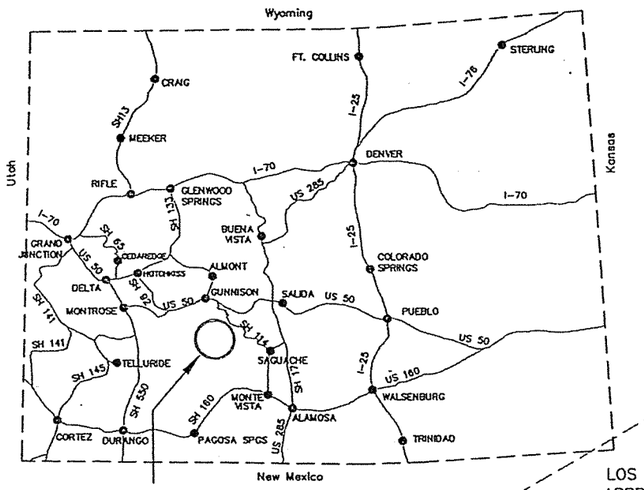
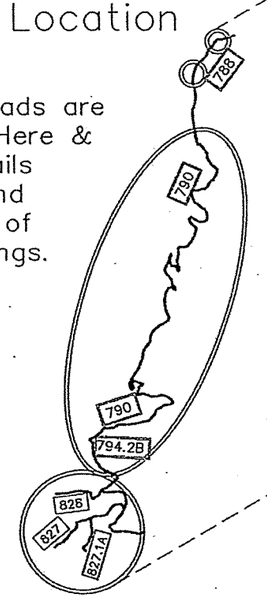
STATE LOCATION MAP

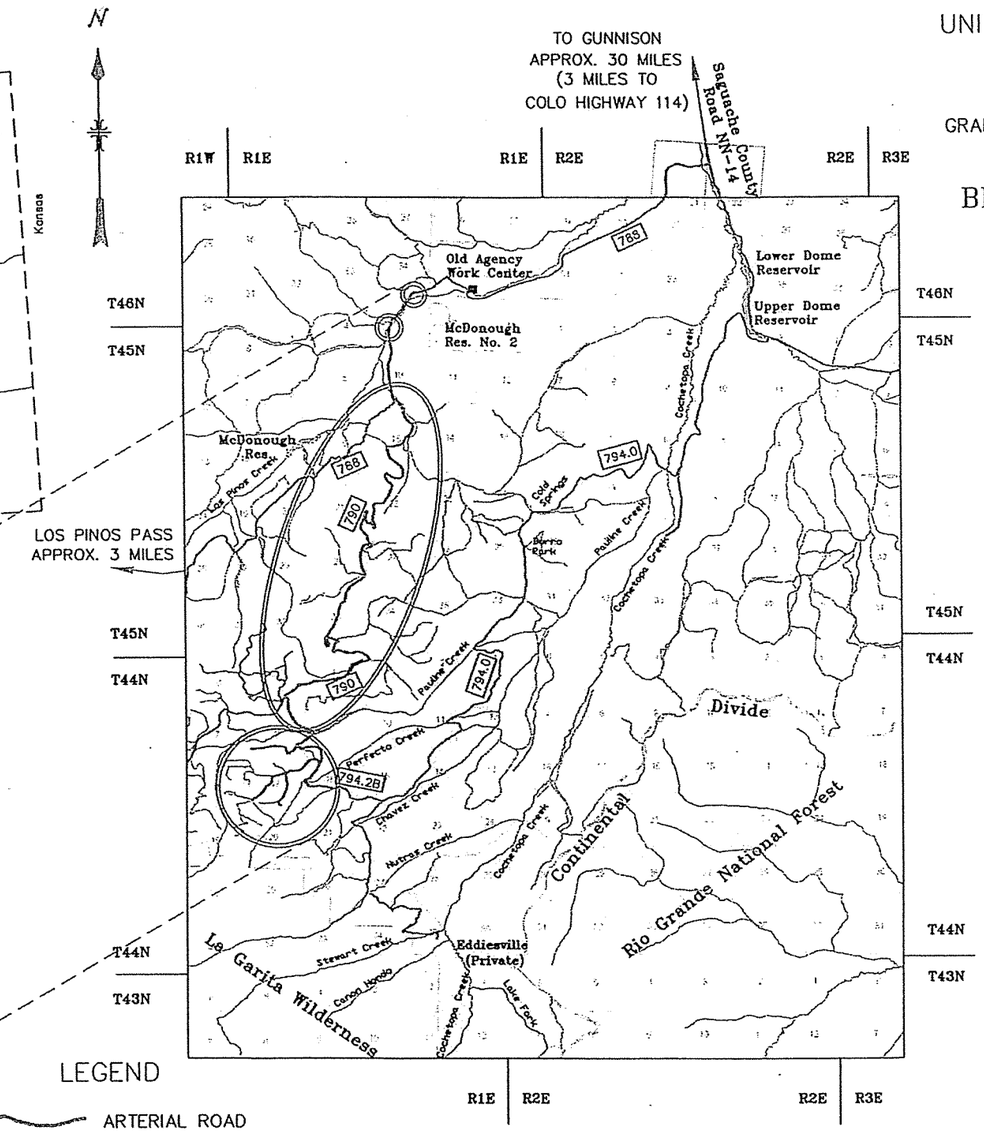
Not to Scale



Project Location

Specified Roads are Highlighted Here & Further Details Can be Found on Sheet 2 of These Drawings.





LEGEND

- ARTERIAL ROAD
- SPECIFIED ROAD
- 4X4 ROAD
- DRAINAGE

NEW MEXICO PRINCIPAL MERIDIAN

0 1 2 3 4
Scale of Miles

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION 2
GRAND MESA, UNCOMPAHGRE AND GUNNISON NATIONAL FOREST
DRAWINGS FOR

BIG MEADOWS RE-OFFER TIMBER SALE

SAGUACHE COUNTY, COLORADO

INDEX TO SHEETS

SHEET NO.	SHEET TITLE
1	TITLE
2	LOCATION
3	SUMMARY OF ESTIMATED QUANTITIES
4	CONSTRUCTION NOTES
5	TYPICAL ROADWAY SECTIONS
6	ROLLING DIP
7	GRADE DIP
8	CULVERT INSTALLATION
9	LOS PINOS CREEK CROSSING
10	ROAD LOG – NFSR 788 (LOS PINOS)
11	ROAD LOG – NFSR 790 (BLUE PARK)
12	ROAD LOG – NFSR 794.2B (BIG MEADOWS)
13	ROAD LOG – NFSR 828 (WEST SPUR)
14–15	ROAD LOG – NFSR 827 (LONG SPUR)
16	ROAD LOG – NFSR 827.1A (PERFECTO SPUR)

Project Engineer — Date: 8/2/2016

Recommended by:
These Drawings comply with the applicable technical requirements and engineering standards as delegated to this position.
Forest Engineer — Date: 8/5/2016

These Drawings comply with the Forest Plan and project specific NEPA documentation.
District Ranger — Date: 8/10/2016

Approved by:
Forest Supervisor — Date: 8/10/2016

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

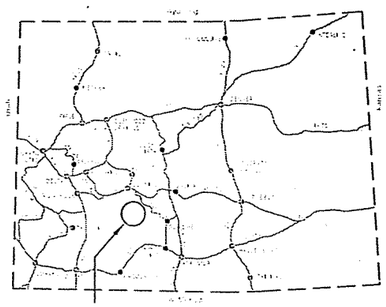
Designed: GAG
Drawn: GAG
Checked: PDM
Date: August 2016

Forest: GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS

Project Name: BIG MEADOWS RE-OFFER TIMBER SALE

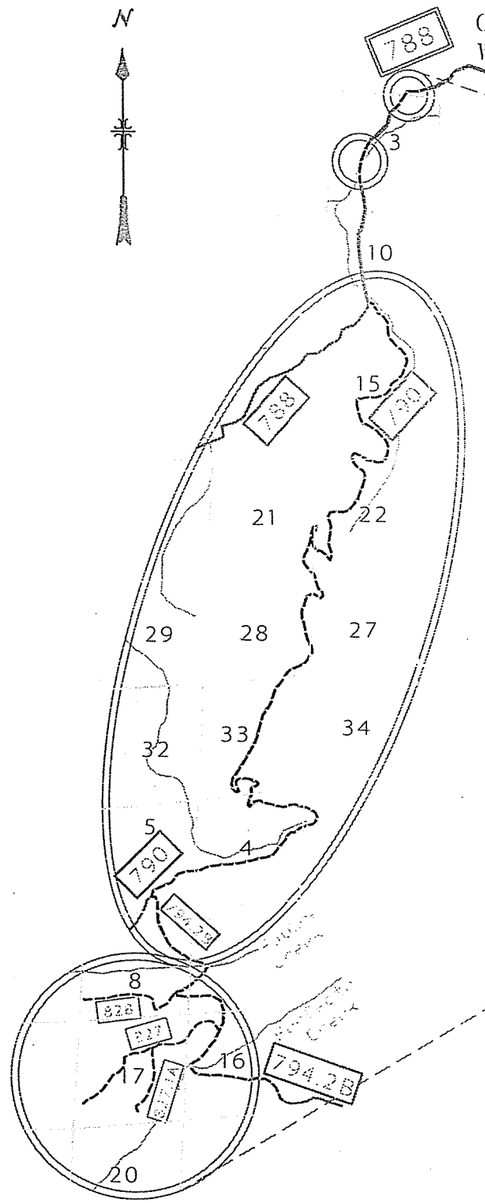
Sheet Title: TITLE
Scale: NOT TO SCALE
Sheet 1 of 16

