

STATE	PROJECT	SHEET NUMBER
WA	FS ERFO 2007(1)-20(9)	A.1

U. S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION



PLANS FOR PROPOSED PROJECT
WA ERFO 2007(1)-20(9)

SKYKOMISH AREA ROADS EMERGENCY REPAIRS

MOUNT BAKER-SNOQUALMIE NATIONAL FOREST
SNOHOMISH AND KING COUNTIES
WASHINGTON

INTERMITTENT REPAIRS

INDEX TO SHEETS

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- A.3-4 VICINITY MAPS

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- D.2 FR 63 M.P. 16.364
- D.3 FR 63 M.P. 16.56
- D.4 FR 6830 M.P. 1.6

E. EROSION CONTROL

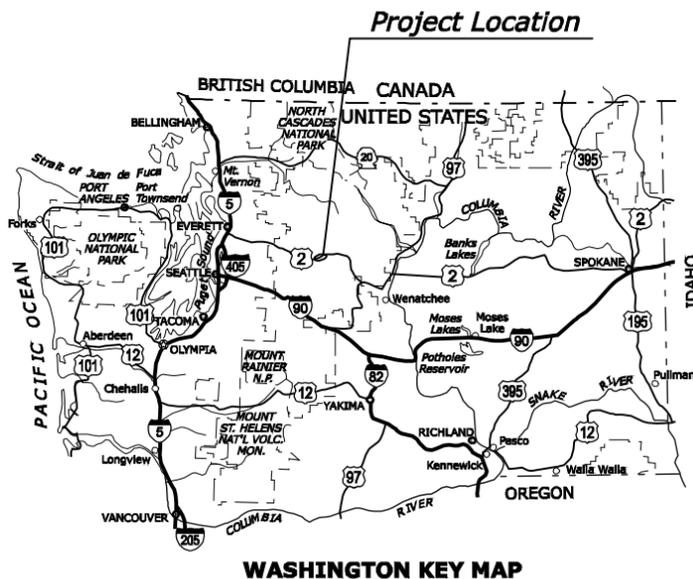
- E.1-2 STANDARD DRAWINGS

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WASHINGTON KEY MAP

TYPE OF CONSTRUCTION:

Embankment, culvert replacement and installation and gravel resurfacing.

DESIGN DESIGNATION:

Emergency repairs.

SPECIFICATION:

Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 US Customary Units and Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT = 400) 2001

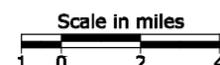
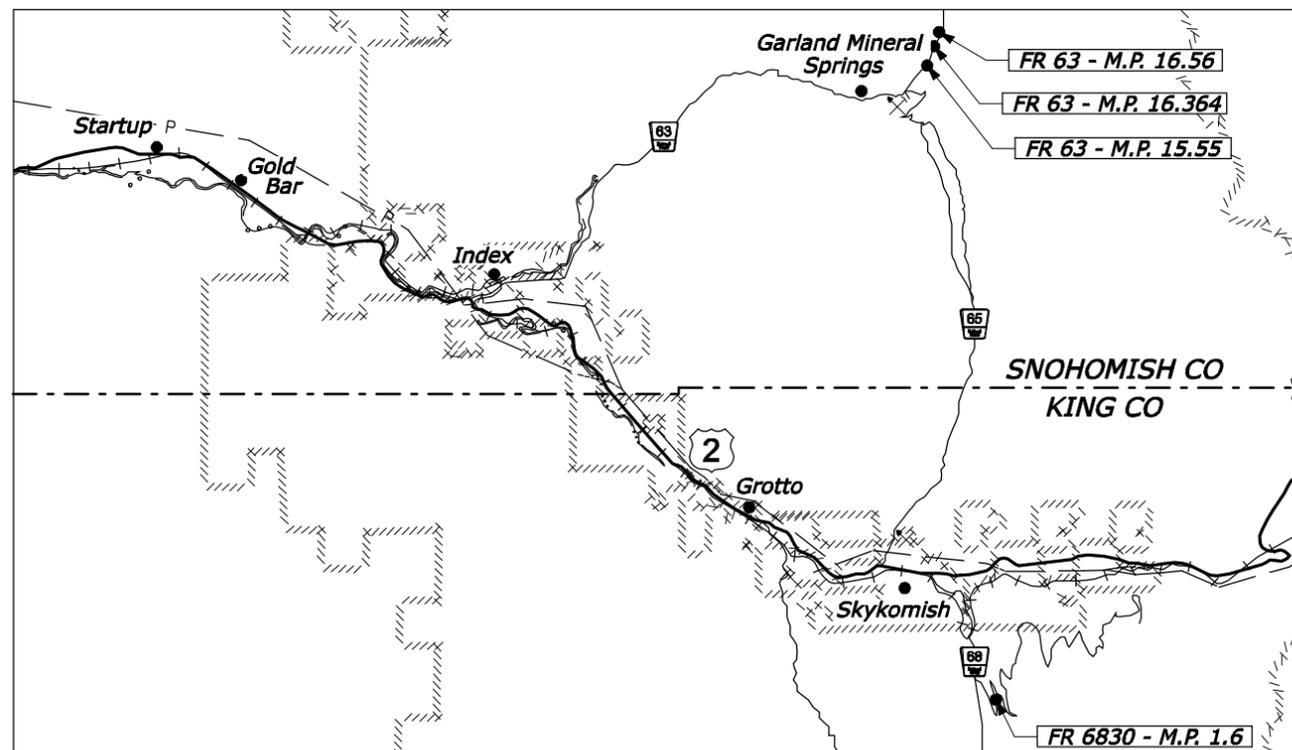


PLANS PREPARED BY

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

WESTERN FEDERAL LANDS HIGHWAY DIVISION
VANCOUVER, WASHINGTON

PROJECT MANAGER
K. LOFTSGAARDEN



APPROVED:

/s/ Robert B. Sale III

DATE *3/25/08*

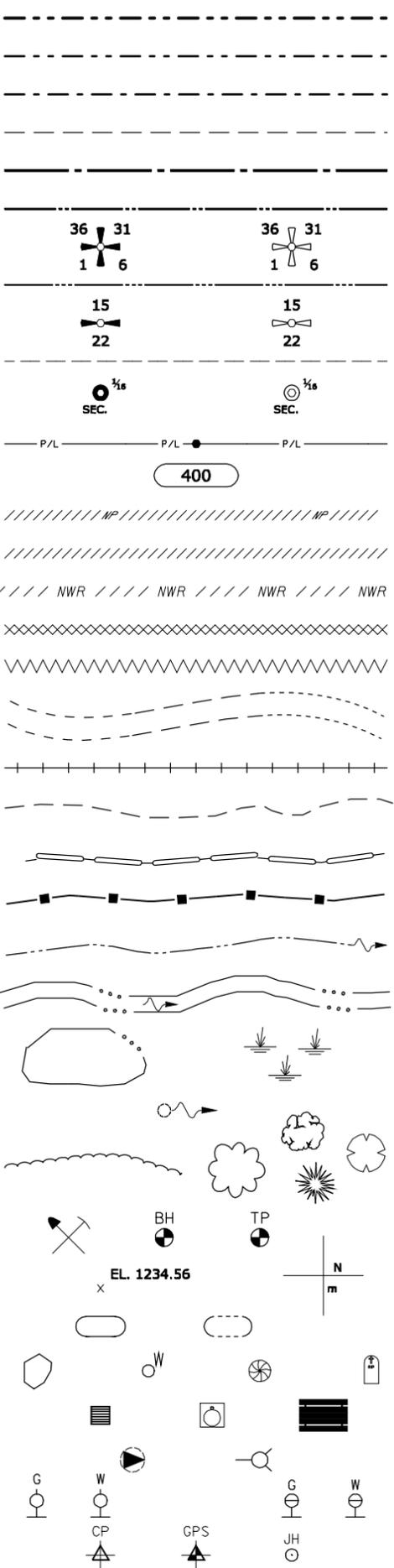
Director, Project Delivery,
Western Federal Lands Highway Division

3/2008 3/2008 3/2008 31-MAR-2008 9:00AM M. MARTINEZ K. PARKER IP: P:\PWP\dms015019\wf7209aaa.dgn [US_Sur2D]

Δ	total central angle
Δc	curve central angle
\emptyset	diameter
θ_s	spiral central angle
abut.	abutment
ADT	average daily traffic
AH	ahead
appr.	approach
BK	back
BM	bench mark
BP	balance point
br.	bridge
brg.	bearing
cc or c. to c.	center to center
ξ	centerline
clr.	clear
CMP	corrugated metal pipe
col.	column
conc.	concrete
conn.	connection
constr. jt.	construction joint
cont.	continuous
CS	point of curve to spiral
ctrs.	centers
CUFT	cubic foot (feet)
culv.	culvert
CUYD	cubic yard(s)
D	diameter
DHV	design hourly volume
dia.	diameter
diag.	diagonal
diaph.	diaphragm
dist.	distance
drwg(s).	drawing(s)
E	east
e	superelevation rate
El. 94.16 ft	elevation with number
elev.	elevation
emb.	embankment
EP	edge of pavement
EQ or eq.	equation
ER	edge of road
EW	edge of water
exc.	excavation
exp. jt.	expansion joint
fin.	finish
flg.	flange
ft ²	square foot
ft ³	cubic foot (feet)
ftg.	footing
ga.	gage (gauge)
galv.	galvanized
hdwl.	headwall
hex.	hexagon
HW	high water
ID	inside diameter
jt.	joint
L	length of curve
lam.	lamination
lat.	latitude
LNFT	linear foot (feet)
long.	longitudinal
LPSM	lump sum
Ls	length of spiral
lt. or LT	left
LW	low water

M.L.	main line
M.P.	mile post
matl.	material
max.	maximum
MGAL	thousand gallon
min.	minimum
mon.	monument
N	north
NC	normal crown
o. c.	on center
o. to o.	out to out
OD	outside diameter
OG	original ground
PC	point of curve
PCC	point of compound curve
PCS	point of curve to spiral
PI	point of intersection
pl.	plate
POC	point on curve
POS	point on spiral
POT	point on tangent
PS	point of tangent to spiral
PSC	point of spiral to curve
PST	point of spiral to tangent
PT	point of tangent
pvmt.	pavement
R	radius
R.	range
R/W	right-of-way
rdwy.	roadway
reinf.	reinforcement
reqd.	required
rt. or RT	right
rtc.	route
S	south
SADT	seasonal average daily traffic
SC	point of spiral to curve
sec.	section
shldr.	shoulder
SLRY	slurry unit
spa.	spacing, spaces or spaced
SQFT	square foot
SQYD	square yard
SRS	point of spiral to reverse spiral
SS	point of spiral to spiral (no curve)
ST	point of spiral to tangent
STA, Sta.	station
std.	standard
stgr.	stringer
stiff.	stiffener
struc.	structural
STS	point of spiral to tangent spiral
sym.	symmetrical
T	tangent distance
T.	township
TBM	temporary bench mark
thd.	thread
TS	point of tangent to spiral
Ts	tangent distance (spiraled curve)
typ.	typical
V	design speed
vph	vehicles per hour
VPI	vertical point of intersection
W	west
yd ²	square yard
yd ³	cubic yard(s)

National Boundary	
State Boundary	
County Boundary	
City Boundary	
Township or Range Line	
Section Line	
Section Corner (Found, Projected)	
1/4 Section Line	
1/4 Section Corner (Found, Projected)	
1/16 Section Line	
1/16 Section Corner (Found, Projected)	
Property Line w/Found Property Corner	
Parcel Number	
National Park Boundary	
National Forest Boundary	
National Wildlife Refuge Boundary	
BLM Lands Boundary	
Indian Reservation Boundary	
Existing Roadway (Road, Paved, Gravel)	
Railroad	
Trail	
Wattle	
Silt Fence	
Intermittent Drainage or Small Creek	
Large Creek or River	
Lake, Pond or Reservoir; Marshland	
Spring or Seep	
Treeline; Individual Trees	
Material Source; Bore Hole; Test Pit	
Spot Elevation; Coordinate Grid Tick	
Above Ground Tank; Underground Tank	
Boulder; Well; Satellite Dish; Grave	
Cooking Grate; Garbage Can; Picnic Table	
Flagpole; Fire Hydrant	
Gas & Water Meter; Gas & Water Valve	
Control Point (Terrestrial and GPS); Jump Hub	



North Arrow	
Slope Stake Limits	
Fence	
Gate with Fence	
Cattleguard	
Guardrail	
Concrete Barrier	
Retaining Wall	
Signs (Single, double post; portable)	
Delineators	
Pipe Culvert (arrow shows flow)	
Pipe Culvert with End Section	
Pipe Culvert with Headwall	
Pipe Culvert with Drop Inlet	
Box Culvert	
Underdrain	
Overhead/Above Ground Utilities	
Underground Utilities	
Poles (Power, Telephone, Joint Use, Light, Support w/Anchor)	
Miscellaneous Utility Features	
Building	
Right-of-Way Line with Monument	
Permanent Easement	
Construction Easement	
Riprap	

FM = force main, FO = fiber optic, G = gas, IRR = irrigation, O = oil, P = power, SA = sanitary sewer, SD = storm drain, SS = storm sewer, STEAM = steam, T = telephone, TV = CATV, W = water

EM = electric meter, T = telephone pedestal, TV = CATV pedestal, UP = transformer or junction box, WF = water fountain

NO SCALE

NOTE:

1. Other symbols used in the plans will be shown in a legend on the appropriate plan sheet.

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

PLAN SYMBOLS AND ABBREVIATIONS

DETAIL APPROVED FOR USE 11/2001
 REVISD: 9/2005 1/2007

DETAIL
W101-1

3/2008 3/2008 3/2008 31-MAR-2008 9:01AM IP_PWP:dms05019\wf7209ac.dgn [US_Sur2D]

Checked by: K. PARKER

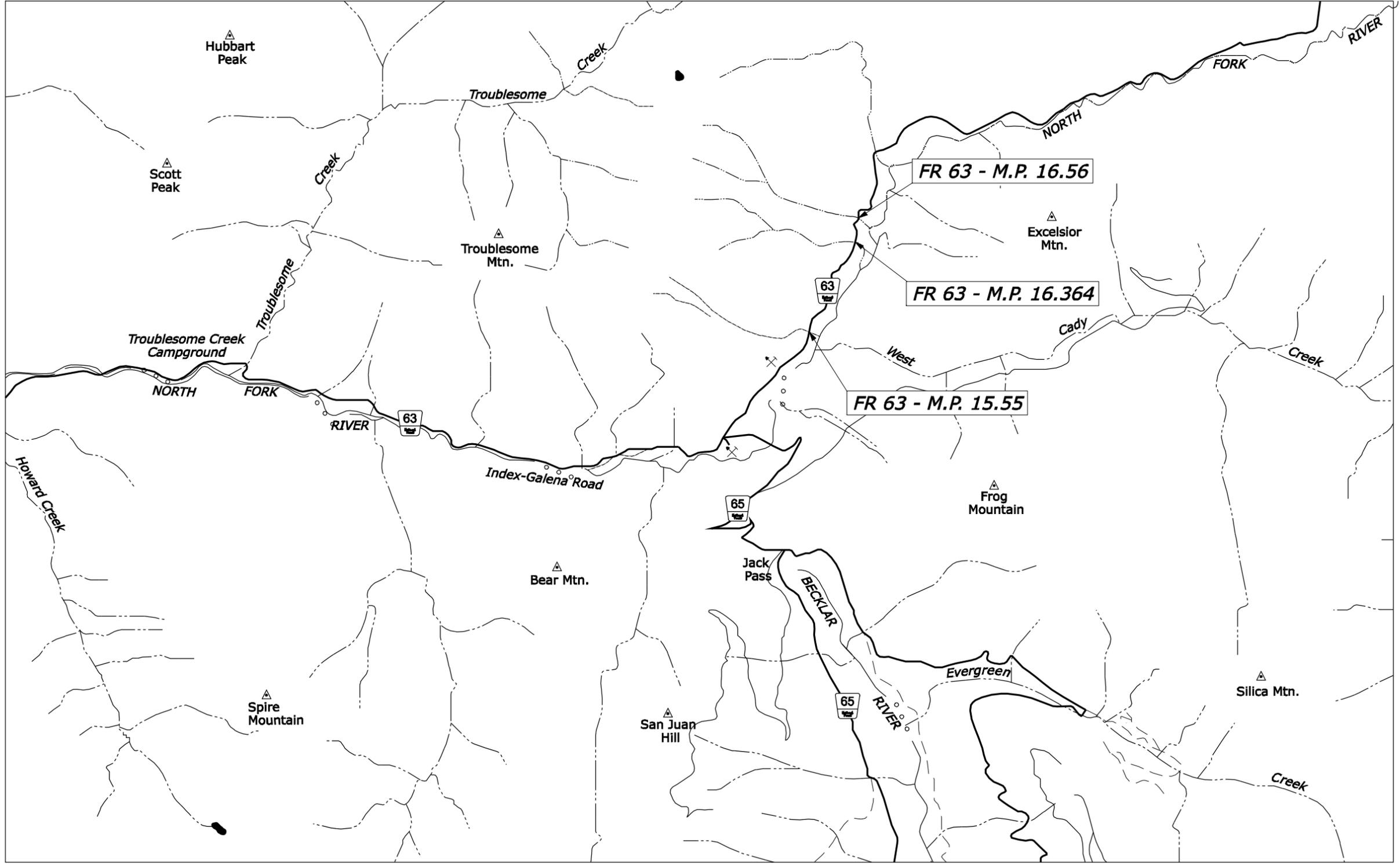
Designed by: M. MARTINEZ

3/2008

3/2008



To Index
9 miles

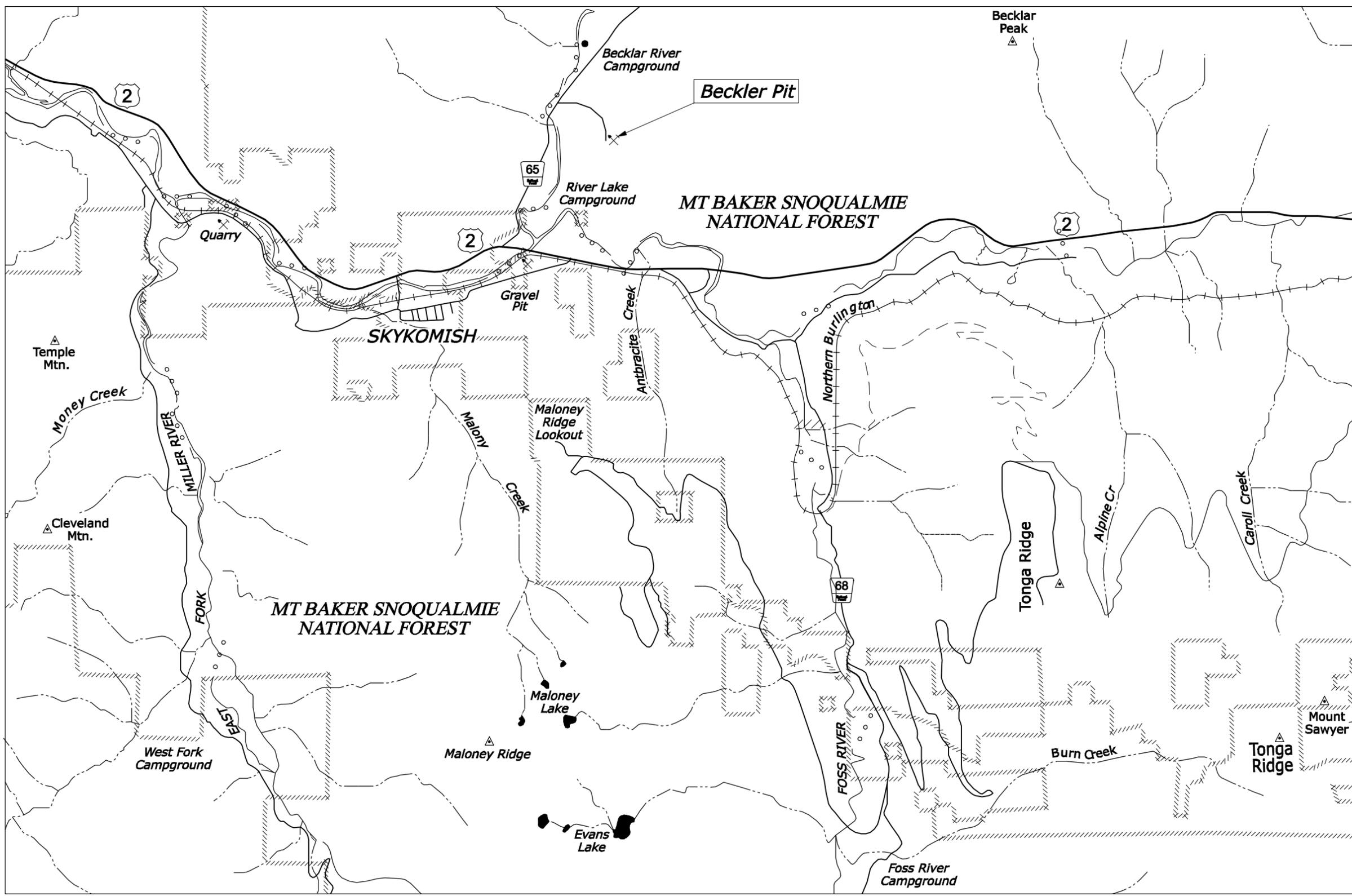


To Skykomish
10 miles

VICINITY MAP

3/2008 K. PARKER Checked by: 3/2008 M. MARTINEZ Designed by: 31-MAR-2008 9:01AM IP_PWP:dms05019\wf7209acd.dgn [US_Sur2D]

To Gold Bar
21 miles



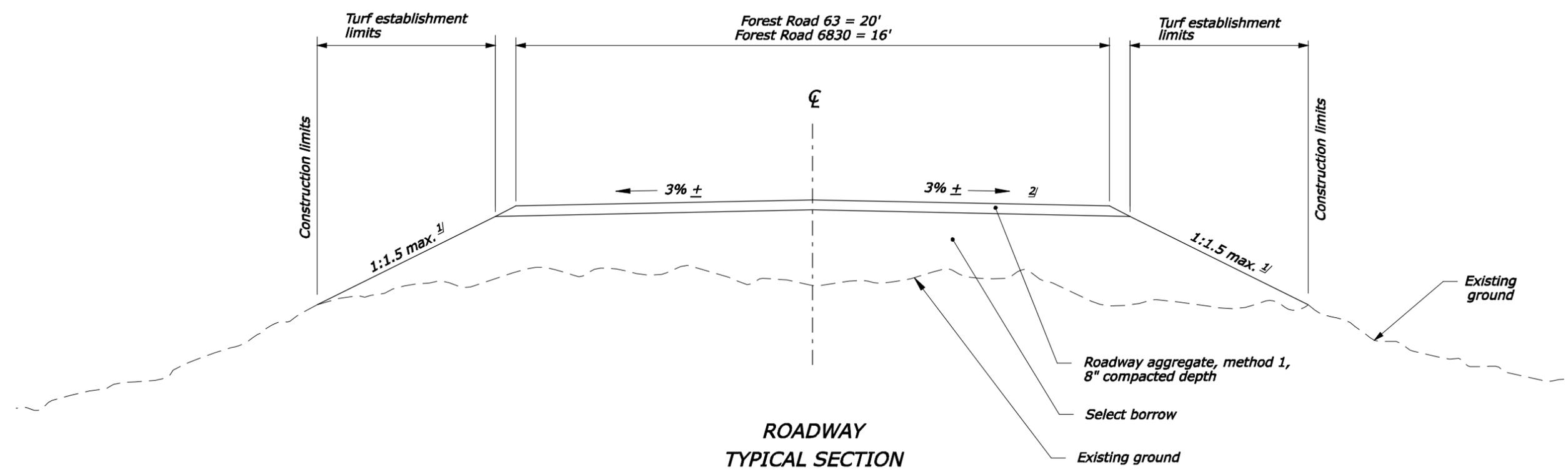
To Leavenworth
51 miles



VICINITY MAP

STATE	PROJECT	SHEET NUMBER
WA	FS ERFO 2007(1)-20(9)	C.1

3/2008
 K. PARKER
 Checked by:
 3/2008
 M. MARTINEZ
 Designed by:
 31-MAR-2008 9:01AM
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FOOTNOTE:

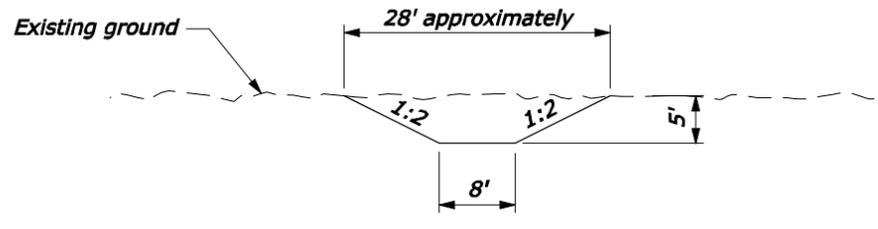
^{1/} Adjust to match adjacent slopes as approved by CO. Slope is 1:1.25 maximum for riprap embankment at the FR 6830 MP 1.6 site. See sheet D.4.

^{2/} Adjust to meet adjacent roadway. Match existing superelevation on curves as approved by CO. Maximum superelevation allowed is 6%.

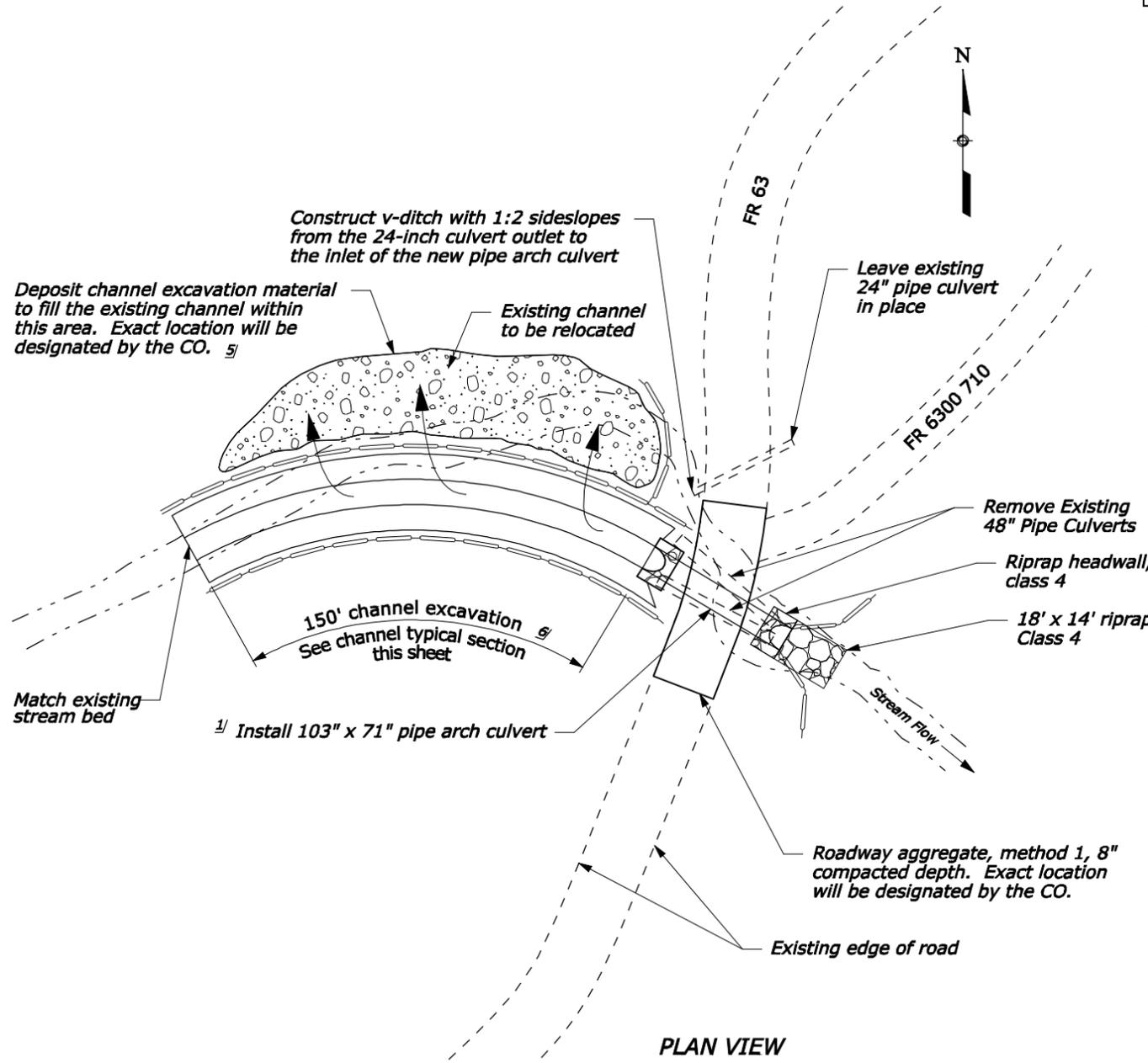
TYPICAL SECTION

Informational Quantities

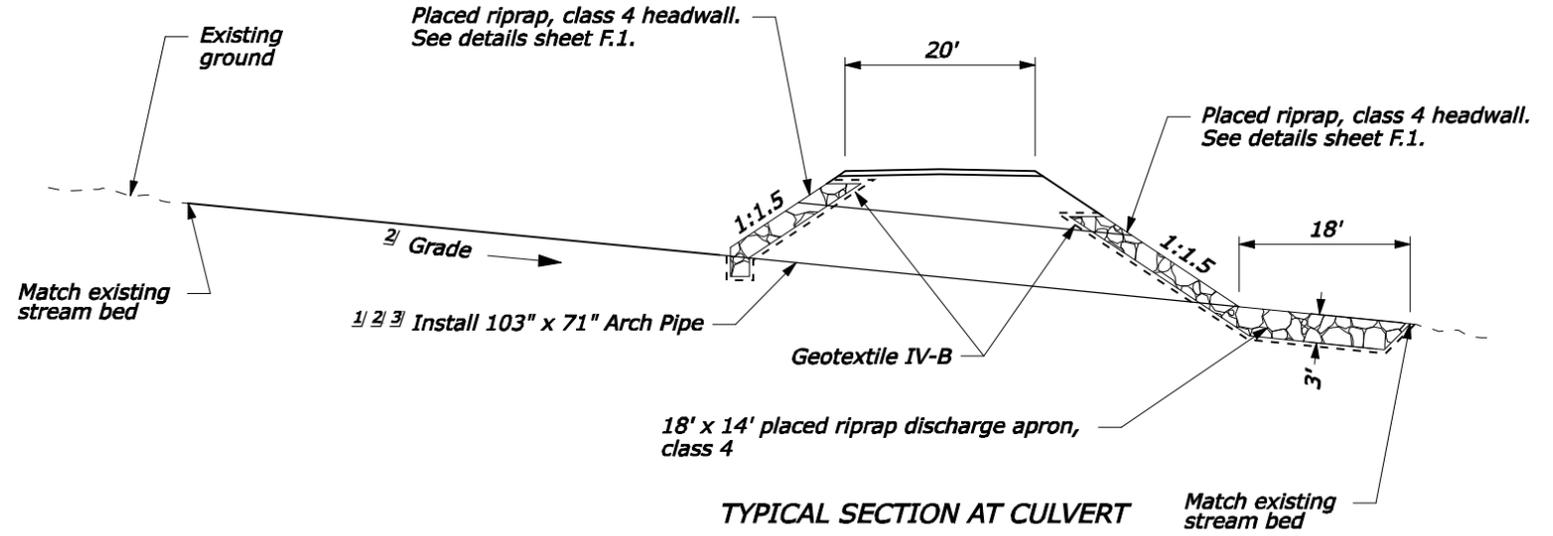
DESCRIPTION	QUANTITIES
Soil erosion control, temporary diversion channel	50 LNFT
Soil erosion control, sediment wattle	430 LNFT
Watering for dust control	80 MGAL
Removal of pipe culvert	2 EACH
Removal of concrete barriers ^{4/}	20 LNFT
Roadway excavation ^{6/}	720 CUYD
Select borrow	250 CUYD
Placed riprap, class 4	70 CUYD
Geotextile IV-B	110 SQYD
Roadway aggregate, method 1, 8" compacted depth	30 CUYD
103" x 71" pipe arch culvert ^{1/}	50 LNFT
Turf establishment	100 SQYD



CHANNEL TYPICAL SECTION
NOT TO SCALE



PLAN VIEW



TYPICAL SECTION AT CULVERT

NOTE:

- Quantities and dimensions shown are for information only. Field verify prior to construction and adjust as approved by the CO to meet field conditions.

