



Local Public Agency  
Formal Contract  
Proposal

PROPOSAL SUBMITTED BY		
Contractor's Name		
Street	P.O. Box	
City	State	Zip Code

STATE OF ILLINOIS

COUNTY OF Lake  
City of North Chicago  
 (Name of City, Village, Town or Road District)

FOR THE IMPROVEMENT OF

STREET NAME OR ROUTE NO. 2019 MFT Street Resurfacing Program  
 SECTION NO. 20-00000-01-GM  
 TYPES OF FUNDS MFT

SPECIFICATIONS (required)

PLANS (required)

**For Municipal Projects**  
 Submitted/Approved/Passed  
*Dem*  
 Mayor  President of Board of Trustees  Municipal Official  
 Date 11 June 2019

**Department of Transportation**  
 Released for bid based on limited review  
 \_\_\_\_\_  
 Regional Engineer  
 \_\_\_\_\_  
 Date

**For County and Road District Projects**  
 Submitted/Approved  
 \_\_\_\_\_  
 Highway Commissioner  
 \_\_\_\_\_  
 Date  
 Submitted/Approved  
 \_\_\_\_\_  
 County Engineer/Superintendent of Highways  
 \_\_\_\_\_  
 Date



*exp. 11/30/19*

*Stephen P. Cieslica*

**Note:** All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed.

RETURN WITH BID

NOTICE TO BIDDERS

County Lake
Local Public Agency City of North Chicago
Section Number 20-00000-01-GM
Route 2019 MFT Street Resurfacing Program

Sealed proposals for the improvement described below will be received at the office of Mr. Steve Cieslica, P.E.
1850 Lewis Avenue, Building Department, North Chicago, IL 60064 until 2:00 pm on June 25, 2019

Sealed proposals will be opened and read publicly at the office of City of North Chicago Council Chambers at City Hall
1850 Lewis Avenue, Building Department, North Chicago, IL 60064 at 2:00 pm on June 25, 2019

DESCRIPTION OF WORK

Name City of North Chicago 2019 Street Resurfacing Program Length: 5,182 feet (.98 miles)

Location Various Locations Within the City Limits of North Chicago

Proposed Improvement

Project includes the resurfacing of various streets in the City of North Chicago. The proposed improvements vary (see Project Location Map and Typical Sections for additional information), but typically include the Pulverization of the existing pavement section, placing 2" of Hot-Mix Asphalt Surface Course, Mix 'D', N50, over 2" of Hot Mix Asphalt Binder Course, IL-19.0, N50, as shown on the typical sections. The contractor is required to maintain two-way directional flow of traffic on each street throughout construction. Improvements shall also include Combination Concrete Curb and Gutter Removal/Replacement, Sidewalk Removal/Replacement, Preformed Plastic Pavement Markings (Grooved), Parkway Restoration; and all other appurtenant work and materials necessary to complete the project in accordance with the plans, standard specifications and these Special Provisions.

1. Plans and proposal forms will be available in the office of Trotter and Associates, Inc., for \$50.00
40W201 Wasco Road, Suite D, St. Charles, IL 60175 Phone: (630) 587 - 0470

2. [X] Prequalification
If checked, the 2 low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57), in duplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One original shall be filed with the Awarding Authority and one original with the IDOT District Office.

3. The Awarding Authority reserves the right to waive technicalities and to reject any or all proposals as provided in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals.

- 4. The following BLR Forms shall be returned by the bidder to the Awarding Authority:
a. BLR 12200: Local Public Agency Formal Contract Proposal
b. BLR 12200a Schedule of Prices
c. BLR 12230: Proposal Bid Bond (if applicable)
d. BLR 12325: Apprenticeship or Training Program Certification (do not use for federally funded projects)
e. BLR 12326: Affidavit of Illinois Business Office

## RETURN WITH BID

5. The quantities appearing in the bid schedule are approximate and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided.
6. Submission of a bid shall be conclusive assurance and warranty the bidder has examined the plans and understands all requirements for the performance of work. The bidder will be responsible for all errors in the proposal resulting from failure or neglect to conduct an in depth examination. The Awarding Authority will, in no case be responsible for any costs, expenses, losses or changes in anticipated profits resulting from such failure or neglect of the bidder.
7. The bidder shall take no advantage of any error or omission in the proposal and advertised contract.
8. If a special envelope is supplied by the Awarding Authority, each proposal should be submitted in that envelope furnished by the Awarding Agency and the blank spaces on the envelope shall be filled in correctly to clearly indicate its contents. When an envelope other than the special one furnished by the Awarding Authority is used, it shall be marked to clearly indicate its contents. When sent by mail, the sealed proposal shall be addressed to the Awarding Authority at the address and in care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the Notice to Bidders. Proposals received after the time specified will be returned to the bidder unopened.
9. Permission will be given to a bidder to withdraw a proposal if the bidder makes the request in writing or in person before the time for opening proposals.

RETURN WITH BID

PROPOSAL

County Lake
Local Public Agency City of North Chicago
Section Number 20-00000-01-GM
Route 2019 MFT Street Resurfacing Program

1. Proposal of \_\_\_\_\_

for the improvement of the above section by the construction of \_\_\_\_\_
Project includes the resurfacing of various streets in the City of North Chicago. The proposed improvements vary (see Project Location Map and Typical Sections for additional information), but typically include the Pulverization of the existing pavement section, placing 2" of Hot-Mix Asphalt Surface Course, Mix 'D', N50, over 2" of Hot Mix Asphalt Binder Course, IL-19.0, N50, as shown on the typical sections. The contractor is required to maintain two-way directional flow of traffic on each street throughout construction. Improvements shall also include Combination Concrete Curb and Gutter Removal/Replacement, Sidewalk Removal/Replacement, Preformed Plastic Pavement Markings (Grooved), Parkway Restoration; and all other appurtenant work and materials necessary to complete the project in accordance with the plans, standard specifications and these Special Provisions.

a total distance of 5,182 feet, of which a distance of 5,182 feet, (.98 miles) are to be improved.

2. The plans for the proposed work are those prepared by Trotter and Associates, Inc. and approved by the Department of Transportation on \_\_\_\_\_

3. The specifications referred to herein are those prepared by the Department of Transportation and designated as "Standard Specifications for Road and Bridge Construction" and the "Supplemental Specifications and Recurring Special Provisions" thereto, adopted and in effect on the date of invitation for bids.

4. The undersigned agrees to accept, as part of the contract, the applicable Special Provisions indicated on the "Check Sheet for Recurring Special Provisions" contained in this proposal.

5. The undersigned agrees to complete the work within 40 working days or by October 1, 2019 unless additional time is granted in accordance with the specifications.

6. A proposal guaranty in the proper amount, as specified in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals, will be required. Bid Bonds will be allowed as a proposal guaranty. Accompanying this proposal is either a bid bond if allowed, on Department form BLR 12230 or a proposal guaranty check, complying with the specifications, made payable to:

City of North Chicago Treasurer of \_\_\_\_\_

The amount of the check is 5% of total bid (\_\_\_\_\_).

7. In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties, which would be required for each individual proposal. If the proposal guaranty check is placed in another proposal, it will be found in the proposal for: Section Number \_\_\_\_\_

8. The successful bidder at the time of execution of the contract will be required to deposit a contract bond for the full amount of the award. When a contract bond is not required, the proposal guaranty check will be held in lieu thereof. If this proposal is accepted and the undersigned fails to execute a contract and contract bond as required, it is hereby agreed that the Bid Bond or check shall be forfeited to the Awarding Authority.

9. Each pay item should have a unit price and a total price. If no total price is shown or if there is a discrepancy between the product of the unit price multiplied by the quantity, the unit price shall govern. If a unit price is omitted, the total price will be divided by the quantity in order to establish a unit price.

10. A bid will be declared unacceptable if neither a unit price nor a total price is shown.

11. The undersigned submits herewith the schedule of prices on BLR 12200a covering the work to be performed under this contract.

12. The undersigned further agrees that if awarded the contract for the sections contained in the combinations on BLR 12200a, the work shall be in accordance with the requirements of each individual proposal for the multiple bid specified in the Schedule for Multiple Bids below.

RETURN WITH BID



SCHEDULE OF PRICES

County Lake  
 Local Public Agency City of North Chicago  
 Section 20-00000-01-GM  
 Route 2019 Street Resurfacing Program

Schedule for Multiple Bids

Combination Letter	Sections Included in Combinations	Total

Schedule for Single Bid

(For complete information covering these items, see plans and specifications)

Bidder's Proposal for making Entire Improvements

Item No.	Items	Unit	Quantity	Unit Price	Total
1	PARKWAY RESTORATION	SQ YD	3,425.00		
2	GRADING AND SHAPING DITCHES	FOOT	1,862.00		
3	INLET FILTERS	EACH	13.00		
4	AGGREGATE BASE REPAIR	TON	1,164.00		
5	BITUMINOUS MATERIALS (PRIME COAT)	LB	5,812.00		
6	BITUMINOUS MATERIALS (TACK COAT)	LB	9,774.00		
7	MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS	TON	2.00		
8	HOT-MIX ASPHALT SURFACE REM - DRIVEWAY BUTT JOINT	SQ YD	562.00		
9	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2"	TON	1,377.00		
10	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, 2"	TON	1,671.00		
11	HOT-MIX ASPHALT LEVELING BINDER (MM), N50, 3/4"	TON	696.00		
12	PORTLAND CEMENT CONCRETE DRIVEWAY 6" REM AND REPL	SQ YD	70.00		
13	HOT-MIX ASPHALT SURFACE REMOVAL, 2 1/2"	SQ YD	2,975.00		
14	COMBINATION CURB AND GUTTER, REMOVAL, SPECIAL	FOOT	100.00		
15	CLASS D PATCHES, TYPE II, 8 INCH	SQ YD	86.00		
16	AGGREGATE SHOULDERS, TYPE B, 4' WIDE	TON	882.00		
17	PRECAST REINFORCED CONCRETE FLARED END SECTION, 12"	EACH	1.00		
18	STORM SEWERS, RUBBER GASKET, CL A, TY 1, 12" (SPECIAL)	FOOT	48.00		
19	STRUCTURES TO BE ADJUSTED W/ NEW FRAME AND LID	EACH	11.00		
20	STRUCTURES TO BE RECON W/ NEW FRAME AND LID	EACH	1.00		
21	WATER BOXES TO BE ADJUSTED	EACH	2.00		
22	COMBINATION CONCRETE CURB AND GUTTER, SPECIAL	FOOT	100.00		
23	MOBILIZATION	LS	1.00		
24	TRAFFIC CONTROL AND PROTECTION STANDARD 701501	LS	1.00		
25	PREFORMED PLASTIC PAVEMENT MARKING - LINE 4"	FOOT	100.00		
26	PREFORMED PLASTIC PAVEMENT MARKING - LINE 6"	FOOT	50.00		
27	PREFORMED PLASTIC PAVEMENT MARKING - LINE 24"	FOOT	226.00		



RETURN WITH BID

CONTRACTOR CERTIFICATIONS

County	Lake
Local Public Agency	City of North Chicago
Section Number	20-00000-01-GM
Route	2019 MFT Street Resurfacing Program

The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder.

1. **Debt Delinquency.** The bidder or contractor or subcontractor, respectively, certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue unless the individual or other entity is contesting, in accordance with the procedures established by the appropriate revenue Act, its liability for the tax or the amount of tax. Making a false statement voids the contract and allows the Department to recover all amounts paid to the individual or entity under the contract in a civil action.

2. **Bid-Rigging or Bid Rotating.** The bidder or contractor or subcontractor, respectively, certifies that it is not barred from contracting with the Department by reason of a violation of either 720 ILCS 5/33E-3 or 720 ILCS 5/33E-4.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

3. **Bribery.** The bidder or contractor or subcontractor, respectively, certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois or any unit of local government, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm.

4. **Interim Suspension or Suspension.** The bidder or contractor or subcontractor, respectively, certifies that it is not currently under a suspension as defined in Subpart I of Title 44 Subtitle A Chapter III Part 6 of the Illinois Administrative Code. Furthermore, if suspended prior to completion of this work, the contract or contracts executed for the completion of this work may be cancelled.

RETURN WITH BID

SIGNATURES

County	<u>Lake</u>
Local Public Agency	<u>City of North Chicago</u>
Section Number	<u>20-00000-01-GM</u>
Route	<u>2019 MFT Street Resurfacing Program</u>

(If an individual)

Signature of Bidder \_\_\_\_\_

Business Address \_\_\_\_\_

(If a partnership)

Firm Name \_\_\_\_\_

Signed By \_\_\_\_\_

Business Address \_\_\_\_\_

Inset Names and Addressed of All Partners



\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(If a corporation)

Corporate Name \_\_\_\_\_

Signed By \_\_\_\_\_

President

Business Address \_\_\_\_\_

Inset Names of Officers



President \_\_\_\_\_

Secretary \_\_\_\_\_

Treasurer \_\_\_\_\_

Attest: \_\_\_\_\_  
Secretary



Route 2019 MFT Street Resurfacing Program
County Lake
Local Agency City of North Chicago
Section 20-00000-01-GM

RETURN WITH BID

PAPER BID BOND

WE \_\_\_\_\_ as PRINCIPAL, and \_\_\_\_\_ as SURETY, are held jointly, severally and firmly bound unto the above Local Agency (hereafter referred to as "LA") in the penal sum of 5% of the total bid price, or for the amount specified in the proposal documents in effect on the date of invitation for bids whichever is the lesser sum. We bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly pay to the LA this sum under the conditions of this instrument.

WHEREAS THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the said PRINCIPAL is submitting a written proposal to the LA acting through its awarding authority for the construction of the work designated as the above section.

THEREFORE if the proposal is accepted and a contract awarded to the PRINCIPAL by the LA for the above designated section and the PRINCIPAL shall within fifteen (15) days after award enter into a formal contract, furnish surety guaranteeing the faithful performance of the work, and furnish evidence of the required insurance coverage, all as provided in the "Standard Specifications for Road and Bridge Construction" and applicable Supplemental Specifications, then this obligation shall become void; otherwise it shall remain in full force and effect.

IN THE EVENT the LA determines the PRINCIPAL has failed to enter into a formal contract in compliance with any requirements set forth in the preceding paragraph, then the LA acting through its awarding authority shall immediately be entitled to recover the full penal sum set out above, together with all court costs, all attorney fees, and any other expense of recovery.

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this \_\_\_\_\_ day of \_\_\_\_\_

Principal

By: \_\_\_\_\_ (Company Name) By: \_\_\_\_\_ (Company Name)
(Signature and Title) (Signature and Title)

(If PRINCIPAL is a joint venture of two or more contractors, the company names, and authorized signatures of each contractor must be affixed.)

Surety

By: \_\_\_\_\_ (Name of Surety) (Signature of Attorney-in-Fact)

STATE OF ILLINOIS, COUNTY OF \_\_\_\_\_, I, \_\_\_\_\_, a Notary Public in and for said county, do hereby certify that \_\_\_\_\_

( Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instruments as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this \_\_\_\_\_ day of \_\_\_\_\_

My commission expires \_\_\_\_\_ (Notary Public)

ELECTRONIC BID BOND

[ ] Electronic bid bond is allowed (box must be checked by LA if electronic bid bond is allowed)

The Principal may submit an electronic bid bond, in lieu of completing the above section of the Proposal Bid Bond Form. By providing an electronic bid bond ID code and signing below, the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the LA under the conditions of the bid bond as shown above. (If PRINCIPAL is a joint venture of two or more contractors, an electronic bid bond ID code, company/Bidder name title and date must be affixed for each contractor in the venture.)

