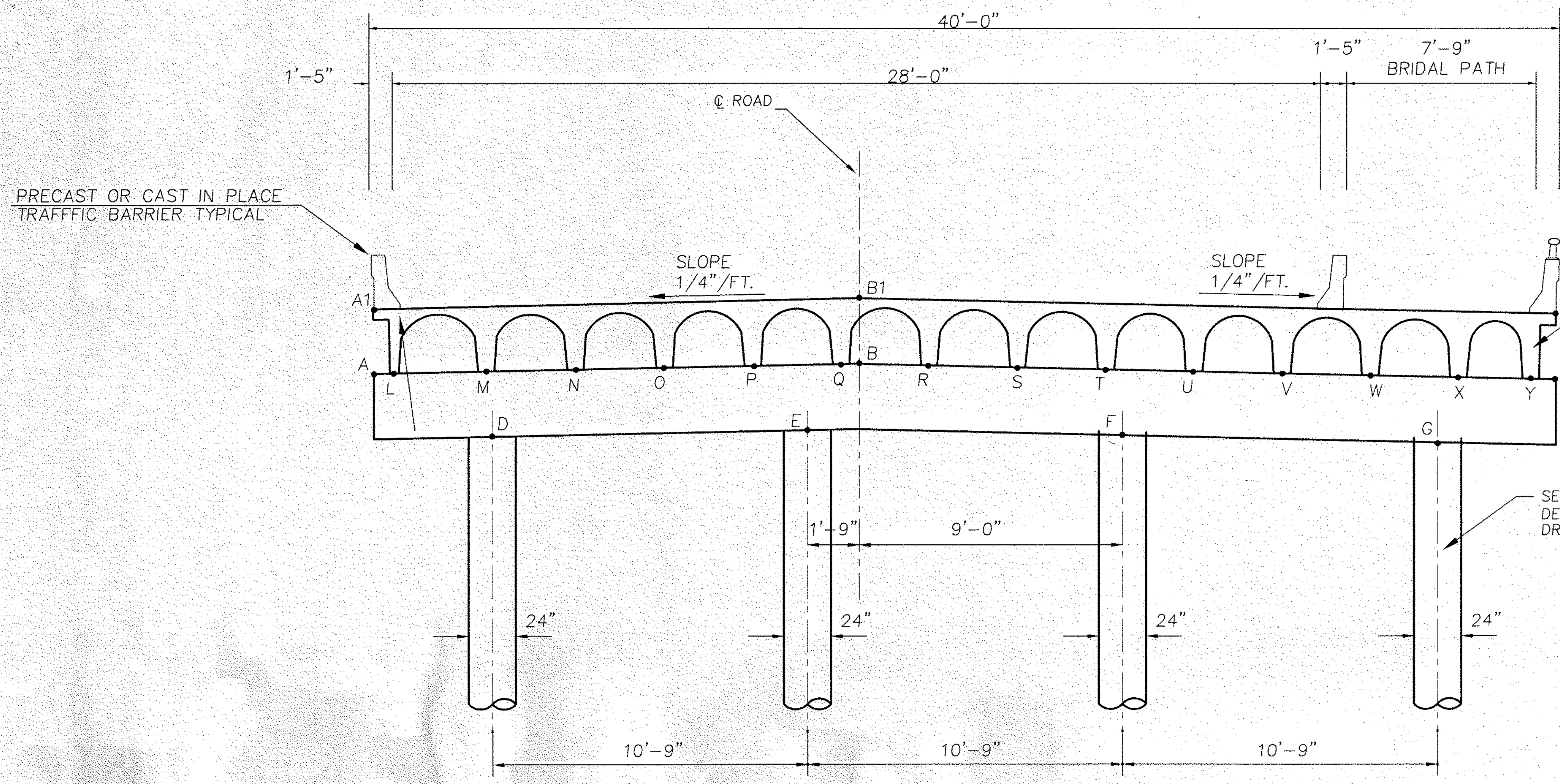
CAP CORNER DETAIL

**GENERAL NOTES:**  
 Designed according to current AASHTO Standard Specifications with MS18 min loading.  
 Designed for normal embankment header slope of 1:3.  
 See Layout for foundation type.  
 See Foundation Detail sheet, FD(M), for all foundation details and notes.  
 All dimensions are in millimeters (mm) except as noted.  
 Drilled Shaft Reinforcing shall be Class 'C' Concrete.  
 All Cap Reinforcing shall be Class 'C' Concrete.  
 Calculated Foundation Loads









H & J ARE LOCATED ON WEST SIDE OF BRIDGE  
I & K ARE LOCATED ON EAST SIDE OF BRIDGE

TYPICAL WINGWALL  
N.T.S.

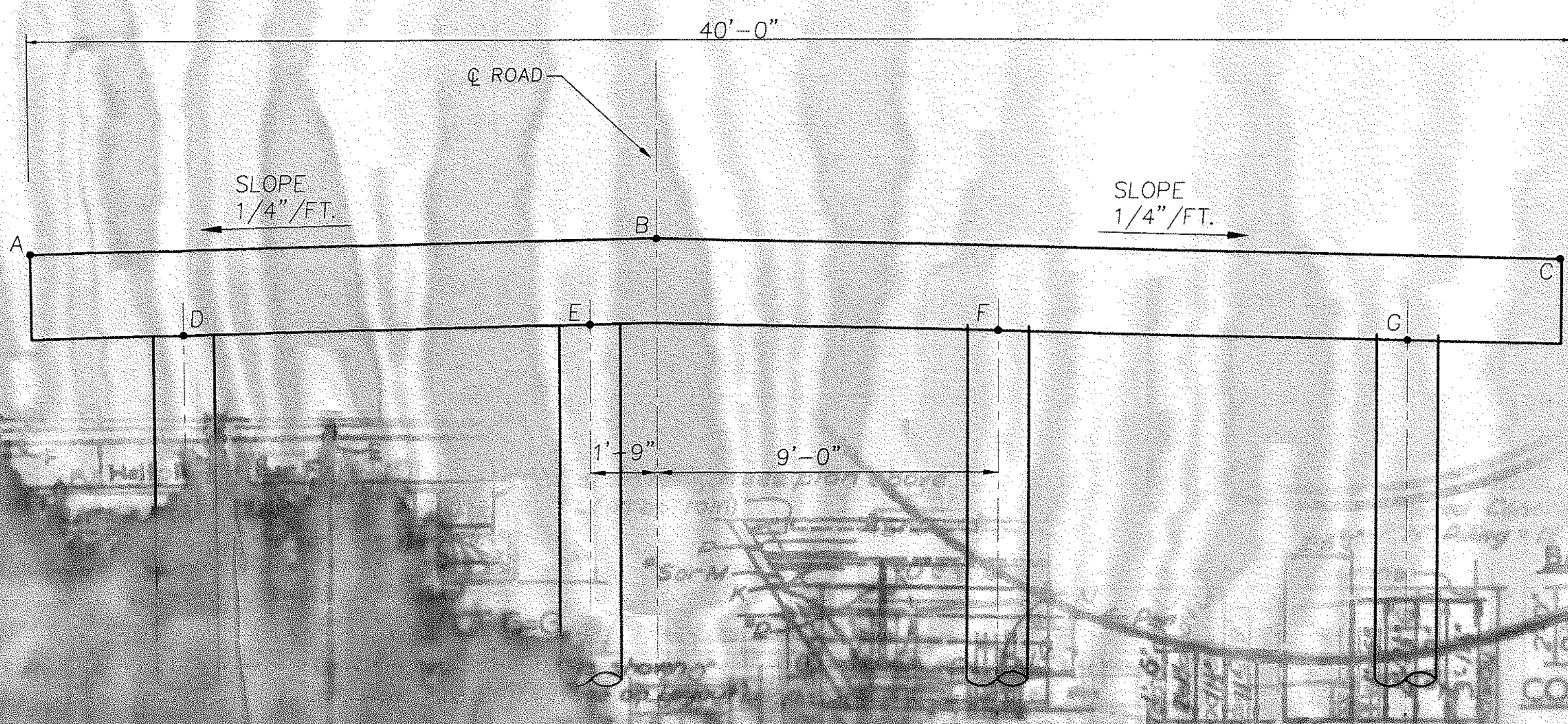
PRECAST OR CAST IN PLACE TRAFFIC BARRIER TYPE PR1

PRECAST OR CAST IN PLACE TRAFFIC BARRIER TYPICAL

SEE SHEET 11 FOR  
DETAIL OF 40'-0"  
CONCRETE SLAB &  
GIRDER SPANS.

SEE SHEET 7 FOR  
DETAILS OF COLUMNS/  
DRILLED SHAFTS

ELEVATION OF ABUTMENTS 1 & 2  
N.T.S.



CONSTRUCTION CONTROL POINTS ELEVATIONS

	A	B	C	D	E	F	G	H	I	J	K
ABUT. No.1	517.67	518.00	517.49	514.49	514.71	514.56	514.34	520.42	520.25	519.00	515.00
ABUT. No.2	517.67	518.00	517.49	514.49	514.71	514.56	514.34	520.42	520.25	519.00	515.00

	A	B	C	D	E	F	G
BENT. No.1	517.67	518.00	517.49	514.49	514.71	514.56	514.34
BENT. No.2	517.67	518.00	517.49	514.49	514.71	514.56	514.34

BEARING ELEVATIONS

	L	M	N	O	P	Q	R
BENT. No.1	517.68	517.74	517.81	517.87	517.93	517.99	517.94
BENT. No.2	517.68	517.74	517.81	517.87	517.93	517.99	517.94

	S	T	U	V	W	X	Y
BENT. No.1	517.87	517.81	517.75	517.69	517.63	517.56	517.50
BENT. No.2	517.87	517.81	517.75	517.69	517.63	517.56	517.50

TOP PAVEMENT SLAB ELEVATIONS

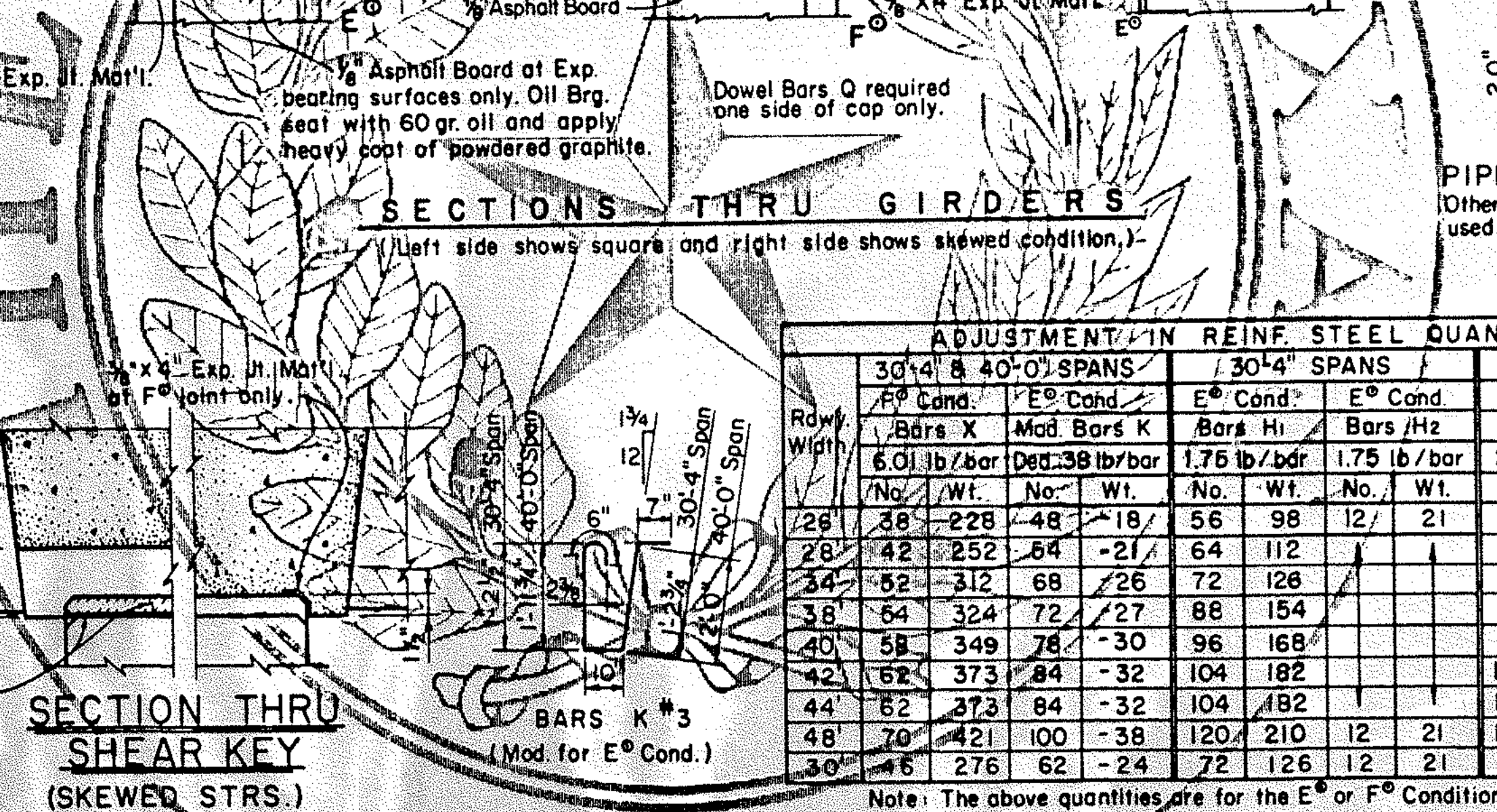
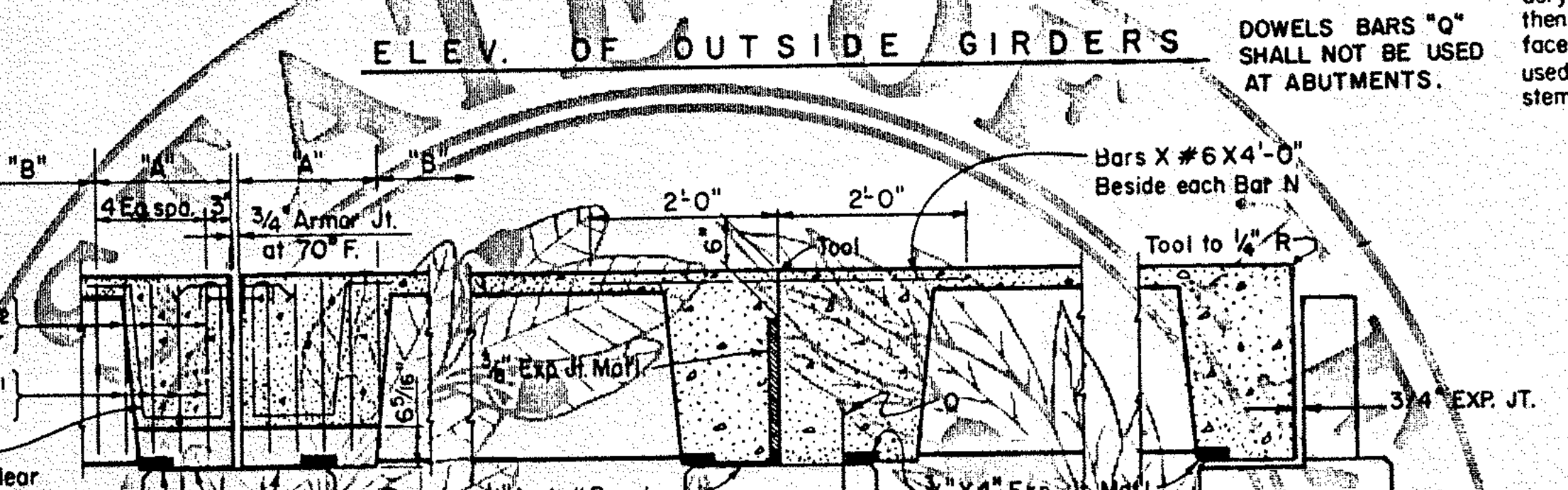
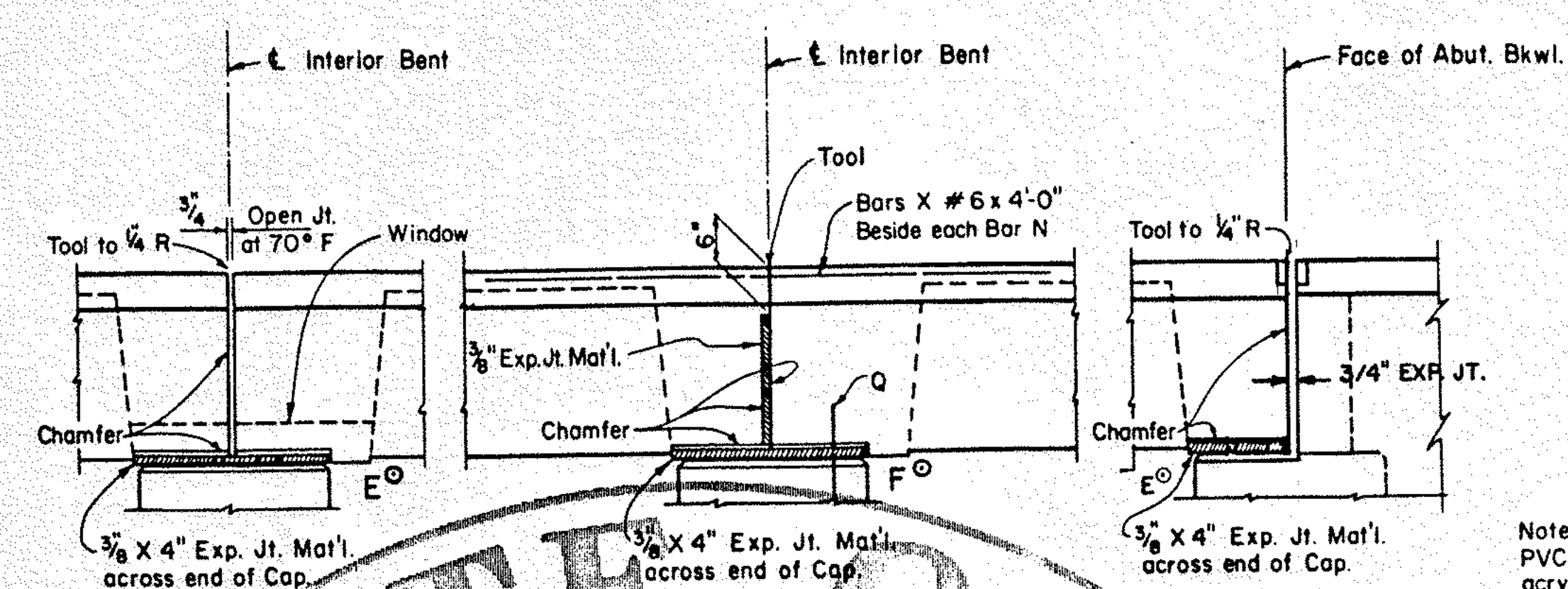
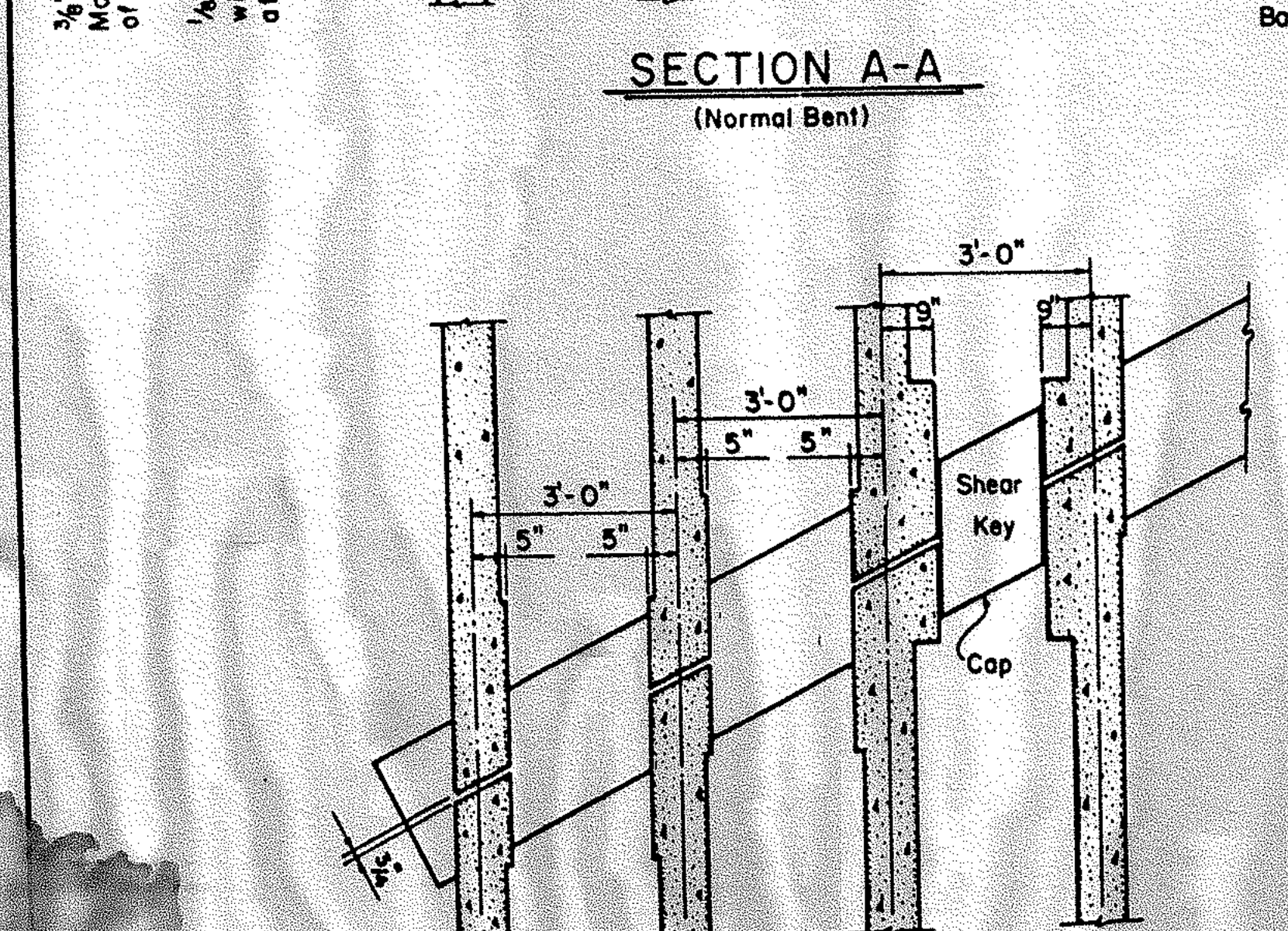
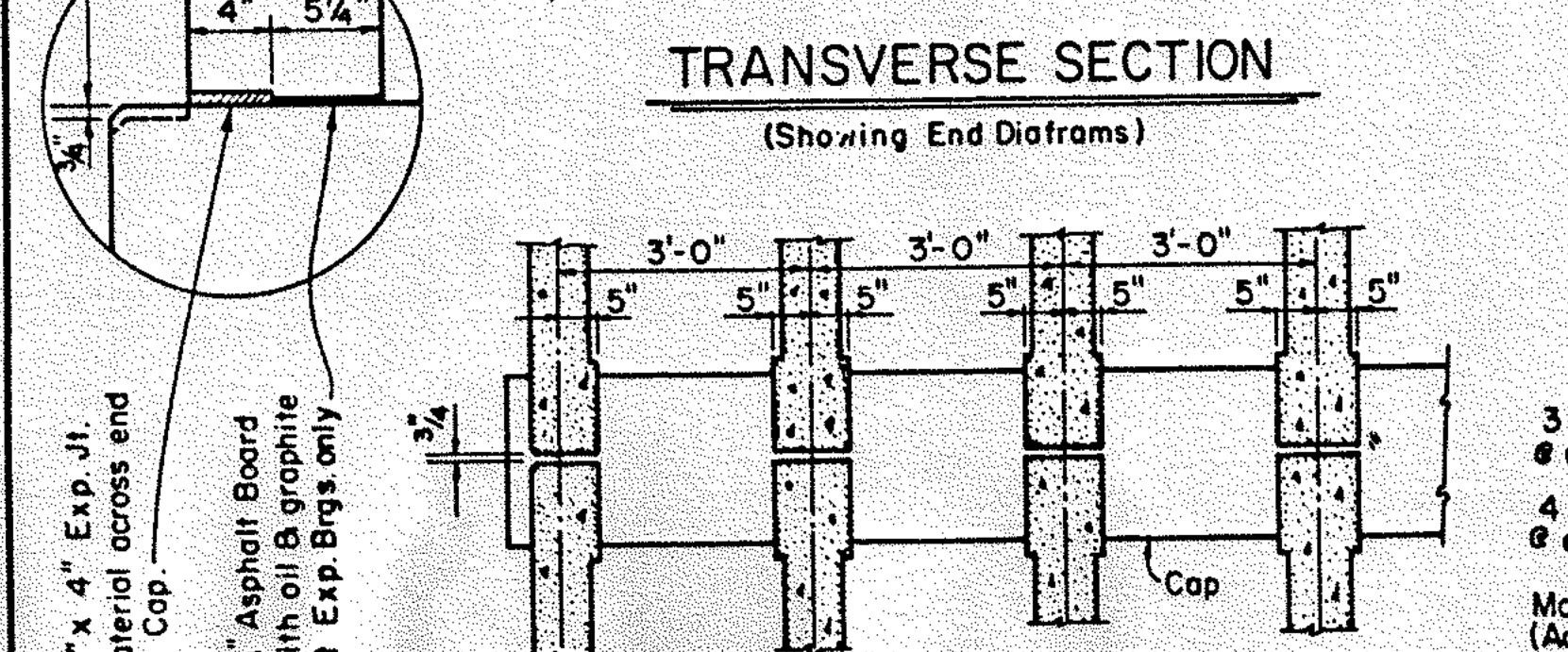
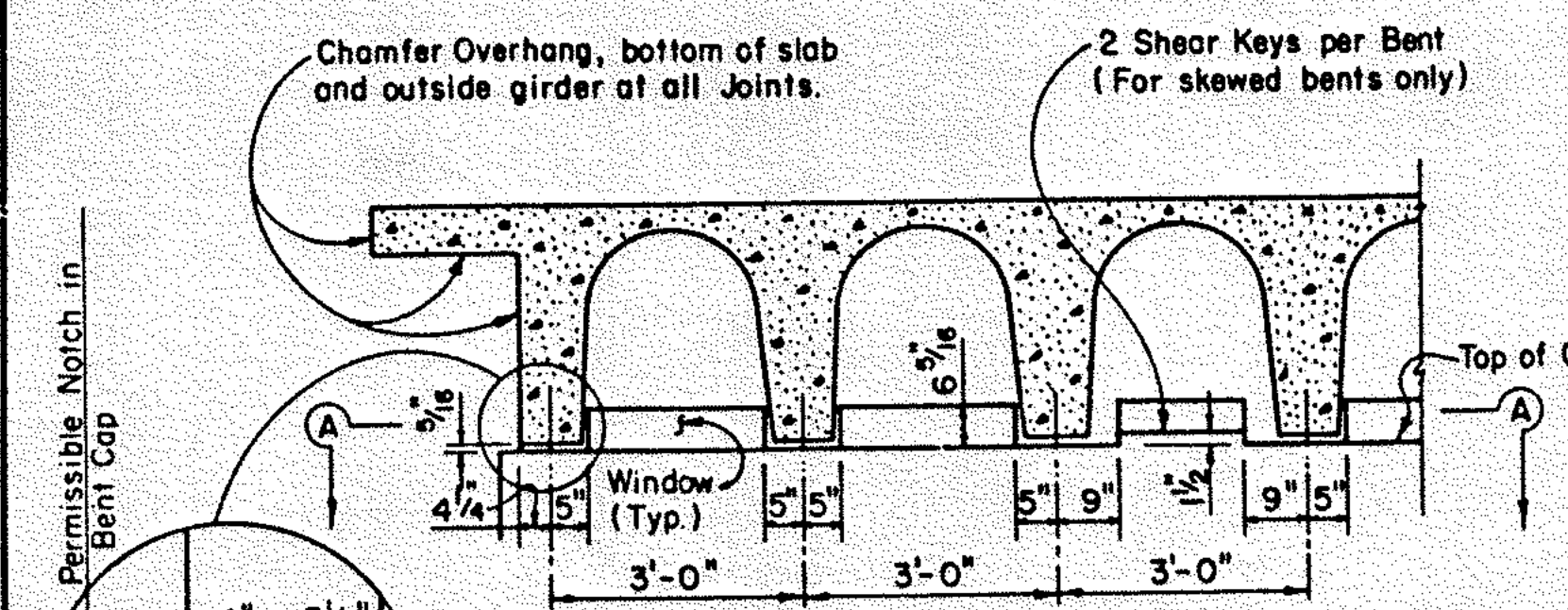
	A1	B1	C1
ABUT. No.1	520.42	520.75	520.24
ABUT. No.2	520.42	520.75	520.24

