



CONCRETE SIDEWALK NOTES:

1. Control Joints shall be installed at intervals not to exceed 10. Layout of Control Joints shall be approved by the Owner.
2. Construction Joints shall be installed at intervals not to exceed 30' and where Concrete Work abuts any Rigid Surfaces. Construction Joint material shall be Bituminous Preformed Expansion Joint Filler conforming to ASTM D994-71, set 1" below the surface & Caulked with SikaFlex 1A.
3. Where concrete abuts granite curb, saw cut at joint between curb and sidewalk; seal with SikaFlex 1A.
4. Seal Surface of New Concrete Sidewalk with 2 coats of "Saltguard WB" by Prosoco approved equal.
5. Provide 2% cross slope on concrete sidewalks, unless otherwise noted on the plans.
6. Existing concrete sidewalks on this site do not have insulation. Where abutting existing concrete sidewalks, insulation thickness shall be 1" thickness for first 8' of new sidewalk.
7. See Section 03225 for additional notes.

KENNEBEC VALLEY COMMUNITY COLLEGE
LUNDER LIBRARY WALKWAY
REPLACEMENT PROJECT
SIDEWALK DETAIL & NOTES

DIRIGO ENGINEERING

2 DIRIGO DRIVE FAIRFIELD, ME 04937
(207) 453-2401

FILE: KVCC Lunder Library Walkway

DATE: 9/26/17

41800

SECTION 03225
CAST-IN-PLACE CONCRETE SIDEWALK

03225.01 GENERAL

All materials, testing and workmanship for cast-in-place concrete shall comply with ASTM C94 Standard Specification for Ready-Mix Concrete, and ACI 301 specifications for structural concrete for buildings. The Contractor shall keep copies of these publications on the site during all cast-in-place work.

The Contractor will be required to furnish the same quality materials and provide comparable workmanship as required for major concrete structures.

03225.02 MATERIALS

- A.) CEMENT shall conform to ASTM Designation C-150 as revised, Type II.
- B.) AGGREGATES shall conform to the Standard Specifications for Concrete Aggregates, ASTM Designation C-33 as revised.
- C.) SAND shall be medium gradation with fineness modulus of 2.60 to 2.90.
- D.) COARSE AGGREGATES shall not exceed 3/8 inch.
- E.) WATER shall be from an approved water supply and free of oil, acid, salt, alkali, organics or other foreign matter.
- F.) AIR ENTRAINING AGENT shall conform to ASTM Designation C260 and shall be used in all concrete.

03225.03 PROPORTIONING

Concrete shall be a homogeneous mixture of Portland Cement, water, and fine coarse aggregates as specified and within limits stated herein.

Concrete shall be proportioned by weights. The proportion of ingredients shall be selected to produce proper placeability, durability, strength, and other properties. The mixture shall be proportioned so it will work readily into rock voids, but will not slump down the slope face or cause the materials to segregate.

If it is found impossible to obtain concrete of the desired placeability and workability with the proportions specified, the Contractor shall make such changes in aggregate weights as may be authorized by the Engineer to adjust the workability to a satisfactory condition.

- A.) CEMENT: A bag of cement shall be considered to weigh 94 pounds.

- B.) WATER: One gallon of water shall be considered to weigh 8.33 pounds.
- C.) ADMIXTURES: Admixtures shall be proportioned in accordance with manufacturer's recommendations or as determined by trial batches. A normal or retarded-set, water-reducing admixture is permissible. An air-entraining admixture complying with ASTM C 260 is acceptable where freeze/thaw durability is required. A nonchloride accelerator is acceptable for cold weather concrete placement. Do not add a high-range water reducing admixture (superplasticizer). Do not add calcium chloride to concrete mix. Use of fly ash as a cement replacement may be acceptable, subject to manufacturer's current recommendations.

Reference for the proportioning and mix design shall be the Portland Cement Association manual "Design and Control of Concrete Mixes," latest edition.

- D.) Proportioning requirements shall meet the design specified as follows:

28 Day Compressive Strength = 4,000 psi min.
Maximum Size Coarse Aggregate = 3/4"
% Air Entrainment = 6.0 +/-1
Minimum/Maximum Slump = 1" to 3"*
Minimum Cement Content #/cy = 611
Maximum W/C Ratio = .44

* = slump range prior to addition of high range water reducing admixtures. If high range water reducers are used, they shall be added at the site and the manufacturer's latest recommendation shall be followed.

