

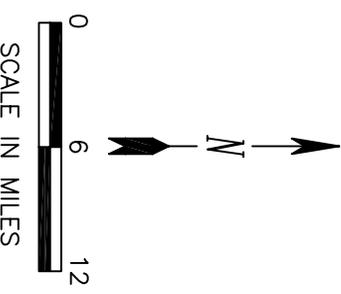
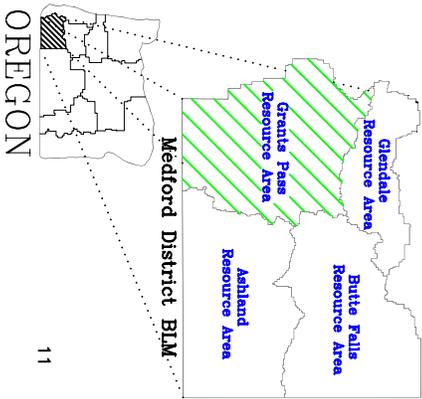
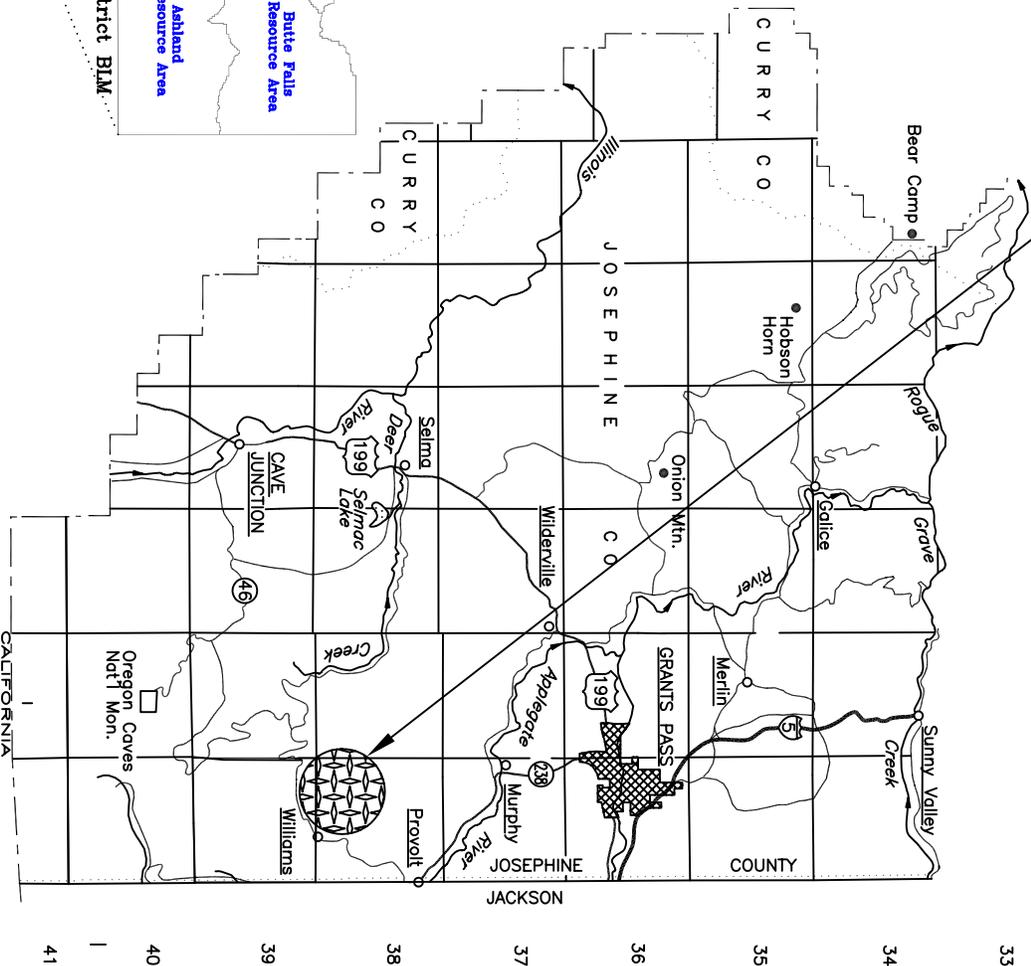