LUCAS BRIDGE  
BRIDGE 20 - ROADWAY  
ELEVATION AND BENT ELEVATIONS  
LUCAS, TEXAS  
12-7-03



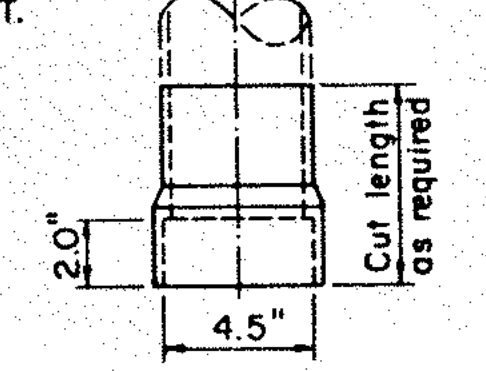
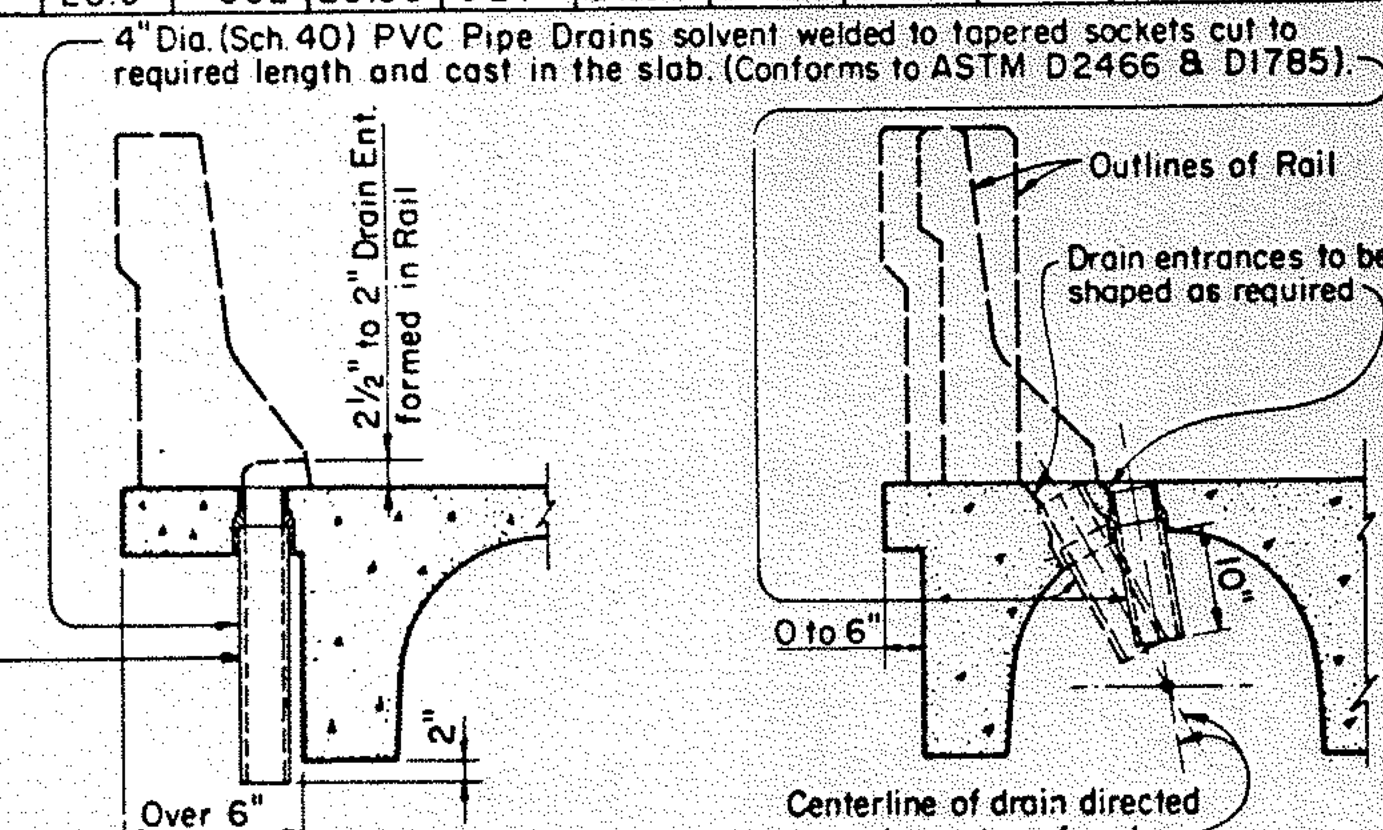






**ARMOR JOINT**

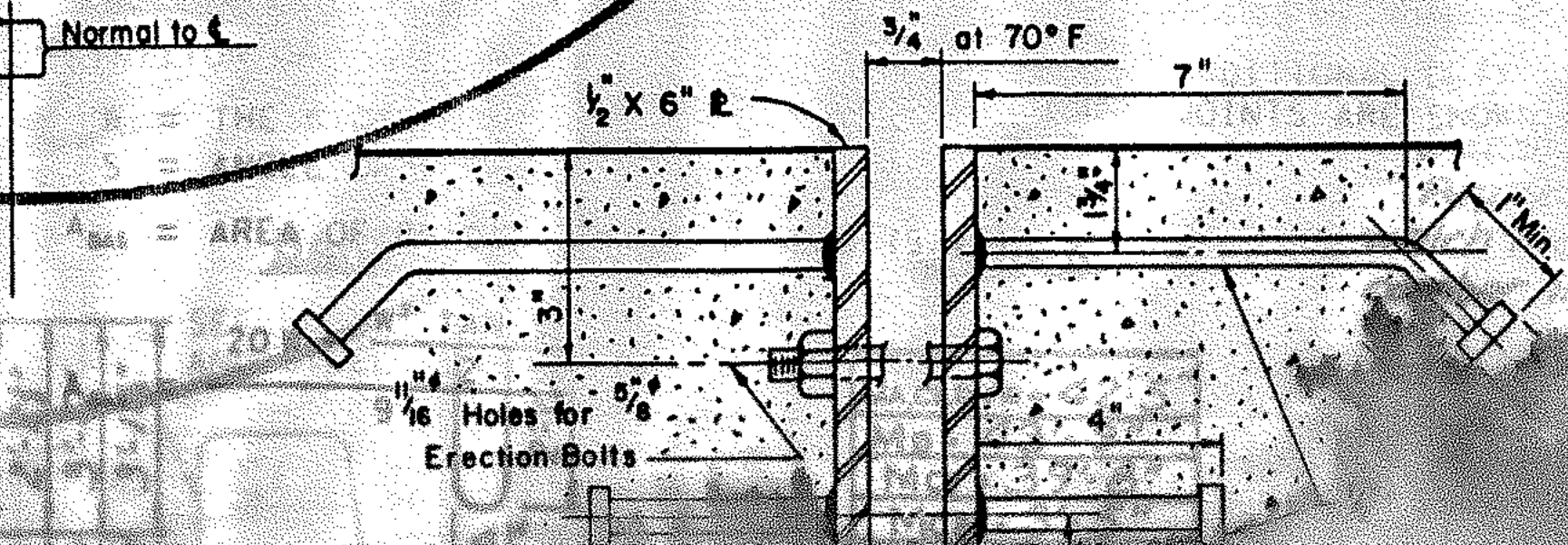
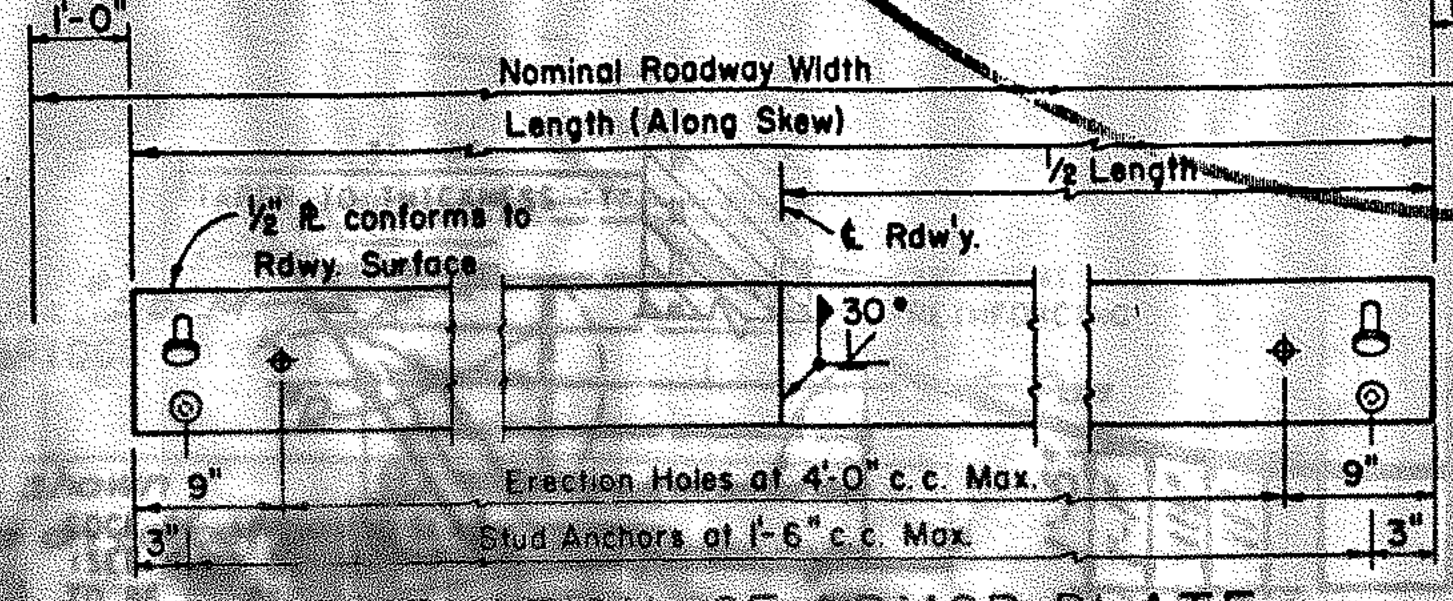
Roadway	0° Skew		14°02' Skew		26°34' Skew		36°52' Skew		45°00' Skew	
	Length	Weight	Length	Weight	Length	Weight	Length	Weight	Length	Weight
2 6'	24.00'	516	24.74'	532	26.83'	577	30.00'	645	33.94'	730
2 8'	26.00'	559	26.80'	576	29.07'	625	32.50'	699	36.77'	791
3 4'	32.00'	688	32.98'	709	35.78'	770	40.00'	860	45.25'	909
3 8'	36.00'	774	37.12'	798	40.25'	866	45.00'	968	50.91'	1095
4 0'	38.00'	817	39.17'	843	42.49'	914	47.50'	1022	53.74'	1156
4 2'	40.00'	860	41.23'	887	44.72'	962	50.00'	1076	56.57'	1217
4 4'	42.00'	903	43.29'	931	46.96'	1010	52.50'	1129	59.40'	1278
4 8'	46.00'	989	47.42'	1020	51.43'	1106	57.50'	1237	65.05'	1399
30'	28.0'	602	28.86'	621	31.31'	673	35.00'	753	39.60'	852



**ADJUSTMENT IN REINF. STEEL QUANTITIES**

Rowdy Width	30'-4" SPANS				30'-4" SPANS				40'-0" SPANS			
	E° Cond.		F° Cond.		E° Cond.		F° Cond.		E° Cond.		F° Cond.	
	Bars X	Mod Bars K	Bars H1	Bars H2	Bars X	Mod Bars K	Bars H1	Bars H2	Bars X	Mod Bars K	Bars H1	Bars H2
	6.01 lb/bar	Des. 38 lb/bar	1.75 lb/bar	1.75 lb/bar	2.29 lb/bar	2.29 lb/bar	2.29 lb/bar	2.29 lb/bar	2.29 lb/bar	2.29 lb/bar	2.29 lb/bar	2.29 lb/bar
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
26'	38	228	48	18	56	98	12	21	56	128	12	21
28'	42	252	64	21	64	112	64	147	64	147		
34'	52	312	68	26	72	128			72	165		
38'	64	324	72	27	88	154			88	202		
40'	58	349	78	30	96	168			96	220		
42'	68	373	84	32	104	182			104	238		
44'	62	373	84	32	104	182			104	238		
48'	70	421	100	38	120	210	12	21	120	275	12	21
30'	48	276	62	24	72	126	12	21	72	165	12	21

Note: The above quantities are for the E° or F° Condition over one Bent.



**GENERAL NOTES:**

Where shown E° on the layouts, provide armor joints and diafram windows. Where shown F° on the layouts, Bars X shall be provided over the Bent.

If both ends of a span are shown E° on the layouts, Dowel Bars Q are required in one end of the span at each girder stem with no adjustment in reinforcing quantities for the added dowels.

Pay quantities will be as shown for additional Bars H1 and Bars H2 shown E° and for the Bars X concrete pay quantities will be as shown for armor joints.

Cast of Concrete for

**FORM LOWERING HOLE TREATMENT**

When directed by the Engineer, the form lowering holes shall be left open for high water venting purposes with 2" O.D. PVC pipe epoxied in place.

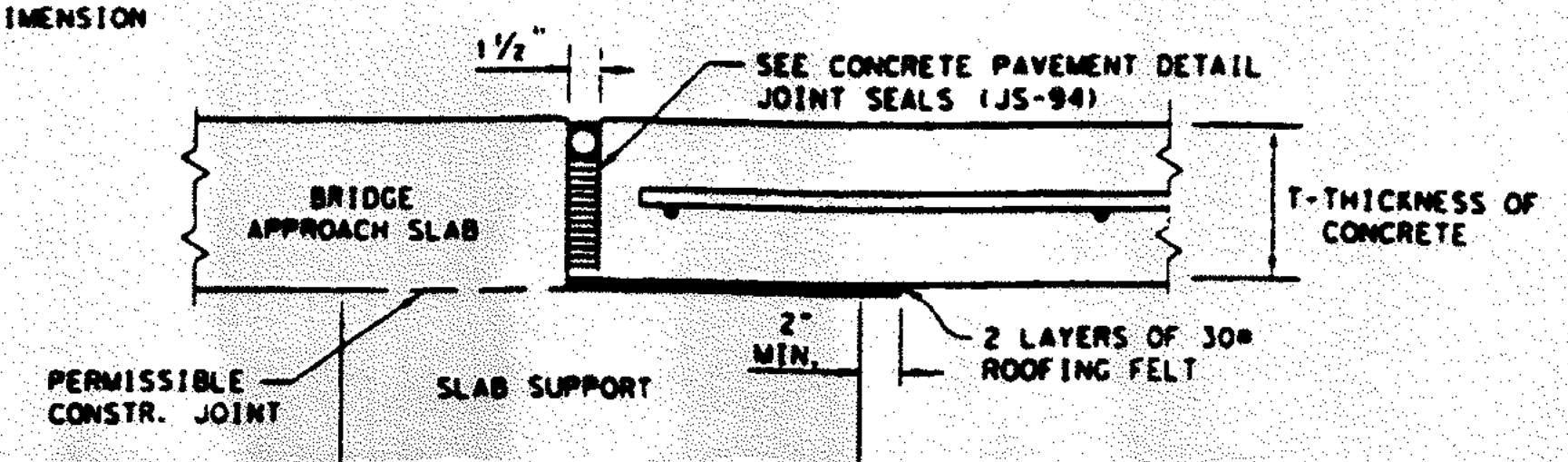
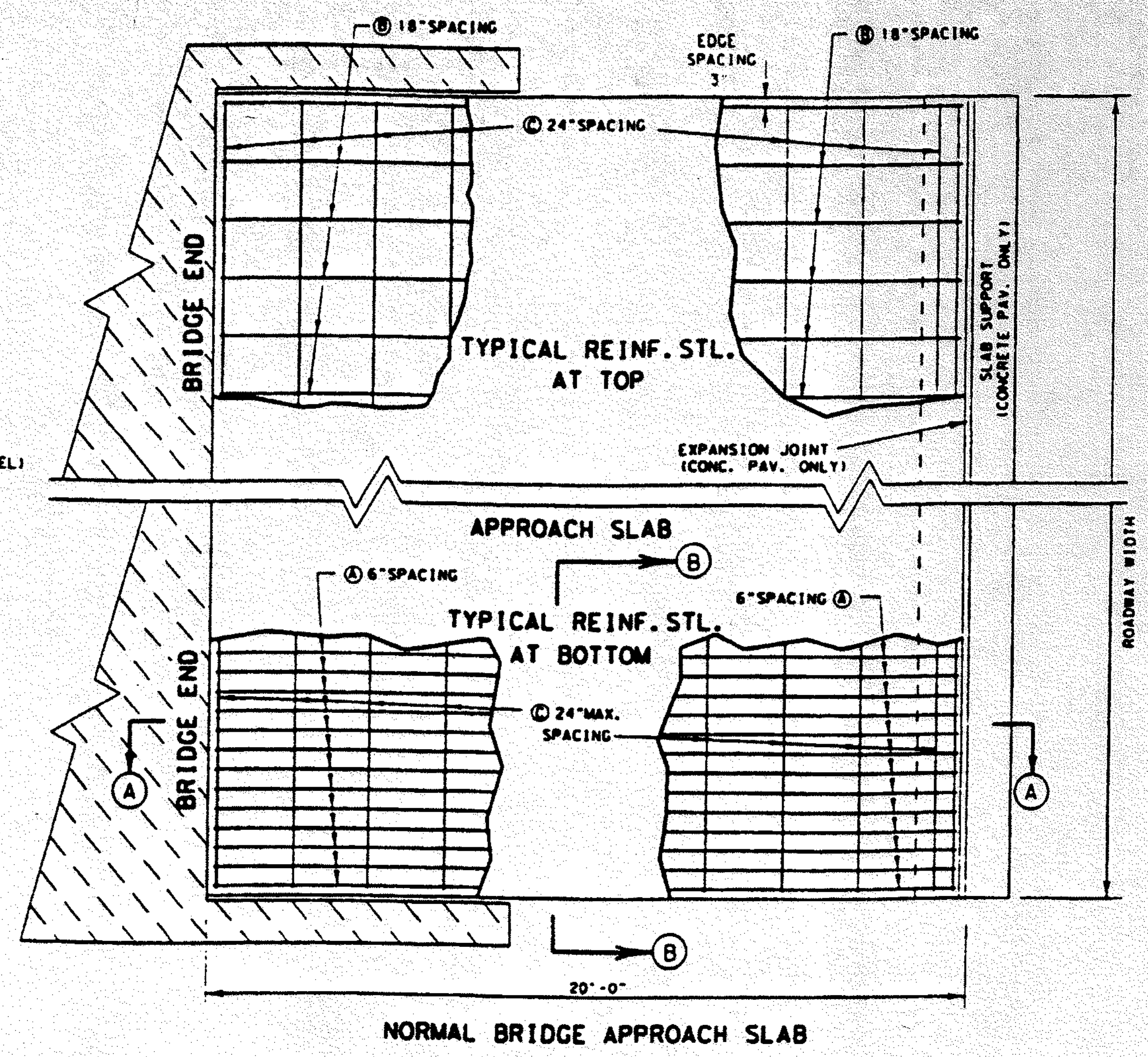
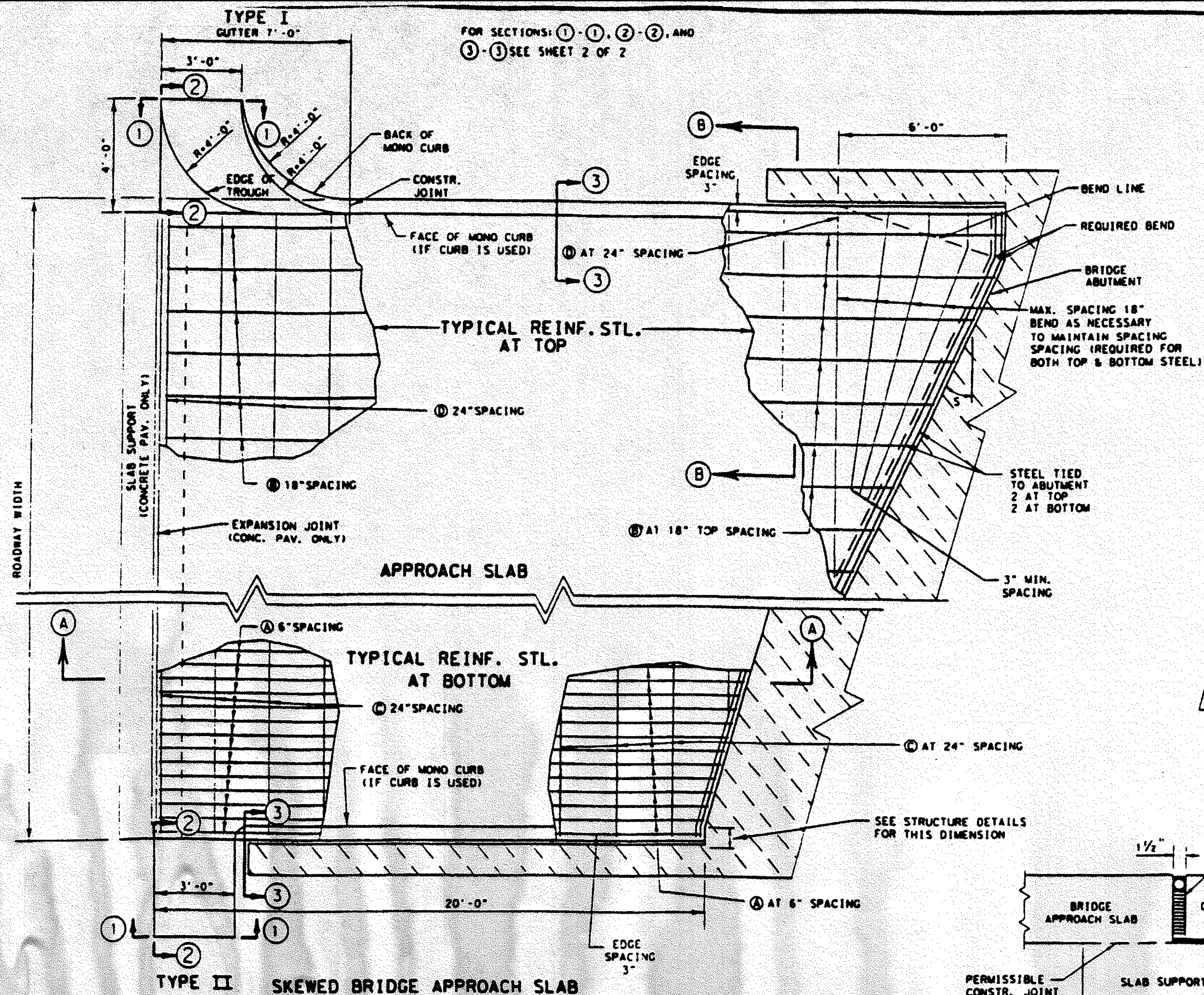
Form lowering holes shall be plugged with grout. (Usual procedure).

