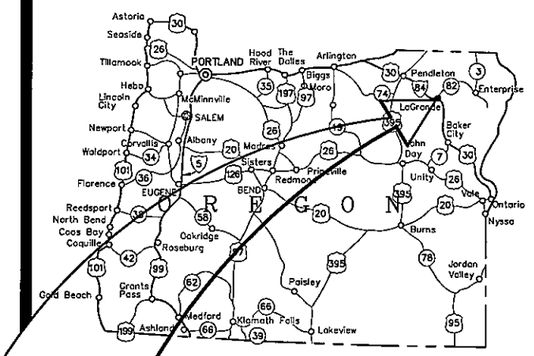
GRANDE RONDE MODEL WATERSHED

NORTH FORK CABIN CREEK
CULVERT REPLACEMENTS - 2009

UNION COUNTY, OREGON



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STANDARD DRAWINGS
- RD415 GUARDRAIL AND METAL MEDIAN BARRIER PARTS
- RD1040 SEDIMENT FENCE

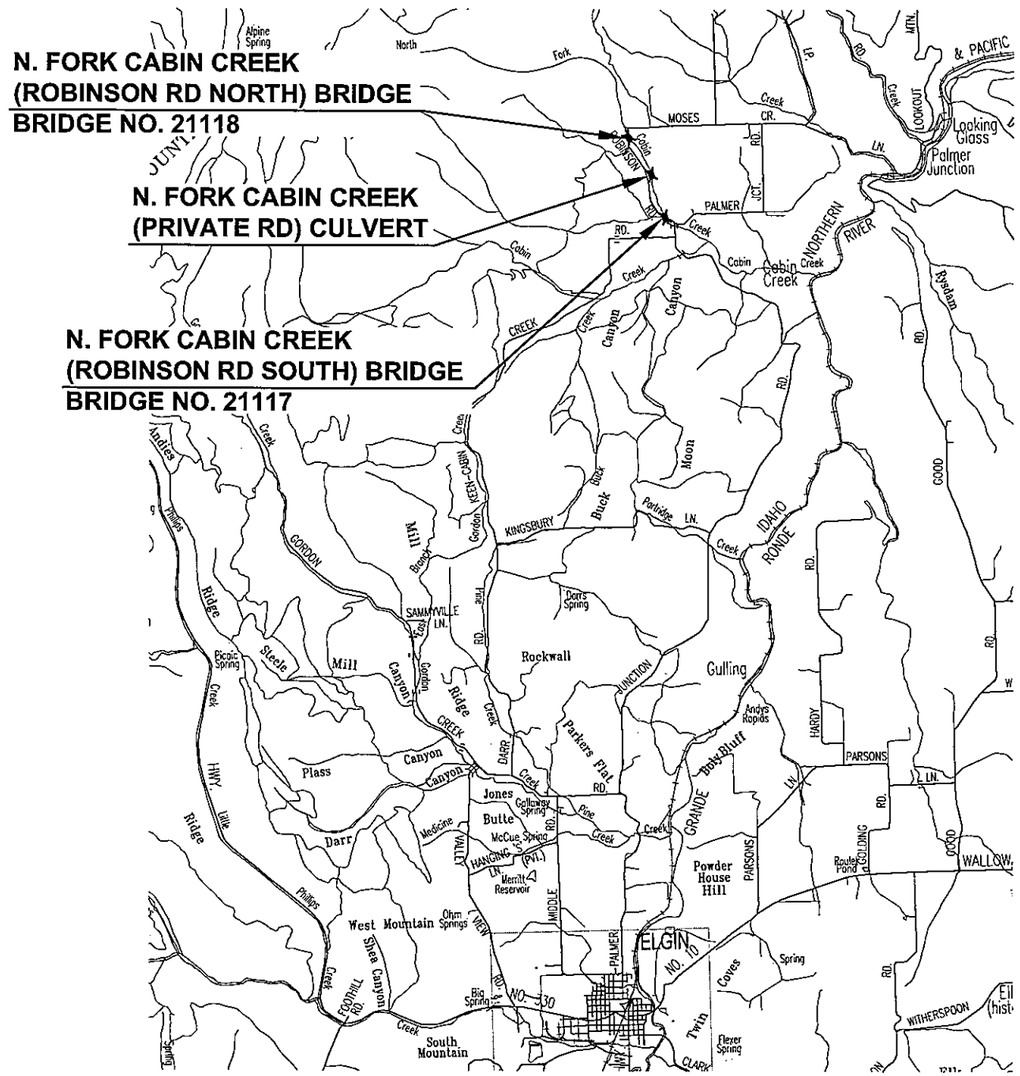
The Grande Ronde Model Watershed has reviewed these drawings and approved them for construction to fulfill the intended project objectives.

09/22/2009
Date

N. FORK CABIN CREEK (ROBINSON RD NORTH) BRIDGE
BRIDGE NO. 21118

N. FORK CABIN CREEK (PRIVATE RD) CULVERT

N. FORK CABIN CREEK (ROBINSON RD SOUTH) BRIDGE
BRIDGE NO. 21117



VICINITY MAP
N.T.S.

GRANDE RONDE MODEL WATERSHED

GRANDE RONDE MODEL WATERSHED

EXECUTIVE DIRECTOR
JEFF OVESON

BOARD OF DIRECTORS
MIKE HAYWARD - Chair
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RICHARD COMSTOCK, Public Works Director

REGISTERED PROFESSIONAL ENGINEER
59,632PE
OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
SIGNED 09-22-09

anderson perry & associates, inc.
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PLAN LEGEND

SEWER/STORM DRAIN

	EXISTING	PROPOSED
CULVERT	⊏ = = = = = = ⊐	⊏ = = = = = = ⊐

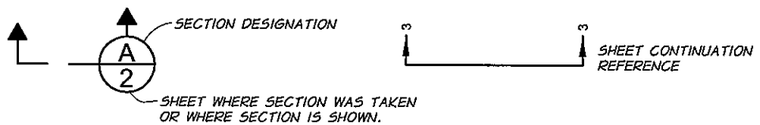
GENERAL

	EXISTING	PROPOSED
FENCE LINE/GATE	-x-x-x-x-	
CREEK CENTERLINE	—— – —— – ——	—— – —— – ——
ORDINARY HIGH WATER	—— · —— · ——	—— · —— · ——

SITE SURVEY

	EXISTING	PROPOSED
INDEX CONTOUR	——750——	——750——
INTERMEDIATE CONTOUR	——750——	——750——
PROPERTY LINE/ RIGHT-OF-WAY	—— – – ——	—— – – ——
CENTERLINE	—— – ——	—— – ——
BENCH MARK/ SECTION CORNER	◒	

DRAFTING



GENERAL NOTES:

"S" CENTERLINE IS CENTERLINE FOR CULVERT.

"L" CENTERLINE IS CENTERLINE FOR BRIDGE.

CONSTRUCTION TO BE PERFORMED BY THE UNION COUNTY PUBLIC WORKS DEPARTMENT.

ALL MATERIAL AND WORKMANSHIP SHALL GENERALLY CONFORM TO THE 2002 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION.

ALL DIMENSIONS, STATIONS, AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.

FIELD VERIFY LOCATION OF UTILITIES, CULVERTS AND WATERWAYS.

ALL IN-STREAM WORK SHALL BE PERFORMED WITHIN THE IN-STREAM WORK WINDOW AS DESIGNATED IN THE OREGON DEPARTMENT OF STATE LANDS (DSL) AND CORPS OF ENGINEERS (COE) PERMITS.

STREAM SIMULATION MATERIAL SHALL BE 18"-0 MATERIAL WITH APPROXIMATELY 84% PASSING THROUGH AN 18" SIEVE. STREAM SIMULATION MATERIAL SHALL BE VISUALLY INSPECTED AND APPROVED BY ENGINEER PRIOR TO INSTALLATION.

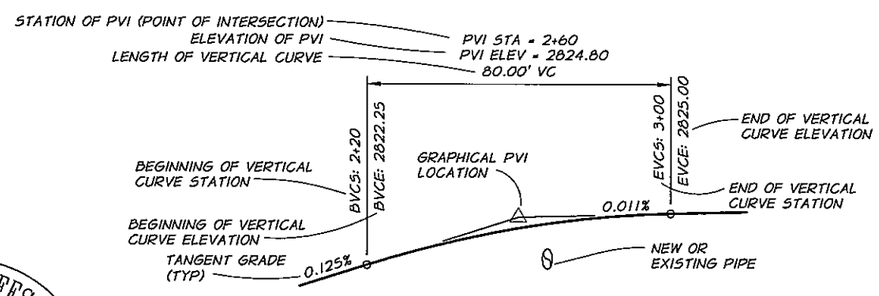
ROAD BASE SHALL BE 3/4"-0 AND SHALL BE COMPACTED TO 95% ASTM D1557 DENSITY. GRANULAR BACKFILL SHALL BE MATERIAL EXCAVATED FROM THE SITE AND SHALL BE FREE OF ORGANIC MATERIAL SUCH AS ROOTS, WOOD, BRUSH, ETC., AND SHALL BE COMPACTED TO 95% ASTM D1557 DENSITY.

ALL WORK, INCLUDING EROSION CONTROL MEASURES, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DSL AND COE PERMITS.

UTILITIES TO BE COORDINATED BY THE COUNTY. COUNTY SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UTILITIES AND FOR COORDINATING WITH UTILITY COMPANIES REGARDING CONDUITS REQUIRED ALONG THE SIDES OF ANY NEW BRIDGE. 48-HOUR NOTIFICATION SHOULD BE GIVEN PER ORS 757-541. THE "CALL BEFORE YOU DIG" NUMBER FOR OREGON IS 1-800-332-2344 (OR 811).

ROADS WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. COUNTY SHALL INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES.

PROFILE LEGEND



BRIDGE NOTES:

DESIGN SPECIFICATIONS:
AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (1996).

DESIGN LOAD:
AASHTO HS 25 LIVE LOAD

CONSTRUCTION SPECIFICATIONS:
1. OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION - 2002, AND OREGON STANDARD DRAWINGS.
2. INSTALL STEEL BRIDGE DECKING PER MANUFACTURER'S INSTRUCTIONS. WELD BRIDGE DECKING TO STEEL GIRDERS PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL WELDING SHALL CONFORM TO AWS-D1.1.

MATERIALS:
1. CONCRETE IN BENT FOOTINGS SHALL BE COMMERCIAL MIX WITH A MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD AND MINIMUM 3,000 PSI 28-DAY COMPRESSIVE STRENGTH. SLUMP 2 TO 3 INCHES.
2. BRIDGE DECKING SHALL BE 4.25" X 12", 7 GA. GALVANIZED STEEL BRIDGE DECKING AS MANUFACTURED BY BIG "R" MANUFACTURING OR EQUAL, SEE DETAIL SHEETS A4 AND C4.
3. STEEL SHAPES SHALL BE A MINIMUM OF ASTM A572, GRADE 50.
4. ALL GUARDRAIL AND BRIDGE RAIL ELEMENTS, POSTS, AND HARDWARE SHALL CONFORM TO ODOT SPECIFICATIONS AND SHALL BE GALVANIZED.

DIMENSIONS AND ELEVATIONS:
ELEVATIONS SHOWN ARE APPROXIMATE AND MAY BE FIELD ADJUSTED, WITH THE ENGINEER'S APPROVAL.

FOUNDATION:
1. ANTICIPATED SOILS CONSIST OF SATURATED GRAVELLY SAND WITH AN ASSUMED ALLOWABLE BEARING CAPACITY OF 1500 PSF. FOUNDATION MAY NEED TO BE ADJUSTED SHOULD THE SOIL PROPERTIES VARY FROM THOSE ASSUMED. ENGINEER SHALL BE NOTIFIED WHEN FIRST FOOTING EXCAVATION IS PERFORMED.
2. ROUTE GROUNDWATER AWAY FROM FOUNDATION EXCAVATIONS.

REGISTERED PROFESSIONAL ENGINEER
59,632PE
OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
SIGNED 09-22-09

REVISION	BY	DATE

DESIGNED BY	C. HUTCHINS	XREFS: 2008 APATB	
DRAWN BY	R. RASMUSSEN		
REVIEWED BY	B. MOORE		

HORZ. SCALE	NONE	VERT. SCALE	
JOB NUMBER	81-08(60)	DATE	2009
ACAD FILE:	LEGEND.DWG		

THIS DRAWING HAS BEEN REDUCED 50%. ADJUST SCALE ACCORDINGLY. BARSCALE SHOWN IS ACCURATE.

