



GILBERTSON
ASSOCIATES
inc.

August 8, 2007

Eric Vermeeren, AWP 623.3
FEDERAL AVIATION ADMINISTRATION
Western-Pacific Region
P.O. Box 92007
Los Angeles, CA 90009-2007

Re: Yuma International Airport
40th Street Air Cargo Apron
AIP 3-04-053-26
GA Job No. 30225.00012

AUG - 8 2007

Dear Mr. Vermeeren:

We are forwarding a plant mix bituminous pavement (ItemP-401), mix design prepared by Geotechnical Testing Services for the above referenced project for your records. This mix design has been reviewed and in our opinion meets project specifications (see attached letter dated August 7, 2007 from Wilcox Professional Services LLC).

Due to the proposed schedule of construction of a test strip on August 14, 2007, we intend to proceed with the construction of this test strip utilizing this mix design unless directed otherwise.

If you have any questions or need additional information you may contact myself or David Gilbertson @ 480.607.2244.

Respectfully,

David Simpson,
Project Coordinator
GILBERTSON ASSOCIATES

Attachment(s)

Cc: Craig Williams - Yuma County Airport Authority
Michael Klein - ADOT Aeronautics Division
Jordan Hamula - DBA Construction, Inc.
Antonio Alvarez - NEI Geotechnical
Mike Kelly - Gilbertson Associates

consulting civil engineers & land surveyors

8502 East Princess Drive, Suite 100 . Scottsdale, Arizona 85255-5465 Tel:\480\607\2244 Fax:\480\607\2299



An ISO 9001
Certified Company

3130 N. 35th Ave
Phoenix, AZ 85017
602-442-0667
Fax: 602-442-0669

1-800-542-2756
wilcoxassociates.com

August 7, 2007

Dave Simpson
Gilbertson And Associates
8502 E. Princess Dr., Suite #100
Scottsdale, Arizona 85255-5465

RE: P-401 Mix Design Review

Project: 40th Street Air Cargo Apron
Yuma, Arizona
Project: FAA AIP 3-04-0053-26

Attention: Dave Simpson

In accordance with your request, the P-401 mix design Lab No. 07-001 from plant #1397 submitted by Geotechnical Testing Services August 3, 2007 was reviewed and found to be in general compliance with the above mentioned project specifications. A few minor errors were noted in specification requirements, however the errors do not affect the mix design compliance.

Respectfully Submitted,
WILCOX PROFESSIONAL SERVICES, LLC

Office Locations

Michigan

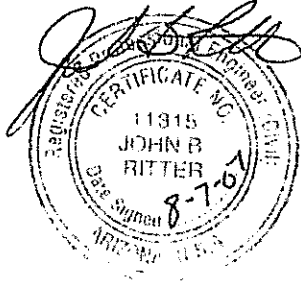
Alpena
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Cadillac
Caledonia
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Farmington Hills
Flint
Lansing
Saginaw

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Indianapolis

Arizona

Phoenix



John Ritter P.E.
Vice President, Material Testing

Built on Quality
continuously improving our
quality of service to meet
and exceed our
clients' expectations.

ENR

"Top Design Firm"
Ranked #288

CE NEWS

"Best Firm To Work For"
Ranked #34

Zweig|Letter

"Hot Firm"
Ranked #85

Geotechnical Testing Services, Inc.
Materials Testing Laboratory

1044 East 21st Street Yuma, Az. 85365
Phone (928) 329-4695 Fax (928) 329-4782

August 3, 2007

DBA
P.O. Box 63035
Phoenix, Arizona 85082-3035

RE: 40th Street Air Cargo

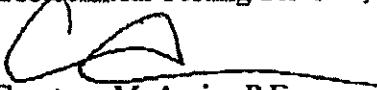
ATTN: Jordan Hamula

Dear Mr. Hamula:

The 401 asphalt mix design that our office provided used PG 76-16 oil from Paramount Oil. The recap sheet of the mix design indicated PG 70-10, which is a typo. I have also included a letter from Paramount Oil stating that PG 76-16 exceeds all of the requirements of PG 76-10 which is the specified oil to be used.

Should you have any questions or need additional information please contact my office.

Best Regards,
Geotechnical Testing Services, Inc.


Courtney M. Arviso P.E.
President





A wholly owned subsidiary of ALON USA

August 2 2007

Re: Yuma City Airport, Substituting 76-16 for 76-10

Gentlemen:

This is to confirm our PG 76-16 will meet or exceed all the requirements of a PG 76-10. The -16 requirements are more restrictive than a -10. The aged and cold temperature test requirements of a 76-10 are warmer than those of a 76-16. The rheological properties of our 76-16 will be more compliant when tested as a 76-10.

