

GREEN VALLEY STATE PARK  
LAKE SPILLWAY REPAIRS  
UNION COUNTY, IOWA  
PROJECT NUMBER: 21-04-88-03

Date 03/08/2023

This Addendum is issued to modify, explain or correct the original Drawings and Specifications, and is hereby made a part of the Contract Documents. Please attach this Addendum to the Project Manual in your possession. Insert the number and issue date of this Addendum in the blank space provided on the Proposal Form.

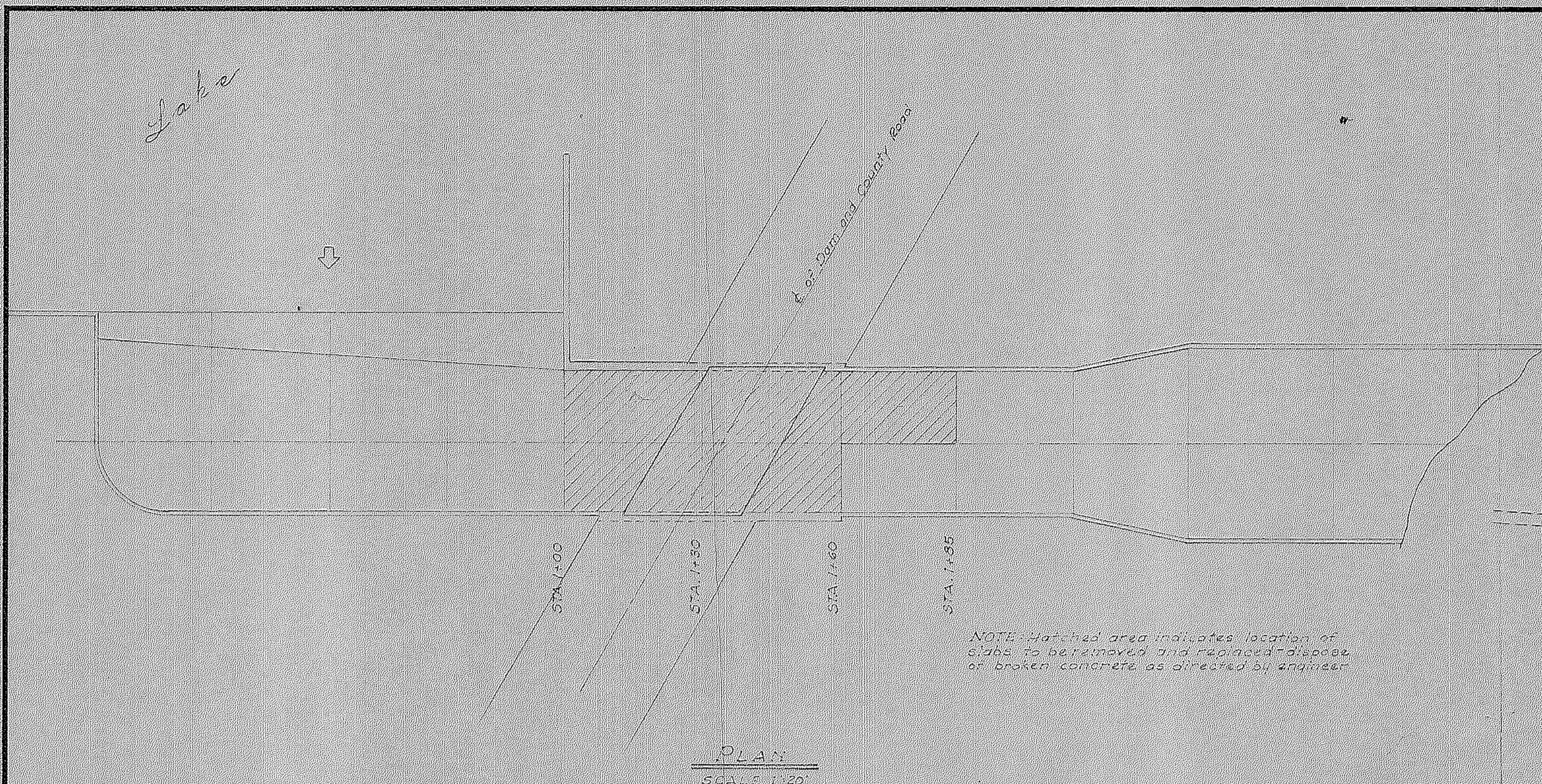
#### **GENERAL CLARIFICATION**

**Note for the Contractors:** Mitchel Marsh will be lowered to the extent feasible for ease of construction. It is suggested that the contractor works on the lower portion of the spillway first, as the marsh level will be raised again in the first week of August.

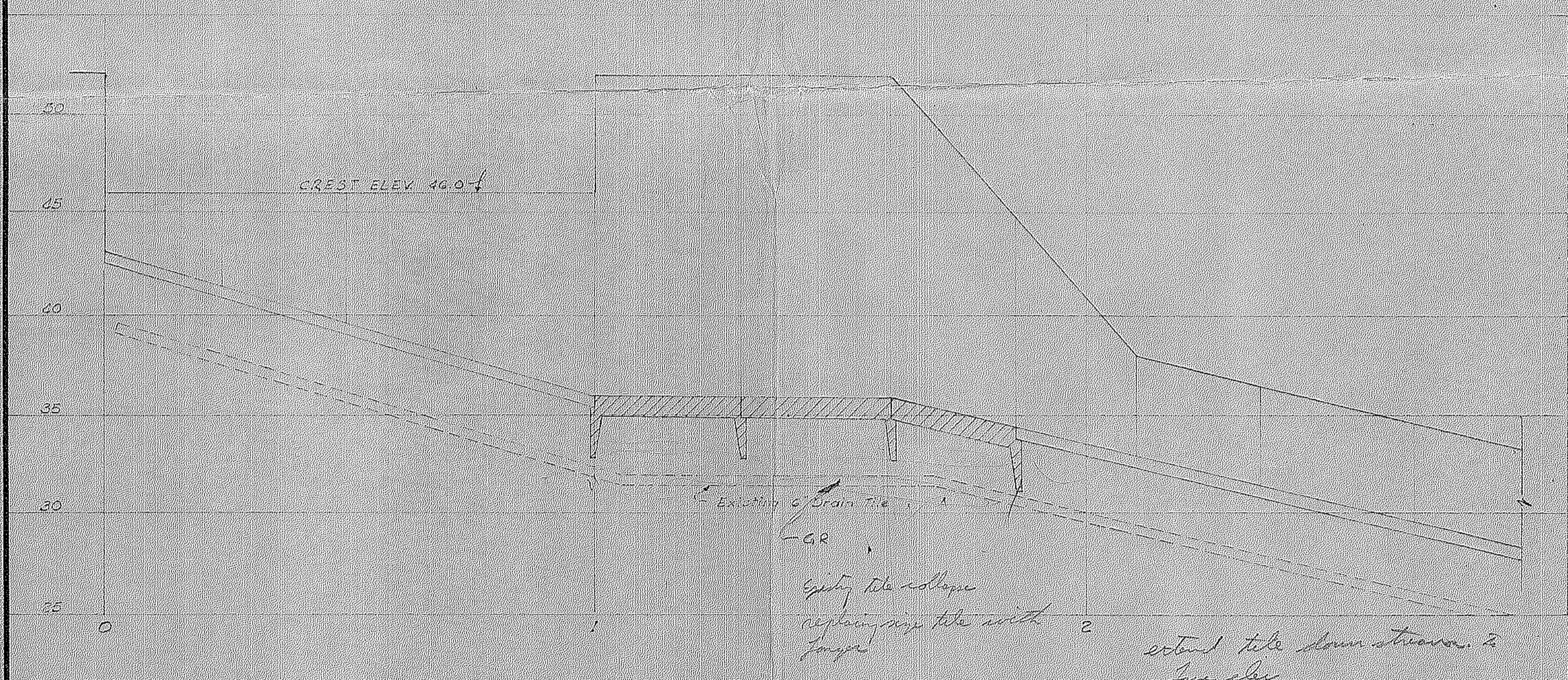
#### **Plans:**

- A. Sheet C000

The referenced drawings mentioned on the sheet are attached in this addendum.



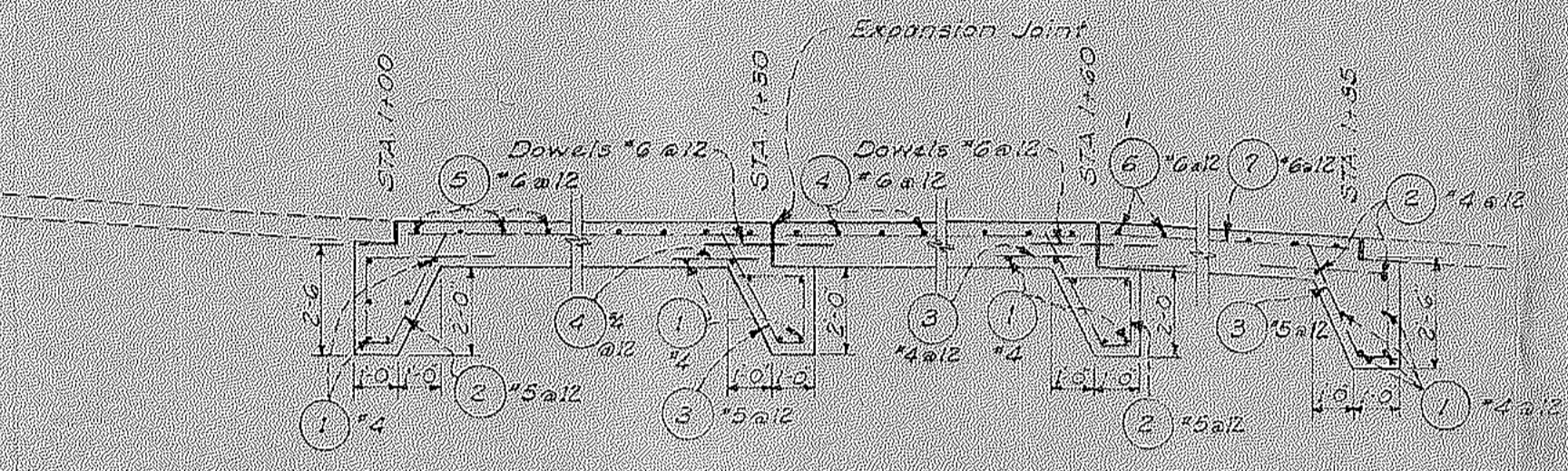
PLAN  
SCALE 1"=20'



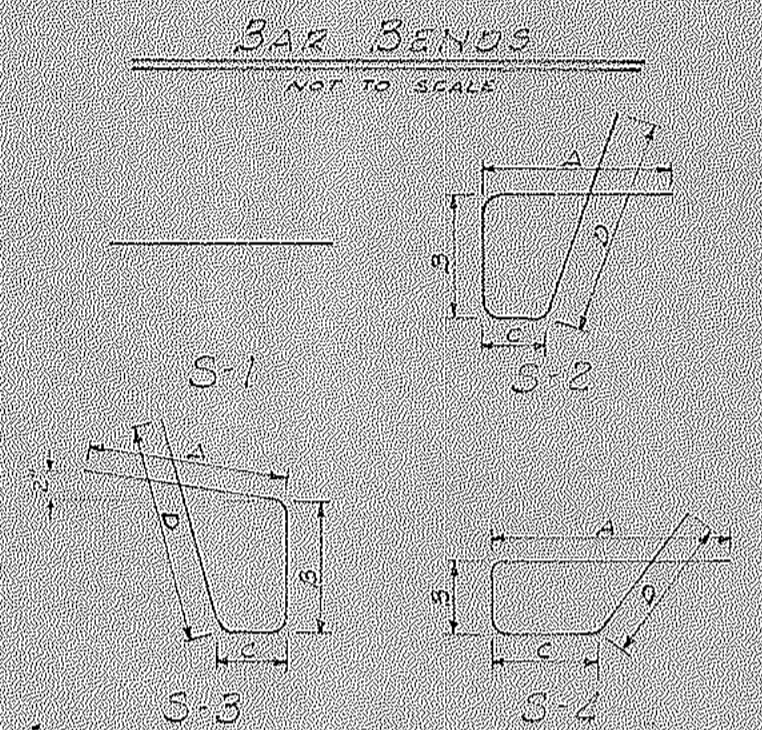
PROFILE AT C OF SPILLWAY  
SCALE VERT 1"=5'  
HORIZ 1"=20'

ESTIMATE OF QUANTITIES

CONCRETE REMOVAL	242 CY
STRUCTURAL EXCAVATION	92 CY
GRAVEL	71 TON
POLYETHYLENE (one thickness)	1931 S.F.
REINFORCING STEEL	7980 LBS.
STRUCTURAL CONCRETE	222 CY
JOINT SEALING COMPOUND	275 LB.

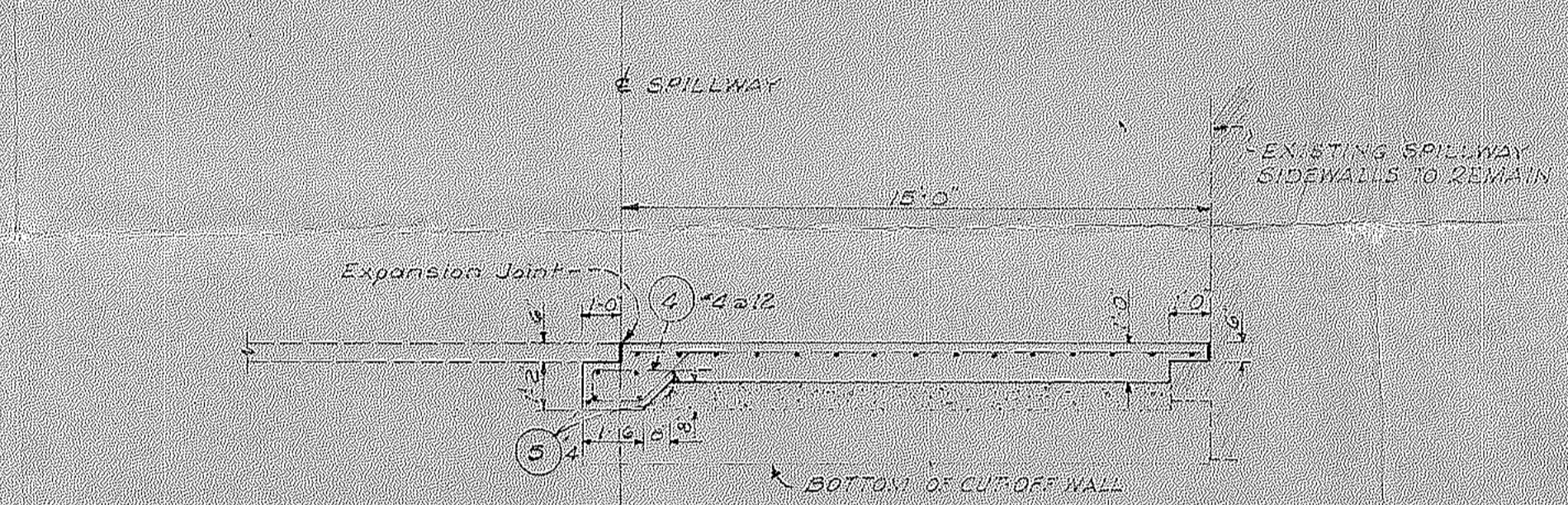


TYPICAL SECTION & DETAILS - @ SPILLWAY  
SCALE 1/4"=1'0"

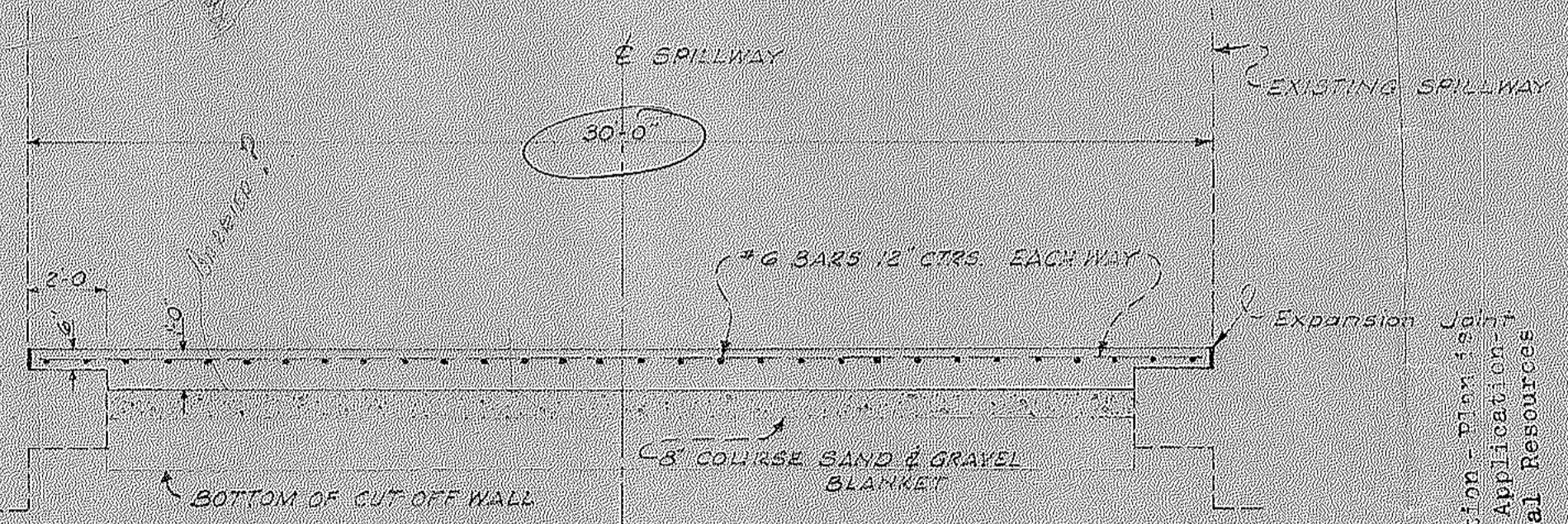


STEEL SCHEDULE

MARK	SIZE	TYPE	LENGTH	A	B	C	D	NO.
STA 1+00 TO STA 1+30								
1	4	S-1	25'-6"					12
2	5	S-2	5'-5"	3'-0"	2'-0"	0'-7"	2'-10"	26
3	5	S-2	5'-5"	1'-5"	1'-6"	2'-10"		26
4	4	S-1	2'-0"					26
5	6	S-1	35'-6"					60
6	6	S-1	3'-0"					30
STA 1+30 TO STA 1+60								
1	4	S-1	25'-6"					6
2	5	S-2	5'-5"	1'-5"	1'-6"	2'-10"		26
3	4	S-1	2'-0"					26
4	6	S-1	35'-6"					60
5	6	S-1	3'-0"					30
STA 1+60 TO STA 1+85								
1	6	S-1	15'-6"					4
2	4	S-1	4'-6"					2
3	5	S-3	4'-5"	3'-0"	2'-0"	0'-7"	2'-10"	15
4	4	S-4	2'-3"	3'-0"	0'-5"	1'-5"	1'-5"	24
5	4	S-1	24'-0"					5
6	6	S-1	14'-6"					25
7	6	S-1	24'-6"					15



TYPICAL SECTION - SLAB REPLACEMENT - STA 1+60 TO 1+85  
SCALE 1/4"=1'0"



TYPICAL SECTION - SLAB REPLACEMENT - STA 1+00 TO 1+60  
SCALE 1/4"=1'0"

NOTE: All dowels to be smooth bars greased and wrap one end.  
All steel to be 2" clear of top of slab and 3" clear of bottom of slab.

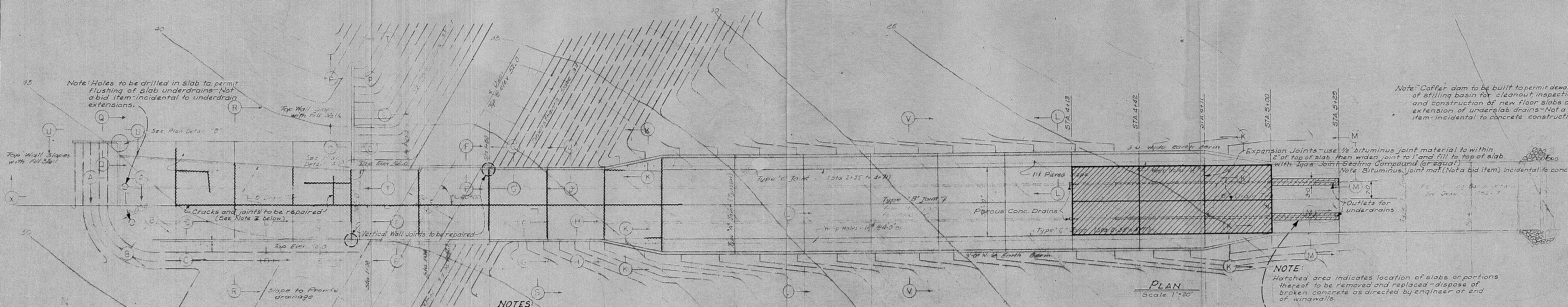
I hereby certify that this Application - Plan is a true and accurate and correct copy of the Application - Plan made a part of Iowa Natural Resources Council Order No. 63-205 Approved 5/17/63 2/1/63  
*Walter Sheehy* Director  
IOWA NATURAL RESOURCES COUNCIL

NOTE: Expansion Joints - use 1/2" bituminous joint material 1/2" within 2" of top of slab then weld joint to 1" and fill to top of slab with Joints Sealing Compound (or equal) - bituminous joint material (Not a fill item) incidental to concrete.

Con 3-4-1-1  
Doc # 3049

STATE CONSERVATION COMMISSION  
OF IOWA  
GREEN VALLEY LAKE  
UNION COUNTY

DRAWN BY SKK	DESIGNED BY SPILLWAY REPAIR - REMEDIAL WORK	PRQJ. NO.
CHECKED BY JFW		SCALE AS SHOWN
CHECKED AND APPROVED BY <i>Wm. Hill</i>	SUPT. ENGINEERING DATE	DATE 3-4-63
APPROVED BY <i>W. O. Brill</i>	SUPT. SECTION DATE	
APPROVED BY <i>W. O. Brill</i>	CHIEF DIVISION DATE	
APPROVED BY <i>E. B. Spoken</i>	DIRECTOR DATE	



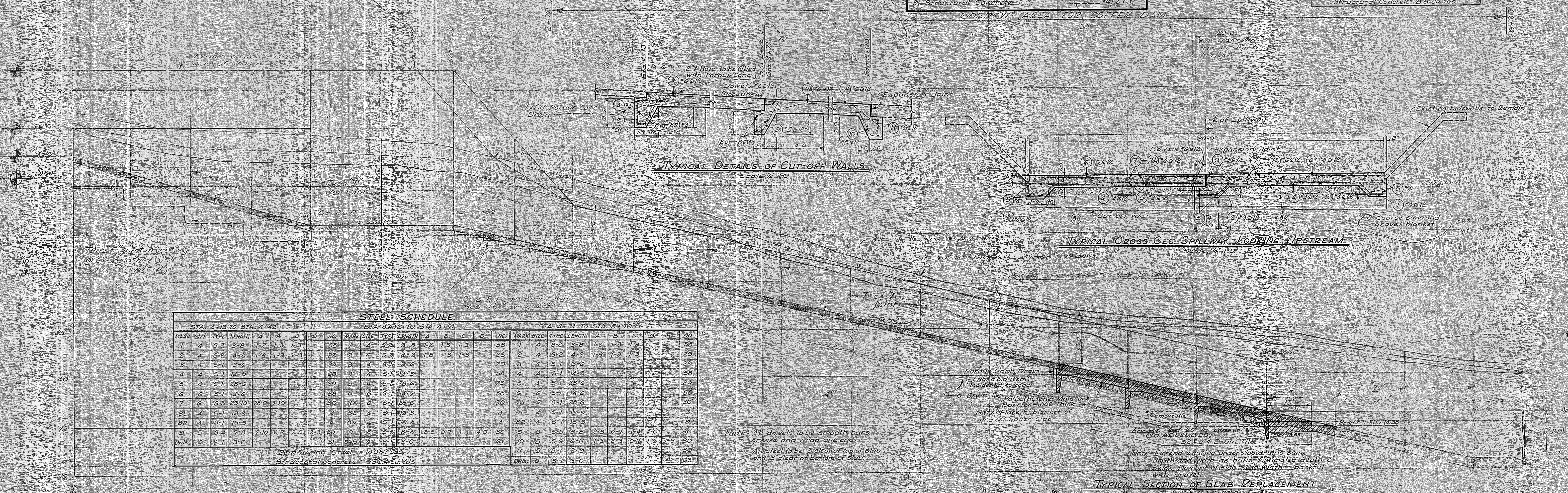
- NOTES:**
1. Chip out and grind off cracked and spalled vertical joints where the retaining walls have tilted—patch with epoxy compound to restore appearance.
  2. Clean out joints between slabs as shown on plan—replace with *Agas* joint sealing compound (or equal) open joints min. 1/4" width by 3/4" depth.
  3. In the repair of cracked and spalled vertical joints remove existing premoled joint material to the depth of the vertical construction keyway and replace with new premoled bituminous joint material—as required.

**ESTIMATE OF QUANTITIES**

1. Repair Vertical Wall Joints	1.5 L.S.
2. Clean & Re-caulk Slab Joints	525 L.F.
3. Concrete Removal	1.5 C.Y.
4. Structural Excavation	184 C.Y.
5. 6" Drain Tile	184 L.F.
6. Gravel	85 TONS
7. Polyethylene (004 Thickness)	3,082 S.F.
8. Reinforcing Steel	14,635 Lbs.
9. Structural Concrete	141.2 C.Y.

**STEEL SCHEDULE**

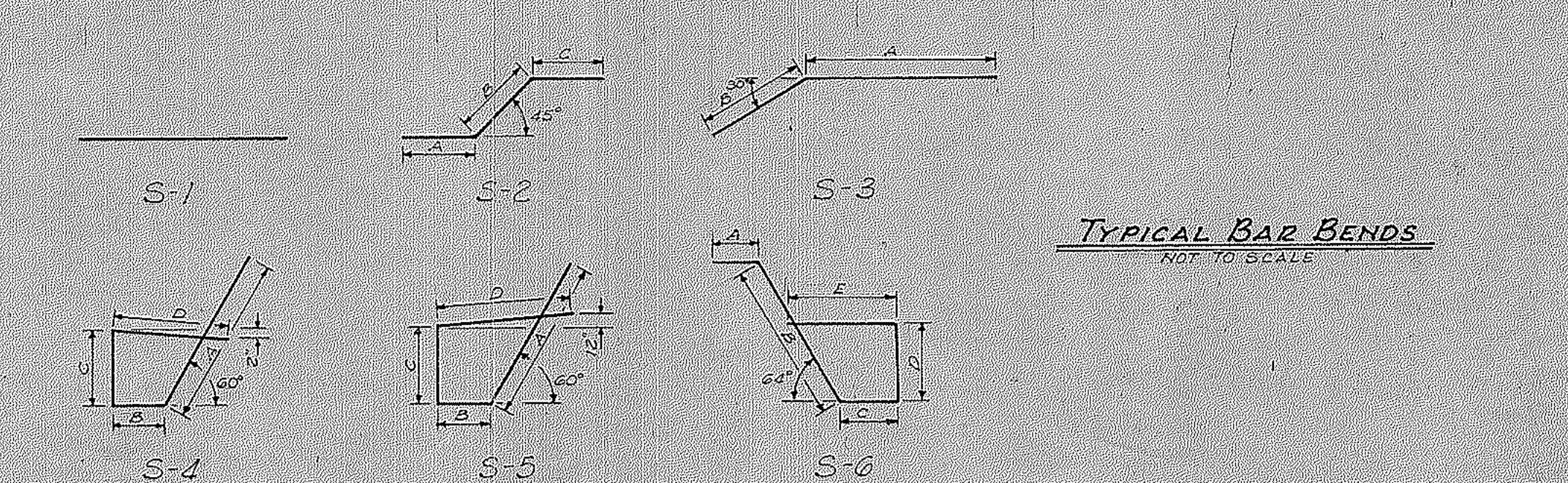
LOCATION	SIZE	LENGTH	NO. REQ.
Transverse Bars	#4 S-1	2'-0"	174
Longitudinal Bars	#4 S-1	28'-0"	12
Reinforcing Steel = 548 Lbs.			
Structural Concrete = 8.8 Cu. Yds.			



**STEEL SCHEDULE**

STA 4+13 TO STA 4+42										STA 4+42 TO STA 4+71										STA 4+71 TO STA 5+00									
MARK	SIZE	TYPE	LENGTH	A	B	C	D	NO.	MARK	SIZE	TYPE	LENGTH	A	B	C	D	NO.	MARK	SIZE	TYPE	LENGTH	A	B	C	D	E	NO.		
1	#4	S-2	3'-8"	1'-2"	1'-3"	1'-3"		58	1	#4	S-2	3'-8"	1'-2"	1'-3"	1'-3"		58	1	#4	S-2	3'-8"	1'-2"	1'-3"	1'-3"		58			
2	#4	S-2	4'-2"	1'-8"	1'-3"	1'-3"		29	2	#4	S-2	4'-2"	1'-8"	1'-3"	1'-3"		29	2	#4	S-2	4'-2"	1'-8"	1'-3"	1'-3"		29			
3	#4	S-1	3'-6"					29	3	#4	S-1	3'-6"					29	3	#4	S-1	3'-6"						29		
4	#4	S-1	14'-9"					60	4	#4	S-1	14'-9"					60	4	#4	S-1	14'-9"						60		
5	#4	S-1	28'-0"					29	5	#4	S-1	28'-0"					29	5	#4	S-1	28'-0"						29		
6	#6	S-1	14'-9"					58	6	#6	S-1	14'-9"					58	6	#6	S-1	14'-9"						58		
7	#6	S-3	28'-0"	28'-0"	1'-0"			80	7A	#6	S-1	28'-0"					80	7A	#6	S-1	28'-0"						80		
8L	#4	S-1	13'-9"					4	8L	#4	S-1	13'-9"					4	8L	#4	S-1	13'-9"						4		
8R	#4	S-1	15'-9"					4	8R	#4	S-1	15'-9"					4	8R	#4	S-1	15'-9"						4		
9	#5	S-4	7'-8"	2'-0"	0'-7"	2'-0"	2'-3"	80	9	#5	S-5	8'-8"	2'-9"	0'-7"	1'-4"	4'-0"	30	9	#5	S-5	8'-8"	2'-9"	0'-7"	1'-4"	4'-0"	30			
Dwls.	#6	S-1	3'-0"					31	Dwls.	#6	S-1	3'-0"					61	Dwls.	#6	S-1	3'-0"						61		

Reinforcing Steel = 14,087 Lbs.  
Structural Concrete = 132.4 Cu. Yds.



STATE CONSERVATION COMMISSION  
OF IOWA  
GREEN VALLEY LAKE  
UNION COUNTY

SECTION XX

**SPILLWAY REPAIR  
REMEDIAL WORK**

DRAWN BY: EWK  
DESIGNED BY: [Signature]  
CHECKED BY: [Signature]  
APPROVED BY: [Signature]

DATE: 12-9-62  
DATE: 12-10-62

STANLEY ENGINEERING COMPANY  
MUSCATINE, IOWA

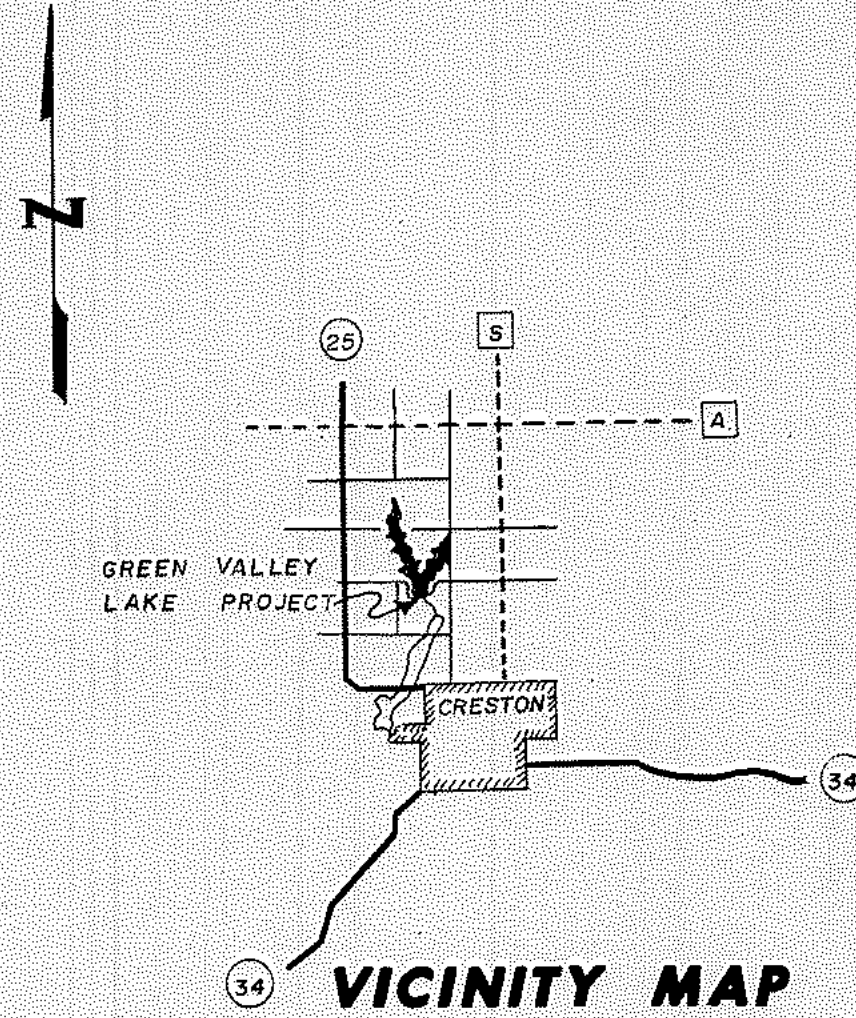
REVISIONS

NO.	DATE	ITEM	PREPARED BY	CHECKED BY
1	10-23-62	Rev. 1	[Signature]	[Signature]
2	11-13-62	Revised Joints	[Signature]	[Signature]
3	10-23-62	Revised	[Signature]	[Signature]
4	11-23-62	Rev. Note	[Signature]	[Signature]
5	12-10-62	Final	[Signature]	[Signature]

SPILLWAY PLAN  
SECTION

DRAFTSMAN: THAYER  
CHECKER: DWK  
DATE: May 21, 1949  
SCALE: 1"=20'  
ENGINEER: [Signature]  
APPROVED: [Signature]

NO. 1062-5

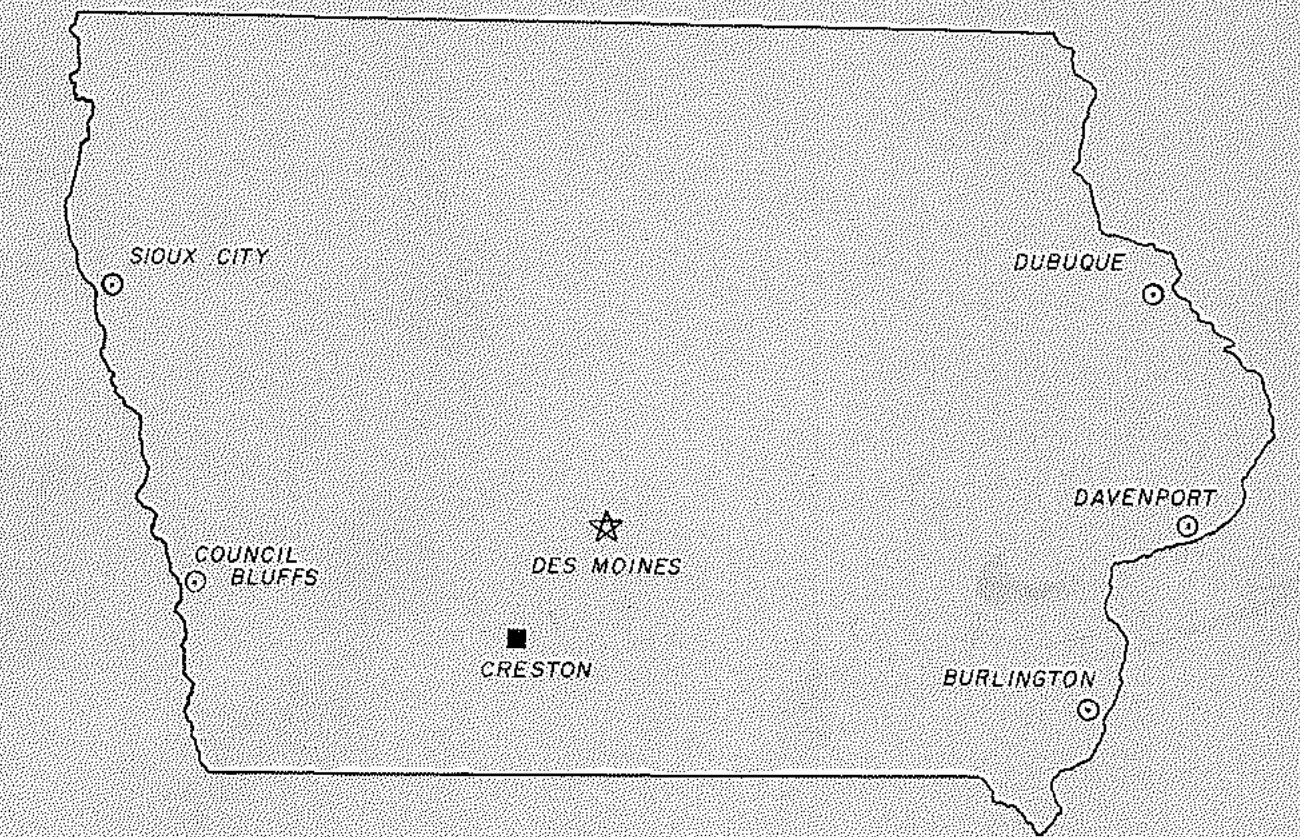


IOWA STATE CONSERVATION COMMISSION

CONSTRUCTION PLANS

FOR  
 SPILLWAY RECONSTRUCTION  
 GREEN VALLEY LAKE

UNION COUNTY  
 IOWA



KEY MAP

ESTIMATE OF QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITIES	
1	REMOVAL OF EXISTING STRUCTURE	310	Cu. Yds.
2	COFFERDAMS AND DEWATERING		Lump Sum
3	STRUCTURAL EXCAVATION	755	Cu. Yds.
4	WALL CONNECTION AND DUCTILE IRON PIPE		Lump Sum
5	10" COLLECTION PIPE	342	Lin. Ft.
6	8" PERFORATED PIPE	20	Lin. Ft.
7	6" PERFORATED PIPE	285	Lin. Ft.
8	6" NON PERFORATED PIPE	75	Lin. Ft.
9	INLET MANHOLE	4	Each
10	SUBGRADE STABILIZATION MATERIAL FOR PIPE	25	Tons
11	TEST PILING (6 at 35')	210	Lin. Ft.
12	PILING DELIVED AND DRIVEN	1200	Lin. Ft.
13	GRANULAR BLANKET	500	Tons
14	STRUCTURAL CONCRETE	672	Cu. Yds.
15	WINTER PROTECTION OF CONCRETE	336	Cu. Yds.
16	REINFORCING STEEL	60500	Lbs.
17	COMPACTED BACKFILL	700	Cu. Yds.
18	SODDING	187	Squares
19	JOINT REPAIR	590	Lin. Ft.
20	MISCELLANEOUS ITEMS		Lump Sum

PLANS PREPARED BY  
 ROBINSON ENGINEERING CO.  
 WATERLOO, IOWA

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.  
 NAME William P. Oleson  
 DATED July 5, 1974 PE. REG. NO. 3995

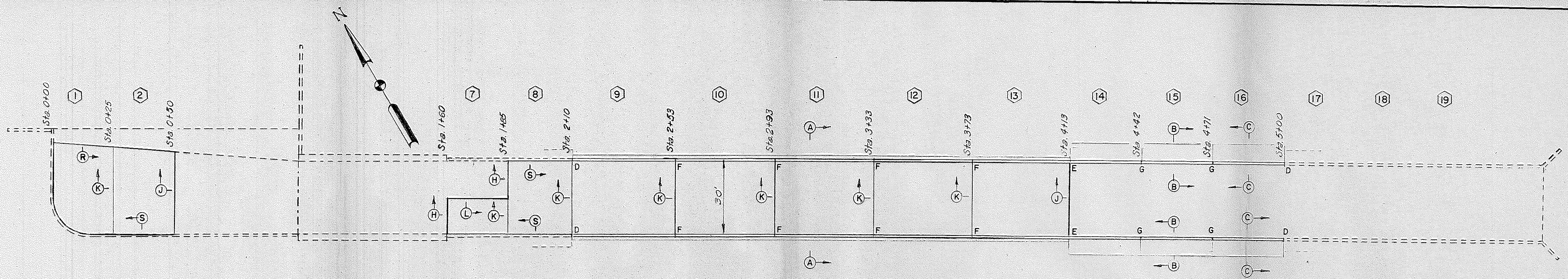
APPROVED BY Norman W. Whislet 7/9/74  
 SUPERINTENDENT OF ENGINEERING DATE

APPROVED BY \_\_\_\_\_  
 SUPERINTENDENT SECTION DATE

APPROVED BY W. P. Oleson 7/11/74  
 CHIEF, DIVISION OF DATE

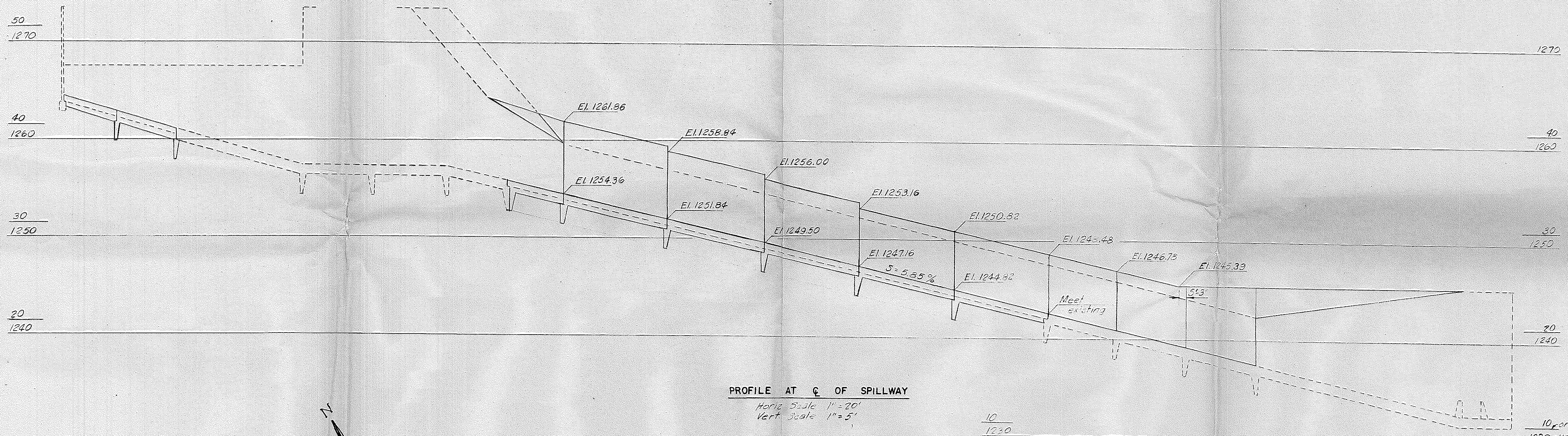
APPROVED BY \_\_\_\_\_  
 DIRECTOR OF IOWA STATE CONSERVATION COMMISSION DATE

INDEX TO DRAWINGS		
TITLE	SHEET	SHEET NO.
GENERAL PLAN AND PROFILE		1
DRAINAGE SYSTEM		2
STRUCTURE DETAILS		3
MISCELLANEOUS DETAILS		4
CROSS SECTIONS		5
CROSS SECTIONS		6
CROSS SECTIONS		7



**FINAL PLAN**  
Scale 1"=20'

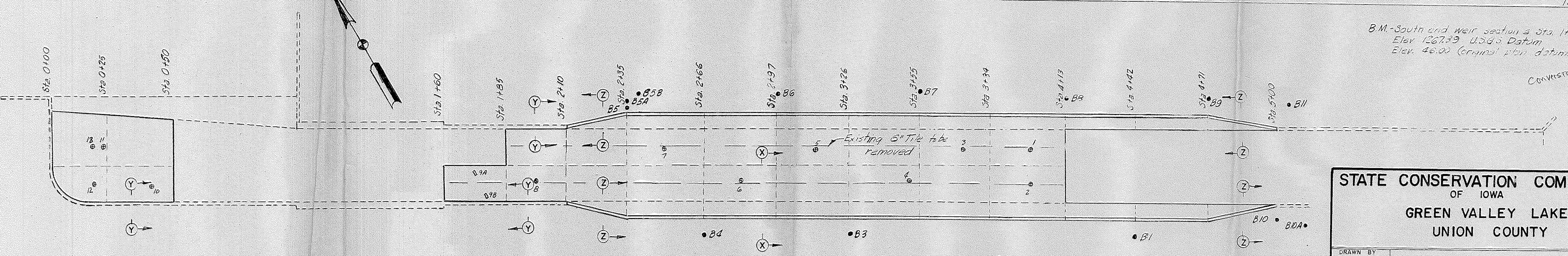
Panel Number to correlate to reinforcement schedule



**PROFILE AT C OF SPILLWAY**  
Horiz. Scale 1"=20'  
Vert. Scale 1"=5'

10' orig. plan D  
1230' USGS datum

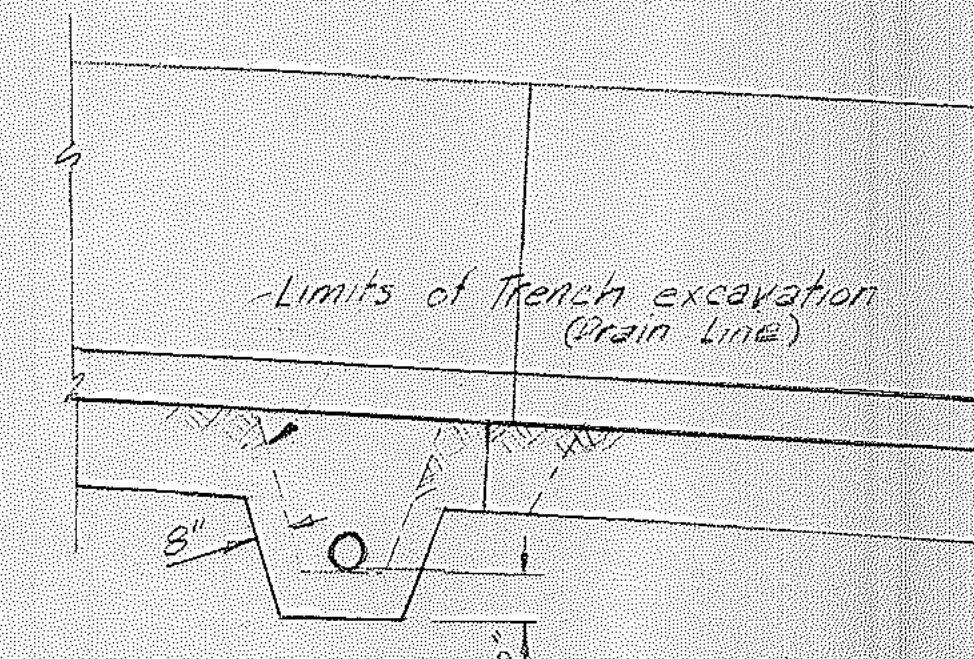
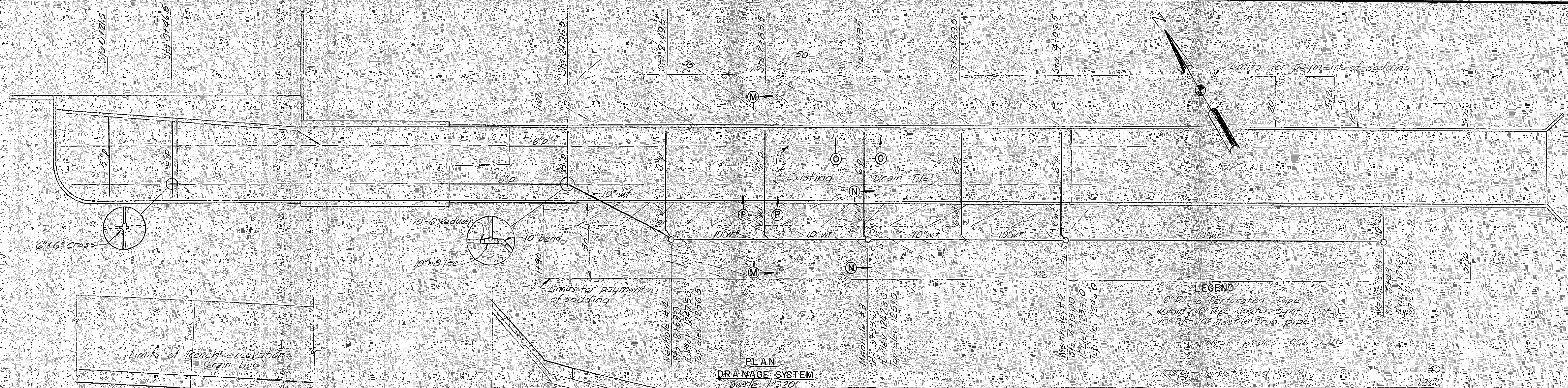
B.M. - South end weir section @ Sta. 1+00  
Elev. 1267.39 USGS Datum  
Elev. 46.00 (original plan datum)  
CONV. 1221.39



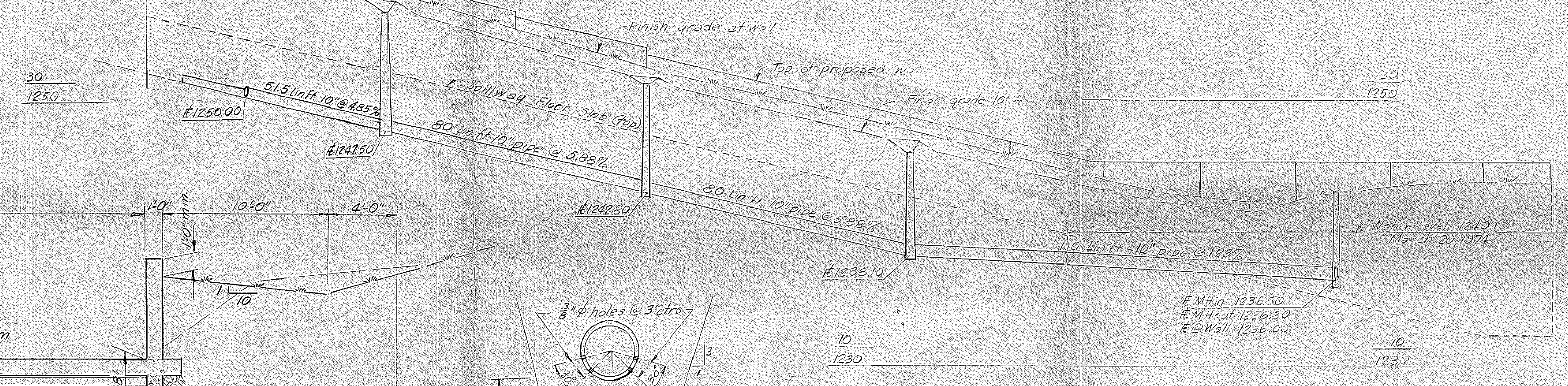
**EXISTING PLAN**  
SHOWING REMOVAL & BORING LOCATIONS  
Scale 1"=20'

**STATE CONSERVATION COMMISSION**  
OF IOWA  
**GREEN VALLEY LAKE**  
UNION COUNTY

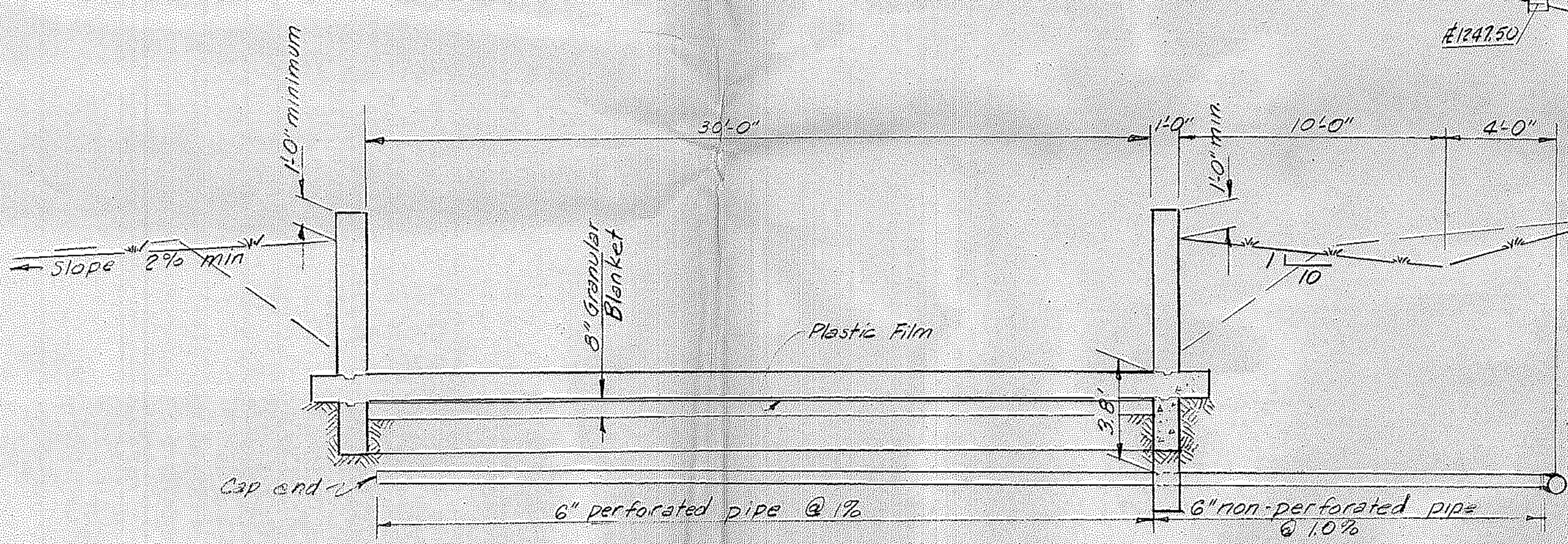
DRAWN BY WPD	SPILLWAY RECONSTRUCTION GENERAL PLAN AND PROFILE	PROJ. NO.
DESIGNED BY		SCALE Noted
CHECKED BY		DATE
CHECKED AND APPROVED BY	SUPT. ENGINEERING	DATE
APPROVED BY	SUPT.	SECTION DATE
APPROVED BY	CHIEF	DIVISION DATE
APPROVED BY	DIRECTOR	DATE



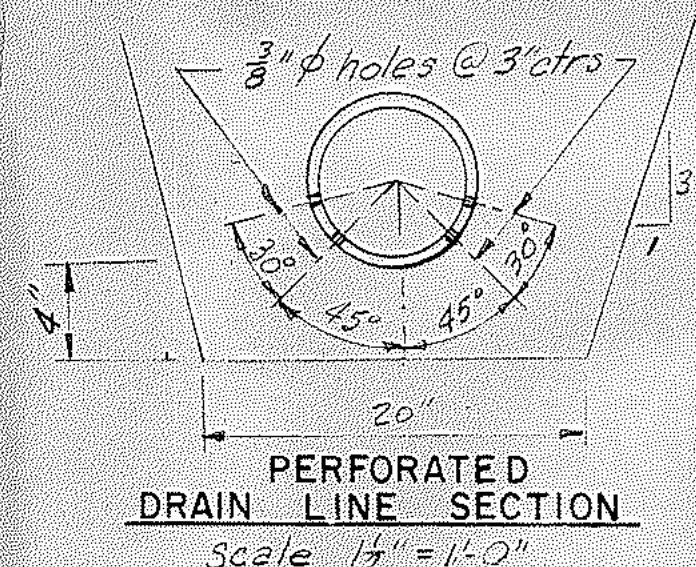
SECTION P-P  
Scale 1/2"=10"



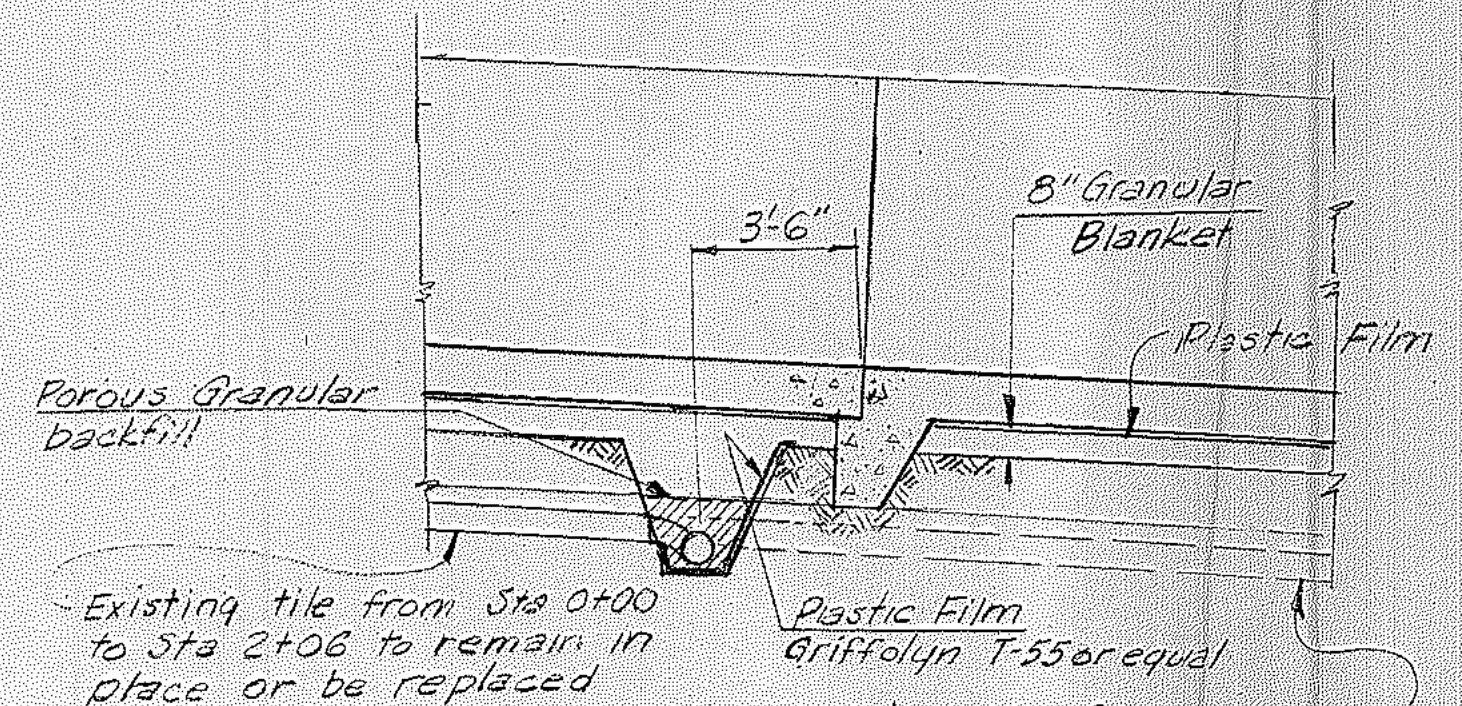
PROFILE DRAINAGE SYSTEM  
Horiz. Scale 1"=20"  
Vert. Scale 1"=5'



SECTION M-M  
Scale 1/2"=10"

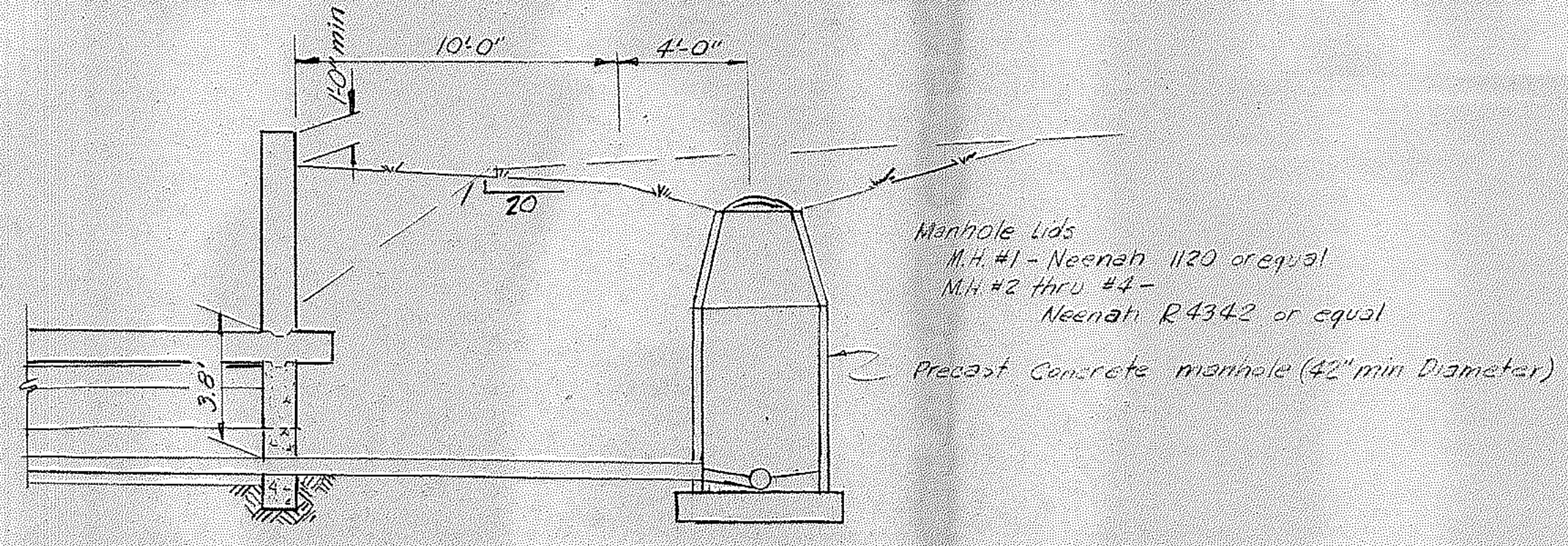


PERFORATED DRAIN LINE SECTION  
Scale 1/2"=10"



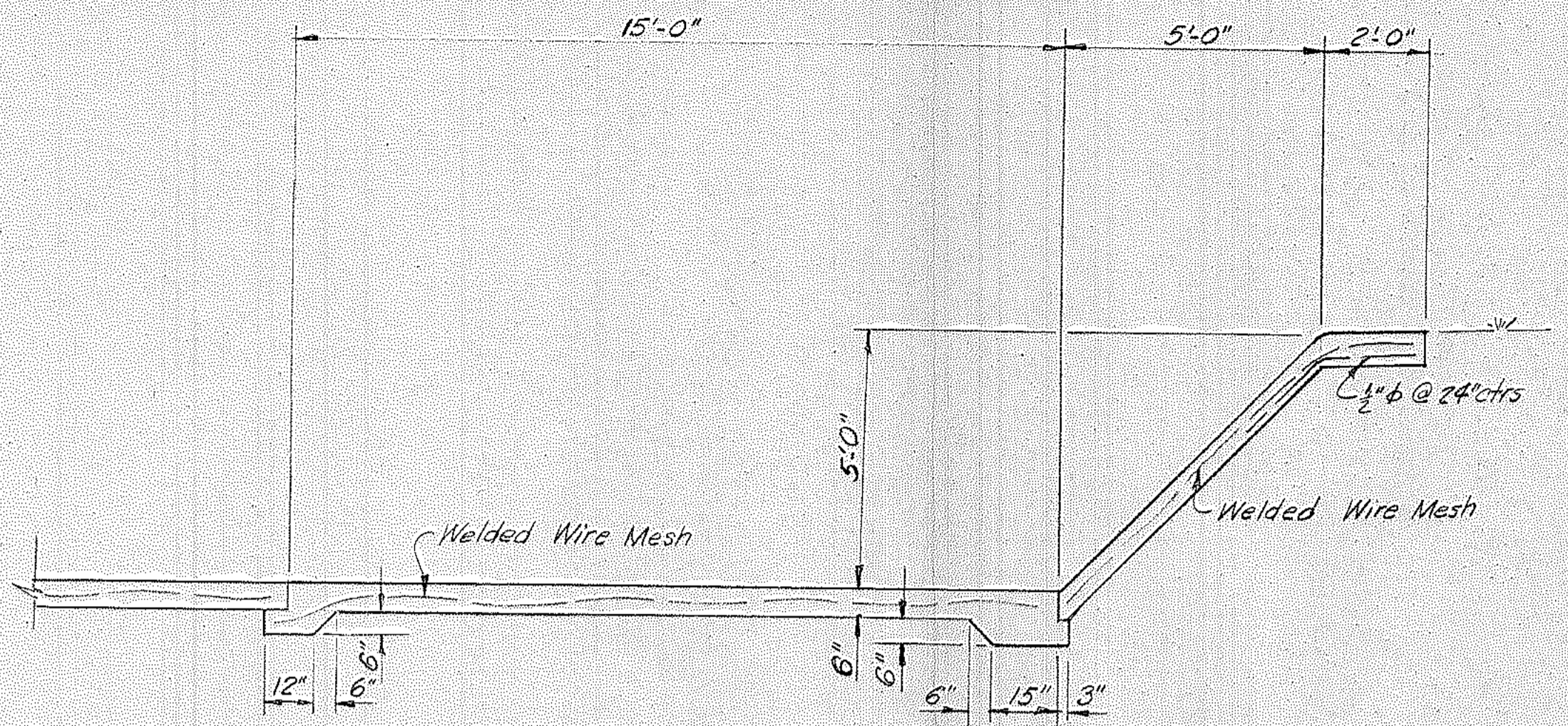
SECTION O-O  
Scale 1/2"=10"

Note: The Engineers Estimate of Special Porous Granular Backfill around Perforated Pipe is 55Tons

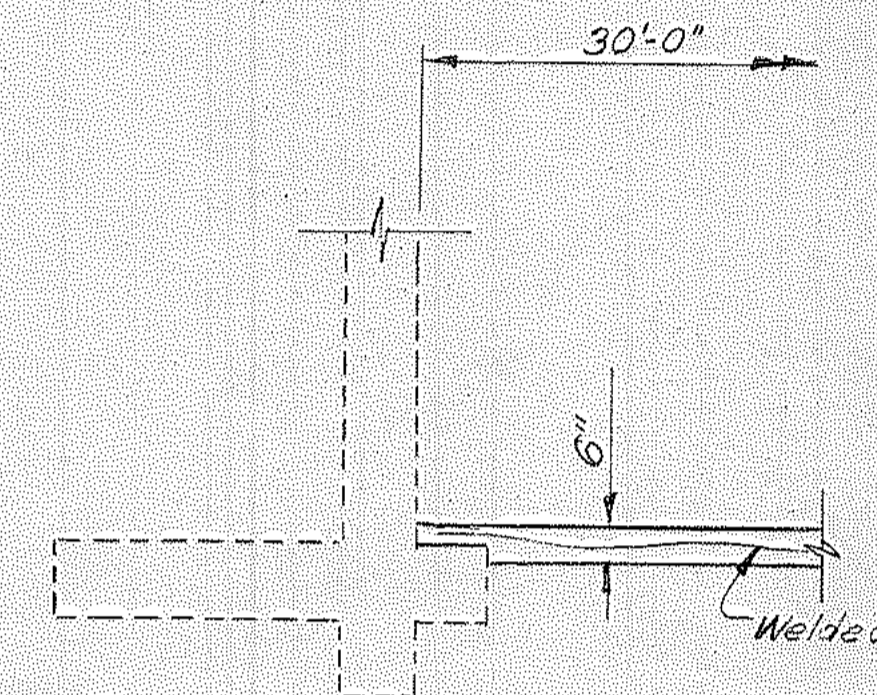


SECTION N-N  
Scale 1/2"=10"

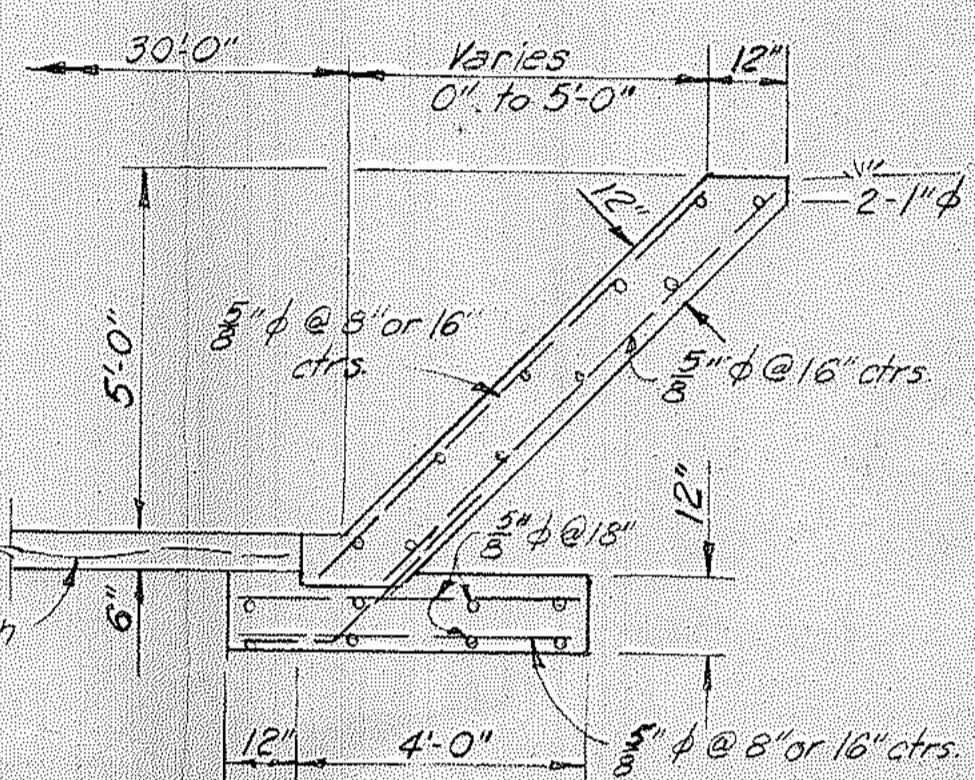
<b>STATE CONSERVATION COMMISSION</b> OF IOWA			
<b>GREEN VALLEY LAKE</b> UNION COUNTY			
DRAWN BY NPO	SPILLWAY RECONSTRUCTION DRAINAGE SYSTEM	PROJ. NO.	
DESIGNED BY		SCALE	Noted
CHECKED BY		DATE	
CHECKED AND APPROVED BY	SUPT. ENGINEERING	DATE	
APPROVED BY	SUPT.	SECTION	DATE
APPROVED BY	CHIEF	DIVISION	DATE
APPROVED BY		DIRECTOR	DATE



SECTION X-X  
Scale  $\frac{3}{8}$ " = 1'-0"

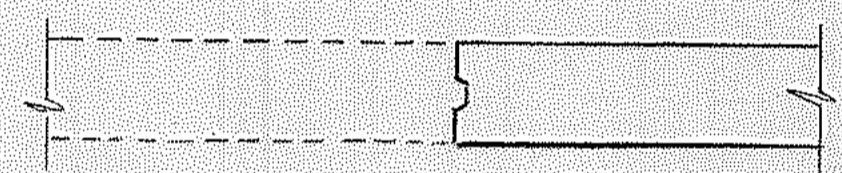


SECTION Y-Y  
Scale  $\frac{3}{8}$ " = 1'-0"



SECTION Z-Z  
Scale  $\frac{3}{8}$ " = 1'-0"

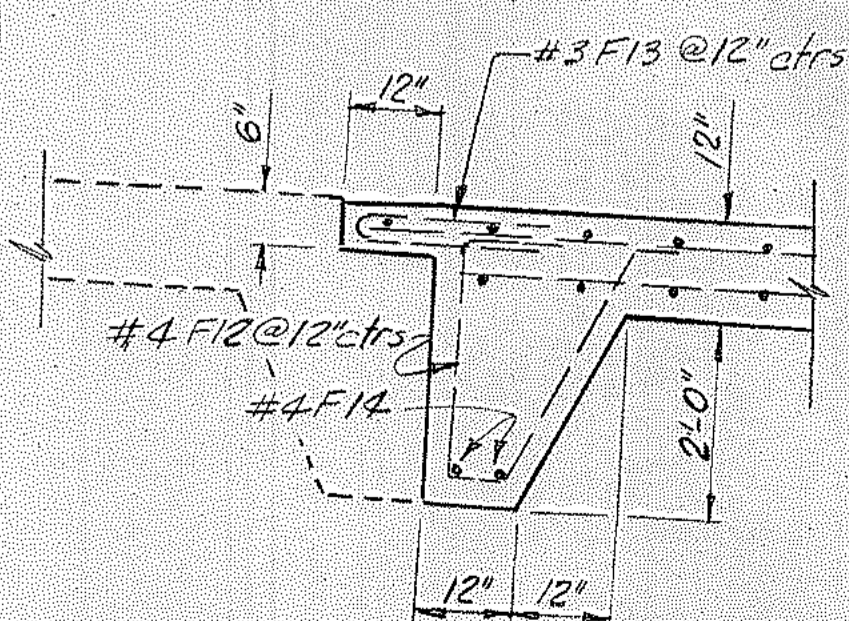
EXISTING-REMOVAL



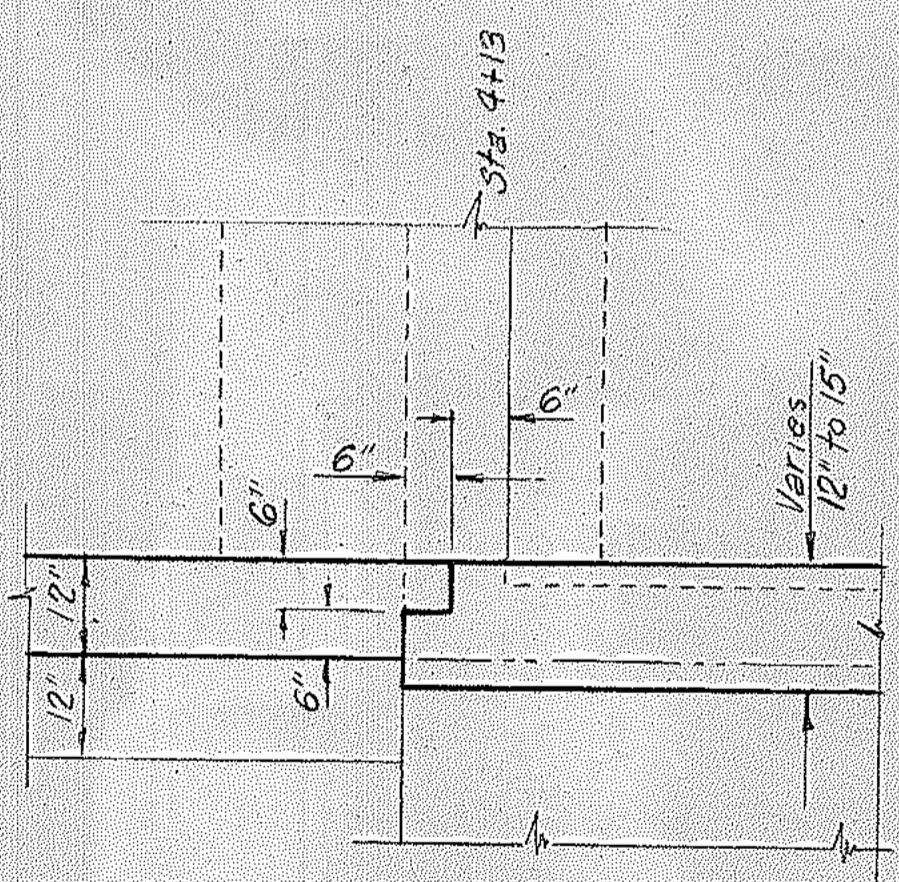
DETAIL D



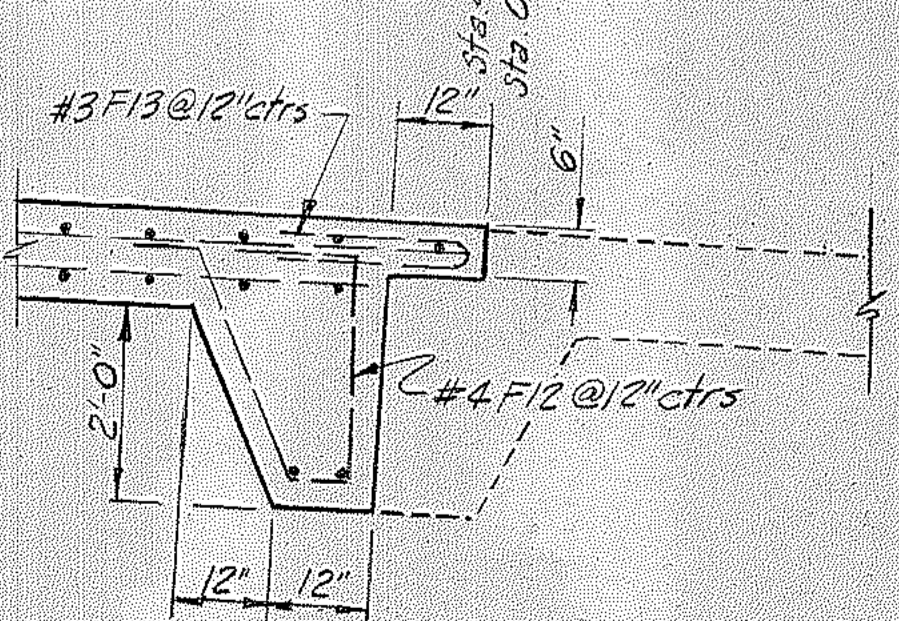
DETAIL D



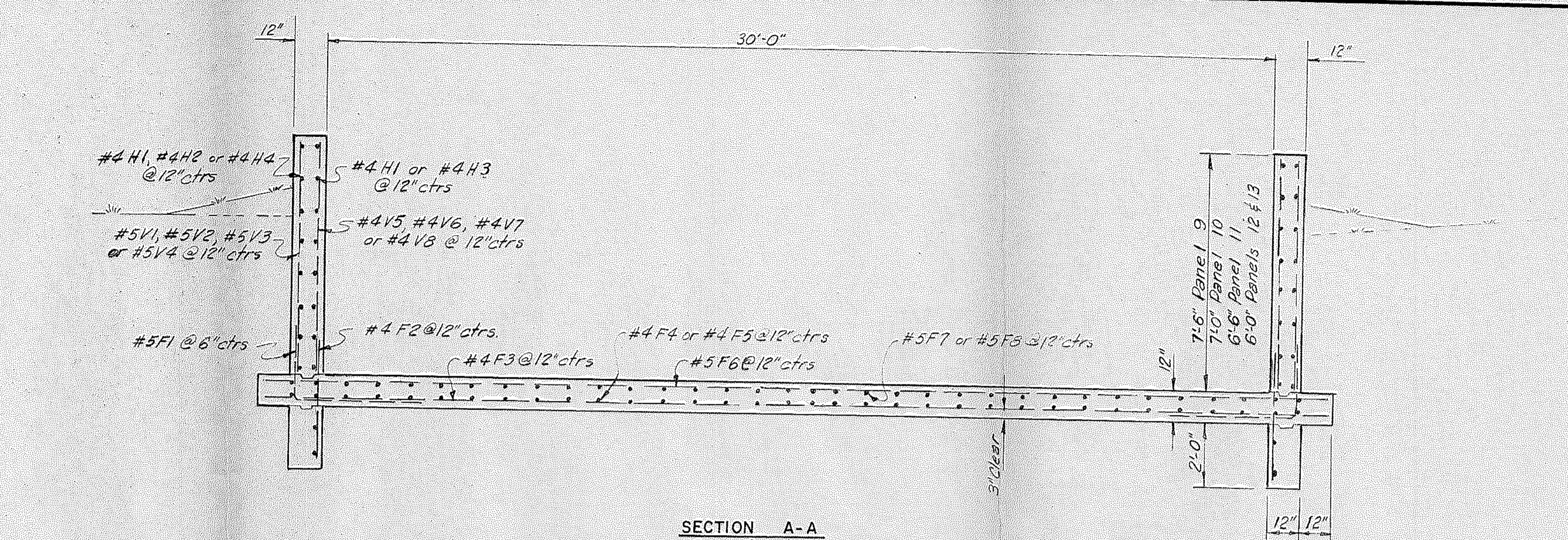
DETAIL H  
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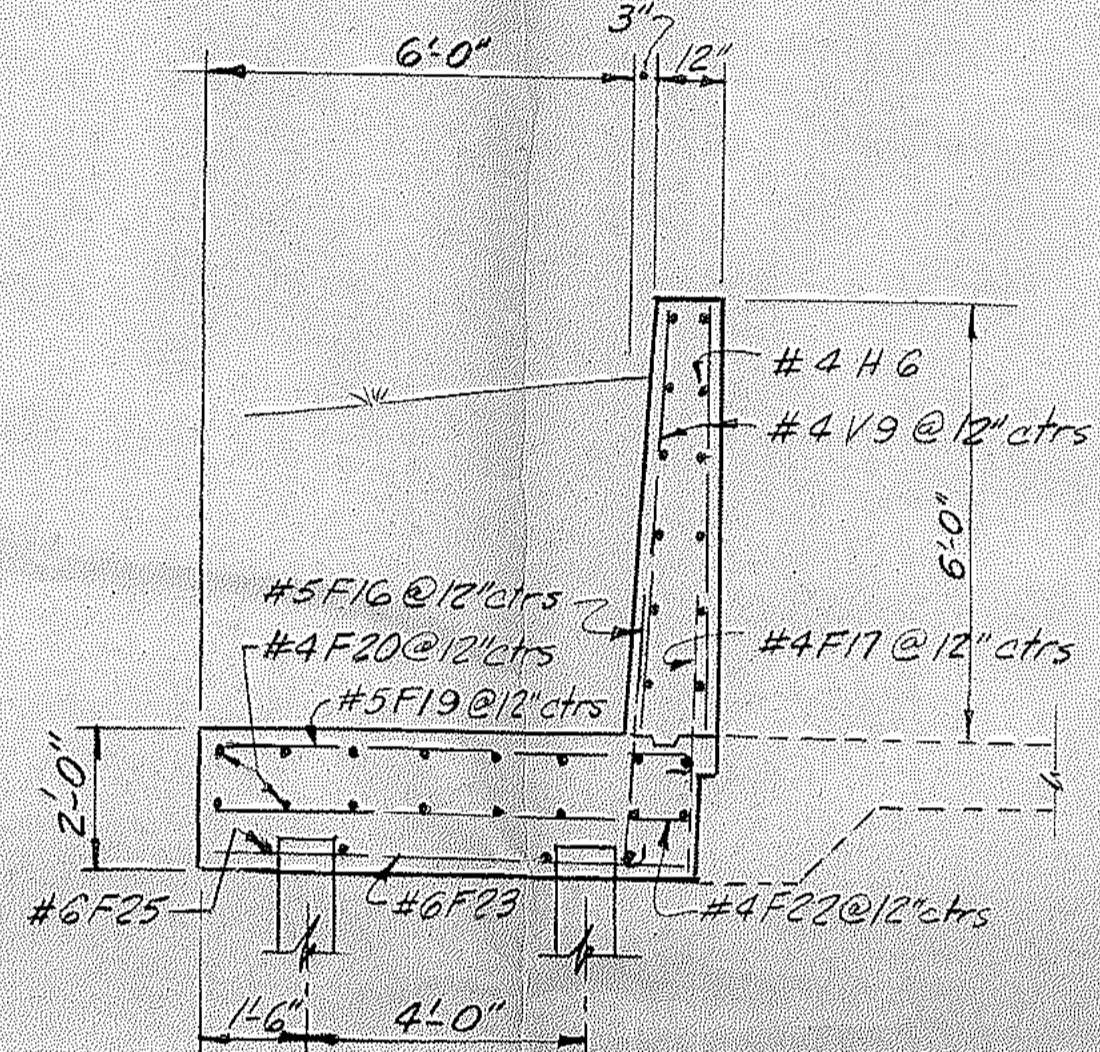
DETAIL E  
Scale  $\frac{1}{2}$ " = 1'-0"



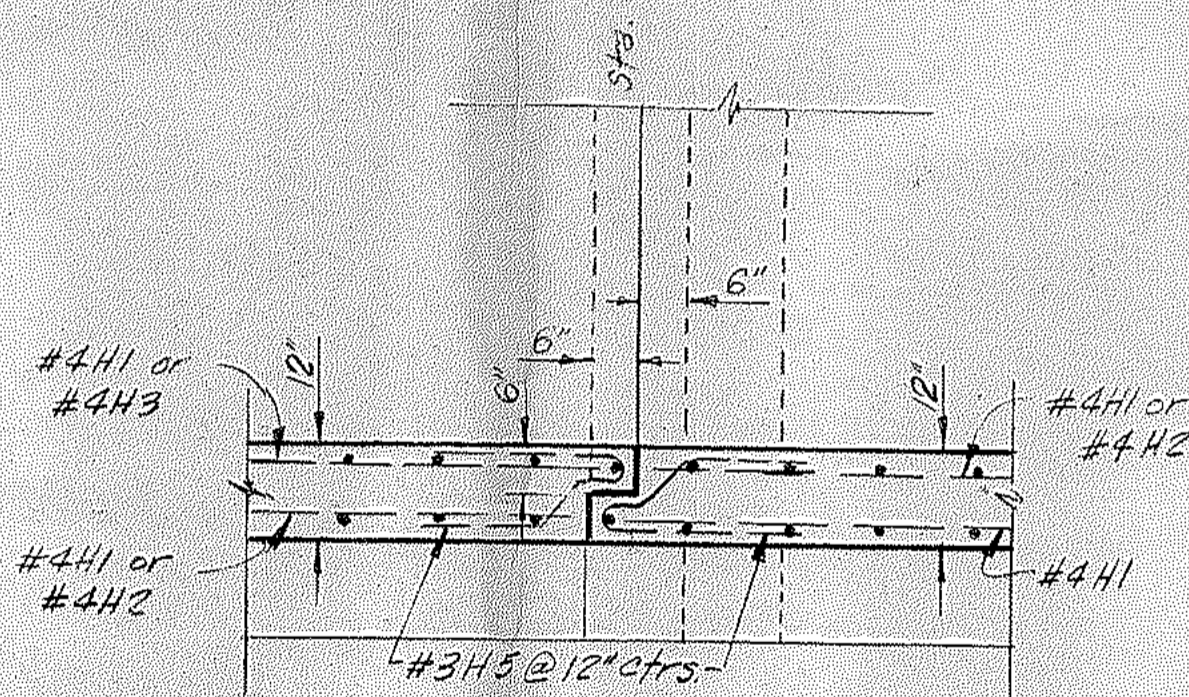
DETAIL J  
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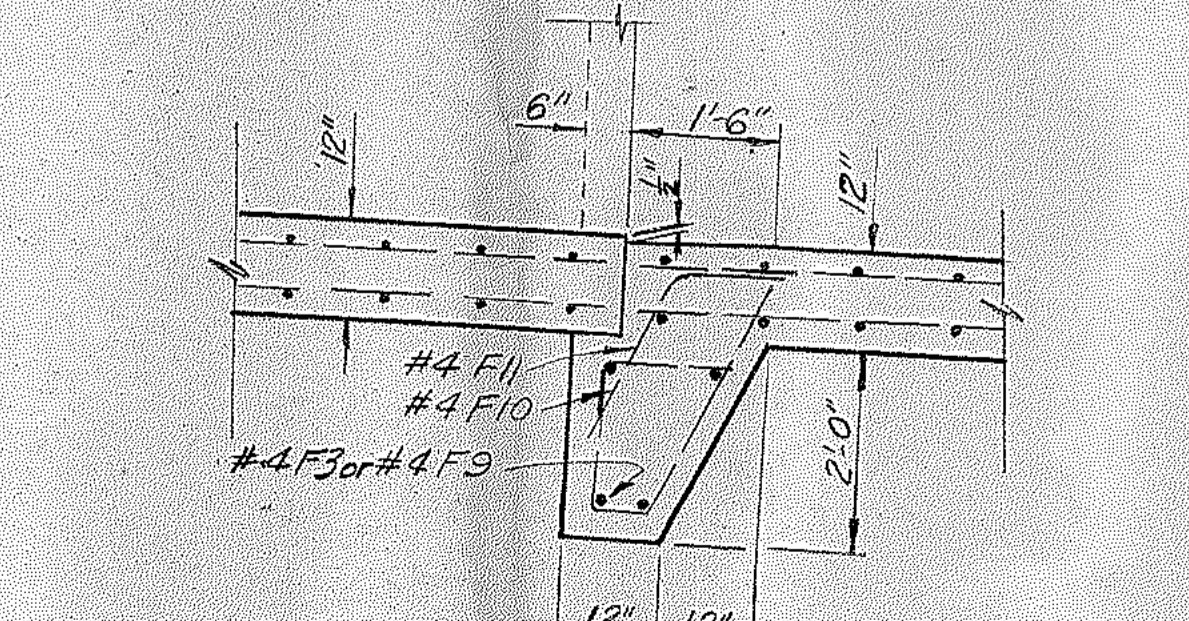
SECTION A-A  
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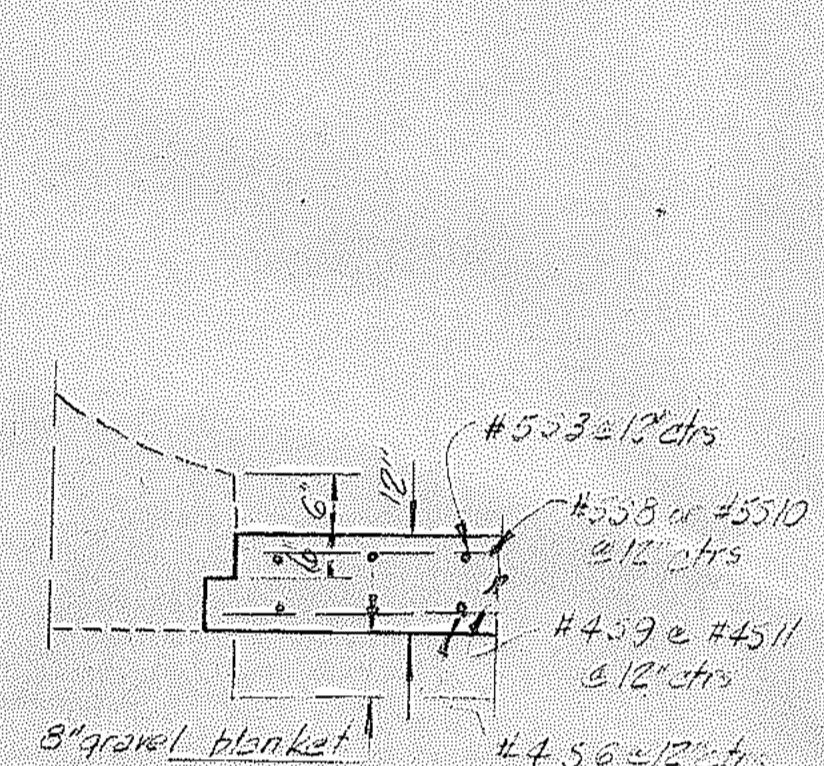
SECTION B-B  
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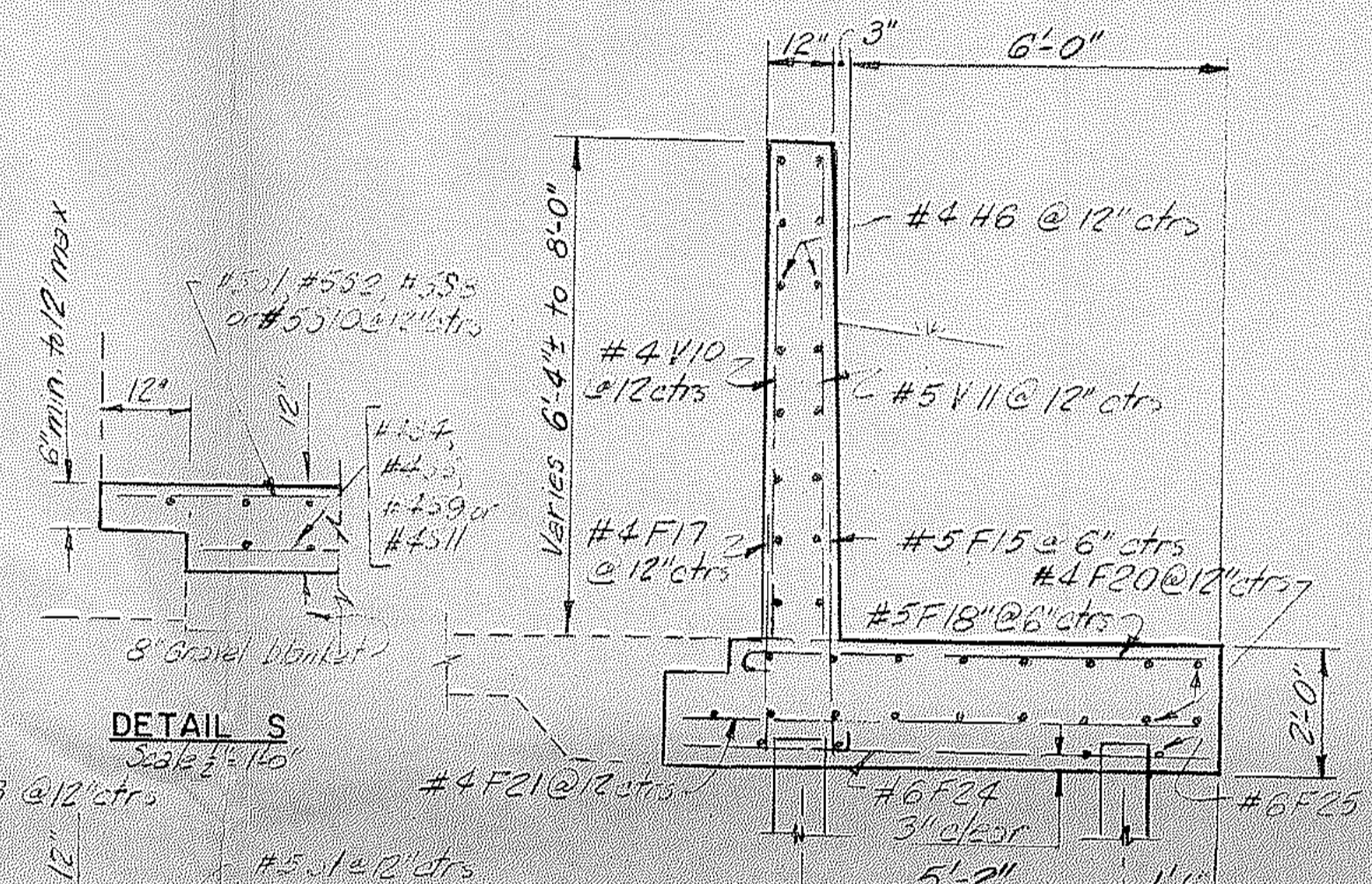
DETAIL F  
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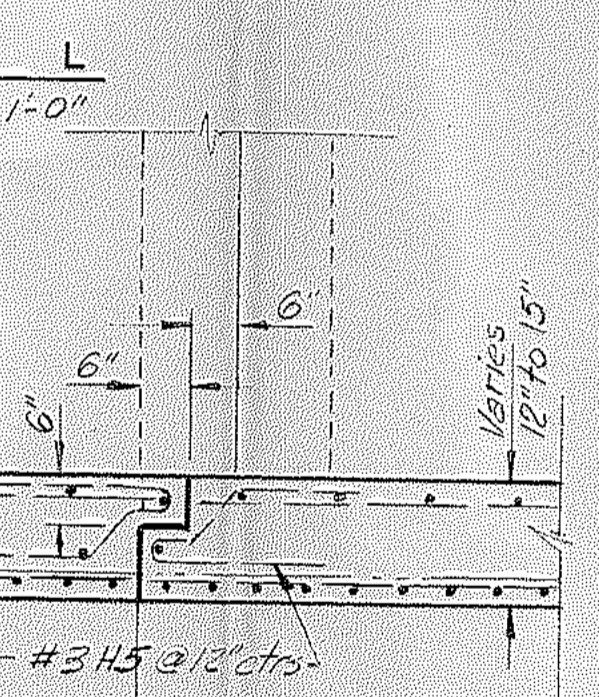
DETAIL K  
Scale  $\frac{1}{2}$ " = 1'-0"



DETAIL R  
Scale  $\frac{1}{2}$ " = 1'-0"

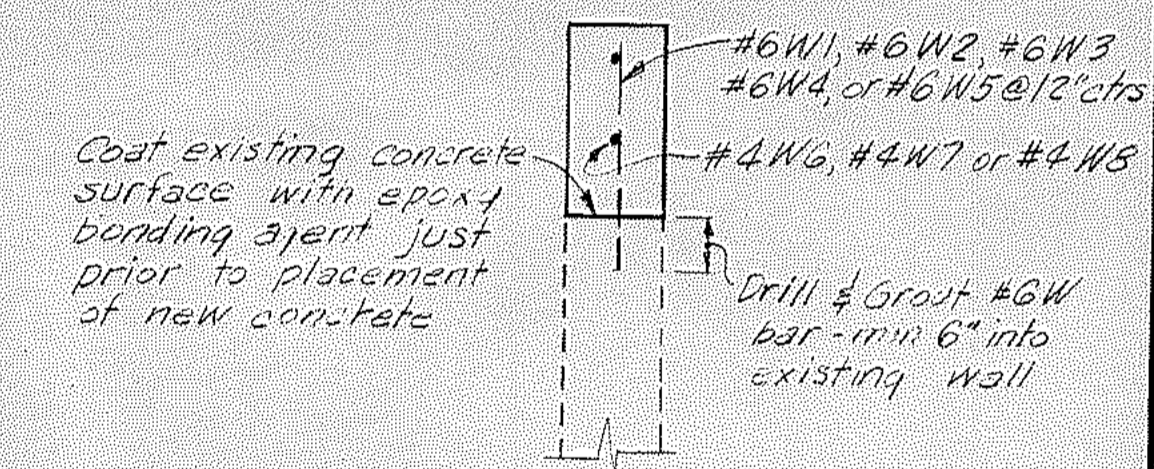


SECTION C-C  
Scale  $\frac{3}{8}$ " = 1'-0"



DETAIL L  
Scale  $\frac{1}{2}$ " = 1'-0"

DETAIL G  
Scale  $\frac{1}{2}$ " = 1'-0"



WALL SECTION  
PANELS 7, 8, 17, 18, 19  
Scale  $\frac{1}{2}$ " = 1'-0"

NOTE:  
All reinforcing shall be 3" clear of earth formed surfaces. All other clearances shall be 2" unless noted otherwise.

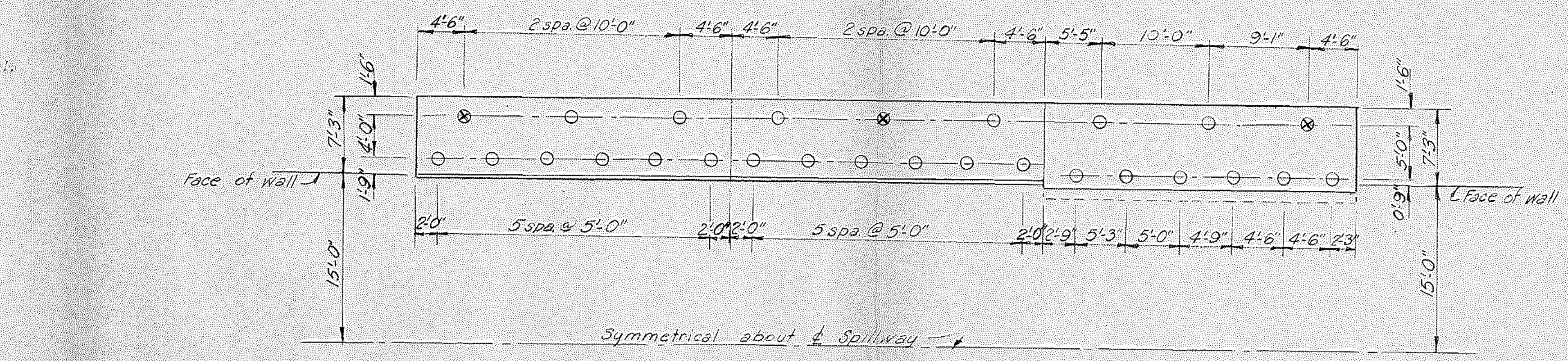
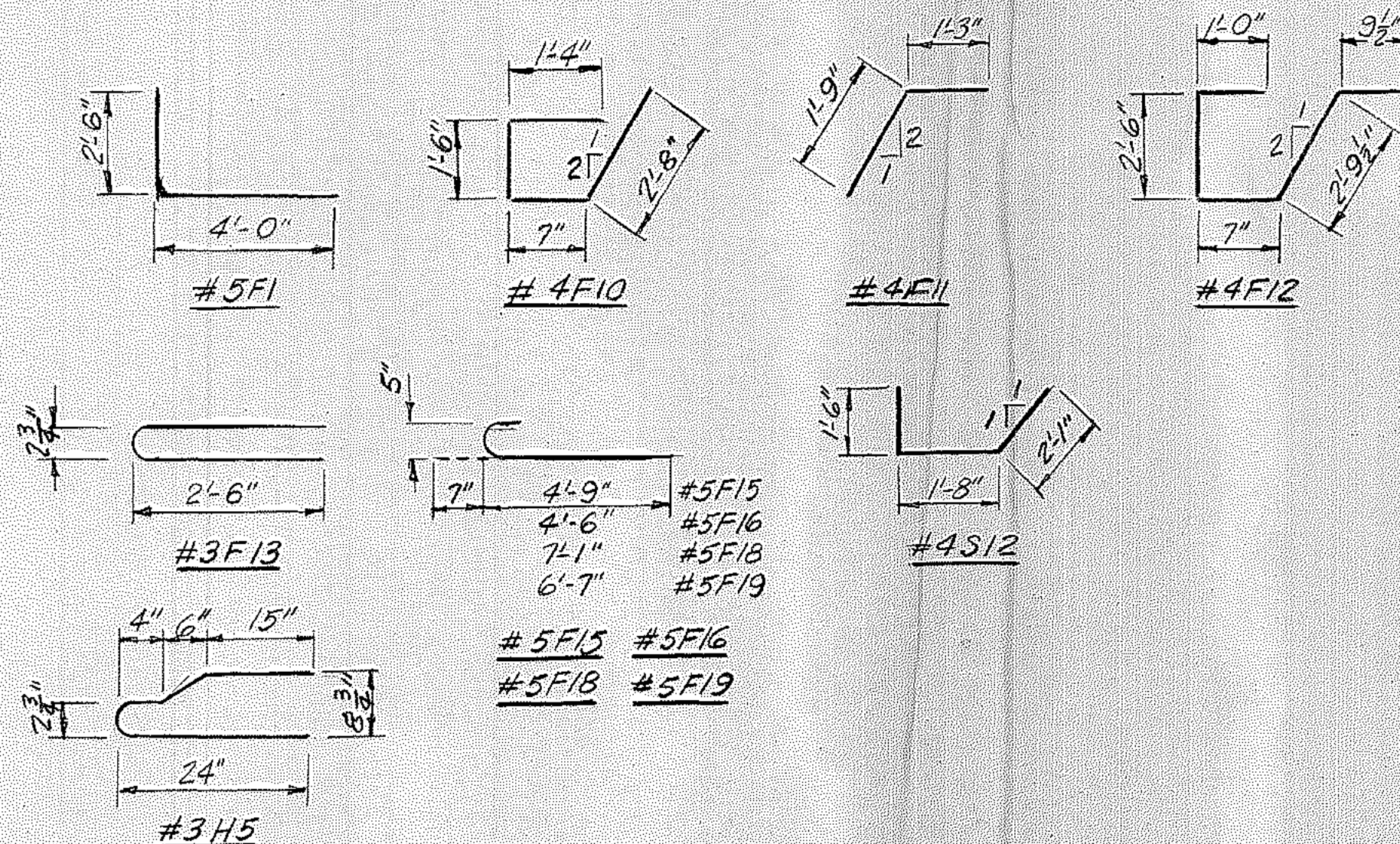
STATE CONSERVATION COMMISSION OF IOWA			
GREEN VALLEY LAKE UNION COUNTY			
DRAWN BY W.P.C.	SPILLWAY RECONSTRUCTION STRUCTURE DETAILS	PROJ. NO.	
DESIGNED BY		SCALE	No. 2
CHECKED BY		DATE	
APPROVED BY	SUPT. ENGINEERING	DATE	
APPROVED BY	DIVISION	DATE	
APPROVED BY	DIRECTOR	DATE	

# REINFORCEMENT SCHEDULE

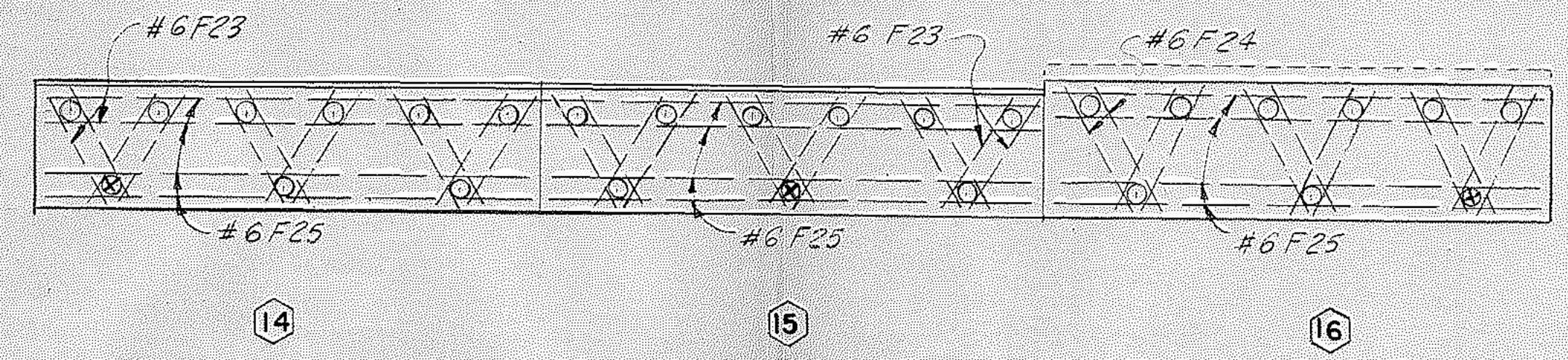
Mark	Length	Shape	Number Each Panel																	Total Number	
			1	2	7	8	9	10	11	12	13	14	15	16	17	18	19				
#5F1	6'-6"	Bent						172	160	160	160	166									808
#4F2	4'-0"	Str.						86	80	80	80	80	78								404
#4F3	33'-8"	Str.						44	44	44	44	42									218
#4F4	39'-8"	Str.							42	42	42	42									168
#4F5	42'-8"	Str.							42												42
#5F6	33'-8"	Str.						43	40	40	40	40									203
#5F7	39'-8"	Str.							30	30	30	30									120
#5F8	42'-2"	Str.							30												30
#4F9	17'-0"	Str.							4												4
#4F10	6'-1"	Bent						17	34	34	34	34									153
#4F11	3'-0"	Bent						17	34	34	34	34									153
#4F12	7'-4"	Bent						17													51
#3F13	5'-0"	Bent		30				15													75
#4F14	13'-8"	Str.							2												2
#5F15	5'-4"	Bent																			116
#5F16	5'-1"	Bent																			116
#4P17	3'-6"	Str.							58	58	58	58									174
#5F18	7'-2"	Bent							58	58	58	58									116
#5F19	7'-2"	Bent							16	16	16	17									49
#4P20	28'-6"	Str.																			58
#4P21	8'-3"	Str.																			58
#4P22	6'-6"	Str.							58	58											116
#6P23	9'-0"	Str.																			24
#6P24	7'-8"	Str.																			8
#6P25	28'-6"	Str.																			8
#5S1	14'-8"	Str.				25															25
#5S2	29'-8"	Str.					25														25
#5S3	24'-8"	Str.	35	33	15	30															113
#4S4	12'-8"	Str.				25															25
#4S5	27'-8"	Str.					25														25
#4S6	29'-8"	Str.	34	32	13	14															93
#4S7	24'-8"	Str.					14														14
#5S8	Var.	Str.				25															25
#4S9	Var.	Str.				25															25
#5S10	Var.	Str.				25															25
#4S11	Var.	Str.				25															25
#4S12	5'-3"	Bent				25															25
#4F1	39'-8"	Str.							28	28	24	12									92
#4F2	28'-2"	Str.										12									12
#4F3	42'-8"	Str.										16									16
#4F4	42'-2"	Str.										16									16
#3H5	3'-9"	Bent										28	28	24	24	24	24	16			184
#4H6	28'-8"	Str.																			30
#5V1	7'-4"	Str.							96												96
#5V2	6'-10"	Str.								90											90
#5V3	6'-4"	Str.								80											80
#5V4	5'-10"	Str.									60	80									160
#4V5	7'-4"	Str.							88												88
#4V6	6'-10"	Str.								84											84
#4V7	6'-4"	Str.									84	82									166
#4V8	5'-10"	Str.										116	116								232
#4V9	5'-10"	Str.											2 @ 29								2 @ 29
#4V10	Var.	Str.											2 @ 29								2 @ 29
#5V11	Var.	Str.											2 @ 29								2 @ 29
#6W1	Var.	Str.												22							22
#6W2	Var.	Str.													29						29
#6W3	Var.	Str.														29					29
#6W4	Var.	Str.															10				10
#6WS	Var.	Str.																25			25
#4W6	27'-3"	Str.																			10
#4W7	24'-3"	Str.																			2
#4W3	9'-0"	Str.																			2

Mark	Variable Lengths
#5S8	28'-8" - 32'-2"
#4S9	28'-8" - 31'-2"
#5S10	32'-2" - 34'-8"
#4S11	31'-2" - 33'-8"
#4V10	6'-2" - 7'-10"
#5V11	6'-2" - 7'-10"
#6W1	10" - 19"
#6W2	19" - 31"
#6W3	31" - 42"
#6W4	11" - 27"
#6WS	11" - 27"

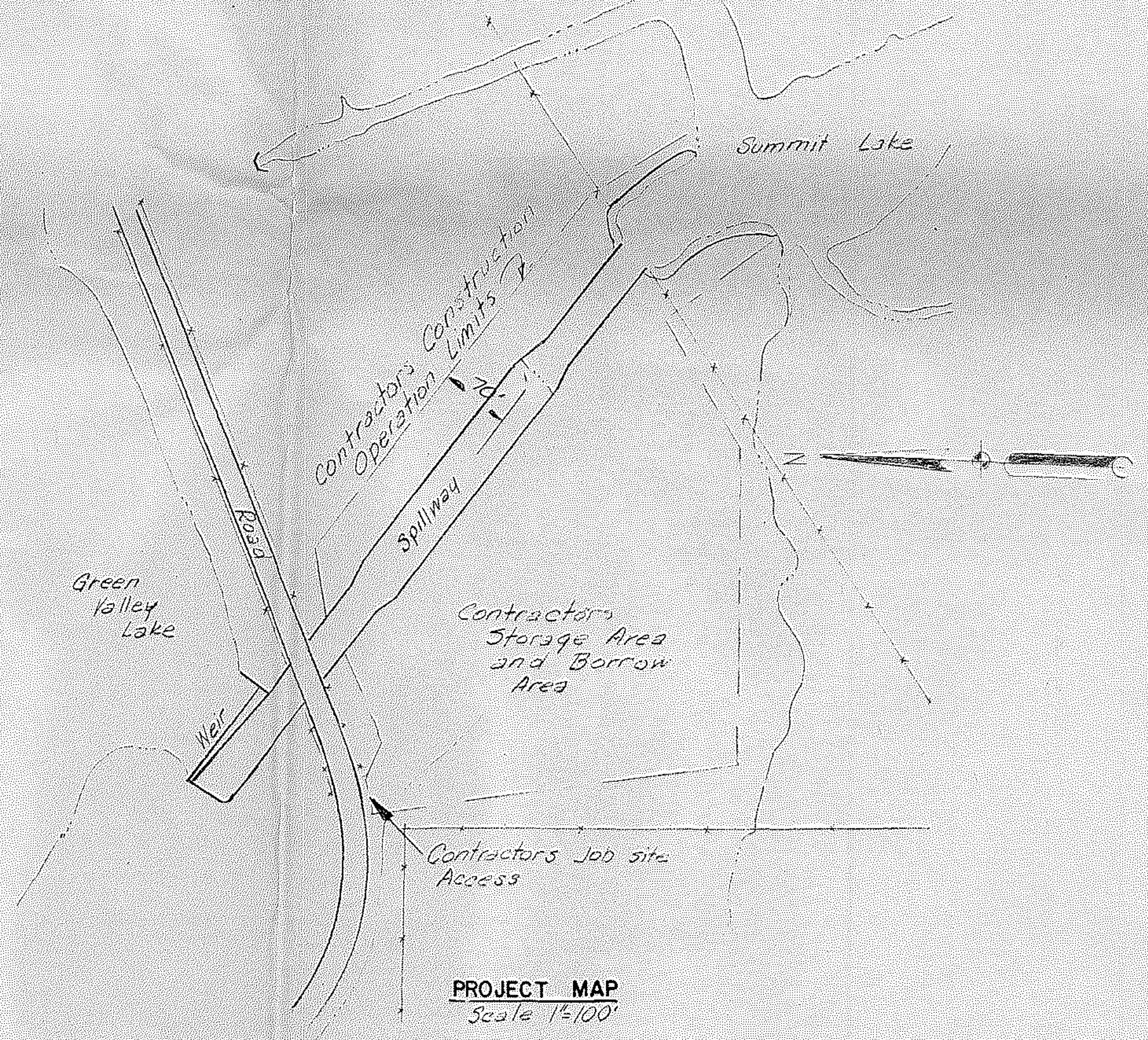
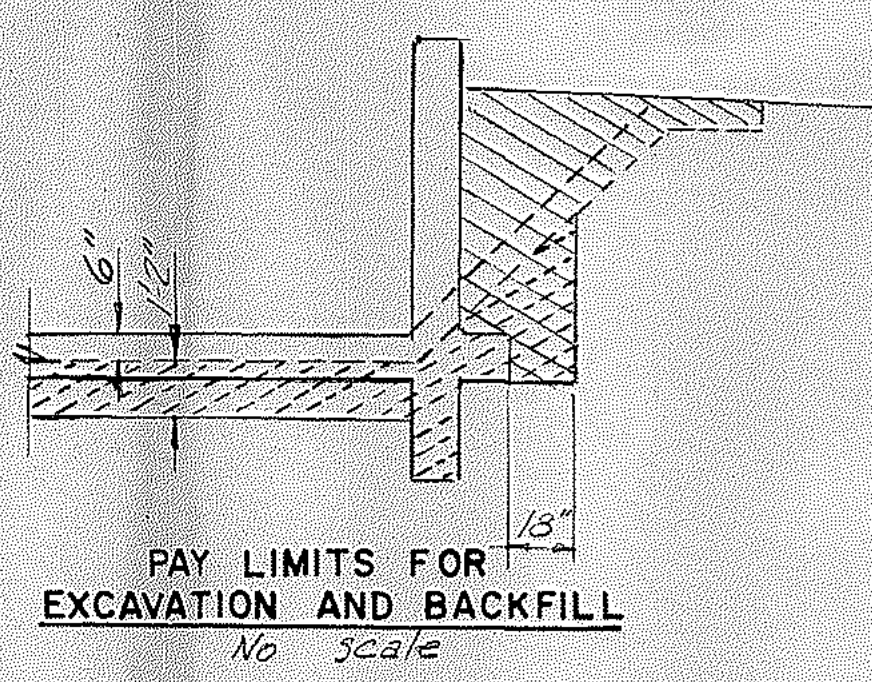
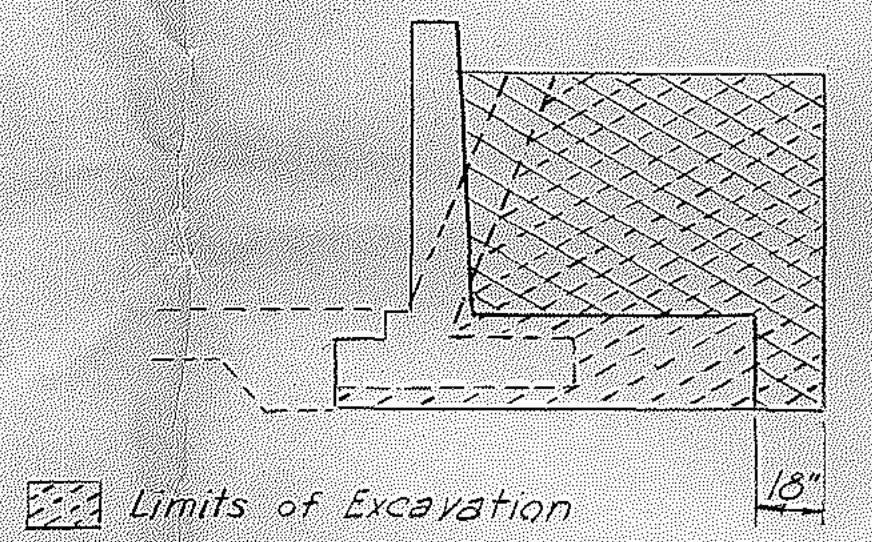
### REINFORCEMENT BENDING DIAGRAMS



Note: ⊗ Designates Placement of test piles



FOOTING PLAN SHOWING PILE LOCATIONS  
Scale 1/8" = 1'-0"



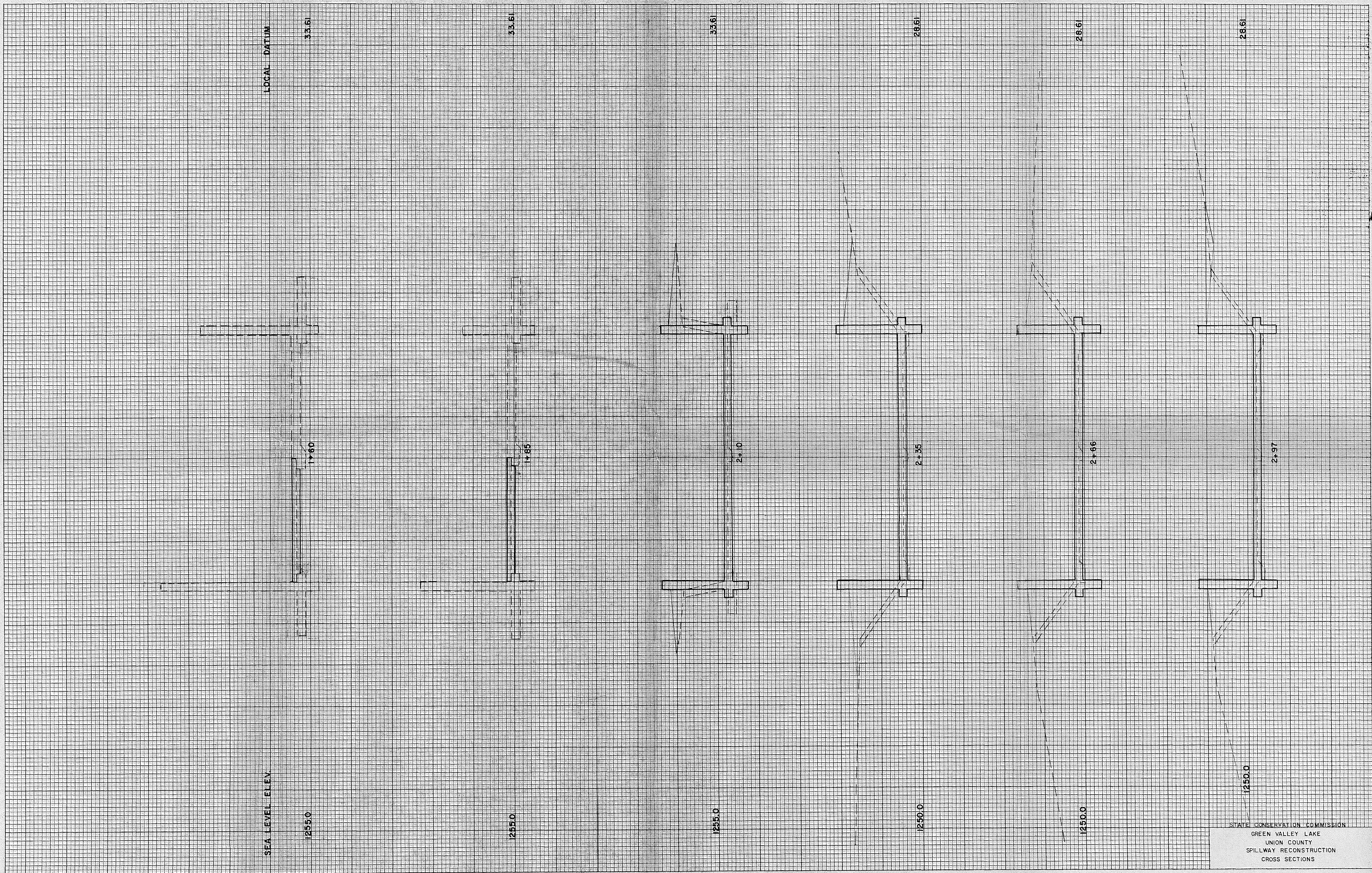
<b>STATE CONSERVATION COMMISSION</b> OF IOWA			
<b>GREEN VALLEY LAKE</b> UNION COUNTY			
DRAWN BY WCO	SPILLWAY RECONSTRUCTION MISCELLANEOUS DETAILS	PROJ. NO.	
DESIGNED BY		SCALE	Noted
CHECKED BY		DATE	
CHECKED AND APPROVED BY		SUPT. ENGINEERING DATE	
APPROVED BY		SUPT. SECTION DATE	
APPROVED BY		CHIEF DIVISION DATE	
APPROVED BY		DIRECTOR DATE	



7772  
 JAMES YEHLER  
 CIVIL ENGINEER  
 1000 N. LAUREL ST.  
 CHICAGO, ILL. 60610

7772  
 JAMES YEHLER  
 CIVIL ENGINEER  
 1000 N. LAUREL ST.  
 CHICAGO, ILL. 60610

THE FREDERICK LORL CO. - CHICAGO  
 100 W. WASHINGTON ST. - CHICAGO, ILL. 60602  
 DRAWN BY: J. L. H. / CHECKED BY: J. L. H. / DATE: 11/11/61



STATE CONSERVATION COMMISSION  
 GREEN VALLEY LAKE  
 UNION COUNTY  
 SPILLWAY RECONSTRUCTION  
 CROSS SECTIONS

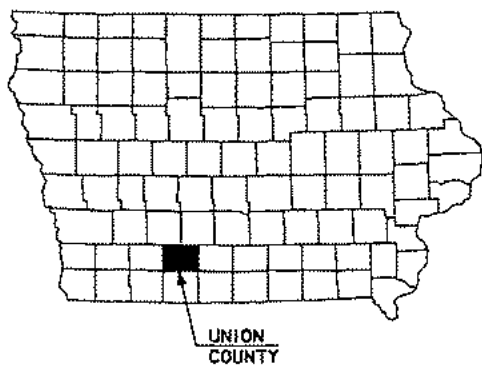


ESTIMATED QUANTITIES			
NO.	DESCRIPTION	UNIT	QUANTITY
1	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	342
2	POROUS BACKFILL MATERIAL	CY	127
3	REMOVAL OF CONCRETE	CY	453
4	GRANULAR MATERIAL	CY	409
5	EXCAVATION	CY	4515
6	STRUCTURAL CONCRETE	CY	942
7	REINFORCING STEEL	LB	95770
8	CONCRETE REPAIR	SF	120
9	SUBDRAIN, PERFORATED PLASTIC PIPE, 6 IN. DIA.	LF	460
10	ENGINEERING FABRIC	SY	950
11	REVTMENT, RUBBLIZED CONCRETE	CY	320
12	FENCE, CHAIN LINK, 42 IN. HEIGHT	LF	214
13	JOINT CLEANING AND RESEALING	LF	200
14	SEEDING AND FERTILIZING	ACRE	0.40

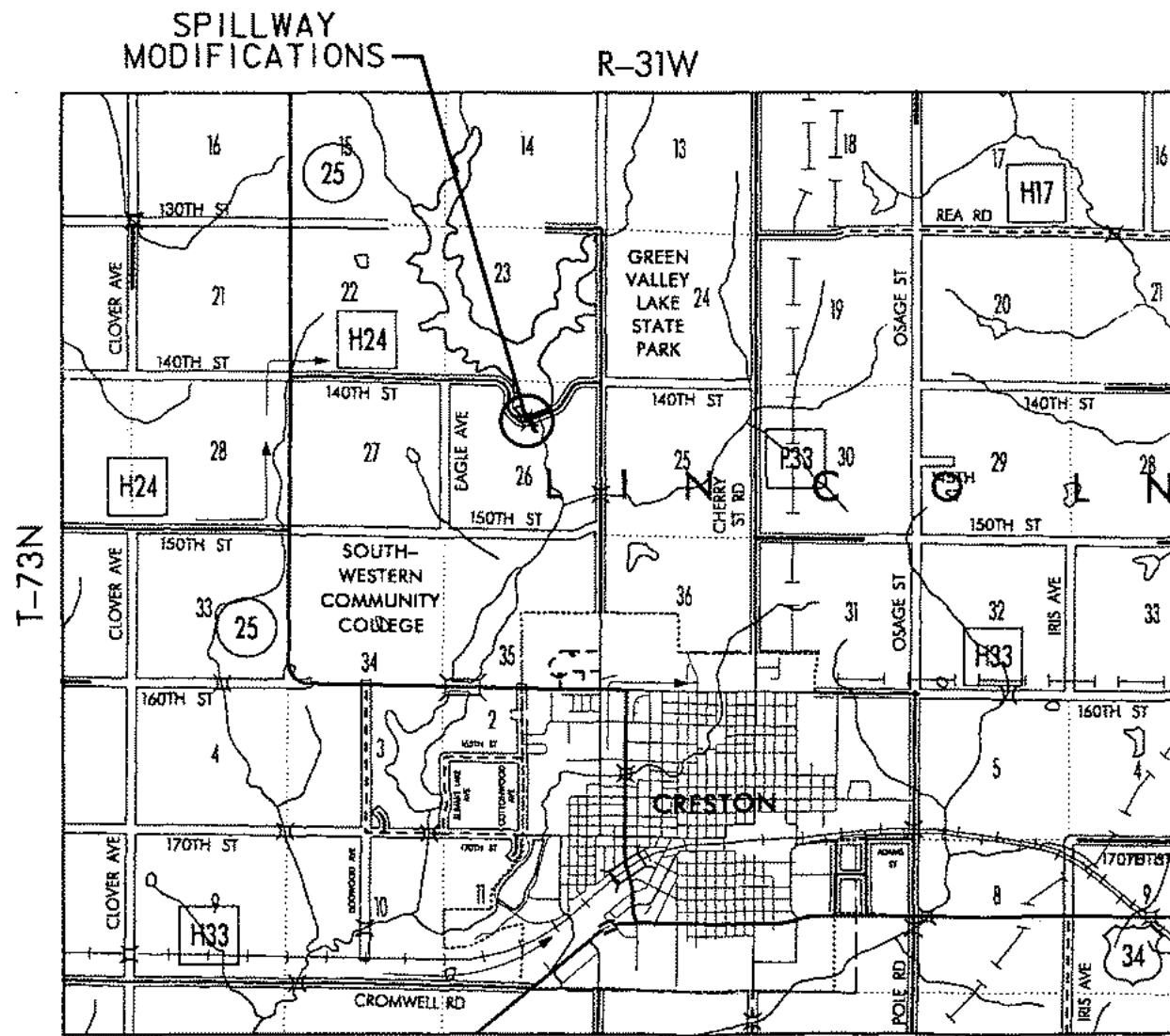
DEPARTMENT OF NATURAL RESOURCES  
ENGINEERING BUREAU  
**CONSTRUCTION PLANS**  
**FOR**  
**GREEN VALLEY STATE PARK**  
**UNION COUNTY, IOWA**  
**SPILLWAY MODIFICATIONS**  
PROJECT NO. 09-04-88-01

DRAWING INDEX	
SHEET NO.	DESCRIPTION
A.01	TITLE SHEET
G.01	GRADING AND SUBDRAIN PLAN
D.01	EXISTING SPILLWAY REMOVALS AND REPAIRS
D.02	EXISTING SPILLWAY SECTIONS AND DETAILS
D.03	EXISTING SPILLWAY SECTIONS AND DETAILS
P.01	PROPOSED SPILLWAY PLAN AND PROFILE
P.02	PROPOSED SPILLWAY SECTIONS AND DETAILS
P.03	CONCRETE REPAIR DETAILS
P.04	SAFETY FENCE DETAILS

Department of Natural Resources  
**APPROVED PLANS**  
Flood Plain Permit FP No. 2010-13



**KM KIRKHAM  
MICHAEL**



PROJECT LOCATION  
NOT TO SCALE

REVISIONS	
	DATE
	DATE
	DATE

*[Signature]* 11-17-08  
DONALD R. LABATE, P.E. - CHIEF - ENGINEERING BUREAU DATE

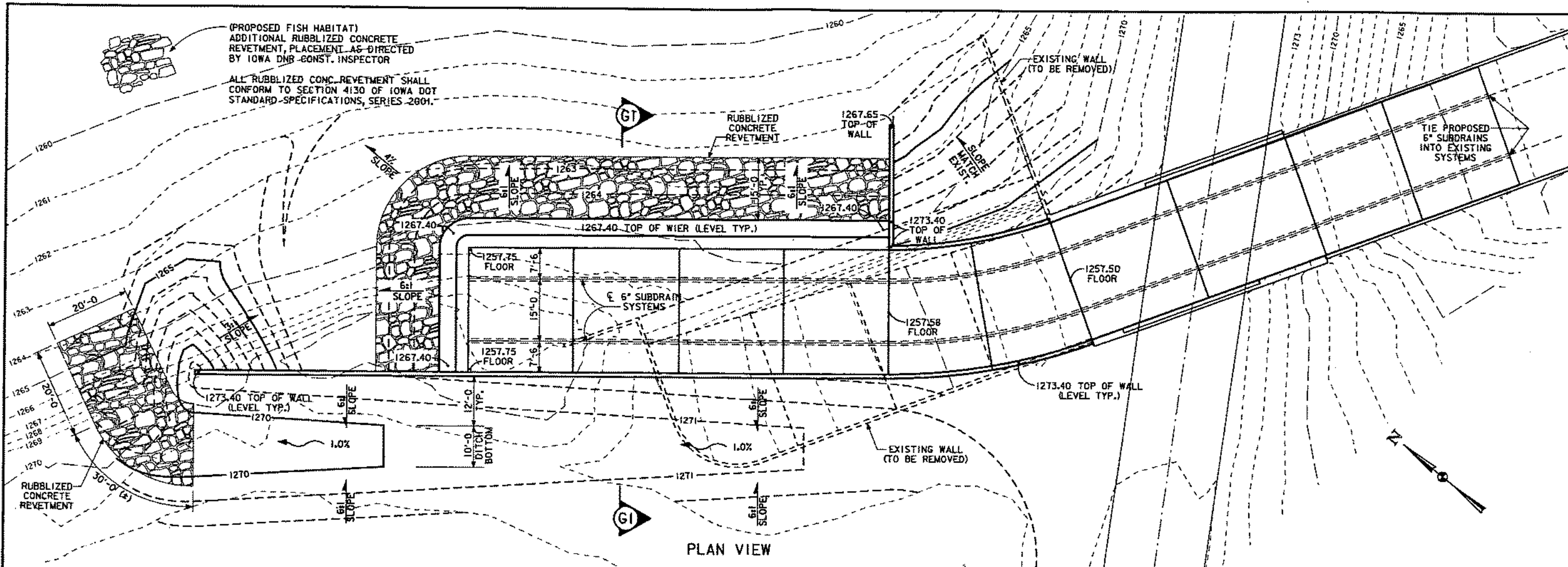
*[Signature]* 11-17-08  
KEN YERRING - ADMINISTRATOR - CONSERVATION AND RECREATION DIVISION DATE

*[Signature]* 11-17-08  
LIZ CHRISTIANSEN - DEPUTY DIRECTOR - DEPARTMENT OF NATURAL RESOURCES DATE

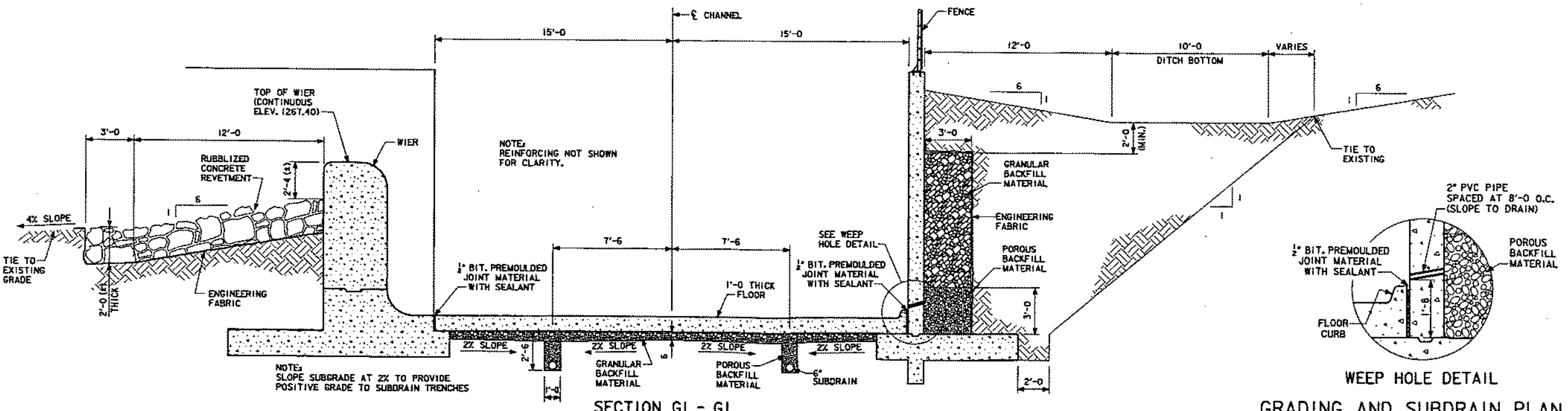
I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

KEVIN L. ARP, P.E. DATE  
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2008  
LICENSE NO.: 13292  
PAGES OR SHEETS COVERED BY THIS SEAL:  
ALL SHEETS



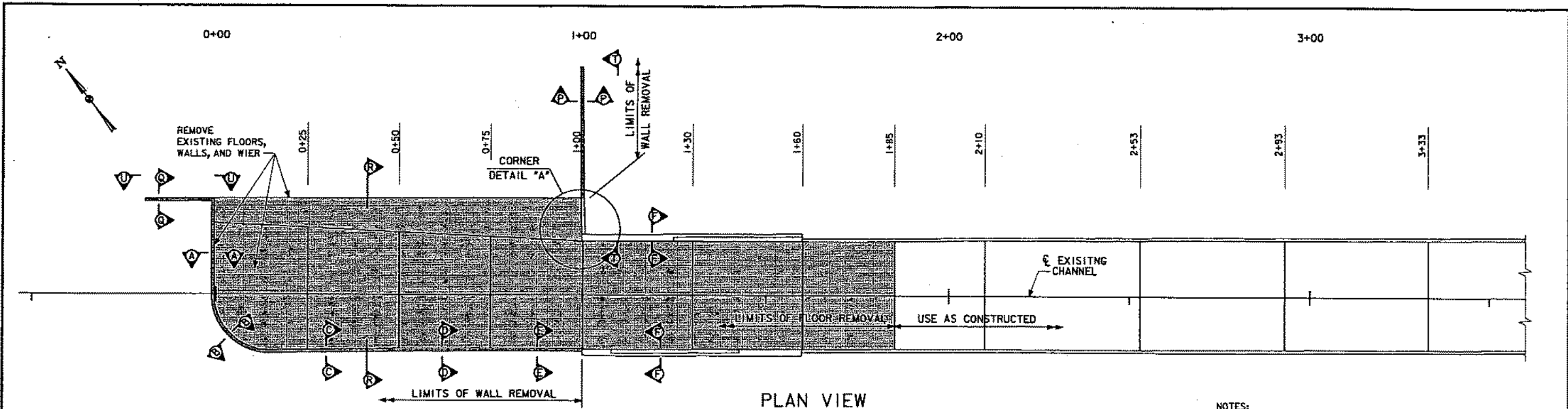


PLAN VIEW



SECTION G1 - G1

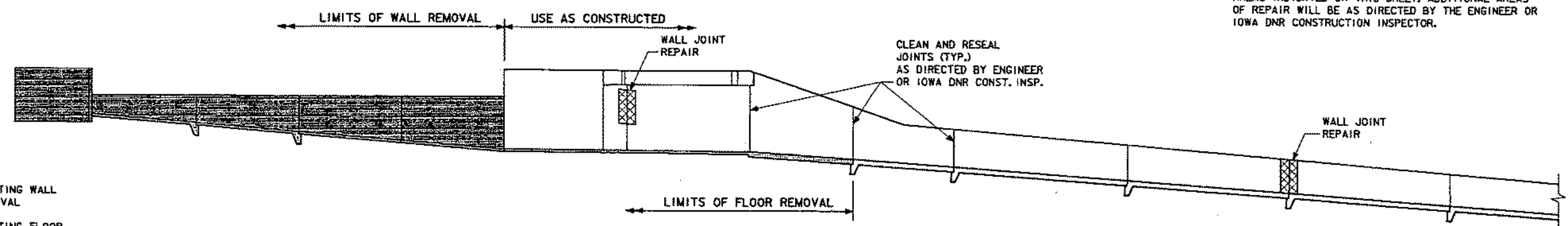
GRADING AND SUBDRAIN PLAN



PLAN VIEW

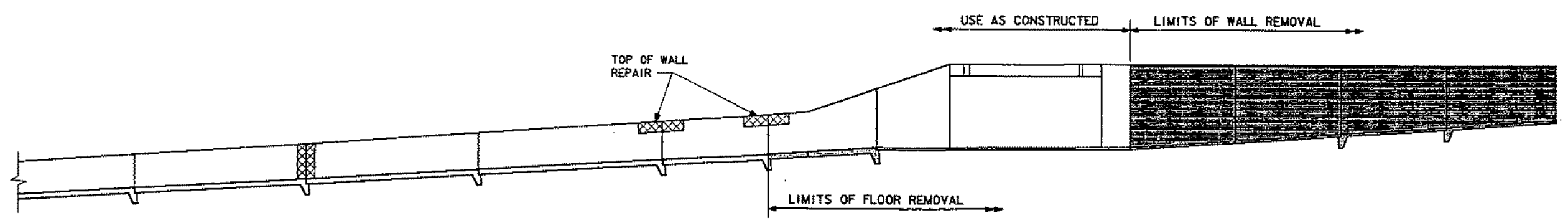
NOTES:

1. ALL SAWCUTTING SHALL BE INCIDENTAL TO CONCRETE REPAIRS AND REMOVALS.
2. CONCRETE REPAIR QUANTITIES ARE BASED ON THE AREAS INDICATED ON THIS SHEET. ADDITIONAL AREAS OF REPAIR WILL BE AS DIRECTED BY THE ENGINEER OR IOWA DNR CONSTRUCTION INSPECTOR.



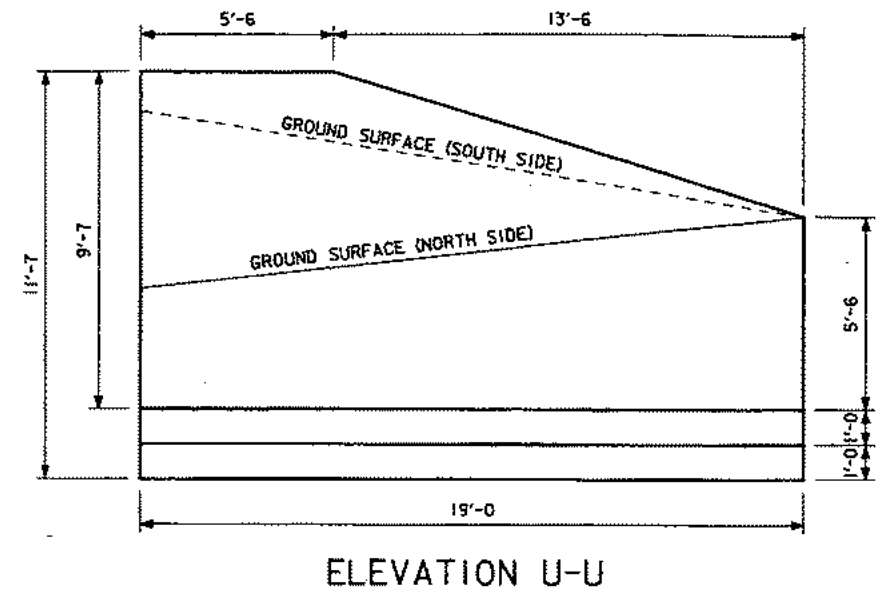
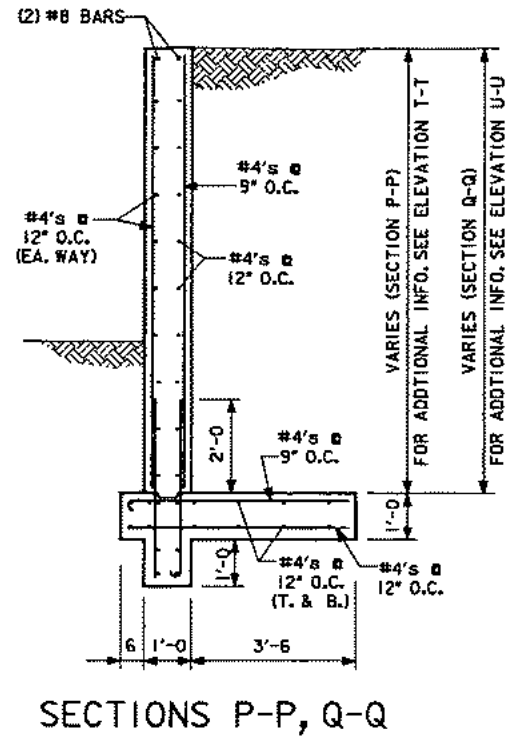
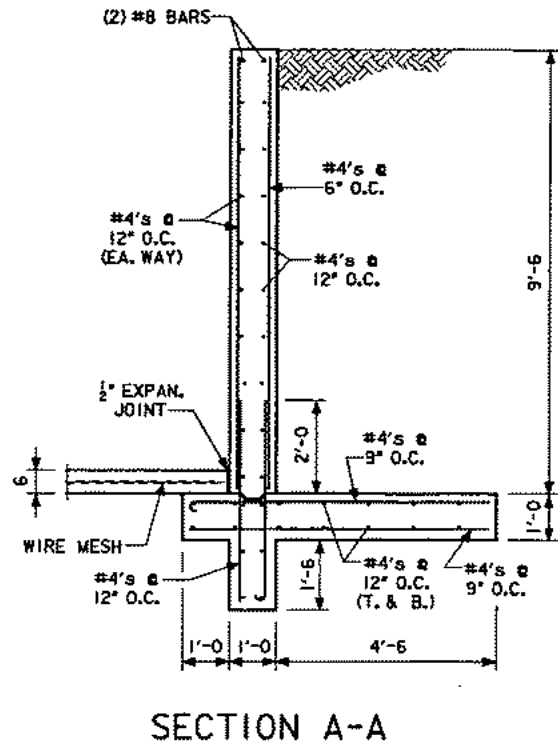
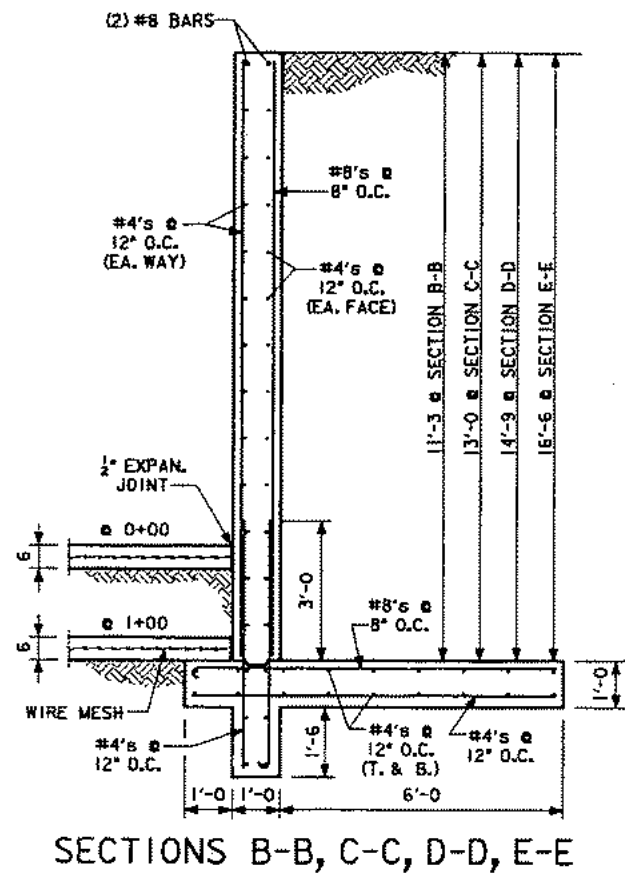
NORTHEAST WALL ELEVATION  
(LOOKING N.E.)

- EXISTING WALL REMOVAL
- EXISTING FLOOR REMOVAL
- CONCRETE REPAIR

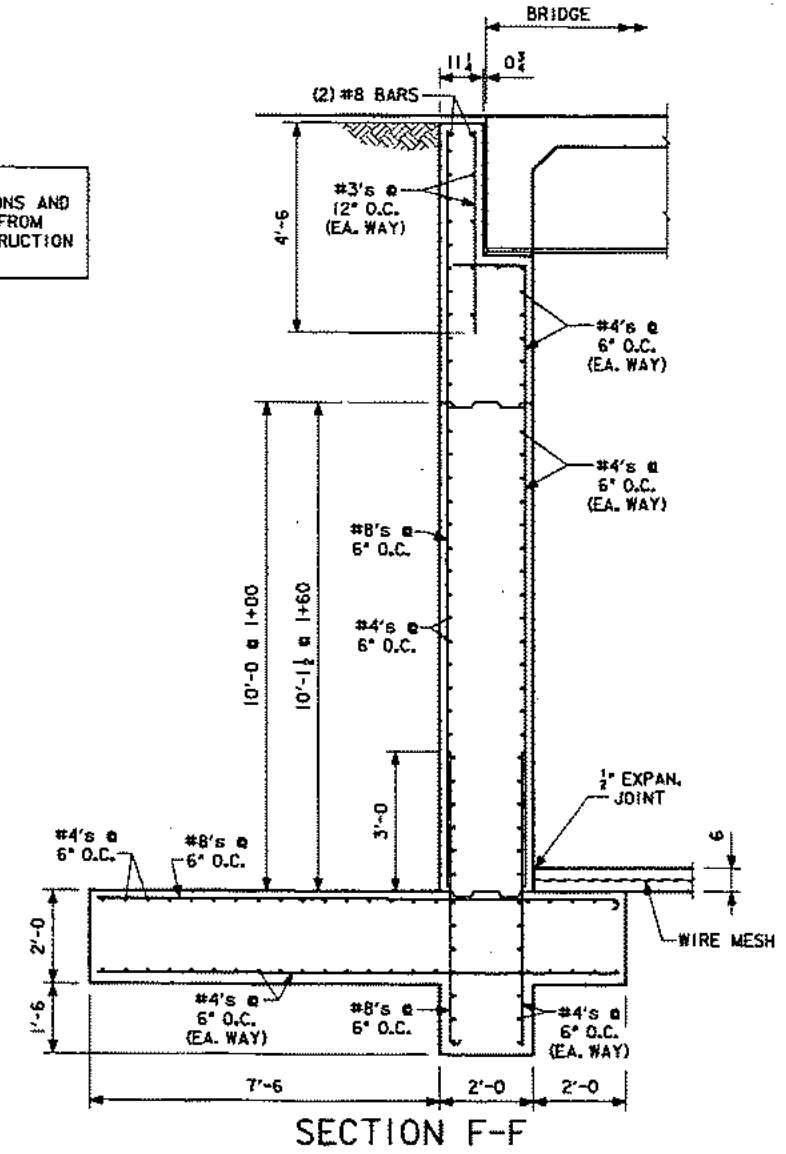
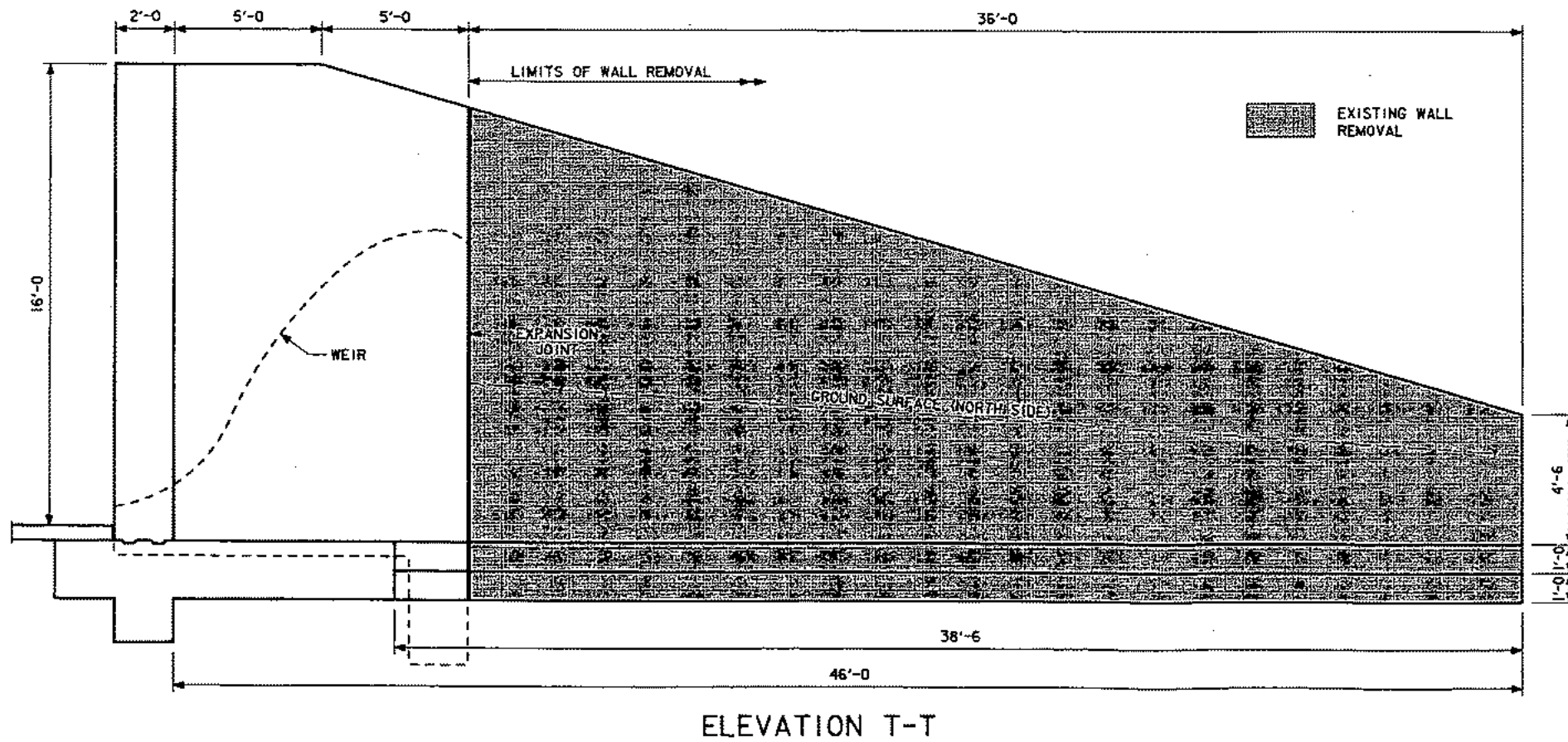


SOUTHWEST WALL ELEVATION  
(LOOKING S.W.)

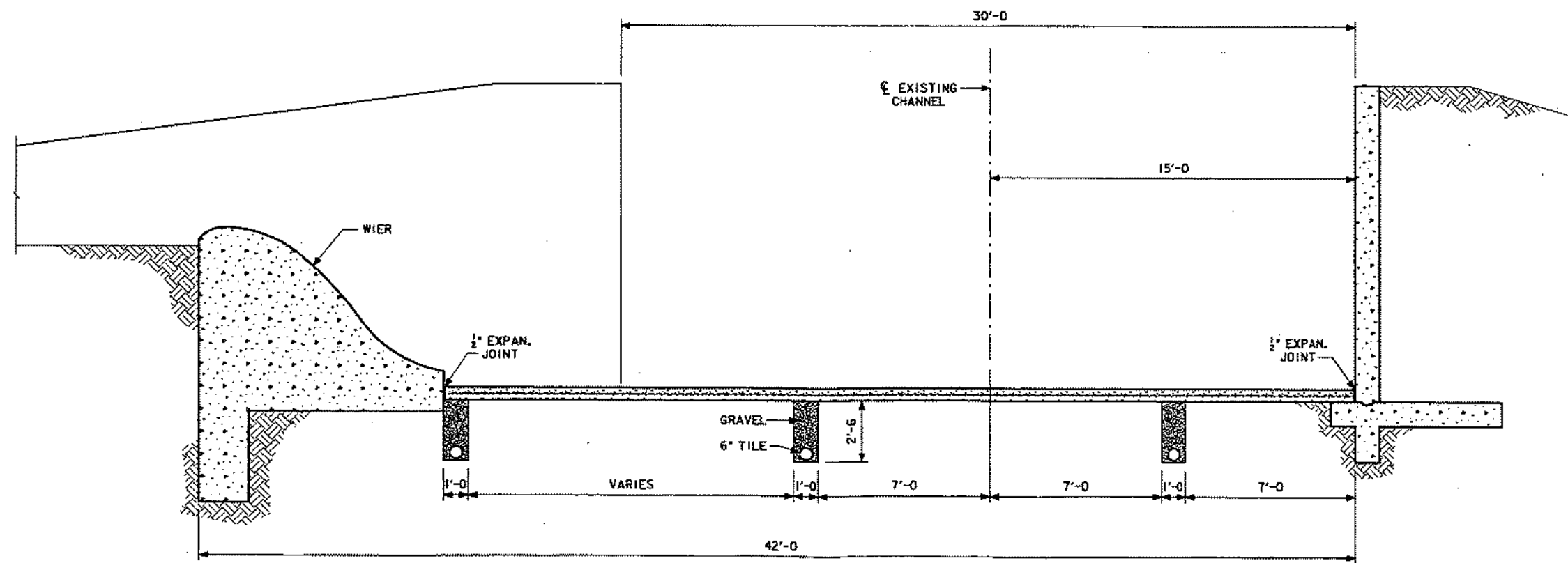
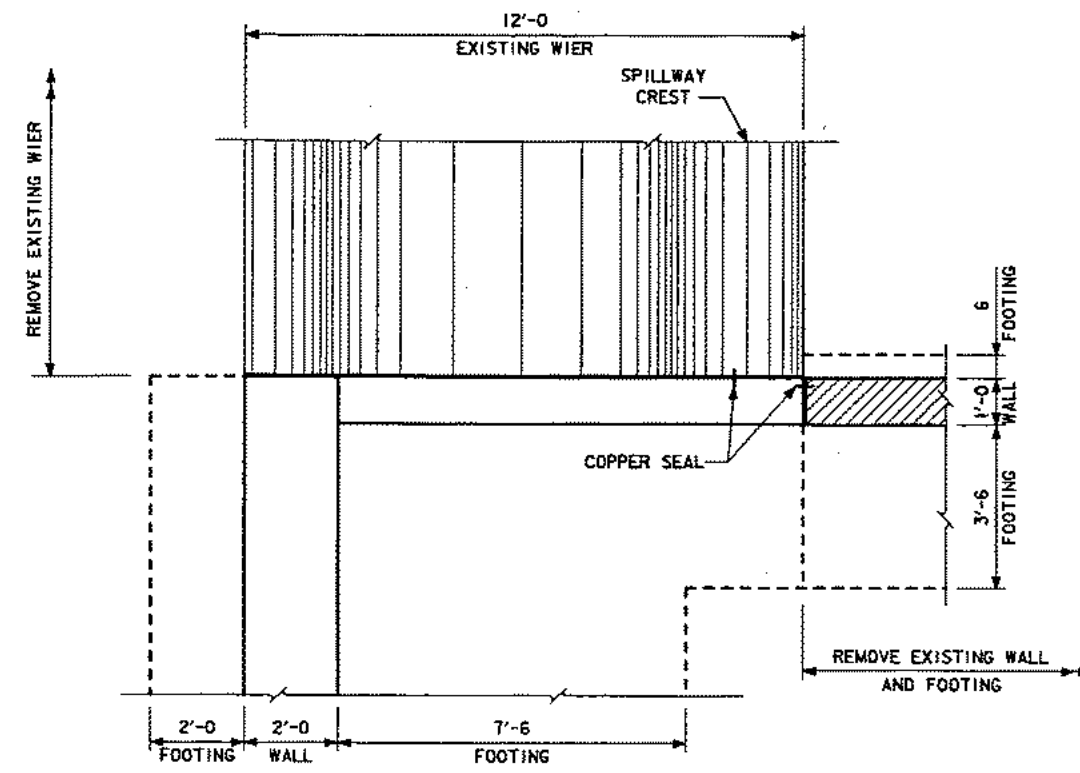
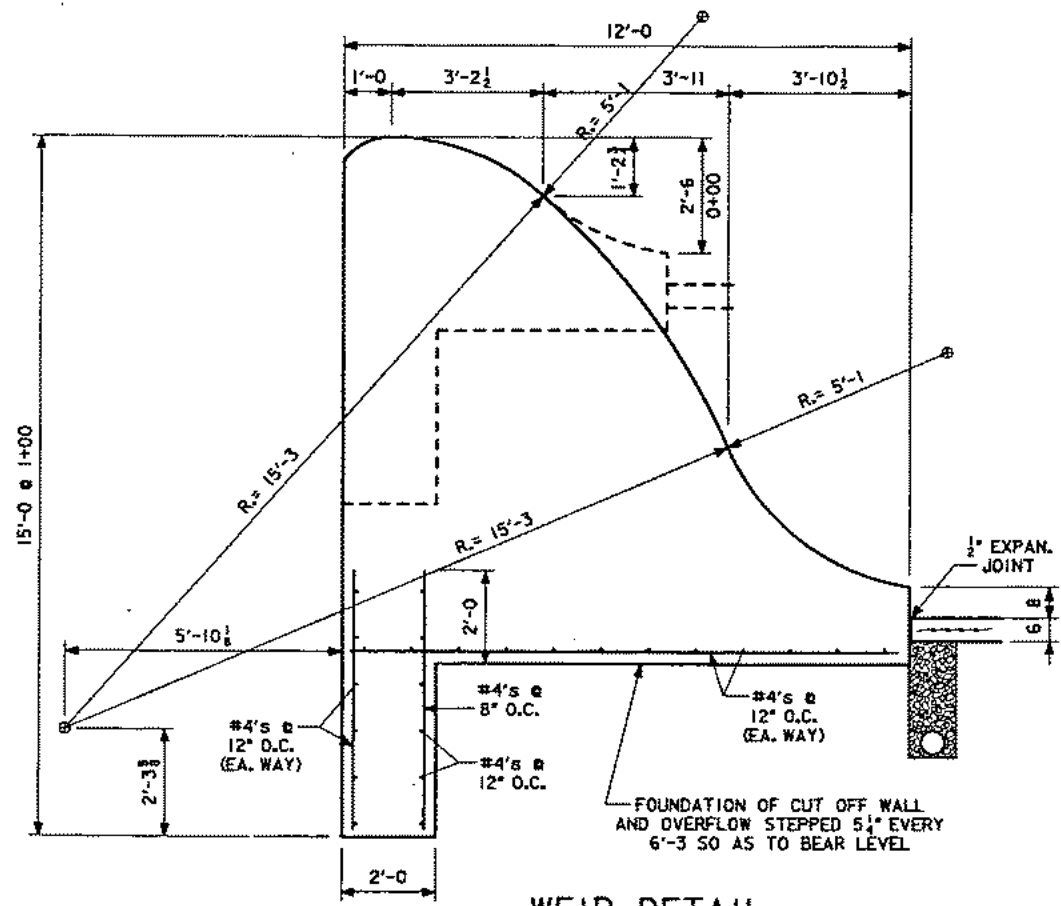
EXISTING SPILLWAY  
REMOVALS AND REPAIRS



NOTE:  
EXISTING SECTIONS AND  
DETAILS TAKEN FROM  
AS-BUILT CONSTRUCTION  
PLANS



EXISTING SPILLWAY  
SECTIONS AND DETAILS



EXISTING SPILLWAY SECTIONS AND DETAILS

99+00

100+00

101+00

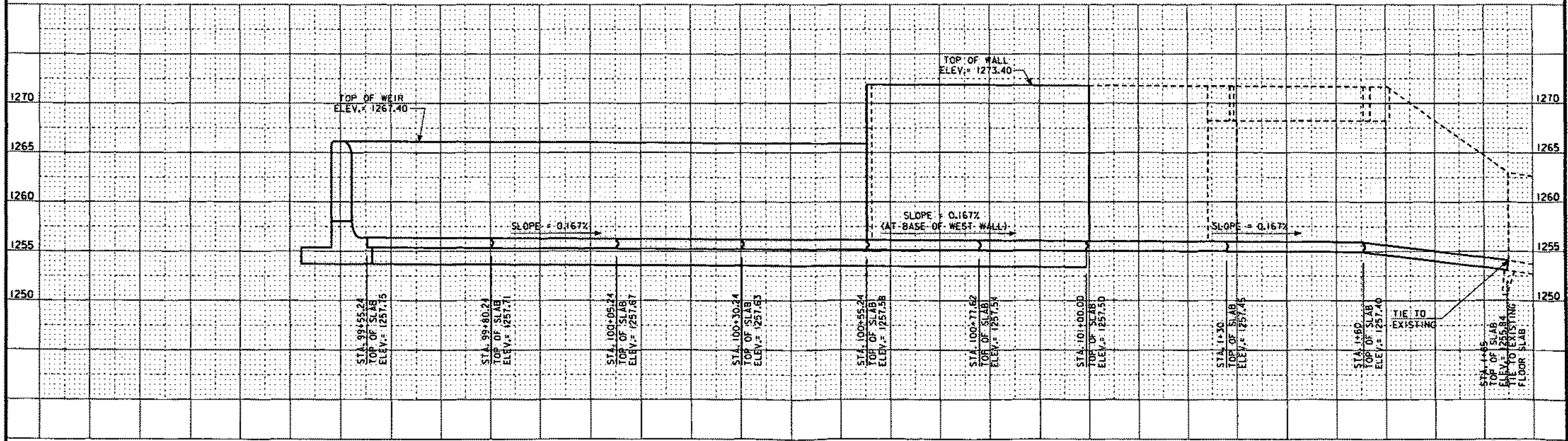
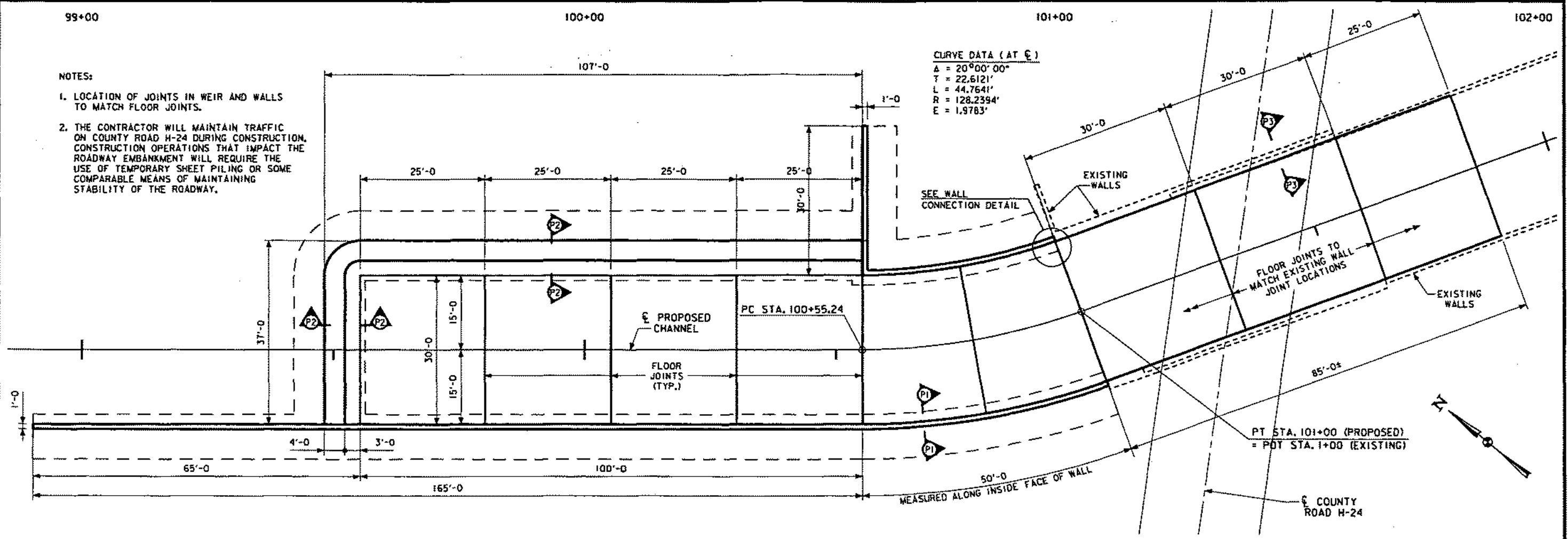
102+00

NOTES:

- 1. LOCATION OF JOINTS IN WEIR AND WALLS TO MATCH FLOOR JOINTS.
- 2. THE CONTRACTOR WILL MAINTAIN TRAFFIC ON COUNTY ROAD H-24 DURING CONSTRUCTION. CONSTRUCTION OPERATIONS THAT IMPACT THE ROADWAY EMBANKMENT WILL REQUIRE THE USE OF TEMPORARY SHEET PILING OR SOME COMPARABLE MEANS OF MAINTAINING STABILITY OF THE ROADWAY.

CURVE DATA (AT E)

$\Delta = 20^{\circ}00'00''$   
 $T = 22.6121'$   
 $L = 44.7641'$   
 $R = 128.2394'$   
 $E = 1.9783'$