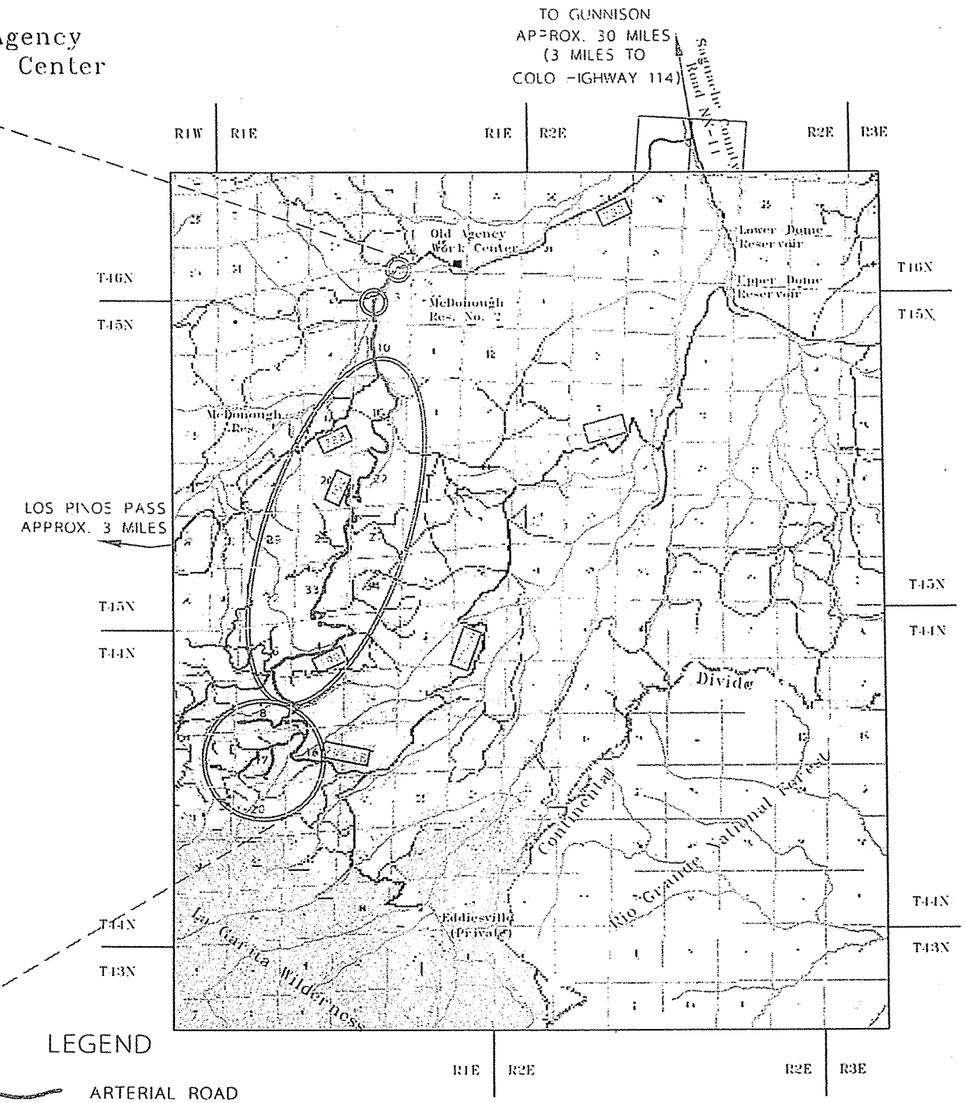
STATE LOCATION MAP



Project Location

Detailed Items of Work For Each Segment of Road Can be Found in the Road Logs Contained in Pages 10 through 16 of These Drawings.





LEGEND

- ARTERIAL ROAD
- SPECIFIED ROAD
- 4X4 ROAD
- DRAINAGE

NEW MEXICO PRINCIPAL MERIDIAN

0 1 2 3 4
Scale of Miles

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: GAG
Drawn: GAG
Checked: PDM
Date: August 2016

Forest
GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS

Project Name
BIG MEADOWS RE-OFFER TIMBER SALE

Sheet Title
LOCATION

Scale
NOT TO SCALE

Sheet
2 of 16

ITEM NUMBER	ITEM DESCRIPTION	UNIT	METHOD OF MEASURE	QUANTITIES BY ROAD NUMBER						PROJECT TOTALS
				NFSR 788	NFSR 790	NFSR 794.2B	NFSR 828	NFSR 827	NFSR 827.1A	
201.02	CLEARING & GRUBBING, LIGHT, SLASH TREATMENT FOR TOPS, LIMBS & STUMPS - SCATTER OR BURY	LF	DQ	515						515
202.02	REMOVAL OF EXISTING SLASH/BERM FROM ROADWAY - SCATTER	EA	AQ				13	3		13
203.17(a)	DRAINAGE EXCAVATION, TYPE - ROLLING DIP, CONSTRUCT, TOLERANCE 'J', COMPACTION METHOD 2 (LAYER PLACEMENT, EQUIPMENT TRAVEL)	EA	AQ	1		13	10	23		47
203.17(c)	DRAINAGE EXCAVATION, TYPE - ROLLING DIP, RECONDITION, TOLERANCE 'J', COMPACTION METHOD 2 (LAYER PLACEMENT, EQUIPMENT TRAVEL)	EA	AQ				4	7	11	22
203.17(d)	GRADE DIP, RECONDITION, TOLERANCE 'J', COMPACTION METHOD 2 (LAYER PLACEMENT, WHEEL ROLL) AS IN SECTION 203	EA	AQ				2	1		3
203.17(e)	GRADE DIP, CONSTRUCT, TOLERANCE 'J', COMPACTION METHOD 2 (LAYER PLACEMENT, WHEEL ROLL) AS IN SECTION 203	EA	AQ				1	4	6	8
203.17(f)	GRADE DIP, MAINTAIN, TOLERANCE 'J', COMPACTION METHOD 2 (LAYER PLACEMENT, WHEEL ROLL) AS IN SECTION 203	EA	AQ				2		1	3
203.18(a)	FURROW DITCH, CONSTRUCT, TOLERANCE 'J' (TABLE 203-1)	LF	DQ					274		274
203.18(b)	FURROW DITCH, CLEAN, TOLERANCE 'J' (TABLE 203-1)	LF	DQ		340	60		240		640
203.18(c)	SHOULDER DITCH, CLEAN, 1' DEEP, 3:1 SHOULDER SLOPE, 1:1 BACKSLOPE, TOLERANCE 'J' (TABLE 203-1).	LF	DQ	770			154			924
251.01	PLACED RIPRAP, CLASS 3 (TABLE 705-1), METHOD A (MACHINE PLACED)	CY	DQ		2	2	2		4	10
304.12	CRUSHED AGGREGATE, SURFACE COURSE, GRADATION - CDOT CLASS 6, COMPACTION METHOD 'A', ATOP GEOTEXTILE - TYPE III-A (TABLE 714-3)	LSQ	LSQ	1						1
306.01	ROAD RECONDITIONING, COMPACTION METHOD 'A' (HAUL EQUIPMENT) OR 'E' (GRID ROLLER), INCLUDES FRINGE CLEARING AS IN SECTION 304	MI	DQ			2.62	0.97	2.48	0.67	6.74
601.01	MOBILIZATION (INCLUDES BONDING, PROFIT & OVERHEAD - 15%)	LSQ	LSQ					1		1
603.01(18)	18" CORRUGATED METAL PIPE, 0.064" THICK STEEL (16 Ga.), COMPACTION METHOD 'A', - INCLUDES COUPLING BAND, FURNISH & INSTALL	LF	DQ		60					60
603.01(36)	36" CORRUGATED METAL PIPE, 0.079" THICK STEEL (14 Ga.), COMPACTION METHOD 'A', - INCLUDES COUPLING BAND, FURNISH & INSTALL	LF	DQ			4				4
618.04	CLEANING CULVERT IN PLACE	EA	AQ		2	1				3
618.05	RECONDITION DRAINAGE STRUCTURES - CLEAN CMP INLET OR OUTLET OR RECONSTRUCT CATCH BASIN	EA	AQ		33	8	10			51
625.01	SEEDING, DRY METHOD WITHOUT MULCH	AC	DQ	0.1	1.2	1.5	0.5	1.0	0.4	4.7

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: GAG
Drawn: GAG
Checked: CDC
Date: August 2016

Forest
GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS

Project Name
BIG MEADOWS RE-OFFER TIMBER SALE

Sheet Title
SUMMARY OF ESTIMATED QUANTITIES

Scale
NOT TO SCALE

Sheet
3 of 16

SECTION 156 - PUBLIC TRAFFIC:

A. Temporary Traffic Control requirements and signing requirements can be found in the Special Project Specifications for this section. Signs and traffic control devices must meet the requirements of the corresponding MUTCD Sections and Subsections.

SECTION 157 - EROSION CONTROL:

A. A plan for permanent and temporary erosion control measures must be submitted & approved prior to the start of construction. Any required permits associated with this project are the responsibility of and must be obtained by the Purchaser.

SECTION 173 - CONSTRUCTION SURVEY & STAKING:

A. If Clearing is necessary, mark the clearing limits with flagging or tags on trees to be left standing, or on a lath.

B. Road builder shall be required to stake all rolling dips and other drainage structures.

SECTION 201 - CLEARING & GRUBBING

A. 201.03 Utilization of Timber:
Method 2 (Limb & Deck) as per the Timber Sale Contract

B. 201.05 Slash Treatment Options:
Tops & Limbs: Method 4 (Scattering), or Method 5 (Burying)
Logs: 11 (Piling), Stumps: Scattering or Burying
Nonmerchantable Timber: Scattering or Burying.

