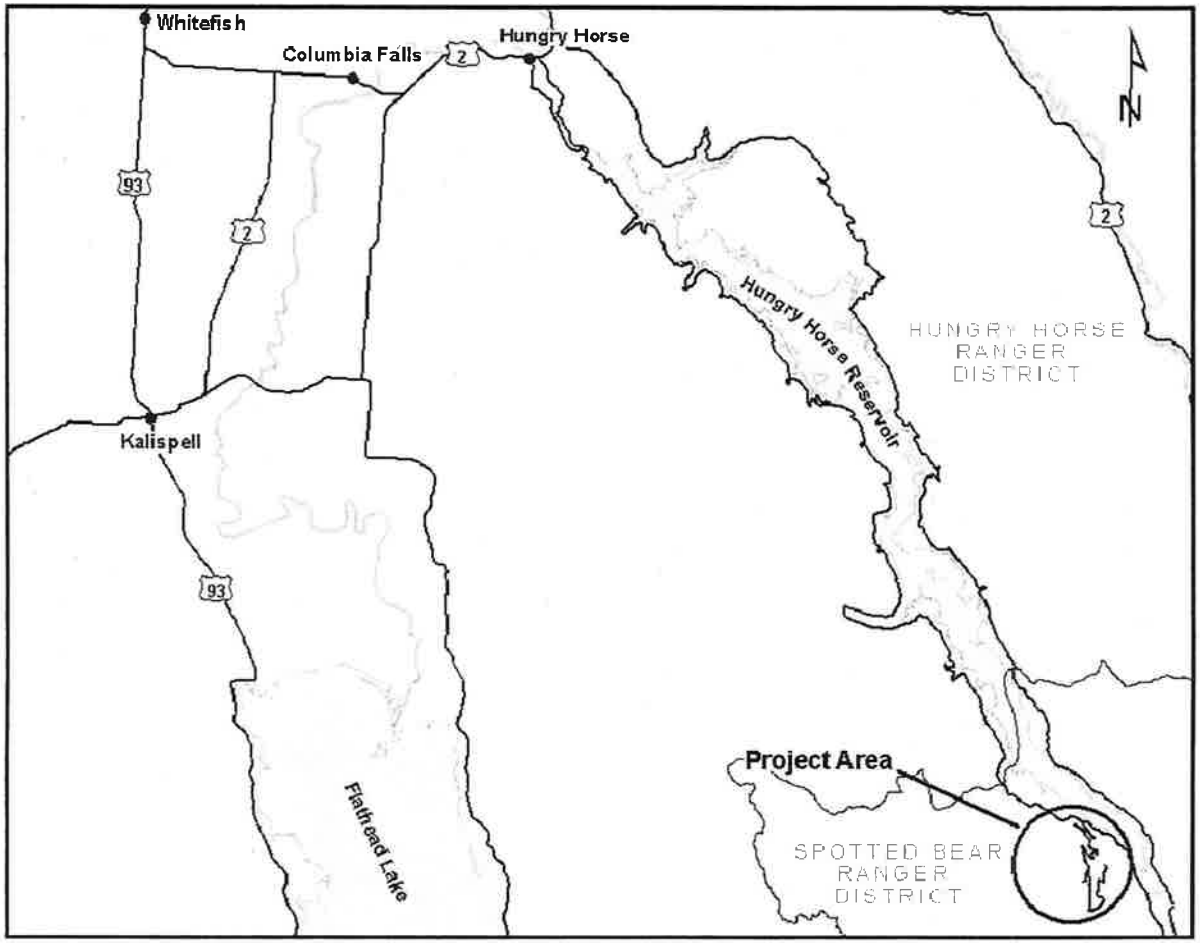
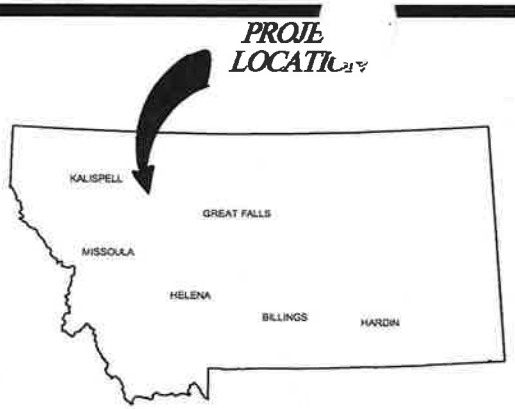
U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION ONE

CONSTRUCTION DRAWINGS FOR TIN MULE

SPOTTED BEAR RANGER DISTRICT
FLATHEAD NATIONAL FOREST

VICINITY MAP





MONTANA INDEX MAP

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7	SED. RETENTION BARRIOR AND CATCH BASIN
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RECOMMENDED:

Caitlin Mack DATE 6/8/2012
SPOTTED BEAR DISTRICT RANGER

APPROVED:

Chris Weber DATE 6/7/12
FOREST SUPERVISOR

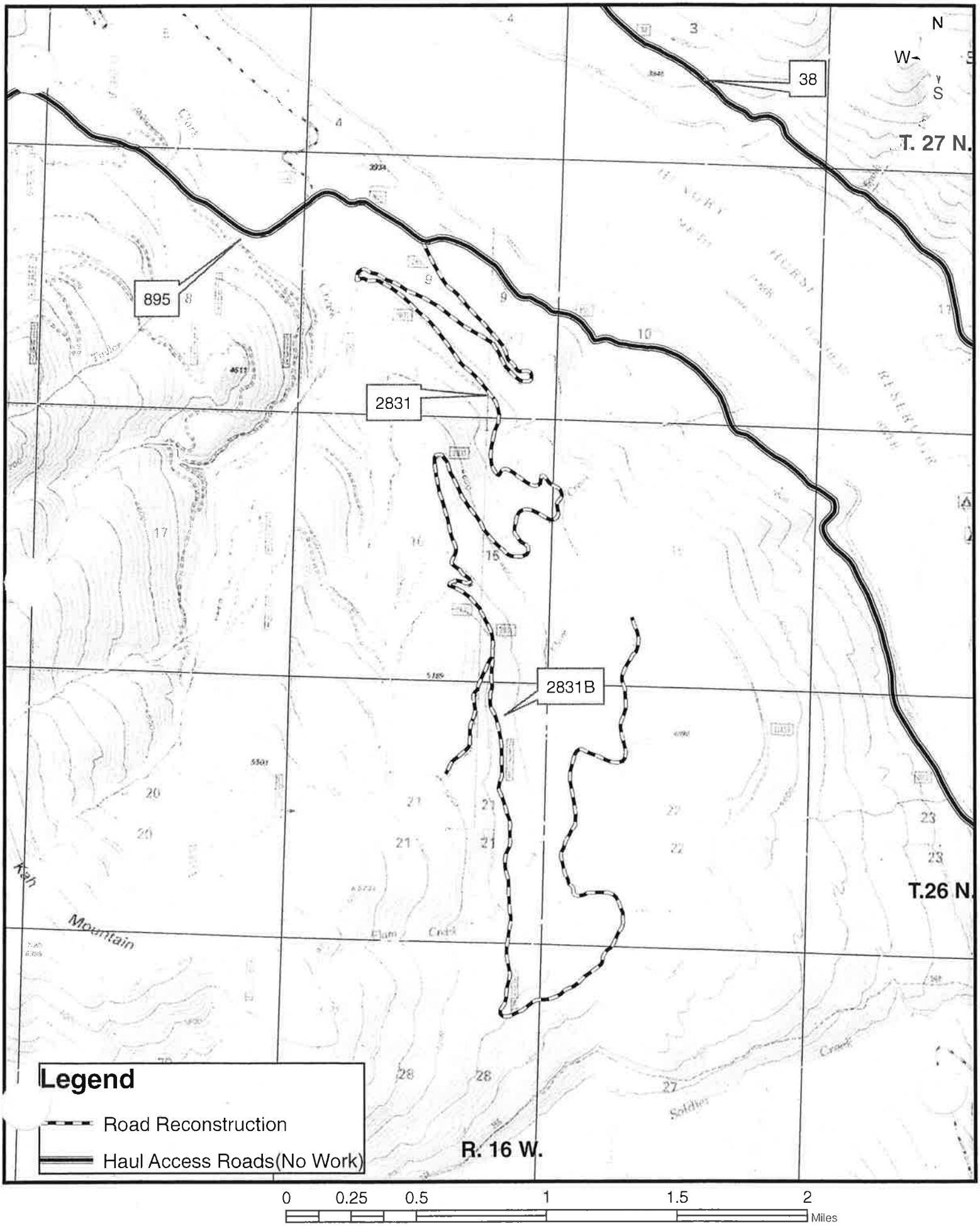
SUBMITTED:

Kathryn A. Hyde DATE June 7, 2012
PROJECT ENGINEER

REVIEWED:

DATE June, 12
FOREST ENGINEER

TIN MULE T.S. ROAD RECONSTRUCTION



TIN MULE TIMBER SALE

ESTIMATE OF QUANTITIES

Sheet 3

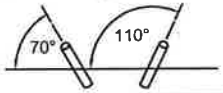
ITEM NO.	DESCRIPTION	METHOD OF MEASURE	UNIT	REVISION DATE	ROAD NUMBER 2831	2831B			-	-	REMARKS
					MILE POST (MILES) 5.49	3.77			-	-	
					QUANTITIES						
201(01)	Roadway Brushing	A.Q.	MILE			1.76					
202(02)	Removal of Existing CMP	A.Q.	EACH		3	3					
203(17)CB	Drainage Excavation, Type Catch Basin	A.Q.	EACH		5						
203(17)DII	Drainage Excavation, Type Low Standard Drain Dip	A.Q.	EACH		35	12					
203(17)DS	Drainage Excavation, Type Standard Drain Sag	A.Q.	EACH		2						
204(09)	Sediment Basin	A.Q.	EACH			2					
251(01)	Placed Riprap, Class III	D.Q	C.Y.		8	16					
304(13)	Placing Aggregate, Compaction A-(Loose CY)	V.Q.	C.Y.		350	50					
304(13)P	Aggregate Purchase	V.Q.	C.Y.								
306(01)	Road Reconditioning, Compaction Method A	D.Q.	L.F.		5.49	3.79					
601(01)	Mobilization	L.S.Q.	L.S.		1	1					
603(01)18	18-Inch Corrugated Metal Pipe, 0.064-Inch Thickness	A.Q.	L.F.		198						
603(01)24	24-Inch Corrugated Metal Pipe, 0.064-Inch Thickness	A.Q.	L.F.		30	78					
603(01)36	36-Inch Corrugated Metal Pipe, 0.064-Inch Thickness	A.Q.	L.F.		42	38					
625(02)	Seeding, Fertilizing, and Mulching, Dry Method	L.S.Q.	L.S.		1	1					

ROAD NO.	DESIGN		AS BUILT		ALLOWABLE ALTER						SKEW ∡	CATCH BASIN	DITCH BLOCK	RIPRAP		1-1\2:1 STEP BEVEL	CULV. EXC.	REMARKS
					STEEL 2-2/3"X1/2"		ALUMINUM											
	STATION	LENGTH	STATION	LENGTH	SIZE	THICKNESS	SIZE	THICKNESS						C.Y.	CLASS		C.Y.	
2831	0.405	34'			18"	0.064					70	X	X	1	III			
	0.585	40'			18"	0.064					70	X	X	1	III			
	1.045	30'			18"	0.064					70			1	III			
	1.087	30'			18"	0.064					90	X		1	III			
	2.678	42'			36"	0.064								1	III			REPLACE EXISTING CMP - SKEW TO CHANNEL
	3.474	30'			24"	0.064								1	III			REPLACE EXISTING CMP - SKEW TO CHANNEL
	3.494	30'			18"	0.064					110°	X	X	1	III			
	3.530	34'			18"	0.064					110°	X	X	1	III			
2831B	0.523	40			24"	0.064								2	III			REPLACE EXISTING CMP - SKEW TO CHANNEL
	1.024	38			36"	0.064								2	III			REPLACE EXISTING CMP - SKEW TO CHANNEL
	1.114	38			24"	0.064								2	III			REPLACE EXISTING CMP - SKEW TO CHANNEL

TIN MULE

SKEW DIAGRAM

ROAD ℄



CULVERT LISTING

FLATHEAD NATIONAL FOREST

SHEET NO. 4

GENERAL NOTES

1. Construction stakes will be set by the Forest Service. It is the contractor's responsibility to maintain the survey work until construction has been completed.