03225.04 CONSTRUCTION METHODS

- A.) FORMS: The Contractor shall design, furnish, and erect forms as required. Forms shall be of sufficient strength and adequate to retain concrete to design dimensions. All forms shall be removed prior to backfilling. The Contractor shall consult with the Engineer on any forming or control guides he wishes to use in placing the concrete.
- B.) CONCRETE: Shall attain a 28-day strength of not less than 4,000 psi. Concrete proportioning, mixing, placing, curing and protection shall be in accordance with accepted practice as amplified in "Design and Control of Concrete Mixtures" by the Portland Cement Association.
- C.) TRUCK MIXES: Shall be permitted only when the mixers and their operation produce a batch as discharged which meets an approved consistency, mix and grading. Retempering of concrete will not be permitted without approval of the Engineer. Elapsed time between batching and final discharge at the job site shall not exceed 1-1/2 hours. Truck mixers shall be equipped with:
- a.) accurate means of measuring mixing water used from the tank on the mixer

- b.) means of verifying the accuracy of this water measurement
 - c.) a device for counting the number of revolutions of the mixing drum
 - d.) facilities for addition of water under such pressure and so directed that the water will be added uniformly from front to back on the mixer
- D.) WEATHER: Unless adequate protection is provided and/or approval is obtained, concrete shall not be placed during rain, sleet or snow. Rain water shall not be allowed to increase the mixing water nor to damage the surface finish.
- E.) PLACING TEMPERATURE:
- a.) Cold Weather: When the mean daily temperature falls below 40 deg F, the minimum temperature of concrete as placed shall be 50 deg F.
 - b.) Hot Weather: Concrete deposited in hot weather shall have a placing temperature which will not cause difficulty from loss of slump, flash set, or cold joints (usually less than 90 deg F).

03225.05 CONTROL JOINTS

Control joints, type, location, and method to be coordinated by the Contractor with the Owner. Slab joints shall be spaced at 10' o.c. unless otherwise shown on the plans.

03225.06 SURFACE FINISH

Broom Finish

After the freshly-poured concrete has been brought to the established grade, it shall be floated with wooden float to produce a surface free from irregularities. The final surface shall be obtained by troweling with a steel trowel or hand float and brushing lightly with a light weight brush in a transverse direction so as to produce a uniform gritty surface of the proper texture. No plastering of the mortar will be permitted. All outside edges of the slab and all joints shall be finished with a sidewalk edging tool, two inches in width, with a ¼ inch radius lip.

No more concrete shall be laid than can be properly finished and covered during the daylight, unless artificial light satisfactory to the Engineer is provided.

03225.07 CURING AND SEALING

- A.) COLD WEATHER CURING: When the mean daily temperature of the atmosphere is less than 40 deg F, maintain temperature of the concrete between 50 deg F and 70 deg F for the required curing period (350 day degrees). Make arrangements for heating, covering, insulating, or housing the concrete work in advance of placement,

arrangements shall be adequate to maintain required temperature and moisture conditions without injury due to concentration of heat. Heat shall be thermostatically controlled and properly vented.

- B.) **HOT WEATHER CURING:** When necessary, make arrangements for installation of windbreaks, shading, fog spraying, ponding, or wet covering of a light color in advance of placement. Employ such protective measures as quickly as concrete placing and finishing operations will allow.
- C.) **SEALING:** Prior to sealing, the following conditions must be present:
- Release agent has been removed.
 - Moisture content of concrete is low enough that alkali and other salts do not become trapped beneath sealer. This will require a minimum of 28 days subsequent to concrete placement, or longer if required.
 - No evidence of free water on concrete surfaces to receive curing and sealing compound.

Seal concrete with liquid membrane curing and sealing compounds as recommended by manufacturer. Apply two coats of specified curing and sealing compound according to manufacturer's written instructions.

03225.08 PROTECTION OF FINISHED WORK

Prohibit foot or vehicular traffic on the newly imprinted concrete surface. Any disturbed work shall be replaced at the Contractor's expense.