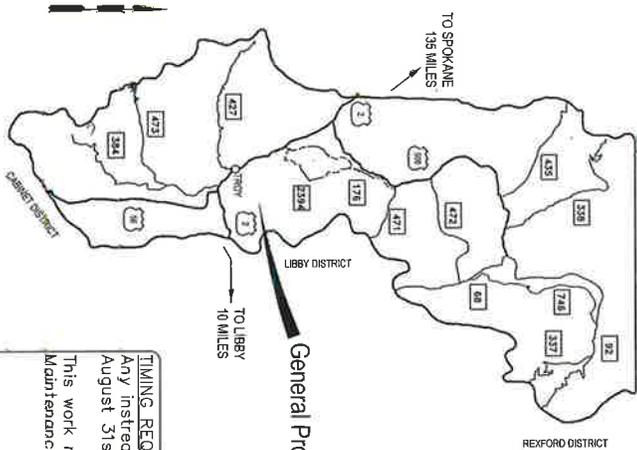
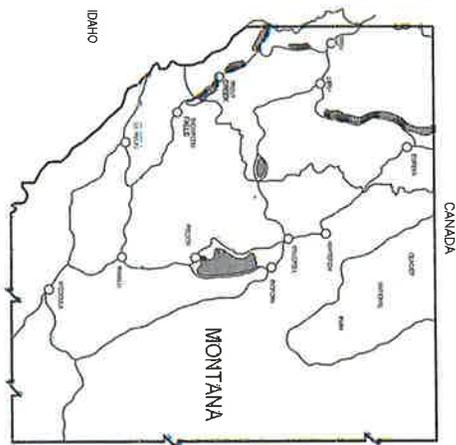


# Appendix Q - Project 17

UNITED STATES DEPARTMENT OF AGRICULTURE  
 FOREST SERVICE - REGION ONE  
 ONLY MOLLY STEWARDSHIP PLANS FOR  
 OPTIONAL ROAD MAINTENANCE AND REPAIRS  
 LINCOLN COUNTY, MONTANA  
**Road Material Placement**  
 KOOTENAI NATIONAL FOREST  
 THREE RIVERS RANGER DISTRICT