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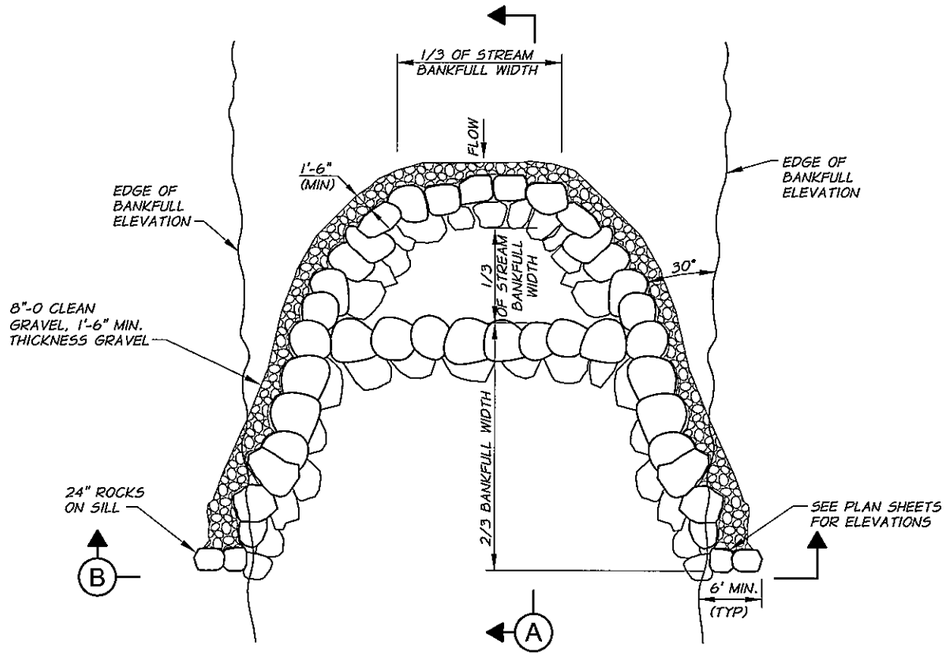
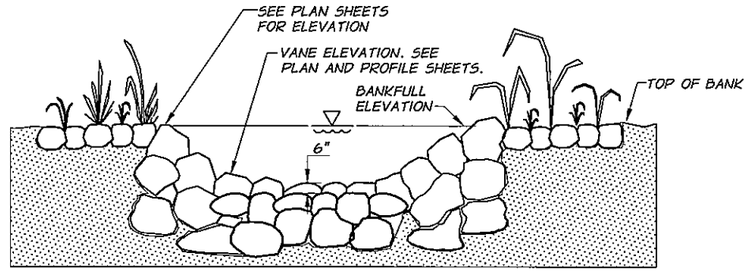
GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

LEGEND AND NOTES

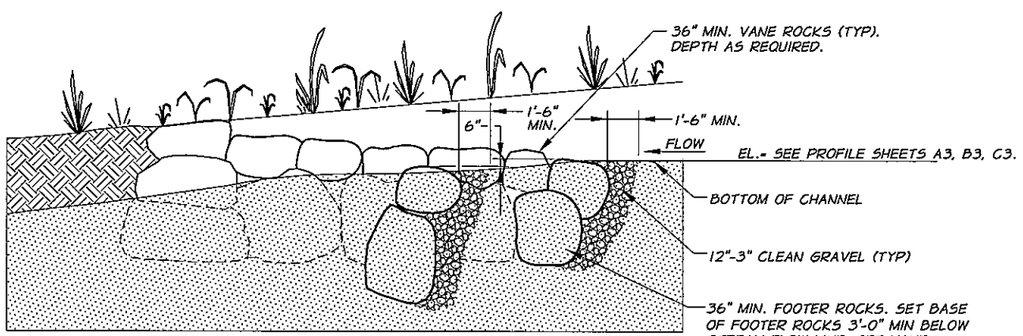
SHEET 1



PLAN
N.T.S.

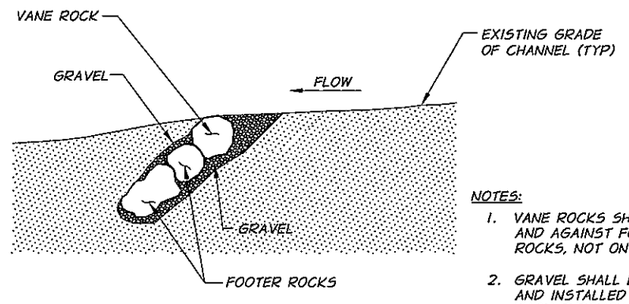


CROSS VANE SECTION B
(ROCKS SHOWN OUT OF SECTION FOR CLARITY)
N.T.S.



CROSS VANE SECTION A
(ROCKS SHOWN OUT OF SECTION FOR CLARITY)
N.T.S.

DOWNSTREAM UPSTREAM



TYPICAL ROCK PLACEMENT
N.T.S.

NOTES:
1. VANE ROCKS SHALL BE PLACED UPSTREAM AND AGAINST FOOTER AND LOWER VANE ROCKS, NOT ON TOP OF THEM.
2. GRAVEL SHALL BE COARSE GRADED 12"-3" AND INSTALLED SO THAT IT DOES NOT WASH THROUGH THE SPACES BETWEEN THE FOOTER AND VANE ROCKS.

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OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
SIGNED 09-22-09

REVISION	BY	DATE	HORZ. SCALE NONE	VERT. SCALE	
DESIGNED BY C. HUTCHINS	XREFS: 2008 APATB		JOB NUMBER 81-08(60)	DATE 2009	
DRAWN BY R. RASMUSSEN			ACAD FILE: VANEDETAILS.DWG		
REVIEWED BY L. STEVENS			COPYRIGHT 2009 BY ANDERSON-PERRY & ASSOC., INC.		

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GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

CROSS VANE DETAILS

SHEET 2

PART 'A'

N. CABIN CREEK (ROBINSON ROAD NORTH) BRIDGE
BRIDGE NO. 21118

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engineering surveying natural resources
LA GRANDE, OR. WALLA WALLA, WA.

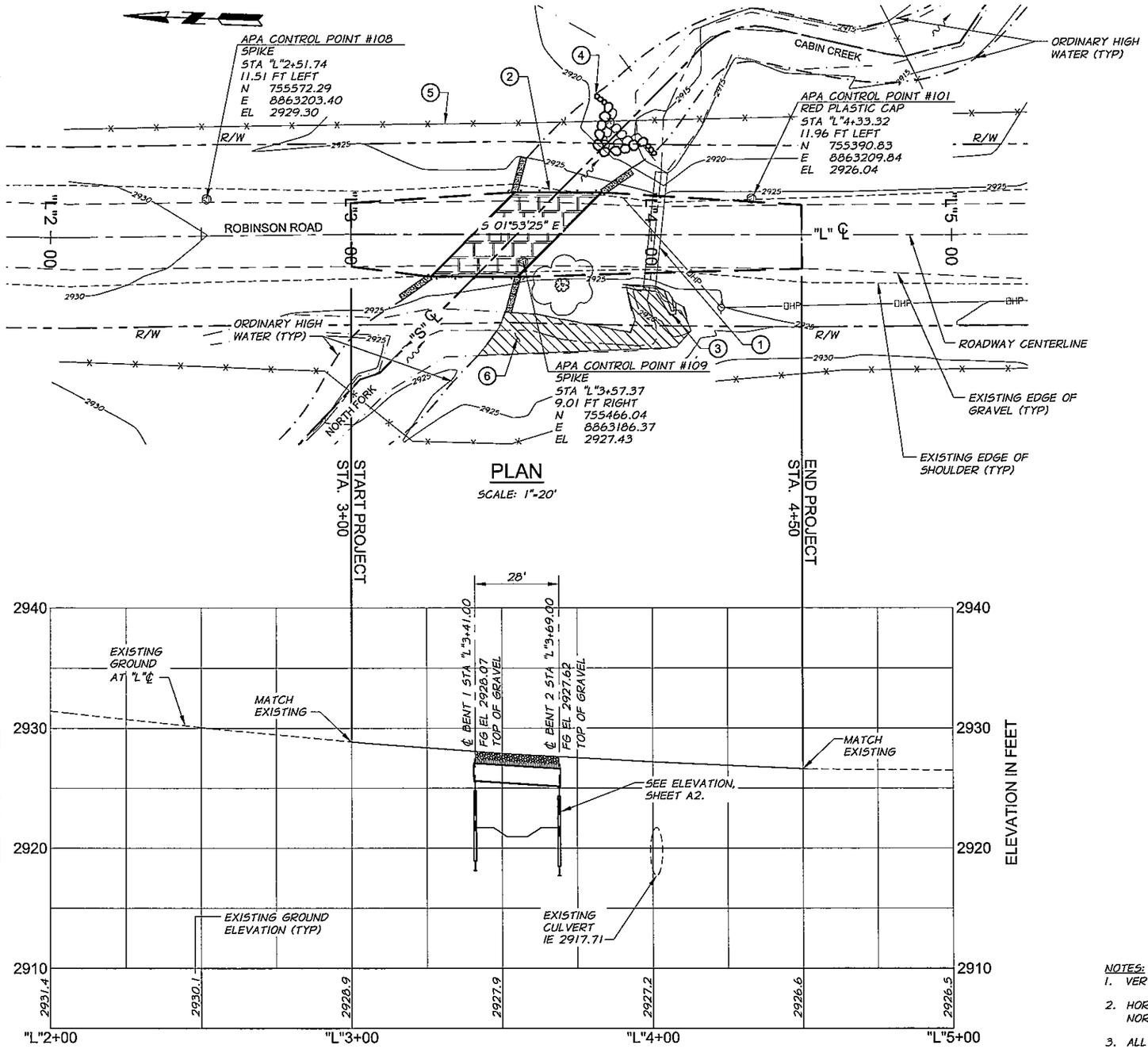
SEC. 26 & 35, T. 3 N., R. 39 E., W.M.

CONSTRUCTION NOTES:

1. REMOVE AND DISPOSE OF EXISTING 48" RCP CULVERT. REBUILD ROAD WHERE EXISTING CULVERT IS LOCATED. SUBGRADE MATERIAL SHALL BE GRANULAR BACKFILL COMPACTED TO 95% OF ASTM D1557 DENSITY. TOP 12" OF ROAD SHALL BE 3/4"-0 BASE ROCK.
2. CONSTRUCT NEW STEEL BRIDGE
3. REMOVE AND DISPOSE OF EXISTING ROCK AND CEMENT RETAINING WALL.
4. CONSTRUCT CROSS VANE GRADE CONTROL STRUCTURE. SEE SHEET A3 FOR ELEVATION AND SHEET 2 FOR DETAILS.
5. REMOVE AND REBUILD EXISTING FENCE AS NEEDED.
6. FILL OLD STREAMBED WITH EXCESS MATERIAL FROM EXCAVATION.

ADDITIONAL CONTROL POINT

APA CONTROL POINT #110
RED PLASTIC CAP
N 755058.92
E 8863227.35
EL 2924.50



PLAN
SCALE: 1"=20'

ROADWAY PROFILE
SCALE: 1"=20' HORIZONTAL
1"=5' VERTICAL

NOTES:
1. VERTICAL DATUM NAVD '88.
2. HORIZONTAL DATUM OREGON COORDINATE SYSTEM - NORTH ZONE NAD '83
3. ALL STATIONS AND ELEVATIONS ARE IN FEET.
4. BRIDGE NO. 21118

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REVISION	BY	DATE

DESIGNED BY C. HUTCHINS	XREFS: 2008 APATB	HORZ. SCALE AS SHOWN	VERT. SCALE
DRAWN BY R. RASMUSSEN		JOB NUMBER 81-08(60)	DATE 2009
REVIEWED BY B. MOORE		ACAD FILE: NORTH-PP.dwg	

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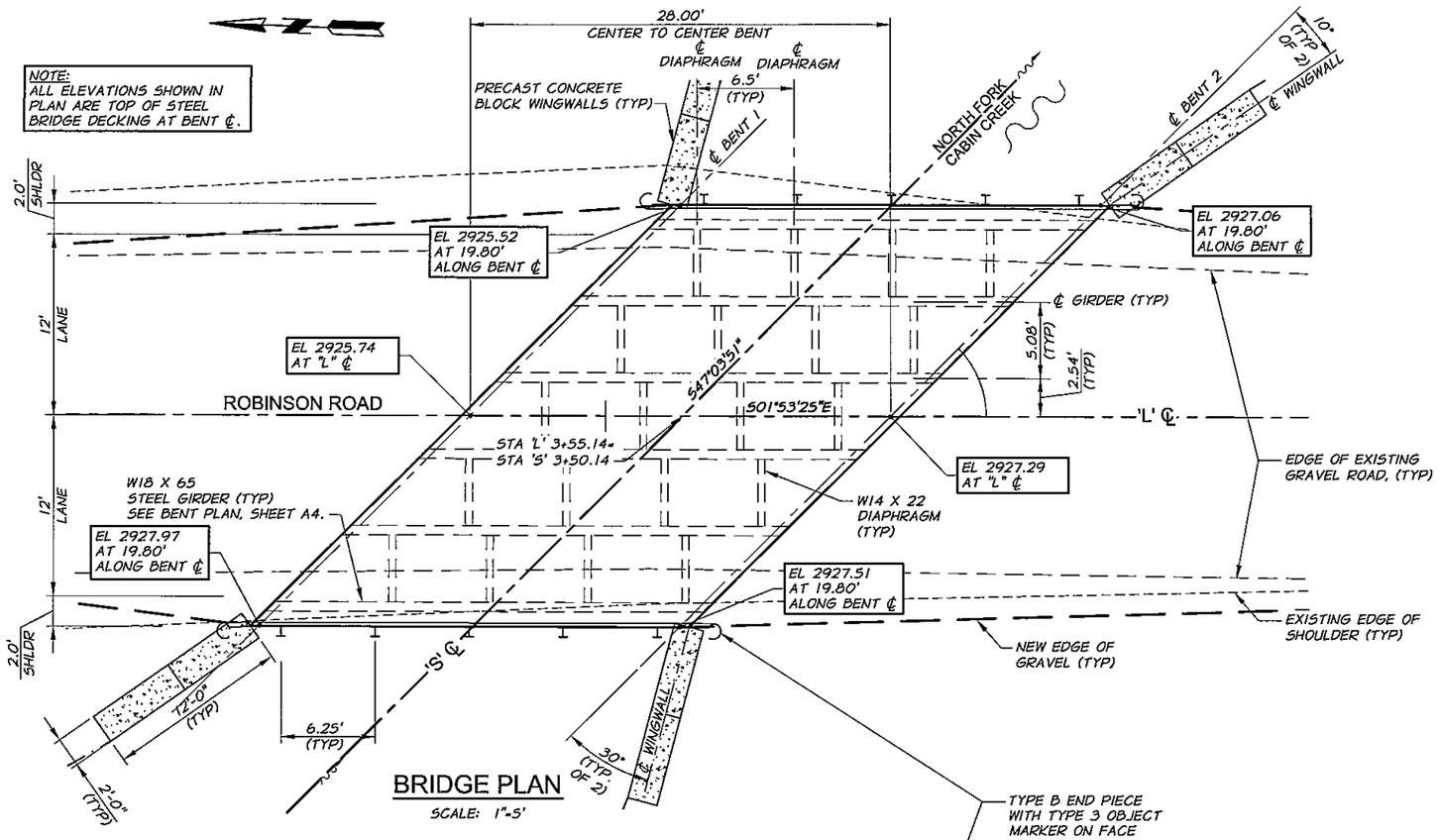
GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