FOOTNOTE:

- Allowable pipe culvert material is galvanized steel, with metal thickness 0.109 inches (12 gage) min., 3-inch by 1-inch corrugations, and pipe ends beveled at 1.0V:1.5H. See sheet F.1 for cover requirements.
- Construct channel and pipe culvert on a uniform grade. Slope pipe culvert minimum of 3%, but steeper as necessary to avoid the pipe outlet being perched above the finished riprap apron elevation.
- Lower inlet as needed for minimum pipe cover.
- Concrete barriers are at milepost 15.3 on Forest Road 63. See Section 203.
- Dispose of material according to Subsections 203.05 and 690.02.
- Channel excavation is included in roadway excavation quantity.

HYDRAULIC INFORMATION
 $Q_{50} = 264$ cfs
 $HW_{50}/D = 1.0$

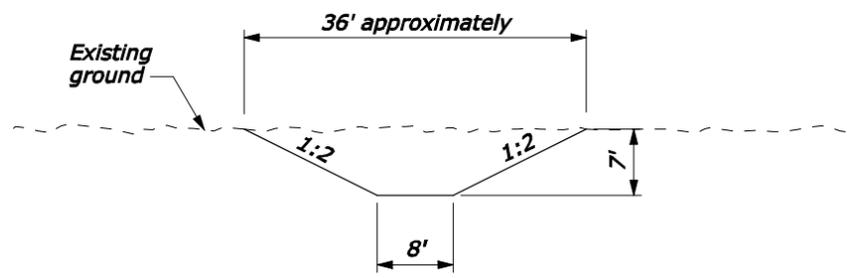
FR 63 MP 15.55 SITE LAYOUT

NOT TO SCALE

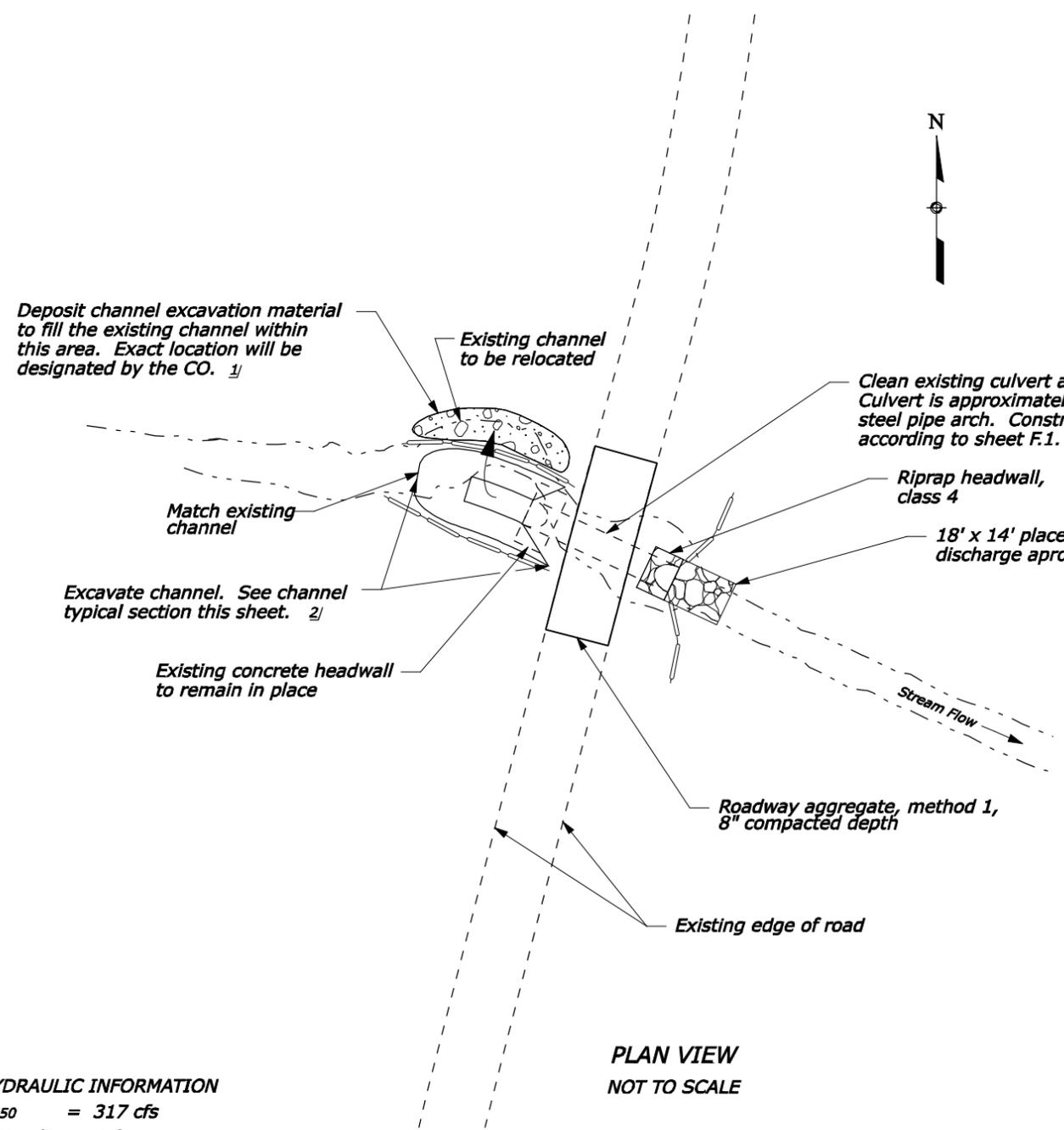
3/2008 K. PARKER Checked by: 3/2008 M. MARTINEZ Designed by: 31-MAR-2008 9:02AM IP_PWP:dms05022\wf7209da.dgn [US_Sur2D]

Informational Quantities

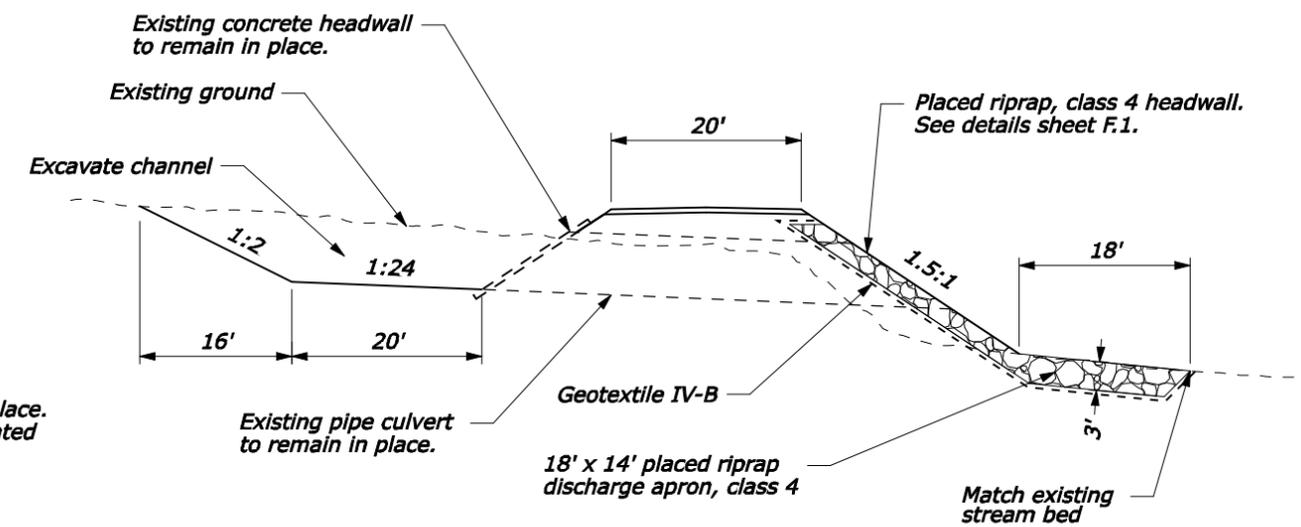
DESCRIPTION	QUANTITIES
Soil erosion control, sediment wattle	170 LNFT
Watering for dust control	80 MGAL
Roadway excavation ^{2/}	250 CUYD
Select borrow	350 CUYD
Placed riprap, class 4	60 CUYD
Geotextile IV-B	90 SQYD
Roadway aggregate, method 1, 8" compacted depth	30 CUYD
Turf establishment	100 SQYD



CHANNEL TYPICAL SECTION
NOT TO SCALE



PLAN VIEW
NOT TO SCALE



TYPICAL SECTION AT CULVERT
NOT TO SCALE

NOTE:

- Quantities and dimensions shown are for information only. Field verify prior to construction and adjust as approved by the CO to meet field conditions.

FOOTNOTE:

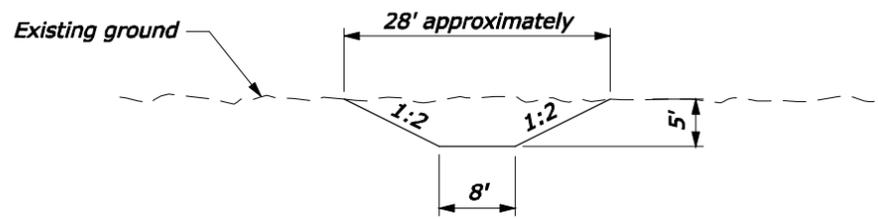
- Dispose of material according to Subsections 203.05 and 690.02.
- Channel excavation is included in roadway excavation quantity.

HYDRAULIC INFORMATION
 $Q_{50} = 317 \text{ cfs}$
 $HW_{50} / D = 1.2$

FR 63 MP 16.364 SITE LAYOUT

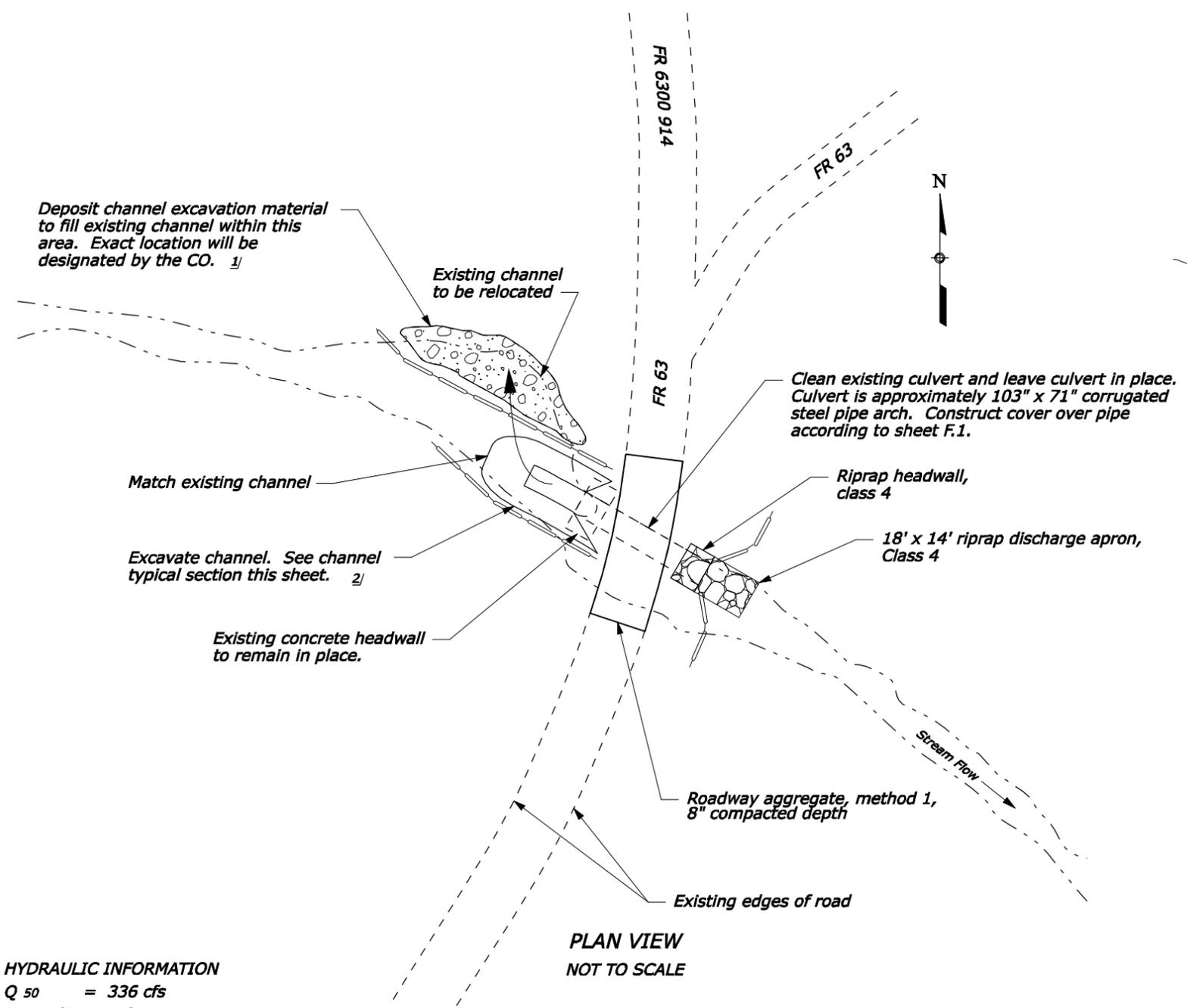
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3/2008 K. PARKER
 3/2008 M. MARTINEZ
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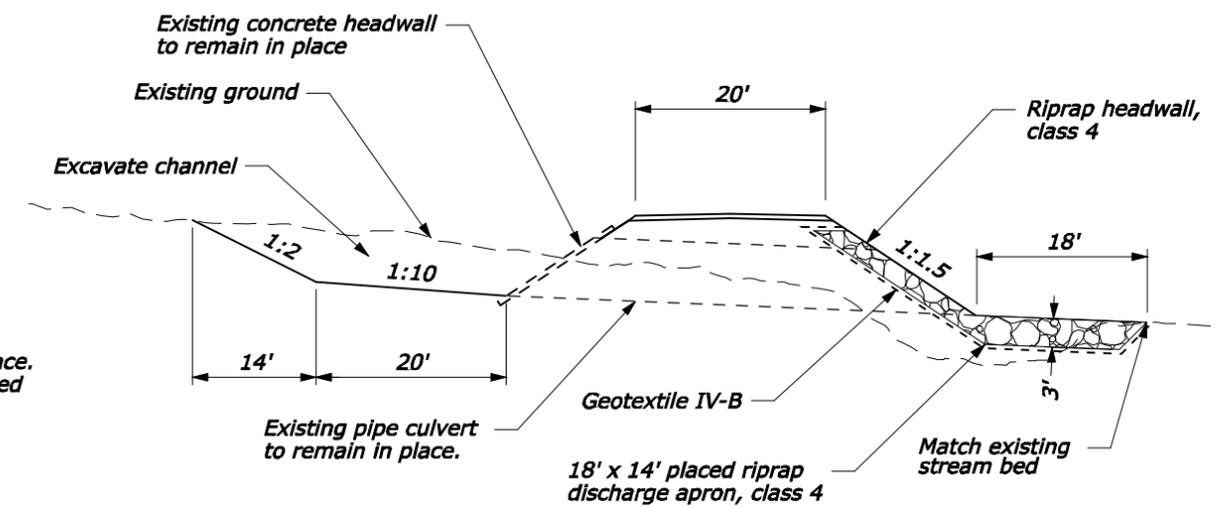


