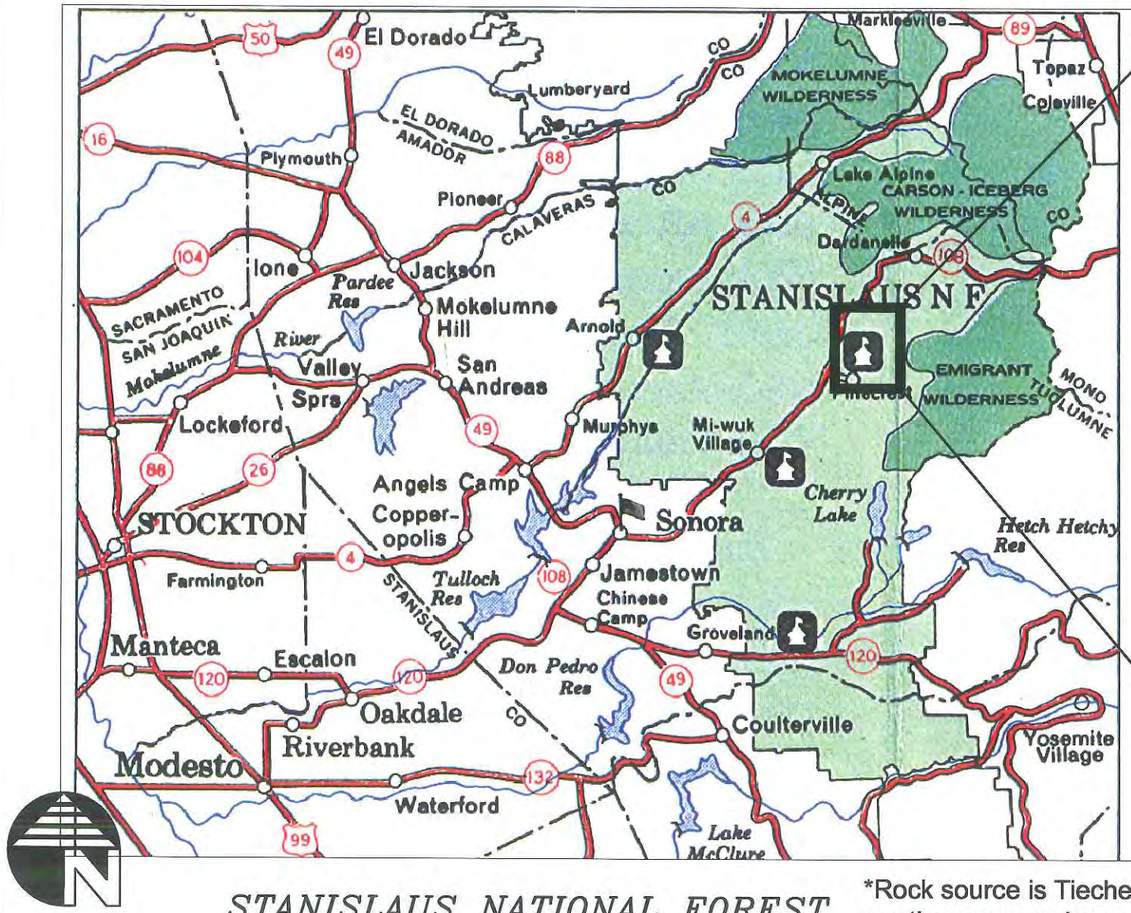
UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION FIVE
STANISLAUS NATIONAL FOREST
TOULUMNE COUNTY CA
SUMMIT RANGER DISTRICT

SOUTH GOOSEBERRY STEWARDSHIP PROJECT



STANISLAUS NATIONAL FOREST
VICINITY MAP

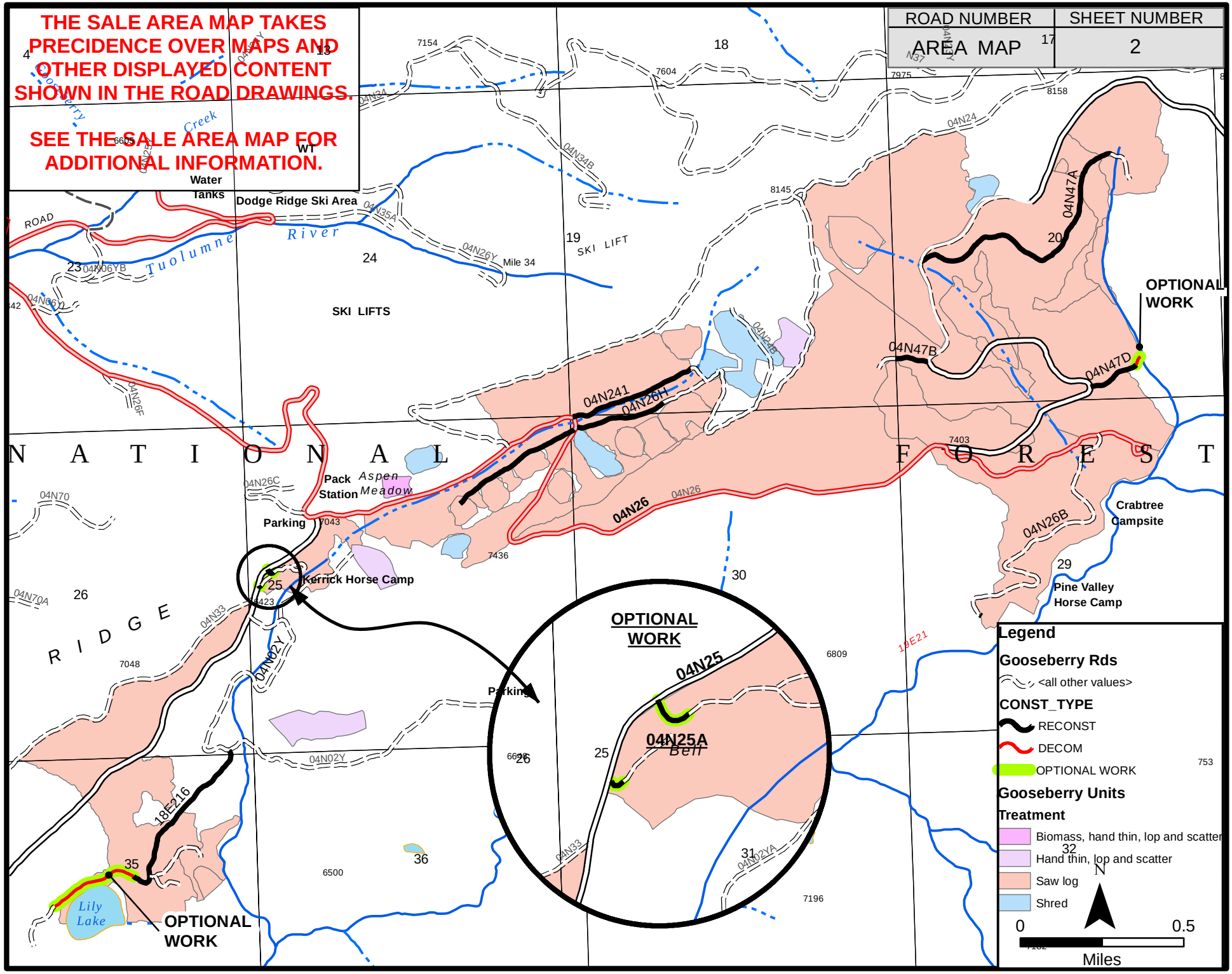
*Rock source is Tiechert or other approved source.

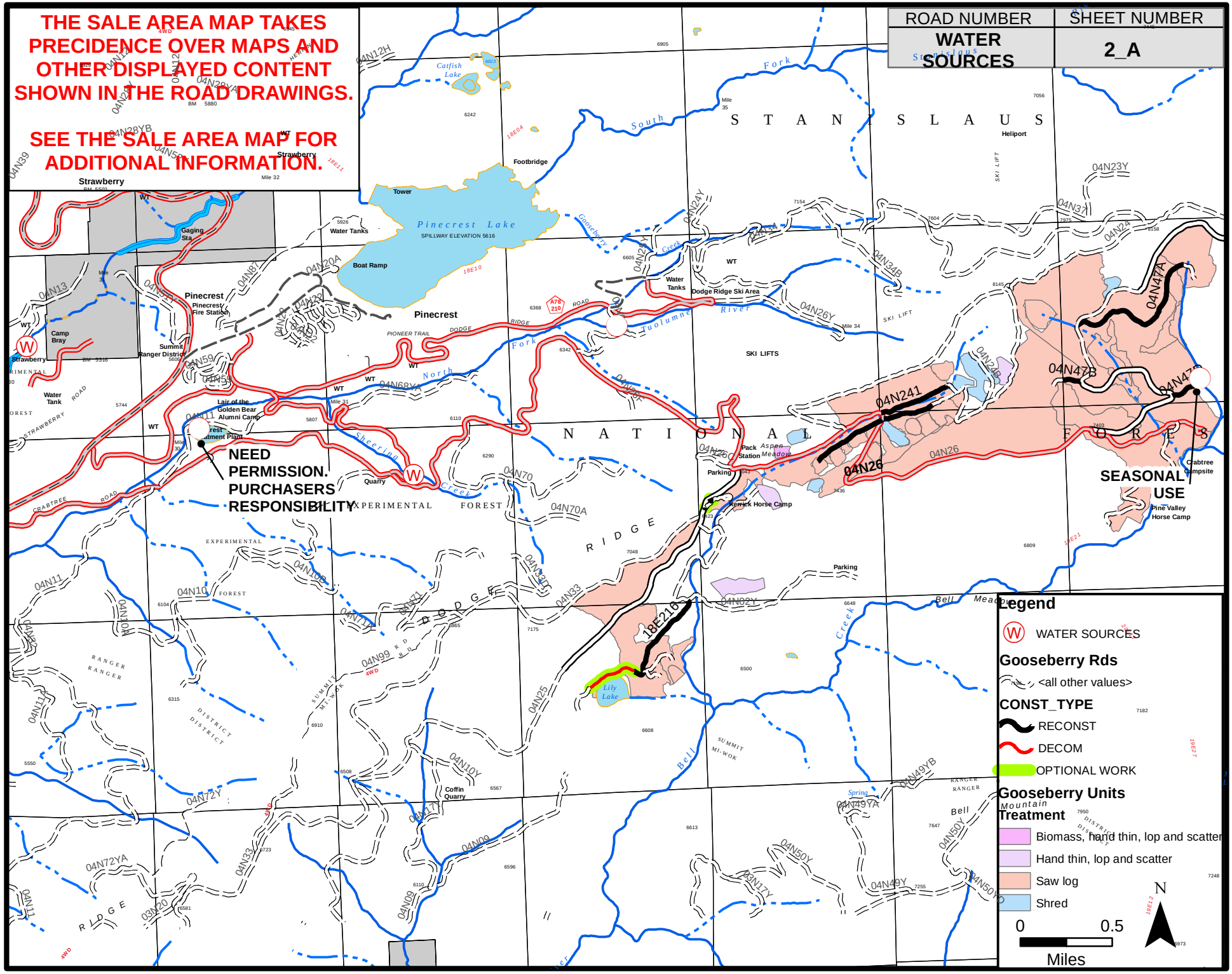
TABLE OF CONTENTS

ROAD NO	TYPE OF WORK	LENGTH (MILES)	SHEET NO.
TITLE SHEET			1
LOCATION MAP			2
NOTES & LEGEND			3
MAT.& QUANT.			4-5
04N241	R	0.40	6
04N25A	R	0.05	7
04N26G	R	0.42	8
04N26H	R	0.28	9
04N47A	R	0.86	10-11
04N47B	R	0.17	12
04N47D	R/D	0.19	13
18E216	R/D	0.83	14
TYPICALS			15-28

REVISED
By Billy at 5:27 pm, 7/23/13

DESIGNED BY	APPROVED BY	DISTRICT RANGER	FOREST ENGINEER	FOREST SUPERVISOR
Billy Ellis 7/23/2013 DATE	DATE	Molly Fuller DATE 8/7/2013	[signature] DATE 8/7/2013 RC	Christine M. Welch DATE 8/14/13


THE SALE AREA MAP TAKES PRECIDENCE OVER MAPS AND OTHER DISPLAYED CONTENT SHOWN IN THE ROAD DRAWINGS.
SEE THE SALE AREA MAP FOR ADDITIONAL INFORMATION.
ROAD NUMBER
AREA MAP
SHEET NUMBER
2
Water Tanks
Dodge Ridge Ski Area
Tuolumne River
Mile 34
SKI LIFT
SKI LIFTS
OPTIONAL WORK
04N47A
04N47B
04N47D
04N241
04N26H
04N26
Crabtree Campsite
Pine Valley Horse Camp
Pack Station
Aspen Meadow
Parking
Kerrick Horse Camp
N A T I O N A L F O R E S T
R I D G E
04N02Y
18E216
Lily Lake
OPTIONAL WORK
04N25
04N25A
Bell
Legend
Gooseberry Rds
<all other values>
CONST_TYPE
RECONST
DECOM
OPTIONAL WORK
Gooseberry Units
Treatment
Biomass, hand thin, lop and scatter
Hand thin, lop and scatter
Saw log
Shred
N
0
0.5
Miles


THE SALE AREA MAP TAKES PRECIDENCE OVER MAPS AND OTHER DISPLAYED CONTENT SHOWN IN THE ROAD DRAWINGS.
SEE THE SALE AREA MAP FOR ADDITIONAL INFORMATION.
ROAD NUMBER
WATER SOURCES
SHEET NUMBER
2_A
S T A N I S L A U S
N A T I O N A L F O R E S T
Pinecrest Lake
SPILLWAY ELEVATION 5616
Footbridge
Tower
Water Tanks
Boat Ramp
Gaging Sta
Pinecrest
Pinecrest Fire Station
Summit Ranger District
Camp Bray
Strawberry
Water Tank
Lair of the Golden Bear Alumni Camp
Quarry
Dodge Ridge Ski Area
SKI LIFTS
Heliport
Pack Station
Aspen Meadow
Parking
Kerrick Horse Camp
Crabtree Campsite
Pine Valley Horse Camp
Lily Lake
Coffin Quarry
Catfish Lake
NEED PERMISSION. PURCHASERS RESPONSIBILITY
SEASONAL USE
18E216
04N241
04N26
04N47A
04N47B
Legend
WATER SOURCES
Gooseberry Rds
<all other values>
CONST_TYPE
RECONST
DECOM
OPTIONAL WORK
Gooseberry Units
Treatment
Biomass, hand thin, lop and scatter
Hand thin, lop and scatter
Saw log
Shred
0
0.5
Miles
N

PROJECT	SHEET NUMBER
S.GOOSEBERRY	3

NOTES AND LEGEND

GENERAL NOTES

* Unless otherwise specified, notes apply to all roads.
* Clearing - Only trees 10"D.B.H or larger to be cleared are indicated on the plans (T=Tree or TS=Tree and Stump). Trees 10" DBH and smaller and brush of any size shall also be cleared as SHOWN ON THE DRAWINGS.
* "Individual removal of trees" denotes hazard trees only and are shown on plans as HT.
* Tops of cut banks are designated decking sites for unmerchantable timber.
* Outslope 3% unless otherwise SHOWN ON THE DRAWINGS.
* Construction Tolerance "J".
* Cushion requirement is waived.
* Reconstruction - Widen as necessary to obtain min. specified width and to obtain outslope when specified. The actual width will vary. Cut slopes shall conform to existing. See Typicals.
* Fill slopes are 1 1/2:1, back slopes are 1:1, unless otherwise SHOWN ON THE DRAWINGS.
* Waterbars are to be installed at the end of each operating season and at the close of sale.
* Reconstruction- Suitable material removed from ditches, roadbed slides and culvert catch basins shall be incorporated into the roadbed.
* Unsuitable material shall be sidecast from the roadbed.
* At intersections, the roadbed shall be graded to assure blending of two riding surfaces for a distance of 50 linear feet.
* Seed and mulch disturbed areas near drainages and where specified in the Drawings. Seeding and mulching is incidental to other pay items.
* Contracttor shall be responsible for all staking and its accuracy, as specified in Section 152.01 of the Standard Specifications for Construction of Roads and Bridges. Staking will be approved by the Forest Service. Payment will be incidental to other work.