N. FORK CABIN CREEK (ROBINSON ROAD NORTH) BRIDGE ROAD PLAN AND PROFILE

SHEET
A1



NOTE:
1. PRECAST CONCRETE BLOCK WINGWALLS, NOT SHOWN FOR CLARITY.
2. ELEVATIONS SHOWN ARE AT ℄ OF BRIDGE.
3. GUARDRAIL TRANSITION REMOVED AT REQUEST OF UNION COUNTY.

BRIDGE NO. 21118

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OREGON
SEPT. 2, 1998
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RENEWS 12-31-10
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REVISION	BY	DATE

DESIGNED BY	C. HUTCHINS	XREFS: 2008 APATB	
DRAWN BY	R. RASMUSSEN		
REVIEWED BY	B. MOORE		

HORZ. SCALE	1"=5'	VERT. SCALE	1"=5'
JOB NUMBER	81-08(60)	DATE	2009
ACAD FILE:	NORTH-PP.dwg		

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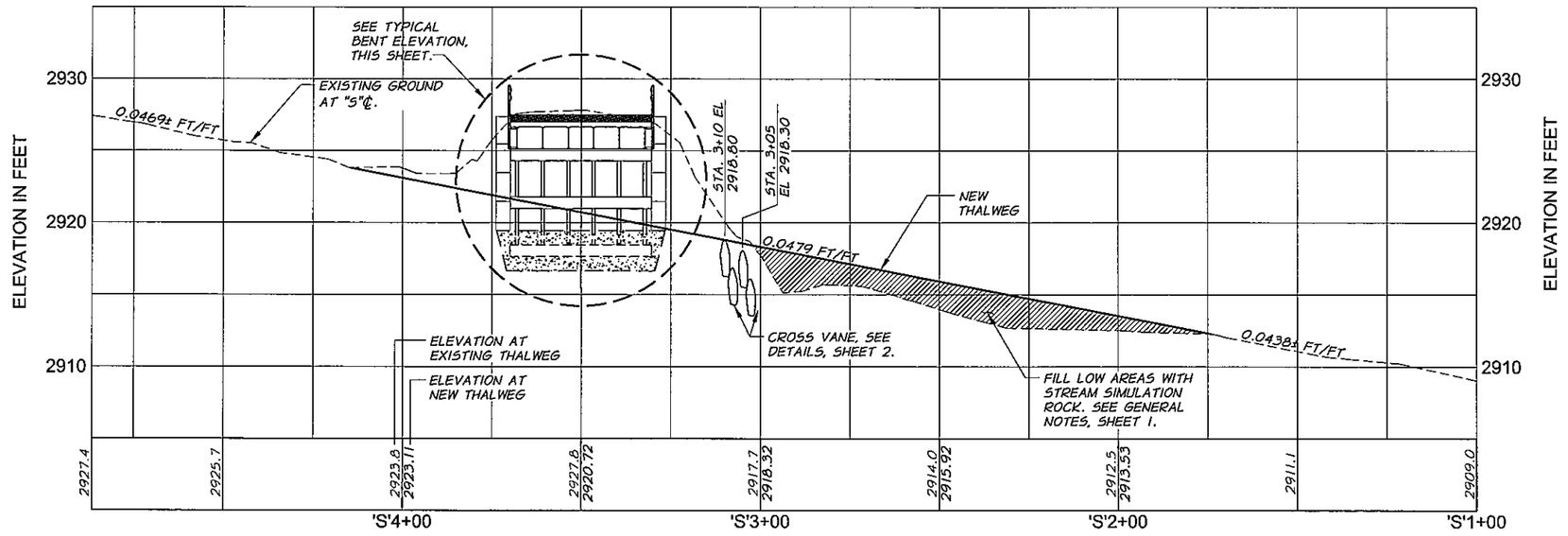
GRANDE RONDE MODEL WATERSHED

NORTH FORK CABIN CREEK

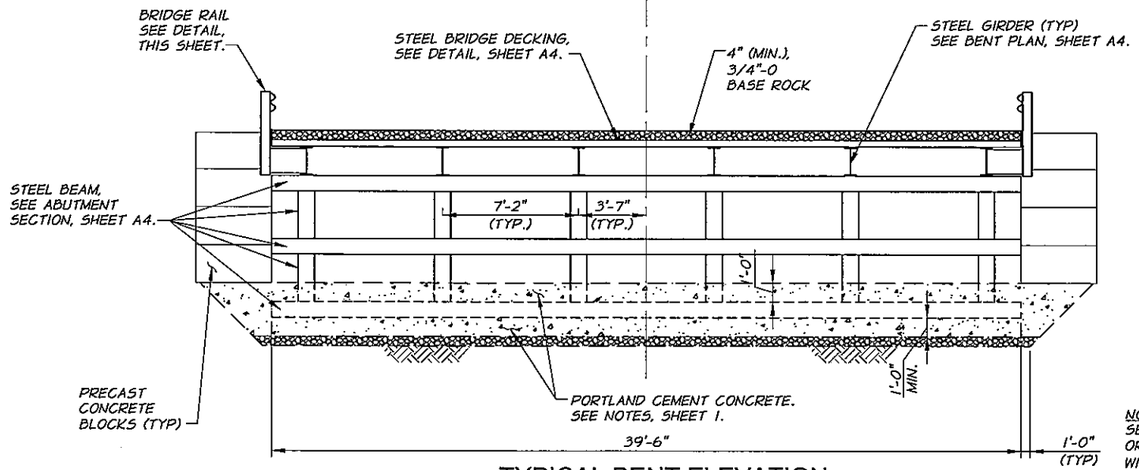
N. FORK CABIN CREEK (ROBINSON ROAD NORTH) BRIDGE
BRIDGE PLAN AND ELEVATION

SHEET
A2



STREAM PROFILE

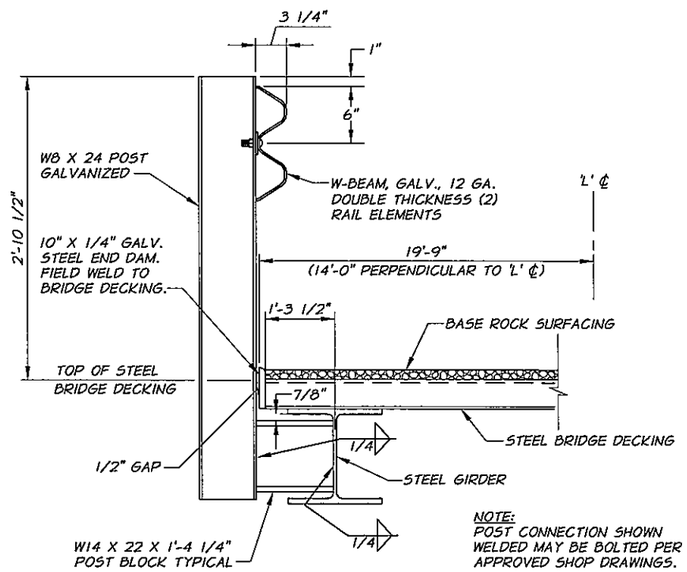
SCALE: 1"=20' HORIZONTAL
1"=5' VERTICAL



TYPICAL BENT ELEVATION

(BENT 2 SHOWN; BENT 1 SIMILAR)
SCALE: 1/4"=1'-0"

NOTE:
SECTION IS SHOWN AT TRUE ORIENTATION, (PARALLEL WITH STREAM ℄). GUARDRAIL AND WINGWALLS SHOWN OUT OF ROTATION FOR CLARITY.



NOTE:
POST CONNECTION SHOWN WELDED MAY BE BOLTED PER APPROVED SHOP DRAWINGS.

BRIDGE RAIL AND POST DETAIL

N.T.S.

BRIDGE NO. 21118

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REVISION	BY	DATE

DESIGNED BY C. HUTCHINS	XREFS: 2008 APATB	HORZ. SCALE AS SHOWN	VERT. SCALE AS SHOWN
DRAWN BY R. RASMUSSEN		JOB NUMBER 81-08(60)	DATE 2009
REVIEWED BY B. MOORE		ACAD FILE: NORTH-PP.dwg	

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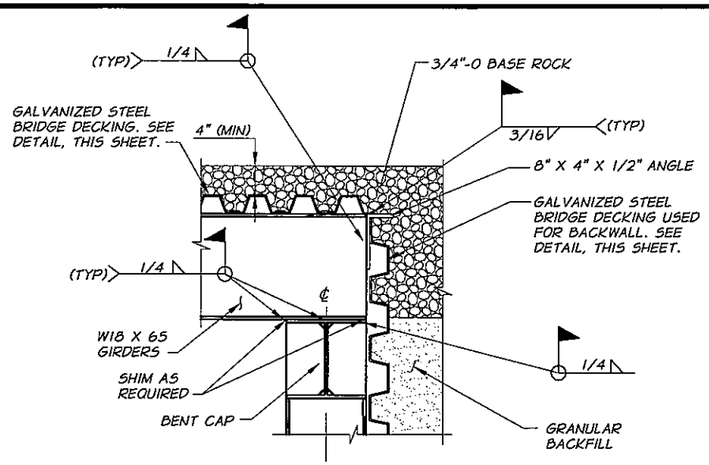
GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

N. FORK CABIN CREEK (ROBINSON ROAD NORTH) BRIDGE
BENT ELEVATIONS AND STREAM PROFILE

SHEET
A3

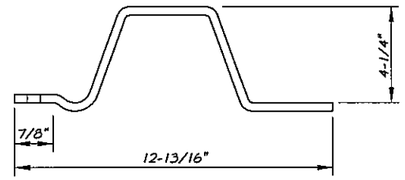


BENT DETAIL

N.T.S

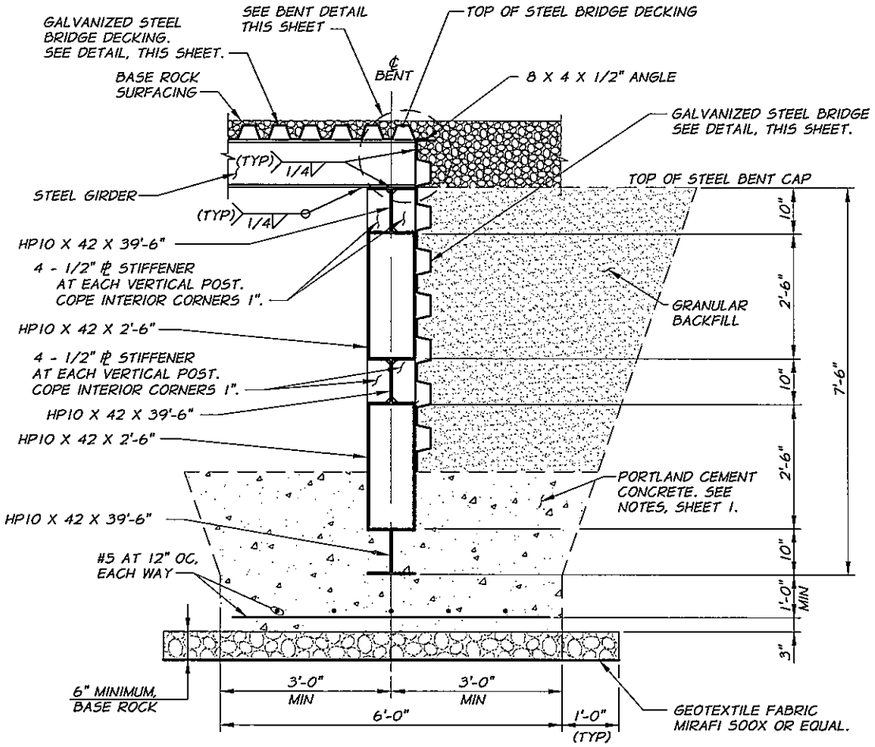
NOMINAL GAGE	DESIGN THICKNESS T (IN)	YIELD STRENGTH (KSI)	APPROX. WT (PSF)	MOMENT OF INERTIA (IN^4/FT)	SECTION MODULUS (IN^3/FT)	ALLOWABLE NET SPAN * (IN.)		
						H520	H525	H530
7	0.179	50	11.5	10.34	4.34	65	60	56