UNITED STATES DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 MEDFORD DISTRICT GRANTS PASS RESOURCE AREA

SHEET 1 OF 13

CHINA CREEK ROAD RESTORATION

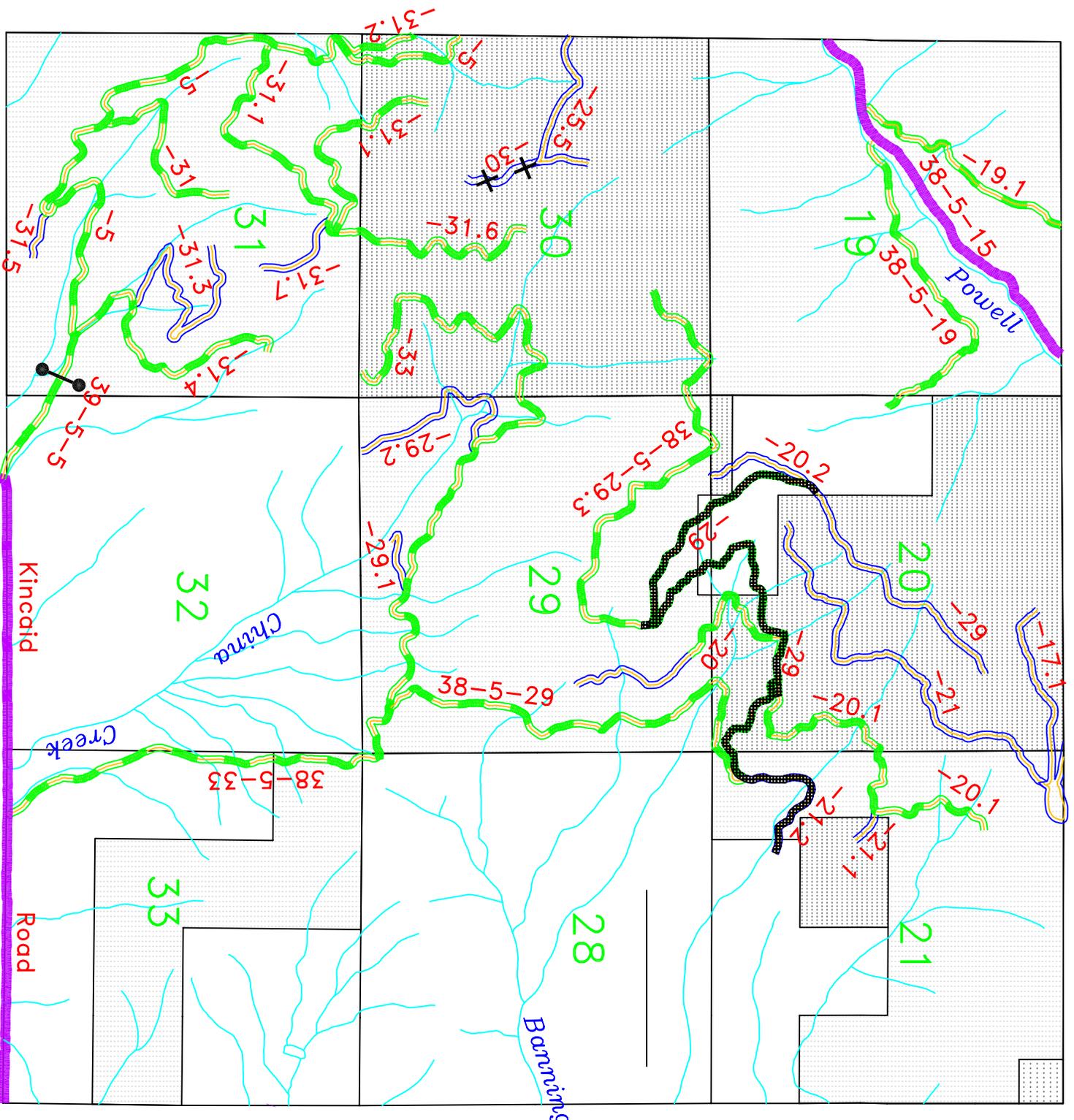
Title Sheet
Project Map
Site Map
Specification Work Sheet
Renovation Work List
Roadside Brushing Detail
Drainage & Erosion Control Installation
Culvert Installation Details
Culvert Band Detail
Steel Pipe Gate Fabrication and Installation Specifications



