6807.1	17.1	1.86	19.39	EMERGENCY SPILLWAY
6809.9	19.9	2.15	25.20	TOP OF EMBANKMENT

PTION
F POND
ELEV.
SPILLWAY
BANKMENT

ENGINEER'S CERTIFICATION

JAMES G. SCHEENVOGT
Engineering Supervisor
Peabody Western Coal Company

ARIZONA P.E. 18782

Date: DEC 23 2004

ee Drawing No. 85400, Sheet K-6 and Drawing No. 85405.
ck Mesa PAP for Construction Specifications.
· 6, Attachment D, Sections 1-3 for description of
.tion.
accordance with approved topsoil salvage plan.
distrubed area above the high waterline shall be in
ie approved reclamation plan.
slopes, typical 3:1 slope or flatter and blend into natural

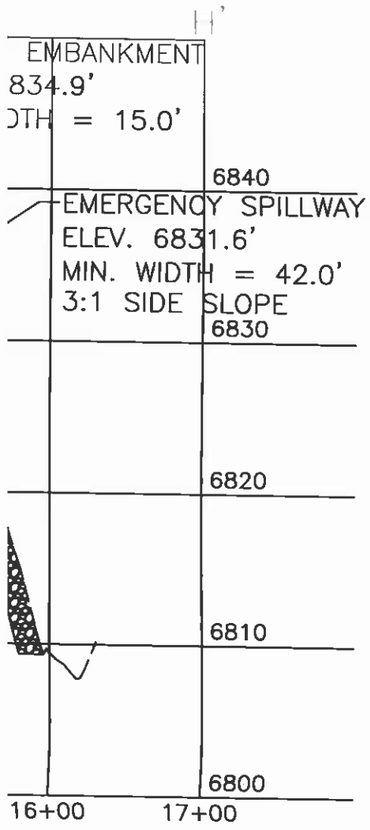
EXHIBIT # 1

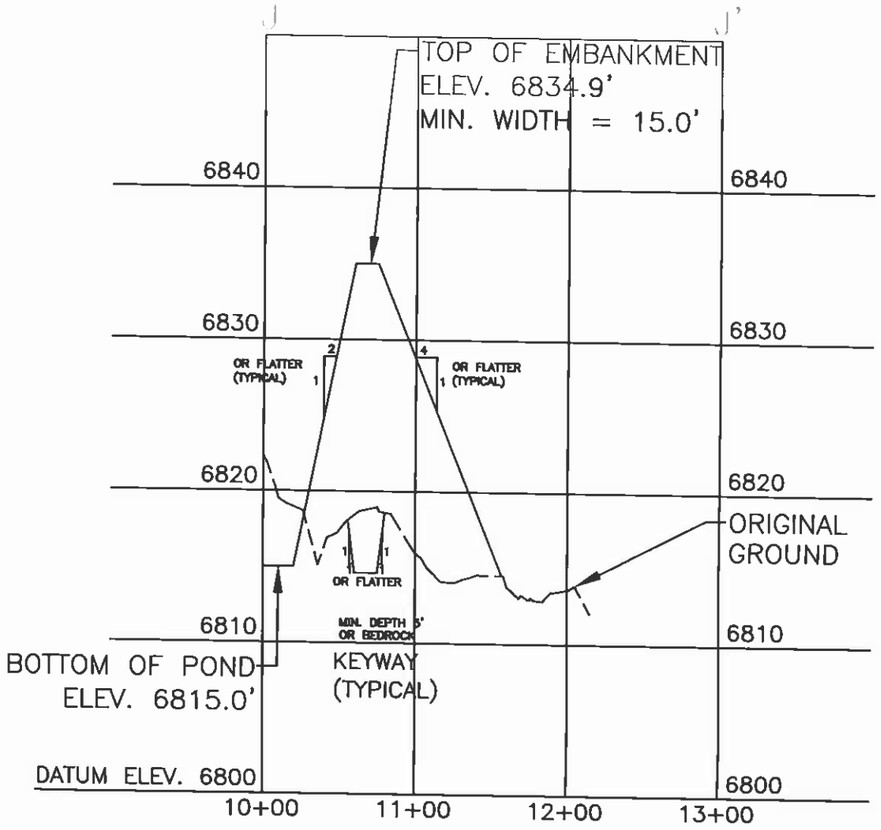
PROPOSED N9-J, J1 & J2 SEDIMENTATION POND DESIGN

KAYENTA MINE

PEABODY WESTERN COAL COMPANY
P. O. BOX 650 KAYENTA, ARIZONA 86033

DESIGNED BY: GA	SCALE: AS NOTED
DRAWN BY: PEK	DRAWING DATE: 11-22-04
CHECKED BY: JGS	PHOTO DATE: 06-67 & 05-83
CONTOUR INTERVAL: 5 FT.	DWG FILE: POND N9-J,J1,J2.DWG





SECTION J — J'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

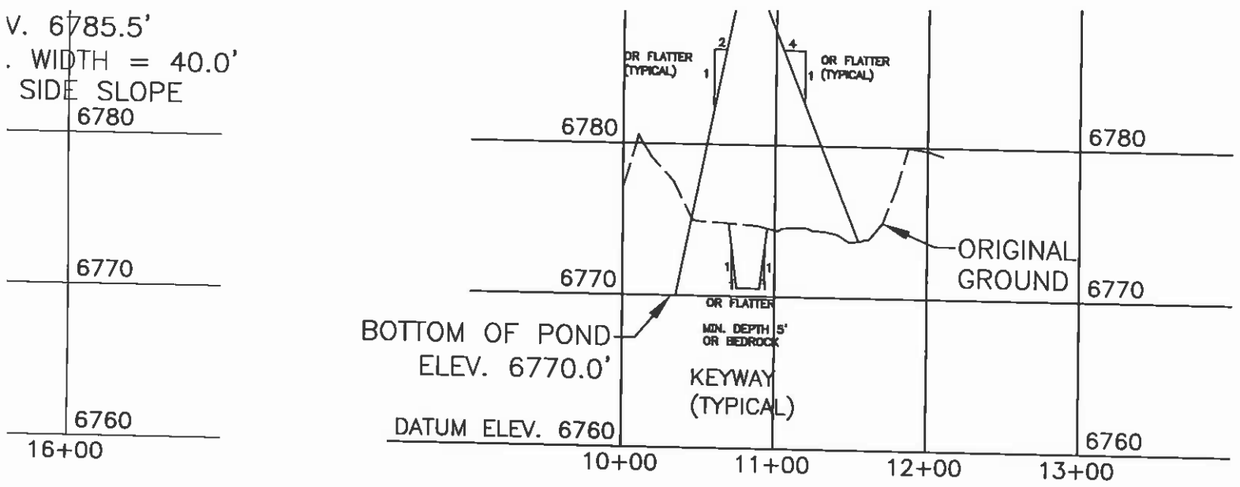
N9-J1 POND STAGE CAPACITY TABLE

ELEVATION (ft-msl)	STAGE (ft)	AREA (acres)	TOTAL CAPACITY (ac-ft)	DESCRIPTION
6790.0	0.0	0.62	0.00	BOTTOM OF POND
6795.0	5.0	0.86	3.70	INCISED ELEV.
6800.0	10.0	1.18	8.80	
6805.0	15.0	1.60	15.75	
6807.1	17.1	1.86	19.39	EMERGENCY SPILLWAY
6809.9	19.9	2.15	25.20	TOP OF EMBANKMENT

E

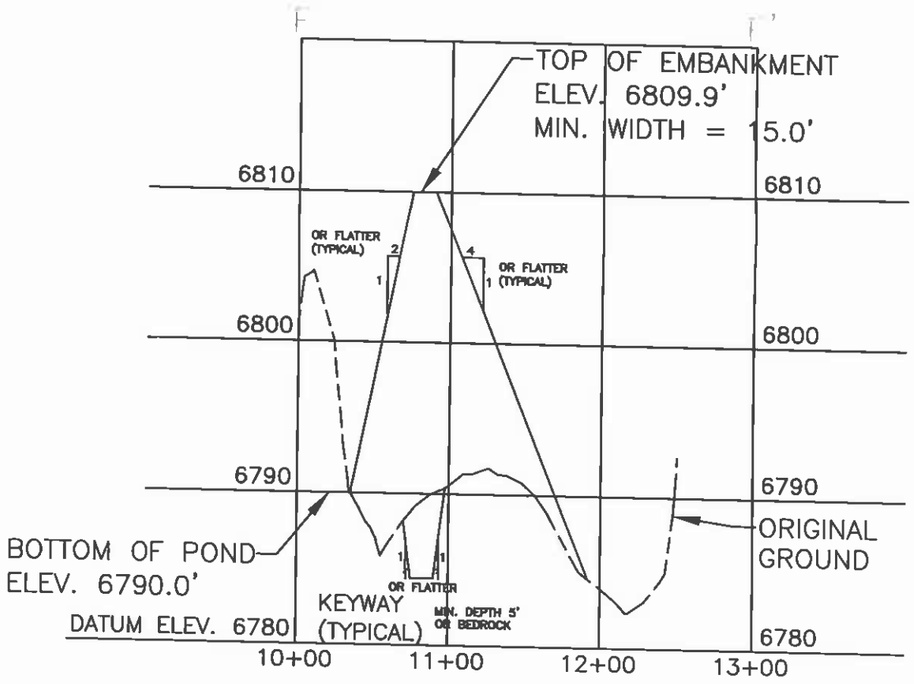
PTION
OF POND
ELEV.
SPILLWAY
BANKMENT

V. 6785.5'
. WIDTH = 40.0'
SIDE SLOPE



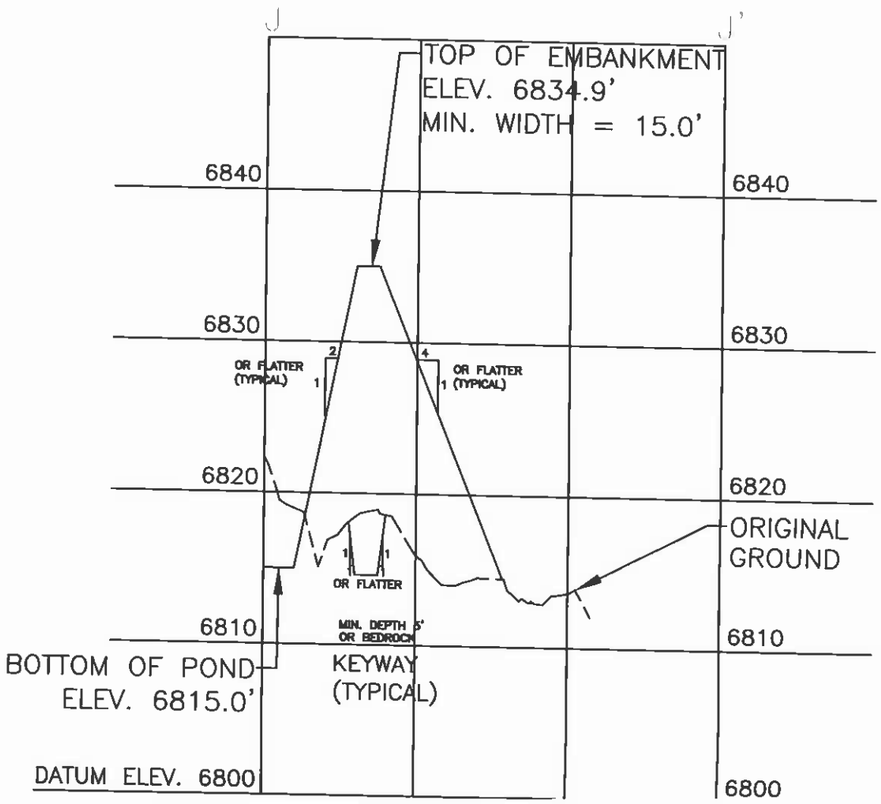
SECTION C - C'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

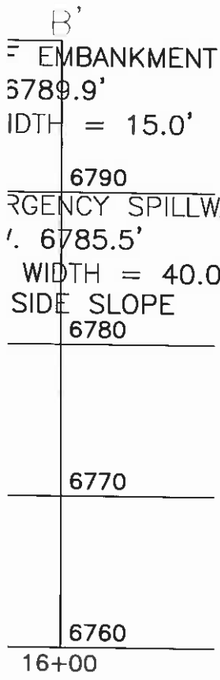
F'
ENT
.0'
6810
ENCY SPILLWAY
6807.1'
IDTH = 47.0'
DE SLOPE
6800
6790
6780
6770
16+00