Electronic Bid Bond ID Code

(Company/Bidder Name) (Signature and Title) Date



Apprenticeship or Training Program Certification

Return with Bid

Route 2019 MFT Street Resurfacing Program
County Lake
Local Agency City of North Chicago
Section 20-00000-01-GM

All contractors are required to complete the following certification:

- For this contract proposal or for all groups in this deliver and install proposal.
For the following deliver and install groups in this material proposal:

Four horizontal lines for listing deliver and install groups.

Illinois Department of Transportation policy, adopted in accordance with the provisions of the Illinois Highway Code, requires this contract to be awarded to the lowest responsive and responsible bidder. The award decision is subject to approval by the Department. In addition to all other responsibility factors, this contract or deliver and install proposal requires all bidders and all bidders' subcontractors to disclose participation in apprenticeship or training programs that are (1) approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training, and (2) applicable to the work of the above indicated proposals or groups. Therefore, all bidders are required to complete the following certification:

- I. Except as provided in paragraph IV below, the undersigned bidder certifies that it is a participant, either as an individual or as part of a group program, in an approved apprenticeship or training program applicable to each type of work or craft that the bidder will perform with its own employees.
II. The undersigned bidder further certifies for work to be performed by subcontract that each of its subcontractors submitted for approval either (A) is, at the time of such bid, participating in an approved, applicable apprenticeship or training program; or (B) will, prior to commencement of performance of work pursuant to this contract, establish participation in an approved apprenticeship or training program applicable to the work of the subcontract.
III. The undersigned bidder, by inclusion in the list in the space below, certifies the official name of each program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's employees. Types of work or craft that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category for which there is no applicable apprenticeship or training program available.

Five horizontal lines for listing program sponsors.

IV. Except for any work identified above, any bidder or subcontractor that shall perform all or part of the work of the contract or deliver and install proposal solely by individual owners, partners or members and not by employees to whom the payment of prevailing rates of wages would be required, check the following box, and identify the owner/operator workforce and positions of ownership.

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The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all approved subcontracts. The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project is accounted for and listed. The Department at any time before or after award may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. In order to fulfill the participation requirement, it shall not be necessary that any applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract or deliver and install proposal.

Bidder: \_\_\_\_\_

By: \_\_\_\_\_

(Signature)

Address: \_\_\_\_\_

Title: \_\_\_\_\_



Affidavit of Illinois Business Office

County Lake
Local Public Agency City of North Chicago
Section Number 20-00000-01-GM
Route 2019 Street Resurfacing Program

State of \_\_\_\_\_ )
) ss.
County of \_\_\_\_\_ )

I, \_\_\_\_\_ of \_\_\_\_\_, \_\_\_\_\_,
(Name of Affiant) (City of Affiant) (State of Affiant)

being first duly sworn upon oath, states as follows:

- 1. That I am the \_\_\_\_\_ of \_\_\_\_\_ bidder
officer or position
2. That I have personal knowledge of the facts herein stated.
3. That, if selected under this proposal, \_\_\_\_\_, will maintain a
(bidder)
business office in the State of Illinois which will be located in \_\_\_\_\_ County, Illinois.
4. That this business office will serve as the primary place of employment for any persons employed in the
construction contemplated by this proposal.
5. That this Affidavit is given as a requirement of state law as provided in Section 30-22(8) of the Illinois
Procurement Code.

\_\_\_\_\_  
(Signature)
\_\_\_\_\_  
(Print Name of Affiant)

This instrument was acknowledged before me on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(SEAL)

\_\_\_\_\_  
(Signature of Notary Public)



# Illinois Department of Transportation

Bureau of Construction  
2300 South Dirksen Parkway/Room 322  
Springfield, Illinois 62764

## Affidavit of Availability For the Letting of \_\_\_\_\_

**structions:** Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

### Part I. Work Under Contract

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate, and must include work subcontracted to others. If no work is contracted, show **NONE**.

	1	2	3	4	Awards Pending	
Contract Number						
Contract With						
Estimated Completion Date						
Total Contract Price						Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor						
Uncompleted Dollar Value if Firm is the Subcontractor						
					Total Value of All Work	

### Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work subcontracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show **NONE**.

						Accumulated Totals
Earthwork						
Portland Cement Concrete Paving						
HMA Plant Mix						
HMA Paving						
Clean & Seal Cracks/Joints						
Aggregate Bases & Surfaces						
Highway, R.R. and Waterway Structures						
Drainage						
Electrical						
Cover and Seal Coats						
Concrete Construction						
Landscaping						
Fencing						
Guardrail						
Painting						
Signing						
Cold Milling, Planning & Rotomilling						
Demolition						
Pavement Markings (Paint)						
Other Construction (List)						
						\$ 0.00
Totals						

Disclosure of this information is **REQUIRED** to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

**Part III. Work Subcontracted to Others.**

For each contract described in Part I, list all the work you have subcontracted to others.

	1	2	3	4	Awards Pending
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Total Uncompleted					

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.

Subscribed and sworn to before me  
 this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ Type or Print Name \_\_\_\_\_  
 Officer or Director Title

\_\_\_\_\_  
 Notary Public

Signed \_\_\_\_\_

My commission expires \_\_\_\_\_

(Notary Seal)

Company \_\_\_\_\_

Address \_\_\_\_\_

**CITY OF NORTH CHICAGO**  
**2019 MFT STREET RESURFACING PROGRAM**  
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**SECTION 20-00000-01-GM**

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The Following Recurring Special Provisions Indicated By An "X" Are Applicable To This Contract And Are Included By Reference:

Recurring Special Provisions

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The Following Local Roads And Streets Recurring Special Provisions Indicated By An "X" Are Applicable To This Contract And Are Included By Reference:

Local Roads And Streets Recurring Special Provisions

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Local Public Agency	County	Section Number
City of North Chicago	Lake	20-00000-01-GM

The following Special Provision supplement the "Standard Specifications for Road and Bridge Construction", adopted April 1, 2016, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", and the "Manual of Test Procedures of Materials" in effect on the date of invitation of bids, and the Supplemental Specification and Recurring Special Provisions indicated on the Check Sheet included here in which apply to and govern the construction of the above named section, and in case of conflict with any parts, or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

## **Instructions for BLR 11310**

This form shall be used as the starting paragraph for the special provision packet included in Federal Aid, Township Bridge (TBP) and Motor Fuel Tax (MFT) roadway improvement and maintenance projects. For more information see Chapter 11 of the Bureau of Local Roads and Street Manual (BLRS Manual).

# PROJECT SPECIAL PROVISIONS

## DESCRIPTION OF WORK

Project includes the resurfacing of various streets in the City of North Chicago. The proposed improvements vary (see Project Location Map and Typical Sections for additional information), but typically include the Pulverization of the existing pavement section, placing 2” of Hot-Mix Asphalt Surface Course, Mix 'D', N50, over 2” of Hot Mix Asphalt Binder Course, IL-19.0, N50, as shown on the typical sections. The contractor is required to maintain two-way directional flow of traffic on each street throughout construction. Improvements shall also include Combination Concrete Curb and Gutter Removal/Replacement, Sidewalk Removal/Replacement, Preformed Plastic Pavement Markings (Grooved), Parkway Restoration; and all other appurtenant work and materials necessary to complete the project in accordance with the plans, standard specifications and these Special Provisions.

## LOCATION OF WORK

This project is located in the City of North Chicago, Lake County, Illinois, within the Northwest Quadrant of the city, as shown on the Project Location Map. The total length of improvement is approximately 5,182 feet or 0.98 miles.

## COMPLETION DATE

A completion date of October 1, 2019 is specified for **all work** on this contract. In case of failure to complete the work on time the provisions of Article 108.09 of the “Standard Specifications” shall apply.

## SCOPE OF WORK

The provisions of Article 104.02 of the Standard Specifications are hereby amended as follows: **“The City of North Chicago reserves the right to remove from the project any roads or portions thereof currently included in the City of North Chicago 2019 MFT Street Resurfacing Program due to budgetary constraints. Such reduction, if any, shall be made in writing by the Village prior to execution of the Contract Documents. Any reduction in the scope of work required by the City prior to execution of the Contract Documents shall not result in an adjustment to the contract or to the unit prices originally bid.”**

## WORK HOURS

The Contractor must adhere to the City ordinance work time schedule. Construction work may be performed Monday thru Friday during the hours of 7:00 a.m. to 6:00 p.m. No work may be performed prior or beyond this period without prior written approval from the City.

## **WORK ADJACENT TO SCHOOLS**

The contractor shall personally notify schools, while also notifying the city and engineer that they will be working on streets adjacent to schools and schedule work to avoid construction activity when children are present. The Contractor shall also make adjustments to work schedules to accommodate events that would involve large numbers of vehicles and people on a particular street. No compensation will be paid for any inconvenience, delay, or loss experienced by the Contractor because of adjustments to their normal schedule.

## **APPLICATION FOR PAYMENT**

Application for payment to the Contractor shall be in accordance with the Standard Specifications and these Special Provisions. The Engineer will submit Engineer's Payment Estimate for partial payment to the Contractor for the work completed to the City not more than once monthly on a date specified by the City.

The Contractor shall procure from each subcontractor and supplier of material or labor a waiver of any claim which they may have under the mechanics lien laws of the state in which the work is located, to insure the City immunity from mechanics liens on subcontractors in carrying out the contract and any work orders for additions thereto, all as a condition of any payment by the City. Any payments made by the City without requiring compliance with this paragraph shall not be construed as a Waiver by the City of the right to require compliance with this paragraph as a condition to later payments.

The Contractor shall submit Partial Waivers of Lien from all subcontractors and suppliers with each partial payment estimate and Contractor's Affidavit for subcontractors and suppliers with second payment request for the previous payment estimates and then with all subsequent payment estimates. The Contractor shall furnish with his final application for payment a complete release of all liens arising out of this contract, or receipts in full in lieu thereof and an affidavit that the releases and receipts include all labor and material for which a lien could be filed.

The Contractor shall submit four (4) original signed copies of the following documents with each application for payment: AIA Form G702 – Application and Certificate for Payment, AIAG703 – Continuation Sheet, Contractor's Affidavit and Waivers of Lien as described above and Certified Payroll reports for all contractors working during the payment period. The Contractor shall also submit an updated construction schedule with each Application for Payment.

## **PREVAILING WAGE REQUIREMENTS**

This contract calls for the construction of a "public work", within the meaning of the Illinois Prevailing Wage Act, 820 ILCS 130/01 et seq ("the Act"). The Act requires contractors and subcontractors to pay laborers, workers and mechanics performing services on public works projects no less than the "prevailing rate of wages" (hourly cash wages plus fringe benefits) in the county where the work is performed. For information regarding current prevailing wage rates, please refer to the Illinois Department of Labor's website at: [www.illinois.gov/idol/Pages/default.aspx](http://www.illinois.gov/idol/Pages/default.aspx). All contractors and subcontractors rendering services under this contract must comply with all requirements of the Act, including but not limited to, all wage, notice and record keeping duties.

## **PROTECTION AND RESTORATION OF PROPERTY**

The Contractor shall take all necessary precautions for the protection of public and private property. The Contractor is responsible for the damage or destruction of property resulting from neglect, staging, storage, stockpiling of equipment or materials, misconduct or omission in his/her manner or method of execution or non-execution of the work, or caused by defective work or the use of unsatisfactory materials and such responsibility shall not be released until the work has been completed and accepted and the requirements of these specifications complied with.

Whenever public or private property is so damaged or destroyed, the contractor shall, at their expense, restore such property to a condition equal to that which existed prior to such damage or injury by repairing, rebuilding or replacing it as may be directed, or he shall otherwise make good such damage or destruction in an acceptable manner. If he fails to do so, the City will withhold any payouts toward completed work until arrangements are made to correct any damage as described above.

## **CONSTRUCTION ACCESS, NOTIFICATIONS**

This work shall consist of preparation and distribution of notices and verbal notification to the public throughout the project area as outlined below:

Pre-construction and progress notices: Prior to the start of construction and at the start of each phase the Contractor shall prepare written notices detailing the work to be completed, duration, and contact information of a representative who will be responsible for addressing issues that may arise due to construction. Samples of written notices shall be submitted to the Engineer for approval.

Access restrictions: If access to a driveway will be restricted due to construction activities the Contractor shall give residents and businesses proper written notification at least 48 hours in advance. The Contractor shall provide them the opportunity to remove vehicles or make other arrangements. Samples of written notices shall be submitted to the Engineer for approval.

In addition, the Contractor shall be responsible for notifying residents and businesses verbally on the day of the access restrictions (i.e., knock on doors when driveways are about to be closed), to ensure awareness on the lack of access.

The Contractor shall not restrict driveway access for more than 48 hours under any circumstance and shall be responsible for maintaining traffic control barricades to prevent traffic from using the driveway during this period.

This work will not be paid for separately but shall be included in the cost to perform the contracted work.

## **GENERAL REQUIREMENTS**

The contractor shall only remove and replace curb and driveways on one side of street at a time. This will allow for an orderly work site and for residential parking on streets when driveways are removed.

## **ROADWAY RESURFACING**

**The Contractor will be required to resurface milled surfaces within 10 calendar days of HOT-MIX ASPHALT SURFACE REMOVAL; failure to do so will result in a charge of \$1,000 per each calendar day over the above specified time, these charges will be deducted from any payments due to the Contractor.**

## **MAINTENANCE OF ROADWAYS**

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

## **STREET SWEEPING & PREPARATION**

The Contractor shall be responsible for sweeping and cleaning streets of any debris and material that has accumulated as a result of the construction activity. A mechanical sweeper, mechanically driven air and handwork with shovel and broom shall be utilized to provide a clean street for the motoring public. Within 24 hours of placing prime coat and the laying of HMA, the contractor shall sweep the pavement and remove standing water, earth, weeds, leaves, dirt, construction debris and all loose material.

This work **will not be paid for separately**, but shall be included in the cost of the contracted work.

## **DEBRIS REMOVAL**

Materials resulting from the construction of underground utility work, construction of the proposed roadway improvements, or removal of HMA and PCC materials shall be removed at the end of each day to an approved site. Failure to do so, shall result in a charge of \$500 per each calendar day until the materials are removed. This charge will be deducted from any payments due the contractor. If in the judgment of the City, should it be necessary to immediately remove such materials, the City will have the material removed and the Contractor shall be billed (charged) accordingly (in addition to the \$500 per day).

Excess material from the pulverization process shall be removed from the site, once the engineer has approved the shaping, grading and compaction of the pulverized material that is to remain in place and the contractor has satisfied the project specifications. The contractor shall transport the excess material to Meadow Lane, which is approximately 1.0 mile from the construction site. Once it has been transported to Meadow Lane, the material shall be spread evenly from Martin Luther King Drive to the southern terminus. While spreading the material it shall be shaped, graded and compacted in place to the satisfaction of the engineer within the aforementioned limits. This work will **NOT** be paid for separately but shall be included in the cost of the of the removal of the excess pulverized material.

## **SAW CUTTING**

The contractor shall saw cut all concrete and asphalt surfaces and underground utility items prior to removal. This work **will not be paid for separately** but shall be included in the unit price for the items being removed.

## **OPEN EXCAVATIONS**

All excavations shall be backfilled at the end of each work day; no open excavations will be permitted during non-working hours. All work associated with backfilling and re-excavating areas due to incompleteness during each work day shall be included in the cost to perform the work.

## **PARKWAY RESTORATION**

### Description of Work:

This work shall consist of restoring all grass areas within 24 inches of any newly constructed HMA or Aggregate Shoulder traveled way, driveway approach, sidewalk, curb and gutter, or ditches that have been graded and shaped, with salt tolerant seed (type 1A) and fertilizer over a minimum of four inches (4") of pulverized topsoil, or as directed by the engineer. This work shall be done in accordance with the appropriate articles of Sections 211 and 250 of the Standard Specifications.

Areas disturbed by the Construction of this project, exceeding six inches (6") from new sidewalks and driveways, shall be restored with full width sections of salt tolerant seed (type 1A).

