



REVISION

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
KOOTENAI NATIONAL FOREST
FILE NO.

KOOTENAI NATIONAL FOREST
HORNET'S NEST/WYOMA TIMBER SALE

DESIGNED BY
AAM/1/2016
DRAWN BY
AAM/1/2016
CHECKED BY
AAM/1/2016

SHEET TITLE
TITLE SHEET

SHEET NO.
1 OF 14

USDA FOREST SERVICE REGION 1 - KOOTENAI NATIONAL FOREST LIBBY RANGER DISTRICT

PLANS FOR RECONSTRUCTION OF EXISTING NATIONAL FOREST SYSTEM ROADS HORNET'S NEST/WYOMA TIMBER SALE

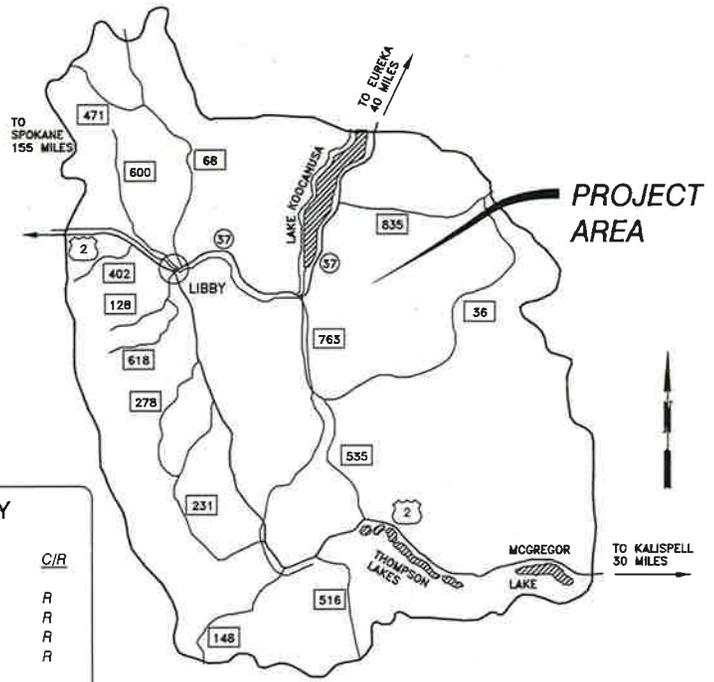
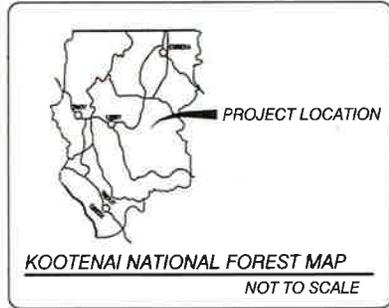
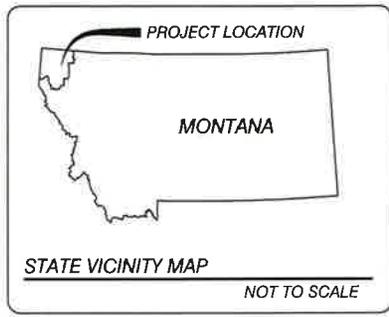
PREPARED BY: [Signature] 2/2/16
PROJECT ENGINEER DATE

REVIEWED BY: [Signature] 2-2-16
SUPERVISORY CIVIL ENGINEER DATE

MULTIPLE RESOURCE REVIEW BY: [Signature] 2/3/16
DISTRICT RANGER DATE

I CERTIFY THAT THIS PROJECT HAS BEEN
DESIGNED IN ACCORDANCE WITH SOUND
ENGINEERING PRACTICE.
[Signature] 2/3/16
FOREST ENGINEER DATE

SHEET TITLE	SHT. NO.
TITLE SHEET	1
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SUMMARY OF QUANTITIES	4
DRAINAGE LISTING	5-6
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ROAD NO.	ROAD NAME	LENGTH	C/R
2364	BPA ROAD	5.90	R
4913	HORNET RIDGE ROAD	0.53	R
4922	SNAG GULCH ROAD	5.08	R
4923	EAST WYOMA ROAD	0.61	R

LIBBY RANGER DISTRICT DIAGRAM
NOT TO SCALE



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DESIGNED BY
KAW 12/018
DRAWN BY
KAW 12/018
CHECKED BY
NAM 12/018