DEPARTMENT OF HIGHWAYS  
PUBLIC TRANSPORTATION

**CONCRETE SLAB AND GIRDER SPAN SUPPLEMENT (MOD.)**  
CG-0 (S)1

NO.	REVISION	DATE	BY	CHECKED





**EXPANSION JOINT DETAIL A**

FOR THE CONTRACTOR INFORMATION QUANTITIES WERE CALCULATED USING THE FOLLOWING :

**DEFINITION OF TERMS**

W = THE WIDTH OF THE SLAB IN FEET  
S = ANGLE OF SKEW IN DEGREES

$A_{BAS} = \text{AREA OF BRIDGE APPROACH SLAB (S. Y.)}$

$A_{BAS} = \frac{20 W \tan S}{9}$

**GENERAL NOTES**

1. THE APPROACH SLAB SHALL HAVE THE SAME TRANSVERSE CROWN THROUGHOUT ITS LENGTH AS THE STRUCTURE WHICH IT ADJOINS.
2. ALL REINFORCING BARS ON THIS STANDARD DRAWING SHALL CONFORM TO ASTM SPECIFICATION A-616, GRADE 60. WHERE BENDING OF THE STEEL IS REQUIRED, A-616, GRADE 60 SHALL BE USED.
3. ADDITIONAL DETAILS FOR POSSIBLE EXPANSION JOINTS AND LONGITUDINAL JOINTS ARE SHOWN ON SHEET 2 OF 2.

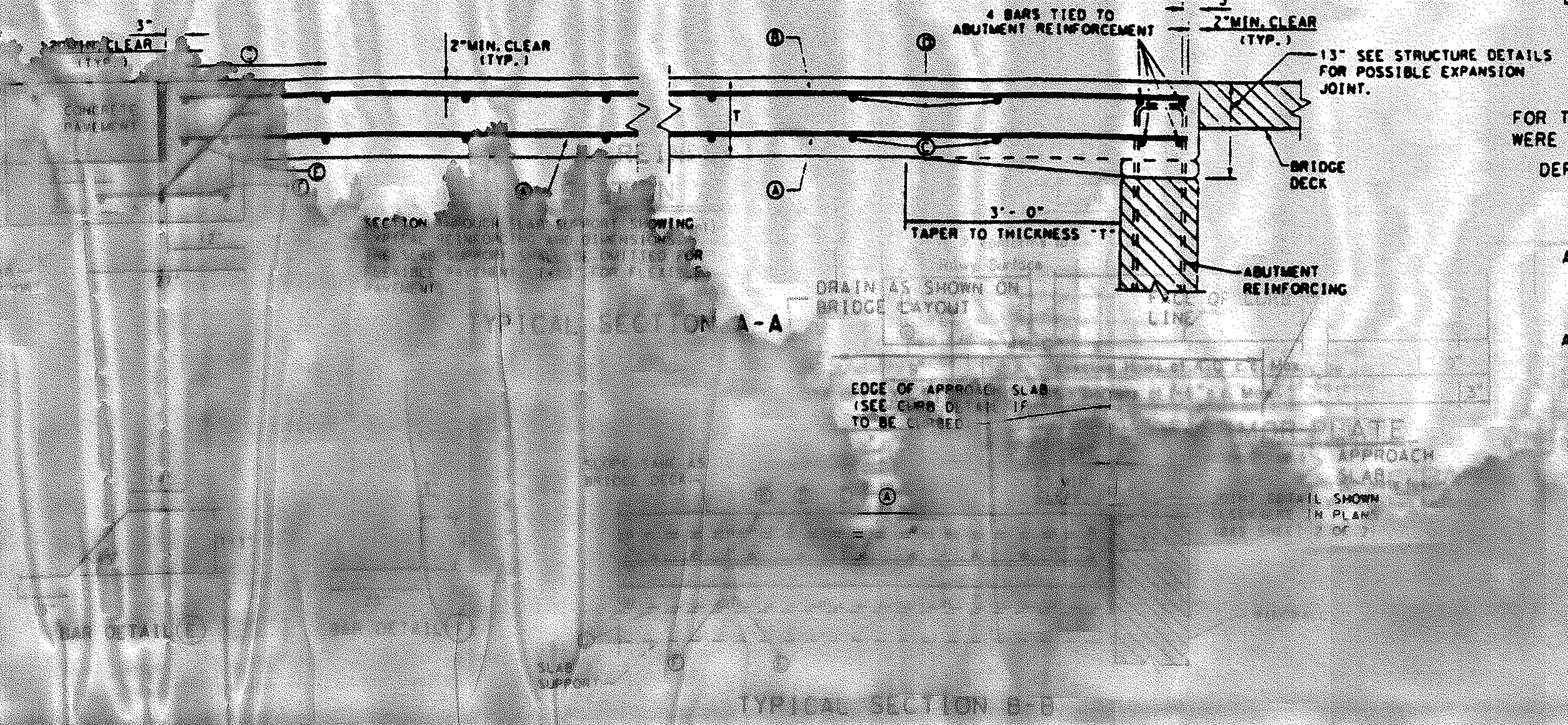
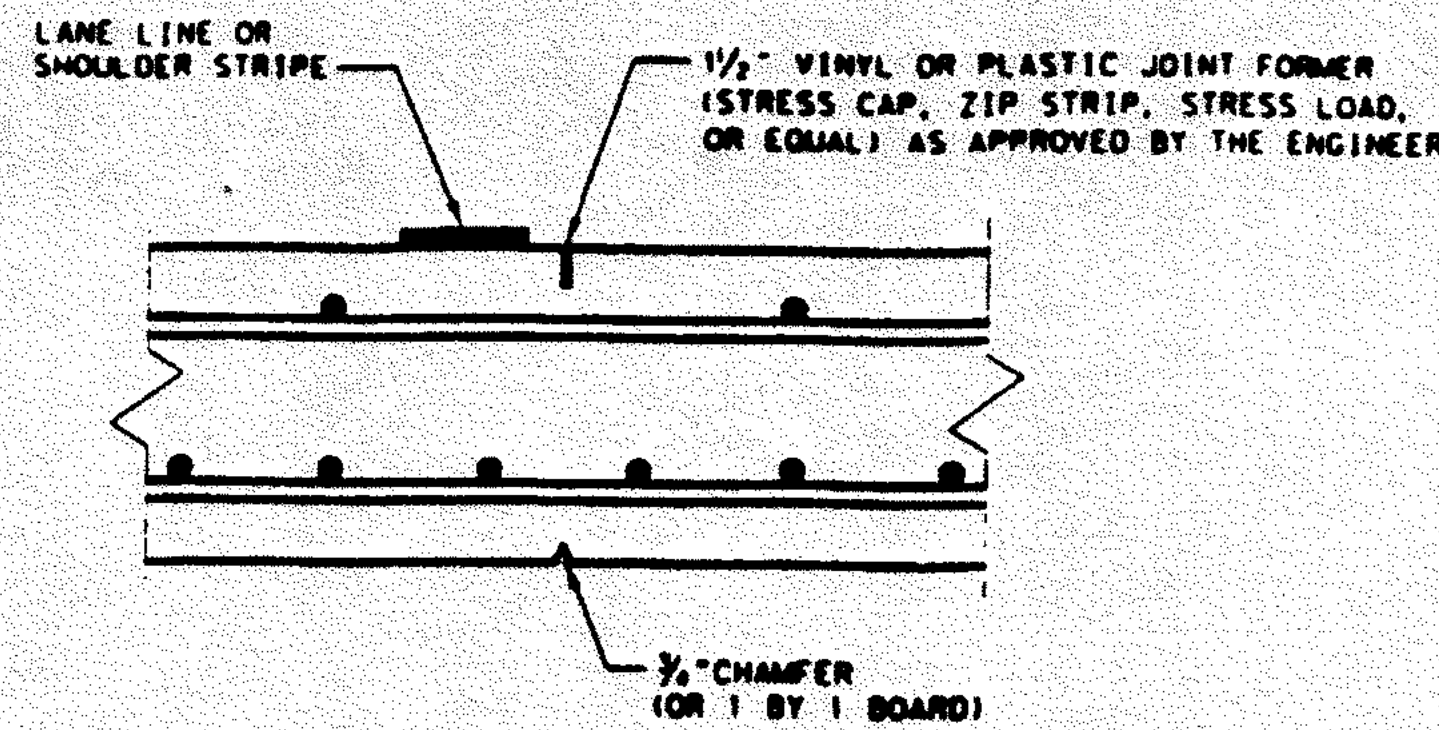


TABLE FOR TECHNICAL SPECIFICATIONS

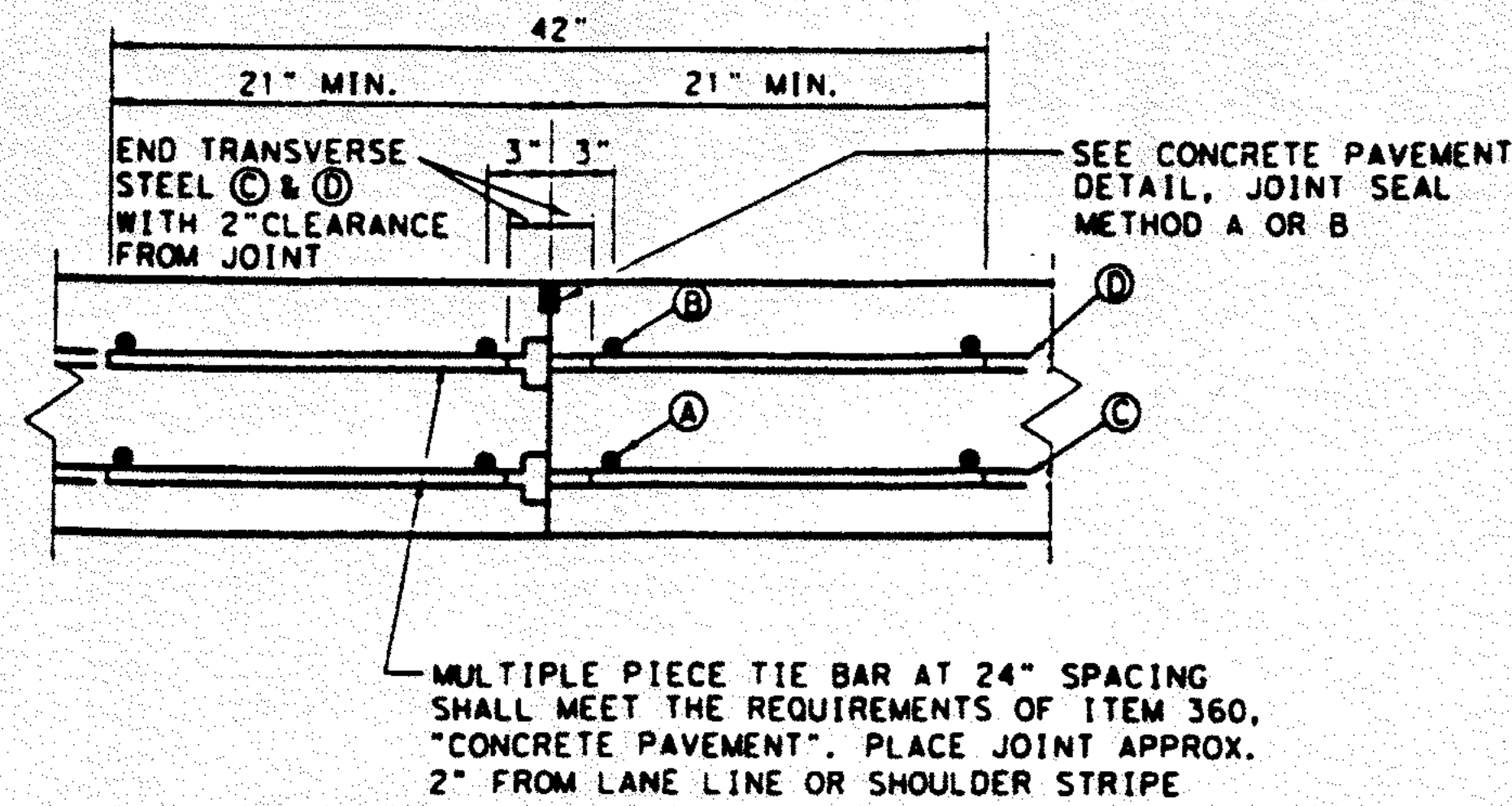


**CONTROLLED LONGITUDINAL JOINT DETAIL**

THE TOP JOINT MAY BE SAWED PROVIDED A LIGHT WEIGHT SAW IS USED WITHIN 6 HOURS OF PLACEMENT. A DRY SAWING OPERATION SHALL BE USED. THE SAW CUT SHALL BE LESS THAN 1/8" WIDE.

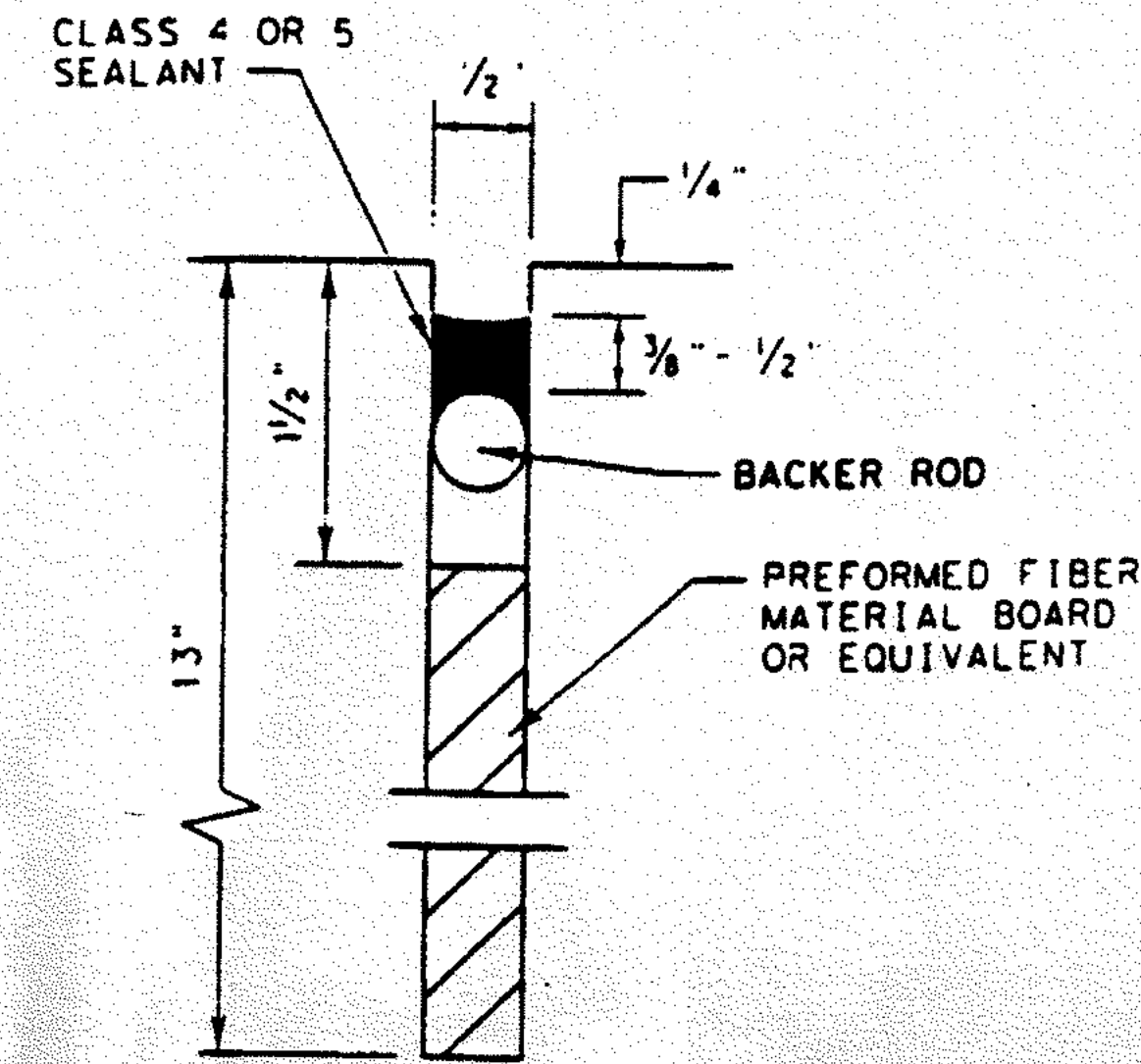
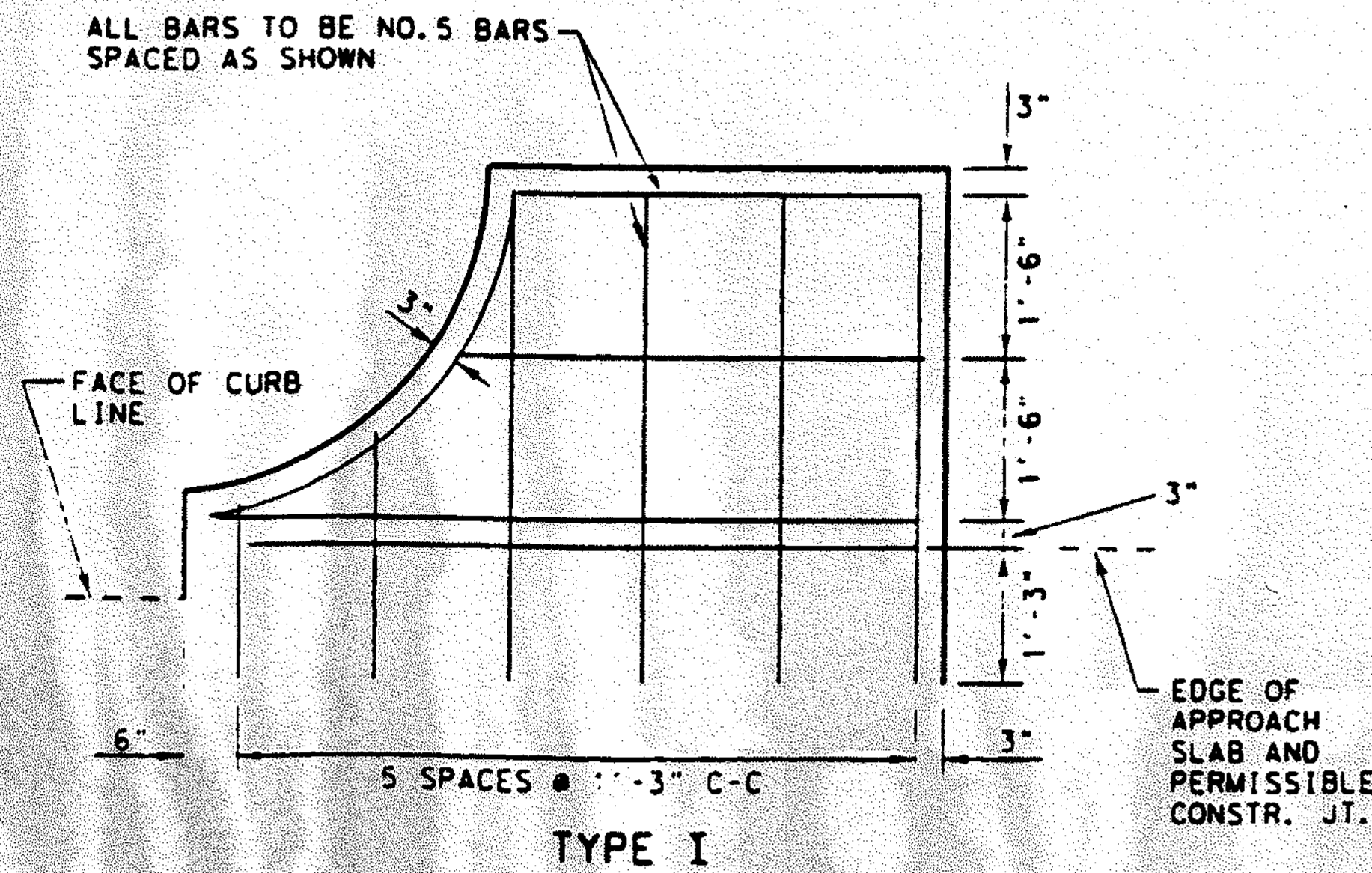
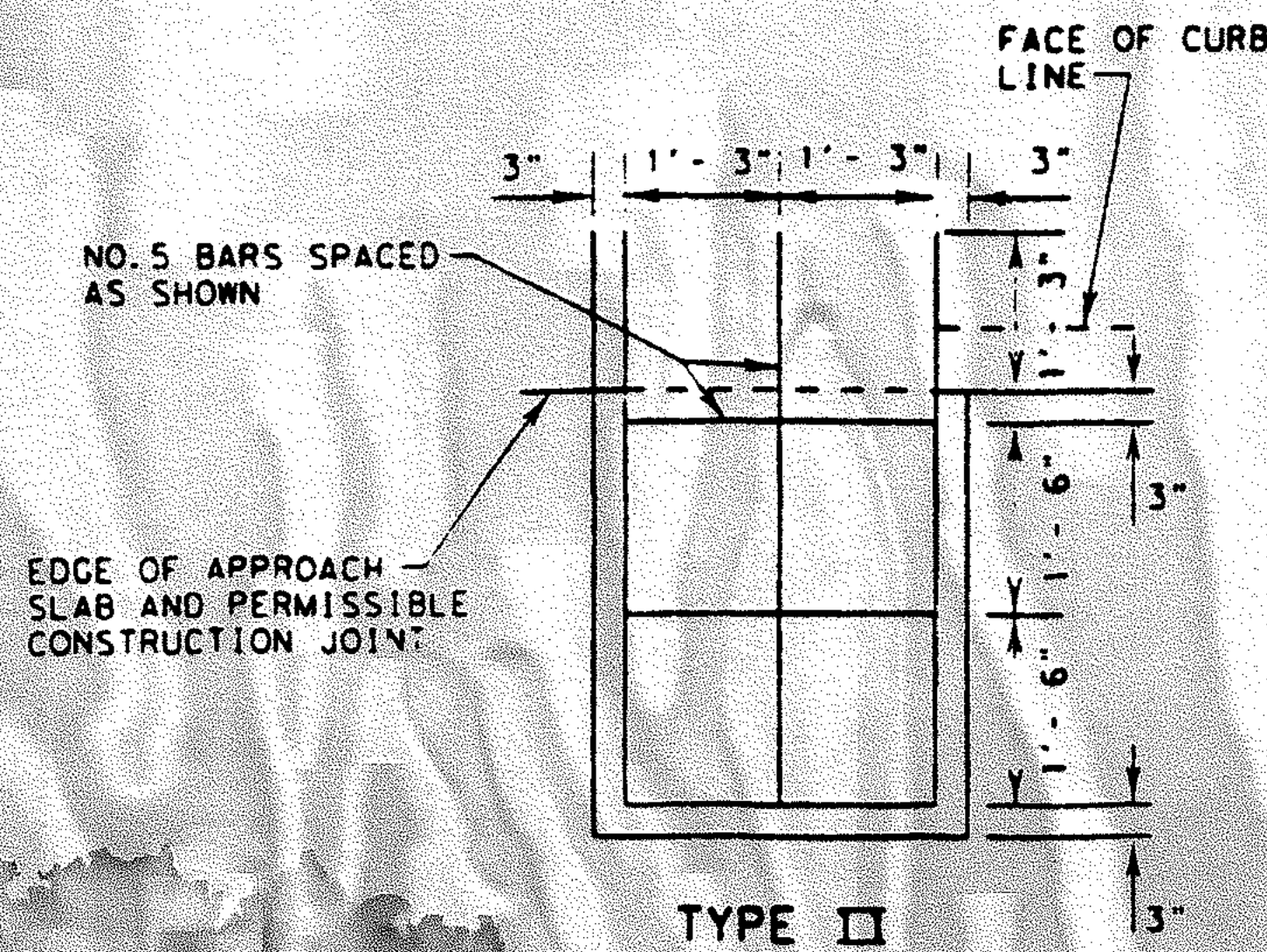
THE CHAMFER SHALL BE PLACED TO BE APPROXIMATELY MIDWAY BETWEEN THE LONGITUDINAL BOTTOM-STEEL. A REFERENCE LINE SHALL BE ESTABLISHED TO INSURE THAT THE INSERT OR SAW CUT IS DIRECTLY ABOVE THE CHAMFER. MINOR ADJUSTMENT IN THE A AND B BARS SPACINGS MAY BE REQUIRED TO INSURE THAT THE JOINT WILL BE APPROXIMATELY 2" FROM THE LANE LINE AND NOT ABOVE A REINFORCING BAR.



**LONGITUDINAL CONSTRUCTION JOINT DETAIL**

**GENERAL NOTES**

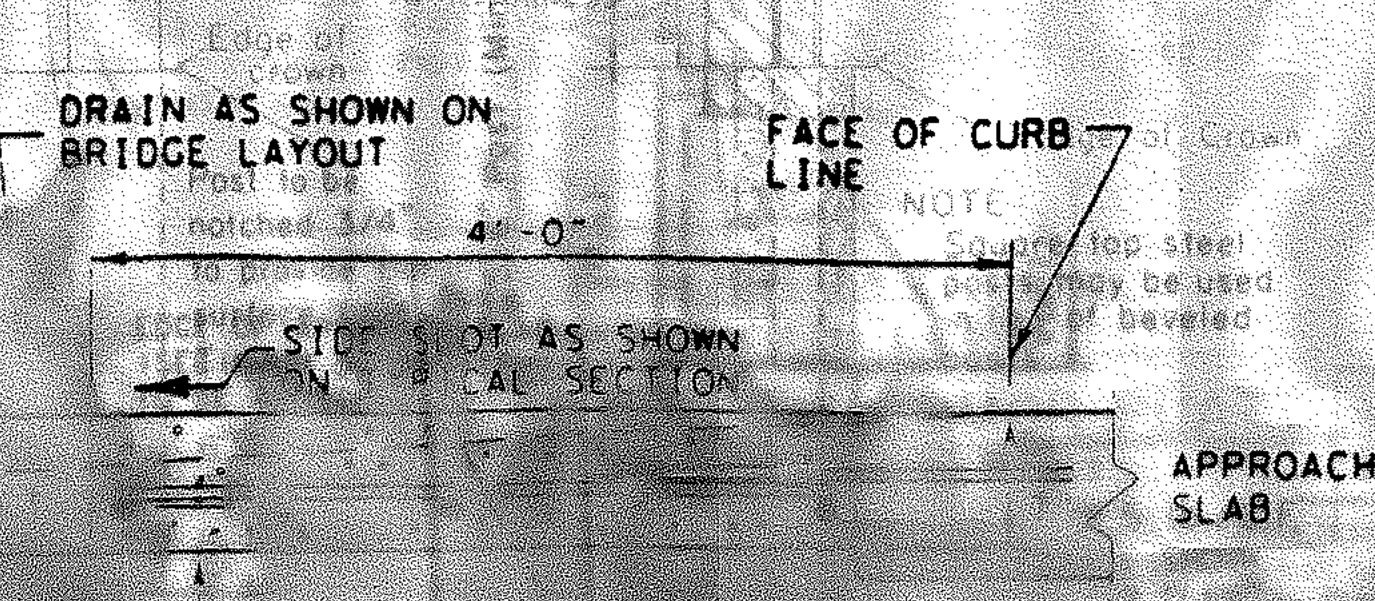
1. TIEBARS AT CONSTRUCTION JOINTS SHALL MEET THE REQUIREMENTS OF ITEM 360, "CONCRETE PAVEMENT."
2. IF A CURB IS USED ON THE STRUCTURE, A CURB WITH HEIGHT AND INSIDE FACE MATCHING THE STRUCTURE CURB SHALL BE USED ON THE APPROACH SLAB. THE CURB SHOULD TAPER TO A TWO INCH HEIGHT AND BE TERMINATED AT THE END OF THE SLAB OR AT THE DRAINAGE GUTTER, IF A DRAINAGE GUTTER IS USED.
3. DETAILS AND QUANTITIES FOR CURB ARE TO BE AS SHOWN ELSEWHERE IN THE PLANS.
4. TYPE I GUTTER SHOULD BE USED IN LIEU OF TYPE II GUTTER WHEN SPACE PERMITS.
5. WHEN STAGE CONSTRUCTION IS USED TO BUILD A PORTION OF A BRIDGE, THE LONGITUDINAL CONSTRUCTION JOINTS OF THE APPROACH SLAB SHALL ALIGN WITH THE LONGITUDINAL CONSTRUCTION JOINTS OF THE BRIDGE STRUCTURE.
6. ALL REINFORCEMENT STEEL ON THIS STANDARD SHEET SHALL BE NUMBER 5 (#5) BARS.



