

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE --- REGION SIX

WILLAMETTE NATIONAL FOREST

**McKENZIE RIVER RANGER DISTRICT**

LANE COUNTY, OREGON

PLANS FOR PROPOSED

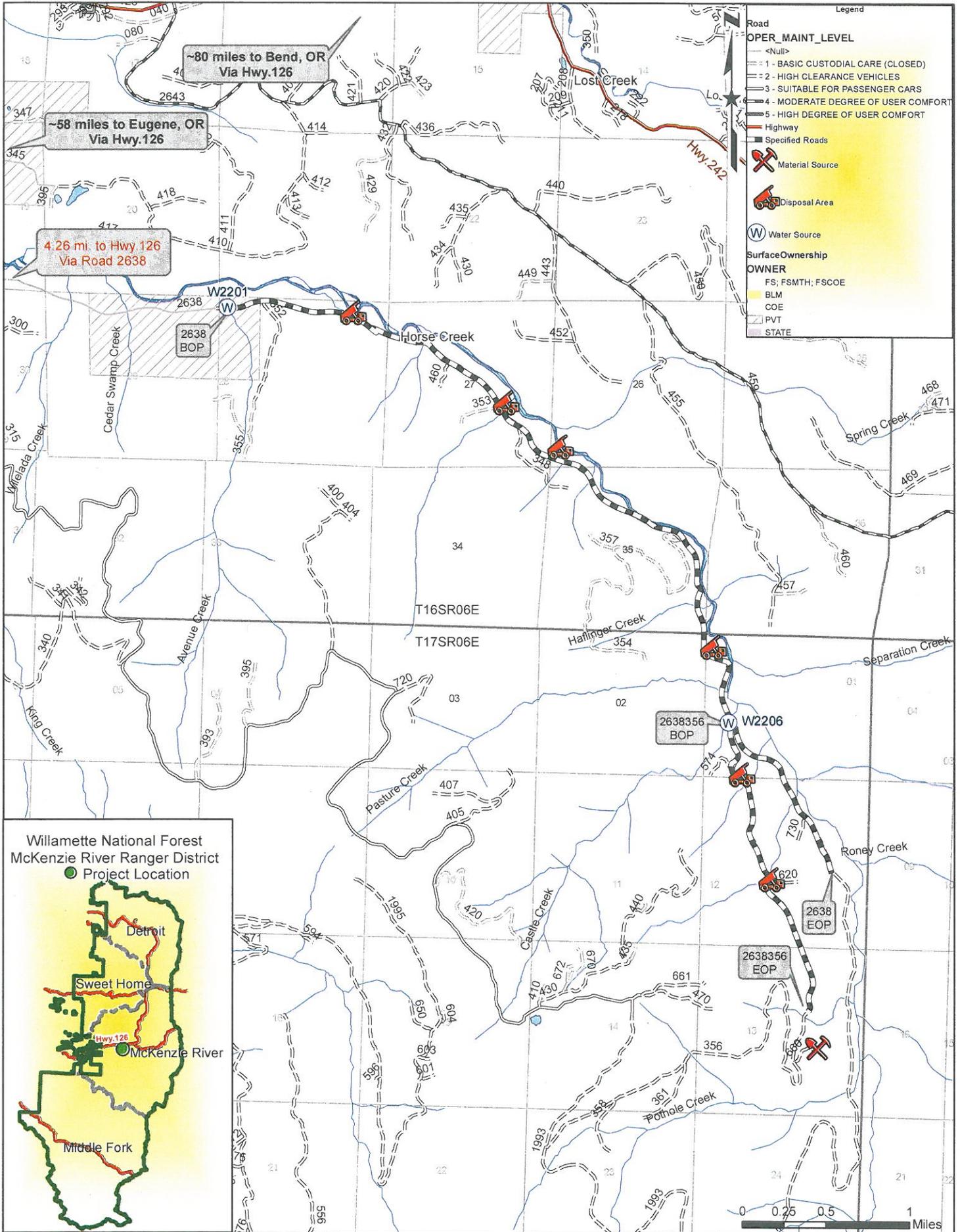
Horse Timber Sale  
ROADS

<u>ROAD NO.</u>	<u>LENGTH</u>	<u>CONST./RECONST.</u>
2638	5.48	RECONST.
2638356	1.41	RECONST.
Total Miles	6.89	

**INDEX TO SHEETS**

<u>SHEET</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	VICINITY MAP
3	GENERAL NOTES
4-7	ESTIMATE OF QUANTITIES
8-15	RECONSTRUCTION SUMMARIES
16-17	DRAINAGE LISTING
18	AGGREGATE LISTING
19	TYPICAL SECTIONS
20	DRAINAGE DETAILS
21	DEWATERING DETAILS
22	CLEARING DETAILS

<b>Design Team:</b>		
<i>Kenny Gabriel and Starr Sullivan</i>		7/28/2014
Name		Date
<b>Reviewed by:</b>		
<i>Mike Larson</i>		7/24/2014
Name		Date
<b>Reviewed by:</b>		
<i>JM Lu</i>		7/28/14
Name	<del>Zone</del> Dev. Engineer	Date
<b>Recommended by:</b>		
<i>Scott Fene</i>		7/24/2014
Name	Zone Engineer	Date
<b>Approved by:</b>		
<i>[Signature]</i>		7/29/14
Name	Forest Engineer	Date
<i>Andy Hordal - Aubay</i>		7/25/2014
Name	District Ranger	Date



**Legend**

**Road**

**OPER\_MAINT\_LEVEL**

- <Null>
- 1 - BASIC CUSTODIAL CARE (CLOSED)
- 2 - HIGH CLEARANCE VEHICLES
- 3 - SUITABLE FOR PASSENGER CARS
- 4 - MODERATE DEGREE OF USER COMFORT
- 5 - HIGH DEGREE OF USER COMFORT

