INDEX TO SHEETS

NO.	DESCRIPTION
	TITLE SHEET
1	TYPICAL SECTION & ESTIMATED QUANTITIES
2	ROAD PLAN & PROFILE
3	STREAM PLAN & PROFILE
4	CULVERT DETAILS
5	STREAM DETAILS
6	ROADWAY CROSS-SECTIONS

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION ONE

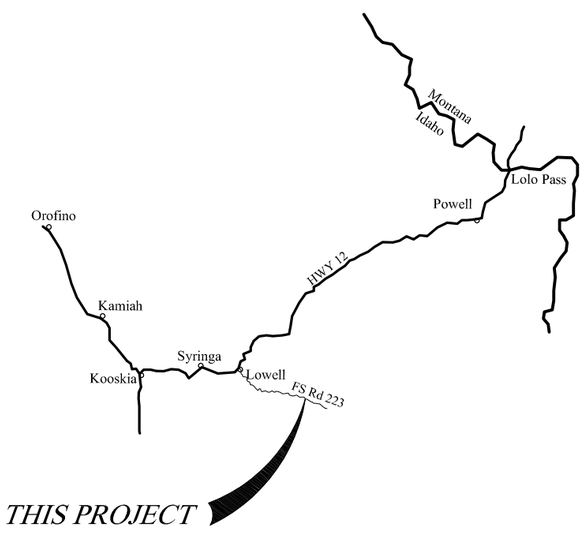
ROAD AND CULVERT PLANS FOR

CACHE CREEK CULVERT REPLACEMENT (RD. NO. 223 - M.P. 12.96)

NEZ PERCE NATIONAL FOREST
MOOSE CREEK RANGER DISTRICT
IDAHO COUNTY, IDAHO

GOVERNMENT FURNISHED

– WASTE AREA
(LOCATED AT OHARA PIT, RD. 651–M.P. 0.5)



LOCATION MAP
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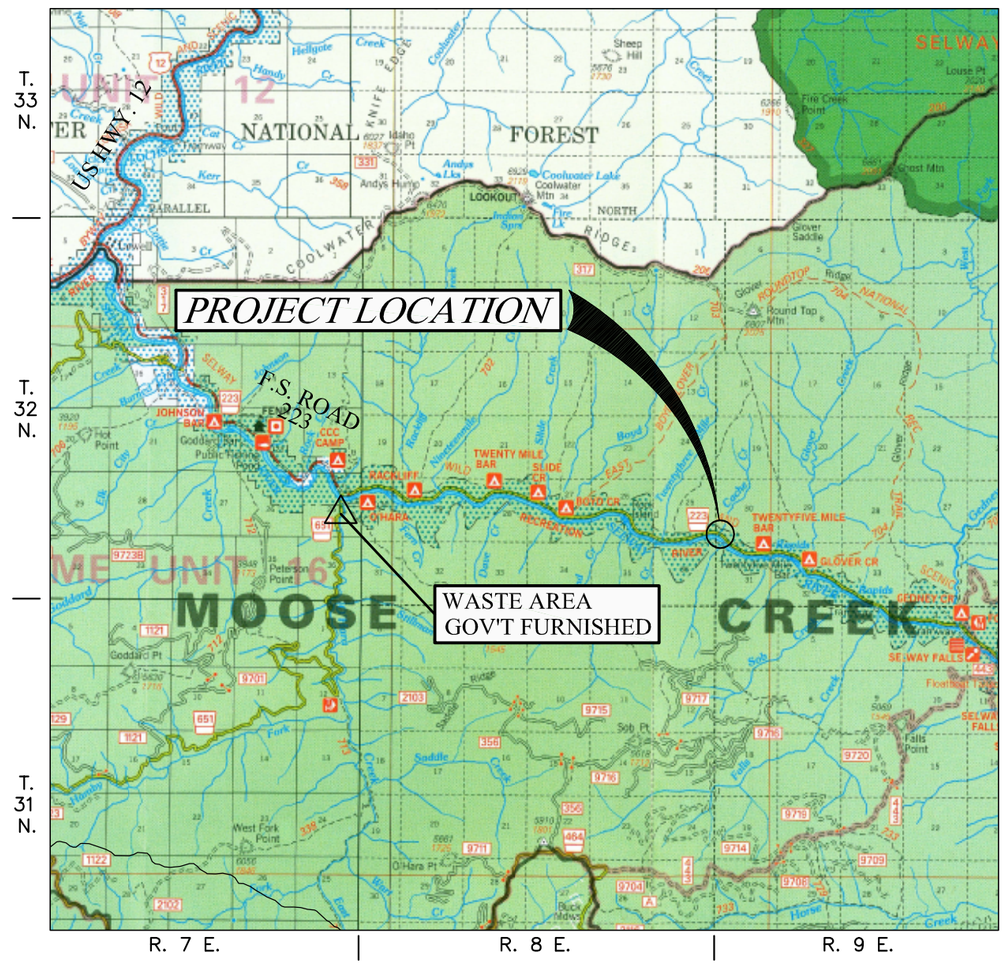

SEC. 30, T. 32 N., R. 9 E.

VICINITY MAP
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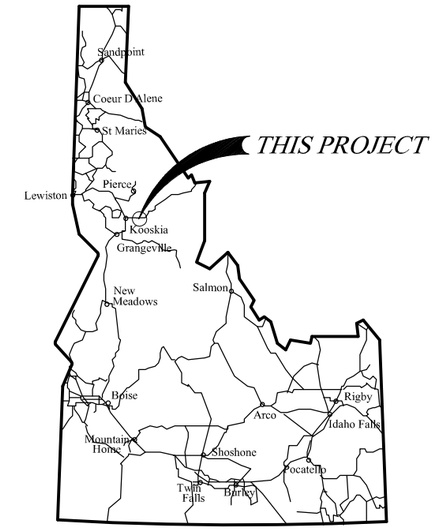

IDAHO INDEX MAP
No Scale

REVIEWED:

_____ DATE _____
FOREST ENGINEER
NEZ PERCE NATIONAL FOREST

RECOMMENDED:

_____ DATE _____
MOOSE CREEK DISTRICT RANGER
NEZ PERCE NATIONAL FOREST

APPROVED:

_____ DATE _____
FOREST SUPERVISOR
NEZ PERCE NATIONAL FOREST

PREPARED BY:
Jeremiah Theys
GREAT WEST ENGINEERING INC.