General Project Location

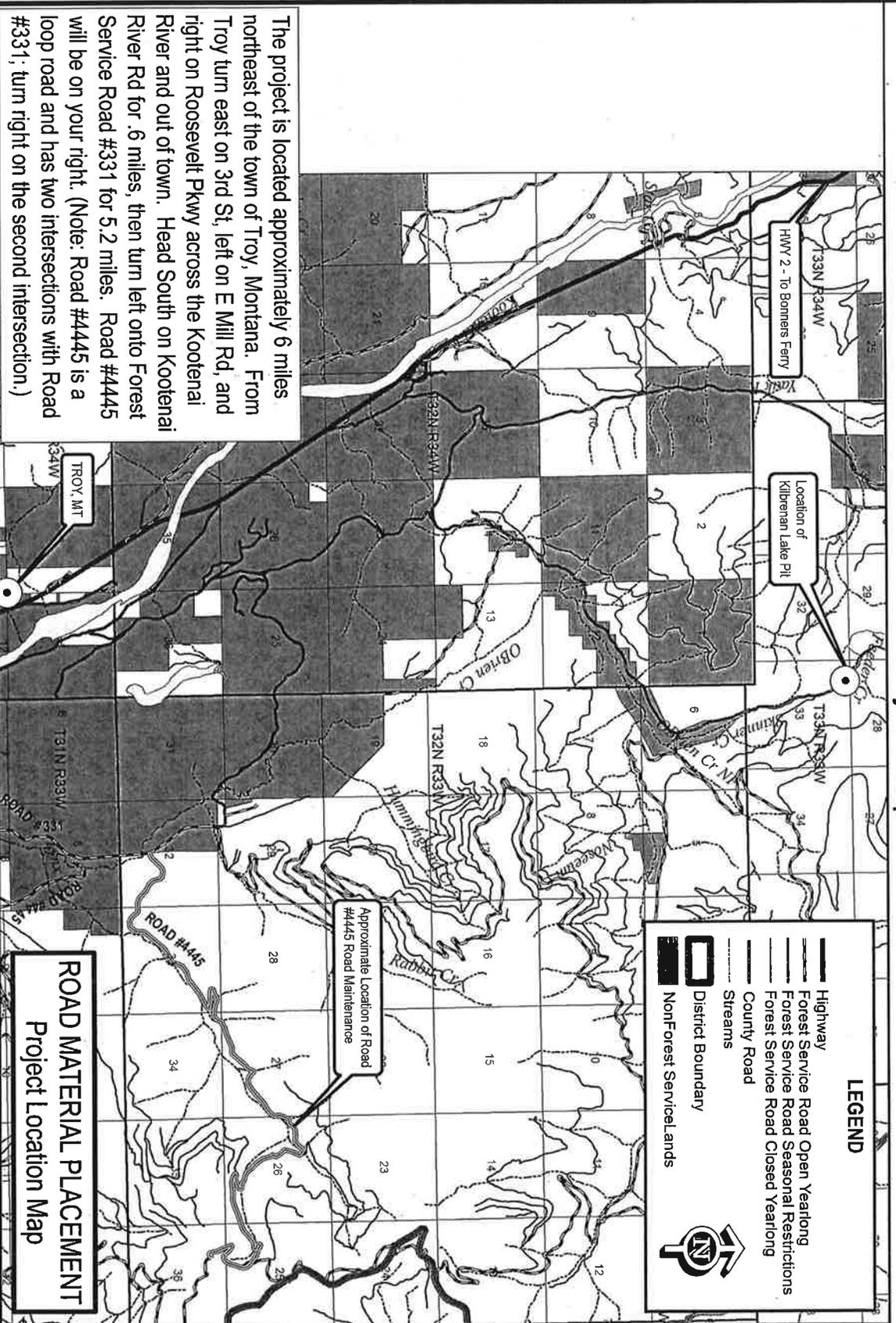
SHEET DESCRIPTION	PAGE NO.
INDEX	
Title Sheet	1
Project Map	2
Quantities & Notes	3
Road Logs	4-6
Open Top Box Culvert Details	7
Typical Section	8

**TIMING REQUIREMENTS:**  
 Any instream work on live, perennial streams must occur between July 15th to August 31st.  
 This work may occur simultaneously or after Project 05 Lynx Creek Road Maintenance, but not before.

PREPARED BY: <i>[Signature]</i> PROJECT ENGINEER DATE: 8/30/16	REVIEWED BY: <i>[Signature]</i> ZONE ENGINEERING TEAM LEADER DATE: 8/30/16
MULTIPLE RESOURCE REVIEW BY: <i>[Signature]</i> DISTRICT RANGER DATE: 8-31-16	I certify that this project has been designed in accordance with sound engineering practices. FOREST ENGINEER <i>[Signature]</i> DATE: 7/21/16

SHEET NUMBER	TOTAL SHEETS
1	8

# Project Map



The project is located approximately 6 miles northeast of the town of Troy, Montana. From Troy turn east on 3rd St, left on E Mill Rd, and right on Roosevelt Pkwy across the Kootenai River and out of town. Head South on Kootenai River Rd for .6 miles, then turn left onto Forest Service Road #331 for 5.2 miles. Road #4445 will be on your right. (Note: Road #4445 is a loop road and has two intersections with Road #331; turn right on the second intersection.)