UNITED STATES DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 MEDFORD DISTRICT - MEDFORD, OREGON

TITLE SHEET

DESIGNED	BLM	SCALE AS SHOWN
REVIEWED		
APPROVED		
DRAWN	JWR	
DATE	April 2003	SHEET 1 OF 13
DRAWING NO.	OR 117-390721-01	

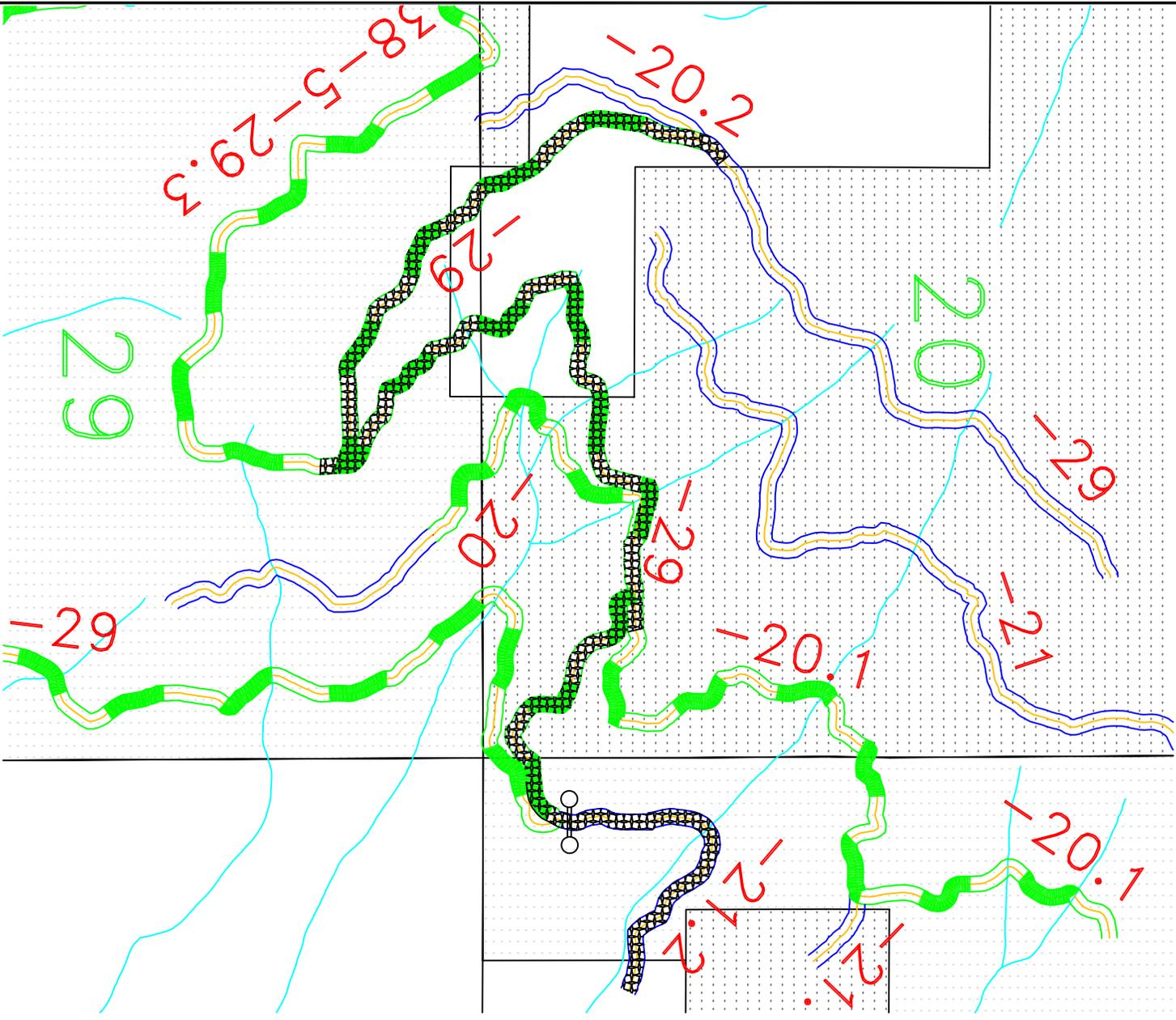


REV. NO.	DESCRIPTION	DATE	APPROVED
1	DESIGNED		
2	REVIEWED		
3	DRAWN		
4	DATE		
5	DRAWING NO.		

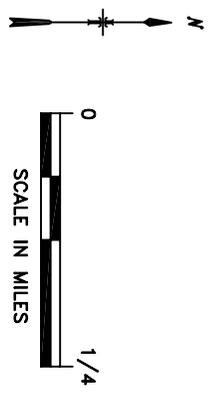
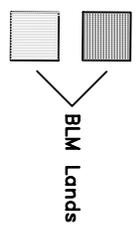
DESIGNED	BLM
REVIEWED	JMB
DRAWN	DCM
DATE	April 2005
DRAWING NO.	08-11-913A-2

UNITED STATES DEPARTMENT OF THE INTERIOR	BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT	MEDFORD, OREGON
CHINA CREEK ROAD RESTORATION PROJECT MAP	
SCALE	AS SHOWN
SHEET	2 OF 13

CHINA CREEK ROAD RESTORATION
SITE MAP



- LEGEND
- Existing Gate
 - Gate To Be Installed
 - Rock Surface Road
 - Natural Surface Road
 - Paved Road
 - Roads to be Restored



REV. NO.	DESCRIPTION	DATE	APPROVED
1	CHINA CREEK ROAD RESTORATION SITE MAP		

DESIGNED: BLM
 REVIEWED: JMS
 APPROVED: JMS

UNITED STATES DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT
 MEDFORD DISTRICT
 MEDFORD, OREGON

CHINA CREEK ROAD RESTORATION
 SITE MAP

DRAWN: DCJM
 DATE: April 2005
 SCALE: AS SHOWN
 SHEET 3 OF 13
 DRAWING NO. OM-11-913A-3

CHINA CREEK ROAD RESTORATION

Road Renovation Work List

cy = cubic yard
CMP = Corrugated Metal Pipe
EOP = End of Project
CWD = Construct Water Dip
CWB = Construct Water Bar

Milepost

38-5-20.1

0.00 Begin ditch construction on left. Drain to culvert on road 38-5-29.
0.07 EOP. Existing CMP. End ditch construction.

38-5-21.2

0.00 Begin roadside brushing and blading. Junction road 38-5-29 to right.
0.01 Install 18"x36' CMP with lead in ditch.
0.02 Install steel pipe gate.
0.09 CWD with armor.
0.13 CWD with armor.
0.20 Remove and replace existing 18" CMP with 24"x30' CMP with lead in ditch.
0.21 Begin 3x1 ditch on left.
0.24 Remove and replace existing 18" CMP with 24"x30' CMP with lead in ditch.
0.30 Begin CWB's every 100 feet.
0.45 EOP. End CWB's. End roadside brushing and blading.