SECTION 203 - EXCAVATION, EMBANKMENT & HAUL:

A. In areas where excess material is generated during reconditioning of the existing roads, treat it in accordance with Section 203.16, Embankment Placement, Compaction Method 2-Layer Placement.

B. Excess material and material encountered during excavation which is unsuitable for use in the embankment shall be disposed of at designated sites adjacent to the roadway as directed by the Engineer. Rocks too large to be incorporated into the embankment shall be scattered outside the roadway and shall not be windrowed.

C. Construction Tolerance for Excavation and Embankment in these areas is Tolerance Class (J) as found in Table 203-1, Construction Tolerances, of these specifications.

D. Compaction for all drainage structures and associated embankment is to be Method 2-Layer Placement (Compaction by Equipment Travel) as per 203.16, Embankment Placement.

E. Construction tolerance for Furrow Ditches, Shoulder Ditches, Rolling Dips and Grade Dips is Tolerance Class (J) as found in Table 203-1, Construction Tolerances.

SECTION 207 - DEVELOPING WATER SUPPLY & WATERING

A. This Item is incidental to reconditioning roads, cleaning culverts, and placing aggregate surfacing.

B. Use & development of water sources off National Forest Lands shall be the responsibility of the Purchaser. No known source exists on National Forest Lands in the area.

SECTION 306 - RECONDITIONING EXISTING ROAD:

A. BEFORE BEGINNING ANY EARTHMOVING ACTIVITIES on NFSR 788, CALL 811 (Utility Notification Center of Colorado) to locate electric lines.

B. Blade & shape existing traveled way and shoulders, including turnouts, to remove minor surface irregularities. Shape the cross slope to effectively drain the road's surface. Establish a blading pattern that will retain the surfacing on the roadbed & provide a thorough mixing of the materials within the completed surface width.

C. Where no template is specified, shape the travel surface to drain effectively by outsloping where possible. If the surface is covered with minor vegetation and stable, light blading may be acceptable.

D. Shape and compact the traveled way and shoulders using Method A (Haul Equipment) or E (Grid Roller) as shown in Section 304.10.

E. Where present, clean ditches to drain and blend into the adjacent grades & slopes. Clean culverts & other structures to drain.

F. Construction tolerance for this Item shall be Tolerance Class (J).

SECTION 601 - MOBILIZATION:

A. Noxious Weed control and the State Noxious Weed List can be found at www.cwma.org (Colorado Weed Management Association). All construction equipment must be cleaned prior to entering the Forest and must be inspected by Forest Service personnel. This includes all haul equipment and screening/classifying plants.

SECTION 625 - SEEDING & MULCHING:

A. The areas to be seeded shall be:
1. Fill Section - shoulder of road to toe of fill.
Cut Section - bottom of ditch to top of cut bank.
2. Any area disturbed by the contractor or used for disposal.

B. Item 625.05 Application Methods for Seed - All seed shall be applied by Dry Method, Without Mulch.

C. A certified weed-free, native seed mix will be used. Furnish seed mix labels stating the name & type of seed, lot number, net weight, percent of purity & germination and weed seed.

D. SEED MIX

Barley	-	12 lbs/acre (30% of mix)
San Luis Valley Slender Wheatgrass	-	26 lbs/acre (65% of mix)
Ariba Western Wheatgrass	-	2 lbs/acre (5% of mix)
Total		40 lbs/acre Pure Live Seed

Application period will be approved by Forest Service. Any substitutions shall be submitted for Forest Service approval prior to ordering seed mix.

SECTION 703 - AGGREGATE:

A. Aggregate used in Aggregate Surface Course Atop Geotextile at Los Pinos Creek Crossing (Sheet 9 of 16 in these drawings) [Pay Item 321.14] shall come from a Purchaser furnished source and must be approved by the engineer prior to delivery. CDOT Class 6 Aggregate or an approved equal is required.

B. Compacted quantites to be delivered are shown in the drawings and shall be spread to cover the geotextile or geoweb in a uniform depth to promote cross drainage by the structures.

C. Aggregate shall be free of organic matter, angular or blocky (not rounded) in shape, hard, dense and durable. Aggregate for the surfacing shall have a Plasticity Index of between 8 and 12. Suitable material includes Aggregate Base Course meeting CDOT Class 6 or Forest Service Specifications Grading 'G'.

D. Aggregate compaction atop the geotextile in the Los Pinos Creek Crossing on NFSR 788 shall be the same as in Section 306, Reconditioning Existing Road, Method A (Haul Equipment) or E (Grid Roller) as shown in Section 304.10.

E. Construction tolerance for this Item shall be Tolerance Class (J).

SECTION 714 - GEOTEXTILE, GEOCOMPOSITE MATERIAL, & GEOGRIDS:

A. Store geotextile in a manner that prevents contamination by deleterious materials and exposure to sunshine. Avoid handling in excessive cold temperatures.

B. Fill depressions in the Los Pinos Crossing as necessary to obtain smooth subgrade. Shape & compact the surface using appropriate compaction equipment as required prior to obtaining approval from the Engineer, Section 304.08 - Preparation of Roadbed.

C. Unroll geotextile in the direction of travel so that the long axis of the roll is parallel with channelized traffic patterns. Overlap fabric in the direction fill placement is spread to avoid "peeling" by the advancing fill. Weaker subgrades require "end-dumping". Do not drive tracked equipment on less than 6" of cover.

D. Unroll geotextile material, align and pull it taut to remove wrinkles and laydown slack with hand tension, then secure in place. Cut and overlap material to accomodate curves and radii in trenches.

E. The geotextile material placed on the subgrade atop the existing culverts in the Los Pinos Creek crossing shall be Type III-A as shown in Table 714-3 and meet the Physical Requirements for Stabilization Geotextile as shown in Section 714. Geotextile shall be laid out and held in place with 9"X2" pins or approved alternate method.

F. Geotextile quantities for all applications are based on design surface area to be covered by the fabric and do not include waste for cuts or overlaps. Geotextile materials are considered incidental to the construction of the associated Pay Item unless otherwise noted.

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: GAG
Drawn: GAG
Checked: PDM
Date: August 2016

Forest
GRAND MESA, UNCOMPAHGRE & GUNNISON NAIONAL FORESTS

Project Name
BIG MEADOWS RE-OFFER TIMBER SALE

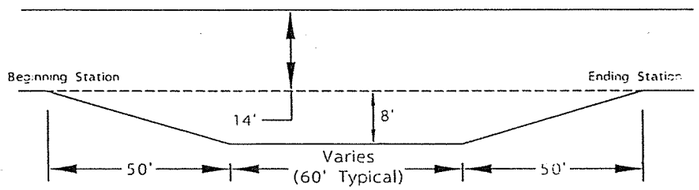
Sheet Title
CONSTRUCTION NOTES

Scale
NOT TO SCALE

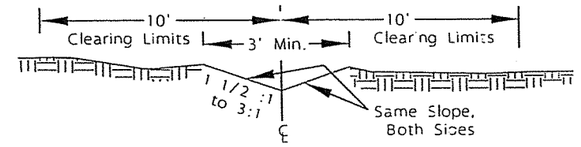
Sheet
4 of 16

TYPICAL TURNOUT - LEFT OR RIGHT

Where 'BOTH' is Specified, Construct Crowned Section With 4' Turnout on Each Side



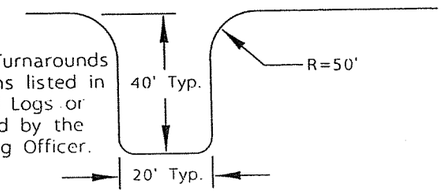
TYPICAL FURROW DITCH

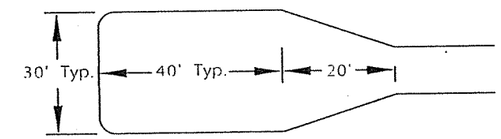


Construct ditches to drain runoff away from roadbed at specified locations. Furrow ditch material is to be incorporated into roadbed where practical without restricting or blocking water flow.
All disturbed areas are to be seeded with the specified mix as addressed elsewhere in these specifications.

TYPICAL TURNAROUNDS

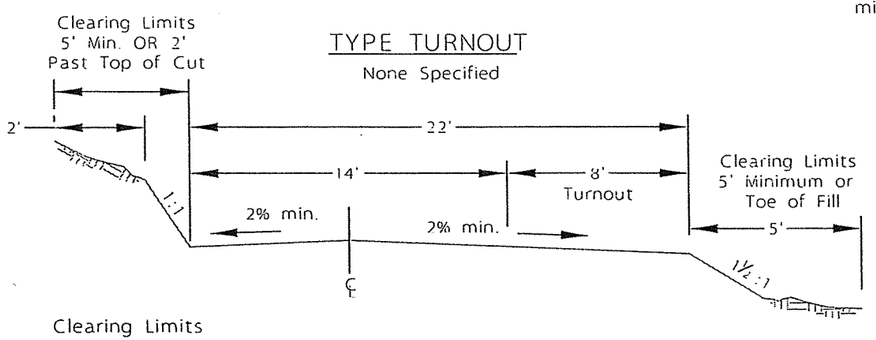
Construct Turnarounds at locations listed in the Road Logs or as directed by the Contracting Officer.





