

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 03 30 00 – Cast-in-Place Concrete.
- .3 Section 31 23 33.01 – Excavating, Trenching and Backfilling.
- .4 Section 32 11 16.01 – Granular Sub Base.
- .5 Section 32 11 23 – Aggregate Base Courses.
- .6 Section 32 12 16.02 – Asphalt Paving for Building Sites.

1.2 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM D4791-10, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 SAMPLES
 - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Allow continual sampling by Departmental Representative during production.
 - .3 Provide Departmental Representative with access to source and processed material for sampling.
 - .4 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Handle and transport aggregates to avoid segregation, contamination and degradation.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for use intended.
- .2 Flat and elongated particles of coarse aggregate: to ASTM D4791.
 - .1 Greatest dimension to exceed five times least dimension.

- .3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:
 - .1 Natural sand.
 - .2 Manufactured sand.
 - .3 Screenings produced in crushing of quarried rock, boulders, gravel or slag.
- .4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:
 - .1 Crushed rock.
 - .2 Gravel and crushed gravel composed of naturally formed particles of stone.

2.2 SOURCE QUALITY CONTROL

- .1 Inform Departmental Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to commencing production.
- .2 If, in opinion of Departmental Representative, materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.
- .3 Advise Departmental Representative 4 weeks in advance of proposed change of material source.
- .4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

PART 3 EXECUTION

3.1 PREPARATION

- .1 Topsoil stripping
 - .1 Do not handle topsoil while in wet or frozen condition or in any manner in which soil structure is adversely affected.
 - .2 Begin topsoil stripping of areas as indicated after area has been cleared of brush, weeds and grasses and removed from site.
 - .3 Strip topsoil to depths as indicated. Avoid mixing topsoil with subsoil.
 - .4 Stockpile in locations as directed by Departmental Representative. Stockpile height not to exceed 2 m.
- .2 Aggregate source preparation
 - .1 Contractor to produce aggregates off site.
 - .2 Contractor to develop aggregate source to prevent contamination of aggregates stockpiled.

- .3 Prior to excavating materials for aggregate production, clear and grub area to be worked, and strip unsuitable surface materials. Dispose of cleared, grubbed and unsuitable materials as directed by Departmental Representative.
- .4 Where clearing is required, leave screen of trees between cleared area and roadways as directed.
- .5 Clear, grub and strip area ahead of quarrying or excavating operation sufficient to prevent contamination of aggregate by deleterious materials.
- .6 When excavation is completed dress sides of excavation to nominal 1.5:1 slope, and provide drains or ditches as required to prevent surface standing water.
- .7 Trim off and dress slopes of waste material piles and leave site in neat condition.
- .3 Processing
 - .1 Process aggregate uniformly using methods that prevent contamination, segregation and degradation.
 - .2 Blend aggregates, if required, to obtain gradation requirements, percentage of crushed particles, or particle shapes, as specified. Use methods and equipment approved by Departmental Representative.
 - .3 Wash aggregates, if required to meet specifications. Use only equipment approved by Departmental Representative.
 - .4 When operating in stratified deposits use excavation equipment and methods that produce uniform, homogeneous aggregate.
- .4 Stockpiling
 - .1 Stockpile aggregates on site in locations as indicated unless directed otherwise by Departmental Representative. Do not stockpile on completed pavement surfaces.
 - .2 Stockpile aggregates in sufficient quantities to meet Project schedules.
 - .3 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.
 - .4 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 300 mm in depth to prevent contamination of aggregate. Stockpile aggregates on ground but do not incorporate bottom 300 mm of pile into Work.
 - .5 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.
 - .6 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by Departmental Representative within two (2) working days of rejection.
 - .7 Stockpile materials in uniform layers of thickness as follows:
 - .1 Max 1.0 m for coarse aggregate and base course materials.
 - .2 Max 2.0 m for fine aggregate and sub-base materials.
 - .3 Max 1.5 m for other materials.
 - .8 Complete each layer over entire stockpile area before beginning next layer.
 - .9 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.
 - .10 Do not cone piles or spill material over edges of piles.

- .11 Do not use conveying stackers.
- .12 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.2 CLEANING

- .1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.
- .2 Leave any unused aggregates in neat compact stockpiles as directed by Departmental Representative.
- .3 For temporary or permanent abandonment of aggregate source, restore source to condition meeting requirements of authority having jurisdiction.

END OF SECTION