ABBREVIATIONS

C.Y. = Cubic yard	DI = Drop Inlet	Const = Construct or install feature
L.F. = Linear Foot	C.M.P.A. = Corrugated Metal Pipe Arch	Reconst = Recosntruct existing feature
C.M.P. = Corrugated Pipe	AC = Asphalt Concrete	Maint = Maintain existing feature
IB = Inlet Basin	AB = Aggregate road base	WB = Waterbar
CB = Catch Basin	Exist = Existing feature	IB = Inlet Basin CB = Catch Basin
TS= Tree/Stump-Remove	EOP = End of Project	MEIOC - Maintain existing inslope/outslope configuration

ROAD NUMBER	SPECIAL NOTES
ALL ROADS	**- Rolling dips do not intercept ditches unless otherwise noted. All dips are Type I unless specified otherwise.** **- All roads used by Contractor during road construction shall be maintained by Contractor.** **- Waterbars drawn or listed on the Drawings are in critical locations. All other waterbars shall be placed according to the typicals.** **- Landings are designated as disposal sites when piling of construction slash is required in specifications.** **- Forest Service will designate borrow sites as needed.** **- The water sources are shown on the Sale Area Map. Water sources shall comply with section 891. Watering is incidental to Sections 201, 202, 204, 301, 303, 607, and T803. The Purchaser / Contractor is to construct a sump filter to use at water source. see sheet 45 for detail.** **- Agg Base and Riprap shall be obtained from an approved commercial source. Aggregate used shall be certified to be no more than 0.25% asbestos present to be in compliance with california health and safety code sections 93105 and 93106 and obtained from an approved commercial source.** **- Equipment, for this project, if driven on state or county roads shall be currently licensed.** ALL ROADS MAY HAVE MOTORCYCLE OR OHV TRAFFIC. PURCHASER IS RESPONSIBLE FOR PLACING CONSTRUCTION SIGNS ON ROADS WHEN OPERATING EQUIPMENT ON THIS PROJECT. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE CONTRACTING OFFICER PRIOR TO START OF WORK.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	4

MATERIALS LIST AND QUANTITIES

SPECIFICATION DATA			ROAD DATA										
			Road No.	04N241	Road No.	04N25A	Road No.	04N26G	Road No.	04N26H	Road No.	04N47A	
			Note:		Note:	ALL WORK OPTIONAL	Note:		Note:		Note:		
Spec No.	Item Description	Units	Quantity	Remarks	Quantity	Remarks	Quantity	Remarks	Quantity	Remarks	Quantity	Remarks	Sub Total
151(01)	Mobilization - Applies to Project	LS	One time cost applies to all roads										1
201(05)	Clearing & Grubbing, Disposal of Tops and Limbs-CHIP, Logs-DECK, and Stumps-SCATTER.	LS	1				1		1		1		4
202(51)	Removal of Individual Trees, (12" to 24"DBH), Disposal of Tops and Limbs-CHIP, Logs-DECK, Stumps-HAUL TO DISPOSAL SITE .	Each			3	OPTIONAL							3
203(04)B	Removal and Disposal of Culverts	Each							1				1
204(20)A	Drainage Excavation, Type 3' Ditch	LF	200										200
204(20)C	Drainage Excavation, Type Inlet Basin	Each											
204(20)F	Drainage Excavation, Type Waterbar	Each	15				15		13		20		63
204(20)J	Drainage Excavation, Type Swale	Each									3		3
204(20)L	Drainage Excavation, Type Rocked Swale(Includes Rock Costs)	Each									7		7
204(50)	Excavation and Embankment - Placement Method 5	LS			1	OPTIONAL							1
251(01)	Placed Riprap, Class II Riprap	CY	2								2		4
301(01)	Aggregate Base, Gradation B, Compaction Method D	Ton			66	OPTIONAL	11		11				88
303(22)	Reconditioning of Roadbed, Roller Compaction - Method B	Mile	0.4										0.4
303(24)	Reconditioning of Roadbed, Roller Compaction - Method B INCLUDES CURVE WIDENING.	Mile			0.05	OPTIONAL	0.42		0.28		0.86		1.61
602(02)A	12-Inch Corrugated Metal Pipe, 0.064-Inch thk FE, Method B.	LF							60				60
404(01)	Minor Hot Asphalt Concrete Pavement	Ton			22	OPTIONAL							22
619(01)	Rock Boulder Barricade	Each			28	OPTIONAL	1						29
619(03)	Earth and Log Barricade	Each							1		1		2
713(01)	Temporary Erosion Control - Straw Waddles or Silt Fence	LF	200										200
211(01)	Decommissioning (Includes Subsoil & Camouflage)	LS			1	OPTIONAL							1

MATERIALS LIST AND QUANTITIES

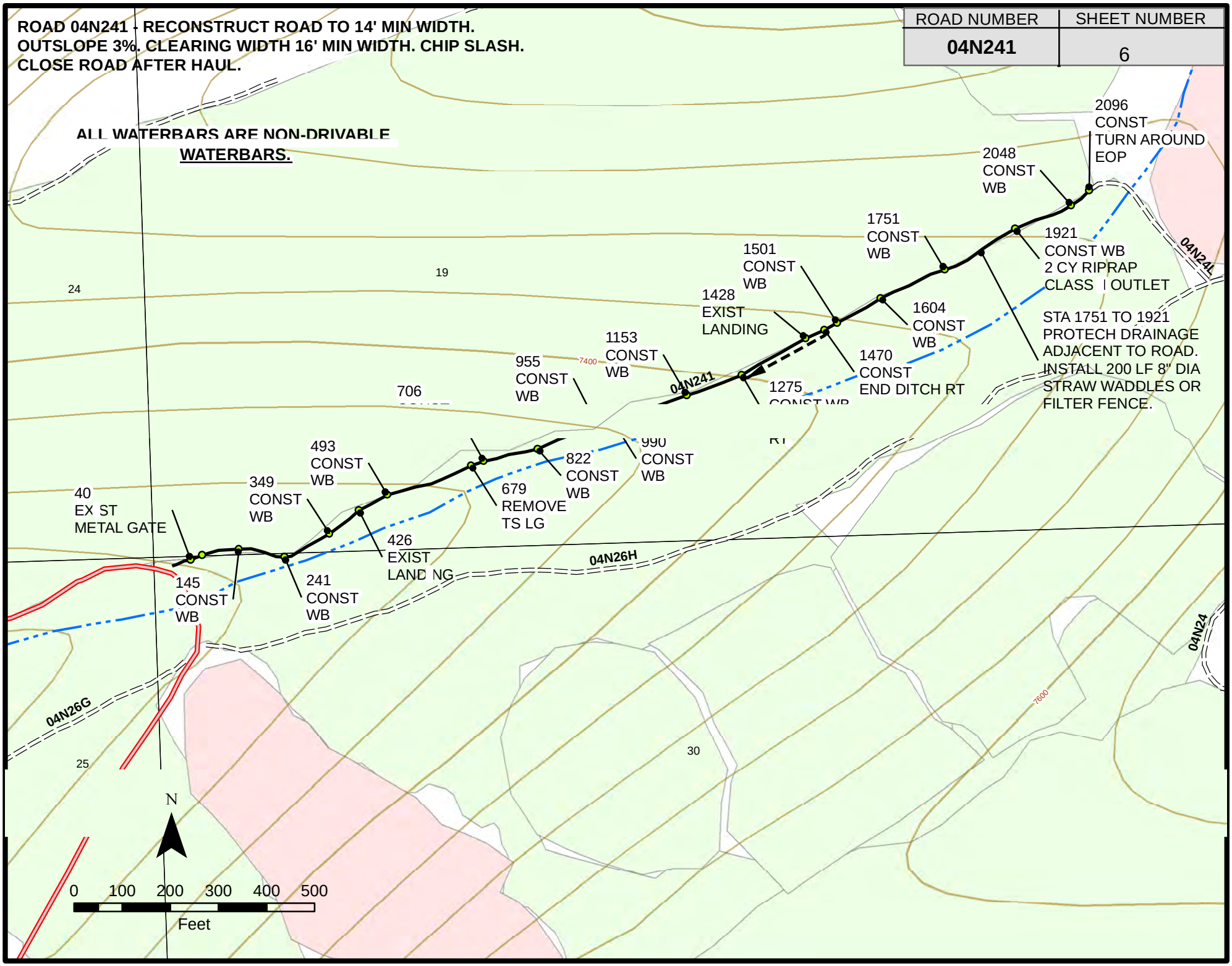
PROJECT	SHEET NUMBER
S.GOOSEBERRY	5

SPECIFICATION DATA			ROAD DATA										
			Road No.	04N47B	Road No.	04N47D	Road No.	18E216	Road No.		Road No.		
			Note:		Note:	Decom Work Optional	Note:	Decom Work Optional	Note:		Note:		
Spec No.	Item Description	Units	Quantity	Remarks	Quantity	Remarks	Quantity	Remarks	Quantity	Remarks	Quantity	Remarks	Sub Total
151(01)	Mobilization - Applies to Project	LS	One time cost applies to all roads										1
201(05)	Clearing & Grubbing, Disposal of Tops and Limbs-CHIP, Logs-DECK, and Stumps-SCATTER.	LS	1		1		1						3
203(04)B	Removal and Disposal of Culverts	Each	1										1
204(20)F	Drainage Excavation, Type Waterbar	Each	2				18						20
204(20)K	Drainage Excavation, Type Rolling Dip	Each			2								2
204(20)L	Drainage Excavation, Type Rocked Swale(Includes Rock Costs)	Each					2						2
303(22)	Reconditioning of Roadbed, Roller Compaction - Method B	Mile			0.19		0.55						0.74
303(24)	Reconditioning of Roadbed, Roller Compaction - Method B INCLUDES CURVE WIDENING.	Mile	0.1										0.17
602(02)A	12-Inch Corrugated Metal Pipe, 0.064-Inch thk FE, Method B.	LF	50										50
619(03)	Earth and Log Barricade	Each	1		1	OPTIONAL	2	OPTIONAL					4
211(01)	Decommissioning (Includes Camouflage and Subsoil)	LS			1	OPTIONAL	1	OPTIONAL					2
204(20)F	Drainage Excavation, Type Waterbar	Each					2	OPTIONAL					2

ROAD NUMBER	SHEET NUMBER
04N241	6

ROAD 04N241 - RECONSTRUCT ROAD TO 14' MIN WIDTH.
OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH.
CLOSE ROAD AFTER HAUL.

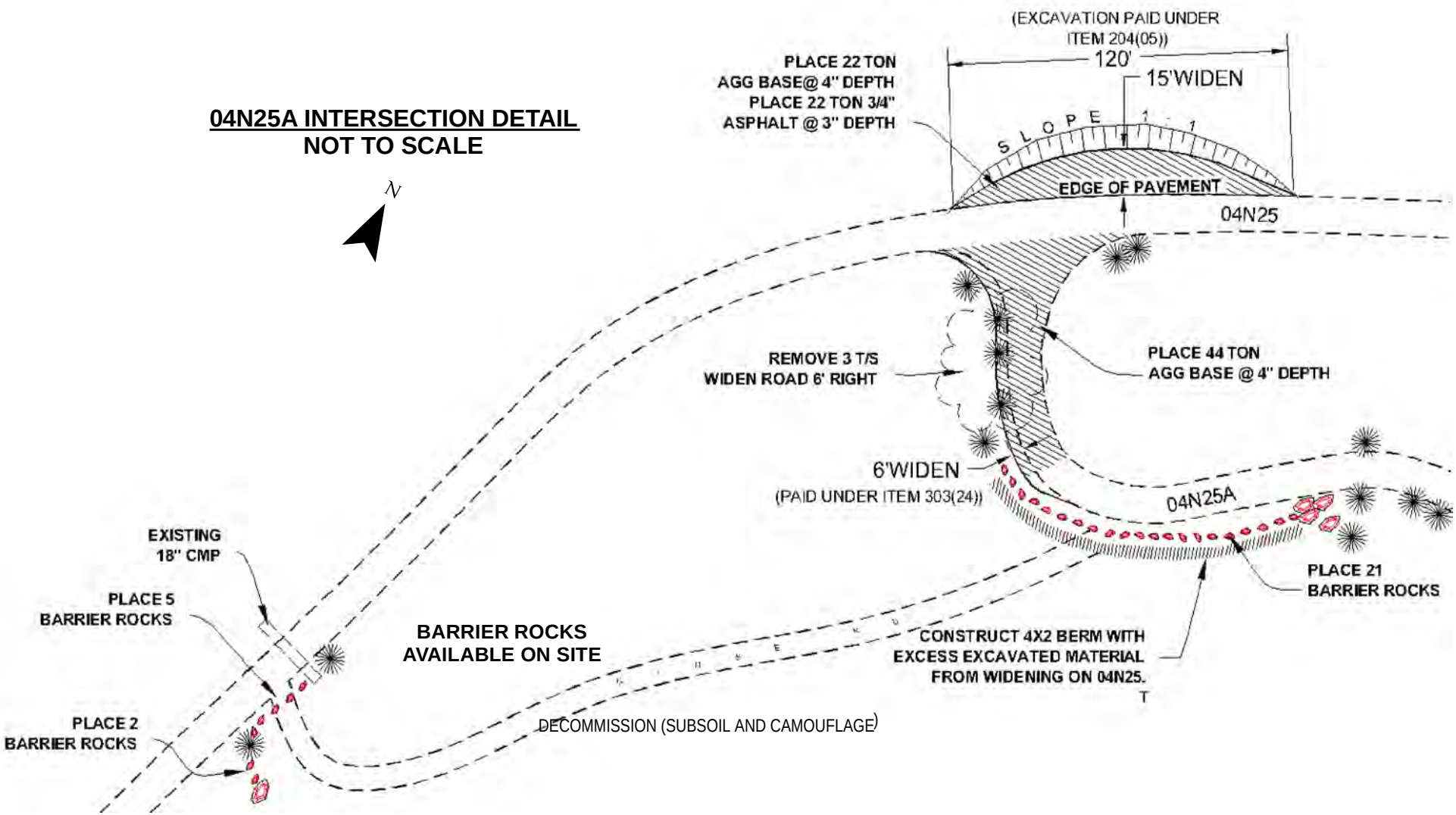
ALL WATERBARS ARE NON-DRIVABLE
WATERBARS.



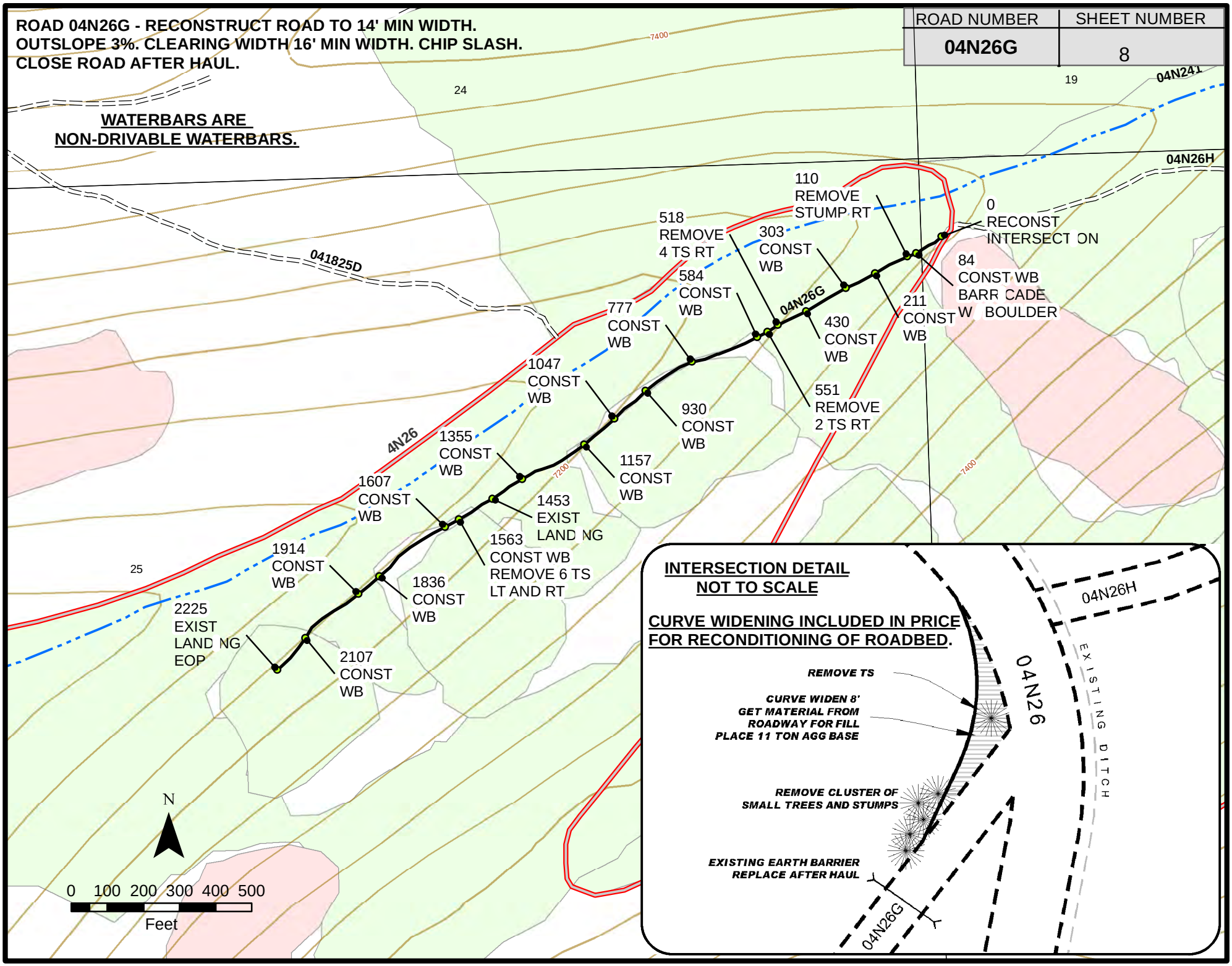
ROAD 04N25A - RECONSTRUCT INTERSECTION AND CONSTRUCT TURN OUT ON 04N25. SEE DRAWING FOR ADDITIONAL INFO.