Highway

Specified Roads

Material Source

Disposal Area

Water Source

**Surface Ownership**

**OWNER**

- FS; FSMTH; FSCOE
- BLM
- COE
- PVT
- STATE

**Willamette National Forest**  
**McKenzie River Ranger District**  
 ● Project Location

Detroit

Sweet Home

McKenzie River

Middle Fork



### GENERAL NOTES

- 1) Remove all berms created from roadway reconditioning or ditch reconstruction to allow for drainage of water. All safety berms are designated to remain.
- 2) Road reconditioning includes cleaning of all culvert inlets/outlets.  
Payment for cleaning roadway ditches, where shown on the plans, is included in item 20479 . Do not undercut existing backslopes.
- 3) Salvage existing aggregate during culvert replacement; use as backfill or bedding material.
- 4) Recondition or reconstruct turnouts and curve widening the same as the basic roadbed.  
Quantities listed in the estimate of quantities include turnouts and curve widening.
- 5) See FSSS 107.02 **Protection and Restoration of Property and Landscape** and Timber Sale provisions for restrictions/mitigations related to this project.
- 6) Designated disposal sites are identified on reconstruction summary sheets. Layer place, smooth and shape to drain excess or unsuitable excavation materials. Additional disposal sites may be identified during construction if the need arises. No other disposal sites will be used, unless designated in advance by the Contracting Officer. Cost for disposal site shaping is indirect to the listed pay items under Sections 204 and 303.
- 7) Maintain all construction staking on the project, until final inspection and acceptance.
- 8) Replace culverts when stream channels are dry or during instream work period. Dewatering will be deleted if there is no water in the stream when the work is done.
- 9) Spread weed free straw over disturbed soil at all culvert installations, disposal areas and other exposed soil, excluding ditches. Cover areas completely.
- 10) Submit a written Erosion Control for approval 21 days prior to beginning culvert replacement. Refer to FSSS 157.03 for additional requirements.
- 11) Provide class D construction tolerance for all roads.
- 12) Set culvert reference stakes prior to excavation and removal of all culverts shown on the Drainage Listing Sheet as "# match existing" installation. Set a culvert reference stake on the centerline of the culvert 10 feet from each end or beyond the clearing limit, whichever is greater.  
Record the following on culvert reference stakes: Mile point, actual stake distance from culvert inlet and outlet and existing culvert diameter. Staking of culverts is an indirect cost to items 60276.

**ESTIMATE OF QUANTITIES**

		ROAD NUMBER	2638	
		SEGMENT	4.26-9.74	
		PROJECT LENGTH (Miles)	5.48	
ITEM NO.	DESCRIPTION	Pay Unit	QTY	REMARKS
15101	Mobilization	Lump Sum	All	Includes equipment washing, temporary traffic control and fire protection measures.
15755	Erosion control & pollution prevention	Each	6	Includes dewatering for culvert replacement.
20103	Clearing and grubbing, disposal of tops and limbs (f), logs (f), stumps (f)	Mile	5.48	Scatter existing woody debris or blowdown (located within the roadway) outside the clearing limits or as specified by CO.
20207	Removal of individual trees, disposal of tops and limbs (f), logs (f), stumps (f)	Each	17	
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs (f) & logs (f)	Each	19	Fell and leave.
20302	Removal of culvert inlet/outlet	Foot	50	Disposal method (a)
20358	Removal of corrugated metal pipe, disposal method (a)	Each	7	
20419	Drainage excavation, type culvert outlet ditch	Foot*	125	
20420	Drainage excavation, type culvert catchbasin	Each	3	
20479	Drainage excavation, type roadway ditch	Mile	0.69	Removal of large rocks/boulders within areas identified for reconstruction are an indirect cost to this pay item. Qty's include 0.20 miles of reconstruction to be field identified within the entire project area included within these plans. Qty's not identified will be deleted.
25101	Placed riprap, class 3	Cubic Yard*	1	Commercial source.
30359	Roadway reconditioning, compaction method E	Mile	5.48	
32450	Crushed aggregate surfacing, compaction method B	Cubic Yard*	450	Submit gradations meeting the specified requirements for F.S. grading T or ODOT 3/4 inch minus for approval. Commercial source.
60256A	18-inch corrugated steel pipe, 0.064-inch thickness, method B	Foot	30	Includes bands and hardware where applicable.
60256B	24-inch corrugated steel pipe, 0.064-inch thickness, method B	Foot	20	Includes bands and hardware where applicable.

## ESTIMATE OF QUANTITIES

ROAD NUMBER		2638		
SEGMENT		4.26-9.74		
PROJECT LENGTH (Miles)		5.48		
ITEM NO.	DESCRIPTION	Pay Unit	QTY	REMARKS
60276A	18-inch corrugated aluminized steel pipe, 0.064-inch thickness, method B	Foot	202	Includes bands and hardware where applicable.
60276B	24-inch corrugated aluminized steel pipe, 0.064-inch thickness, method B	Foot	118	Includes bands and hardware where applicable.
60276C	30-inch corrugated aluminized steel pipe, 0.064-inch thickness, method B	Foot	46	Includes bands and hardware where applicable.
60710	Reconditioning drainage structures, culvert inlet or outlet	Each	3	Cut off ripped culvert edge, disposal method (a).
62509	Mulching, dry method	Lump Sum	All	Commercial Source. Certified weed free. Includes mulching of entire project included in these plans.
	* Designates Contract Quantities			

**ESTIMATE OF QUANTITIES**

		ROAD NUMBER	2638356		
		SEGMENT	0.00 - 1.41		
		PROJECT LENGTH (Miles)	1.41		
ITEM NO.	DESCRIPTION	Pay Unit	QTY	REMARKS	
15755	Erosion control & pollution prevention	Each	1	Includes dewatering for culvert replacement.	
20103	Clearing and grubbing, disposal of tops and limbs (f), logs (f), stumps (f)	Mile	1.41	Scatter existing woody debris or blowdown (located within the roadway) outside the clearing limits or as specified by CO.	
20207	Removal of individual trees, disposal of tops and limbs (f), logs (f), stumps (f)	Each	5		
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs (f) & logs (f)	Each	2	Fell and leave.	
20302	Removal of culvert inlet/outlet	Foot	16	Disposal method (a)	
20358	Removal of corrugated metal pipe, disposal method (a)	Each	2		
20419	Drainage excavation, type culvert outlet ditch	Foot*	95		
20420	Drainage excavation, type culvert catchbasin	Each	3		
20479	Drainage excavation, type roadway ditch	Mile	0.30	Removal of large rocks/boulders within areas identified for reconstruction is an indirect cost to this pay item.	
25101	Placed riprap, class 3	Cubic Yard*	3	Commercial Source.	
30359	Roadway reconditioning, compaction method E	Mile	1.41		
32232	Haul and place stockpiled aggregate, compaction method B	Cubic Yard*	270	Stockpiled aggregate located at the end of Road 2638660.	
32450	Crushed aggregate surfacing, compaction method B	Cubic Yard*	340	Submit gradations meeting the specified requirements for F.S. grading T or ODOT 3/4 inch minus for approval. Commercial source.	
60256A	18-inch corrugated steel pipe, 0.064-inch thickness, method B	Foot	16	Includes bands and hardware where applicable.	
60276A	18-inch corrugated aluminized steel pipe, 0.064-inch thickness, method B	Foot	84	Includes bands and hardware where applicable.	