**EXPANSION JOINT BETWEEN SLAB AND WINGWALL**

PLACE IN ACCORDANCE WITH ITEM 438 "CLEANING AND/OR SEALING JOINTS AND CRACKS".

**REINFORCING LAYOUT FOR GUTTER**



SEE CURB DETAILS FOR DIMENSIONS AND STEEL PLACEMENT OF MONO CURB

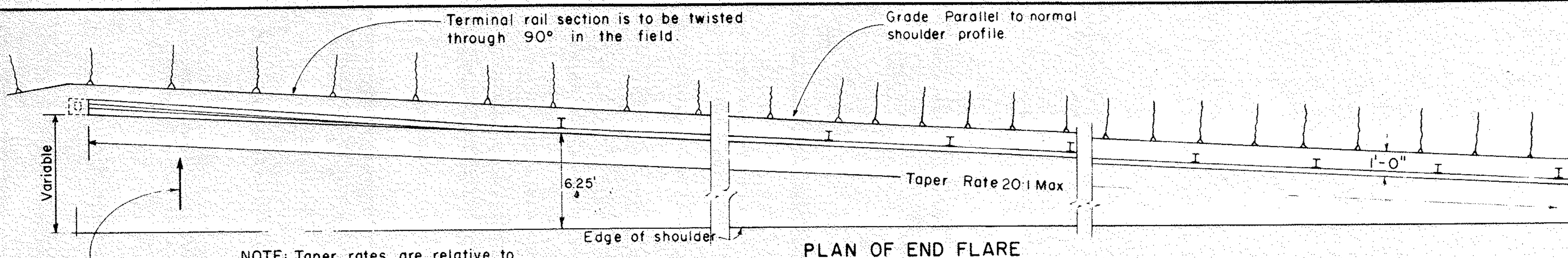
Department of Transportation  
Design Division (Pavement)

**BRIDGE APPROACH SLAB**  
FOR USE WITH ASPHALT  
AND CONCRETE PAVEMENTS  
NORMAL OR SKEW

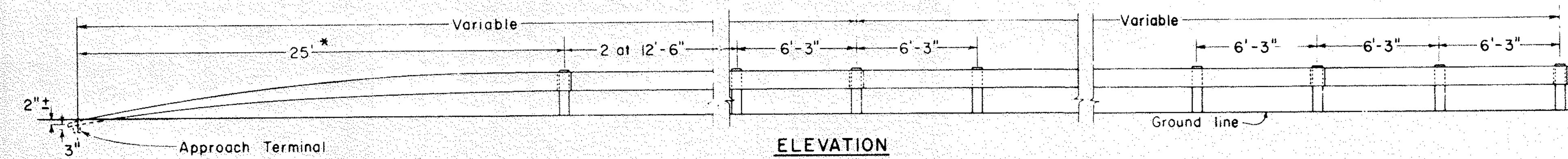
BAS-94 SHEET 2 OF 2

DATE	BY	CHECKED	DATE

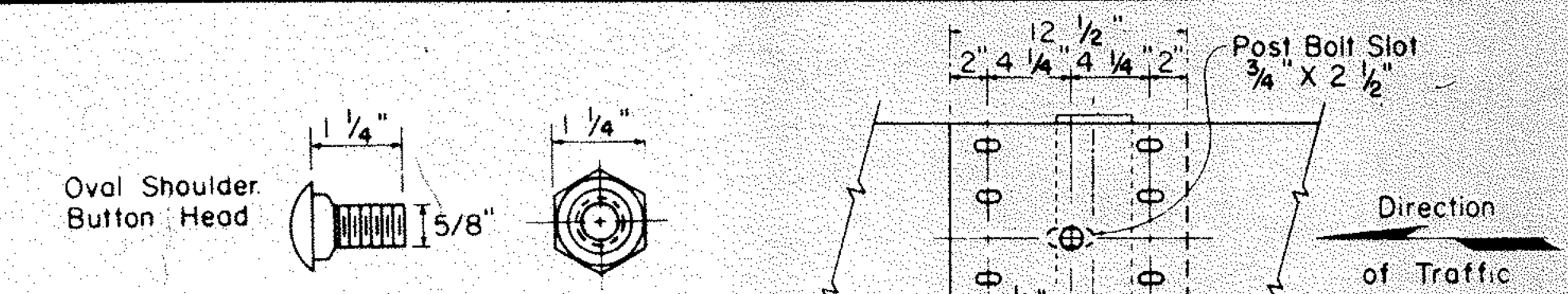




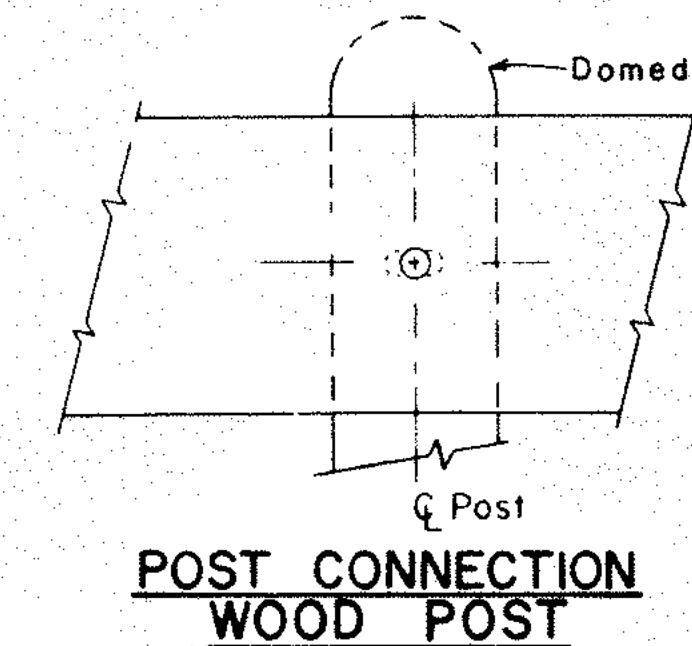
NOTE: Taper rates are relative to pavement edge. Change in taper rates shall be accomplished with short smooth curves.



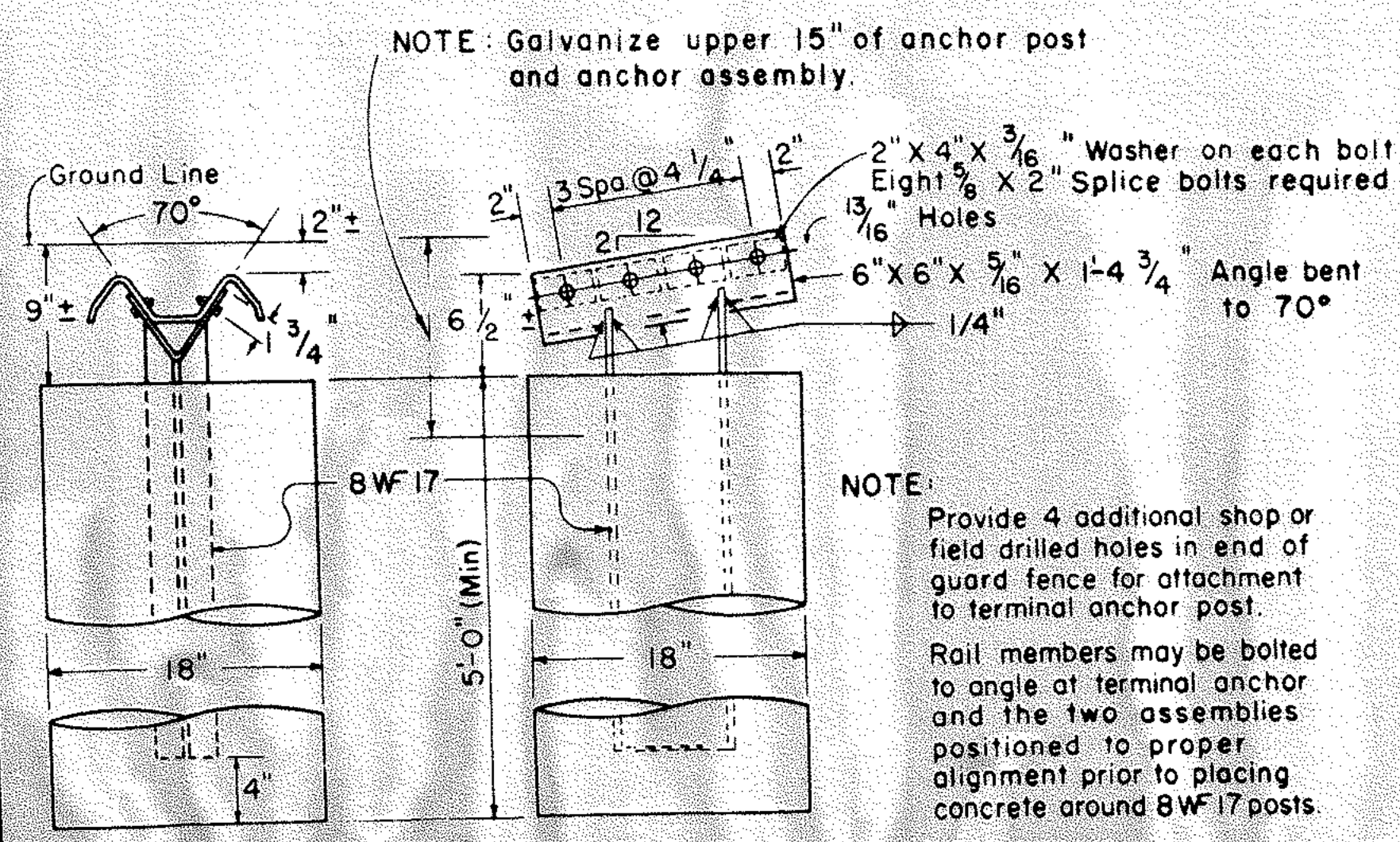
\*NOTE: This dimension measured to center of splice when special end shoe is used



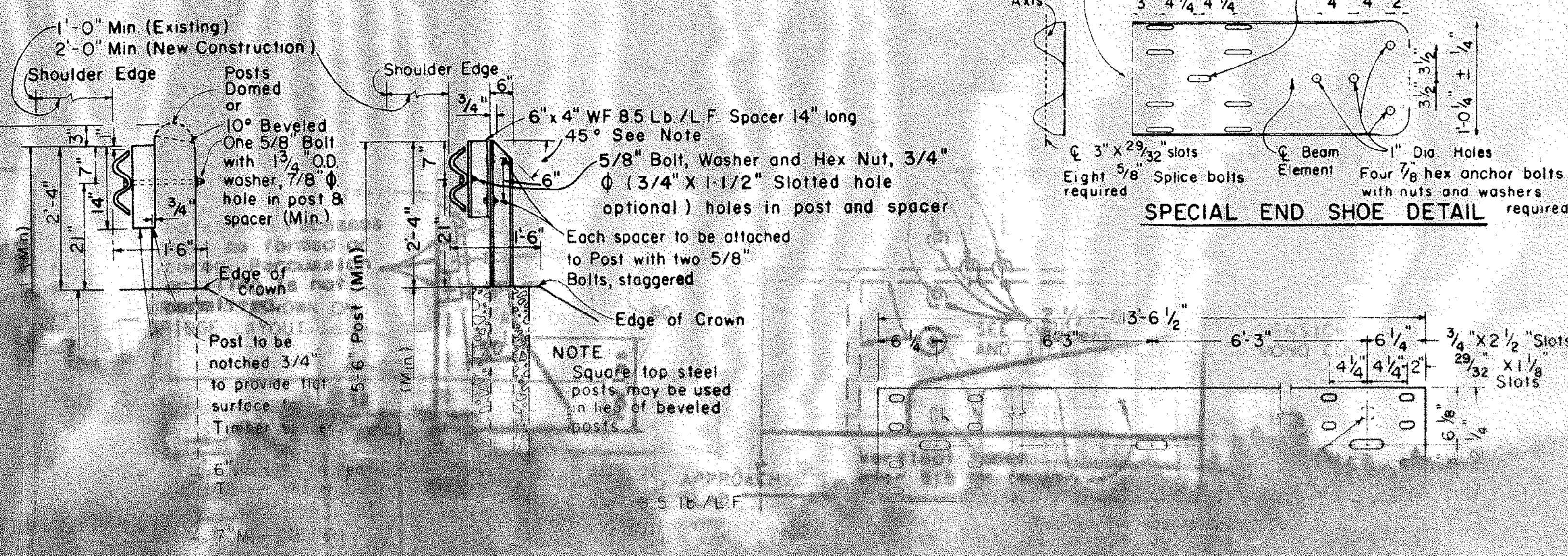
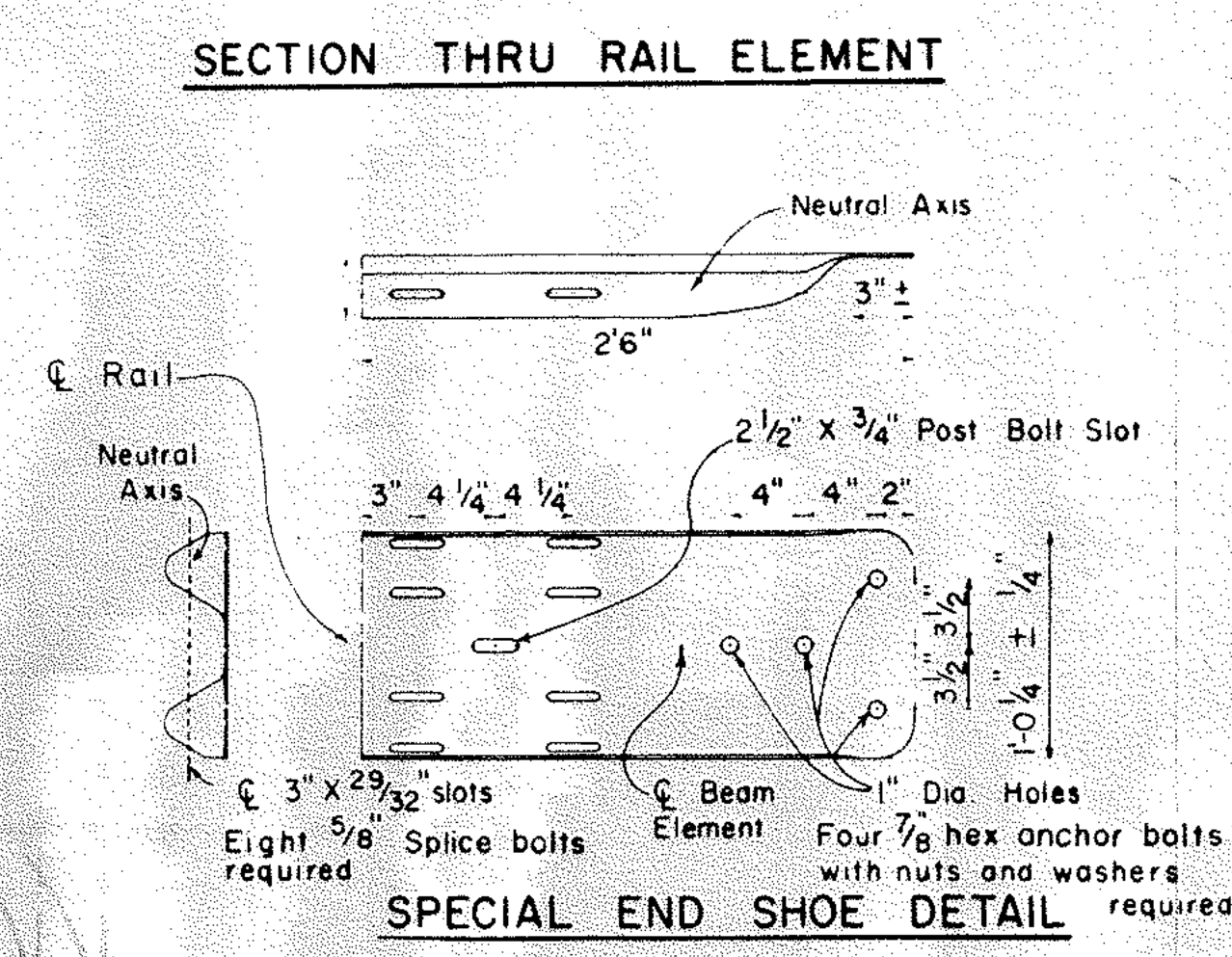
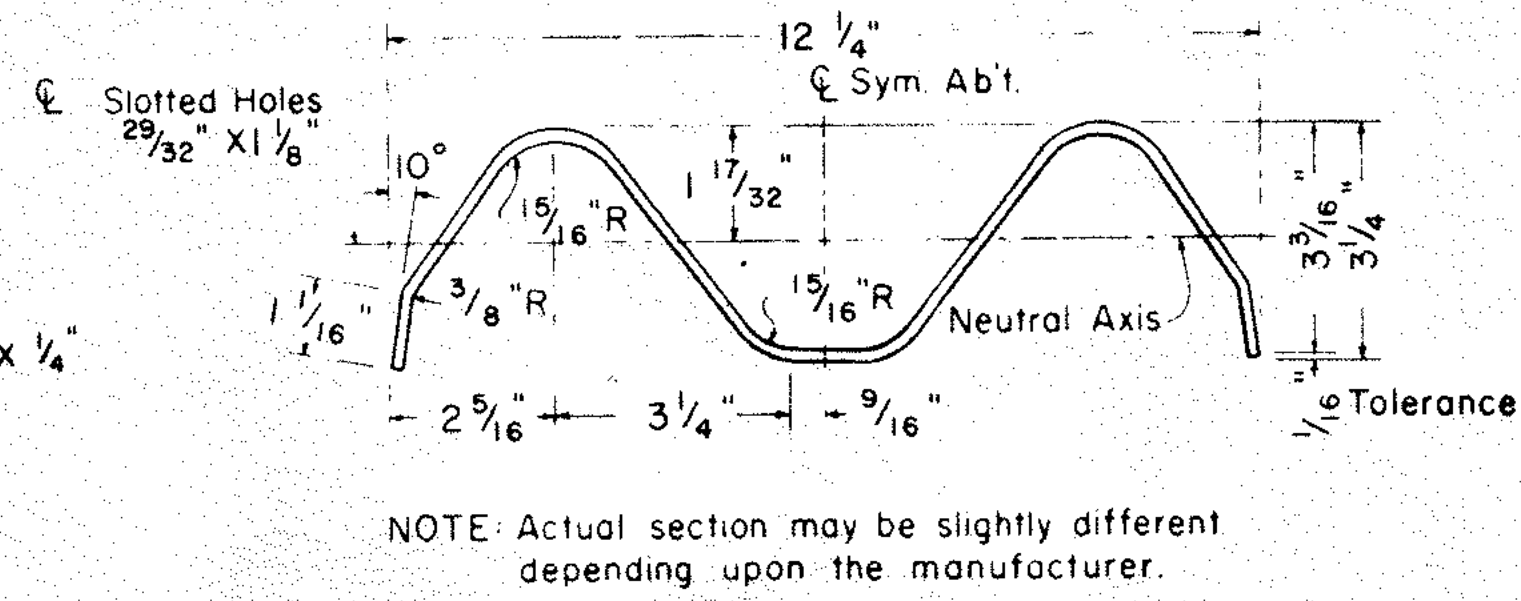
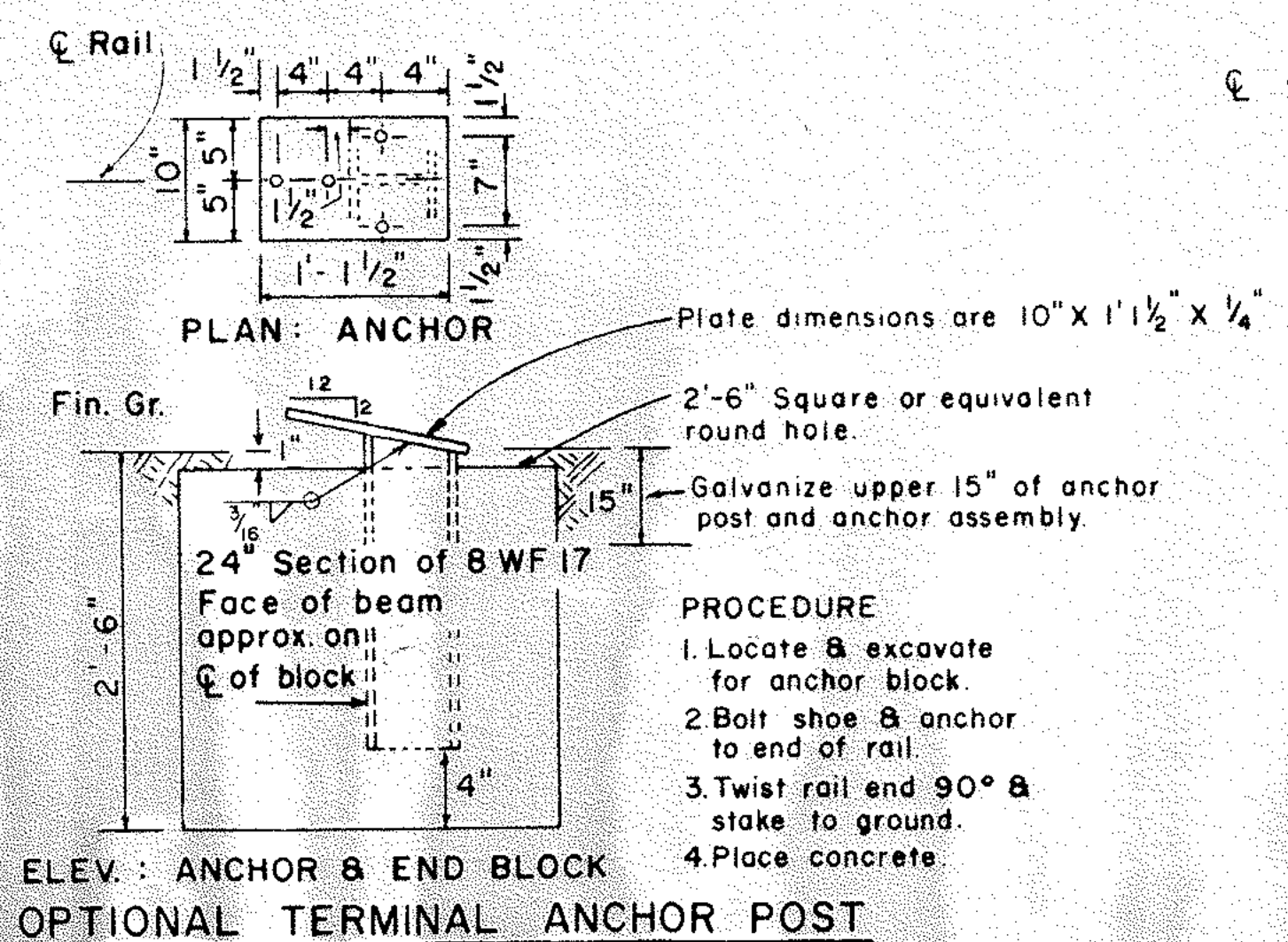
ANCHOR OR SPLICE BOLT 5/8" NUT  
POST BOLT: Similar except length  
(7/8" Hex bolts required for special end shoe)



Wood Post May Be Domed, or Beveled



DETAIL OF TERMINAL ANCHOR POST



GENERAL NOTES

1. EXCEPT WHERE USED AT STRUCTURES THAT ARE NARROWER THAN CROWN WIDTH OR WHERE OTHERWISE INDICATED ON PLANS, THE GUARD FENCE SHALL BE LOCATED A MINIMUM OF ONE FOOT FROM THE SHOULDER EDGE ON EXISTING ROADWAYS AND A MINIMUM OF TWO FEET FROM THE SHOULDER EDGE OF NEW CONSTRUCTION. THE EXACT POSITION SHALL BE AS SHOWN ELSEWHERE ON THE PLANS OR AS DIRECTED BY THE ENGINEER. RAIL SHALL BE TRANSITIONED TO A SMOOTH CONNECTION WITH OTHER STRUCTURE OR RAIL AS SHOWN ELSEWHERE ON PLANS.
2. AT THE OPTION OF THE CONTRACTOR THE RAIL ELEMENTS FOR THE GUARD FENCE MAY BE FURNISHED IN EITHER 12 1/2 OR 25 FOOT NOMINAL LENGTHS. RAIL SHALL BE FURNISHED WITH POST BOLT SLOTS FOR 5/8" DIAMETER BOLT CONNECTION TO POSTS.
3. BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND NO MORE THAN 3/4" BEYOND IT.
4. THE TOP OF THE TERMINAL ANCHOR POST ASSEMBLY AND ALL STEEL FITTINGS THEREON SHALL BE GALVANIZED AS SHOWN.
5. WHERE ROCK IS ENCOUNTERED OR WHERE SHOWN ON THE PLANS, THE DIAMETER OF THE HOLES AND THE MATERIAL FOR BACKFILLING SHALL BE AS DIRECTED BY THE ENGINEER. TIMBER POSTS SHALL NOT BE SET IN CONCRETE.
6. THE TERMINAL ANCHOR POST SHALL BE SET IN CLASS "A", "B" OR "C" CONCRETE IN ACCORDANCE WITH ITEM "CONCRETE FOR STRUCTURES", OR SET IN CONCRETE IN ACCORDANCE WITH ITEM "CONCRETE PAVEMENT". CONCRETE SHALL BE SUBSIDIARY TO THE BID ITEM "METAL BEAM GUARD FENCE."
7. TIMBER POSTS MAY BE BEVELED AT APPROXIMATELY 10 DEGREES ON THE TOP OR BOTH ENDS WITH HIGH SIDE OF TOP OF POST PLACED TOWARD THE ROADWAY OR THEY MAY BE DOMED. WHEN "BLOCKED OUT", THE UPPER PORTION OF THE POST SHALL BE NOTCHED 3/4" TO PROVIDE FLAT SURFACE FOR TIMBER SPACER. A TOLERANCE OF ± 1/8" WILL BE PERMITTED ON THE NOTCHED PORTION OF THE POST.
8. AN ANCHOR OTHER THAN TO A TERMINAL ANCHOR POST SHALL CONSIST OF A CONNECTION SIMILAR TO THE RAIL SPLICE OR SIMILAR TO THE SPECIAL END SHOE.
9. SPECIAL FABRICATION WILL BE REQUIRED IN INSTALLATIONS HAVING A CURVATURE OF LESS THAN 150' RADIUS.
10. POST SPACING WILL BE 6'-3" EXCEPT THAT THE FIRST POST WILL BE 25' FROM THE TERMINAL ANCHOR POST AND THE NEXT TWO POSTS SPACED AT 12'. A MINIMUM OF 25' POST SPACING SHALL BE MAINTAINED THROUGHOUT.
11. THE SPECIAL END SHOE ANCHOR MAY BE USED WITH THE ANCHOR MAY BE USED WITH THE 2' - 6" SQUARE OR
12. CROWN WILL BE WIDENED TO ACCOMMODATE
13. STEEL POSTS SHALL BE SET IN CONCRETE AND BLOCKED OUT
14. A 6" x 6" x 14" TREATED TIMBER ANCHOR OF SOUTHERN POSTS AND A 6" x 4" W.F. 8.5 Lb./L.F. ANCHOR SHALL BE USED IN ANY

STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TIMBER BEAM GUARD FENCE

GP(TB)-75

DATE	PROJECT NO.	SHEET NO.