Milepost

38-5-29

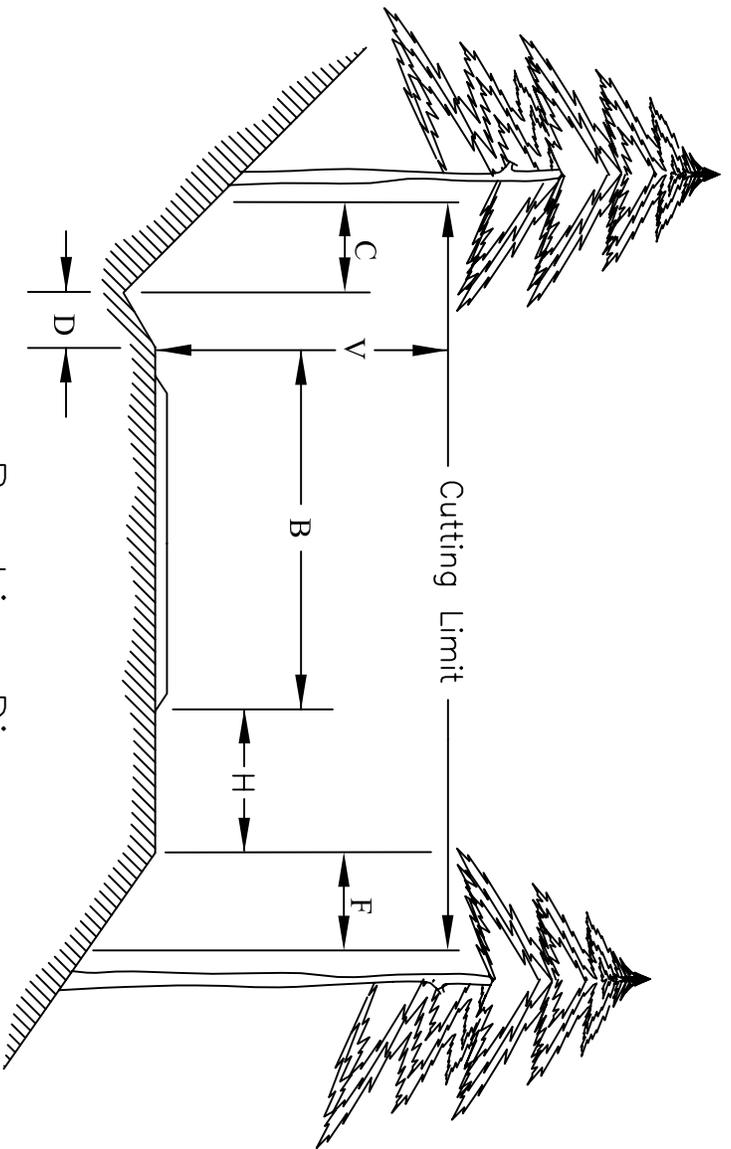
- 1.45 Begin Project. Junction road 38-5-21.2 to right. Begin cleaning ditch.
- 1.49 End cleaning ditch.
- 1.51 CWD with armor.
- 1.60 CWD with armor.
- 1.70 CWD with armor.
- 1.83 Begin roadside brushing and blading. Begin cleaning culverts. Junction road 38-5-20.1 to right.
- 2.13 CWD with armor.
- 2.14 Existing CMP.
- 2.22 Existing CMP.
- 2.25 Existing ditch line culvert. Spur road to right.
- 2.29 Existing CMP.
- 2.38 Existing CMP.
- 2.45 Existing CMP.
- 2.48 CWD with armor.
- 2.58 Existing CMP.
- 2.64 CWD with armor.
- 2.67 Begin existing fill failure. Begin subgrade reconstruction. Reconstruct the existing roadway by shifting alignment to the right. Subgrade width of 16 feet is required with a backslope of $\frac{3}{4} : 1$. Reconstruct fill failure to $1 \frac{1}{2} : 1$ slope. Begin aggregate placement @ 6" depth. Begin inslope to ditch.
- 2.68 End existing fill failure and subgrade reconstruction.
- 2.69 End road shift to right. Junction road 38-5-29.3 left.
- 2.74 CWD with armor. End inslope.
- 2.80 Existing CMP.
- 2.90 CWD with armor.
- 2.91 Existing CMP.
- 2.99 CWD with armor.
- 3.00 Existing CMP.

Milepost

- 3.07 Install 18"x36' CMP.
- 3.11 Existing CMP.
- 3.17 Existing CMP.
- 3.20 CWD with armor.
- 3.27 Existing CMP.
- 3.30 CWD with armor.
- 3.35 Existing CMP.
- 3.41 Junction road 38-5-20.2 to left.
- 3.43 EOP. End roadside brushing and blading. End aggregate placement.

38-5-29.3

- 0.00 Begin roadside brushing and blading. Begin existing ditch and aggregate surface. Existing CMP.
- 0.02 CWD with armor.
- 0.06 EOP. Existing CMP. End ditch.



Brushing Diagram

Cutting Limit = C + D + B + H + F

B = Basic lane width (includes turnouts)
Width shall be determined by the PI

C = $\frac{4}{3}$ ft - Distance to be brushed on cut slope beyond centerline of ditch

D = Centerline of ditch to inside shoulder

H = Variable distance between edge of basic lane and outside shoulder (does not include turnout widths)

F = Distance to be brushed on fill slope beyond outside shoulder

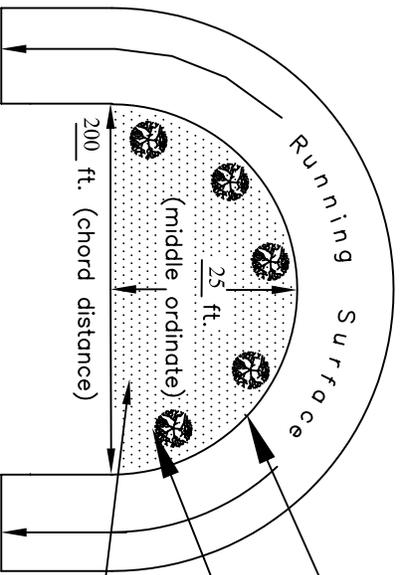
(F = $\frac{4}{3}$ when H is $\frac{4}{3}$ ft or less)

(F = 0 when H is greater than $\frac{4}{3}$ ft)

V = 14 ft - Height of vertical cutting limit

Typical Basic lane widths

- One lane low traffic volume 12 to 16 ft
- One lane medium traffic volume . . 16 to 20 ft
- Two lane high volume traffic 20 to 40 ft
- Turnouts 10 ft



Sight Distance Diagram

Thin, space and prune trees through curved sections of road for visibility as shown. Thinning and spacing of trees shall be a minimum (10) feet apart. A minimum (1/3) tree crown shall be maintained on any pruned tree.

Inside shoulder

Area to be cut

NOTES:

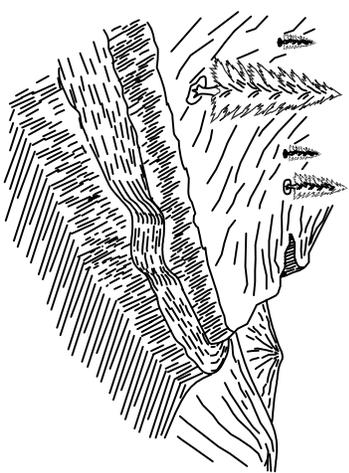
Cutting and Removal of vegetation from ditches and roadway is incidental to brushing within cutting limits.