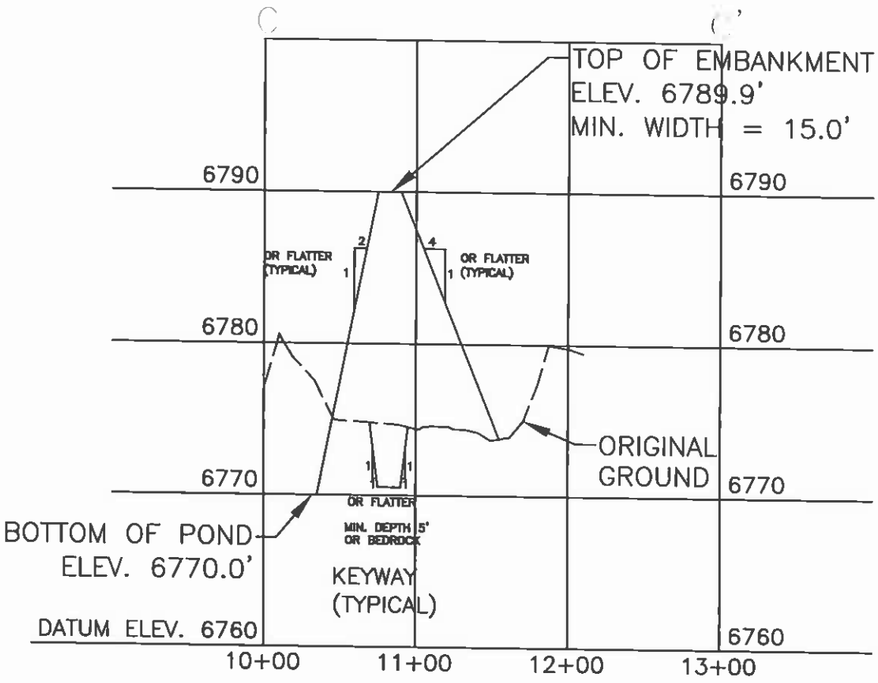


SECTION F - F'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

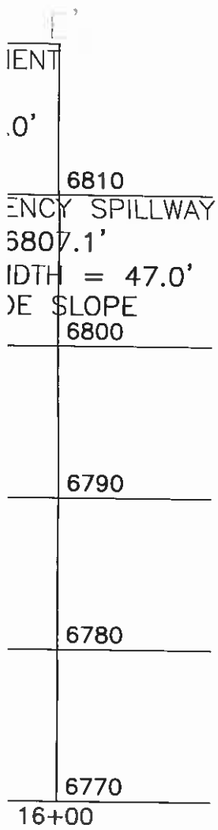
H'
EMBANKMENT
834.9'
TH = 15.0'
6840
EMERGENCY SPILLWAY
ELEV. 6831.6'
MIN. WIDTH = 42.0'
3:1 SIDE SLOPE
6830
6820
6810
6800
16+00
17+00

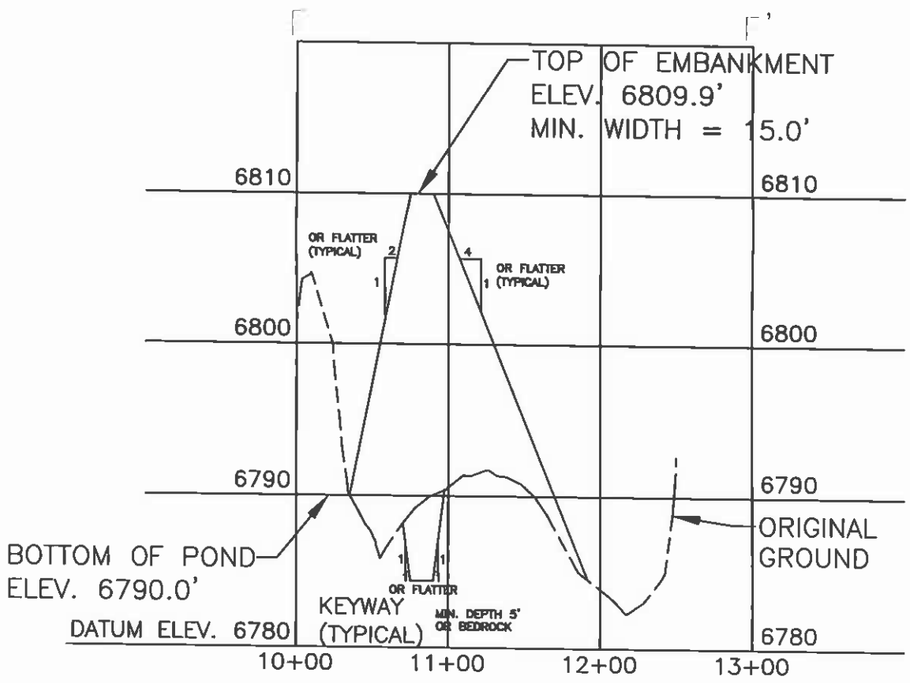




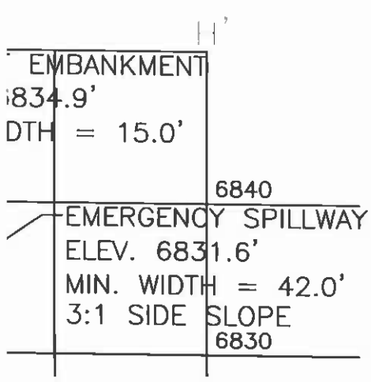


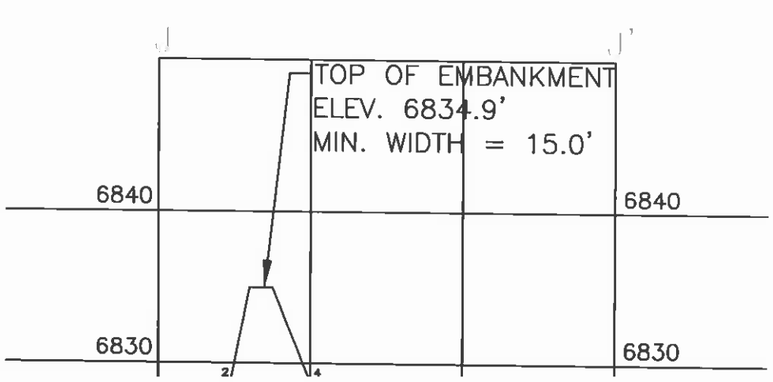
SECTION C – C'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'





SECTION F – F'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'





1.87	19.66	EMERGENCY SPILLWAY
2.31	29.06	TOP OF EMBANKMENT

6807.0	17.0	1.60
6807.1	17.1	1.86
6809.9	19.9	2.15

N9-J2 POND STAGE CAPACITY TABLE

ELEVATION (ft-msl)	STAGE (ft)	AREA (acres)	TOTAL CAPACITY (ac-ft)	DESCRIPTION
6815.0	0.0	0.59	0.00	BOTTOM OF POND
6820.0	5.0	0.86	3.63	INCISED ELEV.
6825.0	10.0	1.20	8.77	
6830.0	15.0	1.83	16.34	
6831.6	16.6	2.14	19.52	EMERGENCY SPILLWAY
6834.9	19.9	2.79	27.89	TOP OF EMBANKMENT

ENGINEER'S CERTIFICA

Registered Professional Engineer CERTIFICATE NO. 19709 JAMES G. SCHLEENVOGT

JAMES G. SCHLEENVOGT
Engineering Supervisor
Peabody Western Coal Company

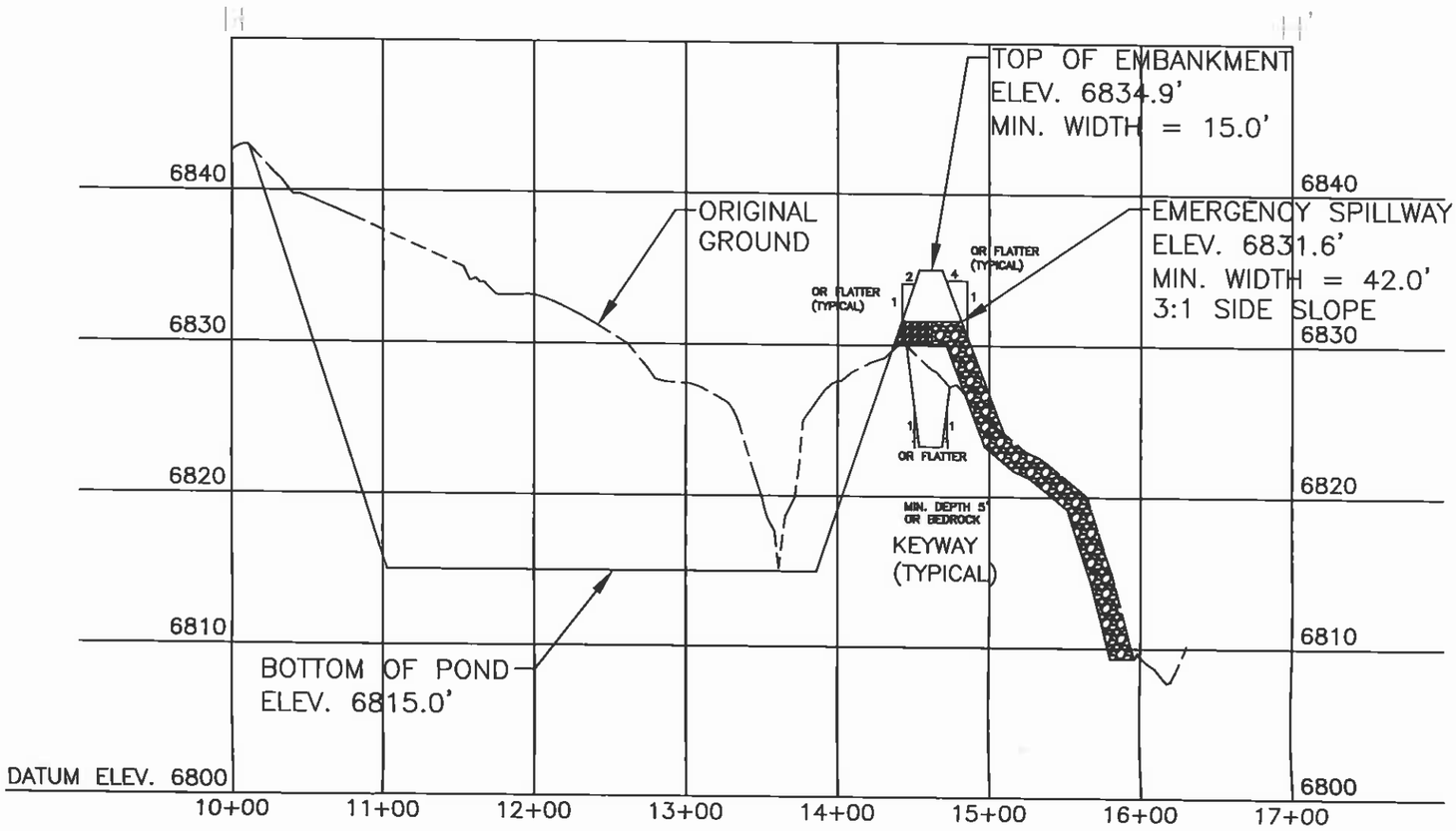
NOTES:
1) General location, see Drawing No. 85400, Sheet K-6
2) See Chapter 6, Black Mesa PAP for Construction S
3) See Vol. 2, Chapter 6, Attachment D, Sections 1-3 Geotechnical Evaluation.
4) Salvage topsoil in accordance with approved topso
5) Reclamation of the distrubed area above the high accordance with the approved reclamation plan.
6) Ponding area side slopes, typical 3:1 slope or flat topography.

WOODSON
ENGINEERING AND SURVEYING, INC.
124 N. ELDEN ST.
FLAGSTAFF, AZ 86001
PHONE: (928) 774-4636 FAX: (928) 774-4646

VERT. 1" = 10'

NKMENT

15.0'



SECTION H - H'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

BO

) STAGE CAPACITY TABLE

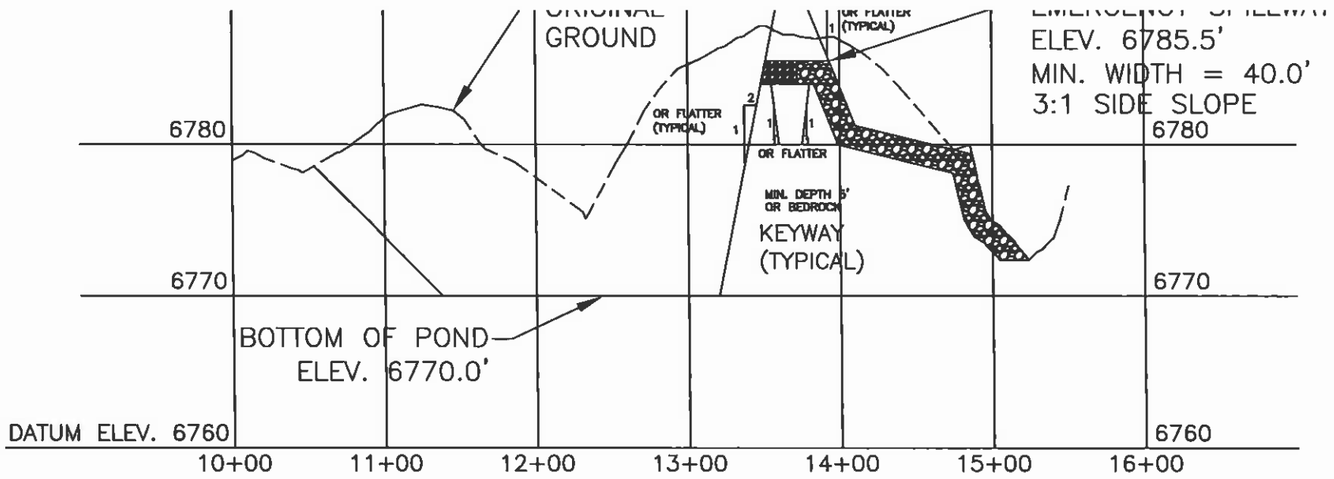
AREA acres)	TOTAL CAPACITY (ac-ft)	DESCRIPTION
0.77	0.00	BOTTOM OF POND
1.05	4.55	INCISED ELEV.
1.40	10.67	
1.82	18.73	
1.87	19.66	EMERGENCY SPILLWAY
2.31	29.06	TOP OF EMBANKMENT