SHEET TITLE
VICINITY MAP

SHEET NO.
2 OF 14

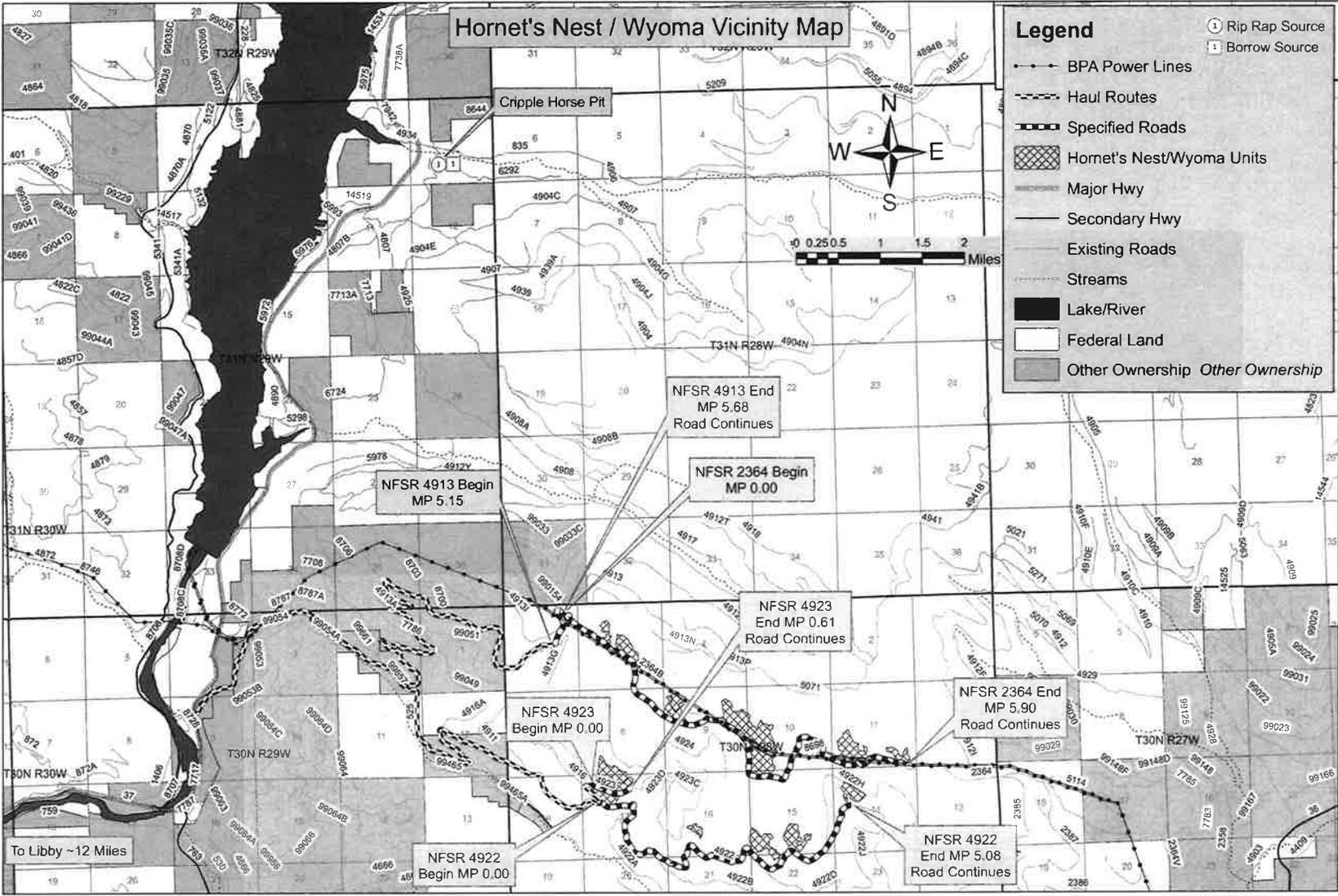
Hornet's Nest / Wyoma Vicinity Map

Legend

- Rip Rap Source
- Borrow Source
- BPA Power Lines
- Haul Routes
- Specified Roads
- Hornet's Nest/Wyoma Units
- Major Hwy
- Secondary Hwy
- Existing Roads
- Streams
- Lake/River
- Federal Land
- Other Ownership



0 0.25 0.5 1 1.5 2 Miles



GENERAL NOTES

- | | |
|--|---|
| <p>1. SECTION 201 – TOPS, LIMBS, AND STUMPS SHALL BE DISPOSED OF OUTSIDE OF CLEARING LIMITS. SLASH SHALL NOT BE DISPOSED OF ABOVE A ROADSIDE DITCH.</p> <p>2. SECTION 204 / 303 – UNSUITABLE OR OVERSIZED MATERIAL ENCOUNTERED DURING CONSTRUCTION OR RECONSTRUCTION SHALL BE PLACED ALONG THE TOE OF THE FILL, AWAY FROM DRAINAGE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.</p> <p>3. ALL AGGREGATE, UNCLASSIFIED BORROW AND PIT RUN, AND MATERIAL IS GOVERNMENT FURNISHED. THE PRIMARY LOCATION FOR THESE MATERIALS WILL BE THE CRIPPLE HORSE PIT (RD. 4925) – SECTION 1, T31N, R29W. PIT RUN AND UNCLASSIFIED BORROW MAY ALSO BE GENERATED/BORROWED FROM <u>APPROVED</u> AND/OR DESIGNATED CUT SLOPES.</p> <p>4. SECTION 625 – ALL DISTURBED AREAS OUTSIDE OF THE ROADBED SHALL BE SEEDED.</p> <p>5. ALL CULVERTS SHALL BE INSTALLED BETWEEN THE DATES OF MAY 1 TO OCTOBER 1 UNLESS APPROVED BY THE CO.</p> <p>6. SCHEDULE OF WORK SHALL BE PROVIDED BY THE PURCHASER IN WRITING AT THE PRE-WORK MEETING. ANY CHANGES TO THE SCHEDULE OF WORK SHALL BE PRESENTED IN WRITING TO THE CO.</p> <p>7. SECTION 156 – PURCHASER IS REQUIRED TO PROVIDE TRAFFIC CONTROL INCLUDING CLOSURE DEVICES AND SIGNS. TRAFFIC CONTROL IS INCIDENTAL TO OTHER ITEMS IN THIS CONTRACT. A PLAN MUST BE PROVIDED TO THE CO PRIOR TO THE START OF WORK.</p> | <p>8. SECTION 602 – CULVERTS ON LIVE STREAMS SHALL BE INSTALLED DURING LOW FLOW IF POSSIBLE.</p> <p>9. SECTION 303 – ROADWAY RECONDITIONING INCLUDES DITCH RECONDITIONING, SHOULDER RECONDITIONING, ROADBED RECONDITIONING, AND AGGREGATE SURFACE RECONDITIONING AND CLEANING INLET AND OUTLET OF EXISTING PIPES. REFER TO FSSS 303.</p> <p>10. ACCESS ROAD TO PIT SHALL REQUIRE WATERING FOR DUST SUPPRESSION IF NEEDED.</p> <p>11. ALL ROADS SHALL BE SCARIFIED TO THE BOTTOM OF POTHOLES AND CLOSED DEPRESSIONS WHEN THEY ARE PRESENT ON THE ROAD SURFACE DURING ROADWAY RECONDITIONING.</p> <p>12. BRUSHING SHALL INCLUDE ALL TURNOUTS AND J-HOLE TURNAROUNDS.</p> <p>13. SECTION 625 – USE THE STANDARD NATIVE CULTIVAR AND ANNUAL RYE SEED MIX UNLESS SPECIFIED ON THE PLANS. THIS IS A NEW SEED MIX ADOPTED BY THE KOOTENAI NATIONAL FOREST.</p> |
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DESIGNED BY
 KAW 1/2018
 DRAWN BY
 KAW 1/2018
 CHECKED BY
 NJM 1/2018

SHEET TITLE
GENERAL NOTES

SHEET NO.
3 OF 14

ESTIMATE OF QUANTITIES



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ROAD NUMBER	2364	4913	4922	4923	-
MILE POST (MILES)	5.90	0.53	5.08	0.61	-