All distances shown are horizontal except for V

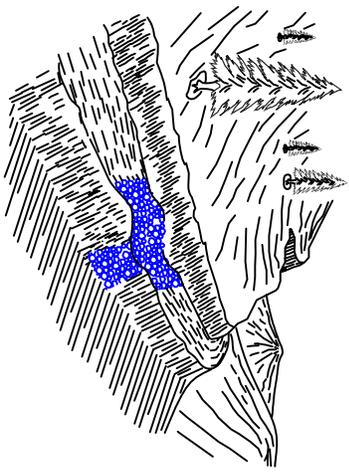
DESIGNED	BLM	DATE	APPROV.
REVIEWED			
APPROVED			
DRAWN	RRB	SCALE	NONE
DATE	April 2003	SHEET	8 OF 13
DRAWING NO.	OR-11-9113.4-8		

ROADSIDE BRUSHING
DETAIL

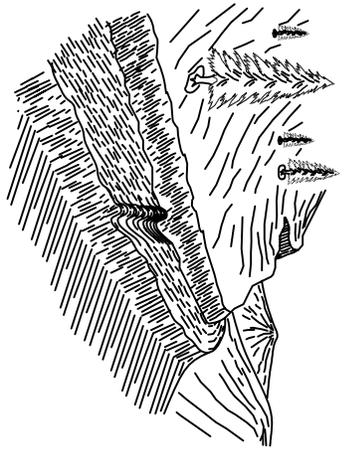
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT — MEDFORD, OREGON



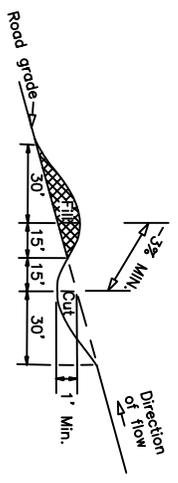
WATER DIP



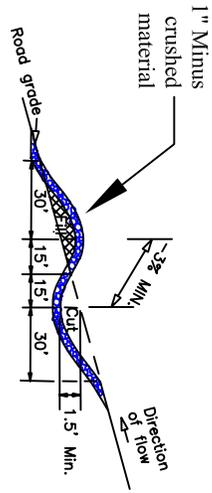
ARMORED WATER DIP



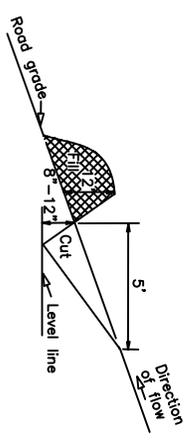
WATER BAR



1. WATER DIPS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE CONTRACTING OFFICER PRIOR TO CONSTRUCTION.
3. ALL WATER DIPS SHALL BE SKEWED 30 DEGREES.
4. THE LENGTH SHALL BE SUFFICIENT TO EXTEND FROM THE CUT BANK TO THE FILL SLOPE AND BE READILY CROSSED BY HIGH CLEARANCE TYPE VEHICLES.

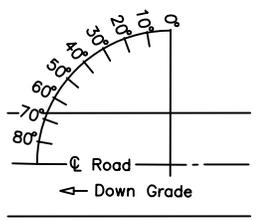


1. WATER DIPS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE CONTRACTING OFFICER PRIOR TO CONSTRUCTION.
3. ALL WATER DIPS SHALL BE SKEWED 30 DEGREES.
4. THE LENGTH SHALL BE SUFFICIENT TO EXTEND FROM THE CUT BANK TO THE FILL SLOPE AND BE READILY CROSSED BY HIGH CLEARANCE TYPE VEHICLES.



1. WATER BARS SHALL BE CONSTRUCTED AS SHOWN ABOVE.
2. EXACT LOCATION WILL BE FLAGGED BY THE CONTRACTING OFFICER PRIOR TO CONSTRUCTION.
3. ALL WATER BARS SHALL BE SKEWED 30 DEGREES.

SKEW DIAGRAM



NOTE:

1. All armored water dips shall be rocked the entire width & length to a depth of 6".

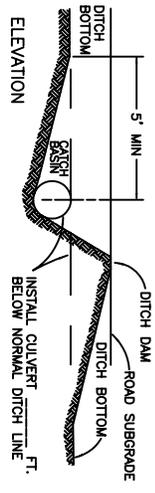
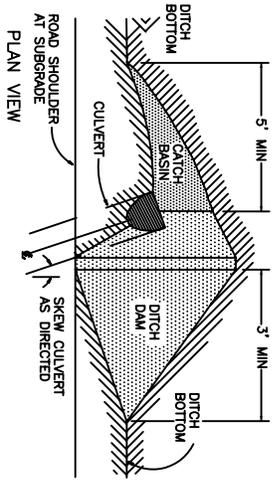
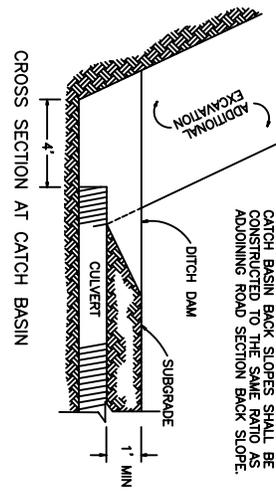
REV. NO.	DESCRIPTION	DATE	APPROV.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT - MEDFORD, OREGON

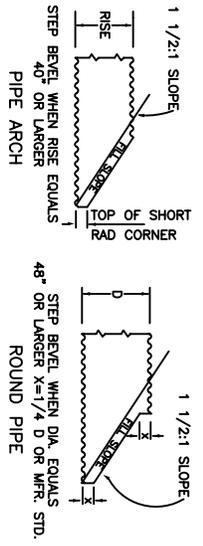
DRAINAGE & EROSION CONTROL INSTALLATION

DESIGNED	BLM
REVIEWED	JWR
APPROVED	
DRAWN	DCM
DATE	April 2003
DRAWING NO.	OR-11-9113.4-9
SCALE	NONE
SHEET	9 OF 13

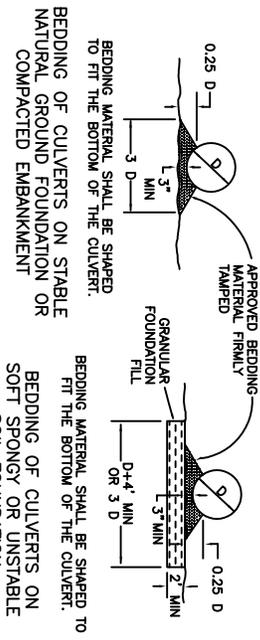
CATCH BASIN BACK SLOPES SHALL BE CONSTRUCTED TO THE SAME RATIO AS ADJOINING ROAD SECTION BACK SLOPE.



