



CONSTRUCTION LEADERS

LETTER OF TRANSMITTAL	
DATE: April 29, 2015	PCL JOB NO: 5515002
ATTN: Chris Barker	TRANSMITTAL NO: 042

To: **State of Vermont Agency of Transportation**
 One National Life Drive
 Montpelier, VT 05633-5001
 (802) 828-0053

Re: Hartford Lateral Slide
 Project No.: IM 091-2(79)
 Contract ID.: 12A132

County: Windsor

PCL FILE NO: 5515002-42

WE ARE SENDING Attached Under separate cover via Email & SP the following:
 Shop drawings Prints Plans Samples Specifications
 Copy of Letter Change Order Other

COPIES	SPEC.	REVISION	DESCRIPTION
1	501.34		HPC Class B Mix Design

TRANSMITTED for as checked below:

For approval Approved as submitted Resubmit 1 Copies for approval
 For your use Approved as noted Submit Copies for distribution
 As requested Returned for corrections Return Corrected prints
 For review and comment

Remarks:

The attached mix designs have been revised based on actual achieved gradations. These were submitted separately to the Agency for approval from Carroll Concrete 4/27/2015 & 4/28/2015.

Please return an email of this approved submittal to Erich Heymann (ewheymann@pcl.com) and Jeremy Mackling (jmackling@pcl.com).

We request the review and return of this submittal within 2 days. Please advise if this request cannot be met so we can plan accordingly.

By: **Erich Heymann**, Project Engineer

COPY TO: Project Files



CONSTRUCTION LEADERS

**SUBMITTAL NO. : 42
HPC Class B Mix Design**

Item No.	Specification	Description
1	501.34	HPC Class B Mix Design

PROJECT:
HARTFORD LATERAL SLIDE
PROJECT NO.: IM 091-2(79)
CONTRACT ID.: 12A132

OWNER:
STATE OF VERMONT AGENCY OF TRANSPORTATION

ENGINEER OF RECORD:
STATE OF VERMONT AGENCY OF TRANSPORTATION

CONTRACTOR:
PCL CIVIL CONSTRUCTORS, INC.

APRIL 29, 2015

**STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIAL AND RESEARCH SECTION - STRUCTURAL CONCRETE UNIT**

STRUCTURAL CONCRETE MIX DESIGN SUBMISSION

Concrete class: HPC B
 Additional Description _____
 Ready Mix Supplier: CARROLL CONCRETE - W LEBANON, NH - RT 12A
 Designed By Scott Jordan
 Design strength _____ 3500 _____ PSI
 Mix Design Style: Conventional
 Agg weight - SSD or Dry: SSD

Agency Use Only	
Mix ID	HP00-B-0
Mix Design #	
Approved by	
Approved Date	
Spec Book Year	2011

Mix designs are valid for a 12 month period from date of approval or unless there is a change in material, material property or design parameter.