* NET SPAN IS THE CLEAR SPAN BETWEEN STRINGER FLANGES



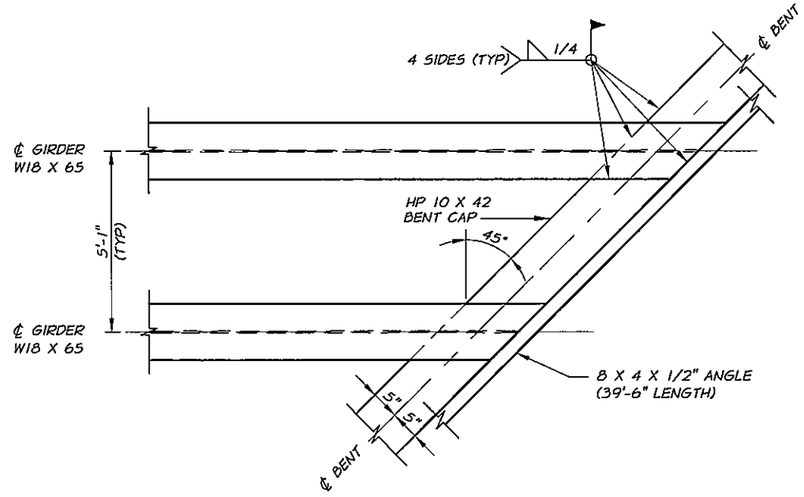
STEEL BRIDGE DECKING DETAIL (GALV.)

N.T.S



TYPICAL ABUTMENT SECTION

N.T.S



BENT PLAN

N.T.S.

BRIDGE NO. 21118

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OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
SIGNED 09-22-09

REVISION	BY	DATE

DESIGNED BY	C. HUTCHINS	XREFS: 2008 APATB	
DRAWN BY	R. RASMUSSEN		
REVIEWED BY	B. MOORE		

HORZ. SCALE AS SHOWN | VERT. SCALE NONE
JOB NUMBER 81-08(60) | DATE 2009
ACAD FILE: NORTH-PP.dwg

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ADJUST SCALE ACCORDINGLY.
BARSCALE SHOWN IS ACCURATE.

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GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

N. FORK CABIN CREEK (ROBINSON ROAD NORTH) BRIDGE
BRIDGE DETAILS

SHEET
A4

PART 'B'

N. CABIN CREEK (PRIVATE ROAD) CULVERT

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LA GRANDE, OR. WALLA WALLA, WA.

0 8 CHRR
1 0.5 CHRR
2 0.75 CHAS
3 2 CHEA
4 .5 CHEA

CONSTRUCTION NOTES:

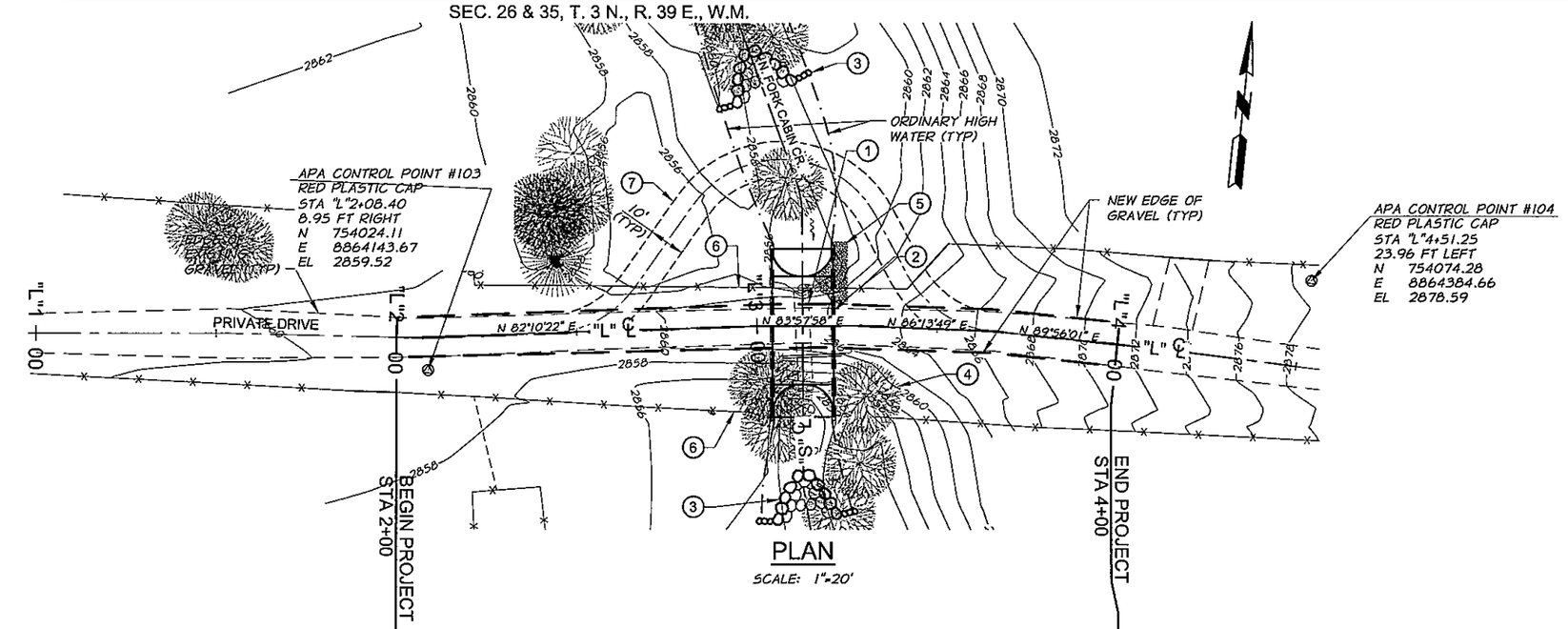
1. REMOVE EXISTING 4'-0" CMP CULVERT. COUNTY SHALL BE RESPONSIBLE FOR HAULING CULVERT OFF SITE AND DISPOSAL.
2. CONSTRUCT NEW MULTIPLATE BOTTOMLESS ARCH CULVERT. SEE DETAILS THIS SHEET, SHEET B2, AND B3. CENTER CULVERT IN ROADWAY AND STREAM.
3. CONSTRUCT CROSS VANE GRADE CONTROL STRUCTURE. SEE SHEET B3 FOR ELEVATION AND SHEET 2 FOR DETAILS.
4. REMOVE SHRUBS AND EXISTING TREES AS REQUIRED.
5. PLACE ONE LAYER OF 24" RIPRAP ON SIDE SLOPES, (TYP).
6. REMOVE AND REBUILD EXISTING FENCE AS NEEDED, (TYP).
7. INSTALL AND REMOVE TEMPORARY DETOUR ROAD. DETOUR ROAD SHALL BE 10'-0" WIDE AT THE TOP AND SHALL NOT HAVE A SLOPE GREATER THAN 15%. A 24" DIAMETER CULVERT SHALL BE INSTALLED IN THE CREEK BOTTOM TO ALLOW WATER TO PASS THROUGH THE DETOUR ROAD DURING THE CONSTRUCTION PROCESS. COUNTY SHALL REMOVE SHRUBS, TREES, ETC. AS REQUIRED TO ACCOMMODATE DETOUR ROAD AND SHALL RESEED ALL DISTURBED AREAS UPON REMOVAL OF THE DETOUR ROAD.

ADDITIONAL CONTROL POINT

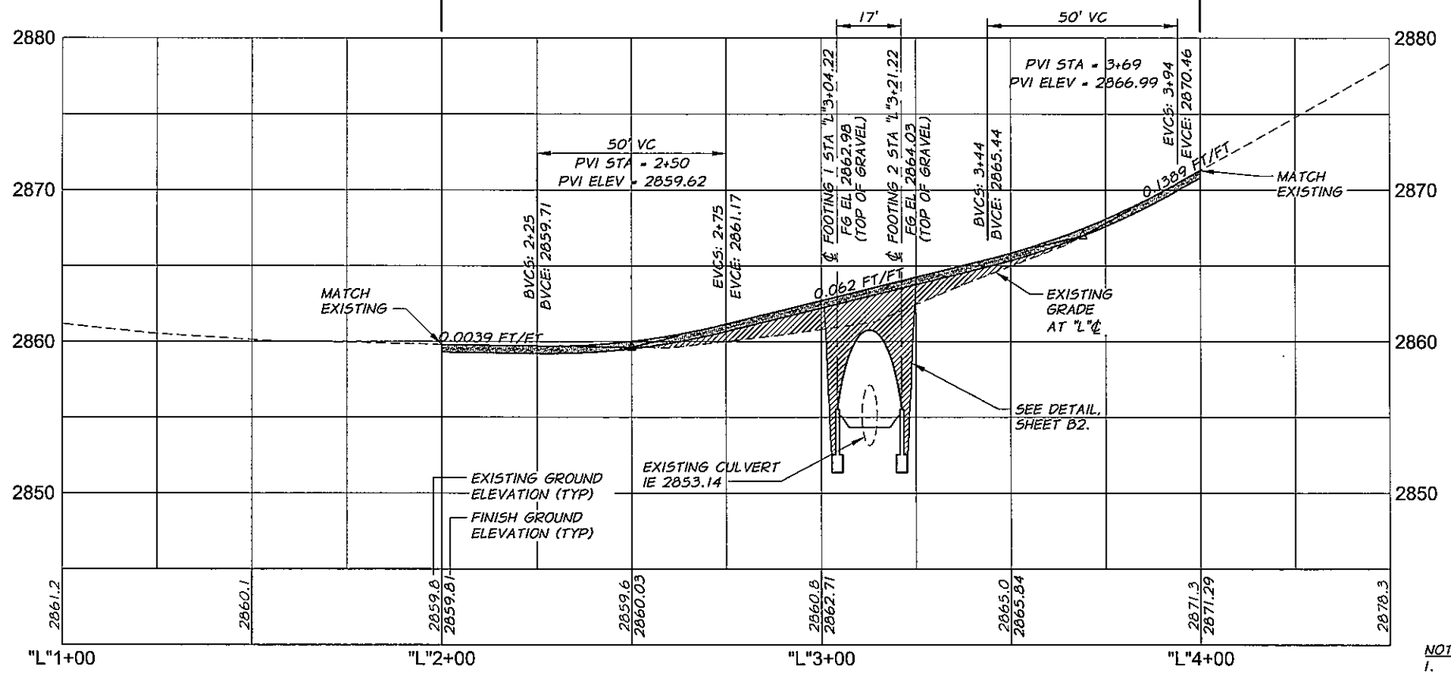
APA CONTROL POINT #111
H+T
N 753973.06
E 8863878.53
EL 2873.37

NOTE:
THIS CONTROL POINT IS IN THE VICINITY OF THE PROJECT BUT IS NOT WITHIN PROJECT LIMITS.

SEC. 26 & 35, T. 3 N., R. 39 E., W.M.



PLAN
SCALE: 1"=20'



ROADWAY PROFILE
SCALE: 1"=20' HORIZONTAL
1"=5' VERTICAL

NOTES:
1. VERTICAL DATUM NAVD '88.
2. HORIZONTAL DATUM OREGON COORDINATE SYSTEM - NORTH ZONE NAD '83
3. ALL STATIONS AND ELEVATIONS ARE IN FEET.

REGISTERED PROFESSIONAL ENGINEER
59,632PE
OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
SIGNED 09-22-09

REVISION	BY	DATE
DESIGNED BY C. HUTCHINS	XREFS: 2008 APATB	
DRAWN BY R. RASMUSSEN		
REVIEWED BY R. HARRIS		

HORZ. SCALE AS SHOWN | VERT. SCALE AS SHOWN
JOB NUMBER 81-08(60) | DATE 2009
ACAD FILE: MIDDLE-PP.dwg

THIS DRAWING HAS BEEN REDUCED 50%. ADJUST SCALE ACCORDINGLY. BARSCALE SHOWN IS ACCURATE.

