



△
△
REVISION

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
M. RICHMOND 12/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
TITLE SHEET

SHEET NO.
1 OF 24

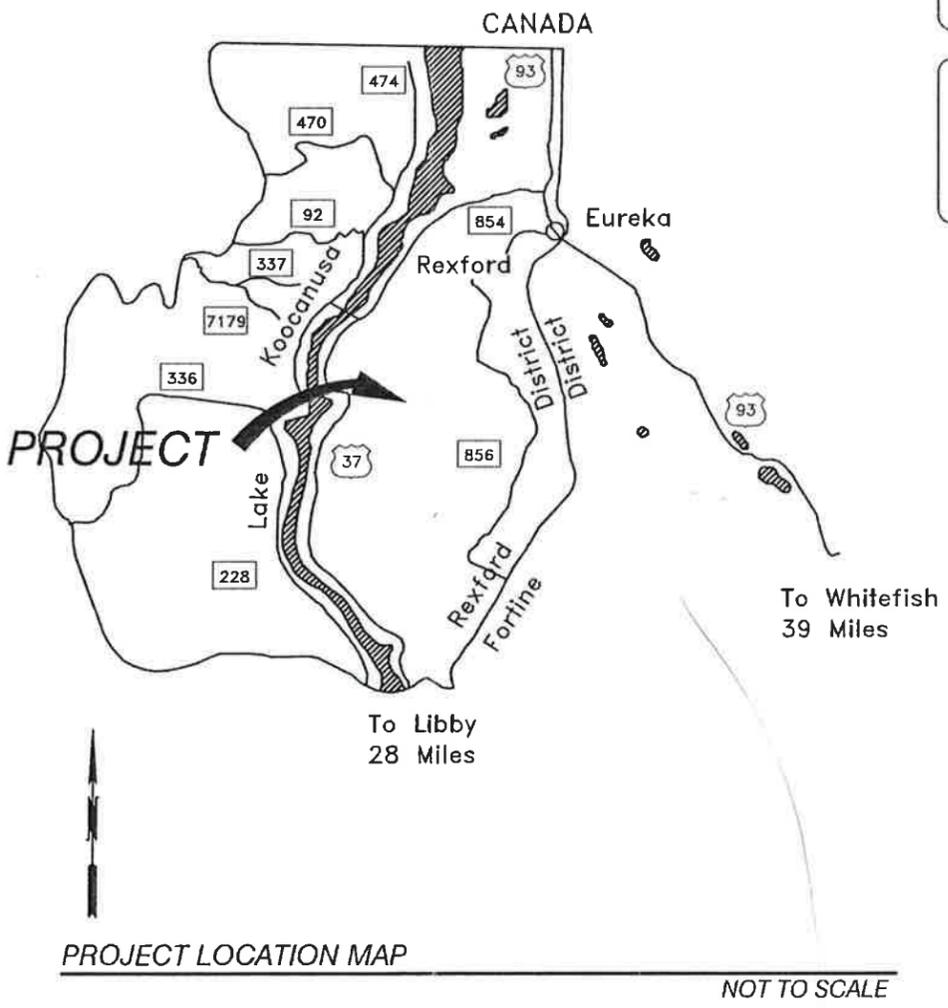
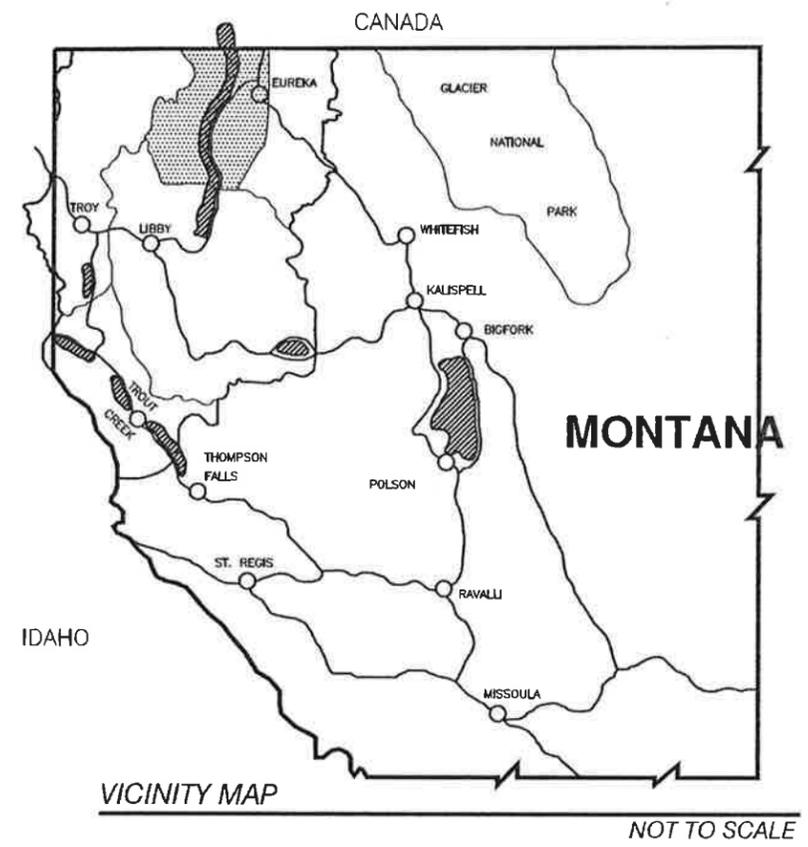
UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE – REGION ONE
KOOTENAI NATIONAL FOREST
REXFORD RANGER DISTRICT
PLANS FOR
FIVE CREEKS
TIMBER SALE

PREPARED BY:
Matt Richmond 11/2014
PROJECT ENGINEER DATE

REVIEWED BY:
Martha Pucco 11/2014
PROJECT TEAM LEADER DATE

MULTIPLE RESOURCE REVIEW BY:
Byron D. Dore 11-25-2014
DISTRICT RANGER DATE

I certify that this project has been designed in accordance with the Forest Plan and with sound engineering practice.
Ann Radel 12/4/14
FOREST ENGINEER DATE

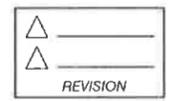
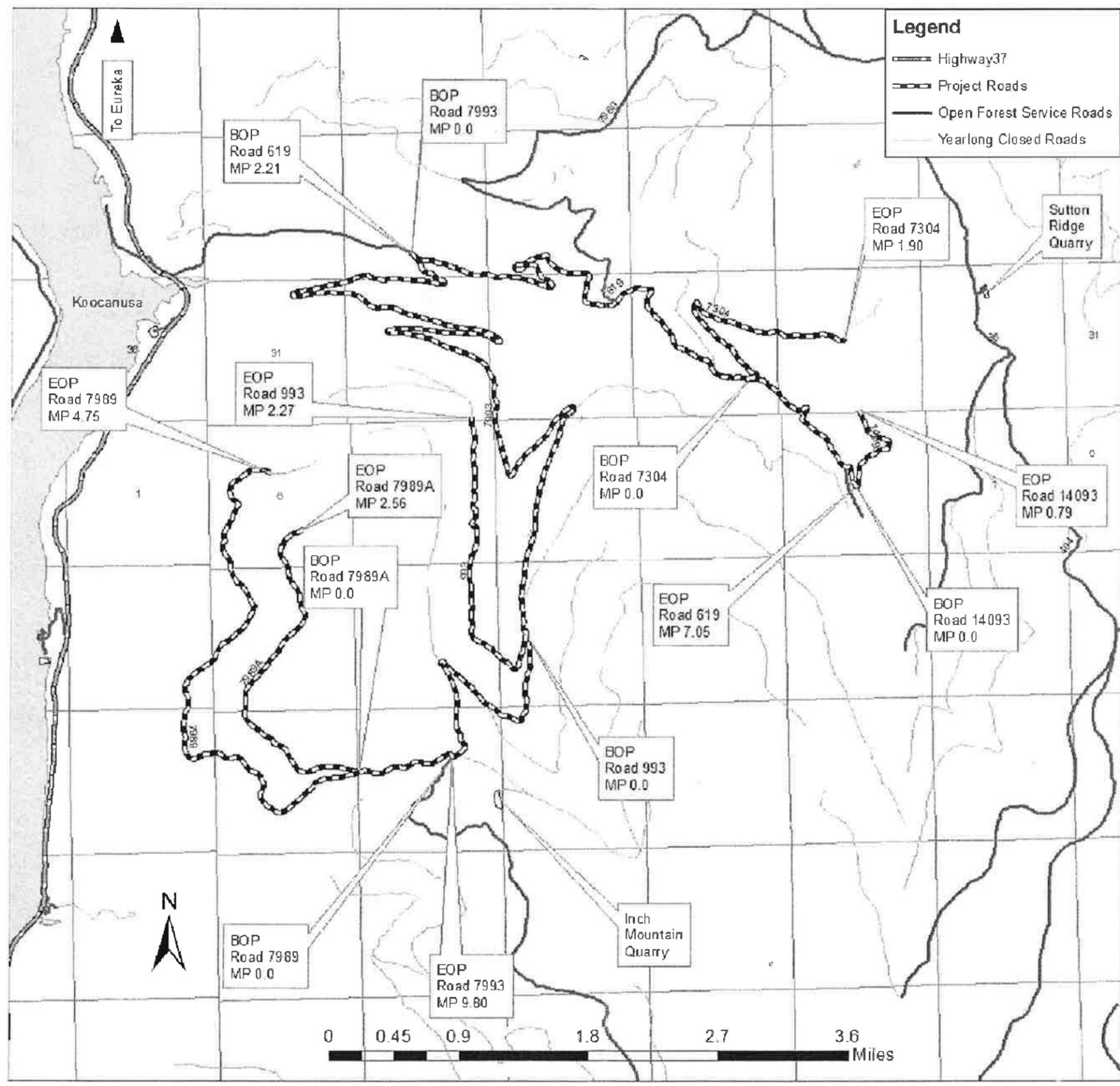


SHEET TITLE	SHT. NO.
TITLE SHEET	1
LOCATION MAP	2
SUMMARY OF QUANTITIES, GENERAL NOTES	3
ROAD LOGS	4-14
60" CULVERT INSTALLATION DETAILS	15
AGGREGATE PLACEMENT DETAILS	16
SURFACE WATER DEFLECTOR DETAILS	17
OPEN TOP CULVERT DETAILS	18
DRAINAGE DIP DETAILS	19
BRUSHING DETAILS	20
RECONDITIONING DETAILS	21
18" CULVERT INSTALLATION DETAILS	22
GATE DETAILS - SHEET 1	23
GATE DETAILS - SHEET 2	24

ROAD NO.	ROAD NAME	LENGTH	*C/R
619	SUTTON CREEK	4.84	R
993	INCH MOUNTAIN	2.27	R
7304	UPPER SUTTON	1.90	R
7989	FLAT FACE	4.75	R
7989A	FLAT FACE A	2.56	R
7993	FLAT CREEK	9.80	R
14093	SUTTON LION	0.79	R

*C=CONSTRUCTION R=RECONSTRUCTION

LOCATION MAP



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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
 M. RICHMOND 12/2013
 DRAWN BY
 M. RICHMOND 12/2013
 CHECKED BY
 M. PRICE 2/2014

