City of East Dubuque, Illinois

Permanent Street Surfacing Construction Requirements

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Origin Design Project Number 22175

PERMANENT STREET SURFACING CONSTRUCTION REQUIREMENTS

FOR

CITY OF EAST DUBUQUE, ILLINOIS

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I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Illinois.

For Origin Design Co.
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6-28-23

Christopher A. Becklin, P.E. Date
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My license renewal date is November 30, 2023
Pages or sheets covered by this seal: Entire Document

CITY OF EAST DUBUQUE, ILLINOIS
PERMANENT STREET SURFACING CONSTRUCTION REQUIREMENTS

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PART I
ROADWAY EXCAVATION, BACKFILL, AND COMPACTION

1. GENERAL

A. Roadway excavation, backfill, and compaction for hot mix asphalt pavement, Portland cement concrete pavement, and rock surfacing shall be in accordance with these specifications and City of East Dubuque Subdivision Regulations.

B. The work in this section consists of furnishing labor, equipment, tools, transportation, materials, accessories, services and performing all operations in connection with roadway and street excavation and filling and grading in accordance with the lines, elevations, cross sections and notes as shown on the drawings and specified herein. Work includes earth excavation and embankment construction necessary for construction of the road surface and the shaping, trimming and finishing thereof; removal of existing obstructions; removal and disposal of surplus, unstable and unsuitable material; topsoil removal and conservation; borrow; protection of existing service lines, utilities, structures and drainage facilities; shoulder construction; placing topsoil and protection of graded areas.

C. The contractor shall strip topsoil and separately store it to provide topsoil replacement. All obstructions such as culvert pipe, signs, and fences shall be removed and stored for replacement upon completion of construction. The contractor shall provide temporary fencing, if necessary, to maintain safety for the contractor and the public or to prevent accidents until permanent fencing is restored.

D. Construction of roadway excavation, backfill, and compaction shall be constructed in accordance with the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction as modified in this specification section.

E. Reference to “City” shall be the City of East Dubuque.

F. Reference to “Engineer” or “City Engineer” shall be designated City Engineer for the City of East Dubuque or the authorized representative of the Engineer.

2. EXISTING UTILITIES AND CONDITIONS

A. The contractor shall be fully responsible for liaison with owners of existing facilities encountered during the construction of roadway improvements. The contractor shall verify the location of all construction site utilities. The contractor shall as a minimum contact Illinois JULIE One Call and the City of East Dubuque for utility locations prior to commencing any construction.

B. All existing utilities shall be protected by the contractor during the progress of the work. Such protection shall allow the utilities to remain in continuous operation. Any utility damaged by the contractor during the course of the work shall be repaired at the contractor’s expense.

C. The contractor shall conduct the work in a manner that will cause a minimum interruption to traffic. The contractor shall post suitable signs indicating that a street is closed and necessary detour signs

for the proper maintenance of traffic. Prior to the closing of any street, the contractor shall notify responsible city authorities, including police and fire departments.

D. If it is necessary during construction to interrupt or obstruct natural drainage of the surface, or the flow of artificial drains, the contractor shall provide temporary drainage facilities during progress of the work at his expense that will prevent damage to public and private interests and shall restore the original drains at his own expense as the work will permit. The contractor shall be liable for all damages which may result from his negligence to provide for either natural or artificial drainage which the work may have interrupted.

3. LINE AND GRADE

A. The roadway shall be excavated to the line and grade shown on drawings prepared and approved by the Engineer.

B. Line and Grade Stakes - The Engineer or the contractor shall provide line and grade stakes when required. The contractor shall be responsible for protecting the original line and grade stakes.

C. Obstruction to Line and Grade - Whenever obstructions are encountered during the progress of the work and interfere to such an extent that an alteration in the plans is required, the Engineer shall have the authority to change the plans and order a deviation from the line and grade or arrange for the removal, relocation, or reconstruction of the obstructions with the approval of the Engineer.

4. EXCAVATION

A. All excavation, embankment construction, and grading required shall be performed in accordance with the drawings, these specifications, and specification for surfacing.

B. After any existing sod has been removed, topsoil shall be stripped, salvaged and stockpiled to a depth specified to allow a uniform lift over all disturbed areas not otherwise surfaced. If not otherwise specified, the depth shall be 6 inches. Topsoil from other sources may be incorporated into the project upon approval by the Engineer.

C. Suitable excavated materials shall be moved to areas requiring fill and shall be placed in accordance with these specifications. Determination of unsuitable material shall be made by the Engineer. Unstable soils encountered during grading operations shall be removed and replaced with suitable material.

D. Existing culvert pipe shall be removed, replaced, salvaged or deleted as shown on the drawings. Operations regarding existing culvert pipe shall be incidental to unclassified excavation unless indicated otherwise.

E. Cut or fill sections shall be sloped uniformly from curb line to sidewalk or other controlling features. Finished banks shall present a neat, finished appearance.

5. BACKFILL AND COMPACTION

A. Fill material shall be placed in lifts not exceeding 6 inches in thickness after compaction. The first layer shall be compacted to a density of 90% of maximum dry density (standard Proctor) unless otherwise indicated. Each succeeding layer shall be compacted to not less than 95% of maximum dry density. Moisture control shall be maintained throughout backfilling operations to ensure that specified densities are achieved. Moisture content shall fall within +/- 2% of optimum.

B. Subgrade shall be shaped to the line and cross section grade shown on the drawings.

C. Alternate compaction methods and equipment shall be subject to the approval of the City Engineer.

6. SUBGRADE PREPARATION

A. Additional subgrade preparation shall be provided as necessary to ensure uniformity of undisturbed material and new embankment across the subgrade.

B. The top 6 inches of material below the proposed finished subgrade elevation shall be scarified for the full width of the paving plus one foot on each side. Subgrade material shall be pulverized by disking or other approved methods.

C. The scarified subgrade material shall be mixed with water to +/- 2% of optimum moisture content and recompacted to 95% of maximum dry density (standard Proctor).

D. Unstable subgrade shall be excavated up to two feet below grade. The material shall be replaced with suitable stable material compacted to uniform density in 6 inch lifts. The density of compacted subgrade shall be equal to or greater than adjacent undisturbed grade.

E. Soils of certain types or with certain moisture conditions which, in the judgment of the Engineer, cannot be manipulated such that the required densities can be obtained shall, if not specified otherwise, be stabilized with compacted crushed rock in an amount and to the extent determined by the Engineer to provide stable subgrade to support the paving.

F. On-site material shall be moved from cut areas to fill areas in accordance with the plans. Borrow material shall be obtained from designated areas as needed. Unstable material shall not be used as fill material.

G. Crushed stone for subgrade stabilization shall be Course Aggregate Gradations CA 1, CA 3 in accordance with IDOT Article 1004 or Engineer approved alternate. Engineer's fabric shall be used under the subgrade stabilization material unless otherwise City or Engineer approved.

H. Fine grading shall consist of smoothing and shaping the entire subgrade surface in accordance with line, grade and cross section shown on the drawings. The contractor shall maintain the finished subgrade in satisfactory condition until subsequent operations are performed.

7. SITE PREPARATION

A. Clearing shall consist of felling and of cutting trees, trimming of trees left standing and the satisfactory removal and disposal of all trees, branches, logs, downed timber, hedge, shrubs, brush, growing corn, weeds, grass, cornstalks, other herbaceous vegetation and all decayed vegetable matter, rubbish and similar unsuitable materials.

B. Grubbing shall consist of the removal and disposal of stumps and roots.

C. Clearing and grubbing shall be performed in areas within the scope limits of embankments, in areas to be excavated, and in other areas as designated on the drawings.

D. The cleared and grubbed material shall in general be disposed away from the site in a legal manner conforming to local and state ordinances, laws, and regulations.

8. TESTING

A. Immediately prior to placing the base and/or pavement, the subgrade shall be tested for conformity with the cross section shown on the plans by means of an approved template. If necessary, material shall be removed or added, as required, to bring all portions of the subgrade to the correct elevation. The subgrade shall then be thoroughly compacted and again tested with the template. Pavement and/or base shall not be placed on any portion of the subgrade which has not been tested for correct elevation. The subgrade should also be cleared of any loose material which may have fallen upon it.

B. The subgrade shall be "proof rolled" by making a minimum of one passage with a fully loaded tandem axle dump truck, or Engineer approved alternate method. If unsuitable areas are revealed, the City will require subgrade stabilization. Additional stabilization shall be paid as indicated in the contract for City owned projects or at the developer's expense for private projects such as subdivisions. If, in the opinion of the City Engineer, the contractor's work was performed improperly or incorrectly, subgrade stabilization shall be at the contractor's expense.