CHANNEL TYPICAL SECTION
NOT TO SCALE

Informational Quantities	
DESCRIPTION	QUANTITIES
Soil erosion control, sediment wattle	240 LNFT
Watering for dust control	80 MGAL
Roadway excavation ^{2/}	110 CUYD
Select borrow	170 CUYD
Placed riprap, class 4	50 CUYD
Geotextile IV-B	70 SQYD
Roadway aggregate, method 1, 8" compacted depth	30 CUYD
Turf establishment	100 SQYD



PLAN VIEW
NOT TO SCALE



TYPICAL SECTION AT CULVERT
NOT TO SCALE

HYDRAULIC INFORMATION
 $Q_{50} = 336$ cfs
 $HW_{50}/D = 1.2$

NOTE:

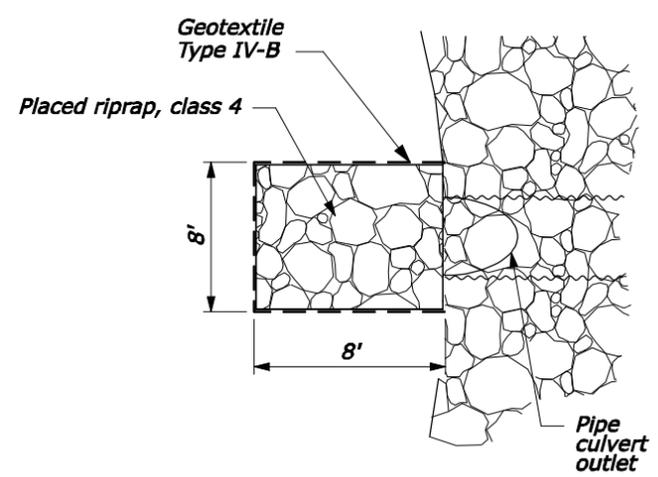
- Quantities and dimensions shown are for information only. Field verify prior to construction and adjust as approved by the CO to meet field conditions.

FOOTNOTE:

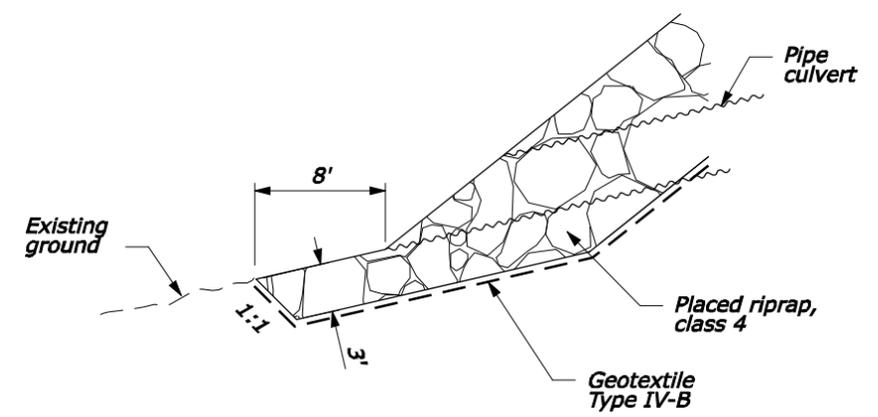
- ^{1/} Dispose of material according to Subsections 203.05 and 690.02.
- ^{2/} Channel excavation is included in roadway excavation quantity.

FR 63 MP 16.56 SITE LAYOUT

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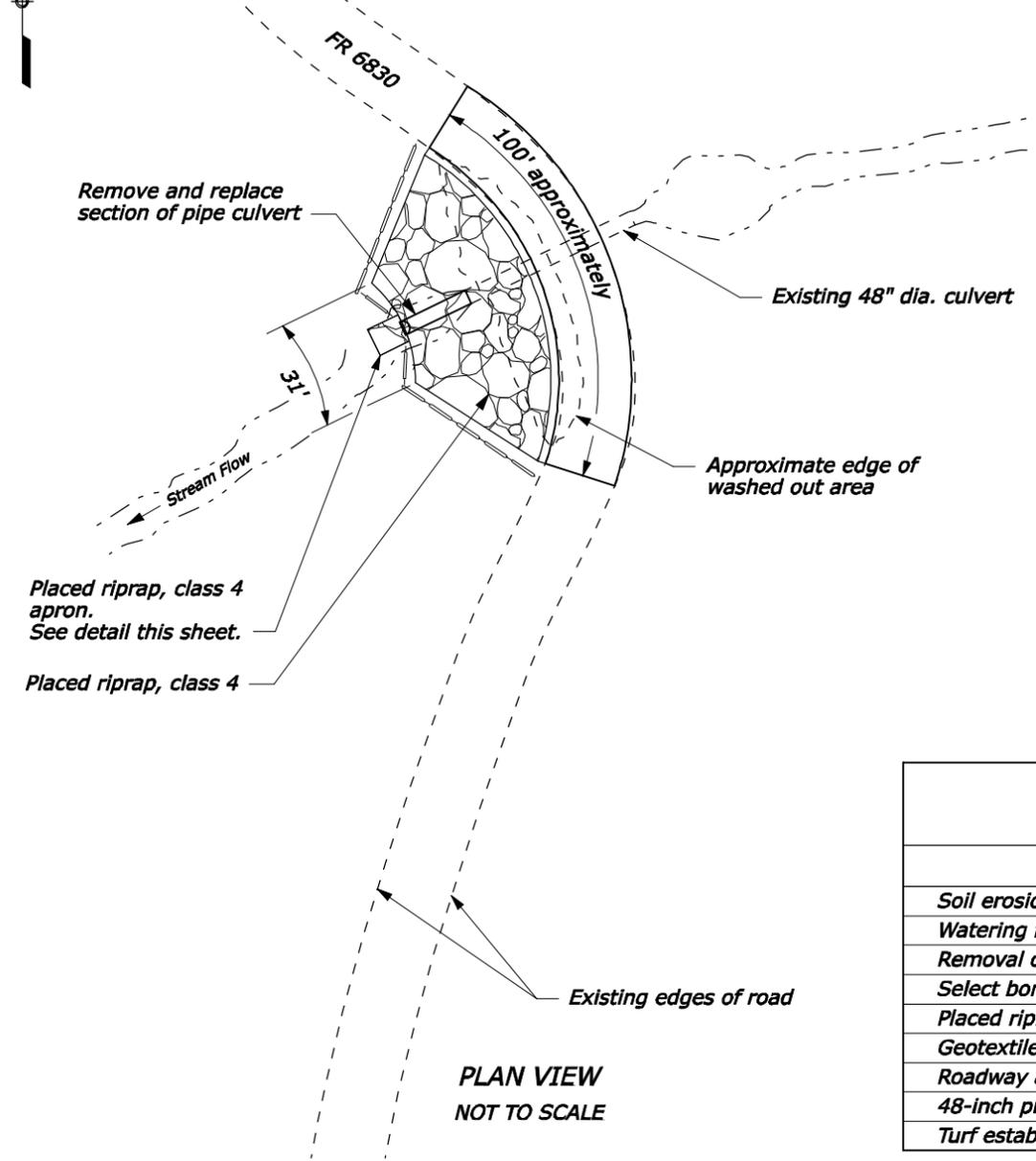


PLAN VIEW

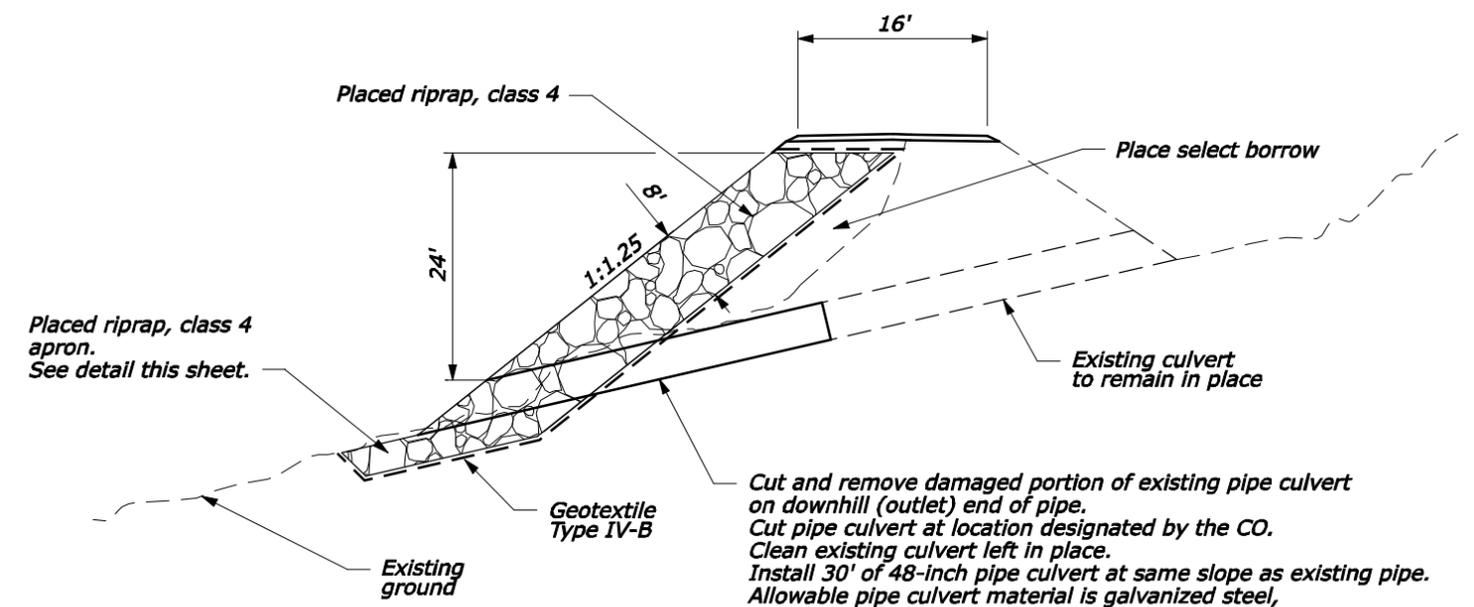


ELEVATION VIEW

PLACED RIPRAP CLASS IV APRON DETAILS



**PLAN VIEW
NOT TO SCALE**



**TYPICAL SECTION AT CULVERT
NOT TO SCALE**

Cut and remove damaged portion of existing pipe culvert on downhill (outlet) end of pipe. Cut pipe culvert at location designated by the CO. Clean existing culvert left in place. Install 30' of 48-inch pipe culvert at same slope as existing pipe. Allowable pipe culvert material is galvanized steel, with metal thickness 0.109 inches (12 gage) min., 3-inch by 1-inch coorugations. Bevel pipe outlet at 1.0V:1.25H.

Informational Quantities	
DESCRIPTION	QUANTITIES
Soil erosion control, sediment wattle	120 LNFT
Watering for dust control	80 MGAL
Removal of pipe culvert	1 EACH
Select borrow	500 CUYD
Placed riprap, class 4	950 CUYD
Geotextile IV-B	610 SQYD
Roadway aggregate, method 1, 8" compacted depth	60 CUYD
48-inch pipe culvert	30 LNFT
Turf establishment	100 SQYD

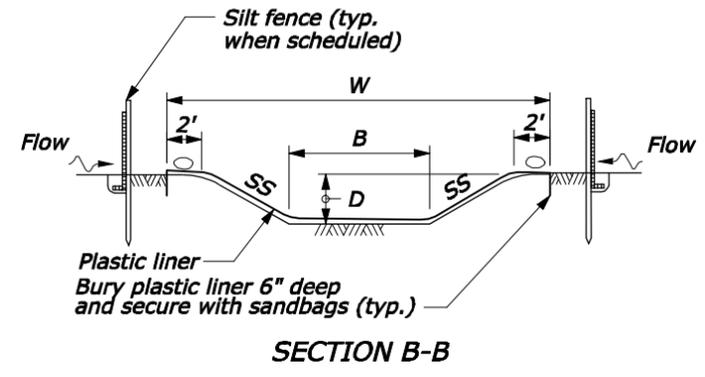
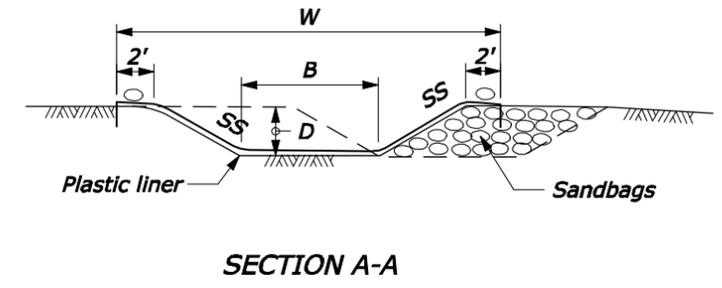
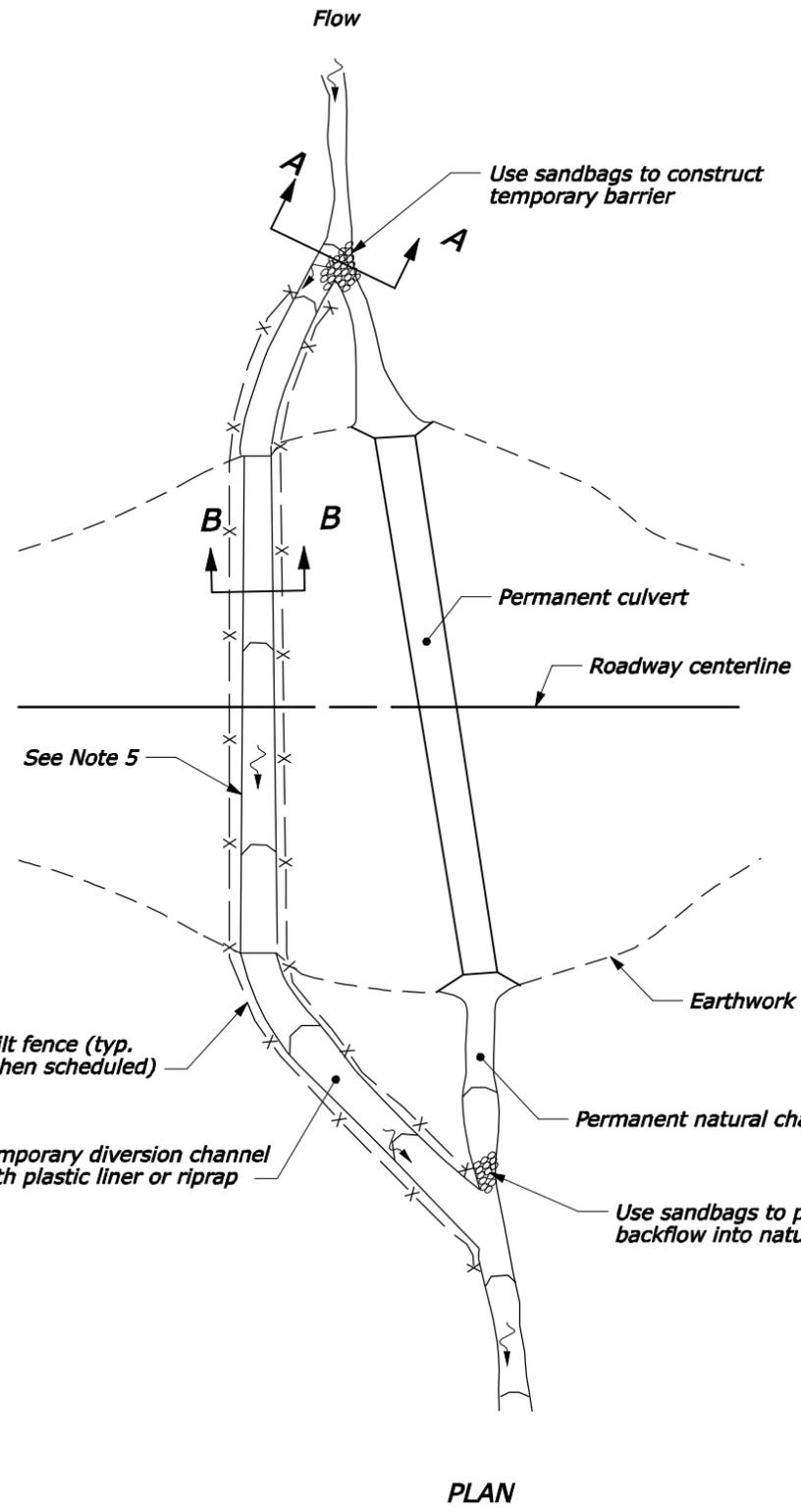
NOTE:

- Quantities and dimensions shown are for information only. Field verify prior to construction and adjust as approved by the CO to meet field conditions.

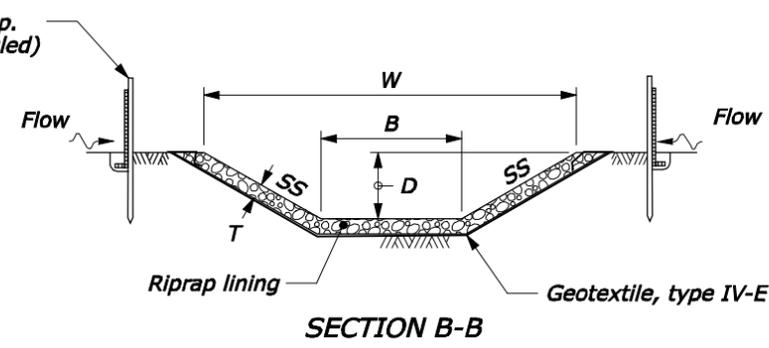
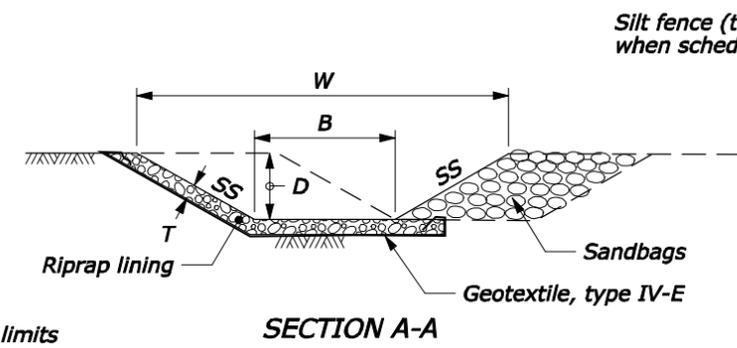
FR 6830 MP 1.6 SITE

NOTE:

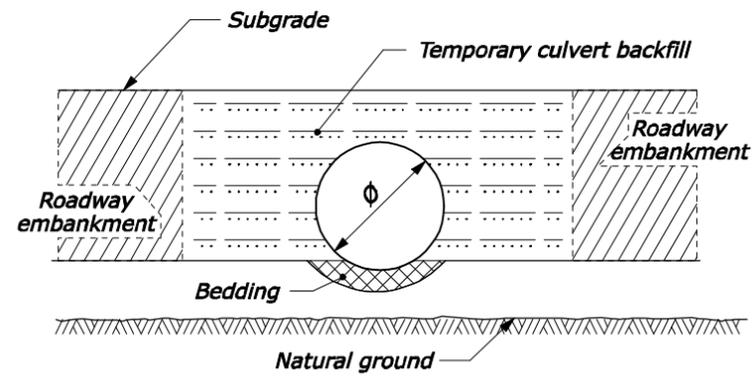
1. See Erosion Control Section for temporary culvert diameter, riprap class, channel dimensions and quantities.
2. Use plastic liner or riprap along the entire length and width of the temporary diversion channel.
3. Construct channel at a minimum grade of 0.5 percent.
4. Do not construct with longitudinal joints if using a plastic liner. Bury the upstream edge of the liner a minimum of 6" deep and secure with riprap or sandbags.
5. When specified replace the portion of the diversion channel through the roadway embankment with temporary culvert. Compact temporary culvert backfill using one of the methods listed in Subsection 204.11(a).



PLASTIC LINED DIVERSION CHANNEL



RIPRAP LINED DIVERSION CHANNEL

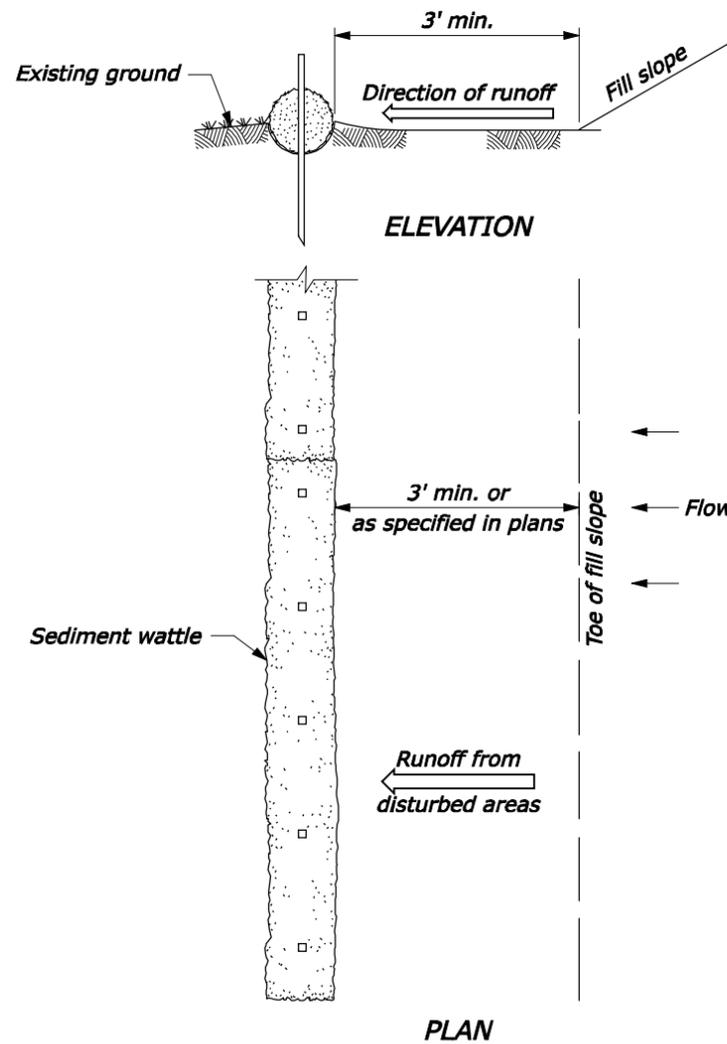


TEMPORARY CULVERT

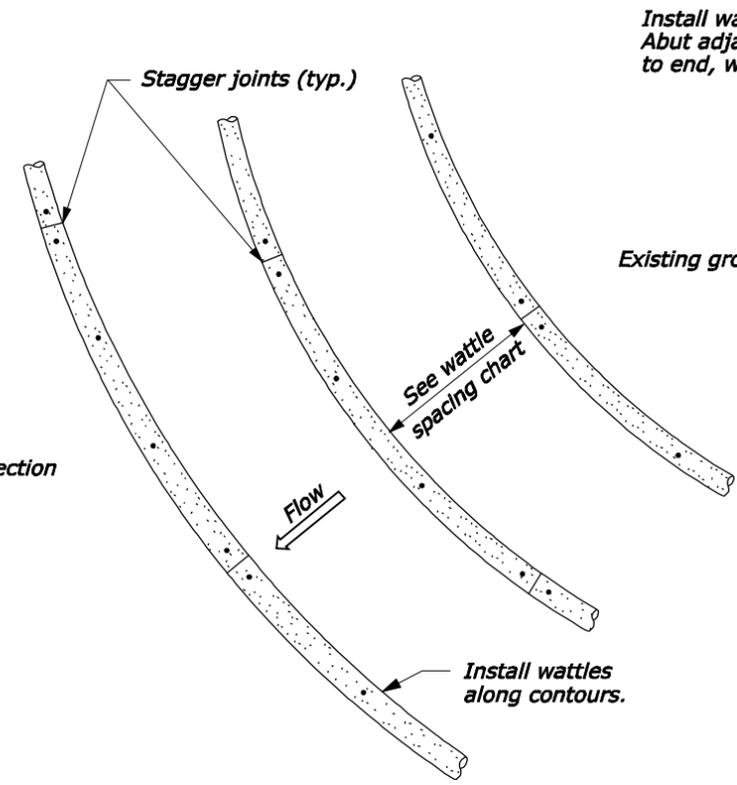
NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD	
TEMPORARY DIVERSION CHANNELS	
STANDARD APPROVED FOR USE 6/2005 REVISED: 6/2007	STANDARD 157-5

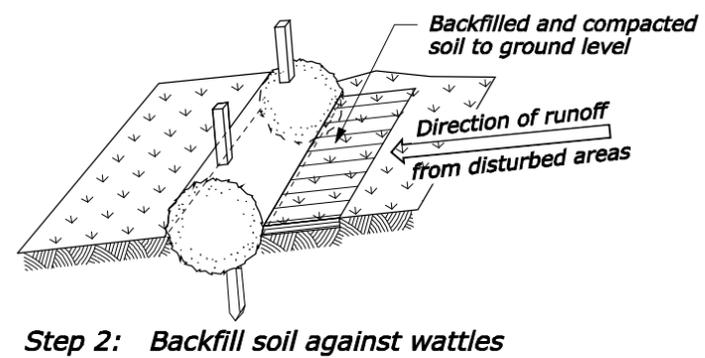
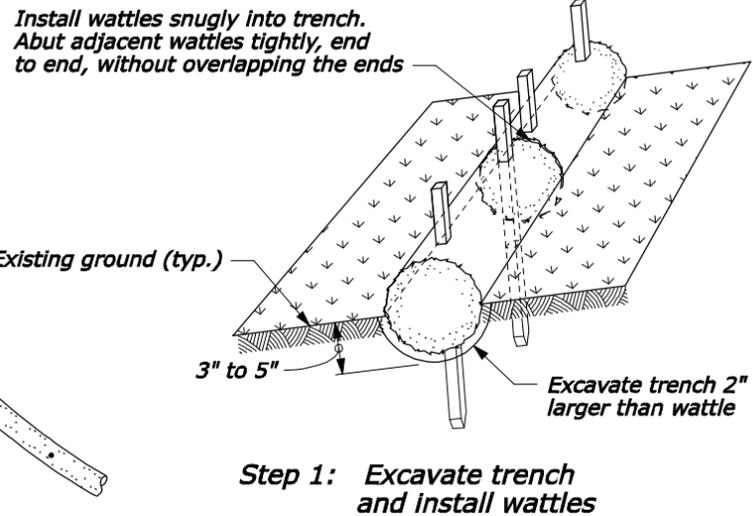
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INSTALLATION BEYOND TOE OF SLOPE



INSTALLATION ALONG SLOPES



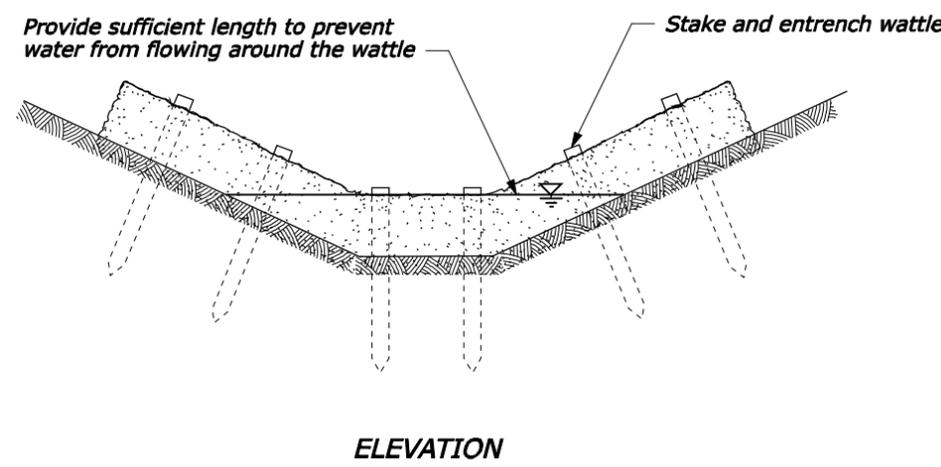
PROPERLY STAKED AND ENTRENCHED WATTLE

NOTE:

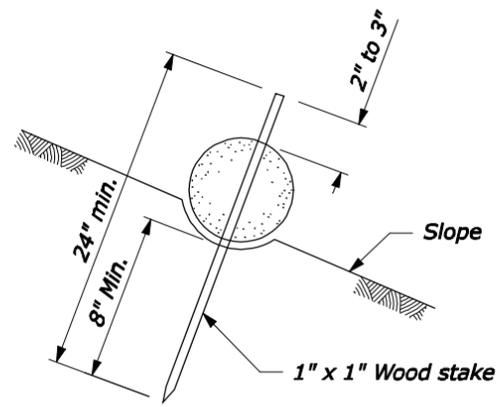
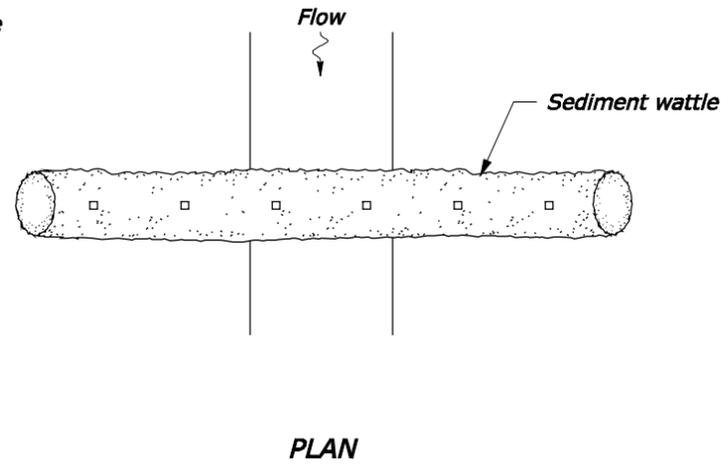
1. Drive stakes at each end and at 4' spacing until wattle is secure to slope. Do not crush wattle while staking. Live stakes may be used for permanent installations.
2. Use drainage ditch installation only in low flow conditions.