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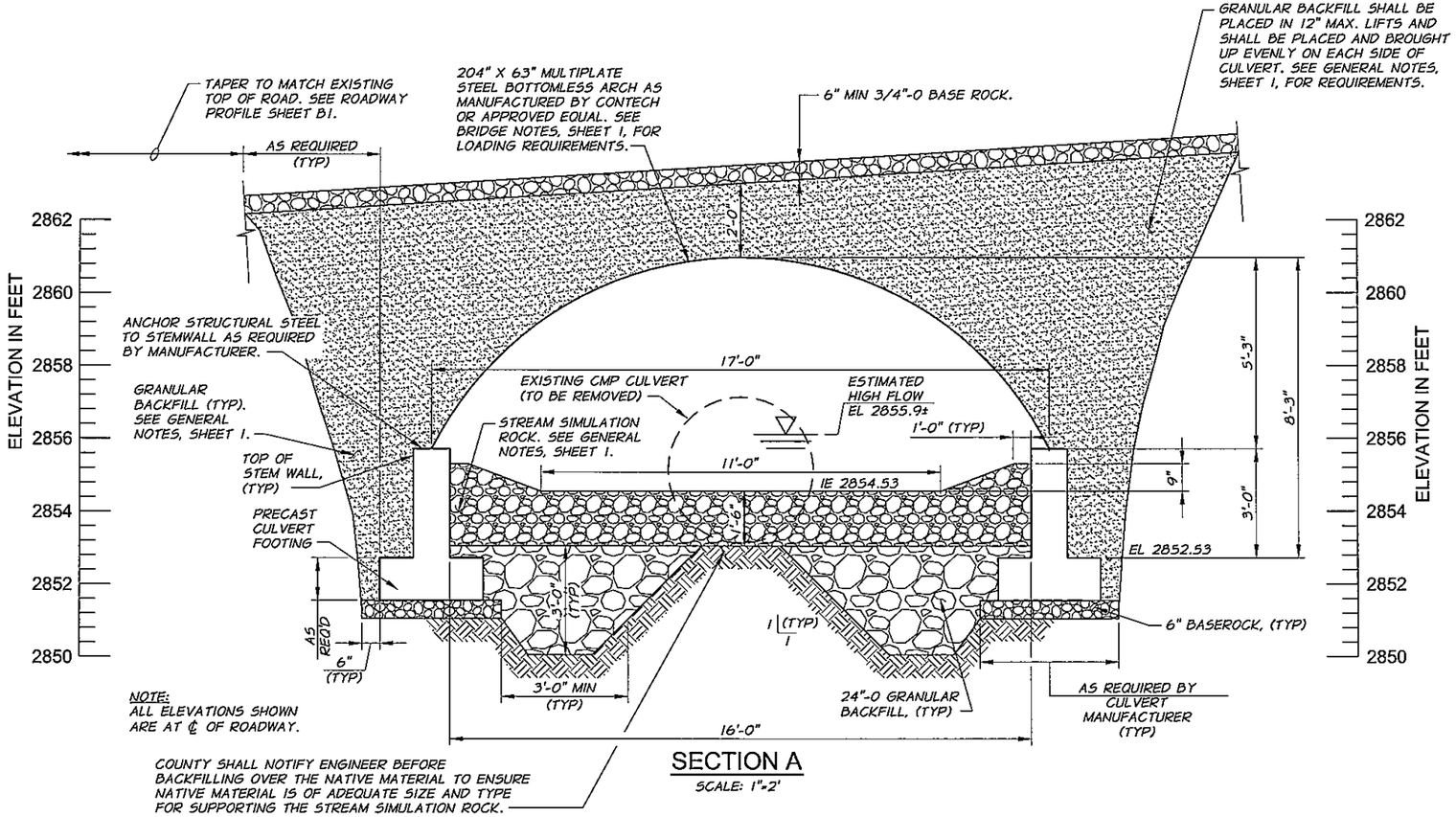
GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

N. FORK CABIN CREEK (PRIVATE RD) CULVERT
ROADWAY PLAN AND PROFILE

SHEET
B1

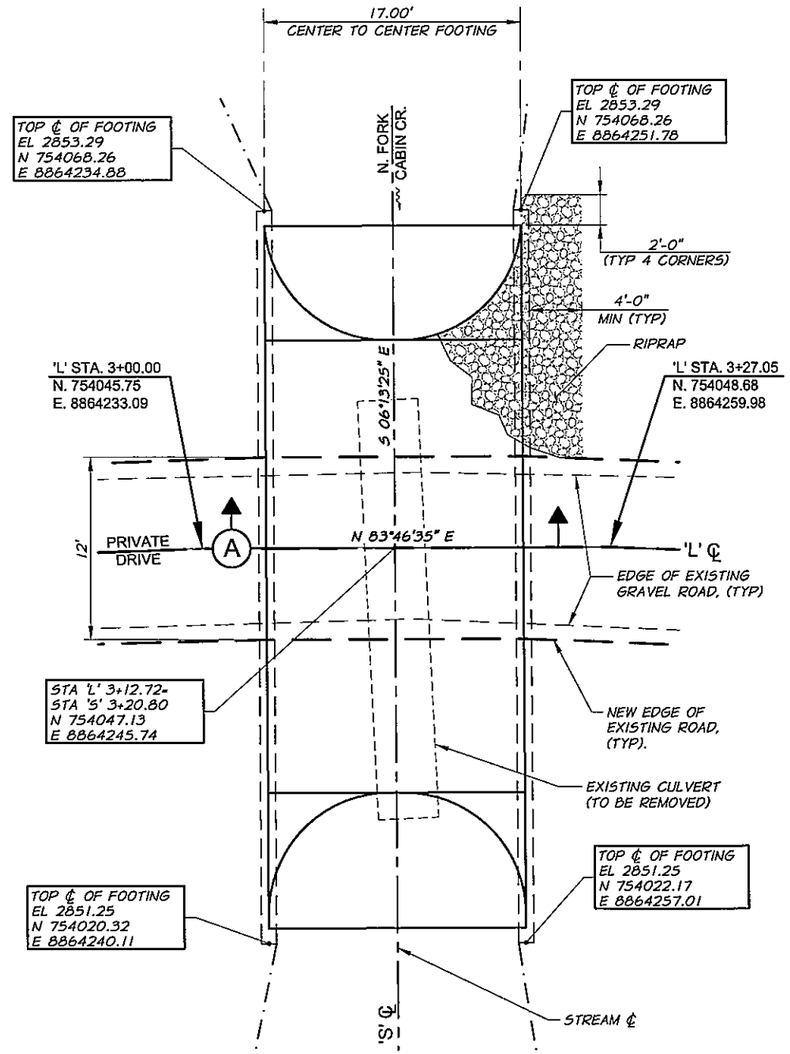
Q:\Grande_Ronde_MW\81-08_NFORK_CAB_CRK\dwg\MIDDLE-PP.dwg, RDWPNP, 9/21/2009 4:48:19 PM, prichardson

0 8 CHRR
1 0.5 CHRR
2 0.75 CHAS
3 2 CH/EA



SECTION A

SCALE: 1"=2'



CULVERT LAYOUT

SCALE: 1"=5'

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REVIEWED BY	R. HARRIS		

HORZ. SCALE	AS SHOWN	VERT. SCALE	AS SHOWN
JOB NUMBER	81-08(60)	DATE	2009
ACAD FILE:	MIDDLE-PP.dwg		

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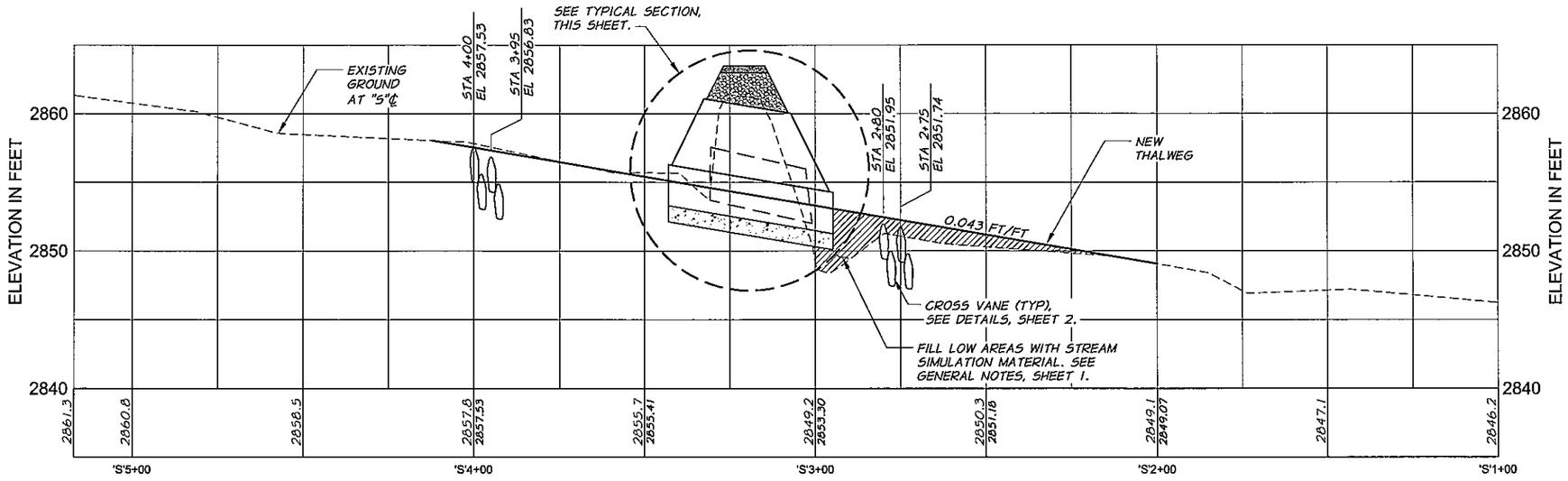
GRANDE RONDE MODEL WATERSHED

NORTH FORK CABIN CREEK

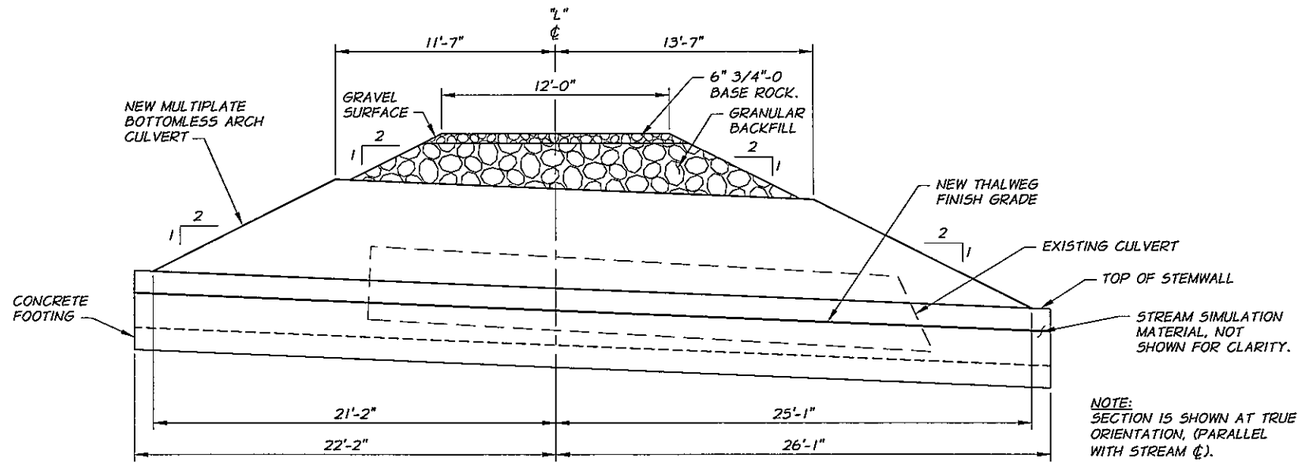
N. FORK CABIN CREEK (PRIVATE RD) CULVERT
CULVERT LAYOUT AND SECTION

SHEET
B2



STREAM PROFILE

SCALE: 1"=30' HORIZONTAL
1"=5' VERTICAL



NOTE:
SECTION IS SHOWN AT TRUE ORIENTATION, (PARALLEL WITH STREAM ℄).