9. BORROW

A. Unless otherwise provided in the contract documents, when the quantity of material required for embankments is not available within the limits of the project cross sections or specific borrow areas as indicated, the contractor shall make up the deficiency from borrow areas provided by the City or furnish equivalent material from alternate borrow areas.

B. If borrow areas are not designated, the contractor will supply their own borrow site and be responsible for obtaining all rights associated with this area.

10. FINISH WORK AND CLEANUP

A. Finish work and cleanup shall include removing excess material from behind curbs and adjacent to slabs and structures. Topsoil shall be replaced to a 6 inch depth in these areas.

B. Disturbed areas shall be dressed and raked. Lumps, stones, limbs and other debris shall be removed from the work site.

11. ACCESS DURING CONSTRUCTION

A. General - A suitable means of access to property which abuts easements, streets and highways involved in the construction of the project shall be maintained. Suitable access shall mean a roadway of sufficient width, free from ruts, potholes, and mud holes, and capable of carrying a passenger car without damage to the car. All adjoining property owners shall be notified at least 24 hours on advance of a street closure. Whenever access must be denied due to construction operations, a suitable access shall be provided within 24 hours after that portion of the construction responsible for the access denial is completed. Whenever construction is halted due to inclement weather, weekends, holidays or for any other reason, a suitable access shall be provided for all adjoining property owners.

12. SAFETY

A. Neither the City of East Dubuque nor the City Engineer nor any employee of either will be responsible for the contractor's compliance with safety and health requirements and regulations.

13. SPECIAL REQUIREMENTS

A. The contractor shall stop work and notify the Engineer or the City of East Dubuque immediately if contaminated soils, historical artifacts or other environmental or historic items are encountered.

B. The contractor shall conform to all City of East Dubuque, State of Illinois, and Federal requirements.

CITY OF EAST DUBUQUE, ILLINOIS
PERMANENT STREET SURFACING CONSTRUCTION REQUIREMENTS

CONSTRUCTION SPECIFICATIONS
FOR PAVING PROJECTS

PART II
PORTLAND CEMENT CONCRETE PAVEMENT, CURB AND GUTTER,
SIDEWALK, DRIVEWAY, AND PEDESTRIAN CURB RAMPS

1. GENERAL

A. Portland Cement Concrete (PCC) pavement, curb and gutter, sidewalk, driveway and pedestrian curb ramps shall be in accordance with these specifications and East Dubuque Subdivision Regulations.

B. Provide the labor, material, facilities and administration as required to complete all work covered by this section.

C. This specification includes the requirements for the construction of full depth PCC pavement, pavement widening, and concrete curbs and gutters, sidewalks, driveways and curb ramps placed upon a prepared or corrected subgrade or previously constructed base or subbase. See City of East Dubuque Roadway Grading Requirements for site grading for subgrade and subbase construction specifications. This section shall also include final subgrade/subbase preparation for concrete paving.

D. Reference is made to the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

E. Construction of PCC pavement, curb and gutter, sidewalk, driveways and pedestrian curb ramps shall be constructed in accordance with the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction as modified in this specification section.

F. Reference to “City” shall be the City of East Dubuque.

G. Reference to “Engineer” or “City Engineer” shall be the designated City Engineer for the City of East Dubuque or the authorized representative of the Engineer.

2. PRODUCTS

A. All materials for PCC pavement, curb and gutter, sidewalk, driveway and pedestrian curb ramp construction shall conform to the requirements of Division 400 of the Standard Specifications for Road and Bridge Construction.

3. TESTING

A. Air content of fresh and unvibrated concrete when placed on the subbase or subgrade shall be maintained at a target air content with a maximum variation of plus 1.5% or minus 1.0%. The air content shall be checked daily.

B. Compression tests made from the mix design shall report a 28-day compressive strength of 4,000 psi. A seven day strength shall be approximately 60% of the 28-day strength.

C. Consistency shall show a minimum slump of 1/2 inch and a maximum of 2-1/2 inch slump for fixed form or slip form, pavement, sidewalk, driveway, and curb ramp. A minimum of 1/2 inch and a maximum of 4 inch slump for hard finished pavement, sidewalk, driveway and curb ramp will be allowed. A minimum of 1/2 inch and a maximum of 3 inch slump will be allowed for curb and gutter.

D. The Contractor shall provide whatever assistance and cooperation is required to the Engineer or inspector during the field sampling and testing of the concrete. The following tests/sampling may be conducted by the Engineer:
   i. Slump Test - One test per 200 CY or minimum of one per day.
   ii. Air Entrainment - One test per 200 CY or minimum of one per day.
   iii. Strength Test Specimens - Two cylinders per 500 cubic yards or a minimum of two per day or two beams per 2,000 cubic yards or a minimum of two per day.

4. MINIMUM ROADWAY IMPROVEMENTS

A. Local streets in the City of East Dubuque which are defined as having no more than 1,000 average daily traffic (ADT) shall have a pavement structure, if PCC, of 7 inches of PCC with a minimum of 6 inches of base stone. Additional base stone or subgrade stabilization stone will be required in areas where the subgrade is determined as not acceptable based on a "proof rolling" operation as previously described. This minimum standard pavement structure is only applicable to residential streets and does not apply to streets serving commercial or industrial properties. Streets that have excess of 1,000 ADT or that serve commercial or industrial properties shall have the pavement designed structure designed and approved by the City prior to installation.

5. PREPARATION OF THE SUBGRADE

A. The bottom of the excavation for the concrete or top or top of the fill shall be known herein as the concrete subgrade and shall conform to the lines, grade and cross-sections shown on the plans.

B. The subgrade shall be prepared in accordance with Illinois DOT Standard Specification and the City of East Dubuque Roadway Excavation, Backfill, and Compaction requirements, the drawings, and any Special Project Requirements.

C. The finished subgrade shall be maintained in a smooth and compacted condition until the concrete has been placed. The mixer, ready-mix trucks, or other equipment shall not operate on the prepared subgrade unless conditions of the job will not permit operation from the shoulder or outside the subgrade. Mixer or ready-mix trucks shall not be permitted to operate from previously paved areas until the pavement is at least seven days old and compressive strength of 4,000 psi or flexural strength of 500 psi is attained, unless otherwise approved.

6. EQUIPMENT

A. Equipment for mixing, transporting and placing PCC shall meet the requirements of Illinois DOT Specification Number 1103.

B. Slip form equipment can be used if the final product conforms with the prepared cross section as shown on the plans or curb and gutter cross section, and can produce satisfactory finish.

C. Form to be used shall be metal and to the full depth of the concrete pavement. Wood forms may be used on curved sections and for sidewalks, driveways and curb ramps. All sections shall be straight, free from warp and of sufficient strength. They shall be staked, braced and held firmly to line and grade until the

concrete has set. All forms shall be kept clean and oiled prior to placing concrete. The Engineer may reject any form that is not in proper condition.

7. DELIVERY OF CONCRETE

A. Concrete transported without continuous agitation shall not be used if the period elapsed between the time the concrete is mixed and the time it is placed is greater than 30 minutes.

B. Concrete transported with agitation shall not be used when the cement has been in contact with the aggregate more than 90 minutes before it is placed.

C. The methods of delivering and handling the concrete shall be such that objectionable segregation or damage to the concrete will not occur, and that which will facilitate placing with a minimum of rehandling.

D. The compartment in which concrete is transported to the work shall be thoroughly cleaned and flushed with water to ensure that hardened concrete will not accumulate. Flushing water shall be discharged from the compartment before it is charged with the next batch.

8. PLACING CONCRETE

A. Unless otherwise approved, no concrete shall be placed unless an inspector is present. Concrete shall be placed as rapidly as possible. Successive batches shall be deposited in a continuous operation.

B. The Contractor shall take necessary precautions to prevent segregation of concrete when discharged.

C. The concrete shall be distributed to such depth that when consolidated and finished the slab will not be below grade at any point. The concrete shall be deposited to require as little rehandling as possible. Necessary hand spreading shall be done with shovels and not with rakes.

D. The Contractor shall exercise care in placing, vibrating, compacting, and finishing concrete at and about all expansion joints and adjacent to outside forms to avoid damage to joint material and the forming of honeycomb and voids. Concrete shall not be dumped directly over or against a joint in such a position that the concrete will flow directly against the joint. Concrete shall be shoveled against sides of joints simultaneously.

E. Concrete for paving shall be of uniform slump and adequately supplied in front of the paver. The rate of progress shall be controlled so that the forward movement of the paver will be as nearly continuous as practicable. If it is necessary to stop the forward movement of the paver, the vibrator and tamping elements shall also be stopped immediately. Care must be taken to see that sufficient concrete is supplied along the form line to form the integral curb where shown on plans.