SHEET TITLE
LOCATION MAP

SHEET NO.
2 OF 24



△
△
REVISION

SUMMARY OF ESTIMATED QUANTITIES												
PROJECT: FIVE CREEKS TIMBER SALE				ROAD NO.	619 ✓	993 ✓	7304 ✓	7989 ✓	7989A ✓	7993 ✓	14093 ✓	
				ROAD LENGTH IN MILES	4.84 ✓	2.27 ✓	1.90 ✓	4.75 ✓	2.56 ✓	9.80 ✓	0.79 ✓	
ITEM NO.	ITEM DESCRIPTION	MEASUREMENT										TOTALS
		MTD	UNIT									
15101 ✓	MOBILIZATION ✓	LS	LS	-	-	-	-	-	-	-	-	1 ✓
20103 ✓	CLEARING AND GRUBBING ✓	CQ	MI								0.79 ✓	0.79
20419A ✓	DRAINAGE EXCAVATION, TYPE SURFACE WATER DEFLECTOR ✓	AQ	LF		14 ✓		112 ✓					126
20419B ✓	DRAINAGE EXCAVATION, TYPE OPEN TOP CULVERT ✓	AQ	LF ✓	326 ✓						224 ✓		550
20419C ✓	DRAINAGE EXCAVATION, TYPE DITCH CONSTRUCTION ✓	AQ	LF ✓								50 ✓	50
20420 ✓	DRAINAGE EXCAVATION, TYPE DRAIN DIP	AQ	EA							1 ✓		1
20701 ✓	GEOTEXTILE, TYPE 1A ✓	CQ	SY		130 ✓					15 ✓		145
23050 ✓	ROADSIDE BRUSHING ✓	CQ	MI	4.84 ✓	2.27 ✓	1.90 ✓	4.75 ✓	2.56 ✓		0.79 ✓		17.11
30113 ✓	AGGREGATE SURFACE COURSE, COMPACTION METHOD E(2) ✓	CQ	CY ✓	10 ✓	45 ✓			10 ✓				65
30122 ✓	PIT RUN, MAX. SIZE 3", COMPACTION METHOD A ✓	CQ	CY ✓	10 ✓								10
30322 ✓	ROAD RECONDITIONING, COMPACTION METHOD A ✓	CQ	MI ✓	4.84 ✓	2.27 ✓		4.75 ✓	2.56 ✓	9.80 ✓	0.79 ✓		25.01
60250A	18" CORRUGATED STEEL PIPE, 0.064" THICKNESS	AQ	LF				58 ✓			30 ✓		88
60250B	60" CORRUGATED STEEL PIPE, 0.064" THICKNESS	AQ	LF							42 ✓		42
62550 ✓	SEEDING AND FERTILIZING, DRY METHOD ✓	CQ	AC ✓	0.25 ✓	0.25 ✓	0.25 ✓	0.25 ✓	0.25 ✓	0.25 ✓	0.25 ✓	0.25 ✓	1.75 ✓
65001 ✓	FURNISH AND INSTALL ROAD CLOSURE DEVICE, TYPE GATE, SIZE 16' ✓	AQ	EA			1 ✓						1

GENERAL NOTES

- SECTION 201 – TOPS, LIMBS, AND STUMPS SHALL BE SCATTERED OUTSIDE OF CLEARING LIMITS.
- 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.
- ALL AGGREGATE, PIT RUN, AND RIPRAP MATERIAL IS GOVERNMENT FURNISHED. THE PRIMARY LOCATION FOR THESE MATERIALS WILL BE THE SUTTON RIDGE QUARRY (RD. 494J) – SECTION 36, T35N, R28W, AND/OR THE INCH MOUNTAIN QUARRY (RD. 7992A) – SECTION 17, T34N, R28W.
- SECTION 625 – ALL DISTURBED AREAS OUTSIDE OF THE ROADWAY TO BE SEEDED AND FERTILIZED.
- ALL CULVERTS SHALL BE INSTALLED BETWEEN THE DATES OF MAY 1 TO OCTOBER 1 UNLESS APPROVED BY THE CO.
- SCHEDULE OF WORK SHALL BE PROVIDED BY THE CONTRACTOR IN WRITING AT THE PRE-WORK MEETING. ANY CHANGES TO THE SCHEDULE OF WORK SHALL BE PRESENTED IN WRITING TO THE CO.
- CONTRACTOR SHALL WORK MONDAY THROUGH FRIDAY BETWEEN THE HOURS OF 7AM AND 5PM. NO WORK SHALL BE CONDUCTED WEEKENDS OR FEDERAL HOLIDAYS. PRIOR APPROVAL MUST BE RECEIVED FROM THE CO PRIOR TO WORKING OUTSIDE THESE RESTRAINTS.
- CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND AN EROSION CONTROL PLAN TO THE CO IN WRITING PRIOR TO THE START OF WORK. THE COST OF BOTH DEWATERING AND EROSION CONTROL ARE INCIDENTAL TO ITEM 60250B IN THIS CONTRACT.
- CONTRACTOR 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.

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
M. RICHMOND 12/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
SUMMARY OF
QUANTITIES
& NOTES

SHEET NO.
3 OF 24



△
△
REVISION

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
A. NELSON 10/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
ROAD LOG
RD. 619 (1 OF 3)

SHEET NO.
4 OF 24

NOTE: MILEAGES WERE MEASURED WITH A DMI AND CAN VARY FROM THE MILEPOST MARKERS ON THE GROUND.

RECONSTRUCTION ROAD LOG – RD. #619 (1 OF 3)

MILEPOST	WORK DESCRIPTION	ITEM 20103	ITEM 20419A	ITEM 20419B	ITEM 20419C	ITEM 20420	ITEM 20701	ITEM 23050	ITEM 30113	ITEM 30122	ITEM 30322	ITEM 60250A	ITEM 60250B	ITEM 62550
		CLEARING & GRUBBING	INSTALL SWD	OPEN TOP CULVERT	CONSTRUCT DITCH	CONSTRUCT DRAIN DIP	GEOTEXTILE	BRUSHING	AGGREGATE	PIT RUN	RECOND.	18" PIPE	60" PIPE	SEED & FERTILIZE
2.21	BEGIN PROJECT (619/7993 JUNCT.)													
	BEGIN ROADWAY BRUSHING							4.84 MI						
	BEGIN ROADWAY RECONDITIONING										4.84 MI			
	BEGIN SEEDING & FERTILIZING AS NEEDED													0.25 AC
2.23	INSTALL OPEN TOP CULVERT			18 LF										
2.40	INSTALL OPEN TOP CULVERT			18 LF										
2.75	INSTALL OPEN TOP CULVERT			18 LF										
2.90	INSTALL OPEN TOP CULVERT			18 LF										
3.00	INSTALL OPEN TOP CULVERT			18 LF										
3.15	INSTALL OPEN TOP CULVERT			18 LF										
3.40	INSTALL OPEN TOP CULVERT			18 LF										
3.77	INSTALL OPEN TOP CULVERT			18 LF										

ROADWAY BRUSHING

ROADWAY RECONDITIONING

SEED & FERTILIZE (ALL DISTURBED AREAS OUTSIDE THE ROADBED)



△
△
REVISION

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
A. NELSON 10/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
ROAD LOG
RD. 993

SHEET NO.
7 OF 24

NOTE: MILEAGES WERE MEASURED WITH A DMI AND CAN VARY FROM THE MILEPOST MARKERS ON THE GROUND.

RECONSTRUCTION ROAD LOG – RD. #993

MILEPOST	WORK DESCRIPTION	ITEM 20103	ITEM 20419A	ITEM 20419B	ITEM 20419C	ITEM 20420	ITEM 20701	ITEM 23050	ITEM 30113	ITEM 30122	ITEM 30322	ITEM 60250A	ITEM 60250B	ITEM 62550
		CLEARING & GRUBBING	INSTALL SWD	OPEN TOP CULVERT	CONSTRUCT DITCH	CONSTRUCT DRAIN DIP	GEOTEXTILE	BRUSHING	AGGREGATE	PIT RUN	RECOND.	18" PIPE	60" PIPE	SEED & FERTILIZE
0.00	BEGIN PROJECT (993/7993 JUNCTION)													
	BEGIN ROADWAY BRUSHING							2.27 MI						
	BEGIN ROADWAY RECONDITIONING										2.27 MI			
	BEGIN SEEDING & FERTILIZING AS NEEDED													0.25 AC
0.30	INSTALL SURFACE WATER DEFLECTOR		14 LF											
1.43	PLACE NONWOVEN GEOTEXTILE 12' WIDE FOR 50 LF						70 SY							
	PLACE 8" OF AGGREGATE								25 CY					
1.57	PLACE NONWOVEN GEOTEXTILE 12' WIDE FOR 20 LF						30 SY							
	PLACE 8" OF AGGREGATE								10 CY					
1.60	PLACE NONWOVEN GEOTEXTILE 12' WIDE FOR 20 LF						30 SY							
	PLACE 8" OF AGGREGATE								10 CY					
2.27	END PROJECT													
	END ROADWAY BRUSHING													
	END ROADWAY RECONDITIONING													
	END SEEDING & FERTILIZING AS NEEDED													

2.27 MI

ROADWAY BRUSHING

2.27 MI

ROADWAY RECONDITIONING

0.25 AC

SEED & FERTILIZE (ALL DISTURBED AREAS OUTSIDE THE ROADBED)



△
△
REVISION

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
A. NELSON 10/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
ROAD LOG
RD. 7989 (1 OF 2)

SHEET NO.
9 OF 24

NOTE: MILEAGES WERE MEASURED WITH A DMI AND CAN VARY FROM THE MILEPOST MARKERS ON THE GROUND.

RECONSTRUCTION ROAD LOG - RD. #7989 (1 OF 2)

MILEPOST	WORK DESCRIPTION	ITEM 20103	ITEM 20419A	ITEM 20419B	ITEM 20419C	ITEM 20420	ITEM 20701	ITEM 23050	ITEM 30113	ITEM 30122	ITEM 30322	ITEM 60250A	ITEM 60250B	ITEM 62550
		CLEARING & GRUBBING	INSTALL SWD	OPEN TOP CULVERT	CONSTRUCT DITCH	CONSTRUCT DRAIN DIP	GEOTEXTILE	BRUSHING	AGGREGATE	PIT RUN	RECOND.	18" PIPE	60" PIPE	SEED & FERTILIZE
0.00	BEGIN PROJECT (7989/7993 JUNCTION)													
	BEGIN ROADSIDE BRUSHING							4.75 MI						
	BEGIN ROADWAY RECONDITIONING							4.75 MI						
	BEGIN SEEDING & FERTILIZING AS NEEDED													0.25 AC
0.58	INSTALL SURFACE WATER DEFLECTOR		14 LF											
0.68	INSTALL SURFACE WATER DEFLECTOR		14 LF											
0.83	INSTALL SURFACE WATER DEFLECTOR		14 LF											
1.00	INSTALL SURFACE WATER DEFLECTOR		14 LF											
1.20	INSTALL SURFACE WATER DEFLECTOR		14 LF											
1.90	INSTALL 18" DIAMETER CMP W/ CATCH BASIN, TYPE 2 INSTALL											30 LF		
2.85	INSTALL SURFACE WATER DEFLECTOR		14 LF											
2.95	INSTALL SURFACE WATER DEFLECTOR		14 LF											

ROADWAY BRUSHING

ROADWAY RECONDITIONING

SEED & FERTILIZE (ALL DISTURBED AREAS OUTSIDE THE ROADBED)



△
△
REVISION

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
A. NELSON 10/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
ROAD LOG
RD. 7993 (1 OF 2)

SHEET NO.
12 OF 24

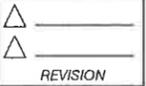
NOTE: MILEAGES WERE MEASURED WITH A DMI AND CAN VARY FROM THE MILEPOST MARKERS ON THE GROUND.

