FIELD INSPECTION REPORT

REPORT NO.	FOR BID ITEM NO.
1	0710 & 0720

PROJECT NAME (SECTION) SNAKE RIVER (NYSSSA) BRIDGE	CONTRACT NO. 12270
HIGHWAY CENTRAL OREGON	F.A. PROJECT NO. X-BHF-STP-S007(32)
PROJECT MANAGER RIC YOUNG	

REASON FOR THIS REPORT

- [x] INSPECTION OF MATERIAL
- [ ] MATERIALS ON HAND
- [ ] OTHER (EXPLAIN)

MATERIALS DELIVERED FOR PROJECT

TYPE OF MATERIAL			DATE DELIVERED
WELDED WIRE WALL			2-12-03
SOURCE OF MATERIAL (MANUFACTURER OR FABRICATOR) DAVIS WIRE, OKLAHOMA, SHERMAN		DELIVERED TO (NAME OF CONTRACTOR / SUB CONTRACTOR) CREA CONSTRUCTION	
QUANTITY DELIVERED 2	UNIT EA	QUANTITY ACCEPTED	QUANTITY REJECTED (EXPLAIN) NONE
TOTAL ACCEPTED TO DATE 2.00	ESTIMATED TOTAL REQUIRED 2.00	SAMPLE DATA SHEET NO. FOR SAMPLE SENT TO MATERIALS LAB FOR TESTS	

SUPPORTING DATA

- [ ] MATERIALS INSPECTION 1- _____ TEST _____ LABORATORY _____
- [ ] MATERIALS LABORATORY INSPECTION LABEL OR MARK.
- [x] TEST RESULTS CERTIFICATE
- [x] QUALITY COMPLIANCE CERTIFICATE
- [ ] CONFORMANCE TO EQUIPMENT LIST AND DRAWINGS (EXPLAIN)
- [x] CERTIFICATE OF MATERIALS ORIGIN FOR PERMANENTLY INCORPORATED IRON OR STEEL MATERIALS AND THEIR COATINGS ON FEDERAL AID PROJECTS
- [x] FIELD TESTS OR OBSERVATIONS (EXPLAIN)

REMARKS AND EXPLANATIONS, MATERIALS DESCRIPTIONS, DATES OF MANUFACTURE, HEAT AND LOT NOS. DAMAGED OR SUBSTANDARD MATERIALS, REASONS FOR REJECTION AND DISPOSITION OF REJECTED MATERIALS.

MSE WALL MATERIALS FOR BOTH WALLS DELIVERED TOGETHER AND CO-MINGLED IN LOAD
MATERIAL WILL BE USED AS NEEDED IN EACH WALL

333 STANDARD AND PRONGLESS MATS
88 CAP MATS
210 BACKING MATS

8700 HOG RINGS
30" X 100" HARDWARE CLOTH

Record #2

WHERE INSPECTED	DATE	INSPECTED AND PREPARED BY
JOBSITE	2-12-03 RB	

734-3469 (8-00)

CERTIFICATE of COMPLIANCE

PROJECT NAME & OWNER:	**Snake River (NYSSA) Bridge Sec.** **State of Oregon Department of Transportation**
PROJECT NUMBERS:	**HRW: 020923EW**
	Project No. X-BHF-STP-S007(32)
CONTRACTOR DATA: ['Ship to' company name, contact, address, and phone number].	**FE Ward Inc.** **Attn: Mike Latimer** **2710 NE 78th Avenue** **Vancouver, WA 98665-0649** **Phone Number: 360/573-8929**

MATERIAL:	**Welded Wire Wall** [MSE utilizing inextensible SR mats]
JOB CODE/LOT NUMBER:	**" Bundles" 1 thru 6 + misc. items (Wall 1)** **" Bundles" 1 thru 12 + misc. items (Wall 2)**
QUANTITY: [total job]	**5,760 SF (535.1215 SM) (23,144#)**
DATE[s] OF MANUFACTURE:	**January 30, 2003**
DATE[s] OF SHIPPING:	**02/03/03 (BL#8222) to Pacific States Galvanizing, Inc.** **Trucking Company: Pacific Timber Company**
APPLICABLE SPECIFICATIONS:	**ASTM A-82[AASHTO M32]; A-185[AASHTO M55]**
	ASTM A-123[AASHTO M111]

We hereby certify that the material indicated above does conform to all requirements of the applicable job specifications.

This material was manufactured in the United States of America. Attached are copies of appropriate supplier mill certificates, as required.

Cindy Burton

Cindy Burton
Administrative Assistant
carolyn@hilfiker.com

2-3-03
Date

W:\Cindy\Certs\WeldedWireWall.doc Last printed 02/03/03 10:22 AM

Davis Wire Corporation
19411 80th Avenue South, Kent, Washington 98032
(253) 872-8910 (800) 872-8920; Fax (253) 396-3729

CERTIFICATE OF COMPLIANCE

SOLD TO: **HILFIKER RETAINING WALLS**
P.O. BOX 2012
EUREKA, CA. 95502-2010

RE: Shipped Date: 10/9/02
Control #506020
P.O. #2051

RECEIVED
OCT 15 2002
HRW Job. No._____

ATTENTION: QUALITY ASSURANCE

MATERIAL DESCRIPTION:

3600 PANELS **4X3 W5/W2.5 8' X 23"**

HEAT & ANALYSIS: *269902:C=.06;MN=.48;P=.006;S=.017;SI=.15(W5)*
HEAT & ANALYSIS: *211202:C=.20;MN=.77;P=.006;S=.016;SI=.17(W2.5)*

SPECIFICATION: **Material meets and exceeds requirements for physical properties of ASTM A-82 and A-185.**

WELD SHEAR VALUES
ASTM A-185
1750 LBS. MINIMUM

Test #	Wire Size	Weld Shear
1	W5/W2.5	2924
2		2594
3		2823
4		2477

W WIRE
ASTM A-82
80 kpsi MINIMUM

Test #	Wire Size	Break	Tensile Kpsi	Bend Test
1	W5	4698	95	PASSED
2	W5	4680	94	PASSED
3	W2.5	3145	126	PASSED
4	W2.5	2883	116	PASSED

MANUFACTURED BY: Davis Wire Corporation
19411 - 80th Ave. South
Kent, Washington 98032

Materials attested to above have been produced to the best industry practices and in all respects comply with the above stated specification. The product is manufactured from domestic rod.

Sincerely,

Steve Graham
Quality Assurance

Subscribed to and sworn before me this 11th day of October, 2002, Leslie Cummings, Notary Public in and for the state of Washington residing in King county. My commission expires JUNE, 2003.

LESLIE L. CUMMINGS NOTARY COMMISSION EXPIRES

Leslie Cummings

ISO 9002-1994 Cert. #003050

QUALITY SERVICE
RELIABILITY
OUR
COMMITMENT

Davis Wire Corporation
19411 80th Avenue South, Kent, Washington 98032
(253) 872-8910 (800) 872-8920; Fax (253) 396-3729

CERTIFICATE OF COMPLIANCE

SOLD TO: **HILFIKER RETAINING WALLS**
P.O. BOX 2012
EUREKA, CA. 95502-2010

RE: Shipped Date: 10/17/02
Control #50171-2
P.O. #2037

ATTENTION: QUALITY ASSURANCE

MATERIAL DESCRIPTION:

17 ROLLS **8X21 W7/W4 88" X 800'**

HEAT & ANALYSIS: *001902:C=.21;MN=.78;P=.007;S=.018;SI=.15(W7)*
HEAT & ANALYSIS: *461701:C=.07;MN=.48;P=.007;S=.024;SI=.16(W4)*

SPECIFICATION: **Material meets and exceeds requirements for physical properties of ASTM A-82 and A-185.**

WELD SHEAR VALUES
ASTM A-185
2450 LBS. MINIMUM

Test #	Wire Size	Weld Shear
1	W7/W4	3533
2		3765
3		2895
4		3375

W WIRE
ASTM A-82
80 kpsi MINIMUM

Test #	Wire Size	Break	Tensile kpsi	Bend Test
1	W7	6820	99	PASSED
2	W7	6529	94	PASSED
3	W4	3677	91	PASSED
4	W4	3430	85	PASSED

RECEIVED
OCT 25 2002

HRW Job. No._____

MANUFACTURED BY: Davis Wire Corporation
19411 - 80th Ave. South
Kent, Washington 98032

Materials attested to above have been produced to the best industry practices and in all respects comply with the above stated specification. The product is manufactured from domestic rod.

Sincerely,

Steve Graham
Quality Assurance

Subscribed to and sworn before me this 22nd day of October, 2002, Leslie Cummings, Notary Public in and for the state of Washington residing in King county. My commission expires JUNE, 2003.

Leslie Cummings

ISO 9002-1994 Cert. #003050

QUALITY SERVICE
RELIABILITY
OUR
COMMITMENT

CERTIFICATE OF MATERIALS ORIGIN

PROJECT NAME (SECTION)	CONTRACT NO.
Snake River (Nyssa) Bridge	12270

BID ITEM NO.	BID ITEM NAME
710 & 720	Welded Wire Retaining Wall / Bridge 19175 & Bridge 19176

DOMESTIC MATERIALS SOURCE (NAME AND ADDRESS)

Davis Wire Corp.
19411 80th Ave S.
Kent, WA 98032-1190

Oklahoma Steel & Wire Co.
Hwy 70 South - PO Box 73446
Madill, OK 73445

DOMESTIC MATERIALS DESCRIPTION

Davis Wire:

8x21 w7/w4 Brite Basic WWM

4x3 w5/w2.5 8'x23" WWM (backing mats)

Oklahoma Steel:

8x12 w4.5/3.5 Black

FOREIGN MATERIALS SOURCE INCLUDING MATERIAL OF UNKNOWN ORIGIN (NAME AND ADDRESS)

FOREIGN MATERIALS (OR OF UNKNOWN ORIGIN) DESCRIPTION AND VALUE OF IRON OR STEEL PRODUCT AS IT IS DELIVERED TO THE PROJECT

This certification is made for the purpose of establishing materials acceptance under the Contract Special Provisions titled 00160.20(a) Buy America. All iron or steel manufacturing processes, including protective coatings, for the domestic materials described above occurred within the United States of America.

Manufactures' certificates verifying the origin of the above described domestic materials will be kept on file for three years following final payment. Copies will be furnished to the Engineer upon request.

I declare under penalty of perjury under Oregon and Federal laws that the foregoing is true and correct.