Sincerely Yours

Stephen Dempsey
 Stephen Dempsey
 Manager Asphalt QA/QC

GEOTECHNICAL TESTING SERVICES

1044 E. 21ST STREET - YUMA, AZ. 85365

Phone (928) 329-4695 Fax (928) 329-4782

A Division of Arvis Engineering, Inc.

CLIENT: DBA
 PROJECT: 40th Street Air Cargo
 MIX DESIGNATION: 401
 SAMPLE SOURCE: Hot Plant - Stockpile samples
 LAB NO: 07-001

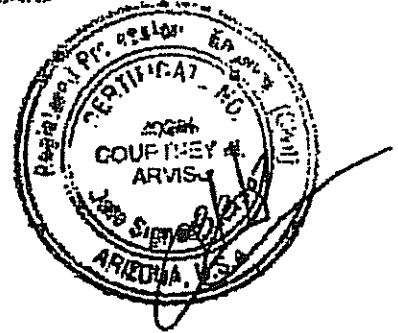
DATE: 7/12/07

MIX CODE:

SOURCE OF MAT'L: Rinker Mat'l.
 Plant #1397

SAMPLED BY: GTS

% MINERAL ADMIX: 2.0



COMPOSITE GRADATION

MATERIAL I.D.		% USED WITHOUT ADMIX	% USED WITH ADMIX	
Washed	Crusher Fines	26	25.5	
Comp.	Sand	29	28.4	
Rock	3/8"	27	26.5	
Rock	3/4"	18	17.6	
ADMIX		2.0	2.0	

SIEVE	40th Street Air Cargo		401-DESIGN LIMITS
	W/O ADMIX % PASSING	W/ADMIX % PASSING	
1-1/4"	100	100	
1"	100	100	
3/4"	99	99	100
1/2"	89	89	79-99
3/8"	85	85	68-88
1/4"	76	76	
#4	63	63	48-68
#8	44	45	33-53
#10	40	41	
#16	30	31	20-40
#30	19	21	14-30
#40	15	16	13-19
#50	11	13	9-21
#100	6	7	6-16
#200	2.8	4.7	3-6

DESIGN DATA

SPECIMEN ID	1	2	3	5	Project Specification
BITUMEN GRADE/SP GR	PG 76-16	1.0230		OPT	
% OF BITUMEN	5.0	5.5	6.0	5.5	
MARSHALL BULK DENSITY (lb/ft ³)	146.6	147.1	148.1	147.1	2150 min.
MARSHALL STABILITY (lb)	3350	3700	3728	3700	10-14
MARSHALL FLOW (.01 in.)	11	12	13	12	2.8-4.2
% AIR VOIDS	4.9	3.8	2.6	3.8	15 min.
% VMA	18.0	18.1	18.0	16.1	
% AIR VOIDS FILLED	88.2	78.5	84.6	76.5	
% EFF ASP TOTAL MIX	4.81	5.32	5.82	5.32	
BITUMEN/DUST RATIO	1.03	1.14	1.25	1.14	

TENSILE STRENGTH RATIO

DRY (psi)	WET (psi)	% RETAINED	PERCENT ASPHALT	PERCENT ADMIX
659.3	530.1	80.4%	5.5	2.0

RECOMMENDED BITUMEN CONTENT (%) = 5.5

AGGREGATE PROPERTIES

MATERIAL	COARSE	FINE	COMBINED	SPEC.
BULK OD SP GR	2.662	2.644	2.651	
SSD SP GR	2.680	2.677	2.678	
APPARENT SP GR	2.710	2.733	2.724	
ABSORPTION	0.664	1.235	0.975	
SAND EQUIVALENT		70		45 min.
PLASTICITY INDEX		NP		6
Flat & Elongated	1.80%			9 max.
FRACTURED FACES				
2 or more, %	89			85% min.
1 or more, %	97			70% min.
L.A. ABRASION - "B"				
100 Revolutions, % Loss			6	10 max.
500 Revolutions, % Loss			32	40 max.
Magnesium Sulfate Sound	5.70%			13 max.

ADDITIONAL DATA

MAXIMUM THEORETICAL DENSITY (pcf) =	152.9	lb/ft ³ @	5.5	%
ASPHALT ABSORPTION ON DRY AGG (%) =	0.20			
BINDER TYPE	PG 76-16			
BINDER SOURCE	Paramount Petroleum			
ADMIX TYPE	Cement			
ADMIX SOURCE	Cemex			
MIXING TEMPERATURE - 295 - 310 DEGREES (F)				
COMPACTING TEMPERATURE - 290 - 295 DEGREES (F)				

GEOTECHNICAL TESTING SERVICES

A Material Testing Division of Arviso Engineering, Inc.