CATCH BASIN



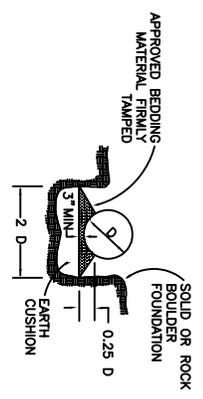
BEVELED END DETAIL



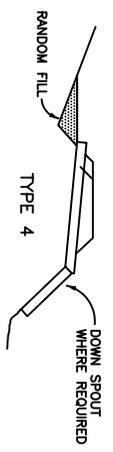
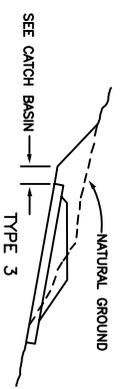
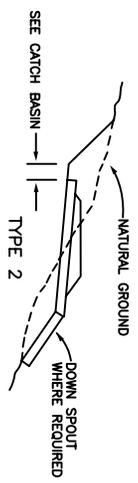
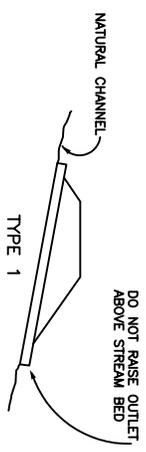
BEDDING OF CULVERTS

BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT.

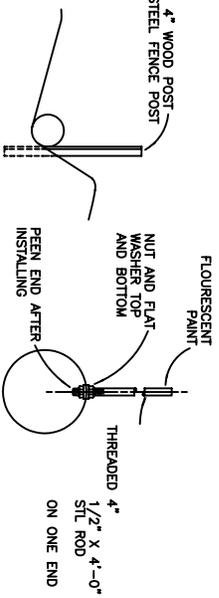
BEDDING OF CULVERTS ON SOFT SPONGY OR UNSTABLE SOIL FOUNDATION



BEDDING MATERIAL SHALL BE SHAPED TO FIT THE BOTTOM OF THE CULVERT. EARTH CUSHIONING OF SILTY CLAY LOAM OR SAND MAY BE USED IF MATERIAL CAN BE PLACED IN THE DRY CONDITION. IF THE EXCAVATION IS WET, USE GRANULAR FOUNDATION FILL MATERIAL. MINIMUM OF 1/2" DEPTH BETWEEN HIGH POINTS OF ROCKS AND/OR BOULDERS AND THE BOTTOM OF THE CULVERT.

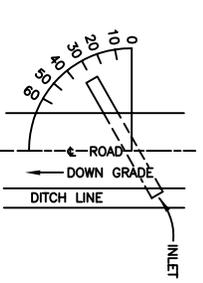


CULVERT INSTALLATION TYPES



CULVERT MARKER INSTALLATION

INSTALL MARKERS NOT MORE THAN 6" BACK FROM END OF CULVERT



SKREW DIAGRAM

THE GRADE OF CROSSBRANS SHALL BE AT LEAST 2% GREATER THAN THE GRADE OF THE DITCH.

REV. NO.	DESCRIPTION	DATE	APPROV.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT - MEDFORD, OREGON

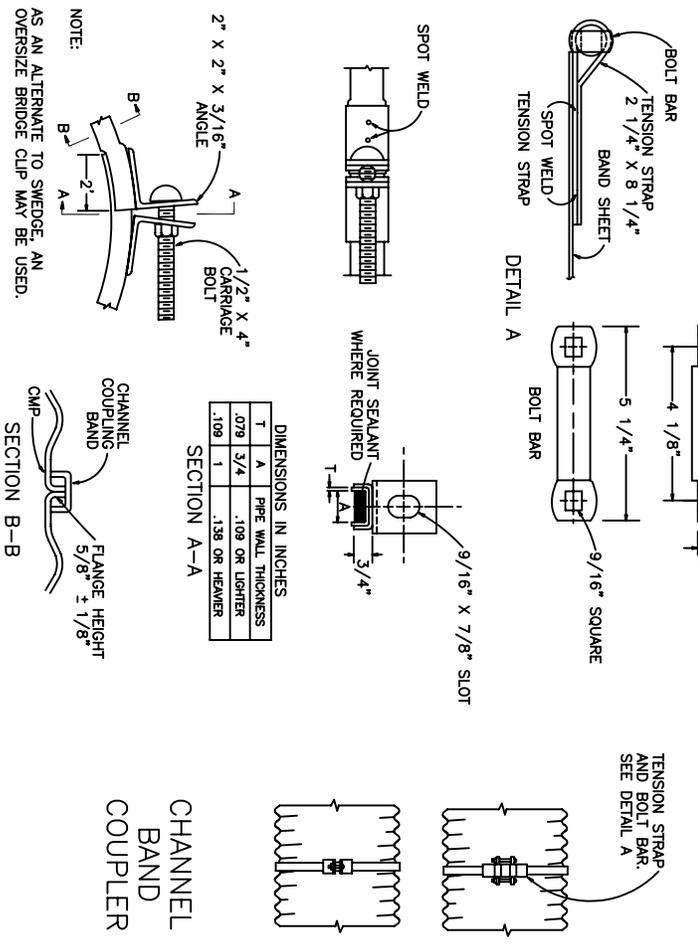
CULVERT INSTALLATION DETAILS

DESIGNED: BLM
REVIEWED: JWR
APPROVED: JR
DRAWN: JR
DATE: June 2002
SCALE: NONE

DRAWING NO. OR-11-9113.4-10

SHEET 10 OF 13

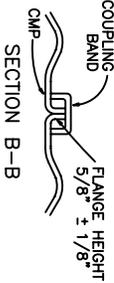
NOTE:
DESIGN VARIATIONS IN FASTENERS,
STRAPS, BARS & WELDS WHICH
PROVIDE A TENSILE STRENGTH OF
7500 LBS. ARE PERMISSIBLE.