F. Concrete shall not be placed when storm or inclement weather will prevent good workmanship. No aggregates containing frozen lumps may be used, and concrete shall not be placed on a frozen subgrade.

G. Concrete shall not be placed when darkness will prevent good workmanship in placing and finishing operations. In good weather the header shall be placed at least 45 minutes before sunset. During cold weather more time shall be allowed for finishing and protection. All finishing and curing operations shall be performed prior to darkness.

H. Mix and place concrete only when the temperature is at least 35 degrees Fahrenheit and rising unless permission to pour is obtained from the Engineer, in which event heat all material and otherwise properly prepare it so that batching and mixing can proceed in full accord with the provisions of this specification.

Irrespective of the temperature conditions at the time of placing, provide suitable means for mixing concrete at a temperature of 65 degrees Fahrenheit. Maintain the concrete at 55 degrees Fahrenheit during placement. Except by specific written authorization, concrete pouring shall cease when the descending air temperature in the shade and away from artificial heat falls below 40 degrees Fahrenheit.

9. FINISHING

A. Compact concrete immediately after placement with the aid of mechanical internal vibrating equipment supplemented by hand spading, rodding and tamping. Use internal vibrators which maintain a speed of not less than 3,500 impulses per minute when submerged in the concrete. Maintain at least one spare vibrator as a relief. Limit the duration of vibration to that necessary to produce satisfactory consolidation without causing objectionable segregation.

B. The vibratory unit shall not be allowed to operate while the finishing machine or spreader is standing still, except at transverse joints where vertical material is used, where a short pause shall be made on both sides of the joint to consolidate the concrete.

C. If machine finishing is the planned method of finish, the pavement shall be struck off and consolidated with a mechanical finishing machine. This machine shall strike-off the concrete at such a height that after consolidation and final finishing it shall be the exact elevation and have the exact crown shown on the plans. A depth of at least 2 inches of concrete shall be carried in front of the strike-off screed for the full width of the slab, but the depth shall not exceed 2/3 of the height of the vertical face of the screed. The operations of the machine shall be controlled to prevent an excess of mortar and water being worked to the top. The finishing machine shall be provided with a screed which will consolidate the concrete by pressure. The concrete shall be brought to a true and even surface, free from rock pockets. Hand finishing tools must be kept available for use in case the finishing machine breaks down.

D. If a vibrating finish is the planned method of finish, the pavement shall be struck off and consolidated with a mechanical finishing machine. This machine shall strike-off the concrete at such a height that after consolidation and final finishing it shall be at the exact elevation and have the exact crown shown on the plans. A depth of at least 2 inches of concrete shall be carried in front of the strike-off screed for the full width of the slab, but the depth shall not exceed 2/3 of the height of the vertical face of the screed. When the forward motion of the vibrating screed is stopped, the vibrator shall be shut off; it shall not be allowed to idle in or on the concrete.

E. Internal vibration shall be required alongside forms, longitudinal joints, transverse joints and in machine placed curbs. Concrete which is inaccessible to the vibratory compaction equipment shall be vibrated either on the surface or internally with a hand vibrator. All vibration shall stop when the machine stops.

F. Hand finishing shall comprise the operations of striking-off, longitudinal floating, scraping, straight edging, edging, testing and final surfacing. Complete hand finishing of the pavement will not be permitted except at intersections, transverse joints, and when failure of mechanical equipment occurs.

G. Where hand finishing is permitted, the pavement shall be struck-off with a screed cut to the form of the pavement surface and weighing at least 15 pounds per lineal foot. The screed shall rest on the side forms, gutter apron or curb and be drawn forward with a sawing action. A depth of at least 2 inches of concrete shall be carried in front of the strike-off screed for the full width of the pavement whenever the screed is being drawn forward.

H. Extreme roughness and depressions greater that 1-1/2 inch shall be a basis for screeding a second time (immediately after the initial screeding). Cement mortar gathered from the surface of the concrete already in place shall not be used in filling boot tracks or stony areas. Such imperfections shall be dug out and

refilled with concrete to the depth of half of the slab and worked smooth. No worker shall then be allowed to walk over the completed area.

I. After the concrete has been struck off and consolidated, it shall be further smoothed if necessary, by means of a float. The float may be a mechanical or a hand float. The Contractor is cautioned to avoid overworking the concrete and impairing the finish.

J. Before final finishing is completed and before the concrete has taken its initial set, the edges of the slab and curb shall be carefully finished with an edger of the radius shown on the plans.

K. The final finish for pavement shall be by wet and clean burlap or artificial turf drawn longitudinally over the surface by hand operation or preferable behind a bridge adapted for that purpose. At least 4 feet of burlap or turf shall be in contact with the concrete at all times. Integral and gutter curb shall be finished in the same manner. The drag operation shall be performed after all edging and tooling had been completed. The drag shall leave longitudinal striations uniform throughout the project and the surface free from aggregate tear or holes. The drag shall be maintained in such condition as to produce the desired finish. For curb and gutter, sidewalk, driveway and curb ramps, after the water sheen has disappeared, the surface shall be given a final finish by light brooming. For sidewalk, driveways and curb ramps, the broom shall be drawn at a right angle to the edge of the walk or driveway with adjacent strokes slightly overlapping. For curb and gutter, the broom shall be drawn parallel to edge of the roadway. This brooming shall produce a uniform, slightly roughened surface with parallel broom marks.

10. PROTECTION AND CURING

A. Concrete shall be cured by protecting it against loss of moisture, rapid temperature changes, and from rain, flowing water, and mechanical injury for a period of not less than 72 hours from the beginning of the curing operation. Moist curing, waterproof paper, white polyethylene sheeting, white pigmented liquid membrane compound or a combination thereof may be used for curing. The method of curing must have approval of the Engineer prior to commencement of operations. All surfaces of the newly laid concrete shall be covered by the curing medium immediately following finishing procedures. Areas exposed by the removal of forms shall be covered 30 minutes after removal. White-pigmented liquid curing compound shall be applied at the rate of no more than 15 square yards per gallon.

B. When concrete is placed in cold weather and temperatures may be expected to drop to 32 degrees Fahrenheit, the concrete shall be covered with one layer of burlap. If the forecast is for low temperatures of 25 to 31 degrees F., two layers of burlap or one layer of burlap and one layer of plastic shall be placed over the concrete. If the temperature is expected to drop below 25 degrees Fahrenheit, four layers of burlap between layers of four millimeter plastic shall be placed on the finished concrete. Concrete shall be protected from freezing conditions until at least 36 hours old (5 days after Oct. 1). Any covering shall be removed and disposed of by the Contractor.

11. JOINTS - GENERAL

A. Joint placement and use shall conform to Illinois DOT Standard Specifications and Illinois Highway Standard 226-420001 and as shown on the drawings or in any Special Project Requirements. Expansion and contraction joints shall be so constructed as to be continuous and shall not be staggered. The saw cuts shall be one-third of the thickness of the slab the entire width of the concrete including the curb, except when noted by the Illinois DOT Standards. The joints shall not be sawed until the concrete has hardened to the extent that tearing and reveling are precluded, nor later than the day the protective coating, if any, is removed or that random cracking would be likely to occur if the joint were not sawed. Any procedure which results in premature and uncontrolled cracking shall be revised immediately by adjusting

the sequence of sawing the joints or the time interval involved between the placing of the concrete and the sawing of joints.

B. Immediately after cutting, all pavement joints shall have all foreign material, joint sawing residual, dirt, and curing membrane removed by blowing. Joints shall then be sealed. Joints shall be recleaned at the time of sealing. Joint fillers and sealers shall conform to Illinois Section 1050 and Illinois Highway Standard 226-420001.

C. For pavement, transverse joints shall be contraction, expansion or construction joints. Contraction and expansion joints shall be placed as indicated on the plans and construction joints wherever construction may require them. Longitudinal joints are those joints parallel to the lane of construction. They may be either intermediate, center joints or the construction joints between construction lanes. Longitudinal joints shall be placed as shown on the plans. They shall be of the sawed, dummy groove, premolded strip, or the keyed construction type. Joints between construction lanes shall be keyed construction type unless otherwise indicated or approved. All joints shall conform to Illinois DOT Standard Specifications and Illinois Highway Standard 226-420001.

D. For sidewalk, driveway and curb ramps the surface shall be marked off into square blocks with contraction joints, at a nominal dimension equal to the width of the sidewalk. However, the area of the block shall not be less than sixteen nor more than one hundred square feet. The concrete shall be cut through a minimum of 1-1/4 inches or not less than one-fourth the depth with a pointed trowel or suitable jointed tool, and the concrete edged on both sides. If the Contractor desires, the contraction joint may be sawed a minimum of 1-1/4 inches or not less than one-fourth the depth as soon as practical without undue reveling of the concrete.