N9-J1 POND STAG

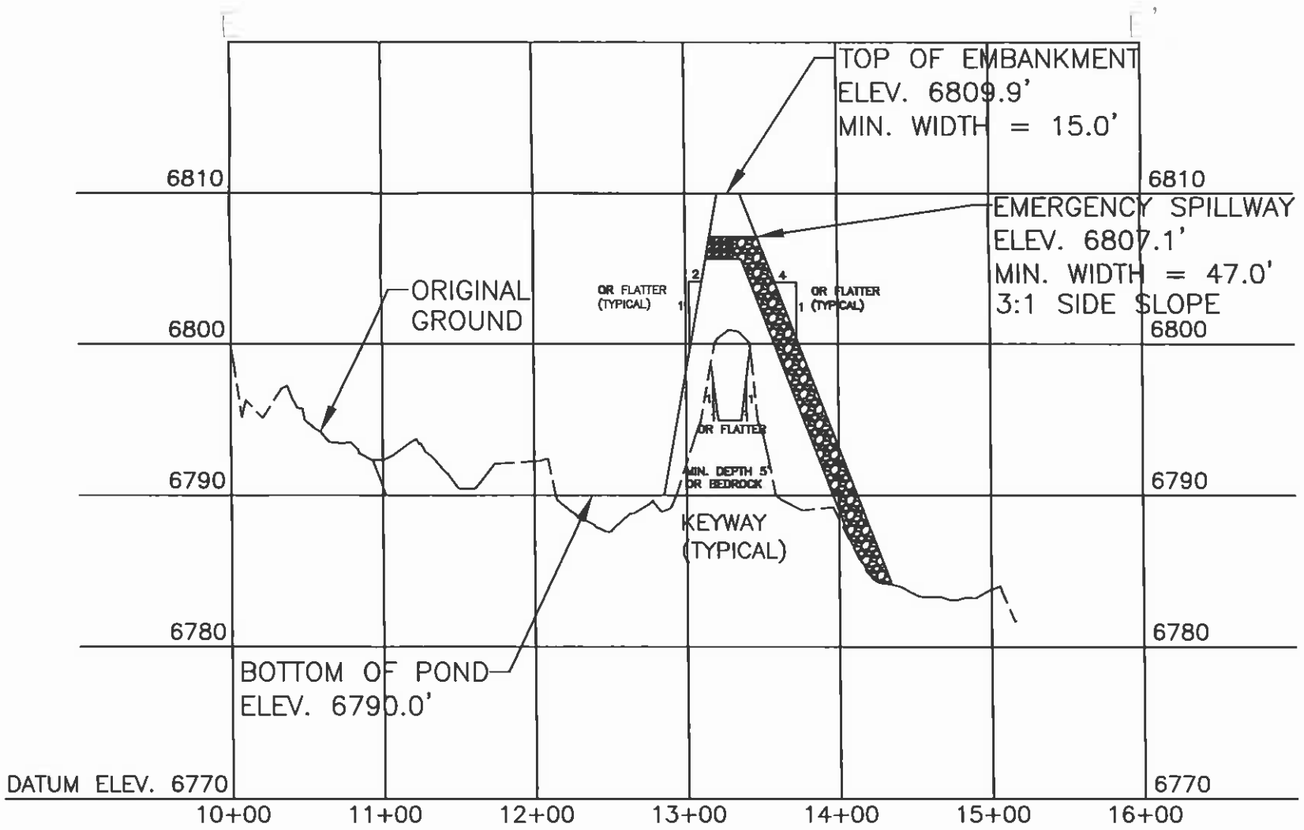
ELEVATION (ft-msl)	STAGE (ft)	AREA (acres)	C
6790.0	0.0	0.62	
6795.0	5.0	0.86	
6800.0	10.0	1.18	
6805.0	15.0	1.60	
6807.1	17.1	1.86	
6809.9	19.9	2.15	

N9-J2 POND STAGE CAPACITY TABLE

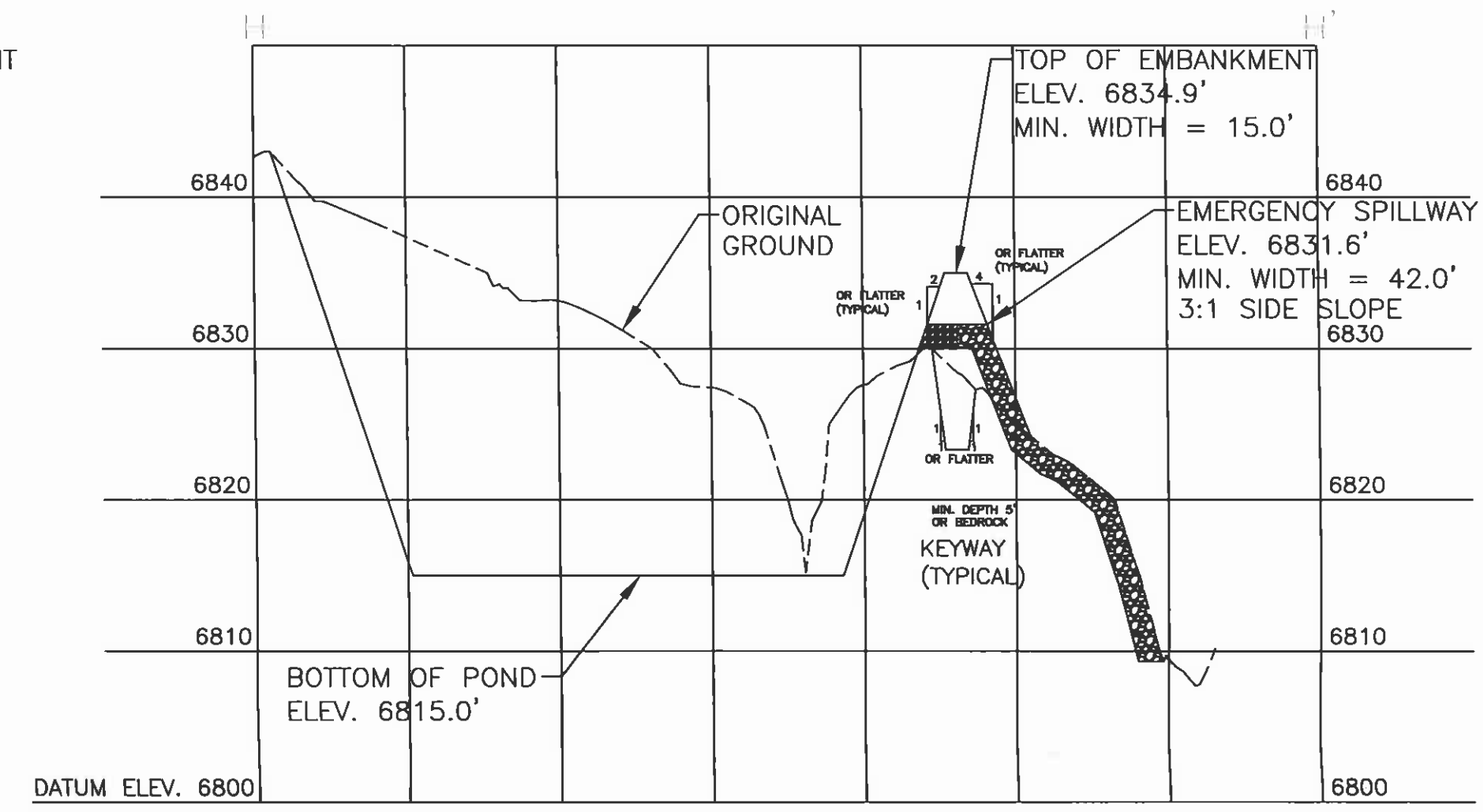
ELEVATION (ft-msl)	STAGE (ft)	AREA (acres)	TOTAL CAPACITY (ac-ft)	DESCRIPTION
6815.0	0.0	0.59	0.00	BOTTOM OF POND
6820.0	5.0	0.86	3.63	INCISED ELEV
6825.0	10.0	1.20	8.77	
6830.0	15.0	1.83	16.34	
6831.6	16.6	2.14	19.52	EMERGENCY SPILLWAY
6834.9	19.9	2.79	27.89	TOP OF EMBANKMENT

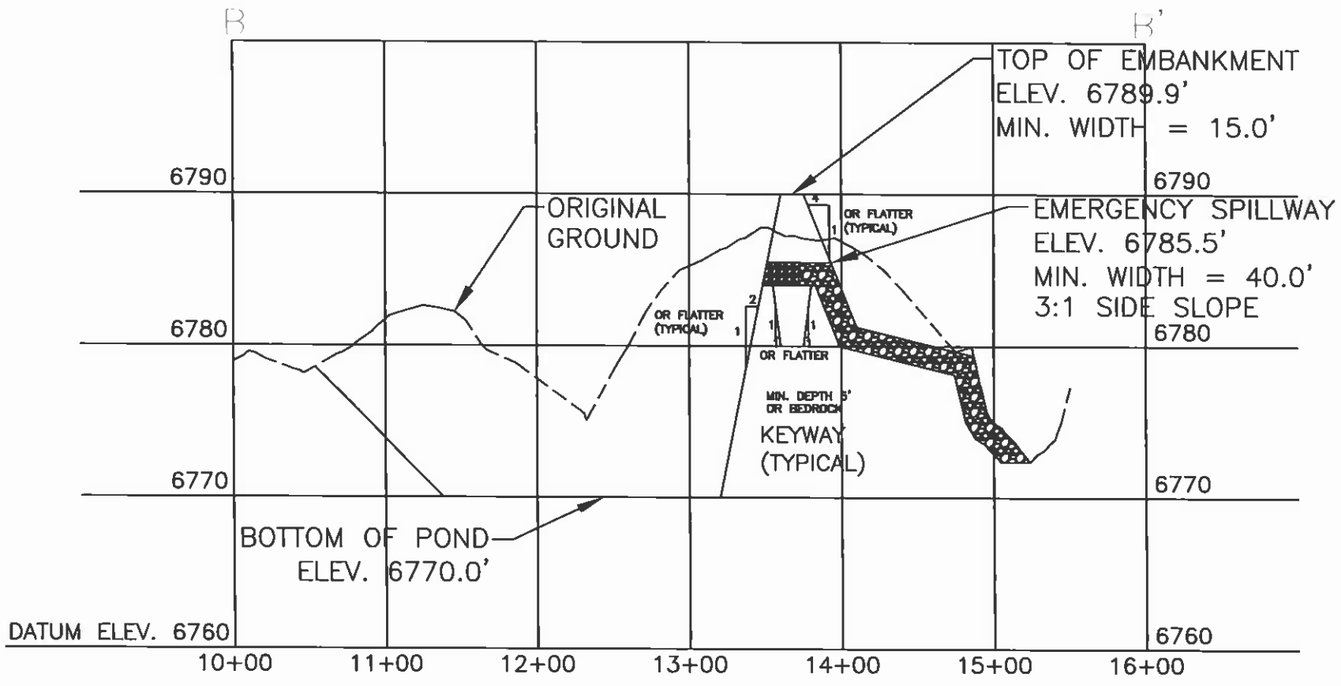


SECTION B – B'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

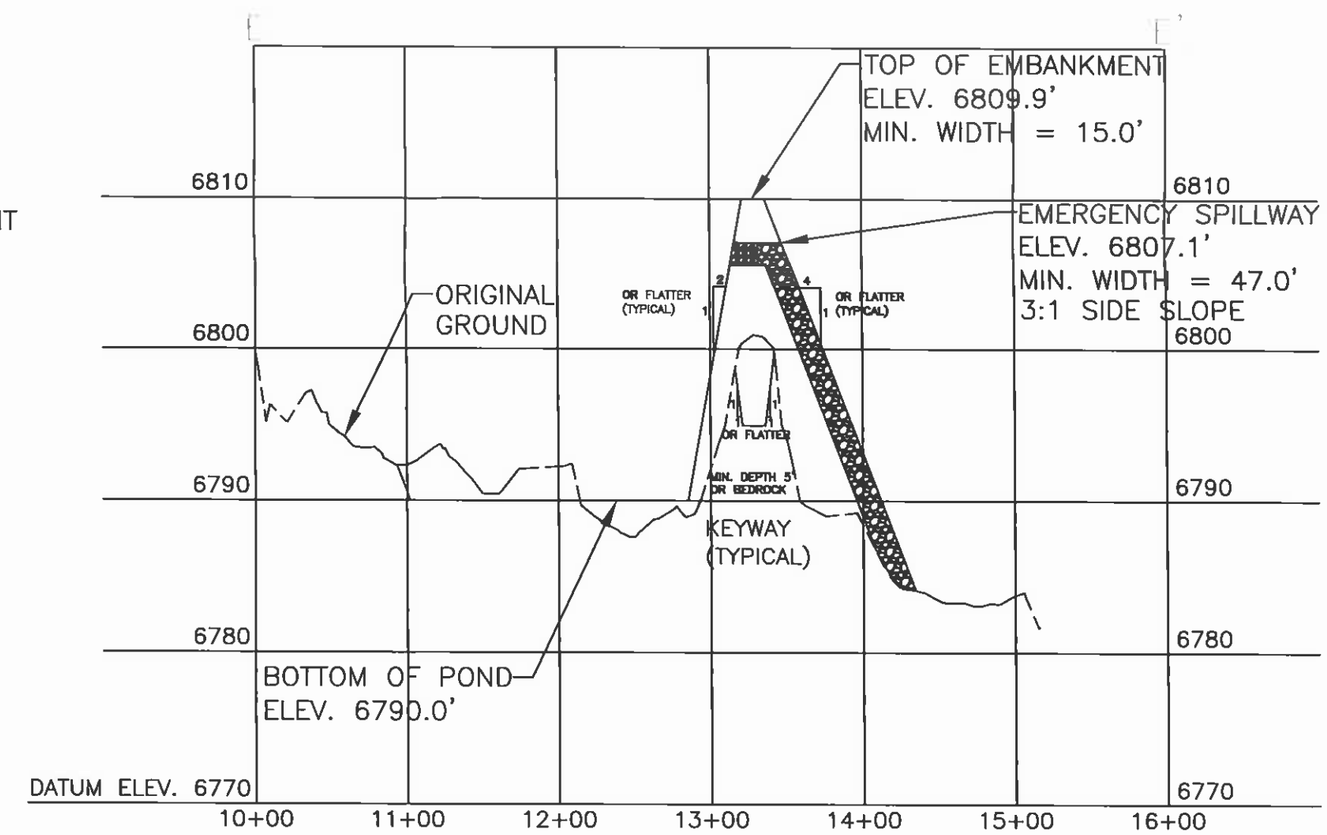


SECTION E – E'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

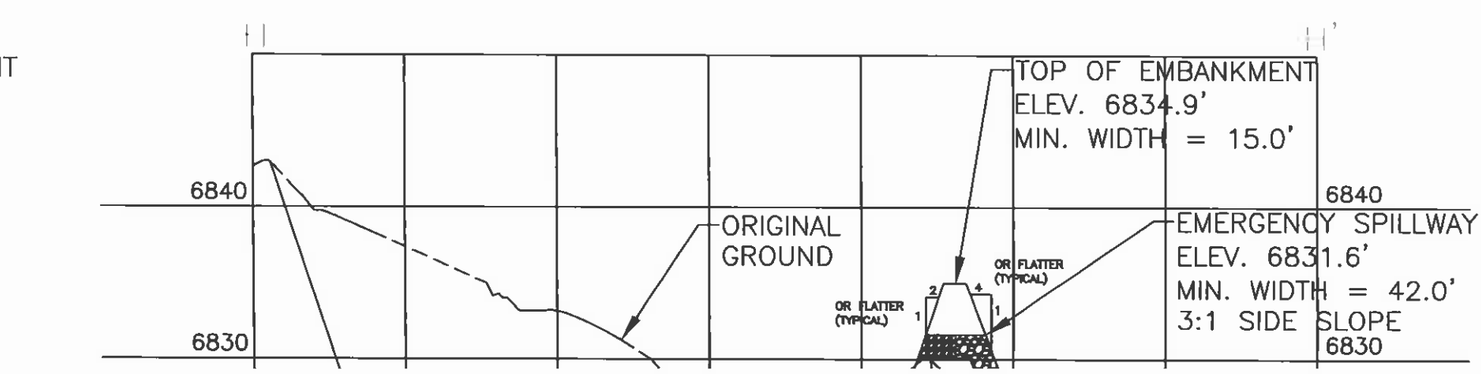


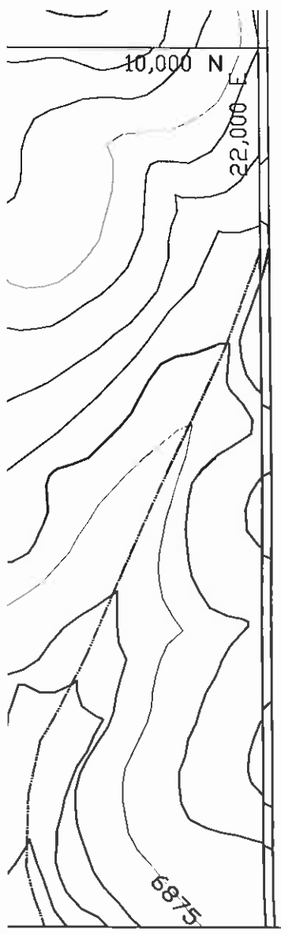


SECTION B – B'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

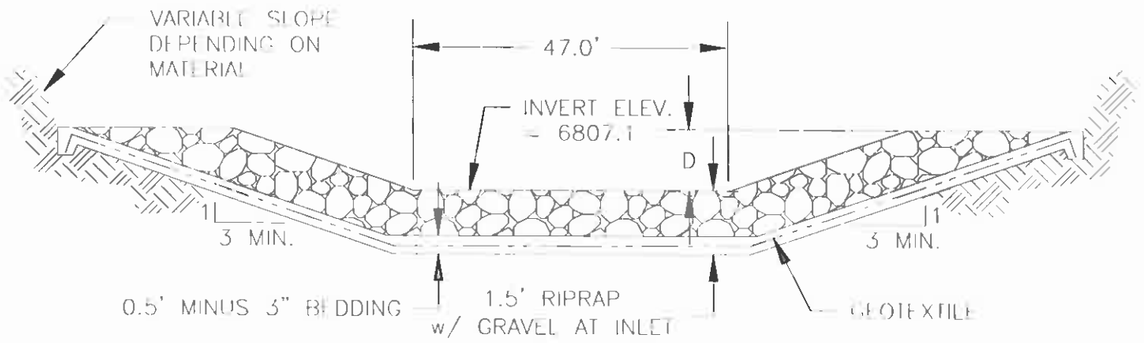


SECTION E – E'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'



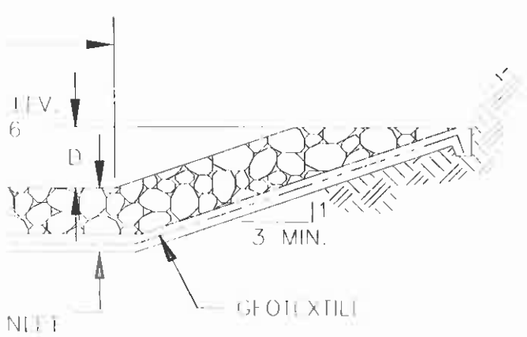


6785.5	15.5	1.87	19.66	EMERGENCY
6789.9	19.9	2.31	29.06	TOP OF EMB



SPILLWAY MIN. D=2.5'
OUTFLOW CHANNEL MIN. D=2.0'

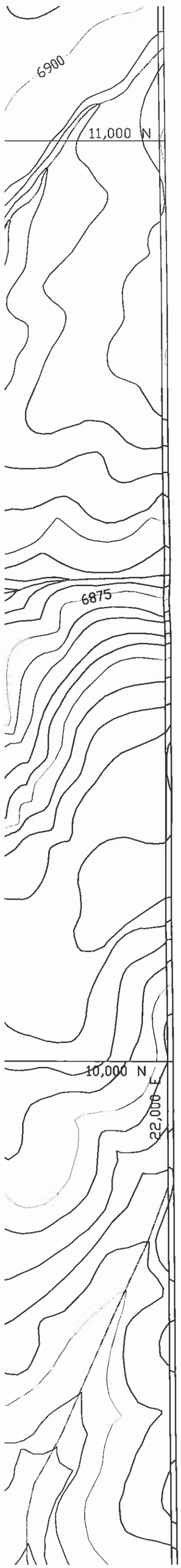
SECTION OF EMERGENCY SPILLWAY
NOT TO SCALE
N9 J1 POND



N. D=2.5'
L MIN. D=2.0

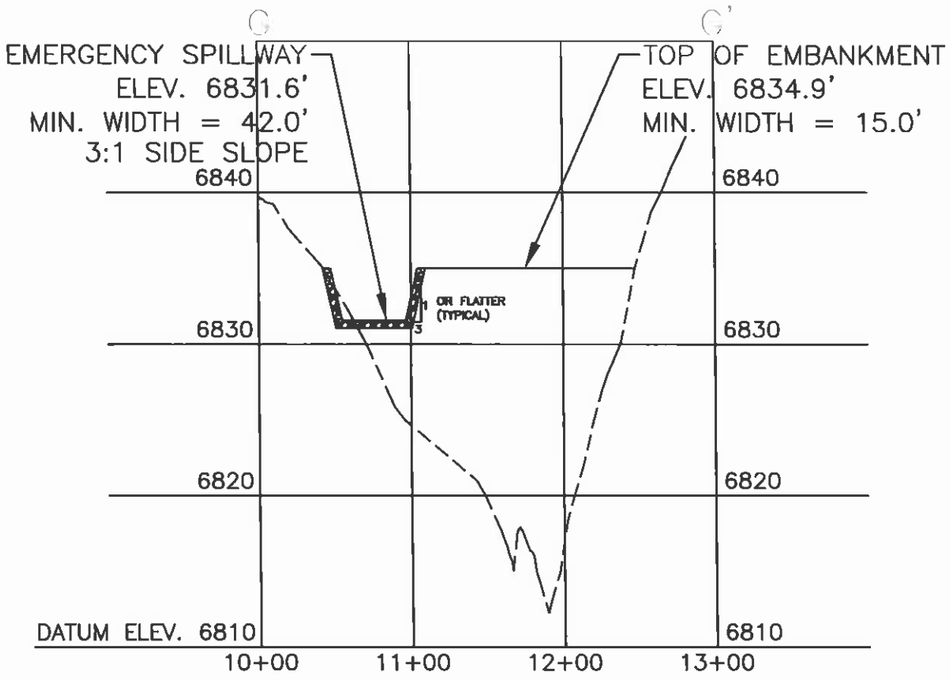
GENCY SPILLWAY
SCALE
OND

ENGINEERI
FL
PHONE: (928



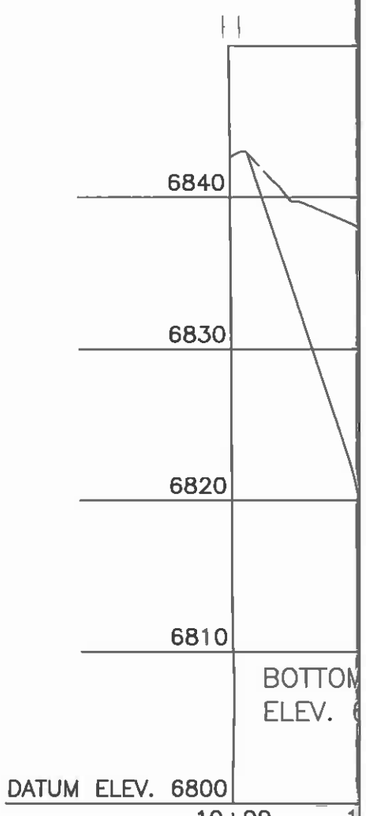
SECTION D – D'

SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'



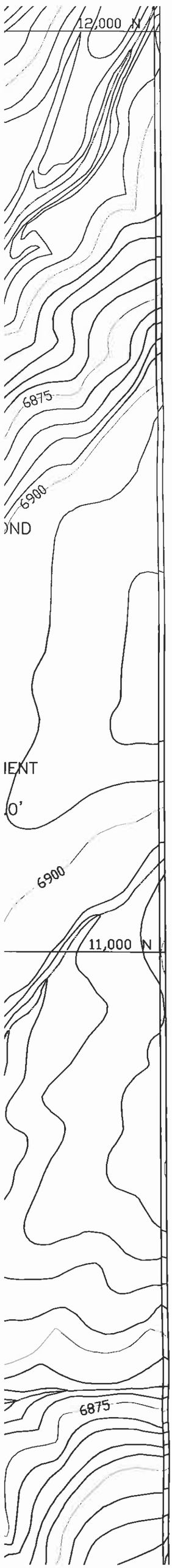
SECTION G – G'

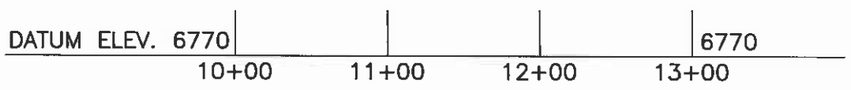
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'