PROFESSIONAL ENGINEER REGISTERED 12313 STATE OF IDAHO JEREMIAH J. THEYS
4/18/07

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(406)449-8627

GENERAL NOTES

SPECIFICATIONS: Materials And Construction Of This Structure Shall Be In Accordance With The Standard Specifications For Construction Of Roads And Bridges On Federal Highway Projects, FP–03 (U.S. Customary Units).

DESIGN SPECIFICATION: This Structure Is Designed For HS20–44 In Accordance With The AASHTO Standard Specifications For Highway Bridges, 17th Edition.

HYDROLOGY & HYDRAULICS: This Structure Provides Adequate Capacity For The 100–Year Frequency Flood Which Has a Design Flow Volume Of 146 Cubic Feet Per Second (cfs). The 2–Year And The 10–Year Events Were Estimated At 31.7 cfs And 71.4 cfs Respectively.

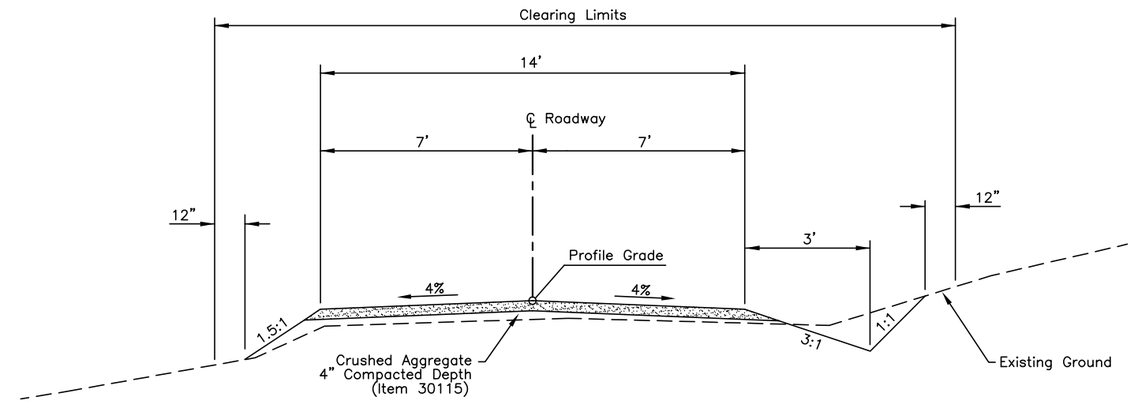
STRUCTURAL PLATE ARCH: The Structural Plate Arch Shall Be 9'–0" Span, 4'–8" Rise, 6" x 2" Corrugations With Galvanized Steel Plate Of 0.138 Inch Thickness. Steel Plates Shall Be Connected With 3/4" ø Bolts, 4 Bolts Per Foot.

CONCRETE: Use Class A(AE) Concrete, f'c = 4,000 psi At 28 Days With An Entrained Air Content Of 5% ± 1%. Finish Concrete With A Class 1 – Ordinary Surface Finish.

All Concrete Shall Be Made In Accordance With An Approved Mix Design. Chamfer All Exposed Edges Of Concrete And Fillet All Re–Entrant Angles 3/4" Unless Noted Otherwise.

REINFORCING STEEL: Reinforcing Shall Be Of The Deformed Bar Type Conforming To AASHTO M31 (ASTM A615), Grade 60. Concrete Clear Cover Shall Be 3" Unless Shown Otherwise On The Plans. Bending And Splicing Of Reinforcement Shall Be In Accordance With ACI 315.

HARDWARE AND STRUCTURAL STEEL: All Steel Shapes, Plates And Bars Shall Conform To AASHTO M183 (ASTM A36) And Shall Be Galvanized. All Welding Shall Be In Accordance With AWS D1.5, Bridge Welding Code. All Electrodes Shall Be E70XX.



TYPICAL ROADWAY SECTION

Halfsize Scale: 1" = 5'

INFORMATIONAL ONLY – NOT FOR BIDDING PURPOSES – REFER TO BID SCHEDULE

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY	METHOD OF MEASUREMENT
15101	Mobilization	LS	1	LSQ
15221	Construction Surveying And Staking	LS	1	LSQ
15713	Soil Erosion And Pollution Control	LS	1	LSQ
20102	Clearing And Grubbing	LS	1	LSQ
20304	Removal Of Existing Corrugated Metal Pipe	LS	1	LSQ
20806	Structure Excavation	LS	1	LSQ
25101	Placed Riprap, Class 4 (Commercial Source)	CY	30	DQ
25118	Grade Control Structure (Commercial Source)	EA	3	AQ
27250	Geocell Abutment Stabilization, 6 Inch Depth	SY	37	AQ
30115	Aggregate Surface Course, Grading S, Compaction Method E (Commercial Source)	TON	40	DQ
55305	Concrete Member, Footings	LS	1	LSQ
60304	Steel Structural Plate Arch, 9' Span, 4'–8" Rise, 0.138" Thickness	LF	40	DQ
62201	Hydraulic Excavator With Thumb	HR	8	AQ
62501	Seeding, Dry Method	ACRE	0.10	DQ