Cement:		Specific Gravity _____	_____ lb/cy	_____ cf
701.02	Source: _____ Brand Name: _____			
Cement Type III:		Specific Gravity _____	_____ lb/cy	_____ cf
701.04	Source: _____ Brand Name: _____			
Blended Cement:		Specific Gravity <u>2.980</u>	<u>564</u> lb/cy	<u>3.03</u> cf
701.06	Source: <u>LAFARGE - TERCEM - MONTREAL, EAST PLANT</u> Brand Name: _____			
Cement with Slag:		Specific Gravity _____	_____ lb/cy	_____ cf
701.07	Source: _____ Brand Name: _____			
Pozzolan:		Specific Gravity _____	_____ lb/cy	_____ cf
725.03(a)	Source: _____ Brand Name: _____			
Fly Ash:		Specific Gravity _____	_____ lb/cy	_____ cf
725.03(a)	Source: _____ Brand Name: _____			
Silica Fume:		Specific Gravity _____	_____ lb/cy	_____ cf
725.03(b)	Source: _____ Brand Name: _____			
Slag:		Specific Gravity _____	_____ lb/cy	_____ cf
725.03(c)	Source: _____ Brand Name: _____			
Water			<u>29</u> gals	<u>242.01</u> lb/cy
Air Content Target			<u>7.0</u> %	<u>1.89</u> cf
Coarse Aggregate 3/8"	Absorption _____	Specific Gravity _____	_____ lb/cy	_____ cf
704.02A	Source: _____			
Coarse Aggregate 3/4"	Absorption <u>0.70</u>	Specific Gravity <u>2.930</u>	<u>766</u> lb/cy	<u>4.19</u> cf
704.02B	Source: <u>LEBANON CRUSHED STONE - W LEBANON, NH</u>			
Coarse Aggregate 1 1/2"	Absorption <u>0.40</u>	Specific Gravity <u>2.940</u>	<u>1149</u> lb/cy	<u>6.26</u> cf
704.02C	Source: <u>LEBANON CRUSHED STONE - W LEBANON, NH</u>			
Fine Aggregate:	Absorption <u>1.40</u>	Specific Gravity <u>2.700</u>	<u>1306</u> lb/cy	<u>7.75</u> cf
704.01	Source: <u>LEBANON CRUSHED STONE - W LEBANON, N</u>	Fineness Modulus <u>2.78</u>		
Air Entrainment Admixture		Specific Gravity _____	<u>1.5</u> oz/cy	
725.02(b)	Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u> Brand Name: <u>MasterAir AE 200/MicroAir</u>			
Retarder Admixture:		Specific Gravity _____	<u>0.5</u> oz/cwt	
725.02(c)	Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u> Brand Name: <u>MasterSet R100</u>			
High Range Water Reducer Admixture:		Specific Gravity _____	<u>4</u> oz/cwt	
725.02(h)	Source: <u>MASTER BUILDERS INC - MESQUITE, TX</u> Brand Name: <u>MasterGlenium 7500</u>			
Other Admixtures:		Specific Gravity _____	_____ gal/cy	_____ cf
	Source: _____ Brand Name: _____			
		Specific Gravity _____	_____ oz/cwt	_____ cf
	Source: _____ Brand Name: _____			
		Specific Gravity _____	_____	_____ cf
	Source: _____ Brand Name: _____			
		TOTAL	<u>47.550</u>	<u>4027</u> lb
				<u>27.00</u> cf
		Maximum Water/Cementitious Ratio	<u>0.49</u>	
		Maximum Water (gal/cy)	<u>33.1</u>	
		Slump Min/Max (inch)	<u>4.0</u> min	<u>7.0</u> max
		Air Content Min/Max (%)	<u>5.5</u> min	<u>8.5</u> max
		Design Unit Wt. (lb/cf)	<u>149.15</u>	

Notes:

**STATE OF VERMONT
AGENCY OF TRANSPORTATION
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725.03(b)	Source: _____ Brand Name: _____			
Slag:		Specific Gravity _____	_____ lb/cy	_____ cf
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704.02A	Source: _____			
Coarse Aggregate 3/4"	Absorption <u>0.70</u>	Specific Gravity <u>2.930</u>	<u>383</u> lb/cy	<u>2.09</u> cf
704.02B	Source: <u>LEBANON CRUSHED STONE - W LEBANON, NH</u>			
Coarse Aggregate 1 1/2"	Absorption <u>0.40</u>	Specific Gravity <u>2.940</u>	<u>1532</u> lb/cy	<u>8.35</u> cf
704.02C	Source: <u>LEBANON CRUSHED STONE - W LEBANON, NH</u>			
Fine Aggregate:	Absorption <u>1.40</u>	Specific Gravity <u>2.700</u>	<u>1307</u> lb/cy	<u>7.76</u> cf
704.01	Source: <u>LEBANON CRUSHED STONE - W LEBANON, N</u>	Fineness Modulus <u>2.78</u>		
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Other Admixtures:		Specific Gravity _____	_____ gal/cy	_____ cf
	Source: _____ Brand Name: _____			
		Specific Gravity _____	_____ oz/cwt	_____ cf
	Source: _____ Brand Name: _____			
		Specific Gravity _____	_____	_____ cf
	Source: _____ Brand Name: _____			
		TOTAL	<u>47.550</u>	<u>4028</u> lb
				<u>27.00</u> cf
		Maximum Water/Cementitious Ratio	<u>0.49</u>	
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		Design Unit Wt. (lb/cf)	<u>149.19</u>	

Notes: