

PROJECT MANUAL

FOR

2006 SIDEWALK IMPROVEMENTS

FOR

CITY OF ALMA

JULY 2006



SECTION 1A

EXCAVATING, FILLING AND GRADING

1A-01. GENERAL. Areas within the construction limits shall be graded and excavated or filled as required, or as herein specified for construction. Excess excavated soil materials, concrete and waste materials shall be disposed of at approved locations.

1A-02. GRADING. Excavated areas resulting from removal of obstructions below finish grade shall be backfilled and compacted as specified for the area immediately adjacent. Excavations along edges of structures or base shall be backfilled and compacted as specified for backfills. Areas behind curbs shall be finished to smooth planes controlled by the location of such structures. All other slopes shall be left smooth and uniform or to match adjacent contours. Areas which may have been disturbed or affected by construction shall be restored to a graded condition equal to or better than the original, and graded to drain.

1A-03. OBSTRUCTIONS. Surface and subsurface obstructions shall be removed, relocated, reconstructed, or worked around. Definite information is not available as to the location of all subsurface utilities and facilities, and the Contractor shall determine their existence and location by hand digging in advance of excavation.

1A-04. BACKFILLS. Shall be constructed of approved material, free from objectionable matter, and shall be brought to approximate optimum moisture content, then manipulated and compacted. Backfills within the limits of concrete walks or base course shall be compacted to uniform density of 95 percent of maximum as determined by ASTM D-698. Depth of lifts or layers shall be controlled by methods of compaction and shall be such as to obtain a uniform density throughout the entire backfill. Backfill material and operations, including labor and equipment, shall be considered subsidiary to concrete placement.

1A-05. COMPACTED FILLS. Shall be constructed of approved material, free from objectionable matter, and shall be brought to the required moisture content, then manipulated and compacted to uniform density of not less than 95% of maximum as determined by ASTM D-698 with moisture content of $\pm 2\%$ of optimum. Depth of lifts or layers shall be controlled by methods of compaction and shall be such as to obtain a uniform density throughout the entire embankment or fill. Compacted fill material and operations, including labor and equipment, shall be considered subsidiary to concrete placement.

SECTION 2A

CONCRETE CURB RAMP AND SIDEWALK

2A-01. GENERAL. Concrete curb ramp, including sidewalks, shall conform to the details shown. Where new construction joins existing sidewalks of different pattern or at different elevation, elevations shall be adjusted to provide smooth transition and new construction shall be formed to match existing improvement, using a transition section not less than three feet long unless otherwise detailed.

2A-02. REMOVALS. The sidewalk designated for removal shall be completely removed. All waste material shall be disposed of as directed. Items designated for salvage shall be transported and stored as directed. Upon completion of removal operations the areas shall be backfilled or further excavated as required to permit new construction. Edges or removal areas shall be saw cut or removed in such a manner as to achieve a straight uniform edge.

2A-03. EXCAVATION shall allow full thickness of concrete and permit installation of forms. Any fills required shall be at least four inches wider than the sidewalk section; constructed in three inch lifts; each lift moistened and compacted to density not less than that of adjacent undisturbed soil. Subgrade shall be in a uniformly moist condition when concrete is placed. All loose or unconsolidated material shall be removed from areas on which concrete is to be placed. Excavation, subgrade preparation and compaction as described herein shall conform to Section 1A-04 & 05 of these specifications.

2A-04. FORMS shall be full depth of sidewalk; properly shaped and free from knots, dents or other imperfections; set true to grade and line; attached securely to stakes and braced rigidly to prevent movement or distortion while placing and tamping concrete. Forms shall be cleaned thoroughly and oiled before each using.

2A-05. JOINTS shall be straight, plumb and at true right angles to back of curb and shall extend entirely through concrete from top to bottom and from edge to back.