**LEGEND**

- Highway
- Forest Service Road Open Yearlong
- Forest Service Road Seasonal Restrictions
- Forest Service Road Closed Yearlong
- County Road
- Streams
- District Boundary
- Non-Forest Servicalands



**ROAD MATERIAL PLACEMENT**  
Project Location Map

Road Material Placement

SHEET NUMBER	TOTAL SHEETS
2	8

# Summary of Quantities & General Notes

PROJECT ITEM NO.	PAY ITEM NO.	ITEM DESCRIPTION	METHOD OF MEASURE	UNIT OF MEASURE	QUANTITY
17	15101	MOBILIZATION	LSQ	LS	ALL
17	20301	REMOVAL OF SURFACE WATER DEFLECTORS	AQ	EA	10
17	20419	DRAINAGE EXCAVATION, OPEN TOP BOX CULVERT, COMPACTION METHOD F	AQ	LF	2888
17	32222	GENERATE, HAUL & PLACE 4" MINUS ANGULAR PIT RUN, COMPACTION METHOD B	CQ	CY	5500

**GENERAL NOTES:**

- A. THIS PROJECT CONSISTS OF MULTIPLE BMP IMPROVEMENTS THAT WILL HELP THE WATERSHED FROM SEDIMENT DEPOSITION AND THE ROAD BY DECREASING THE AMOUNT OF RUNOFF ON THE ROAD SURFACE
- B. CONSTRUCT THE PROJECT IN COMPLIANCE WITH FEDERAL HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-403) AND APPLICABLE FOREST SERVICE SUPPLEMENTAL SPECIFICATIONS (FSSS) FOUND IN THE MASTER STEWARDSHIP AGREEMENT.
- C. TEMPORARY TRAFFIC CONTROL IS INCIDENTAL TO PAY ITEM 15101. ALL SIGNS MUST BE MANUFACTURED AND INSTALLED AS SPECIFIED IN THE FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND FS PUBLICATION 'STANDARDS FOR FOREST SERVICE SIGNS AND POSTERS' (EM 7100-15).
- E. ITEM 20301 REMOVAL OF SURFACE WATER DEFLECTORS SHALL BE IN SUCH A MANNER TO PREVENT DAMAGE TO THE STRUCTURE. SURFACE WATER DEFLECTORS SHALL REMAIN PROPERTY OF THE GOVERNMENT, AND ARE TO BE HAULED TO THE SLYVANTE GOVERNMENT ADMINISTRATION SITE BY THE CONTRACTOR AFTER SUCCESSFUL REMOVAL.
- F. PAY ITEM 32222 GENERATE, HAUL & PLACE 4" MINUS - IT IS ASSUMED THAT 1 LOADER, 1 EXCAVATOR, AND A JAW WILL BE USED TO MANUFACTURE MATERIAL. THE KILBENNAW LAKE PIT HAS SUFFICIENT QUANTITY OF 18" ROCK AVAILABLE FOR CRUSHING. THERE CURRENTLY IS NATURALLY OCCURRING 4" MINUS ON SITE WHICH MAY BE INCORPORATED. A GRADER AND ROLLER ARE SPECIFIED FOR SPREADING AND COMPACTION OF ANGULAR PIT RUN IN 6" MAXIMUM LIFTS. MATERIAL SHALL BE PLACED TO ENSURE PROPER OUTSLOPE ON TYPICAL SECTIONS WHO DITCH AS SHOWN ON SHEET 8.
- G. THERE IS NO SEPARATE PAY ITEM FOR ROAD PREPARATION, HAUL, OR WATERING. THEY ARE INCIDENTAL TO 32222.
- H. FINAL LOCATION OF WORK ITEMS WILL BE MARKED BY THE GOVERNMENT WITH WOODEN STAKES PRIOR TO THE START OF WORK.