ITEM NO.	DESCRIPTION	METHOD OF MEASURE	UNIT	REVISION DATE	QUANTITIES				REMARKS
15101	Mobilization	LS	LS	FP-03	1.00	1.00	1.00	1.00	
20419	Drainage excavation, type Surface Water Deflector	CQ	LF	FP-03	124.00	26.00			
20420	Drainage excavation, type 4% Outslope	CQ	Each	FP-03	13.00		2.00		
20420	Drainage excavation, type Reconstruct Drain Dip	CQ	Each	FP-03	8.00		29.00	1.00	
20420	Drainage excavation, type Construct Drain Dip	CQ	Each	FP-03		1.00	1.00		
23050	Roadside Brushing	CQ	Mile	FP-03	5.90	0.53	5.08	0.61	
25101	Placed riprap, class 1	CQ	CY	FP-03				6.00	
30305	Ditch reconditioning, Clean Outfall Ditch	CQ	Each	FP-03		1.00			
30357	Road Reconditioning, Compaction Method A	AQ	Mile	FP-03	5.90	0.53	5.08	0.61	
32222	Pit run maximum size 3", compaction method A	CQ	CY	FP-03	270.00				
60250	18" Corrugated Metal Pipe, .064" Thickness, (includes Culvert Excavation) Compaction Method B, Class 2 Installation	AQ	LF	FP-03	194.00				
60710	Reconditioning drainage structures, Jack Crushed Inlet or Outlet	CQ	Each	FP-03	1.00				
62555	Seeding, Dry Method	CQ	Acre	FP-03	1.10	0.30	2.50	0.30	

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DESIGNED BY
 KMM 1/2016
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 KMM 1/2016
 CHECKED BY
 KMM 1/2016

SHEET TITLE
 SUMMARY OF
 QUANTITIES

SHEET NO.
 4 OF 14

DRAINAGE LISTING

AS DESIGNED						AS BUILT						INSTALLATION			RIPRAP			BMP ITEMS					REMARKS			
STATION OR MILE POST	CULVERT DIAMETER (INCHES)	CULVERT LENGTH (FEET)	ROLLING DRAIN DIP	BLIND DRAIN (LIN. FT.)	SURFACE DEFLECTOR (LIN. FT.)	STATION OR MILE POST	CULVERT DIAMETER (INCHES)	CULVERT LENGTH (FEET)	ROLLING DRAIN DIP	BLIND DRAIN (LIN. FT.)	SURFACE DEFLECTOR (LIN. FT.)	TYPE*	SKEW (DEGREES)	OUTLET DITCH (LF)	GASKETS REQUIRED	CLASS	INLET (CY)	OUTLET (CY)	STRAW BALES	SLASH FILTER DRAIN	FILTER FABRIC INLET	FILTER FABRIC OUTLET	SILT FENCE (LIN. FT.)			
NFSR 2364																										
0.38																									Outslope Road 4%	
0.45			X																							Outslope Road 4%
0.48					22											1	0.25									
0.65					30											1	0.25									
0.72					30											1	0.25									
0.75					22											1	0.25									
0.80			X																							Outslope Road 4%
0.92					20											1	0.25									
1.03			X																							Outslope Road 4%
1.09			X																							Outslope Road 4%
1.12	18	24										2				1	0.25	0.25								
1.17	18	24										2				1	0.25	0.25								
1.98	18	30										2				1	0.25	0.25								
2.43			X																							Outslope Road 4%
2.90	18	26										2				1	0.25	0.25								
2.97	18	20										2				1	0.25	0.25								
3.09	18	20										2				1	0.25	0.25								
3.37			X																							Outslope Road 4%
3.45			X																							Outslope Road 4%
3.76			X																							Outslope Road 4%
3.83			X																							Outslope Road 4%
3.89			X																							Outslope Road 4%
4.23			X																							Outslope Road 4%
4.53			X																							Reconstruct Drain Dip
4.58			X																							Reconstruct Drain Dip
4.69			X																							Reconstruct Drain Dip
4.76			X																							Reconstruct Drain Dip
4.83			X																							Outslope Road 4%
5.10			X																							Reconstruct Drain Dip
5.22			X																							Reconstruct Drain Dip
5.31	18	26										2				1	0.25	0.25								
5.38			X																							Reconstruct Drain Dip
5.44			X																							Reconstruct Drain Dip
5.64	18	24										2				1	0.25	0.25								
NFSR 4913																										
5.27			X																							
5.43					26												1	0.25								
NFSR 4922																										
0.19			X																							Reconstruct Drain Dip
0.45			X																							Reconstruct Drain Dip
0.97			X																							Reconstruct Drain Dip
1.33			X																							Reconstruct Drain Dip
1.42			X																							Reconstruct Drain Dip
1.51			X																							Reconstruct Drain Dip
NFSR 4922 Continues Next Sheet																										



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DESIGNED BY
 KMW 12/21/16
 DRAWN BY
 PMP 7/22/19
 CHECKED BY
 NMF 12/21/16

SHEET TITLE
DRAINAGE
LISTING (1 OF 2)

SHEET NO.
5 OF 16

DRAINAGE LISTING

AS DESIGNED						AS BUILT						INSTALLATION			RIPRAP			BMP ITEMS					REMARKS			
STATION OR MILE POST	CULVERT DIAMETER (INCHES)	CULVERT LENGTH (FEET)	ROLLING DRAIN DIP	BLIND DRAIN (LIN. FT.)	SURFACE DEFLECTOR (LIN. FT.)	STATION OR MILE POST	CULVERT DIAMETER (INCHES)	CULVERT LENGTH (FEET)	ROLLING DRAIN DIP	BLIND DRAIN (LIN. FT.)	SURFACE DEFLECTOR (LIN. FT.)	TYPE	SKEW (DEGREES)	OUTLET DITCH (LF)	GASKETS REQUIRED	CLASS	INLET (CY)	OUTLET (CY)	STRAW BALES	SLASH FILTER DRAIN	FILTER FABRIC INLET	FILTER FABRIC OUTLET	SILT FENCE (LIN. FT.)			
NFSR 4922 Continued																										
1.56			X																						Reconstruct Drain Dip	
2.14			X																							Reconstruct Drain Dip
2.25			X																							Reconstruct Drain Dip
2.36			X																							Reconstruct Drain Dip
2.45			X																							Reconstruct Drain Dip
2.52			X																							Reconstruct Drain Dip
2.60			X																							Reconstruct Drain Dip
2.70			X																							Reconstruct Drain Dip
2.80			X																							Reconstruct Drain Dip
2.98			X																							Reconstruct Drain Dip
3.08			X																							Reconstruct Drain Dip
3.17			X																							Reconstruct Drain Dip
3.28			X																							Reconstruct Drain Dip
3.42			X																							Reconstruct Drain Dip
3.46			X																							Reconstruct Drain Dip
3.57			X																							Reconstruct Drain Dip
3.68			X																							Reconstruct Drain Dip
3.79			X																							Reconstruct Drain Dip
3.88			X																							Reconstruct Drain Dip
4.01			X																							Reconstruct Drain Dip
4.05			X																							Reconstruct Drain Dip
4.24			X																							Outslope Road 4%
4.47			X																							Reconstruct Drain Dip
4.68			X																							Outslope Road 4%
4.83			X																							Reconstruct Drain Dip
4.93			X																							Reconstruct Drain Dip
NFSR 4923																										
0.10			X																							Reconstruct Drain Dip
0.17																1		1.00								Armor Existing Drain Dip
0.23																1		1.00								Armor Existing Drain Dip
0.32																1		1.00								Armor Existing Drain Dip
0.40																1		1.00								Armor Existing Drain Dip
0.45																1		1.00								Armor Existing Drain Dip
0.54																1		1.00								Armor Existing Drain Dip