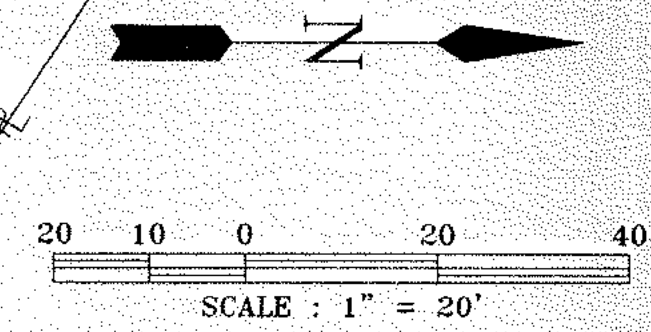






NOTE:  
 THE CONTRACTOR IS RESPONSIBLE FOR  
 VERIFYING THE DEPTH AND LOCATION  
 OF ALL EXISTING UTILITIES PRIOR TO  
 CONSTRUCTION TO ALLOW FOR REDESIGN  
 IF NECESSARY. ANY REDESIGN OR EXTRA  
 WORK CAUSED BY FAILURE TO LOCATE  
 THESE UTILITIES WILL BE AT THE SOLE  
 EXPENSE OF THE CONTRACTOR.

MICHAEL JAMES ARNOLD



WILLIAM & SHARON E. RHEA & KEVIN BANGS

MCMILLAN ROAD  
 ROW

START STREAM  
 EXCAVATION EAST SIDE  
 STATION 1+50

START STREAM  
 EXCAVATION WEST SIDE  
 STATION 0+50

STATION 1+50 MATCH TO  
 EXISTING CONTOURS

STATION 0+50 MATCH TO  
 EXISTING CONTOURS

515

510

505

503

503

505

510

515

LIMIT OF CONCRETE STA. 1+39.03  
 SLOPE PROTECTION

PT. = 1+38.03

PROPOSED BRIDGE

EXISTING BRIDGE

PROPOSED BRIDGE

PC = 2+38.03

LIMIT OF CONCRETE STA. 2+47.03  
 SLOPE PROTECTION

FL. CREEK

PARCEL 1

PARCEL 2

MATCH TO EXISTING  
 CONTOURS AND GRADE  
 TO DRAIN

GRADE TO  
 RAIN

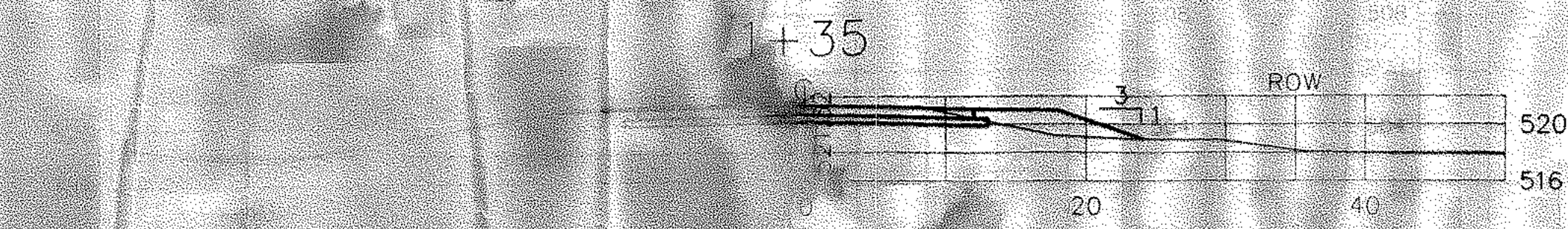
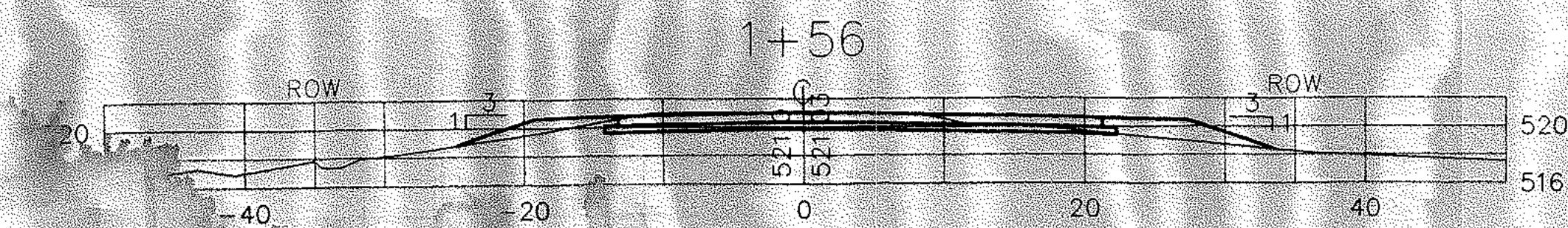
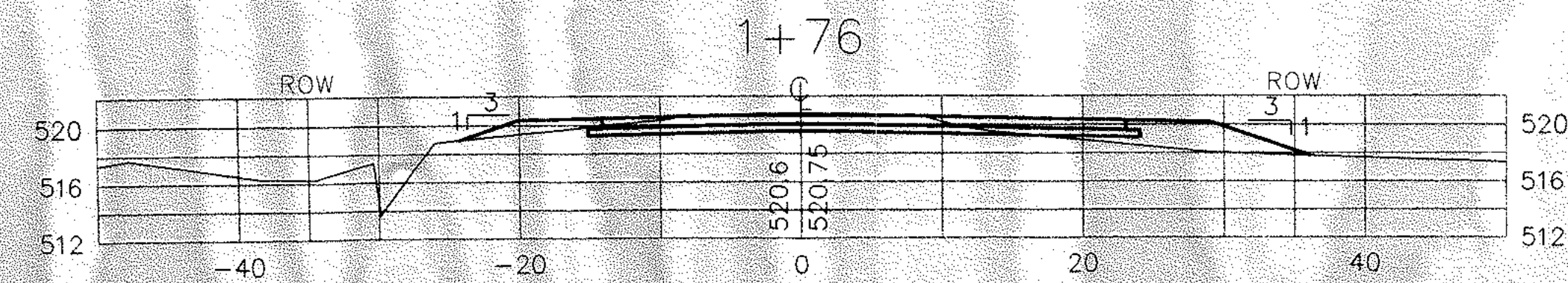
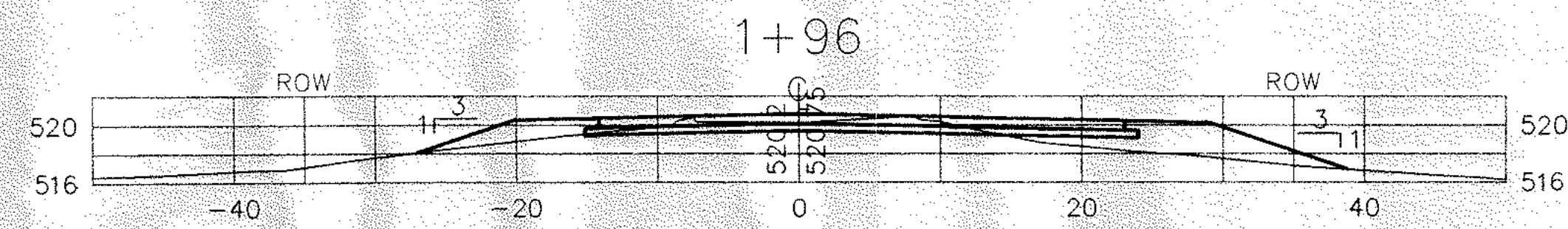
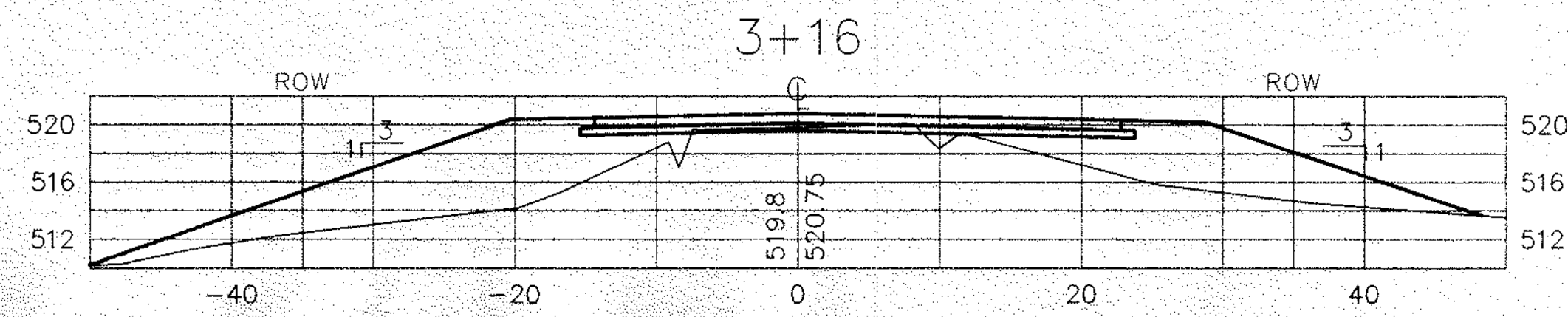
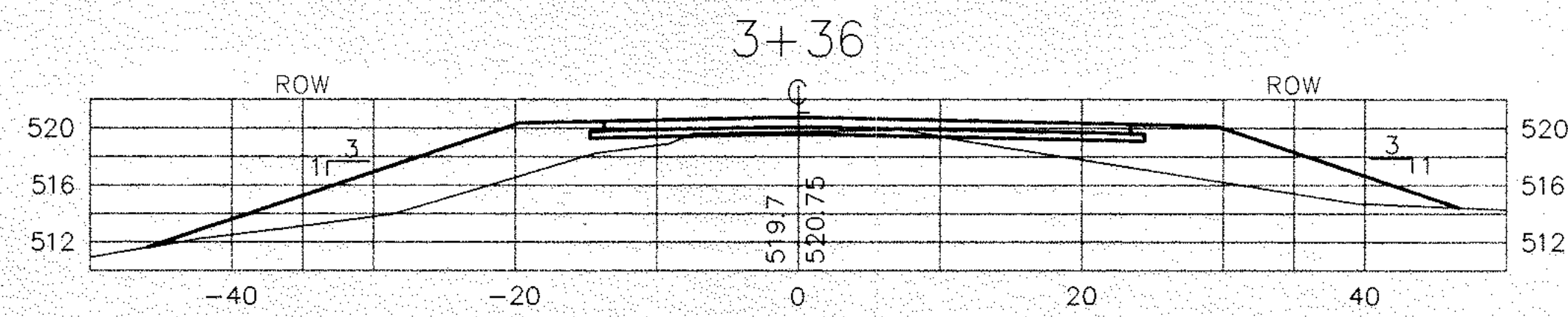
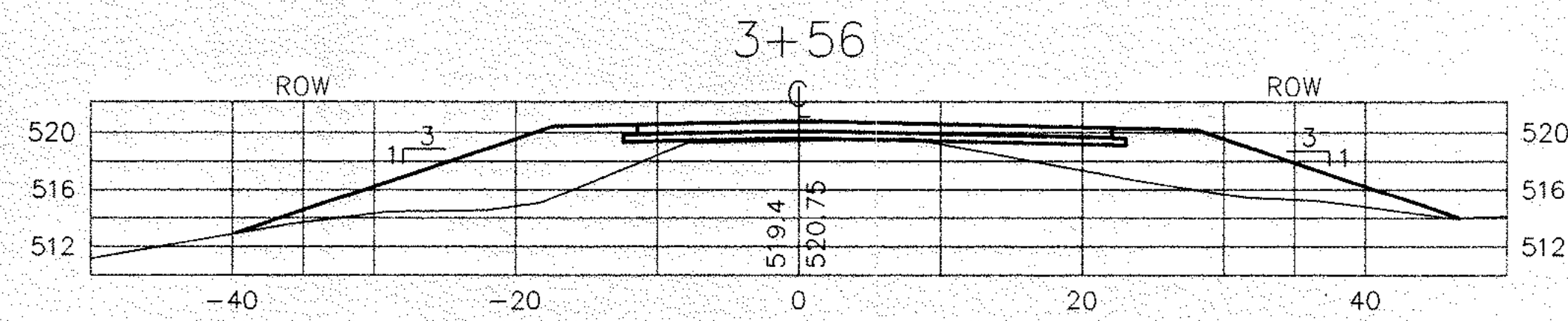
LEGEND  
 PROPOSED CONTOURS  
 EXISTING CONTOURS

BRIDGE AT NW CORNER OF BRIDGE SECT.  
 LOCATED ON FEMA FLOOD PROFILE 2105  
 COUNTY OF TARRANT, TEXAS

BRIDGE AT NW CORNER OF BRIDGE SECT.  
**LEAS WINNINGROFF BRIDGE**  
 BRIDGE SECT.

ENGINEER ASSOCIATES TEXAS, LTD.

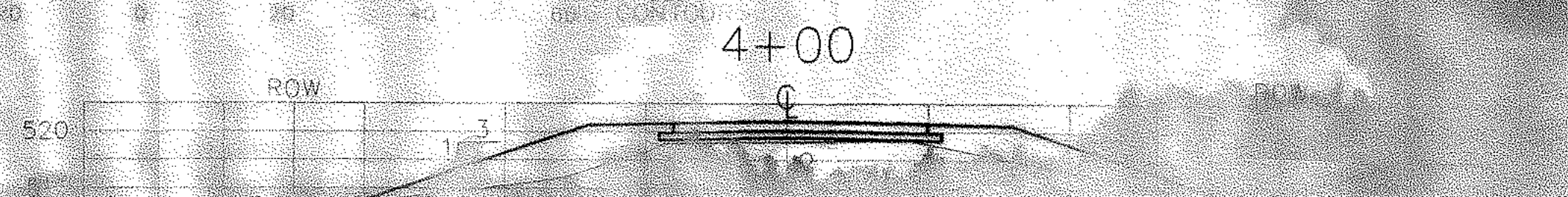
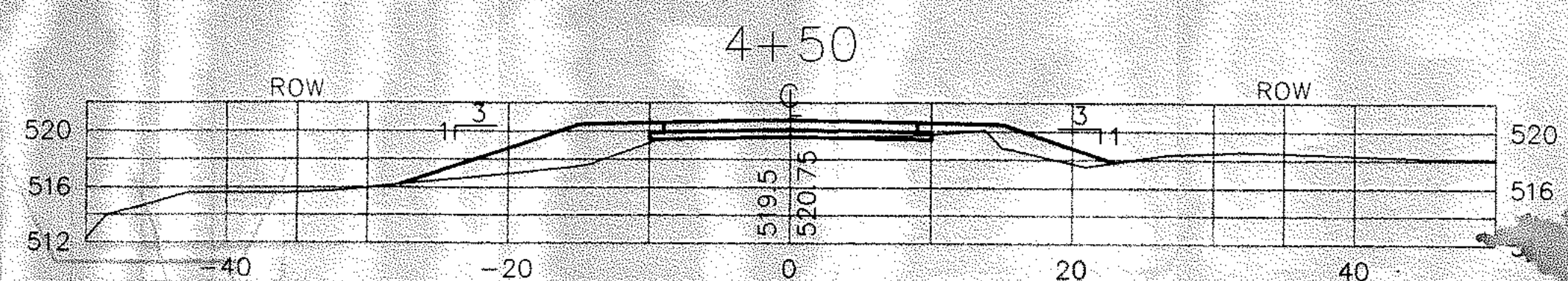
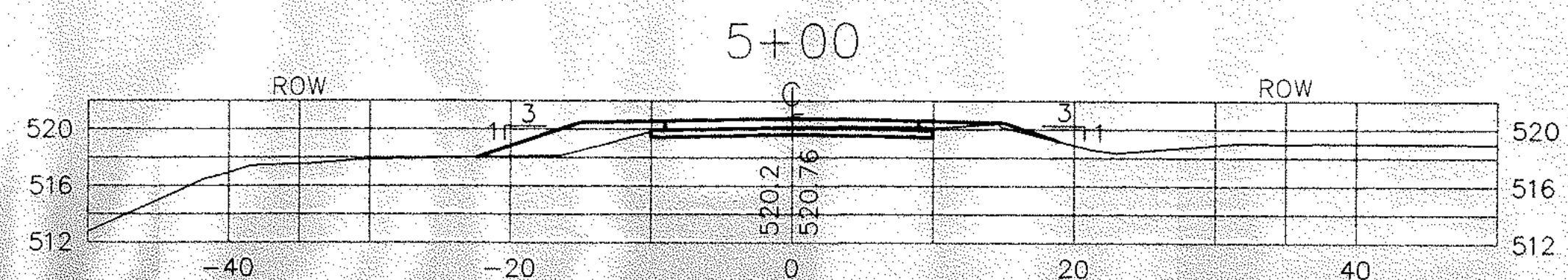
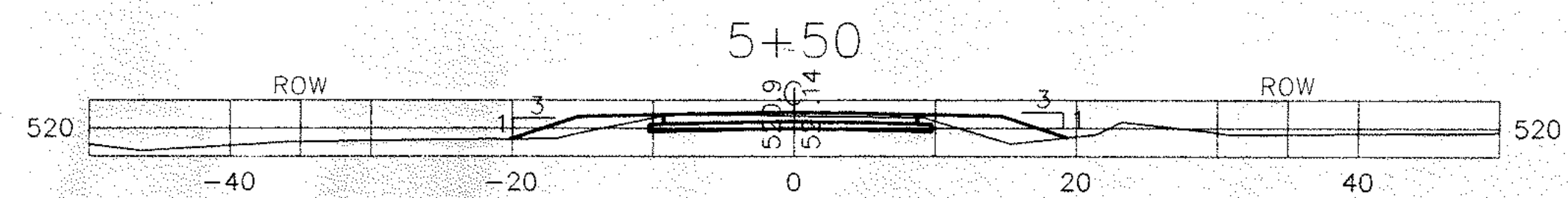
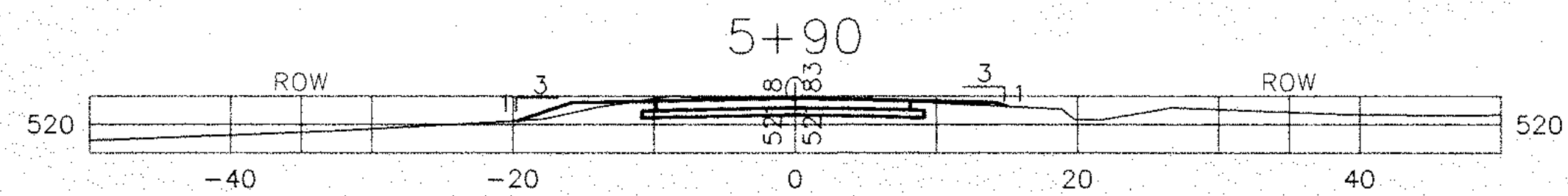




STATION	AREAS Square Feet		VOLUMES Cubic Yards		CUMULATIVE VOLUMES Cubic Yards	
	CUT	FILL	CUT	FILL	CUT	FILL
1+00	17.34	7.86	23.11	13.18	23.11	13.18
1+35	18.32	12.66	13.67	12.55	36.77	25.73
1+56	16.83	19.90	11.35	18.85	48.12	44.58
1+76	13.86	31.44	7.25	29.28	55.37	73.86
1+96	6.22	48.19	0.00	0.00	55.37	73.86

STATION	AREAS Square Feet		VOLUMES Cubic Yards		CUMULATIVE VOLUMES Cubic Yards	
	CUT	FILL	CUT	FILL	CUT	FILL
3+16	0.16	235.29	0.04	148.03	0.04	148.03
3+36	0.00	166.38	0.00	126.29	0.04	274.33
3+56	0.00	174.64	0.00	210.20	0.04	484.53
4+00	0.00	88.20	0.00	128.60	0.04	613.13
4+50	0.00	52.25	1.22	62.52	1.26	675.65
5+00	1.97	18.20	9.38	32.91	10.63	708.56
5+50	9.01	17.34	16.48	14.58	27.12	723.14
5+90	13.39	3.93	0.00	0.00	27.12	723.14

