





**FOREST SERVICE SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES**

**SPECIFICATION LIST**

Project Name <u>Ruby Copper TS</u>		Road Number . . . . .	403	403A	2509	2517	2517E	2517F	Latest
		Road Name . . . . .	Copper Ridge	Copper Ridge A	Spruce Lake	Copper Falls	Copper Falls E	Copper Falls F	Revision
Date Prepared	1/21/09	Termini . . . . .	0.0-6.8	0.0-0.25	0.0-3.4	0.0-5.8	0.0-0.6	0.0-0.1	Date
Spec. No.	Title	Const. - Reconst. . . .	R	R	R	R	R	R	
101-106	General Specifications		X	X	X	X	X	X	4/85
203	Excavation and Embankment								4/85
204	Soil Erosion & Water Pollution Control		X	X	X	X	X	X	4/85
206A	Excavation for Culverts and Minor Structures					X			4/85
207	Developing Water Supply and Watering				X	X			4/85
304	Aggregate Base or Surface Course				X	X			4/85
306	Reconditioning Existing Road		X	X	X	X	X	X	4/85
601	Mobilization		X	X	X	X	X	X	4/85
603	Metal Pipe					X			4/85
619	Riprap			X					4/85
640	Gates								4/85
703	Aggregates				X	X			4/85
707	Metal Pipe					X			4/85
713	Roadside Improvement Materials		X	X	X	X	X	X	4/85
SPS-101	Abbreviations		X	X	X	X	X	X	1/30/09
SPS-104	Maintenance for Traffic		X	X	X	X	X	X	1/30/09
SPS-201A	Roadway Brushing		X	X	X	X	X	X	1/30/09
SPS-204	Soil Erosion & Water Pollution Control		X	X	X	X	X	X	1/30/09
SPS-206A	Excavation for Culverts and Minor Structures					X			1/30/09
SPS-207	Developing Water Supply and Watering				X	X			1/30/09
SPS-304	Aggregate Base or Surface Course				X	X			1/30/09
SPS-306	Reconditioning Existing Road		X	X	X	X	X	X	1/30/09
SPS-412	Dust Palliative Treatment				X	X			1/95
SPS-601	Mobilization		X	X	X	X	X	X	1/30/09
SPS-603	Metal Pipe					X			1/30/09
SPS-619	Riprap			X					1/30/09

SPECIFICATION LIST

Project Name <u>Ruby Copper TS</u>		Road Number. ....	2517G	2527	2528	2529	2529A	2529B	Latest
		Road Name .....	Copper Falls G	Bottom	Line Creek	Brass Creek	Brass Creek A	Brass Creek B	Revision
Date Prepared	1/21/09	Termini .....	0.0-0.14	0.0-0.4	0.0-0.5	0.0-3.77	0.0-1.53	0.0-1.6	Date
Spec. No.	Title	Const. - Reconst. ...	R	R	R	R	R	R	
101-106	General Specifications		X	X	X	X	X	X	4/85
203	Excavation and Embankment						X	X	4/85
204	Soil Erosion & Water Pollution Control		X	X	X	X	X	X	4/85
206A	Excavation for Culverts and Minor Structures					X	X		4/85
207	Developing Water Supply and Watering								4/85
304	Aggregate Base or Surface Course					X		X	4/85
306	Reconditioning Existing Road		X	X	X	X	X	X	4/85
601	Mobilization		X	X	X	X	X	X	4/85
603	Metal Pipe					X	X		4/85
619	Riprap					X			4/85
640	Gates				X				4/85
703	Aggregates					X		X	4/85
707	Metal Pipe					X	X		4/85
713	Roadside Improvement Materials		X	X	X	X	X	X	4/85
SPS-101	Abbreviations		X	X	X	X	X	X	1/30/09
SPS-104	Maintenance for Traffic		X	X	X	X	X	X	1/30/09
SPS-201A	Roadway Brushing		X	X	X	X	X	X	1/30/09
SPS-204	Soil Erosion & Water Pollution Control		X	X	X	X	X	X	1/30/09
SPS-206A	Excavation for Culverts and Minor Structures					X	X		1/30/09
SPS-207	Developing Water Supply and Watering								1/30/09
SPS-304	Aggregate Base or Surface Course					X		X	1/30/09
SPS-306	Reconditioning Existing Road		X	X	X	X	X	X	1/30/09
SPS-412	Dust Palliative Treatment								1/95
SPS-601	Mobilization		X	X	X	X	X	X	1/30/09
SPS-603	Metal Pipe					X		X	1/30/09
SPS-619	Riprap					X			1/30/09

United States  
Department of  
Agriculture

Forest  
Service

Idaho Panhandle  
National Forests

Bonnors Ferry  
Engineering Team

REPLY TO: 7700  
2450

Date: January 30, 2009

SUBJECT: Special Project Specifications

Ruby Copper Proposed Timber Sale

6 DISTRICT

TO: Forest Engineer

RO SALE (Check one)  
 SO SALE  
 DISTRICT SALE

The following Special Project Specifications are recommended for use in the Timber Sale Contract for the above referenced sale.

