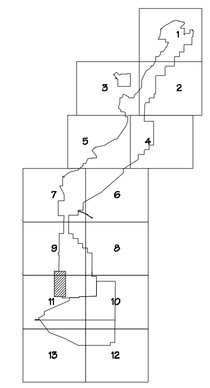
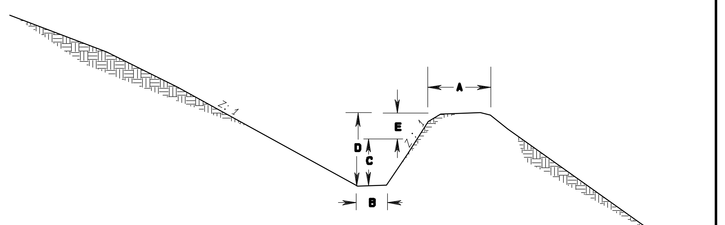
LEGEND

- ROAD
- WATERSHED
- BUILDING
- FENCE
- IRRIGATION LINE
- CULVERT
- DAM
- DRAINAGE
- RAILROAD
- TREES
- POWERLINE
- ×5338.5 SPOT ELEVATION
- 5300 INDEX CONTOUR
- 5298 INTERMEDIATE CONTOUR
- 218 △ 5422.45
- LEASE LINE
- TERRACE
- MAIN CHANNEL
- RIPRAP
- BOUNDARY OF RECLAIMED AREA

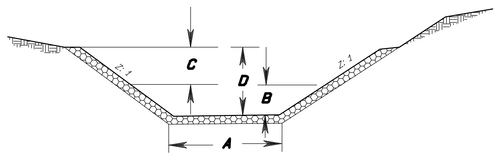


Typical Terrace Cross-Section



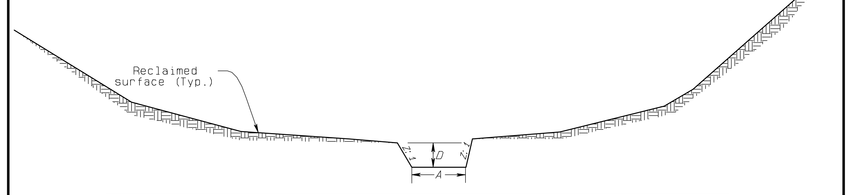
A	EMBANKMENT WIDTH (ft.)	12 TO 25
B	BOTTOM WIDTH (ft.)	3.0 TO 13.9
C	FLOWDEPTH W/SEDIMENT (100 YR-6HR) (ft.)	0.3 TO 1.6
D	DEPTH (ft.)	1.0 TO 5.0
Z:1	SLOPES (ft.)	2.6:1 TO 10:1
	FLOW VELOCITIES (10 YR-6HR) (fps)	1.1 TO 3.1
	TERRACE GRADIENTS (%)	0.01 TO 12
E	MINIMUM FREEBOARD (ft.)	1.0

Typical Riprap Drop Structures Cross-Section



		DS-1	DS-2	DS-3	DS-4	DS-5	DS-6
A	BOTTOM WIDTH (ft.)	6.5 - 9.5	8.0 - 8.5	5.0 - 6.3	5.5 - 6.0	3.5 - 7.5	4.5 - 7.0
B	FLOW DEPTH (100 YR - 6 HR (ft.)	0.53	0.18	0.25	0.13	0.21	0.13
C	MINIMUM FREEBOARD (ft.)	0.8	0.80	1.20	0.80	0..80	1.0
D	DEPTH (ft.)	1.2 - 1.9	1.0 - 1.6	1.4 - 2.3	0.9 - 1.5	1.0 - 1.2	1.1 - 2.0
Z:1	SIDE SLOPES (ft.)	4.7:1 - 10:1	5.5:1 - 14.9:1	2.3:1 - 4:1	4.3:1 - 7.3:1	3.4:1 - 6.0:1	2.5:1 - 5.0:1
	RIPRAP D50 (Req'd)(in)	6	6	6	3	6	9
	RIPRAP D50 (PLACED)(in)	6	6	6	9	6	9
	RIPRAP THICKNESS (in)	12	18	12	18	12	18
	GRADIENT (%)	4.4 - 9.2	9.1 - 11.0	10.0 - 13.7	3.5 - 10.4	8.1 - 14.4	14.1 - 15.0