2. item 157(02) -- Sediment basin -- Riprap shall be obtained from the existing stock pile located in the Airport Pit on NFSR 11462, (Section 1, T25N., R16W.)

3. Item 306(01) -- Recondition roadbeds to a "Motor Grader Finish" --- (Scarification not Required). Shape and grade all drain dips and drain sags to effectively drain water from the road surface. Excess rocks and waste material removed during the process shall be disposed of along the adjacent fill slopes as directed by the engineer.

During the reconditioning of roadways, ditches shall be cleaned as called for on the road logs. Berms of duff and debris are expected to be disposed off roadway in fill areas, "tracked in," and or feathered out or rolled down. Reconditioning of roadway includes ditching, cmp cleaning, 4:1 slope shaping, and crowning of roads to 4%.

4. Drain dips and sags shall not function as a ditch relief, and shall not intercept the ditch bottom unless specified on the road logs for each site to protect the ditch line.

5. Item 202(02) -- Culverts designated for removal shall become the property of the contractor and will be removed from National Forest Service Lands.

6. Item 603(01) -- 18" - 36" Corrugated Steel Pipe - Excavate and backfill according to Section 603 (Layer place and Compact using compaction equipment).

Prior to beginning work on stream culverts, review the State 124 Permit issued and follow the requirements. No work shall occur on streams before July 15..

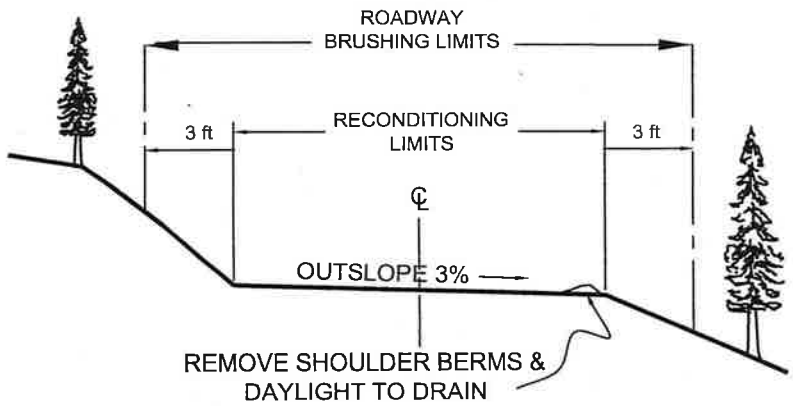
If stream flow exists on the site at the time of work within the stream banks, the stream shall be diverted around the work area by either a visquine lined channel, a diversion pipe, pumping, or other contractor proposed methods, as approved by the engineer. Care shall be taken to prevent sediment from entering the flowing stream.

7. Items 304(13) Crushed Aggregate and 251(01) Placed Riprap, shall be obtained from the existing stock pile located in the Airport Pit on NFSR 11462, (Section 1, T25N., R16W.). Measurement for these materials is cubic yards in the hauling vehicle, 106.03 units of measurement.

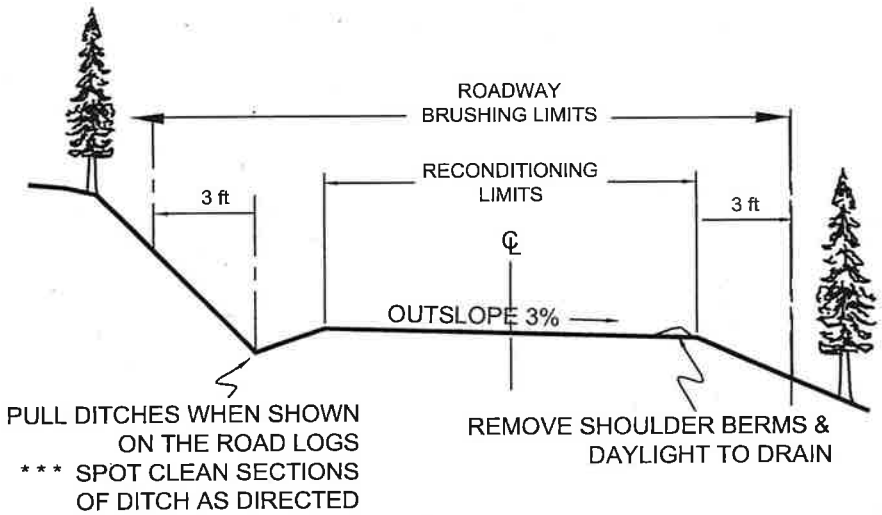
8. Item 625(02) -- Apply seed, fertilizer, and mulch at the rates specified to all disturbed areas outside of the road shoulder (includes fill slopes, cut slopes, drain dip outlets. etc.). Care shall be taken not to distribute any fertilizer into streams.