Regional Numbers: 412

Forest Numbers: 101, 201A, 206A, 306, 603

Revised Regional Numbers: \_\_\_\_\_

Revised Forest Numbers: 104, 204, 207, 304, 619

Unique Numbers: 601

Prepared by: N. Davis

Approval of the Forest and attached Revised and Unique SPS's is requested.

  
Forest Engineer

Enclosures

IPNF SPECIAL PROJECT SPECIFICATION  
 Ruby Copper T.S.

**Section 101 - Abbreviations**

**101.02 Delete in its entirety and substitute the following:**

Pay Items &

Pay Units

"& .....	And	M.....	Metal
AC .....	Acre	MAX.....	Maximum
AL.....	Aluminum	MBF.....	One Thousand Feet Board Measure
ASP.....	Asphalt	MGALS.....	One Thousand Gallons
AVAIL.....	Available	MHD.....	Method
BARR.....	Barrier	MI.....	Mile
BKN.....	Broken	MIN.....	Minimum
BST.....	Bituminous Surface Treatment	MISC.....	Miscellaneous
CATTLEGD.....	Cattleguard	MP.....	Mile Post
CLEAR (CLG).....	Clearing	MSF.....	One Thousand Square Feet
CLEAR/GRUB.....	Clearing & Grubbing	OTBC.....	Open Top Box Culvert
CMP.....	Corrugated Metal Pipe	P M.....	Placement Method
COMP.....	Compaction	PVC.....	Polyvinylchloride
CONC.....	Concrete	RD.....	Road
CONST.....	Construction (Construct)	RECOND.....	Reconditioning
CTD.....	Coated (Coating)	RECONST.....	Reconstruction (Reconstruct)
CUSH.....	Cushion	REFL.....	Reflectorized
CY (CU YD).....	Cubic Yard	RT.....	Right
CY MI (CYM).....	Cubic Yard Mile	STMP (STP).....	Stump(s)
DIA.....	Diameter	SB.....	Self Balance
DL.....	Double Lane	SEC.....	Section
DWGS.....	Drawings	SF.....	Square Foot (Feet)
EA.....	Each	SL.....	Single Lane
EMB.....	Embankment	SLD.....	Solid
EXC.....	Excavation	ST.....	Slash Treatment
F&I.....	Furnish & Install	STA.....	Station (100 Feet)
FDN.....	Foundation	STA YD.....	Station Yard
FT.....	Foot (Feet)	STL.....	Steel
FUNC.....	Function	STR (STRUC).....	Structural
GAL.....	Gallon	SY (SQ YD).....	Square Yard
GR.....	Grade	SZ.....	Size
GRUB.....	Grubbing	T&L.....	Tops & Limbs
HDPE.....	High Density Polyethylene	TBR.....	Timber
HOR.....	Horizontal	TH.....	Thickness
HR.....	Hour	TM.....	Ton Mile
HT.....	Height	TO.....	Turnout
I.....	Install	TOL.....	Turnout Left
IN.....	Inches	TOR.....	Turnout right
INCL.....	Including (Includes)	TRS.....	Trees
IND.....	Individual	UOT.....	Utilization of timber
JCT.....	Junction	VERT.....	Vertical
L.....	Logs	W.....	Width
LBS.....	Pounds	W/.....	With
LDG.....	Loading	W/O.....	Without
LF (LIN FT).....	Linear (lineal) Foot	X-SEC.....	Cross Section
LS.....	Lump Sum	YD.....	Yard
LT.....	Left		
MAT'L.....	Material		

SPECIAL PROJECT SPECIFICATION  
**Ruby Copper T.S.**

**Section 104 - Maintenance for Traffic**

104.01

Roads to be  
Constructed

Delete the first two paragraphs and replace with the following:

Prior to the Contractor shutting down any operations, the Contractor shall take such precautions as may be necessary to prevent damage to the project, such as approaches, crossings or intersections; and shall make provisions for normal drainage and minimization of erosion.