E. Longitudinal contraction joints will not be required unless the sidewalk or driveway is less than 5 inches and the width is 8 feet or greater or the paved width is greater than 12 feet. The joint shall be cut or sawed one-third the depth.

12. BACKFILL

A. After the concrete has sufficiently set, the area adjacent to the pavement shall be backfilled to the required elevation with suitable material obtained on the site unless otherwise indicated on the plans. Backfill shall contain no pieces of concrete or rocks within the top foot of backfill.

13. PORTLAND CEMENT CONCRETE PAVEMENT

A. Applicable portions of these specifications shall govern all work.

B. Transverse contraction joints shall be sawed. Sawing shall be performed within 24 hours of concrete placing.

C. Expansion joints shall be located where shown on the plans. They shall extend the entire width of the slab and from the subgrade to 3/4 inch below the surface of the slab. They shall be the dimensions and spacing as shown on the plans. The filler shall be held accurately in place during the placing and finishing of the concrete by a bulkhead, a metal channel cap or other approved method.

D. When dowels are required, dowel caps shall be placed over the greased ends of dowels that extend into the last slab poured at expansion joints. When used, reinforcing mesh will terminate 3 inches from the expansion joint and resume 3 inches from the expansion material on the other side of the joint. Under no circumstances shall any concrete be left above the expansion material or across the joints at any point.

Any concrete spanning the ends of the joint next to the forms shall be cleaned and sealed with joint sealing material.

E. Whenever the work of pouring concrete stops for 30 minutes or more, a header, the top of which is true to the shape and grade of the slab, shall be set in a vertical position and should line up with adjacent joints. The concrete shall be poured up to the header, spaded, vibrated, or tamped into place so as to leave no porous place in the concrete. Smooth steel dowel pins, 3/4 inch in diameter, 16 inches long, shall be placed at intervals of one foot, on the center height of the pavement for a distance of 8 inches into the concrete. When work is resumed the header shall be removed without disturbing the concrete or pins. The fresh concrete shall be placed directly against the face of the previously poured concrete and well spaded around the rods.

F. If a header is at the end of the project, at the end of an intersection return, or if paving operations are to be suspended for thirty days or more, the header board shall be left in place and concrete placed over the dowel bars until such time as paving operations are resumed at the header.

G. Longitudinal center joints shall be tied and sawed if paving full width or keyed and tied if the center is at the edge of the paving width (construction joint). Sawed longitudinal center joints shall be sawed grooves made with a concrete saw after the concrete has set. The saw shall be at least 1/4 of the slab depth. The joint may be sawed before the concrete is seven days old. These joints are otherwise formed in the same manner as the transverse sawed joints.

H. Sawed longitudinal contraction joints shall be constructed in the same manner as sawed transverse contraction joints. If the pavement width is placed more than one pour, then a longitudinal construction joint shall be constructed of deformed bars 3 feet long at 2 feet 6 inches centers in a key way. Bars may be bent at 90 degrees in the center, placed at the mid-point in the slab, one leg to extend at right angles to the centerline into the first pour and parallel to the finished grade. The other leg shall be parallel to the edge and separated from the first pour. Prior to pouring the second portion of the pavement, the bars shall be straightened. Care must be used in straightening the bars so as to not injure the concrete already in place. In no case are bars to be straightened before 72 hours after the first pour. Before pouring the second slab, all concrete should be removed from the keyway.

I. Final inspection, acceptance, tolerances and smoothness shall be tested by the Engineer by means of surface-testing machine or straight edge applied to each separate line of pavement. All surface variations of 1/8 inch or more in 10 feet shall be ground off. Brush-hammering shall not be permitted. Sections of pavement containing depressions with a depth in excess of 1/4 inch in 10 feet shall be removed and replaced at the Contractor's expense. Such removed sections shall not be less than full lane width and full distance between joints in length. Slabs containing spalling, excessive cracking or other defects shall be removed and replaced as above. Excessive cracking shall be defined as any crack with vertical displacement, two cracks of 0.06 inch width per panel or three cracks of 0.03 inch width per panel.

J. It is the intent of the specifications that the pavement shall be constructed to the exact thickness shown on the plans. When the pavement thickness is suspected of being deficient, the pavement thickness will be determined by at least three cores taken from 1,000 linear feet of each lane and at such other locations as the Engineer or City may direct. The Contractor shall be responsible for the costs of this core sampling. Slabs deficient in thickness by more than 1/2 inch shall be removed and replaced at the expense of the Contractor with concrete of required thickness.

K. All reinforcing steel shall be epoxy coated.

14. PORTLAND CEMENT CONCRETE SIDEWALK

A. Unless otherwise specified, the minimum thickness of sidewalks shall be 4 inches. Driveway sidewalks shall have a minimum thickness of 6 inches for residential dwellings and 8 inch for industrial driveways.

B. The Contractor shall remove the sidewalks as shown on the plans or designated by the City. If only portions of sidewalks are to be removed, the boundaries of removal shall be made by a vertical cut not less than one inch deep before breaking. Any areas of sidewalk designated for removal but which are damaged by the Contractor's operations, shall be removed and replaced by the Contractor without compensation.

C. Forms of wood or steel shall be used along each edge of the sidewalk. These forms shall be set true to line and grade and shall held rigidly in place by stakes placed outside the forms and flush with or below the top edge of the forms. All forms shall have a height equal to the full specified depth of nominal thickness. All wood forms shall be thoroughly wetted and metal forms oiled or coated with soft soap before depositing any material against them. Forms shall be free of warp, mortar and dirt.

D. The curb side form shall be set at a gradient of 1/2 inch per foot for the respective distance from the curb. The transverse slope between forms shall be 1/4 inch per foot toward the curb for the respective width of the sidewalk, unless otherwise directed by the City. The maximum transverse slope shall not be greater than 1/2 inch per foot.

E. After the concrete has been brought to the established grade by means of a strike-board, it shall be worked with a steel trowel or wood float to give it a smooth surface.

F. When tested with a straightedge which spans the forms, the surface shall not vary from the required plane more than 1/8 inch. After the surface had been floated, the edges of the slabs shall be finished with a suitable edging tool.

G. Expansion joints shall be constructed at all points where the concrete meets other walks, driveways, curbs, foundations or fixtures in the surface, and at normal intervals of 20 feet, however, in no case shall the interval exceed 25 feet. These joints shall be constructed by installing a 1/2 inch wide full depth strip of approved non-extruded, pre-molded joint material.

H. See attached details to this section.

15. PEDESTRIAN CURB RAMPS

A. Applicable portions of these specifications shall govern all work. Curb ramps shall construction shall comply with Illinois DOT Standards, Illinois Administrative Code Requirements and Illinois DOT Highway Standard 226-42400-11, 226-424006-05, 226-424011-04, 226-424016-05, 226-424021-06, 226-424026-03, 226-424031-02.

B. Curb ramps shall be installed at all intersections and at certain mid-block locations on all new or reconstructed curbs and sidewalks. The ramp condition may be perpendicular, parallel or a combination.

C. The cross slope shall be 1/4 inch per foot maximum. Exception is that this requirement shall not apply to mid-block crossings or when the street grade exceeds 2%.

D. A landing/turning space of 60 inches minimum by 60 inches minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other landings.

E. Detectable warning surfaces shall be provided where a curb ramp connects to a crosswalk or crosses a vehicular path. These may be pre-manufactured panels or stamped into the concrete.

F. A detectable warning surface shall be a surface of truncated domes aligned in a square grid pattern. The detectable warning surface color shall contrast visually with adjacent walking surfaces. (i.e. light on dark or dark on light)

G. A detectable warning shall be placed in accordance with Illinois DOT and Illinois Administrative Code Standards.

H. The grade break between the gutter area and street shall not exceed 8.3%.

16. PORTLAND CEMENT CONCRETE CURB AND GUTTER

A. Concrete shall be deposited so as to provide for construction of the curb and gutter as an integral unit. Concrete of the gutter shall be consolidated as rapidly as it is placed by use of an internal vibrator operating at not less than 3,500 vibrations per minute. Concrete of the curb shall be consolidated by vibration or by tamping while maintaining a sufficient head of concrete to produce a dense, smooth surface.

B. After concrete has been consolidated and face forms have been removed, the surface shall be finished with a wood float to a uniform granular texture and groomed with a fine hair broom or dragged with burlap. Edges adjacent to all forms and expansion joints shall be edged with a suitable edging tool.

C. The finished surface shall conform to the lines and grades shown on the plans and shall have no depressions which trap water.

D. Expansion joints shall be formed by installing a 3/4 inch bituminous fiber joint shaped to the full width and depth of cross section of the curb and gutter and perpendicular to line. Expansion joints hall be placed at intervals not to exceed 150 feet and at all junctions of curved sections of curb and gutter with straight sections.