**ESTIMATE OF QUANTITIES**

ROAD NUMBER					2638356
SEGMENT					0.00 - 1.41
PROJECT LENGTH (Miles)					1.41
ITEM NO.	DESCRIPTION	Pay Unit	QTY	REMARKS	
60710	Reconditioning drainage structures, culvert inlet or outlet	Each	1		
	* Designates Contract Quantities				



RECONSTRUCTION SUMMARY  
ROAD 2638

Milepost	Reference Point or Work Required	Pay Item
5.02	Existing culvert. Reconstruct outlet ditch, 10 feet.	20419
5.04	Reference: Mile marker 5.	
5.06	Reference: Fisherman's trail (old road), left. Disposal area, left.	
5.25	Reference: Water source W2204, left. Dewater culvert installation site. Remove existing culvert. Install new 30" x 46' culvert. Raise inlet 6 inches and shift inlet 3 feet up the road to match existng stream channel. Backfill existing catchbasin with suitable backfill material to bottom of inlet. Borrow material is located both at the culvert installation site as well as numerous locations in the ditch along Road 2638. Work is indirect to item 60276C. Reconstruct outlet ditch, 20 feet. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	15755 20358 60276C  20419 32450
5.45	Reference: Intersection with Road 2638450, left.	
5.67	Reference: Intersection with Road 2638460, right.	
5.90	Dewater culvert installation site. Remove existing culvert. Install new 24" x 50' culvert. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	15755 20358 60276B 32450
6.04	Reference: Mile marker 6.	
6.05	Reference: Disposal area, left. Intersection with Road 2638353, right.	
6.21	Reference: Intersection with Road 2638348, right.	
6.49	Reference: Disposal area, left.	
6.55	Existing culvert. Reconstruct outlet stream channel, 15' long x 3' wide.	20419

RECONSTRUCTION SUMMARY  
ROAD 2638

Milepost	Reference Point or Work Required	Pay Item
6.65	Existing culvert. Reconstruct catchbasin.	20420
7.04	Reference: Mile marker 7.	
7.07	Remove 8 feet of existing culvert inlet. Install new 18" x 8' steel culvert to inlet end. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition. Begin reconstructing roadway ditch, right.	20302 60256A 32450 20479
7.22	Dewater culvert installation site. Remove 8 feet of existing culvert inlet. Install new 18" x 8' steel culvert to inlet end. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition. End roadway ditch reconstruction, right.	15755 20302 60256A 32450
7.28	Existing culvert. Reconstruct catchbasin.	20420
7.49	Reference: Intersection with Road 2638354, right.	
7.62	Reference: Intersection with 2 spur roads, left.	
7.65	Existing culvert. Reconstruct catchbasin. Reconstruct outlet ditch, 25 feet. Begin reconstructing roadway ditch, right.	20420 20419 20479
7.76	Remove 8 feet of existing culvert inlet. Install new 18" x 8' steel culvert to inlet end. Repair culvert outlet; cut off ripped edge. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	20302 60256A 60710 32450
7.85	Remove existing culvert. Install new 18" x 48' culvert. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition. End roadway ditch reconstruction, right.	20358 60276A 32450

RECONSTRUCTION SUMMARY  
ROAD 2638

Milepost	Reference Point or Work Required	Pay Item
7.98	Remove 6 feet of existing culvert inlet. Install new 18" x 6' steel culvert to inlet end. Place 1 CY class 3 riprap at outlet as energy dissipator. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	20302 60256A 25101 32450
8.05	Existing culvert. Repair culvert inlet; cut off ripped edge. Remove 6 green trees from outlet.	60710 20207
8.06	Reference: Mile marker 8.	
8.21	Existing culvert. Reconstruct outlet ditch, 10 feet.	20419
8.29	Reference: Disposal area, left.	
8.44	Begin reconstructing roadway ditch, right.	20479
8.53	Reference: Large culvert crossing. Live stream. End roadway ditch reconstruction, right.	
8.67	Reference: Intersection with Road 2638570, left.	
8.78	Reference: Intersection with Road 2638356, right.	
8.95	Dewater culvert installation site. Remove existing culvert. Install new 24" x 68' culvert. Remove 4 green trees from outlet. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	15755 20358 60276B 20207 32450
9.01	Existing culvert. Repair culvert inlet; cut off ripped edge.	60710
9.07	Reference: Mile marker 9.	
9.43	Existing culvert. Reconstruct outlet ditch, 10 feet.	20419

RECONSTRUCTION SUMMARY  
ROAD 2638

Milepost	Reference Point or Work Required	Pay Item
9.52	Reference: Intersection with Road 2638730, right.	
9.53	Dewater culvert installation site. Remove existing culvert. Install new 18" x 54' culvert. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	15755 20358 60276A 32450
9.55	Reference: Trailhead, left.	
9.59	Dewater culvert installation site. Remove 20 feet of existing culvert inlet. Install new 24" x 20' steel culvert to inlet end. Remove 2 green trees from inlet. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	15755 20302 60256B 20207 32450
9.74	End of project. End all reconstruction.	
	<b>DANGER TREE REMOVAL LIST</b>	
4.72	Remove 2 danger trees, right.	20253
4.80	Remove 2 danger trees, left.	20253
5.11	Remove 1 danger tree, right.	20253
5.56	Remove 1 danger tree, right.	20253
6.14	Remove 1 danger tree, right.	20253
6.46	Remove 1 danger tree, left.	20253
6.47	Remove 1 danger tree, left.	20253
8.72	Remove 1 danger tree, right.	20253
8.99	Remove 1 danger tree, right.	20253
9.03	Remove 2 danger trees, left.	20253
9.34	Remove 1 danger tree, right.	20253
9.43	Remove 1 danger tree, left.	20253
<b>NOTE:</b>	Remove 4 danger trees (to be field identified).	20253

RECONSTRUCTION SUMMARY  
ROAD 2638356

Milepost	Reference Point or Work Required	Pay Item
0.00	<p>Reference: Intersection with Road 2638.</p> <p>Begin clearing and grubbing.</p> <p>Begin reconditioning roadway. Scarify a minimum of 1" below the depth of all existing potholes, corrugations or surface irregularities. Grubbing and disposal of all stumps and root masses within the roadbed and in the ditch is required unless otherwise noted in the work description. Haul material from the cleaning of ditches, inlets and outlets and slough and slide removal to designated disposal sites.</p> <p>Begin placement of crushed aggregate, 2" depth (570 CY). Blend new aggregate to existing roadbed surface and reshape roadbed to obtain a minimum 3% crown.</p>	<p>20103</p> <p>30359</p>  <p>32232 32450</p>
0.07	<p>Reference: Intersection with spur road, right.</p>	
0.21	<p>Reference: Intersection with Road 2638574, right.</p>	
0.22	<p>Existing culvert.</p> <p>Reconstruct outlet ditch, 10 feet.</p>	<p>20419</p>
0.26	<p>Reference: Disposal area, left.</p>	
0.32	<p>Existing culvert.</p> <p>Reconstruct outlet ditch, 10 feet.</p>	<p>20419</p>
0.37	<p>Existing culvert.</p> <p>Reconstruct outlet ditch, 10 feet.</p>	<p>20419</p>
0.51	<p>Existing culvert.</p> <p>Remove 6 feet of existing culvert inlet.</p> <p>Install new 18" x 6' steel culvert to inlet end.</p> <p>Reconstruct outlet ditch, 10 feet.</p> <p>Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.</p>	<p>20302</p> <p>60256A</p> <p>20419</p> <p>32450</p>
0.58	<p>Existing culvert.</p> <p>Remove 10 feet of existing culvert outlet.</p> <p>Install new 18" x 10' steel culvert to outlet end.</p> <p>Remove 5 green trees from inlet.</p> <p>Reconstruct outlet ditch, 15 feet.</p> <p>Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.</p>	<p>20302</p> <p>60256A</p> <p>20207</p> <p>20419</p> <p>32450</p>