**CONSTRUCTION SIGNING**

The contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient signs, and other traffic control devices and shall take necessary precautions for the protection of the work and safety of the public as SHOWN IN THE DRAWINGS.

**PAYMENT**

104.06  
Basis

The following shall be added:

"Payment for construction signing and traffic control under this section shall be considered subsidiary to Pay Item 601 - Mobilization and no separate payment will be made."

IPNF SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.

**Section 204 - Soil Erosion & Water Pollution Control**

DESCRIPTION

204.01  
Work

Delete in entirety and substitute the following:

"This work consists of special temporary and/or permanent construction measures as SHOWN ON THE DRAWINGS and/or listed in this specification to control soil erosion and water pollution. Such measures may include (but are not limited to) filter windrows, slash blankets, brush barriers, drainage devices, earth berms, earthen water bars, sediment basins, aggregate base/surfacing, rock ditches, riprap, seeding, mulching, and/or straw bales.

This work shall also include special construction methods SHOWN ON THE DRAWINGS to control erosion at control areas."

MATERIALS

204.02  
Requirements

Delete the 2nd paragraph and substitute the following:

"All other materials shall meet commercial grade standards and shall be approved before being incorporated into the project."

CONSTRUCTION

204.03  
Performance

Delete the 2nd paragraph and substitute the following:

"Erosion control measures shall be incorporated into the project no later than the dates specified in Table 204.1. Variations in this schedule must be approved in writing by the Engineer."

Add the following after the 3rd paragraph:

"The following construction requirements shall apply:

- a.- Earthwork. Clearing and grubbing, excavation, borrow and embankment operations shall be scheduled and performed so that grading operations and permanent erosion control measures can follow without interference or be constructed within the time periods listed in Table 204.1.

IPNF SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.

- b.- Wet Conditions. The contractor shall conduct operations so as to minimize erosion and not develop conditions that will cause erosion. Work may continue during wet conditions as long as erosion and rutting is controlled.
- c.- End of Construction Season and prior to Move-out. Any rutted areas and other damaged areas shall be smoothed, sloped and graded to drain. All temporary stream course diversion conduits and temporary culverts shall be removed and the stream returned to its natural channel. All erosion control measures required under this specification shall be functional and approved by the Engineer.

MEASUREMENT

204.04  
Method

Add the following to the first paragraph:

"Items not shown in the SCHEDULE OF ITEMS will not be measured."

PAYMENT

204.05  
Basis

Add the following:

"Other erosion control work required under this specification and not shown in the SCHEDULE OF ITEMS is considered incidental to pay items in the Section listed in Table 204.1."

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**Ruby Copper T.S.**

**SECTION 201A - ROADWAY BRUSHING**

DESCRIPTION

- 201A.01      This work shall consist of removing limbs, residual slash, live roadside brush, and  
Work            small trees between, or obtruding into, the designated brushing limits. The brushing  
limits            shall be AS SHOWN ON THE DRAWINGS. Brushing areas shall include turnouts.  
CONSTRUCTION
- 201A.02      All brush and small trees (6 inches diameter, or less, at the point of cut) inside the  
Clearing &      brushing limits and outside the roadbed shall be cut off no higher than 4 inches  
Brushing        above ground level (6 inches for machine brushing). Should rocks or other  
obstructions    be encountered, the cutting height shall be no higher than 6 inches above the  
obstruction. Live trees with a diameter larger than 6 inches should be limbed to a  
height of 14 feet above the road surface. All brush and trees located on the roadbed  
shall be cut as nearly flush to the road surface as possible so stumps will not become  
a hazard to automobile tires.
- 201A.03      Windfalls lying within or across the brushing limits shall be limbed and cut off at a  
Windfalls      horizontal distance of 10 feet from each shoulder or at the brushing limit, which ever  
is                least. Cut windfall material shall be disposed of as slash.
- 201A.04      No brushing debris shall be deposited in the traveled way Road Junctions and/or  
                      ditches of adjoining roads.
- 201A.06      All slash shall be scattered outside the brushing limits without damaging residual  
Slash            trees. Slash shall be defined as any material cut that has a length greater than  
Treatment      36 inches or with a diameter greater than 3 inches at any point. No material shall be  
                      deposited in streams, streambeds, culvert inlets or outlets, or drainage ways.

MEASUREMENT

- 201A.07      The method of measurement, described in Section 106, will be DESIGNATED in  
Method         the SCHEDULE OF ITEMS.
- Linear measurements will be horizontal along the road centerline.
- Quantities will be the number of miles (or stations) and fractions thereof along the  
road centerline, regardless of the amount of work required.