ROAD NUMBER	SHEET NUMBER
04N25A	7

04N25A INTERSECTION DETAIL
NOT TO SCALE

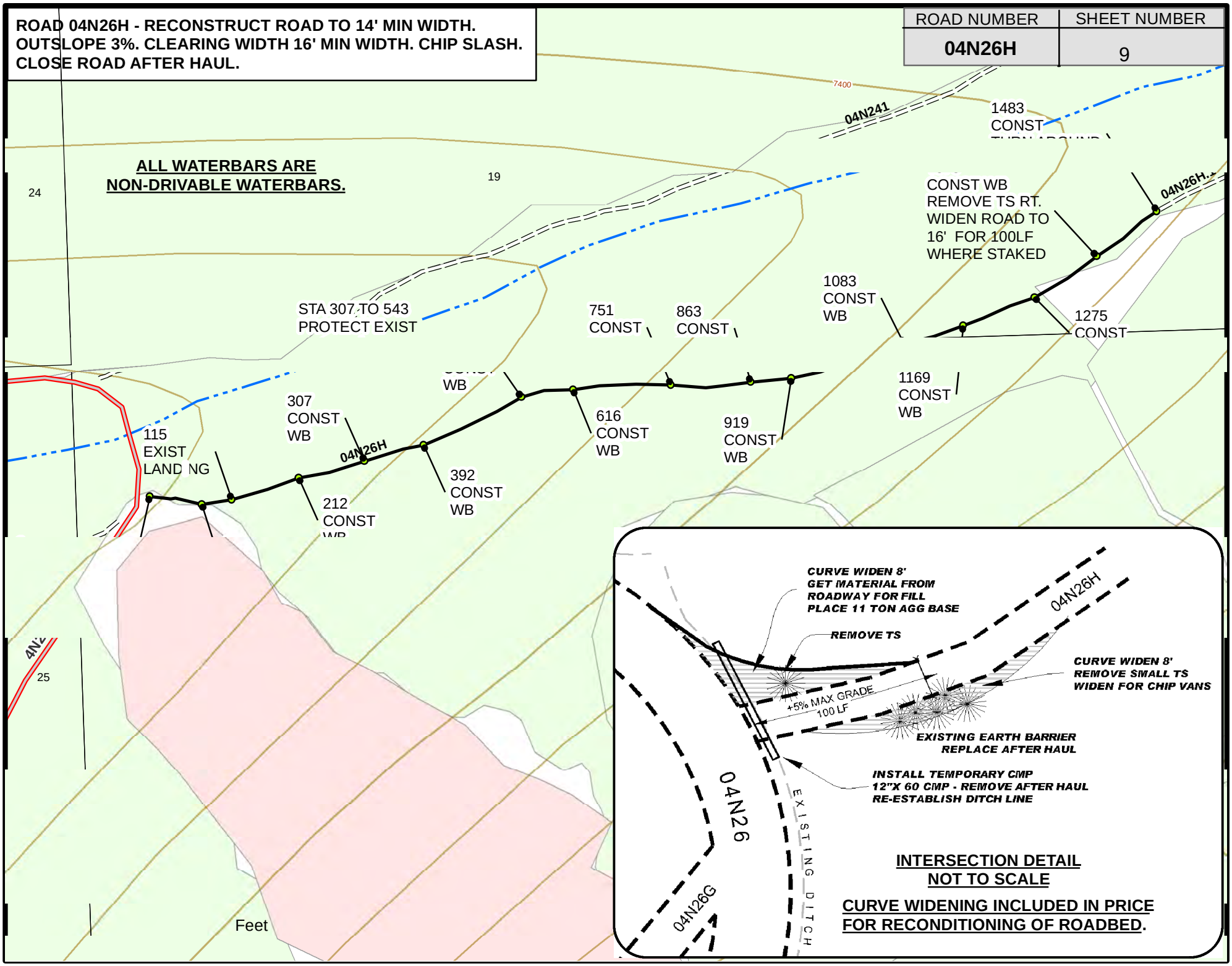


ALL WORK OPTIONAL


ROAD 04N26G - RECONSTRUCT ROAD TO 14' MIN WIDTH.
OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH.
CLOSE ROAD AFTER HAUL.
ROAD NUMBER
04N26G
SHEET NUMBER
8
WATERBARS ARE
NON-DRIVABLE WATERBARS.
24
19
25
04N241
04N26H
041825D
04N26G
4N26
7400
7200
0
RECONST
INTERSECT ON
84
CONST WB
BARR CADE
W BOULDER
110
REMOVE
STUMP RT
211
CONST
WB
303
CONST
WB
430
CONST
WB
518
REMOVE
4 TS RT
551
REMOVE
2 TS RT
584
CONST
WB
930
CONST
WB
777
CONST
WB
1157
CONST
WB
1047
CONST
WB
1453
EXIST
LAND NG
1355
CONST
WB
1563
CONST WB
REMOVE 6 TS
LT AND RT
1607
CONST
WB
1836
CONST
WB
1914
CONST
WB
2107
CONST
WB
2225
EXIST
LAND NG
EOP
N
0 100 200 300 400 500
Feet
INTERSECTION DETAIL
NOT TO SCALE
CURVE WIDENING INCLUDED IN PRICE
FOR RECONDITIONING OF ROADBED.
REMOVE TS
CURVE WIDEN 8'
GET MATERIAL FROM
ROADWAY FOR FILL
PLACE 11 TON AGG BASE
REMOVE CLUSTER OF
SMALL TREES AND STUMPS
EXISTING EARTH BARRIER
REPLACE AFTER HAUL
04N26H
04N26
04N26G
EXISTING DITCH

ROAD 04N26H - RECONSTRUCT ROAD TO 14' MIN WIDTH. OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH. CLOSE ROAD AFTER HAUL.

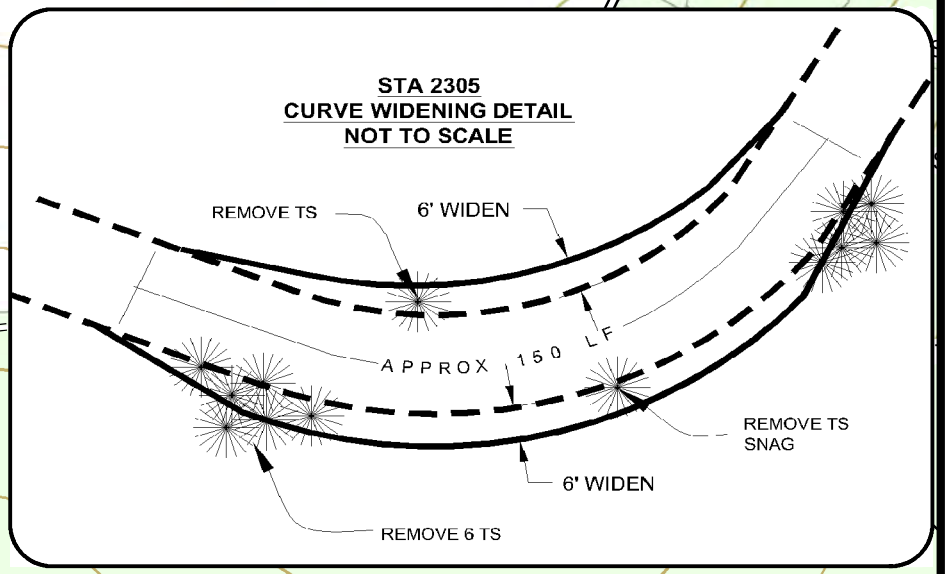
ROAD NUMBER	SHEET NUMBER
04N26H	9



ROAD 04N47A - RECONSTRUCT ROAD TO 14' MIN WIDTH. OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH. CLOSE ROAD AFTER HAUL.

ROAD NUMBER	SHEET NUMBER
04N47A	10

ALL WATERBARS ARE NON-DRIVABLE WATERBARS.



CURVE WIDENING PAID UNDER PAY ITEM 303(24)

04N47

20

7800

213 REPLACE LOG BARRICADE

276 CONST WB 1CY R RRAP

969 CONST

1269 REMOVE 3-TS RT

1294 CONST ROCK SWALE

1406 CONST ROCK SWALE

1131 CONST

1530 CONST WB

1457 CONST ROCK SWALE

1567 REMOVE TS-2 RT

1739 EXIST LANDING

2794 RECONST 1-TS RT

2963 EXIST LANDING

3032 CONST WB

2894 REC NOT

2794 RECON WB

04N47A

684 REMOVE TS RT

797 CONST WB

725 CONST WB

485 CONST SWALE

142 CONST ROCK SWALE

395 CONST ROCK SWALE

2016 CONST WB

2233 CONST WB

EXIST LANDING

2377 REMOVE 2 TS RT

2643 CONST WB

2305 CW ROAD 6' LT & 6' RT FOR 120 LF WHERE STAKED.

N

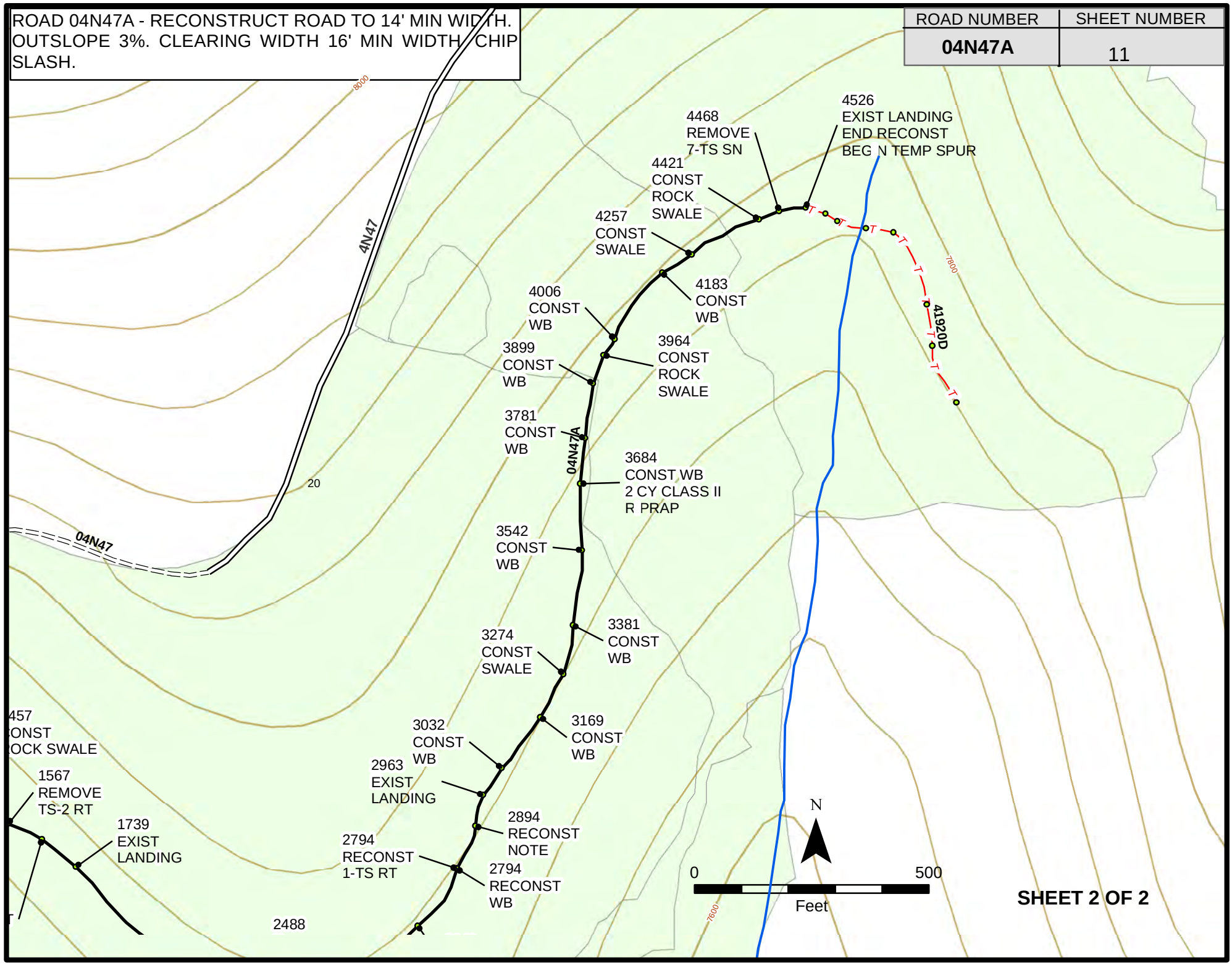
0 500 Feet

7600

SHEET 1 OF 2

ROAD 04N47A - RECONSTRUCT ROAD TO 14' MIN WIDTH. OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH.

ROAD NUMBER	SHEET NUMBER
04N47A	11



SHEET 2 OF 2

ROAD 04N47B - RECONSTRUCT ROAD TO 14' MIN WIDTH. OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH. CLOSE ROAD AFTER HAUL.

ROAD NUMBER	SHEET NUMBER
04N47B	12

548
EXIST
LANDING
EOP

401
REMOVE
STUMP

448
CONST
WB

298
MAINTAIN
SWALE

218
REMOVE
2 TS LG

137
CONST
WB

04N47B

20
REMOVE
TS LG

04N47

4N47

7600

19

20

RESHAPE INTERSECTION
FOR HAUL. BLEND GRADE
USING MATERIAL FROM ROAD.
INSTALL 18 X 50 CMP.
REMOVE AFTER HAUL. RE-ESTABLISH
DITCH LINE.
INSTALL LOG BARRICADE.

INTERSECTION DETAIL
NOT TO SCALE

EXIST DITCH LINE

60'

MAX. GRADE 7%

04N47B

REMOVE
T/S

WIDEN INTERSECTION
FOR CHIP VANS

INSTALL 12X50 CMP
REMOVE AFTER HAUL-
RESTORE DITCH LINE

04N47

N

0

200

Feet

ROAD 04N47D - RECONSTRUCT ROAD TO 14' MIN WIDTH. OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH.

ROAD NUMBER	SHEET NUMBER
04N47D	13

STA 848 TO 1005
ALL WORK OPTIONAL

DECOMMISSIONING INCLUDES
- SUBSOIL AND CAMOUFLAGE.
DROP ADJACENT DEAD TREES
INTO SITE.

1005
EX ST
EOP

937
CONST LOG
BARRICADE

848
EXIST LANDING
END RECONSTRUCTION
BEGIN DECOMMISSION NG

709
CONST
DIP

514
CONST
DIP

450
EXIST
LANDING

7400

20

29

04N47D

4N47

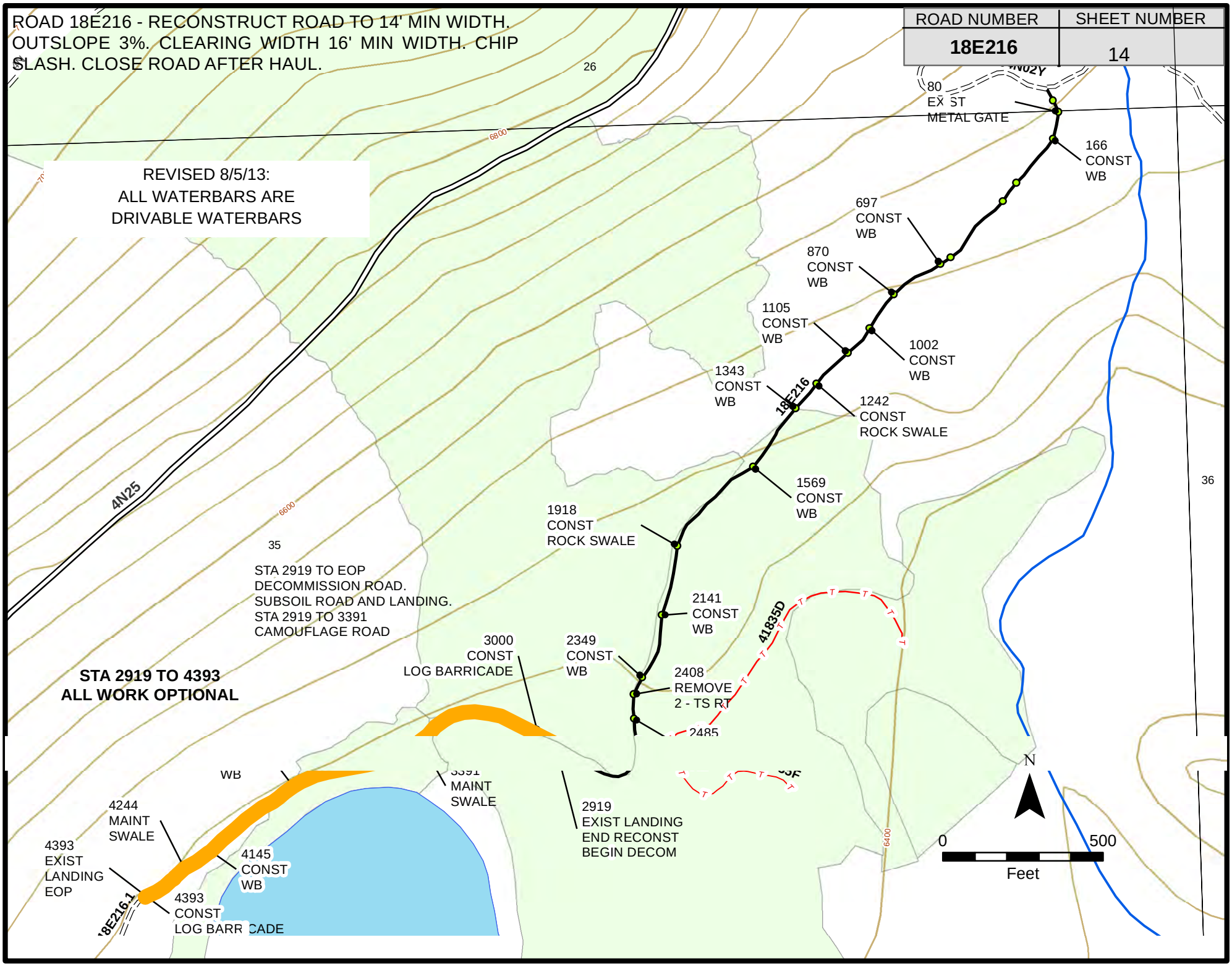
N

0 200
Feet

ROAD 18E216 - RECONSTRUCT ROAD TO 14' MIN WIDTH. OUTSLOPE 3%. CLEARING WIDTH 16' MIN WIDTH. CHIP SLASH. CLOSE ROAD AFTER HAUL.