RECONSTRUCTION SUMMARY  
ROAD 2638356

Milepost	Reference Point or Work Required	Pay Item
0.64	Existing culvert.	
	Reconstruct catchbasin.	20420
	Reconstruct outlet ditch, 10 feet.	20419
0.68	Existing culvert.	
	Reconstruct catchbasin.	20420
0.71	Existing culvert.	
	Repair (jack open) culvert inlet; straighten and reform circular opening.	60710
0.77	Begin reconstructing roadway ditch, right.	20479
0.83	Existing culvert.	
	Place 2 CY class 3 riprap at outlet as energy dissipator.	25101
0.91	Existing culvert.	
	Reconstruct catchbasin.	20420
	Reconstruct outlet ditch, 10 feet.	20419
	End roadway ditch reconstruction, right.	
0.98	Existing culvert.	
	Begin reconstructing roadway ditch, right.	20479
0.99	Reference: Intersection with Road 2638620, left. Disposal area, left (on Road 2638620)	
1.04	Dewater culvert installation site.	15755
	Remove existing culvert.	20358
	Install new 18" x 44' culvert.	60276A
	Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	32450
	End roadway ditch reconstruction, right.	
1.20	Existing culvert.	
	Reconstruct outlet ditch, 10 feet.	20419
1.22	Begin reconstructing roadway ditch, right.	20479
1.32	Existing culvert.	
	Reconstruct outlet ditch, 10 feet.	20419
	End roadway ditch reconstruction, right.	

RECONSTRUCTION SUMMARY  
ROAD 2638356

Milepost	Reference Point or Work Required	Pay Item
1.36	Remove existing culvert. Install new 18" x 40' culvert. Place 1 CY class 3 riprap at outlet as energy dissipator. Place 10 CY crushed aggregate over installation; blend to adjacent road surfaces to provide a smooth transition.	20358 60276A 25101 32450
1.41	End of project. End all reconstruction.	
<b>NOTE:</b>	<b>DANGER TREE REMOVAL LIST</b>  Remove 2 danger trees (to be field identified)	20253

DRAINAGE LISTING

ROAD NO.	Remove		As Built		Date	DIMENSION		Installation Details						REMARKS	
	FEET	EACH				SIZE	THICK	Dewater	Catch Basin	Outlet Ditch	TYPE	SKEW	GRADE		Riprap
	+	-	M.P.	FEET		in.	in.			Feet		Deg	%		C.Y.
<b>2638</b>															
<b>Milepost</b>															
4.52	52	1				18	0.064				3	#		Raise inlet 6 inches.	
4.59										10					
4.72										10					
4.85	48	1				18	0.064			15	3	#		Raise inlet 1 foot and outlet 6 inches.	
5.02										10					
5.25	46	1				30	0.064	X		20	3			Raise inlet 6 inches and shift inlet 3 feet up the road to match existing stream channel.	
5.90	50	1				24	0.064	X			3	#	#		
6.55										15					
6.65									Rec.						
7.07	8					18	0.064							Attach to inlet end.	
7.22	8					18	0.064	X						Attach to inlet end.	
7.28									Rec.						
7.65									Rec.	25					
7.76	8					18	0.064							Attach to inlet end. Repair culvert outlet.	
7.85	48	1				18	0.064				3	#	#		
7.98	6					18	0.064						1	Attach to inlet end. Riprap is used as an energy dissipator.	
8.05														Repair culvert inlet.	
8.21										10					
8.95	68	1				24	0.064	X			3	#	#		
9.01														Repair culvert inlet.	
9.43										10					
9.53	54	1				18	0.064	X			3	#	#		
9.59	20					24	0.064	X						Attach to inlet end.	
# = Match Existing		Rec.= Reconstruct.													
THE ABOVE INSTALLATIONS TO INCLUDE CONNECTING BANDS.															
NOTE: Standard pipe corrugation will be 2-2/3" x 1/2" unless otherwise noted.															
Some culvert installations listed above may require additional excavation below grade line to obtain 1 foot minimum cover. Indirect to corresponding culvert installations.															

DRAINAGE LISTING

ROAD NO.	FEET	Remove EACH	As Built		Date	DIMENSION		Installation Details						REMARKS		
			M.P.	FEET		SIZE	THICK	Dewater	Catch Basin	Outlet Ditch	TYPE	SKEW	GRADE		Riprap	
	+	-				in.	in.			Feet		Deg	%	C.Y.		
<b>2638356</b>																
<b>Milepost</b>																
0.22										10						
0.32										10						
0.37										10						
0.51	6					18	0.064			10						Attach to inlet end.
0.58	10					18	0.064			15						Attach to outlet end.
0.64										Rec.	10					
0.68										Rec.						
0.71																Jack open inlet.
0.83														2		Riprap is used as an energy dissipator.
0.91										Rec.	10					
1.04	44	1				18	0.064	X			3	#	#			
1.20											10					
1.32											10					
1.36	40	1				18	0.064				3	#	#	1		Riprap is used as an energy dissipator.
# = Match Existing		Rec.= Reconstruct.														
THE ABOVE INSTALLATIONS TO INCLUDE CONNECTING BANDS.																
NOTE: Standard pipe corrugation will be 2-2/3" x 1/2" unless otherwise noted.																
Some culvert installations listed above may require additional excavation below grade line to obtain 1 foot minimum cover. Indirect to corresponding culvert installations.																



HORSE TIMBER SALE

PROJECT

AGGREGATE LISTING

SHEET NAME



SHEETS

22

SHEET

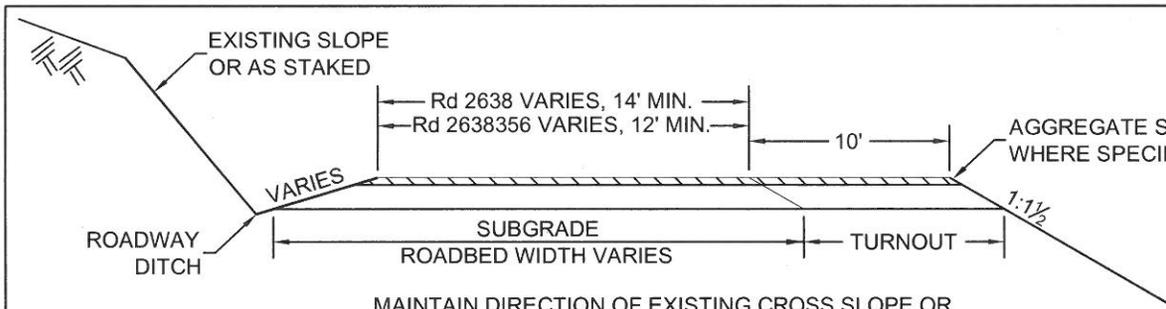
18

AGGREGATE LISTING

ROAD #	GRADATION	TYPICAL SECTION	M.P. LOCATION	QUANTITY (cy)	DEPTH	TRAVELED WAY WIDTH	ROCK SLOPE
2638	As Approved	CROWNED	AS STAKED	330	3"	14'	1V:2H
2638356	Stockpile	CROWNED	0.00-1.41	270	2"	12'	1V:2H
2638356	As Approved	CROWNED	0.00-1.41	300	2"	12'	1V:2H