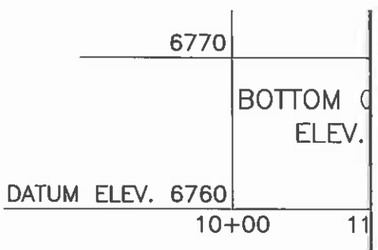
N9-J POND STAGE CAPACITY TABLE

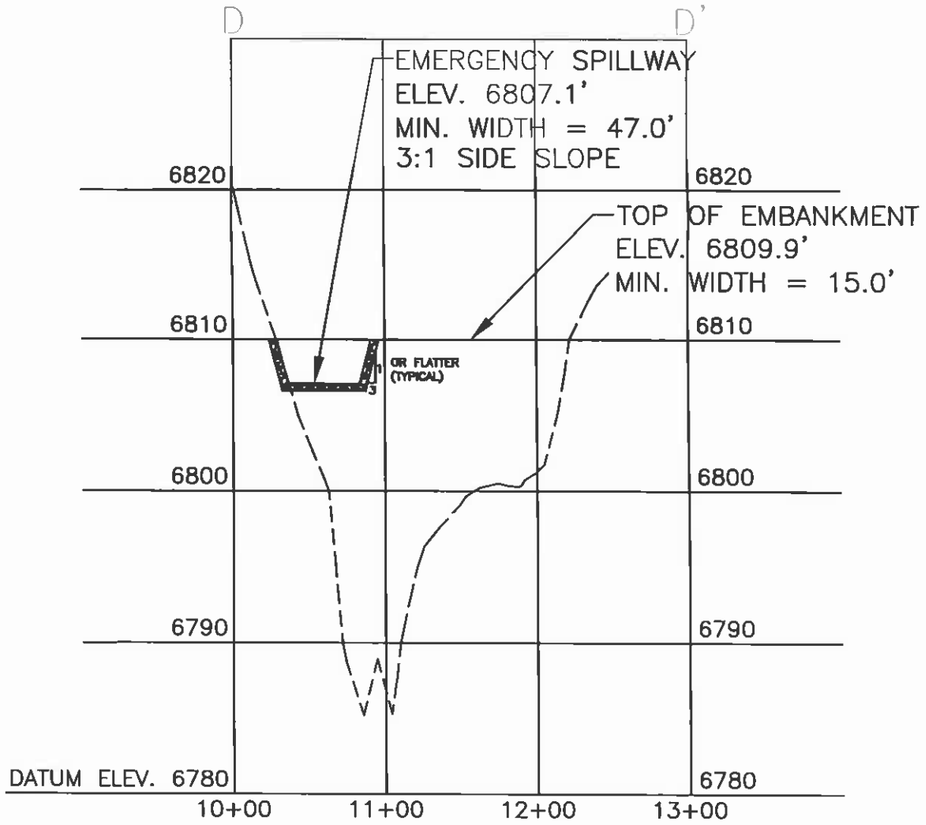
ELEVATION (ft-msl)	STAGE (ft)	AREA (acres)	TOTAL CAPACITY (ac-ft)	DESCRI
6770.0	0.0	0.77	0.00	BOTTOM C
6775.0	5.0	1.05	4.55	INCISE D
6780.0	10.0	1.40	10.67	
6785.0	15.0	1.82	18.73	
6785.5	15.5	1.87	19.66	EMERGENCY
6789.9	19.9	2.31	29.06	TOP OF EM

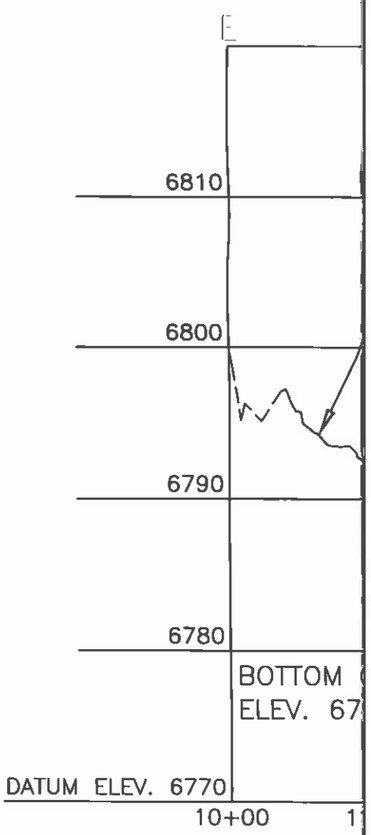




SECTION A – A'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'







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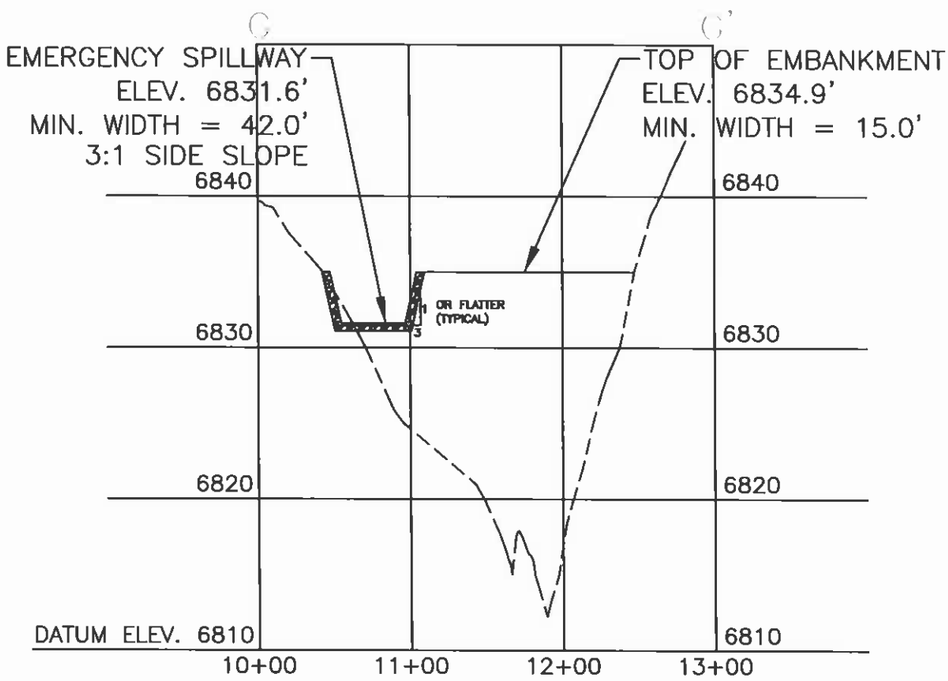

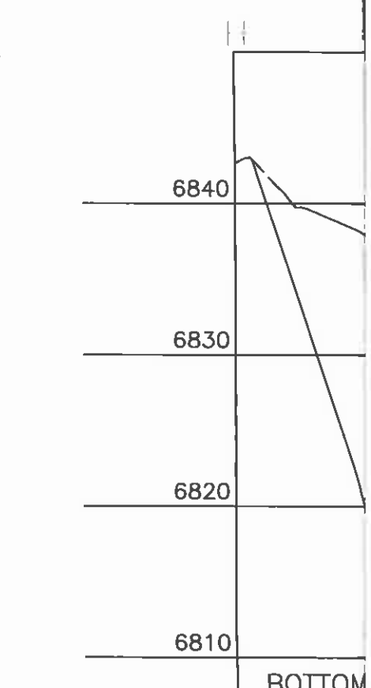

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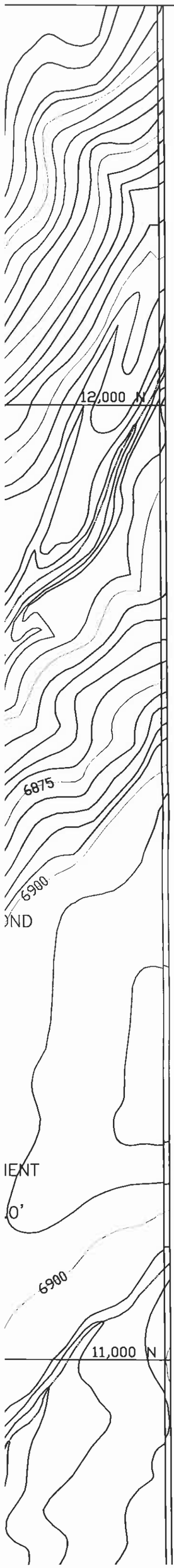
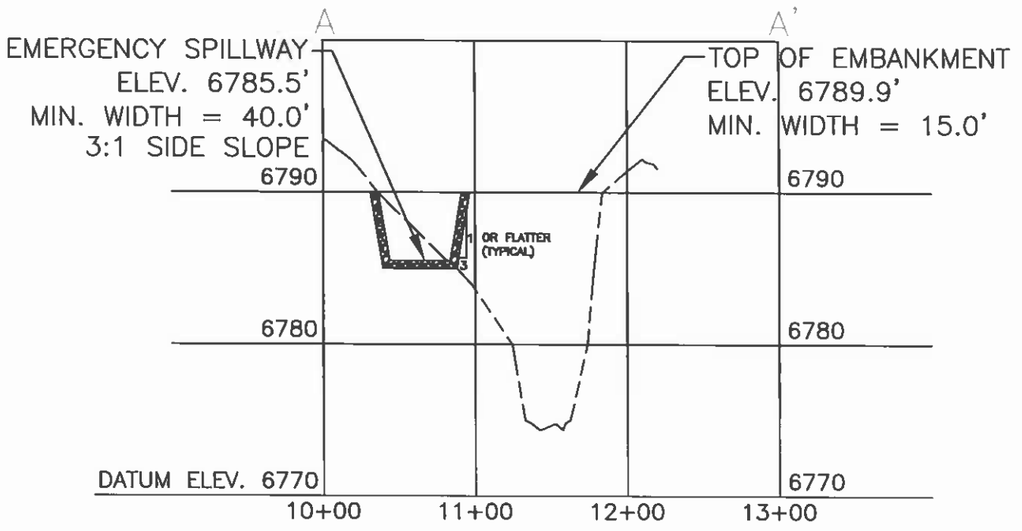
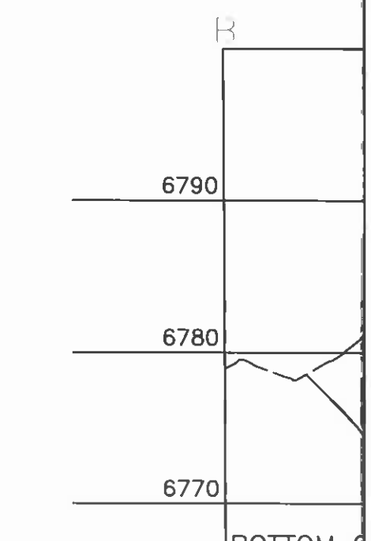
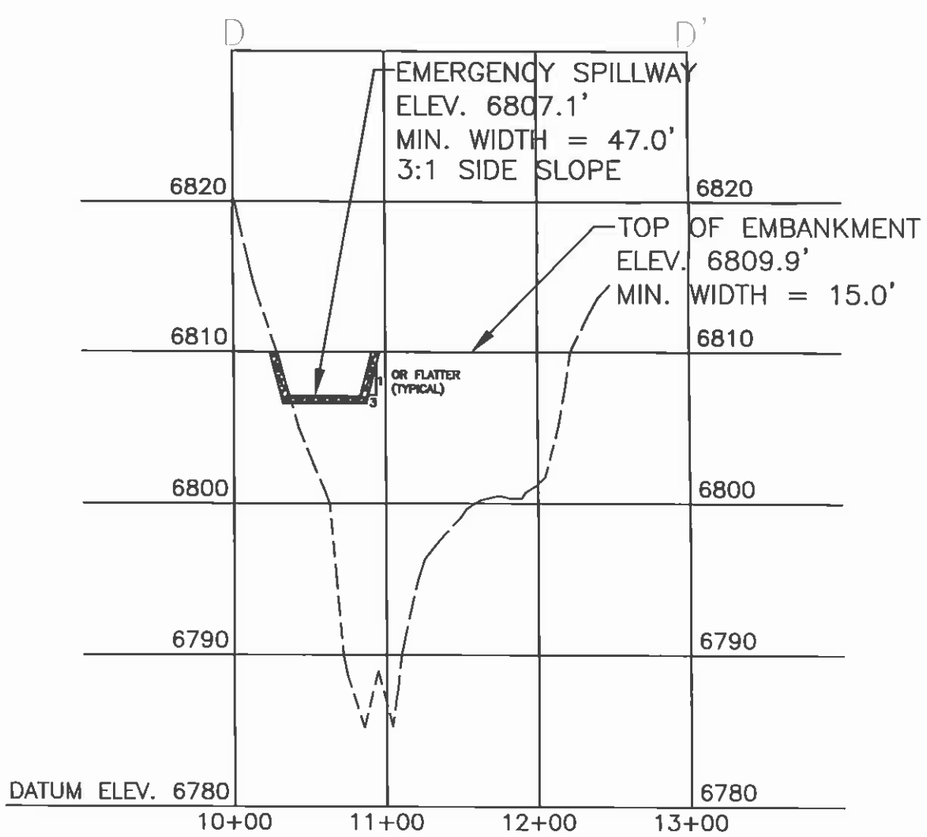


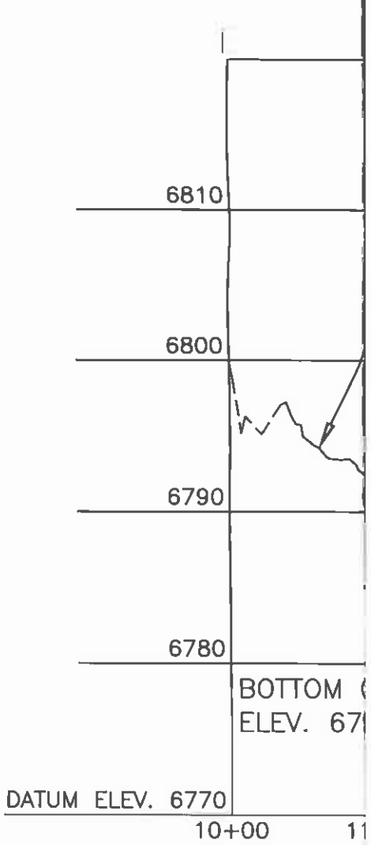


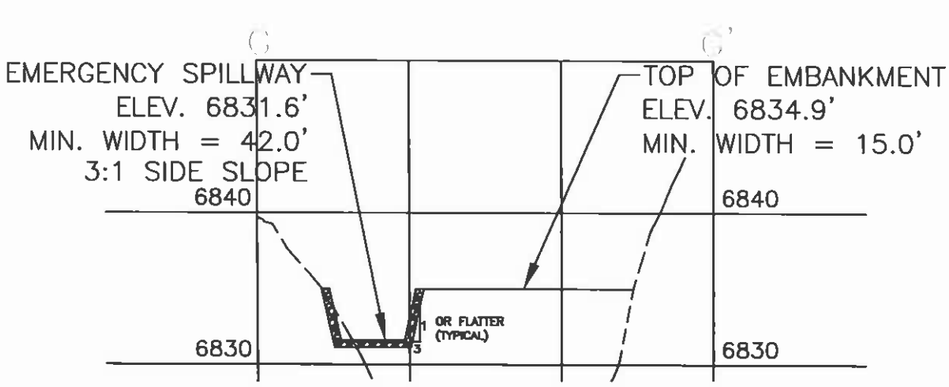
SECTION A – A'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