99+00

100+00

101+00

PROPOSED SPILLWAY PLAN & PROFILE

DESIGN TEAM: KEVIN ARP / RUSS LEMKE



GREEN VALLEY STATE PARK - SPILLWAY RENOVATION

UNION COUNTY

KM PROJECT NUMBER: 0808610

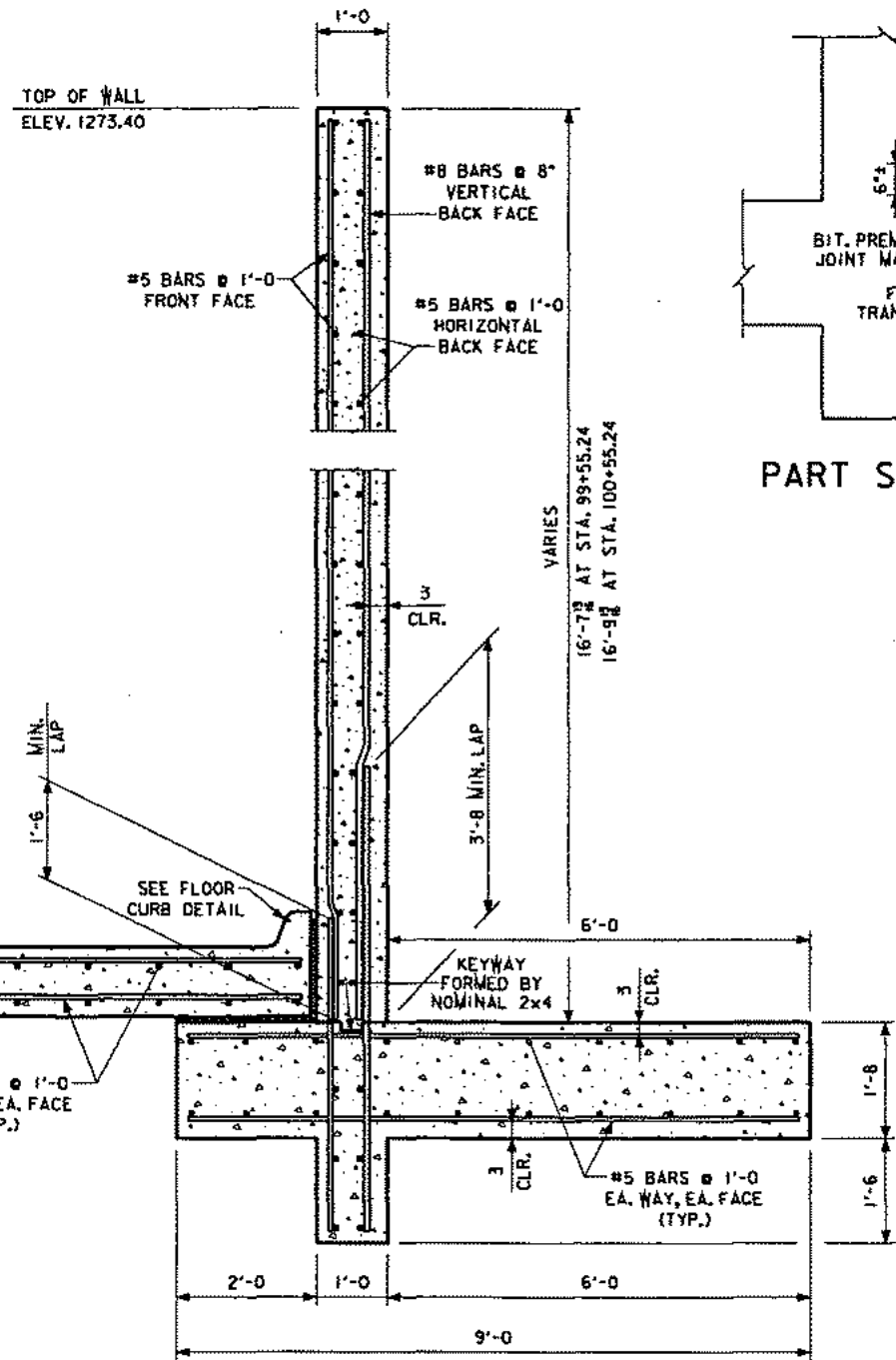
SHEET NUMBER P.01

11/14/2008

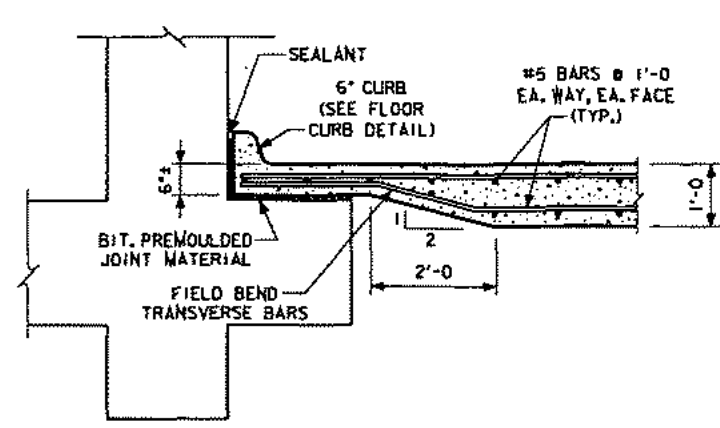
karp

H:\0808610 Green Valley Spillway\Design\km0808610.DESIGN.dgn

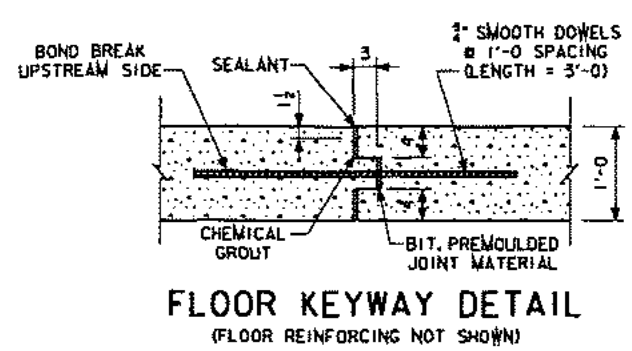




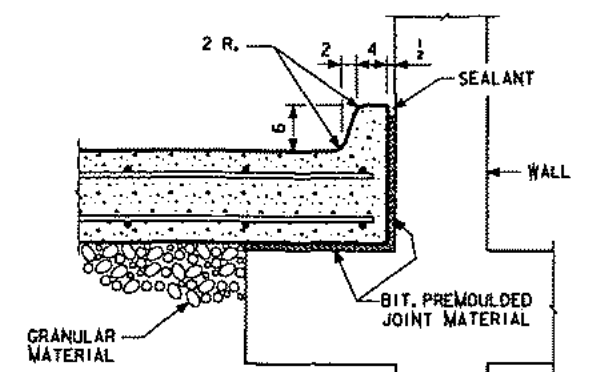
SECTION P1 - P1



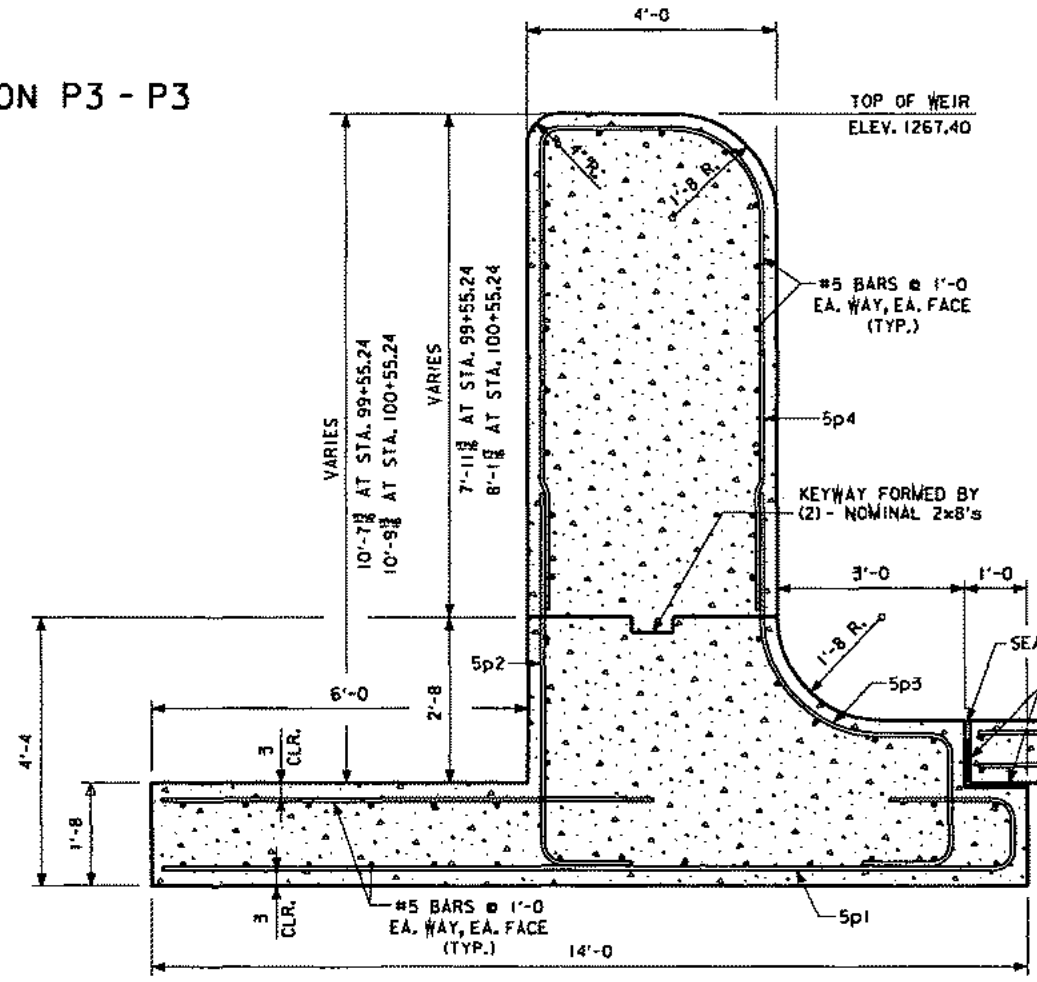
PART SECTION P3 - P3



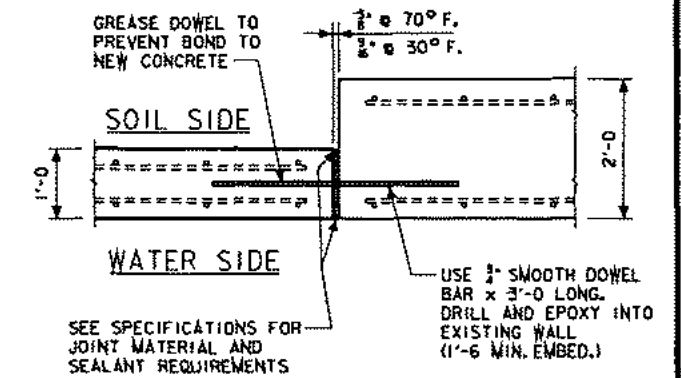
FLOOR KEYWAY DETAIL  
(FLOOR REINFORCING NOT SHOWN)



FLOOR CURB DETAIL

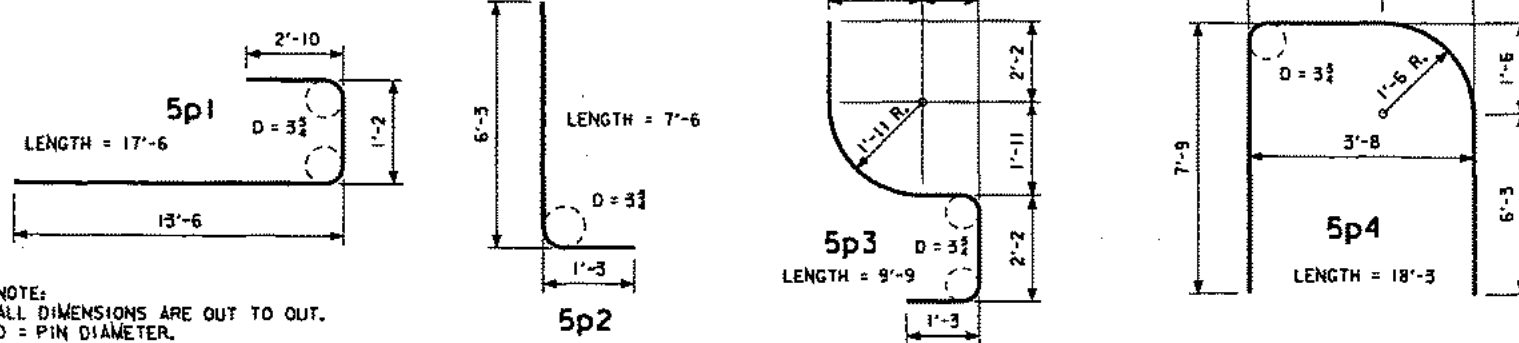


SECTION P2 - P2



WALL CONNECTION DETAILS

BENT BAR DETAILS

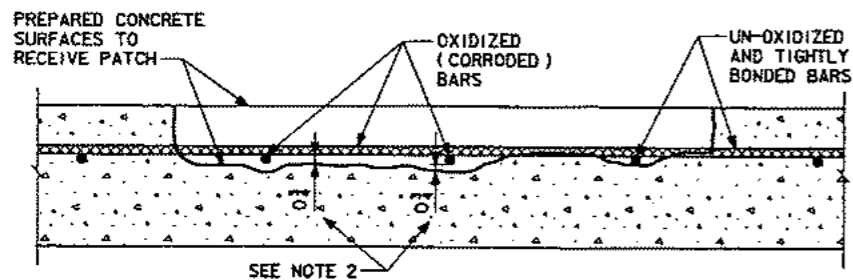


NOTE:  
ALL DIMENSIONS ARE OUT TO OUT.  
D = PIN DIAMETER.

NOTES:

1. MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE SHOWN OR NOTED.
2. ALL REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS POURED.
3. ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A 3" DRESSED AND BEVELED STRIP.
4. ALL REINFORCING STEEL SHALL BE GRADE 60 AND CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c) OF 3500 PSI.

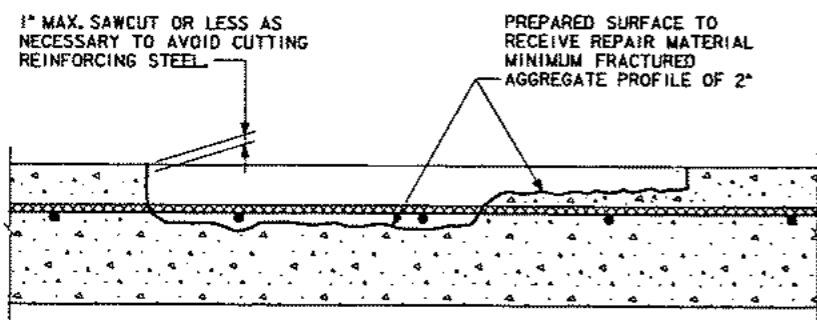
PROPOSED SPILLWAY SECTIONS AND DETAILS



**EXPOSING AND UNDERCUTTING REINF. STEEL**  
TYPICAL SECTION  
(APPLICABLE TO HORIZ., VERT. & OVERHEAD LOCATIONS)

**NOTES:**

1. REMOVE LOOSE OR DELAMINATED CONCRETE ABOVE OXIDIZED REINFORCING STEEL. ONCE INITIAL REMOVALS ARE MADE, PROCEED WITH THE UNDERCUTTING OF ALL EXPOSED OXIDIZED (CORRODED) BARS.
2. PROVIDE MINIMUM  $\frac{3}{4}$ " CLEARANCE BETWEEN EXPOSED REBARS AND SURROUNDING CONCRETE OR  $\frac{1}{4}$ " LARGER THAN LARGEST AGGREGATE IN REPAIR MORTAR WHICH EVER IS GREATER.
3. CONCRETE REMOVALS SHALL EXTEND ALONG THE BARS TO LOCATIONS ALONG THE BAR FREE OF BOND INHIBITING CORROSION, AND WHERE THE BAR IS WELL BONDED TO SURROUNDING CONCRETE.
4. IF UNOXIDIZED REINFORCING STEEL IS EXPOSED DURING THE UNDERCUTTING PROCESS, CARE SHALL BE TAKEN NOT TO DAMAGE THE BAR'S BOND TO SURROUNDING CONCRETE. IF BOND BETWEEN BAR AND CONCRETE IS BROKEN, UNDERCUTTING OF THE BAR SHALL BE REQUIRED.
5. ANY REINFORCEMENT WHICH IS LOOSE SHALL BE SECURED IN PLACE BY TYING TO OTHER SECURED BARS.
6. REPAIR EXISTING REINFORCING STEEL AS SPECIFIED. PROVIDE MECHANICAL SPLICES OR LAP SPLICES FOR NEW REINFORCING STEEL BARS WHERE THE ORIGINAL CROSS SECTION IS DECREASED BY 25% OR MORE DUE TO CORROSION.



**EDGE AND SURFACE CONDITIONING**  
TYPICAL SECTION  
(APPLICABLE TO HORIZ., VERT. & OVERHEAD LOCATIONS)

**NOTES:**

1. BEFORE STARTING REMOVALS, REVIEW EFFECT OF REMOVALS ON STRUCTURAL INTEGRITY; PROVIDE SHORING OF MEMBER AS NECESSARY. PARTICULAR CARE SHALL BE EXERCISED AT SLAB CONNECTIONS TO WALLS.
2. REMOVE DELAMINATED CONCRETE, UNDERCUT REINFORCING STEEL (REFER TO REINFORCING STEEL UNDERCUTTING GUIDELINES), REMOVE ADDITIONAL CONCRETE AS REQUIRED TO PROVIDE MINIMUM REQUIRED THICKNESS OF REPAIR MATERIAL.
3. AT EDGE LOCATION PROVIDE RIGHT ANGLE CUTS. AVOID FEATHER EDGES. PATCH CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE. FOR EXAMPLE:



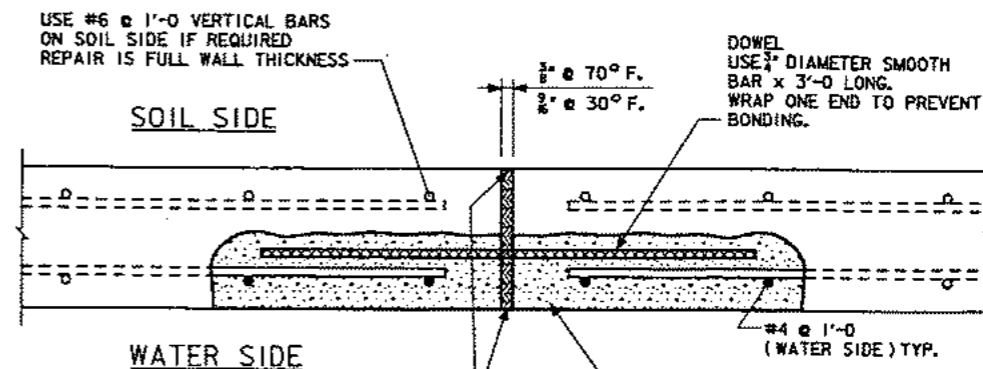
UN-ACCEPTABLE → ACCEPTABLE

UN-ACCEPTABLE → ACCEPTABLE

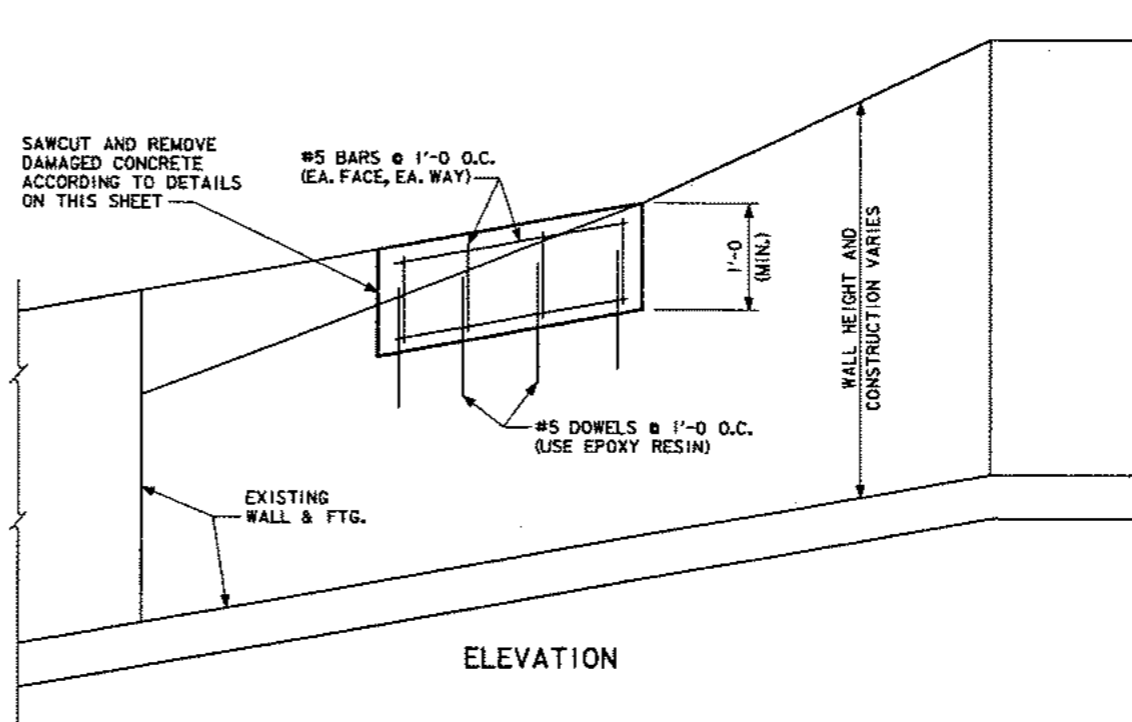
4. AFTER REMOVALS AND EDGE CONDITIONING ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, CONCRETE SLURRY, LOOSELY BONDED AGGREGATES) BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVE. CHECK THE SURFACES AFTER CLEANING TO INSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE, OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.

99+00

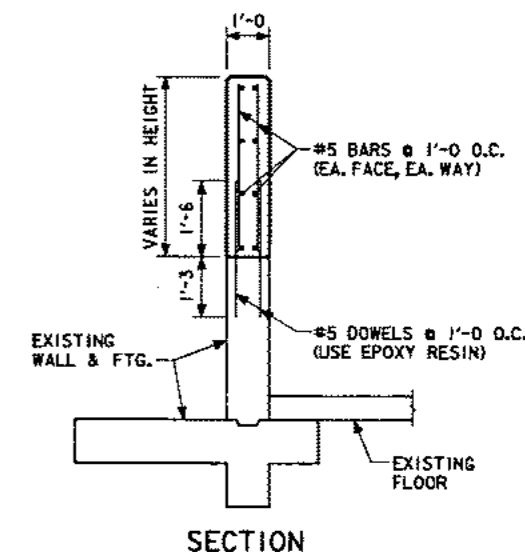
NOTE:  
ALL CONCRETE REMOVALS AND REQUIRED REINFORCEMENT FOR REPAIRS SHALL BE INCIDENTAL TO BID ITEM "CONCRETE REPAIR".



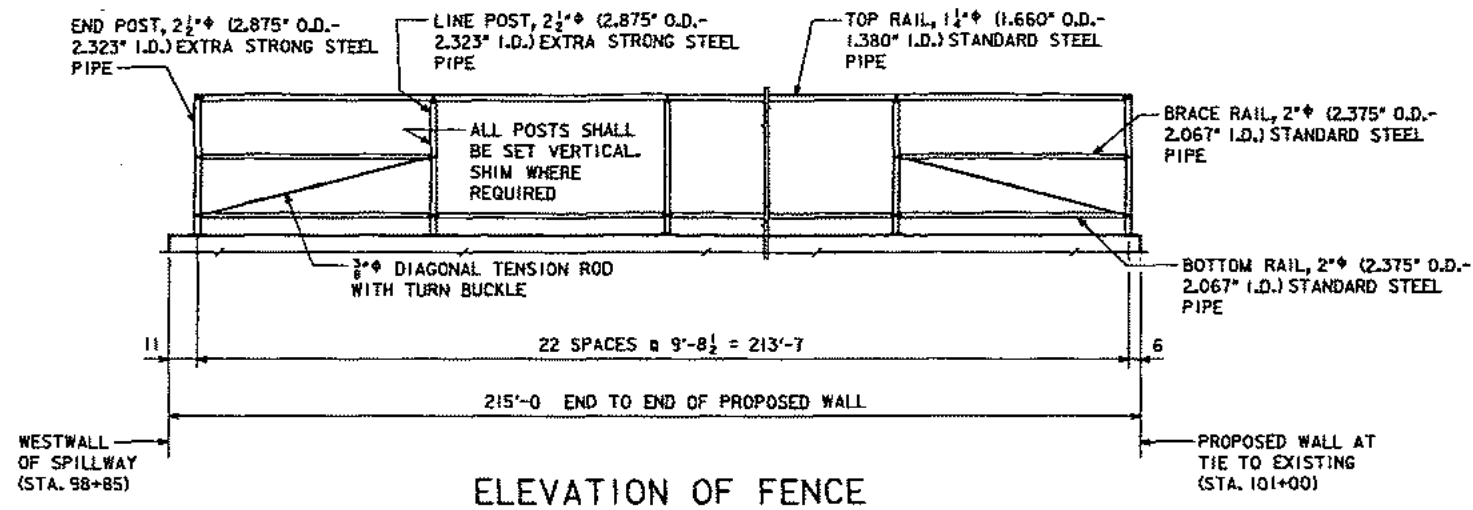
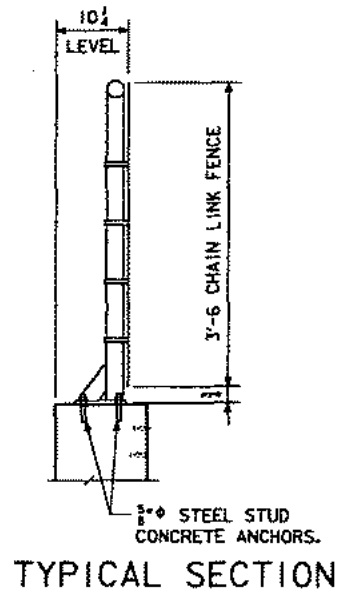
**WALL JOINT REPAIR DETAILS**  
NOT TO SCALE



**TOP OF WALL REPAIR DETAILS**  
NOT TO SCALE



**CONCRETE REPAIR DETAILS**



**NOTES:**

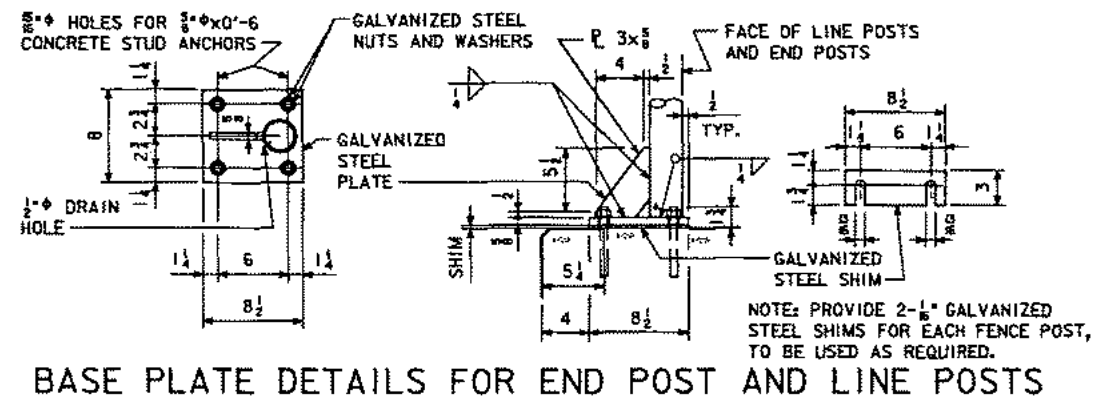
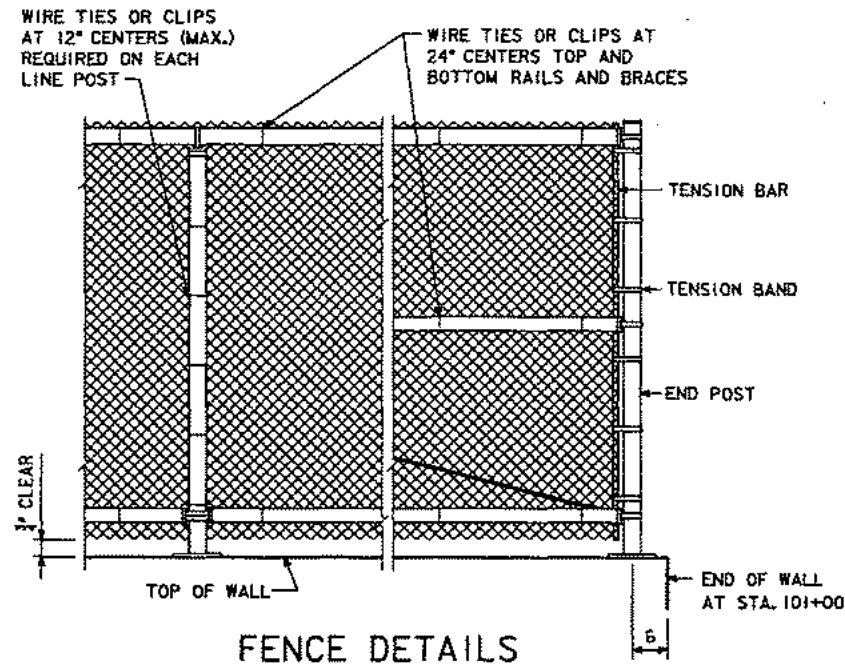
THE CHAIN LINK FENCE IS TO BE BID ON A LINEAR FOOT BASIS MEASURED FROM  $\bar{C}$  TO  $\bar{C}$  OF END POSTS. THE PRICE BID FOR "CHAIN LINK FENCE, 42" HEIGHT" SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, INCLUDING CONCRETE ANCHORS AND SHIMS, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE FENCE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.

THE CHAIN LINK FENCE SHALL BE EITHER ZINC OR ALUMINUM COATED FABRIC, 2" MESH, NO. 9 WIRES, 42" HEIGHT WITH KNUCKLED SELVAGES TOP AND BOTTOM.

THE STUD CONCRETE ANCHORS SHALL BE GALVANIZED AND HAVE A MINIMUM PULLOUT STRENGTH OF 8000 POUNDS BASED ON 4000 PSI CONCRETE.

THE MATERIAL FOR POSTS, BRACES AND RAILS SHALL BE STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, TYPE E OR S, GRADE B. BASE PLATES AND SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A-36. POSTS AND BASE PLATES SHALL BE GALVANIZED, AFTER FABRICATION, IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A-123. SPECIAL FITTINGS SHALL BE AS SPECIFIED IN ARTICLE 4154.11, OF THE STANDARD SPECIFICATIONS, UNLESS OTHERWISE NOTED.

THE FENCE SHALL BE TRUE TO LINE, TAUT, AND COMPLY WITH THE BEST PRACTICE FOR FENCE CONSTRUCTION OF THIS TYPE. ALL ENDS OF WIRES SHALL BE TURNED SO THAT THEY EXTEND AWAY FROM THE SIDEWALK SIDE OF THE FENCE.



**SAFETY FENCE DETAILS**