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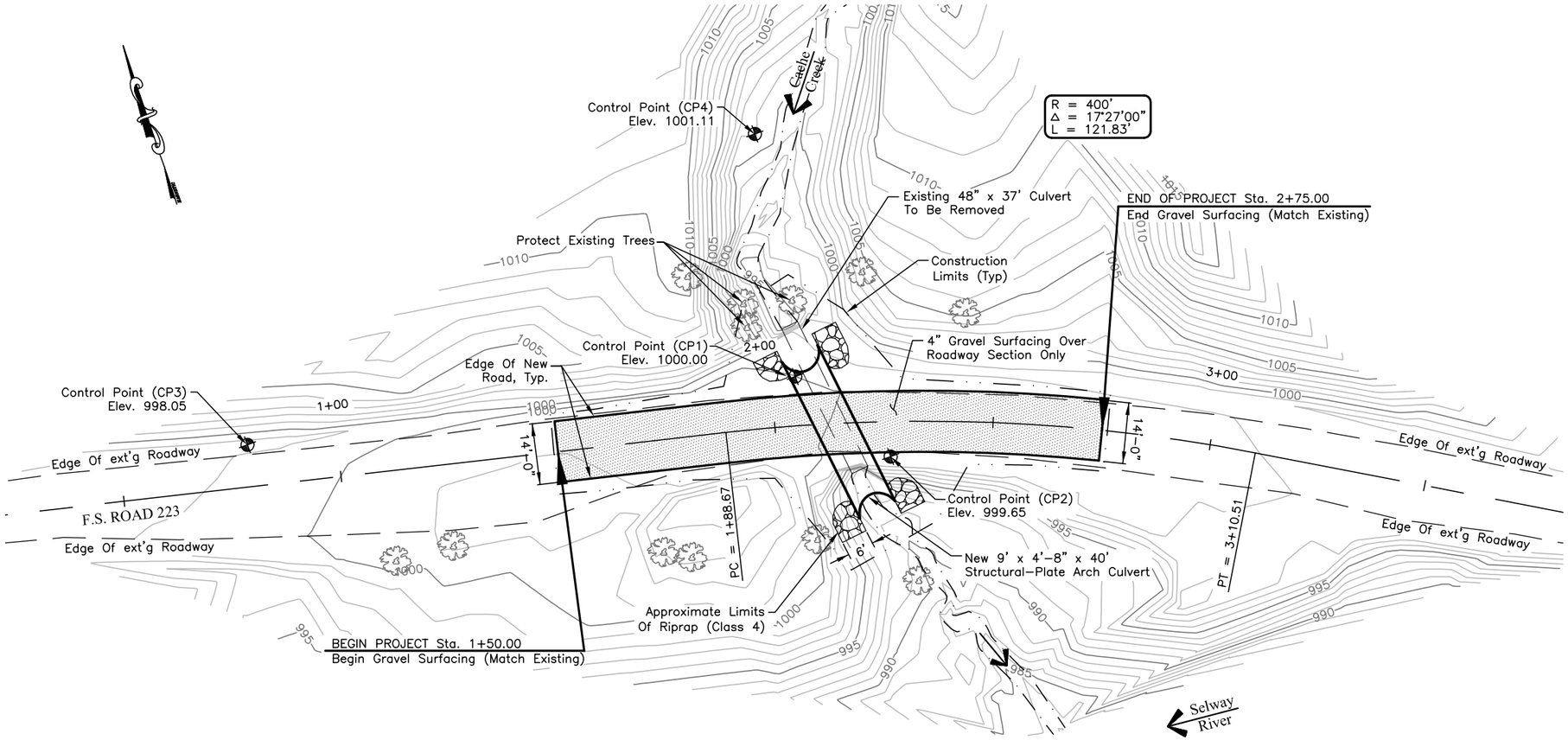
CACHE CREEK CULVERT REPLACEMENT
ROAD NO. 223 - M.P. 12.96
NEZ PERCE NATIONAL FOREST

TYPICAL SECTION & ESTIMATED QUANTITIES

Designed JJT Design Checked WBL
Drawn JJT Drawing Checked WBL
Date April 20, 2007

SHEET 1 Of 6



ROAD PLAN

Scale: 1" = 30'-0"

COORDINATE TABLE*				
Point	Northing	Easting	Elevation	Description
CP1	5000.00	5000.00	1000.00	Rebar W/Cap
CP2	4975.30	5014.26	999.65	Rebar
CP3	5028.21	4876.77	998.05	Rebar
CP4	5055.37	5010.32	1001.11	Hub w/Nail

* Local Coordinate System Utilized

ROADWAY CENTERLINE COORDINATE TABLE			
Station	*Northing*	*Easting*	*Elevation*
1+50 BEGIN	5002.41	4943.05	1000.96
1+60	5000.08	4952.78	1000.84
1+80	4995.42	4972.23	1000.58
1+88.67 PC	4993.40	4980.66	1000.48
2+00	4990.61	4991.64	1000.33
2+20	4984.92	5010.81	1000.08
2+40	4978.28	5029.67	999.83
2+60	4970.70	5048.18	999.58
2+75 END	4964.42	5061.80	999.39
3+10.51 PT	4947.54	5093.03	999.01

NOTES:

1.) A Soil Investigation Has Not Been Conducted At This Culvert Site.

