PRECAST / READY-MIX CONCRETE

J. P. CARRARA & SONS, INC

CONCRETE CONTRACTORS

ARCHITECTURAL / STRUCTURAL PRECAST CONTRACTORS

2464 Case Street
MIDDLEBURY, VT 05753
TEL (802) 388-6363
FAX (802) 388-9010

CROWN POINT, NY 12928
TEL (518) 597-3680

RT 7 SO.
NO. CLARENDON, VT 05701
TEL (802) 775-2301
FAX (802) 775-1048

CONCRETE MIX DESIGN

DATE :	February 23, 2016					
PROJECT :	VAOT Annual Mix Qualification				VT	
ENGINEER :						
CONTRACTOR :						
CONCRETE SUPPLIER :	J.P. Carrara & Sons, Inc., Middlebury, VT					$G_{s,\ SSD}$
CEMENT SOURCE & TYPE :	Lafarge Type III					3.103
FLY ASH SOURCE & CLASS:	Headwaters Resources - Class F - Brayton Point					2.36
COARSE AGGREGATE(1):	J.P. Carrara & Sons, Inc., Middlebury, VT	P-stone (3/4")		ABS =	1.22%	2.586
FINE AGGREGATE :	J.P. Carrara & Sons, Inc., Middlebury, VT	JPC sand		ABS =	1.03%	2.607
AIR ENTRAINING AGENT :	Sika AEA-14					
RETARDING AGENT :	Sika Plastiment					
SELF-CONSOLIDATING ADMIX:	Sika Viscocrete 6100		HRWR + Superplasticizer			
VISCOSITY MODIFIER:	Sika Stabilizer 4R		Not Required; Dosed as needed			

QUANTITIES PER CUBIC YARD

Identification # : 425M-NoDCI

Mix Description : SCC Bridge - 4,000psi Release

								Yield
SPECIFICATIONS REQUIREMENT,	28	Day Strength (psi)	5,000	800 # Total Cementious (CM)				
Lafarge Type III		(lbs)	600					3.10
Fly Ash, Class F		(lbs)	200	25% by weight of CM				1.36
P-stone (3/4")		(lbs)(SSD)	1400	51% by weight of total agg.				8.68
JPC sand		(lbs)(SSD)	1320	49% by weight of total agg.				8.11
WATER (gallons) : (Maximum Water =	32.6	gal.+ CI)	31.0					4.14
W/C RATIO (lbs/lb) : (Max W/C =	0.34	)	0.32					
Sika AEA-14	(2-20 range)	(oz/yd^3)	5.5	7.0%	+ / --	2.0%		1.89
Sika Plastiment	(0-6 range)	(oz/cwt)	3.0					
Sika Viscocrete 6100	(7-11 range)	(oz/cwt)	7.6	24"	spread	+ / --	4"	
Sika Stabilizer 4R	(0-7 range)	(oz/cwt)	0.0	Not Required; Dosed as needed				
								27.3

Mix Properties: Unit Wt. (#/ft^3) 138.5

Prepared By:

Benjamin L. Cota, Precast Production Engineer

Pours

Pour Info							Release Breaks			28-Day Breaks
Pour Date	Bed	Mix	Concrete	Concrete Temp	Unit Wgt	Slump/Spread	VSI	Air	Avg	Avg
6/30/2015	Curtain Wall	425M-noDCI	1.8	79 ° F	144.22 lbs	13"	0.0	5.4 %	5,611	9,636
6/30/2015	FLOATING FORM	425M-noDCI	2.4	79 ° F	144.22 lbs	13"	0.0	5.4 %	5,611	9,636
7/1/2015	Curtain Wall	425M-noDCI	2	75 ° F	137.35 lbs	20"	0.0	8.9 %	3,982	8,026
7/1/2015	FLOATING FORM	425M-noDCI	2.25	75 ° F	137.35 lbs	20"	0.0	8.9 %	3,882	8,026
7/2/2015	189' BRIDGE	425M-noDCI	30.3	76 ° F	138.10 lbs	17"	0.0	8.5 %	7,291	9,001
7/2/2015	FLOATING FORM	425M-noDCI	2.25	74 ° F	142.20 lbs	23"	0.0	6.2 %	7,273	9,848
7/2/2015	Curtain Wall	425M-noDCI	2.1	74 ° F	142.20 lbs	23"	0.0	6.2 %	7,273	9,848
7/2/2015	VERTICAL ABUTMEN	425M-noDCI	24.7	71 ° F	137.70 lbs	25"	0.5	8.1 %	6,261	8,378
7/2/2015	250' Next Beam	425M-noDCI	74.4	75 ° F	142.60 lbs	22 1/2"	0.0	6.4 %	7,568	9,462
7/6/2015	FLOATING FORM	425M-noDCI	2	78 ° F	140.58 lbs	24"	0.0	6.6 %	5,265	9,140
7/6/2015	Curtain Wall	425M-noDCI	1.9	78 ° F	140.58 lbs	24"	0.0	6.6 %	5,265	9,140
7/6/2015	EAST WING WOOD (	425M-noDCI	4.33	78 ° F	140.58 lbs	24"	0.0	6.6 %	5,265	9,140
7/7/2015	Curtain Wall	425M-noDCI	1.9	82 ° F	142.40 lbs	21"	0.0	6.0 %	5,501	9,510
7/9/2015	Curtain Wall	425M-noDCI	2.1	75 ° F	137.70 lbs	25"	0.5	6.0 %	5,129	9,866
7/9/2015	Curb Form	425M-noDCI	4.5	75 ° F	137.70 lbs	25"	0.5	6.0 %	5,129	9,866
7/13/2015	Curb Form	425M-noDCI	4.5	78 ° F	142.60 lbs	22 1/2"	0.0	5.8 %	5,322	9,057
7/15/2015	EAST WING WOOD (	425M-noDCI	4.5	75 ° F	138.90 lbs	24"	0.0	7.9 %	5,271	8,781
7/15/2015	Curtain Wall	425M-noDCI	2.1	75 ° F	138.90 lbs	24"	0.0	7.9 %	5,271	8,781
8/5/2015	189' BRIDGE	425M-noDCI	25	78 ° F	143.01 lbs	24"	0.0	5.8 %	5,144	8,880
8/7/2015	34DT 6' STEM	425M-noDCI	40.08	72 ° F	140.79 lbs	23"	0.0	7.6 %	5,947	8,013
8/7/2015	189' BRIDGE	425M-noDCI	18.9	77 ° F	138.36 lbs	25 1/2"	0.5	7.9 %	6,488	8,532
8/13/2015	34DT 6' STEM	425M-noDCI	40.08	75 ° F	141.50 lbs	24"	0.0	6.0 %	5,464	9,163
8/18/2015	34DT 6' STEM	425M-noDCI	37.48	78 ° F	140.79 lbs	25"	0.5	6.8 %	5,727	8,589
8/20/2015	189' BRIDGE	425M-noDCI	29.1	79 ° F	139.37 lbs	25"	0.0	7.3 %	5,493	8,679
8/21/2015	34DT 6' STEM	425M-noDCI	37.24	78 ° F	141.59 lbs	23 1/2"	0.0	7.0 %	6,489	8,836
8/28/2015	189' BRIDGE	425M-noDCI	129.1	78 ° F	142.60 lbs	25"	0.5	6.5 %	6,034	9,041
12/23/2015	189' BRIDGE	425M-noDCI	28.8	68 ° F	141.19 lbs	27"	0.0	6.0 %	5,375	8,206
12/30/2015	189' BRIDGE	425M-noDCI	28.8	59 ° F	140.18 lbs	28"	1.0	6.9 %	6,051	7,560
28			585		AVG=140.55 lbs	AVG=22.86	AVG=0.1	AVG=6.8 %	5,728	8,951