ROAD NUMBER	SHEET NUMBER
18E216	14

REVISED 8/5/13:
ALL WATERBARS ARE
DRIVABLE WATERBARS

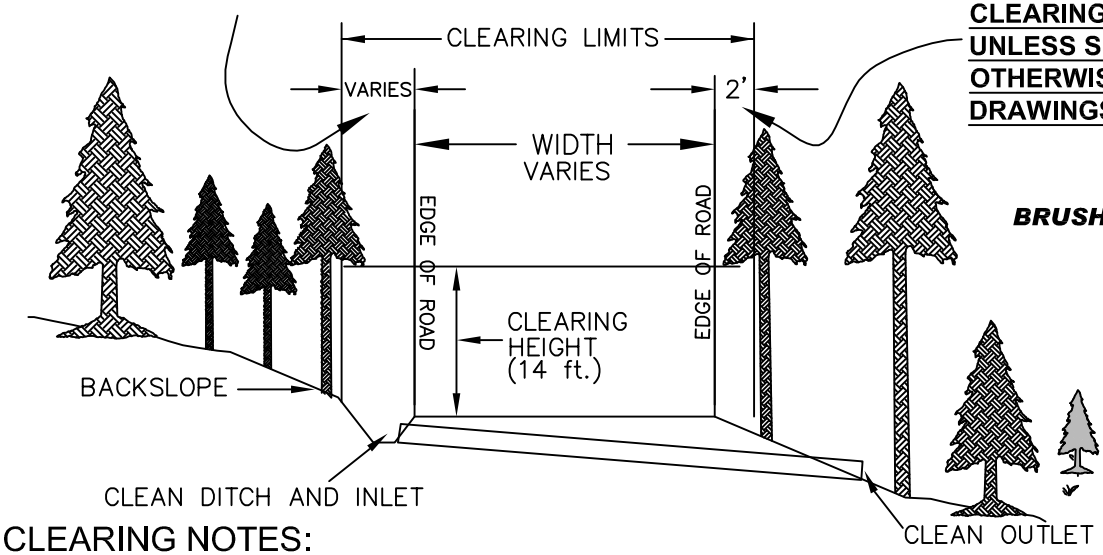


CONCEPTUAL
NO SCALE

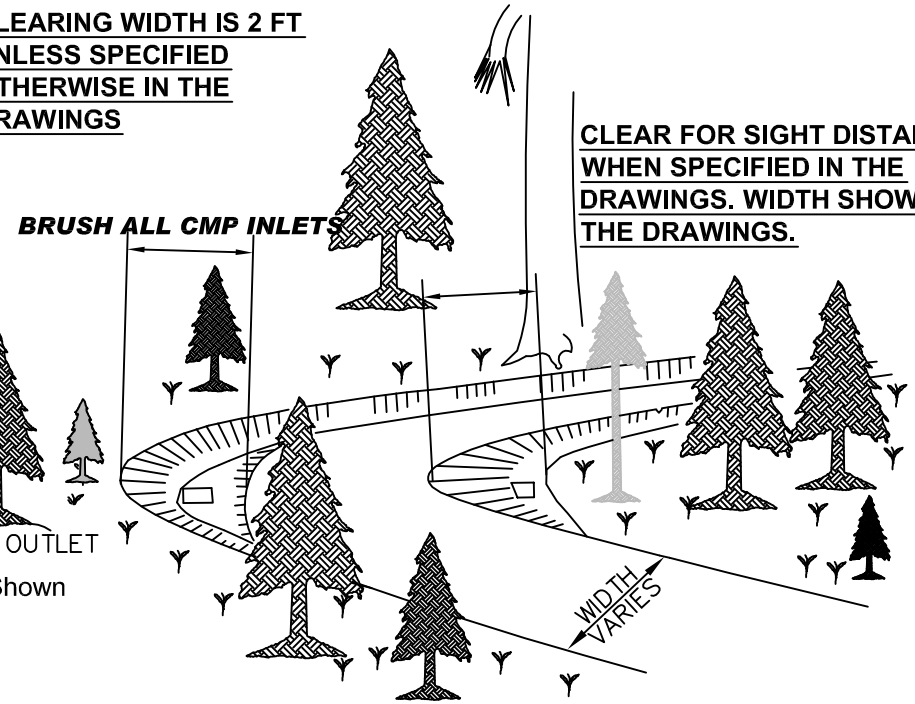
ROAD RECONSTRUCTION DETAILS

PROJECT	SHEET NUMBER
S.GOOSEBERRY	15

WIDTH IS 6' (LEVEL) OR TOP OF BANK - WHICH EVER IS LESS.



CLEARING WIDTH IS 2 FT UNLESS SPECIFIED OTHERWISE IN THE DRAWINGS



CLEAR FOR SIGHT DISTANCE WHEN SPECIFIED IN THE DRAWINGS. WIDTH SHOWN IN THE DRAWINGS.

CLEARING NOTES:

1. Clearing slash disposal methods shall be designated in the Schedule of Items or Shown On The Drawings. Do not brush landings unless needed for other operations.
2. Hazard tree removal, **if required**, will be marked by Forest Service prior to falling operations. Treatment of logs and limbs shall be treated as specified in the Specifications.
3. Clearing slash disposal sites shall be designated on the plans or the ground by the Forest Service.
4. Clear small trees (10"dbh and less) and brush from all existing ditches, catch basins and inlet basins.
5. Clear small trees (10"dbh and less) and brush above all CMP inlets for a distance of 10 linear feet either side of CMP.
6. Unless noted otherwise, mastication may be substituted for chipping of road side slash. When mastication is used, side cast all masticated material onto fill slopes. Remove masticated material from all drainagee, inlets and ditches. Masticated material shall be no loner than 36" length. Concentrations of chip material shall be scattered as directed by the FS. Flush cut stobs greater than 2 ".
7. Where 'TREAT WITHIN UNITS" is specified, scatter slash within adjacent units. Slash treatment will then be treated with that specified for unit.
8. **On all roads the actual clearing is typically the full width of the road plus 2 ft outside and 6 ft inside. Since road width varies widely on any given road segment the typical tries to convey the intent of clearing requirements. On the road sheets a minimum distance is specified. The actual clearing width will be based on whether a ditch, cutslope, culvert, turnout or fill slope is present. In the absense of all these, the minimum clearing would be that specified on the road sheets.**

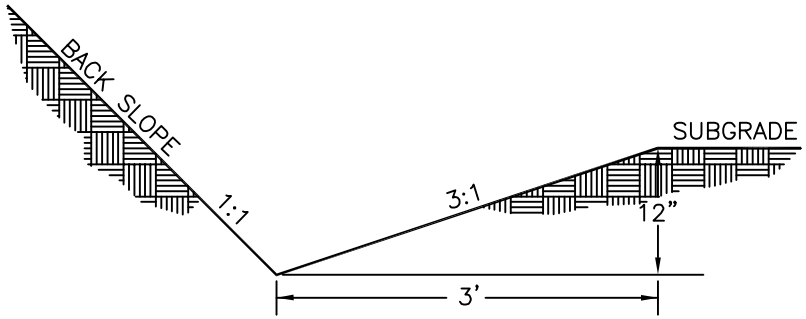
RECONDITIONING OF ROADBED:

1. Outslope road bed 3% whenever possible. Remove all outside berms. When this is impractical **due to trees greater than 10"dbh or berms greater than 4' wide and greater than 18"in height, then** relieve berm every 50 linear feet.
2. Clean inlets and outlets of all existing metal pipes **of dirt, rock and vegetation**.
3. Clean and reshape all existing road ditches, leadoff ditches, dips, and waterbars to the lines specified in the typicals. **If clearing is not specified in the Schedule of Items then clearing of ditches, leadoff ditches and culverts prior to cleaning/reshaping shall be considered incidental to Reconditioning of Roadbed.**
4. When 'Maintain Inslope/Outslope Configuration' is specified, reshape road bed to the existing width and inslope/outslope configuration (MEIOC).
5. Drain all low points, ponds, swales.
6. Construction of lead-off ditches are incidental to road work or other pay items.
7. Curve Widening, unless noted otherwise, is incidental to Reconditioning of Roadbed.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	16

ROADWAY DITCH

TYP 3' DITCH

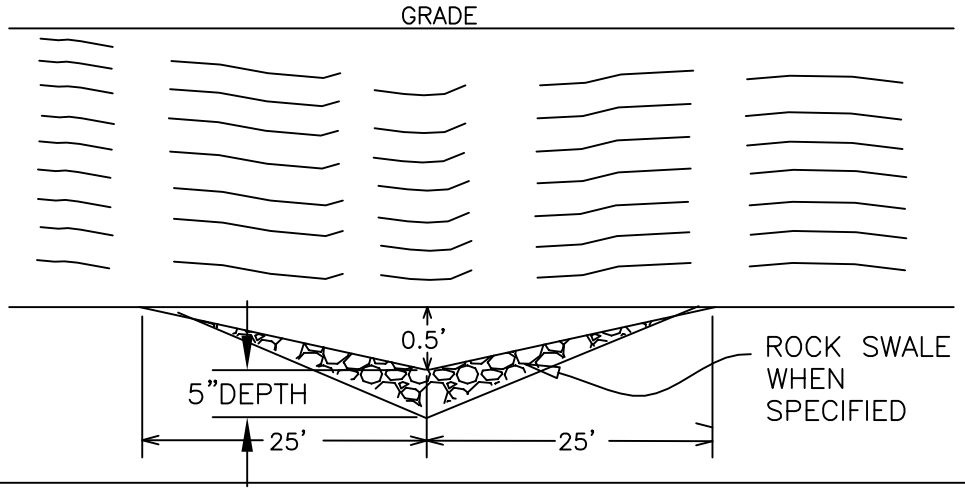


GENERAL NOTES:

1. WHEN POSSIBLE, UTILIZE SUITABLE EXCAVATED MATERIAL IN ROADBED.

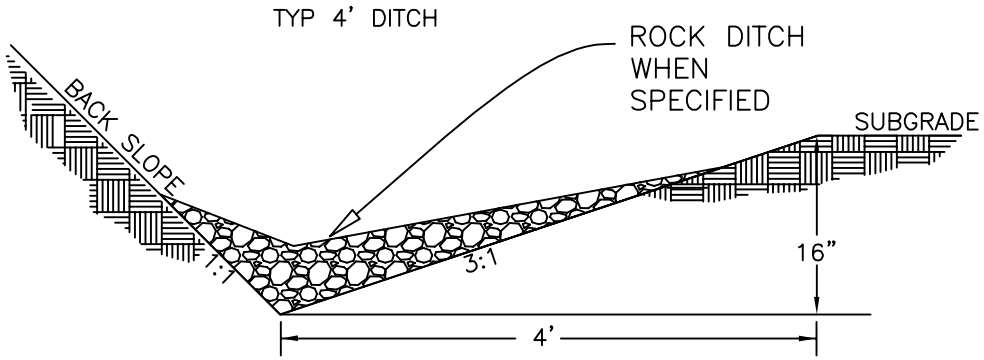
Contractor shall construct Lead Off Ditches as need to ensure proper drainage of Swale. Lead-Off Ditches are incidental to the construction of Swale construction.

GRADED SWALE



ROADWAY DITCH

TYP 4' DITCH

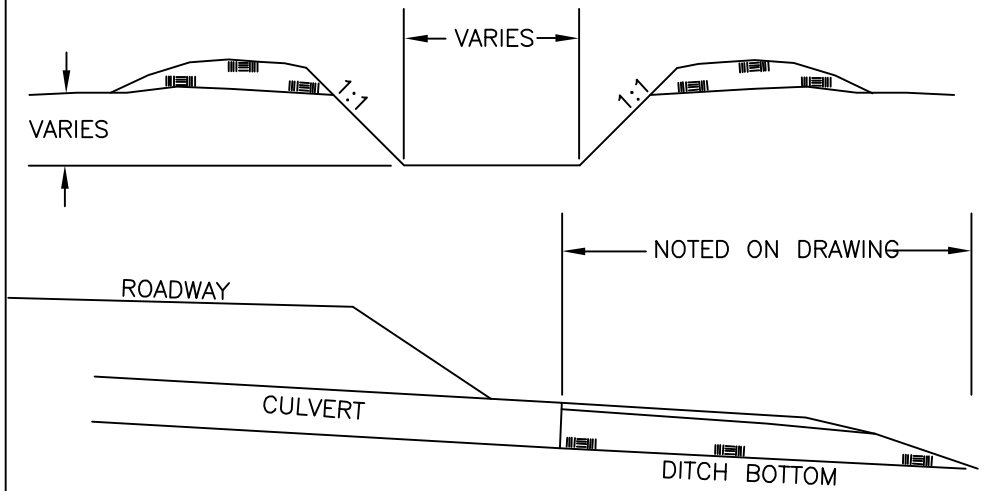


GENERAL NOTES:

1. WHEN POSSIBLE, UTILIZE SUITABLE EXCAVATED MATERIAL IN ROADBED.

LEAD OFF DITCH

1. LEAD OFF DITCH BOTTOM SHALL BE SLOPED TO PROVIDE PROPER DRAINAGE.

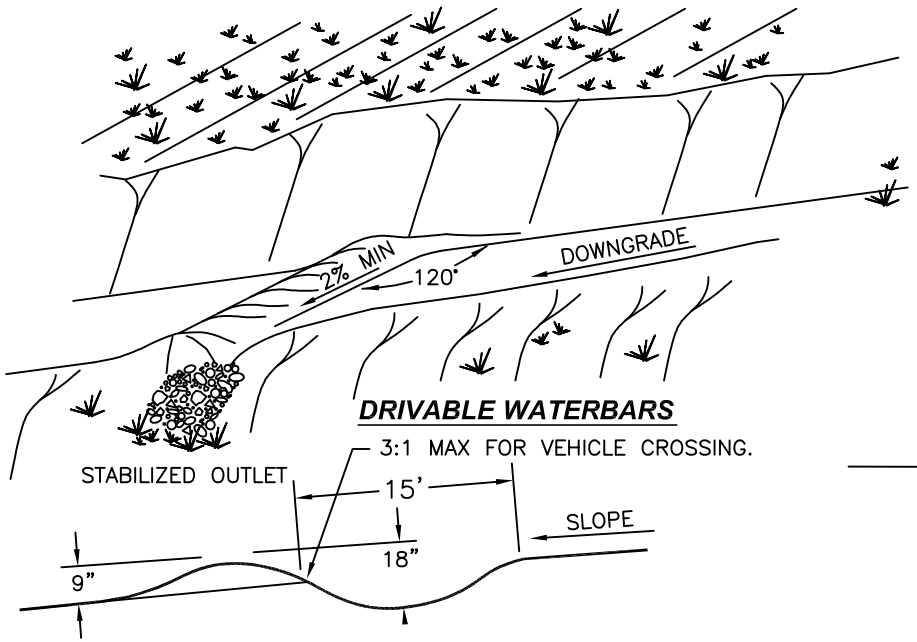


Lead–Off Ditches are considered incidental to other Pay Items and will not be measured of paid for seperately.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	17

WATERBAR

FOR HIGH CLEARANCE VEHICLES



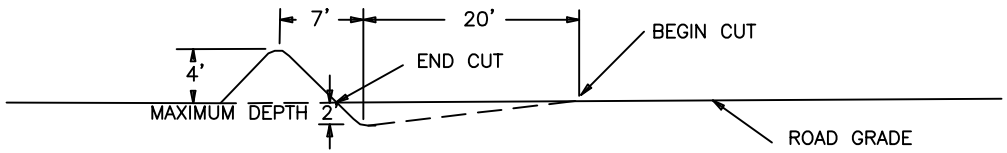
NOTES: WATERBARS

1. ALL WATER BARS SHALL BEGIN AT THE INTERSECTION OF THE ROAD BED WITH THE BACK SLOPE AND RUN ACROSS THE ENTIRE WIDTH OF THE ROAD BED.