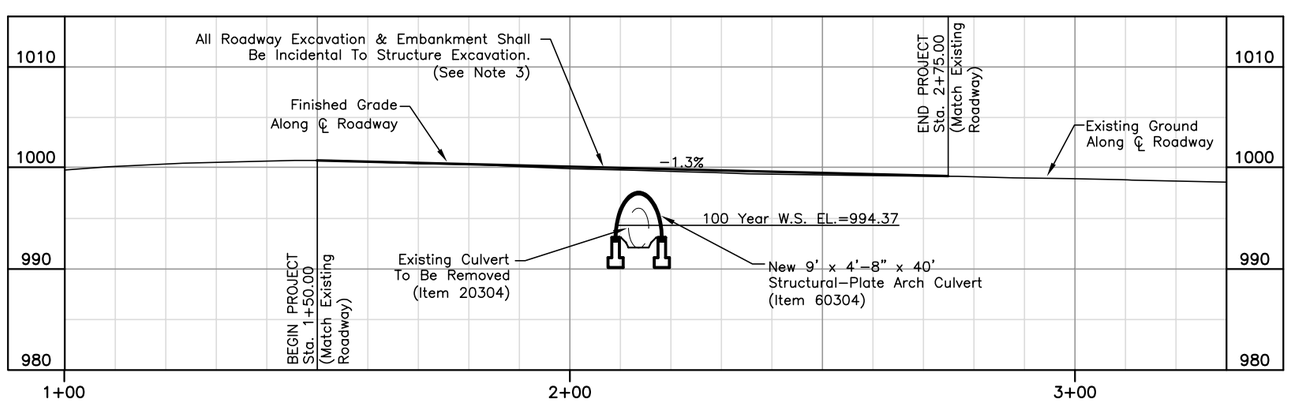
2.) Seed All Disturbed Areas After Construction Per FSSS 625.

3.) All Roadway Excavation & Embankment Shall Be Incidental To The Structure Excavation Item 20806. Compact Road Excavation And Fill Per FSSS 204 Compaction Method e.

4.) Waste Excess And Unsuitable Material At The Ohara Pit Waste Area.

5.) Contractor May Use Suitable Onsite Rock For Riprap Material.

6.) Contractor To Preserve All Large Diameter Trees Per The Direction Of The CO.



ROAD PROFILE

Scale: 1" = 30' Horiz., 1" = 15' Vert.

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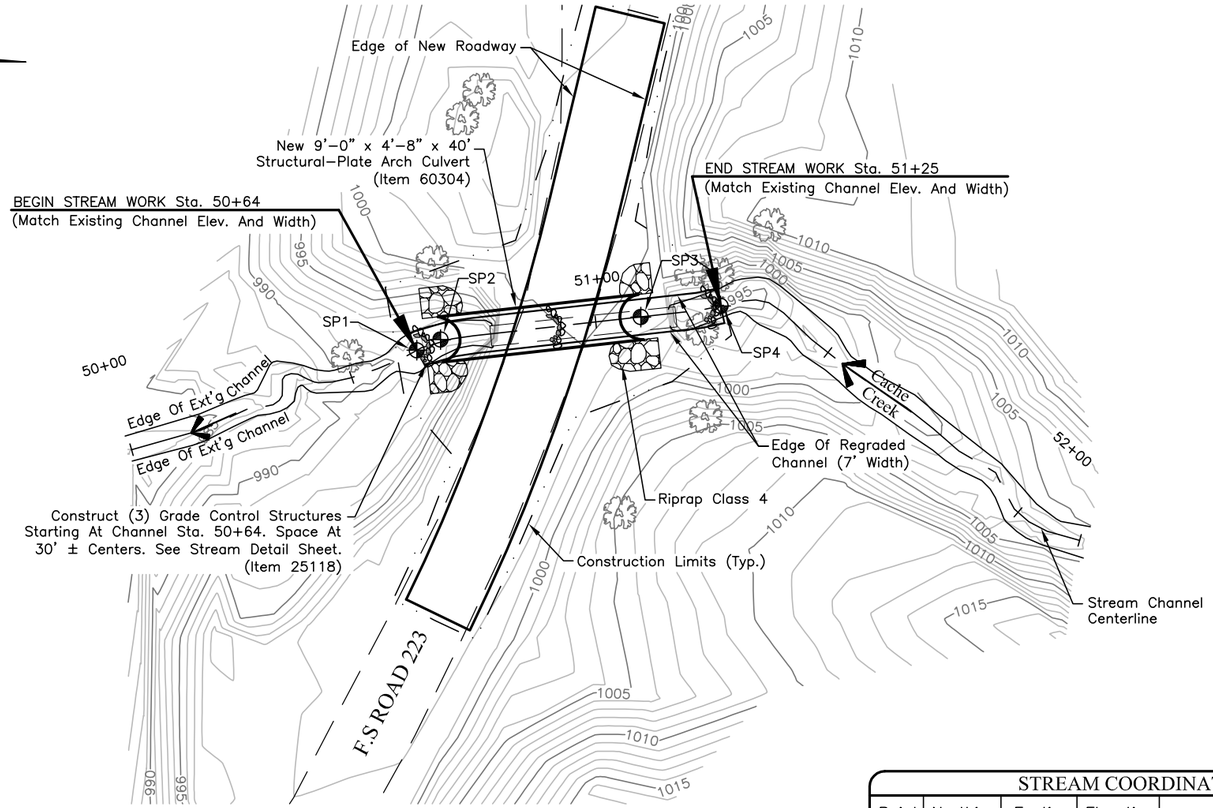
REGION ONE

CACHE CREEK CULVERT REPLACEMENT
ROAD NO. 223 - M.P. 12.96
NEZ PERCE NATIONAL FOREST

ROAD PLAN AND PROFILE

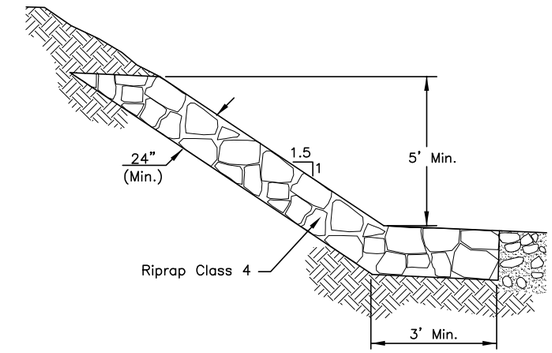
Designed JJT Design Checked WBL
Drawn JJT Drawing Checked WBL
Date April 20, 2007

SHEET 2 Of 6



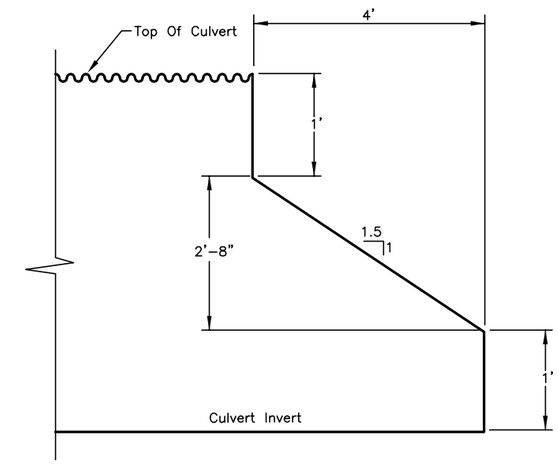
STREAM PLAN

Scale: 1" = 30'–0"



RIPRAP @ INLET & OUTLET

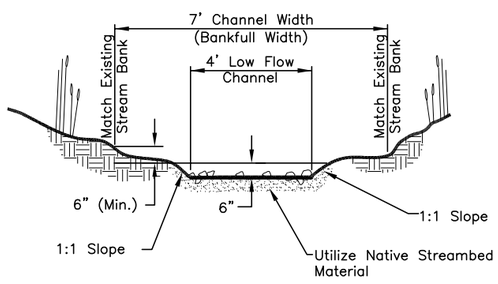
Not to Scale



CULVERT END TREATMENT

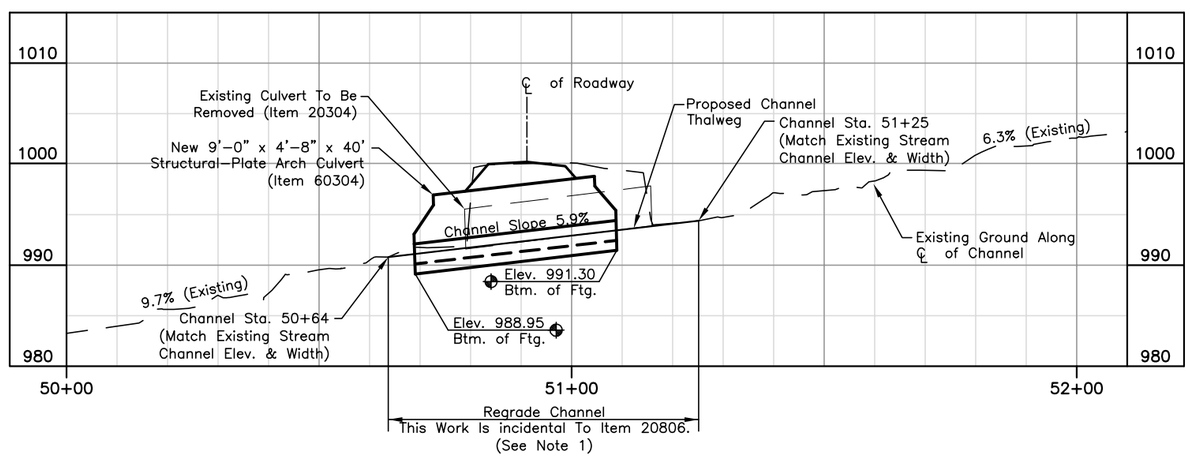
Not to Scale

STREAM COORDINATE TABLE				
Point	*Northing*	*Easting*	*Elevation*	*Description*
SP1	4960.19	5009.41	990.64	Begin Stream Work
SP2	4964.91	5007.53	988.95	Downstream End Of Footing – ℄ Culvert
SP3	5004.53	5002.82	991.30	Upstream End Of Footing – ℄ Culvert
SP4	5020.38	5000.60	994.26	End Stream Work



TYPICAL CHANNEL SECTION

No Scale



STREAM PROFILE

Scale: 1" = 30' Horiz., 1" = 15' Vert.

NOTES:

1.) Utilize Native Streambed Material To Regrade And Shape The Stream Channel. Regrade And Shape The Channel Within The Culvert Per Details On Sheet 4. Regrade And Shape The Channel Outside The Culvert Per The Typical Channel Section Detail On This Sheet.

2.) Bevel The Culvert Inlet And Outlet Per The Culvert End Treatment Detail On This Sheet.