## ROAD MATERIAL PLACEMENT

SHEET NUMBER	TOTAL SHEETS
3	8

# Road Log

## Road #4445

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
23.06		BEGIN ROAD #4445 WORK			
		JUNCTION WITH ROAD #331 APPROXIMATELY 8.5 MILES FROM THE JUNCTION OF RIVER ROAD AND US HIGHWAY			
		2. NOTE: MILEPOSTS GO IN DECREASING ORDER			
22.07	20419	INSTALL OPEN TOP BOX CULVERT 40'	20.34	20419	BEGIN SECTION OF 4' MINUS PIT RUN W/ 9' LIFT
22.03	20419	INSTALL OPEN TOP BOX CULVERT 40'			
22.00	20419	INSTALL OPEN TOP BOX CULVERT 40'	20.29	20419	INSTALL OPEN TOP BOX CULVERT 38'
21.98	20419	INSTALL OPEN TOP BOX CULVERT 40'	20.20	20419	INSTALL OPEN TOP BOX CULVERT 40'
21.11		EXISTING SWITCHBACK	20.16	20419	INSTALL OPEN TOP BOX CULVERT 46'
20.93		EXISTING SWITCHBACK	20.13	20419	INSTALL OPEN TOP BOX CULVERT 38'
20.88	20301	REMOVE SURFACE WATER DEFLECTOR	20.10	20419	INSTALL OPEN TOP BOX CULVERT 38'
	20419	INSTALL OPEN TOP BOX CULVERT 28'	20.07	20419	INSTALL OPEN TOP BOX CULVERT 38'
20.64	20419	INSTALL OPEN TOP BOX CULVERT 38'	20.03	20419	INSTALL OPEN TOP BOX CULVERT 38'
20.58	20301	REMOVE SURFACE WATER DEFLECTOR	20.00	20419	INSTALL OPEN TOP BOX CULVERT 48'
	20419	INSTALL OPEN TOP BOX CULVERT 52'	19.97	20419	INSTALL OPEN TOP BOX CULVERT 38'
20.54	20301	REMOVE SURFACE WATER DEFLECTOR	19.95	20419	INSTALL OPEN TOP BOX CULVERT 34'
	20419	INSTALL OPEN TOP BOX CULVERT 48'	19.92	20419	INSTALL OPEN TOP BOX CULVERT 32'
20.49	20301	REMOVE SURFACE WATER DEFLECTOR	19.89	20419	INSTALL OPEN TOP BOX CULVERT 30'
	20419	INSTALL OPEN TOP BOX CULVERT 46'	19.87	20419	INSTALL OPEN TOP BOX CULVERT 34'
20.42	20301	REMOVE SURFACE WATER DEFLECTOR	19.83	20419	INSTALL OPEN TOP BOX CULVERT 38'
	20419	INSTALL OPEN TOP BOX CULVERT 38'			

### ROAD MATERIAL PLACEMENT

Note: Minor changes are requested electronically and do not reflect final changes intended on the ground.

SHEET NUMBER	TOTAL SHEETS
4	8

# Road Log

## Road #4445 (continued)

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
19.80	20419	INSTALL OPEN TOP BOX CULVERT 34'	19.22	20419	INSTALL OPEN TOP BOX CULVERT 34'
19.76	20419	INSTALL OPEN TOP BOX CULVERT 26'	19.19	20419	INSTALL OPEN TOP BOX CULVERT 36'
19.73	20419	INSTALL OPEN TOP BOX CULVERT 28'	19.17	20419	INSTALL OPEN TOP BOX CULVERT 38'
19.70	20419	INSTALL OPEN TOP BOX CULVERT 34'	19.13	20419	INSTALL OPEN TOP BOX CULVERT 34'
19.68	20419	INSTALL OPEN TOP BOX CULVERT 42'	19.11	20419	INSTALL OPEN TOP BOX CULVERT 42'
19.64	20419	INSTALL OPEN TOP BOX CULVERT 34'	19.06	20419	INSTALL OPEN TOP BOX CULVERT 36'
19.61	20419	INSTALL OPEN TOP BOX CULVERT 28'	18.92	20419	INSTALL OPEN TOP BOX CULVERT 30'
19.58	20419	INSTALL OPEN TOP BOX CULVERT 28'	18.89	20419	INSTALL OPEN TOP BOX CULVERT 30'
19.55	20419	INSTALL OPEN TOP BOX CULVERT 32'	18.86	20419	INSTALL OPEN TOP BOX CULVERT 32'
19.52	20419	INSTALL OPEN TOP BOX CULVERT 30'	18.83	20419	INSTALL OPEN TOP BOX CULVERT 36'
19.49	20419	INSTALL OPEN TOP BOX CULVERT 28'	18.80	20419	INSTALL OPEN TOP BOX CULVERT 36'
19.47	20419	INSTALL OPEN TOP BOX CULVERT 28'	18.77	20419	INSTALL OPEN TOP BOX CULVERT 40'
19.44	20419	INSTALL OPEN TOP BOX CULVERT 26'	18.74	20419	INSTALL OPEN TOP BOX CULVERT 46'
19.41	20419	INSTALL OPEN TOP BOX CULVERT 24'	18.68	20419	INSTALL OPEN TOP BOX CULVERT 34'
19.36	20419	INSTALL OPEN TOP BOX CULVERT 24'	18.64	20419	INSTALL OPEN TOP BOX CULVERT 28'
19.33	20419	INSTALL OPEN TOP BOX CULVERT 30'	18.61	20419	INSTALL OPEN TOP BOX CULVERT 28'
19.25	20419	INSTALL OPEN TOP BOX CULVERT 28'	18.59	20419	INSTALL OPEN TOP BOX CULVERT 28'

