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Project NO. R.062334.001		2014-02-10

PART 1 - GENERAL

<u>1.1 Relate Work</u>	.1	Aggregates: General: Section 31 05 17
<u>1.2 References</u>	.1	ASTM C117-2013, Test Method for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
	.2	ASTM C131-2006, Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
	.3	ASTM C136-2006, Method for Sieve Analysis of Fine and Coarse Aggregates.
	.4	ASTM D698-2012, Test Methods for Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 2.49 kg Rammer and 304.8 mm Drop.
	.5	ASTM D4318-2010, Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
	.6	CAN/CGSB-8.2-M88 (R10/3), Sieves Testing, Woven Wire, Metric.
	.7	ASTM D1557-2012, Test Methods for Moisture Density Relations of Soils and Soil Aggregate Mixtures Using 4.54 kg Rammer and 457 mm Drop.
	.8	ASTM D1883-07e2, Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
	.9	ASTM D2922-2005, Standard Test Method for Density of Soil and Soil Aggregate in Place by Nuclear Methods.

PART 2 - PRODUCTS

<u>2.1 Materials</u>	.1	Granular Sub-base Material: in accordance with Section 31 05 17 - Aggregate Materials and following requirements: .1 Site excavated material, crushed, from existing rock material, gravel processed at the Rocky Barachois site.
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.2 Gradations to be within limits specified when tested To ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1 AND CAN/CGSB-8.2.

.3 Granular Subbase Table:

<u>Sieve Designation</u>	<u>% Passing</u>
75 mm	100
50 mm	75 - 100
12.5 mm	38 - 70
4.75 mm	25 - 55
1.20 mm	12 - 35
0.300 mm	7 - 20
0.075 mm	3 - 8

.4 Other Properties as follows:

.1 Liquid Limit: to ASTM D 4318, Maximum 25.

.2 Plasticity Index: to ASTM D 4318 Maximum 0.

.3 Los Angeles degradation: to ASTM C131. Max % loss by mass: 35.

.4 Crushed Particles: at least 50% of particles by mass retained on the 4.75 mm sieve to have at least one fractured face.

.5 Particles smaller than 0.02 mm: to ASTM D 422, Maximum 3%.

.6 Flat and elongated particles: maximum percent by mass: 15.

PART 3 - EXECUTION

3.1 Inspection of Underlying Sub-Base

.1 Place granular sub-base after surface is inspected and approved by Departmental Representative.

.2 Underlying material to be compacted to 100% of Standard Proctor Density to ASTM D698.

3.2 Placing

.1 Use Granular Sub-bases (Granular B) in conjunction with full depth patching and for shouldering at culvert installation locations and other areas indicated on plans or as directed by Departmental Representative.

.2 Do not use frozen material.

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- .3 Place material only on clean unfrozen surface, properly shaped and compacted and free from snow and ice.
- .4 Place aggregate where required and in uniform layers not exceeding 150 mm compacted thickness or as directed by the Departmental Representative.
- .5 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
- .6 Remove and replace that portion of layer in which material becomes segregated during spreading.
- .7 Place and compact shoulder to 3% cross slope in reconstruction areas. In overlay sections, feather new shoulder material from top of new asphalt to existing hinge point of shoulder slope.
- .8 Compacted shoulders so it is flush with asphalt concrete surface.
- .9 Hand work will be required to form base for asphalt concrete gutters/offtakes.
- .10 Place, hand rake and compact new shoulder material under and behind guiderail.

3.3 Compaction Equipment

- .1 Use vibratory compaction equipment capable of obtaining required densities on aggregates on project.

3.4 Compacting

- .1 Compact to density not less than 100% corrected maximum dry density.
- .2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
- .3 Apply water as necessary during compacting to obtain specified density. If aggregate is excessively moist, aerate by scarifying with suitable equipment until moisture content is corrected.

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- .4 In areas not accessible to rolling equipment, compact to specified density with vibratory mechanical tampers approved by Departmental Representative.
- .5 Density will be determined according to ASTM D2922.

3.5 Finish

- .1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.
- .2 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.
- .3 Shoulders to have 3% cross slope.

3.6 Maintenance

- .1 Maintain finished sub-base in condition conforming to this section until succeeding material is applied or until acceptance by Departmental Representative.