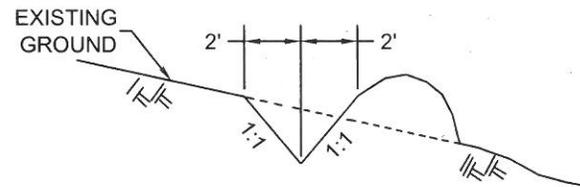
NOTES:

- 1) LOCATIONS TO BE IDENTIFIED AND STAKED BY CO DURING RECONSTRUCTION
- 2) PLACE SPOT ROCK AGGREGATE TO FULL DEPTH SHOWN PRIOR TO SCARIFICATION AND ROADBED RECONDITIONING.
- 3) SEE RECONSTRUCTION SUMMARIES FOR AGGREGATE REQUIRED FOR CULVERT INSTALLATIONS, ROADBED REPAIRS AND SPOT SURFACING LOCATIONS.

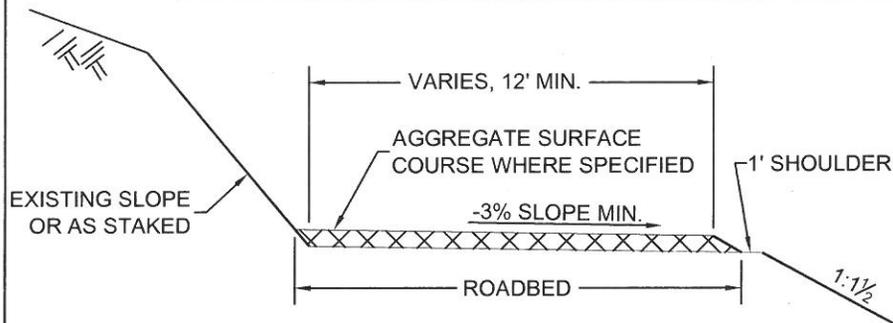


MAINTAIN DIRECTION OF EXISTING CROSS SLOPE OR CROWN, EXCEPT AS NOTED ON PLANS, 3% MINIMUM

TYPICAL SINGLE, DOUBLE LANE, TURNOUT AND TURNAROUND

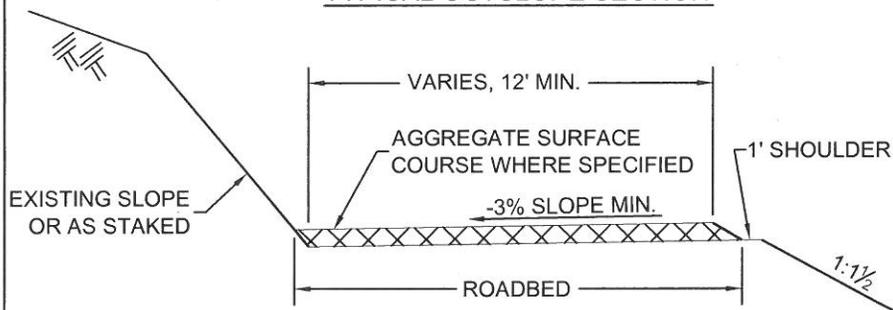


TYPICAL LEADOFF DITCH AND FURROW DITCH

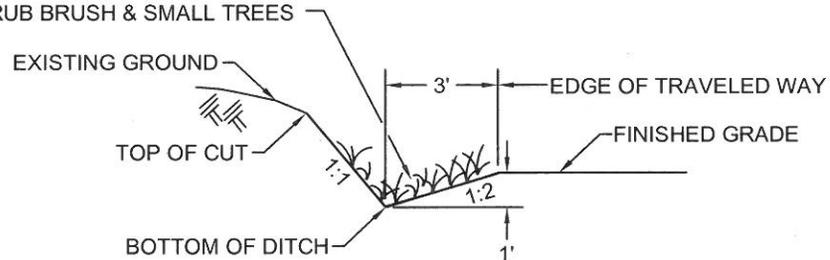


TYPICAL OUTSLOPE SECTION

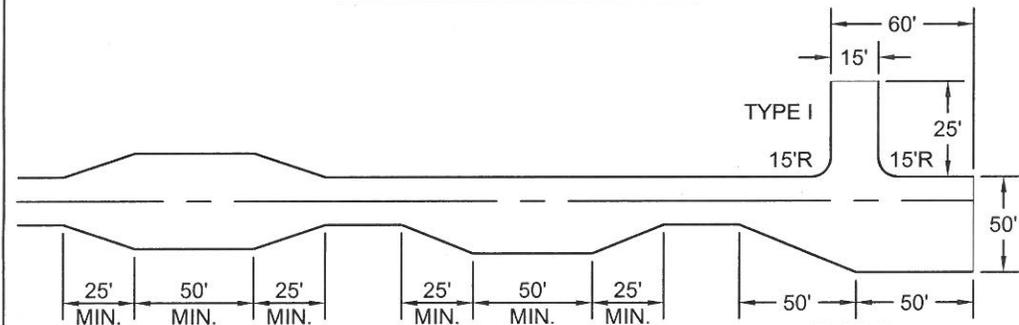
RETAIN LOW GROWING VEGETATION, SUCH AS GRASS AND FORBS, UNLESS IT OBSTRUCTS THE STRUCTURE AND INTERFERES WITH PROPER FUNCTION OR ENCROACHES INTO ROADBED. GRUB BRUSH & SMALL TREES



TYPICAL INSLOPE SECTION



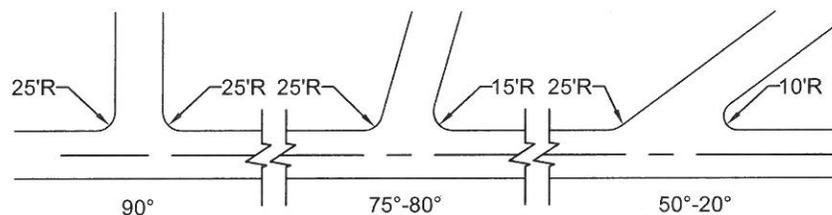
ROADWAY DITCH



DOUBLE LANE OR SPLIT TURNOUT

TURNOUT

TURNAROUND



TYPICAL INTERSECTION

NOTES:

1) ILLUSTRATED SLOPE RATIO = RISE:RUN (WHERE RISE =1)