If existing ground is to be used as topsoil, the existing vegetation is to be removed and the exposed ground shall be rototilled to a minimum depth of 4 inches, this may include the removal of existing aggregate shoulders. This work shall be included in the cost of **PARKWAY RESTORATION**.

The seed shall be fertilized in accordance with Article 250.04 of the Standard Specifications and shall be included in the cost of **PARKWAY RESTORATION**.

Schedule of seeding shall be according to Article 250.07 of the Standard Specifications.

### Method of Measurement:

**PARKWAY RESTORATION** shall be measured for payment in place and the area computed in square yards. For the restoration to be acceptable for final payment, the seeding must be inspected and approved according to Article 250.07 of the Standard Specifications.

### Basis of Payment:

This work will be paid for at the contract unit price per square yard for **PARKWAY RESTORATION**.

## PREPARATION OF BASE

### Description of Work:

This work shall consist of shaping and grading the exposed HMA base course, in accordance with the appropriate articles of Sections 358 and 406 of the Standard Specifications.

### Cleaning:

Upon completion of the proposed grinding operations, all loose and defective material shall be removed from all holes, ruts or depressions in the exposed base. All excess crack filler and bituminous patches which contain an excess of bitumen or which are unstable in hot weather shall be removed. All bitumen shall be removed from expansion joints and cracks more than 1-1/2 inches wide. The Contractor shall perform this in the most economical manner practicable and as directed by the Engineer. All waste material accumulated during the pavement cleaning operations shall be removed at the close of each day's work and shall be disposed of outside the limits of the job at locations acceptable to the Engineer in accordance with Article 107.01 of the "Standard Specifications for Road and Bridge Construction" as amended by Public Act 90-761.

### Repair:

Prior to placing leveling binder or binder course mixtures for multiple course construction and prior to placing surface Course mixture for single Course construction, all open cracks and open expansion joints having a width of a ½ inch or more, all expansion joints and cracks that have been cleaned and street car track flangeways shall be filled completely with **MIXTURE FOR CRACKS, JOINTS AND FLANGEWAYS**. The mixture shall be hand tamped in place with hand tools.

At locations where heavy disintegration and deep spalling exist, the area shall be cleaned of all loose and unsound material with pneumatic tools, primed and filled with leveling binder. The leveling binder used in this area will be paid for at the contract unit price per ton for **HOT-MIX ASPHALT LEVELING BINDER (MACHINE METHOD), N50**.

Where areas to be leveled are greater than 2 inches in depth, the leveling binder shall be placed and compacted in layers not exceeding a maximum depth of 2 inches. The total thickness of leveling binder placed in one day will be limited to 4 inches, unless otherwise directed by the Engineer. The leveling binder shall be placed at least 24 hours prior to placing the surface course. Any leveling binder exceeding 1-1/2 inches in thickness shall meet the density requirements of Article 406.07.

This work shall be completed at least 24 hours prior to placing the first course of bituminous mixture.

### Preparation:

After the base course has been repaired and permitted to cure, it shall be cleaned by means of a mechanical sweeper, hand brooms, flushing with water or by other approved methods. Special care shall be taken to clean the surface of the base course adjacent to the edges, so that the full width of the surface to be treated will be clean.

### Method of Measurement and Basis of Payment:

The required work here in described with the cleaning, repair and preparation as per **PREPARATION OF BASE** of the exposed base, except for materials, will **NOT** be measured for payment, but shall be included in the cost of the item being constructed.

Additional material required for the repair of the exposed base will be measured and paid for at the contract unit prices as follows:

**HOT-MIX ASPHALT LEVELING BINDER**

(MACHINE METHOD), N50, 0.75”	per TON.
Class "D" Patching, Full Depth, SPECIAL,	per SQUARE YARD of the depth specified.
Bituminous Materials (PRIME COAT),	per POUND.
Bituminous Materials (Tack Coat),	per POUND.
Mixture for Cracks, Joints, and Flangeways,	per TON.

**HOT-MIX ASPHALT PAVEMENTS**

Hot-mix asphalt pavements shall be constructed in accordance with **HMA MIXTURE DESIGN REQUIREMENTS (D-1)** and other applicable sections of the Standard Specifications, Chapter 44 of the Bureau of Local Roads and Streets Manual and the following:

1. Re-proportioning of IDOT verified mix designs may be allowed and must be approved by the Engineer. One field TSR test by the contractor will be required to validate changes and to ensure values meet the following specification requirements:
  - a. N50, IL-19.0 mm Binder course, minimum of 40% passing the #4 sieve.
  - b. N50, IL-19.0 mm Surface course, minimum of 40% passing the #8 sieve.
2. Pneumatic tired roller is required on all lifts, all mixes, except surface courses.
3. Auger extensions are required on all lifts, all mixes.
4. Reverse augers must be installed properly.
5. Paving of the full roadway width shall be completed at the end of each day. Longitudinal joints shall be closed daily and within one truck load of HMA to prevent cold joints. Any violation shall require saw cutting edge back 3" to expose straight edge, shall be tack coated twice, and will be straight and uniform.
6. Mainline street paving shall not be interrupted by side street radius returns. Those will be addressed the following day, at the end of the working day, or a distinct separate operation.
7. HMA Surface Course asphalt along curb line shall be compacted such that the finish asphalt surface is ¼" above the curb line.
8. **IDOT QC/QA standards apply for all HMA pavement materials placed and all testing will be considered incidental to the contract.**
9. **HOT MIX ASPHALT SURFACE REMOVAL, SPECIAL**, of the depth and widths specified are intended to remove the existing HMA Surface to the minimum depths and widths specified while matching the existing cross slope from the edge of pavement or curb line to the centerline crown of the roadway or the cross slope that is designated on the proposed typical cross sections within the plan or as directed by the engineer based on changing field conditions.
10. **HOT MIX ASPHALT SURFACE COURSE, MIX "D", N50** and **HOT-MIX ASPHALT LEVELING BINDER (MACHINE METHOD), N50**, of the depths specified, are intended

to be placed on the designated streets (see Typical Sections) at the locations and slopes specified by the Typical Sections and as directed by the Engineer.

<u>PAY ITEM DESCRIPTION</u>	<u>UNIT</u>	<u>MIX TYPE</u>	<u>PERCENT AIR VOIDS @ Ndes</u>	<u>Lift Thickness</u>	<u>Unit Weight Lbs/SqYd/in</u>
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	IL 9.5 mm	4% @ 50 Gyr.	1.5" or 2"	112
HOT-MIX ASPHALT LEVELING BINDER (MACHINE METHOD), N50	TON		3.5% @ 50 Gyr	0.75"	110
CLASS "D" PATCHING, FULL DEPTH, (SPECIAL)	SQ YD		4% @ 70 Gyr.	7", 9" or 12"	
HOT-MIX ASPHALT DRIVEWAY APPROACH (placed with → HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50)	TON	IL 9.5 mm	4% @ 50 Gyr.	2.0"	112
HOT MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON		4% @ 50 Gyr	3"	112

**Notes:**

1. The unit weight used to calculate **plan quantities** for all Hot-Mix Asphalt Surface Mixtures is **115 lbs/SqYd/In.** **Constructed/field** quantities will use the IDOT recommended unit weight listed above.
2. The unit weight used to calculate **plan quantities** for Hot-Mix Asphalt Leveling Binder ( Machine Method), N50 is **120 lbs/SqYd/In.** **Constructed/field** quantities will use the IDOT recommended unit weight listed above.
3. Hot-Mix Asphalt Binder Course, IL-19, N50 to be used instead of Leveling Binder when the total resurfacing thickness is greater than or equal to 3-3/4" (w/ Mix "D")
4. If overlaying HMA Pavement and using Mix "D" then Leveling Binder thickness will be minimum of 3/4"

All concrete used in this contract shall comply with the appropriate articles within this specification. The contractor will be directed by the Engineering Inspector to prepare cylinders for testing purposes on a daily basis when concrete is being poured. These cylinders will be made each time to test one 7-day break, and two 14-day breaks.

Any concrete **NOT** reaching the 14-day strength requirement prescribed by these specifications will be rejected. All rejected concrete will be replaced by the contractor, at the contractor's expense. Coring, or any other means of testing besides the prepared cylinders **WILL NOT** be an option to further test the concrete as these additional tests would not represent the 14-day strength of the concrete. IDOT QC/QA standards will apply for all concrete materials placed and will be considered incidental to the contract.

## **PORTLAND CEMENT CONCRETE DRIVEWAY APPROACH**

### Description of Work:

The work under this Pay Item includes the removal and replacement of various concrete driveways which are directed to be removed by the Engineer, or as indicated in the plans.

All work shall be done in accordance with the City of North Chicago Driveways Detail, as well as the appropriate articles of Sections 423 and 424 of the “Standard Specifications of Road and Bridge Construction.”

The area to be paved shall be fine graded to provide for the construction of a six-inch (6”) Portland Cement Concrete surface. All work to prepare the existing aggregate base, or regrading or removing of aggregate shall be included in this Pay Item.

### Curing and Protection:

Curing and protection shall be in accordance with Article 1020.13 of the Standard Specifications as amended herein. A **WHITE PIGMENTED** curing compound shall be applied to the finished surface of the placed concrete once it is set.

### Method of Measurement:

**PORTLAND CEMENT CONCRETE DRIVEWAY APPROACH** shall be measured for payment in place and the area computed in square yards.

Existing driveway approach, no matter the material, slated for removal will not be measured for payment and the cost shall be included in this item.

### Basis of Payment:

The work under this Pay Item will be paid for at the Contract unit price per square yard for **PORTLAND CEMENT CONCRETE DRIVEWAY APPROACH**.

## **HOT-MIX ASPHALT SURFACE REMOVAL, SPECIAL, 2.5”**

### Description of Work:

This work shall consist of removing existing bituminous materials from the pavement on the designated areas as shown on the typical sections contained herein, in accordance with Article 440 of the Standard Specifications.

**HOT-MIX ASPHALT SURFACE REMOVAL, SPECIAL, 2.5”** is intended to remove the existing HMA Surface to the minimum depth specified while matching the existing cross slope from the edge of pavement or curb line to the centerline crown of the roadway or the cross slope that is designated on the proposed typical cross sections within the plan or as directed by the engineer based on changing field conditions.

Pavement cores are provided for the contractor’s reference. The existing cross slopes may vary from lane to lane and from one lane to the opposing lane.

#### Disposal of Materials:

All material resulting from the Hot-Mix Asphalt Surface Removal operations shall be disposed of, at the Contractor's expense, outside the limits of the job at locations acceptable to the Engineer. In accordance with Article 107.01 of the "Standard Specifications for Road and Bridge Construction" as amended by Public Act 90-761.

#### Construction Requirements:

The contractor shall remove the existing bituminous materials to the limits shown on the plans or as directed by the Engineer.

Care shall be taken not to damage the curb and gutter or the drive approaches. Curb and gutter and drive approaches damaged by the removal operations that are not scheduled for replacement shall be removed and replaced to the satisfaction of the Engineer, by the Contractor at his expense.

The Contractor shall at the time of the removal / milling operations have equipment on the job capable of removing any debris left behind by the milling machine. Failure to remove debris left by the milling machine to the satisfaction of the Engineer will result in a deduction of \$100 per hour from the bituminous removal item in the contract. The deduction shall start from the onset of the planning operation and continue until appropriate equipment arrives on the jobsite and debris removal begins.

Butt joints shall **NOT** be ground more than 48 hours prior to paving and shall be ramped according to the **BUTT JOINTS (BDE)** special provision until the paving operations begin. Butt joints and butt joint ramps will be considered included in the work to be performed and will not be paid for.

#### Scheduling:

The contractor shall coordinate the milling and paving operations such that the portion of the street that has been milled will be paved with binder within 10 days of milling operations. Failure to do so shall result in liquidated damages in the amount of \$1000 per day until the binder course has been placed. Should the contractor fail to pave within the allotted time, and the pavement now requiring additional Class "D" Patching, the contractor shall be responsible for the additional patching. All costs associated with this additional patching shall be incurred by the Contractor.

#### Method of Measurement:

**HOT-MIX ASPHALT SURFACE REMOVAL, SPECIAL, 2.5"**, will be measured in square yards. This will be paid for only once regardless of the number of passes needed to remove the bituminous materials.

#### Basis of Payment:

This work will be paid for at the contract unit price per square yard, of the depth and width specified, for **HOT-MIX ASPHALT SURFACE REMOVAL, SPECIAL, 2.5"**. This will be paid for only once, regardless of the number of passes needed to remove the bituminous materials. Removal of bituminous materials for Butt Joints will **NOT** be paid for separately, but will be included in the measurement of this pay item. No additional payment will be made for the milling of concrete base if required.

## **COMBINATION CURB AND GUTTER REMOVAL, SPECIAL**

### Description of Work:

This work shall consist of the removal and the satisfactory disposal of combination curb and gutter in accordance with the appropriate articles of Section 440 of the Standard Specifications.

### Disposal of Material:

All material resulting from the curb and gutter removal operations shall be disposed of at the Contractor's expense, outside the limits of the job at locations acceptable to the Engineer. In accordance with Article 107.01 of the "Standard Specifications for Road and Bridge Construction" as amended by Public Act 90-761.

### Construction Requirements:

All segments of curb and gutter scheduled for removal, as directed by the Engineer, shall be removed full depth, at all points where the limits of removal abut existing concrete to remain in place. This work shall be done in such a manner that a straight joint will be secured. Any adjacent concrete damaged due to negligence by the Contractor shall be replaced at his expense.

Removal of the existing pavement will be required in order to install a full front face form. Steel angle pieces will not be allowed for forming. The cost of all labor, materials, saw cutting, over filling and for forming methods shall be included in the unit price for **COMBINATION CURB AND GUTTER REMOVAL, SPECIAL**.

It shall be the responsibility of the contractor to determine the thickness of the existing curb and gutter to be removed, and the extent to which it is reinforced. No additional compensation will be allowed because of variations from the assumed thickness shown on the plans, nor for variations in the amount of reinforcement.

In locations where there is a concrete base course, the Contractor shall assume that the curb was poured monolithically with the concrete base course. The full depth saw cutting required to detach the concrete curb and base course shall be included in the cost of the curb and gutter removal.

No additional compensation will be allowed for any additional excavation below the curb and gutter being removed whether it is due to the contractor's operations or required by the plans or the Engineer, nor for any material required to bring the sub-base to the proper grade.

Some segments of curb and gutter scheduled for removal through drive approaches, which are to remain in place, may require the saw cutting and removal at the front edge of the concrete drive. This will require the sawing of a line from the back of curb on one side of the drive approach to the back of curb on the other side of the drive approach. Unless otherwise directed by the Engineer, the saw cut will parallel the front edge of the curb and shall be cut a minimum depth of six inches to assure removal of the curb without damage to the remaining drive approach. Any adjacent concrete damaged due to negligence by the Contractor shall be replaced at his expense. The cost of this saw cut shall be included in the cost of **COMBINATION CURB AND GUTTER REMOVAL, SPECIAL**. The front edge of the concrete drive approach removed by this operation will be considered part of the curb and gutter removal and will not be paid for separately. The curb shall be replaced as per the attached City of North Chicago Combination Curb and Gutter Detail or as directed by the Engineer and paid for as **COMBINATION CONCRETE CURB AND GUTTER, SPECIAL**.

Method of Measurement:

**COMBINATION CURB AND GUTTER REMOVAL, SPECIAL**, no matter the type or size, will be measured for payment, at the face of curb prior to removal, in feet.

All saw cutting required herein will not be measured for payment, but shall be included in the cost of the item being removed.

Basis of Payment:

This work will be paid for at the contract unit price per foot for **COMBINATION CURB AND GUTTER REMOVAL, SPECIAL**, no matter the type, which price shall be payment in full for all work required to complete the work, as herein specified.

**STORM SEWER, RUBBER GASKET, CLASS A, TYPE 1, 12" (SPECIAL)**

Description of Work:

This work consists of furnishing and installing **Storm Sewer, Rubber Gasket, Class A, Type 1, 12" (SPECIAL)** concrete storm sewer pipe of the size specified at the locations as shown on the standards, details and exhibits, in accordance with Articles 208, 542 and 1004 of the standard specifications

Materials:

Storm sewer material shall be reinforced concrete culvert pipe, Class IV. The bedding, haunching and initial backfill material shall be CA-7 (Washed). The final backfill prior to the placement of the Class D Patch shall be a minimum of 6" of CA-6 (Crushed).

Construction Methods:

The contractor along with the engineer shall set the invert elevations based on the existing ditch elevations. The contractor shall adhere to the necessary and required traffic control standards that are provided within this document while performing this described work. The contractor will be required to coordinate the schedule of this work with the engineer, residents, and City of North Chicago staff.

Method of Measurement:

This work shall be measured for at the contract unit price per foot of **Storm Sewer, Rubber Gasket, Class A, Type 1, 12" (SPECIAL)**, of the material and size specified, along pipe centerline of pipe for the full length.

Basis of Payment:

This work shall be paid for at the contract unit price per foot for **Storm Sewer, Rubber Gasket, Class A, Type 1, 12" (SPECIAL)**, of the material and size specified. The price shall include the cost of all labor, equipment, and materials necessary including the bedding, haunching and initial backfill material shall be CA-7. As well as the final backfill prior to the placement of the Class D Patch shall be a minimum of 6" on CA-6 (Crushed) to complete this item.

## **STRUCTURES TO BE ADJUSTED W/ NEW FRAME AND LID/GRATE**

### Description of Work:

This work shall consist of the adjustment of existing catch basins, manholes, inlets or valve vaults in accordance with the City of North Chicago Frame and Grate Schedule and appropriate articles of Section 602 of the Standard Specifications. All adjustment rings and castings shall have an **exterior rubber chimney gasket if they are located in a non-paved area** (to encase all adjusting rings vertically). **If they are located in a paved area or curb and gutter** a six inch wide (minimum) full depth collar of concrete to the top of the binder course **(to encase all adjusting rings and frame vertically)**.

ALL STRUCTURES located within the pavement to be milled / removed shall have their frame and lids removed, the structure shall then be plated and then topped off with an approved aggregate material just prior to the bituminous removal operation. Saw cutting of the existing pavement may be required.

### Cleaning of Existing Structures:

In addition to the requirements as described in Section 602 of the Standard Specifications, it shall be the responsibility of the contractor to clean ALL existing structures that are to be adjusted or reconstructed. The cleaning shall consist of the removal of all debris from inside the structure to the satisfaction of the Engineer.

Catch basins and manholes are to be cleaned immediately prior to the adjustment or reconstruction to ensure that all portions of the structure requiring repair are identified and repaired upon completion of all work.

### Damage to Castings:

During the contract, should any casting be damaged by the Contractor or by traffic prior to the completion of the contract, the contractor shall replace the damaged casting at no cost to the City. Castings previously damaged or scheduled for replacement shall be supplied by the Contractor. It shall be the responsibility of the Contractor to deliver damaged castings to the City's Street Department located at 1421 Renken Drive, North Chicago, IL 60064.

All determinations as to the suitability or the cause of damage to a casting shall be made by the Engineer, and shall be binding. Tightened bolts with nuts and washers are to be used for catch basins or inlet frame back adjustments (new or existing), the cost of which shall be included in the cost of the adjustment.

### Manhole and Catch Basin Frames:

All Frames, Grates and Lids shall adhere to the City of North Chicago Frame and Grate Schedule attached herein. Types that differ from the Frame and Grate Schedule require prior approval from the Engineer before use. Lids shall be marked to identify the utility which passes through the structure. Lids shall also have "CITY OF NORTH CHICAGO" imprinted on them.

All castings shall be set in full mortar beds. Castings shall be set accurately to the finished elevation so that no subsequent adjustment will be necessary. All structures adjusted within pavement areas shall have a full depth collar of concrete to the top of the binder course and shall encompass all rings and a minimum of 4" of the structure.

Basis of Payment:

This work will be paid for at the contract unit price per each for **STRUCTURES TO BE ADJUSTED W/ NEW FRAME AND LID/GRATE.**

Where the frames are to be removed and structures plated prior to bituminous surface removal, no additional compensation shall be considered for payment, as the contract unit price should reflect the need for this additional process. All labor and material necessary to lower the structure and provide for proper plating of the structure shall be considered included in the price of the structure adjustment or reconstruction. Which shall be payment in full for all labor and materials necessary to complete the work as specified herein including new frames and grates/lids if specified.

**STRUCTURES TO BE RECONSTRUCTED W/ NEW FRAME AND LID/GRATE**

Description of Work:

This work shall consist of the adjustment of existing catch basins, manholes, inlets or valve vaults in accordance with the City of North Chicago Frame and Grate Schedule and appropriate articles of Section 602 of the Standard Specifications. All adjustment rings and castings shall have an **exterior rubber chimney gasket if they are located in a non-paved area** (to encase all adjusting rings vertically). **If they are located in a paved area or curb and gutter** a six inch wide (minimum) full depth collar of concrete to the top of the binder course (**to encase all adjusting rings and frame vertically**).

ALL STRUCTURES located within the pavement to be milled / removed shall have their frame and lids removed, the structure shall then be plated and then topped off with an approved aggregate material just prior to the bituminous removal operation. Saw cutting of the existing pavement may be required.

Cleaning of Existing Structures:

In addition to the requirements as described in Section 602 of the Standard Specifications, it shall be the responsibility of the contractor to clean ALL existing structures that are to be adjusted or reconstructed. The cleaning shall consist of the removal of all debris from inside the structure to the satisfaction of the Engineer.

Catch basins and manholes are to be cleaned immediately prior to the adjustment or reconstruction to ensure that all portions of the structure requiring repair are identified and repaired upon completion of all work.

Damage to Castings:

During the contract, should any casting be damaged by the Contractor or by traffic prior to the completion of the contract, the contractor shall replace the damaged casting at no cost to the City. Castings previously damaged or scheduled for replacement shall be supplied by the Contractor. It shall be the responsibility of the Contractor to deliver damaged castings to the City's Street Department located at 1421 Renken Drive, North Chicago, IL 60064.

All determinations as to the suitability or the cause of damage to a casting shall be made by the Engineer, and shall be binding. Tightened bolts with nuts and washers are to be used for catch basins or inlet frame back adjustments (new or existing), the cost of which shall be included in the cost of the adjustment.

Manhole and Catch Basin Frames:

All Frames, Grates and Lids shall adhere to the City of North Chicago Frame and Grate Schedule attached herein. Types that differ from the Frame and Grate Schedule require prior approval from the Engineer before use. Lids shall be marked to identify the utility which passes through the structure. Lids shall also have "CITY OF NORTH CHICAGO" imprinted on them.

All castings shall be set in full mortar beds. Castings shall be set accurately to the finished elevation so that no subsequent adjustment will be necessary. All structures adjusted within pavement areas shall have a full depth collar of concrete to the top of the binder course and shall encompass all rings and a minimum of 4" of the structure.

Basis of Payment:

This work will be paid for at the contract unit price per each for **STRUCTURES TO BE RECONSTRUCTED W/ NEW FRAME AND LID/GRATE**. Where the frames are to be removed and structures plated prior to bituminous surface removal, **no additional compensation** shall be considered for payment, as the contract unit price should reflect the need for this additional process. All labor and material necessary to lower the structure and provide for proper plating of the structure shall be considered included in the price of the structure adjustment or reconstruction. Which shall be payment in full for all labor and materials necessary to complete the work as specified herein including new frames and grates/lids if specified.

**MANHOLE SAFETY RAMPS**

All structures located in the pavement that rise above the surface of the existing roadway (milled surface, HMA binder course, etc.) must have temporary safety ramps installed. The ramps can be made of HMA material or a safety product. The ramps must be maintained and can only be removed immediately prior to placement of the final surface course of HMA. This work shall be **included in the cost** of installing a new structure, adjusting or reconstructing structures.

**WATER BOXES TO BE ADJUSTED**

Description of Work:

This work shall consist of adjusting to grade, water boxes, buffalo boxes, or 5 1/4" valve boxes, encountered on the job, and if necessary, the replacement of defective or damaged parts of the water box, in accordance with the appropriate articles of Section 602 of the Standard Specifications.

Water boxes, buffalo boxes, or valve boxes are defined as a three-piece casting consisting of a stem or hip, a neck and a lid. Adjustment is attained by turning the neck of the casting, either clockwise or counterclockwise until the required grade is attained. Excavation of approximately 3 to 3½ feet of base and sub-base material is to be anticipated to facilitate the turning of the neck.

It may be necessary to excavate the entire water box or valve box in order to complete the adjustment. No additional compensation will be allowed should this need arise. All excavated sub-base material shall be replaced with trench backfill and compacted in accordance with Article 550.07 of the Standard

Specifications. The excavated base material shall be replaced in accordance with appropriate articles of Section 602 of the Standard Specification.

After a water box, buffalo box, or 5 1/4" valve box, has been adjusted to the proper line and grade, the exterior of the water box, buffalo box, or 5 1/4" valve box **shall be incased in concrete from 3" below final grade to 12" below final grade**, so that it is secured in place prior to paving.

If any water box is adjusted, repaired or replaced, the contractor shall ensure that the valve box is cleaned of all debris and shall be key-able.

Basis of Payment:

This work will be paid for at the contract unit price per each for **WATER BOXES TO BE ADJUSTED**, which price shall be payment in full for performing the work as specified herein including all trench backfill.

**COMBINATION CONCRETE CURB AND GUTTER, SPECIAL**

Description of Work:

This work shall conform to the appropriate articles of Section 606 of the Standard Specifications and the City of North Chicago Combination Curb and Gutter Detail attached herein.

Sub-Grade Preparation:

After the existing curb and gutter have been removed, the sub-grade shall be brought to the proper grade, to accommodate a 9" thick gutter flag, as approved by the Engineer, by either excavation of additional material or the addition of an approved sub-grade material. Any tree roots or other obstructions shall be removed to a depth of 2" below the proposed sub-grade. Tree roots that need to be removed, as determined by the Engineering Division, shall be removed only after the tree root has been saw-cut at both ends. The preparation of the sub-grade shall be thoroughly compacted by mechanical means. All soft or unstable areas shall be removed and replaced with approved sub-grade material. There shall be a minimum of 4" of compacted aggregate, CA-6.

Construction Requirements:

If form boards are to be used for the manual placement of concrete, face boards shall be used to aid the construction of the curb. A mechanical vibrator shall be used to eliminate voids in the concrete adjacent to the face of the gutter. The mechanical vibrator shall conform to Article 1103.17 (a) of the Standard Specifications.

The Contractor will be required to string line the proposed curb elevations, so the Engineer can verify that there will be the required thickness for the proposed leveling binder, binder course and surface course and provide positive drainage to the existing structure. If required by the Engineer the Contractor may need to reset the string line to provide drainage and positive flow to the curb of driveways. This will need to be completed, but no additional compensation will be given. This will be considered included in the bid price for **COMBINATION CONCRETE CURB AND GUTTER, SPECIAL**.

The area between the edge of the existing pavement and face of the new gutter shall be cleaned of all loose material and filled with Class SI concrete, to a minimum of six (6) inches width. Driveways removed for forming shall be backfilled with an approved granular material and considered incidental.

Curing and Protection:

Curing and protection shall be in accordance with the appropriate Article 1020.13 of the Standard Specifications as amended herein. A **WHITE PIGMENTED** curing compound shall be applied to the finished surface of the placed concrete once it is set.

Thickness of Gutter Flag:

The thickness of the new gutter flag shall be a minimum of 9", regardless of the thickness of the existing gutter flag.

1. Contraction Joints. Contraction joints shall be located every 10 lineal feet.
2. Longitudinal Construction Joints. Longitudinal construction joints will not be doweled.
3. Longitudinal Curb Preformed joints. Longitudinal curb preformed joints are required at concrete driveways.
4. Transverse Expansion Joints. Transverse expansion joints shall be placed every 60 lineal feet.

Basis of Payment:

This work will be paid for at the contract unit price per foot for **COMBINATION CONCRETE CURB AND GUTTER, SPECIAL**, no matter the type or size of the existing combination concrete curb and gutter, which price shall include payment for furnishing and installing all joints as required and all necessary excavation, tree root grinding or cutting and sub-base material required to complete the work to the lines and grades shown on the plans.

**HOT-MIX DRIVEWAY SURFACE, 2"**

Description of Work:

The work under this Pay Item includes the removal and replacement of various HMA driveways which are directed to be removed by the Engineer, or as indicated in the plans.

All work shall be done in accordance with the City of North Chicago Driveways Detail.

The area to be paved shall be fine graded to provide for the construction of a two-inch (2") bituminous surface. All work to prepare the existing aggregate base, or regrading or removing of aggregate shall be included in this Pay Item.

Method of Measurement:

**HOT-MIX DRIVEWAY SURFACE, 2"**, shall be measured for payment in place and the area computed in square yards.

Existing driveway approach, no matter the material, slated for removal will not be measured for payment and the cost shall be included in this item.

Basis of Payment:

The work under this Pay Item will be paid for at the Contract unit price per square yard for **HOT-MIX DRIVEWAY SURFACE, 2"**, which price shall be payment in full for performing the work as specified herein.

**TEMPORARY ACCESS**

The CONTRACTOR shall construct and maintain aggregate surface course for temporary access to private entrances, commercial entrances and roads according to Articles 402.07 and 402.10 as directed by the ENGINEER.

The aggregate surface course shall be constructed to the dimensions and grades specified below, except as modified by the plans or as directed by the ENGINEER.

- a. Private Entrance. The minimum width shall be 12 ft. (3.6 m). The minimum compacted thickness shall be 6 in. (150 mm). The maximum grade shall be eight percent, except as required to match the existing grade.
- b. Commercial Entrance. The minimum width shall be 24 ft. (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The maximum grade shall be six percent, except as required to match the existing grade.
- c. Road. The minimum width shall be 24 ft. (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

Maintaining the temporary access shall include relocating and/or re-grading the aggregate surface course for any operation that may disturb or remove the temporary access. The same type and gradation of material used to construct the temporary access shall be used to maintain it.

When use of the temporary access is discontinued, the aggregate shall be removed and utilized in the permanent construction or disposed of according to Article 202.03.

Method of Measurement:

Aggregate surface course for the temporary access to private entrances, commercial entrances or roads constructed will **NOT** be measured for payment. If a residential drive, commercial entrance, or road is to be constructed under multiple stages, the aggregate needed to construct the second or subsequent stages will not be measured for payment but shall be included in the cost of the item being constructed.

Basis of Payment:

This work shall **NOT be paid for separately**, but shall be included in the price of all **Hot-Mix Asphalt Surface Removal**, which shall include all work described herein at locations/driveways as directed by the ENGINEER. Work shall be in accordance with section 402 of the Standard Specifications.

**HMA MIXTURE DESIGN REQUIREMENTS (D-1)**

Effective: January 1, 2013

Revised: April 1, 2016

**1) Design Composition and Volumetric Requirements** Revise the table in Article 406.06(d) of the Standard Specifications to read:

“MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19)
SMA-9.5, IL-9.5, IL-9.5L	1 1/2 (38)
SMA-12.5	2 (50)
IL-19.0, IL-19.0L	2 1/4 (57)”

Revise the table in Article 1004.03(c) of the Standard Specifications to read:

“Use	Size/Application	Gradation No.
Class A-1, 2, & 3	3/8 in. (10 mm) Seal	CA 16
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & 3	Cover	CA 14
HMA High ESAL	IL-19.0 IL-9.5	CA 11 <sup>1/</sup> CA 16, CA 13 <sup>3/</sup>
HMA Low ESAL	IL-19.0L IL-9.5L Stabilized Subbase or Shoulders	CA 11 <sup>1/</sup> CA 16
SMA <sup>2/</sup>	1/2 in. (12.5mm) Binder & Surface IL 9.5 Surface	CA13 <sup>3/</sup> , CA14 or CA16  CA16, CA 13 <sup>3/</sup>

1/ CA 16 or CA 13 may be blended with the gradations listed.

2/ The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve.

Revise Article 1004.03(e) of the Supplemental Specifications to read:

“(e) Absorption. For SMA the coarse aggregate shall also have water absorption  $\leq 2.0$  percent.”

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

“IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steel slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours.”

Revise the nomenclature table in Article 1030.01 of the Standard Specifications to read:

“High ESAL	IL-19.0 binder; IL-9.5 surface; IL-4.75; SMA-12.5, SMA-9.5
Low ESAL	IL-19.0L binder; IL-9.5L surface; Stabilized Subbase (HMA) <sup>1/</sup> ; HMA Shoulders <sup>2/</sup>

1/ Uses 19.0L binder mix.

2/ Uses 19.0L for lower lifts and 9.5L for surface lift.”

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

“**1030.02 Materials.** Materials shall be according to the following.

Item .....	Article/Section
(a) Coarse Aggregate .....	1004.03
(b) Fine Aggregate .....	1003.03
(c) RAP Material .....	1031
(d) Mineral Filler .....	1011
(e) Hydrated Lime .....	1012.01
(f) Slaked Quicklime (Note 1)	
(g) Performance Graded Asphalt Binder (Note 2) .....	1032
(h) Fibers (Note 3)	
(i) Warm Mix Asphalt (WMA) Technologies (Note 4)	

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be an Elvaloy or SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.

Note 3. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed Asphalt Shingles (RAS) may be used in Stone Matrix Asphalt (SMA) mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either Type I or Type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 4. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, “Warm Mix Asphalt Technologies”.”

Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

“ (1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) <sup>1/</sup>										
Sieve Size	IL-19.0 mm		SMA <sup>4/</sup> IL-12.5 mm		SMA <sup>4/</sup> IL-9.5 mm		IL-9.5 mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)										
1 in. (25 mm)		100								
3/4 in. (19 mm)	90	100		100						
1/2 in. (12.5 mm)	75	89	80	100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 <sup>5/</sup>	16	32 <sup>5/</sup>	34 <sup>6/</sup>	52 <sup>2/</sup>	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 μm)			12	16	12	18				
#50 (300 μm)	6	15					4	15	15	30
#100 (150 μm)	4	9					3	10	10	18
#200 (75 μm)	3	6	7.0	9.0 <sup>3/</sup>	7.5	9.5 <sup>3/</sup>	4	6	7	9 <sup>3/</sup>
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0

1/ Based on percent of total aggregate weight.

- 2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign = 90.
- 3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.
- 4/ The maximum percent passing the #635 (20 μm) sieve shall be ≤ 3 percent.
- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.
- 6/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

Revise Article 1030.04(b)(1) of the Standard Specifications to read:

- “(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent and for IL-4.75 it shall be 3.5 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix, and shall conform to the following requirements.

VOLUMETRIC REQUIREMENTS High ESAL				
Voids in the Mineral Aggregate (VMA), % minimum				Voids Filled with Asphalt Binder (VFA), %
Ndesign	IL-19.0	IL-9.5	IL-4.75 <sup>1/</sup>	
50	13.5	15.0	18.5	65 – 78 <sup>2/</sup>
70			65 - 75	
90				

Maximum Draindown for IL-4.75 shall be 0.3 percent

1/ VFA for IL-4.75 shall be 72-85 percent”

Replace Article 1030.04(b)(3) of the Standard Specifications with the following:

“(3) SMA Mixtures.

Volumetric Requirements SMA <sup>1/</sup>			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 <sup>4/</sup>	3.5	17.0 <sup>2/</sup>	75 - 83
		16.0 <sup>3/</sup>	

- 1/ Maximum draindown shall be 0.3 percent. The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.
- 2/ Applies when specific gravity of coarse aggregate is ≥ 2.760.
- 3/ Applies when specific gravity of coarse aggregate is < 2.760.
- 4/ Blending of different types of aggregate will not be permitted.  
For surface course, the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be

crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone.

Add to the end of Article 1030.05 (d) (2) a. of the Standard Specifications:

“During production, the Contractor shall test SMA mixtures for draindown according to AASHTO T305 at a frequency of 1 per day of production.”

Delete last sentence of the second paragraph of Article 1102.01(a) (4) b. 2.

Add to the end of Article 1102.01 (a) (4) b. 2.:

“As an option, collected dust (baghouse) may be used in lieu of manufactured mineral filler according to the following:

- (a.) Sufficient collected dust (baghouse) is available for production of the SMA mix for the entire project.
- (b.) A mix design was prepared based on collected dust (baghouse).

## 2) Design Verification and Production

Revise Article 1030.04 (d) of the Standard Specifications to read:

“(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department’s verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new and renewal mix designs will be required to be tested, prior to submittal for Department verification and shall meet the following requirements:

- (1)Hamburg Wheel Test criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements <sup>1/</sup>

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions.

For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

- (2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa).”

Production Testing. Revise first paragraph of Article 1030.06(a) of the Standard Specifications to read:

“(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture with a quantity of 3000 tons (2750 metric tons) or more according to the Manual of Test Procedures for Materials “Hot Mix Asphalt Test Strip Procedures”.

Add the following after the sixth paragraph in Article 1030.06 (a) of the Standard Specifications:

“The Hamburg Wheel test shall also be conducted on all HMA mixtures from a sample taken within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day’s production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.

If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria”

Method of Measurement:

Add the following after the fourth paragraph of Article 406.13 (b):

“The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design’s  $G_{mb}$ .”

Basis of Payment:

Replace the fourth paragraph of Article 406.14 of the Standard Specifications with the following:

“Stone matrix asphalt will be paid for at the contract unit price per ton (metric ton) for **POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT**, of the mixture composition and  $N_{design}$  specified; and **POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT**, of the mixture composition and  $N_{design}$  specified.”

**RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)**

Effective: November 1, 2012

Revise: April 1, 2017

Revise Section 1031 of the Standard Specifications to read:

**“SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES**

**1031.01 Description.** Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after

completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Bureau of Materials and Physical Research approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve. RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
- (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
  - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

**1031.02 Stockpiles.** RAP and RAS stockpiles shall be according to the following.

- (a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. "Non- Quality, FRAP -#4 or Type 2 RAS", etc...).
- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. All FRAP shall be processed prior to testing and sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mix the FRAP will be used in.
  - (2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, Superpave (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 in. (75 mm) single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.
  - (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality, but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
  - (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round

but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as “Non-Quality”.

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of Type 1 RAS with Type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written approval. The Engineer’s written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be “B Quality” or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type, and lot number shall be maintained by project contract number and kept for a minimum of three years.

**1031.03 Testing.** FRAP and RAS testing shall be according to the following.

- (a) FRAP Testing. When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 metric tons) or once per week, whichever comes first.

(3) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample of FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

- (b) RAS Testing. RAS shall be sampled and tested during stockpiling according to Bureau of Materials and Physical Research Policy Memorandum, “Reclaimed Asphalt Shingle (RAS) Sources”. The Contractor shall also sample as incoming material at the HMA plant.

- (1) During Stockpiling. Washed extraction and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a  $\leq 1000$  ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.
- (2) Incoming Material. For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

**1031.04 Evaluation of Tests.** Evaluation of test results shall be according to the following.

- (a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag),  $G_{mm}$ . A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	$\pm 6 \%$
No. 8 (2.36 mm)	$\pm 5 \%$
No. 30 (600 $\mu\text{m}$ )	$\pm 5 \%$
No. 200 (75 $\mu\text{m}$ )	$\pm 2.0 \%$
Asphalt Binder	$\pm 0.3 \%$
$G_{mm}$	$\pm 0.03$ <sup>1/</sup>

1/ For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the ITP, “Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)” or Illinois Modified AASHTO T-164-11, Test Method A.

- (b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.5 %
Asphalt Binder Content	± 2.0 %

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

- (c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor’s and the Engineer’s split sample test results will be considered acceptable if within the following limits.

Test Parameter	Acceptable Limits of Precision	
	FRAP	RAS
% Passing: <sup>1/</sup>		
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	4.0%
No. 200	2.2%	4.0%
Asphalt Binder Content	0.3%	3.0%

G <sub>mm</sub>	0.030	
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1/ Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

- (d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

**1031.05 Quality Designation of Aggregate in RAP and FRAP.**

- (a) RAP. The aggregate quality of the RAP for homogeneous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

- (1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.
- (2) RAP from Superpave/HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.
- (3) RAP from Class I, Superpave/HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.
- (4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

- (b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the Bureau of Materials and Physical Research Aggregate Lab for MicroDeval Testing, according to ITP 327. A maximum loss of 15.0 percent will be applied for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

**1031.06 Use of FRAP and/or RAS in HMA.** The use of FRAP and/or RAS shall be the Contractor's option when constructing HMA in all contracts.

- (a) FRAP. The use of FRAP in HMA shall be as follows.

- (1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.

- (3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.
- (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.
- (5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.
- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.
- (c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0 percent by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts indicated in the table below for a given N Design.

**Max Asphalt Binder Replacement for FRAP with RAS Combination**

HMA Mixtures <sup>1/ 2/ 4/</sup>	Maximum % ABR		
	Binder/Leveling Binder	Surface	Polymer Modified <sup>3/</sup>
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
4.75 mm N-50			40
SMA N-80			30

- 1/ For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.
- 2/ When the binder replacement exceeds 15 % for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 % binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 %, the required virgin asphalt binder grade shall be PG64-28.
- 3/ When the ABR for SMA or IL-4.75 is 15 % or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.

- 4/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10 %.

**1031.07 HMA Mix Designs.** At the Contractor's option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the detailed requirements specified herein.

- (a) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under "Evaluation of Tests" herein, and meet all requirements herein, the additional FRAP or RAS stockpiles may be used in the original design at the percent previously verified.
- (b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design. A RAS stone bulk specific gravity (Gsb) of 2.300 shall be used for mix design purposes.

**1031.08 HMA Production.** HMA production utilizing FRAP and/or RAS shall be as follows.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS and FRAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

- (a) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within  $\pm 0.5$  percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.
- (b) HMA Plant Requirements. HMA plants utilizing FRAP and/or RAS shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

- a. Date, month, year, and time to the nearest minute for each print.
- b. HMA mix number assigned by the Department.
- c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- d. Accumulated dry weight of RAS and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
- e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
- f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
- g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.
- h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)

- i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.
  - j. Accumulated mixture tonnage.
  - k. Dust Removed (accumulated to the nearest 0.1 ton (0.1 metric ton))
- (2) Batch Plants.
- a. Date, month, year, and time to the nearest minute for each print.
  - b. HMA mix number assigned by the Department.
  - c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
  - d. Mineral filler weight to the nearest pound (kilogram).
  - f. RAS and FRAP weight to the nearest pound (kilogram).
  - g. Virgin asphalt binder weight to the nearest pound (kilogram).
  - h. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

**1031.09 RAP in Aggregate Surface Course and Aggregate Wedge Shoulders, Type B.** The use of RAP or FRAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except “Non-Quality” and “FRAP”. The testing requirements of Article 1031.03 shall not apply. RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.
- (b) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200 (75  $\mu\text{m}$ ) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation.”

State of Illinois  
Department of Transportation  
Bureau of Local Roads and Streets

SPECIAL PROVISION  
for  
PULVERIZATION

January 24, 2017

All references to Divisions, Sections or Articles in this Special Provision shall be construed to mean specific Divisions, Sections or Articles of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

Description. The pulverization process shall be limited to low volume streets and roadways with an average daily traffic less than or equal to 400. This work shall consist of pulverizing the bituminous layers and/or portions of the aggregate base material to a specified depth and maximum size. Additional aggregate or reclaimed asphalt pavement shall be blended in as required. The pulverized pavement will be graded and compacted and used as an Aggregate Base Course.

Materials. Materials shall be according to the following Articles of Division 1000 – Materials

Item	Article/Section
(a) Water.....	1002
(b) Coarse Aggregates.....	1004
(c) Reclaimed Asphalt Pavement (Note 1).....	1031

Note 1. Reclaimed asphalt pavement (RAP) from Conglomerate "D" Quality or better RAP stockpiles as specified in Article 1031.02 or from milling of the existing roadway may be used as shown on the plans. The RAP material shall not exceed the maximum size requirement of the cold pulverized material.

Equipment. Equipment shall be according to the following Articles of Division 1100 – Equipment

Item	Article/Section
(a) Self-Propelled Pneumatic-Tired Rollers (Note 1).....	1101.01(c)
(b) Vibratory Roller (Note 2).....	1101.01(g)
(c) Motor Grader.....	1101.05
(d) Aggregate Spreaders.....	1102.04
(e) Self-Propelled Vibratory Padfoot Roller (Note 3)	
(f) Self-Propelled Reclaimer (Note 4)	

Note 1. The self-propelled pneumatic-tired roller shall have a gross weight of not less than 25 tons (23 metric tons).

Note 2. The double drum vibratory steel roller shall have a gross weight of not less than 10 tons (9 metric tons).

Note 3. The self-propelled vibratory pad foot roller shall have 84 in. (2133 mm) wide drums and gross weight of not less than 10 tons (9 metric tons). A front mounted blade is recommended for back-dragging.

Note 4. The self-propelled reclaimer shall be capable of fully pulverizing the existing pavement to the depth required, incorporating water, and mixing the materials to produce a homogeneous material. The minimum power of the self-propelled reclaimer shall be 500 hp (373 kW). The self-propelled reclaimer shall be capable of reclaiming not less than 8 ft (2.4 m) wide and up to 12 in. (305 mm) deep in each pass. The self-propelled reclaimer shall have a system for adding water with a full-width spray bar consisting of a positive displacement pump interlocked to the self-propelled reclaimer's ground speed so the amount of water being added is automatically adjusted with changes to the self-propelled reclaimer's ground speed. Individual valves on the spray bar shall be capable of being turned off as necessary to minimize water overlap on subsequent passes.

### **Pulverization, Shaping, and Compacting.**

The existing bituminous layers and aggregate base material shall be pulverized, to the depth required, by the self-propelled reclaimer and shaped by the motor grader to the proposed crown according to the plans. If additional aggregate is required to meet the proposed grade line, this material shall be added prior to pulverization and thoroughly blended during the pulverization process. All of the pulverized material shall pass the 1-1/2 in. sieve. The pulverized and shaped material shall be compacted to the satisfaction of the Engineer. The moisture content shall be sufficient to prevent segregation of the pulverized materials. Water should be added as required by the Engineer to obtain compaction satisfactory to the Engineer.

### **Quality Control / Quality Assurance (QC/QA).**

- 1) Quality Control by the Contractor. The Contractor shall perform or have performed the inspection and tests required to assure conformance of the contract requirements. Control includes the recognition of obvious defects and their immediate correction. This may require increased testing, communication of test results to the job site, modification of operations, suspension of the work, or other actions appropriate.

The Engineer shall be immediately notified of any failing tests and subsequent remedial action. Passing tests shall be reported to the Engineer no later than the start of the next work day.

- 2) Quality Assurance by the Engineer. The Engineer will conduct independent assurance tests on split samples taken by the Contractor for quality control testing. In addition, the Engineer will witness the sampling and splitting of these samples and will immediately retain witnessed split samples for quality assurance testing.

### 3) Test Methods

- a) Depth of Pulverization. The nominal depth measured at the centerline shall be required.
- b) Maximum Particle Size. Sampling shall be done at three randomly located test holes across the width of the pulverized material per test site. Sampling / testing should be done immediately behind the self-propelled reclaimer machine. Caution should be used to avoid obtaining subgrade material with the pulverized material from the test holes. All of the pulverized material shall pass through a 1-1/2 in. sieve.
- c) Compaction and Stability. A proof rolling test is to be conducted using a standard proof rolling vehicle to assess the quality of the road. The test vehicle for proof rolling shall consist of a tandem axle truck loaded to a minimum gross weight of 40,000 lb (18,100 kg). Proof rolling shall consist of 10 passes in each lane of the completed pulverized base course. Failure of the proof rolling test will be indicated by ruts in excess of one half inch (1/2 in). Any failures in the base that occur during the proof rolling shall be immediately repaired and shall be subjected to an additional five passes of the test vehicle after the initial 10 passes are completed. This process shall be repeated, if necessary, until all failed areas pass the proof rolling. A nuclear density test is permitted when the proof rolling test is not a viable option.
- d) Frequency. The following list provides the minimum frequency for tests; however, the Engineer may increase the testing frequency if the construction process is experiencing problems or unknown conditions are encountered.

Depth of Pulverization	- QC 1 per 500 ft (150 m)
	- QA 1 per 1000 ft (300 m)
Maximum Particle Size	- QC 1 per 0.5 day production
	- QA 1 per 1.0 day production
Compaction and Stability	- QC 1 per 0.25 mile (0.4 km)
	- QA 1 per 1.0 mile (1.6 km)

#### **Method of Measurement.**

Pulverization will be measured in square yards (square meters) using the centerline length and width from outside to outside of completed pavement.

If additional Coarse Aggregate is required, it will be measured in tons (metric tons) according to the requirements of Article 311.08(b).

#### **Basis of Payment.**

The pulverization will be paid for at the contract unit price per square yard (square meter) for PULVERIZATION, of the thickness specified.

The coarse aggregate or reclaimed asphalt pavement will be paid for at the contract unit price per ton (metric ton) for AGGREGATE BASE REPAIR.

## **GROOVING FOR RECESSED PAVEMENT MARKINGS (BDE)**

Effective: November 1, 2012

Revised: November 1, 2017

Description. This work shall consist of grooving the pavement surface in preparation for the application of recessed pavement markings.

Equipment. Equipment shall be according to the following.

- (a) Preformed Plastic Pavement Marking Installations. The grooving equipment shall have a free-floating saw blade cutting head equipped with gang-stacked diamond saw blades. The diamond saw blades shall be of uniform wear and shall produce a smooth textured surface. Any ridges in the groove shall have a maximum height of 15 mils (0.38 mm).
- (b) Liquid and Thermoplastic Pavement Marking Installations. The grooving equipment shall be equipped with either a free-floating saw blade cutting head or a free-floating grinder cutting head configuration with diamond or carbide tipped cutters and shall produce an irregular textured surface.

### CONSTRUCTION REQUIREMENTS

General. The Contractor shall supply the Engineer with a copy of the pavement marking material manufacturer's recommendations for constructing a groove.

Pavement Grooving Methods. The grooves for recessed pavement markings shall be constructed using the following methods.

- (a) Wet Cutting Head Operation. When water is required or used to cool the cutting head, the groove shall be flushed with high pressure water immediately following the cut to avoid build up and hardening of slurry in the groove. The pavement surface shall be allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.
- (b) Dry Cutting Head Operation. When used on HMA pavements, the groove shall be vacuumed or cleaned by blasting with high-pressure air to remove loose aggregate, debris, and dust generated during the cutting operation. When used on PCC pavements, the groove shall be flushed with high pressure water or shot blasted to remove any PCC particles that may have become destabilized during the grooving process. If high pressure water is used, the pavement surface shall be allowed to dry for a minimum of 24 hours prior to the final cleaning of the groove and application of the pavement marking material.

Pavement Grooving. Grooving shall not cause ravels, aggregate fractures, spalling or disturbance of the joints to the underlying surface of the pavement. Grooves shall be cut into

the pavement prior to the application of the pavement marking material. Grooves shall be cut such that the width is 1 in. (25 mm) greater than the width of the pavement marking line as specified on the plans. Grooves for letters and symbols shall be cut in a square or rectangular shape so that the entire marking will fit within the limits of the grooved area. The position of the edge of the grooves shall be a minimum of 2 in. (50 mm) from the edge of all longitudinal joints. The depth of the groove shall not be less than the manufacturer's recommendations for the pavement marking material specified, but shall be installed to a minimum depth of 110 mils (2.79 mm) and a maximum depth of 200 mils (5.08 mm) for pavement marking tapes thermoplastic markings and a minimum depth of 40 mils (1.02 mm) and a maximum depth of 80 mils (2.03 mm) for liquid markings. The cutting head shall be operated at the appropriate speed in order to prevent undulation of the cutting head and grooving at an inconsistent depth.

At the start of grooving operations, a 50 ft (16.7 m) test section shall be installed and depth measurements shall be made at 10 ft (3.3 m) intervals within the test section. The individual depth measurements shall be within the allowable ranges according to this Article. If it is determined the test section has not been grooved at the appropriate depth or texture, adjustments shall be made to the cutting head and another 50 ft (16.7 m) test section shall be installed and checked. This process shall continue until the test section meets the requirements of this Article.

For new HMA pavements, grooves shall not be installed within 10 days of the placement of the final course of pavement.

Final Cleaning. Immediately prior to the application of the pavement marking material or primer sealer, the groove shall be cleaned with high-pressure air blast.

Method of Measurement. This work will be measured for payment in place, in feet (meter) for the groove width specified.

Grooving for letter, numbers and symbols will be measured in square feet (square meters).

Basis of Payment. This work will be paid for at the contract unit price per foot (meter) for GROOVING FOR RECESSED PAVEMENT MARKING of the groove width specified, and per square foot (square meter) for GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS.

The following shall only apply when preformed plastic pavement markings are to be recessed:

Add the following paragraph after the first paragraph of Article 780.07 of the Standard Specifications.

"The markings shall be capable of being applied in a grooved slot on new and existing portland cement concrete and HMA surfaces, by means of a pressure-sensitive, precoated adhesive, or liquid contact cement which shall be applied at the time of installation. A primer sealer shall be applied with a roller and shall cover and seal the entire bottom of the groove.

State of Illinois  
Department of Transportation  
Bureau of Local Roads and Streets

SPECIAL PROVISION  
FOR  
INSURANCE

Effective: February 1, 2007  
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

City of North Chicago, Illinois

Trotter and Associates, Inc., 40W201 Wasco Road, Ste D, St. Charles, IL 60175

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

**TRAFFIC CONTROL PLAN**

Effective: September 30, 1985

Revised: January 1, 2007

Traffic Control shall be according to the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plans, and the Special Provisions contained herein.

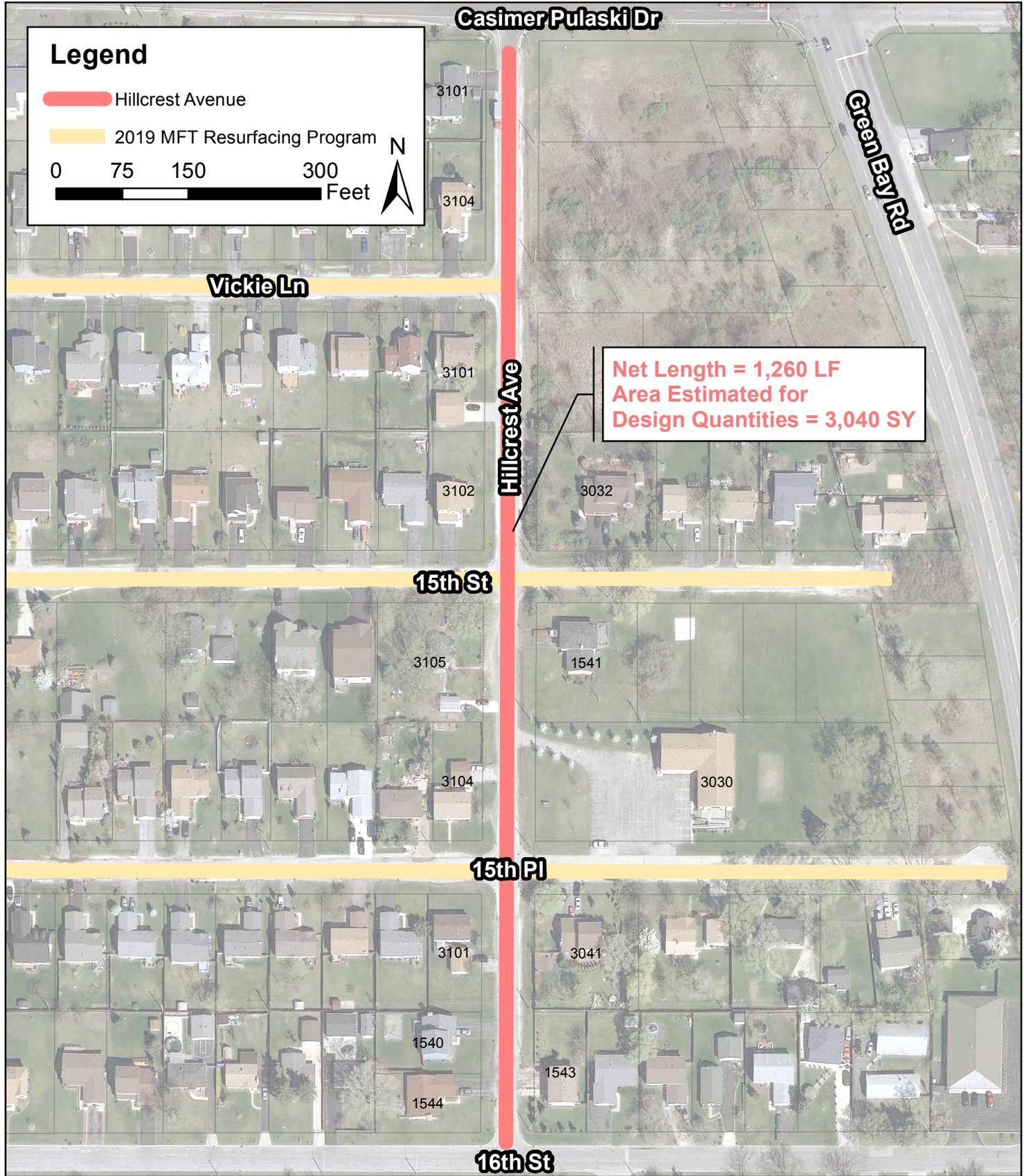
Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

STANDARDS: 701301-04, 701501-06, 701901-08, 780001-05, BLR 17-4, BLR 18-6

DETAILS: District One Typical Pavement Markings (TC-13)

SPECIAL PROVISIONS:



**Legend**

Hillcrest Avenue

2019 MFT Resurfacing Program

0 75 150 300 Feet

N

**Net Length = 1,260 LF**  
**Area Estimated for**  
**Design Quantities = 3,040 SY**

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 INFORMATION STORAGE AND RETRIEVAL  
 SYSTEM, WITHOUT PERMISSION IN WRITING BY THE ENGINEER,  
 TROTTER AND ASSOCIATES, INC.

Project No.:  
 Base File:  
 Sheet File:  
 Issue Date: 4/29/2019  
 Scale: 1" = 150'

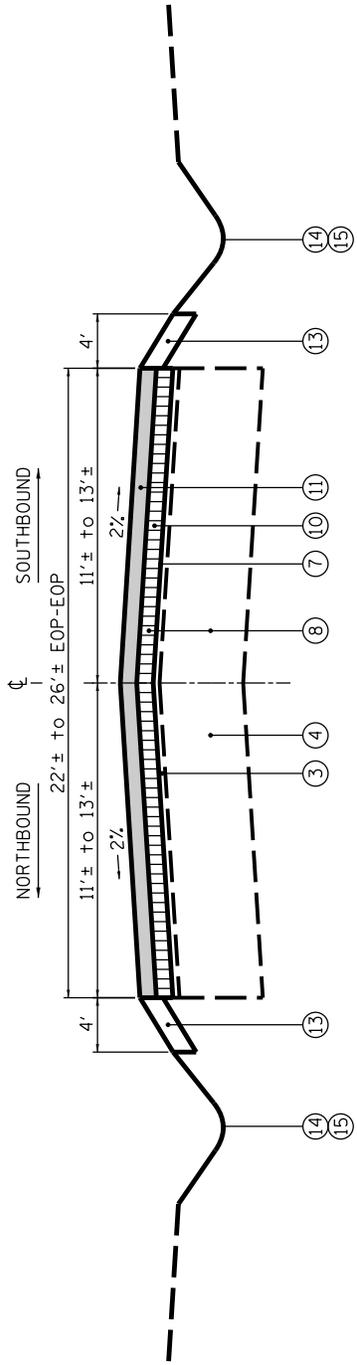
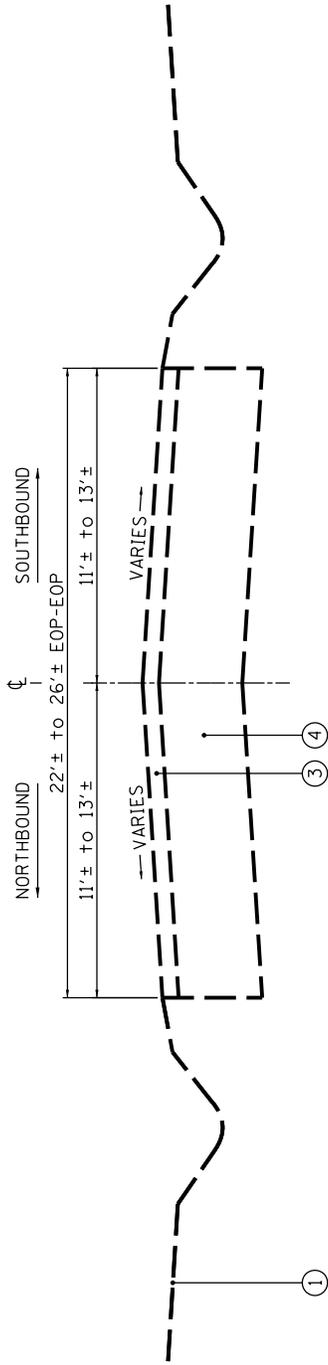
Sheet Number  
**EX.1**

**2019 MFT Resurfacing Program**  
**Hillcrest Avenue**  
**North Chicago, IL**

**TROTTER**  
 and  
 ASSOCIATES, INC.

700 Geneva Parkway, Suite B  
 Lake Geneva, WI 53147  
 Ph. 262-729-4350

PROJECT STAFF	DATE
PROJECT MANAGER: STEVE CIESLICA, P.E.	
ENGINEER:	
ENGINEER:	
ENGINEER:	
TECHNICIAN: CHRIS MERINO	
TECHNICIAN:	



NET LENGTH = 1,260 LF  
AREA ESTIMATED FOR DESIGN QUANTITIES = 3,040 SY

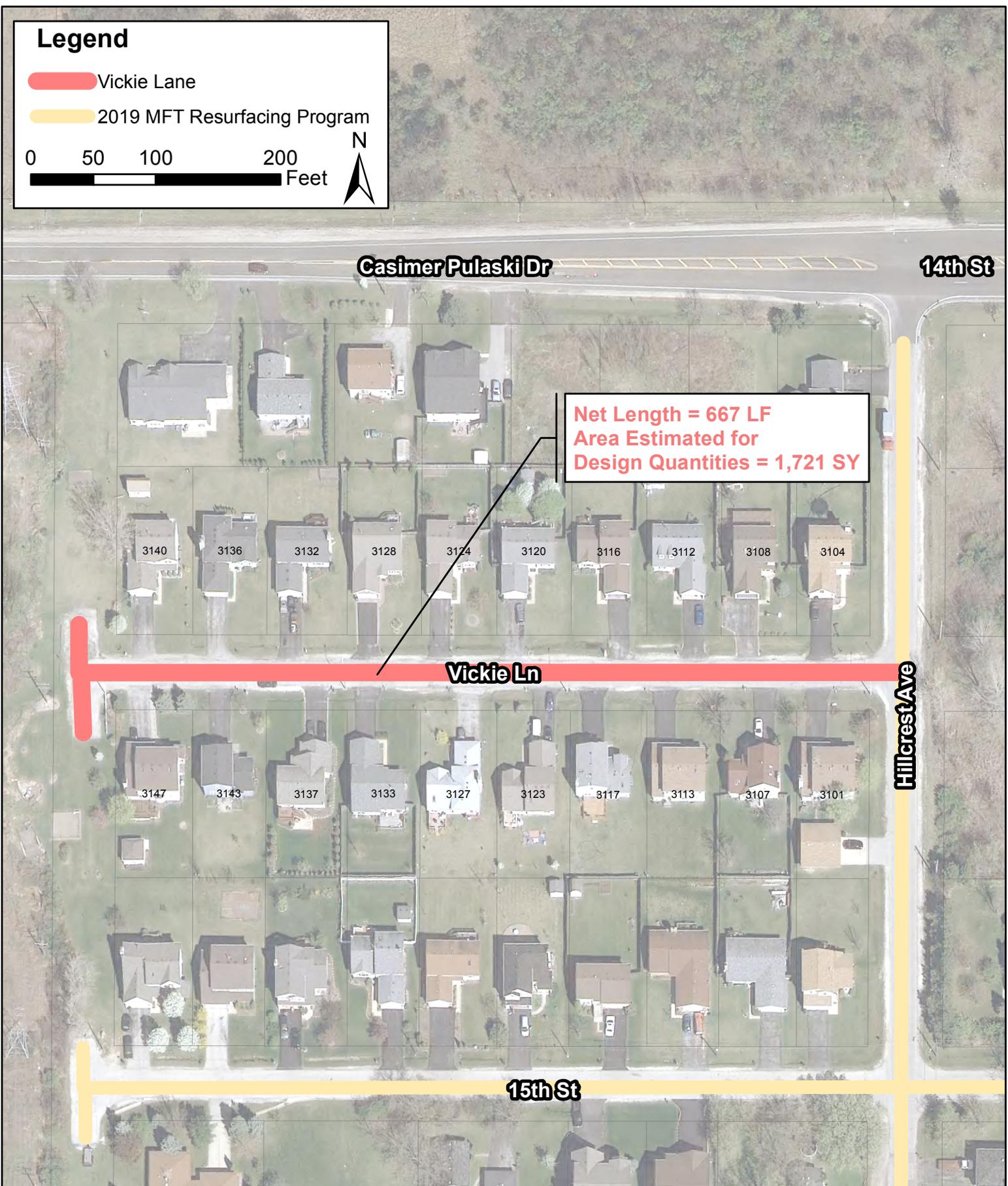
- ① EXISTING GROUND
- ~~② EXISTING CURB AND GUTTER~~
- ③ EXISTING HOT-MIX ASPHALT (SEE CORE REPORTS)
- ④ EXISTING BASE COURSE (SEE CORE REPORTS)
- ~~⑤ CLASS B PATCHES, TYPE II, 0"~~
- ~~⑥ HOT MIX ASPHALT SURFACE REMOVAL, SPECIAL (2.5" MINIMUM AT CURB WITH 2% GROSS SLOPE)~~
- ⑦ PROPOSED BITUMINOUS MATERIALS (TACK) - 0.05 LB/SF FOR MILLED HMA/CONCRETE (TACK) - 0.025 LB/SF FOR HMA LIFTS (PRIME) - 0.25 LB/SF FOR AGGREGATE BASES
- ⑧ PULVERIZATION (SPECIAL)
- ~~⑨ PROPOSED HOT MIX ASPHALT LEVELING BANDER (HMA, N50, 3/4"~~
- ⑩ PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2"
- ⑪ PROPOSED HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50, 2"
- ~~⑫ COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER~~
- ⑬ AGGREGATE SHOULDERS, TYPE B
- ⑭ GRADING AND SHAPING DITCHES
- ⑮ PARKWAY RESTORATION

# Legend

 Vickie Lane

 2019 MFT Resurfacing Program

0 50 100 200 Feet



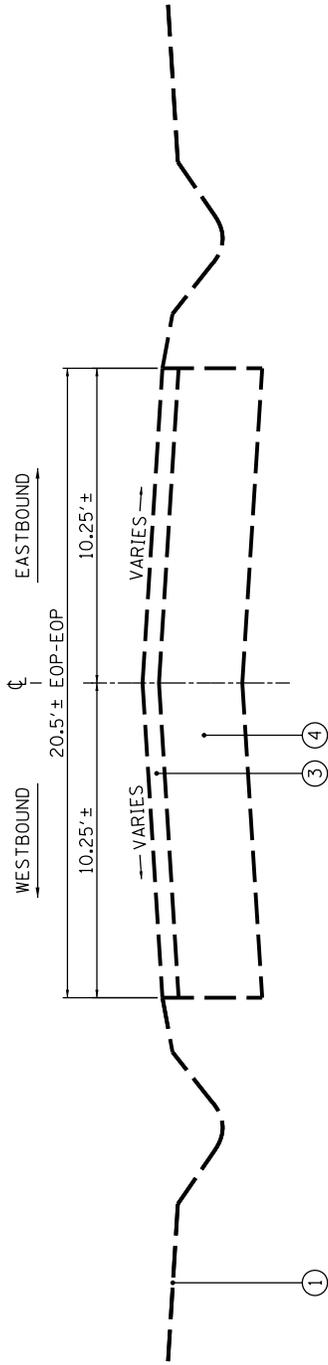
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**Area Estimated for**  
**Design Quantities = 1,721 SY**



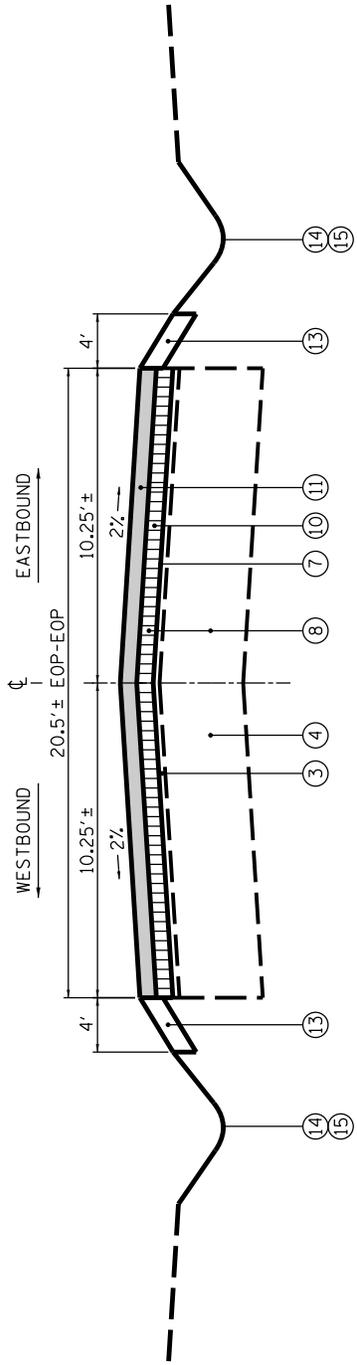
40W201 Wasco Road, Suite D St Charles, IL 60175  
P: 630-587-0470 F: 630-587-0475

**2019 MFT Resurfacing Program**  
**Vickie Lane**  
**North Chicago, IL**

<b>Project No.:</b>	<b>Sheet Number</b>  <b>EX.2</b>
<b>Base File:</b>	
<b>Sheet File:</b>	
<b>Issue Date: May 28, 2019</b>	
<b>Scale: 1" = 100'</b>	



Existing Typical Section  
Vickie Lane  
Hillcrest Avenue to West Terminus



Proposed Typical Section  
Vickie Lane  
Hillcrest Avenue to West Terminus

NET LENGTH = 667 LF  
AREA ESTIMATED FOR DESIGN QUANTITIES = 1,721 SY

- ① EXISTING GROUND
- ~~② EXISTING CURB AND GUTTER~~
- ③ EXISTING HOT-MIX ASPHALT (SEE CORE REPORTS)
- ④ EXISTING BASE COURSE (SEE CORE REPORTS)
- ~~⑤ CLASS-B PATCHES, TYPE II, 0"~~
- ~~⑥ HOT-MIX ASPHALT SURFACE REMOVAL, SPECIAL (2.5" MINIMUM AT CURB WITH 2% GROSS SLOPE)~~
- ⑦ PROPOSED BITUMINOUS MATERIALS (TACK) - 0.05 LB/SF FOR MILLED HMA/CONCRETE (TACK) - 0.025 LB/SF FOR HMA LIFTS (PRIME) - 0.25 LB/SF FOR AGGREGATE BASES
- ⑧ PULVERIZATION (SPECIAL)
- ~~⑨ PROPOSED HOT-MIX ASPHALT LEVELING BANDER (HMA, N50, 3/4"~~
- ⑩ PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2"
- ⑪ PROPOSED HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50, 2"
- ~~⑫ COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER~~
- ⑬ AGGREGATE SHOULDERS, TYPE B
- ⑭ GRADING AND SHAPING DITCHES
- ⑮ PARKWAY RESTORATION

Casimer Pulaski Dr

14th St

Green Bay Rd

**Legend**

- 15th Street
- 2019 MFT Resurfacing Program

0 75 150 300 Feet

Vickie Ln

**Net Length = 1,098 LF**  
**Area Estimated for**  
**Design Quantities = 3,055 SY**

15th St

Hillcrest Ave

15th Pl

16th St

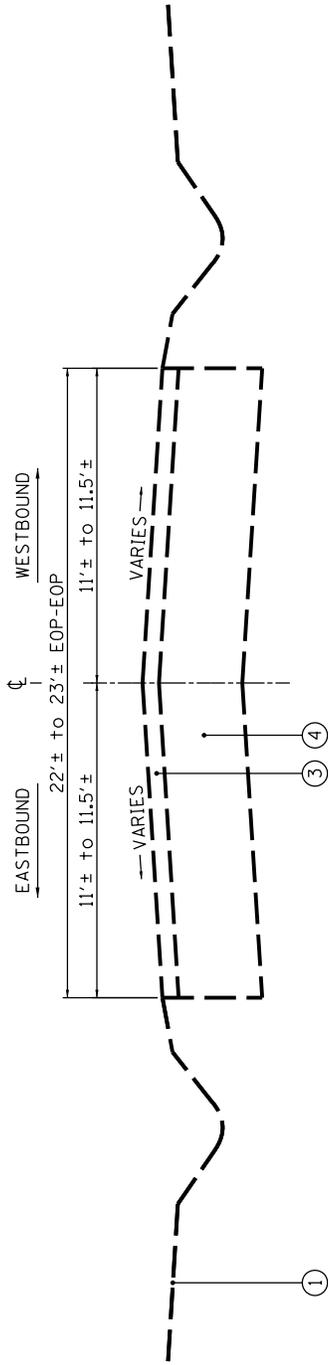


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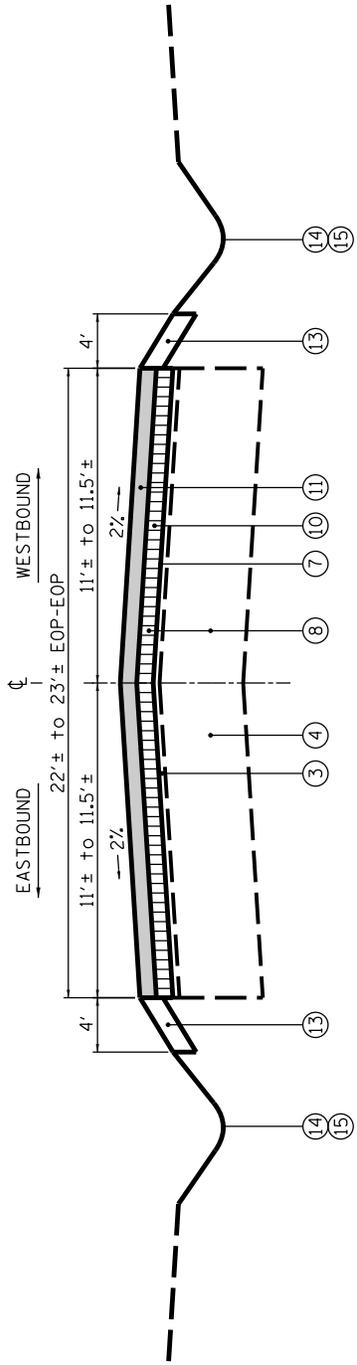
**2019 MFT Resurfacing Program**  
**15th Street**  
**North Chicago, IL**

<b>Project No.:</b>
<b>Base File:</b>
<b>Sheet File:</b>
<b>Issue Date: May 28, 2019</b>
<b>Scale: 1" = 150'</b>

**Sheet**  
**Number**  
**EX.3**



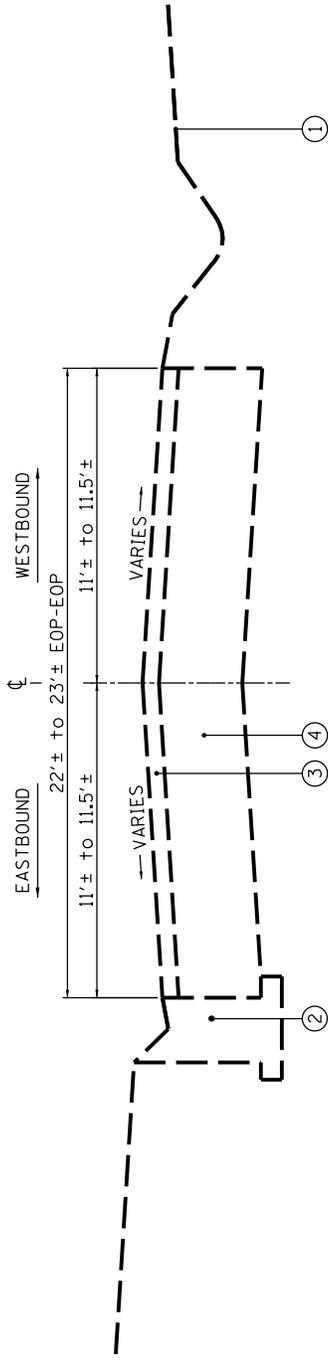
Existing Typical Section  
15th Street  
Hillcrest Avenue to East Terminus



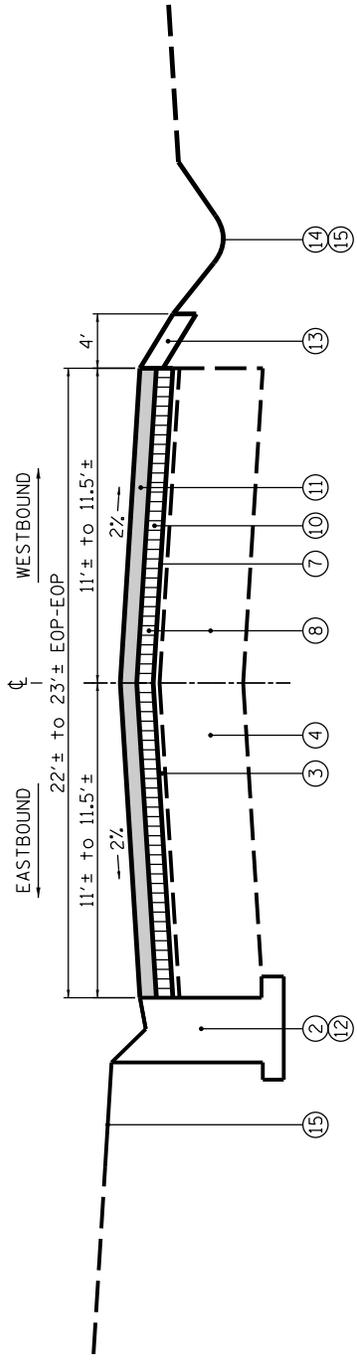
Proposed Typical Section  
15th Street  
Hillcrest Avenue to East Terminus