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 KMW 1/2016
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 KMW 1/2016
 CHECKED BY
 KMW 1/2016

SHEET TITLE
DRAINAGE LISTING (2 OF 2)

SHEET NO.
6 OF 14

RECONSTRUCTION LOG

BPA Road NFSR 2364			BPA Road NFSR 2364 Continued		
STATION OR MILE POST	PAY ITEM NUMBER	DESCRIPTION OF WORK	STATION OR MILE POST	PAY ITEM NUMBER	DESCRIPTION OF WORK
MP 0.00		Junction with NFSR 4913	MP 5.44	20420	Drainage Excavation, Type Reconstruct Drainage Dip
	23050	Begin Roadside Brushing	MP 5.64	60250	Install 18" x 24' CMP, Compaction Method B
	30357	Begin Roadway Reconditioning, Compaction Method A		32222	Place 30 CY Pit Run Over Culvert for Cover
	62555	Seed all Disturbed Areas, Dry Method	MP 5.89	32222	30 CY, Pit Run, Maximum Size 3", Compaction Method B
MP 0.38	20420	Drainage Excavation, 4% Outslope, Compaction Method C	MP 5.90		End of Project, Road Continues
MP 0.45	20420	Drainage Excavation, 4% Outslope, Compaction Method C		23050	End Roadside Brushing
MP 0.48	20419	Install 22 LF Surface Water Deflector		30357	End Roadway Reconditioning
MP 0.57	60710	Recondition Drainage Structures - Jack out Inlet		62555	End Seeding
MP 0.65	20419	Install 30 LF Surface Water Deflector			
MP 0.72	20419	Install 30 LF Surface Water Deflector			
MP 0.75	20419	Install 22 LF Surface Water Deflector			
MP 0.80	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 0.92	20419	Install 20 LF Surface Water Deflector			
MP 1.03	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 1.09	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 1.12	60250	Install 18" x 24' CMP, Compaction Method B			
	32222	Place 30 CY Pit Run Over Culvert for Cover			
MP 1.17	60250	Install 18" x 24' CMP, Compaction Method B			
	32222	Place 30 CY Pit Run Over Culvert for Cover			
MP 1.98	60250	Install 18" x 30' CMP, Compaction Method B			
	32222	Place 30 CY Pit Run Over Culvert for Cover			
MP 2.43	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 2.90	60250	Install 18" x 26' CMP, Compaction Method B			
	32222	Place 30 CY Pit Run Over Culvert for Cover			
MP 2.97	60250	Install 18" x 20' CMP, Compaction Method B			
	32222	Place 30 CY Pit Run Over Culvert for Cover			
MP 3.09	60250	Install 18" x 20' CMP, Compaction Method B			
	32222	Place 30 CY Pit Run Over Culvert for Cover			
MP 3.37	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 3.45	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 3.76	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 3.83	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 3.89	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 4.23	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 4.53	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.00		Junction with NFSR 334
MP 4.58	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 5.15		Begin Project Area
MP 4.69	20420	Drainage Excavation, Type Reconstruct Drainage Dip		23050	Begin Roadside Brushing
MP 4.76	20420	Drainage Excavation, Type Reconstruct Drainage Dip		30357	Begin Roadway Reconditioning, Compaction Method A
MP 4.83	20420	Drainage Excavation, 4% Outslope, Compaction Method C		62555	Seed all Disturbed Areas, Dry Method
MP 5.10	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 5.27	20420	Drainage Excavation, Type Construct Drainage Dip
MP 5.22	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 5.38	30305	Ditch Reconditioning, Clean Outfall Ditch
MP 5.31	60250	Install 18" x 26' CMP, Compaction Method B	MP 5.43	20419	Install 26 LF Surface Water Deflector
	32222	Place 30 CY Pit Run Over Culvert for Cover	MP 5.68		End Project, Junction NFSR 2364 Right, Road Continues
				23050	End Roadside Brushing
MP 5.38	20420	Drainage Excavation, Type Reconstruct Drainage Dip		30357	End Roadway Reconditioning

Hornet Ridge Road NFSR 4913



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DESIGNED BY
 6/24/11/2016
 DRAWN BY
 6/24/11/2016
 CHECKED BY
 6/24/11/2016