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PAYMENT

201A.08      The accepted quantities will be paid for at the contract unit price for each pay item  
shown            in the SCHEDULE OF ITEMS.  
Basis

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
201A(01)	Roadway Brushing	Mile
201A(02)	Roadway Brushing	Station

IPNF SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.

**Section 204 - Soil Erosion & Water Pollution Control**

DESCRIPTION

204.01  
Work

Delete in entirety and substitute the following:

"This work consists of special temporary and/or permanent construction measures as SHOWN ON THE DRAWINGS and/or listed in this specification to control soil erosion and water pollution. Such measures may include (but are not limited to) filter windrows, slash blankets, brush barriers, drainage devices, earth berms, earthen water bars, sediment basins, aggregate base/surfacing, rock ditches, riprap, seeding, mulching, and/or straw bales.

This work shall also include special construction methods SHOWN ON THE DRAWINGS to control erosion at control areas."

MATERIALS

204.02  
Requirements

Delete the 2nd paragraph and substitute the following:

"All other materials shall meet commercial grade standards and shall be approved before being incorporated into the project."

CONSTRUCTION

204.03  
Performance

Delete the 2nd paragraph and substitute the following:

"Erosion control measures shall be incorporated into the project no later than the dates specified in Table 204.1. Variations in this schedule must be approved in writing by the Engineer."

Add the following after the 3rd paragraph:

"The following construction requirements shall apply:

- a.- Earthwork. Clearing and grubbing, excavation, borrow and embankment operations shall be scheduled and performed so that grading operations and permanent erosion control measures can follow without interference or be constructed within the time periods listed in Table 204.1.

IPNF SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.

- b.- Wet Conditions. The contractor shall conduct operations so as to minimize erosion and not develop conditions that will cause erosion. Work may continue during wet conditions as long as erosion and rutting is controlled.
- c.- End of Construction Season and prior to Move-out. Any rutted areas and other damaged areas shall be smoothed, sloped and graded to drain. All temporary stream course diversion conduits and temporary culverts shall be removed and the stream returned to its natural channel. All erosion control measures required under this specification shall be functional and approved by the Engineer.

MEASUREMENT

204.04  
Method

Add the following to the first paragraph:

"Items not shown in the SCHEDULE OF ITEMS will not be measured."

PAYMENT

204.05  
Basis

Add the following:

"Other erosion control work required under this specification and not shown in the SCHEDULE OF ITEMS is considered incidental to pay items in the Section listed in Table 204.1."

**IPNF SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.**

TABLE 204.1

<b>SECTION</b>	<b>DURATION</b>	<b>DESCRIPTION OF WORK</b>	<b>TIMING OF CONSTRUCTION</b>
203	Permanent	<u>Culvert Catch Basins and Ditch Transitions</u>	Concurrently with culvert installation.
203	Permanent	<u>Inslope/Outslope</u> as shown on drawings.	Continuously as road is roughed to grade.
203	Permanent	<u>Ditches</u>	Concurrently with road reconditioning
Incidental to 201, 203 304 or 603		<u>Special Construction Methods.</u> Specific locations and requirements shown on the drawings, and/or described in the Special Project Specifications.	As described on the drawings and/or in the Special Project Specifications.
Incidental to 203	Temporary	<u>Straw Bales/Straw Mulch.</u> As necessary to stabilize eroding areas.	Immediately upon discovery of active erosion.
203	Permanent	<u>Culvert Catch Basins and Ditch Transitions</u>	Concurrently with pipe installation
304	Permanent	<u>Aggregate Base/Surfacing</u> The total length of all areas of disturbed earth (including pioneer roads and completed subgrades) on which gravel has not been placed shall not exceed 1000 lineal feet after 10/31.(Date)  This requirement may be waived by the Engineer based on a review of the Contractor's operations, methods, and progress in controlling erosion and keeping erosion control features current as described in this specification. Such waiver, if given, shall be in writing.	See description of work.
412	Permanent	<u>Dust Paliative</u>	The Forest Service will be notified 48 hours prior to application.
603	Permanent	<u>Culverts</u> <u>Live Streams</u> <u>Cross Drains</u>	At time of initial crossing of live streams. Concurrently with road maintenance
619	Permanent	<u>Culvert Inlet/Outlet</u> <u>Riprap</u>	Concurrently with culvert installations
640	Permanent	<u>Road Closure Devices</u>	Immediately after excavation and removal of existing barricade.

**Ruby Copper T.S.**

**Section 207 - Developing Water Supply & Watering**

CONSTRUCTION

207.03      Add the following:

Development  
of Supply  
& Access

"All activities which may cause siltation or damming of a stream shall be approved in advance of the work, in writing by the Contracting Officer."

PAYMENT

207.06      Delete the first paragraph and substitute with the following:

Basis

"Payment for Developing Water Supply & Watering shall be included as a subsidiary item to Section 304. No separate payment shall be made under Section 207."

IPNF SPECIAL PROJECT SPECIFICATION  
**Ruby Copper T.S.**

**Section 304 - Aggregate Base or Surface Course**

**CONSTRUCTION**

304.12

Thickness     Add the following to this subsection:

Requirements

"Compensation will not be made for thickness exceeding the specified thickness."

**Ruby Copper T.S.**

**Section 306 - Reconditioning Existing Road**

DESCRIPTION

- 306.01 Delete "scarifying and" from the text.  
Add: "and catch basins" following "outlets"

CONSTRUCTION

- 306.02 Delete the first two paragraphs including (a) and (b) of the second paragraph  
Performance and replace with the following:  
"Scarification of the traveled way and shoulders is not required. Any rock protruding less than two inches may be left in place. Rock protruding in excess of two inches shall be removed or the tops blasted. Resulting holes in the roadway or shoulders shall be backfilled with compacted suitable material."

## Ruby Copper T.S.

### Section 412 - Dust Palliative Treatment

Delete this entire specification and substitute the following:

#### DESCRIPTION

412.01

Work

This work shall consist of furnishing, sampling and applying dust palliative to a road surface. Road surface preparation requirements are DESIGNATED IN THE SCHEDULE OF ITEMS.

#### MATERIALS

412.02

Requirements

The type of material shall be as shown on the SCHEDULE OF ITEMS and shall meet the specified requirements shown below:

#### Magnesium or Calcium Chloride Brine

Chloride brines shall consist of water and magnesium and/or calcium chloride. The chemical composition, percent by weight brine, shall be as follows:

Chloride Concentration (Sum of Magnesium & Calcium Chloride)	
Magnesium Chloride product	28.0 % minimum
Calcium Chloride products	36.0 % minimum
Sulfate	4.3 % maximum
Nitrate	5.0 % maximum

(Test method R1-412/Cl must be used. It is available upon request from USDA Forest Service, Regional Materials Engineering Center, P.O. Box 7669, Missoula, Montana 59807)

The pH shall be between 4.5 and 10.0. The temperature of the material shall be 40°F or above when it is applied.

#### Calcium Chloride Flake

The chemical composition as shown below shall be determined by ASTM E 449-79 on a percent-by-weight basis:

Calcium Chloride (CaCl <sub>2</sub> )	77% Minimum
Total Alkali Chlorides (as NaCl)	3% Maximum
Calcium Hydroxide (Ca(OH) <sub>2</sub> )	0.3% Maximum

Particle size shall be as follows: 100% pass the 3/8" screen, 80 to 100% pass the #4 screen, and 0 to 5% pass the #30 screen

R01-85-SPS 412-1 (1/95)

**REGIONAL SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.**

**Lignin Sulfonate**

Lignin Sulfonate shall be the residue produced by the acid-sulfite pulping of wood. The base application shall be ammonium, calcium, or sodium. Lignin sulfonate shall be supplied as a uniform mixture and shall be miscible with an equal weight of water. The undiluted material shall conform to the following requirements:

pH (AASHTO T200)	4.5 minimum
Viscosity at 77 °F (AASHTO T202)	20.5 poise maximum
Total Lignin Solids Concentration (Test method R1-412/LS must be used for Total Lignin Solids Concentration. It is available upon request from USDA Forest Service, Regional Materials Testing Laboratory, P.O. Box 7669, Missoula, Montana 59807)	48 Percent Minimum

The solids must meet the following requirements:

Lignin Sulfonate	50 percent minimum
Reducing Sugars	25 percent maximum

The temperature of the material during application shall be between 40 and 140°F.

**Clarified Dust Oil DO-4**

Clarified Dust Oil shall conform to the following requirements:

Flash Point (AASHTO T48)	200°F min.
Kinematic Viscosity @ 100°F (AASHTO T201)	20-100 cSt
Water (AASHTO T55)	0.2% maximum
Asphaltenes (ASTM D3279)	0 - 5%
Saturates (R1-412/DO-4)	10% minimum
Volume of Oil Distillate @ 550°F (AASHTO T59)	5% max.
Viscosity of Residue by Distillation at 100°F (AASHTO T201)	400 cSt max.