TYPE TURNOUT

None Specified

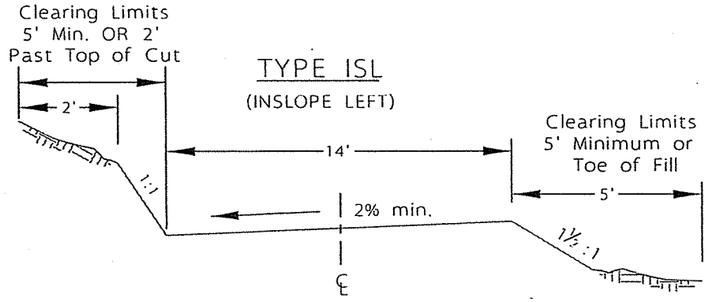


GENERAL NOTES

1. Construction Tolerances from Table 203-1:
   Class 'J' for Composite Road Construction, Excavation & Embankment
   Class 'J' for Furrow Ditches, Shoulder Ditches, Rolling Dips and Grade Dips
2. Embankment method shall be Method 2-Layer Placement. To build solid embankment, level and smooth each layer before placement of subsequent layers. Operate hauling & spreading equipment uniformly over full width of each layer (Compaction Method 'A') or by use of Grid Roller (Compaction Method 'E') as in Section 304.10.
3. Reconstruct/Recondition roadbeds to the templates shown in the road logs by blading and shaping the existing traveled way and shoulders. If none is identified, the template is to remain as it exists.
   Establish a blading pattern that will result in a driveable surface, retain as much vegetation as possible, and promote drainage from the surface.
   Regardless of template indicated, ensure drainage.
4. Normal roadbed width shown in all templates is without widening for fills, curves, or turnouts. If required, widening has been included in design and quantity calculations. Curves shall be widened as staked. If aggregate is required, it shall be placed on the entire roadbed (curve widening & turnouts included) in those sections designated.

TYPE ISL

(INSLOPE LEFT)



TYPE OSL

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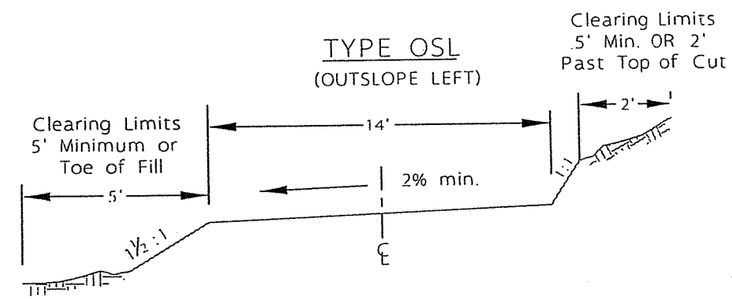

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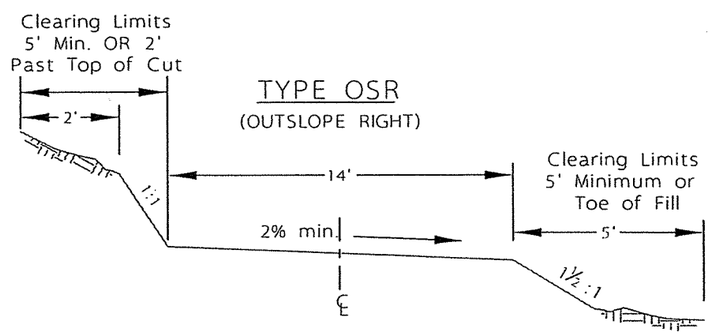

TYPE ISR

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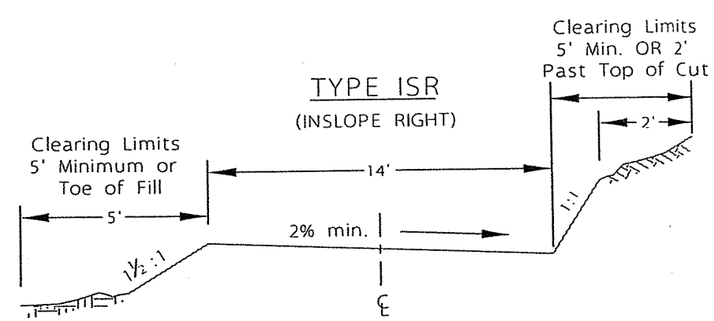

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: GAG
Drawn: GAG
Checked: CDC
Date: August 2016

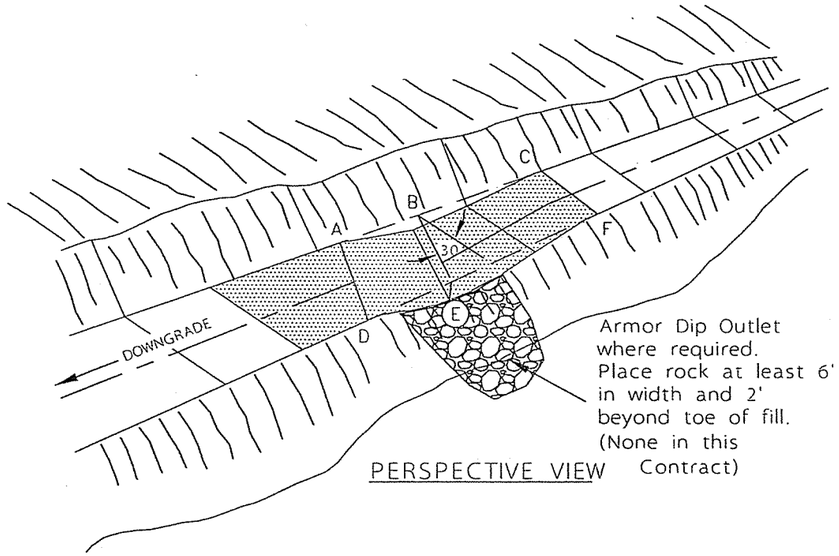
Forest: GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS

Project Name: BIG MEADOWS RE-OFFER TIMBER SALE

Sheet Title: TYPICAL ROADWAY SECTIONS

Scale: NOT TO SCALE

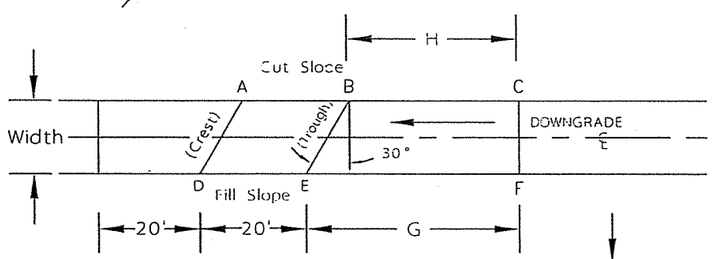
Sheet 5 of 16



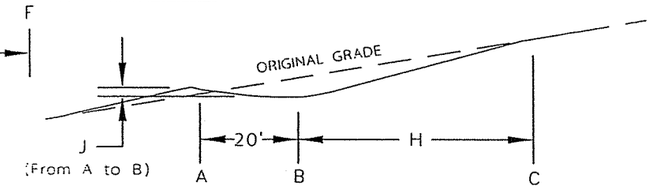
PERSPECTIVE VIEW

30° ROLLING DIP

ROAD GRADE IN %	Road Width - 12' LENGTH G	H	DEPTH I	J	Road Width - 14' LENGTH G	H	DEPTH I	J
<6	57	50	0.80	0.30	58	50	0.90	0.30
6	62	55	0.80	0.30	63	55	0.90	0.30
7	67	60	0.85	0.30	68	60	0.95	0.30
8	72	65	0.85	0.30	73	65	1.00	0.30
9	77	70	0.85	0.30	78	70	1.00	0.30
10	82	75	0.90	0.30	83	75	1.05	0.30

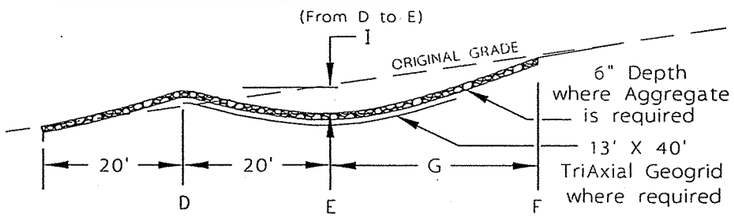


PLAN VIEW



PROFILE A - B - C

	12' Road	14' Road
A - B =	0.3'	0.3'
B - E =	0.5' OR % Uphill Slope	
D - E =	0.8'	0.9 - 1.0'
A - D =	Flat (+/ - 0.1')	



PROFILE D - E - F

NOTES:

1. Details shown are for an outsloped, insloped or flat roadbed without a ditch. Rolling Dips will be constructed in a ditch section by transitioning the ditch invert from normal ditch depth to full Rolling Dip depth between points "B" and "C". Resume ditch construction 20' downgrade from point "A".
2. Rolling Dip outlets will be constructed to drain freely away from road. Any outlet ditching required to accomplish this will be considered incidental to construction of the dip unless otherwise specified.
3. Reconditioning consists of moderate shaping & sloping of an existing dip to drain flows across the road without pooling or the roadway becoming soft.
4. Tolerance Class through the Rolling Dip shall be Class J from Table 203-1, as contained in the accompanying specifications.
5. Slope of the Rolling Dip from point "B" to the outlet shall be equal to the road grade or a minimum of 0.5' drop (whichever is greater).
6. Dimension "G" or "H" shall be a minimum of 50' for road grades up to 5% with an additional 5' of length for each 1% of road grade greater than 5%.
7. Excess excavation material from Rolling Dip construction may be incorporated into the embankment of the road, used to construct an embankment crest downgrade from Line A-D, or spread evenly over the embankment of the road. If crest is constructed, transition on the downgrade side shall equal transition length "H", top of crest to original grade.
8. Contractor shall be required to stake all rolling dips and other drainage facilities.
9. Rock to armor Rolling Dips and their Outlets may be obtained from Purchaser Furnished Sources or hand picked from the area adjacent to the project. Rock shall be angular and well graded with a maximum particle size of 3" unless otherwise approved by the Engineer.