- A. Expansion Joints, conforming to typical details, shall be constructed where sidewalks and curb ramps abut an existing structure; at each side of inlets and manholes; at tangent points of all curves; and at driveways and entrances. Expansion joints shall be finished as hereinafter specified. Preformed expansion joint filler shall conform to requirements of Section CONCRETE WORK, shall be of thickness designated and shall be cut to shape and dimensions as detailed.
- A. Block Joints. All curb ramp and sidewalk shall be divided into blocks or stones as shown on the detail plan sheet, using any of various approved methods or forming planes of weakness.

2A-06. CONCRETE. Slump of concrete used in construction of curb ramps and sidewalks shall not exceed three inches. Concrete shall be placed in one course. Concrete shall conform to requirements of Section – CONCRETE WORK.

2A-07. FINISHING shall be done with metal screeds or mules; forward edge shall be belled slightly to avoid tearing concrete. Screed shall be designed to ride the forms and, when manipulated properly, shall leave the finished surface in proper shape condition. The final finish will be provided with uniform brushing with a stiff brush or broom as required to ensure nonslip characteristics. Edges of concrete curb ramp and sidewalk shall be finished with an edger. Joints shall be finished in accordance with applicable following methods.

- A. Expansion Joints. The joint groove above the preformed filler shall be raked out, and concrete adjacent to joint tooled and finished to a smooth surface conforming to adjacent concrete. Edges of joint groove shall be rounded with an edger.

- B. Block Joints. The concrete shall be opened with a mason's trowel or other suitable tool. The line of cut shall be of such depth to form a definite plane of weakness. Joint shall be finished with a jointing tool. Block joints may be opened with a concrete saw to form a definite plane of weakness. The width of cut should be a minimum of ¼ inch and approximately 1 ½ inch deep. All sawed joints are to be sealed meeting requirements of contraction joints in Section – CONCRETE WORK.

2A-08. SEALING EXPANSION JOINT. The groove above the preformed filler shall be thoroughly cleaned by approved methods and concrete faces shall be surface dry. The groove shall be filled with sealing compound meeting requirements of drawings, using care to avoid overpouring or spilling. Any excess or spilled material shall be removed immediately.

2A-09. CURING AND PROTECTION. See Section – CONCRETE WORK.

2A-10. BACKFILLING. Curb ramp and sidewalk shall be backfilled using approved material, free from objectionable matter. Material shall be compacted and graded to uniform slopes, conforming to existing adjacent contours and to designated grades sections, properly drained without ponding, and presenting a neat and finished appearance.

2A-11. MEASUREMENT AND PAYMENT. Concrete curb ramp and concrete sidewalk will include all subgrade preparation, forming, placement, and finishing of the concrete. The contractor will supply all the necessary tools, labor, and equipment to complete the work. Concrete curb ramp and concrete sidewalk will be measured and paid for at the contract unit price per square foot of completed and accepted work for each item.

SECTION 3A
CONCRETE WORK

3A-01. GENERAL. Concrete work shall consist of Portland Cement Concrete, mixed as specified and placed according to the lines, grades, thickness, and dimensions shown on the details. Reference to the American Society for Testing and Materials, the Standard Specifications for Highway Construction of the State of Nebraska Department of Roads, 1997 Edition, and the American Association of State Highway and Transportation Officials shall be identified hereinafter as ASTM, NDOR and AASHTO.

3A-02. COMPOSITION OF CONCRETE. Concrete shall consist of tested Platte River aggregate, Type I Portland Cement, water and an approved air-entraining admixture. No substitution of fly ash for Portland cement will be permitted. Concrete shall be "AX" for sidewalks, driveways, steps and structures and 47-B for street pavement, curb and gutter and concrete valley gutters. The mixes shall comply with Section 1002 NDOR Standard Specifications. The proportions of cement and aggregate shall be as shown below:

Class	Lbs. of Cement per C.Y.	Air Content	Lbs. of Aggreg. per 100 lbs of Cement	Max. Water Cement Ratio(lb of Water) per 100 lbs of Cement	Ratio of Coarse Aggr. to Type of Total Aggr.	Course Aggr.
"AX"	658 (7 Sacks)	5.0-7.5%	410-450	0.53		
"47B"	564 (6 Sacks)	5.0-7.5%	510-555	0.53	27-33%	Limestone

If necessary, an approved water-reducing admixture may be used to produce a workable mixture.