SHEET TITLE
ROAD LOG
2364 & 4913

SHEET NO.
7 OF 14

RECONSTRUCTION LOG

Snag Gulch Road NFSR 4922			East Wyoma Road NFSR 4923		
STATION OR MILEPOST	PAY ITEM NUMBER	DESCRIPTION OF WORK	STATION OR MILEPOST	PAY ITEM NUMBER	DESCRIPTION OF WORK
MP 0.00		Junction with NFSR 4916	MP 0.00		Junction with NFSR 4916
	23050	Begin Roadside Brushing		23050	Begin Roadside Brushing
	30357	Begin Roadway Reconditioning, Compaction Method A		30357	Begin Roadway Reconditioning, Compaction Method A
	62555	Seed all Disturbed Areas, Dry Method		62555	Seed all Disturbed Areas, Dry Method
MP 0.19	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.10	20420	Drainage Excavation, Type Reconstruct Drainage Dip, Disconnect Ditch
MP 0.45	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.17	25101	1 CY, Placed Rip Rap, Class 1, Armor Existing Drain Dip
MP 0.97	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.23	25101	1 CY, Placed Rip Rap, Class 1, Armor Existing Drain Dip
MP 1.33	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.32	25101	1 CY, Placed Rip Rap, Class 1, Armor Existing Drain Dip
MP 1.42	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.40	25101	1 CY, Placed Rip Rap, Class 1, Armor Existing Drain Dip
MP 1.51	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.45	25101	1 CY, Placed Rip Rap, Class 1, Armor Existing Drain Dip
MP 1.56	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.54	25101	1 CY, Placed Rip Rap, Class 1, Armor Existing Drain Dip
MP 2.14	20420	Drainage Excavation, Type Reconstruct Drainage Dip	MP 0.61		End Project, East Line Unit 219A, Road Continues
MP 2.25	20420	Drainage Excavation, Type Reconstruct Drainage Dip		23050	End Roadside Brushing
MP 2.36	20420	Drainage Excavation, Type Reconstruct Drainage Dip		30357	End Roadway Reconditioning
MP 2.45	20420	Drainage Excavation, Type Reconstruct Drainage Dip		62555	End Seeding
MP 2.52	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 2.60	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 2.70	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 2.80	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 2.98	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.08	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.17	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.28	20420	Drainage Excavation, Type Construct Drainage Dip			
MP 3.42	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.46	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.57	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.68	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.79	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 3.88	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 4.01	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 4.05	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 4.24	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 4.47	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 4.68	20420	Drainage Excavation, 4% Outslope, Compaction Method C			
MP 4.83	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 4.93	20420	Drainage Excavation, Type Reconstruct Drainage Dip			
MP 5.08		End of Project, NE Corner Unit 366, Road Continues			
	23050	End Roadside Brushing			
	30357	End Roadway Reconditioning			
	62555	End Seeding			



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 RAW 1/2018
 DRAWN BY
 RAW 1/2018
 CHECKED BY
 NJM 1/2018

SHEET TITLE
 ROAD LOG
 4922 & 4923

SHEET NO.
 8 OF 14



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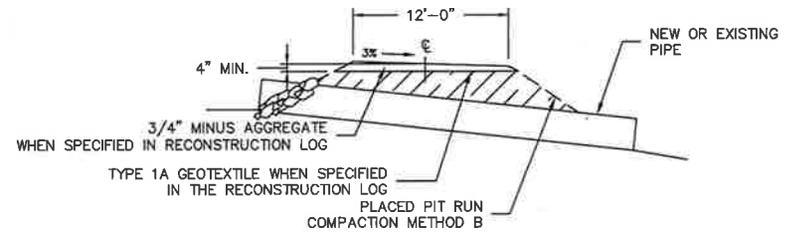
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KMM 1/2018
DRAWN BY
JMT 1/2018
CHECKED BY
MM 1/2018

SHEET TITLE
CONSTRUCTION
DETAILS

SHEET NO.
9 OF 14

PIT RUN PLACEMENT DETAIL
FOR COVER OVER CULVERTS

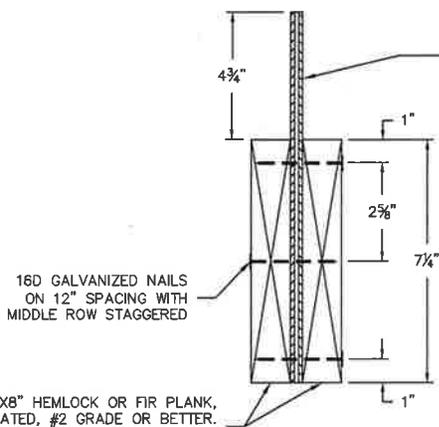


NOTES:

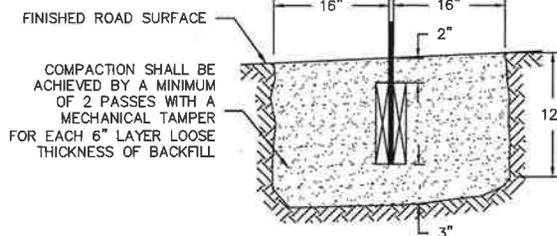
1. PIT RUN WILL BE GOVERNMENT FURNISHED AND MAY BE OBTAINED FROM THE CRIPPLE HORSE PIT, RD. 4925.
2. EACH LIFT SHALL BE COMPACTED USING A PLATE COMPACTOR.
3. THE LENGTH OF PLACEMENT IS AS STAKED BY THE ENGINEERING REPRESENTATIVE.

DRAWINGS NOT TO SCALE

SURFACE WATER DEFLECTOR DETAILS



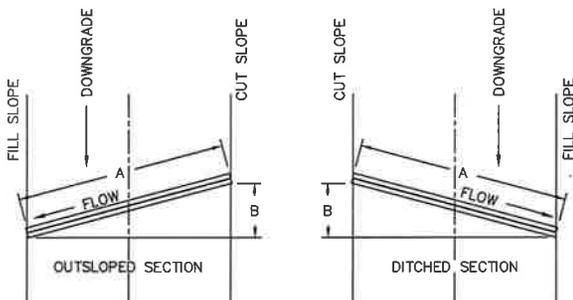
12" GOODYEAR PLYLON PLUS 375 WITH A MINIMUM THICKNESS OF 7/16". OTHER COMMERCIAL BRANDS MAY BE USED BUT THE BELT THICKNESS SHALL BE EQUAL TO OR GREATER THAN 7/16". THE PLYS SHALL BE MADE OF NYLON FOR BELT STIFFNESS. MATERIAL SHALL BE ONE CONTINUOUS LENGTH.