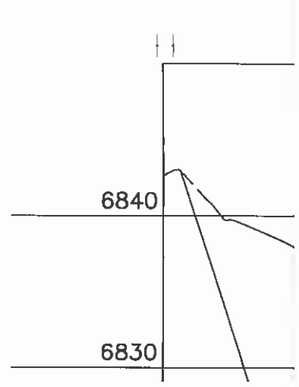


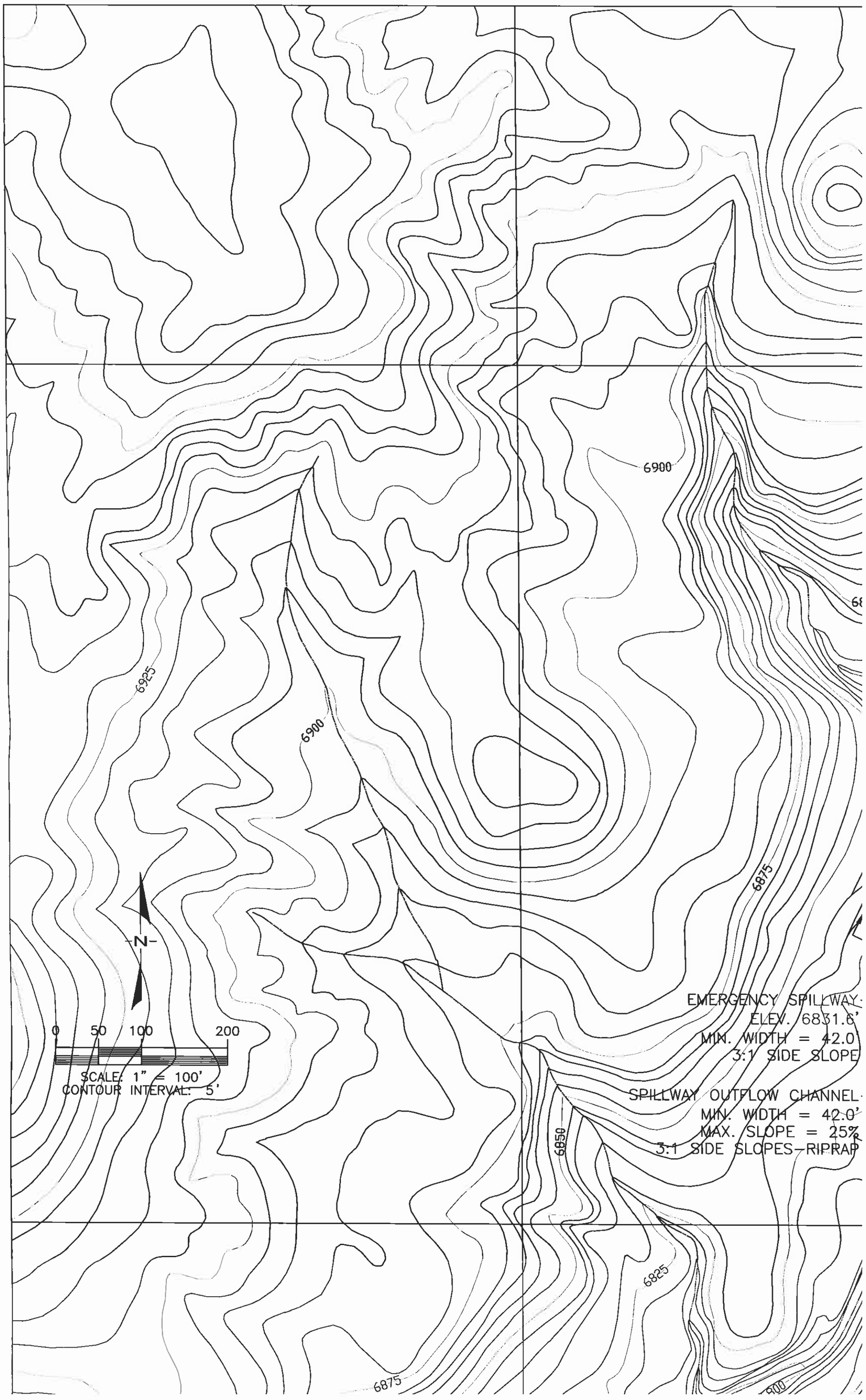


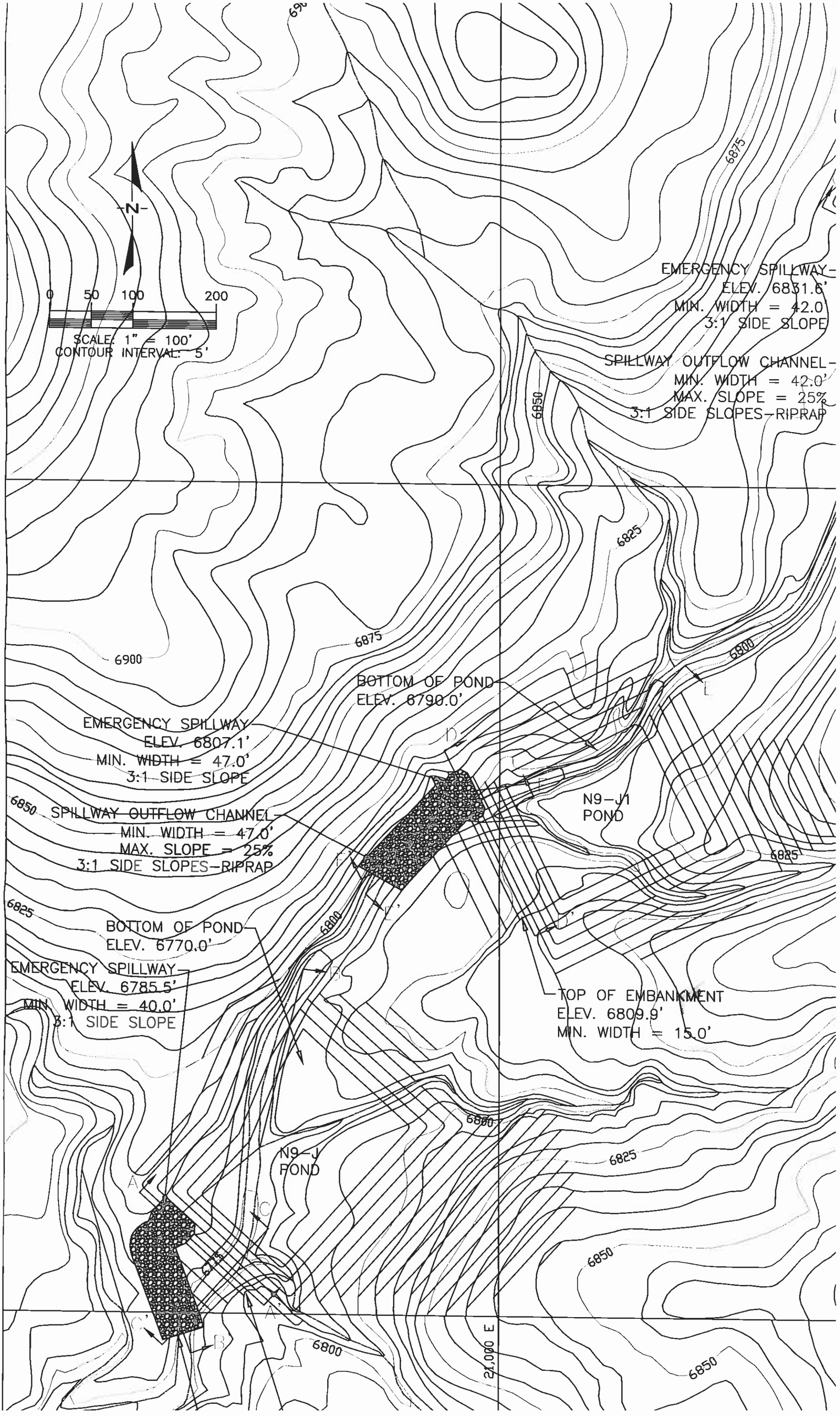
SECTION D – D'
SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

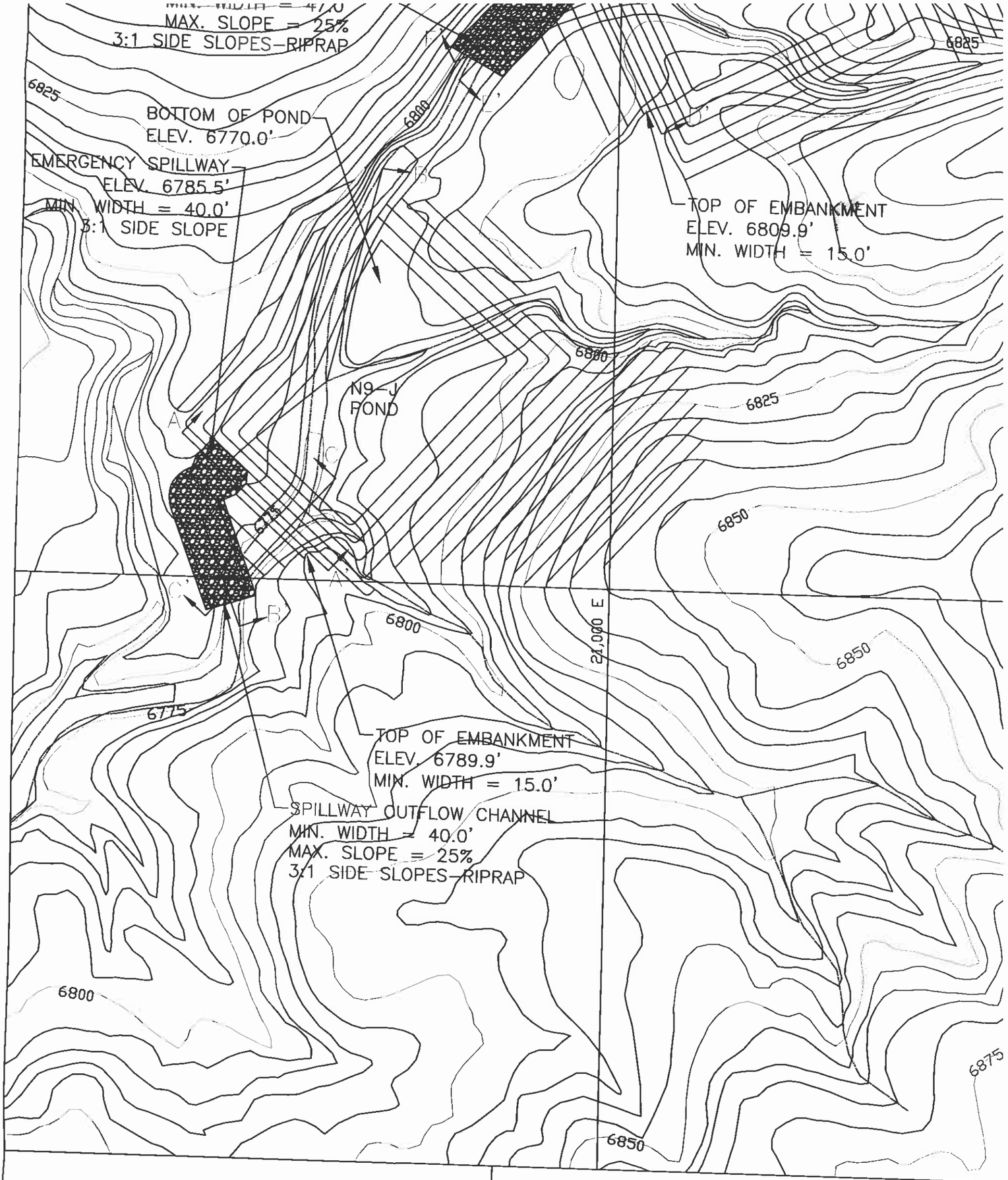


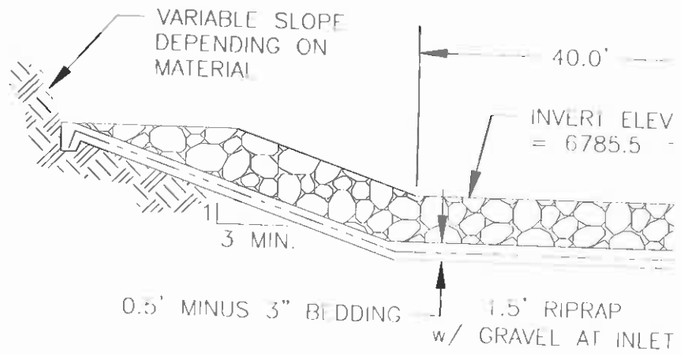





6900
6925
6900
6875
6850
6825
6875
-N-
0 50 100 200
SCALE: 1" = 100'
CONTOUR INTERVAL: 5'
EMERGENCY SPILLWAY
ELEV. 6831.6'
MIN. WIDTH = 42.0'
3:1 SIDE SLOPE
SPILLWAY OUTFLOW CHANNEL
MIN. WIDTH = 42.0'
MAX. SLOPE = 25%
3:1 SIDE SLOPES-RIPRAP


