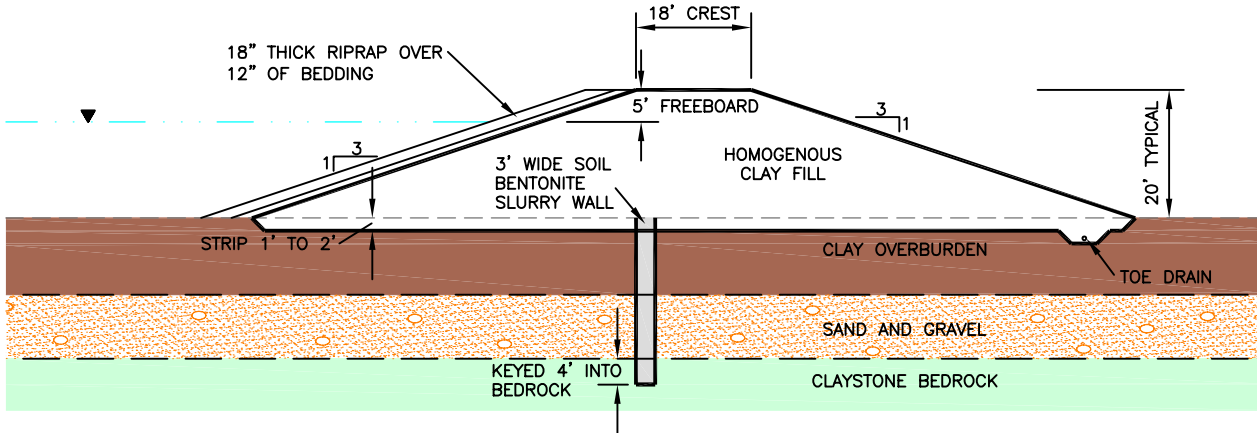


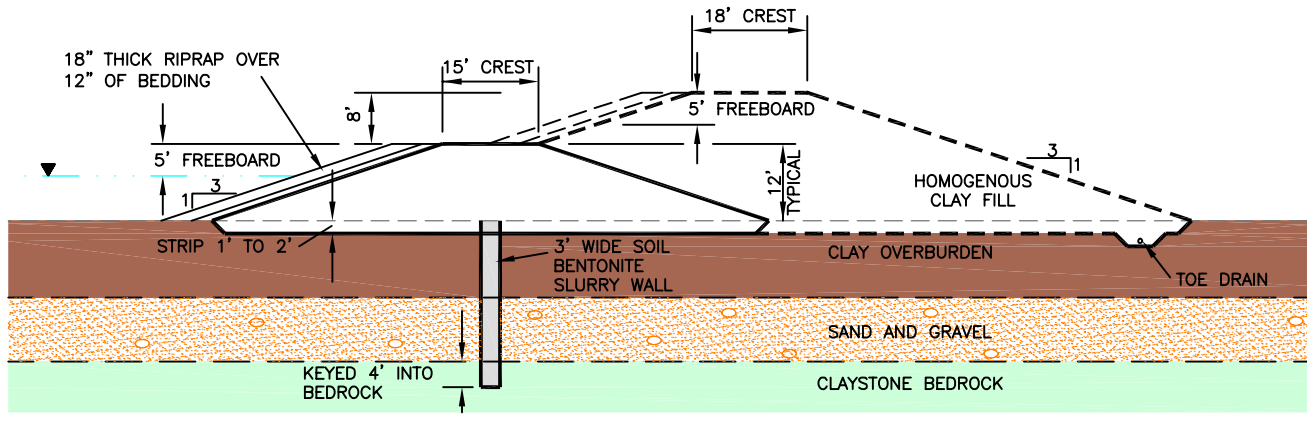
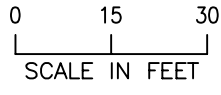
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UNION RESERVOIR
BORROW AREA LOCATION MAP