TYPICAL RECONDITIONING LIMITS

Not to Scale

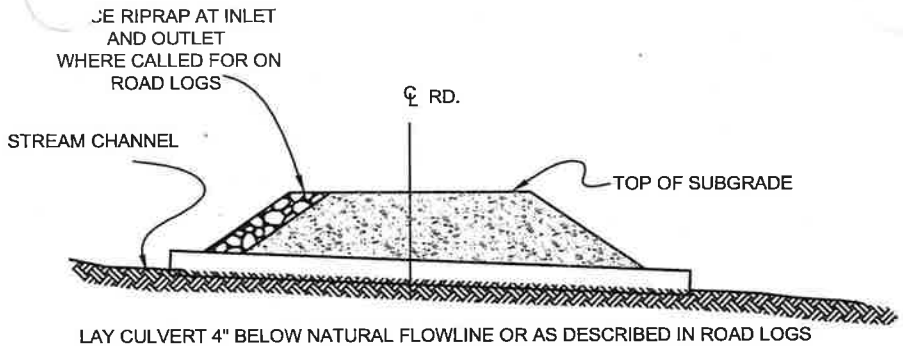


ROAD SECTIONS WITHOUT DITCH



ROAD SECTIONS WITH DITCH

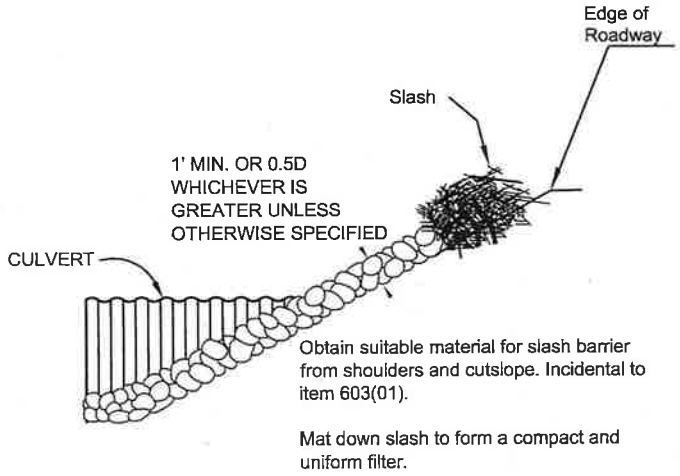
TIN MULE	Sheet	Total
General Notes and Reconditioning Typicals	5	19

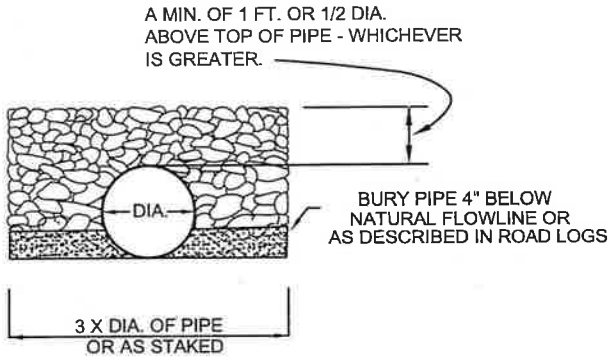


LAY CULVERT 4" BELOW NATURAL FLOWLINE OR AS DESCRIBED IN ROAD LOGS

TYPICAL INSTALLATION IN EMBANKMENT

NO SCALE



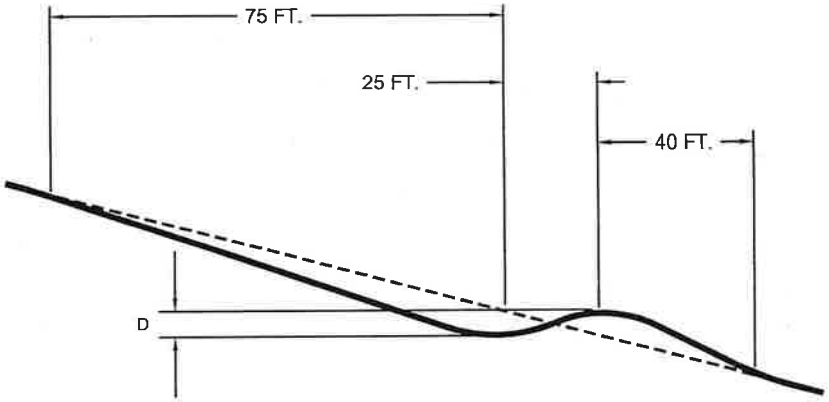


CULVERT HEADWALL PLACED RIPRAP

NOT TO SCALE

DRAIN DIP TYPE DII

Not to Scale



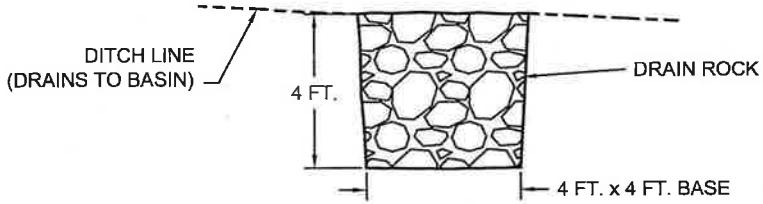
D = 6 INCHES AT THE INSIDE SHOULDER.
D = 3% TO 4% (15 TO 20 INCHES) AT THE OUTSIDE SHOULDER.
RUBBER TIRE MOTOR GRADER FINISH REQUIRED.

1. CONSTRUCTED DRAIN DIPS SHALL NOT HAVE PROTRUSIONS OR DEPRESSIONS GREATER THAN 2 IN. FROM THE TYPICAL SECTION.
2. SKEW TROUGH AND CREST OF THE DIP 10 DEGREES FROM PERPENDICULAR TO THE ROAD CENTERLINE.
3. CROSS DRAIN SLOPE OF THE DIP SHALL BE 5%.
4. CONSTRUCT 10 FT. VERTICAL CURVES AT ALL DIP TRANSITIONS.
5. IF TOLD TO "INTERCEPT DITCH" CONSTRUCTION OF A DITCH BLOCK AT THE INLET OF THE DIP TO DIRECT WATER INTO THE DIP IS REQUIRED.
6. CONSERVE RIPRAP FROM THE EXCAVATION OR SLASH FROM ROADWAY BRUSHING AND PLACE AT OUTFALL OF DRAIN DIP .