DIMENSIONS IN INCHES

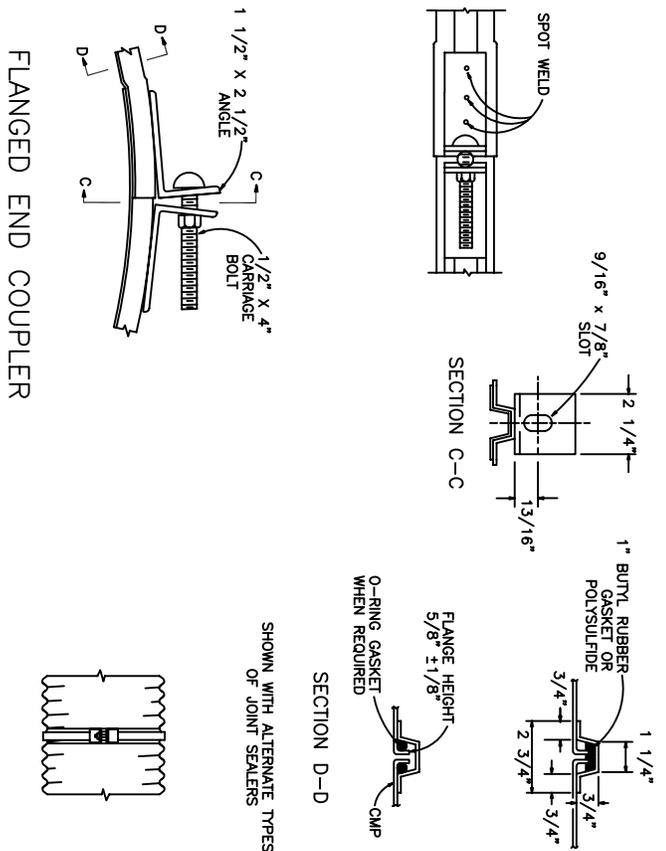
T	A	PIPE WALL THICKNESS
.079	3/4	.109 OR LIGHTER
.109	1	.138 OR HEAVIER

SECTION A-A

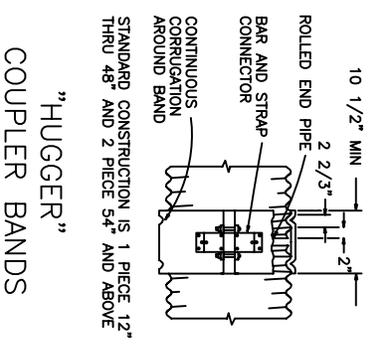


CHANNEL BAND COUPLER

FLANGED END COUPLER



SHOWN WITH ALTERNATE TYPES OF JOINT SEALERS



THE HUGGER COUPLER BAND OR AN APPROVED EQUIVALENT COUPLER BAND SHALL BE MADE OF THE SAME MATERIAL AND FINISH AS THE PIPES JOINED. THE COUPLER BANDS SHALL HAVE A MINIMUM WIDTH OF 10 1/2 INCHES AND MAY BE TWO NUMERICAL THICKNESSES LIGHTER THAN THE GAGE OR THICKNESS DESIGNATED FOR THE CONDUIT JOINED. THE BAND SHALL BE DESIGNED TO BE DRAWN TOGETHER WITH TWO 1/2 INCH BOLTS THROUGH USE OF A BAR AND STRAP SUITABLY WELDED TO THE BAND. THE BAND SHALL ENGAGE AND MESH WITH THE SECOND ANNULER CORRUGATION INWARD FROM THE END OF EACH OF THE CONDUIT SECTIONS JOINED.

STANDARD COUPLER BANDS

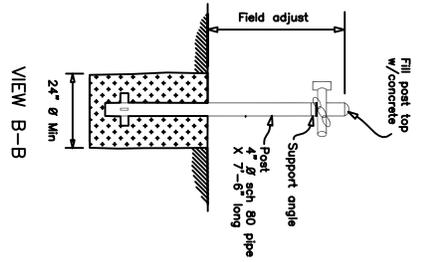
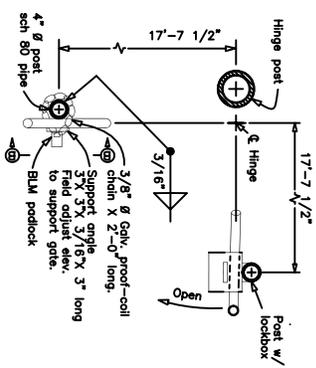
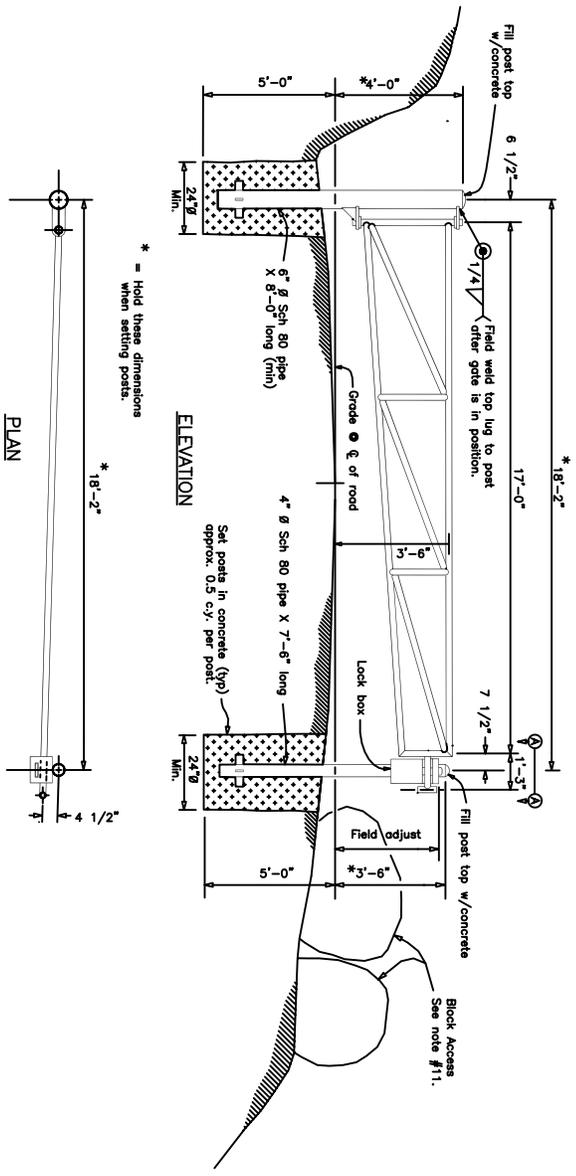
CULVERT SIZE INCHES	CORRUGATED			FLAT-DIMPLED		
	STD. ANNULAR WIDTH	HELICAL WIDTH	3" X 1" WIDTH	6" X 1" WIDTH	NO. OF DIMPLES	NO. OF BOLTS
UNDER 18	7	2	7	2	10 1/2	2
18 TO 54	12	3	12	3	10 1/2	2
OVER 54	24	5	24	5	16 1/2	4