ALL FILL SLOPES TO BE 1:1 1/2 UNLESS NOTED OTHERWISE

2) DRAWINGS NOT TO SCALE



HORSE TIMBER SALE

PROJECT

DRAINAGE DETAILS

SHEET NAME

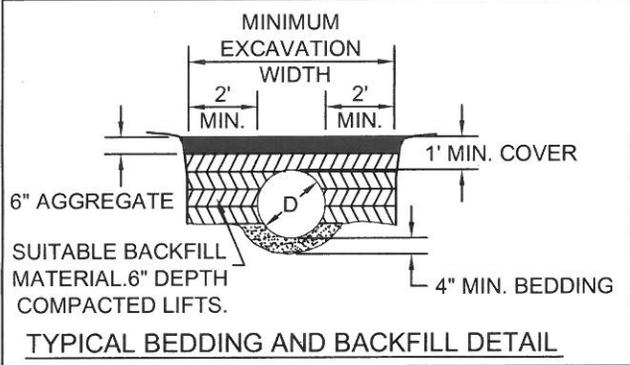
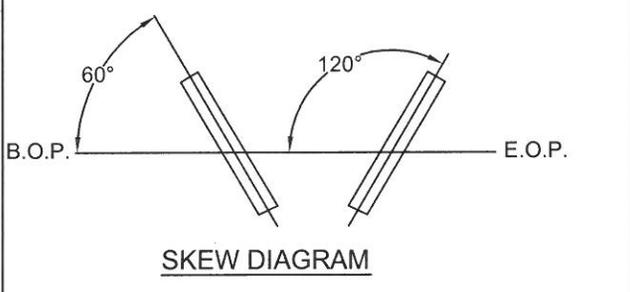
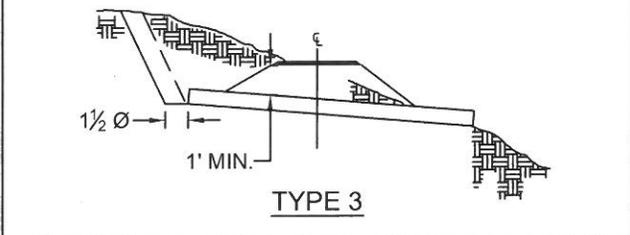
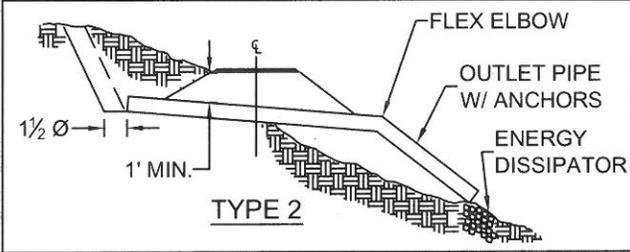
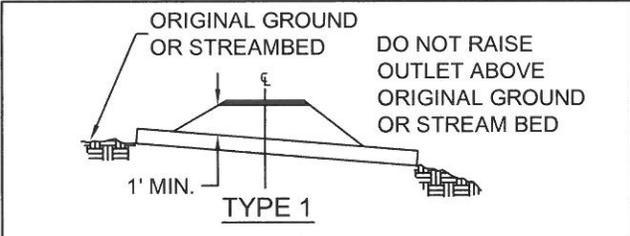


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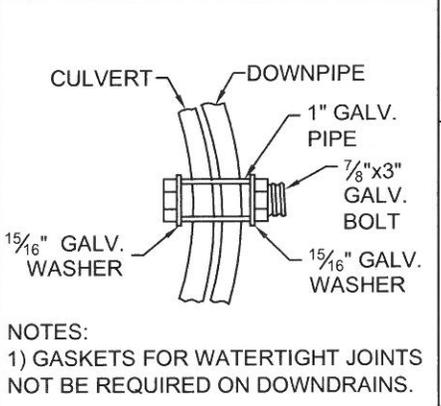
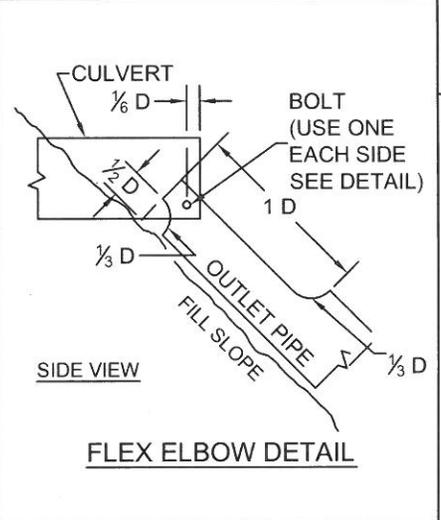
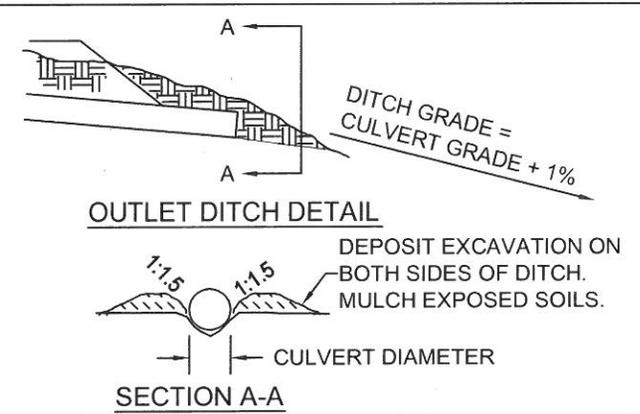
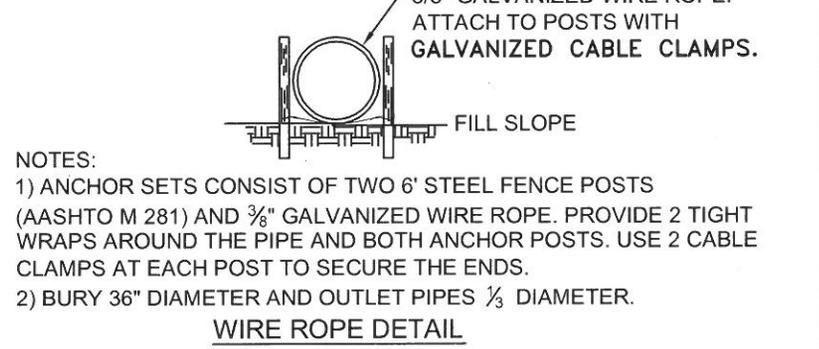
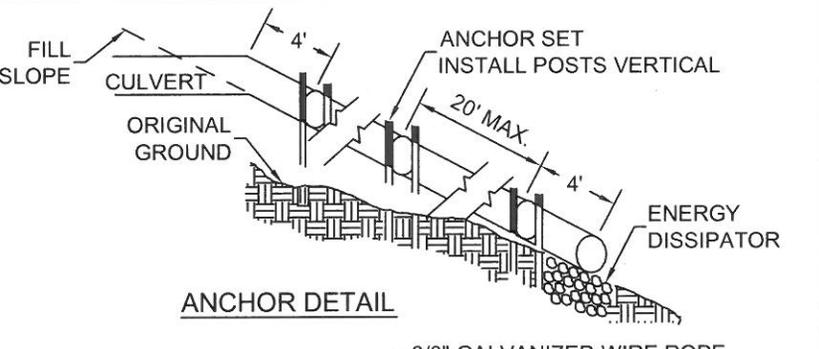
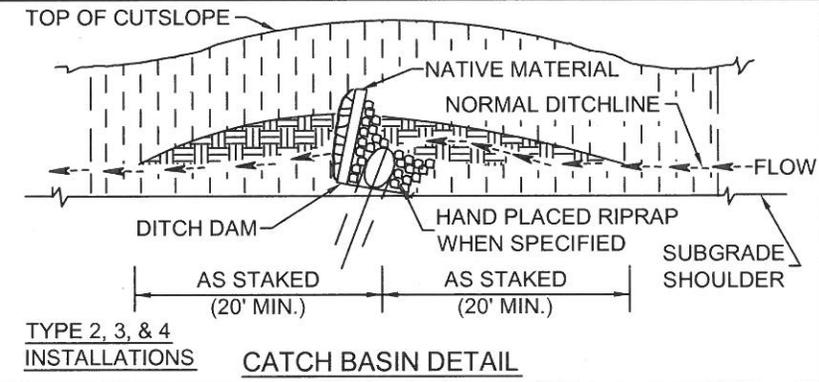
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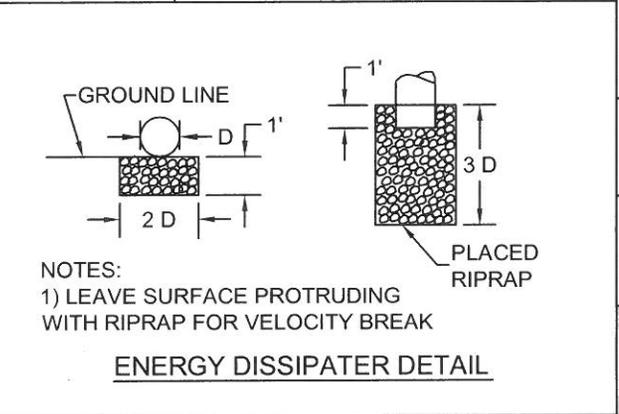
20