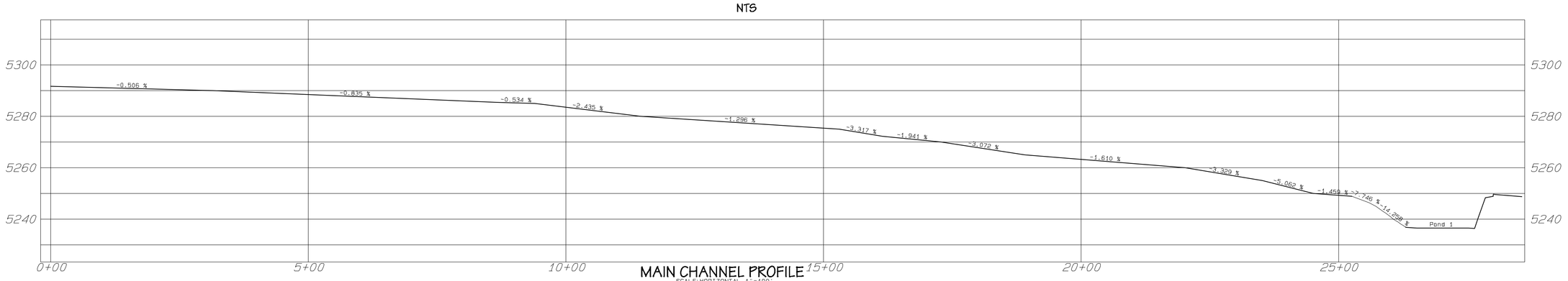
Typical Main Channel Cross-Section



A	BOTTOM WIDTH (ft.)	5.7 - 19.5
Z:1	SIDE SLOPES (ft.)	2.6:1 - 10 :1
	GRADIENTS (%)	0.5 - 5.0
	FLOW DEPTHS (100 YR - 6 HR) (ft.)	0.9 -1.9
	FLOW VELOCITIES (10 YR - 6 HR) (fps)	2.9 - 5.97
D	DEPTH (ft.)	1.4 - 3.4

TYPICAL CROSS SECTIONS

NTS



MAIN CHANNEL PROFILE

SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=20'

CERTIFICATION STATEMENT

I, Ron C. VAN VALKENBURG, hereby certify that this drawing was reviewed by me and that the information shown is complete and accurate to the best of my knowledge.

RON C. VAN VALKENBURG NEW MEXICO 9263 LICENSED PROFESSIONAL ENGINEER

NOTES

1. The minimum freeboard for the riprapped downdrains is 0.8 foot, which is slightly less than the 1.0 foot specified in the Reclamation Surface Stabilization Handbook but should be sufficient.
2. The unlined channel downstream of downdrain DS-1 should be reconstructed to meet the minimum freeboard criteria.
3. Since, Regolithe Stockpile DXR1_RG_W is not completely depleted it is shown on the asbuilt topography.
4. The upper reach of the main channel is not completed.The alignment of the upper reach coincides with the haulroad to the regolithe stockpile. The upper channel reach will not be completed until the stockpile is depleted and the haulroad removed.

REV. No.	DATE	DRAFT. BY	REVISION DESCRIPTION	DWG.	E.G.	P.E.	P.S.	CHIEF ENG.
2-0	01/31/09	RY	Updated surface contours with drainage pattern into Terrace E1	SS	SS	RCV	FG	
1	12/29/99	RY	As-Built	AY	MC	LR	CN	

APPROVALS

EXHIBIT 11-140

NAVAJO COAL COMPANY

NAVAJO MINE — SAFETY — PAYS

P.O. BOX 155 FRUITLAND, NEW MEXICO 87416

DIXON RECLAMATION
AS-BUILT
PLAN, PROFILE & SECTIONS

PREPARED BY AY, RY	DRAWN BY RY	SCALE AS NOTED
APPROVED BY LR	DATE 12/29/99	REF DWG
DWG LOC	G:\Departments\Ds\DSM_SUBWVPER_PROD\CH_11_PAP EXHIBITS\11-140-CH RECLAIMED-ASBUIL	

Project Date: Path: G:\Departments\Ds\DSM_SUBWVPER_PROD\CH_11_PAP EXHIBITS\11-140-CH RECLAIMED-ASBUILT.dwg
AutoCad Plot time: Tue Mar 24 15 09:30 2009