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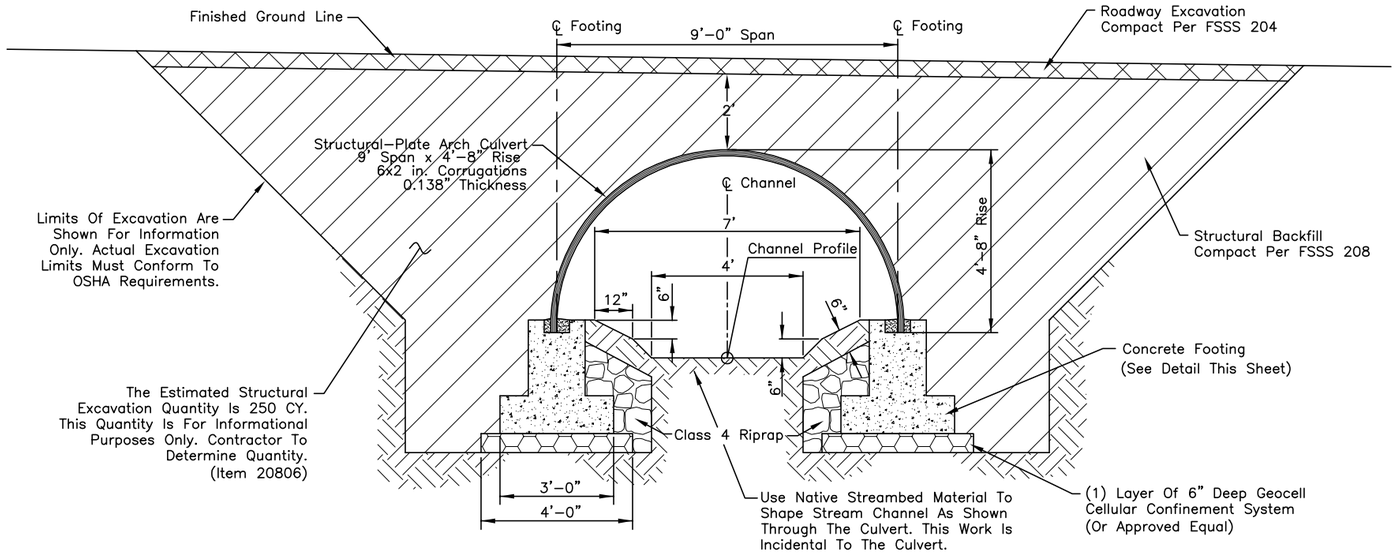
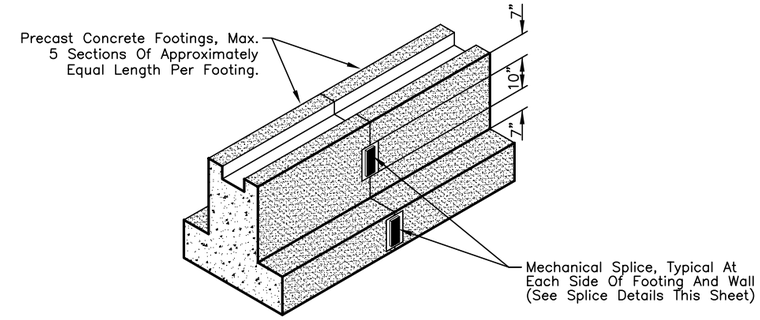
STREAM PLAN AND PROFILE

Designed JJT Design Checked WBL
Drawn JJT Drawing Checked WBL
Date April 20, 2007



TYPICAL SECTION - STRUCTURAL-PLATE ARCH CULVERT

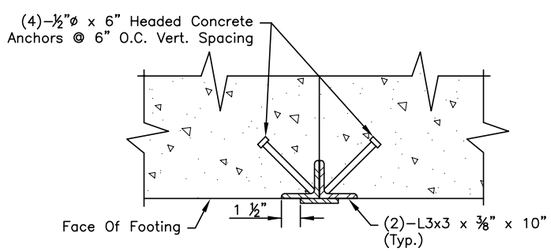
Halfsize Scale: 1" = 4'



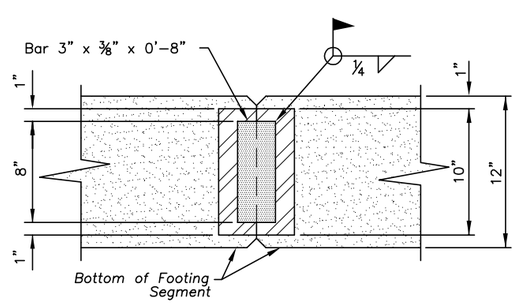
TYPICAL PRECAST FOOTING SEGMENTS

Splice Assembly Shall Be Considered Incidental To Footing Concrete.
Footing Segments Shall Be Placed With A Vertical Tolerance of 1/4" Max.

Halfsize Scale: 1" = 4'



PLAN SECTION



ELEVATION

MECHANICAL SPLICE DETAILS

Footing Splice Shown.
Wall Splice Is Similar.

Halfsize Scale: 1" = 1'

CULVERT NOTES:

1.) Compact All Structural Backfill In Accordance With FSSS 208.

FOOTING NOTES:

1.) No Connection Using An Unbalanced Channel Or Similar Angle Connection Will Be Allowed.

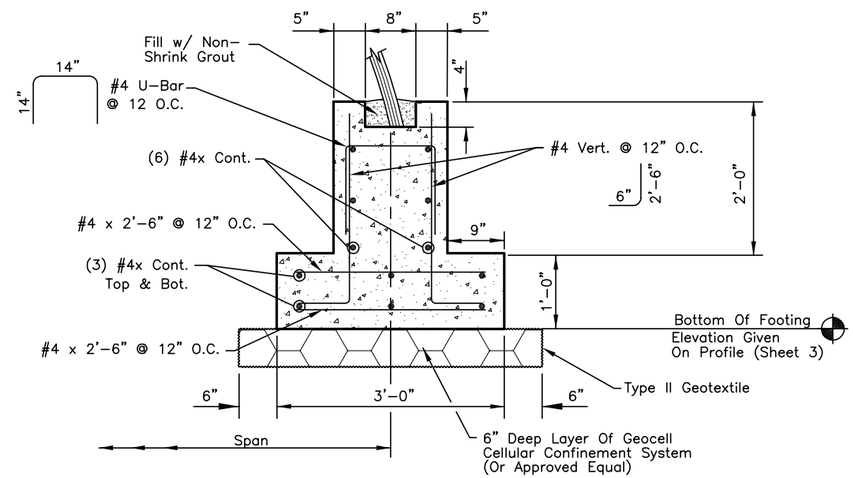
2.) Min. 3" Clear Cover Over Rebar Unless Otherwise Noted.

3.) Contractor May Elect To Cast–In–Place Concrete Footings. Geocell Can Be Eliminated If Cast–In–Place Option Is Used.

4.) All Concrete Reinforcing Steel Shall Be Considered Incidental To Footing Concrete.

5.) Place Geocell On Undisturbed Soil. Backfill Geocell w/Coarse Granular Backfill Per FSSS 272.