Test Method R1-412/DO-4 is available from USDA Forest Service, Regional Materials Laboratory, P.O. Box 7669, Missoula, MT 59807

The material temperature during application shall be above 85°F.

**REGIONAL SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.**

412.03  
Certificate  
& Sampling

(a) Certification with Shipments. When each load of dust palliative is delivered, the contractor shall furnish the Engineer with one copy of the Bill of Lading and a fully executed Certificate of Compliance containing the applicable information shown in Figure 412-1. A separate Certificate of Compliance will not be required if the standard Bill of Lading contains the applicable information required by the certificate.

(b) Sampling. Sampling of dust palliative may be required to validate certifications furnished by the contractor. When sampling is directed by the Government, the actual samples shall be obtained by the contractor. The Engineer will be given the opportunity to witness sampling. All liquid delivery equipment shall be constructed to permit sampling in conformance with AASHTO T40 test procedure.

**CERTIFICATE OF COMPLIANCE**

Consignee .....	Destination .....
Transportation ID (Truck No., etc) .....	Date .....
Percent Concentration by Weight:	Magnesium Chloride: ..... %
Calcium Chloride : ..... %	Lignin Sulfonate: ..... %
Net Weight Total Shipment .....	Net Gallons @ 60°F.....
Specific Gravity @ 60°F .....	
This shipment of ..... identified above and covered by this Certificate of Compliance complies with Forest Service Specifications applicable to Contract Number _____.	
Producer .....	Signed ..... (Producer's Representative)

Figure 412 - 1. -- Sample Certificate of Compliance

REGIONAL SPECIAL PROJECT SPECIFICATION  
**Ruby Copper T.S.**

CONSTRUCTION

412.04  
Weather  
Limitations

All dust abatement materials shall be applied only when the surface to be treated contains appropriate moisture to get adequate penetration and absorption of dust abatement materials. Application during a light rain is acceptable provided the material penetrates the road surface, and does not flow to low areas or off the road surface.

Chloride brines and Lignin materials shall be applied only when the temperature is 40°F or higher and the ground is not frozen.

To accelerate the penetration and absorption of calcium chloride flake materials, the road surface may be dampened prior to or after the flake application.

Clarified Dust Oil shall be applied only when the road surface and atmospheric temperature is 50°F or more and rising or above 60°F and falling.

412.05  
Equipment

The distribution equipment shall be so designed, equipped, maintained, and operated such that the dust abatement material may be applied uniformly on variable widths of surface. Application shall be at readily determined and controlled rates from 0.10 to 0.50 gallons per square yard with uniform pressure and application. The allowable variation from the specified application rate shall not exceed 10% of the specified rate for individual distributor loads, and 2% of the specified rate for the entire project.

For liquid products the following requirements shall apply: (1) The spray pattern from each nozzle on the spray bar shall be uniform across the spray bar; (2) Distribution equipment shall include accurate volume measuring devices or a calibrated tank, a thermometer for measuring temperatures of tank contents, and a hose and nozzle attachment for applying material to areas inaccessible to the spray bar.

Calcium Chloride Flake shall be spread with equipment that evenly distributes the material across the required road width. The weight of flake in distribution vehicles trucks shall be accurately determined prior to application. The relative weight of material placed shall be easily determined during application.

REGIONAL SPECIAL PROJECT SPECIFICATION  
**Ruby Copper T.S.**

412.06  
Preparation  
of Road  
Surface

One or more of the following preparation and application methods shall be followed as DESIGNATED IN THE SCHEDULE OF ITEMS.

Method 1. Apply the dust palliative directly to the previously prepared surface.

For Method 2 and 3 the road surface shall be processed by blading below the elevation of ravelling, washboarding, and pot holes. The top two inches of surfacing material shall have a moisture content greater than 5 percent. After processing, the surface shall be shaped by blading to the required cross section SHOWN ON THE DRAWINGS. The prepared surface shall be approved in writing by the Engineer prior to treatment.

Method 2. A layer of loose cushion material approximately 1 inch in depth shall be developed for the full width of traveled way and kept in as loose a condition as possible prior to applying dust palliative. After the dust palliative has penetrated and pickup of material will not occur, the surface shall be compacted as SHOWN ON THE DRAWINGS, or compacted over the full treated width with either roller(s) or loaded truck(s).