Slump tests will be performed by the Resident Project Representative to determine the consistency of the concrete mixture. Concrete shall have a slump of 1" to 2 1/2" as determined by ASTM C143. Concrete to be placed by slip-form shall have a slump of 1/2" to 1 1/2".

3A-03. COMPRESSIVE STRENGTH OF CONCRETE. Concrete shall have 2,000 PSI compressive strength at 7 days and 3,000 PSI at 28 days.

3A-04. MATERIAL REQUIREMENTS AND EQUIPMENT FOR HANDLING AND MIXING CONCRETE. Comply with Sections 601.01, 601.02 and 603.02 of NDOR Standard Specifications.

3A-05. PREPARATION OF SUBGRADE. The Subgrade shall be prepared as specified in Section 2B above.

3A-06. FORMS; MEASURING AND HANDLING MATERIALS; AND PLACING CONCRETE. Comply with Sections 603.03, Parts 1, 2 & 4 of NDOR Standard Specifications.

3A-07. JOINTS AND SEALING JOINTS IN CONCRETE PAVEMENT. Comply with Sections 603.03, Part 7 of NDOR Standard Specifications and the details shown on the drawings.

3A-08. FINISHING CONCRETE PAVEMENT. Comply with Section 603.03, Part 5 of NDOR Standard Specifications.

3A-09. SLIP-FORM CONSTRUCTION. Pavement may be constructed by means of slip-form equipment provided it is capable of spreading, consolidating, striking off, shaping and float-finishing the freshly placed concrete to the desired line, grade and thickness in one continuous passage. The equipment shall be designed and constructed to span half of the width of pavement slab to be laid. If slip-form construction is used, the equipment and procedures shall comply with Section 603.03, Part 3 of NDOR Standard Specifications.

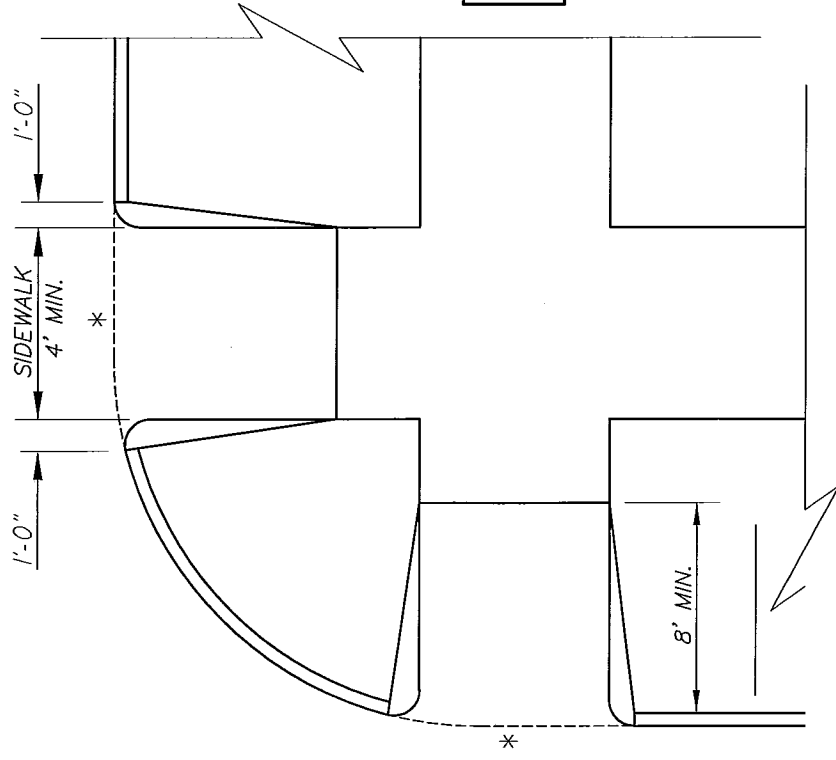
3A-10. INTEGRAL CURB. Comply with Section 603.03, Part 9 1a of NDOR Standard Specifications.