1044 E. 21st Street - Yuma, Az.

Phone (928) 329-4695 Fax (928) 329-4782

CLIENT: DBA

DATE: 7/12/2007

PROJECT 40th Street Air Cargo

MIX DESIGNATION: 401

SOURCE OF MAT'L Rinker Mat'ls.

Plant #1397

SAMPLE SOURCE: Hot Plant - Stockpile samples

SAMPLED BY: GTS

LAB NO: 07-001

% MINERAL ADMIX: 2.0

AGGREGATE SPECIFIC GRAVITIES

ASTM C-127 & C-128

MAT'L	COARSE AGGREGATE	FINE AGGREGATE
S.S.D. WT.	3017.4	500.0
O.D. WT.	2997.5	493.9
IMMERSED WT. FLASK & H ₂ O	1891.3	982.5
	-	669.3
BULK O.D. SP. GR.	2.662	2.644
S.S.D. SP. GR.	2.680	2.677
APPARENT SP. GR.	2.710	2.733
% ABSORPTION	0.664	1.235

RICE TEST

ASTM D-2041

SAMPLE I.D.	SAMPLE WT. (DRY)	FLASK + H ₂ O	SAMPLE + FLASK + H ₂ O	SAMPLE WT. (S.S.D.)	SAMPLE VOLUME	MAXIMUM SP. GR.	MAXIMUM DENSITY
1	1052.6	3182.8	3803.1	1053.6	433.3	2.429	151.3
2	1051.7	3164.8	3787.8	1052.8	429.8	2.447	152.4
3	1050.7	3300.2	3919.7	1051.6	432.1	2.432	151.5
AVERAGE						2.430	151.4

SAND EQUIVALENT

ASTM D-2419

READING	SAMPLE # 1	SAMPLE # 2	SAMPLE # 3	AVERAGE	SPEC
SAND	3.3	3.4	3.7		
CLAY	4.8	4.9	5.4		
S.E.	69	70	69	70	50 MIN.

FRACTURED FACES

ASTM D-5821

	TOTAL SAMPLE WT.	WT. CRUSHED	% CRUSHED FACES	SPEC
1 or more	2150.5	2088.5	97.1	85
2 or more	2245.6	1993.2	88.8	70

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CLIENT: DBA

DATE: 7/12/2007

PROJECT 40th Street Air Cargo

MIX DESIGNATION: 401

SOURCE OF MAT'L: Rinker Mat'ls.
Plant #1397

SAMPLE SOURCE: Hot Plant - Stockpile samples

SAMPLED BY: GTS

LAB NO: 07-001

% MINERAL ADMIX: 2.0

MIX DESIGN VOID CALCULATIONS

SPECIFIC GRAVITY DATA

ASTM C-127 & C-128

	COARSE AGG	FINE AGG	COMBINED AGG
BULK OD	2.662	2.644	2.651
SSD	2.680	2.677	2.678
APPARENT	2.710	2.733	2.724
ABSORPTION	0.664	1.235	0.935

RICE TEST DATA

ASTM D-2041

MAX SP GR	MAX DENSITY	ASPHALT %AC	ASPHALT SP GR	EFFECTIVE SP GR	ASPHALT ABSORPTION	ADMIX SP GR
2.430	151.4	6.0	1.023	2.664	0.200	3.14

