STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SUPPLEMENT 1064

PROCEDURES FOR RIGID PAVEMENT THICKNESS DETERMINATION

December 31, 2012

1064.01 General. Conforming to 451.18, the Contractor is responsible for providing the equipment and for coring the concrete pavement at the direction of the Engineer. Measure the 4 inch (100 mm) cores according to AASHTO T148 to the nearest 0.1 inch (1 mm). The Engineer will determine the core locations conforming to this Supplement.

1064.02 Equipment. Furnish the following equipment for sampling and measuring cores:

A. Portable core drilling equipment and water supply having sufficient capacity to drill the entire thickness of the concrete.
B. 4 inch (100 mm) diameter core bits.
C. Measuring device to measure to the nearest 0.1 inch (1 mm), (AASHTO T 148).
D. Ruler - readable to the nearest 0.1 inch (1 mm)
E. Measuring Wheel.

1064.03 Determining Core Locations. In addition to 451.18, the Engineer will use the following procedure in determining the core locations, and recording the results:

A. From project documents, determine the quantity of rigid pavement or base that needs to be cored. Separate into categories such as:
   1. Item (ie. 451, 452, 305 ...)
   2. Type (ie. Mainline, shoulder, ramp ...)
   3. Design Thickness.
   4. Reference Number.
   5. Limits of the Rigid Pavement
   6. Location Description (ie. Street name, route number, direction ...)

B. From project records, determine the following information:
   1. Placement Width.
   2. Placement Dates.

3. Job Mix Formula(s) (JMF)
4. Station Limits of each JMF

C. Determine the beginning and ending stations for each separate item, thickness and type of rigid pavement. This is a Lot of pavement. Determine how many cores need to be taken from each Lot as per 451.18. This is determined by dividing the quantity of pavement by 2000 sq. yds (1650 m^2) sublots.

D. Determine the station limits of each sublot of rigid pavement or base that a core will represent. The determining factor is the placement width. A core should be taken in the middle of a lane. Therefore, if the pavement was placed in 12 ft (3.6 m) widths (1 lane), the sublot length should be determined from the width of the one lane and the core shall be taken at the middle of the lane. If the pavement was placed in 24 ft (7.3 m) widths (2 lanes), the cores should still be taken out of the middle of the lanes. The lane that the core is taken from should be determined by the last digit in the random number. The core should be taken from the left lane if the last digit is an odd number and from the right lane if it is even.

E. Determine the core location for the sublot. A four digit number is arbitrarily selected from the random number chart. This number is multiplied by the length of the sublot and added to the beginning station.

F. Record the information on the PC Core Form along with the placement dates and location

G. description. Use the following guidelines:

1. **Core Number** - Used to keep numeric record of the cores.
2. **Beginning Station** - This establishes the beginning station of the sublot. Different types of pavement (for example: ramps, shoulders) should be separate from mainline cores while determining core locations.
3. **Placement Width** - Taken from project records.
4. **Sublot Length** - Dependant upon placement width. Sublot size [2000 sq. yd (1650 m^2)] divided by the placement width.
5. **Ending Station** - The station at the end of the sublot. Add the sublot length to the beginning station. This becomes the beginning station for the next sublot.
6. **Random Number** - A four digit number taken from a random number chart. Each core should have a different random number. The first number should be determined randomly; then, use the next number in sequence for the following sublot.
7. **Core Location** - Location that the core is to be taken. Sublot Length x Random No. + Beginning Station.
8. **Placement Date** - To be determined from project records.
9. **Location Description** - Description of where the core is to be taken. Locations on a two lane pavement can be indicated by direction [i.e.: East bound (EB) or North bound (NB)]. Multiple lane pavement core locations should be indicated by numbering lanes (1,2,3...) from left to right while looking up-station. Shoulders and berms that are to be cored should be labeled with the direction.

10. **Measured length** -. The core should be measured and recorded to the nearest 0.1 inch (1 mm) using a ruler with appropriate graduations by taking three readings around the circumference of the core and calculating the average length. Cores that are deficient in length by 0.5 inch (13 mm) or more, or if there is a question about the accuracy of the measurement using the ruler, shall be measured in accordance with AASHTO T 148.
11. **Deduction Cores** - When a randomly selected scheduled core is deficient in length
12. by 0.5 to 1.0 inch (13 to 25 mm), obtain additional cores as per 451.18.A and record the core length on the PC Core form. Record the limits of the deduction in the remarks. Flag the initial and resulting cores with a "D" (for deduction) in the "CORE NO" column and indicate that they are deductions in the "LOCATION DESCRIPTION" column. Indicate the limits of the deductions in the remarks.
13. **Deficient Cores** - When a randomly selected scheduled core is deficient in length
14. by more than 1.0 inch (25 mm), obtain additional cores as per 451.18.A using 1.0 inch (25 mm) as the limit of the deficiency and record the core length on the PC Core form. Record the limits of the removal in the remarks. Flag the initial and resulting cores with a "DF" (for Deficient) in the "CORE NO." column and indicate that they are removed cores in the "LOCATION DESCRIPTION" column. Indicate the limits of the removal in the remarks. Once the section of pavement is removed and replaced, re-core the pavement at the originally selected locations