AUTHORIZED REPRESENTATIVE *

NAME: HAROLD HILFIKER

TITLE: PRESIDENT

SIGNATURE: Harold Hilfiker

DATE: 2-3-03

COMPANY* NAME AND ADDRESS --

Hilfiker Retaining Walls
3900 Broadway / PO Box 2012
Eureka, CA 95503

Submit a new certificate for subsequent shipments if any of the above information changes. * May be Contractor, Sub-Contractor or supplier

734-2126 (2-96) ORIGINAL TO PROJECT MANAGER

OREGON DEPARTMENT OF TRANSPORTATION
GEO/HYDRO SECTION
Eastside Geo/Hydro Unit
63034 OB Riley Road, Bend, OR 97701
Telephone: (541) 388-6032
Fax: (541) 385-0476

DATE: February 12, 2003

TO.....: ODOT PM Office ATTN: Ric Young

1508 E Idaho Ave

Ontario, OR 97914

PROJECT.....: Snake River (Nyssa) Bridge

BRIDGE NAME.....: MSE Retaining Wall 1 and 2

BRIDGE NUMBER.: 19175/19176 CONTRACT NUMBER 12770 PCS KEY 10457

WE ARE SENDING YOU THE ATTACHED SUBMITTALS OF:

☐ Reinf. Steel ☐ Railing ☐ Mechanical ☐ Electrical ☐ Bearings

☐ Struct. Steel ☐ Misc. Metal ☐ Prest. Bms ☐ Post-Tensioning ☐ Expansion Joints

☒ Other Plans & Stability Calculations, Hilfiker Retaining Walls, Revised January 17, 2003

WE HAVE REVIEWED THE SUBMITTALS AND MARKED THEM AS SHOWN BELOW:

APPROVED.....: Sheet(s)

APPROVED AS NOTED.....: Sheet(s)

RETURNED FOR CORRECTION: Sheet(s)

REVIEWED.....: Sheet(s) Submittal, dated January 17, 2003

☒ PLEASE RETURN THESE SUBMITTALS TO THE CONTRACTOR FOR DISTRIBUTION.

DESCRIPTION: Plans sheets (bound copies: 4 to PM office, 2 to Geo/Hydro, 1 to Bridge)

REMARKS: Backfill requirements include face detail, per Hilfiker recommendation

CHECKER: Rene' A. Renteria, P.E. Phone: (541) 388-6032

ENG. OF RECORD

cc: Bridge Designer Hormoz Seradj (Salem)

RECEIVED

FEB 20 2003

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON
☐ P.M. ☐ A.P.M. ☒ G.M. ☐ C.S

FORM 734-1759(6-93) Edited 2-03

HILFIKER RETAINING WALLS

Welded Wire Wall • Eureka Reinforced Soil
Steepened Slope • Reinforced Soil Embankment
ArtWeld Gabions • Gabion Faced M.S.E. • Trinity Wall

Monday, February 10, 2003

Mr. John Shemwell
Estimator
FE Ward Inc.
2710 NE 78th Avenue
Vancouver, WA 98665-0649 USA
Ph (360)573-8929
Fx (360)573-4507

Snake River (NYSSA) Bridge Section
Highway 26 MP 266.61, Malheur County, Oregon
State of Oregon Department of Transportation
Welded Wire Retaining Wall
3/4" Minus Facing Material
HRW 020923EW - SHN 002009.120

Dear Mr. Shemwell:

As per our conversation this letter is to confirm I feel the ¾" Base Material with 40-65% Passing the 475 mm Sieve will work well for facing material provided adequate compaction effort is used in this zone. I would recommend using a jumping jack type Whacker to compact this area, it will put out enough energy to move and force out any undersized material that may in content with the ¼" facing screen. Our wall technician, Allen Day will be on-site to get your crew started and to ensure they perform this procedure correctly.

Please give me a call if you have any questions, 800/762-8962.

Sincerely,

Harold K. Hilfiker
President

NOTED
FRANK WIGNESS

RECEIVED

FEB 11 2003

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON
P.M. A.P.M. O.M. C.S.

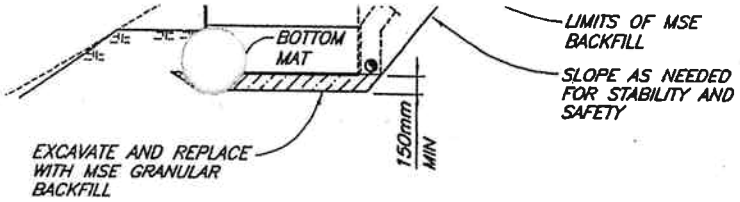
Enclosures
Via: facsimile (1 Page Total)
C: Karl Crea, Crea Construction

\\renserver\sh_wall\goldrnne\submittal letters\fe ward snake river facing material2.doc

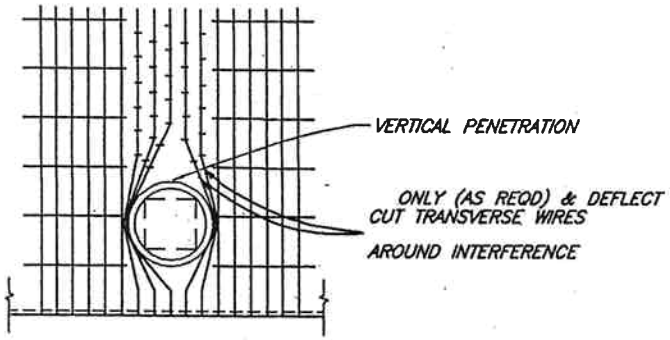
NOTED
ERIC KNAPP

3900 Broadway • Eureka, CA 95503-5707 • P.O. Box 2012 • Eureka, CA 95502-2012 • web: www.hilfiker.com
phone: **707.443.5093** toll free: **800.762.8962** fax: **707.443.2891** • email: info@hilfiker.com

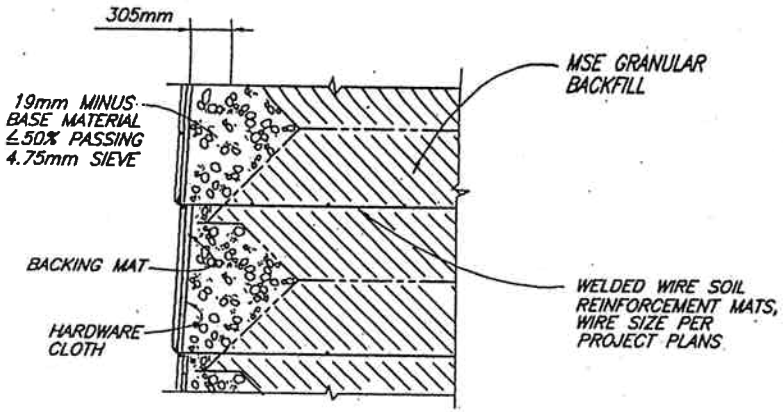
1902-2002 100 YEARS HILFIKER COMPANY



MATERIAL LIMITS
NO SCALE



SOIL REINF. PENETRATION 033
NO SCALE

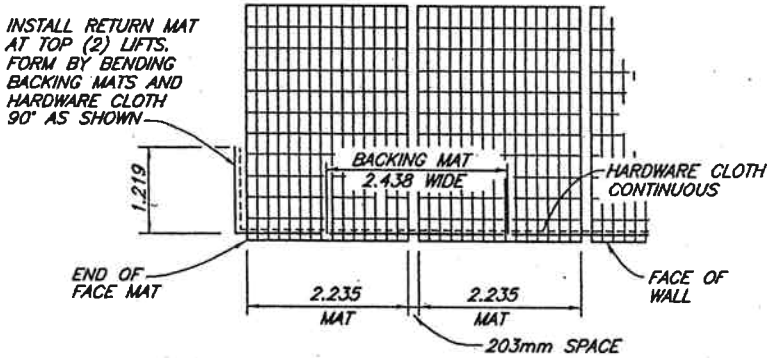


NOTE:
MAY BE USED WHERE MORE THAN 50% OF MSE GRANULAR BACKFILL MATERIAL PASSES 4.75mm SIEVE

OPTIONAL GRAVEL FACE DETAIL
NO SCALE

NOTE: ALL RETURN MATS TO BE 203mm X 305mm, W4.5 X W3.5 PRONGLESS MATS, HOG-RINGED TO OUTSIDE LONGITUDINAL WIRE OF MAIN SOIL REINF MATS @ 203mm O.C.

END OF WALL RETURN 009
NO SCALE



RETURN MATS 053
NO SCALE

NOTE: ALL DIMENSIONS ARE IN METERS (m) UNLESS OTHERWISE STATED

M.S.E. (WELDED WIRE WALL)

HILFIKER RETAINING WALLS
P.O. BOX 2012 EUREKA, CALIFORNIA 95502-2012
PHONE: (707) 443-5093 FAX: (707) 443-2891

NO.	DATE	REVISION	BY
1	1/15/03	REVISE PER REVIEW COMMENTS	KJN

DSGN KJN
DR RDW
CHK KJN
APVD

SNAKE RIVER (NYSSA) BRIDGE SEC.
CENTRAL OREGON HIGHWAY 26
MALHEUR COUNTY, OREGON AND
CANYON COUNTY, IDAHO

SECTION AND DETAILS

SHEET 3 OF 4
DATE 12/02
PROJ. NO. 002009.120

Oregon State Department of Transportation

TEST SUMMARY (B-QA)

(FIELD TESTED MATERIALS)

CONTRACT NO.	SHEET
12770	12B

REVIEWERS AND DATES	ITEM NO	DESCRIPTION	UNIT	ORIG. QUANT.	FINAL QUANT.
	710 & 720	**MSE Walls (MSE Backfill)**			

					TESTING BY					TEST METHOD AND FREQUENCY												QUANTITIES		
LINE	DATE OF SAMPLE, TEST, OR INSPECTION	REPORT NO.	DATA SHEET NO.	LAB REPORT NO.	QUALITY CONTROL BY CONTRACTOR	REGION-QUALITY VERIFICATION	REGION-INDEPENDENT ASSURANCE	CONTRACTOR-INDEPENDENT ASSURANCE (SPLIT SAMPLE)	SOURCE COMPLIANCE	SOURCE MATERIAL (QUALIFYING)	MIX DESIGN		T27 - 1/1000 Mg		Resistivity	pH	Plastic Index			DENSITY	STRENGTH	VISUAL	IN COMPLIANCE INCORPORATED	NON-COMPLIANCE INCORPORATED	EXPLANATIONS AND NON-COMPLIANCE
1	2/7/03				x								4												2.0-0
2	2/7/03				x								4												19.0-0
3																									
4	2/12/03			03-0425					x						x	x	x								19.0-0 Complies
5	2/12/03			03-0426					x						x	x	x								19.0-0 Complies
6	2/12/03			03-0429					x						x	x	x								2.0-0 Does Not Comply
7	2/19/03																								Acceptance Memo
8	2/12/03			03-0430					x						x	x	x								2.0-0 Complies
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									
21																									

WORK PHASE	
x	AGGR. PROD
	MIX PRODUCTION
	DENSITY
	OTHER

734-1902-B(4-96)

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was intentionally

left blank.

FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION)	CONTRACT NUMBER
Snake River (Nyssa) Bridge Section	12770

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
Valley Paving	Ric Young	710

SOURCE NAME	SOURCE NUMBER	MATERIAL SIZE
Valley Paving	23-097-5	2.0MM-0.0MM

TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1*1	2/7/03	1pm	Valley Paving stockpile	MSE Wall

SIEVE ANALYSIS AASHTO T27/11

SIEVE SIZE	SPECS. LIMITS	MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100	100	0.0	0.0			0.0	0.0	100	
50	80-100	0.0	0.0			0.0	0.0	100	
19	50-100	0.0	0.0			0.0	0.0	100	
12.5	40-100	0.0	0.0			0.0	0.0	100	
4.75	20-100	0.7	0.0			0.7	0.1	100	
2.00	15-100	60.3	84.5			144.8	12.3	88	
1.18		83.7	119.4			203.1	17.3	70	
.425	10-60	205.3	263.3			468.6	39.9	30	
.150	5-35	110.9	141.7			252.6	21.5	9	
.075	0-15	24.9	32.0			56.9	4.8	4.1	
PAN		19.5	27.8			47.3	4.0		

B = INITIAL DRY MASS: 1174.8 D =MASS AFTER SIEVING: 1174.0

PERCENT FRACTURE IN AGG TM 1

SIEVE SIZE	SPECS. LIMITS	FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	ELONGATED PIECE TEST MASS	ELONG MASS

SE T 176

1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	1596.7
WET MASS & PAN	2842.1
DRY MASS & PAN	2771.5
AFTER WASH DRY MASS & PAN	2771.5

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11.

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		6.01%	
SIEVE LOSS %={(C-D) / C} X 100		0.1%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

RECEIVED

[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	Materials Testing & Inspect		2-9-03

FEB 10 2003

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON

[ ] P.M. [ ] A.P.M. [ ] O.M. [ ] C.S.

1792-Base 9-02

FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION)	CONTRACT NUMBER
Snake River (Nyssa) Bridge Section	12770

CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
Valley Paving	Ric Young	710
SOURCE NAME	**SOURCE NUMBER**	**MATERIAL SIZE**
Valley Paving	23-097-5	2.0mm-0.0mm

TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1*2	2/7/03	1pm	Valley Paving stockpile	MSE Wall

SIEVE ANALYSIS AASHTO T27/11

SIEVE SIZE	SPECS. LIMITS	MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100	100	0.0	0.0			0.0	0.0	100	
50	80-100	0.0	0.0			0.0	0.0	100	
19	50-100	0.0	0.0			0.0	0.0	100	
12.5	40-100	0.0	0.0			0.0	0.0	100	
4.75	20-100	0.0	0.0			0.0	0.0	100	
2.00	15-100	95.4	79.8			175.2	12.4	88	
1.18		124.0	114.6			238.6	16.9	71	
.425	10-60	266.4	228.5			494.9	35.1	36	
.150	5-35	198.5	180.3			378.8	26.9	9	
.075	0-15	39.2	35.2			74.4	5.3	3.4	
PAN		25.1	23.2			48.3	3.4		

B = INITIAL DRY MASS: 1410 | D =MASS AFTER SIEVING: 1410.2

PERCENT FRACTURE IN AGG TM 1 / ELONGATED PIECE

SIEVE SIZE	SPECS. LIMITS	FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	TEST MASS	ELONG MASS

SE T 176

1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	1605.2
WET MASS & PAN	3077.5
DRY MASS & PAN	3015.2
AFTER WASH DRY MASS & PAN	3015.2

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		4.42%	
SIEVE LOSS %={(C-D) / C} X 100		0.0%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

RECEIVED

[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	Materials Testing & Inspect		2-9-03

FEB 10 2003

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON
[ ] P.M. [ ] A.P.M. [ ] O.M. [ ] C.S.

1792-Base 9-02

FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION)				CONTRACT NUMBER
Snake River (Nyssa) Bridge Section				12770
CONTRACTOR OR SUPPLIER		PROJECT MANAGER		BID ITEM NUMBER
Valley Paving		Ric Young		710
SOURCE NAME		SOURCE NUMBER		MATERIAL SIZE
Valley Paving		23-097-5		2.0mm-0.0mm
TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1*3	2/7/03	1pm	Valley Paving stockpile	MSE Wall

SIEVE ANALYSIS AASHTO T27/11

SIEVE SIZE	SPECS. LIMITS	MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100	100	0.0	0.0			0.0	0.0	100	
50	80-100	0.0	0.0			0.0	0.0	100	
19	50-100	0.0	0.0			0.0	0.0	100	
12.5	40-100	0.0	0.0			0.0	0.0	100	
4.75	20-100	0.0	0.0			0.0	0.0	100	
2.00	15-100	69.6	78.1			147.7	13.0	87	
1.18		86.0	94.6			180.6	15.8	71	
.425	10-60	183.3	205.0			388.3	34.0	37	
.150	5-35	121.7	133.5			255.2	22.4	15	
.075	0-15	48.4	51.3			99.7	8.7	6.0	
PAN		31.8	34.5			66.3	5.8		

B = INITIAL DRY MASS: 1140.4 D =MASS AFTER SIEVING: 1137.8

PERCENT FRACTURE IN AGG TM 1

SIEVE SIZE	SPECS. LIMITS	FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	ELONGATED PIECE TEST MASS	ELONG MASS

SE T 176

1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	1605.6
WET MASS & PAN	2783.4
DRY MASS & PAN	2746
AFTER WASH DRY MASS & PAN	2746

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		3.28%	
SIEVE LOSS %={(C-D) / C} X 100		0.2%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

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[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	Materials Testing & Inspect		2-9-03

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1792-Base 9-02

FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION)			CONTRACT NUMBER
Snake River (Nyssa) Bridge Section			12770
CONTRACTOR OR SUPPLIER		PROJECT MANAGER	BID ITEM NUMBER
Valley Paving		Ric Young	710
SOURCE NAME		SOURCE NUMBER	MATERIAL SIZE
Valley Paving		23-097-5	2.0mm-0.0mm

TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1*4	2/7/03	1pm	Valley Paving stockpile	MSE Wall

SIEVE ANALYSIS AASHTO T27/11

SIEVE SIZE	SPECS. LIMITS	MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100	100	0.0	0.0			0.0	0.0	100	
50	80-100	0.0	0.0			0.0	0.0	100	
19	50-100	0.0	0.0			0.0	0.0	100	
12.5	40-100	0.0	0.0			0.0	0.0	100	
4.75	20-100	0.0	0.0			0.0	0.0	100	
2.00	15-100	63.0	57.0			120.0	11.3	89	
1.18		90.6	85.0			175.6	16.5	72	
.425	10-60	181.2	176.1			357.3	33.6	39	
.150	5-35	141.9	141.5			283.4	26.7	12	
.075	0-15	38.2	36.0			74.2	7.0	4.9	
PAN		26.4	26.1			52.5	4.9		

B = INITIAL DRY MASS: 1062.1 D =MASS AFTER SIEVING: 1063.0

PERCENT FRACTURE IN AGG TM 1

SIEVE SIZE	SPECS. LIMITS	FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	ELONGATED PIECE TEST MASS	ELONG MASS

SE T 176

1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	754.1
WET MASS & PAN	1858.5
DRY MASS & PAN	1816.2
AFTER WASH DRY MASS & PAN	1816.2

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		3.98%	
SIEVE LOSS %={(C-D) / C} X 100		-0.1%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

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[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	Materials Testing & Inspect		2-9-03

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1792-Base 9-02

FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION)			CONTRACT NUMBER
Snake River (Nyssa) Bridge Section			12770
CONTRACTOR OR SUPPLIER	PROJECT MANAGER		BID ITEM NUMBER
Valley Paving	Ric Young		710
SOURCE NAME	SOURCE NUMBER		MATERIAL SIZE
Valley Paving	23-097-5		~~25~~ 19.0mm-0.0mm

TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1*1	2/7/2003	1pm	Valley Paving stockpile	MSE Wall 1' off of face

SIEVE SIZE	SPECS. LIMITS	SIEVE ANALYSIS AASHTO T27/11							FM
		MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100		0.0	0.0	0.0	0.0	0.0	0.0	100	
50		0.0	0.0	0.0	0.0	0.0	0.0	100	
19		34.5	48.7	34.0	49.8	167.0	2.8	97	
12.5		283.0	327.4	292.2	335.0	1237.6	21.0	76	
4.75	40 - 65	344.9	334.9	237.1	339.0	1255.9	21.3	55	
2.00		301.9	299.8	231.9	288.3	1121.9	19.0	36	
1.18		122.2	121.6	97.5	111.7	453.0	7.7	28	
.425		275.9	263.8	204.3	239.8	983.8	16.7	11	
.150		137.6	128.9	93.5	124.6	484.6	8.2	3	
.075		29.9	27.5	23.6	25.7	106.7	1.8	1.3	
PAN		29.3	18.5	19.7	16.5	84.0	1.4		

B = INITIAL DRY MASS: 5889.9 D =MASS AFTER SIEVING: 5894.5

SIEVE SIZE	SPECS. LIMITS	PERCENT FRACTURE IN AGG TM 1				ELONGATED PIECES	
		FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	TEST MASS	ELONG MASS

SE T 176			
1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	1582.1
WET MASS & PAN	7654
DRY MASS & PAN	7472
AFTER WASH DRY MASS & PAN	7472

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		3.09%	
SIEVE LOSS %={(C-D) / C} X 100		-0.1%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

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[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	FEB 1 1 2003 Materials Testing & Inspect	[signature]	2-9-03

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[signature]

1792-Base 9-02

FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION): Snake River (Nyssa) Bridge Section			CONTRACT NUMBER: 12770
CONTRACTOR OR SUPPLIER: Valley Paving	PROJECT MANAGER: Ric Young		BID ITEM NUMBER: 710
SOURCE NAME: Valley Paving	SOURCE NUMBER: 23-097-5		MATERIAL SIZE: ~~25~~ 19.0mm-0.0mm