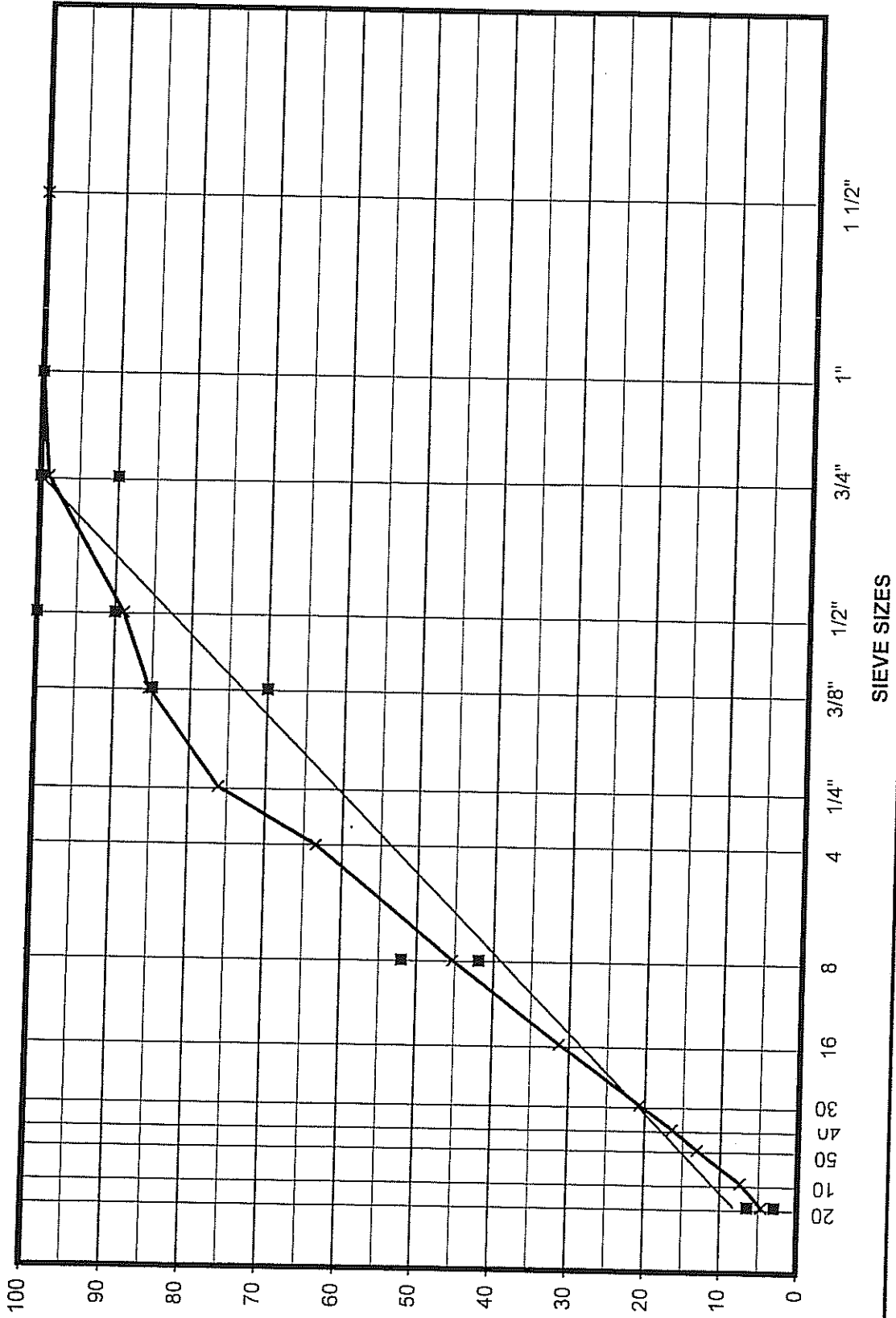
VOID CALCULATIONS

PERCENT ASPHALT	SPECIFIC GRAVITY	BULK DENSITY	PERCENT AGG	PERCENT ADMIX	TOTAL % ADMIX	AGG VOLUME	ADMIX VOLUME	EFFECTIVE ASPHALT	ASPHALT VOLUME	VMA	EFFECTIVE VOIDS	VOIDS FILLED
5.0	2.351	146.5	93.137	2.0	1.863	82.617	1.395	4.814	11.065	15.988	4.924	69.203
5.5	2.362	147.1	92.647	2.0	1.853	82.555	1.394	5.315	12.271	16.051	3.779	76.454
6.0	2.377	148.1	92.157	2.0	1.843	82.631	1.395	5.816	13.512	15.974	2.462	84.589
5.5	2.362	147.1	92.647	2.0	1.853	82.555	1.394	5.315	12.271	16.051	3.779	76.454

45 Power Chart

COMPOSITE

401



GEOTECHNICAL TESTING SERVICES

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CLIENT: DBA

DATE: 7/12/2007

PROJECT: 40th Street Air Cargo

SOURCE OF MAT'L: Rinker Mat'ls.

MIX DESIGNATION: 401

Plant #1397

SAMPLE SOURCE: Hot Plant - Stockpile samples

SAMPLED BY:

GTS

LAB NO: 07-001

% MINERAL ADMIX: 2.0

TYPE: Cement

COMPOSITE GRADATION - ASTM C-136 & C-117

SOURCE: Cemex

MATL NAME % USED	ORIGINAL GRADATION - % PASSING					COMPOSITE % PASS (w/o ADMIX)	COMPOSITE % PASS (w/ADMIX)	GRADATION DESIGN LIMITS	
	MAT'L 1	MAT'L 2	MAT'L 3	MAT'L 4	MAT'L 5			JOB SPEC. 401	
	Washed Crusher Fines	Conc. Sand	Rock 3/8"	Rock 3/4"					
	26	29	27	18	0				
SIEVE									
1-1/4"	100.0	100.0	100.0	100.0	0.0	100	100		
1"	100.0	100.0	100.0	100.0	0.0	100	100		
3/4"	100.0	100.0	100.0	94.0	0.0	99	99	100	
1/2"	100.0	100.0	100.0	37.0	0.0	89	89	79-99	
3/8"	100.0	100.0	100.0	17.0	0.0	85	85	68-88	
1/4"	100.0	100.0	75.0	2.0	0.0	76	76		
#4	100.0	100.0	27.0	2.0	0.0	63	63	48-68	
#8	79.0	80.0	1.0	1.3	0.0	44	45	33-53	
#10	71.0	73.0	0.9	1.2	0.0	40	41		
#16	52.0	55.0	0.9	1.2	0.0	30	31	20-40	
#30	33.0	35.0	0.9	1.0	0.0	19	21	14-30	
#40	26.0	26.0	0.9	1.0	0.0	15	16	13-19	
#50	21.0	19.0	0.9	1.0	0.0	11	13	9-21	
#100	10.0	9.0	0.9	0.9	1.0	6	7	6-16	
#200	5.6	3.5	0.5	0.8	0.0	2.8	4.7	3-6	

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DATE: 7/12/2007

PROJECT 40th Street Air Cargo

MIX DESIGNATION 401

SOURCE OF MAT'L:

Rinker Mat'ls.
Plant #1397

SAMPLE SOURCE: Hot Plant - Stockpile samples

SAMPLED BY: GTS

LAB NO: 07-001

% MINERAL ADMIX:

2.0

MARSHALL MIX DESIGN DATA - ASTM D1559, 75 BLOWS PER FACE

PERCENT ASPHALT	PERCENT ADMIX	SPECIMEN NUMBER	SSD WEIGHT	H ₂ O WEIGHT	AIR WEIGHT	SPECIFIC GRAVITY	BULK DENSITY	HEIGHT (inches)	STABILITY (pounds)	CORRECTION FACTOR	CORRECTED STABILITY	FLOW (0.01 in)
5.0	2.00	1	1197.1	689.2	1195.5	2.354	146.6	2.495	3540	1.00	3290	11
		2	1198.5	689.1	1197.7	2.351	146.5	2.459	3475	1.03	3340	12
		3	1195.3	687.1	1193.6	2.349	146.3	2.500	3420	1.00	3420	10
		AVG				2.351	146.5					3350
5.5	2.00	1	1188.0	685.7	1187.6	2.364	147.3	2.500	3655	1.00	3625	13
		2	1190.8	686.9	1190.3	2.362	147.2	2.489	3890	1.01	3850	11
		3	1193.3	687.8	1192.6	2.359	147.0	2.478	3620	1.01	3625	12
		AVG				2.362	147.1					3700
6.0	2.00	1	1191.4	689.9	1190.9	2.375	147.9	2.493	3300	1.00	3565	13
		2	1192.1	690.6	1191.2	2.375	148.0	2.488	3150	1.01	3835	14
		3	1195.5	693.7	1194.3	2.380	148.3	2.491	3205	1.01	3785	13
		AVG				2.377	148.1					3728



transmittal

to: Yuma County Airport Authority
 2191 E. 32nd St Suite 218
 Yuma, AZ 85365

date: August 8, 2007
job #: 30225.00012
attn: Craig Williams

re: 40TH STREET AIR CARGO APRON

ENCLOSED UNDER SEPARATE COVER, THE FOLLOWING ITEMS WILL BE SENT VIA MAIL

- SHOP DRAWINGS PRINTS PLANS SAMPLES
 SPECIFICATIONS COPY OF LETTER CHANGE ORDER _____

copies	date	no.	description
1			Plan mix bituminous pavemen, mix design prepared by Geotechnical Testing Services.

AUG - 9 2007

items are transmitted:

- FOR APPROVAL APPROVED AS SUBMITTED RESUBMIT ___ COPIES FOR APPROVAL
 FOR YOUR USE APPROVED AS NOTED SUBMIT ___ COPIES FOR DISTRIBUTION
 AS REQUESTED RETURNED FOR CORRECTIONS RETURN ___ CORRECTED PRINTS
 FOR REVIEW & COMMENT _____
 FOR BIDS DUE: _____

remarks:

Please see enclosed for your use and information, if you have any questions please feel free to contact me.
 Thank-You

copy to: file **signed:** Dave Simpson

If enclosures are not as noted, please notify us immediately. Thank you.