RECONSTRUCTION ROAD LOG - RD. #7993 (1 OF 2)

MILEPOST	WORK DESCRIPTION	ITEM 20103	ITEM 20419A	ITEM 20419B	ITEM 20419C	ITEM 20420	ITEM 20701	ITEM 23050	ITEM 30113	ITEM 30122	ITEM 30322	ITEM 60250A	ITEM 60250B	ITEM 62550
		CLEARING & GRUBBING	INSTALL SWD	OPEN TOP CULVERT	CONSTRUCT DITCH	CONSTRUCT DRAIN DIP	GEOTEXTILE	BRUSHING	AGGREGATE	PIT RUN	RECOND.	18" PIPE	60" PIPE	SEED & FERTILIZE
0.00	BEGIN PROJECT (7993/619 JUNCTION)													
	BEGIN ROADWAY RECONDITIONING										9.80 MI			
	BEGIN SEEDING & FERTILIZING AS NEEDED										~			0.25 AC
0.24	INSTALL OPEN TOP CULVERT			16 LF							~			
0.36	INSTALL OPEN TOP CULVERT			16 LF							~			
0.65	INSTALL OPEN TOP CULVERT			16 LF							~			
0.97	INSTALL OPEN TOP CULVERT			16 LF							~			
1.10	INSTALL OPEN TOP CULVERT			16 LF							~			
1.80	INSTALL OPEN TOP CULVERT			16 LF							~			
2.15	INSTALL OPEN TOP CULVERT			16 LF							~			
2.40	INSTALL OPEN TOP CULVERT			16 LF							~			

ROADWAY RECONDITIONING

SEED & FERTILIZE (ALL DISTURBED AREAS OUTSIDE THE ROADBED)



NOTE: MILEAGES WERE MEASURED WITH A DMI AND CAN VARY FROM THE MILEPOST MARKERS ON THE GROUND.

RECONSTRUCTION ROAD LOG – RD. #14093

MILEPOST	WORK DESCRIPTION	ITEM 20103	ITEM 20419A	ITEM 20419B	ITEM 20419C	ITEM 20420	ITEM 20701	ITEM 23050	ITEM 30113	ITEM 30122	ITEM 30322	ITEM 60250A	ITEM 60250B	ITEM 62550
0.00	BEGIN PROJECT (14093/619 JUNCTION)	CLEARING & GRUBBING	INSTALL SWD	OPEN TOP CULVERT	CONSTRUCT DITCH	CONSTRUCT DRAIN DIP	GEOTEXTILE	BRUSHING	AGGREGATE	PIT RUN	RECOND.	18" PIPE	60" PIPE	SEED & FERTILIZE
	BEGIN CLEARING & GRUBBING	0.79 MI												
	BEGIN ROADSIDE BRUSHING							0.79 MI						
	BEGIN ROADWAY RECONDITIONING										0.79 MI			
	BEGIN SEEDING & FERTILIZING AS NEEDED													0.25 AC
0.41	REPLACE EXISTING CULVERT WITH 60" DIAMETER CULVERT						15 SY						42 LF	
0.43	INSTALL 18" DIAMETER CMP W/ CATCH BASIN, TYPE 2 INSTALL											30 LF		
0.44	CONSTRUCT DRAIN DIP					1 EA								
0.53	BEGIN CONSTRUCTION OF 50' DITCH				50 LF									
0.79	END PROJECT (14093/619 JUNCTION)													
	END CLEARING & GRUBBING													
	END ROADSIDE BRUSHING													
	END ROADWAY RECONDITIONING													
	END SEEDING & FERTILIZING AS NEEDED													

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

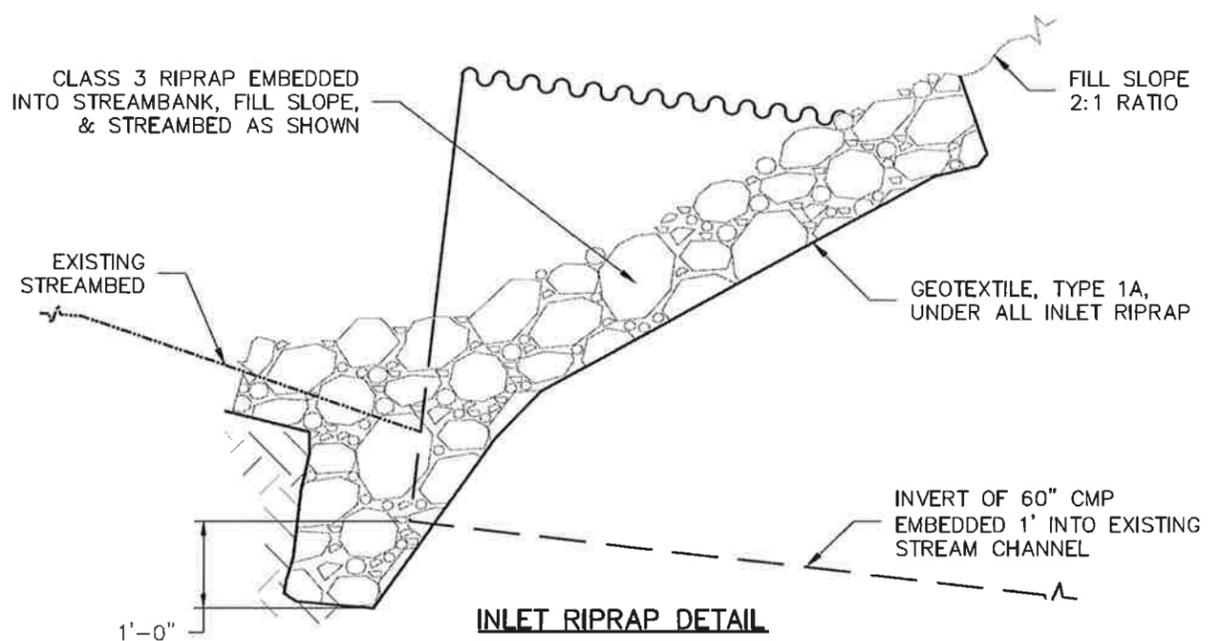
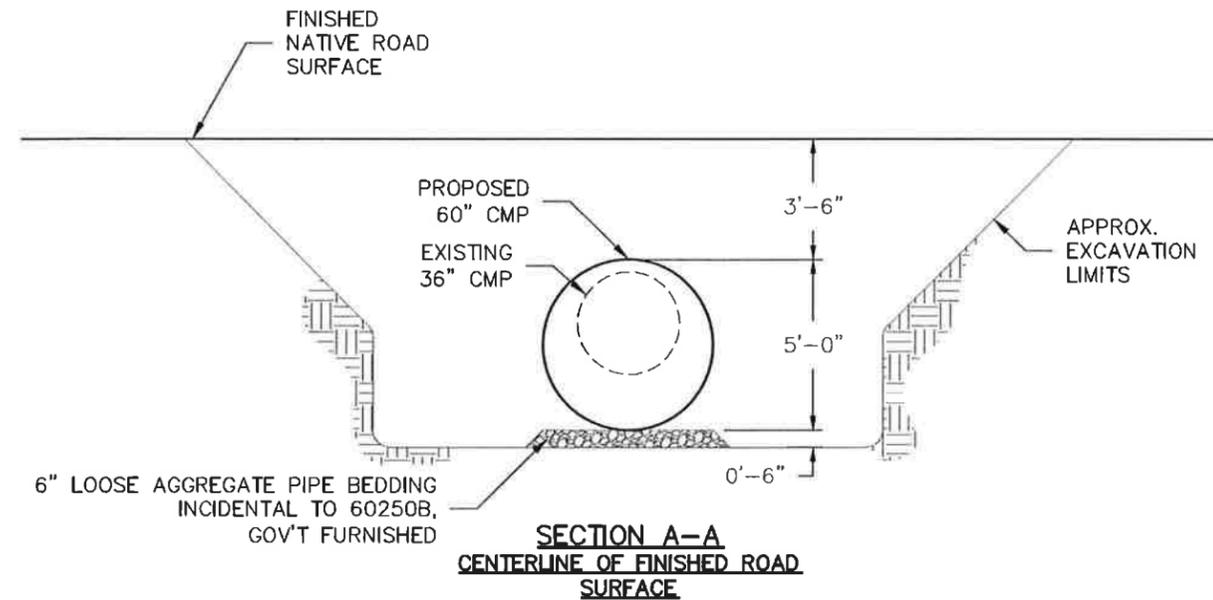
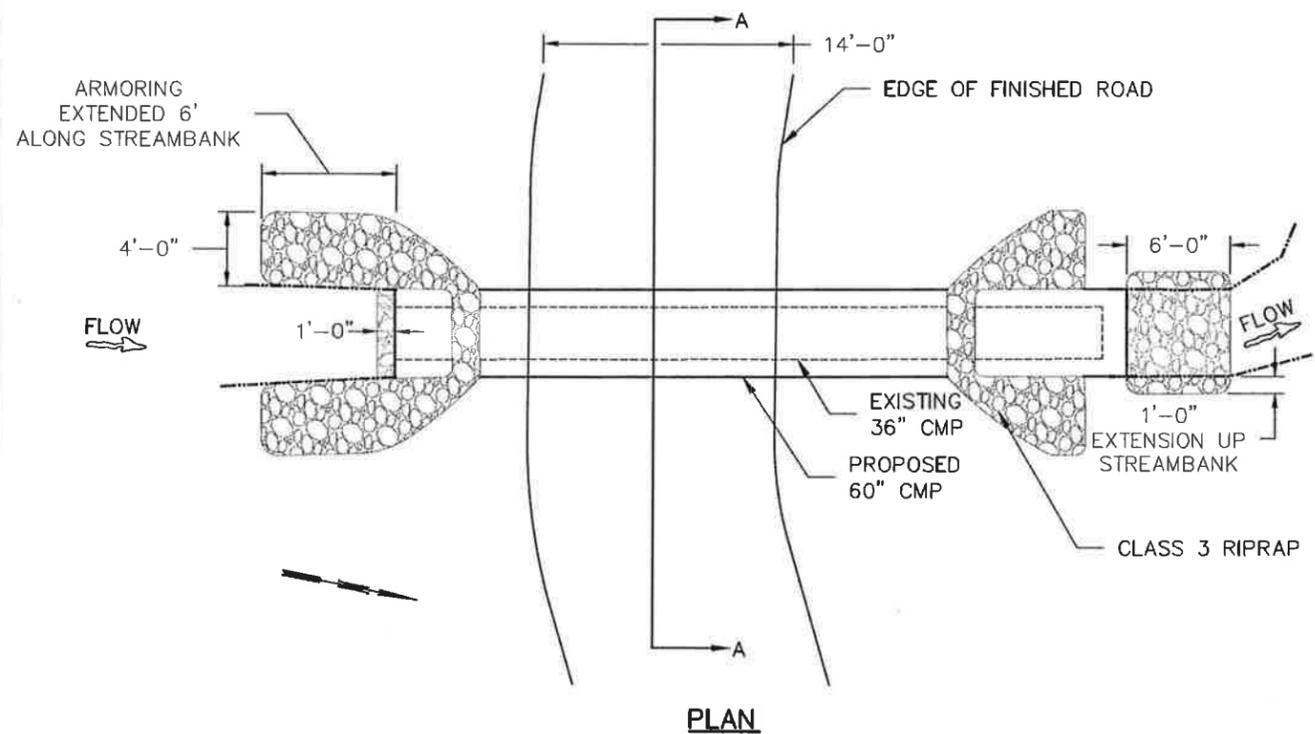
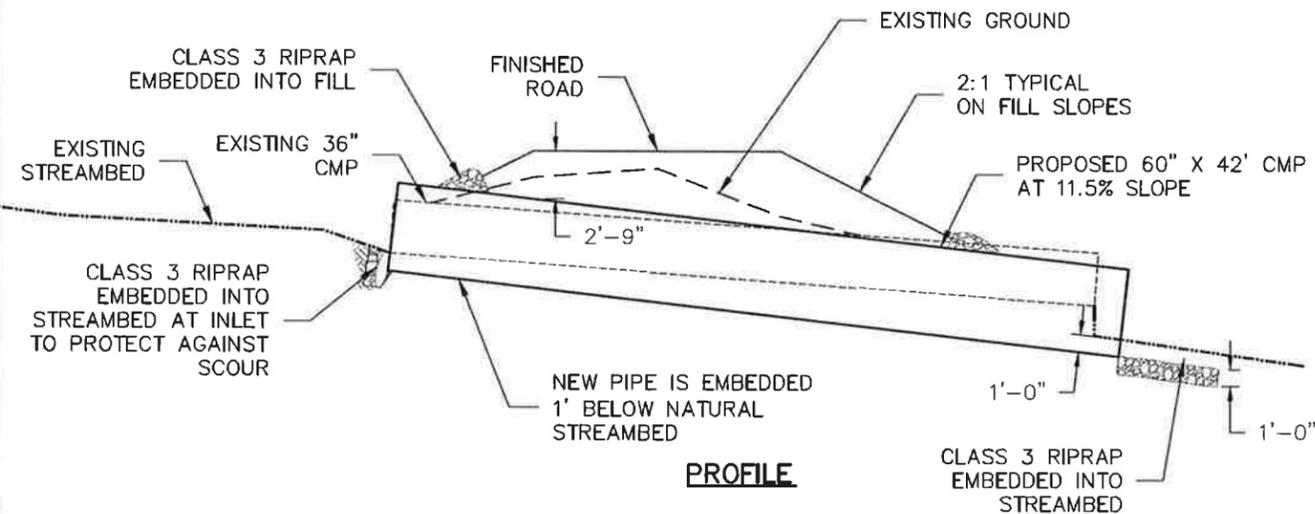
KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
 A. NELSON 10/2013
 DRAWN BY
 M. RICHMOND 12/2013
 CHECKED BY
 M. PRICE 2/2014