TEST NO.	DATE	TIME	SAMPLED AT	TO BE USED IN
1*2	2/7/2003	1pm	Valley Paving stockpile	MSE Wall 1' off of face

SIEVE ANALYSIS AASHTO T27/11

SIEVE SIZE	SPECS. LIMITS	MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100		0.0	0.0	0.0	0.0	0.0	0.0	100	
50		0.0	0.0	0.0	0.0	0.0	0.0	100	
19		45.5	39.7	129.1	33.4	247.7	4.0	96	
12.5		309.3	233.1	236.1	260.9	1039.4	16.7	79	
4.75	40 - 65	330.7	330.5	318.2	332.9	1312.3	21.1	58	
2.00		301.1	262.7	275.7	309.0	1148.5	18.5	40	
1.18		124.0	112.7	129.9	139.3	505.9	8.1	32	
.425		329.5	301.1	309.4	349.6	1289.6	20.7	11	
.150		142.4	116.7	123.7	135.7	518.5	8.3	3	
.075		27.5	18.4	18.0	21.5	85.4	1.4	1.2	
PAN		26.7	14.9	14.5	16.7	72.8	1.2		

B = INITIAL DRY MASS: 6224.7 D =MASS AFTER SIEVING: 6220.1

PERCENT FRACTURE IN AGG TM 1 / ELONGATED PIECES

SIEVE SIZE	SPECS. LIMITS	FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	TEST MASS	ELONG MASS

SE T 176

1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	1581.7
WET MASS & PAN	8068.2
DRY MASS & PAN	7806.4
AFTER WASH DRY MASS & PAN	7806.4

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		4.21%	
SIEVE LOSS %={(C-D) / C} X 100		0.1%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

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[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
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FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION): Snake River (Nyssa) Bridge Section			CONTRACT NUMBER: 12770
CONTRACTOR OR SUPPLIER: Valley Paving	PROJECT MANAGER: Ric Young		BID ITEM NUMBER: 710
SOURCE NAME: Valley Paving	SOURCE NUMBER: 23-097-5		MATERIAL SIZE: ~~25~~ 19.0mm-0.0mm
TEST NO.: 1*3	DATE: 2/7/2003	TIME: 1pm	SAMPLED AT: Valley Paving stockpile
TO BE USED IN: MSE Wall 1' off of face			

SIEVE ANALYSIS AASHTO T27/11

SIEVE SIZE	SPECS. LIMITS	MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100		0.0	0.0	0.0	0.0	0.0	0.0	100	
50		0.0	0.0	0.0	0.0	0.0	0.0	100	
19		46.8	77.9	58.9	109.2	292.8	5.6	94	
12.5		258.8	245.7	164.9	130.8	800.2	15.4	79	
4.75	40 - 65	294.1	234.0	169.1	168.2	865.4	16.6	62	
2.00		352.9	293.0	188.3	213.6	1047.8	20.1	42	
1.18		149.1	127.0	80.8	97.8	454.7	8.7	33	
.425		398.1	340.0	217.7	244.0	1199.8	23.1	10	
.150		135.4	114.7	78.4	84.4	412.9	7.9	2	
.075		24.7	20.6	15.0	16.9	77.2	1.5	1.0	
PAN		13.0	11.8	9.0	11.2	45.0	0.9		

B = INITIAL DRY MASS: 5201.1 D =MASS AFTER SIEVING: 5195.8

PERCENT FRACTURE IN AGG TM 1 / ELONGATED PIECES

SIEVE SIZE	SPECS. LIMITS	FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	TEST MASS	ELONG MASS

SE T 176

1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	1595
WET MASS & PAN	6961.9
DRY MASS & PAN	6796.1
AFTER WASH DRY MASS & PAN	6796.1

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		3.19%	
SIEVE LOSS %={(C-D) / C} X 100		0.1%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

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[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
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1792-Base 9-02

FIELD WORKSHEET FOR AGGREGATE

PROJECT NAME (SECTION): Snake River (Nyssa) Bridge Section			CONTRACT NUMBER: 12770
CONTRACTOR OR SUPPLIER: Valley Paving	PROJECT MANAGER: Ric Young		BID ITEM NUMBER: 710
SOURCE NAME: Valley Paving	SOURCE NUMBER: 23-097-5		MATERIAL SIZE: ~~25~~ 19.0mm-0.0mm
TEST NO.: 1*4	DATE: 2/7/2003	TIME: 1pm	SAMPLED AT: Valley Paving stockpile
TO BE USED IN: MSE Wall 1' off of face			

SIEVE ANALYSIS AASHTO T27/11

SIEVE SIZE	SPECS. LIMITS	MASS 1	MASS 2	MASS 3	MASS 4	TOTAL MASS	% RET	% PASS	FM CUMULATIVE % RETAINED
mm						0.0	0.0	100	
100		0.0	0.0	0.0	0.0	0.0	0.0	100	
50		0.0	0.0	0.0	0.0	0.0	0.0	100	
19		30.9	85.8	47.2	122.6	286.5	4.8	95	
12.5		211.9	308.6	263.7	309.4	1093.6	18.2	77	
4.75	40 - 65	237.0	278.6	321.1	337.0	1173.7	19.5	58	
2.00		229.2	287.4	328.1	357.8	1202.5	20.0	38	
1.18		96.7	134.3	143.3	153.7	528.0	8.8	29	
.425		215.9	321.6	321.9	383.9	1243.3	20.7	8	
.150		66.0	96.9	97.4	115.3	375.6	6.2	2	
.075		11.5	16.9	17.9	19.3	65.6	1.1	0.7	
PAN		8.5	12.2	13.1	14.6	48.4	0.8		

B = INITIAL DRY MASS: 6013.8 D =MASS AFTER SIEVING: 6017.2

PERCENT FRACTURE IN AGG TM 1

SIEVE SIZE	SPECS. LIMITS	FRAC MASS (F)	QUESTIONABLE MASS (Q)	NON FRAC MASS (N)	INDIVIDUAL FRAC %	ELONGATED PIECES TEST MASS	ELONG MASS

SE T 176

1	2	3	Samp
			Clay
			Sand
			S.E.
		AVG.	

PAN TARE	1594.9
WET MASS & PAN	7856.4
DRY MASS & PAN	7608.7
AFTER WASH DRY MASS & PAN	7608.7

C = DRY MASS AND PAN AFTER WASH - PAN

A = WET MASS & PAN - PAN

[X] DRY [ ] WET

WAQTC AASHTO T-27/T11

[X] Round [ ] Square [ ] Rectangle 12" Size

		RESULT	SPEC
Combine % Fracture	TM 1		
Wood Waste	TM225		
CleannessValue	TM 227		
Flat & Elongated	TM 229		
Fineness Modulus	T 27/T11		
MOISTURE %={(A-B) / B} X 100		4.12%	
SIEVE LOSS %={(C-D) / C} X 100		-0.1%	0.3
Base Agg 2.00mm / 6.3mm			

REMARKS

RECEIVED

[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	Materials Testing & Inspect		2-9-03

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MATERIALS LABORATORY (503)986-3100
800 AIRPORT RD. SE SALEM, OR 97301-4798 FAX(503)986-3096

Contract No.: C12770 EA No.: CON01479 Lab No.: 03-000425
Project: SNAKE RIVER (NYSSA) BRIDGE
Highway: CENTRAL OREGON County: MALHEUR Data Sheet No.: F3106 001
Contractor: F.E. WARD INC FA No.: X-BHF-STP-S007(32)
Project Manager: RIC YOUNG Org Unit: 5804 Bid Item No.: 0710,0720
Submitted By: WILLIAM RUSSELL Org Unit: MTI Sample No.: 2003-1
Material Source: 23-097-5 ONTARIO ASPHALT Qty Represented: 400 MG
Sampled At: 3M S FACE,1.5M ABOVE GL Sampled By: Witnessed By:
DATE-Sampled: 03/ 2/ 7 Received: 03/ 2/12 Tested: 03/ 2/21 Date Reported:
Class/Type: COMPLIANCE Use: MSE WALL BACKFILL

Q or G: GRAVEL AGGREGATE LABORATORY REPORT - BACKFLL Size: 19.0mm-0.0mm

AASHTO T 27

SIEVE SIZE	% PASSING
100 mm	
90	
75	
63	
50	
37.5	
25.0	100 %
19.0	96 %
12.5	77 %
9.5	68 %
6.3	58 %
4.75	53 %
2.00	34 %
425 µm	12 %
150	4 %
75	2.2 %

AASHTO T 90 Plastic Index : NonPlastic
AASHTO T 288 Resistivity : 21984 Ω-cm
AASHTO T 289 pH : 8.6

AASHTO T 267 Organic : 0.37 %
ASTM D 512 Chloride :
ASTM D 516 Sulfate :

1 204 $
1 102/103
1 107
1 107A
1 129X

NSM = Not Sufficient Material
TOTAL CHARGES: $ 0.00

REMARKS:
Material represented by sample DOES comply with specifications.

Gradation is Informational only.
Fails Class A, B, & C Gradation Specifications: Insufficient Material Passing the #150 Sieve.

REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THIS LABORATORY.

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MATERIALS LABORATORY
800 AIRPORT RD. SE SALEM, OR 97301-4798
(503)986-3100
FAX(503)986-3096

Contract No.: C12770 EA No.: CON01479 Lab No.: 03-000426
Project: SNAKE RIVER (NYSSA) BRIDGE
Highway: CENTRAL OREGON County: MALHEUR Data Sheet No.: F3106 002
Contractor: F.E. WARD INC FA No.: X-BHF-STP-S007(32)
Project Manager: RIC YOUNG Org Unit: 5804 Bid Item No.: 0710,0720
Submitted By: WILLIAM RUSSELL Org Unit: MTI Sample No.: 2003-2
Material Source: 23-097-5 ONTARIO ASPHALT Qty Represented: 400 MG
Sampled At: 1.5M S FACE,1-3M ABOVE GL Sampled By: Witnessed By:
DATE-Sampled: 03/ 2/ 7 Received: 03/ 2/12 Tested: 03/ 2/21 Date Reported:
Class/Type: COMPLIANCE Use: MSE WALL BACKFILL

Q or G: GRAVEL AGGREGATE LABORATORY REPORT - BACKFLL Size: 19.0mm-0.0mm

AASHTO T 27

SIEVE SIZE	% PASSING
100 mm	
90	
75	
63	
50	
37.5	
25.0	100 %
19.0	97 %
12.5	83 %
9.5	74 %
6.3	65 %
4.75	60 %
2.00	42 %
425 µm	16 %
150	5 %
75	2.6 %

AASHTO T 90 Plastic Index : NonPlastic
AASHTO T 288 Resistivity : 15801 Ω-cm
AASHTO T 289 pH : 8.8

AASHTO T 267 Organic : 0.45 %
ASTM D 512 Chloride :
ASTM D 516 Sulfate :

1 204 $
1 102/103
1 107
1 107A
1 129X

NSM = Not Sufficient Material
TOTAL CHARGES: $ 0.00

REMARKS:
Material represented by sample DOES comply with specifications.