TYPICAL SECTION

SCALE: 1/4"=1'-0"

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SEPT. 2, 1998
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RENEWS 12-31-10
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REVIEWED BY	B. MOORE		

HORZ. SCALE	AS SHOWN	VERT. SCALE	AS SHOWN
JOB NUMBER	81-08(60)	DATE	2009
ACAD FILE:	MIDDLE-PP.dwg		

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GRANDE RONDE MODEL WATERSHED

NORTH FORK CABIN CREEK

N. FORK CABIN CREEK (PRIVATE RD) CULVERT
STREAM PROFILE AND SECTION

SHEET
B3

PART 'C'

N. CABIN CREEK (ROBINSON ROAD SOUTH) BRIDGE
BRIDGE NO. 21117

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0 .8 CHRR
1 .75 CHRR
2 0.75 CHAS
3 2 CH/EA

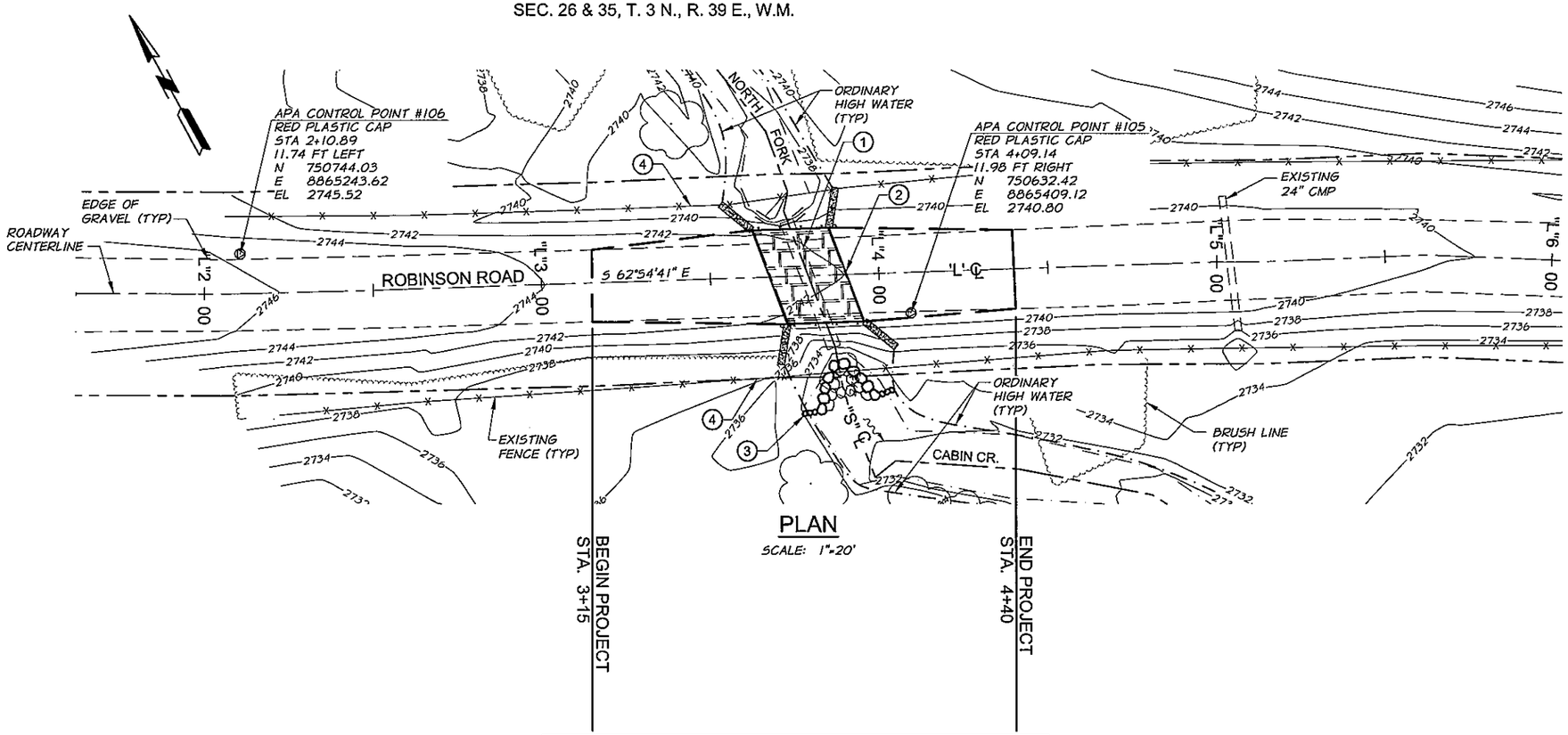
SEC. 26 & 35, T. 3 N., R. 39 E., W.M.

CONSTRUCTION NOTES:

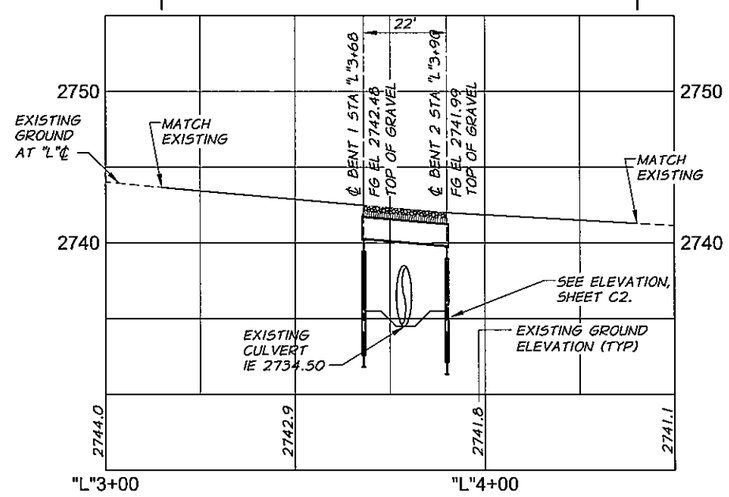
1. REMOVE AND DISPOSE OF EXISTING 48" RCP CULVERT.
2. CONSTRUCT NEW STEEL BRIDGE
3. CONSTRUCT CROSS VANE GRADE CONTROL STRUCTURE. SEE SHEET C2 FOR ELEVATION AND SHEET 2 FOR DETAILS.
4. REMOVE AND REBUILD EXISTING FENCE AS NEEDED.

ADDITIONAL CONTROL POINT

APA CONTROL POINT #107
RED PLASTIC CAP
N 750489.26
E 8865654.29
EL 2736.60



PLAN
SCALE: 1"=20'



ROADWAY PROFILE
SCALE: 1"=20' HORIZONTAL
1"=5' VERTICAL

NOTES:
1. VERTICAL DATUM NAVD '88.
2. HORIZONTAL DATUM OREGON COORDINATE SYSTEM - NORTH ZONE NAD '83
3. ALL STATIONS AND ELEVATIONS ARE IN FEET.
4. BRIDGE NO. 21117

REGISTERED PROFESSIONAL ENGINEER
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OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
SIGNED 09-22-09

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DESIGNED BY C. HUTCHINS
DRAWN BY R. RASMUSSEN
REVIEWED BY B. MOORE
XREFS: 2008 APATB

HORZ. SCALE AS SHOWN
VERT. SCALE
JOB NUMBER 81-08(60)
DATE 2009
ACAD FILE: SOUTH-PP.dwg

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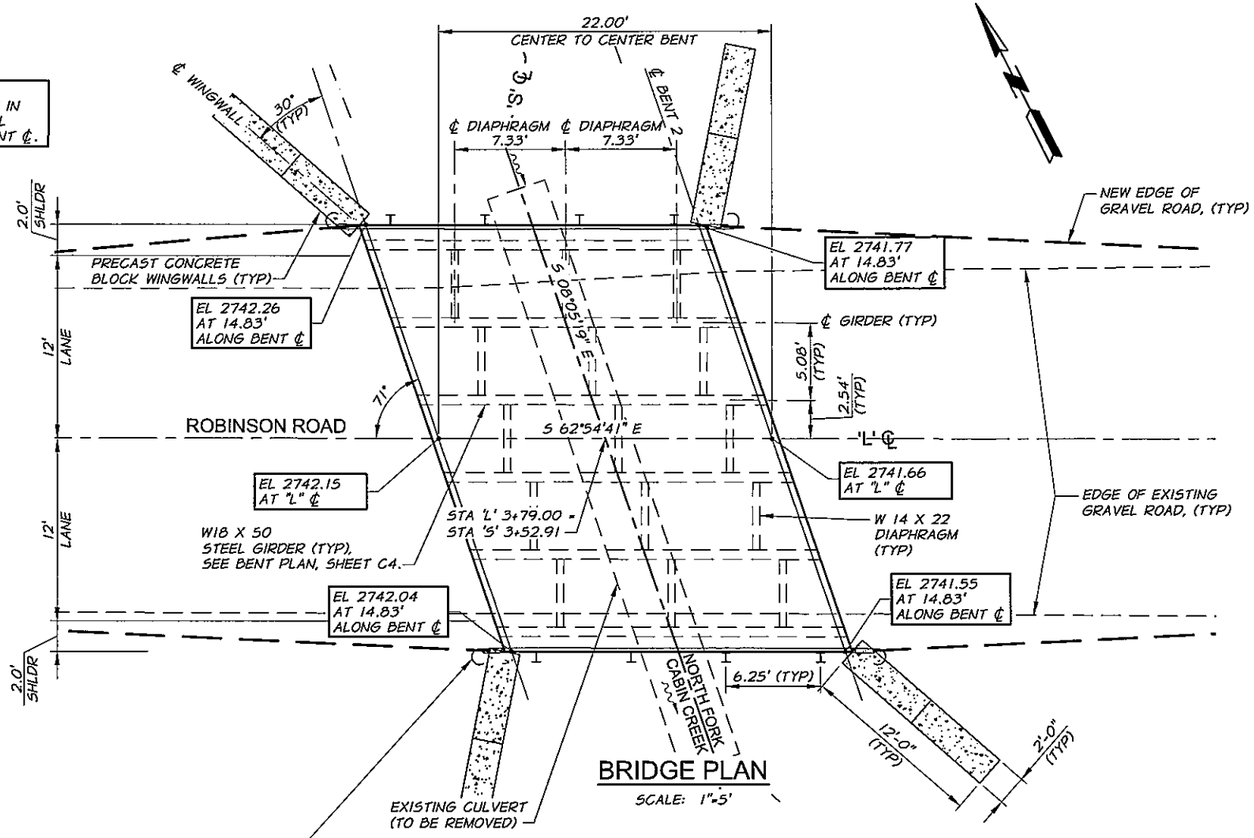
GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

N. FORK CABIN CREEK (ROBINSON ROAD SOUTH) BRIDGE ROAD PLAN AND PROFILE WITH CONSTRUCTION NOTES

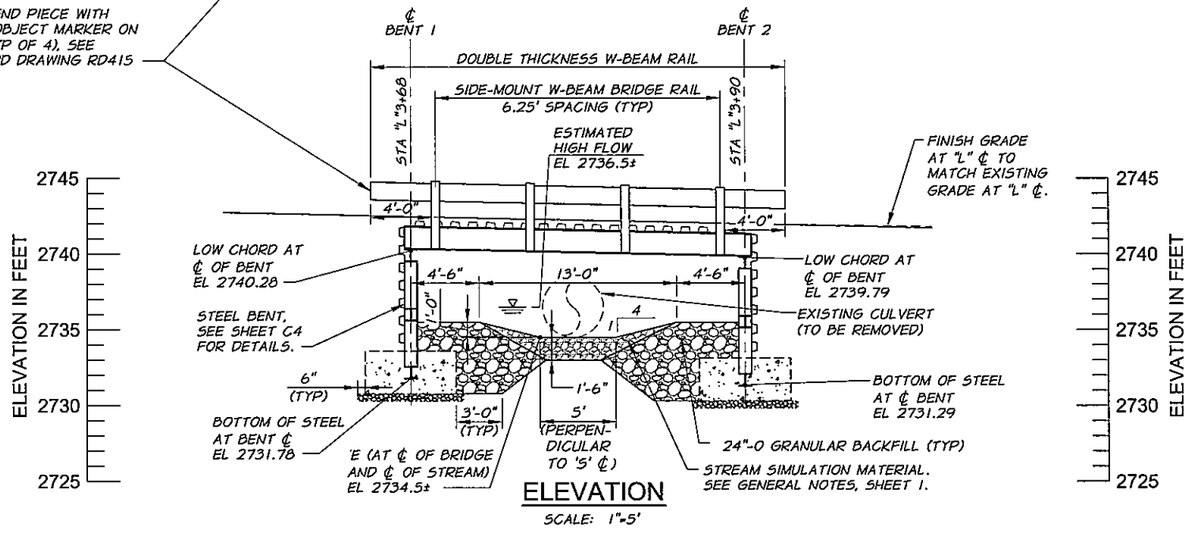
SHEET
C1

Q:\Grande_Ronde_MW\81-08_NFORK_CAB_CRK\dwg\SOUTH-PP.dwg, RDWYPLN, 9/21/2009 5:03:06 PM, prichardson

NOTE:
ALL ELEVATIONS SHOWN IN PLAN ARE TOP OF STEEL BRIDGE DECKING AT BENT ℄.



BRIDGE PLAN
SCALE: 1"=5'



ELEVATION
SCALE: 1"=5'

NOTE:
1. PRECAST CONCRETE BLOCK WINGWALLS, NOT SHOWN FOR CLARITY.
2. ELEVATIONS SHOWN ARE AT ℄ OF BRIDGE.
3. GUARDRAIL TRANSITION REMOVED AT REQUEST OF UNION COUNTY.