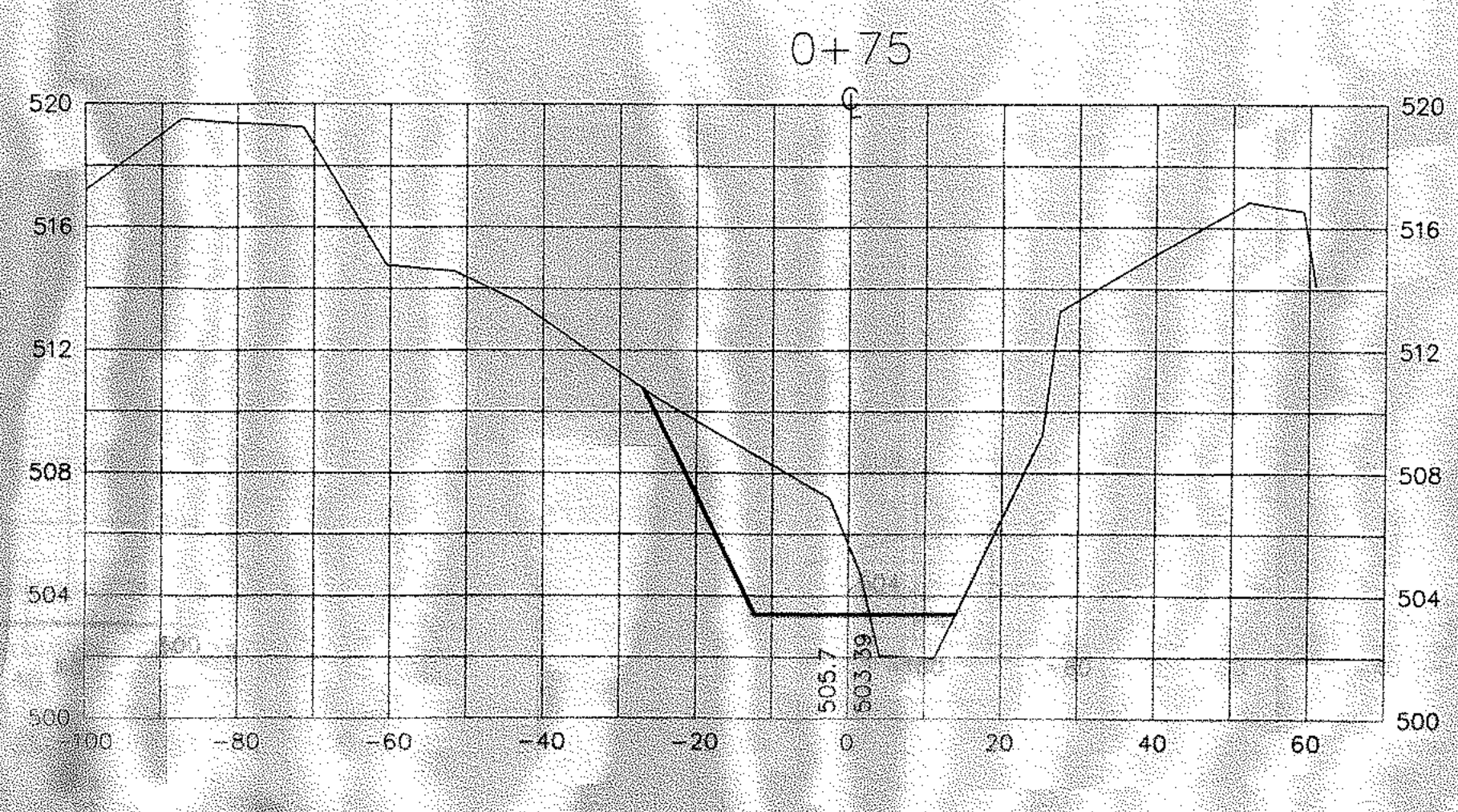
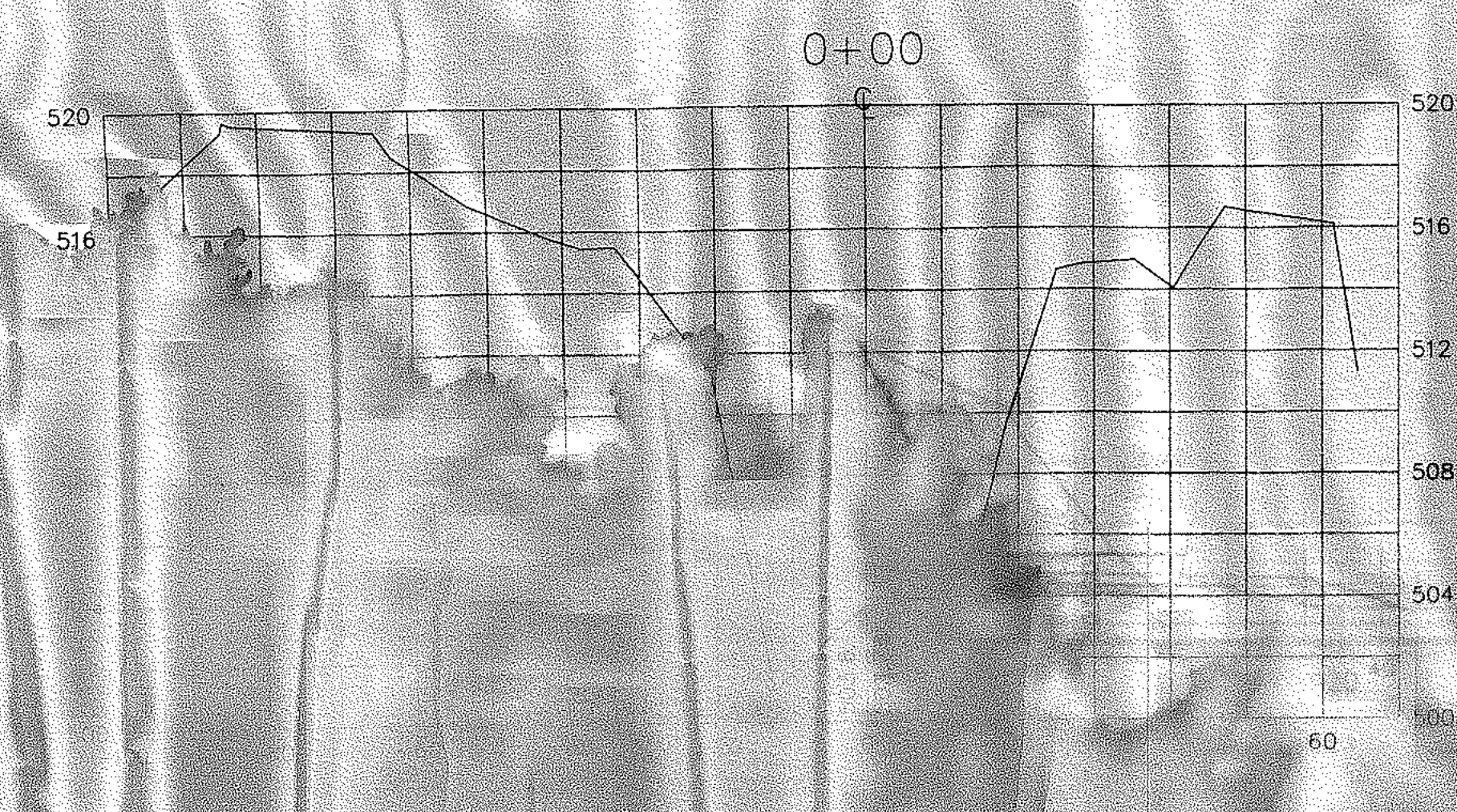
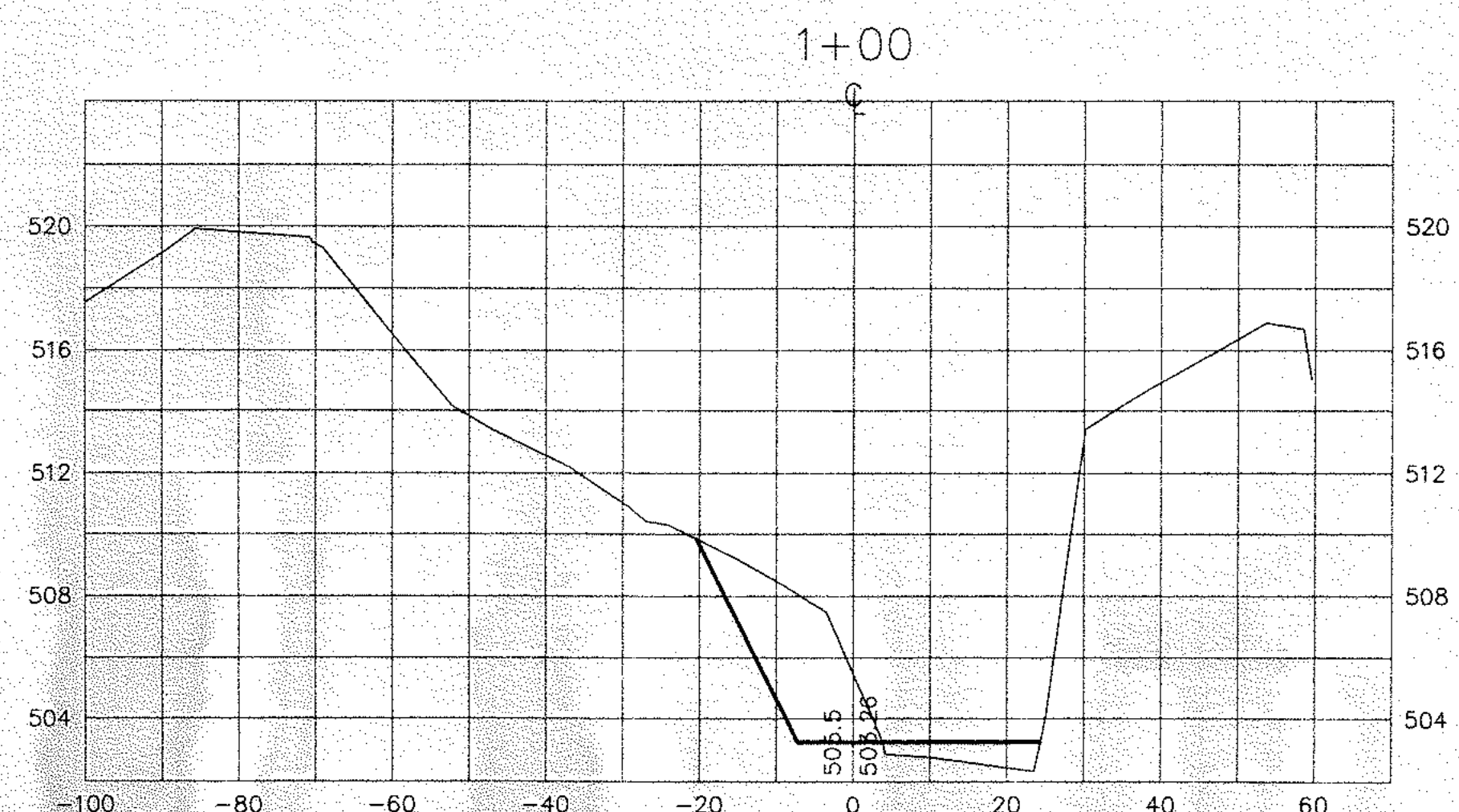
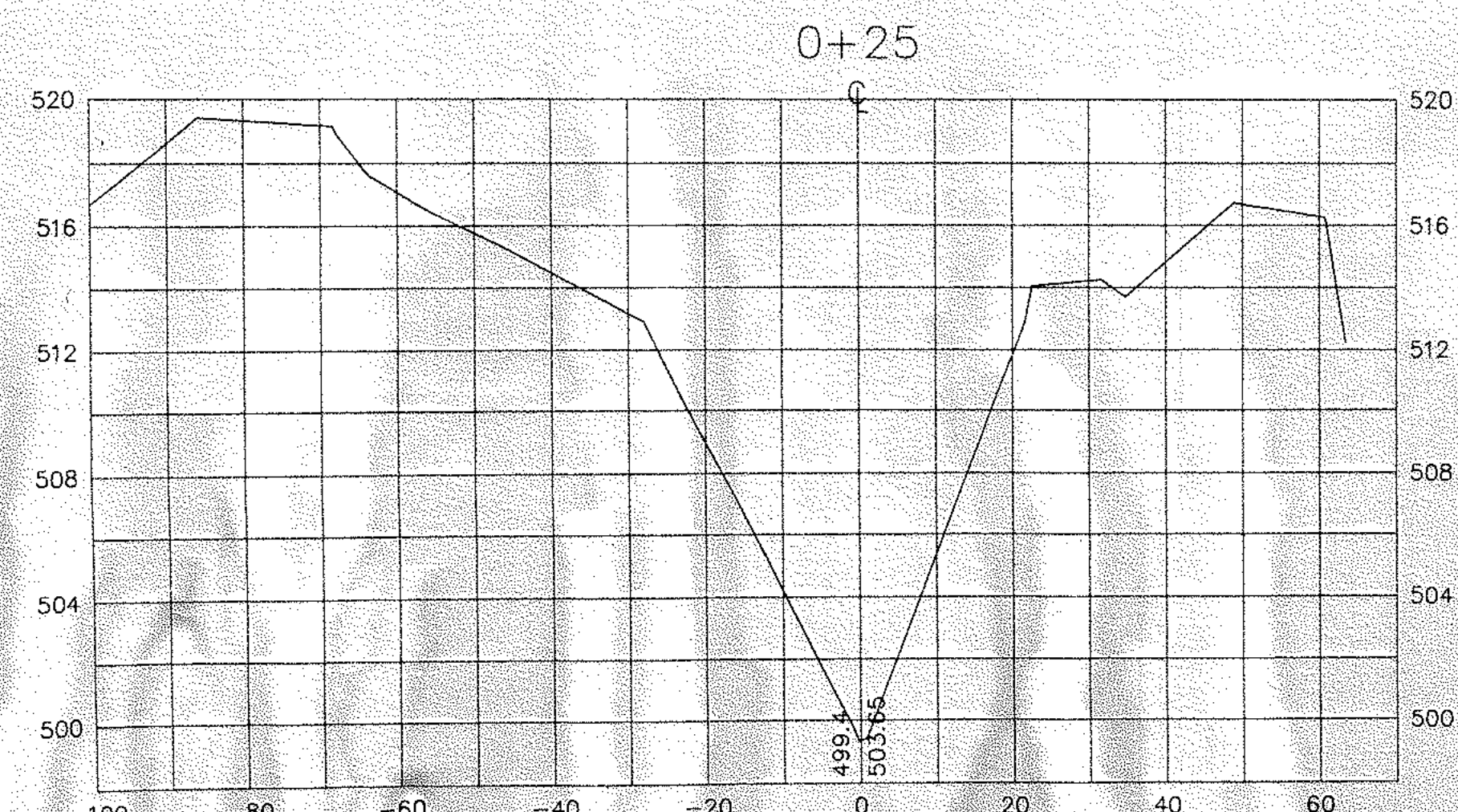
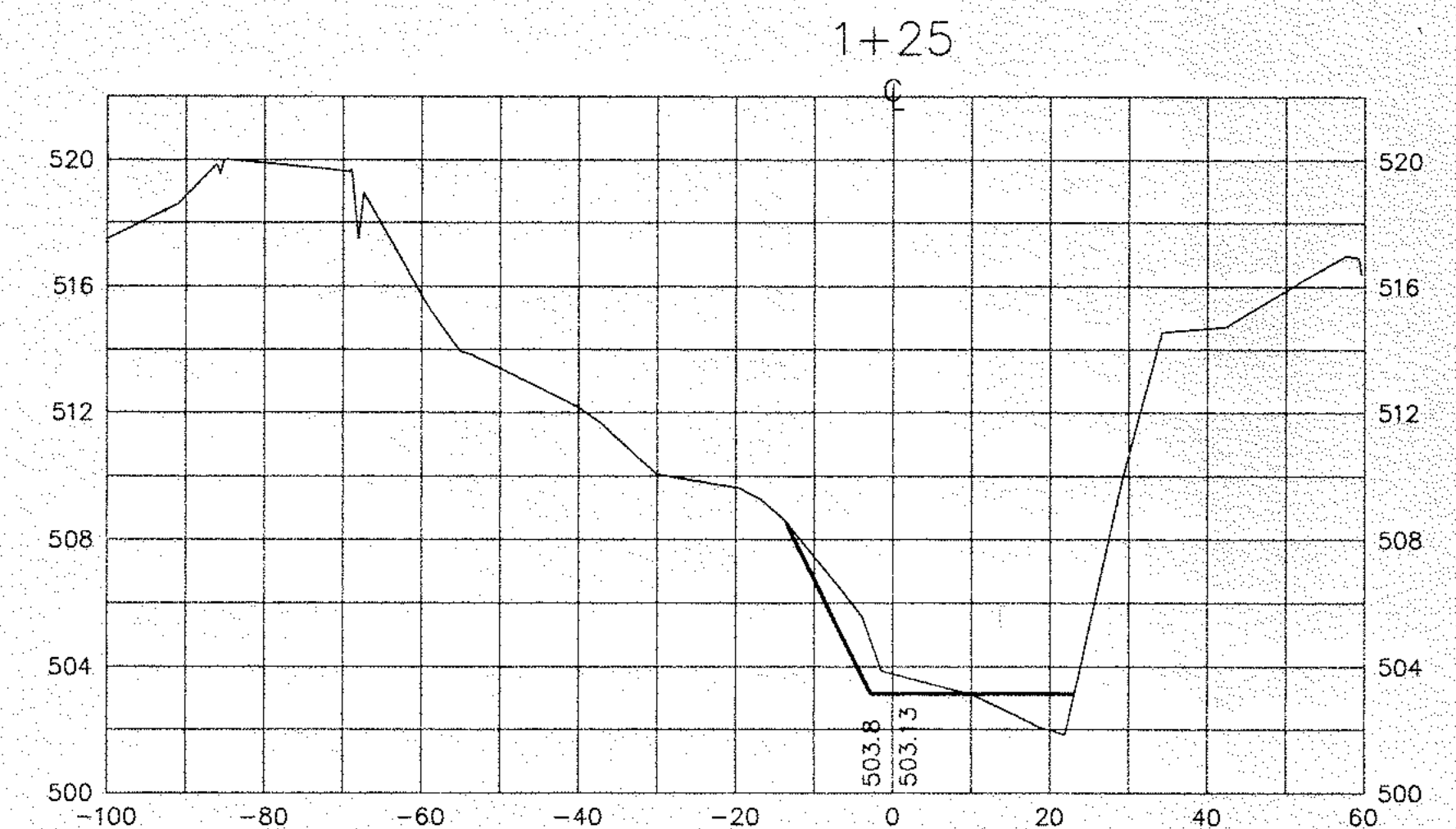
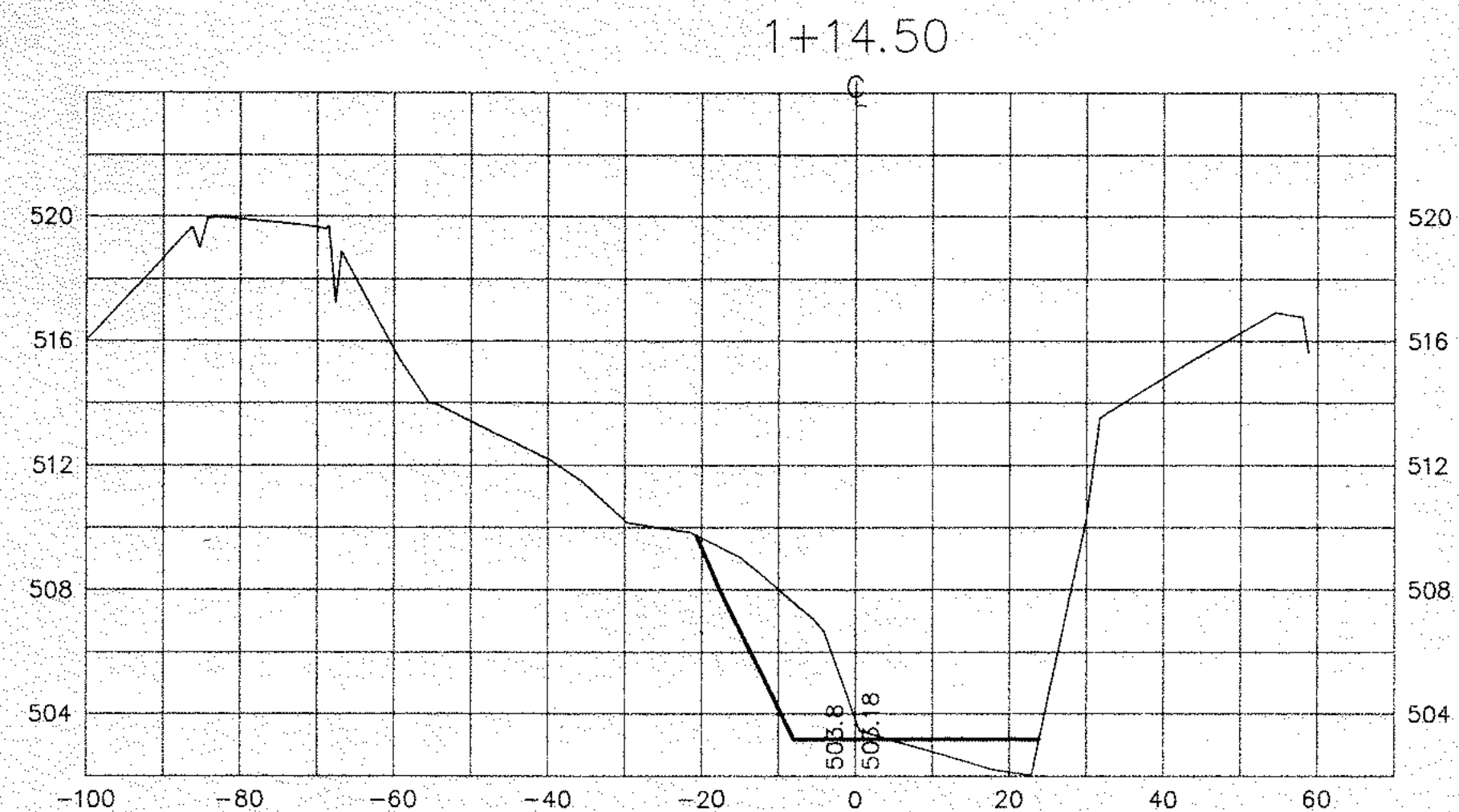
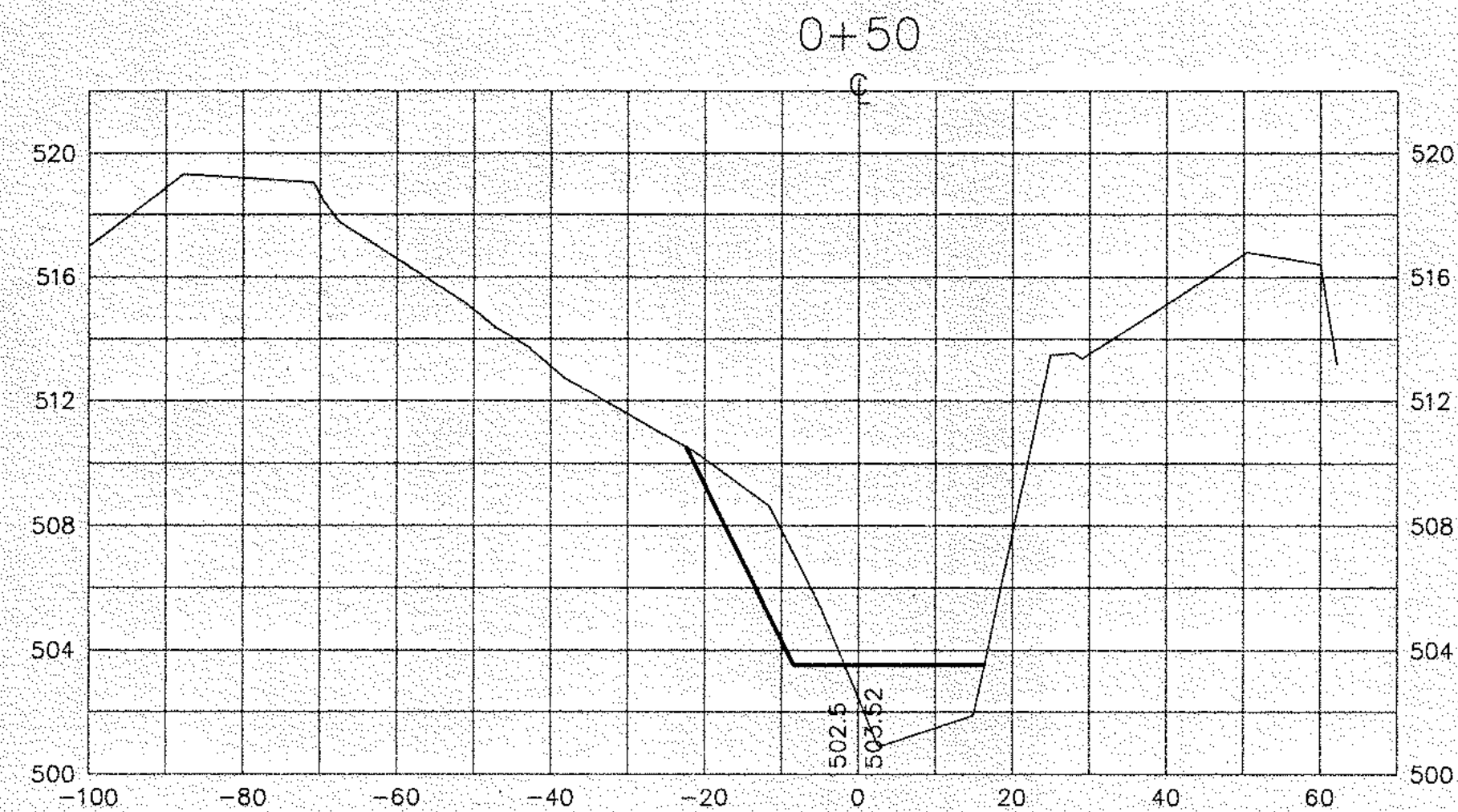
\*THE QUANTITIES ABOVE ARE ESTIMATES ONLY. THE ACTUAL QUANTITIES REQUIRED TO COMPLETE THE PROJECT MAY VARY. THE CONTRACTOR MUST VISIT THE SITE AND VERIFY THE QUANTITIES FOR HIMSELF.