INSTALLATION DETAIL

NOTES

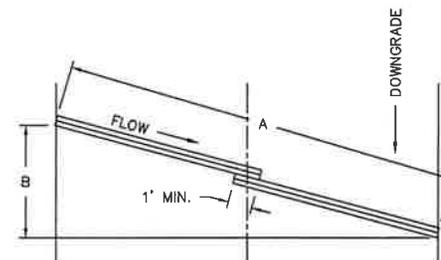
1. ALL TREATED LUMBER SHALL BE INCISED AND PRESSURE TREATED IN ACCORDANCE WITH THE AWP A UC4-A FOR GROUND CONTACT.
2. FIELD TREATMENT: ALL ABRASIONS AND CUTS MADE IN THE FIELD SHALL BE CAREFULLY TRIMMED AND GIVEN THREE BRUSH COATS OF THE TREATMENT SOLUTION. HOLES DRILLED IN THE FIELD SHALL BE POURED FULL OF PRESERVATIVE AND PLUGGED WITH TIGHT FITTING TREATED PLUGS.
3. ALL HARDWARE SHALL CONFORM TO FP-03 716.02 AND SHALL BE GALVANIZED. LUMBER SHALL CONFORM TO FP-03 716.03.
4. OUTLET OF DEFLECTOR SHALL BE A MINIMUM OF 0.5' LOWER THAN THE INLET.
5. CERTIFICATIONS: ONE COPY OF THE FOLLOWING COMPLIANCE CERTIFICATE SHALL BE FURNISHED UPON DELIVERY OF THE MATERIALS:
 - A. SUPPLIER CERTIFICATION THAT ALL WOOD MATERIALS MEET THE REQUIREMENTS AS TO SPECIES AND GRADE.
 - B. CERTIFICATION OF TREATMENT OF LUMBER TO INCLUDE TYPE OF PRESERVATIVE, RETENTION IN PCF (ASSAY METHOD) AND PENETRATION IN INCHES, BY A QUALIFIED INSPECTION AND TESTING AGENCY.
 - C. SUPPLIER CERTIFICATION THAT ALL RUBBER BELTING MATERIALS MEET THE REQUIREMENTS AS NOTED IN DETAIL.
6. SKEW SHALL BE 45% UNLESS OTHERWISE INDICATED. LENGTH AS INDICATED IN DRAINAGE LISTING.
7. IF REQUIRED IN THE PLANS, ARMOR OUTLET WITH CLASS 1 RIPRAP. INCIDENTAL TO PAY ITEM 20419.



SINGLE LANE

VALUES FOR SKEWED
INSTALLATION (FEET)

ROAD WIDTH	A	B
12	17	12
13	18	13
14	20	14
15	21	15
16	23	16
17	24	17
18	25	18



DOUBLE LANE

DRAWINGS NOT TO SCALE



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 KOOTENAI NATIONAL FOREST
 FILE NO.

KOOTENAI NATIONAL FOREST
 HORNET'S NEST/WYOMIA TIMBER SALE

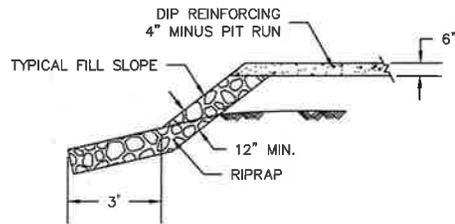
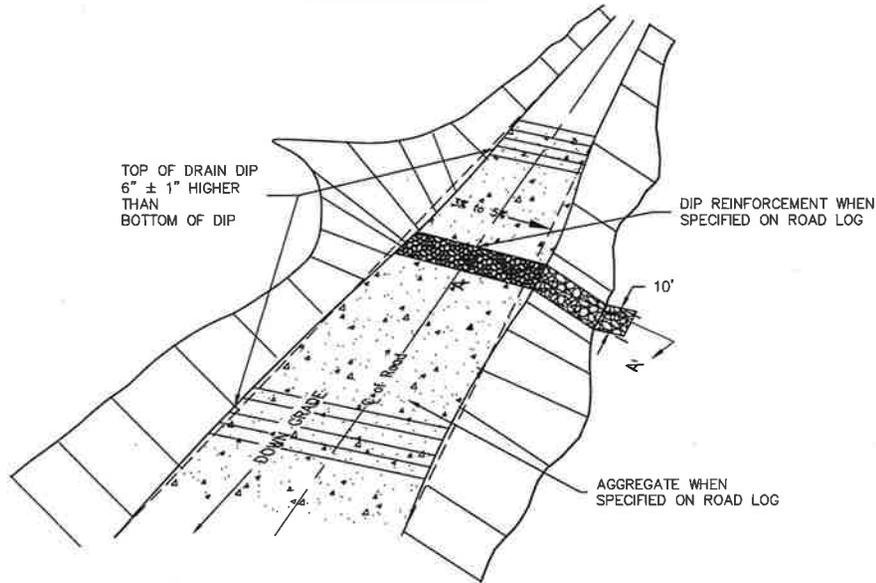
DESIGNED BY
 KAW 1/20/19
 DRAWN BY
 KAW 1/20/19
 CHECKED BY
 MA 1/20/19

SHEET TITLE
SWD DETAILS

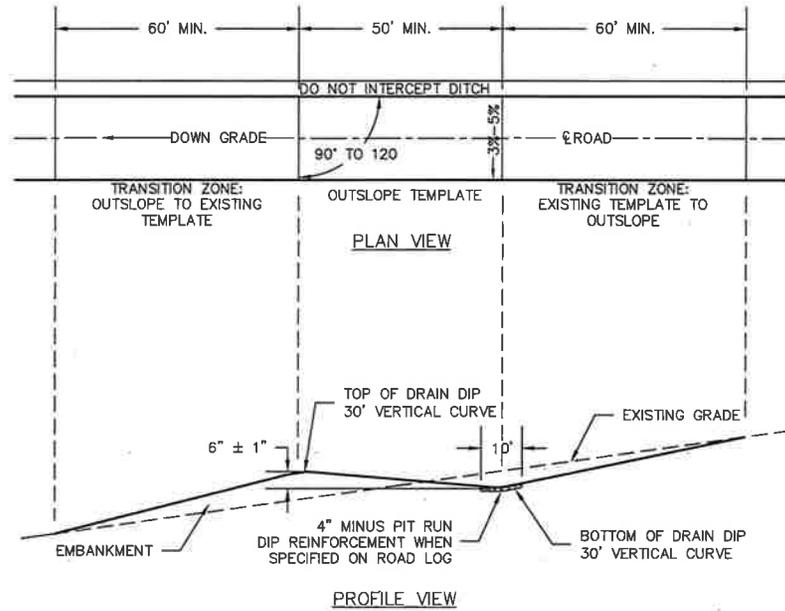
SHEET NO.
10 OF 14

DRAIN DIP DETAILS

PERSPECTIVE VIEW



SECTION A' - A
RIPRAP SECTION DETAIL
WHEN SPECIFIED ON ROAD LOG



NOTES:

1. EXCAVATION BELOW THE EXISTING GRADE LINE WILL BE USED AS EMBANKMENT ON THE DOWN GRADE SIDE OF THE DIP. COMPACTION METHOD D.
2. ALL DISTURBANCES SHALL BE KEPT WITHIN THE LIMITS OF THE DRAIN DIP.
3. AGGREGATE, DIP REINFORCEMENT, OR RIPRAP WILL ONLY BE REQUIRED WHEN SPECIFIED IN THE DRAINAGE LISTING OR RECONSTRUCTION LOG.

DRAWINGS NOT TO SCALE



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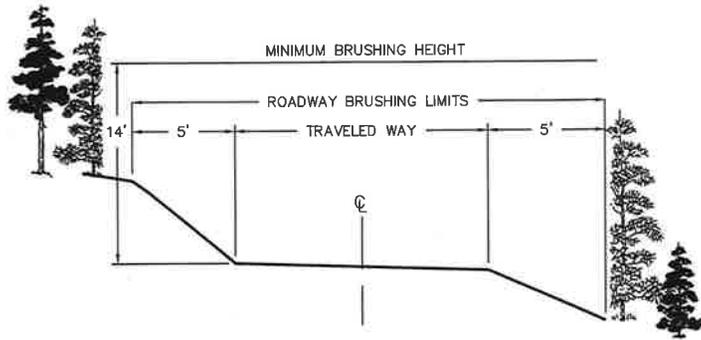
DESIGNED BY
KAW 12/2/16
DRAWN BY
KAW 12/2/16
CHECKED BY
NHW 12/2/16

SHEET TITLE
DRAIN DIP
DETAILS

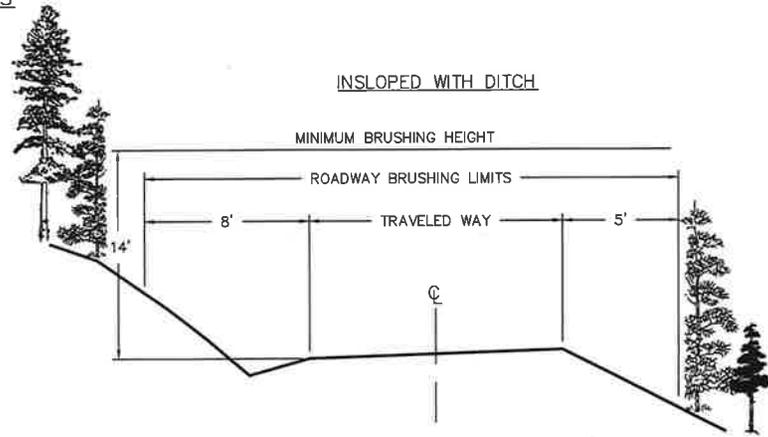
SHEET NO.
11 OF 14

BRUSHING LIMITS
CROSS SECTIONS

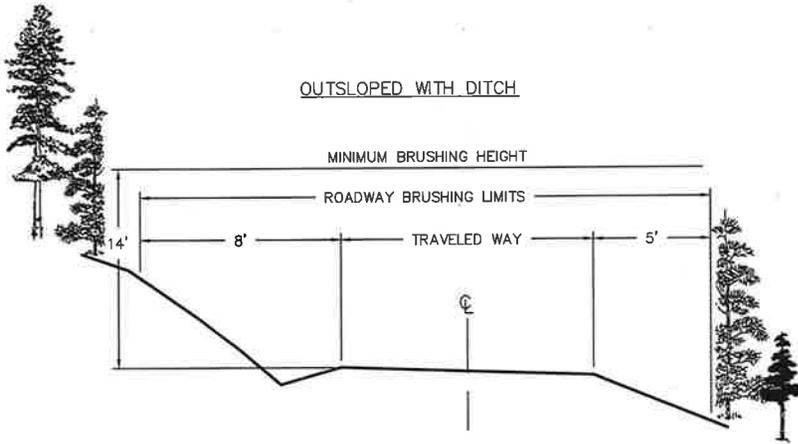
OUTSLOPED WITHOUT DITCH



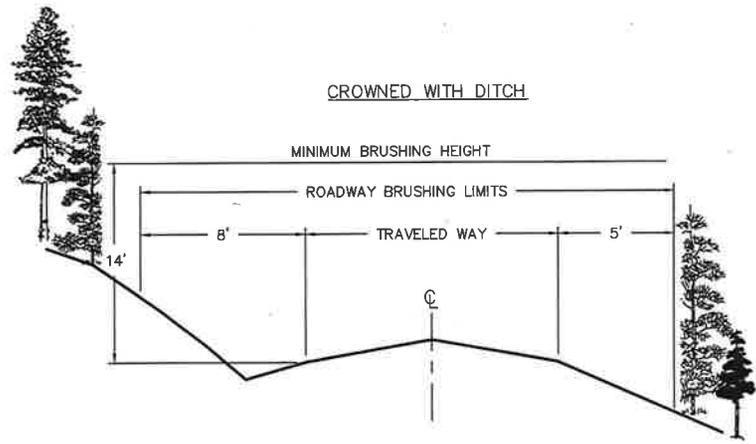
INSLOPED WITH DITCH



OUTSLOPED WITH DITCH



CROWNED WITH DITCH



DRAWINGS NOT TO SCALE



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FILE NO.