DATA IN THIS BLOCK DOES NOT APPLY TO PERFORATED PIPE UNDERDRAIN. FOR BANDS WITH "PUNCH-OUT" TYPE CONNECTIONS, 2 BOLTS ARE PERMISSIBLE FOR EACH LAP. BANDS SHALL LAP 1/2 WIDTH ONTO EACH SECTION OF PIPE AND MUST FULLY ENIRCLE THE JOINT FORMING A NEARLY WATERTIGHT CONNECTION. SEE SECTION 400.

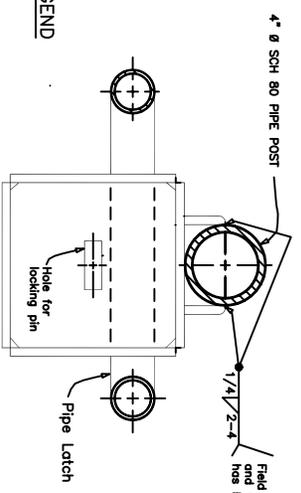
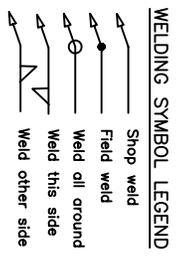
CULVERT BAND DETAIL

- Ⓐ BANDS WITH ANGLES
- Ⓑ BANDS WITH TENSION TYPE CONNECTIONS

DESIGNED	BLM
REVIEWED	JWR
APPROVED	
DRAWN	JR
DATE	June 2002
DRAWING NO.	OR-11-9113.4-11



POST FOR OPEN POSITION
(IF REQUIRED)



- NOTES**
1. CONTRACTOR SHALL FURNISH GATE, POSTS, LOCKBOX, LOCKING PINS, AND ALL MISCELLANEOUS HARDWARE.
 2. PRIOR TO INSTALLATION, THE ENTIRE GATE ASSEMBLY, INCLUDING GATE, POSTS, LOCKBOX, AND LOCKING PINS SHALL BE CLEANED AND GIVEN ONE COAT OF FILLER O'BRIEN #621-04 RUST PRIMER OR EQUIVALENT.
 3. PRIOR TO FIELD INSTALLATION, FINAL GATE LOCATION SHALL BE DETERMINED AND APPROVED BY THE COR.
 4. POST HOLE WALLS SHALL BE NEAR VERTICAL AS SHOWN. CONSTRUCTION BY BACKHOLE IS NOT PERMITTED.
 5. GATE, POSTS, AND LOCKBOX SHALL BE INSTALLED AS SHOWN. POSTS SHALL BE SET PLUMB IN THE CONCRETE AND GATE SHALL HANG STRAIGHT AND LEVEL.
 6. GATE UNIT SHALL BE INSTALLED WITH THE HINGED SECTION ON THE CUTSLOPE SIDE OF THE ROAD UNLESS OTHERWISE DIRECTED BY THE COR.
 7. GATE SHALL BE INSTALLED TO OPEN IN THE DIRECTION SPECIFIED BY THE COR.
 8. FIELD WELDS SHALL BE SLAGGED AND CLEANED.
 9. CONCRETE SHALL BE 3000 PSI MINIMUM.
 10. EXPOSED SURFACES OF CONCRETE SHALL BE CROWNED TO SHED WATER.
 11. LARGE BOULDERS, PIT RUN ROCK BERMS, OR LOG BARRICADES SHALL BE FURNISHED AND PLACED IF NECESSARY AT SIDES OF GATE TO PREVENT ACCESS BY MOTOR VEHICLES.
 12. AFTER INSTALLATION IS COMPLETE, THE ENTIRE GATE ASSEMBLY, INCLUDING GATE, POSTS, LOCKBOX, AND LOCKING PINS SHALL BE CLEANED AND GIVEN ONE FIELD COAT OF FILLER O'BRIEN #6112-35 HIGHWAY YELLOW HEAVY DUTY ENAMEL OR EQUIVALENT.

UNITED STATES DEPARTMENT OF THE INTERIOR	
BUREAU OF LAND MANAGEMENT	
MEDFORD DISTRICT - MEDFORD, OREGON	
STEEL PIPE GATE	
INSTALLATION	
DESIGNED	BLM
REVIEWED	
APPROVED	
DRAWN	JWR
DATE	April 2003
SCALE	NONE
SHEET	13 OF 13
DRAWING NO.	OR-11-91134-13