N
0 50 100 200
SCALE: 1" = 100'
CONTOUR INTERVAL: 5'
EMERGENCY SPILLWAY
ELEV. 6831.6'
MIN. WIDTH = 42.0'
3:1 SIDE SLOPE
SPILLWAY OUTFLOW CHANNEL
MIN. WIDTH = 42.0'
MAX. SLOPE = 25%
3:1 SIDE SLOPES-RIPRAP
BOTTOM OF POND
ELEV. 6790.0'
EMERGENCY SPILLWAY
ELEV. 6807.1'
MIN. WIDTH = 47.0'
3:1 SIDE SLOPE
SPILLWAY OUTFLOW CHANNEL
MIN. WIDTH = 47.0'
MAX. SLOPE = 25%
3:1 SIDE SLOPES-RIPRAP
BOTTOM OF POND
ELEV. 6770.0'
EMERGENCY SPILLWAY
ELEV. 6785.5'
MIN. WIDTH = 40.0'
3:1 SIDE SLOPE
N9-J1
POND
TOP OF EMBANKMENT
ELEV. 6809.9'
MIN. WIDTH = 15.0'
N9-J
POND
21,000 E
6900
6875
6850
6825
6800



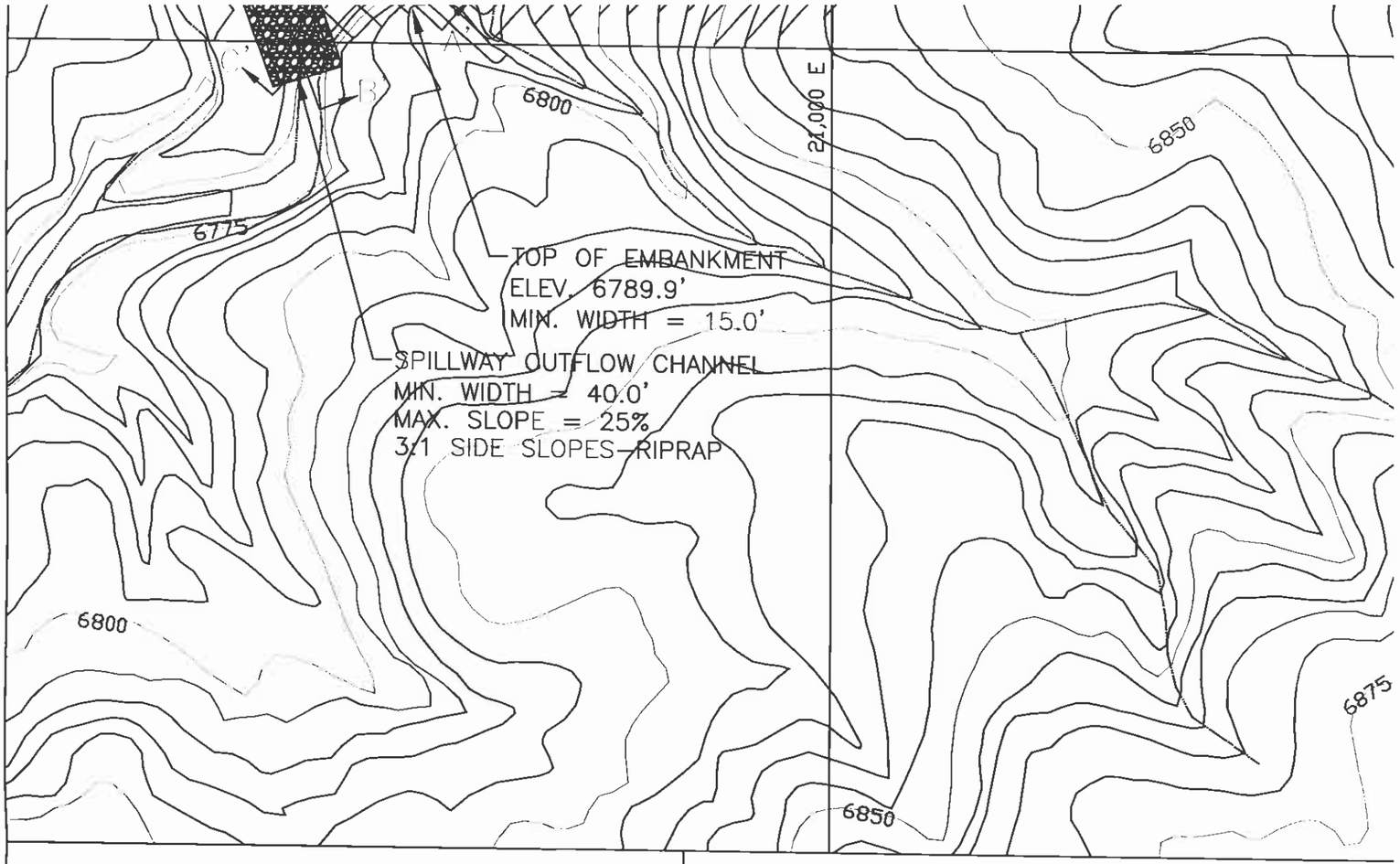


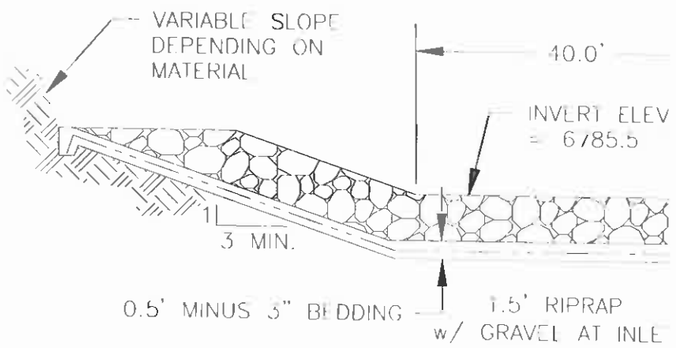
SPILLWAY MIN. D
OUTFLOW CHANNEL MI

SECTION OF EMERGEN

NOT TO SCALE

N9 J POND



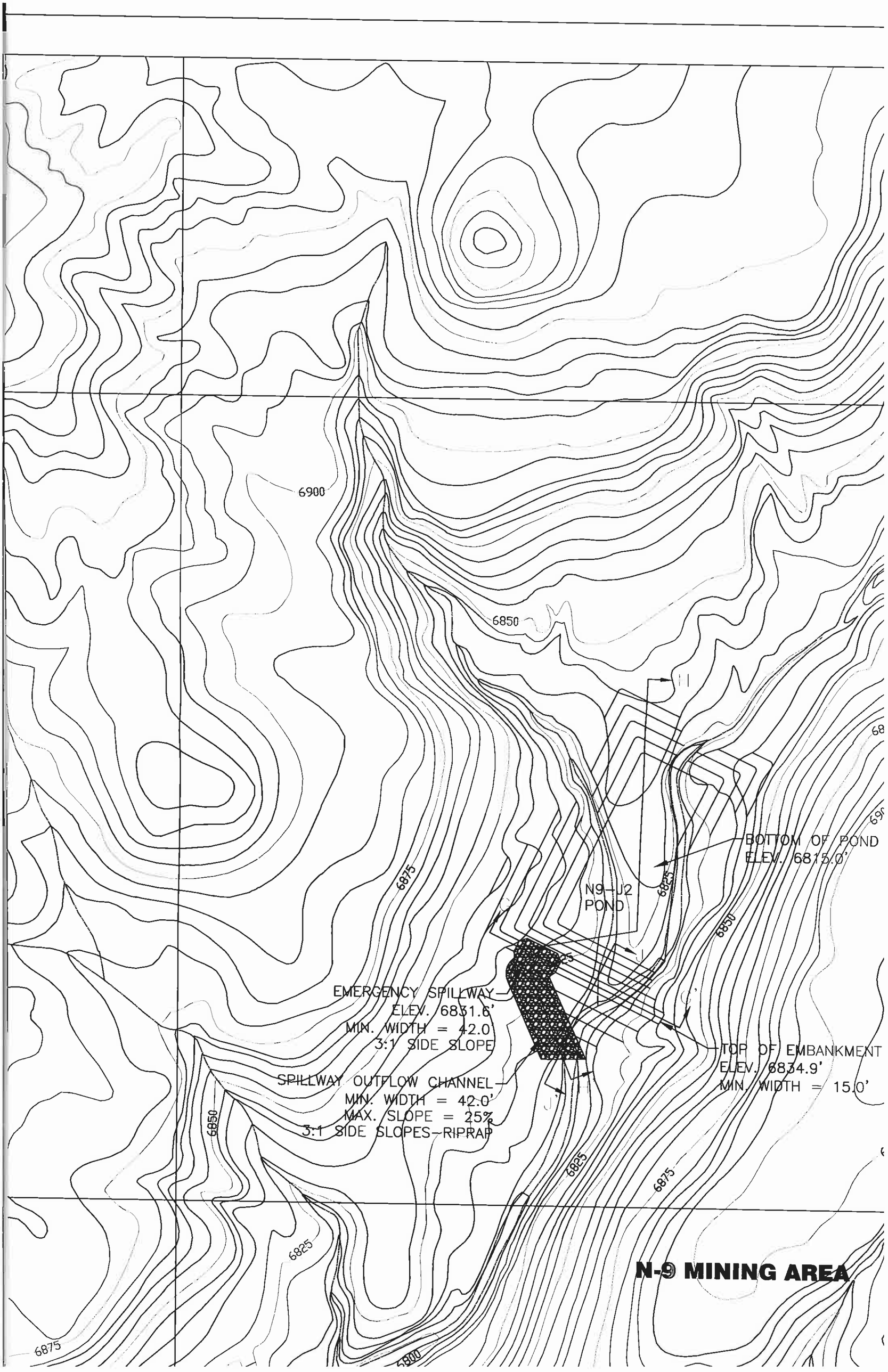


SPILLWAY MIN. D
OUTFLOW CHANNEL M

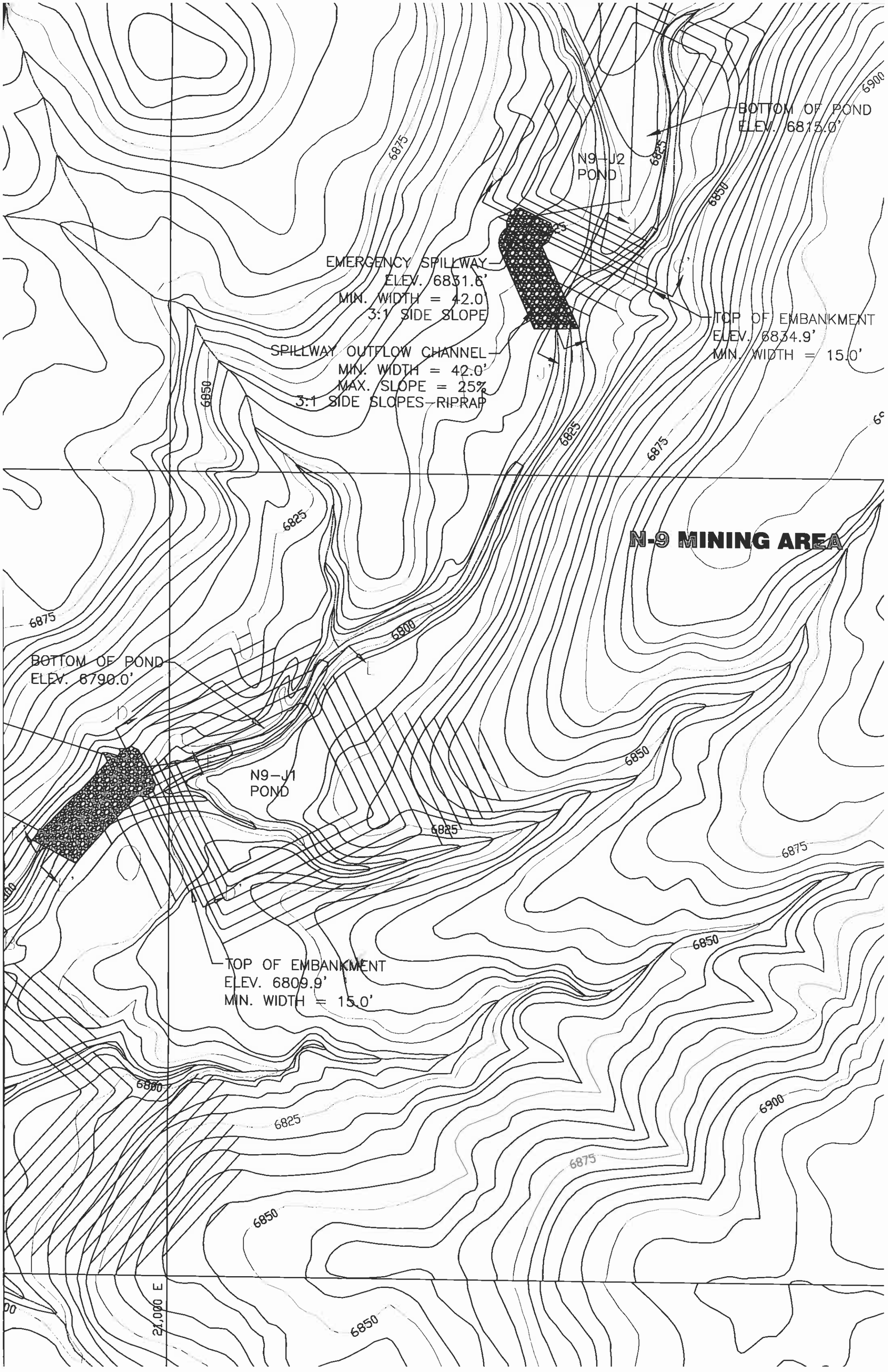
SECTION OF EMERGEN

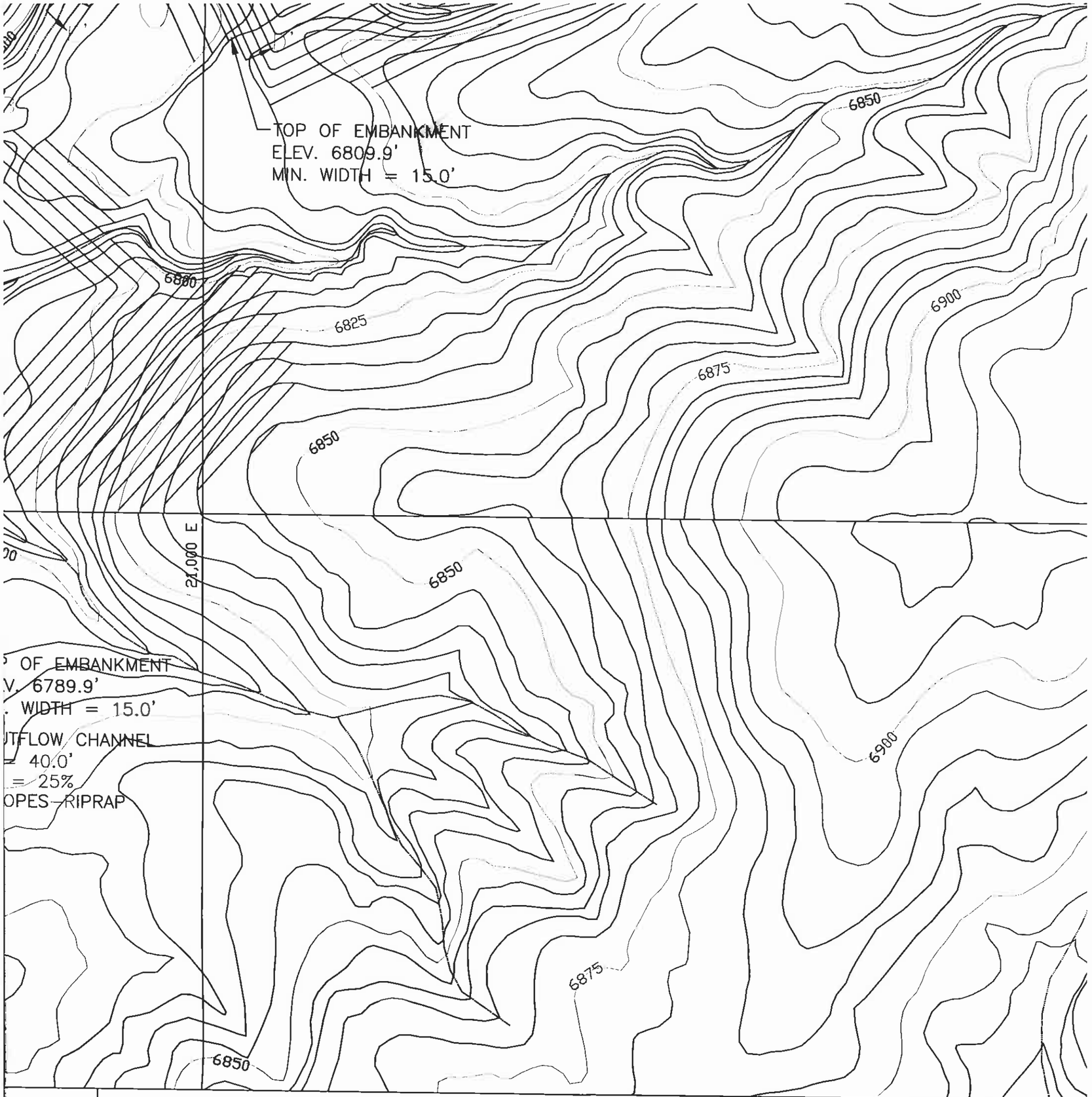