Gradation is Informational Only.
Meets Class A Gradation Specification.

REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THIS LABORATORY.

C: FILES ; PROJ MGR: RIC YOUNG ; F.E. WARD INC ; REG 5 Q.A. COORDINATOR ; RAS 5

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MATERIALS LABORATORY
800 AIRPORT RD. SE SALEM, OR 97301-4798
(503)986-3100
FAX(503)986-3096

Contract No.: C12770 EA No.: CON01479 Lab No.: 03-000429
Project: SNAKE RIVER (NYSSA) BRIDGE
Highway: CENTRAL OREGON County: MALHEUR Data Sheet No.: F3106 005
Contractor: F.E. WARD INC FA No.: X-BHF-STP-S007(32)
Project Manager: RIC YOUNG Org Unit: 5804 Bid Item No.: 0710,0720
Submitted By: WILLIAM RUSSELL Org Unit: MTI Sample No.: 2003-1
Material Source: 23-097-5 ONTARIO ASPHALT Qty Represented: 2400 MG
Sampled At: 4M IN FROM W/F,3M UP G/L Sampled By: Witnessed By:
DATE-Sampled: 03/ 2/ 7 Received: 03/ 2/12 Tested: 03/ 2/21 Date Reported:
Class/Type: COMPLIANCE Use: MSE WALL BACKFILL

Q or G: GRAVEL AGGREGATE LABORATORY REPORT - BACKFLL Size: 2.0mm-0.0mm

AASHTO T 27

SIEVE SIZE	% PASSING
100 mm	
90	
75	
63	
50	
37.5	
25.0	
19.0	
12.5	
9.5	
6.3	100 %
4.75	100 %
2.00	90 %
425 µm	39 %
150	14 %
75	7.6 %

AASHTO T 90 Plastic Index : NonPlastic
AASHTO T 288 Resistivity : 10992 Ω-cm
AASHTO T 289 pH : 9.6

AASHTO T 267 Organic : 0.38 %
ASTM D 512 Chloride :
ASTM D 516 Sulfate :

1 204 $
1 102/103
1 107
1 107A
1 129X

NSM = Not Sufficient Material
TOTAL CHARGES: $ 0.00

REMARKS:
Material represented by sample DOES NOT comply with specifications.

Fails pH Requirement: 9.5 is Maximum Allowed by Specification.
Gradation is Informational Only.
Meets Class A & B Gradation Specifications.

REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THIS LABORATORY.

KNAPP Eric T

From: BJORKLUND Russell A
Sent: Wednesday, February 19, 2003 7:54 AM
To: KNAPP Eric T
Subject: FW: Snake River Nyssa MSE walls

-----Original Message-----
From: RENTERIA Rene A
Sent: Tuesday, February 18, 2003 5:36 PM
To: MCDANNEL Lee R; YOUNG Richard A
Cc: WOODWORTH Paul D; NARKIEWICZ Steve A; HOUSTON James W; BJORKLUND Russell A
Subject: RE: Snake River Nyssa MSE walls

Upon further discussion with Lee, he clarified to me the extent of sampling to obtain representation across the individual stockpiles, and how location of material from within the stockpiles will be monitored. Therefore, the samples can be considered representative of the material, and pH/resistivity accepted for use at each of the walls. If any material changes within the stockpile are observed or noted, additional sampling should be performed.

It is also my understanding that further quality control testing as required by the contract is currently being performed, and the contractor is aware of the remaining requirements.

-----Original Message-----
From: MCDANNEL Lee R
Sent: Tuesday, February 18, 2003 4:34 PM
To: RENTERIA Rene A; YOUNG Richard A
Cc: WOODWORTH Paul D; NARKIEWICZ Steve A; HOUSTON James W; BJORKLUND Russell A
Subject: RE: Snake River Nyssa MSE walls

Good Day.

As for additional testing. I believe we covered the testing of the material very well. I have staked off the area of the stockpile that we intend to use. I also was present when sampling was done. We cut into the stockpile about 12 to 18 feet on both sides. Sampled the top and the bottom on one side, we took the loader to the top of the pile and dug down into the top about 10 feet and sampled. I am very confident that the samples are representative of the pile. I would really like to accept the material based on the test we have and not add any additional tests. We plan to start building the MSE Wall Wednesday Feb 19.

-----Original Message-----
From: RENTERIA Rene A
Sent: Tuesday, February 18, 2003 4:06 PM
To: YOUNG Richard A
Cc: MCDANNEL Lee R; WOODWORTH Paul D; NARKIEWICZ Steve A
Subject: Snake River Nyssa MSE walls

I reviewed the 8 lab data for pH/resistivity (samples for the 2 mm- backfill and 19mm- face). The resistivity values were all greater than 10,000 except for one at 9,618 (2mm- material). The pH values ranged from 8.6 to 9.5, except 1 test at 9.6 (2 mm- material, corresponding resistivity is 10,992). Based on the high values for resistivity, the single value of 9.6 can be accepted.

Additional quality testing should be performed to determine any changes within the stockpile. The acceptance of this single test value of 9.6 does not waive the contract requirement of meeting a pH range of 4.5-9.5 for any subsequent samples. Future quality testing that indicate results are in non-conformance to the contract requirements will require review of the overall quality test results for the sample(s) in question, and may result in non-conformance for those particular samples.

Rene' A. Renteria, P.E.
Oregon Department of Transportation
Eastside Geotechnical Engineer
Bend, Oregon
541-388-6383

** COPY ** OREGON DEPARTMENT OF TRANSPORTATION ** COPY ** Page 1 of 1

MATERIALS LABORATORY
800 AIRPORT RD. SE SALEM, OR 97301-4798
(503)986-3100
FAX(503)986-3096

Contract No.: C12770 EA No.: CON01479 Lab No.: 03-000430
Project: SNAKE RIVER (NYSSA) BRIDGE
Highway: CENTRAL OREGON County: MALHEUR Data Sheet No.: F3106 006
Contractor: F.E. WARD INC FA No.: X-BHF-STP-S007(32)
Project Manager: RIC YOUNG Org Unit: 5804 Bid Item No.: 0710,0720
Submitted By: WILLIAM RUSSELL Org Unit: MTI Sample No.: 2003-2
Material Source: 23-097-5 ONTARIO ASPHALT Qty Represented: 2400 MG
Sampled At: 2M IN FROM W/F,2M UP G/L Sampled By: Witnessed By:
DATE-Sampled: 03/ 2/ 7 Received: 03/ 2/12 Tested: 03/ 2/21 Date Reported:
Class/Type: COMPLIANCE Use: MSE WALL BACKFILL

Q or G: GRAVEL AGGREGATE LABORATORY REPORT - BACKFLL Size: 2.0mm-0.0mm

AASHTO T 27

SIEVE SIZE	% PASSING
100 mm	
90	
75	
63	
50	
37.5	
25.0	
19.0	
12.5	
9.5	
6.3	100 %
4.75	100 %
2.00	88 %
425 µm	38 %
150	16 %
75	9.0 %

AASHTO T 90 Plastic Index : NonPlastic
AASHTO T 288 Resistivity : 13053 Ω-cm
AASHTO T 289 pH : 9.5

AASHTO T 267 Organic : 0.39 %
ASTM D 512 Chloride :
ASTM D 516 Sulfate :

1 204 $
1 102/103
1 107
1 107A
1 129X

NSM = Not Sufficient Material
TOTAL CHARGES: $ 0.00

REMARKS:
Material represented by sample DOES comply with specifications.

Gradation is Informational Only.
Meets Class A & B Gradation Specifications.

REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THIS LABORATORY.

C: FILES ; PROJ MGR: RIC YOUNG ; F.E. WARD INC ; REG 5 Q.A. COORDINATOR ; RAS 5

Oregon State Department of Transportation

TEST SUMMARY (B-QA)

(FIELD TESTED MATERIALS)

CONTRACT NO.	SHEET
12770	12C

REVIEWERS AND DATES	ITEM NO	DESCRIPTION	UNIT	ORIG. QUANT.	FINAL QUANT.
	710 & 720	**MSE Walls (MSE Backfill)**			

					TESTING BY					TEST METHOD AND FREQUENCY												QUANTITIES		
LINE	DATE OF SAMPLE, TEST, OR INSPECTION	REPORT NO.	DATA SHEET NO.	LAB REPORT NO.	QUALITY CONTROL BY CONTRACTOR	REGION-QUALITY VERIFICATION	REGION-INDEPENDENT ASSURANCE	CONTRACTOR-INDEPENDENT ASSURANCE (SPLIT SAMPLE)		SOURCE MATERIAL (QUALIFYING)	MIX DESIGN		T99							DENSITY	STRENGTH	VISUAL	IN COMPLIANCE INCORPORATED	NON-COMPLIANCE INCORPORATED	EXPLANATIONS AND NON-COMPLIANCE
1	2/18/03				x								x													Curve #4 - 2.0-0 Backfill
2	2/20/03				x								x													Curve #3 - 19.0-0 Backfill
3																										
4	2/19/03	1&2	BI 710		x															2						Tests Comply
5	2/20/03	3	BI 710		x															1						Complies
6	3/11/03	4	BI 720		x															1						Complies
7	3/25/03	5	BI 720		x															1						Fails Moisture
8	5/9/03	5a	BI 720		x															1						Retest Complies
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										
21																										

WORK PHASE

	AGGR. PROD
	MIX PRODUCTION
x	DENSITY
	OTHER

734-1902-B(4-96)