(C) = Construct New
(R) = Recondition Existing

NFSR 794.2B

M.P. LOCATIONS

(C) 0.060
(C) 0.140
(C) 0.962
(C) 1.049
(C) 1.132
(C) 1.273
(C) 1.345
(C) 1.614
(C) 1.893
(C) 2.196
(C) 2.318
(C) 2.551
(C) 2.625

NFSR 828

STATIONS

(C) 3+27
(C) 7+66
(C) 13+78
(C) 16+84
(C) 19+96
(C) 25+66
(R) 30+68
(R) 33+26
(C) 35+48
(C) 38+23
(C) 39+97
(R) 41+66
(C) 43+77
(R) 47+68

NFSR 827

STATIONS

(R) 1+40
(R) 2+33
(C) 4+09
(R) 5+77
(C) 7+46
(C) 8+71
(C) 11+82
(R) 21+52
(C) 24+30
(C) 30+13
(C) 32+57
(C) 39+54
(R) 40+71
(C) 43+80
(C) 47+34

STATIONS

(C) 50+05
(C) 51+37
(C) 54+92
(C) 57+87
(C) 60+69
(C) 64+26
(C) 66+88
(C) 68+93
(C) 71+47
(C) 74+39
(C) 75+97
(R) 78+03
(C) 80+45
(R) 81+71

NFSR 790

STATIONS

(R) 0+84
(R) 1+80
(R) 2+96
(R) 3+85
(R) 5+39
(R) 7+50
(R) 9+50
(R) 12+36
(R) 19+38
(R) 24+29
(R) 34+80

NFSR 788

M.P. LOCATION

(C) 0.338

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: GAG
Drawn: GAG
Checked: PDM
Date: August 2016

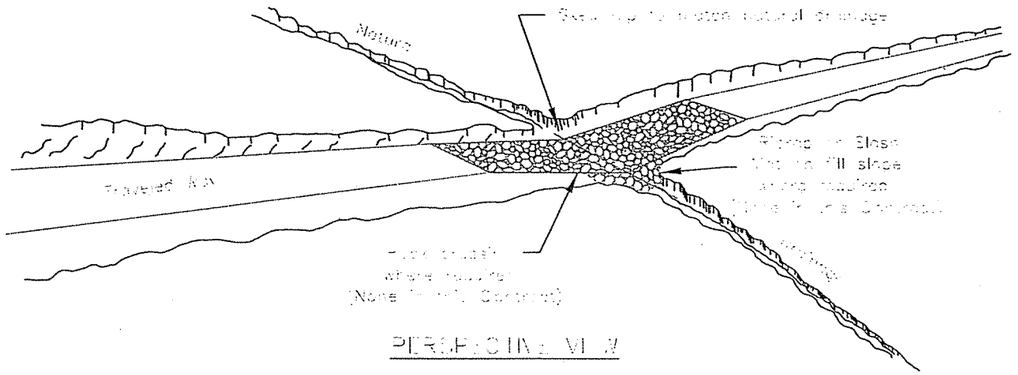
Forest: GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS

Project Name: BIG MEADOWS RE-OFFER TIMBER SALE

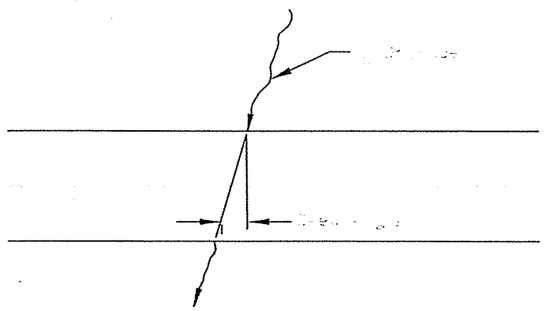
Sheet Title: ROLLING DIP

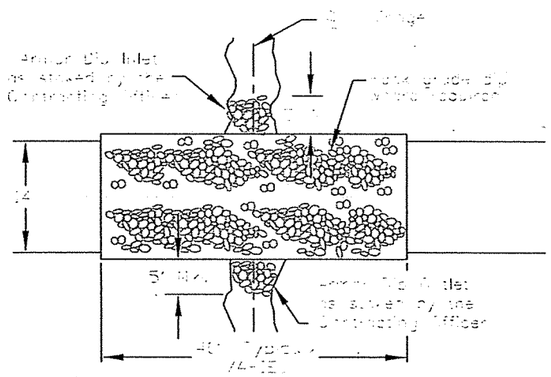
Scale: NOT TO SCALE

Sheet: 6 of 16

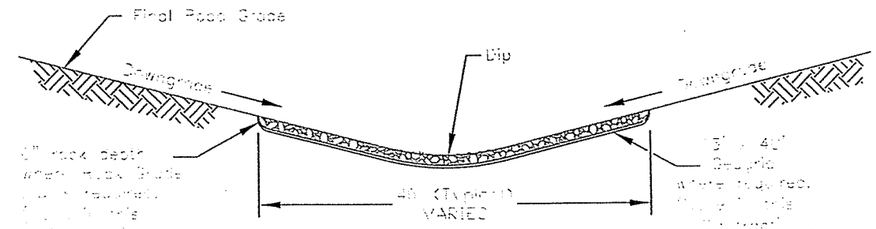


PERSPECTIVE VIEW





PLAN VIEW



PROFILE VIEW

NFSR 828	NFSR 827	NFSR 827.1A
Station	Station	Station
(C) 11+25	(C) 26+68	(C) 15+52
(M) 15+05	(R) 36+45	(C) 18+16
(M) 21+75		(C) 22+55
(R) 27-09		(C) 26+98
(R) 29-20		(C) 28+99
		(C) 31+12
		(M) 33+53

(R) = Reconditioning Existing
(C) = Construct New
(M) = Maintain

NOTES:

1. Details shown are for an outslope, inslope or flat roadbed without a ditch. Grade Dip shall be constructed in a ditch section by transitioning the ditch from normal depth to normal road grade elevation for a sufficient distance to provide drainage.
2. Grade Dips shall be outsloped a minimum of 2% and a maximum of 4%. Tolerance Class through Grade Dips shall be Class J from Table 203-1 as contained in the accompanying specifications.
3. Grade Dip outlets will be constructed to drain freely away from the road. Any outlet ditching required for free drainage will be considered incidental to the construction of the dip unless otherwise specified.
4. Reconditioning consists of moderate shaping and sloping of an existing dip to drain flows across the road without pooling or the roadway becoming soft.
5. Maintaining consists of minor shaping and sloping of an existing dip to drain flows across the road without pooling or softening the roadway.
6. Construct, Recondition, and Maintain Grade Dips along ℄ of existing drainage, not to exceed 30 degree skew angle. All shall function in the same manner.
7. Where Slash Mat outlets are specified, slash material shall be generated from clearing the adjacent areas and compacted as directed in the field.
8. Rock for Rock Grade Dip may be obtained from Purchaser Furnished Sources or hand picked from the area adjacent to the project. Rock shall be angular and well graded with a maximum particle size of 3" unless otherwise approved. by the Engineer.
9. Rock to armor the inlet & outlet, where specified, may be obtained from the project area and may be machine-placed or hand-placed to prevent erosion.

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: GAG
Drawn: GAG
Checked: CDC
Date: August 2016

Forest
GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS

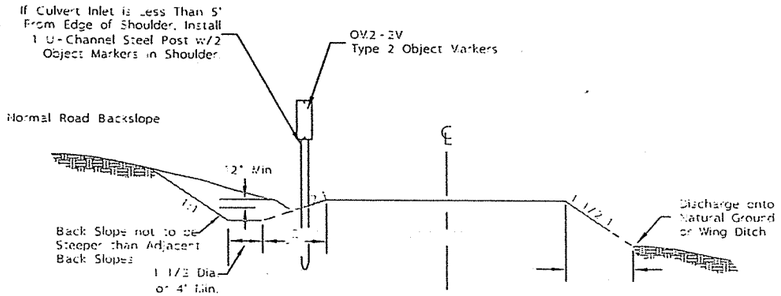
Project Name
BIG MEADOWS RE-OFFER TIMBER SALE