TIN MULE	Sheet	Total
CULVERT INSTALL AND DRAIN DIP TYPICAL	6	19

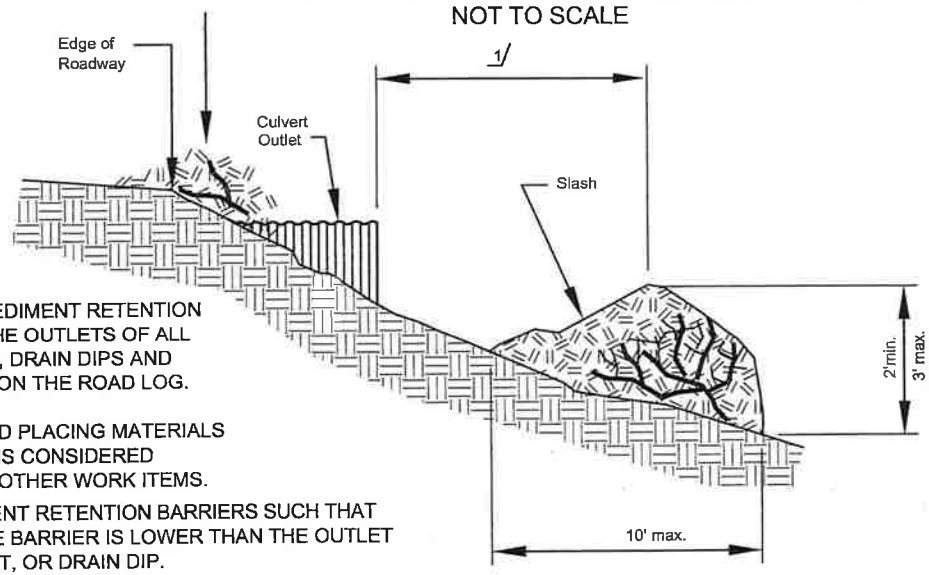
SEDIMENT BASIN

Not to Scale



SLASH
SEDIMENT RETENTION BARRIER

NOT TO SCALE

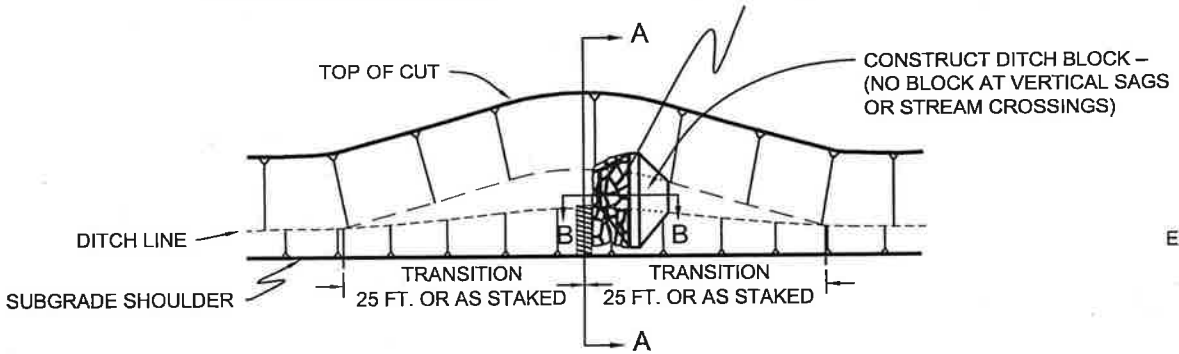


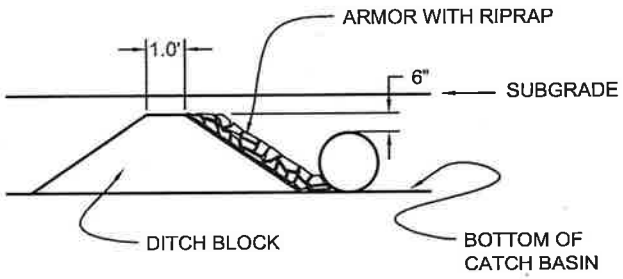
NOTE: PLACE SEDIMENT RETENTION BARRIERS AT THE OUTLETS OF ALL NEW CULVERTS, DRAIN DIPS AND WHERE NOTED ON THE ROAD LOG.

FURNISHING AND PLACING MATERIALS FOR BARRIERS IS CONSIDERED INCIDENTAL TO OTHER WORK ITEMS.

LOCATE SEDIMENT RETENTION BARRIERS SUCH THAT THE TOP OF THE BARRIER IS LOWER THAN THE OUTLET OF THE CULVERT, OR DRAIN DIP.

PLACE RIPRAP AROUND THE INLETS OF ALL NEW CULVERTS AND AT ALL OTHER CULVERTS AS DESIGNATED ON THE PLANS. .

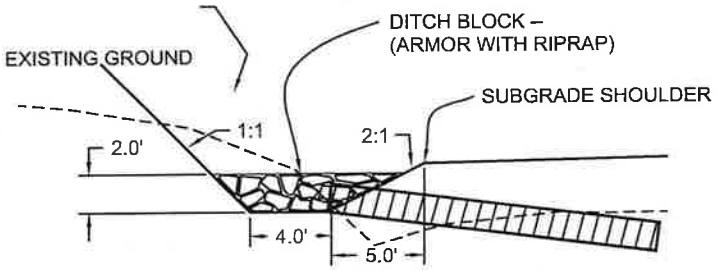




SECTION B-B

TYPICAL CATCH BASIN INSTALLATION

NO SCALE



SECTION A-A

TIN MULE	Sheet	Total
Sediment Retention Barrier & Catch Basin	7	19

RECONSTRUCTION ROAD LOG

PROJECT: Tin Mule

ROAD NUMBER 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
0.000	Begin Project at Jnct with 895							I					
	Begin Recond. Medium including Cleaning Culverts							I					
	and pulling Ditches							I					
								I					
0.079	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
0.120	Exist 18" CMP							I					
								I					
0.150	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
0.230	Exist 18" CMP							I					
								I					
0.240	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
0.290	Exist 18" CMP-Clean Inlet and Outlet							I					
								I					
0.318	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
0.380	Exist 18" CMP-Small Stream							I					
								I					
0.392	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					