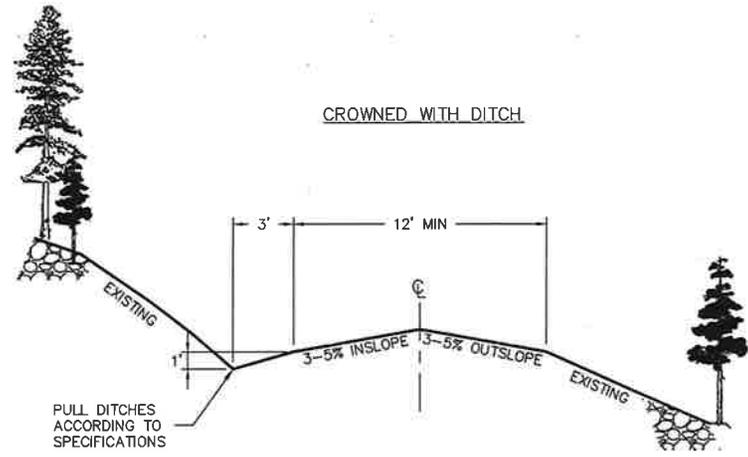
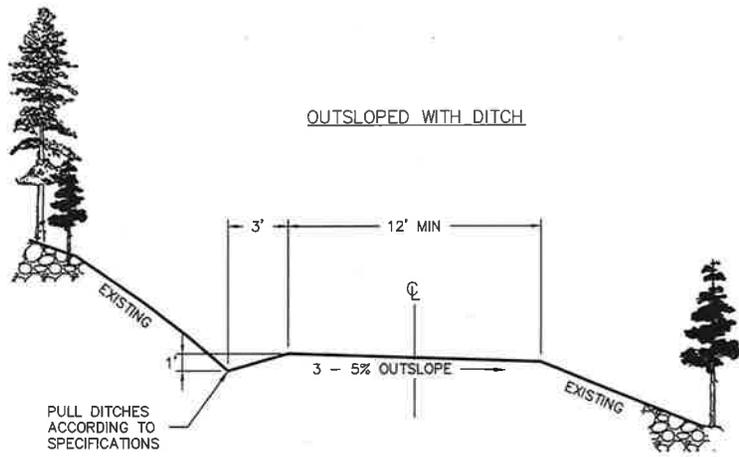
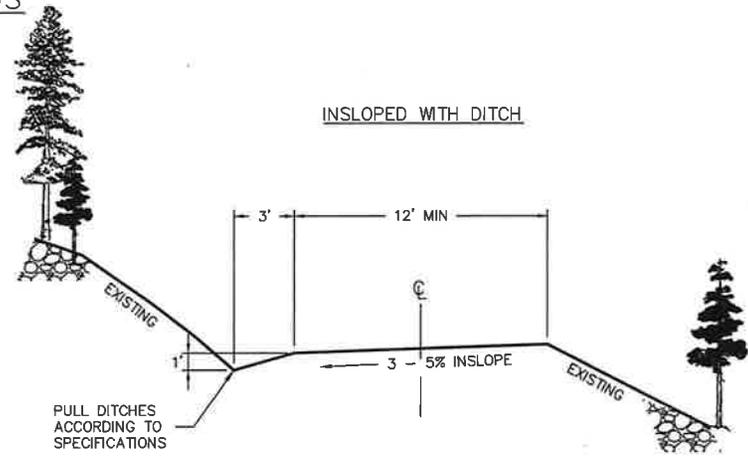
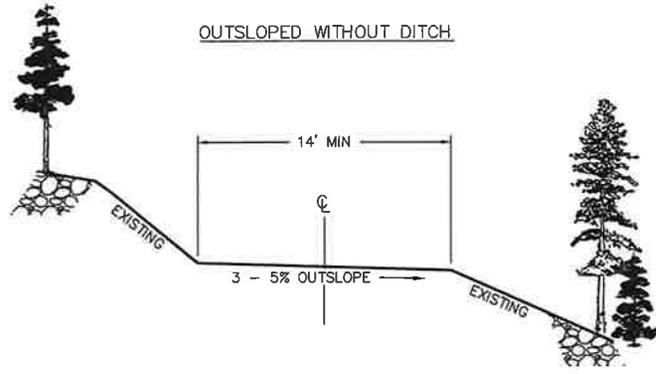
KOOTENAI NATIONAL FOREST
HORNET'S NEST/WYOMIA TIMBER SALE

DESIGNED BY
ADM 1/2016
DRAWN BY
ADM 1/2016
CHECKED BY
ADM 1/2016

SHEET TITLE
BRUSHING
DETAILS

SHEET NO.
12 OF 14

RECONDITIONING LIMITS CROSS SECTIONS



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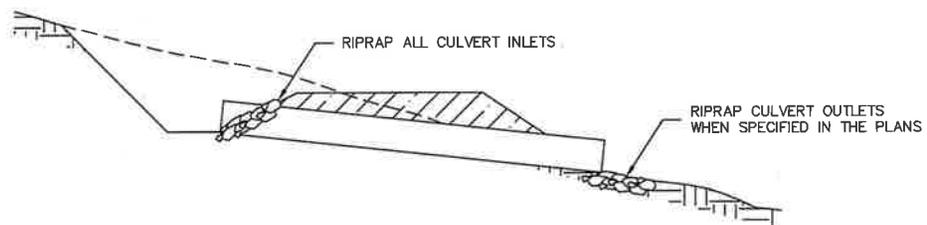
KOOTENAI NATIONAL FOREST
 HORNET'S NEST/WYOMIA TIMBER SALE

DESIGNED BY
 MAM 1/2016
 DRAWN BY
 MAM 1/2016
 CHECKED BY
 MAM 1/2016

SHEET TITLE
 RECONDITIONING
 DETAILS

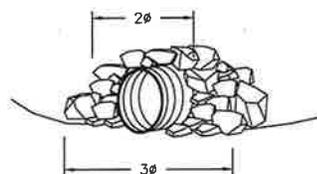
SHEET NO.
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TYPE II CULVERT INSTALLATION WITH REINFORCEMENT



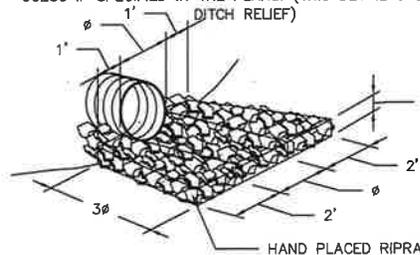
INLET RIPRAP INSTALLATION

INLET RIPRAP AND PLACEMENT INCIDENTAL TO PAY ITEM 60250

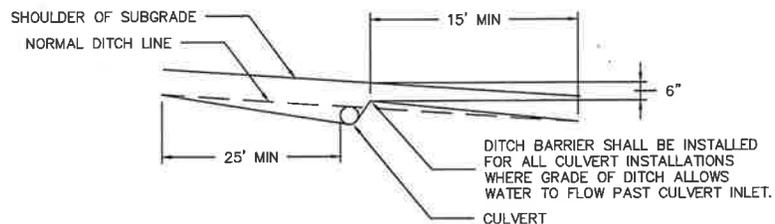


OUTLET RIPRAP INSTALLATION

OUTLET RIPRAP AND PLACEMENT INCIDENTAL TO PAY ITEM 60250 IF SPECIFIED IN THE PLANS. (THIS DETAIL ONLY FOR DITCH RELIEF)



DITCH BLOCK DETAIL



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KOOTENAI NATIONAL FOREST
HORNET'S NEST/WYOMA TIMBER SALE

DESIGNED BY
RMM 1/22/16
DRAWN BY
RMM 1/22/16
CHECKED BY
MM 1/22/16

SHEET TITLE
CULVERT TYPE II
INSTALLATION

SHEET NO.
14 OF 14