STAKES REQUIRED	
Wattle length (ft)	Stakes required for each wattle
25	8
20	6
12	4

WATTLE SPACING	
Slope	Spacing (ft)
1:4 or flatter	40
1:3	30
1:2	20
1:1	10



DRAINAGE DITCH INSTALLATION



WATTLE STAKING DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION
 WESTERN FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY DETAIL

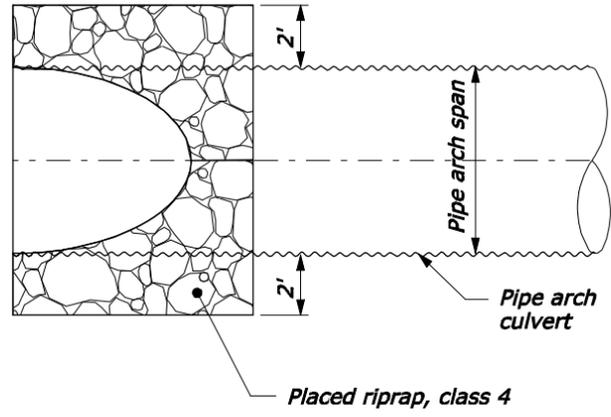
SEDIMENT WATTLE

DETAIL APPROVED FOR USE 9/2007

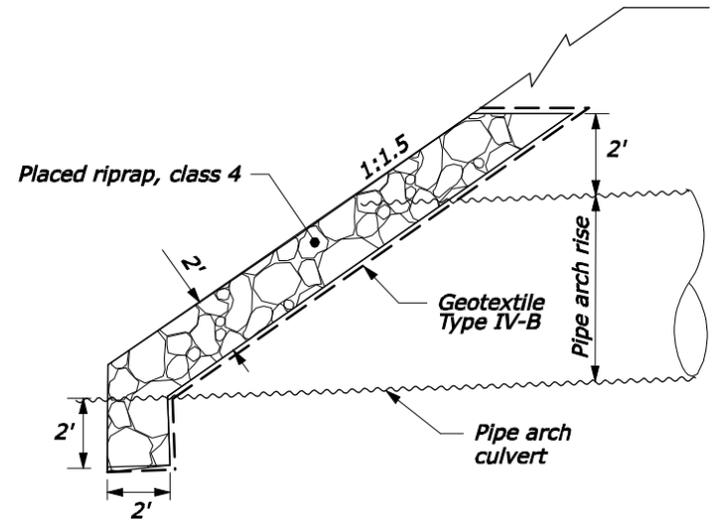
REVISOR: _____

DETAIL W157-20

05/2006
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 Checked by:
 04/2006
 MARK McNEARNEY
 Designed by:
 31-MAR-2008 9:04AM
 IP_PWP:dms05024\wf7209fa.dgn [US_Sur2D]

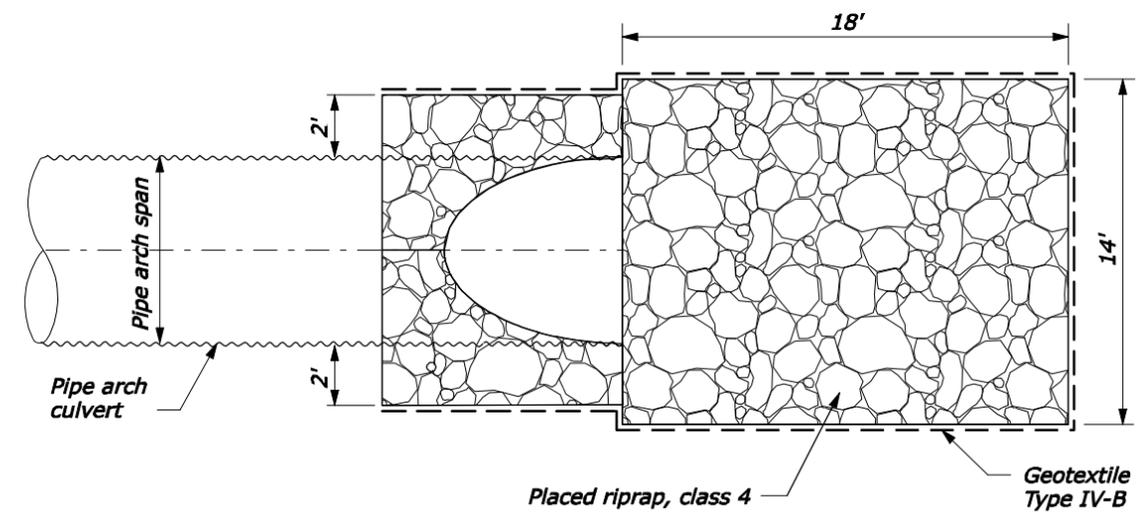


PLAN VIEW

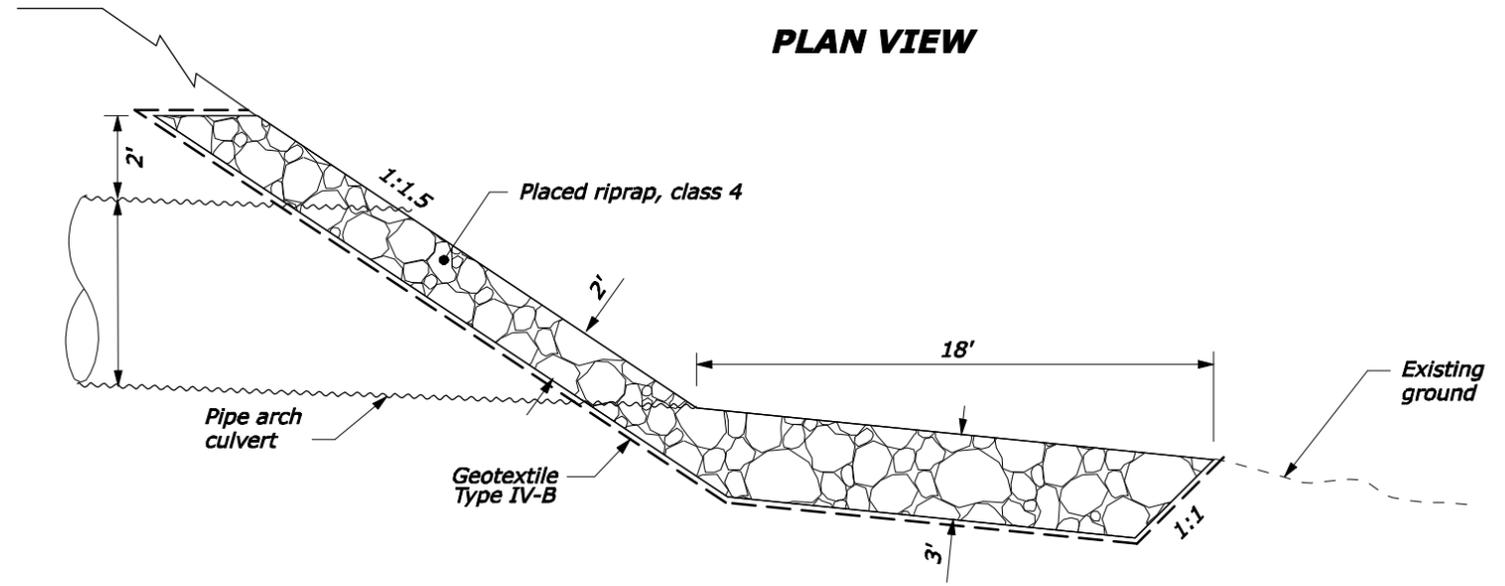


ELEVATION VIEW

HEADWALL AT PIPE INLET

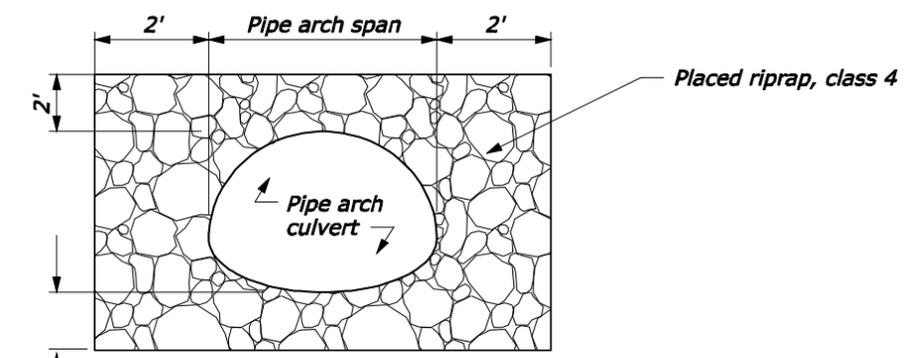


PLAN VIEW



ELEVATION VIEW

HEADWALL AT PIPE OUTLET



END VIEW

2' at pipe inlet
3' at pipe outlet

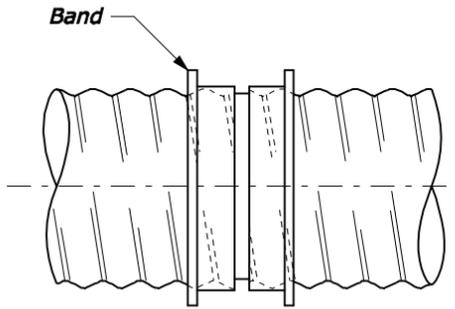
NO SCALE

RIPRAP HEADWALL DETAILS

COUPLING BANDS FOR METAL PIPE CULVERT ^{1/}

CORRUGATION SIZE ^{2/} INCHES	ROUND PIPE DIAMETER INCHES	PIPE ARCH SPAN x RISE INCHES	MINIMUM BAND WIDTH (INCHES)		
			ANNULAR CORRUGATED BANDS ^{3/}	HELICALLY CORRUGATED BANDS ^{4/}	SEMI-CORRUGATED BANDS ^{5/}
1 1/2 x 1/4	underdrain ^{6/}	-	10.5	7	10.5
	12 to 36	17 x 13 to 42 x 29	7	12	
2 2/3 x 1/2	42 to 72	49 x 33 to 83 x 57	10.5	12	
	78 to 84	-	10.5	12	10.5
3 x 1	36 to 72	60 x 46 to 81 x 59	12	14	10.5
	78 to 144	87 x 64 to 142 x 91	12	14	10.5
5 x 1	36 to 72	60 x 46 to 81 x 59	20	22	
	78 to 144	87 x 64 to 142 x 91	20	22	

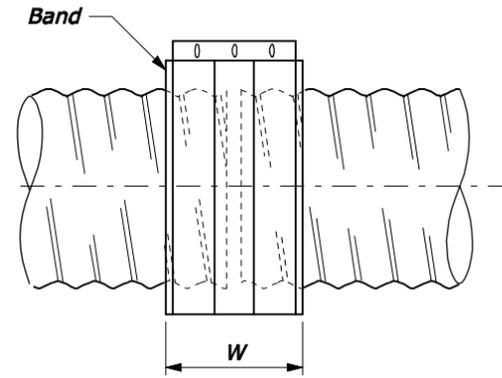
- ^{1/} Fabricate annular, helical and semi-corrugated type coupling bands from the same metal as the connecting pipe. Provide coupling bands not more than 3 nominal sheet thicknesses thinner than the thickness of the pipe to be connected, and no thinner than 0.052 inch for steel or 0.048 inch for aluminum. Fasten coupling bands with the following diameter of bolt:
 $\frac{3}{8}$ " for 18" round culvert (21" x 15" pipe arch) or less
 $\frac{1}{2}$ " for 21" round culvert (24" x 18" pipe arch) or more
- ^{2/} For helically corrugated pipe with rerolled ends, the nominal corrugations size refers to the dimension of the end corrugation in the pipe.
- ^{3/} Use annular corrugated bands with pipes having annular corrugations or with helical pipe having rerolled end to form annular corrugations. A 10.5 inch band is acceptable on pipe ends rerolled with 2 2/3" x 1/2" corrugations. A 12 inch band is acceptable on pipe ends rerolled with 3" x 1" pipe corrugations.
- ^{4/} Use helical corrugated bands with pipes having helically corrugated ends.
- ^{5/} The minimum band widths shown for 3" x 1" and 5" x 1" corrugated sizes apply to 2 2/3" x 1/2" corrugations on rerolled pipe ends.
- ^{6/} Smooth sleeve-type couplers and flat bands may be used for pipe diameters of 12" or less. Use a matching metal having a nominal thickness of not less than 0.040 inch for steel, or 0.036 inch for aluminum, or a plastic with an equivalent strength to metal.