SHEET TITLE
**ROAD LOG
 RD. 14093**

SHEET NO.
14 OF 24

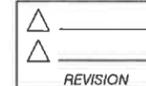
RECONSTRUCTION DETAILS



NOTES:

1. BENTONITE SHALL BE INCORPORATED INTO ALL FILL MATERIAL BENEATH INLET GEOTEXTILE AS DIRECTED BY COR. BENTONITE POWDER SHALL BE GOVERNMENT FURNISHED MATERIAL. INCORPORATION OF THE BENTONITE IS INCIDENTAL TO ITEM 60250B.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DISPOSE OF THE EXISTING 36" CMP, UPON REMOVAL, LEGALLY OFF THE PROJECT. INCIDENTAL TO ITEM 60250B.
3. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING THE NEW 60" X 42' CMP AND NEEDED COUPLING BAND (60250B), AS WELL AS THE GEOTEXTILE REQUIRED UNDER THE INLET RIPRAP ARMORING (20701).
4. THE CONTRACTOR IS RESPONSIBLE FOR MEETING OSHA TRENCHING REQUIREMENTS DURING CONSTRUCTION.

DRAWINGS NOT TO SCALE



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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

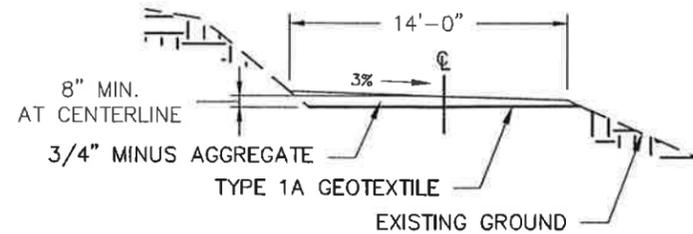
DESIGNED BY
M. RICHMOND 12/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
60" CULVERT
INSTALLATION
DETAILS

SHEET NO.
15 OF 24

RECONSTRUCTION DETAILS

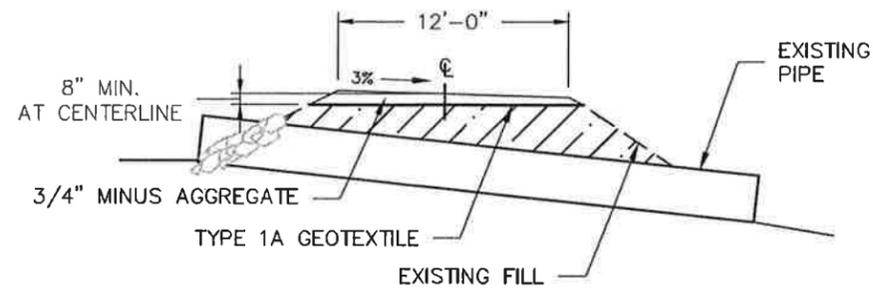
AGGREGATE PLACEMENT DETAIL RD. 993 MP 1.43



NOTES:

1. 3/4" MINUS AGGREGATE WILL BE GOVERNMENT PROVIDED AND SHALL BE OBTAINED FROM THE INCH MOUNTAIN QUARRY, RD. 7992A.
2. THE TYPE 1A GEOTEXTILE SHALL BE FURNISHED BY THE CONTRACTOR.
3. THE AGGREGATE SHALL BE LAYED DOWN IN TWO LIFTS. MAXIMUM COMPACTED THICKNESS OF A SINGLE LIFT SHALL NOT EXCEED 4".
4. EACH LIFT SHALL BE COMPACTED USING A STEEL-WHEELED, VIBRATORY ROLLER COMPACTOR.
5. THE LENGTH OF PLACEMENT IS APPROX. 50' AS STAKED BY THE ENGINEERING REPRESENTATIVE.

AGGREGATE PLACEMENT DETAIL RD. 993 MP 1.57 & 1.60



NOTES:

1. 3/4" MINUS AGGREGATE WILL BE GOVERNMENT PROVIDED AND SHALL BE OBTAINED FROM THE INCH MOUNTAIN QUARRY, RD. 7992A.
2. THE TYPE 1A GEOTEXTILE SHALL BE FURNISHED BY THE CONTRACTOR.
3. THE AGGREGATE SHALL BE LAYED DOWN IN TWO LIFTS. MAXIMUM COMPACTED THICKNESS OF A SINGLE LIFT SHALL NOT EXCEED 4".
4. EACH LIFT SHALL BE COMPACTED USING A STEEL-WHEELED, VIBRATORY ROLLER COMPACTOR.
5. THE LENGTH OF PLACEMENT IS AS STAKED BY THE ENGINEERING REPRESENTATIVE.



△	_____
△	_____
REVISION	

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

KOOTENAI NATIONAL FOREST	FIVE CREEKS TIMBER SALE
--------------------------	-------------------------

DESIGNED BY M. RICHMOND 12/2013	DRAWN BY M. RICHMOND 12/2013	CHECKED BY M. PRICE 2/2014
------------------------------------	---------------------------------	-------------------------------

SHEET TITLE
RD 993 AGGREGATE DETAILS

SHEET NO.
16 OF 24

DRAWINGS NOT TO SCALE



△	_____
△	_____
REVISION	

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

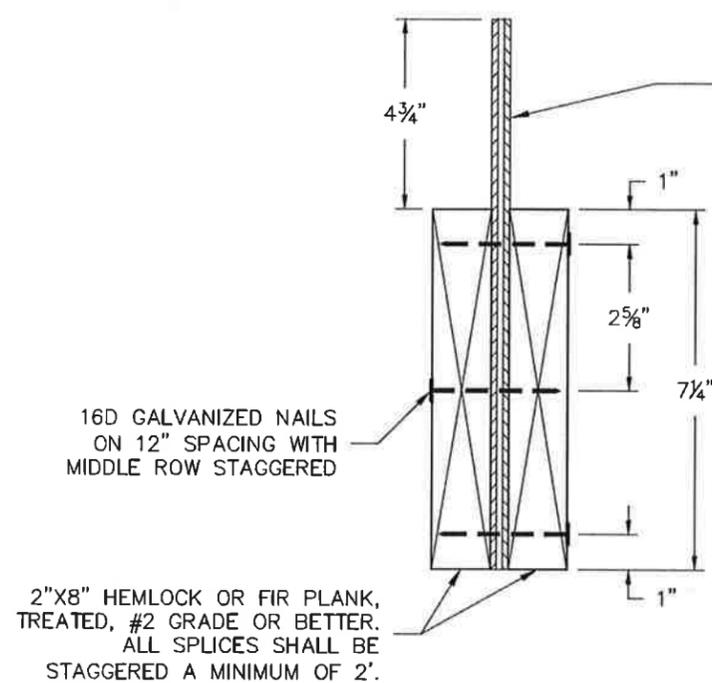
KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
M. RICHMOND 12/2013
 DRAWN BY
M. RICHMOND 12/2013
 CHECKED BY
M. PRICE 2/2014

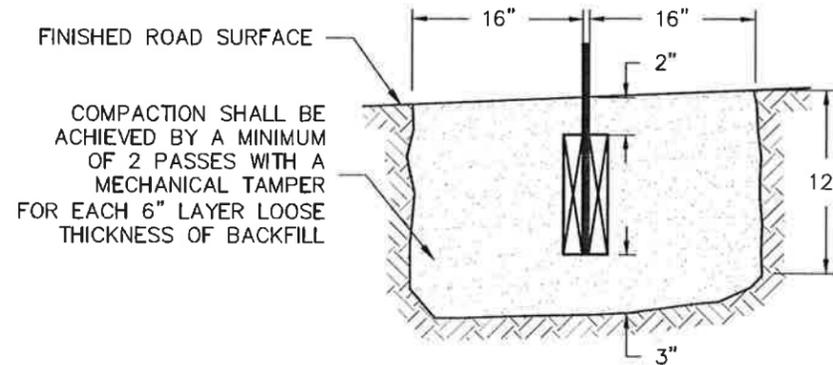
SHEET TITLE
SWD DETAILS

SHEET NO.
17 OF 24

SURFACE WATER DEFLECTOR DETAILS



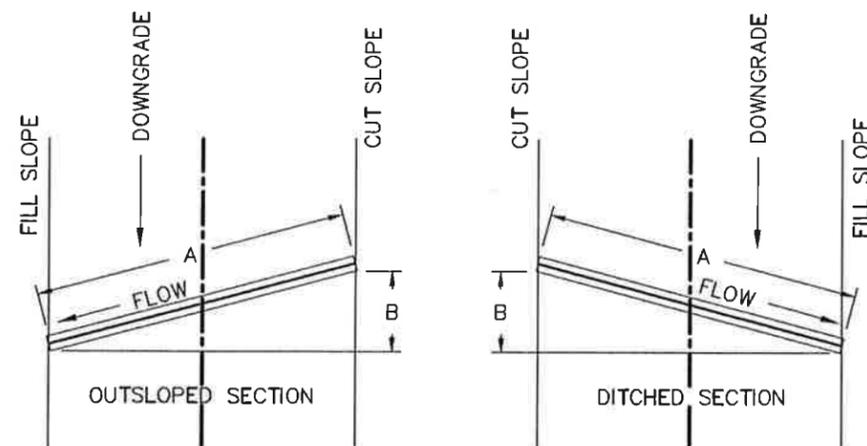
12" GOODYEAR PLYLON PLUS 375 WITH A MINIMUM THICKNESS OF 7/16". OTHER COMMERCIAL BRANDS MAY BE USED BUT THE BELT THICKNESS SHALL BE EQUAL TO OR GREATER THAN 7/16" AND SHALL HAVE A MINIMUM BREAKING STRENGTH OF 4200 psi. THE PLYS SHALL BE MADE OF NYLON FOR BELT STIFFNESS. MATERIAL SHALL BE ONE CONTINUOUS LENGTH.