### ROAD MATERIAL PLACEMENT

Note: Mileages are measured electronically and do not match the Posts marked on the ground.

SHEET NUMBER	5	TOTAL SHEETS	8
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# Road Log

## Road #4445 (continued)

Station or Mile Post	Pay Item Number	Description of Work	Station or Mile Post	Pay Item Number	Description of Work
18.56	20419	INSTALL OPEN TOP BOX CULVERT 28'	17.83	20301	REMOVE SURFACE WATER DEFLECTOR
				2419	INSTALL OPEN TOP BOX CULVERT 28'
18.54	20419	INSTALL OPEN TOP BOX CULVERT 38'	17.73	20419	INSTALL OPEN TOP BOX CULVERT 30'
				20419	INSTALL OPEN TOP BOX CULVERT 30'
18.52	20419	INSTALL OPEN TOP BOX CULVERT 36'	17.55	20419	INSTALL OPEN TOP BOX CULVERT 30'
				20419	INSTALL OPEN TOP BOX CULVERT 28'
18.49	20419	INSTALL OPEN TOP BOX CULVERT 36'	17.48	20419	INSTALL OPEN TOP BOX CULVERT 28'
18.46	20419	INSTALL OPEN TOP BOX CULVERT 36'	17.38		EXISTING SWITCHBACK
18.44	20419	INSTALL OPEN TOP BOX CULVERT 36'	17.30		EXISTING SWITCHBACK
18.41	20419	INSTALL OPEN TOP BOX CULVERT 36'	17.20	20419	INSTALL OPEN TOP BOX CULVERT 28'
18.38	20419	INSTALL OPEN TOP BOX CULVERT 36'	17.07		JUNCTION W/ ROAD #4429
18.35	20419	INSTALL OPEN TOP BOX CULVERT 38'	16.95		EXISTING DIP
18.33	20419	INSTALL OPEN TOP BOX CULVERT 34'	16.88		EXISTING DIP
18.30	20419	INSTALL OPEN TOP BOX CULVERT 50'	16.78		EXISTING DIP
18.23	32222	END SECTION OF 4' MINUS PIT RUN W/ 9' LIFT	16.76	20419	INSTALL OPEN TOP BOX CULVERT 32'
18.08		JUNCTION W/ ROAD #4439	16.66		EXISTING SWITCHBACK
17.99	20301	REMOVE SURFACE WATER DEFLECTOR	16.61	20301	REMOVE SURFACE WATER DEFLECTOR
	20419	INSTALL OPEN TOP BOX CULVERT 28'		20419	INSTALL OPEN TOP BOX CULVERT 42'
17.91	20301	REMOVE SURFACE WATER DEFLECTOR	16.55	20419	INSTALL OPEN TOP BOX CULVERT 28'
	20419	INSTALL OPEN TOP BOX CULVERT 30'			
			16.50		SUMMIT, CHINA MOUNTAIN TRAIL HEAD

### ROAD MATERIAL PLACEMENT

Note: Measurements are measured electronically and do not include final finish material on the ground.