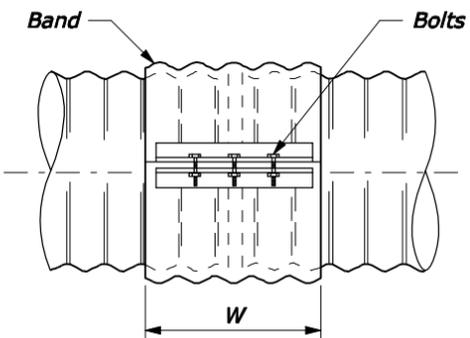
SLEEVE JOINT

Smoother sleeve with center stop.
Stab type joint

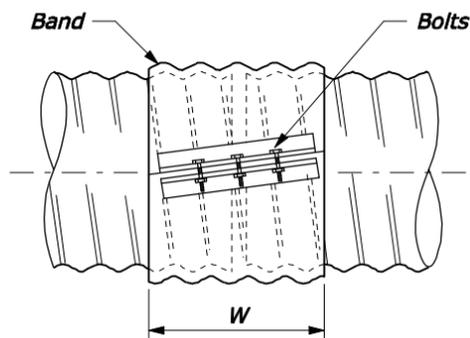
SMOOTH SLEEVE BAND



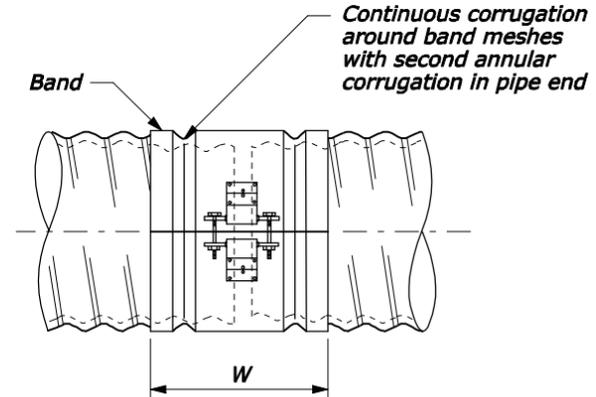
FLAT BAND



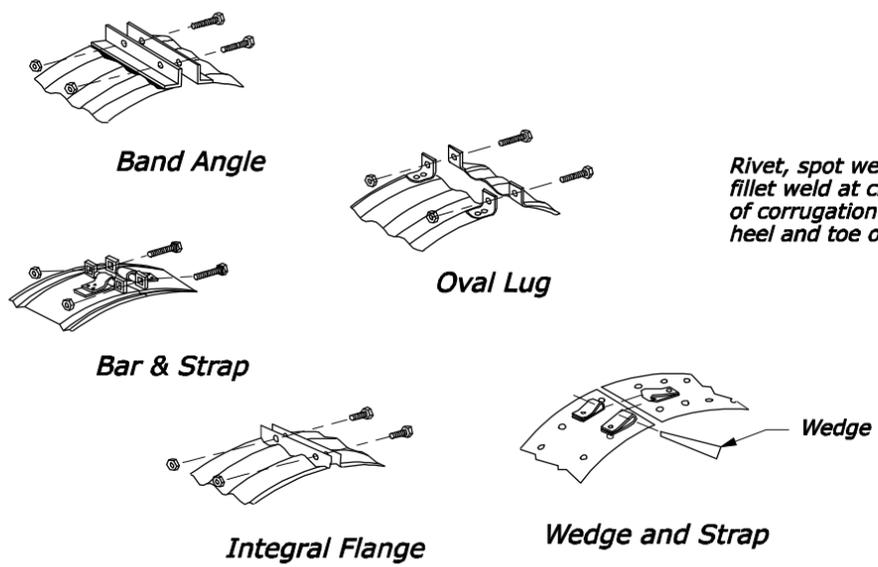
SIDE VIEW



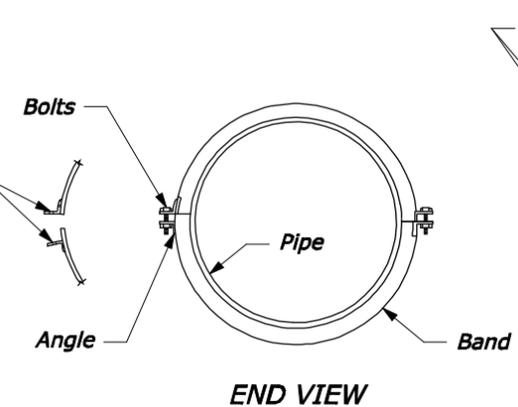
SIDE VIEW



SIDE VIEW



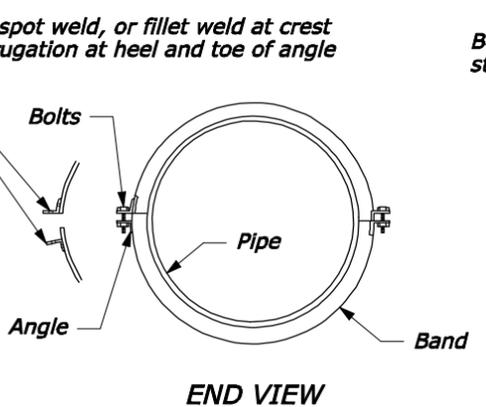
STANDARD BAND CONNECTIONS



END VIEW

Second angle connection optional to 42" diameter, required above 42" diameter

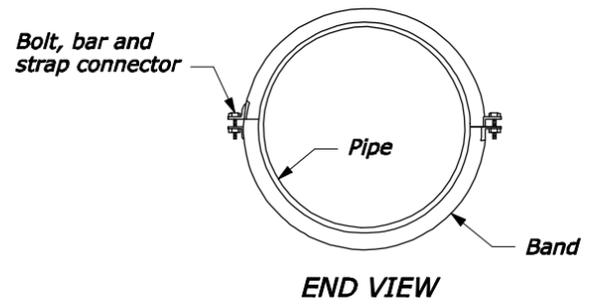
ANNULAR BAND



END VIEW

Second angle connection optional to 42" diameter, required above 42" diameter

HELICAL BAND



END VIEW

SEMI-CORRUGATED BAND

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

METAL PIPE CULVERT COUPLING BAND

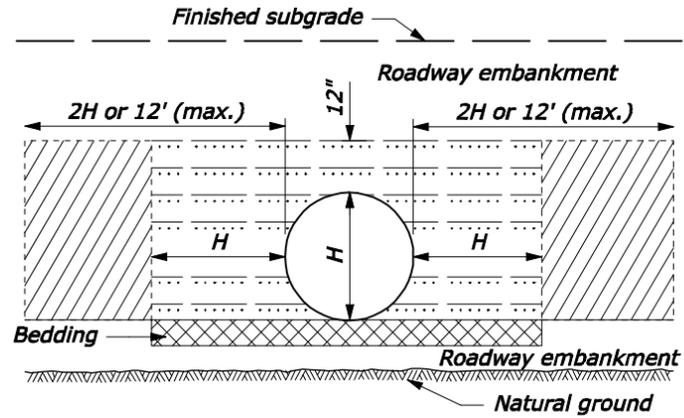
STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

STANDARD
602-2

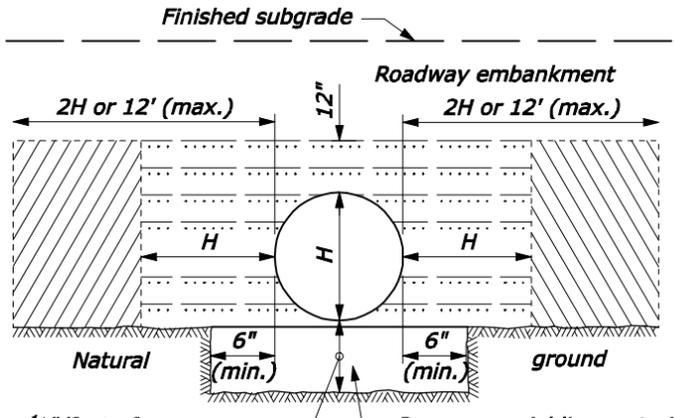
NOTE:

1. Watertight pipe joints are not required unless specified in the Special Contract Requirements.
2. Other types of coupling bands or fastening devices that comply with the joint performance criteria of AASHTO Standard specifications for Highway Bridges, Division II Section 26 may be used.

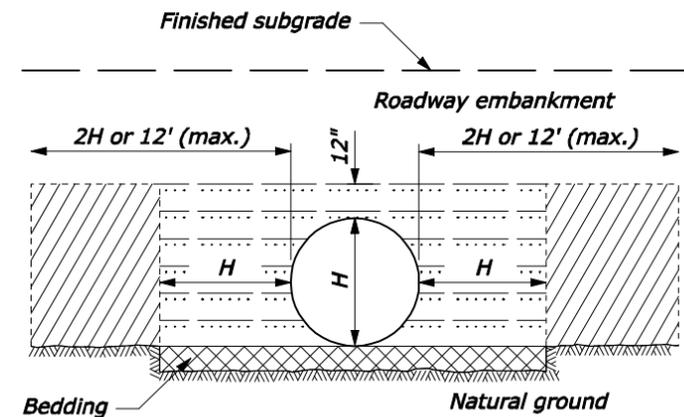
NO SCALE



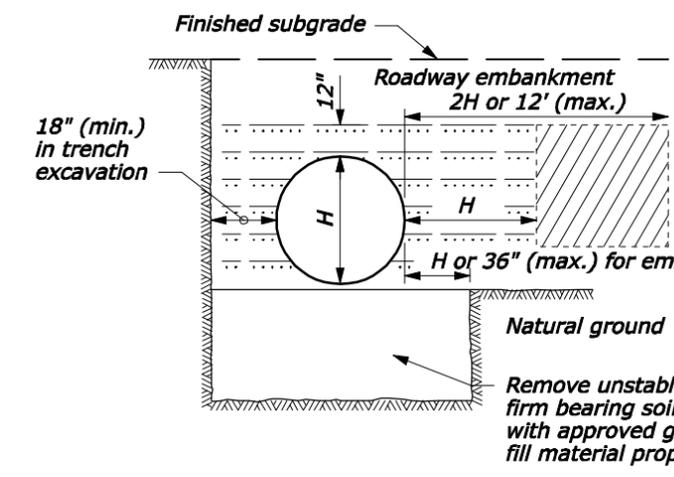
ABOVE NATURAL GROUND



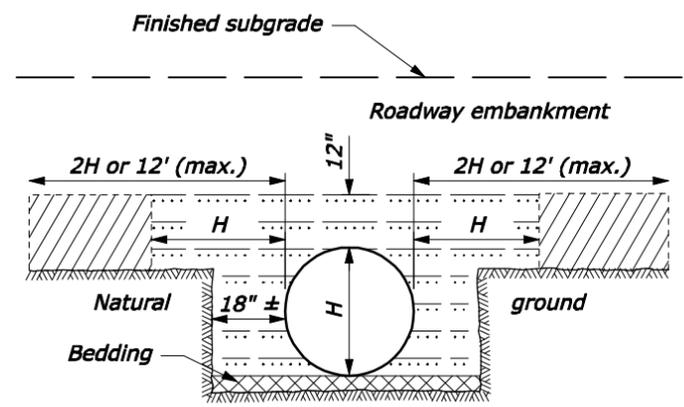
ON UNYIELDING MATERIAL



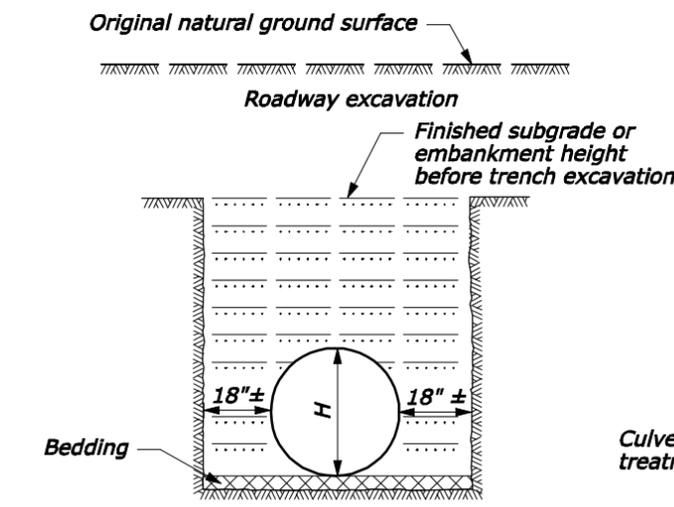
ON NATURAL GROUND



ON UNSTABLE MATERIAL



ABOVE AND BELOW NATURAL GROUND

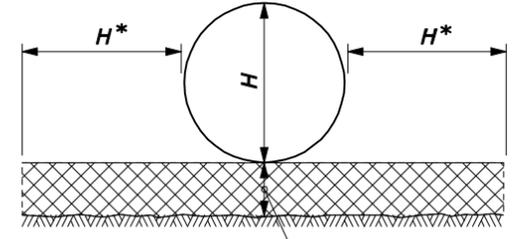


BELOW NATURAL GROUND OR TRENCH EXCAVATION IN EMBANKMENT

BEDDING DEPTH	
PIPE SIZE (H)	DEPTH
12" to 54"	4"
> 54"	6"

NOTE:

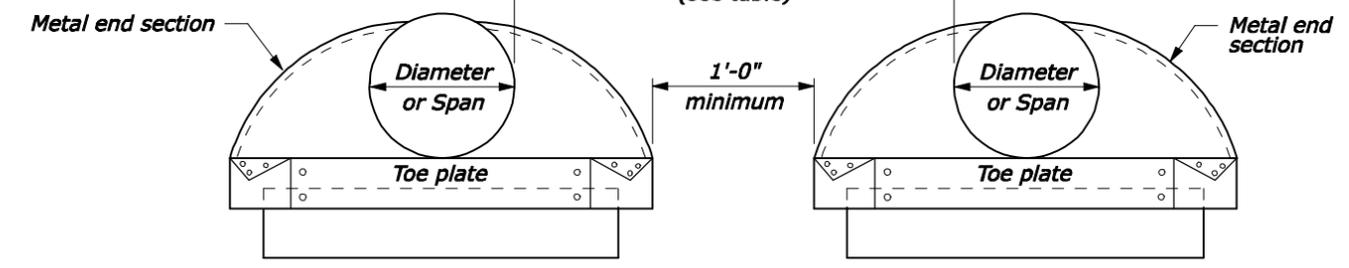
- When directed, camber pipe culverts upward from a chord through the inlet and outlet inverts an ordinate amount equal to 1% of the pipe length. Develop camber on a parabolic curve. If the midpoint elevation on the parabolic curve as designed exceeds the elevation of the inlet invert, reduce the amount of camber or increase the pipe culvert gradient.
- H equals the diameter of all round pipe culverts or the rise dimension of all pipe arch culverts.



PIPE BEDDING

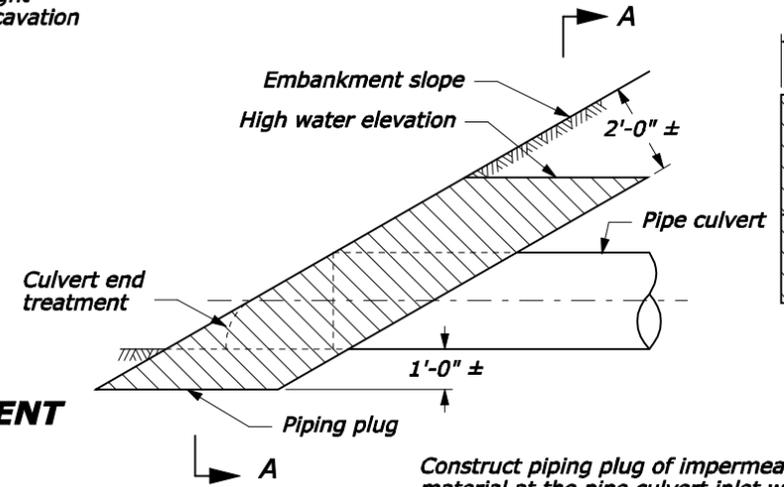
MINIMUM SPACING	
DIAMETER or SPAN	SPACING
UP to 48"	24"
48" and UP	Half diameter or span OR 36" whichever is less

* Reduce to 18" for trench excavations
See bedding depth table



ELEVATION MULTIPLE PIPE INSTALLATION

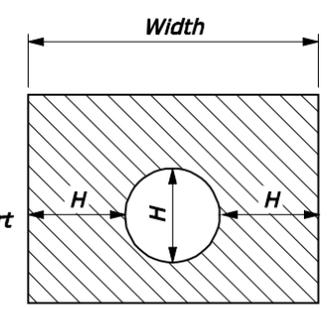
- Bedding material (uncompacted)
- Embankment material placed in layers not exceeding 6" compacted depth.
- Compacted backfill material placed in layers not exceeding 6" compacted depth meeting the following:
 - Metal Pipe: Maximum particle size = 3"
 - Soil classification: A-1, A-2, or A-3
 - Plastic Pipe: Maximum particle size: 1 1/2"
 - Soil classification: A-1, A-2-4, A-2-5, or A-3
- Or lean concrete backfill in accordance with Section 614.



Construct piping plug of impermeable backfill material at the pipe culvert inlet where granular material is used for backfill. Width may be adjusted to tie into impervious material.