COUNTY OF LUCAS, TEXAS  
**LUCAS WINNINGROFF BRIDGE**  
 EXHIBIT B - PROPOSED ROAD CROSS SECTIONS

ENGINEER: HUNTER ASSOCIATES, TEXAS, LTD.  
 PROJECT NO.: 09/00  
 DATE: 12-7-00





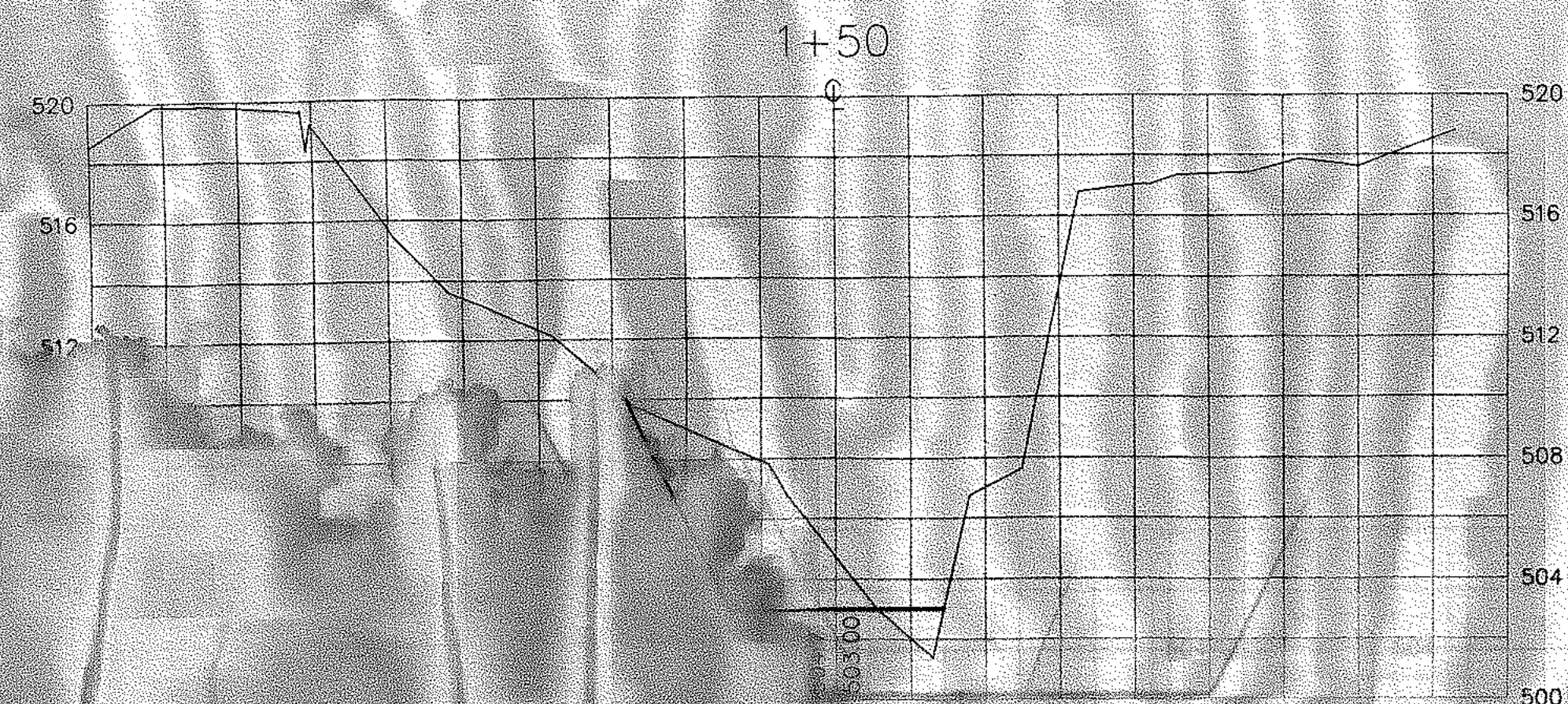
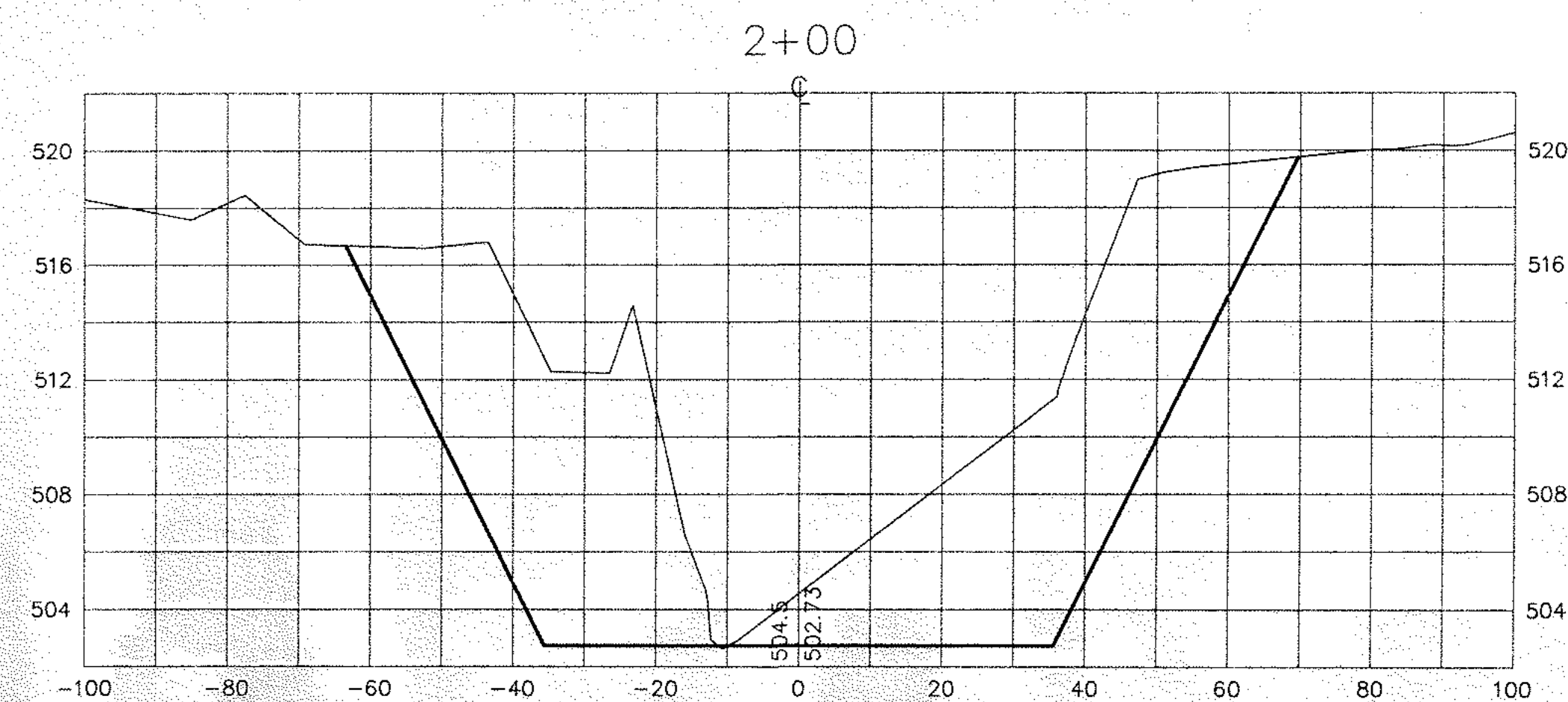
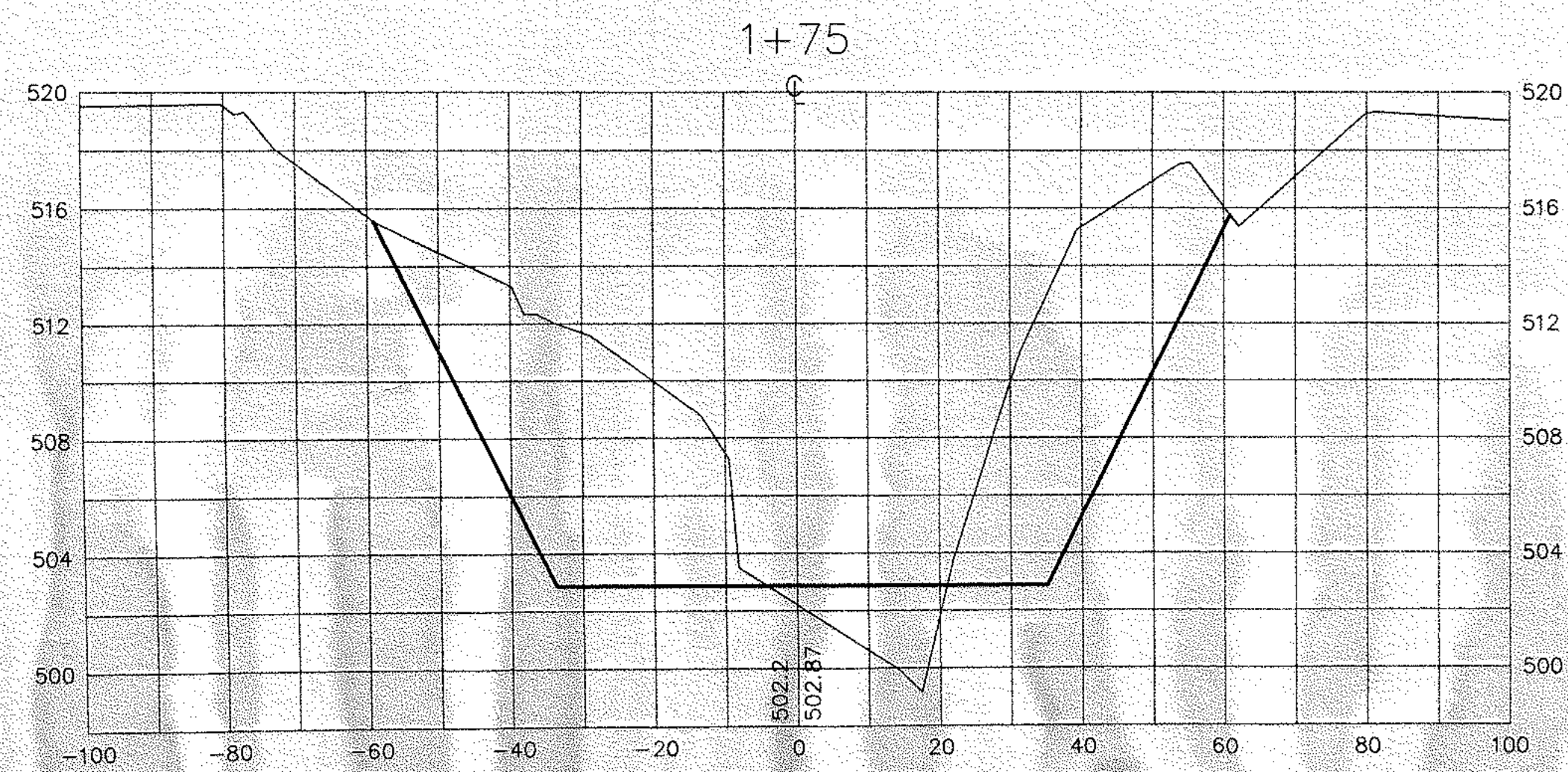
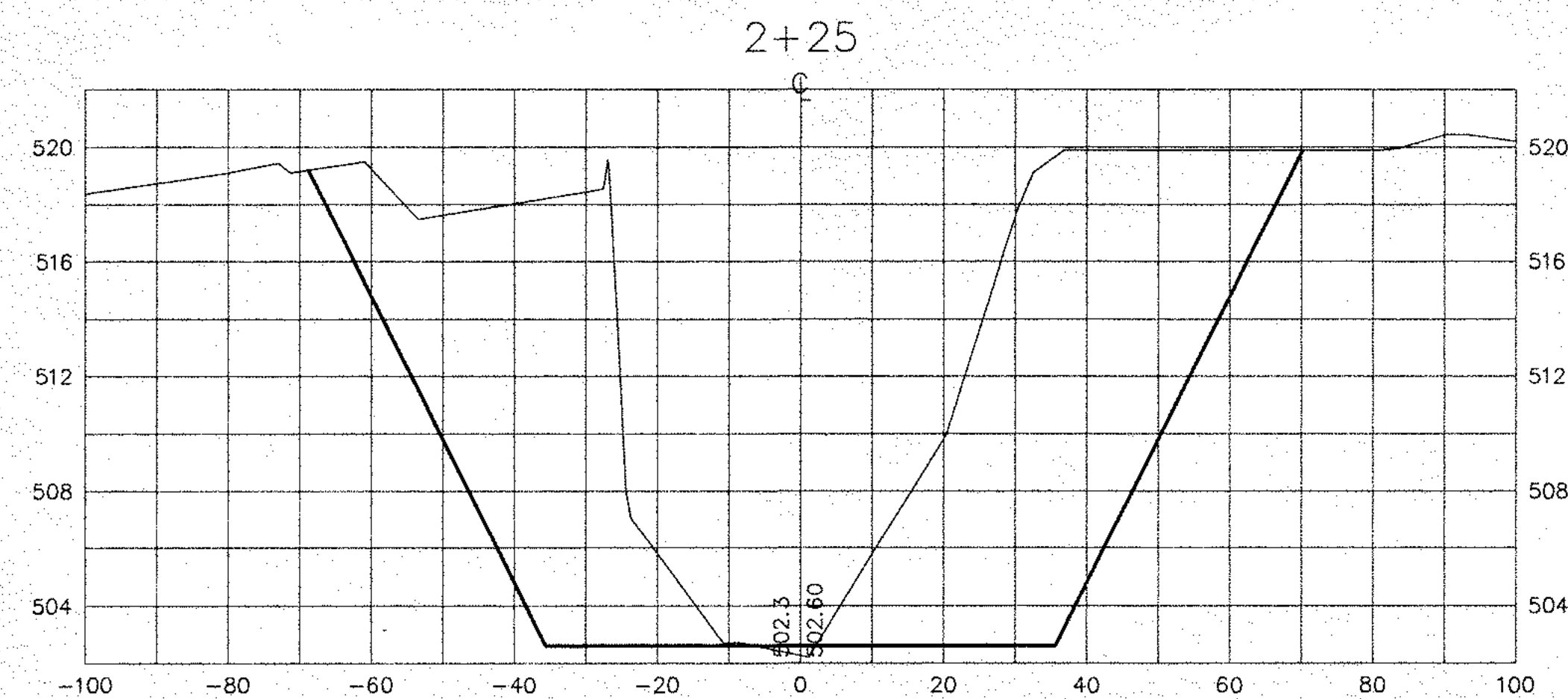
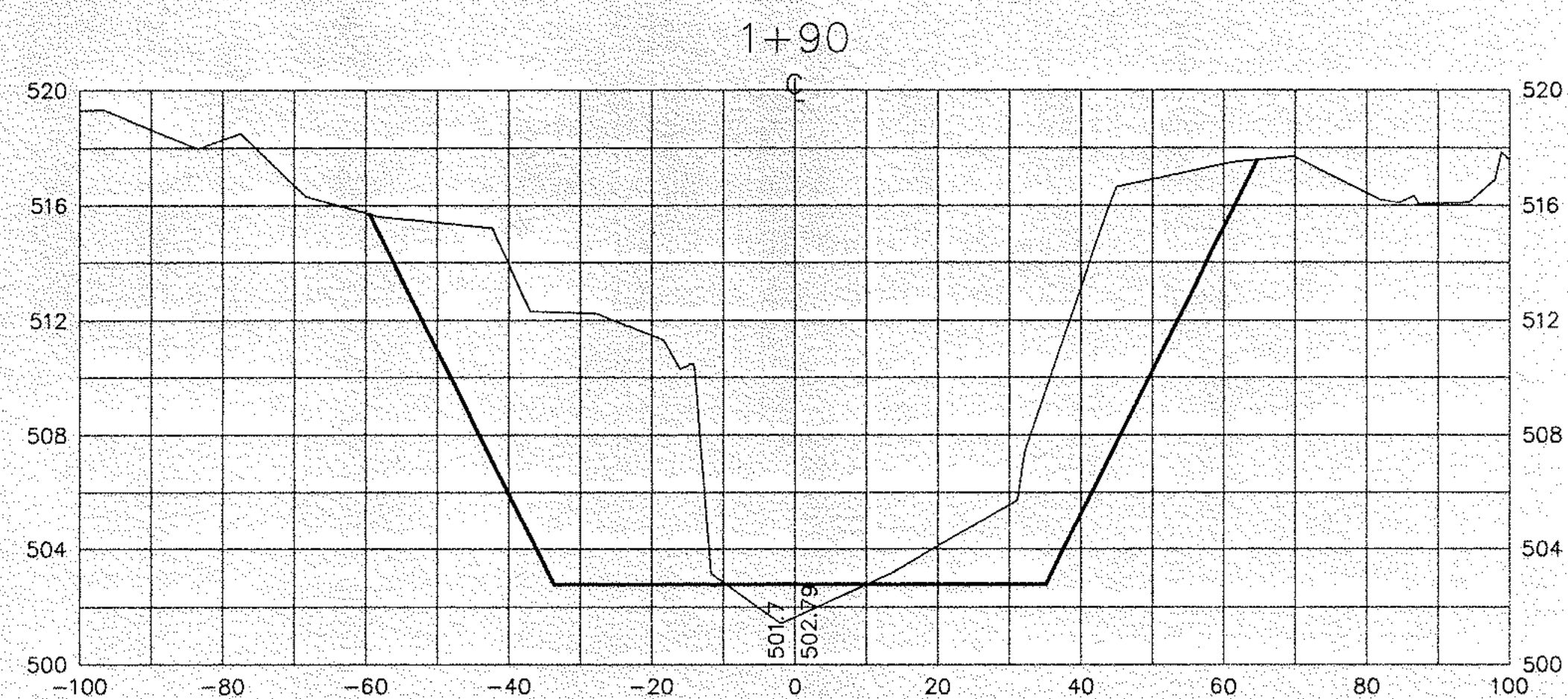
NOTES:  
CROSS-SECTIONS FACING DOWNSTREAM

STATE OF TEXAS  
**LUCAS WINNINGOFF BRIDGE**  
 CROSS-SECTION & PROFILE - DOWNSTREAM CROSS SECTIONS

PREPARED BY: HUNTER ASSOCIATES, TEXAS, LTD.  
 DATE: 12/20/00  
 DRAWING NO.: 12-20-00

*[Signature]*

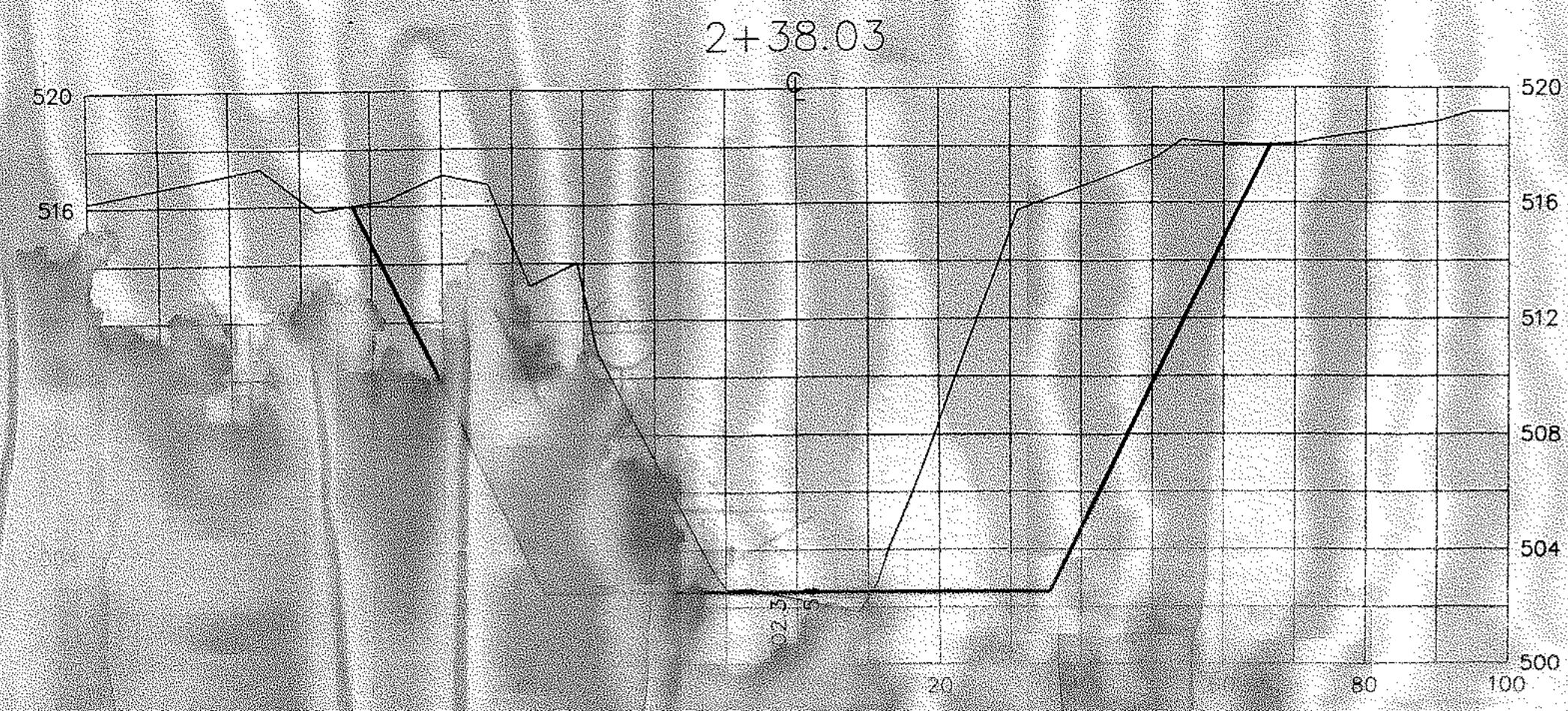
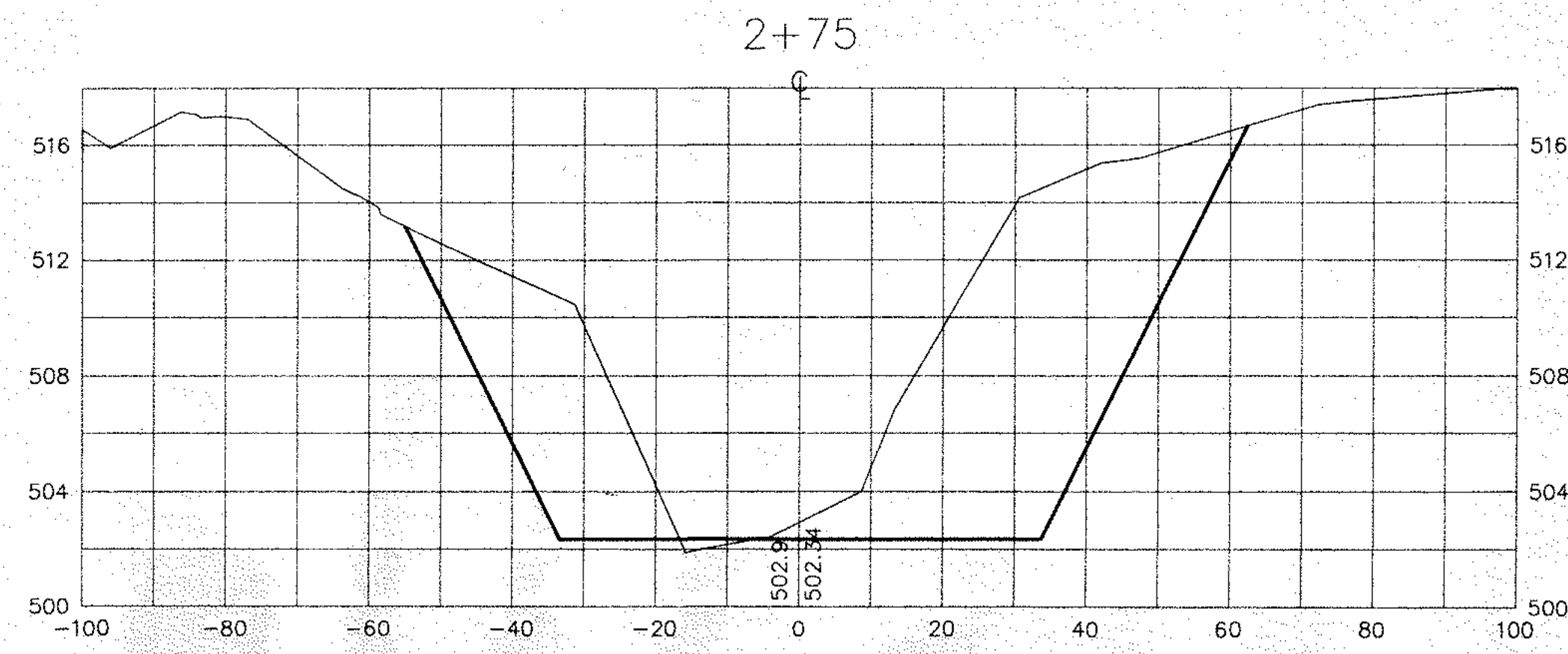
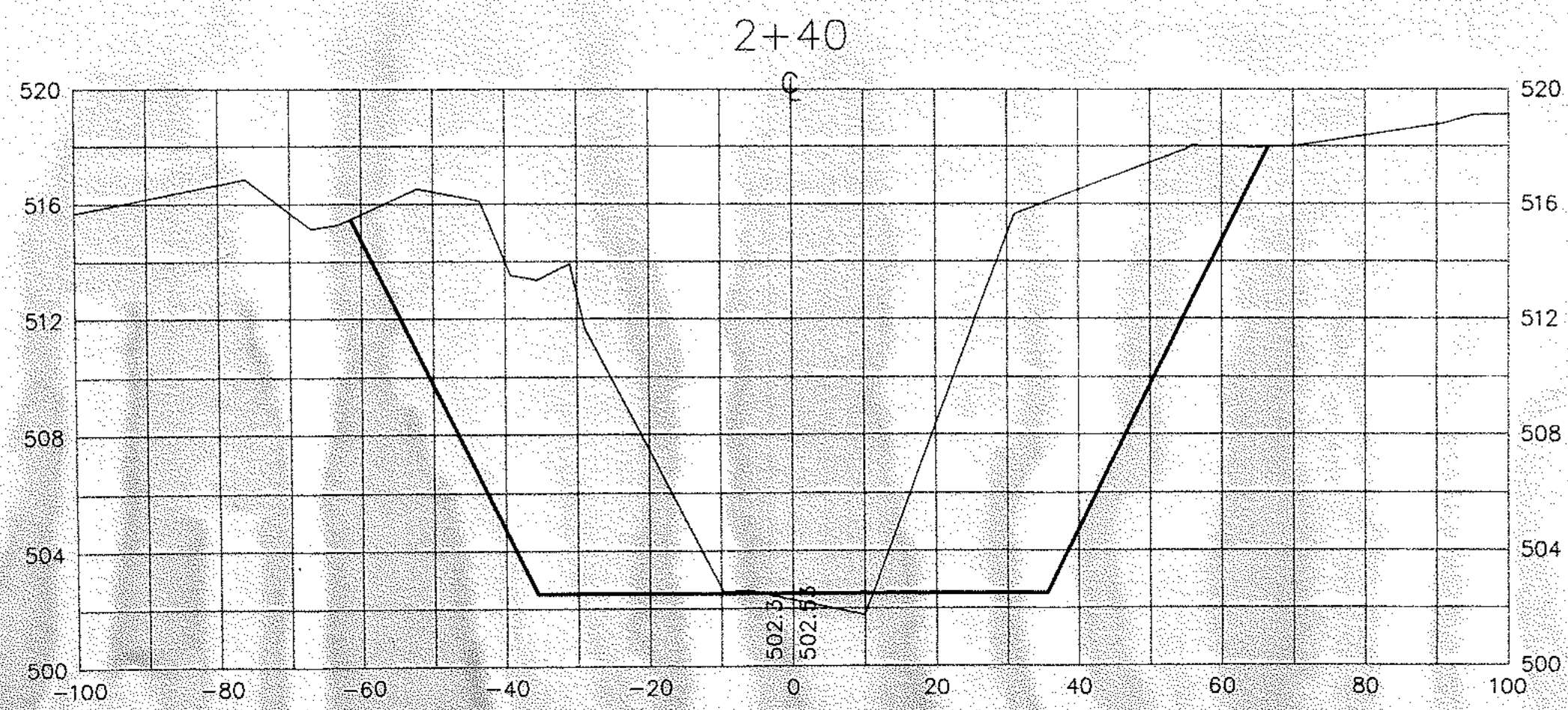
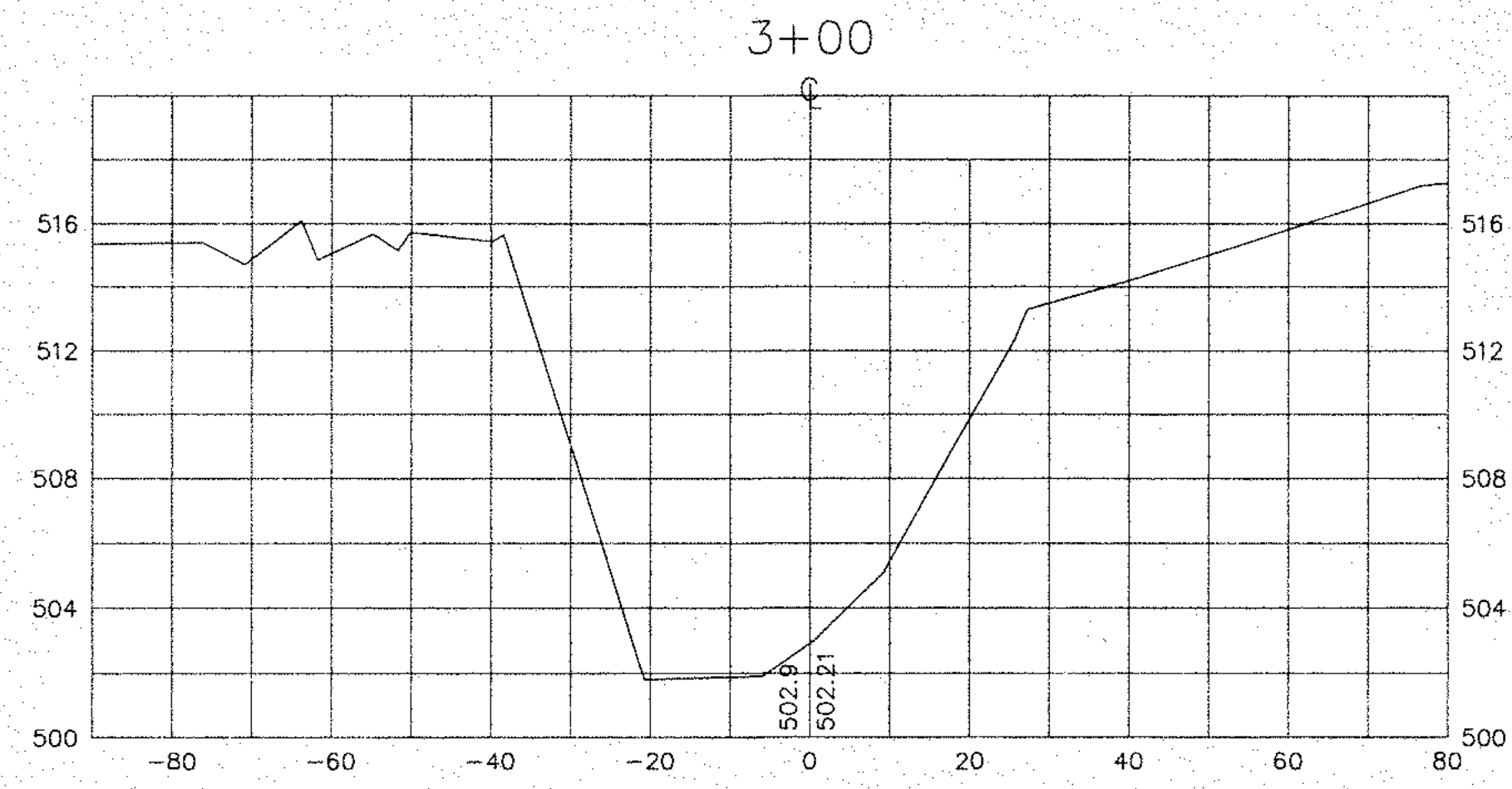
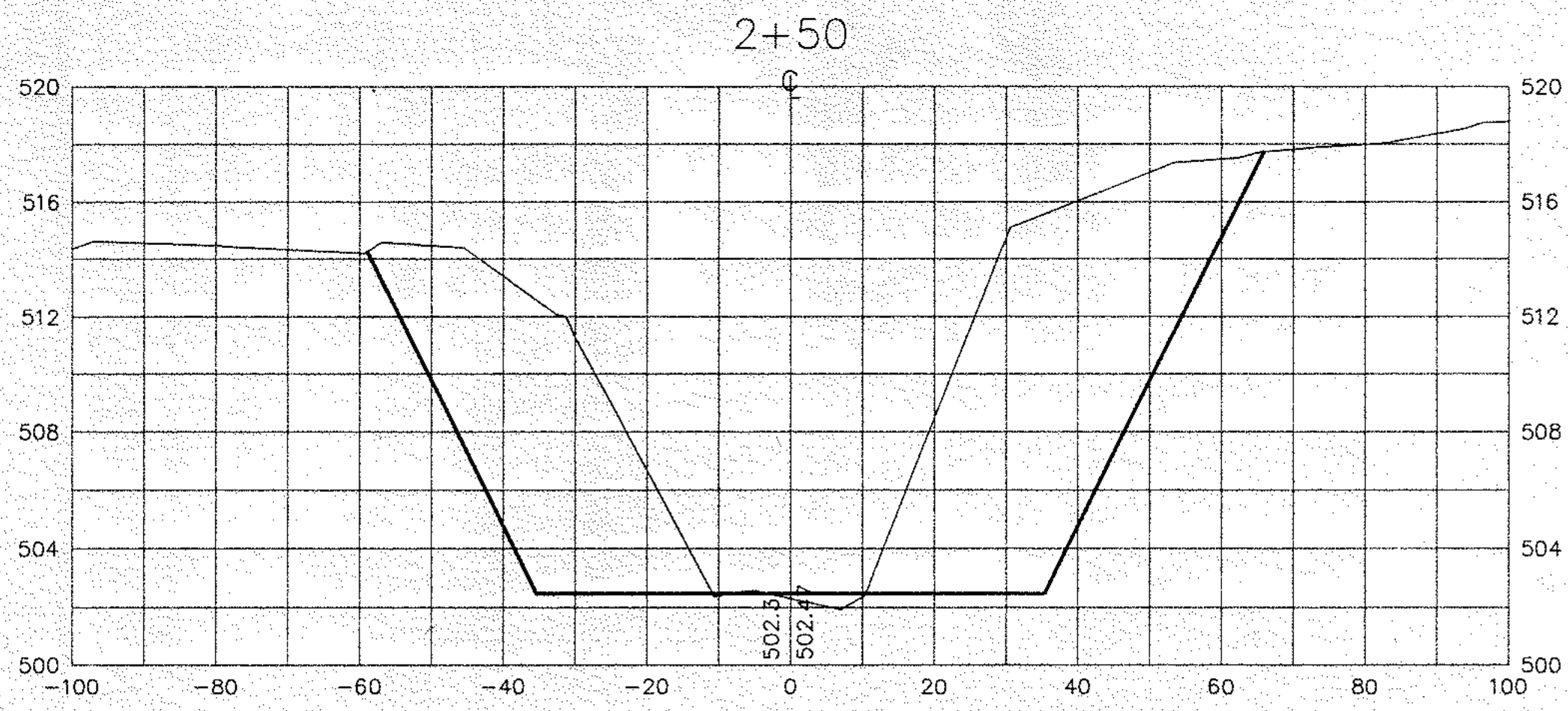