E. Contraction joints shall be formed at intervals of 15 feet by a metal insert, by inserting into the concrete a plane of weakness or by sawing not less than one-half the depth.

F. At points where sidewalks and driveways abut the curb and gutter, a 1/2 inch bituminous fiber expansion joint shall be placed, extending to the depth of the abutting concrete.

G. After the concrete curb and gutter have sufficiently set, the area behind the curb and gutter shall be backfilled to the required elevation with suitable material that shall contain no pieces of concrete or rocks within the top of backfill. The area shall then be covered with 3 inches of select topsoil and shall be graded and raked to meet existing conditions and property elevations at the direction of the Engineer. The select topsoil may be obtained from the construction site if available and approved by the Engineer. The Contractor may be required to supply this material at his expense from another source that the Contractor shall secure.

H. See attached details to this section.

17. PORTLAND CEMENT CONCRETE DRIVEWAYS

A. Driveway width for a Residential driveway shall be 15 feet minimum with a 30 foot maximum width. Driveway width for a Commercial/Industrial drive shall be 24 feet minimum and 45 feet maximum. The

width of the entrance shall be measured at a point 10 feet from the curb and if no curb is present, it shall be measured across the top of the entrance at the culvert line or where a culvert would normally be located.

B. The driveway shall be a minimum of 6 inches thick.

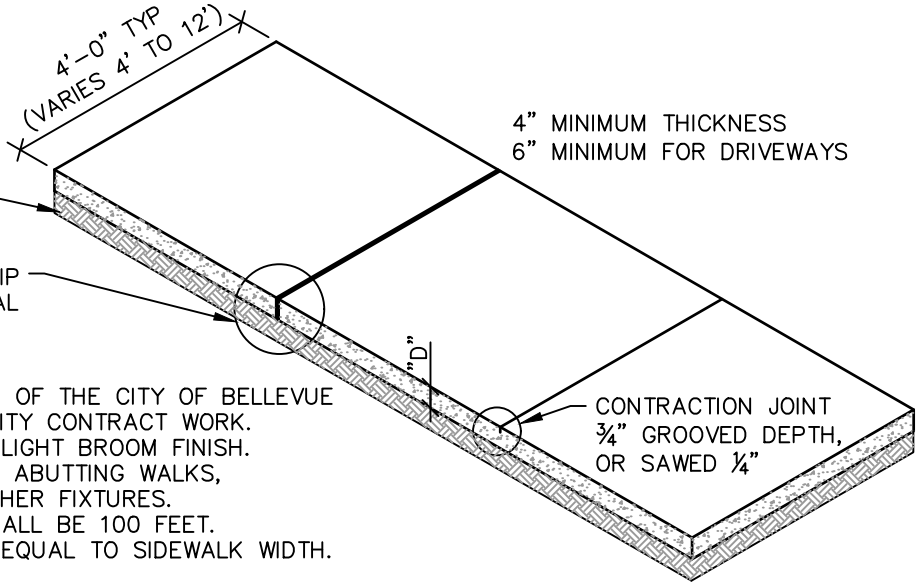
C. Joints will be required to delineate a sidewalk extension through an entrance.

D. The sidewalk slope through the driveway shall be a 2% maximum.

E. The slope of the drive shall be established to prevent "bottoming out" and prevent turning vehicles from slowing appreciably to reduce likelihood of traffic accidents.

18. CONSTRUCTION DETAILS

A. Construction details are part of these standard specifications. The details include:
- Standard Sidewalk
- Standard Curb
- Residential Driveway - Drop Curb
- Commercial Driveway - Drop Curb
- Residential Driveway
- Residential & Commercial Driveway - No Parkway



NOTES:

1. A PERMIT IS REQUIRED FROM THE OFFICE OF THE CITY OF BELLEVUE PRIOR TO CONSTRUCTION, EXCEPT FOR CITY CONTRACT WORK.
2. ALL EXPOSED CONCRETE SHALL HAVE A LIGHT BROOM FINISH.
3. EXPANSION JOINTS SHALL BE PLACED AT ABUTTING WALKS, DRIVEWAYS, CURBS, FOUNDATIONS OR OTHER FIXTURES.
4. EXPANSION JOINTS MAXIMUM SPACING SHALL BE 100 FEET.
5. CONTRACTION JOINT SPACING TYPICALLY EQUAL TO SIDEWALK WIDTH.
6. CROSS SLOPE TYPICAL ¼" PER FOOT.

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Project Description

STANDARD SIDEWALK
CITY OF EAST DUBUQUE, ILLINOIS

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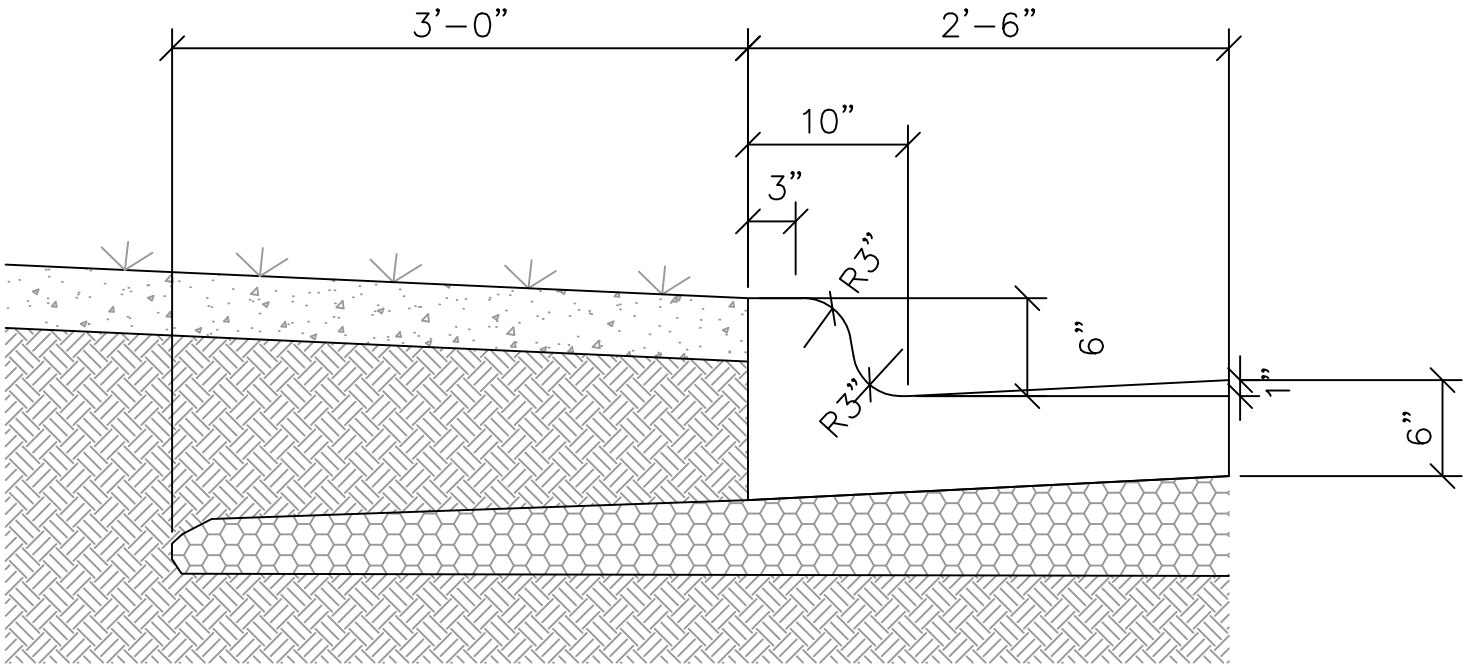
Drawing Issue Information