6.) Place Type II Geotextile Under Geocell And Wrap Over Top After Geocell Is Backfilled.



FOOTING DETAIL

Halfsize Scale: 1" = 2'

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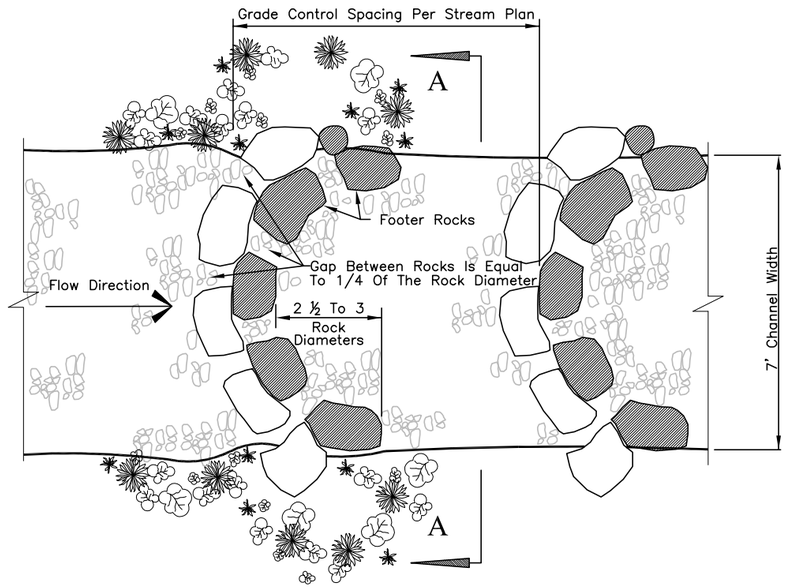
CULVERT DETAILS

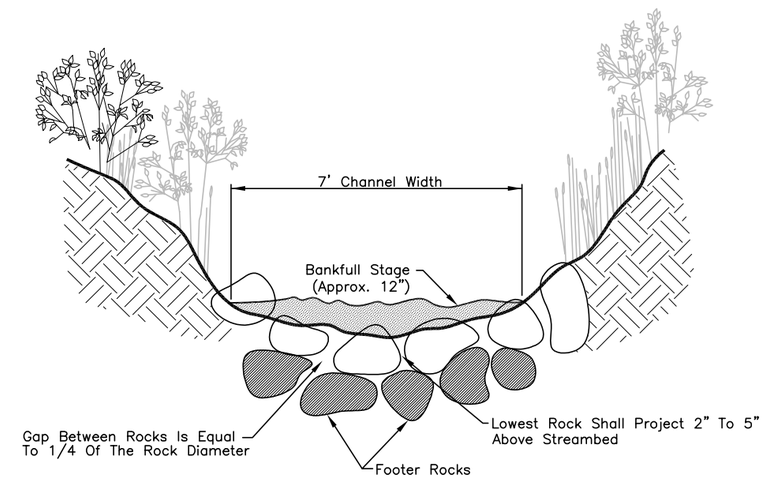
Designed JJT Design Checked WBL
Drawn JJT Drawing Checked WBL
Date April 20, 2007

SHEET 4 Of 6



PLAN VIEW - GRADE CONTROL

No Scale



GRADE CONTROL SECTION A-A

No Scale

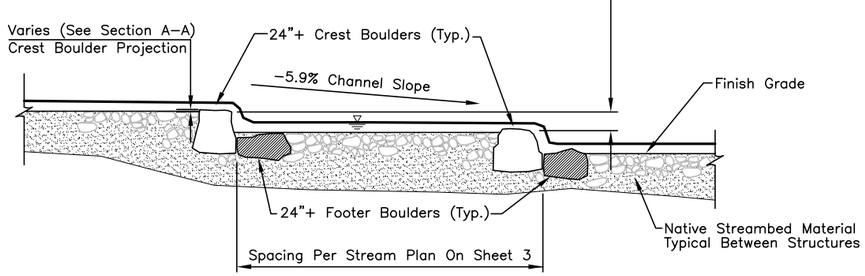
STREAM DETAIL NOTES:

1.) Grade Control Locations Will Be Confirmed Or Adjusted By The C.O. To Take Advantage Of Existing Streambed Features And Material.

2.) Rock For Grade Control Shall Come From Native Onsite Material Or From The Commercial Riprap Source.

NOTE:

1.) The Elevation Difference Between Successive Crest Boulders Shall Approximate The Grade Control Spacing Multiplied By The Channel Slope.



PROFILE VIEW - GRADE CONTROL

No Scale

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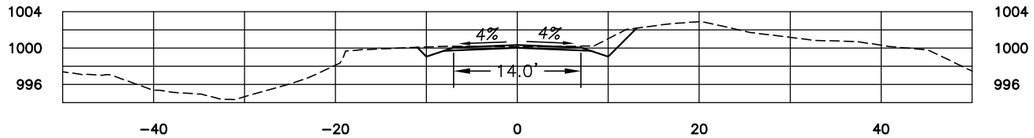
NEZ PERCE NATIONAL FOREST

STREAM DETAILS

Designed JJT Design Checked WBL
Drawn JJT Drawing Checked WBL
Date April 20, 2007

SHEET 5 Of 6

2+00



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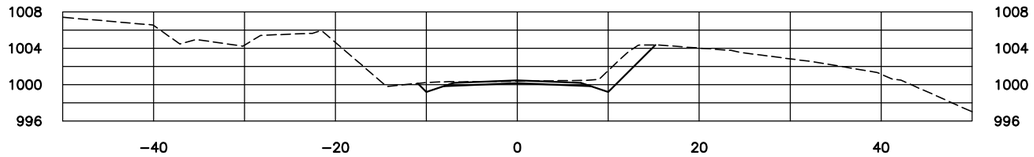

