

**WASHINGTON CLOSURE HANFORD**

**Job No. 14655**

**SUPPLIER/SUBCONTRACTOR DOCUMENT STATUS STAMP**

- 1. Work may proceed
- 2. Revise and resubmit. Work may proceed prior to resubmission.
- 3. Revise and resubmit. Work may proceed prior to resubmission subject to resolution of indicated comments.
- 4. Revise and resubmit. Work may not proceed.
- 5. Permission to proceed not required.

Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods, or materials developed or selected by the supplier/subcontractor and does not relieve supplier/subcontractor from full compliance with contractual obligations or release any "holds" placed on the contract.

	CIVIL/STRUCTURAL/ ARCHITECTURAL/ GEOTECHNICAL	ELECTRICAL	MECHANICAL	PROCESS/NUCLEAR	CADD	PROJECT REP.	ENVIRONMENTAL	WASTE MANAGEMENT	SAFETY	INDUSTRIAL HYGIENE	FIRE PROTECTION	QA	RADCON	FIELD ENGINEER	OTHER
CHECK REVIEW REQUIREMENT	✓ 1/5/10													✓	
REVIEWED BY														PK	

*Jeffrey S. P...*  
Project Engineer/STR

*4/5/10*  
Date

**DOCUMENT ID NUMBER**

S005691A00

05-01Q

003

SC/P.O. No.

SSRS ITEM

SUBMITTAL

WCH-DE-032 (01/15/2007)



**CONCRETE MIX DESIGN CERTIFICATE**

11919 Harris Rd. - Pasco, Wa. 99301 (509) 545-8510

Project: Hanford D-4 Project Date: April 1, 2010  
 Contractor: George Grant Design Efflux: < 20 Seconds  
 Project Location: Hanford, WA Air Content: 1.0%  
 Mix / Description: 354258 Internal Shielding IM Water/Cement Ratio: 525 / 800 = 0.66  
 Strength Required: 2500 PSI @ 28 DAYS Cement / Type: ASTM C-150 Type I - II

	Aggregates	Bulk Specific Gravity
Gravel	1-1/2" TO 3/4"	2.70
	3/4" TO #4	2.70
	3/8" TO #8	2.74
Sand	ASTM Concrete Sand	2.69
	ASTM Mortar Sand	2.67

Source of Aggregates: Central Pre-Mix Concrete Co. Pasco Pit #FN-50 / Richland Pit #R-101

Material	Description	Absolute Volume	Saturated Surface Dry Weights
Fly Ash Type "F"	3.2 SACK	2.35	300
Cement	5.3 SACK	2.55	500
Water	63.0 GALLONS	8.42	525
Gravel	1-1/2" TO 3/4"	0.00	0
	3/4" TO #4	0.00	0
	3/8" TO #8	0.00	0
Sand	Concrete Sand	13.42	2250
	Mortar Sand	0.00	0
Air Content Retarder	1.00%	0.27	15 oz/yd
TOTAL:		27.00	3575

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Admixtures: All admixtures to be used according to manufacturers specifications.  
Use WR GRACE RECOVER at 15 ounces per yard for retardation.

Remarks: Efflux time measured per ASTM C939.

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WCH DOCUMENT CONTROL  
04/05/2010

Signed:   
Michael Liniger

Title: South Region Lead Quality Control Technician