If the one-inch layer of cushion material becomes compacted by traffic prior to treatment, a one-inch thickness shall be cut from the surface and bladed into a berm on the shoulder. Just prior to applying the dust palliative, the material in the berm shall be bladed to a uniform depth across the full width of the previously watered surface. The loose material shall have a moisture content greater than 5 percent just prior to applying dust palliative. After application, compact as specified above.

Method 3. Approximately 1 inch of the surface material shall be bladed into a berm on the shoulder. The initial application shall then be made on the existing surface. As soon as practical, but no more than 1 hour after application, the material in the berm(s) shall be bladed to a uniform depth across the previously treated surface and watered, if necessary, to meet the 5 percent minimum moisture content. The second application shall then be applied. Compaction shall be performed as specified in Method 2.

**REGIONAL SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.**

412.07  
Application  
of Dust  
Palliative

Dust palliative application rates and width of road surface to be covered shall be as SHOWN ON THE DRAWINGS. For liquid products the rate is expressed as gallons per square yard and for Calcium Chloride Flake, the rate is expressed in pounds per square yard. If the actual application rate is less than specified, the dust abatement material left over will be applied at locations and application rates designated by the Engineer. If the application rate used by the contractor is greater than specified and additional material is required to complete the project coverage, the additional material shall be furnished and applied at the Contractor's expense.

The Engineer may field test Chloride brines and Lignin materials prior to application to make sure that the products meet the minimum concentrations specified. Acceptance of the material will be based on the concentration shown on the manufacturer's certificate, or on results of laboratory quality assurance tests done by the Forest Service on samples taken from distribution or hauling vehicles.

Uniform distribution shall be obtained at all points. For liquid products the spray pattern from each nozzle on the spray bar shall be uniform across the spray bar. For flake products, the coverage will be uniform on the road surface. Overlapping or skipping between spread sections shall be corrected. Accidental spillage and areas with excess dust palliative that are hazardous to traffic shall be covered with additional road surfacing material at the contractor's expense. The surface of adjacent structures and trees shall be protected from spattering or marring. Dust palliative material shall be discharged only in approved areas, and shall not be allowed to flow into ditches or stream courses.

412.08  
Maintenance  
& Opening  
Traffic

The treated road surface shall be open to traffic within two hours following treatment. Traffic control and the prevention of vehicle undercoating is the contractor's responsibility. If dust abatement material is picked up by vehicles, the contractor shall apply road surfacing blotter material, and if necessary apply more dust abatement material to repair the damage. No compensation will be made for blotter or the additional dust abatement material to correct these problems. Reductions in payment may be made where traffic control and repair of the treated surface are not adequate.

**REGIONAL SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.**

**MEASUREMENT**

412.09  
Method

The method of measurement, as described in Section 106, will be DESIGNATED in the SCHEDULE OF ITEMS.

**PAYMENT**

412.10  
Basis

The accepted quantities will be paid for at the contract unit price for the pay item shown in the SCHEDULE OF ITEMS, with the following exceptions:

If laboratory quality assurance tests indicate that the minimum Calcium or Magnesium Chloride concentrations applied to the road surface were not as specified in Section 412.02, the Forest Service may reduce payment by multiplying the pay factor as calculated below, times the contract unit price for Item 412(07), 412(08), 412(13), 412(14), Item 412(15) or Item 412(16), times the accepted quantity. No payment will be made for brine concentrations below 20 percent.

Magnesium Chloride Brine Pay Factor =

$$1.0 - \frac{(28\% - \text{Concentration Applied})}{(8\%)}$$

Calcium Chloride Brine Pay Factor =

$$1.0 - \frac{(36\% - \text{Concentration Applied})}{(16\%)}$$

If laboratory quality assurance tests indicate that the minimum Lignin concentrations were not as specified in Section 412.02, the Forest Service may reduce payment by multiplying the pay factor as calculated below times the contract unit price for Item 412(09) or Item 412(10), times the accepted quantity. No payment will be made for concentrations below 24 percent.

$$\text{Lignin Pay Factor} = 1.0 - \frac{(48\% - \% \text{ Concentration Applied})}{(24\%)}$$

If laboratory quality assurance tests on Clarified Dust Oil indicate that the maximum limits for viscosities, or asphaltenes were exceeded, the Forest Service may reduce payment by multiplying the lowest pay factor as determined below, times the contract unit price for Item 412(05) or Item 412(06), times the accepted quantity.