NOT TO SCAL

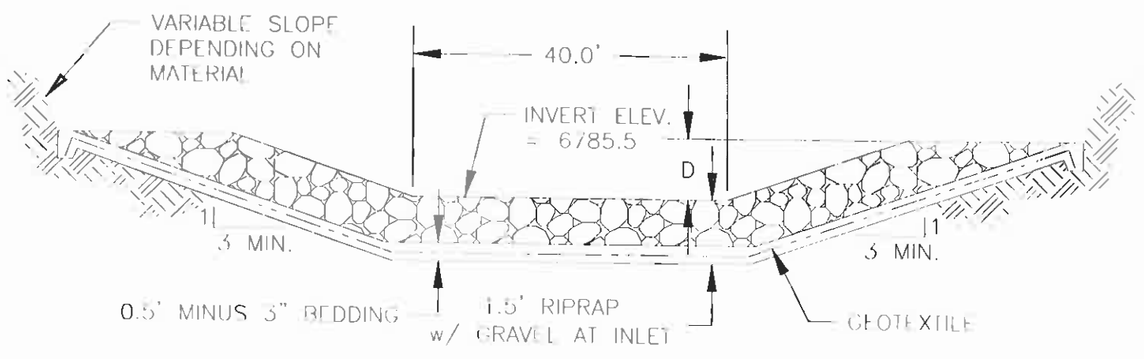
N9 J POND



N-9 MINING AREA


BOTTOM OF POND
ELEV. 6815.0'
N9-J2
POND
EMERGENCY SPILLWAY
ELEV. 6831.6'
MIN. WIDTH = 42.0'
3:1 SIDE SLOPE
SPILLWAY OUTFLOW CHANNEL
MIN. WIDTH = 42.0'
MAX. SLOPE = 25%
3:1 SIDE SLOPES-RIPRAP
TOP OF EMBANKMENT
ELEV. 6834.9'
MIN. WIDTH = 15.0'
N-9 MINING AREA
BOTTOM OF POND
ELEV. 6790.0'
N9-J1
POND
TOP OF EMBANKMENT
ELEV. 6809.9'
MIN. WIDTH = 15.0'
6875
6825
6850
6900
6800
21,000 E



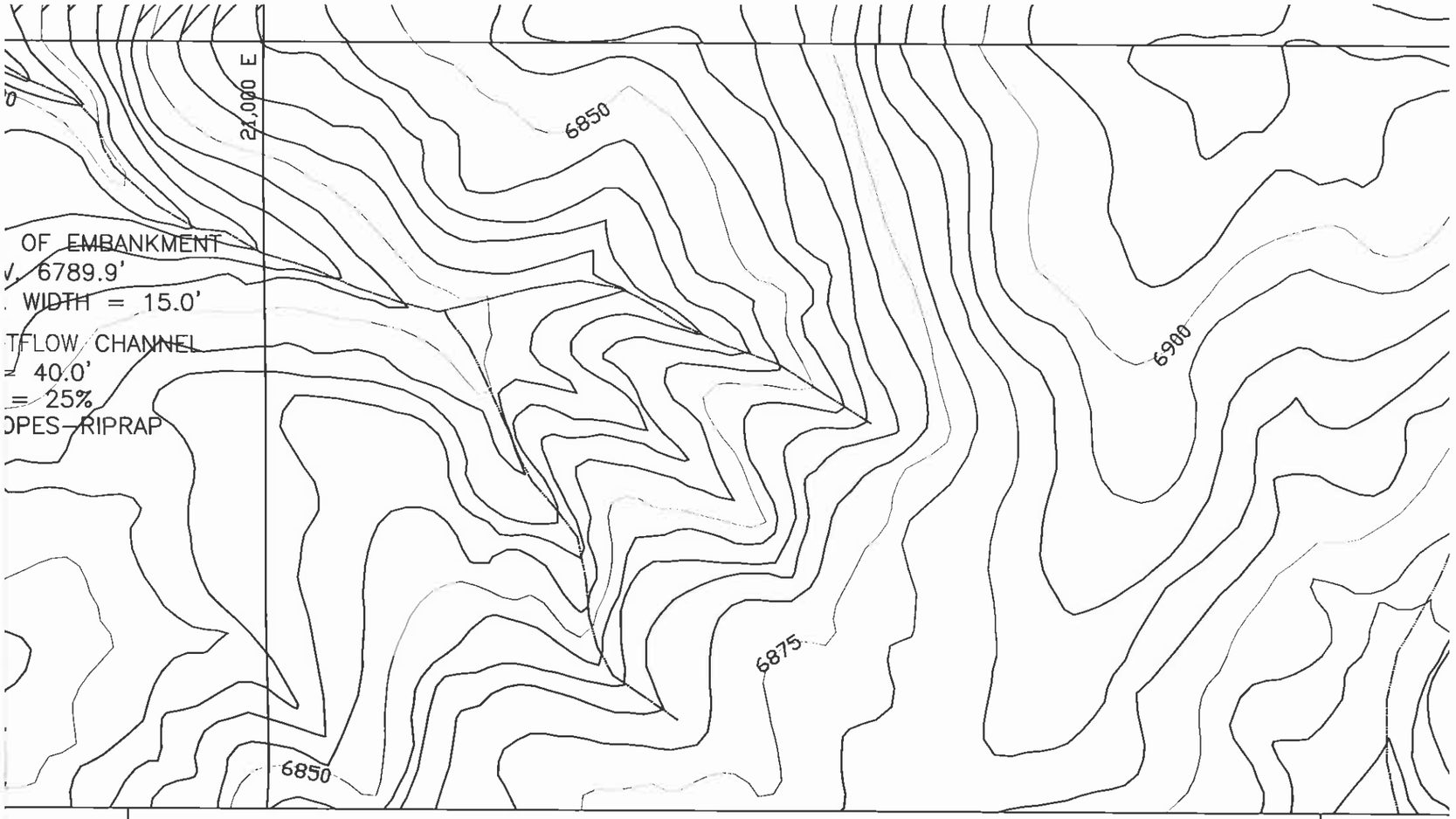


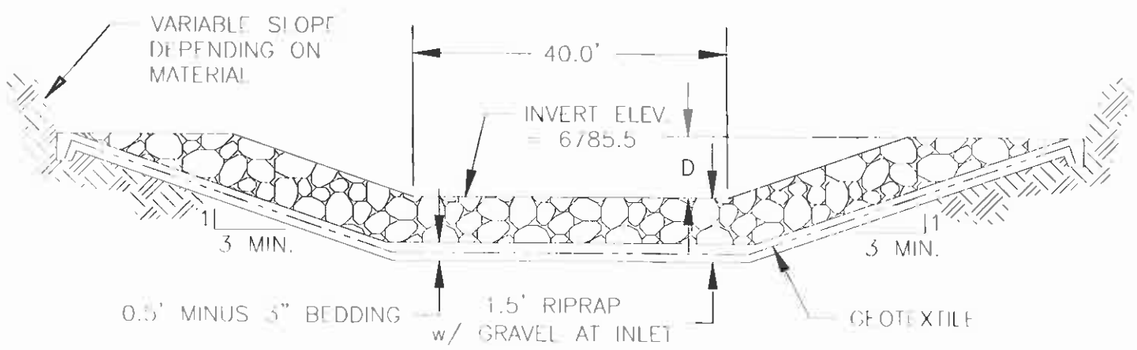
SPILLWAY MIN. D=2.5'
OUTFLOW CHANNEL MIN. D=2.0'

SECTION OF EMERGENCY SPILLWAY

NOT TO SCALE

N9 J POND



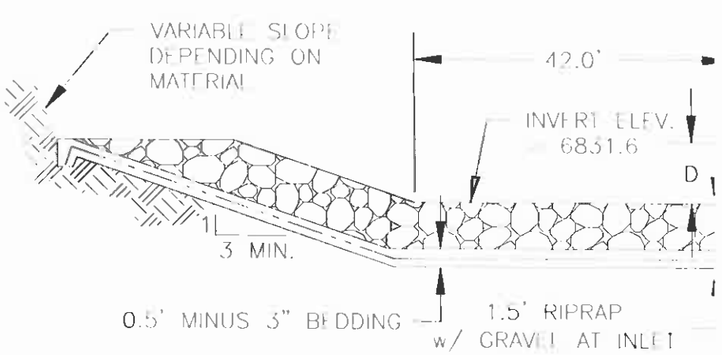


SPILLWAY MIN. D=2.5'
OUTFLOW CHANNEL MIN. D=2.0'

SECTION OF EMERGENCY SPILLWAY

NOT TO SCALE

N9-J POND



SPILLWAY MIN. D=2.5'
OUTFLOW CHANNEL MIN.

SECTION OF EMERGENCY

NOT TO SCALE

N9-J2 POND