RECONSTRUC ON ROAD LOG

PROJECT: Tin Mule

ROAD NUMBER 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
								I					
0.405	Install 18" x 34' CMP-Skew 70			1			10	I	34			1	
	Construct Catch Basin and ditch block							I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					
								I					
0.542	Exist 18" CMP							I					
								I					
0.555	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
0.585	Install 18" x 40' CMP-Skew 70 Const Catch Basin and ditch block			1			10	I	40			1	
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					
								I					
0.649	Exist 18" CMP-Clean Inlet and Outlet							I					
								I					
0.662	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
0.705	Switchback							I					
								I					
0.775	Exist 18" CMP							I					
								I					
0.864	Exist 18" CMP							I					
								I					
0.970	Exist 18" CMP-Clean Inlet and Outlet							I					
								I					
1.045	Remove Exist 18" CMP Replace with 18" x 30' CMP		1				10	I	30			1	
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					

RECONSTRUCTION ROAD LOG

PROJECT: Tin Mule

SHEET 10

ROAD NUMBER 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
								I					
1.087	Install 18" x 30' CMP-In Drain Sag-Construct Catch Basin			1			10	I	30			1	
	Construct Catch Basin and ditch block							I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					
								I					
1.121	Exist 18" CMP-Clean Inlet							I					
								I					
1.180	Exist 18" CMP-Clean Inlet							I					
								I					
1.357	Exist 18" CMP-Clean Outlet							I					
								I					
1.501	Exist 18" CMP							I					
								I					
1.565	Exist 18" CMP-In Existing Sag							I					
								I					
1.603	Switchback Lt and Jnct with road 1635 on RT							I					
								I					
1.650	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
1.671	Exist 18" CMP							I					
								I					
1.774	Construct Low Standard Drain Dip-Intercept Ditch				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
1.788	Exist 18" CMP							I					
								I					
1.891	Exist 18" CMP-Clean Inlet and Outlet							I					
								I					
1.907	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					

RECONSTRU ON ROAD LOG

PROJECT: Tin Mule

S T 11
ROAD NUMBER 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
								I					
1.965	Exist 18" CMP							I					
								I					
2.034	Exist 18" CMP							I					
								I					
2.052	**Reconstruct Low Standard Drain Dip**				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
2.100	Exist 18" CMP							I					
								I					
2.119	**Existing Drain Dip-Reshape**							I					
								I					
2.218	**Existing Drain Dip-Reshape**							I					
								I					
2.336	Jnct with Road 10339 on Right							I					
								I					
2.350	**Construct Low Standard Drain Dip**				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
2.474	**Construct Low Standard Drain Dip**				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
2.510	Exist 18" CMP							I					
								I					
2.551	**Construct Low Standard Drain Dip-*Intercept Ditch***				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					

RECONSTRUC ON ROAD LOG

PROJECT: Tin Mule

ROAD NUMBER 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
2.556	Exist 18" CMP							I					
								I					
2.678	Exist 18" CMP-Stream		1				10	I			42	1	
	Remove and Replace with a 36" x 42' CMP							I					
	Bury Inlet 1/2 foot below natural Stream Flow							I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					
								I					
2.690	Reconstruct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
2.800	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
2.872	Exist 18" CMP-Stream-Clean Inlet and Outlet-Stream							I					
								I					
2.891	Construct Low Standard Drain Dip-*Intercept Ditch*				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
2.954	Construct Low Standard Drain Dip-*Intercept Ditch*				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
3.029	Exist 18" CMP-Stream-Clean Inlet and Outlet							I					
								I					
3.059	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
3.199	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					

RECONSTRUC[illegible]ON ROAD LOG

S[illegible]T 13

PR[illegible]CT: Tin Mule

ROAD NUM[illegible] 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
								I					
3.343	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
3.454	Reconstruct Exist Drain Sag-Outslope					1	10	I					
	Construct 10' Outlet Ditch Incidental to Item 203(17)DS							I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
								I					
3.474	Remove Exist 18" CMP-Stream		1				10	I		30		1	
	Remove and Replace with a 24" x 30' CMP							I					
	Bury Inlet 1/2 foot below natural stream bottom							I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					
								I					
3.487	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
3.494	Install 18" x 30' CMP-Skew 110^0			1			10	I	30			1	
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					
								I					
3.530	Install 18" x 34' CMP-Skew 110^0			1			10	I	34			1	
	Construct Catch Basin and ditch block							I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Place 1cy Riprap to Armor Inlet and Outlet							I					
								I					
3.580	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
3.644	Exist 18" CMP-Stream-Clean Inlet							I					
								I					

RECONSTRUC[illegible]N ROAD LOG

PRO[illegible]CT: Tin Mule

ROAD NUMBER 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
3.685	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
3.822	Construct Low Standard Drain Dip				1		10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
3.832	Exist 18" CMP							I					
								I					
3.995	Grade Crest							I					
								I					
4.102	Existing Gate-Continue Reconditioning-End Pulling Ditches							I					
								I					
4.267	Exist Drain Sag-Outslope 5%					1	10	I					
	Place 10cy(loose) Crushed Agg to harden road surface							I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
4.272	Exist 18" CMP-Clean Inlet and Outlet							I					
								I					
4.335	Construct Low Standard Drain Dip				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
4.463	Reconstruct Low Standard Drain Dip				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
4.508	Switchback							I					
								I					
4.589	Reconstruct Low Standard Drain Dip				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
4.626	Switchback							I					
								I					
4.653	Reconstruct Low Standard Drain Dip				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					