SHEET NUMBER	6	TOTAL SHEETS	8
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# Open Top Box Culvert

**NOTES:**

OTBC must be inspected and approved in writing prior to installation. Location for inspection to be agreed upon.  
 Pilot holes are recommended but not required.  
 Any split which results from fastening boards without a pilot hole and intersects a perpendicular face may allow rejection of the entire board.

Lumber must be full dimension Selected Structural Douglas fir or Larch. See WWPFA Western Lumber Grading Rules 98  
 \*See attached requirement in Forest Service Supplemental Specifications\* See Split & Check requirements. Any split or check beyond stated maximum may allow rejection of board.

The Strap Tie may be eliminated if joints are offset. This will be documented in writing at time of inspection prior to installation.

WWPFA Western Lumber Grading Rules, Structural Joist and Planks, Standard Sizes does not apply. Full rough sawn dimensions are required for 2"x8" and 2"x10" lumber.

3/4" pipe screener assumed at 8.75" long with two flat washers (assumed 0.125" thickness) for total clearance between upright of 4".

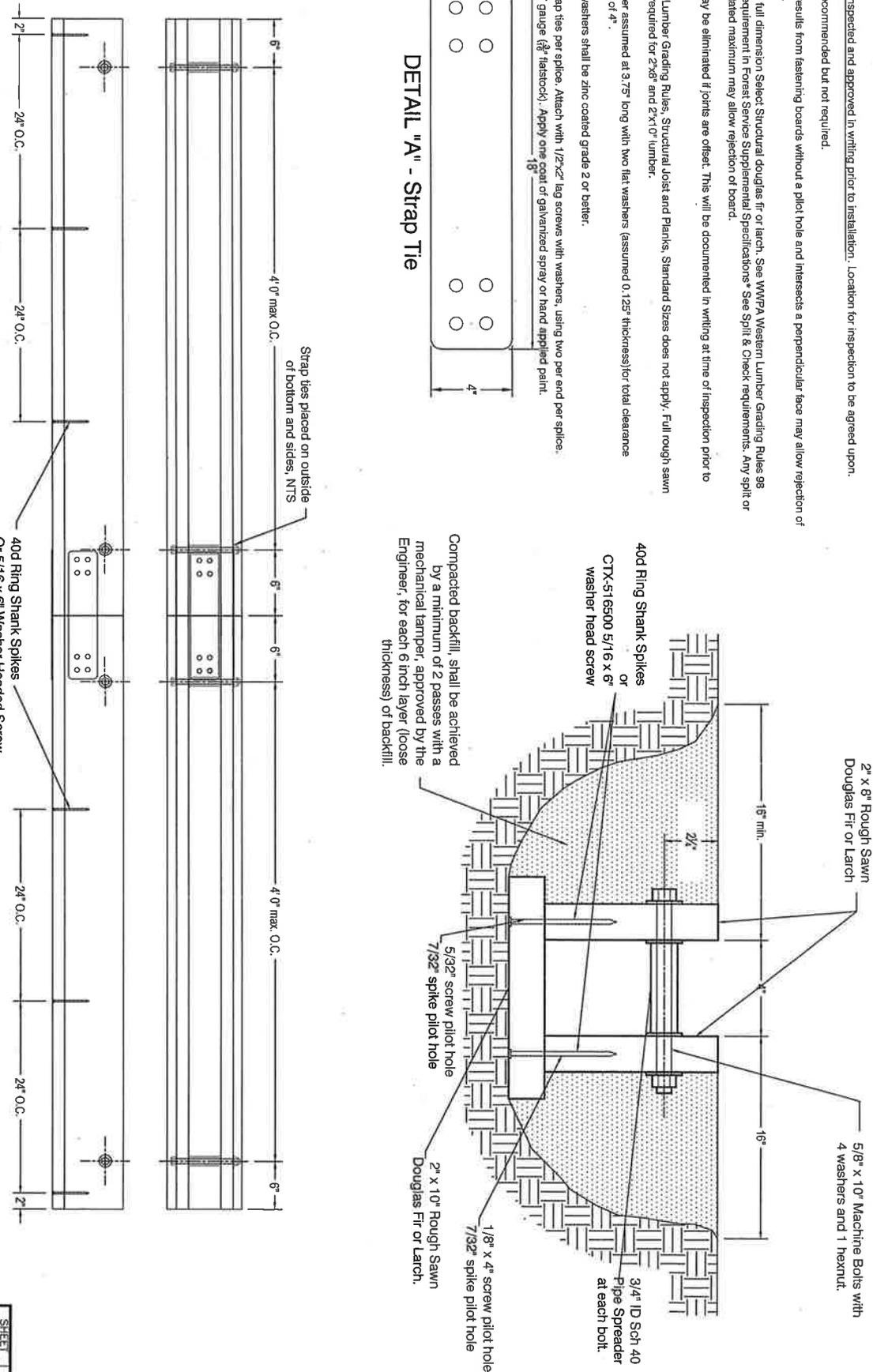
All nuts, bolts, washers shall be zinc coated grade 2 or better.