Drawing No:	E1
Sheet:	1 of 6
Date:	3-10-23
Drawn By:	AMH
Project No:	22175

* INTEGRAL CURB AND GUTTER TO MATCH PAVEMENT THICKNESS



Project Description

STANDARD CURB
CITY OF EAST DUBUQUE, ILLINOIS

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Drawing Issue Information

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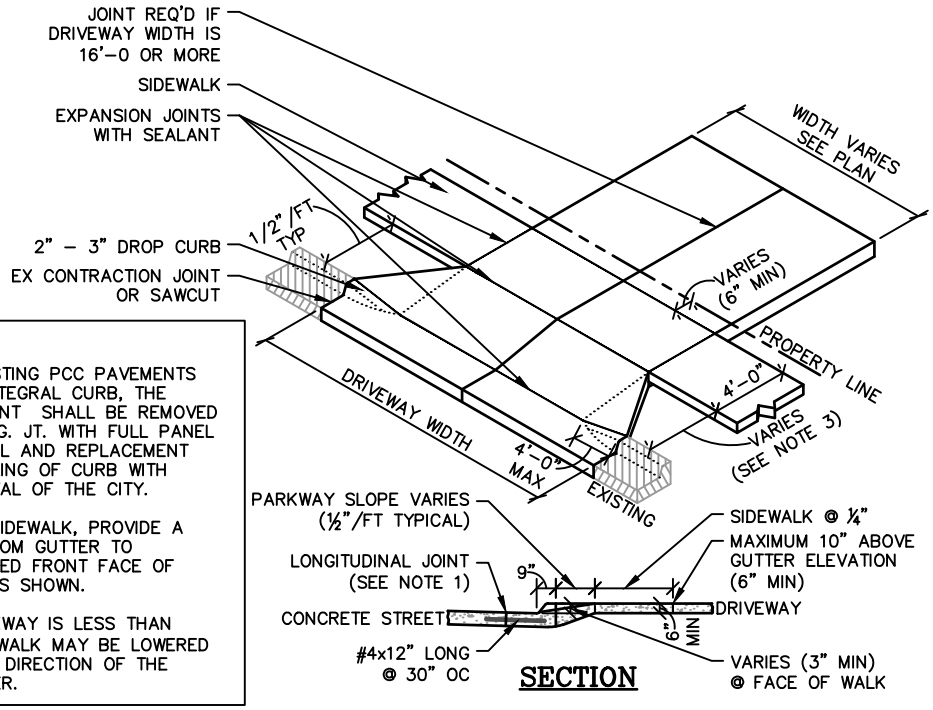
Drawn By:	AMH
Project No:	22175



SECTION

NOTES:

1. ON EXISTING PCC PAVEMENTS WITH INTEGRAL CURB, THE PAVEMENT SHALL BE REMOVED TO LONG. JT. WITH FULL PANEL REMOVAL AND REPLACEMENT OR MILLING OF CURB WITH APPROVAL OF THE CITY.
2. IF NO SIDEWALK, PROVIDE A RISE FROM GUTTER TO PROPOSED FRONT FACE OF WALK AS SHOWN.
3. IF PARKWAY IS LESS THAN 3'–0", WALK MAY BE LOWERED AT THE DIRECTION OF THE ENGINEER.

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Project Description

RESIDENTIAL DRIVEWAY
DROP CURB
CITY OF EAST DUBUQUE, ILLINOIS

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Drawing Issue Information

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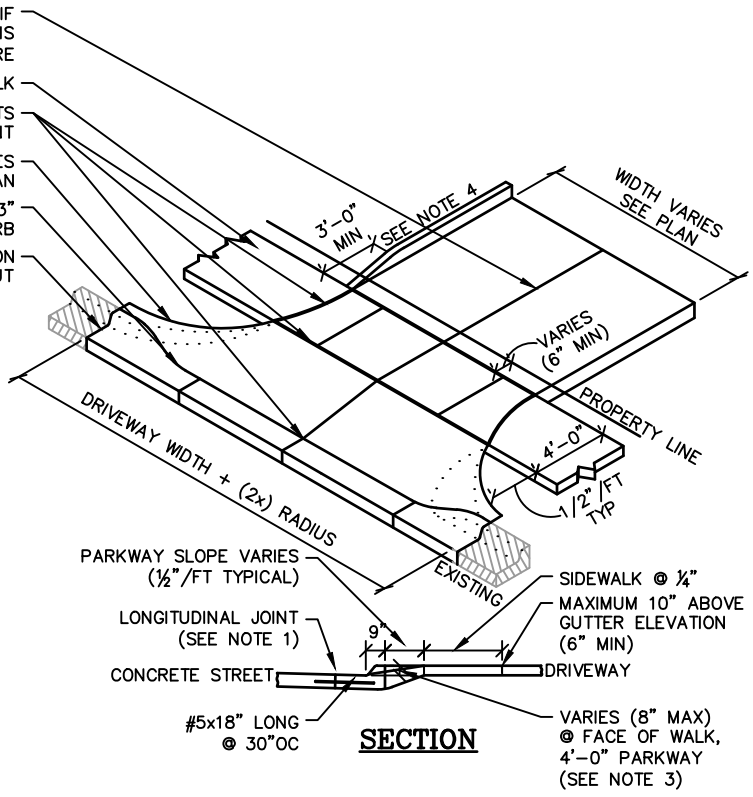
Drawn By:	AMH
Project No:	22175



SECTION

NOTES:

1. ON EXISTING PCC PAVEMENTS WITH INTEGRAL CURB, THE PAVEMENT SHALL BE REMOVED TO LONG. JT WITH FULL PANEL REMOVAL AND REPLACEMENT OR MILLING OF CURB WITH APPROVAL OF THE CITY.
2. IF NO SIDEWALK, PROVIDE A RISE FROM GUTTER TO PROPOSED FRONT FACE OF WALK AS SHOWN.
3. IF PARKWAY IS LESS THAN 3'-0", WALK MAY BE LOWERED AT THE DIRECTION OF THE ENGINEER.
4. IF DRIVEWAY INCLUDES A CURB SECTION, END CURB AT BACK OF SIDEWALK. TAPER CURB HEIGHT FROM 6" TO 0" OVER A DISTANCE OF 3'-0".

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Project Description

COMMERCIAL DRIVEWAY
DROP CURB
CITY OF EAST DUBUQUE, ILLINOIS

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Drawing Issue Information

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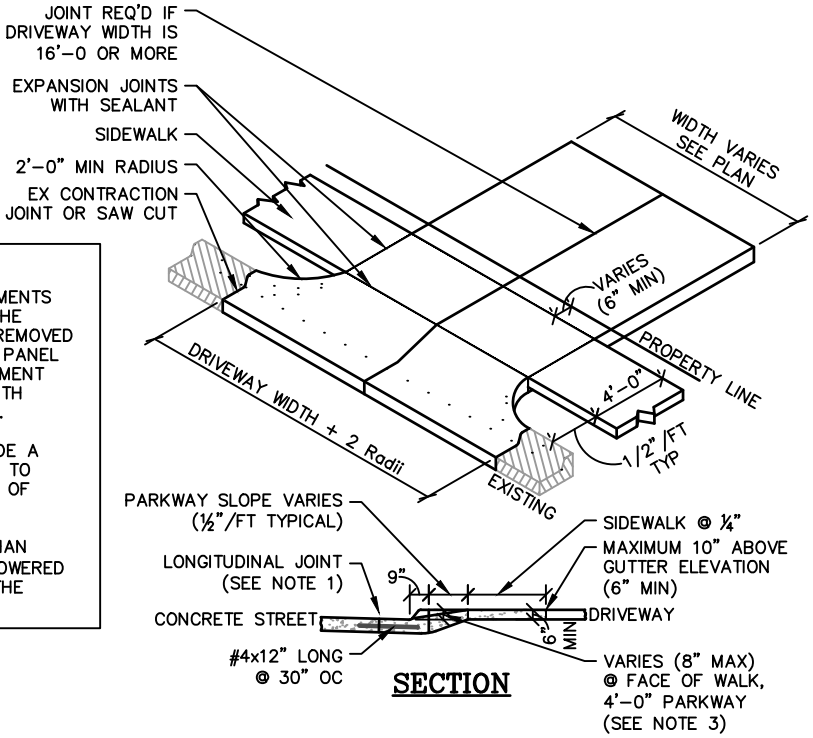
Drawn By:	AMH
Project No:	22175



NOTES:

1. ON EXISTING PCC PAVEMENTS WITH INTEGRAL CURB, THE PAVEMENT SHALL BE REMOVED TO LONG JT WITH FULL PANEL REMOVAL AND REPLACEMENT OR MILLING OF CURB WITH APPROVAL OF THE CITY.
2. IF NO SIDEWALK, PROVIDE A RISE FROM THE GUTTER TO PROPOSED FRONT FACE OF WALK AS SHOWN.
3. IF PARKWAY IS LESS THAN 3'-0", WALK MAY BE LOWERED AT THE DIRECTION OF THE ENGINEER.