BRIDGE NO. 21117

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REVIEWED BY B. MOORE
XREFS: 2008 APATB

HORZ. SCALE 1"=5' VERT. SCALE 1"=5'
JOB NUMBER 81-08(60) DATE 2009
ACAD FILE: SOUTH-PP.dwg

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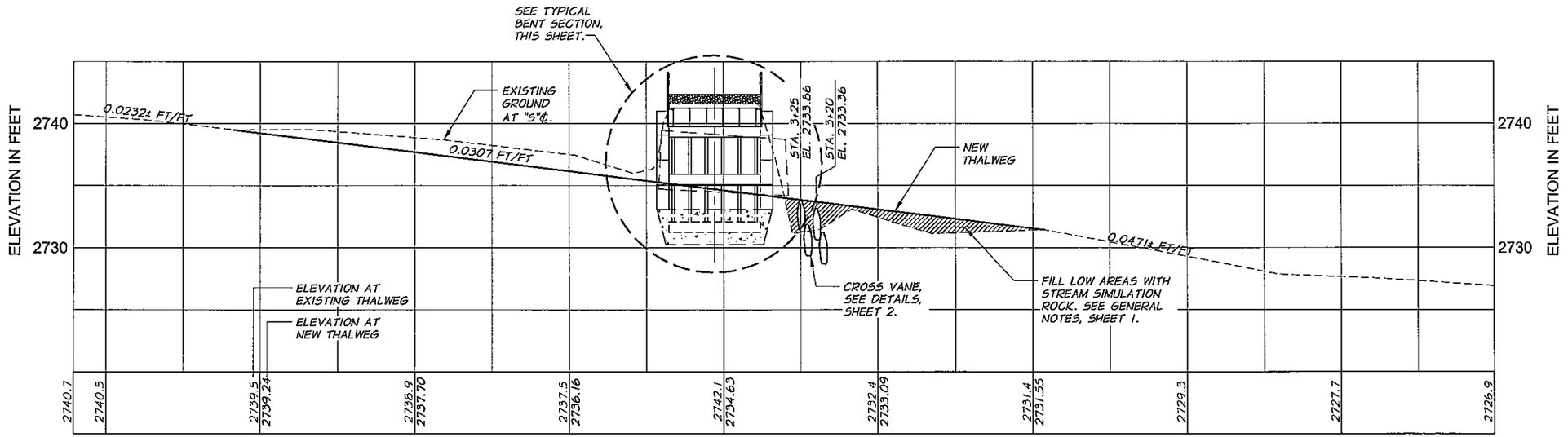
GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

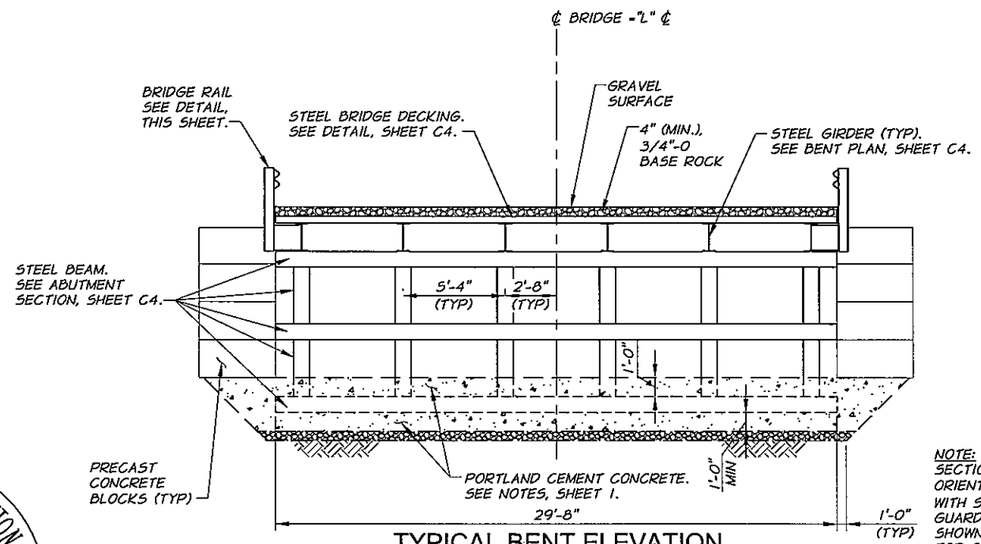
N. FORK CABIN CREEK (ROBINSON ROAD SOUTH) BRIDGE
BRIDGE PLAN AND ELEVATION

SHEET C2



STREAM PROFILE

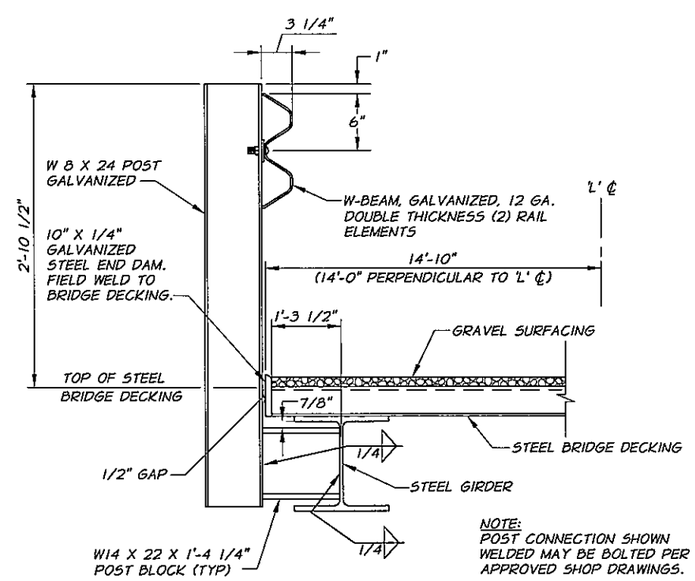
SCALE: 1"=20' HORIZONTAL
1"=5' VERTICAL



NOTE:
SECTION IS SHOWN AT TRUE ORIENTATION, (PARALLEL WITH STREAM ℄). GUARDRAIL AND WINGWALLS SHOWN OUT OF ROTATION FOR CLARITY.

TYPICAL BENT ELEVATION

(BENT 2 SHOWN; BENT 1 SIMILAR)
SCALE: 1/4"=1'-0"



NOTE:
POST CONNECTION SHOWN WELDED MAY BE BOLTED PER APPROVED SHOP DRAWINGS.

BRIDGE RAIL AND POST DETAIL

N.T.S.

BRIDGE NO. 21117

REGISTERED PROFESSIONAL ENGINEER
59,632PE
OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
SIGNED 09-22-09

REVISION	BY	DATE	HORZ. SCALE AS SHOWN	VERT. SCALE AS SHOWN
DESIGNED BY C. HUTCHINS	XREFS: 2008 APATB		JOB NUMBER 81-08(60)	DATE 2009
DRAWN BY R. RASMUSSEN			ACAD FILE: SOUTH-PP.dwg	
REVIEWED BY B. MOORE			COPYRIGHT 2009 BY ANDERSON-PERRY & ASSOC., INC.	

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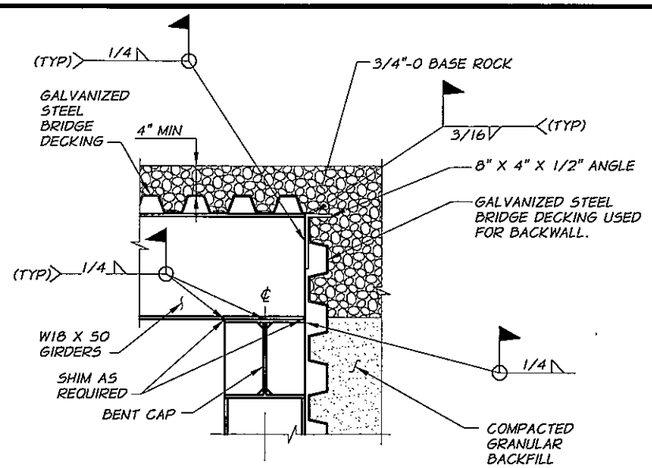
GRANDE RONDE MODEL WATERSHED
NORTH FORK CABIN CREEK

N. FORK CABIN CREEK (ROBINSON ROAD SOUTH) BRIDGE
BENT ELEVATION AND STREAM PROFILE

SHEET
C3

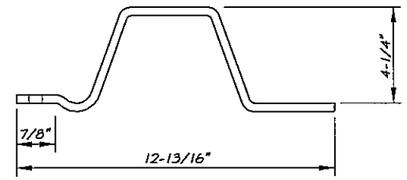


BENT DETAIL

N.T.S.

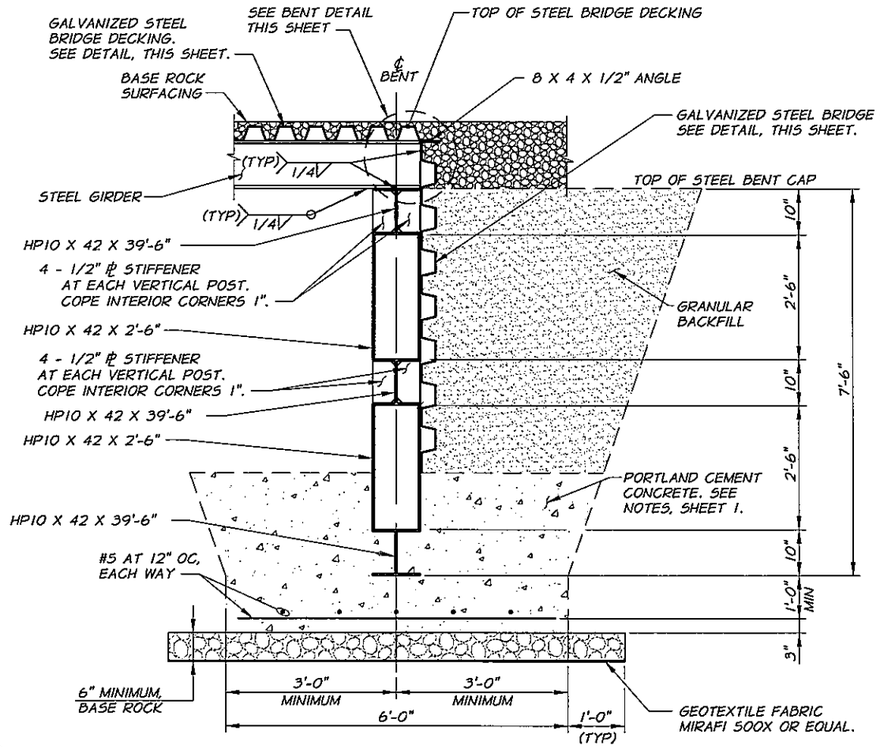
NOMINAL GAGE	DESIGN THICKNESS T (IN)	YIELD STRENGTH (KSI)	APPROX. WT (PSF)	MOMENT OF INERTIA (IN^4/FT)	SECTION MODULUS (IN^3/FT)	ALLOWABLE NET SPAN * (IN.)		
						H520	H525	H530
7	0.179	50	11.5	10.34	4.34	65	60	56

* NET SPAN IS THE CLEAR SPAN BETWEEN STRINGER FLANGES



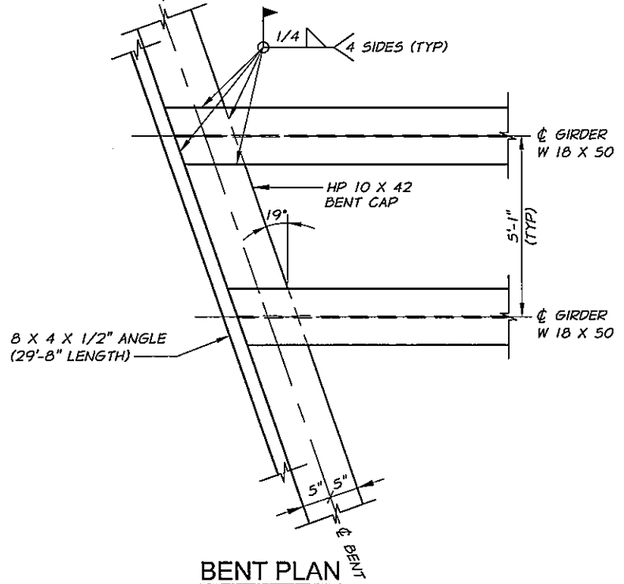
STEEL BRIDGE DECKING DETAIL (GALV.)

N.T.S.



TYPICAL ABUTMENT SECTION

N.T.S



BENT PLAN

N.T.S.

BRIDGE NO. 21117

REGISTERED PROFESSIONAL ENGINEER
59,632PE
OREGON
SEPT. 2, 1998
BRETT MOORE
RENEWS 12-31-10
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HORZ. SCALE	AS SHOWN	VERT. SCALE	AS SHOWN
JOB NUMBER	81-08(60)	DATE	2009
ACAD FILE:	SOUTH-PP.dwg		

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GRANDE RONDE MODEL WATERSHED

NORTH FORK CABIN CREEK

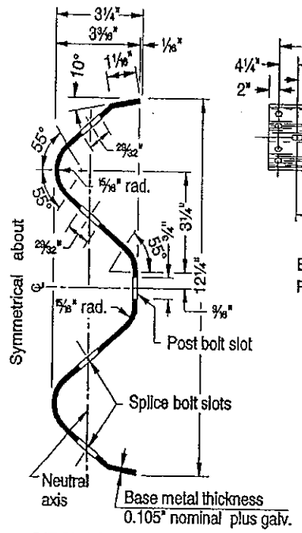
N. FORK CABIN CREEK (ROBINSON ROAD SOUTH) BRIDGE
BRIDGE DETAILS

SHEET
C4

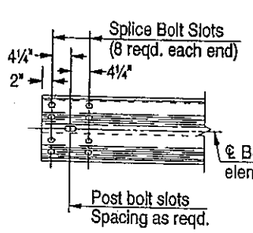
STANDARD DRAWINGS

rd415.dgn 01-JAN-2008

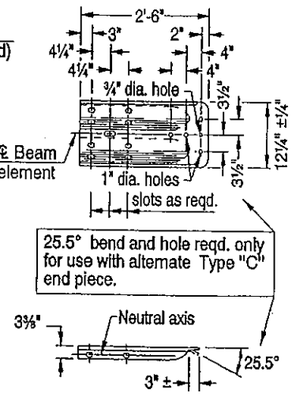
RAIL MEMBERS



SECTION THRU RAIL ELEMENT



ELEVATION OF RAIL ELEMENT

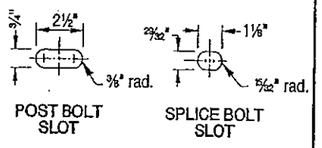


Base metal thickness 0.135" nominal plus galv.