INSTALLATION DETAIL

NOTES

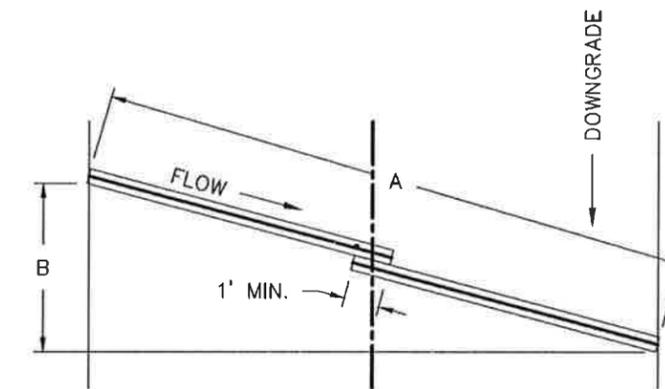
1. ALL TREATED LUMBER SHALL BE INCISED AND PRESSURE TREATED IN ACCORDANCE WITH THE AWPA UC4-A FOR GROUND CONTACT.
2. FIELD TREATMENT: ALL ABRASIONS AND CUTS MADE IN THE FIELD SHALL BE CAREFULLY TRIMMED AND GIVEN THREE BRUSH COATS OF THE TREATMENT SOLUTION. HOLES DRILLED IN THE FIELD SHALL BE Poured FULL 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.



SINGLE LANE

VALUES FOR SKEWED INSTALLATION (FEET)

ROAD WIDTH	A	B
12	14	7.2
13	16	9.3
14	16	7.7
15	18	9.9
16	18	8.2
17	20	10.5
18	20	8.7



DOUBLE LANE

DRAWINGS NOT TO SCALE



REVISION

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

KOOTENAI NATIONAL FOREST
 FIVE CREEKS TIMBER SALE

DESIGNED BY
 M. RICHMOND 12/2013
 DRAWN BY
 M. RICHMOND 12/2013
 CHECKED BY
 M. PRICE 2/2014

SHEET TITLE
**OPEN TOP
 CULVERT
 DETAILS**

SHEET NO.
18 OF 24

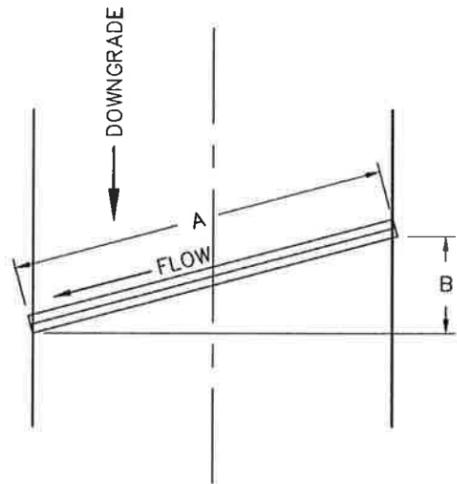
OPEN TOP CULVERT DETAILS

NOTES:

1. ALL LUMBER SHALL BE INCISED AND PRESSURE TREATED IN ACCORDANCE WITH AWPA C-2 FOR GROUND CONTACT. ONE GALLON OF COPPER NAPHTHENATE (2% COPPER) SHALL BE FURNISHED FOR FIELD TREATMENT.
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 STANDARD SPEC. 716.02 AND SHALL BE GALVANIZED. LUMBER SHALL CONFORM TO SPEC. 716.01.

VALUES FOR SKEWED
 INSTALLATION (IN FEET)

ROAD WIDTH	A	B
12	14	7
14	16	8
16	19	10
18	21	11
20	23	12
22	26	13
24	28	14



COMPACTED BACKFILL SHALL BE ACHIEVED BY A MIN. OF 2 PASSES WITH A MECHANICAL TAMPER, APPROVED BY THE ENGINEER, FOR EACH 6 INCH LAYER (LOOSE THICKNESS) OF BACKFILL.

30D RING SHANK SPIKES

2" X 8" PRESSURE TREATED PLANKS

5/8" X 8" MACHINE BOLTS WITH 4 WASHERS AND 1 HEXNUT.

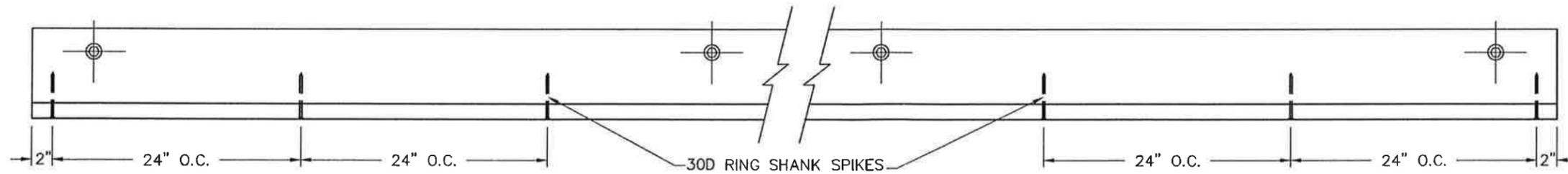
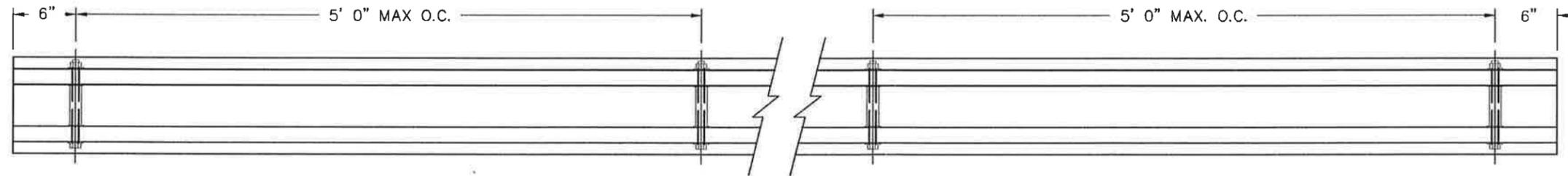
16" MIN. 4" 16"

2 1/4"

3/4" ID PIPE SPACER AT EACH BOLT.

2" X 10" PRESSURE TREATED PLANK.

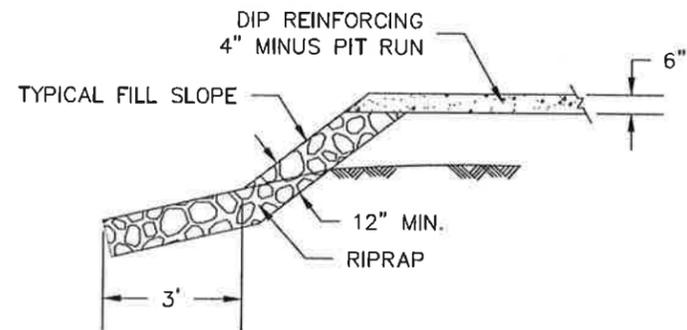
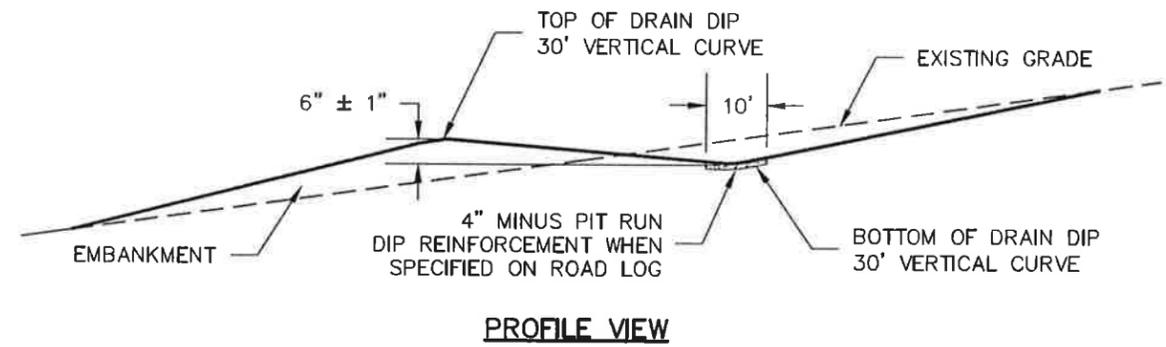
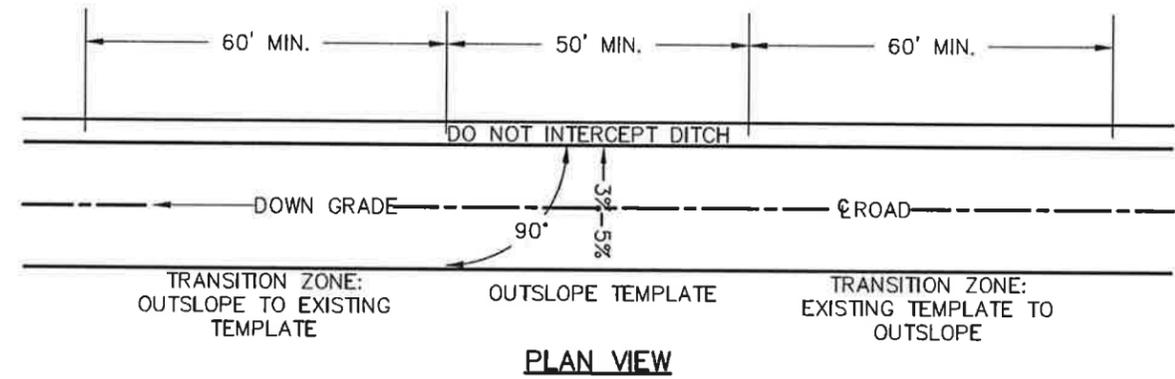
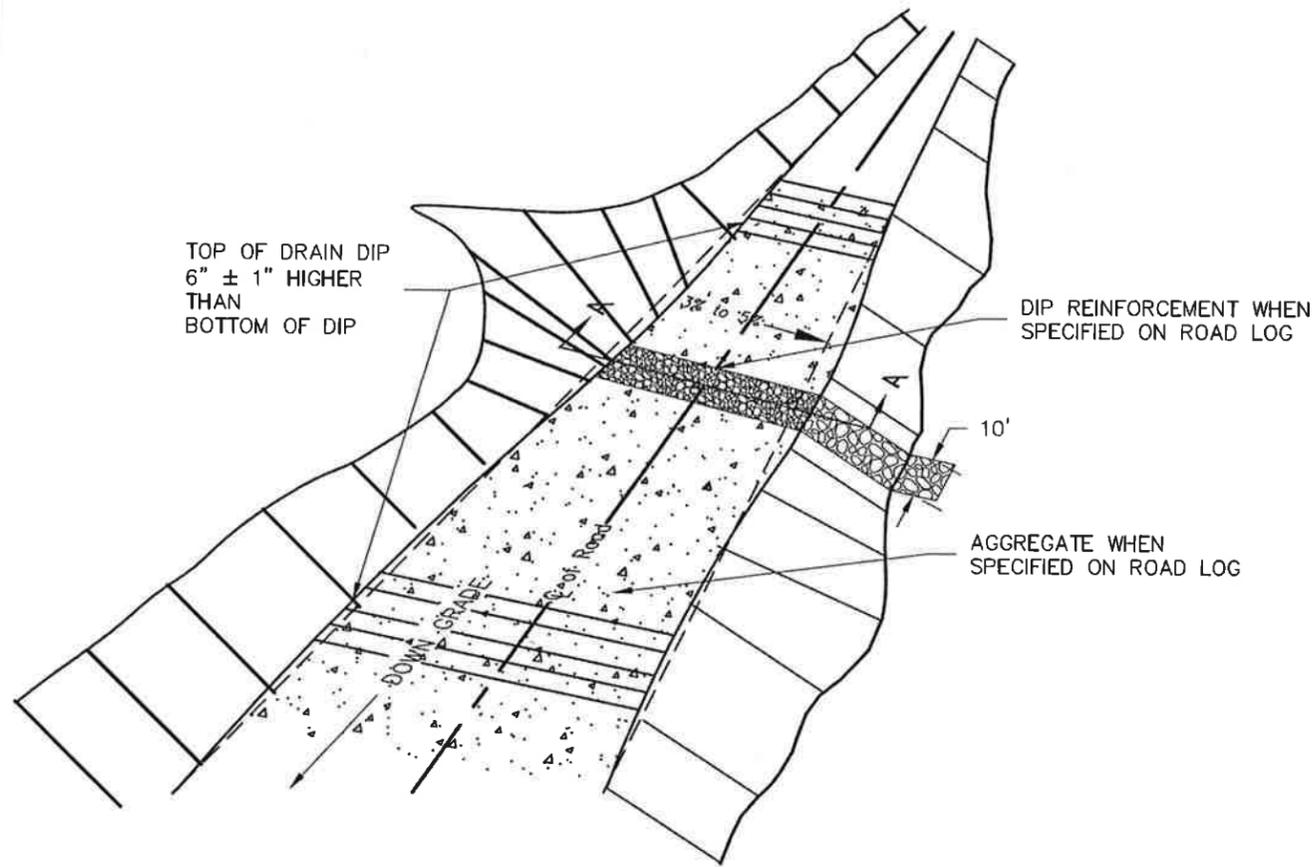
SECTION