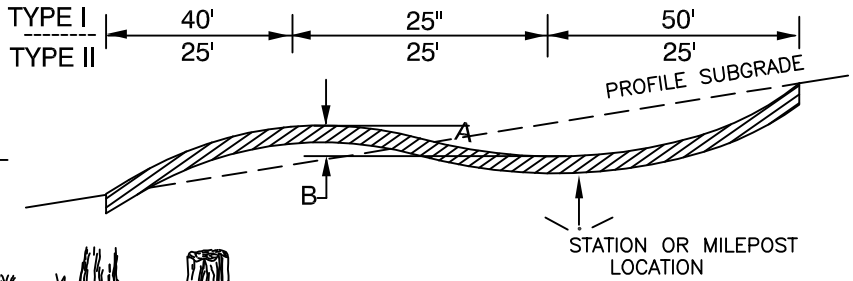
2. ALL WATER BARS SHALL HAVE FREE FLOWING OUTLETS. CONSTRUCTION OF LEAD–OFF DITCHES ARE INCIDENTAL TO WATER BAR CONSTRUCTION

3. WHEEL ROLL AND COMPACT ALL DRIVABLE WATERBARS. REMOVE ROCKS AND OTHER OBSTRUCTIONS FROM FINISHED WATERBARS.

NON - DRIVABLE WATERBARS



ROLLING DIP DETAIL
TYPE I & II

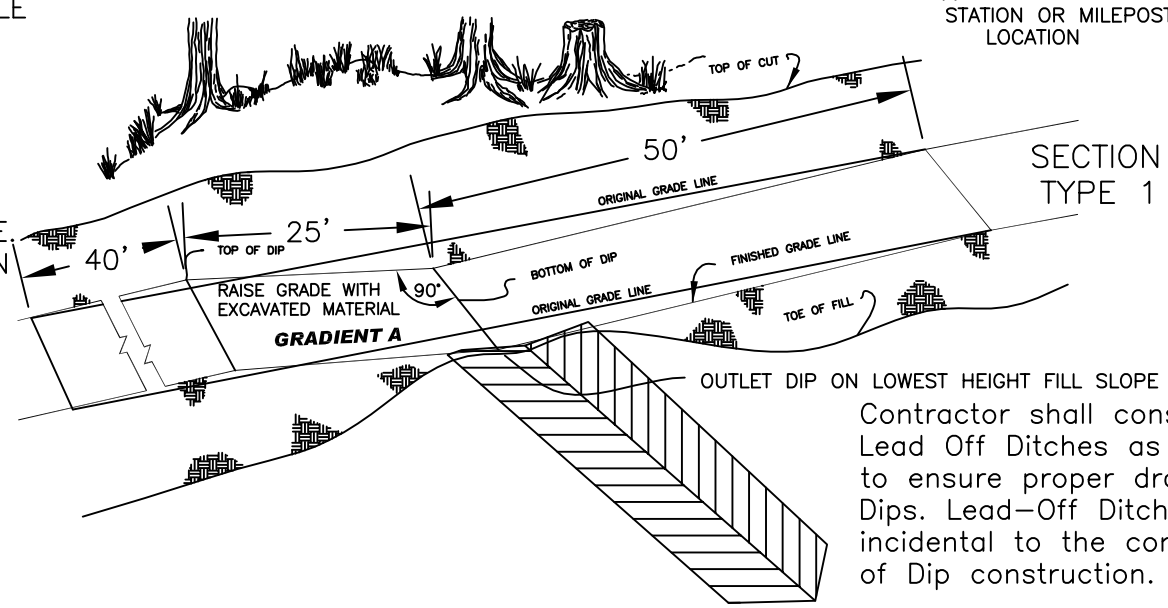


NOTES:

1. THE DESIGN VEHICLE OR CRITICAL VEHICLE FOR THIS DIP DESIGN IS A MODEL 62 FIRE ENGINE.

2. ENTIRE LENGTH OF DIP SHALL BE OUTSLOPED 3% TO 5%.

3. ROLLING DIP STATIONS ARE APPROXIMATE. LOCATIONS OF THE DIPS WILL BE STAKED ON THE GROUND BY THE FOREST SERVICE BEFORE CONSTRUCTION.



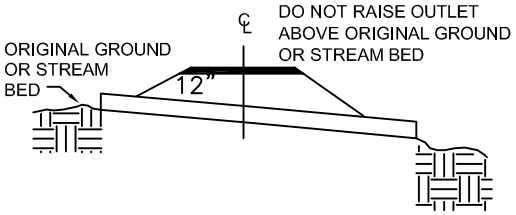
SECTION TYPE 1

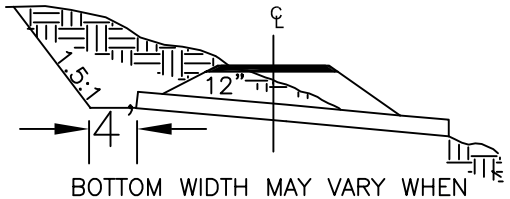
ORIGINAL ROAD GRADIENT	GRADIENT A
0 %–8 %	+3–5 %
9 %–12 %	+2–3 %

Contractor shall construct Lead Off Ditches as needed to ensure proper drainage of Dips. Lead–Off Ditches are incidental to the construction of Dip construction.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	18

DRAINAGE CONSTRUCTION DETAILS

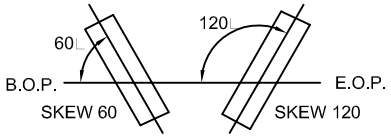




BOTTOM WIDTH MAY VARY WHEN CATCH BASIN IS CONSTRUCTED IN NATURAL DRAINAGE.

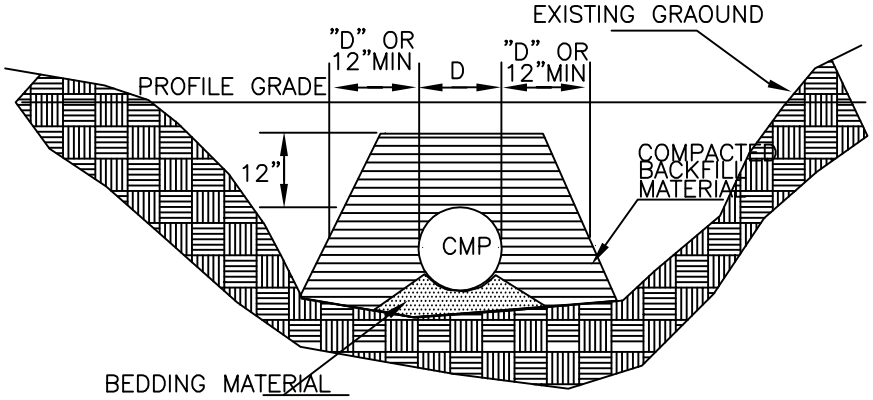
NOTE: MINIMUM COVER OVER CULVERT AT SHOULDER SHALL BE 12 INCHES BELOW SUBGRADE FOR SURFACED AND 18 INCHES BELOW SUBGRADE FOR UNSURFACED.

SKEW DIAGRAM

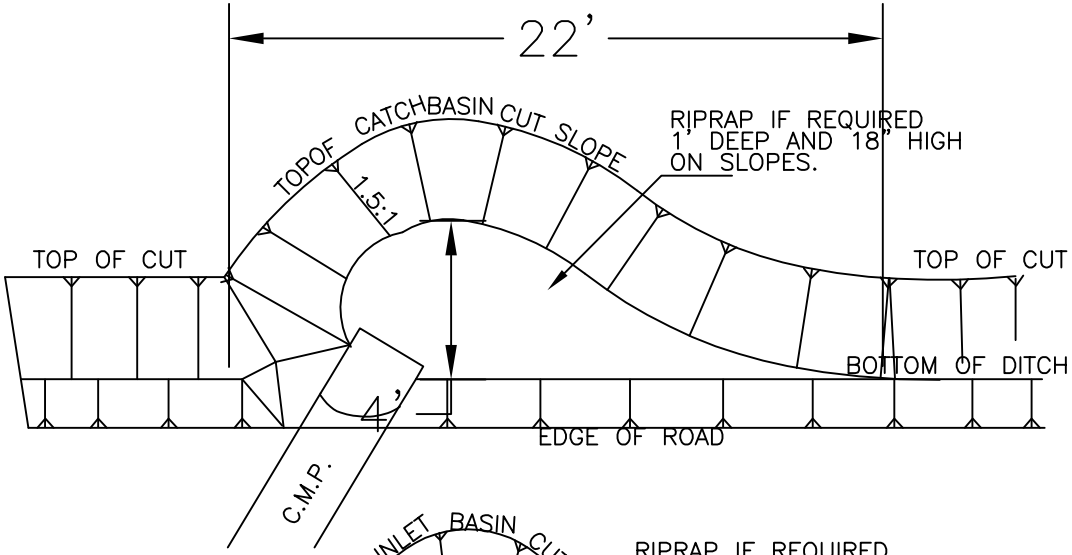


NOTE: SKEW ANGLE WILL BE SHOWN ON THE PLANS.

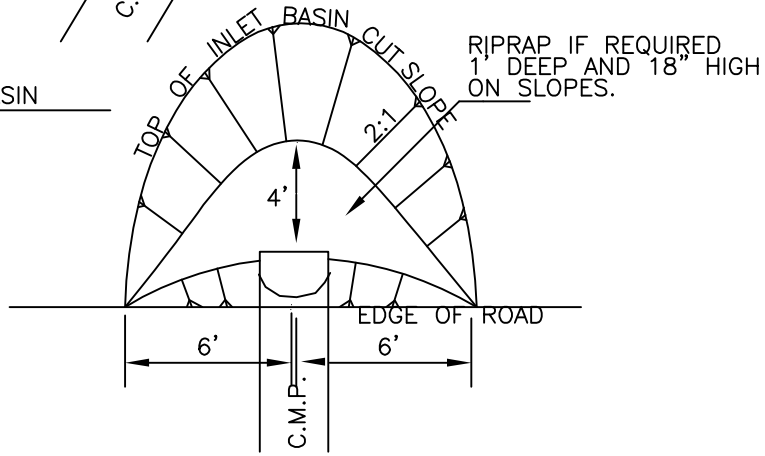
METHOD OF BACKFILLING PIPE



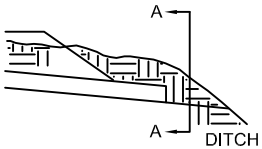
CATCH BASIN



INLET BASIN

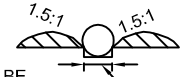


OUTLET DITCH



DITCH GRADE =

SECTION A-A



MATERIAL TO BE DEPOSITED IN BOTH SIDES OF DITCH

CULVERT DIAMETER

PROJECT	SHEET NUMBER
S.GOOSEBERRY	19

FILL HEIGHT & INCH (mm) SHEET THICKNESS TABLES

THE METRIC CONVERSIONS ARE PROVIDED IN PARENTHESIS FOLLOWING THE ENGLISH UNITS.

H–20 LIVE LOAD

ROUND PIPES

2 2/3" x 1/2" (68 mm x 13 mm) CORRUGATIONS

PIPE DIA.	MIN. COVER	STEEL					ALUMINUM						
		MAXIMUM FILL HEIGHTS ABOVE TOP OF PIPE IN FEET (meter)											
		METAL THICKNESS IN INCHES (mm)											
		RIVETED, HELICAL OR SPOT WELDED					RIVETED OR HELICAL FABRICATION					SPOT WELDED FAB.	
INCHES (mm)		.064 (1.6)	.079 (2.00)	.109 (2.8)	.138 (3.5)	.168 (4.26)	.060 (1.5)	.075 (1.9)	.105 (2.67)	.135 (3.4)	.164 (4.0)	.060 (1.5)	.075 (1.9)
12 (305)	12 (305)	84 (25.6)	91 (27.7)				45 (13.7)	45 (13.7)	78 (23.8)	81 (25.6)	84 (25.4)	26 (7.9)	33 (10.0)
15 (381)	12 (305)	67 (20.4)	73 (22.2)										
18 (457)	12 (305)	56 (17.0)	61 (18.6)				30 (9.1)	30 (9.1)	52 (15.8)	54 (16.5)	56 (17.0)	18 (5.5)	22 (6.7)
24 (610)	12 (305)	42 (12.8)	46 (14.0)	59 (18)			22 (6.7)	22 (6.7)	39 (11.9)	41 (12.5)	42 (12.8)	14 (4.3)	16 (4.9)
30 (762)	12 (305)	34 (10.4)	36 (11.0)	47 (14)			18 (5.5)	18 (5.5)	31 (9.4)	32 (9.8)	34 (10.4)	11 (3.4)	13 (4.0)
36 (914)	12 (305)	28 (8.5)	30 (9.1)	39 (11.9)	41 (12.5)		15 (4.6)	15 (4.6)	26 (7.9)	27 (8.2)	28 (8.5)	9 (2.7)	11 (3.3)
42 (1067)	12 (305)	31 (9.4)	43 (13.1)	46[67] (14.0)	48[70] (14.6)	50[73] (15.2)		26 (7.9)	43 (13.1)	43 (13.1)	44 (13.4)		
48 (1219)	12 (305)	27 (8.2)	37 (11.3)	45[58] (13.7)	46[61] (14.0)	47[64] (14.3)			40 (12.2)	41 (12.5)	43 (13.1)		
54 (1372)	12 (305)		33 (10.0)	43[52] (13.1)	44[54] (13.4)	45[57] (13.7)			35 (10.7)	37 (11.3)	38 (11.6)		
60 (1524)	12 (305)			43[47] (13.1)	43[49] (13.1)	44[51] (13.4)				33 (10.0)	34 (10.4)		
66 (1676)	12 (305)			42 (12.8)	43 (13.1)	43[47] (13.1)				30 (9.1)	31 (9.4)		
72 (1829)	12 (305)				41 (12.8)	43 (13.1)					29 (8.8)		
78 (1981)	12 (305)					39 (11.9)							
84 (2134)	12 (305)					35 (10.7)							

3" X 1" (76 mm x 25 mm) CORRUGATIONS

PIPE DIAMETER	MINIMUM COVER	STEEL				
		MAXIMUM FILL HEIGHTS ABOVE TOP OF PIPE IN FEET (meter)				
		METAL THICKNESS IN INCHES (mm)				
INCHES (mm)		.064 (1.6)	.079 (2.00)	.109 (2.76)	.138 (3.5)	.168 (4.26)
36 (914)	12 (305)	48 (14.6)	60 (18.3)	78[88] (23.8)	89[106] (27)	101[118] (30.8)
42 (1067)	12 (305)	41 (12.5)	51 (15.6)	64[76] (19.5)	71[91] (21.6)	79[101] (24.0)
48 (1219)	12 (305)	36 (11.0)	45 (13.7)	57[66] (17.4)	61[80] (18.6)	66[88] (20.1)
54 (1372)	12 (305)	32 (9.75)	40 (12.2)	52[59] (15.8)	55[71] (16.7)	59[79] (18.0)
60 (1524)	12 (305)	29 (8.8)	36 (11.0)	49[53] (14.9)	51[64] (15.9)	54[71] (16.4)
66 (1676)	12 (305)	26 (7.9)	33 (10.0)	47 (14.3)	49[58] (14.9)	51[64] (15.5)
72 (1829)	12 (305)	24 (7.3)	30 (9.1)	44 (13.4)	47[53] (14.3)	49[59] (14.9)
78 (1981)	12 (305)	22 (6.7)	28 (8.5)	41 (12.5)	46[49] (14.0)	47[54] (14.3)
84 (2134)	12 (305)	21 (6.4)	26 (7.9)	38 (11.6)	45 (13.7)	46[51] (14.0)
90 (2286)	12 (305)	19 (5.8)	24 (7.3)	35 (10.7)	43 (13.1)	45 (13.7)
96 (2438)	12 (305)	18 (5.5)	22 (6.7)	33 (10.0)	40 (12.2)	44 (13.4)
102 (2591)	24 (610)	17 (5.2)	21 (6.4)	31 (9.4)	38 (11.6)	42 (12.8)
108 (2743)	24 (610)		20 (6.0)	30 (9.1)	35 (10.7)	39 (11.9)
114 (2896)	24 (610)		19 (5.8)	28 (8.5)	34 (10.4)	37 (11.3)
120 (3048)	24 (610)			27 (8.2)	32 (9.7)	36 (11.0)

6" X 1" (152 mm x 25 mm) CORRUGATIONS

PIPE DIAMETER	MINIMUM COVER	ALUMINUM				
		MAXIMUM FILL HEIGHTS ABOVE TOP OF PIPE IN FEET (meter)				
		METAL THICKNESS IN INCHES (mm)				
INCHES	(mm)	.060 (1.5)	.075 (1.9)	.105(2.67)	.135 (3.4)	.165 (4.0)
30 (762)	15 (381)	29 (8.8)	37 (11.3)	56 (17.0)	58 (17.7)	59 (18.0)
36 (914)	15 (381)	24 (7.3)	31 (9.4)	47 (14.3)	48 (14.6)	49 (14.9)
42 (1067)	15 (381)	21 (6.4)	27 (8.2)	40 (12.2)	41 (12.5)	42 (12.8)
48 (1219)	15 (381)	24 (7.3)	28 (8.5)	37 (11.3)	44 (13.4)	49 (14.9)
54 (1371)	24 (610)	22 (6.7)	25 (7.6)	33 (10.1)	39 (11.9)	46 (14.0)
60 (1524)	24 (610)	19 (5.8)	22 (6.7)	30 (9.1)	35 (10.7)	42 (12.8)
66 (1676)	24 (610)	18 (5.5)	20 (6.0)	27 (8.2)	32 (9.7)	38 (11.6)
72 (1829)	36 (914)		18 (6.4)	25 (7.6)	29 (8.8)	35 (10.7)
78 (1981)	36 (914)			23 (7.0)	27 (8.2)	32 (9.7)
84 (2133)	36 (914)			21 (6.4)	25 (7.6)	30 (9.1)
90 (2286)	36 (914)				24 (7.3)	28 (8.5)
96 (2438)	36 (914)				22 (6.7)	26 (7.9)

[88] NUMBERS IN BRACKETS ARE MAXIMUM FILL HEIGHTS IN FEET

EQUIVALENT THICKNESS

GAUGE NUMBER	THICKNESS –INCHES (mm) STEEL	ALUMINUM
16	0.064 (1.6)	0.060 (1.5)
14	0.079 (2.0)	0.075 (1.9)
12	0.109 (2.8)	0.105 (2.7)
10	0.138 (3.5)	0.135 (3.4)
8	0.168 (4.3)	0.165 (4.2)