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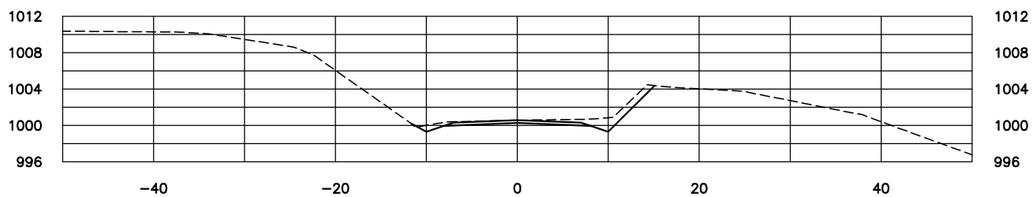

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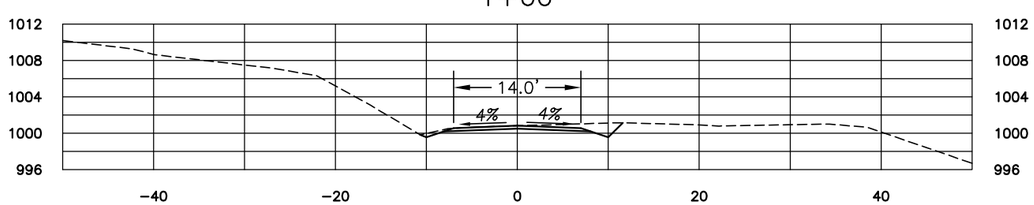

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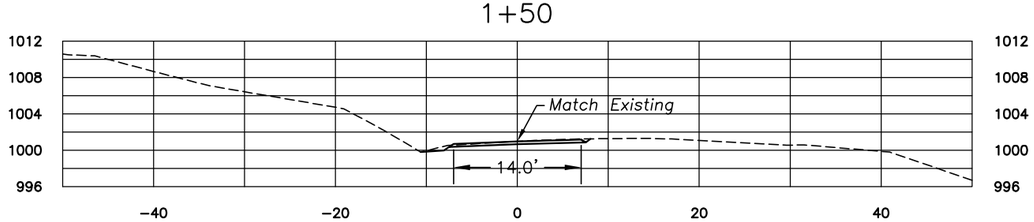

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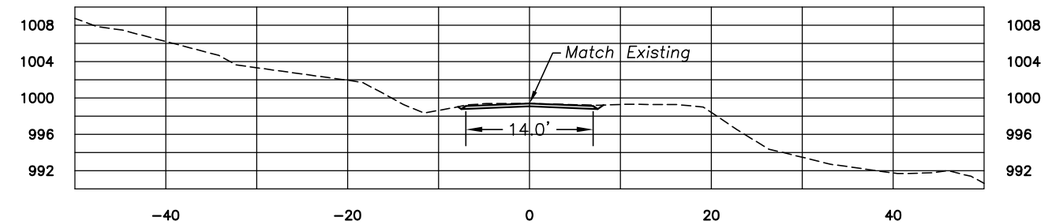

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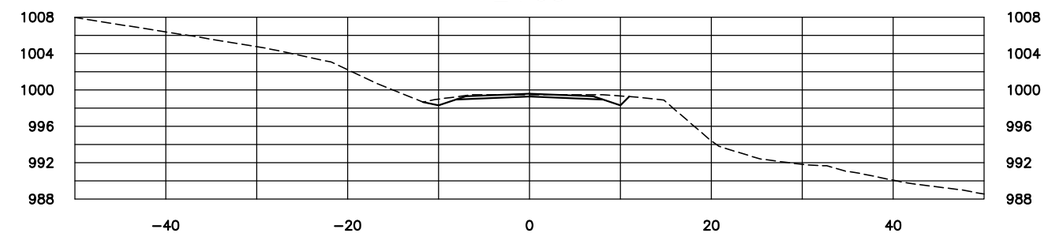

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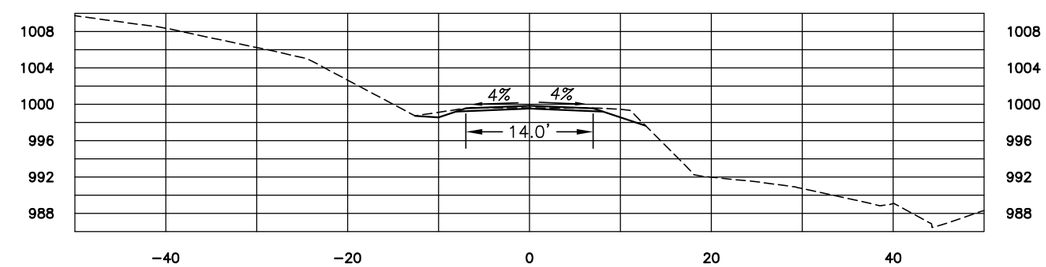

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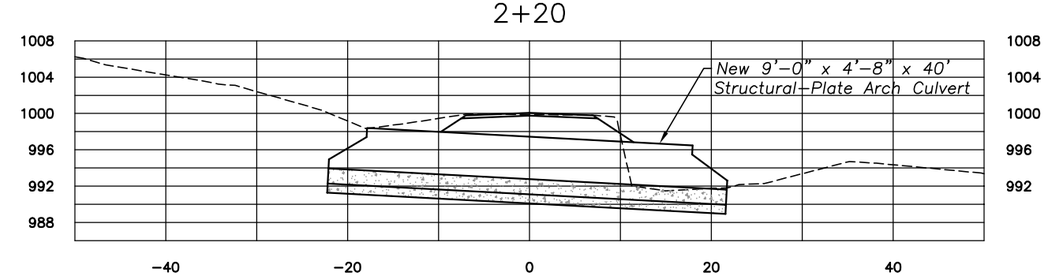

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ROADWAY CROSS-SECTIONS

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SHEET 6 Of 6