R01-85-SPS 412-7 (1/95)

REGIONAL SPECIAL PROJECT SPECIFICATION

**Ruby Copper T.S.**

Original Kinematic Viscosity Pay Factor = 100/Original Viscosity Asphaltene  
 Pay Factor = (5 percent)/(percent Asphaltenes) Residue Viscosity Pay Factor =  
 400/Residue Viscosity

When each hauling/distribution vehicle cannot be readily weighed to determine quantities, the actual weight of material in full vehicles shall be determined at the start of the project. Thereafter, the number of vehicle loads applied to the road surface can be used for quantity determination, provided each load is full, each load is completely emptied on the project, and material lost from the load is deducted. The Engineer may direct the additional check weighing of loaded and empty vehicles at any time.

<u>Pay Item</u>	<u>Pay Unit</u>
412(05) Clarified Dust Oil DO-4 Preparation Method	_____ TON
412(06) Clarified Dust Oil DO-4 Preparation Method	_____ GAL
412(07) Magnesium Chloride Brine @ 28% minimum Concentration Preparation Method	_____ TON
412(08) Magnesium Chloride Brine @ 28% minimum Concentration Preparation Method	_____ GAL
412(09) Lignin Sulfonate Solution @ 48% minimum Concentration Preparation Method	_____ TON
412(10) Lignin Sulfonate Solution @ 48% minimum Concentration Preparation Method	_____ GAL
412(13) Calcium Chloride Brine @ 36% minimum Concentration Preparation Method	_____ TON
412(14) Calcium Chloride Brine @ 36% minimum Concentration Preparation Method	_____ GAL
412(15) Magnesium Chloride Brine @ 28% minimum Concentration or Calcium Chloride Brine @ 36% minimum Concentration, or Preparation Method	_____ L.S.
412(16) Calcium Chloride Flake @ 77% Min. Pellet 94% Concentration Preparation Method	_____ TON

SPECIAL PROJECT SPECIFICATION  
**Ruby Copper T.S.**

Section 601 - Mobilization

**DESCRIPTION**

601.01        Add the following to this subsection:  
Work

Preparatory work shall include cleaning of all equipment used at the project site. The contractor(s) is required to clean all construction equipment prior to entry on the project site. This cleaning shall remove all dirt, plant parts and material that may carry noxious weed seeds into the area. Only construction equipment inspected by the Contracting Officer will be allowed to operate within the project area. All subsequent move-ins of equipment shall be treated the same as the initial move-in. Truck beds and dump boxes hauling to the project site must also be cleaned prior to entering the work area.

IPNF SPECIAL PROJECT SPECIFICATION  
**Ruby Copper T.S.**

**Section 603 - Metal Pipe**

MATERIALS

603.02                   Delete the second sentence, last paragraph, and add:  
Requirements

"Pipe should not be ordered until culvert locations are DESIGNATED ON THE GROUND and the correct lengths are determined and approved by the Contracting Officer."

CONSTRUCTION

603.06                   Replace the last sentence of the first paragraph with the following:  
Joining Pipes

"Dimpled bands shall not be used unless approved by the Contracting Officer in writing."

603.08                   At the end of the second paragraph, after "Method A or B," add:  
Backfilling

"or C"

After Method B, add:

"Method C - Compaction shall be obtained by a minimum of two passes with a mechanical tamper, approved by the Contracting Officer, for each 6-inch layer (loose thickness) of backfill unless otherwise SHOWN ON THE DRAWINGS."

**SPECIAL PROJECT SPECIFICATION  
Ruby Copper T.S.**

**Section 619 - Riprap**

RIPRAP CLASS	STONE WEIGHT IN LBS	% SMALLER THAN THE GIVEN	1. 2. & 3. EQUIVALENT CUBIC SIZE INCHES	% BETWEEN	EQUIVALENT CUBIC SIZE MM	REMARKS
	<---weight		Size----->			
						1. Size developed from weight using specific gravity of 2.71 and unit weight of 169 #/cubic ft. and then rounded to nearest inch.
						2. To determine weight of non cubic rocks - use the following formula:  $X = W \times D \times L \times .0978 \text{ \#/Cubic Inch}$ X = Stone Weight (lbs) W = Width D = Depth L = Length  Example: 27"x21"x18"x.0978=998lbs
V	250	100	14		356	This would place the stone at 998 lbs in the maximum size for Class VIII, 30% between 800# and 1600#.
	150	70	12	30	305	
	50	30	8	40	203	
	15	<10	5	20	127	
				<10		
VII	700	100	19		483	
	400	70	16	30	406	
	200	30	13	40	330	
	25	<10	6	20	152	
				<10		

F04-SPS 619-Table (1/30/09)