PIPING PLUG

NO SCALE



SECTION A-A

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

METAL AND PLASTIC PIPE CULVERT BEDDING

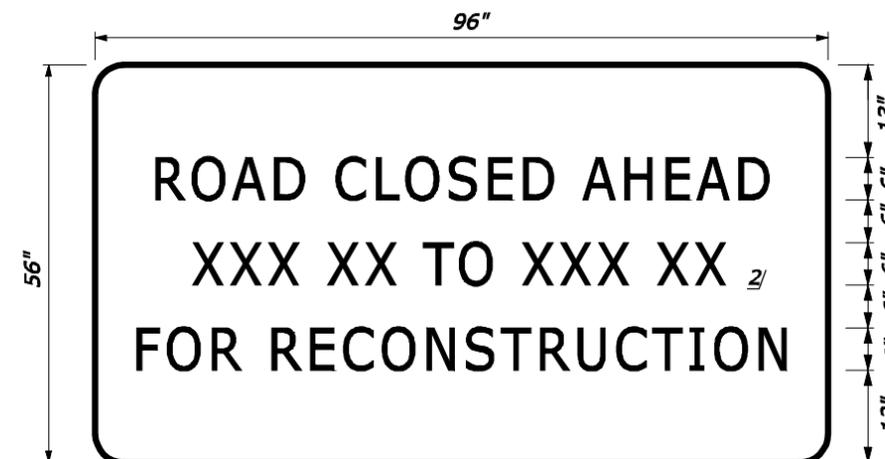
STANDARD APPROVED FOR USE 12/1993
REVISED: 4/1994 6/2005

STANDARD 602-3

3/2008
 Kevin Parker
 Checked by:
 3/2008
 Marty Martinez
 Designed by:
 31-MAR-2008 9:05AM
 IP_PWP:dms05025\wf7209ga.dgn [US_Sur2D]

TEMPORARY TRAFFIC CONTROL

APPROXIMATE LOCATION <i>(See sheet G.2 for map)</i>	DESCRIPTION	MUTCD SIGN NO.	QUANTITIES <i>(information only)</i>
FOREST ROAD 63 ON NORTH SIDE OF JCT. WITH FR 65	BARRICADE, TYPE 3		2 EACH
	WARNING LIGHT, TYPE A		4 EACH
	ROAD CLOSED (48" X 30")	R11-2	1 EACH = 10.00 SF
FOREST ROAD 6830 AT JCT. WITH FR 68	BARRICADE, TYPE 3		2 EACH
	WARNING LIGHT, TYPE A		4 EACH
	ROAD CLOSED (48" X 30")	R11-2	1 EACH = 10.00 SF
FOREST ROAD 6830 ON WEST SIDE OF JCT. WITH FR 6820	BARRICADE, TYPE 3		2 EACH
	WARNING LIGHT, TYPE A		4 EACH
	ROAD CLOSED (48" X 30")	R11-2	1 EACH = 20.00 SF
INTERSECTION APPROACH	TRUCK CROSSING (30" X 30")	W8-6	2 EACH = 12.50 SF
Index-Galena Road	Ref-1 sign. See detail this sheet. (96" X 56")		1 EACH = 37.33 SF



DETAIL
Ref-1 Sign ^{1/}

NOTE:

1. Conform to the current edition of the "Manual On Uniform Traffic Control Devices (MUTCD)".
2. Mount sign on wooden posts. See sheet G.3 for details.
3. Provide additional signs as required to meet field conditions.

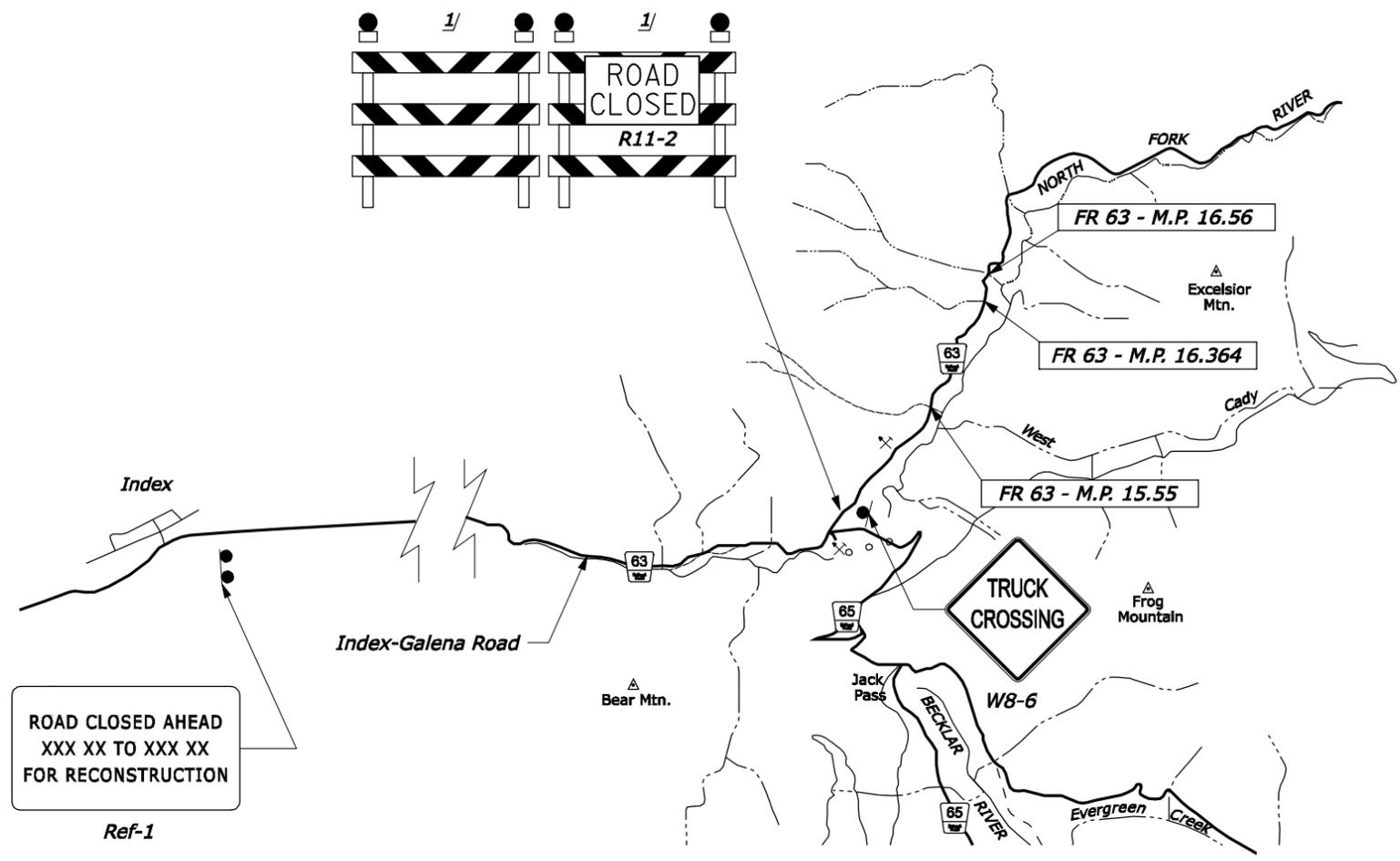
FOOTNOTE:

- ^{1/} Sign colors are orange background with black letters and border. Use standard alphabet sizes, letter series C.
- ^{2/} Insert dates shown as abbreviated month and day, for example Aug. 15. Insert dates that match anticipated road closure period.

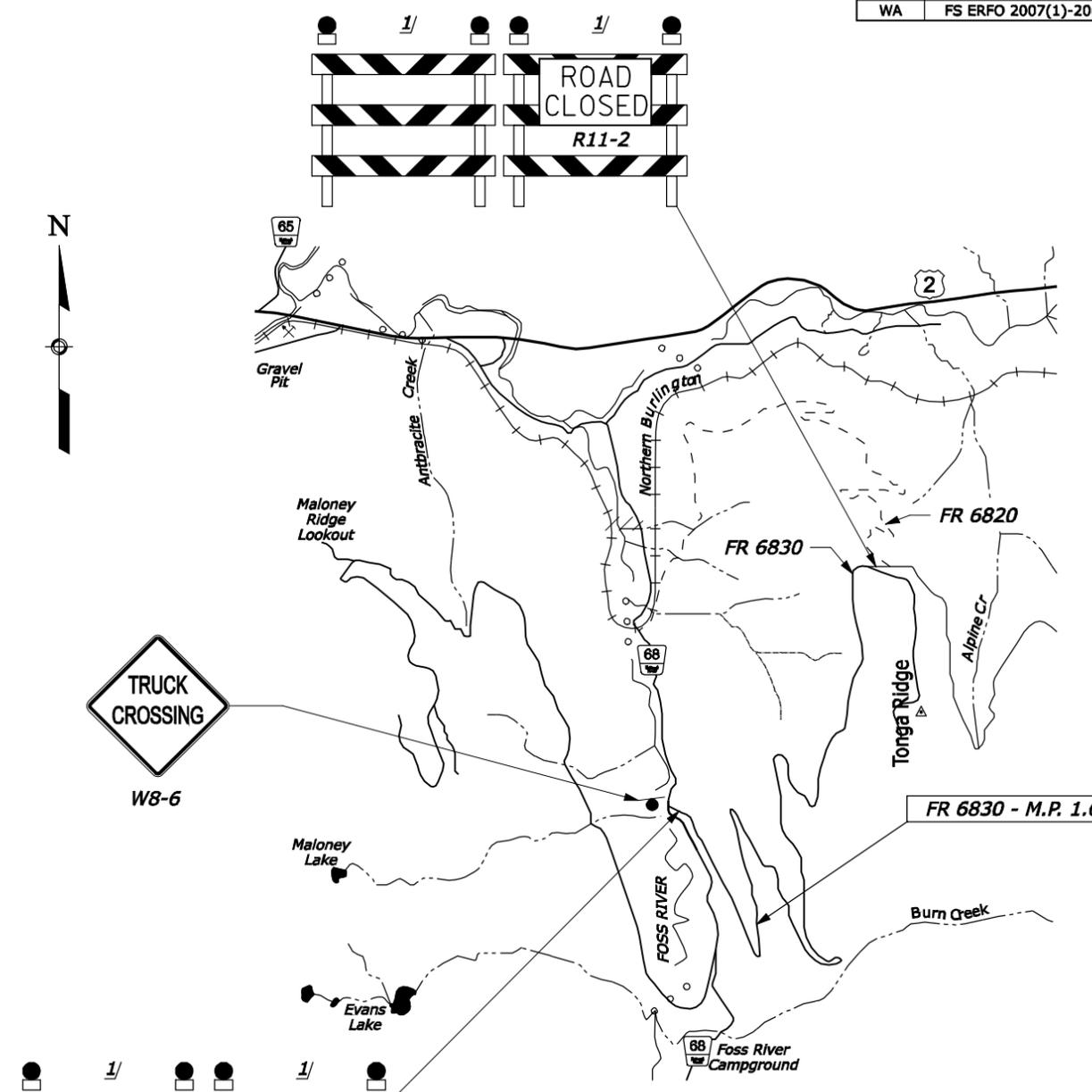
TEMPORARY TRAFFIC CONTROL QUANTITIES AND DETAILS

3/2008 Kevin Parker
 3/2008 Marty Martinez
 31-MAR-2008 9:05AM
 IP_PWP:dms05025\wf7209ga.dgn [US_Sur2D]

STATE	PROJECT	SHEET NUMBER
WA	FS ERFO 2007(1)-20(9)	G.2



Forest Road 63 Road Closure Signing



Forest Road 6830 Road Closure Signing

NOTE:

1. Install signs according to the current edition of the "Manual on Uniform Traffic Control Devices (MUTCD)".
2. Place Truck Crossing signs during hauling operations and remove when not in use.
3. Provide additional signs as required to meet field conditions.
4. "FR" = Forest Road

FOOTNOTE:

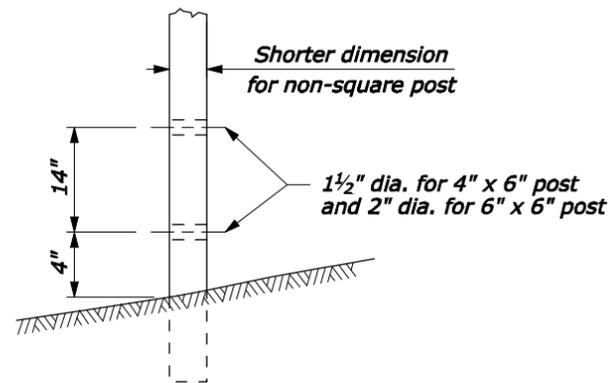
- ^{1/} Place barricades on road to be closed 50' from the intersection. Mount two warning lights on each barricade, and the ROAD CLOSED sign on the right barricade.



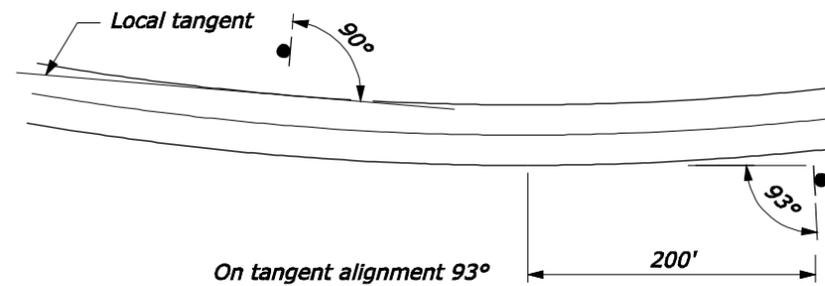
TEMPORARY TRAFFIC CONTROL ROAD CLOSURE SIGNING

NOTE:

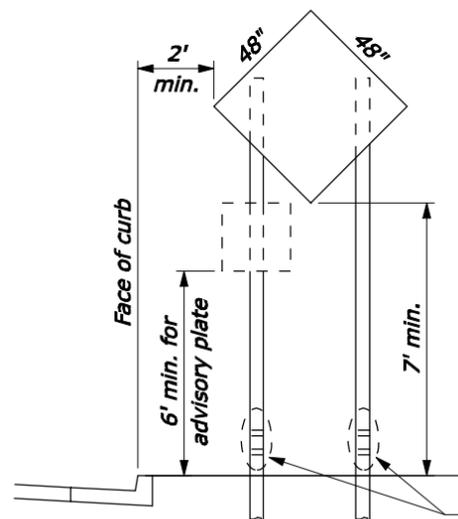
1. Use Type III or higher type sheeting on all signs and channelizing devices. Warning lights are not normally needed on devices with Type III or higher type sheeting, but may be beneficial to attract the drivers attention in fog or other special conditions. When used, apply the appropriate type of warning light (Type A, B, C, or D) per the MUTCD Chapter 6F.
2. Ensure all sign supports exposed to impact by traffic meet the requirements of NCHRP-350 for crash worthiness.
3. Do not store traffic control devices along the roadway when not in use. Cover post-mounted signs when not applicable.
4. State standards may be used as an alternative if approved by the CO.



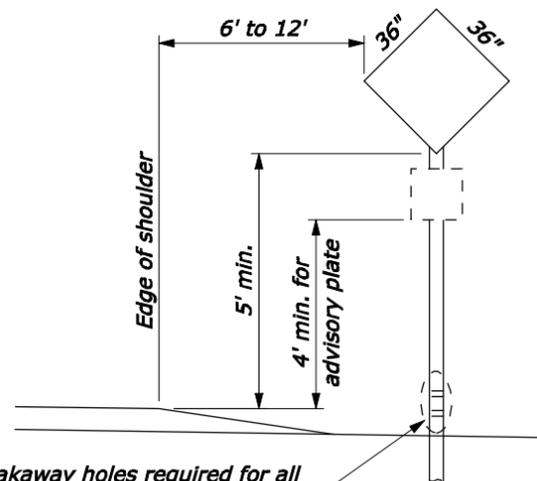
POST DETAIL



SIGN INSTALLATION ANGLE



URBAN AREAS
(or pedestrian or parking areas)



RURAL AREAS

Breakaway holes required for all wooden sign posts larger than 4" x 4". See Post Detail

NOTE: Mount signs with area 9 sqft and under on a single 4" x 4" wood post. Use double wood posts for signs wider than 36" or signs with an area over 9 sqft. Steel may be used in lieu of wood posts (See Note 2)

SIGN PLACEMENT

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION FEDERAL LANDS HIGHWAY	
U.S. CUSTOMARY STANDARD	
TEMPORARY TRAFFIC CONTROL SIGN INSTALLATION	
STANDARD APPROVED FOR USE 6/2005	STANDARD
REVISED: DRAFT: 11/2007	635-14