3A-11. PROTECTION AND CURING. Comply with Section 603.03, Part 6 of NDOR Standard Specifications.

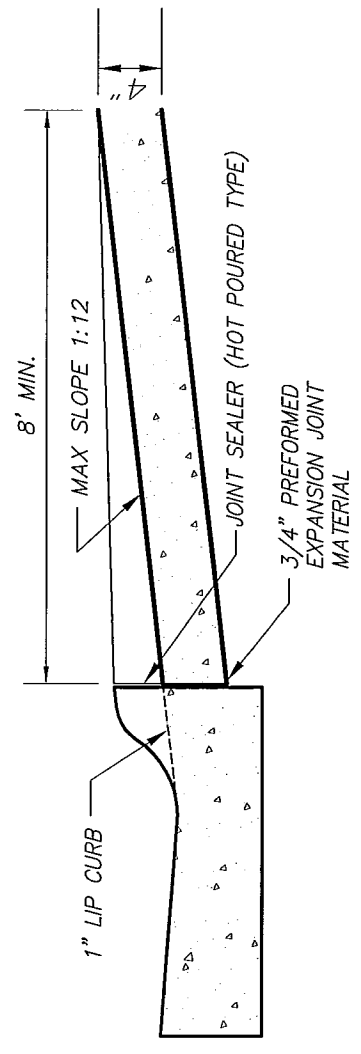
3A-12. REOPENING PAVEMENT FOR USE. No section of the work shall be opened to traffic until approval has been given by the Engineer. In general, no pavement will be opened to traffic until 14 calendar days have passed after its placement unless compressive strength tests indicate the pavement is in condition for safe use.

3A-13. METHOD OF MEASUREMENT. The quantity of concrete pavement to be paid for shall be the number of square yards of pavement measured in place, completed and accepted. Headers, expansion joints, sawing, sealing joints, curing, finishing, tie bars, dowels, etc., shall not be paid for directly but shall be considered as subsidiary work pertaining to concrete pavement.

3A-14. BASIS OF PAYMENT. The quantity of completed and accepted concrete work, measured as provided above, shall be paid for at the contract unit price per square foot, square yard or per linear foot for the various bid items involving concrete pavement.



TYPICAL PLAN

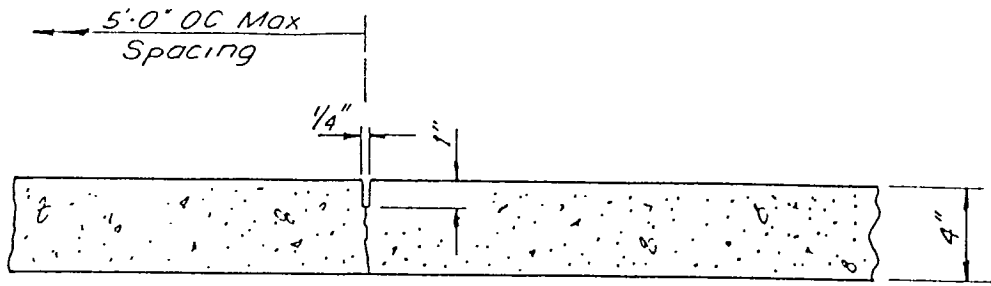


* DO NOT OBSTRUCT GUTTER.
 MAINTAIN NORMAL GUTTER
 PROFILE THROUGH CURB RAMP
 AREA.
 TINE RAMPS.