PLAN VIEW

DRAWINGS NOT TO SCALE

DRAIN DIP DETAILS



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



△	
△	
REVISION	

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

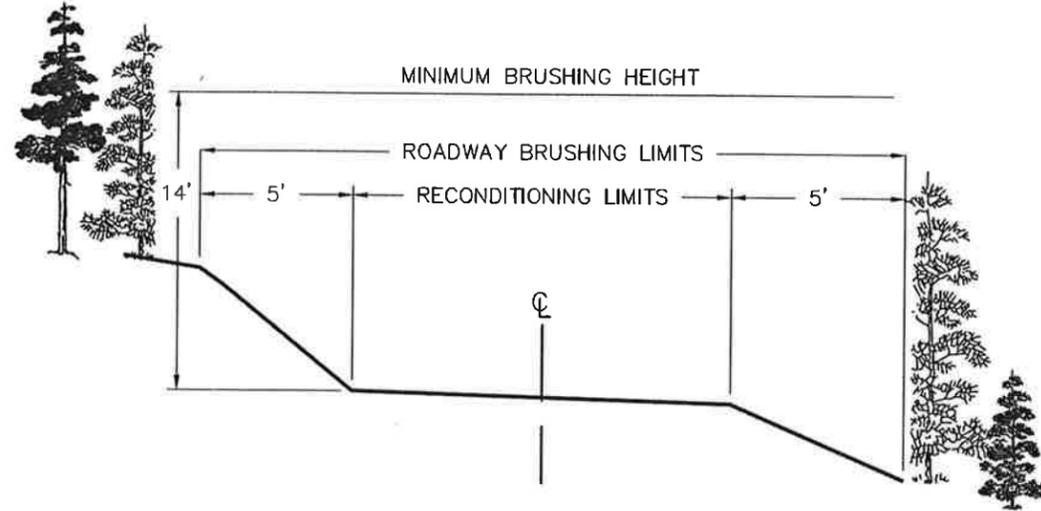
DESIGNED BY
M. RICHMOND 12/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
DRAIN DIP
DETAILS