NOTES:  
1) ALL DRAWINGS NOT TO SCALE  
2) INSTALL HELICALLY CORRUGATED LOCK SEAM PIPE WITH SEAM AT INLET/OUTLET PLACED BELOW HORIZONTAL CENTERLINE



NOTES:  
1) GASKETS FOR WATERTIGHT JOINTS NOT BE REQUIRED ON DOWNDRAINS.



NOTES:  
1) LEAVE SURFACE PROTRUDING WITH RIPRAP FOR VELOCITY BREAK



HORSE TIMBER SALE

PROJECT

DEWATERING DETAILS

SHEET NAME

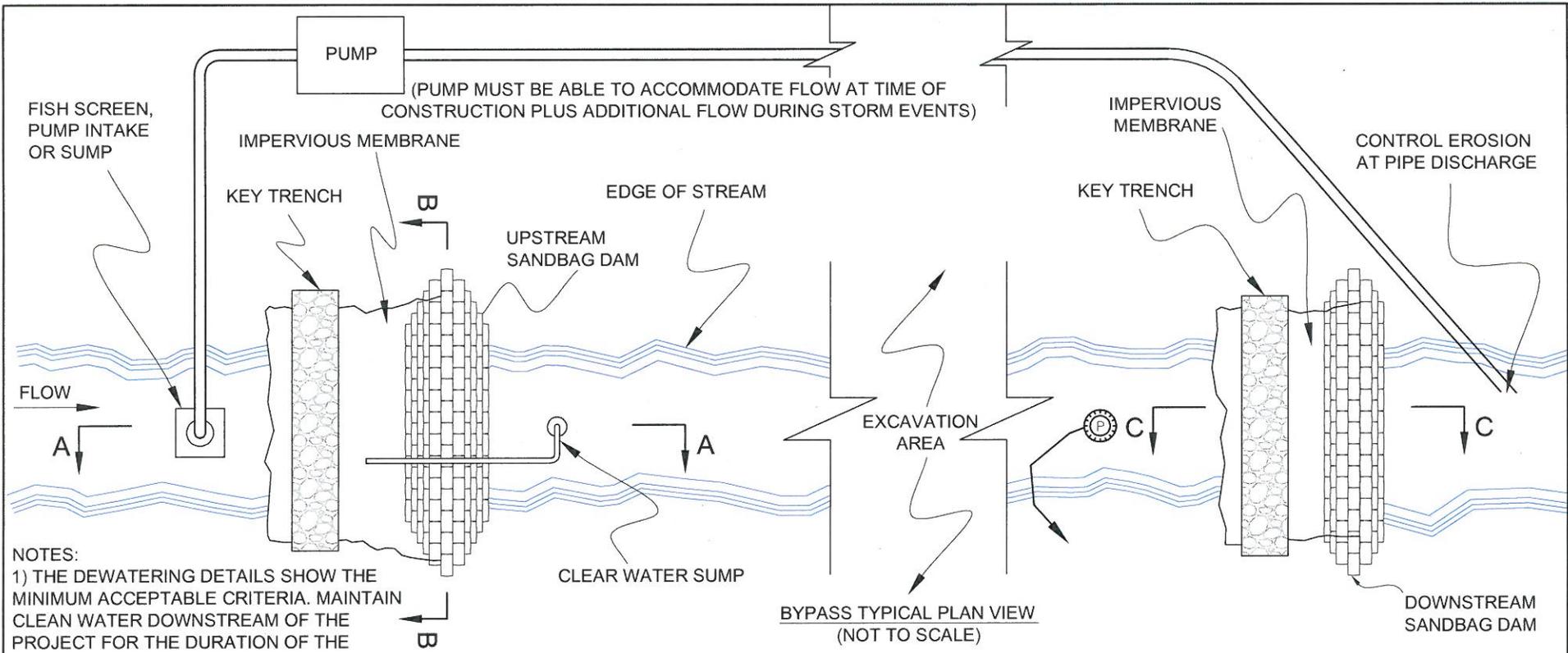


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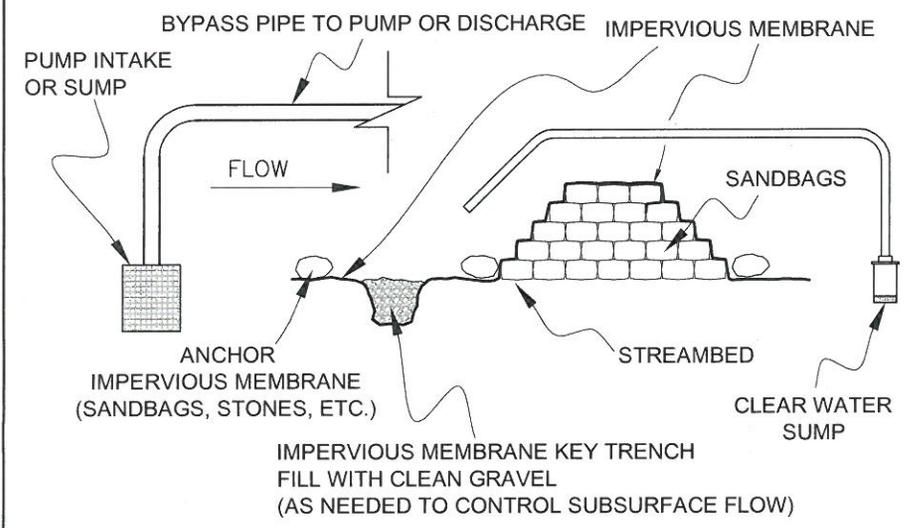
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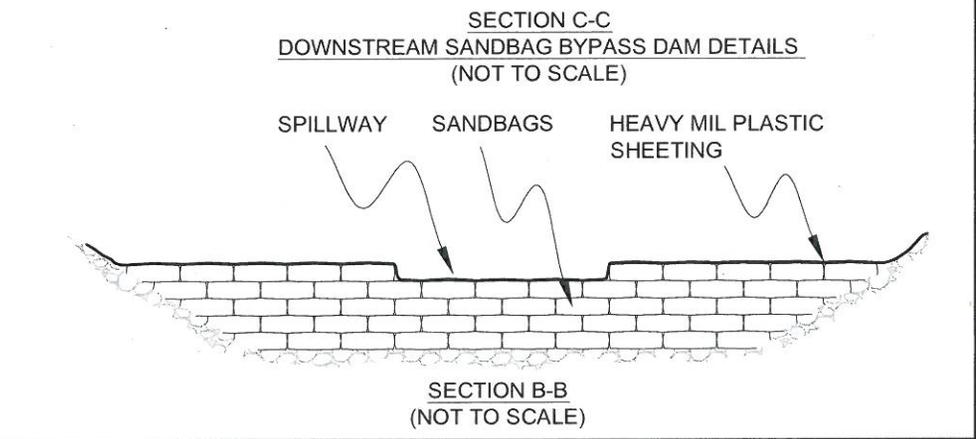
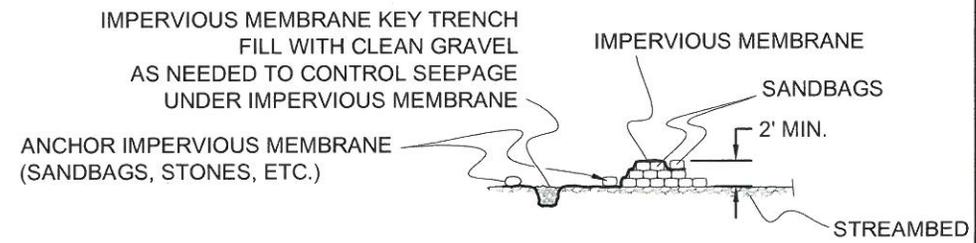
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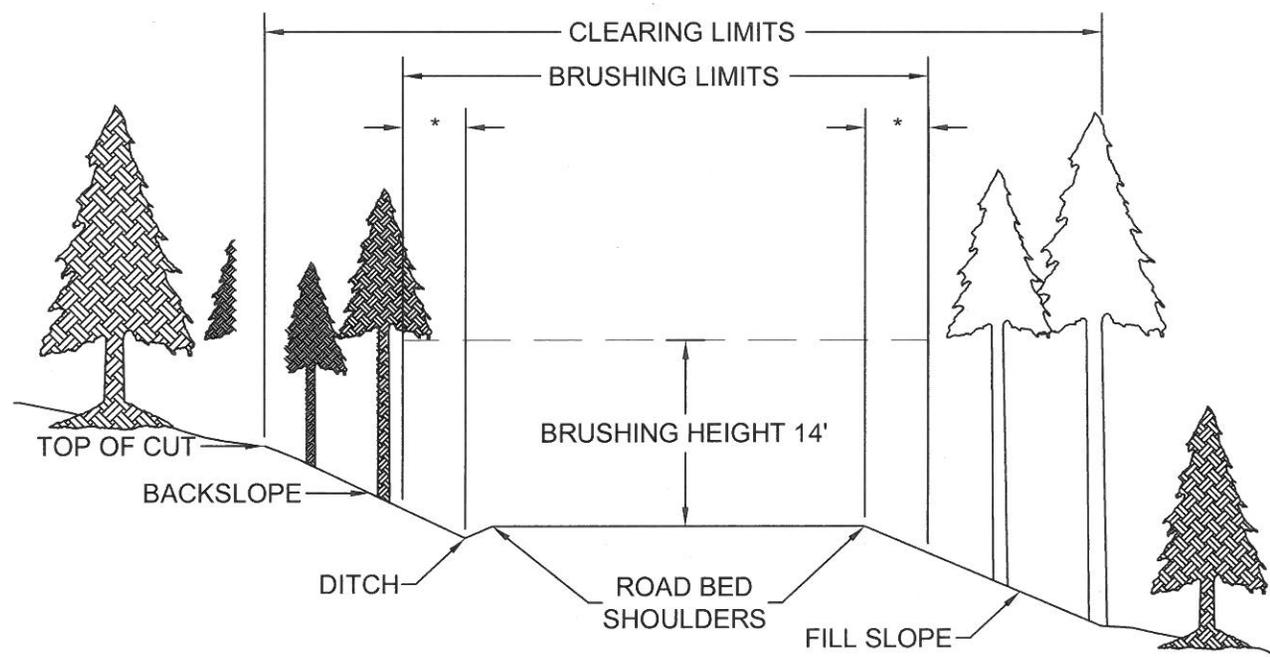
NOTES:  
 1) THE DEWATERING DETAILS SHOW THE MINIMUM ACCEPTABLE CRITERIA. MAINTAIN CLEAN WATER DOWNSTREAM OF THE PROJECT FOR THE DURATION OF THE PROJECT.  
 2) MAINTAIN PUMPING CAPACITY UNTIL THE STREAM IS FLOWING ON THE APPROVED, FINISHED STREAMBED.



SECTION A-A  
 UPSTREAM SANDBAG BYPASS DAM DETAILS  
 (NOT TO SCALE)



SECTION B-B  
 DOWNSTREAM SANDBAG BYPASS DAM DETAILS  
 (NOT TO SCALE)



- NOTES:
- 1) DRAWING NOT TO SCALE
  - 2) REMOVE ALL VEGETATIVE GROWTH INSIDE THE BRUSHING LIMITS, FROM THE SHOULDERS OF THE ROAD OR THE BOTTOM OF THE DITCH, TO A MAXIMUM HEIGHT OF 6 INCHES ABOVE GROUND SURFACES.
  - 3) LEAVE TREES LARGER THAN 6 INCHES IN DIAMETER (WHEN MEASURED 6 INCHES ABOVE THE GROUND) WITHIN THE BRUSHING LIMITS, THAT ARE BEYOND THE BOTTOM OF THE DITCH AND BEYOND THE HINGE POINT ON THE FILL SLOPE.
  - 4) TRIM LIMBS ON REMAINING TREES FROM GROUND LEVEL TO A CLEARING HEIGHT LIMIT OF 14 FEET ABOVE THE TRAVELWAY SURFACE.
  - 5) GRUB AREAS DESIGNATED IN RECONSTRUCTION SUMMARIES.

BRUSHING LIMITS		
ROAD #	M.P. LOCATION	* BRUSHING WIDTH
2638	4.26-9.74	6'
2638356	0.00-1.41	4'