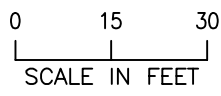
RMC
FIGURE:
5.1



13 FOOT RESERVOIR RAISE



**5 FOOT RESERVOIR RAISE WITH FUTURE
DOWNSTREAM ENLARGEMENT TO 13 FEET**



R:\0033_283 Union Reservoir Dams\TYPXSECT.dwg, 3/8/2005 10:22:07 AM

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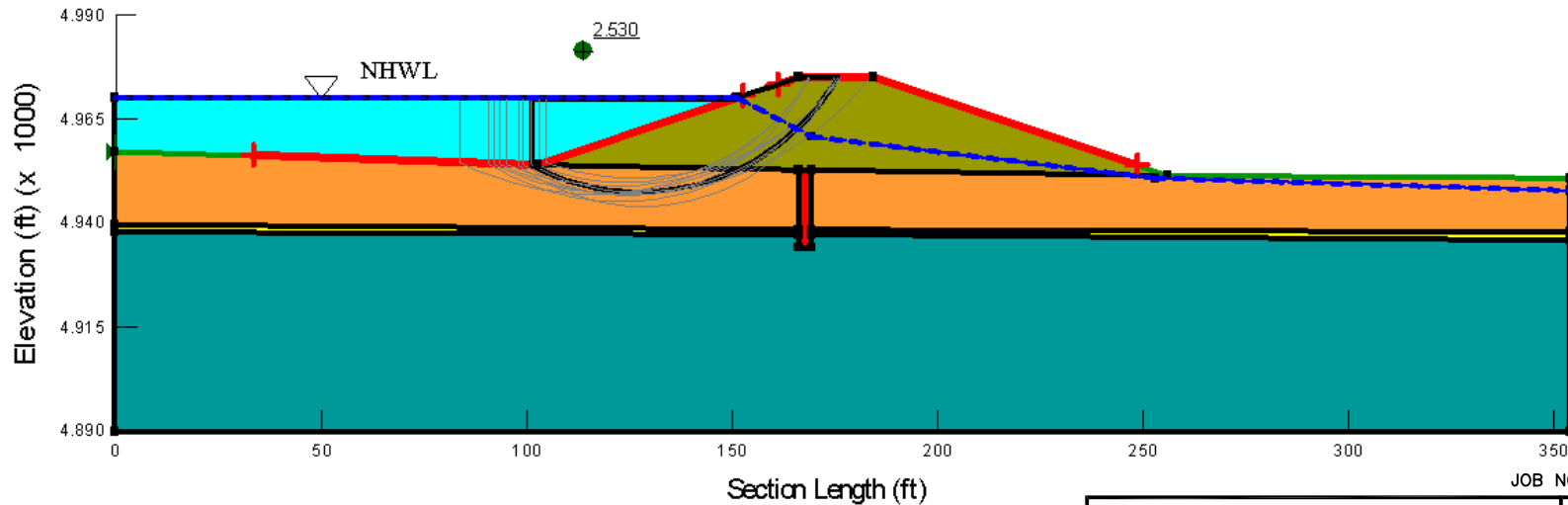
UNION RESERVOIR
TYPICAL DAM SECTIONS

RMC
FIGURE:
5.2

Union Reservoir Station 59+74 NHWL Upstream Slope

- Description: Bedrock (Fully Softened)
Wt: 110
Cohesion: 0
Phi: 26
- Description: Sand & Gravel
Wt: 120
Cohesion: 0
Phi: 35
- Description: Overburden
Wt: 106
Cohesion: 50
Phi: 26
- Description: Embankment
Wt: 106
Cohesion: 150
Phi: 28
- Description: Slurry Wall
Wt: 115
Cohesion: 0
Phi: 22
- Description: Water
Wt: 62.4

Spencer Factor of Safety: Factor of Safety: 2.530



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JOB NO. 19-0033.283.00

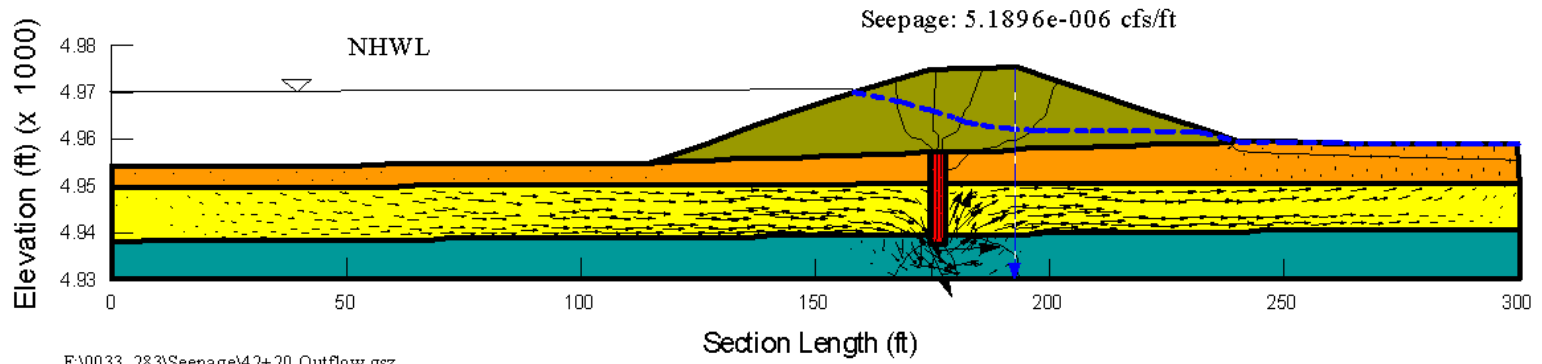
UNION RESERVOIR
SLOPE STABILITY ANALYSIS
STATION 59+74



FIGURE:
5.3

Union Reservoir Slurry Wall Option

- Bedrock, $K = 3.29e-05$ cm/sec
- Sand & Gravel, $K = 1.40e-02$ cm/sec
- Overburden, $K = 7.99e-06$ cm/sec
- Embankment, $K = 3.29e-07$ cm/sec
- Slurry Wall, $K = 1.00e-07$ cm/sec



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JOB NO. 19-0033.283.00

UNION RESERVOIR
SEEPAGE ANALYSIS
STATION 42+20



FIGURE:

5.4