





**J. P. CARRARA & SONS, INC**  
**CONCRETE CONTRACTORS**  
**ARCHITECTURAL / STRUCTURAL PRECAST CONTRACTORS**

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**CONCRETE MIX DESIGN**

DATE :	February 16, 2016		
PROJECT :	VAOT Annual Mix Qualification	STATE:	VT
ENGINEER/ARCH :			
CONTRACTOR :			
CONCRETE SUPPLIER :	J.P. Carrara & Sons, Inc., Middlebury, VT	G <sub>s</sub> , 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 on an as needed basis	

**QUANTITIES PER CUBIC YARD**

Identification # : 445MSCC  
 Mix Description : Standard SCC - 3,500psi @ 18hrs

SPECIFICATIONS REQUIREMENT,	28	Day Strength (psi)	5,000	750 # Total Cementious (CM)	Yield
Lafarge Type III	(lbs)	563			2.91
Fly Ash, Class F	(lbs)	188	25% by weight of CM		1.27
P-stone (3/4")	(lbs)(SSD)	1320	48% by weight of total agg.		8.18
JPC sand	(lbs)(SSD)	1440	52% by weight of total agg.		8.85
WATER (gallons) : (Maximum Water =	33.3 Gal.)	31.5			4.21
W/C RATIO (lbs/lb) : (Max W/C =	0.37 )	0.35			
Sika AEA-14	(0-20 range) (oz/yd <sup>3</sup> )	4.5	7.0% + / -- 2.0%		1.89
Sika Plastiment	(0-6 range) (oz/cwt)	2.0			
Sika Viscocrete 6100	(6-11 range) (oz/cwt)	8.5	24" spread + / -- 4"		
Sika Stabilizer 4R	(0-7 range) (oz/cwt)	0.0	Not Required; Dosed on an as needed basis		

27.3

Mix Properties:

unit wt (#/ft<sup>3</sup>)  
138.2

Prepared By: Benjamin L. Cota  
 Benjamin L. Cota, Precast Production Engineer

*Approved by James Will, VAOT  
 Structural Concrete Engineer 2/22/16*