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was intentionally

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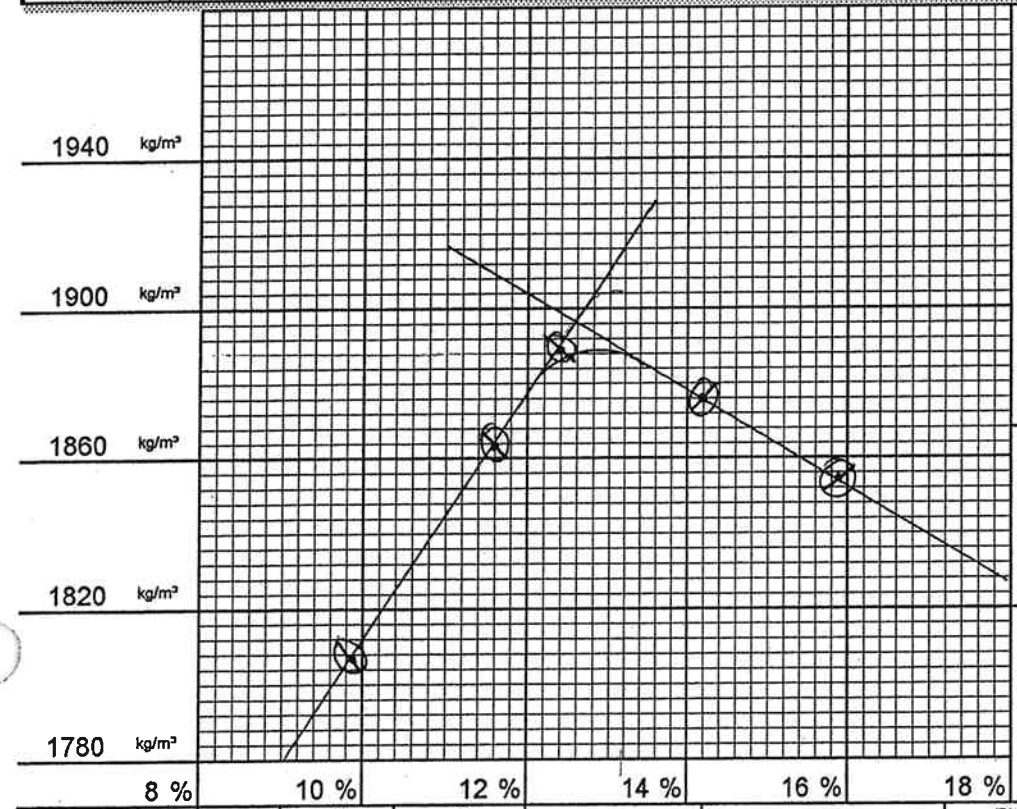
MAXIMUM DENSITY OF CONSTRUCTION MATERIALS

PROJECT NAME (SECTION)					CONTRACT NUMBER
Snake River (Nyssa) Bridge Section					12770
CONTRACTOR OR SUPPLIER			PROJECT MANAGER		BID ITEM NUMBER
F.E, Ward			Ric Young		710-720
SOURCE NAME			SOURCE NUMBER		MATERIAL SIZE
valley paving			23-097-5		2.00mm-0.0mm
TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN
4	2/18/03	9am	stockpile	2.00mm mse	MSE Wall Backfill



TEST METHOD

T 99 [X] T 180 [ ]

A [X] D [ ]

SAMPLE

+ 4.75	0
- 4.75	23754
Total	23754
Pc	0 %
+ 19 m	
- 19 m	
Total	
Pc	%

SOILS

MAX DRY DENSITY OF THE FINES D_f 1888 kg/m³

OPTIMUM MOISTURE % THE FINES MC_f 12.8 %

BASE AGG

Stock Pile AVE. P_c %

RELATIVE MAX DRY DENSITY D_d kg/m³

COMBINED OPTIMUM MOISTURE % MC_T %

TEST NO.	MASS OF MOLD AND MATERIALS	MASS OF MOLD	(M) MASS OF WET MATERIAL	(A) WET DENSITY kg/m³	SPEEDY MOISTURE % WET (B)	SPEEDY MOISTURE % DRY (C)	OVEN MOISTURE % WET(a)	OVEN MOISTURE % DRY(b)	OVEN MOISTURE % % M (C)	(D) DRY DENSITY kg/m³
1	6139.6	4266.0	1873.6	1986			398.0	362.2	9.9	1807
2	6227.7	4266.0	1961.7	2079			434.3	389.1	11.6	1863
3	6267.0	4266.0	2001	2121			413.2	367.7	12.4	1887
4	6287.6	4266.0	2021.6	2143			402.6	352.4	14.2	1876
5	6294.0	4266.0	2028	2150			408.3	352.3	15.9	1855
6										
7										
8										

101.6mmMOLD (A) =(M) X 1.060
152.4mmMOLD (A) =(M) X 0.471

SPEEDY MOISTURE % $(C) = \frac{(B)}{100 - (B)} \times 100$

OVEN MOISTURE % $(C) = \frac{(a) - (b)}{(b)} \times 100$

$(D) = \frac{(A)}{(C)+100} \times 100$

AASHTO T85 SPECIFIC GRAVITY OF COARSE AGGREGATE	Oven Dry Mass (A)	SSD Mass (B)	Weight in Water (C)	Gsb (A) / [(B)-(C)]	Gsb SSD (B) / [(B)-(C)]	Gsa (A) / [(A)-(C)]	ABSORPTION [(B)-(A)]/(A)]X100

AGGREGATES $P_f = 1.00 - P_c$ $k = Gsb \times 1000$ If Material is manufactured use Average Pc from T 27 MC_c = ABSORPTION

AASHTO T224 COARSE PARTICLE CORRECTION

MAXIMUM COMBINED DRY DENSITY: $100 \times D_f \times k \div (D_f \times P_c + k \times P_f) = D_d$

OPTIMUM COMBINED MOISTURE: $(MC_f \times P_f + MC_c \times P_c) \div 100 = MC_T$

[ ] ÷ [ ] + [ ] = [ ]

RECEIVED

[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	Materials Testing & Inspect		2-18-03

FEB 7 2003

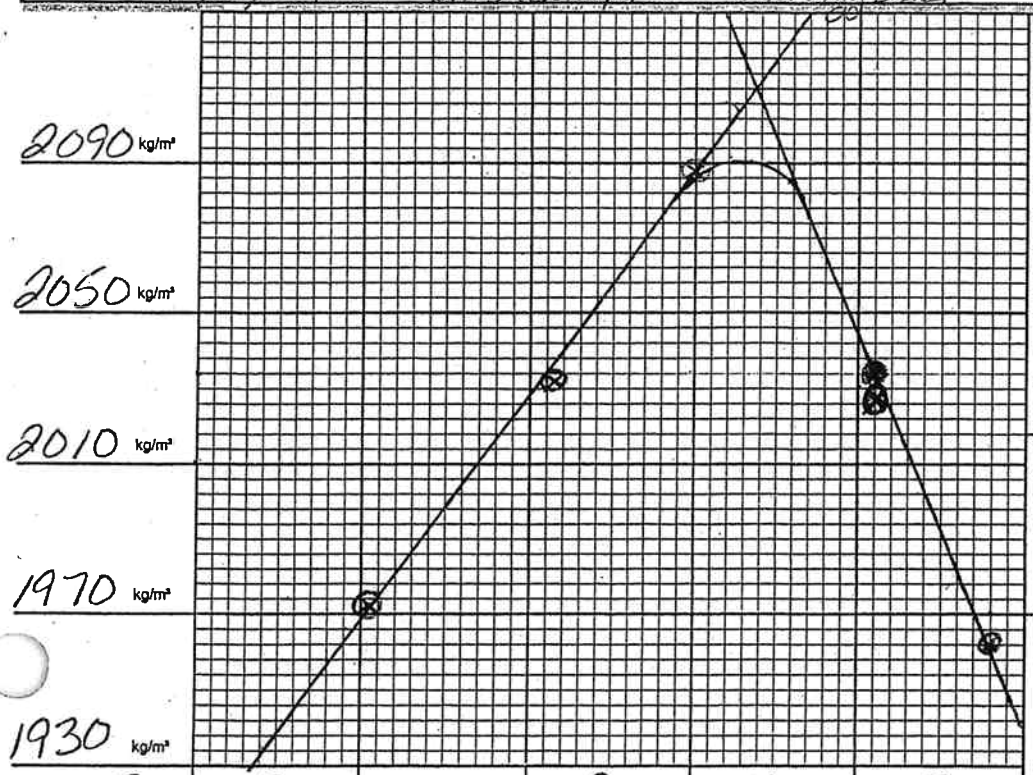
OFFICE OF PROJECT MANAGER
ONTARIO, OREGON
[ ] P.M. [ ] [ ] [ ] C.S

3468 9-01

MAXIMUM DENSITY OF CONSTRUCTION MATERIALS

PROJECT NAME (SECTION)			CONTRACT NUMBER
Snake River Bridge (Nyssa) Section			12770
CONTRACTOR OR SUPPLIER: F.E. Ward / Valley Paving	PROJECT MANAGER: Ric Young		BID ITEM NUMBER: 710-720
SOURCE NAME: Valley Paving	SOURCE NUMBER: 23-097-5		MATERIAL SIZE: 19.0 mm-0.0 mm

TEST NO.	DATE	TIME	SAMPLED AT	MATERIAL DESCRIPTION	TO BE USED IN
3	2/20/03	8:00 AM	on-site Stockpile	25.0mm Agg Base	MSE Wall



TEST METHOD

T 99 [X] T 180 [ ]

A [ ] D [X]

SAMPLE

+ 4.75	
- 4.75	
Total	
Pc	%
+ 19 mm	2115.0
- 19 mm	40205
Total	42320
Pc	5.0 %

SOILS

MAX DRY DENSITY OF THE FINES: Df 2090 kg/m³

OPTIMUM MOISTURE % THE FINES: MCf 9.6 %

BASE AGG

Stock Pile AVE. Pc %

RELATIVE MAX DRY DENSITY: Dd kg/m³

COMBINED OPTIMUM MOISTURE %: MCT %

TEST NO.	MASS OF MOLD AND MATERIALS	MASS OF MOLD	(M) MASS OF WET MATERIAL	(A) WET DENSITY kg/m³	SPEEDY MOISTURE % WET (B)	SPEEDY MOISTURE % DRY (C)	OVEN MOISTURE % WET(a)	OVEN MOISTURE % DRY(b)	OVEN MOISTURE % % M (C)	(D) DRY DENSITY kg/m³
1	10851.3	6450	4401.3	2073			634.2	603.3	5.1	1972
2	11080.1		4630.1	2180			822.1	765.9	7.3	2032
3	11284.7		4834.7	2277			694.5	637.2	9.0	2089
4	11234.0		4784.0	2253			661.8	595.0	11.2	2026
5	11141.5		4691.5	2210			703.7	624.7	12.6	1963
6										
7										
8										

101.6mmMOLD (A) =(M) X 1.060
152.4mmMOLD (A) =(M) X 0.471

SPEEDY MOISTURE %: $(C) = \frac{(B)}{100 - (B)} \times 100$

OVEN MOISTURE %: $(C) = \frac{(a) - (b)}{(b)} \times 100$

$(D) = \frac{(A)}{(C)+100} \times 100$

AASHTO T85 SPECIFIC GRAVITY OF COARSE AGGREGATE	Oven Dry Mass (A)	SSD Mass (B)	Weight in Water (C)	Gsb (A) / [(B)-(C)]	Gsb SSD (B) / [(B)-(C)]	Gsa (A) / [(A)-(C)]	ABSORPTION [(B)-(A)]/(A)]X100

AGGREGATES: $P_f = 100$, $P_c = 5$, $k = Gsb \times 1000$ — If Material is manufactured use Average Pc from pt. 27 — MCc = ABSORPTION

AASHTO T224 COARSE PARTICLE CORRECTION

MAXIMUM COMBINED DRY DENSITY: $100 / (P_f / D_f + P_c / k) = D_d$

OPTIMUM COMBINED MOISTURE: $(MC_f \times P_f + MC_c \times P_c) / 100 = MC_T$

[X] QUALITY CONTROL [ ] VERIFICATION [ ] INDEPENDENT ASSURANCE

CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
CHARLES D. WALKER #2738	Materials Testing & Inspections	Charles D. Walker	2/20/03

Revised previous cover.