    Report - Enter information into SITEMANAGER

Supplement 1064

PC Core

OHIO DEPARTMENT OF TRANSPORTATION
RIGID PAVEMENT CORE LOCATIONS

Sample I.D. # _____

Project No. _____ County, Route _____ Reference No. _____ Item No. _____ *Design Thick._____

No. of Cores _____ JMF _____ *Material Code _____

Concrete Producer _____ Contractor _____

*CORE NO.	BEGIN STATION	PLACE WIDTH	SUBLOT LENGTH	END STATION	RANDOM NUMBER	*CORE LOCATION	PLACE DATE	LOCATION DESCRIPTION	MEASURED LENGTH*

REMARKS: _____

RANDOM NUMBER TABLE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1048	0150	1015	3602	0118	1647	9164	6691	7914	1946	2590	3620	7209	6999	5709	1291	9070
2	2236	8465	7325	5958	5393	3309	9589	1982	7982	5340	2939	6534	0955	2666	1917	4396	1599
3	2413	0483	6022	5279	7265	7639	3648	0915	1792	4830	4934	0320	8130	6801	9655	6334	4858
4	4216	7930	9306	2436	1680	0785	6163	7639	4405	3537	7134	1570	0400	8497	4917	9775	8163
5	3757	0399	7581	8371	6656	0612	1917	8260	4688	1305	4968	6067	2141	1006	9270	1263	5461
6	7792	1069	0711	0084	2751	2775	6534	9818	6027	0659	9065	5150	5321	9168	1825	4439	4428
7	9956	2729	0556	4206	9994	9887	2310	1671	1941	8738	4401	3488	4063	2132	1069	1063	4129
8	9630	1919	7705	4630	7972	1887	6209	2294	5955	6869	6901	4600	4518	1842	5849	0342	2508
9	8957	9143	4263	6611	0281	1745	3181	0357	7740	8437	8253	3112	5665	8678	4494	7055	8556
10	8547	5368	5753	3425	3988	5306	0595	3886	7623	0008	1581	7983	1643	9114	5818	1859	3649
11	2891	8695	7888	2313	3276	7099	7799	3656	8650	0585	9901	0631	5950	1547	8559	0916	1078
12	6355	3409	6148	2350	0342	7496	2669	4451	8663	7269	5521	8020	8471	2234	9051	1337	7039
13	0942	9939	6952	2636	9273	7889	7433	4883	6320	0176	1730	0150	8272	8411	5271	5630	6137
14	1036	5611	2987	5298	5689	9482	3752	2676	6768	9933	9401	5112	6358	8510	4202	8529	9758
15	0711	9973	3671	0480	8178	7723	3139	1647	5648	1056	9773	5859	7729	3727	4461	2855	1907
16	5108	5127	6551	8215	1259	7745	2163	0860	7569	2144	4944	2539	0070	9606	3990	7560	1407
17	0236	8213	8252	4046	0268	8936	8198	8555	3224	4819	0118	8652	5564	8354	4919	0594	4551
18	0101	1540	9233	3629	4904	3127	3041	4618	5942	9852	7158	5850	3051	1320	1915	9274	7649
19	5216	2539	1646	3695	8586	2321	6145	1383	1499	8736	2349	5643	5094	7381	7752	3515	6357
20	0705	6976	2833	7870	9998	4269	8066	9176	9881	3602	5185	1461	0488	9161	9509	2562	5581
21	4866	3912	4585	8281	4346	0917	2301	6890	2290	4734	5919	3221	7830	4216	1666	9990	4328
22	5416	4584	9222	4217	4103	4707	0253	0676	4682	6384	5815	1066	4621	5241	5227	9690	9445
23	3263	9323	6305	5972	4200	1336	3380	0594	3422	8728	3580	6069	1217	0126	4161	1829	6228
24	2933	4270	0187	6378	7308	5873	1002	5645	8341	5398	4655	7411	3510	3670	7684	3618	8185
25	0248	8330	6228	8340	7351	1973	1924	2060	5261	2805	0001	6765	8325	8686	6795	0720	9495
26	8152	5722	9504	8399	6423	2487	8826	5166	5661	4778	7679	7147	8013	3008	7074	7966	6957
27	2967	6205	9168	0862	6432	4690	1208	4989	7688	1536	8664	5126	5992	2595	7102	8042	8252
28	0074	2573	9239	0646	6432	8467	3400	2732	8326	1362	9894	7960	6764	7606	4584	9609	6982
29	0536	6042	1325	6692	6422	4440	7440	4837	9376	3904	4576	6661	3475	4706	6520	3469	3904
30	9192	1264	1864	1179	4305	2676	6259	4039	9722	2209	7150	0645	6891	4024	2416	0784	4696

How to determine random numbers for purpose of determining core locations:

1. Randomly select a starting number from the table.
2. The following number can be the next number in that row or in that column. The choice is purely a matter of preference as long as the chosen method is consistently followed.
3. The number chosen shall be treated as a decimal and multiplied by the length of the sublot.
4. That length shall be added to the sublot=s beginning station. This is the core location for that sublot.