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Project Description

RESIDENTIAL DRIVEWAY
CITY OF EAST DUBUQUE, ILLINOIS

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Drawing Issue Information

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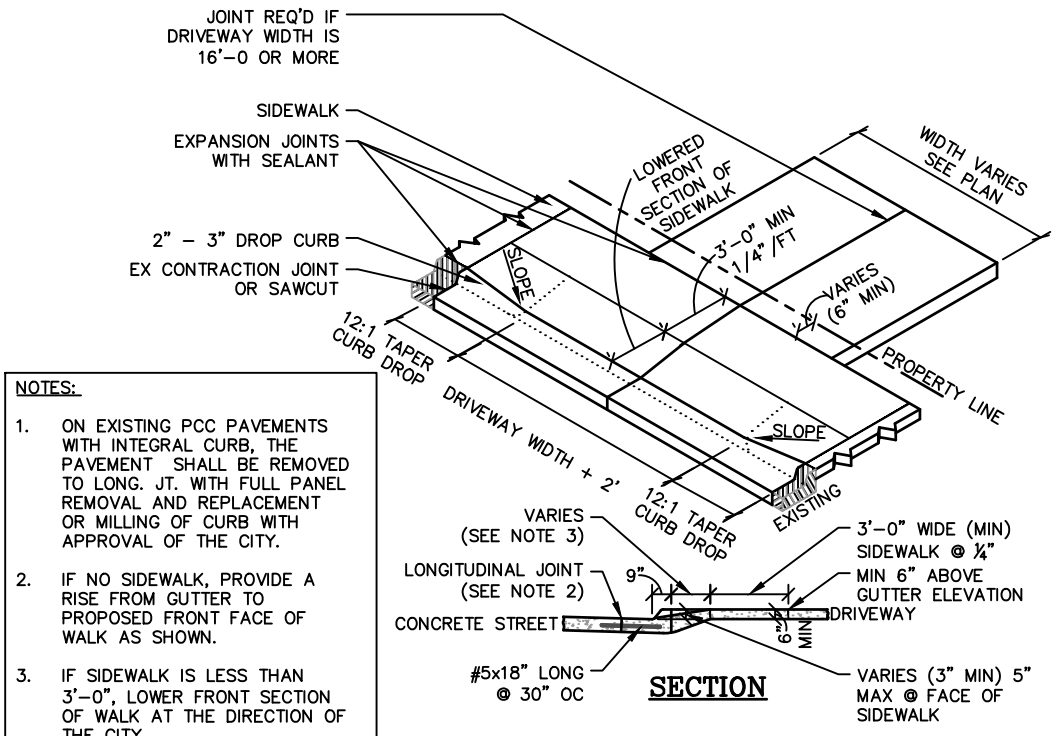
Date: 3-10-23
Drawn By: AMH
Project No: 22175



SECTION

NOTES:

1. ON EXISTING PCC PAVEMENTS WITH INTEGRAL CURB, THE PAVEMENT SHALL BE REMOVED TO LONG. JT. WITH FULL PANEL REMOVAL AND REPLACEMENT OR MILLING OF CURB WITH APPROVAL OF THE CITY.
2. IF NO SIDEWALK, PROVIDE A RISE FROM GUTTER TO PROPOSED FRONT FACE OF WALK AS SHOWN.
3. IF SIDEWALK IS LESS THAN 3'–0", LOWER FRONT SECTION OF WALK AT THE DIRECTION OF THE CITY.

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Project Description

RESIDENTIAL & COMMERCIAL DRIVEWAY
NO PARKWAY
CITY OF EAST DUBUQUE, ILLINOIS

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Drawing Issue Information

Drawing No:	E6
Sheet:	6 of 6
Date:	3-10-23
Drawn By:	AMH
Project No:	22175

CITY OF EAST DUBUQUE, ILLINOIS
PERMANENT STREET SURFACING CONSTRUCTION REQUIREMENTS

CONSTRUCTION SPECIFICATIONS
FOR PAVING PROJECTS

PART III
HOT MIX ASPHALT PAVEMENT

1. GENERAL

A. Hot mix asphalt pavement shall be in accordance with these specifications and East Dubuque Subdivision Regulations.

B. Provide the labor, materials, facilities and administration as required to complete all work covered in this section.

C. This specification includes the requirements for the construction of Hot Mix Asphalt (HMA) pavement and pavement widening placed upon a prepared or corrected subgrade or previously constructed base or subbase. See City of East Dubuque Roadway Grading Requirements for site grading for subgrade and subbase construction specifications. This section shall also include final subgrade/subbase preparation for HMA paving.

D. Reference is made to the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

E. Construction of HMA pavement and pavement widening shall be constructed in accordance with the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction as modified in this specification section.

F. Reference to "City" shall be the City of East Dubuque.

G. Reference to "Engineer" or "City Engineer" shall be designated City Engineer for the City of East Dubuque or the authorized representative of the Engineer.

2. MATERIALS

A. Asphalt cement shall be a performance grade asphalt binder unless specified otherwise and shall comply with the applicable requirements of AASHTO MP1. A refinery analysis shall be required for each shipment.

B. Aggregates shall meet the requirements of Illinois DOT Section 1003.03 and 1004.03.

C. Tack coat shall be SS-1, SS-1h, CSS-1 or CSS-1h on brick, concrete or HMA bases. The prime coat on aggregate bases shall be MC-30. RC70 may also be if air temperatures are below 60°F. A refinery analysis shall be required for each shipment. Tack coat or prime coat shall be applied uniformly across the entire surface of the proposed paving area. Prime coat on aggregate bases shall be applied at a rate of 0.25 lb/sq ft. Tack coat concrete, existing HMA or milled HMA shall be 0.05 lb/sq ft and for new HMA or brick it shall be 0.025 lb/sq ft.

3. JOB MIX FORMULA

A. On projects with HMA quantities of 5,000 tons or more, the Contractor is to provide Mix Design and Quality Control in accordance with Illinois DOT Section 1030.

B. On projects less than 5,000 total ton, the Contractor shall be responsible for performing the Mix design and when required, complete all quality control testing. The Contractor will provide acceptance testing and/or Material Certification in accordance with Illinois DOT Section 1030.

If the Contractor does not have an approved HMA Production Quality Control program for Contractor Certified HMA, the quality control criteria for aggregate, HMA mixture and density cores sampled and tested on a project lot size are required.

C. The Contractor shall provide the City of East Dubuque and the City Engineer with a copy of all required test results upon completion of the project.

4. MINIMUM ROADWAY IMPROVEMENTS

A. Local streets in the City of East Dubuque which are defined as having no more than 1,000 average daily traffic (ADT) shall have a pavement structure, if HMA, of 4 inches of HMA with a minimum of 6 inches of base stone and 8 inches of Course Aggregate Gradation CA 1, CA 3 in accordance with IDOT Article 1004 or Engineer approved alternate. Engineer's fabric shall be used under the subgrade stabilization material unless otherwise City or Engineer approved. Additional base stone or subgrade stabilization stone will be required in areas where the subgrade is determined as not acceptable based on a "proof rolling" operation as previously described. This minimum standard pavement structure is only applicable to residential streets and does not apply to streets serving commercial or industrial properties. Streets that have excess of 1,000 ADT or that serve commercial or industrial properties shall have the pavement designed structure designed and approved by the City prior to installation.

5. EQUIPMENT

A. All equipment used shall be subject to the approval of the Engineer and shall be maintained in satisfactory working condition. All equipment shall be serviced away from the paving site to prevent contamination of the mixture. Units that drip fuel, oil and/or grease shall be removed from the project until leakage is correct.

B. All equipment shall conform to Illinois DOT Standard Specifications.

6. PLANT OPERATION

A. The different sizes of aggregates shall be kept in a separate pile and adequate provisions shall be made to keep them from becoming mixed or contaminated with foreign materials. Stockpiles shall be built as layers and very effort made to prevent them from becoming intermingled. Material shall be so handled as to minimize segregation.

B. The asphalt cement shall be brought to a temperature of 260-330 degrees F. before being measured for mixing with the aggregates. The exact temperature may be regulated by the Engineer based on the mixture, proportion and viscosity of the asphalt cement.

C. The various aggregates shall be fed separately by feeders to the cold elevator in their proper proportions and at a rate to permit uniform temperature control of heating and drying operations. The dry materials shall be delivered to the mixer at substantially the same temperature as the asphalt cement.

D. The exact proportions of the various materials shall be regulated within the limits specified so as to produce a satisfactory coating and mixture. The mixer shall be so operated that the mixture is of consistently uniform temperature and as discharged from the mixer, will not vary more than 20 degrees F. from the temperature set by the Engineer.

E. The temperature of the mix shall range between 260 degrees and 330 degrees F.

7. APPLICATION OF TACK COATS AND SAND COVER

A. Actual samples of all materials must be made available to the Engineer in time to permit laboratory tests before the material is used. Materials shall not be used until approval of the Engineer has been given.

B. Immediately before the tack coat is placed and before placing the asphaltic concrete, the entire existing surface shall be thoroughly swept and cleaned of all loose or foreign material. Tack coat shall be applied only when the surface on which the coat is to be applied is clean and free from moisture. Should the tack-coated surface become dirty from weather or traffic, the surface shall be thoroughly cleaned, and if necessary, retacked before any asphaltic concrete is placed upon it at the direction of the Engineer.

C. The rate of application of the tack coat on existing surfaces shall not exceed an undiluted rate of 0.02 to 0.05 gal. per sq. yd. or as directed by the Engineer. Spraying temperature shall be within recommended ranges for the specific grade.

D. The Contractor shall carefully paint the face of the curbing, manhole rims, abandoned tracks, and edges of any other utility housing with a tack coat to the elevation of the finished surface. Spot dabbing or excess pouring will not be permitted. The surfaces of all appurtenances will be protected from spattering with any of the materials used in the construction. Tack coats shall be allowed to cure properly before any further operations are permitted on the area.

E. Not more than a one day run shall be tacked ahead of the lay down machine, unless progress of work warrants more according to the Engineer.

F. When traffic is to be maintained through the project, the tack coat shall be covered with sand cover at a rate of two to five pounds per square yard.

G. The Engineer may also require the tack coat to be applied less than full width at a time. Care shall be used to avoid excessive application of bitumen or sand cover at the juncture of adjacent strips.

8. PLACING THE MIX

A. Placing, leveling and strengthening courses: The plans or City Code will show the thickness of binder and surface courses to be placed. Any depressions or low areas more than one inch below the bottom of the intended elevation of the bottom of the binder course by placement of preliminary leveling courses of courses of asphaltic concrete. Strengthening courses will be placed as indicated on the plans or as directed by the Engineer. These courses shall be of the same mixture specified for binder course.

B. When the depth of leveling or strengthening course is more than three inches, the desired depth shall be placed in approximately equal layers not exceeding three inches of thickness.

C. Where the width of any strengthening or leveling layer is eight feet or more, the layer shall be spread by a finishing machine. Other widths and irregular areas may be spread by hand methods. Where leveling or strengthening courses must be featheredged, the coarser aggregate shall be luted out and discarded. Strengthening and leveling courses shall be compacted.

D. Succeeding layers may be placed as soon as final rolling or tamping on the previous layer is completed.

E. Succeeding layers of leveling, strengthening, binder or surface course shall not be placed until the previously layer is completed for the full width of pavement.

F. The plans and/or special provisions will show the thickness of binder and surface courses to be placed. After the base has been prepared and any asphaltic strengthening or leveling courses have been placed and compacted, the succeeding binder and surface courses may be placed.

G. On areas of uniform width, binder and surface courses shall be spread with a finishing machine. When placing the mixture, the forward speed of the finishing machine shall be slowed as necessary to provide the least amount of stopping. Where traffic is to be maintained through the work, spreading shall be done in strips approximately one traffic lane in width with one pass of the finished machine. Spreading to the binder and surface courses shall be at such a rate that, when compacted, the layer will be substantially of the thickness and dimensions specified on the plans. A stringline shall be used as a guide for the finishing machine to maintain edge alignment unless otherwise directed by the Engineer.

H. Edge alignment irregularities shall be corrected by hand methods immediately after they occur. When the edges of binder or surface courses are required to be sloped 45 degrees from the vertical, this edge shall be smoothed and compressed by the finishing machine.

I. No asphaltic concrete shall be used when its temperature is less than 245 degrees F. for a nominal layer of 1-1/2 inches or less and 225 degrees for a nominal layer thickness of more than 1-1/2 inches.

J. Except for an unavoidable delay or breakdown, delivery of hot asphaltic concrete to any individual spreading unit shall be at a rate sufficient to provide as nearly continuous an operation of the spreading unit as possible.

K. While operating on the road surface, the use of kerosene, distillate, or other petroleum fractions for cleaning hand tools or for spraying the spreader hopper will not be permitted. No container of such cleaning solution shall be carried on or near the spreader. While the spreader is off the road surface, kerosene or any desired solvent for cleaning the spreader may be used. The spreader shall not be used for at least five hours after such cleaning. Hand tools shall be kept clean.

L. When the basis of payment is in square yards, the Contractor shall be responsible for obtaining the designated thickness and width and for the application rate. A lift or course determined by the Contractor to be deficient in thickness may be corrected by an increased thickness of a subsequent lift or course; however, the thickness of a course of 1/2 or 3/8 inch mixture size shall not be increased by more than 1/4 inch to correct a deficiency. All lower courses which are a part of the contract shall be constructed to the tolerances required and the Engineer will furnish staking and inspection on that basis.

M. For irregular areas where use of a finishing machine is not practical, binder and surface mixture may be spread by hand methods. The hot mixture shall be spread uniformly to the desired depth with hot shovels and rakes. After spreading, the hot mixture shall be carefully smoothed to remove all segregated coarse aggregate and rake marks. Rakes and lutes used for hand spreading and smoothing shall be of the type designed for use on asphalt mixture.

N. Loads shall not be dumped faster than they can be spread properly. The workers shall not stand on the loose mixture while spreading, except as necessary.

O. Manholes and water valves may be raised before the surfacing is laid if existing conditions warrant so and under written permission of the Engineer, otherwise they shall be raised after completion of the surface course and an 8 inch ring of 4,000 psi concrete shall be placed around the casting to the depth of the casting in both cases. Adjustments shall be made with concrete bricks, concrete rings or other stable material approved by the Engineer.

P. Longitudinal joints for surface courses less than one inch in thickness may be constructed directly above the longitudinal joint in the next course below. The offset distance between all other longitudinal joints in succeeding courses shall be at least 3 inches. Transverse construction joints shall be separated by not less than 6 feet. Spreading of the hot mixture along longitudinal joints shall be adjusted to secure complete closure of the joint and full compression of the mixture with a smooth surface after compaction. At transverse joints, the cold mixture of the layer shall be sawn to a straight line at right angles to the centerline so that a full thickness, a true surface, and a vertical edge will be provided.

Q. The Contractor shall provide a 10 foot wood straightedge for checking binder and surface transverse joints for smoothness. Variations in the surface at transverse joints as indicated by the straightedge shall be corrected by hand methods before compaction.

R. Suitable paper or burlap shall be used under the ramp at day's run transverse joints to prevent adhesion. Sand, dirt or wood shall not be used for his purpose. Use of wood or metal headers to form the edge of the joint during of the fresh mixture will not be permitted.

S. After the final rolling the binder and surface courses shall be checked with a 10 foot straightedge placed parallel to the centerline, and any variation greater than 1/4 inch in the surface shall be corrected. The surface corrections/deductions shall be completed in accordance with Article 406.11 of the IDOT Standard Specifications for Road and Bridge Construction.

T. In filling depressions less than 1/2 inch in depth, the surface course over the entire area below the required elevation for the pavement surface shall also be first heated with surface heater, then loosened and covered with hot, fresh mixture from which the coarse particles have been removed. The mixture shall be raked to the proper elevation and rolled to proper density.

U. In the event of a defective area or a depression of 1/2 inch or more in depth, the surface course over the entire area below the required elevation for the pavement surface shall be removed and replaced with fresh mixture which shall be smoothed and compacted in the layers and to the density to provide surface at the correct elevation.

V. The mixing and placing of hot mix asphalt shall be performed only when weather conditions are suitable. When the moisture of the aggregate interferes with the uniformity of temperature, or with continuous plant operation, or when pools of water are observed on the base, mixing and placing of hot mix asphalt shall not be permitted. The temperature of the surface on which the hot mix asphalt is placed shall not be less than 40 degrees F. and rising. When the surface temperature on which the material is to be placed falls below 50 degrees F., precautions shall be taken in controlling the temperature of the delivered material and compacting the mix. Under all circumstances, specified density requirements shall be fulfilled. HMA shall not be placed after November 15th, except with approval of the Engineer.

9. COMPACTION AND SAMPLING

A. Each layer shall be promptly and thoroughly compacted. For all rollers, the initial contact with the hot mixture shall be made by the compaction roller.

B. The longitudinal joints shall be rolled smooth and even at the time of construction.

C. Mechanical tampers shall be used for areas inaccessible to the rollers.

D. Steel-tired rollers shall be used to smooth out all marks and roughness in the surface.

E. The overall rolling procedure shall produce a surface free of ridges, marks or bumps and shall be subject to the approval or disapproval of the Engineer.

F. Each layer shall be compacted to not less than 95% of the density as specified on the approved mix design.

G. At the direction of the Engineer, the Contractor shall cut samples from any course or from finished pavement for tests of density and composition. These samples shall be taken at points designated by the Engineer by drilling with a 4 inch diameter core drill. The surfaces from which the samples have been taken shall be restored by the Contractor not later than the next succeeding day of plant operation. The Contractor will not receive any extra compensation for sampling.

H. The Engineer shall have free access at all times to all parts of work. All test results will be available to the Contractor.

I. A test section may be required if problems are encountered with the compaction procedure and test results.