RECONSTRU' ON ROAD LOG

PROJECT: Tin Mule

ROAD NUMBER 2831

MILE POST	WORK DESCRIPTION		ITEM 202(02)	ITEM 203(17) CB	ITEM 203(17) DII	ITEM 203(17) DS	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (18C)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
								I					
4.734	Switchback							I					
	Road right 9734 Gated							I					
								I					
4.771	**Reconstruct Low Standard Drain Dip**				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
4.846	**Construct Low Standard Drain Dip**				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
4.980	Historic Road Right							I					
								I					
5.040	**Construct Low Standard Drain Dip**				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
5.072	**Intersection with Road Haul Road 2831B Lt**							I					
								I					
5.095	**Construct Low Standard Drain Dip**				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
5.117	**Existing 18" CMP-Clean Inlet**							I					
								I					
5.222	**Construct Low Standard Drain Dip**				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
5.344	**Construct Low Standard Drain Dip**				1			I					
	Conserve Riprap from Excavation and Place at Outflow							I					
								I					
5.480	**Unit boundary**							I					
	End Project												
	ROAD 2831 WORK ITEM TOTALS		**3**	**5**	**35**	**2**	**350**	**5.49**	**198**	**30**	**42**	**8**	**1**

RECONSTRU[illegible]ON ROAD LOG

PROJECT: TIN MULE

ROAD NUMBER 2831B

MILE POST	WORK DESCRIPTION	ITEM 201(02)	ITEM 202(02)	ITEM 203(17) DII	ITEM 204(09) Sed Basin	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
0.000	Begin Project at Jnct with 2831 at MP 5.072						I				
	Begin Reconditioning heavy including Cleaning Culverts						I				
	and pull ditches only as directed						I				
							I				
0.024	Exist 18" CMP-Clean Inlet						I				
	Pull ditch back to MP 0.000						I				
							I				
0.183	Exist 18" CMP-Clean Inlet						I				
							I				
0.300	Exist 18" CMP-Clean Inlet and Outlet						I				
							I				
0.421	Exist 18" CMP-Clean Inlet						I				
							I				
0.523	Remove and Replace 18" CMP with a 24" x 40' CMP		1			10	I	40		2	
	Place 10cy(loose) Crushed Agg to harden road surface						I				
	Place 2cy Riprap to Armor Inlet and Outlet						I				
							I				
0.695	Exist 18" CMP-Clean Inlet and Outlet						I				
							I				
0.745	Exist 18" CMP						I				
							I				
0.860	Exist 18" CMP-Intermittent Stream						I				
							I				
0.910	Exist 18" CMP-Small Stream						I				
							I				
0.947	Exist 18" CMP-Clean Inlet and Outlet-Small Stream						I				
							I				
0.956	Construct Low Standard Drain Dip			1			I				
	Conserve Riprap from Excavation and Place at Outflow						I				

RECONSTRUC N ROAD LOG

PROJECT: TIN MULE

ROAD NUMBER 2831B

MILE POST	WORK DESCRIPTION	ITEM 201(02)	ITEM 202(02)	ITEM 203(17) DII	ITEM 204(09) Sed Basin	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
							I				
1.024	Exist 18" CMP-Stream -Elam Creek		1			10	I		38	2	
	Remove and Replace with a 36" x 38' CMP						I				
	Bury Inlet 1 foot and Outlet 1/2 foot						I				
	Place 10cy(loose) Crushed Agg to harden road surface						I				
	Place 2cy Riprap to Armor Inlet and Outlet						I				
							I				
1.036	Construct Low Standard Drain Dip-Intercept Ditch			1		10	I				
	Place 10cy(loose) Crushed Agg to harden road surface						I				
	Conserve Riprap from Excavation and Place at Outflow						I				
							I				
1.092	Construct Low Standard Drain Dip-Intercept Ditch			1		10	I				
	Place 10cy(loose) Crushed Agg to harden road surface						I				
	Conserve Riprap from Excavation and Place at Outflow						I				
							I				
1.114	Remove and Replace 18" CMP with a 24" x 38' CMP		1			10	I	38		2	
	Place 10cy(loose) Crushed Agg to harden road surface						I				
	Place 2cy Riprap to Armor Inlet and Outlet						I				
							I				
1.118	Construct Sediment Basin				1		I			5	
							I				
1.126	Construct Low Standard Drain Dip						I				
	Conserve Riprap from Excavation and Place at Outflow						I				
							I				
1.182	Exist 18" CMP-Clean Inlet and Outlet-Small Stream						I				
							I				
1.187	Construct Sediment Basin				1		I			5	
							I				
1.193	Construct Low Standard Drain Dip			1			I				
	Conserve Riprap from Excavation and Place at Outflow						I				
							I				
1.328	Exist 18" CMP						I				

RECONSTRUC[illegible]ON ROAD LOG

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PROJECT: TIN MULE

ROAD NUMBER 2831B

MILE POST	WORK DESCRIPTION	ITEM 201(02)	ITEM 202(02)	ITEM 203(17) DII	ITEM 204(09) Sed Basin	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
							I				
1.461	Switchback						I				
							I				
1.815	Exist 18" CMP-Clean Inlet and Outlet						I				
							I				
2.015	Historic Road Rt 11459	I					I				
	Begin Roadway Brushing	I					I				
		I					I				
2.244	Construct Low Standard Drain Dip at berm	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
2.390	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I					I				
2.428	Construct Low Standard Drain Dip	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
2.620	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I					I				
2.694	Construct Low Standard Drain Dip-Intercept Ditch as directed	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
2.700	Exist 18" CMP-Clean Inlet and Outlet-Sm Stream	I					I				
		I					I				
2.780	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I					I				
2.820	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I					I				
2.850	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I					I				
2.920	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I									
3.000	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I									