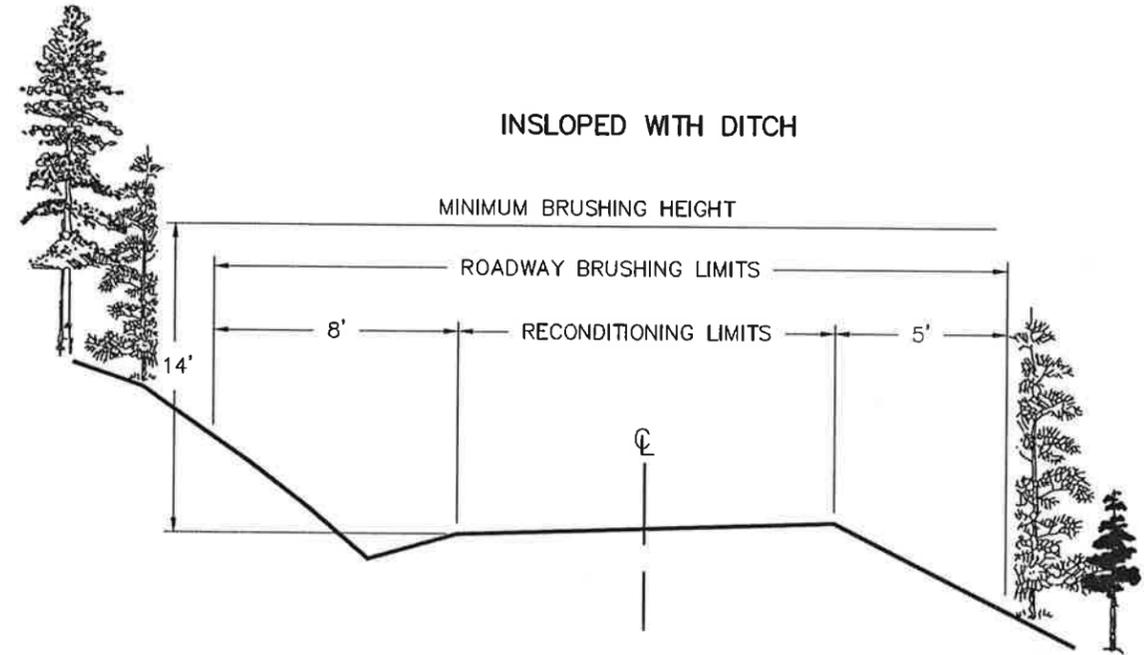
SHEET NO.
19 OF 24

BRUSHING LIMITS

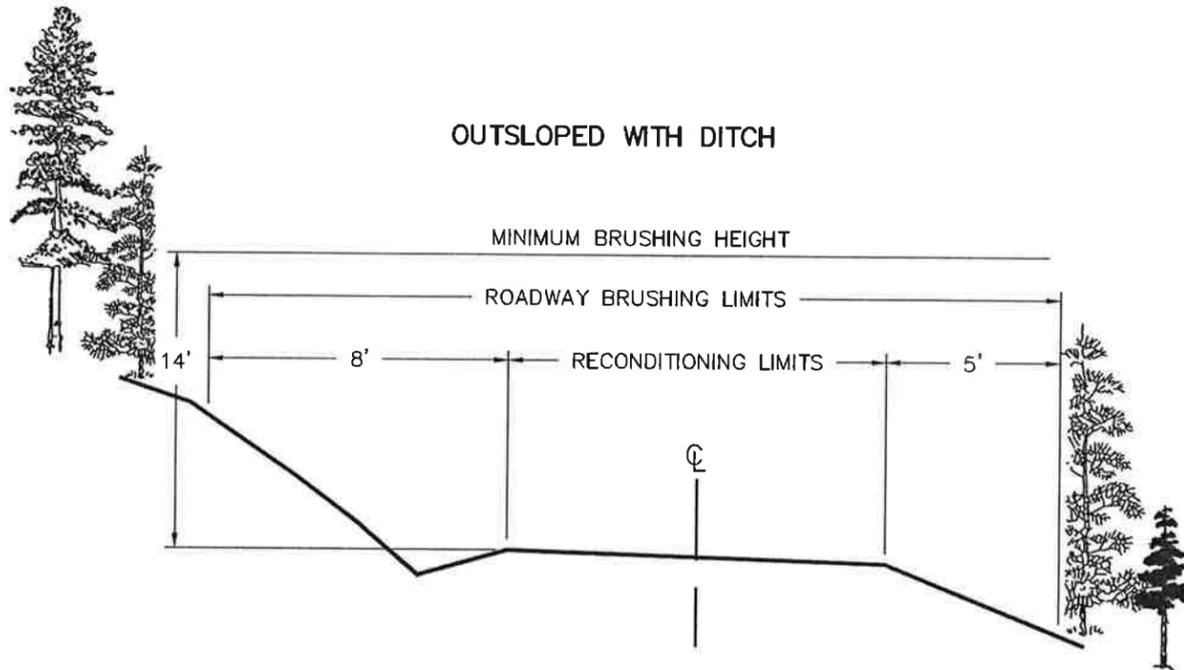
OUTSLOPED WITHOUT DITCH



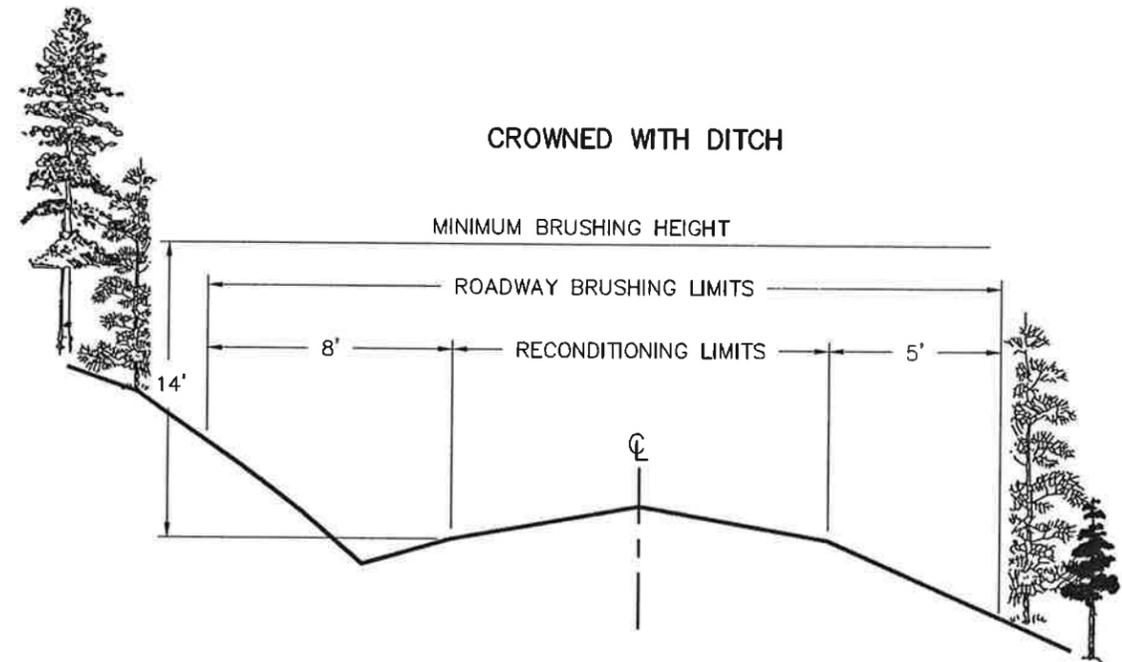
INSLOPED WITH DITCH



OUTSLOPED WITH DITCH



CROWNED WITH DITCH



DRAWINGS NOT TO SCALE



△	_____
△	_____
△	_____
REVISION	

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

KOOTENAI NATIONAL FOREST

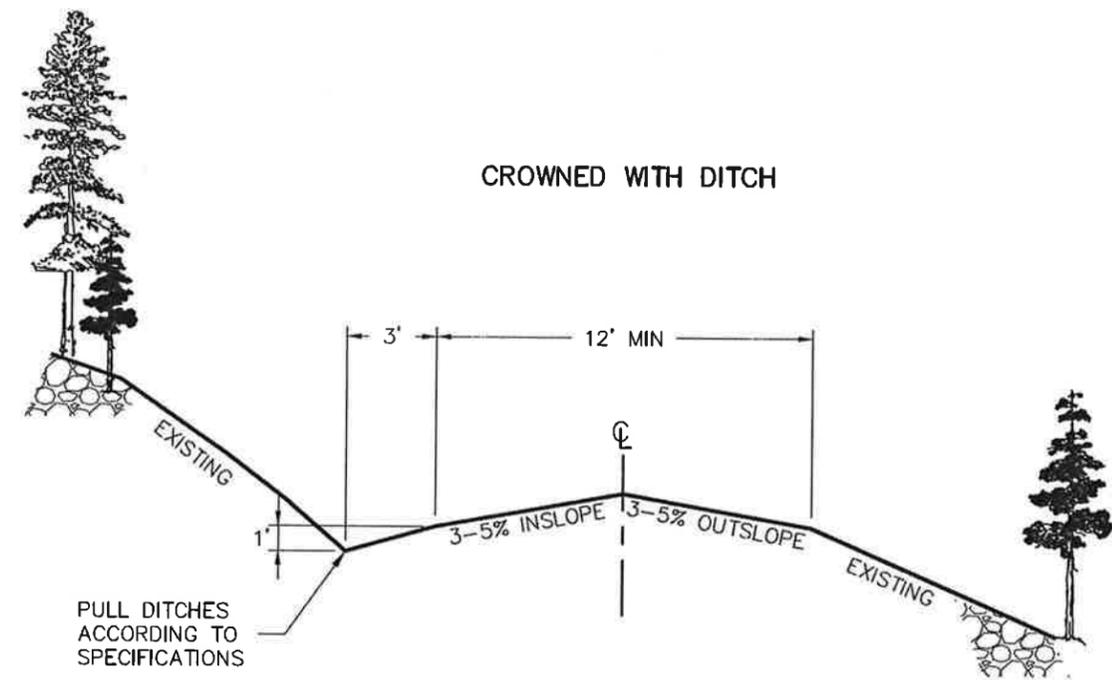
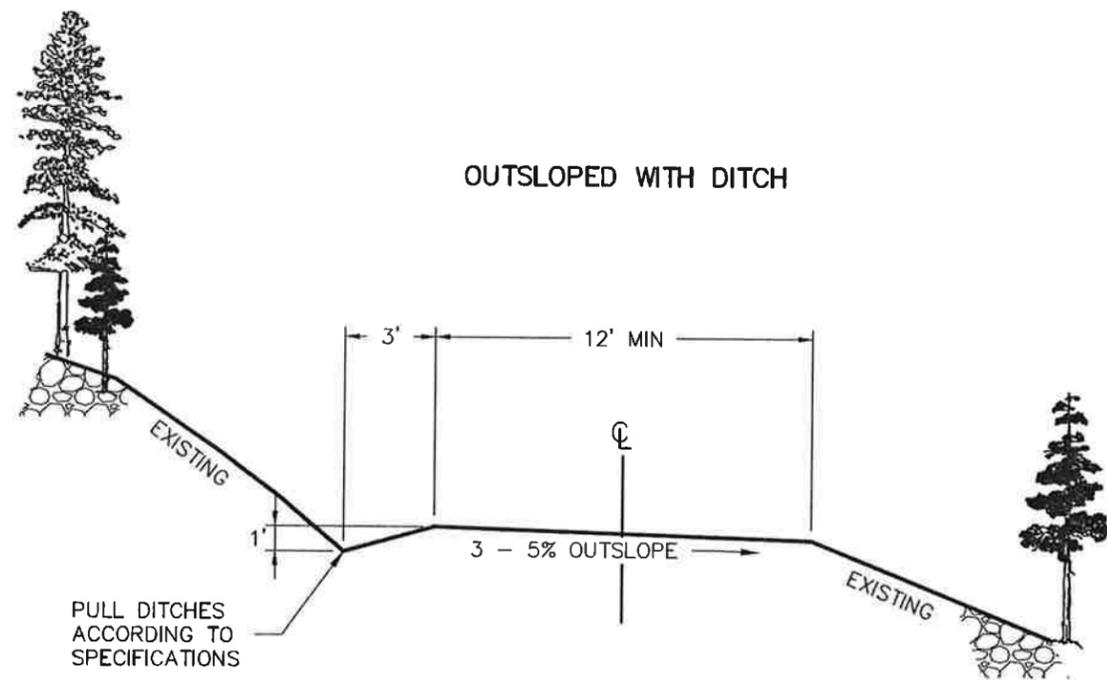
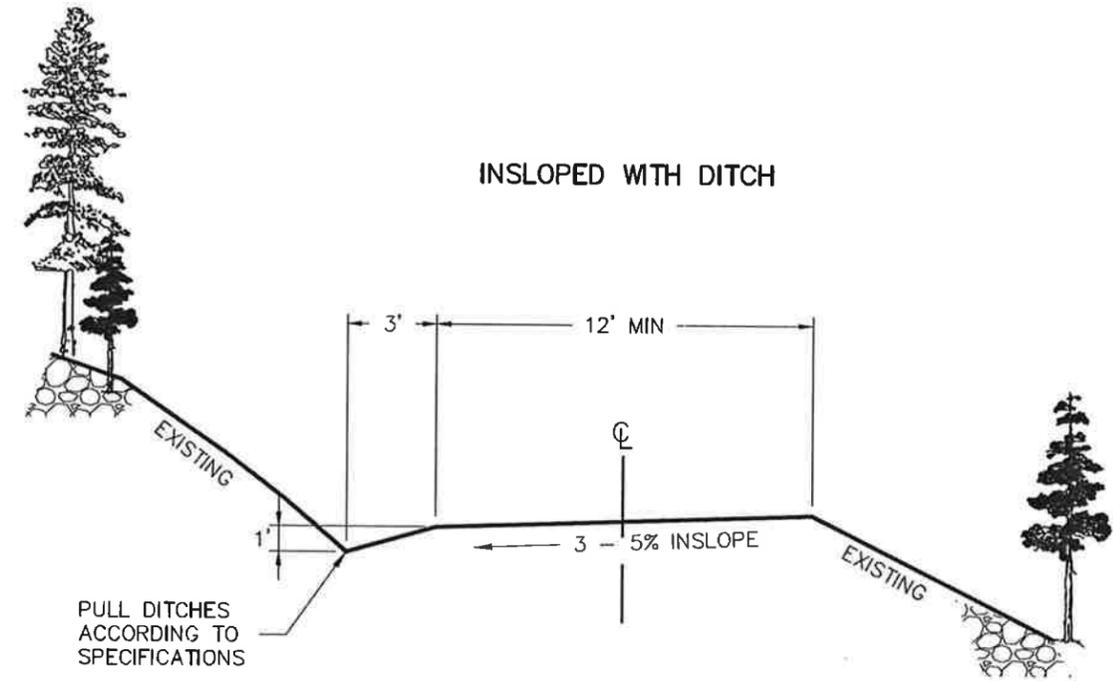
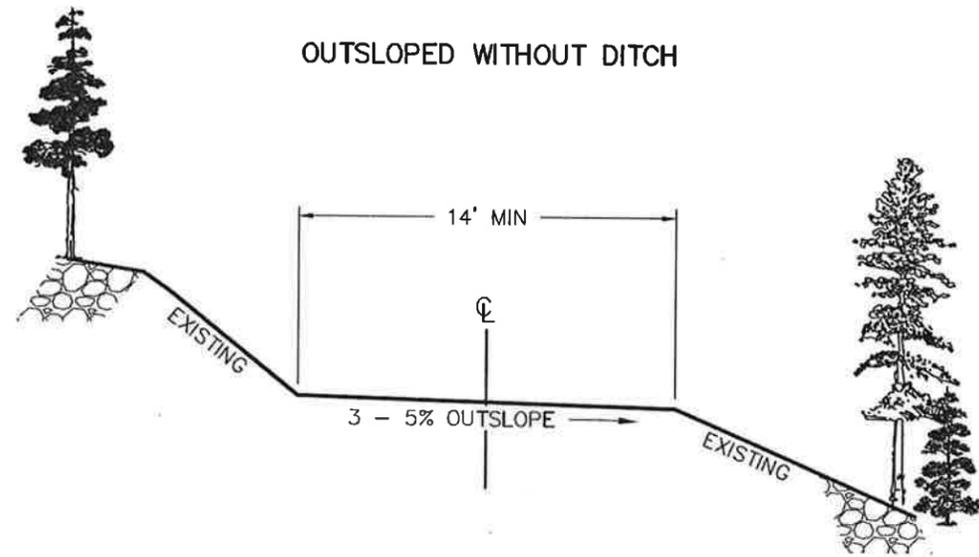
FIVE CREEKS TIMBER SALE

DESIGNED BY
M. RICHMOND 12/2013
 DRAWN BY
M. RICHMOND 12/2013
 CHECKED BY
M. PRICE 2/2014

SHEET TITLE
**BRUSHING
 DETAILS**

SHEET NO.
20 OF 24

RECONDITIONING LIMITS



DRAWINGS NOT TO SCALE



△
△
REVISION

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

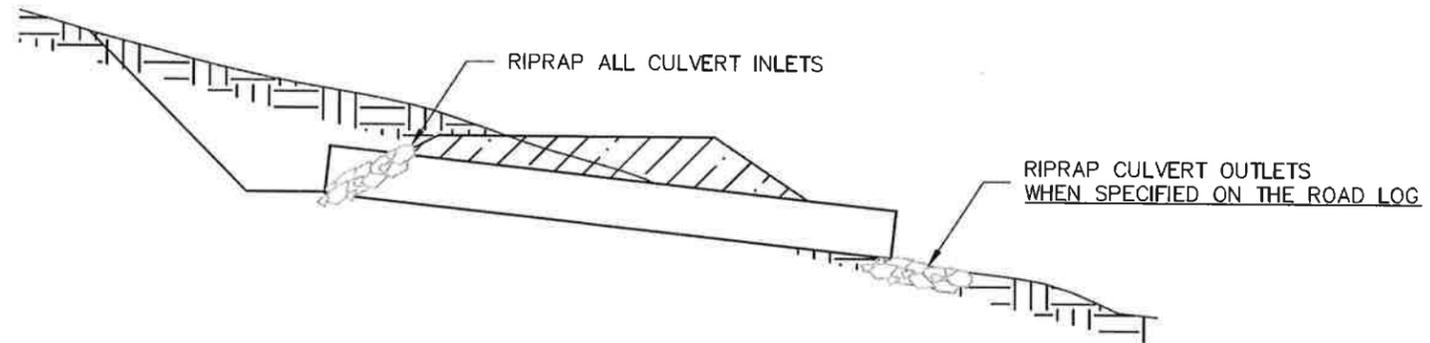
KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
M. RICHMOND 12/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
RECONDITIONING
DETAILS