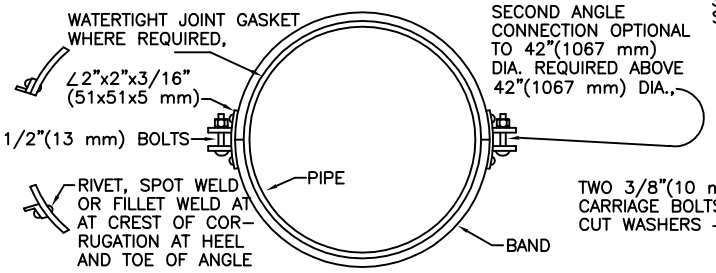
STANDARD COUPLER BANDS

CULVERT SIZE INCHES (mm)	CORRUGATED: STANDARD ANNULAR WIDTH INCHES (mm)	STANDARD ANNULAR NO. OF BOLTS	HELICAL WIDTH INCHES (mm)	HELICAL NO. OF BOLTS	3" X 1" (76 x 25 mm) WIDTH INCHES (mm)	3" X 1" (76 x 25 mm) NO. OF BOLTS	6" X 1" (152 x 25 mm) WIDTH INCHES (mm)	6" X 1" (152 x 25 mm) NO. OF BOLTS	(A) FLAT–DIMPLED WIDTH INCHES (mm)	NO. OF ROWS OF DIMPLES	NO. OF BOLTS (B)	NO. OF BOLTS (C)
UNDER 18" (457)	7" (178)	2	7" (178)	2					10 1/2" (267)	2	2	2
18" TO 54" (457–1372)	12" (305)	3	12" (305)	3	14" (355)	3	18" (457)	3	10 1/2" (267)	2	3	2
OVER 54" (1372)	24" (610)	5	24" (610)	5	24" (610)	5	24" (610)	4	16 1/4" (413)	4	5	4

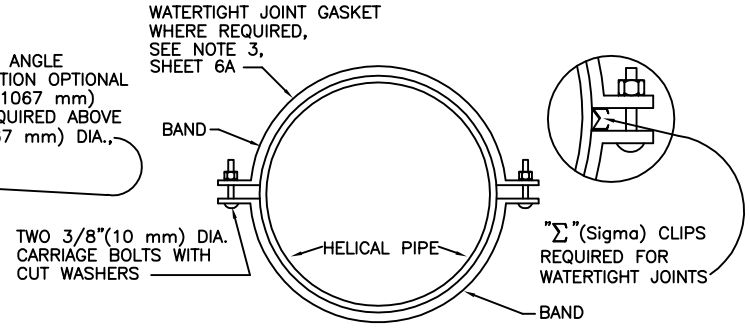
(A)–PERMITTED ONLY FOR CONNECTING ANNULAR CORRUGATED TO HELICAL CORRUGATED PIPE, (B)–FOR CONNECTING METAL END SECTIONS. (C)–FOR BANDS WITH ANGLES. FOR BANDS WITH TENSION TYPE CONNECTIONS.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	20

TYPE A



CONNECTION ANGLE DETAIL

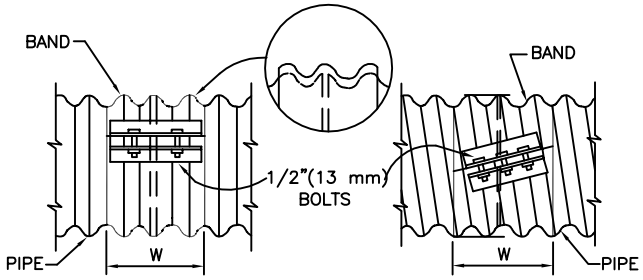


END VIEW

TYPE D

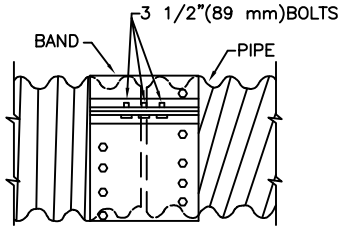
NOTE:
DIMPLED BANDS MAY BE USED ON PIPES WHEN APPROVED BY THE CONTRACTING OFFICER.

SECTION THRU DIMPLE



ANNULAR COUPLING

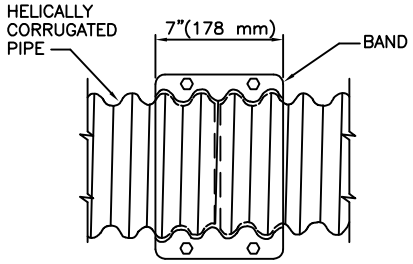
HELICAL COUPLING



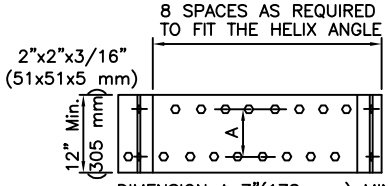
TOP VIEW

TYPE B

FOR 6"–10" (152–254 mm) DIA. PIPES



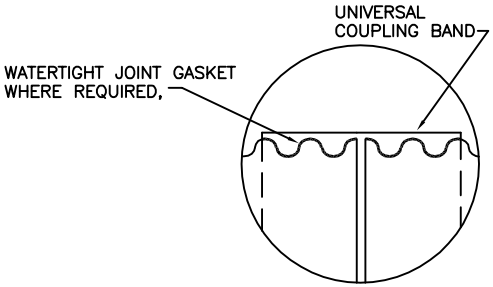
TOP VIEW



DIMENSION A 7"(178 mm) MIN. BETWEEN DIMPLES AS REQUIRED TO FIT THE HELIX ANGLE

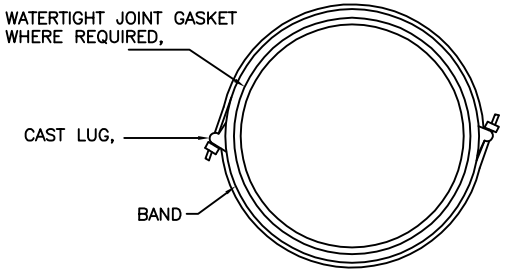
2 2/3"x1/2"(68x13 mm)CORRUGATIONS							3" x 1"(76X25 mm) CORRUGATIONS						
PIPE DIAMETER		W				# of 1/2" (13 mm) BOLTS	PIPE DIAMETER		W				# of 1/2" (13 mm) BOLTS
		ANN.		HEL.					ANN.		HEL.		
inches	mm	inch.	mm	inch.	mm		inches	mm	inch.	mm	inch.	mm	
6–10	152–254	7	178	7	178	2	36–84*	914–2134	14	356	14	356	3
12–15	305–381	7	178	12	305	2–3	36–120	914–3048	26	660	26	660	5
18–84*	457–2134	12	305	12	305	3							
24–84	610–2134	24	610	24	610	5							

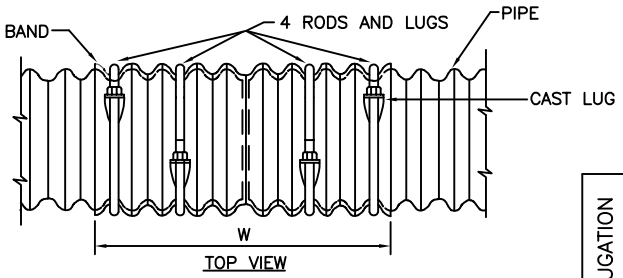
* = SEE THE SPECIFICATIONS



TYPE C

END VIEW





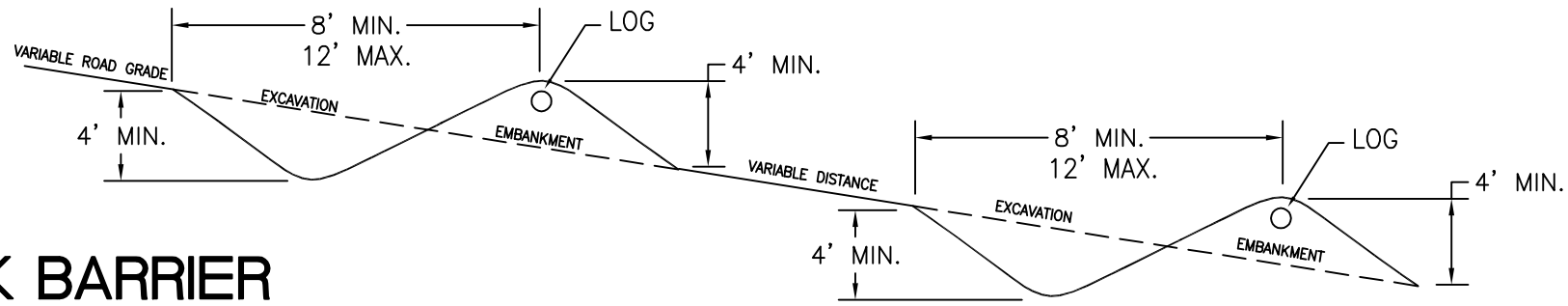
TOP VIEW

		PIPE DIAMETER		ROD DIA.		NARROW BAND			WIDE BAND		
						W		# of ROD	W		# of ROD
		(inch.)	(mm)	(inch.)	(mm)	(inch.)	(mm)		(inch.)	(mm)	
CORRUGATION	2 2/3" X1/2" (68x13mm)	12–21	305–533	3/8	10	12	305	2			
		24–54*	610–1372	1/2	13	12	305	2	24	610	4
		60–84*	1524–2134	5/8	16	12	305	2	24	610	4
	3"X1" (76x 25mm)	36–54*	914–1372	1/2	10	14	356	2	26	660	4
		60–84*	1524–2134	3/8	13	14	356	2	26	660	4
		84–120	2134–3048	5/8	16				26	660	4

* = SEE THE SPECIFICATIONS

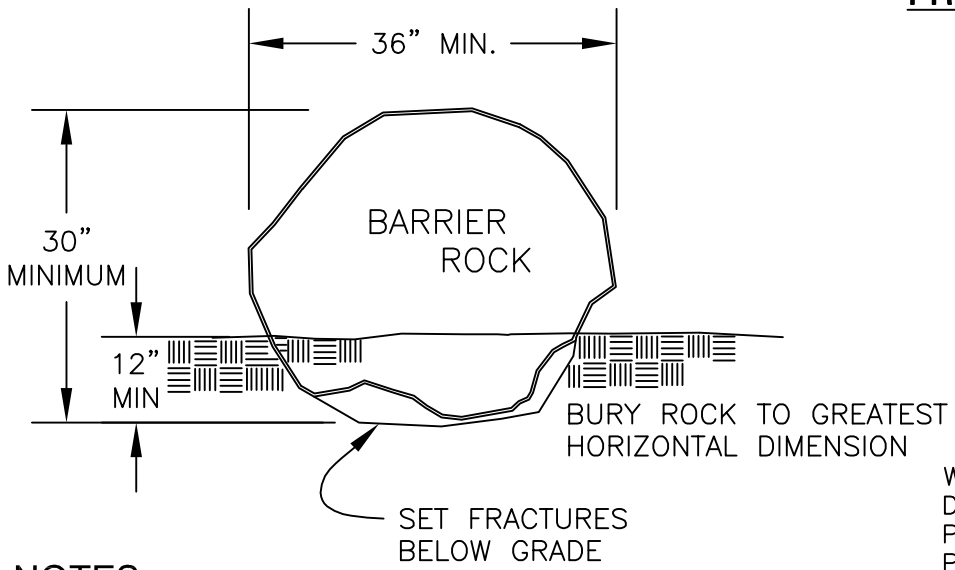
PROJECT	SHEET NUMBER
S.GOOSEBERRY	21

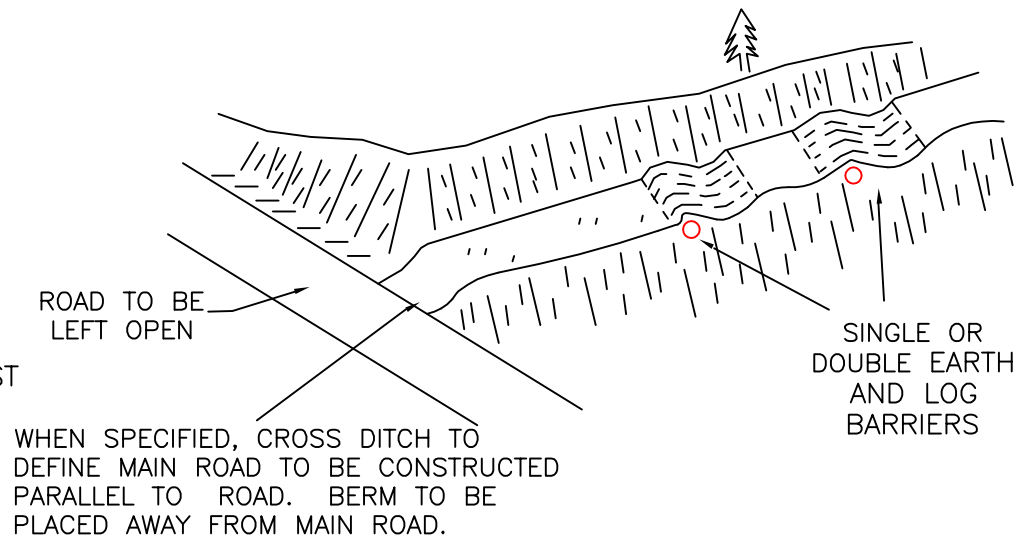
EARTH AND LOG BARRICADE DETAIL



PROFILE VIEW

ROCK BARRIER





NOTES:

(1) BARRIER ROCKS SHALL BE A MINIMUM SIZE OF 30" X 36".

(2) DISTURBED EARTH BECAUSE OF INSTALLATION OF ROCK BARRIER SHALL BE BLENDED INTO THE SURROUNDING GROUND.

(3) WHEN LOCATION STAKES ARE USED, THEY DESIGNATE THE CENTER OF ROCK BARRIER.

(4) UNLESS SHOWN OTHERWISE, BARRIER ROCKS ARE TO BE PURCHASED COMMERCIALLY.

NOTES:

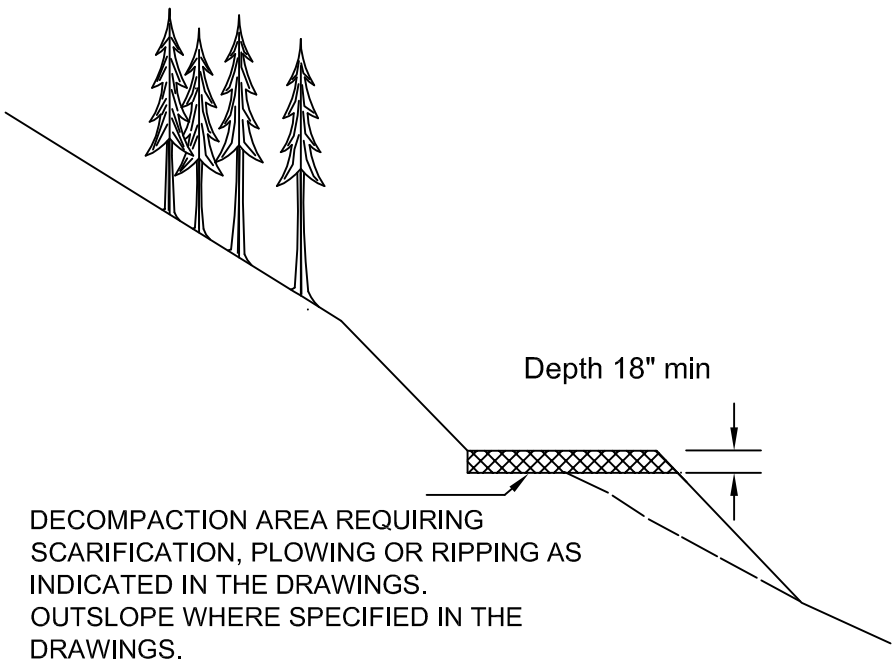
(1) PLACE 20" X 12' LOG IN EMBANKMENT AND COVER WITH AT LEAST ONE FOOT OF EMBANKMENT MATERIAL. BOULDERS MAY BE USED IN LIEU OF LOGS WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) ROAD BARRICADES SHALL BE CONSTRUCTED AT LOCATIONS STAKED BY THE ENGINEER.