CITY OF LUGAN, TEXAS  
**LUCAS WINNINGKOFF BRIDGE**  
 EXISTING & PROPOSED SEPARATE CROSS SECTIONS

DESIGNED BY: INTEREX ASSOCIATES, TEXAS, LTD.  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 DATE: 12/7/99





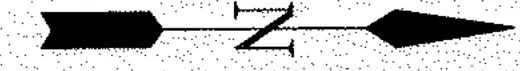
COUNTY OF COCKS, TEXAS  
**LUCAS WINNINGROFF BRIDGE**  
 STREAM & WINDWARD STREAM CROSS SECTIONS  
 ENGINEER ASSOCIATES, TEXAS, LTD.  
 11-7-99







NOTE:  
 THE CONTRACTOR IS RESPONSIBLE FOR  
 VERIFYING THE DEPTH AND LOCATION  
 OF ALL EXISTING UTILITIES PRIOR TO  
 CONSTRUCTION TO ALLOW FOR REDESIGN  
 IF NECESSARY. ANY REDESIGN OR EXTRA  
 WORK CAUSED BY FAILURE TO LOCATE  
 THESE UTILITIES WILL BE AT THE SOLE  
 EXPENSE OF THE CONTRACTOR.



BLONDY JUNE ROAD

R11-3 a  
 CW20-1 A  
 1800 FT  
 CW20-2 B  
 BOND PROGRAM SIGN

CW20-1 A  
 1500 FT  
 CW20-2 B

CW20-1 A  
 1000 FT  
 CW20-2 B  
 G20-2

CW20-1 A  
 500 FT  
 CW20-2 B

M4-9L  
 M4-8a

TYPE III BARRICADES WITH LIGHTS

EXISTING BRIDGE

6800'

500'

500'

500'

500'

500'

500'

CW20-1 A  
 1000 FT  
 CW20-2 B

CW20-1 A  
 500 FT  
 CW20-2 B

M4-9R

FRAME:  
 2"X4" STOCK

PAINT:  
 FRAME TO BE PAINTED WHITE PAINT  
 BACKGROUND TO BE PAINTED RED  
 PAINT ME

LUCAS WINNINGKOFF BRIDGE

TRAFFIC CONTROL

LUCAS HUNTER ASSOCIATES TEXAS LTD

NO. 1

DATE: 11/2/98

11/2/98

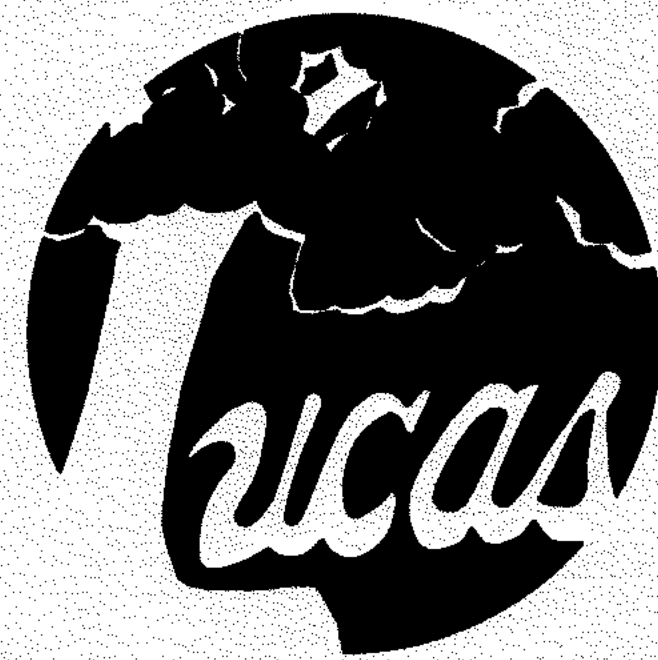
11/2/98

11/2/98

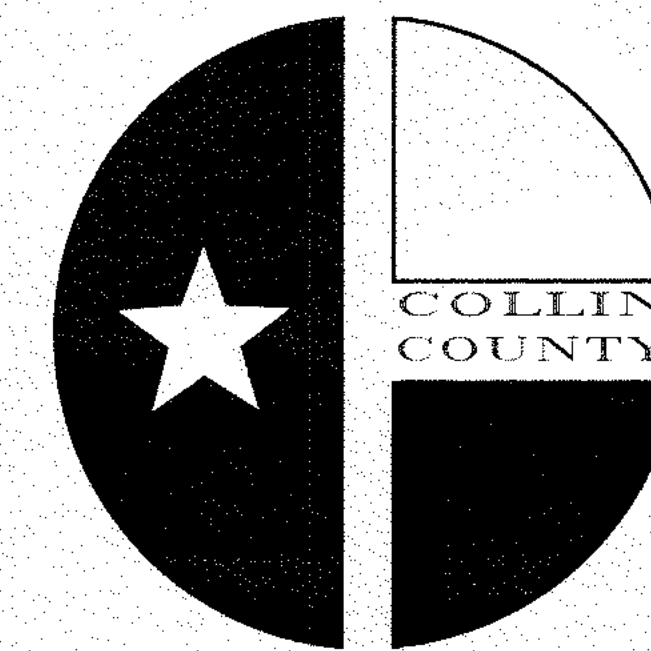


# SIGN SPECIFICATIONS

8' - 0"



**CITY OF LUCAS, TEXAS**  
**COLLIN COUNTY, TEXAS**



## LUCAS WINNINGKOFF BRIDGE

**CITY OF LUCAS OFFICIALS**

ANDREA CALVE	MAYOR
BOB BARBER	MAYOR PRO-TEM
TOMMY MCDANEL	PUBLIC WORKS MANAGER
BEVERLY COVINGTON	CITY SECRETARY
LINDA SHOUP	ADMINISTRATOR
<b>CITY COUNCIL OF LUCAS</b>	
RICHE WOLFE	CHARLIE GAINES
TOM FLEPS	PHILLIP NOGUERE

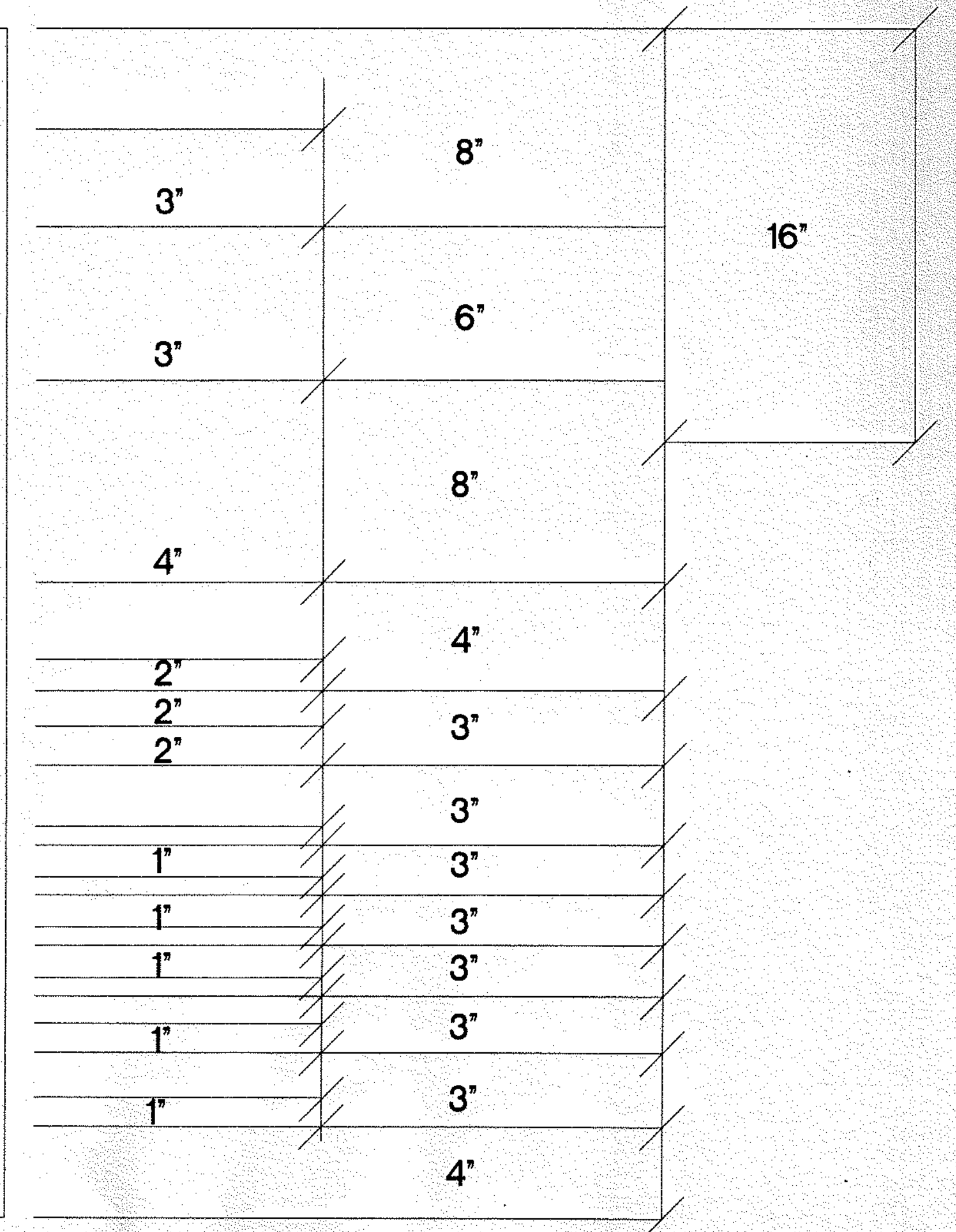
**1999 COLLIN COUNTY BOND PROGRAM**

**NOVEMBER, 1999**

**COUNTY OF COLLIN OFFICIALS**

RON HARRIS	COUNTY JUDGE
PHYLLIS COLE	COMMISSIONER, PCT. 1
JERRY HOAGLAND	COMMISSIONER, PCT. 2
JOE JAYNES	COMMISSIONER, PCT. 3
JACK HATCHELL	COMMISSIONER, PCT. 4
RUBEN DELGADO, P.E.	DIRECTOR OF ENGINEERING

**JOHN DOE COMPANY GENERAL CONTRACTOR**



4' - 0"

**SPECIFICATIONS**

**SIGN PANEL:**  
 1/2" LAMINATED DUOLOX  
 MASONITE OR 1/2"  
 MARINE PLYWOOD.

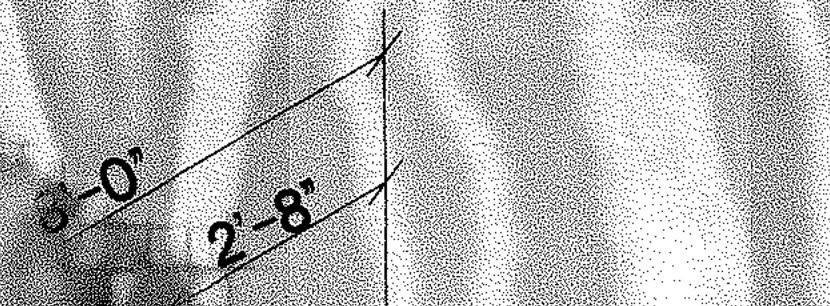
**FRAME:**  
 2"X4" STOCK

**PAINT:**  
 FRAME TO BE PAINTED "WHITE" PAINT  
 BACKGROUND OF SIGN "WHITE"  
 PAINT MESSAGE "MASON BLUE"  
 ALL PAINT TO BE EXTERIOR TYPE

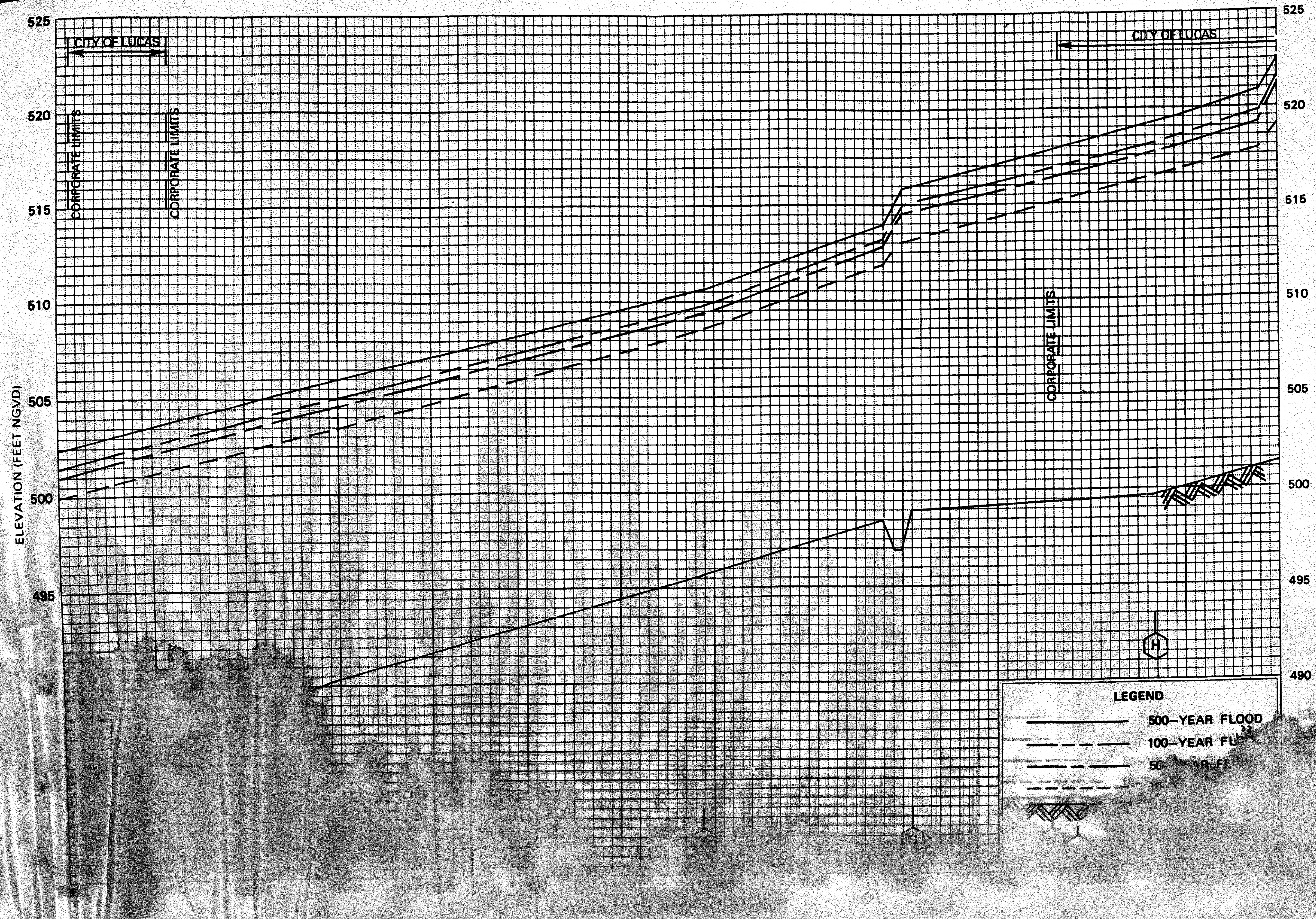
LETTER HEIGHT

SPACING

BOL HEIGHT







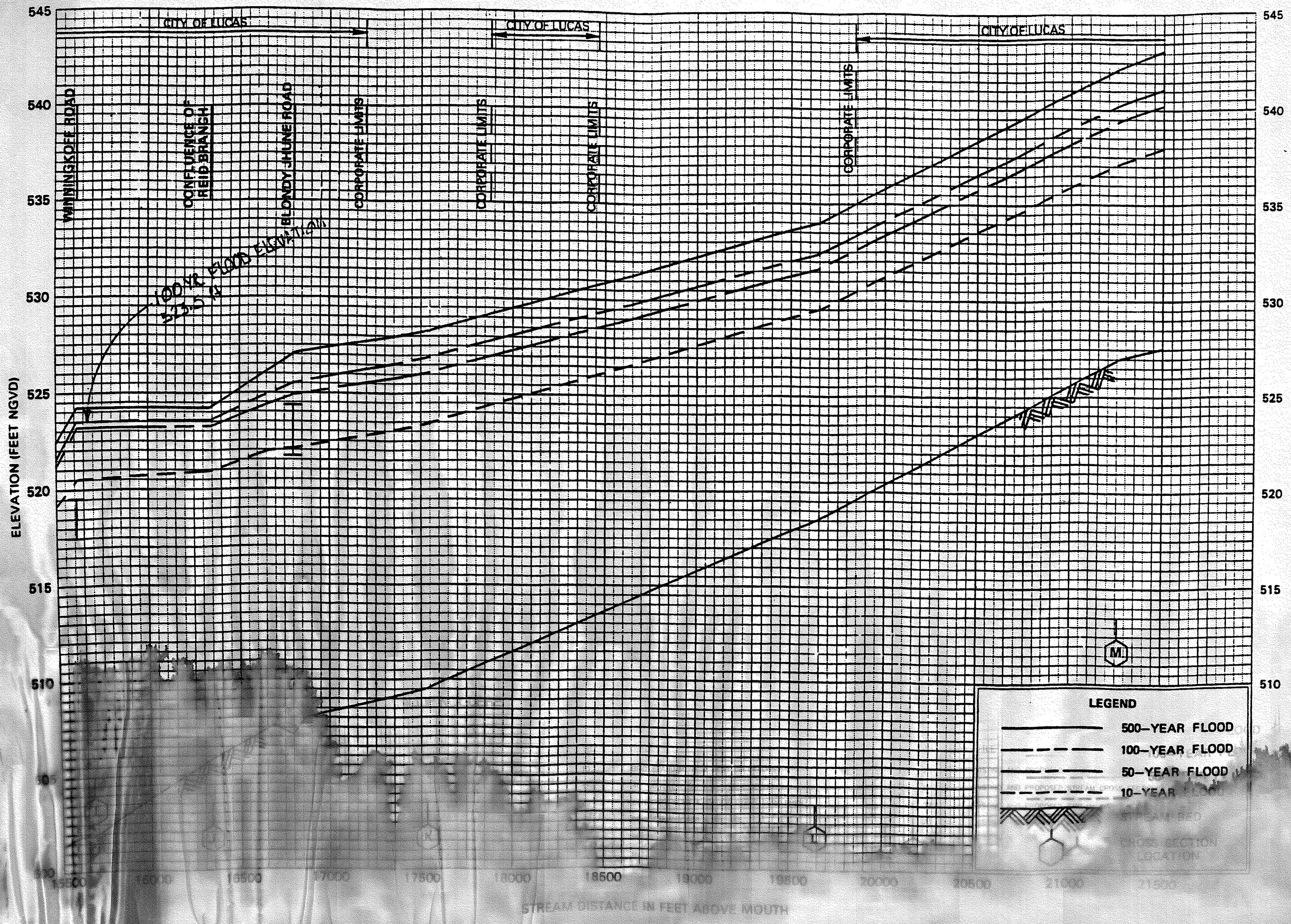
**FLOOD PROFILES**

**WHITE ROCK CREEK (EAST)**

PLANNING AND MANAGEMENT AGENCY

**COLLIN COUNTY, TX  
AND INCORPORATED AREAS**





**FLOOD PROFILES  
CITY OF LUCAS**

FEDERAL EMERGENCY MANAGEMENT AGENCY  
 QUELLEN COUNTY, TX  
 AND INCORPORATED AREAS