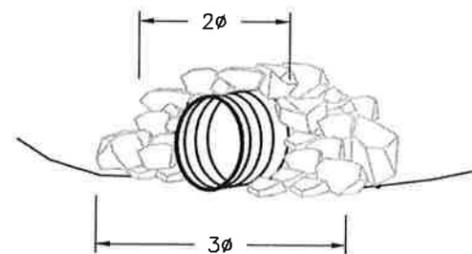
SHEET NO.
21 OF 24

TYPE II CULVERT INSTALLATION WITH REINFORCEMENT



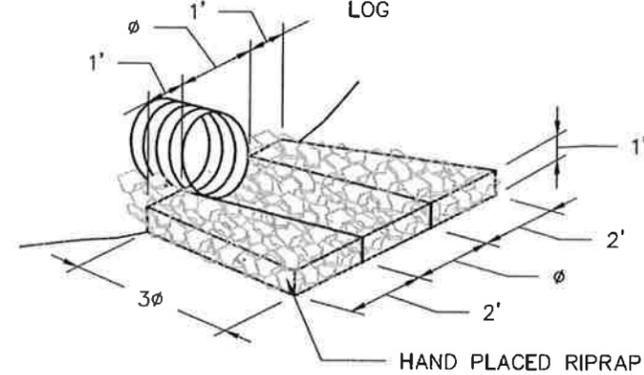
INLET RIPRAP INSTALLATION

INLET RIPRAP PLACEMENT INCIDENTAL TO PAY ITEM 60250A

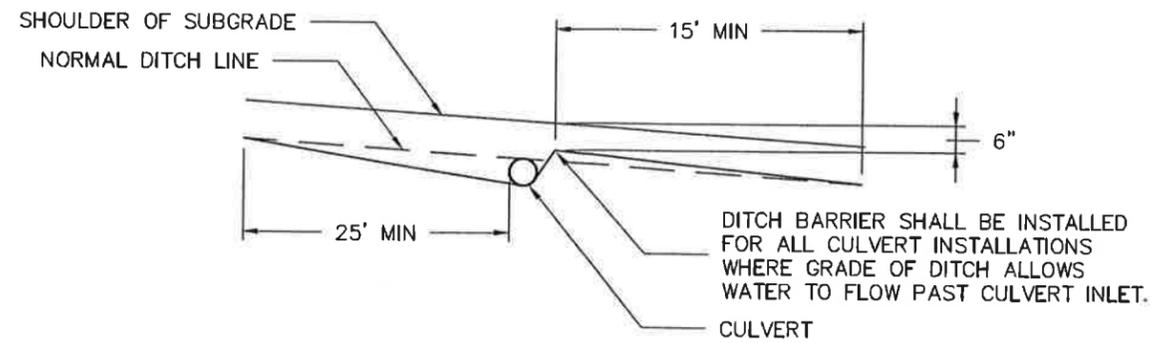


OUTLET RIPRAP INSTALLATION

OUTLET RIPRAP PLACEMENT INCIDENTAL TO PAY ITEM 60250A IF SPECIFIED ON ROAD LOG



DITCH BLOCK DETAIL



DRAWINGS NOT TO SCALE



△	
△	
REVISION	

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

KOOTENAI NATIONAL FOREST
FIVE CREEKS TIMBER SALE

DESIGNED BY
M. RICHMOND 12/2013
DRAWN BY
M. RICHMOND 12/2013
CHECKED BY
M. PRICE 2/2014

SHEET TITLE
18" CULVERT TYPE II
INSTALLATION

SHEET NO.
22 OF 24



REVISION

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

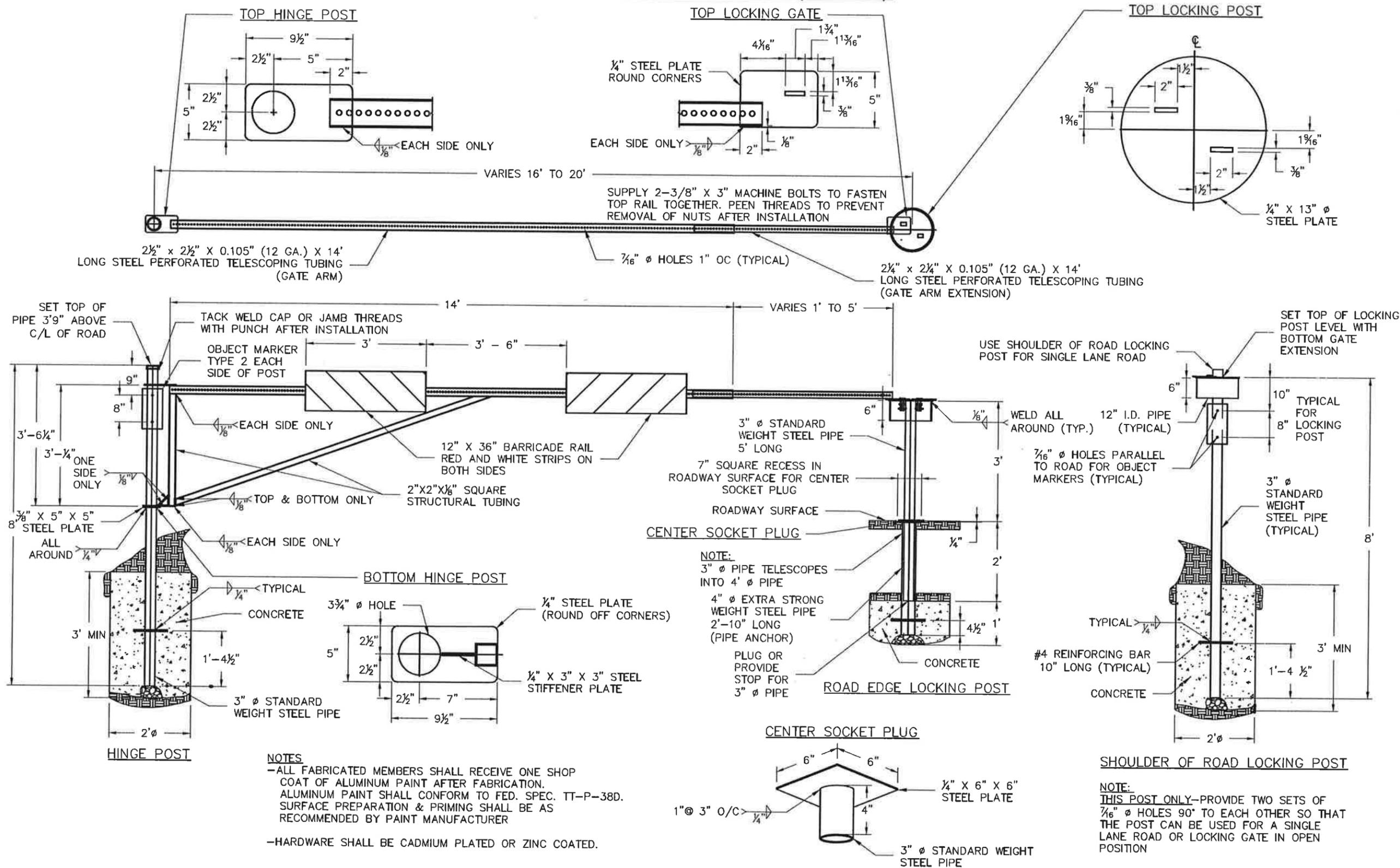
KOOTENAI NATIONAL FOREST
 FIVE CREEKS TIMBER SALE

DESIGNED BY
 M. RICHMOND 12/2013
 DRAWN BY
 M. RICHMOND 12/2013
 CHECKED BY
 M. PRICE 2/2014

SHEET TITLE
GATE DETAILS
 (1 OF 2)

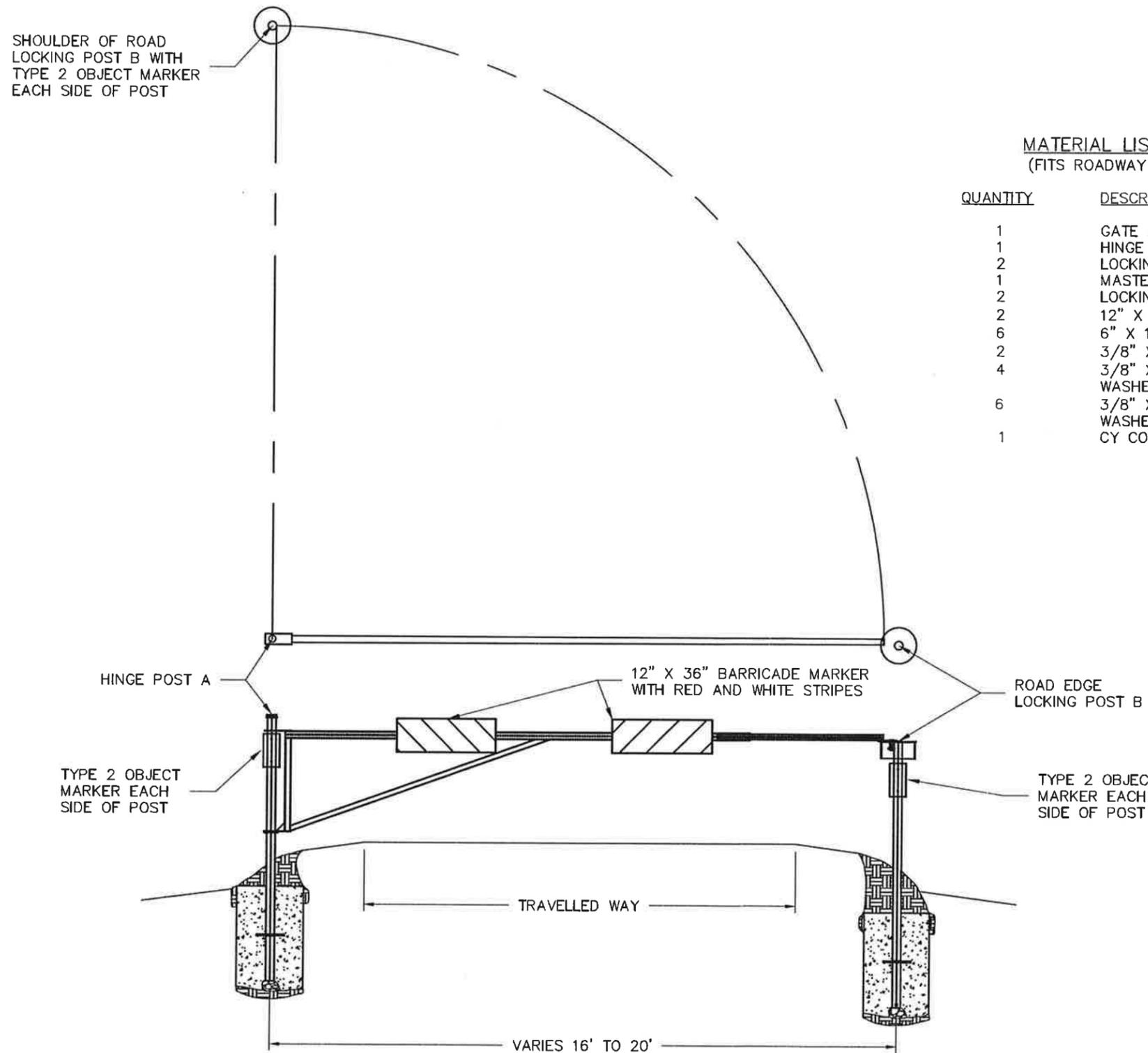
SHEET NO.
23 OF 24

TYPICAL GATE DETAILS (1 OF 2)



DRAWINGS NOT TO SCALE

SINGLE LANE ROAD TYPICAL GATE ARRANGEMENT (2 OF 2)



MATERIAL LIST FOR SINGLE LANE ROAD GATE (FITS ROADWAY CLOSURES FROM 16 TO 20 FEET WIDE)

QUANTITY	DESCRIPTION
1	GATE ARM AND ARM EXTENSION
1	HINGE POST A WITH CAP
2	LOCKING POSTS B
1	MASTER LOCKING PIN
2	LOCKING SYSTEM BARS
2	12" X 36" BARRICADE RAIL, RED AND SILVER STRIPES
6	6" X 12" TYPE 2 OBJECT MARKERS
2	3/8" X 3" MACHINE BOLTS FOR GATE EXTENSION.
4	3/8" X 4" CARRIAGE BOLT WITH 1 CUT AND 1 LOCK WASHER FOR MARKERS ON GATE ARM
6	3/8" X 6" CARRIAGE BOLT WITH 1 CUT AND 1 LOCK WASHER FOR MARKERS ON GATE POST
1	CY CONCRETE TO EMBED 3 POSTS

DRAWINGS NOT TO SCALE



△	_____
△	_____
REVISION	

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

KOOTENAI NATIONAL FOREST
 FIVE CREEKS TIMBER SALE

DESIGNED BY
 M. RICHMOND 12/2013
 DRAWN BY
 M. RICHMOND 12/2013
 CHECKED BY
 M. PRICE 2/2014

SHEET TITLE
GATE DETAILS
 (2 OF 2)

SHEET NO.
24 OF 24