(3) DRAWINGS NOT TO SCALE.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	22

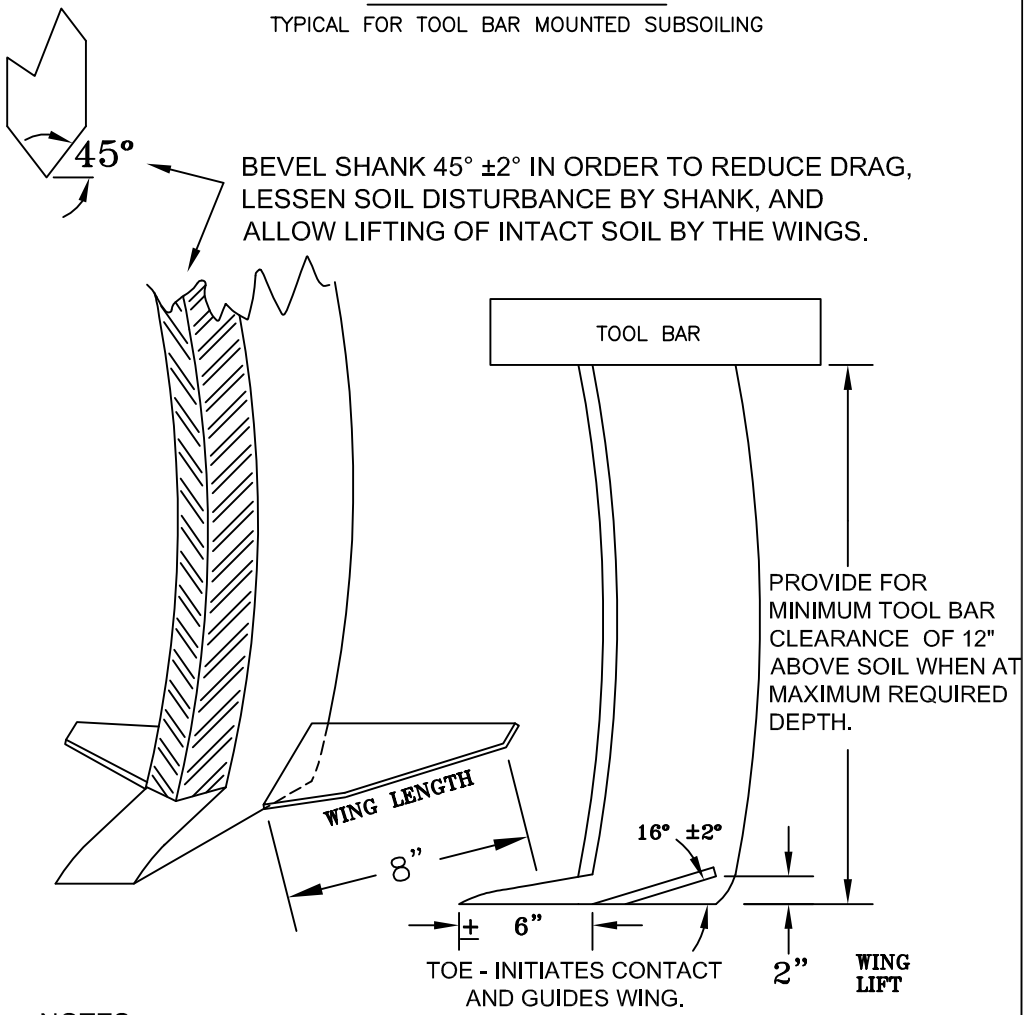
TYPICAL FOR ROADBED SCARIFICATION, PLOWING OR RIPPING



DECOMPACTION AREA REQUIRING SCARIFICATION, PLOWING OR RIPPING AS INDICATED IN THE DRAWINGS.
OUTSLOPE WHERE SPECIFIED IN THE DRAWINGS.

WING RIPPERS

TYPICAL FOR TOOL BAR MOUNTED SUBSOILING



NOTES:

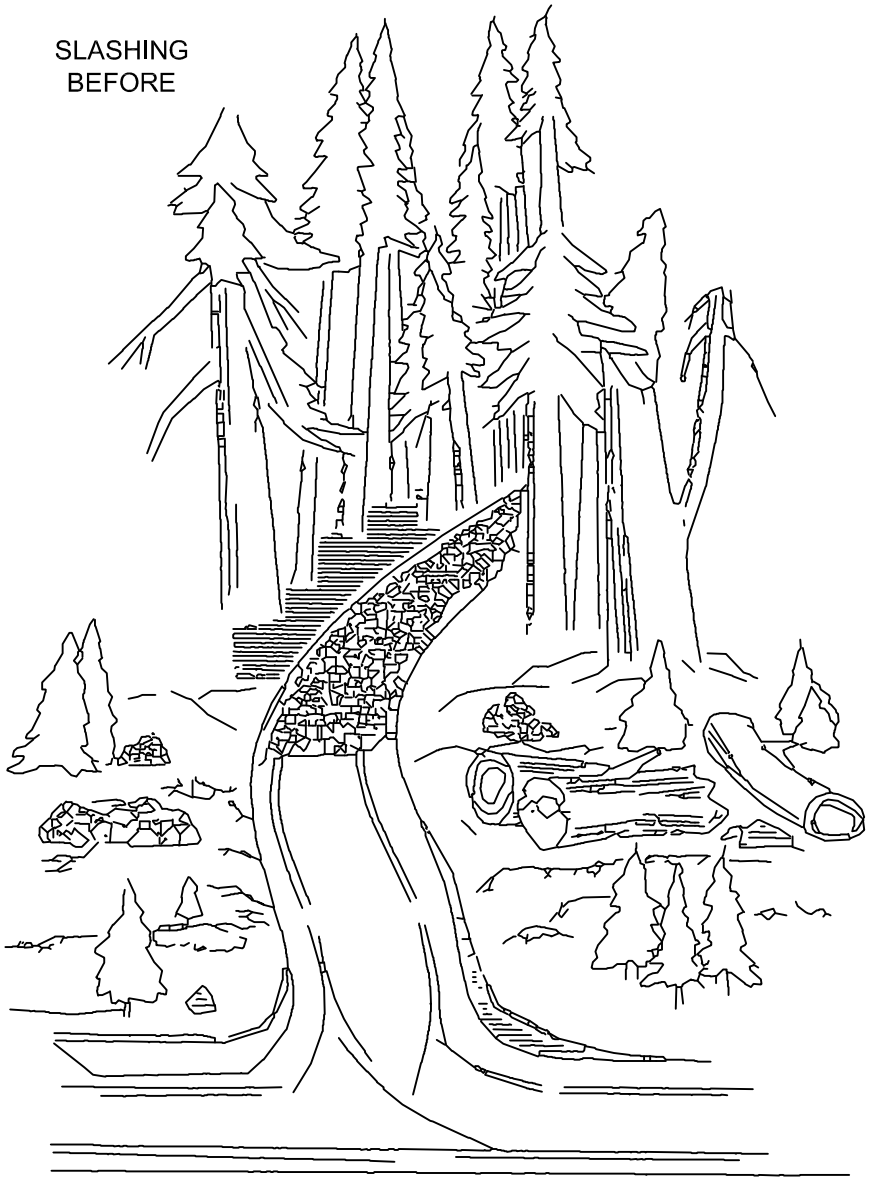
1) SHANK MAY BE CURVED OR STRAIGHT. INTENDED FOR USE WHEN OPERATING 3 SHANKS OVER AN 8' WIDTH. WINGS WITH TOO GREAT AN ANGLE OF LIFT CAN RESULT IN PLOWING EFFECT.

2) AN EXCAVATOR MAY BE USED IN LIEU OF WING RIPPER AND DOZER WHEN APPROVED IN WRITING BY THE CONTRACTING OFFICER.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	23

SLASHING OR CAMOUFLAGE TYP

SLASHING BEFORE



NOTE:
1) COMPLETE ALL SURFACE TREATMENTS SUCH AS OUTSLOPING, SCARIFICATION, DRAINAGE REMOVAL PRIOR TO SLASHING ROAD.
2) SURFACE TREATMENTS SHALL BE INSPECTED AND APPROVED PRIOR TO SLASHING.

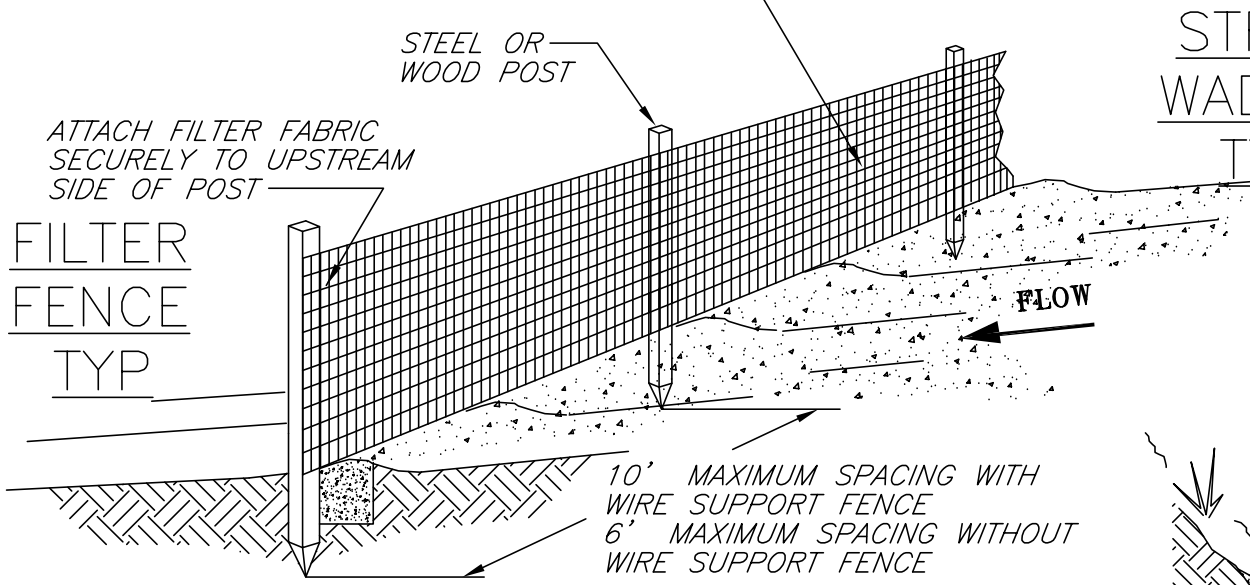
SLASHING AFTER

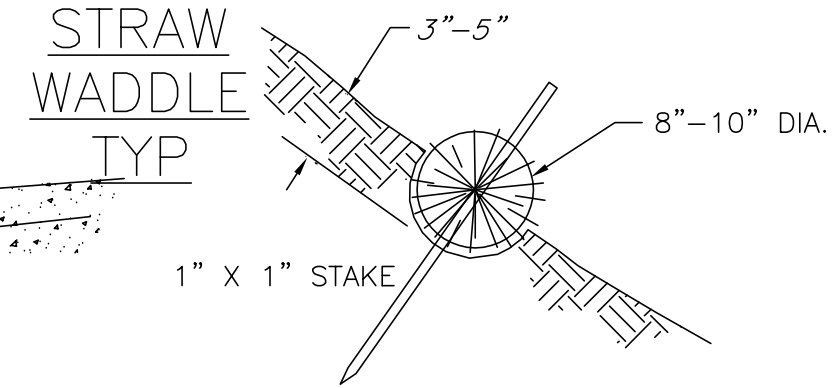
NOTE:
1) UTILIZE ROCK, LOGS, STUMPS, LEAF LITTER AND BRUSH FROM SURROUNDING AREA TO ENSURE ROAD LOOKS SIMILAR TO ADJACENT SURFACE.
2) ROAD SURFACE SHOULD HAVE A MINIMUM OF 80% COVERAGE AND SHOULD BE SLASHED WITH ENOUGH LARGE MATERIAL TO ELIMINATE POSSIBLE VEHICULAR TRAFFIC.
3) IF NECESSARY AND APPROVED BY THE CONTRACTING OFFICER, TREES ADJACENT TO ROADWAY MAY BE FELLED.

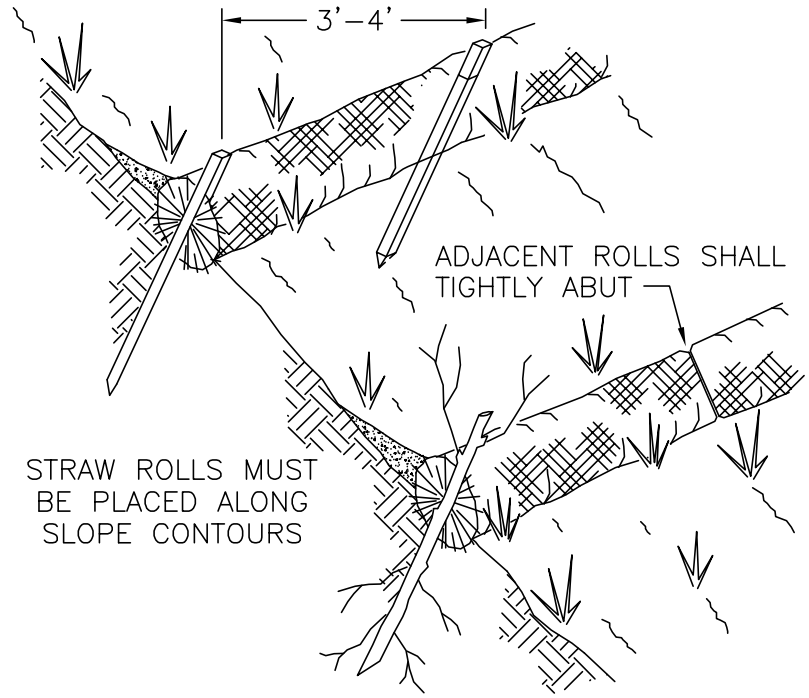
TEMPORARY EROSION CONTROL

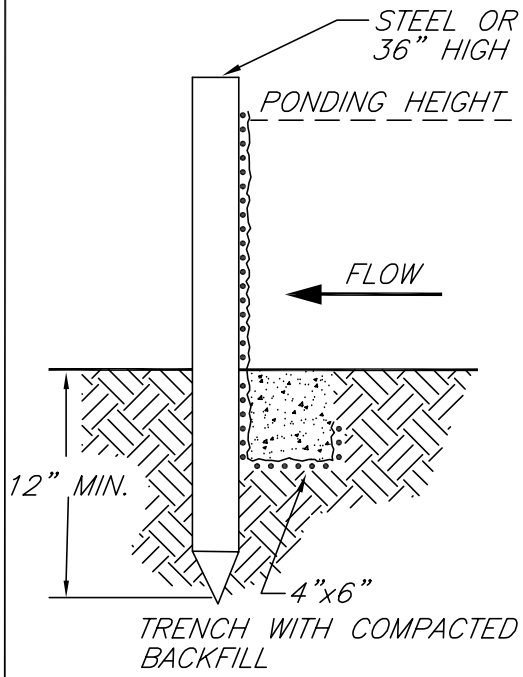
NOT TO SCALE

PROJECT	SHEET NUMBER
S.GOOSEBERRY	24

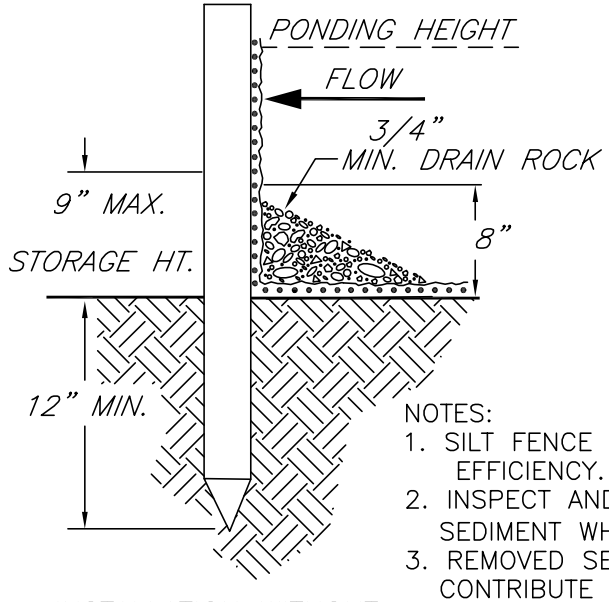








TRENCH DETAIL



INSTALLATION WITHOUT TRENCHING

NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.
4. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"–5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
5. FILTER FENCE OR STRAW WADDLES MAY BE USED.

LOW TO MID ELEVATION SITES (3,000 TO 5,500 FT)

Seed Mixes

Seed shall be state-certified seed of the latest season's crop and shall be delivered in original, sealed packages bearing the producer's guaranteed analysis for percentages of mixtures, purity, germination, weed-seed content, and inert material. Labels shall conform with USDA Federal Seed Act, California Agricultural Code and other applicable seed laws, and shall be acceptable to the County Agricultural Commissioner. Wet, moldy, or otherwise damaged seed will be rejected.

Vulpia microstachys, ssp. "Sierra"	6.0 pounds per acre (Ok source is from Sierra National Forest north of Fresno)
Lotus purshianus, var "Sierra"	4.0 pounds per acre (Northern California source only).
Bromus carinatus, var. carinatus (Eldorado or Mokelumne Brome)	9.0 pounds per acre (OK either source)
Elymus Glaucus, ssp. "El Dorado"	8.0 pounds per acre (OK either item)
Festuca rubra, ssp. "Mokelumne Fescue"	5.0 pounds per acre (*We call this seed F Occidentalis - Mokelumne*
TOTAL	32.0 pounds per acre

Fertilizer

Fertilizer shall be slow-release, organic product, commercial grade, granular free flowing, uniform in composition, delivered in fully-labeled sealed containers, and shall conform to applicable state and federal regulations. Fertilizer shall have the manufacture's guaranteed statement of analysis.

The U.S. Forest Service-approved fertilizer product is BIOSOL Mix 7-2-3.
For Seed Mix A, BIOSOL Mix 7-2-3 will be applied. BIOSOL Mix 7-2-3 will be applied with and application rate of 1000 lbs/ac, reflecting a Nitrogen application rate of 70 lbs/ac and a Phosphorus application rate of 20 lbs/ac.

Timing

Seeding is to be completed between September 15 and October 15, and prior to the onset of the rainy season.

Seeding

Seed should be applied as soon after seedbed preparation and fertilizing as possible, when the soil is loose and moist.

Always apply seed or inocculant before mulch.

Apply seed or inoculant/seed mixture using hand broadcasting, calibrated spreaders, cyclone seeders, mechanical drills, or hydro seeders (only for seed) so the seed is applied uniformly on the site.

Mulching

Straw mulch, erosion control blankets or mulch and tackifiers/soil binders should be applied over the seeded areas.