RECEIVED FEB 20 2003 OF PROJECT MANAGER ONTARIO OREGON

3468 9-02

NUCLEAR COMPACTION TEST REPORT

PROJECT NAME (SECTION): Snake River (Nyssa) Bridge Section		CONTRACT NUMBER: 12770
CONTRACTOR OR SUPPLIER: F.E. Ward	PROJECT MANAGER: Ric Young	BID ITEM NUMBER: 710
ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC): SDV	CODES FOR ROLLER TYPES: SDV-SINGLE DRUM VIBRATORY, DDV-DOUBLE DRUM VIBRATORY, SF- SHEEP FOOT, GR - GRID ROLLER	

TEST NUMBER		1*1			1*2		
DATE OF TEST		19-Feb-03			2/19/03		
TEST LOCATION (STATION)		0+521 (OR. Side)			0+514 (OR. Side)		
DISTANCE LT. OR RT. OF CENTERLINE (METERS)		6m lt			7m lt		
LIFT / DIST BELOW GRADE / LIFT THICKNESS		1	3.0m	150mm	2	2.5m	300mm
SOURCE POSITION		150mm			300mm		
		SHOT 1	SHOT 2	AVERAGE	SHOT 1	SHOT 2	AVERAGE
WET DENSITY kg/m³	1	2202	2199	2201	2042	2037	2040
MOISTURE kg/m³	2	142	154	148	123	131	127
				Corrected Dry Density			Corrected Dry Density
DRY DENSITY kg/m³ (LINE 1 avg. - LINE 2 avg.) / Corrected Dry Density	3	2053		2026	1913		1873
MOISTURE PERCENT (LINE 2avg./ LINE 3) X 100 / COMBINED MOISTURE	4	7.2%		8.6	6.6		8.9
MASS COARSE / MASS FINE / PERCENT RETAINED	4.75 Pc						
MASS COARSE / MASS FINE / PERCENT RETAINED	19 Pc						
ONE POINT VERIFICATION		DRY DENSITY		MOISTURE	DRY DENSITY		MOISTURE
ORIGINAL (NATIVE)	5a						
SECOND (added moisture)	5b						
CURVE INFORMATION		CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE MC_f	CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE MC_f
	6	3	2090	9.6	4	1888	12.8
k (Gsb x 1000) / MC_c	7						
OPTIMUM COMBINED MOISTURE (MC_T) $P_f = 1.00 - P_c$		$MC_T = (MC_f P_f + MC_c P_c) \div 100$					
		+			+		
	8						
RELATIVE MAXIMUM DRY DENSITY kg/m³ Corrected Dry Density (D_d)		$D_d = 100\ D_f\ k \div (D_f P_c + k P_f)$					
		÷			÷		
	9						
% COMPACTION FOR INDIVIDUAL TESTS (LINE 3 / LINE 9) X 100 / % REQ	10	97		95%	99%		95%
Circle appropriate based on specification.		YES NO Deflection Observed?			YES NO Deflection Observed?		
		YES NO Moisture acceptable?			YES NO Moisture acceptable?		
REPRESENTS MATERIAL/AREA INCORPORATED							
STATION / FROM OFFSET / DIST. BELOW GRAD		0+528	4m lt	3.25m	0+528	4m lt	3.0m
STATION / TO OFFSET / DIST. BELOW GRAD		0+511	8m lt	3.0m	0+511	8m lt	2.5m

REMARKS: Deflection checked with skidsteer 1*1 ~~25~~ 19mm 1*2 2.00mm

RECEIVED

X QUALITY CONTROL ☐ VERIFICATION

TYPE GAUGE-SERIAL NUMBER: TROXLER ~~3440~~ #20528

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	Materials Testing & Inspection		2-19-03

FEB 20 2003

ONTARIO, OREGON

☐ P.M. ☐ A.P.M. ☐ O.M. ☐ C.S

1793 S 9-01

NUCLEAR COMPACTION TEST REPORT

PROJECT NAME (SECTION): Snake River (Nyssa) Bridge Section		CONTRACT NUMBER: 12770
CONTRACTOR OR SUPPLIER: F.E. Ward	PROJECT MANAGER: Ric Young	BID ITEM NUMBER: 710
ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC): SDV	CODES FOR ROLLER TYPES: SDV-SINGLE DRUM VIBRATORY, DDV-DOUBLE DRUM VIBRATORY, SF- SHEEP FOOT, GR - GRID ROLLER	

TEST NUMBER		1*3					
DATE OF TEST		20-Feb-03					
TEST LOCATION (STATION)		4+90 (OR. Side)					
DISTANCE LT. OR RT. OF CENTERLINE (METERS)		6m lt					
LIFT / DIST BELOW GRADE / LIFT THICKNESS		3	3.0m	200mm			
SOURCE POSITION		200mm					
		SHOT 1	SHOT 2	AVERAGE	SHOT 1	SHOT 2	AVERAGE
WET DENSITY kg/m³	1	2000	1995	1998			
MOISTURE kg/m³	2	141	138	140			
				Corrected Dry Density			Corrected Dry Density
DRY DENSITY kg/m³ (LINE 1 avg. - LINE 2 avg.) / Corrected Dry Density	3	1858		1823			
MOISTURE PERCENT (LINE 2avg./ LINE 3) X 100 / COMBINED MOISTURE	4	7.5%		9.6			
MASS COARSE / MASS FINE / PERCENT RETAINED	4.75 Pc						
MASS COARSE / MASS FINE / PERCENT RETAINED	19 Pc						
ONE POINT VERIFICATION		DRY DENSITY		MOISTURE	DRY DENSITY		MOISTURE
ORIGINAL (NATIVE)	5a			9.6			
SECOND (added moisture)	5b						
CURVE INFORMATION		CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE MC_f	CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE MC_f
	6	4	1888	12.80%			
k (Gsb x 1000) / MC_c	7						
OPTIMUM COMBINED MOISTURE (MC_T) $P_f = 1.00 - P_c$		$MC_T = (MC_f P_f + MC_c P_c) \div 100$					
		+			+		
	8						
RELATIVE MAXIMUM DRY DENSITY kg/m³ Corrected Dry Density (D_d)		$D_d = 100\ D_f\ k \div (D_f P_c + k P_f)$					
		÷			÷		
	9						
% COMPACTION FOR INDIVIDUAL TESTS (LINE 3 / LINE 9) X 100 / % REQ	10	97%		95%			95%
Circle appropriate based on specification.		YES NO Deflection Observed?			YES NO Deflection Observed?		
		YES NO Moisture acceptable?			YES NO Moisture acceptable?		
REPRESENTS MATERIAL/AREA INCORPORATED							
FROM STATION / OFFSET / DIST. BELOW GRADE		4+70	4m lt	3.0m			
TO STATION / OFFSET / DIST. BELOW GRADE		4+128	8m lt	3.25m			

REMARKS: deflection checked with skid steer observed compaction on 28mm MSE material one foot off face with jumping jack three passes per manufacture spec

PAN = 1628.2
Pan+WET WT = 2252.1 9.6% Moisture
Pan+Dry WT = 2197.0

RECEIVED

X QUALITY CONTROL ☐ VERIFICATION

TYPE GAUGE-SERIAL NUMBER: TROXLER 3440 #20528

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
William B Russell #43106	FEB 21 2003 Materials Testing & Inspection		2-21-03

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON
P.M. A.P.M.

1793 S 9-01

NUCLEAR COMPACTION TEST REPORT

PROJECT NAME (SECTION)		CONTRACT NUMBER
Snake River (nyssa) Bridge Section		12770
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
F.E. Ward	Ric Young	720

CODES FOR ROLLER TYPES
SDV-SINGLE DRUM VIBRATORY SF- SHEEP FOOT
DDV-DOUBLE DRUM VIBRATORY GR - GRID ROLLER

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)
SDV

REPRESENTS MATERIAL / AREA INCORPORATED

From Station	0+741	Off Set	3.5m lt	Distance Below Grade	4.5m
To Station	0+760	Off Set	6.5m lt	Distance Below Grade	4.0m

Check Appropriate [ ] Material deflected under loaded equipment [X] Material did not deflect under loaded equipment

TEST NUMBER	1*4
DATE OF TEST	3/11/03
TEST LOCATION (STATION)	0+756
DISTANCE LT. OR RT. OF CENTERLINE (METERS)	5.0m lt

LIFT	1	DIST BELOW GRADE	4.0m	LIFT THICKNESS	200 mm	SOURCE DEPTH	200 mm

AASHTO T 310	Wet Density kg/m³	Moisture kg/m³	Dry Density kg/m³	Percent Moisture
Shot 1	2003	151	WD - M	(M / DD) X 100
Shot 2	2000	147		
Average	WD 2002	M 149	DD 1853	%M 8.0

AASHTO T 99					
A	4.75 Pc	COARSE	FINE	% Coarse
D	19 Pc	COARSE	FINE	% Coarse

MASS OF MOLD AND MATERIALS	MASS OF MOLD	MASS OF WET MATERIAL	WET DENSITY kg/m³ (A)	SPEEDY MOISTURE % WET (B)	SPEEDY MOISTURE % DRY (C)	AASHTO T 255 / T 265 MOISTURE % WET(a)	DRY(b)	% M (C)	DRY DENSITY kg/m³ (D)
						2114.4	2070.4	9.8	
						pan 1620.6			

101.6mmMOLD (A) =(M) X 1.060
152.4mmMOLD (A) =(M) X 0.471
(C) = In-Place (unaltered) one-point Mois.