Provide three strap ties per splice. Attach with 1/2"x2" lag screws with washers, using two per end per splice. Construct from 7 gauge (1/8" flatstock). Apply one coat of galvanized spray or hand applied paint.



**DETAIL "A" - Strap Tie**

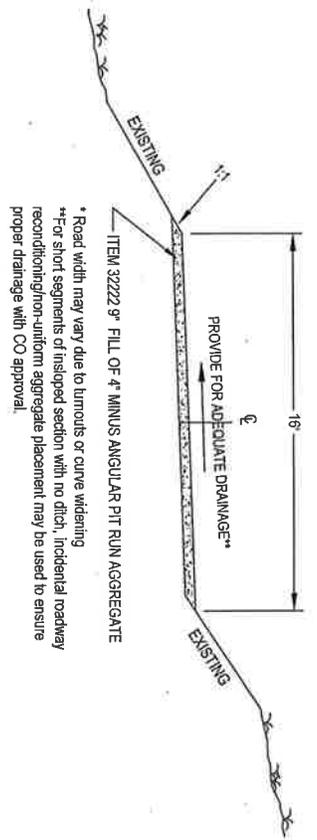
Compacted backfill, shall be achieved by a minimum of 2 passes with a mechanical tamper, approved by the Engineer, for each 6 inch layer (loose thickness) of backfill.



**ROAD MATERIAL PLACEMENT**

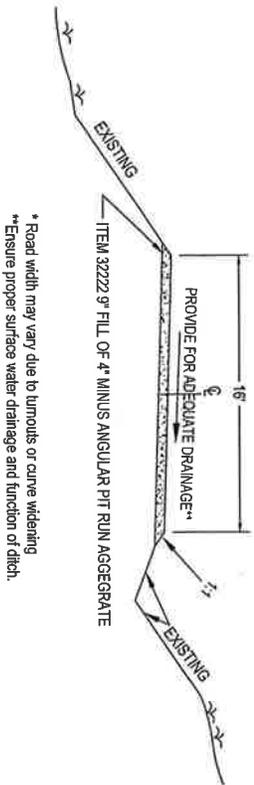
SHEET NUMBER	TOTAL SHEETS
7	8

# Typical Section



**TYPICAL PT RUN SECTION w/o DITCH**

NO SCALE



**TYPICAL PIT RUN SECTION w/ SINGLE DITCH**

NO SCALE

\* Road width may vary due to turnouts or curve widening  
 \*\*Ensure proper surface water drainage and function of ditch.

## ROAD MATERIAL PLACEMENT

SHEET NUMBER	TOTAL SHEETS
8	8



**Engineer's Estimate**  
(Timber Sale)

Timber Sale Optional Road Material Placement

Road No. 4445

Road Name Lynx Creek

Length (Miles) 6.6

Item Number	Description	Method of Meas.	Unit	Quantity	Unit Price	Total
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**TOTAL ALL ROADS: \$ 325,319.38**