Straw will be weed-free rice straw, applied at 4,000 lbs/AC. .

Apply the following seed / mulch application at all soil disturbance within 50 lf of drainages when specified in the Drawings.

This work is incidental to other work in the Contract.

PROJECT	SHEET NUMBER
S.GOOSEBERRY	26

PART 1 GENERAL

1.01 SCOPE

A. This specification shall be included in all contracts that allow drafting of water from a live stream . Approval from the CONTRACTING OFFICER shall be in writing prior to any drafting from a live stream. This work shall include any stream preperation , installation of a screen box as shown on the drawings and other work as required by the CONTRACTING OFFICER .

1.02 MEASUREMENT AND PAYMENT

A. No separate measurement or payment will be made for work defined in this section. Work defined under this section shall be considered as part of the work, and contract price and payment is included in other sections.

PART 2 PRODUCTS AND MATERIALS

2.01 WIRE MESH

A. Wire mesh shall be 2mm openings.

B. The screen box frame shall be constructed of 1-1/2" angle iron , that will support the wire mesh in a secure manner with no joints or holes over 2mm in greatest dimension.

2.02 SCREEN BOX METAL FRAME

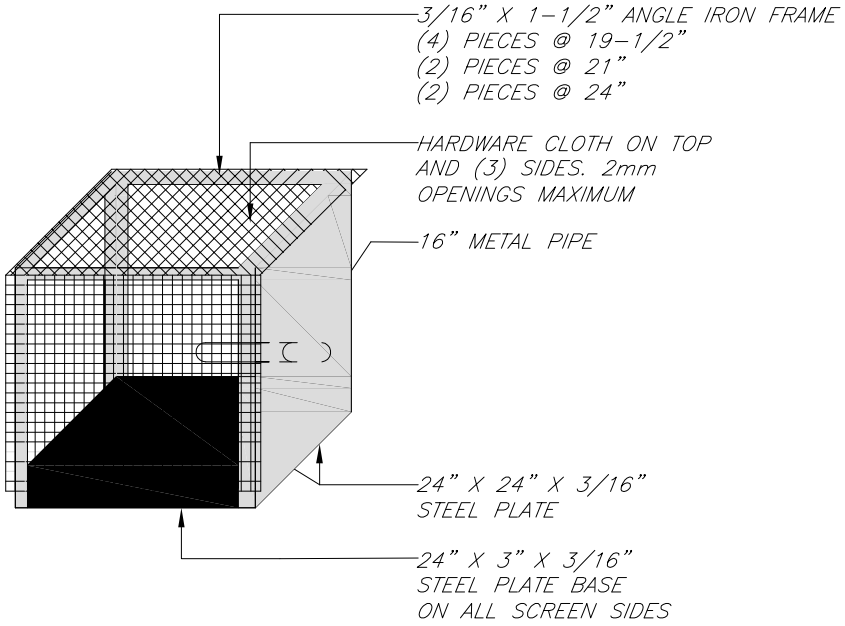
A. The metal frame shall have a solid bottom and one solid side of 3/16" metal. The bottom shall be welded a minimum of three (3) inches from the bottom of the screen box. The solid side shall be securely welded to the side frame metal and to the metal bottom.

PART 3 EXECUTION

3.01 SCREEN BOX CONSTRUCTION

A. A 16" long metal pipe for the drafting hose to be used shall be fixed to the metal side plate a minimum of four inches (4") from the bottom of the screen box. The bottom of the metal pipe and the inlet end of the pipe would be fixed so it is at the center of the screen box as shown on the DRAWING. The outlet end of the pipe may be attached to the drafting hose by any method that will ensure a secure, tight connection.

B. The metal screen shall be securely attached to the outside of the screen box frame with metal screws , bolts , clamps or other method that will securely hold the screen material in place. The three open sides and the top shall be covered with screen . The top of the box should be constructed so that it may be opened to service the inlet pipe and to clean the screen.



COVERED WATER DRAFTING BOX

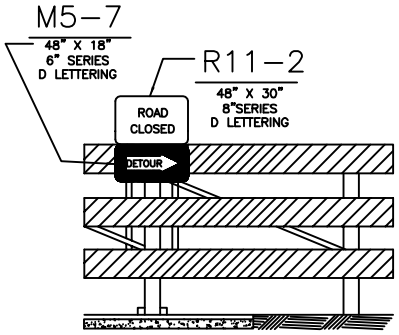
NO SCALE

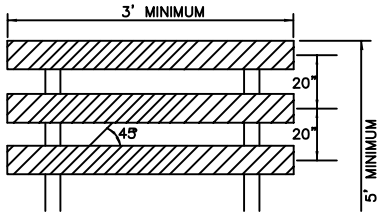
PROJECT	SHEET NUMBER
S.GOOSEBERRY	27

TRAFFIC CONTROL DEVICES

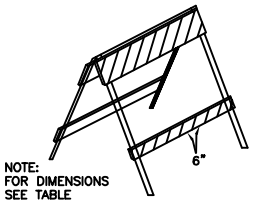
GENERAL NOTES

1. DESIGNS FOR SIGNS AND BARRICADES SHOWN ABOVE ARE IN ACCORDANCE WITH STANDARDS IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" LATEST EDITION.
SIGNS MUST COMPLY WITH DEPARTMENT OF TRANSPORTATION " SIGN RETROREFLECTIVITY REQUIREMENT" GUIDE.
2. SIGNS SHALL BE MADE FROM SUITABLE MATERIALS WHICH ARE IN ACCORDANCE WITH ALL STATE AND FEDERAL SPEC.
3. SIGNS MAY BE MADE OF WOOD OR METAL WOOD –5/8" PLYWOOD MANUFACTURED WITH ALL SPECIAL WATERPROOF GLUE. METAL SIGNS–16 GAUGE SHEET STOCK WITH EMBOSSED OR VITRIFIED FINISH. WHEN EMBOSSED THE DETAILS OF THE DESIGN ARE RAISED FROM THE BACKGROUND OF THE DESIGN NOT LESS THAN .100" NOR MORE THAN .125". A CARDBOARD SIGN MAY BE USED IF APPROVED BY THE ENGINEER.
4. REGULATORY SIGNS SHALL BE RECTANGULAR IN SHAPE WITH THE LARGER DIMENSION VERTICAL AND HAVE BLACK AND WHITE LEGEND OR BACKGROUND. ALL REGULATORY SIGNS UNLESS DEFINITELY EXCEPTED IN THE SPECIFICATIONS, SHALL BE REFLECTORIZED OR ILLUMINATED.
5. ALL SIGNS, UNLESS DEFINITELY EXCEPTED IN THE SPECIFICATIONS, SHALL BE DIAMOND SHAPED (SQUARE WITH ON DIAGONAL VERTICAL) AND SHALL HAVE A HIGHWAY ORANGE BACKGROUND WITH A BLACK LEGEND. ALL WARNING SIGNS HAVING SIGNIFICANCE DURING THE HOURS OF DARK SHALL BE REFLECTORIZED OR ILLUMINATED.
6. SIGNS SHALL BE LOCATED WHERE THEY WILL BE CONSPICUOSLY VISIBLE DAY AND NIGHT ON THE RIGHT HAND SIDE OF APPROACHING TRAFFIC. THEY SHALL BE FACING TRAFFIC AND LOCATED WHERE THEY CAN BE SEEN AT ALL TIMES BY APPROACHING DRIVERS WITH A MINIMUM OF EFFORT.
7. WHEN A SIGN IS REQUIRED FOR AN EXTENDED PERIOD, IT SHALL BE FASTENED TO 4 X 4 POSTS WITH 2, 3/8" CARRIAGE BOLTS. PORTABLE SUPPORTS ARE PERMITTED FOR SHORT PERIODS PROVIDED THE CONSTRUCTION IS SUCH THAT WIND OR OTHER AGENTS CANNOT READILY UPSET THE SIGN.
8. SIGN M4–10R SHALL BE ERRECTED AT THE BEGINNING OF DETOURS, ALONG DETOURS AT 1/4 MILE INTERVALS AND AT ROAD JUNCTIONS ALONG DETOURS IN A GREATLY ENLARGED SIZE IN THIS SIGN IS PRESCRIBED FOR USE ON BARRICADES IN THE ROADWAY WHERE A ROAD IS CLOSED FOR CONSTRUCTION OR MAJOR MAINTENANCE OPERATIONS.
9. SIGN W20–1 SHALL BE ERRECTED 1500' FROM EACH END OF CONSTRUCTION OPERATIONS.
10. SIGN W21–3 AND W11–1 SHALL BE ERRECTED AT EACH END OF AREAS WHERE HEAVY EQUIPMENT IS IN OPERATION AND SHALL BE REPEATED EVERY 1/2 MILE, IF THE OPERATION EXTENDS OVER ONE MILE.
11. OTHER SIGNS SHOWN ABOVE SHALL BE USED AS INDICATED BY THEIR DESIGN.
12. IF OTHER SIGNS NOT SHOWN ARE REQUIRED THEY SHALL ALSO CONFORM IN DESIGN TO THOSE SHOWN IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
13. SELECTION AND PLACEMENT OF ALL SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
14. LIGHTING DEVICES SUCH AS FLASHERS, TORCHES, LANTERNS, AND ELECTRIC LIGHTS SHALL BE PLACED AND MAINTAINED FROM SUNSET TO SUNRISE AT ALL POINTS OF HAZARD AND AT ALL SIGNS INDICATING CAUTION.
15. SIGNS TO BE INSTALLED ON ALL HAUL ROADS AND CONSTRUCTION SITES TO PROVIDE ADEQUATE WARNING TO ALL USERS.

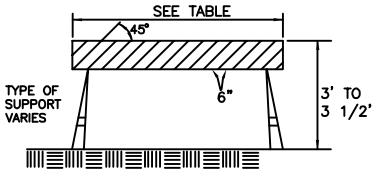




TYPE 111 BARRICADE



TYPE 11 BARRICADE

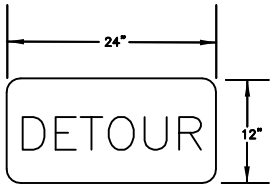


TYPE 1 BARRICADE

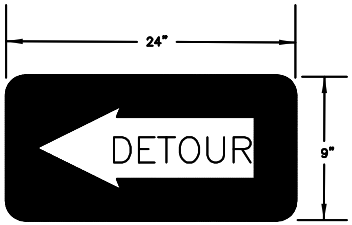
TYPE	1	11	111
WIDTH OF RAIL	8" MIN–12" MAX.	8" MIN–12" MAX.	8" MIN–12" MAX.
LENGTH OF RAIL	6'–8'	3' MIN.–4' MAX.	3' MIN.–VARIABLE MAX.
WIDTH OF STRIPES	6 IN.	6 IN.	6 IN.
HEIGHT	3 FT. MIN.	3' MIN.–3 1/2' MAX.	5 FT. MIN.
TYPE OF FRAME	DEMOUNTABLE OR HEAVY "A" FRAME	LIGHT "A" FRAME	POST OR SKIDS
FLEXIBILITY	ESSENTIALLY MOVABLE	PORTABLE	ESSENTIALLY PERMANENT

PROJECT	SHEET NUMBER
S.GOOSEBERRY	28

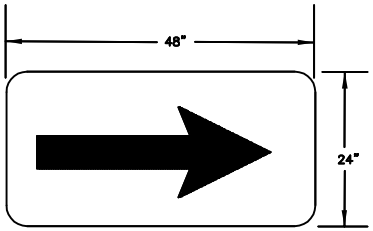
TRAFFIC CONTROL DEVICES



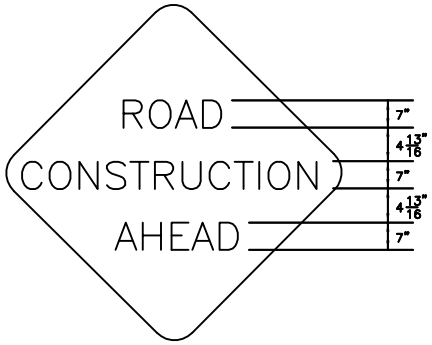
M4–B
24" X 12"
5" SERIES B LETTERING



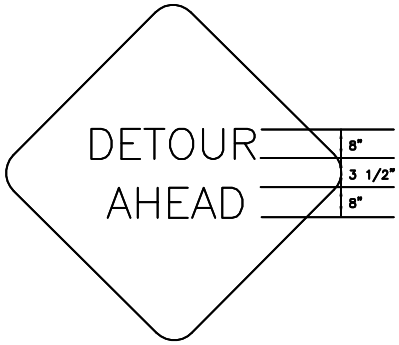
M4–10R
24" X 9"
RIGHT OR LEFT
3" SERIES D LETTERING



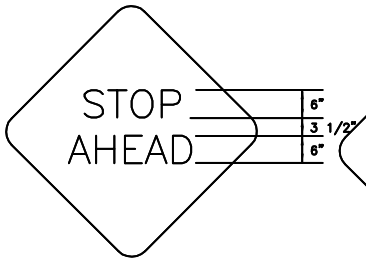
W1–6
48" X 24"
BLACK ARROW RIGHT OR LEFT.



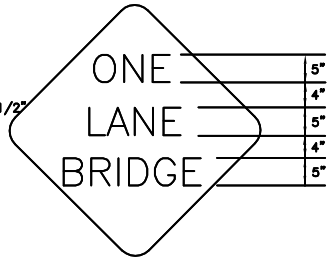
W20–1
48" X 48"
7" SERIES C LETTERING



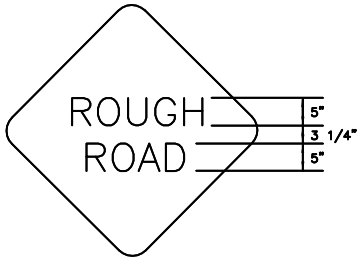
W20–2d
48" X 48"
8" SERIES C LETTERING



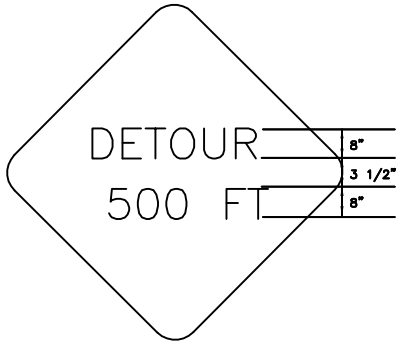
W3–1
30" X 30"
6" SERIES D LETTERING



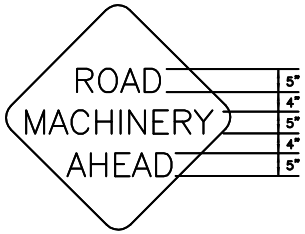
W5–2
36" X 36"
5" SERIES D LETTERING



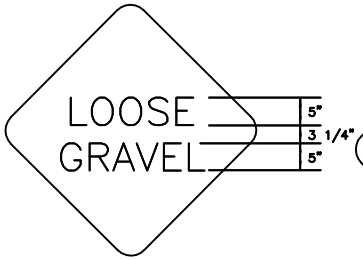
W8–6
30" X 30"
5" SERIES D LETTERING



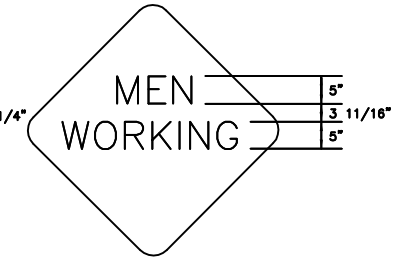
W20–2c
48" X 48"
8" SERIES C LETTERING



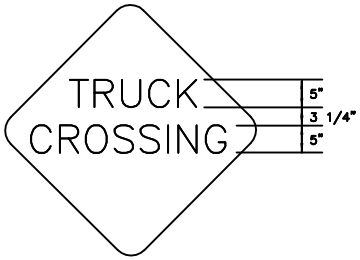
W21–3
36" X 36"
5" SERIES D LETTERING



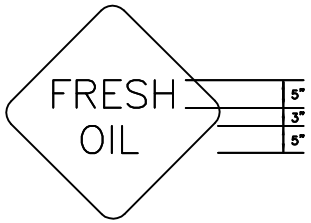
W8–7
30" X 30"
5" SERIES D LETTERING



W21–1
30" X 30"
5" SERIES C LETTERING

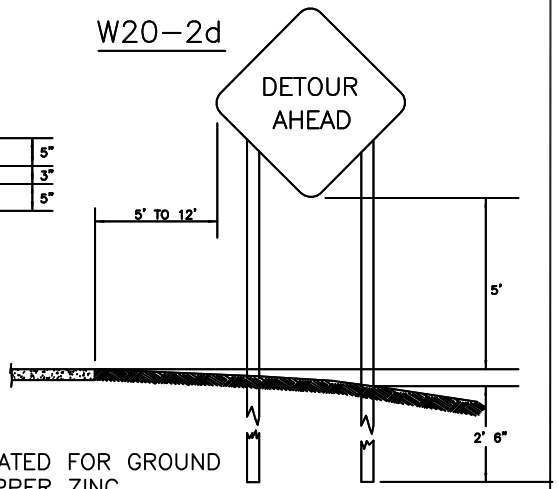


W11–1
30" X 30"
5" SERIES D LETTERING



W21–2
24" X 24"
5" SERIES C LETTERING

W20–2d



POST SHALL BE DOUGLAS FIR, TREATED FOR GROUND CONTACT, .40PCF, AMMONIACAL COPPER ZINC ARSENATE (ACZA)

SHEET 2 OF 2