RECONSTRUCTION ROAD LOG

PROJECT: TIN MULE

ROAD NUMBER 2831B

MILE POST	WORK DESCRIPTION	ITEM 201(02)	ITEM 202(02)	ITEM 203(17) DII	ITEM 204(09) Sed Basin	ITEM 304(13)	ITEM 306(01)	ITEM 603(01) (24C)	ITEM 603(01) (36C)	ITEM 251(01) Riprap	ITEM 625(02)
3.120	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I									
3.210	Exist 18" CMP-Clean Inlet and Outlet	I					I				
		I					I				
3.216	Construct Low Standard Drain Dip	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
3.230	Exist 18" CMP-Clean Inlet and Outlet-Small Stream	I					I				
		I					I				
3.240	Exist 18" CMP-Clean Inlet and Outlet-Small Stream	I					I				
		I					I				
3.262	Construct Low Standard Drain Dip-Drain Left	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
3.440	Construct Low Standard Drain Dip	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
3.460	Exist 18" CMP-Clean Inlet and Outlet-Intermittent Stream	I					I				
		I					I				
3.700	Construct Low Standard Drain Dip	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
3.720	Exist 18" CMP-Clean Inlet and Outlet-Stream	I					I				
		I					I				
3.740	Construct Low Standard Drain Dip	I		1			I				
	Conserve Riprap from Excavation and Place at Outflow	I					I				
		I					I				
3.790	Unit 7 Corner-Begin Temp Road	I					I				
	End Brushing End Reconditioning										
	End Project										
	ROAD 2831B WORK ITEM TOTALS	1.76	3	12	2	50	3.79	78	38	16	1

Tin Mule Project Specifications for Construction of Roads

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(June, 2012)

Section 101—Abbreviations, Acronyms, & Terms

101.01 Terms, Organizations, & Standards

These specifications are generally written in the imperative mood. In sentences using the imperative mood, the subject, "the Contractor," is implied. Also implied in this language is "shall," "shall be," or similar words and phrases. In material specifications, the subject may also be the supplier, fabricator, or manufacturer supplying material, products, or equipment for use on the project.

Wherever "directed," "required," "prescribed," or similar words are used, the "direction," "requirement," or "order" of the Contracting Officer (CO) is intended. Similarly, wherever "approved," "acceptable," "suitable," "satisfactory," or similar words are used, they mean "approved by," "acceptable to," or "satisfactory to" the CO.

The word "will" generally pertains to decisions or actions of the CO.

Whenever in these specifications, or in other contract documents, the following terms (or pronouns in place of them) are used, the intent and meaning shall be interpreted as follows: reference to a specific standard, test, testing method, or specification shall mean the latest published edition or amendment that is in effect at the solicitation issue date for Public Works Contracts or the sale advertisement date for Timber Sale Contracts.

These specifications are divided into the following divisions:

- Division 100 consists of general specifications for which no direct payment is made. These requirements are applicable to all contracts.
- Division 150 consists of engineering requirements that are applicable to some contracts. Work under this division is paid for directly when there is a PAY ITEM IN THE SCHEDULE OF ITEMS. When there is no PAY ITEM IN THE SCHEDULE OF ITEMS, no direct payment is made.
- Divisions 200–600 consist of construction contract requirements for specific items of work. Work under these divisions is paid for directly or indirectly according to Section 106 and the section for ordering the work when there is a PAY ITEM IN THE SCHEDULE OF ITEMS.
- Division 700 contains the material requirements for Divisions 200–600. No direct payment is made under Division 700. Payment for material is included as part of the work required in Divisions 200–600.

(a) Acronyms. The following acronyms are used in these specifications:

AA	Aluminum Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADA	Americans With Disabilities Act
AGC	Associated General Contractors of America
AI	Asphalt Institute
AISC	American Institute of Steel Construction
AITC	American Institute of Timber Construction
ALSC	American Lumber Standards Committee
ANSI	American National Standards Institute
APA	American Plywood Association
ARTBA	American Road and Transportation Builders Association

ASTM	American Society for Testing and Material
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CFR	Code of Federal Regulations
CRSI	Concrete Reinforcing Steel Institute
DEMA	Diesel Engine Manufacturers Association
DOT	U.S. Department of Transportation
FAR	Federal Acquisition Regulation
FHWA	Federal Highway Administration
FLH	Federal Lands Highway (Federal Highway Administration)
FSS	Federal Specifications and Standards
ISSA	International Slurry Surfacing Association
MIL	Military Specification(s)
MSHA	Mine Safety and Health Administration
MUTCD	Manual on Uniform Traffic Control Devices
NBS	National Bureau of Standards
OSHA	Occupational Safety and Health Administration
PCI	Prestressed Concrete Institute
PTI	Post-Tensioning Institute
SI	International System of Units
SSPC	Steel Structures Painting Council
WWPI	Western Wood Preservation Institute

(b) System of International Units (SI) Symbols.

(c) SI Prefix Symbols.

(d) Slope Notation (horizontal : vertical). Express the slope as the ratio of a number of units horizontal to one unit vertical.

101.02 Abbreviations & Symbols

ABS	Acrylonitrile-butadiene-styrene
ACA	Ammoniacal copper arsenate
ACZA	Ammoniacal copper zinc arsenate
Agg	Aggregate
Al	Aluminum
AOS	Apparent opening size
AQ	Actual quantities
AQL	Acceptable Quality Level
BMP	Best Management Practice
CAPWAP	Case pile wave analysis program
CCA	Chromated copper arsenate
CMP	Corrugated metal pipe
CMPA	Corrugated metal pipe arch
CO	Contracting Officer

CPF	Composite pay factor
CSP	Corrugated steel pipe
CSPA	Corrugated steel pipe arch
CTB	Cement-treated base
CY	Cubic Yard
CY MI	Cubic Yard Mile
DAR	Durability Absorption Ratio
Dia	Diameter
DQ	Designed quantities
DTI	Direct tension indicator
Dwgs	Drawings
EA	Each
FM	Fineness modulus
Ft	Foot
GAL	Gallon
GFM	Government-furnished materials
Gr	Grade
Ht	Height
ha	Hectare
HDO	High-density overlay
HDPE	High-density polyethylene
hr	Hour
Hor	Horizontal
HSLA	High-strength low-alloy
In	Inch
kg	Kilogram
kL	Kiloliter
kL km	Kiloliter kilometer
km	Kilometer
L	Length
l	Liter
Lbs	pounds
LF	Linear Foot
LS	Lump Sum
LSL	Lower specification limit
m	Meter
m2	Square meter
m3	Cubic meter
m3 km	Cubic meter kilometer
Matl	Material
max.	Maximum
Mbf	Thousand board feet