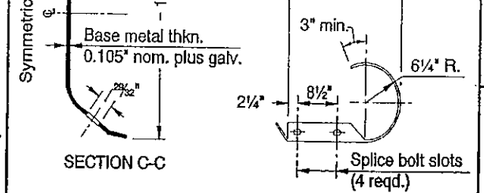
TERMINAL CONNECTOR

NOTES:

1. For guardrail installed on radii of 150' or less (5' min. radius) use rail elements pre-curved to industry standard. Install "Radius Identification Plate" (See detail right).
2. Effective length of rail sections shall be 12'-6".

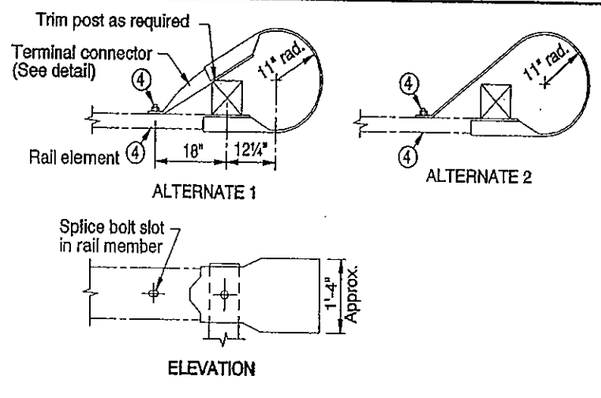


POST BOLT SLOT SPLICE BOLT SLOT



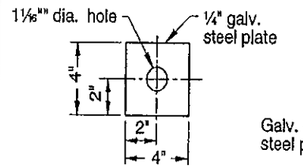
SECTION C-C

TYPE B END PIECE

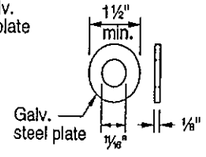


TYPE C END PIECE
(For details not shown, see Type B End Piece)

APPURTENANCES

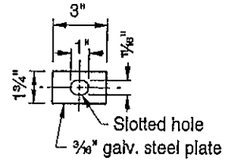


SNOW LOAD (OPTIONAL)
(In area of heavy snow, as directed by the engineer)



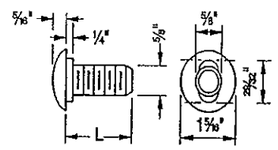
PLAIN ③

USE ON BACK OF POST



RECTANGULAR

USE ON RAIL ELEMENT FACE OF TYPE C END PIECE ④

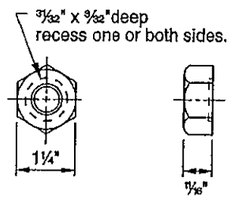


ALTERNATIVE No. 1

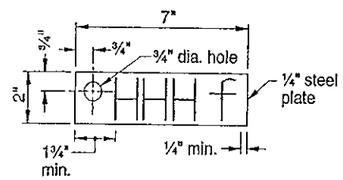
ALTERNATIVE No. 2

WASHERS

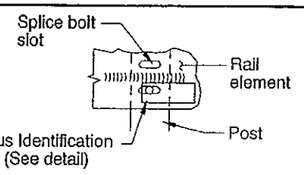
L (in.)	Thread Length
1¼	Full length
2	1½" min.
9½	2" min.
18	3½" min.
25	3" min.



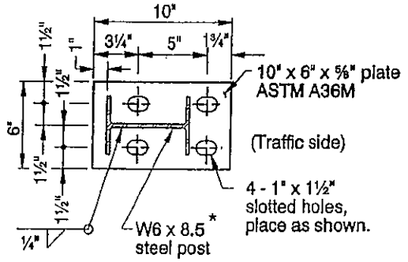
POST OR SPLICE BOLT AND NUT
Dimensions to manufacturer's and AASHTO M180 tolerances



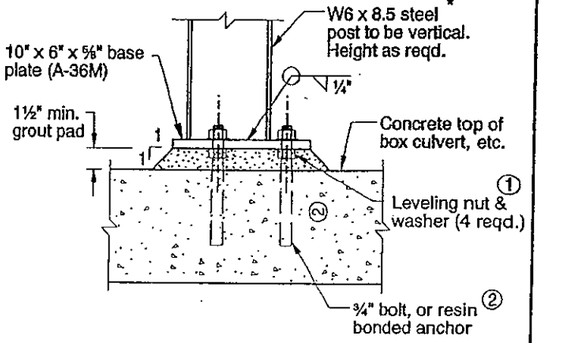
RADIUS IDENTIFICATION PLATE
(See general note 4)



RADIUS IDENTIFICATION PLATE MOUNTING DETAIL
(See general note 5)



* W6 x 9 is an acceptable alternative for W6 x 8.5



BASE PLATE DETAILS
(For additional details, see Std. Drg. BR266)

(Use when depth of cover is less than normal for post installation.)

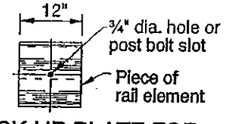
NOTES:

① Furnished & installed by structure contractor when shown on structure plans.

② 5½" min. penetration into concrete slabs other than bridge decks. Cast in place or core and install using approved resin bonding system.

③ Not required if "Snow Load" washer option is used.

④ Use rectangular washer under bolt head and nut on Type C End Piece as shown.



BACK-UP PLATE FOR STEEL POST INSTALLATIONS

On Steel Post installations, place 12" long, 12 gauge Back-up Plate between rail element and any post where there is no splice of rail elements.

GENERAL NOTES FOR ALL DETAILS:

1. For assembly and installation details, see Std. Drgs. RD400, RD405, RD420, RD425, RD430, RD435 & RD440.
2. For details of guardrail connections to structural handrails, see special details or Standard Drawings as called for on plans.
3. All indicated welds shall attain the full strength of the section welded.
4. Radius dimensions, in feet to the nearest 0.5 foot, shall be placed on the plate with a raised weld bead replacing the letters "HHH", shown on the Radius Identification Plate detail. Digits shall be 1½" min. height and ¾" max. width. Plate shall be galvanized after placement of digits.
5. The guardrail radius identification plate is to be mounted on the back side of the rail element with the lowest splice bolt nearest the P.C. of the guardrail radius.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 15-JUL-2006

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

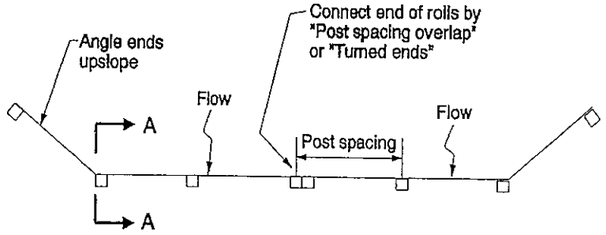
OREGON STANDARD DRAWINGS

GUARDRAIL AND METAL MEDIAN BARRIER PARTS

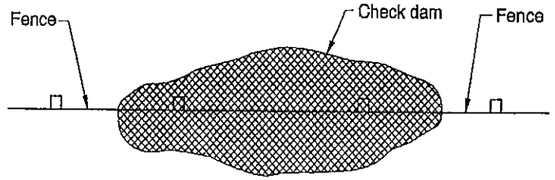
DATE	REVISION DESCRIPTION
03-09	REVISED DRAWING
01-20-06	REVISED NOTES
06-06	REVISED RADIUS IDENTIFICATION PLATE NOTES
07-2006	REVISED DETAILS AND NOTES
01-2008	ADDED NOTES

RD415

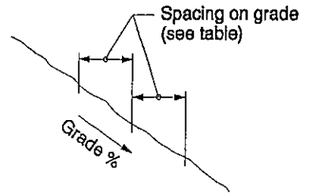
Effective Date: October 15, 2008 - May 31, 2009

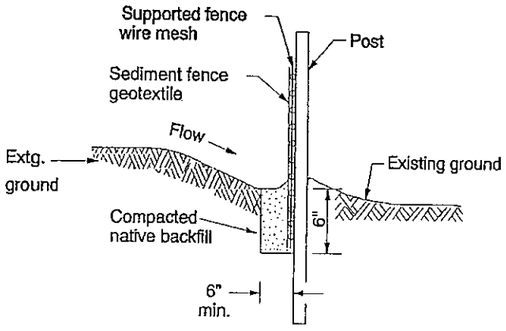


PLAN

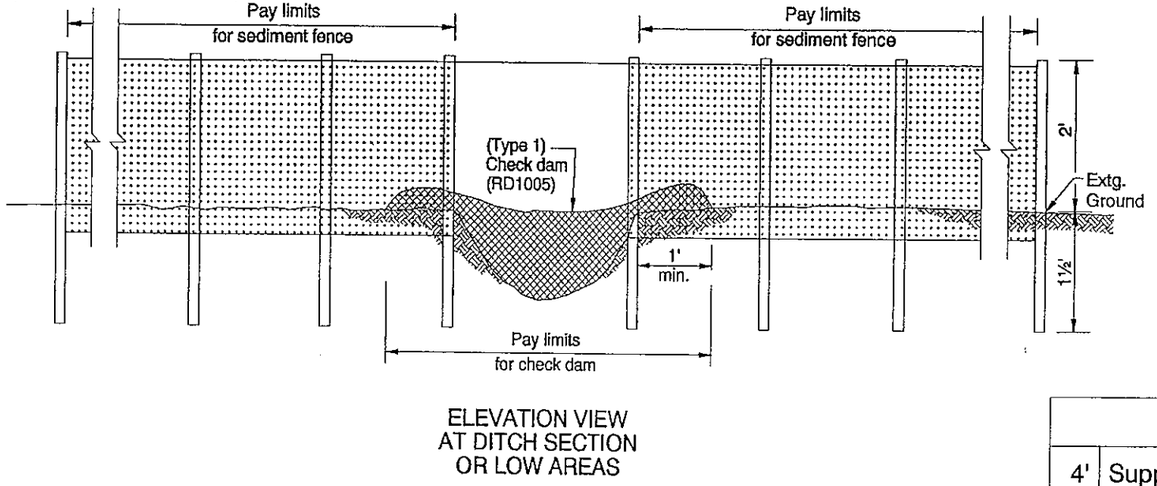


PLAN VIEW AT DITCH SECTION





SECTION A-A

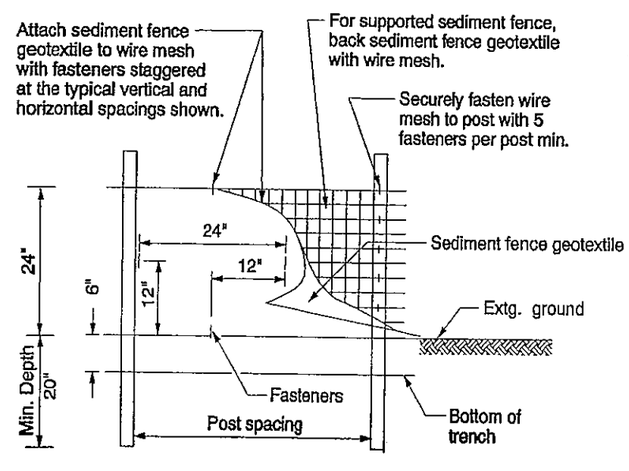


ELEVATION VIEW AT DITCH SECTION OR LOW AREAS

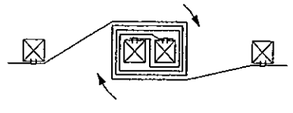
TABLE 1

FENCE SPACING FOR GENERAL APPLICATION

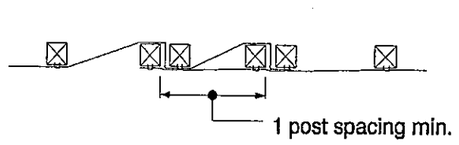
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'



ELEVATION



TURNED ENDS
1 5/8 Turns



POST SPACING OVERLAP

GEOTEXTILE END CONNECTIONS

TABLE 2

POST SPACING	
4'	Supported Sediment Fence
6'	Unsupported Sediment Fence with Geotextile elongation *less than 50%
4'	Unsupported Sediment Fence with Geotextile elongation *more than 50%

* Geotextile grab elongation value as documented by "Level B" manufacturer's documentation (See Standard Specifications).

NOTE: This plan is not a legal engineering document but an electronic duplicate. The original signed by the engineer and approved for publication is kept on file at the Oregon Department of Transportation. A copy may be obtained upon request.

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

SEDIMENT FENCE, SUPPORTED
SEDIMENT FENCE, UNSUPPORTED

2002

REVISIONS	
DATE	DESCRIPTION
12-02	REVISE NOTE
04-05	REVISE TABLE 2

erd1040.dgn 04-04-05

rd1040