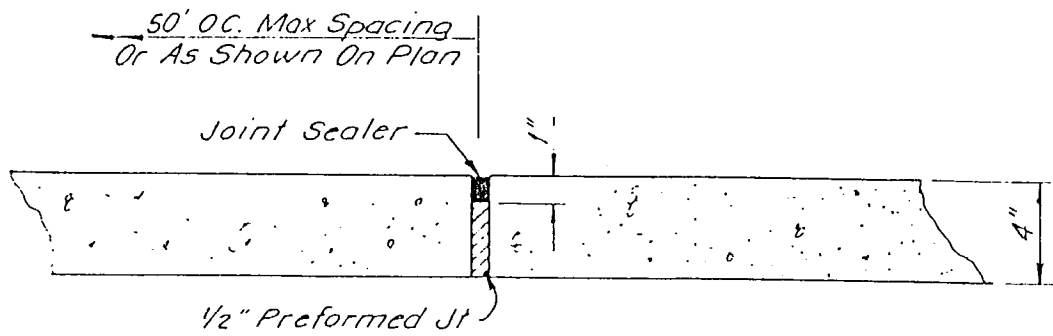
TYPICAL PROFILE

CURB RAMPS

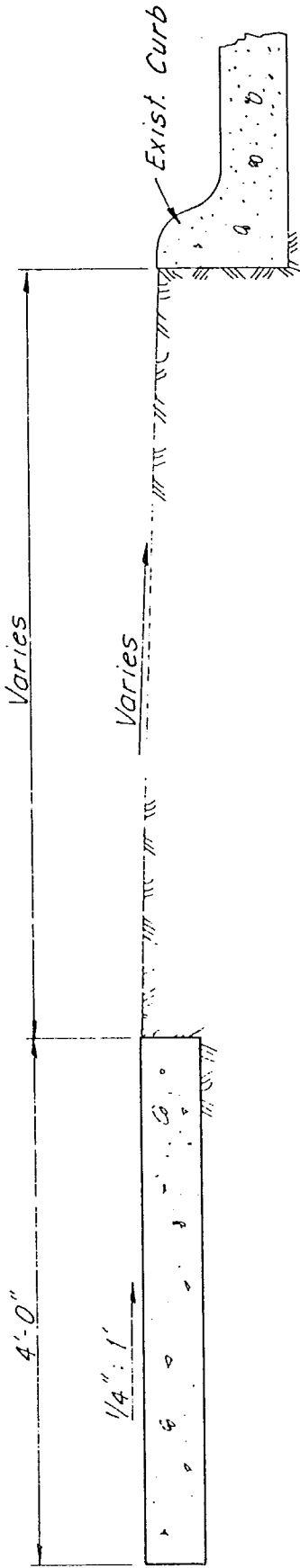
N.T.S.



CONTRACTION JOINT DETAIL



EXPANSION JOINT DETAIL



TYPICAL SECTION OF WALK



112 W. 11th Avenue • P.O. Box 23
Holdrege, NE 68949-0023
(308) 995-6677

LETTER OF TRANSMITTAL

Outgoing Corresp.

DATE	7/25/2006	JOB NO.	024-103
ATTENTION	Russ Pfeil		
RE:	Sidewalk Improvement Spec		

TO: City of Alma
P.O. Box 468
Alma, NE 68920-0468

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop drawings
 Prints
 Plans
 Samples
 Specifications
 Copy of letter
 Change order

COPIES	DATE	NO.	DESCRIPTION

THESE ARE TRANSMITTED as checked below:

- For approval
 Approved as submitted
 Resubmit _____ 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

 FOR BIDS DUE _____, 20____ PRINTS RETURNED AFTER LOAN TO US

REMARKS Russ,

Enclosed please find specifications for sidewalk improvements as per our discussion.

If you have any questions or need any additional information, please feel free to contact our office.

COPY TO: _____

SIGNED: Brian L. Langenberg
Brian L. Langenberg

PLEASE ACKNOWLEDGE RECEIPT OF THIS SHIPMENT BY SIGNING AND RETURNING THE ATTACHED COPY OF THIS TRANSMITTAL.

N/A

ADDRESSEE SIGNATURE