Sheet Title
GRADE DIP

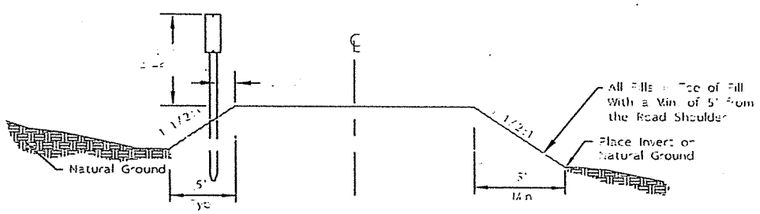
Scale
NOT TO SCALE

Sheet
7 of 16

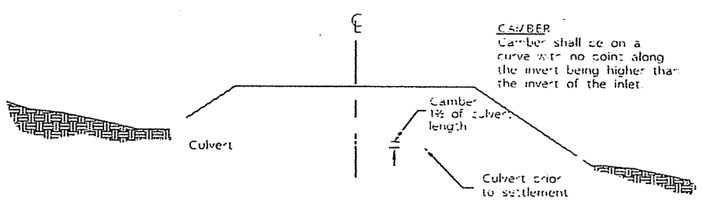
TYPICAL CULVERT INSTALLATIONS



TYPE I - SIDEHILL SECTION

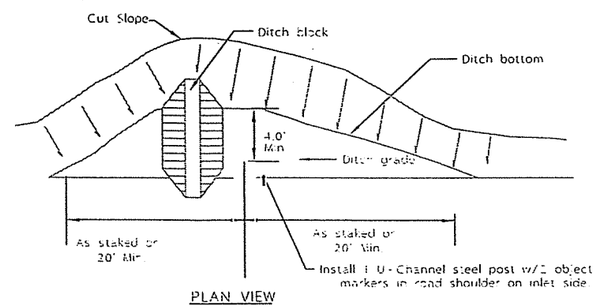


TYPE II - FILL SECTION

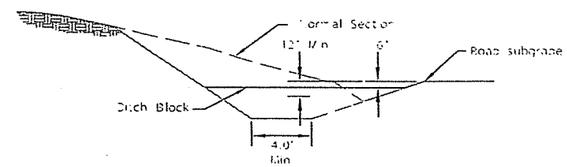


TYPICAL INSTALLATION FOR CAMBER

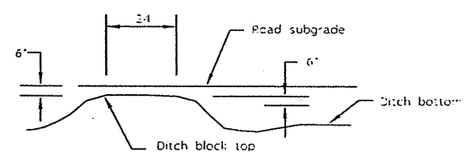
TYPICAL CATCH BASIN DETAILS



PLAN VIEW

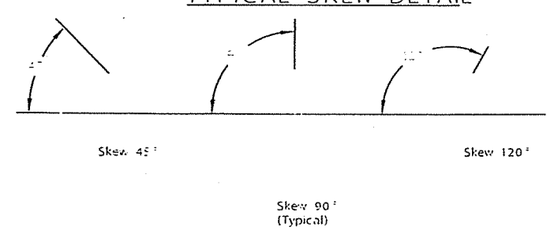


DITCH BLOCK



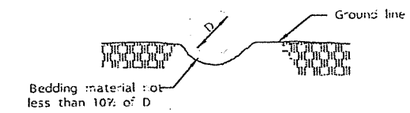
PROFILE ALONG DITCH

TYPICAL SKEW DETAIL

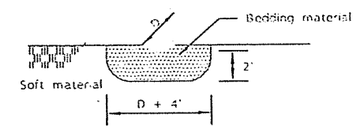


SKEW DIAGRAM

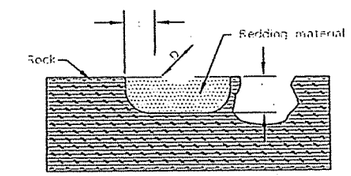
TYPICAL BEDDING DETAILS



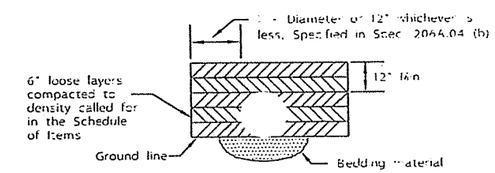
SUITABLE FOUNDATION



YIELDING FOUNDATION



ROCK FOUNDATION



TYPICAL BACKFILL DETAIL

NOTES:

1. Bedding shall be suitable material, uniformly compacted and shaped to fit the bottom of the pipe. Thickness shall be 4" or 10% of pipe diameter, whichever is greater. Material shall be free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material. Maximum particle size is 1/2" or half corrugation diameter, whichever is smaller.
2. Backfill material shall be free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material. Maximum particle size is 1" within 4" of the pipe.
3. Place and compact backfill material to a depth of at least 12" above the top of the pipe. Complete backfilling the trench with suitable roadway excavation or unclassified borrow. Place material in layers that do not exceed 6" in thickness when compacted.
4. Embankment material more than 1' above top of pipe shall be granular, free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material. Maximum particle size is 4".
5. Ditch blocks shall be constructed where necessary to divert flow from ditch lines into culverts and shall be 6" lower than the top of the traveled way.
6. Construct trenches for culverts being placed in embankments to a width of one diameter plus one diameter on each side (3 X diameter).

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: DWA
Drawn: GAG
Checked CDC
Date August 2016

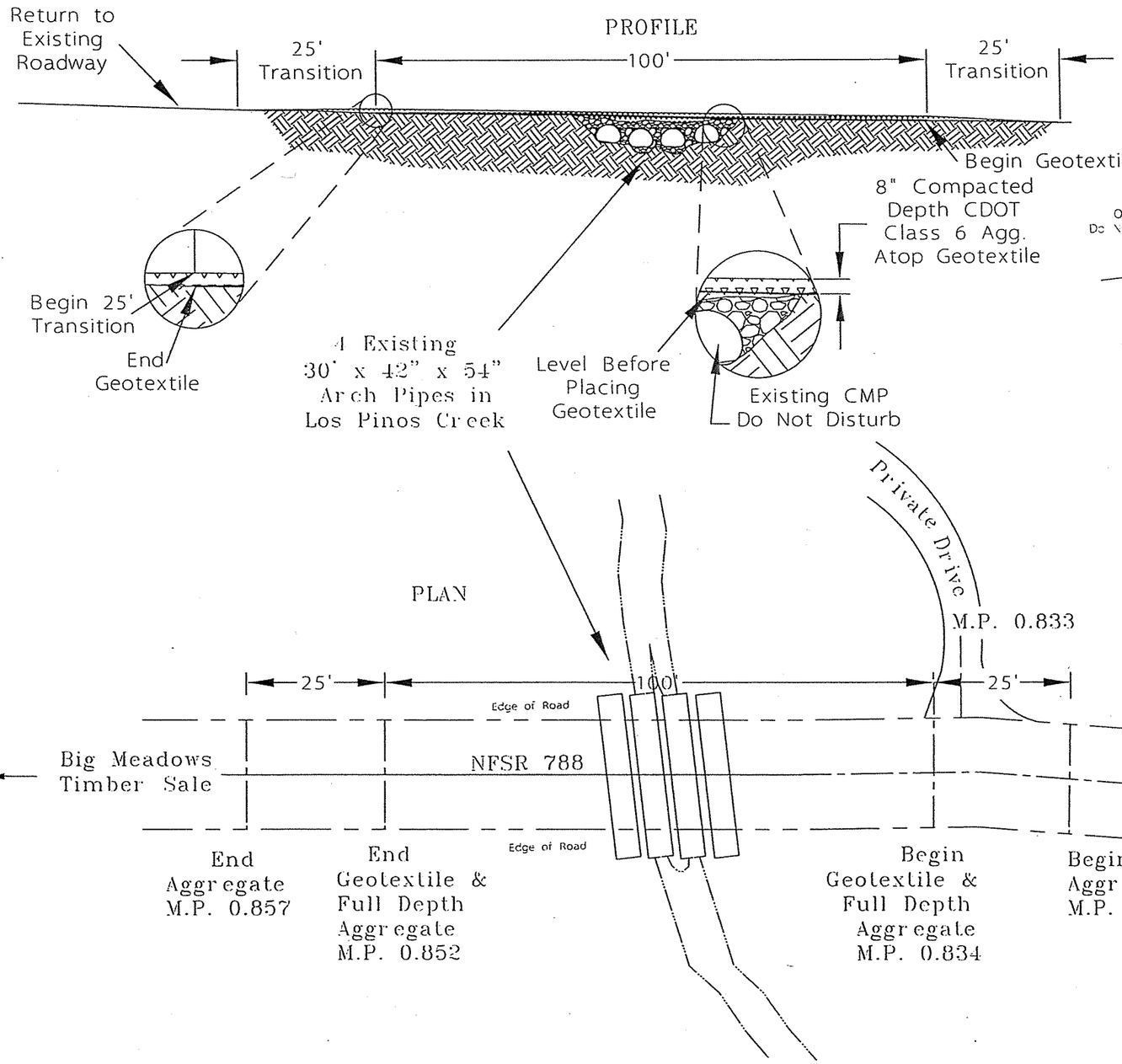
Forest
GRAND MESA, UNCOMPAHGRE AND GUNNISON NATL. FORESTS

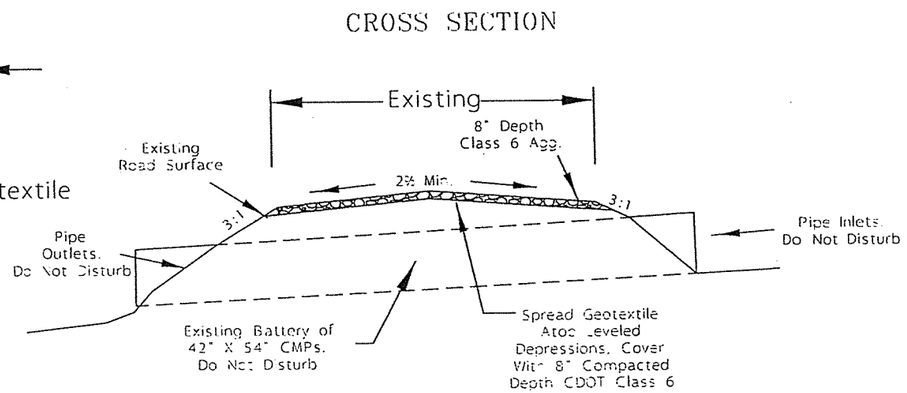
Project Name
BIG MEADOWS RE-OFFER TIMBER SALE

Sheet Title
TYPICAL CULVERT INSTALLATION

Scale
NOT TO SCALE

Sheet
8 of 16

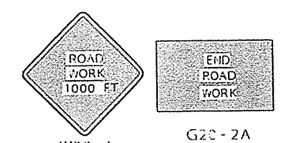




GENERAL NOTES

1. Furnish, deliver & place approximately 60 cubic yards of CDOT Class 6 aggregate and 100 linear feet of Type III-A Geotextile.
2. Fill depressions between the pipes with a small quantity of CDOT Class 6 aggregate before spreading geotextile on surface.
3. Transition to full compacted depth of 8" in 25' of roadway and transition back to existing roadway in 25' beyond area to be covered with geotextile and full depth of aggregate.
4. Place geotextile a minimum of 14' wide by 100' in length across the area as staked in the field by the Engineer.
5. Shape the adjacent driveway at M.P. 0.833 so it is drivable in a low clearance vehicle.
6. Call the Utilities Location Service before performing any earth work here or at the Rolling Dip and ditching around M.P. 0.338.

Furnish traffic control devices whose designs & configurations conform to the MUTCD. All traffic control devices shall meet the requirements of American Traffic Safety Services Association (ATSSA) "Quality Guidelines for Temporary Traffic Control Devices and Features".



W20-1 36" X 36" G20-2A 36" X 18"

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U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
R-2
ROCKY MOUNTAIN REGION

Designed: GAG
Drawn: GAG
Checked: PDM
Date August 2016

Forest
GRAND MESA, UNCOMPAHGRE & GUNNISON NATIONAL FORESTS

Project Name
BIG MEADOWS RE-OFFER TIMBER SALE

Sheet Title
LOS PINOS CREEK CROSSING

Scale
NOT TO SCALE

Sheet
9 of 16

NFSR 788 – BIG MEADOWS RE-OFFER TIMBER SALE ROAD LOG

O\NFS\GMUG\Project\GURD\7100eng_projects\timber_sales\Big_Meadows ReOffer_road_log (Los Pinos/Old Agency)

Kilo / M.P.	Pay Item	Quantities	Template	Description
0.0 / 0.000 For Location Referencing				Cattleguard Above Old Agency Ranch. Call "811" for Utilities to be Located Where Roadway will be Disturbed Ahead.
0.625 / 0.338	203.17(a)	1 Ea.		Construct Rolling Dip, Lt. Construct Ditch to Drain From Rt., Begin Ditch Both Sides, 1' Depth, 3:1 Slope. Incorporate Excavation Into Roadway
0.663 / 0.412	203.18(c)	340 L.F.		End Ditch, Lt., Gate on Lt.
0.675 / 0.419	203.18(c)	430 L.F.		End Ditch, Rt.
1.052 / 0.654				Begin Fringe Clearing, Both Sides
1.123 / 0.698	201.02	230 L.F.		End Fringe Clearing, Rt.
1.140 / 0.708	201.02	285 L.F.		End Fringe Clearing, Lt.
1.334 / 0.829				Begin 25' Taper to 8" Full Depth CDOT Class 6 Aggregate atop Geotextile. See Sheet 9 of 16.
1.341 / 0.833				Private Drive, Rt. – Shape to Drain
1.356 / 0.843	321.14	1 Ea. (60 cy agg. 200 sy geo)		Los Pinos Creek Crossing – Four Existing 42" x 54" CMPs. Level Ruts Prior to Placement of Geotextile. This Item Includes Materials, Equipment and Labor.
1.379 / 0.857				End 8" Depth Aggregate in 25' Taper
1.854 / 1.152				Existing 16' Cattleguard
2.660 / 1.653				Intersection NFSR 790 (County Road 8EE), Lt.

NFSR 790 – BIG MEADOWS RE-OFFER TIMBER SALE ROAD LOG

O\NFS\GMUG\Project\GURD\7100eng_projects\timber_sales\Big_MeadowsReOffer_road_log (Blue Park)

Kilo. / M.P.	Pay Item	Quantities	Template	Description
0.000 / 0.000				Intersection 788 @ M.P. 1.653, Begin this Segment. Template Remains as it Exists.
0.771 / 0.479	618.04 618.05	1 Ea. 1 Ea.		Clean Existing 18" CMP In Place, Excavate Outlet
1.463 / 0.909	618.05	1 Ea.		Existing 18" CMP, Clean Outlet
1.651/ 1.206	618.05 251.01	1 Ea. 2 CY		Existing 18" CMP, Clean Catch Basin, Straighten Inlet, Riprap Outlet
1.859 / 1.155	618.05	1 Ea.		Existing 18" CMP, Clean Outlet
2.307 / 1.266	618.05 203.18(b)	1 Ea. 20 LF		Existing 18" CMP, Clean Catch Basin, Clean Leadout Furrow Ditch Above Pipe Outlet
2.230 / 1.386	618.05	2 Ea.		Existing 18" CMP, Clean Inlet, Reconstruct Catch Basin
2.483 / 1.543	203.18(b)	40 LF		Existing 18" CMP, Clean Inlet & Outlet Furrow Ditch
2.547 / 1.583	618.05 203.18(b)	2 Ea. 20 LF		Existing 18" CMP, Clean Inlet & Outlet, Clean Inlet Furrow Ditch
2.629 / 1.634	618.05 203.18(b)	3 Ea. 20 LF		Existing 18" CMP, Clean Catch Basin, Inlet & Outlet, Clean Outlet Furrow Ditch
3.000 / 1.864	618.05	1 Ea.		Existing 18" CMP, Clean Inlet
3.438 / 2.136	618.05	3 Ea.		Existing 18" CMP, Clean Catch Basin, Inlet & Outlet
3.681 / 2.287	203.18(b)	50 LF		Clean Furrow Ditch, Lt.
3.872 / 2.406	618.05	2 Ea.		Existing 30" CMP, Clean Inlet & Outlet
5.123 / 3.183	618.05	1 Ea.		Existing 30" CMP, Clean Outlet
5.733 / 3.562	618.05	1 Ea.		Existing 18" CMP, Clean Outlet
5.818 / 3.615	203.18(b)	50 LF		Clean Furrow Ditch, Lt.
6.189 / 3.486	618.05	2 Ea.		Existing 18" CMP, Clean catch Basin & Outlet
6.350 / 3.946	618.05	2 Ea.		Existing 18" CMP, Clean Catch Basin & Outlet
6.439 / 4.001	203.18(b)	30 LF		Clean Furrow Ditch, Lt.
7.600 / 4.722	618.05	1 Ea.		Existing 18" CMP, Clean & Straighten Inlet
7.690 / 4.778	203.18(b)	30 LF		Clean Furrow Ditch, Lt.
8.294 / 5.154	618.04 618.05 203.18(b)	1 Ea. 2 Ea. 20 LF		Clean Existing 18" CMP In Place, Clean Catch Basin & Inlet, Clean Outlet Furrow Ditch
8.625 / 5.359	618.05	1 Ea.		Existing 18" CMP, Clean Catch Basin
8.909 / 5.536	618.05	2 Ea.		Existing 30" CMP, Clean Inlet & Outlet
9.640 / 5.990	618.05	2 Ea.		Existing 18" CMP, Clean Catch Basin & Inlet
11.332 / 7.041	618.05	1 Ea.		Existing 18" CMP, Clean Outlet
11.647 / 7.237	203.18(b)	20 LF		Existing 18" CMP, Clean Outlet Furrow Ditch
12.673 / 7.875	203.18(b)	40 LF		Existing 18" CMP, Clean Inlet & Outlet Furrow Ditch
13.409 / 8.332	603.01(18)	30 LF		Replace Existing 18" CMP, Shape to Drain
13.485 / 8.379	603.01(18)	30 LF		Replace Existing 18" CMP, Shape to Drain
16.517/10.263				Intersection NFSR 794.2B, Lt., End this Segment

NFSR 794.2B – BIG MEADOWS RE-OFFER TIMBER SALE ROAD LOG

O\NFS\GMUG\Project\GURD\7100eng_projects\timber_sales\Big_MeadowsReOffer_road_log (Big Meadows Road)

Mile Post	Pay Item	Quantities	Template	Description
0.000	306.01	2.62 Mi.		Begin Reconditioning – Intersection NFSR 790 (Mild Grading, Very Light Fringe Clearing) Template Remains as it Exists
0.018				Route Marker, Rt. – Protect
0.060	203.17(a)	1 Ea.		Construct Rolling Dip, Rt.
0.089	306.01			Existing 18" CMP – No Action (Cut Ditch Block)
0.140	203.17(a)	1 Ea.		Construct Rolling Dip, Rt.
0.227	618.05	2 Ea.		Existing 18" CMP, Clean Catch Basin/Inlet
0.343	306.01			Existing 18" CMP – No Action (Cut Ditch Block)
0.377				"Big Meadows" Sign, Rt. - Protect
0.497	618.05	2 Ea.		Existing 18" CMP, Clean Inlet & Outlet
0.620	618.05	1 Ea.		Existing 18" CMP, Clean Inlet
0.753	618.04	1 Ea.		Existing 18" CMP, Hydraulically Clean In Place
0.908				Existing Multiplate Structure, Pauline Creek
0.962	203.17(a)	1 Ea.		Construct Rolling Dip, Rt.
1.049	203.17(a)	1 Ea.		Construct Rolling Dip, Rt.
1.069	618.05 203.18(b)	1 Ea. 20 LF		Existing 18" CMP, Clean Outlet, Clean Furrow Ditch 20'
1.132	203.17(a)	1 Ea.		Construct Rolling Dip, Rt., Ditch to Drain
1.201				Existing "Curve" Sign, Rt. - Protect
1.211	618.05 203.18(b)	1 Ea. 20 LF		Existing 18" CMP, Clean Outlet, Clean Furrow Ditch 20'
1.273	203.17(a)	1 Ea.		Construct Rolling Dip, Rt.
1.331	306.01			Intersection NFSR 828, Rt. – Shape to Drain
1.345	203.17(a)	1 Ea.		Construct Rolling Dip, Lt.
1.400	306.01			Existing 18" CMP – No Action (Cut Ditch Block)
1.415				Existing "Curve" Sign, Rt. - Protect
1.0480	251.01	2 CY		Existing 18" CMP, Armor Outlet W/2 CY Riprap
1.536				Existing 14' Cattleguard – No Action
1.567	618.05	1 Ea.		Existing 18" CMP, Clean Outlet
1.614	203.17(a)	1 Ea.		Construct Rolling Dip, Lt.
1.695	306.01			Existing 18" CMP – No Action (Cut Ditch Block)
1.893	203.17(a)	1 Ea.		Construct Rolling Dip, Lt.
2.007	306.01			Existing 18" CMP – No Action (Cut Ditch Block)
2.054	306.01			Intersection NFSR 827, Rt. – Shape to Drain
2.196	203.17(a)	1 Ea.		Construct Rolling Dip, Lt.
2.318	203.17(a)	1 Ea.		Construct Rolling Dip, Lt.
2.469				"Perfecto Creek" Sign, Rt. - Protect
2.479	603.01(36) 203.18(b)	4 LF 20 LF		Existing 36" CMP, Install 4' Outlet Extension, Provide 1' Min. Cover, Borrow From Nearby Cutbank, Clean Furrow Ditch 20'
2.551	203.17(a)	1 Ea.		Construct Rolling Dip, Lt.
2.625	203.17(a)	1 Ea.		Construct Rolling Dip, Lt. End This Segment

NFSR 828 – BIG MEADOWS RE-OFFER TIMBER SALE ROAD LOG

O\NFS\GMUG\Project\GURD\7100eng_projects\timber_sales\Big_MeadowsReOffer_road_log (West Spur Big Meadows)

Station/ Section #	Pay Item	Quantities	Template	Description
0+00	306.01	0.97 Mi.		Intersection 794.2B. Begin Reconstruction. Template Remains as it Exists.
1+58/Sec 10	202.02	1 Ea.		Slash Removal
3+27/Sec 15	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
3+75/Sec 16	202.02	1 Ea.		Slash Removal
4+80/Sec 20	618.05 203.18(c)	2 Ea. 154 LF		Culvert, Live Drain, Clean Inlet & Outlet Begin Cleaning Shoulder Ditch
5+02/Sec 22	202.02	1 Ea.		Slash Removal
5+86/Sec 25	618.05	2 Ea.		Culvert, Live Drain, Clean Inlet & Outlet
6+34/Sec 27				End Ditch Cleaning
7+66/Sec 30	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
9+45/Sec 35	202.02	1 Ea.		Slash Removal
11+25/Sec 40	203.17(e)	1 Ea.		Construct GRADE Dip, Rt.
11+88/Sec 41	202.02	1 Ea.		Slash Removal
12+41/Sec 45	618.05	2 Ea.		Culvert, Live Drain, Clean Inlet & Outlet
13+78/Sec 50	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
15+05/Sec 55	203.17(f)	1 Ea.		Maintain EXISTING GRADE Dip, Rt.
15+84/Sec 56	202.02	1 Ea.		Slash Removal
16+84/Sec 60	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
18+43/Sec 65	202.02	1 Ea.		Slash Removal
19+96/Sec 70	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
21+75/Sec 75	203.17(f)	1 Ea.		Maintain EXISTING GRADE Dip, Rt.
23+13/Sec 80	202.02	1 Ea.		Slash Removal
24+08/Sec 85	202.02	1 Ea.		Slash Removal
25+66/Sec 90	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
27+09/Sec 95	203.17(d)	1 Ea.		Recondition GRADE Dip, Rt.
29+20/Sec 100	203.17(d)	1 Ea.		Recondition GRADE Dip, Rt.
30+04/Sec 101	202.02	1 Ea.		Slash Removal
30+68/Sec 105	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Rt.
33+26/Sec 110	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Rt.
35+48/Sec 115	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
37+22/Sec 120	618.05	2 Ea.		Culvert, Clean Inlet & Outlet
38+23/Sec 125	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
39+97/Sec 130	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
41+66/Sec135	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Rt.
43+77/Sec 140	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
45+25/Sec 145	618.05	2 Ea.		Culvert, Clean Inlet & Outlet
47+04/Sec 150	202.02	1 Ea.		Slash Removal
47+68/Sec 151	203.17(c) 251.01	1Ea. 2 C.Y.		Reconstruct Existing Rolling Dip, Rt. Armor Outlet
50+16/Sec 160	202.02	1 Ea.		Slash Removal
51+53/Sec 165	202.02	1 Ea.		Slash Removal / Reconstruct Turnaround

NFSR 827 – BIG MEADOWS RE-OFFER TIMBER SALE ROAD LOG

O\NFS\GMUG\Project\GURD\7100eng_projects\timber_sales\Big_MeadowsReOffer_road_log Logged 8/26/2015 – Goehl & Gantt (Long Spur)

Station/ Section #	Pay Item	Quantities	Template	Description
0+00	306.01 203.18(a)	2.48 Mi. 224 LF		Intersection with NFSR 794.2B. Begin Reconstruction. Reshape Intersection to Allow Traffic Flow to Rt., Construct Furrow Ditch Both Sides to Drain to 794.2B Borrow Ditches.
0+52				Carsonite Route Marker on Steel Post, Rt. Protect.
1+12				End ditch both sides.
1+40	203.17(c)	1 Ea.	Outslope, Rt.	Recondition Existing Rolling Dip, Rt.
2+33	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Rt. Extend Leadout Ditch 20' (Included)
4+09	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
5+77	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Rt.
7+46	203.17(a)	1 Ea.	Inslope, Lt	Construct NEW Rolling Dip, Rt.
8+71	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
11+82	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
13+38	203.18(b)	30 LF	Crown, Clean Both Ditches	Clean Furrow Ditch, Rt. 30'
14+09	203.18(b)	30 LF		Clean Furrow Ditch, Lt. 30'
15+98	203.18(a)	50 LF		CONSTRUCT Furrow Ditch, Rt. 50'
18+40	203.17(a)	1 Ea.	Outslope, Lt.	Construct NEW Rolling Dip, Lt.
21+52	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
24+30	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
26+68	203.17(e) 203.18(b)	1 Ea. 30 LF		Construct GRADE DIP, Lt. Clean Furrow Ditch
30+13	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt.
32+57	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt.
33+21	203.18(b)	30 LF		Clean Furrow Ditch, Rt. 30'
36+45	203.17(d)	1 Ea.		Recondition Existing Grade Dip, Rt.
38+42				Intersection 827.1A, Lt., Shape to Drain
39+54	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Rt.
40+71	203.17(c)	1 Ea.	Crown, Clean Both Ditches	Recondition Existing Rolling Dip, Rt.
43+80	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt., Drain Both Ditches
47+34	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt., Drain Both Ditches
50+05	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt., Drain Both Ditches
51+37	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt., Drain Into Existing Furrow Ditch
52+16				Intersection NFSR 827.1E, Rt. No Action
52+69	203.18(b)	30 LF		Clean Furrow Ditch, Lt. 30'
54+92	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt., Drain Both Ditches (Included)
57+87	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt., Drain Into Existing Furrow Ditch
60+69	203.17(a) 203.18(b)	1 Ea. 30 LF		Construct NEW Rolling Dip, Lt., Drain Into Existing Furrow Ditch Extend Furrow Ditch 30'

NFSR 827 – BIG MEADOWS RE-OFFER TIMBER SALE ROAD LOG

O\NFS\GMUG\Project\GURD\7100eng_projects\timber_sales\Big_MeadowsReOffer_road_log (Long Spur)

Station/ Section #	Pay Item	Quantities	Template	Description
61+89	203.18(b)	60 LF		Clean Furrow Ditches, Both Sides, 30'
64+26	203.17(a)	1 Ea.	Inslope, Rt.	Construct NEW Rolling Dip, Lt.
66+88	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt.
68+93	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt.
71+47	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt.
74+39	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt.
75+97	203.17(a)	1 Ea.	Outslope, Lt	Construct NEW Rolling Dip, Lt.
78+03	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
80+45	203.17(a)	1 Ea.		Construct NEW Rolling Dip, Lt.
81+71	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
83+50				Intersection NFSR 827.1D, Rt. No Action

NFSR 827.1A – BIG MEADOWS RE-OFFER TIMBER SALE ROAD LOG

O\NFS\GMUG\Project\GURD\7100eng_projects\timber_sales\Big_MeadowsReOffer_road_log (Perfecto Spur)

Station/ Section #	Pay Item	Quantities	Template	Description
0+00/Sec 0	306.01	0.67 Mi.		Intersection 827.0. Begin Reconstruction. Template Remains as it Exists.
0+84/Sec 5	203.17(c)	1 Ea.	Outslope Lt.	Recondition Existing Rolling Dip, Lt. (Most are old style Tank Trap Remnants)
1+80/Sec 10	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
2+96/Sec 15	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
3+85/Sec 20	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
5+39/Sec 25	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
7+50/Sec 30	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
8+71				Existing Landing
9+50/Sec 35	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
12+36/Sec 40	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
15+52/Sec 45	203.17(e)	1 Ea.		Construct GRADE Dip, Lt.
18+16/Sec 50	203.17(e)	1 Ea.		Construct GRADE Dip, Lt.
19+38/Sec 55	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
21+01				Existing Landing
22+55/Sec 60	203.17(e)	1 Ea.		Construct GRADE Dip, Lt.
24+29/Sec 65	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
26+98/Sec 70	203.17(e)	1 Ea.		Construct GRADE Dip, Lt.
28+99/Sec 75	203.17(e)	1 Ea.		Construct GRADE Dip, Lt.
31+10/Sec 80	203.17(e)	1 Ea.		Construct GRADE Dip, Lt.
33+53/Sec 85	203.17(f) 251.01	1 Ea. 4 CY		Maintain Existing GRADE Dip, Lt. Armor Outlet 4 CY
34+80/Sec 90	203.17(c)	1 Ea.		Recondition Existing Rolling Dip, Lt.
35+64				End Reconstruction