SPEEDY MOISTURE % $(C) = \frac{(B)}{100 - (B)} \times 100$

T 255 / T 265 MOISTURE % $(C) = \frac{(a) - (b)}{(b)} \times 100$

DRY DENSITY kg/m³ $(D) = \frac{(A)}{(C)+100} \times 100$

AASHTO T 224	CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE	MCf	k (Gsb x 1000)	MCc
Pf = 100 - Pc	4	1888	12.8			

IN-PLACE COMBINED MOISTURE
Within 1 % of T 310 % Moisture?
If not Correct T 310 DD

$W = ((C)P_f + MC_cP_c) / 100$
980 + 0 /100
W= 9.80%

OPTIMUM COMBINED MOISTURE (MCT)
Based on Curve Info.

$MC_T = (MC_fP_f + MC_cP_c) / 100$
+ /100
MC_T=

CORRECTED DRY DENSITY
DD = WD / (1+(W/100))

DD		WD		1+(W/100)
1823	=	2002	/	1.098

RELATIVE MAXIMUM DRY DENSITY kg/m³
$Dd = \frac{100}{\frac{Pf}{Df} + \frac{Pc}{k}}$

Dd = 100 / ___ + ___

PERCENT COMPACTION
Original or Corrected (DD / Dd) x 100

Percent Required	95	PERCENT OBTAINED	97

Check appropriate based on spec. [X] Moisture is within specification [ ] Moisture is not within specification

REMARKS

RECEIVED
MAR 26 2003
Materials Testing & Inspection

[X] QUALITY CONTROL [ ] VERIFICATION

TYPE GAUGE-SERIAL NUMBER: troxler 3430 #26144

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Randy G. Crum #43262	Materials Testing & Inspection	Randy	3/11/03

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON
P.M. A.P.N

NUCLEAR COMPACTION TEST REPORT

PROJECT NAME (SECTION)		CONTRACT NUMBER
Snake River (nyssa) Bridge Section		12770
CONTRACTOR OR SUPPLIER	PROJECT MANAGER	BID ITEM NUMBER
F.E. Ward	Ric Young	720

CODES FOR ROLLER TYPES
SDV-SINGLE DRUM VIBRATORY SF- SHEEP FOOT
DDV-DOUBLE DRUM VIBRATORY GR - GRID ROLLER

ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)
SDV

REPRESENTS MATERIAL / AREA INCORPORATED

From Station	0+760	Off Set	3.5m lt	Distance Below Grade	4.5m
To Station	0+865	Off Set	6.5m lt	Distance Below Grade	4.0m

Check Appropriate [ ] Material deflected under loaded equipment [X] Material did not deflect under loaded equipment

TEST NUMBER	1*5
DATE OF TEST	3/25/2003 (ID side)
TEST LOCATION (STATION)	0+795
DISTANCE LT. OR RT. OF CENTERLINE (METERS)	5.5m lt

LIFT	2	DIST BELOW GRADE	4.0m	LIFT THICKNESS	200 mm	SOURCE DEPTH	200 mm

AASHTO T 310	Wet Density kg/m³	Moisture kg/m³	Dry Density kg/m³	Percent Moisture
Shot 1	1934	132	WD - M	(M / DD) X 100
Shot 2	1937	126		
Average	WD 1936	M 129	DD 1807	%M 7.1

AASHTO T 99					
A	4.75 Pc	COARSE	FINE	% Coarse
D	19 Pc	COARSE	FINE	% Coarse

MASS OF MOLD AND MATERIALS	MASS OF MOLD	MASS OF WET MATERIAL	WET DENSITY kg/m³ (A)	SPEEDY MOISTURE % WET (B)	SPEEDY MOISTURE % DRY (C)	AASHTO T 255 / T 265 MOISTURE % WET(a)	AASHTO T 255 / T 265 MOISTURE % DRY(b)	AASHTO T 255 / T 265 MOISTURE % % M (C)	DRY DENSITY kg/m³ (D)

101.6mmMOLD (A) =(M) X 1.060
152.4mmMOLD (A) =(M) X 0.471
(C) = In-Place (unaltered) one-point Mois.

SPEEDY MOISTURE % $(C) = \frac{(B)}{100 - (B)} \times 100$

T 255 / T 265 MOISTURE % $(C) = \frac{(a) - (b)}{(b)} \times 100$

DRY DENSITY kg/m³ $(D) = \frac{(A)}{(C)+100} \times 100$

AASHTO T 224	CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE	MCf	k (Gsb x 1000)	MCc
Pf = 100 - Pc	4	1888	12.8			

IN-PLACE COMBINED MOISTURE
Within 1 % of T 310 % Moisture?
If not Correct T 310 DD

$W = ((C)P_f + MC_cP_c) / 100$
+ /100
W=

OPTIMUM COMBINED MOISTURE (MCT)
Based on Curve Info.

$MC_T = (MC_fP_f + MC_cP_c) / 100$
+ /100
MC_T=

CORRECTED DRY DENSITY
DD = WD / (1+(W/100))
DD = WD / 1+(W/100)

RELATIVE MAXIMUM DRY DENSITY kg/m³
$Dd = \frac{100}{\frac{Pf}{Df} + \frac{Pc}{k}}$
Dd = 100 / ____ + ____

PERCENT COMPACTION
Original or Corrected (DD / Dd) x 100

Percent Required	95	PERCENT OBTAINED	96

Check appropriate based on spec. [ ] Moisture is within specification [X] Moisture is not within specification

REMARKS moisture is out of spec. +2, -4. Informed contractor and ODOT onsite inspector.

[X] QUALITY CONTROL [ ] VERIFICATION

RECEIVED

TYPE GAUGE SERIAL NUMBER: troxler 3440 #20528

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
Randy G. Crum #43262	Materials Testing & Inspection	Randy	3/25/03

MAR 26 2003

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON

[ ] P.M. [ ] A.P.M.

NUCLEAR COMPACTION TEST REPORT

PROJECT NAME (SECTION)	Snake River (nyssa) Bridge Section
CONTRACT NUMBER	12770
CONTRACTOR OR SUPPLIER	F.E. Ward
PROJECT MANAGER	Ric Young
BID ITEM NUMBER	720
CODES FOR ROLLER TYPES	SDV-SINGLE DRUM VIBRATORY; SF- SHEEP FOOT; DDV-DOUBLE DRUM VIBRATORY; GR - GRID ROLLER
ROLLER TYPE AND DESCRIPTION (MANUFACTURE, WEIGHT, ETC)	SDV

REPRESENTS MATERIAL / AREA INCORPORATED

From Station	0+760	Off Set	3.5m lt	Distance Below Grade	4.5m
To Station	0+865	Off Set	6.5m lt	Distance Below Grade	4.0m

Check Appropriate [ ] Material deflected under loaded equipment [X] Material did not deflect under loaded equipment

TEST NUMBER	1*5 RETEST
DATE OF TEST	5/9/03 (ID side)
TEST LOCATION (STATION)	0+795
DISTANCE LT. OR RT. OF CENTERLINE (METERS)	5.5m lt

LIFT 2	DIST BELOW GRADE	4.0m	LIFT THICKNESS	200 mm	SOURCE DEPTH	200 mm

AASHTO T 310	Wet Density kg/m³	Moisture kg/m³	Dry Density kg/m³	Percent Moisture
Shot 1	2005	166	WD - M	(M / DD) X 100
Shot 2	2012	174		
Average	WD 2009	M 170	DD 1839	%M 9.2

AASHTO T 99					
A	4.75 Pc	COARSE	FINE	% Coarse
D	19 Pc	COARSE	FINE	% Coarse

MASS OF MOLD AND MATERIALS	MASS OF MOLD	MASS OF WET MATERIAL	WET DENSITY kg/m³ (A)	SPEEDY MOISTURE % WET (B)	SPEEDY MOISTURE % DRY (C)	AASHTO T 255 / T 265 MOISTURE % WET(a)	AASHTO T 255 / T 265 MOISTURE % DRY(b)	AASHTO T 255 / T 265 MOISTURE % % M (C)	DRY DENSITY kg/m³ (D)
				9.1	10				

101.6mmMOLD (A) =(M) X 1.060
152.4mmMOLD (A) =(M) X 0.471
(C) = In-Place (unaltered) one-point Mois.

SPEEDY MOISTURE % (C)= (B) / (100 - (B)) X100

T 255 / T 265 MOISTURE % (C)= (a) - (b) / (b) X100

DRY DENSITY kg/m³ (D)= (A) / ((C)+100) X100

AASHTO T 224	CURVE NO.	DRY DENSITY D_f	OPTIMUM MOISTURE	MCf	k (Gsb x 1000)	MCc
Pf = 100 - Pc	4	1888	12.8			

IN-PLACE COMBINED MOISTURE
Within 1 % of T 310 % Moisture?
If not Correct T 310 DD

$W = ((C)P_f + MC_cP_c) / 100$
+ /100
W=

CORRECTED DRY DENSITY
DD = WD / (1+(W/100))
DD = WD / 1+(W/100)

OPTIMUM COMBINED MOISTURE (MCT)
Based on Curve Info.

$MC_T = (MC_fP_f + MC_cP_c) / 100$
+ /100
MC_T=

RELATIVE MAXIMUM DRY DENSITY kg/m³

$Dd = \frac{100}{\frac{Pf}{Df} + \frac{Pc}{k}}$

Dd = 100 / (+)

PERCENT COMPACTION
Original or Corrected (DD / Dd) x 100

Percent Required	95	PERCENT OBTAINED	97

Check appropriate based on spec. [X] Moisture is within specification [ ] Moisture is not within specification

REMARKS Speedy Moisture Reading 9.1%. 9.1/(100 - 9.1) = 10.0%

RECEIVED

[X] QUALITY CONTROL [ ] VERIFICATION TYPE GAUGE-SERIAL NUMBER: Troxler 3440 #20528

CERTIFIED TECHNICIAN (PLEASE PRINT) AND CARD NUMBER	COMPANY NAME	SIGNATURE	DATE
CHARLES D WALKER # 2738	MAY 12 2003 Materials Testing & Inspection	Charles D. Walker	5/9/03

OFFICE OF PROJECT MANAGER
ONTARIO, OREGON
[ ] P.M. [ ] A.P.M. [ ] O.M. [ ] C.S

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