NET LENGTH (WEST TO EAST TERMINUS) = 433 LF.  
AREA ESTIMATED FOR DESIGN QUANTITIES (WEST TO EAST TERMINUS) = 1,205 SY

- ① EXISTING GROUND
- ~~② EXISTING CURB AND GUTTER~~
- ③ EXISTING HOT-MIX ASPHALT (SEE CORE REPORTS)
- ④ EXISTING BASE COURSE (SEE CORE REPORTS)
- ~~⑤ CLASS B PATCHES, TYPE II, 0"~~
- ~~⑥ HOT MIX ASPHALT SURFACE REMOVAL, SPECIAL (2.5" MINIMUM AT CURB WITH 2% GROSS SLOPE)~~
- ⑦ PROPOSED BITUMINOUS MATERIALS (TACK) - 0.05 LB/SF FOR MILLED HMA/CONCRETE (TACK) - 0.025 LB/SF FOR HMA LIFTS (PRIME) - 0.25 LB/SF FOR AGGREGATE BASES
- ⑧ PULVERIZATION (SPECIAL)
- ~~⑨ PROPOSED HOT MIX ASPHALT LEVELING BANDER (HMA, N50, 3/4"~~
- ~~⑩ PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2"~~
- ⑪ PROPOSED HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50, 2"
- ~~⑫ COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER~~
- ⑬ AGGREGATE SHOULDERS, TYPE B
- ⑭ GRADING AND SHAPING DITCHES
- ⑮ PARKWAY RESTORATION



Existing Typical Section  
15th Street  
West Terminus to Hillcrest Avenue



Proposed Typical Section  
15th Street  
West Terminus to Hillcrest Avenue

NET LENGTH (WEST TO EAST TERMINUS) = 665 LF  
AREA ESTIMATED FOR DESIGN QUANTITIES (WEST TO EAST TERMINUS) = 1.850 SY

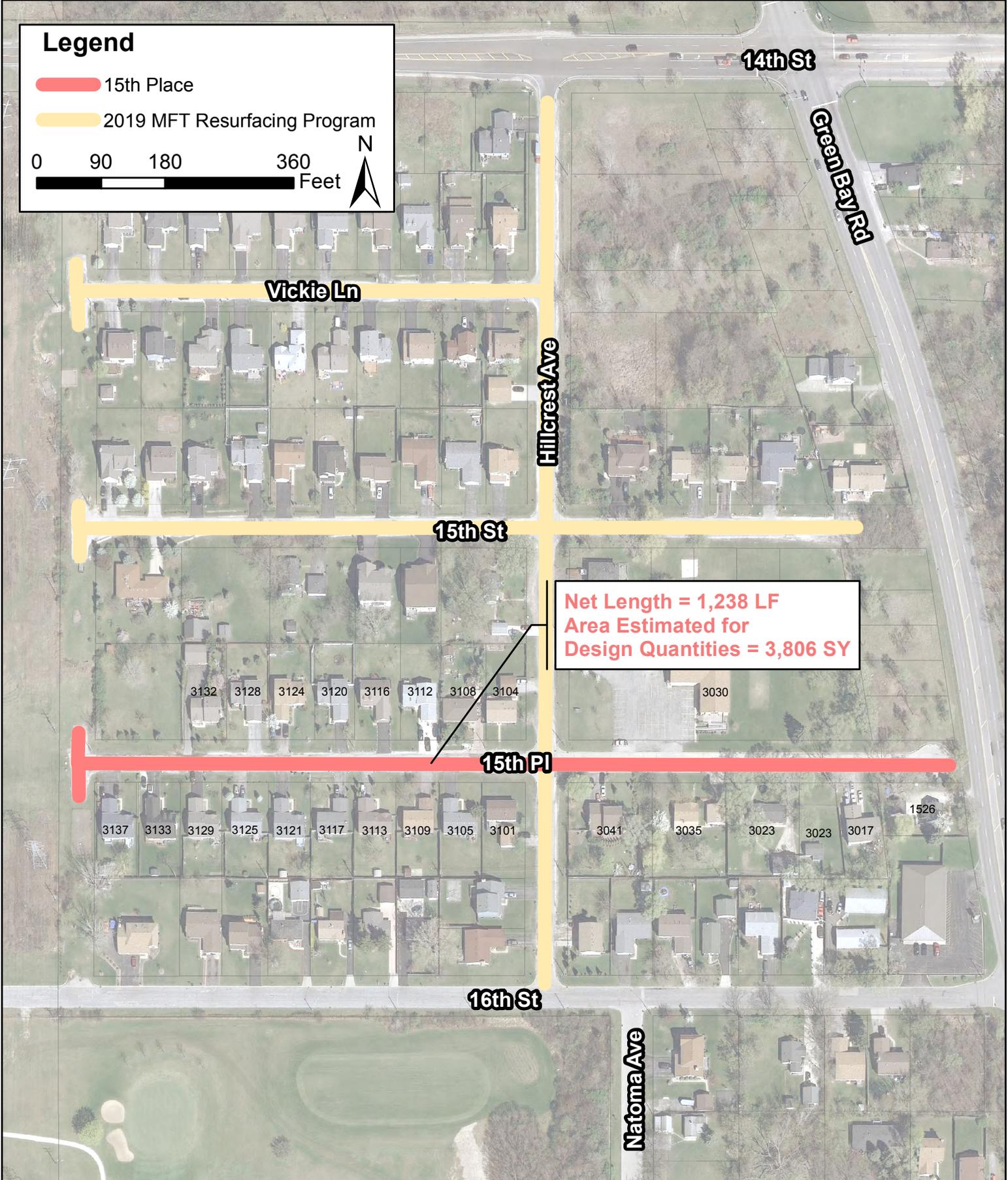
- ① EXISTING GROUND
- ② EXISTING CURB AND GUTTER
- ③ EXISTING HOT-MIX ASPHALT (SEE CORE REPORTS)
- ④ EXISTING BASE COURSE (SEE CORE REPORTS)
- ~~⑤ CLASS B PATCHES, TYPE II, 6"~~
- ~~⑥ HOT MIX ASPHALT SURFACE REMOVAL, SPECIAL (2.5% MINIMUM AT CURB WITH 2% GROSS SLOPE)~~
- ⑦ PROPOSED BITUMINOUS MATERIALS (TACK) - 0.05 LB/SF FOR MILLED HMA/CONCRETE (TACK) - 0.025 LB/SF FOR HMA LIFTS (PRIME) - 0.25 LB/SF FOR AGGREGATE BASES
- ⑧ PULVERIZATION (SPECIAL)
- ~~⑨ PROPOSED HOT MIX ASPHALT LEVELING BANDER (HMA, N50, 3/4"~~
- ⑩ PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2"
- ⑪ PROPOSED HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50, 2"
- ⑫ COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER
- ⑬ AGGREGATE SHOULDERS, TYPE B
- ⑭ GRADING AND SHAPING DITCHES
- ⑮ PARKWAY RESTORATION

# Legend

 15th Place

 2019 MFT Resurfacing Program

0 90 180 360  
 Feet



40W201 Wasco Road, Suite D St Charles, IL 60175  
P: 630-587-0470 F: 630-587-0475

## 2019 MFT Resurfacing Program 15th Place North Chicago, IL

Project No.:

Base File:

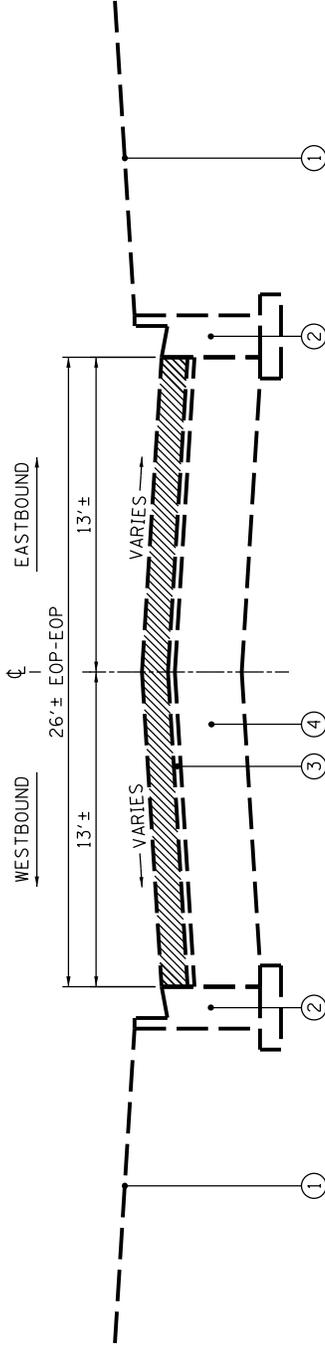
Sheet File:

Issue Date: May 28, 2019

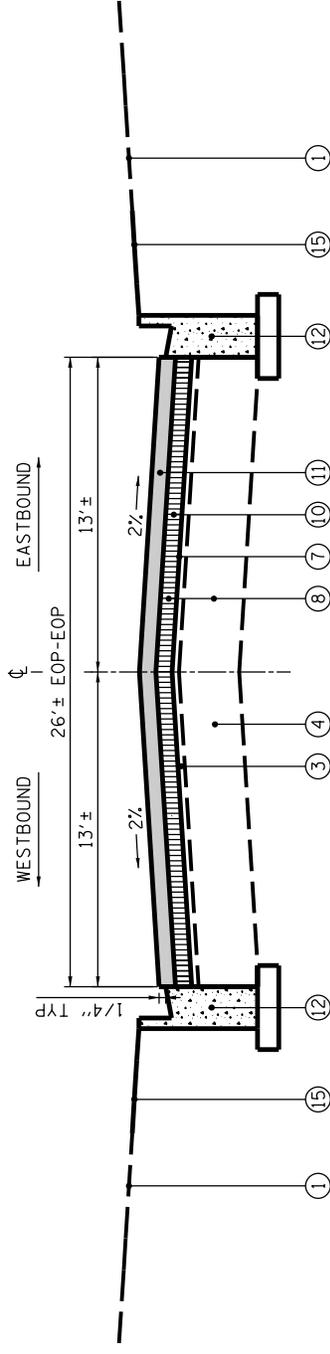
Scale: 1" = 175'

Sheet  
Number

EX.4



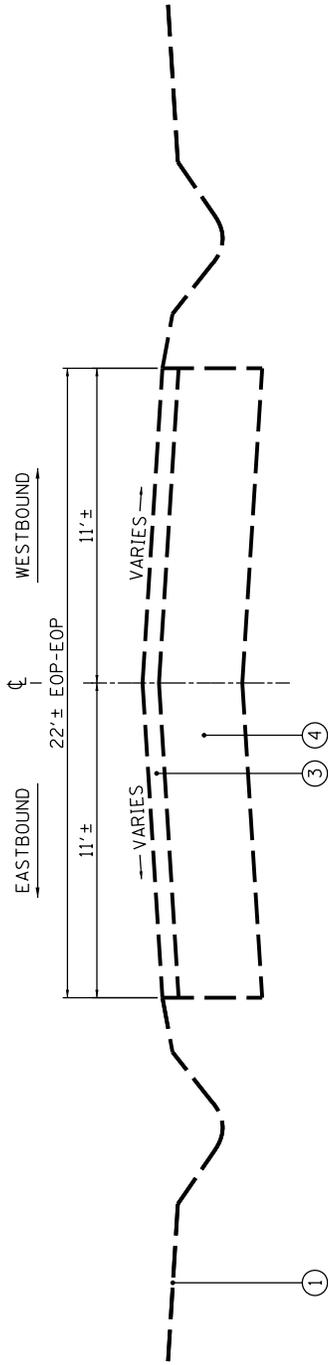
Existing Typical Section  
15th Place  
Hillcrest Avenue to East Terminus



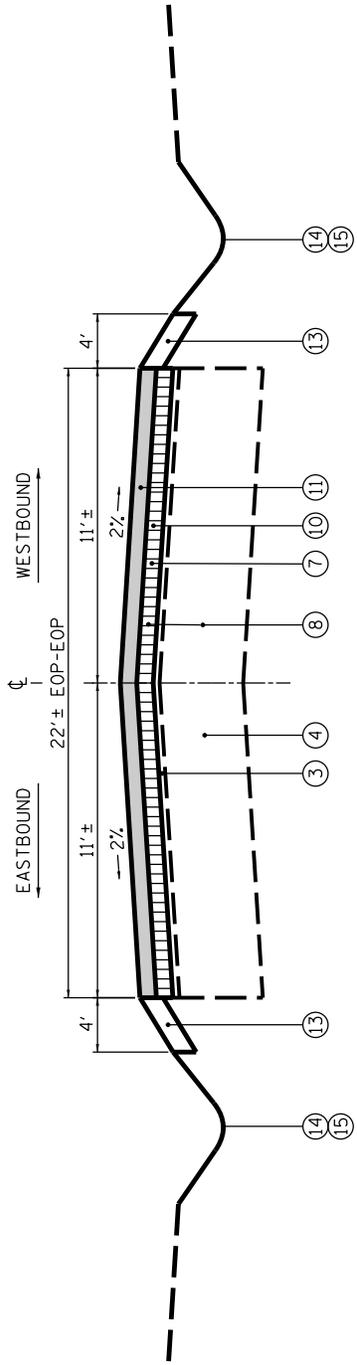
Proposed Typical Section  
15th Place  
Hillcrest Avenue to East Terminus

NET LENGTH (WEST TO EAST TERMINUS) = 571  
AREA ESTIMATED FOR DESIGN QUANTITIES (WEST TO EAST TERMINUS) = 1,755 SY

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>① EXISTING GROUND</li> <li>② EXISTING CURB AND GUTTER</li> <li>③ EXISTING HOT-MIX ASPHALT (SEE CORE REPORTS)</li> <li>④ EXISTING BASE COURSE (SEE CORE REPORTS)</li> <li><del>⑤ CLASS B PATCHES, TYPE II, 6"</del></li> </ul> | <ul style="list-style-type: none"> <li><del>⑥ HOT MIX ASPHALT SURFACE REMOVAL, SPECIAL (2.5% MINIMUM AT CURB WITH 2% GROSS SLOPE)</del></li> <li>⑦ PROPOSED BITUMINOUS MATERIALS (TACK) - 0.05 LB/SF FOR MILLED HMA/CONCRETE (TACK) - 0.025 LB/SF FOR HMA LIFTS (PRIME) - 0.25 LB/SF FOR AGGREGATE BASES</li> <li>⑧ PULVERIZATION (SPECIAL)</li> <li><del>⑨ PROPOSED HOT MIX ASPHALT LEVELING BANDER (HMA, N50, 3/4"</del></li> </ul> | <ul style="list-style-type: none"> <li>⑩ PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2"</li> <li>⑪ PROPOSED HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50, 2"</li> <li>⑫ COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER</li> <li><del>⑬ AGGREGATE SHOULDERS, TYPE B</del></li> <li><del>⑭ GRADING AND SHAPING DITCHES</del></li> <li>⑮ PARKWAY RESTORATION</li> </ul> |
|--|---|---|



Existing Typical Section  
15th Place  
West Terminus to Hillcrest Avenue

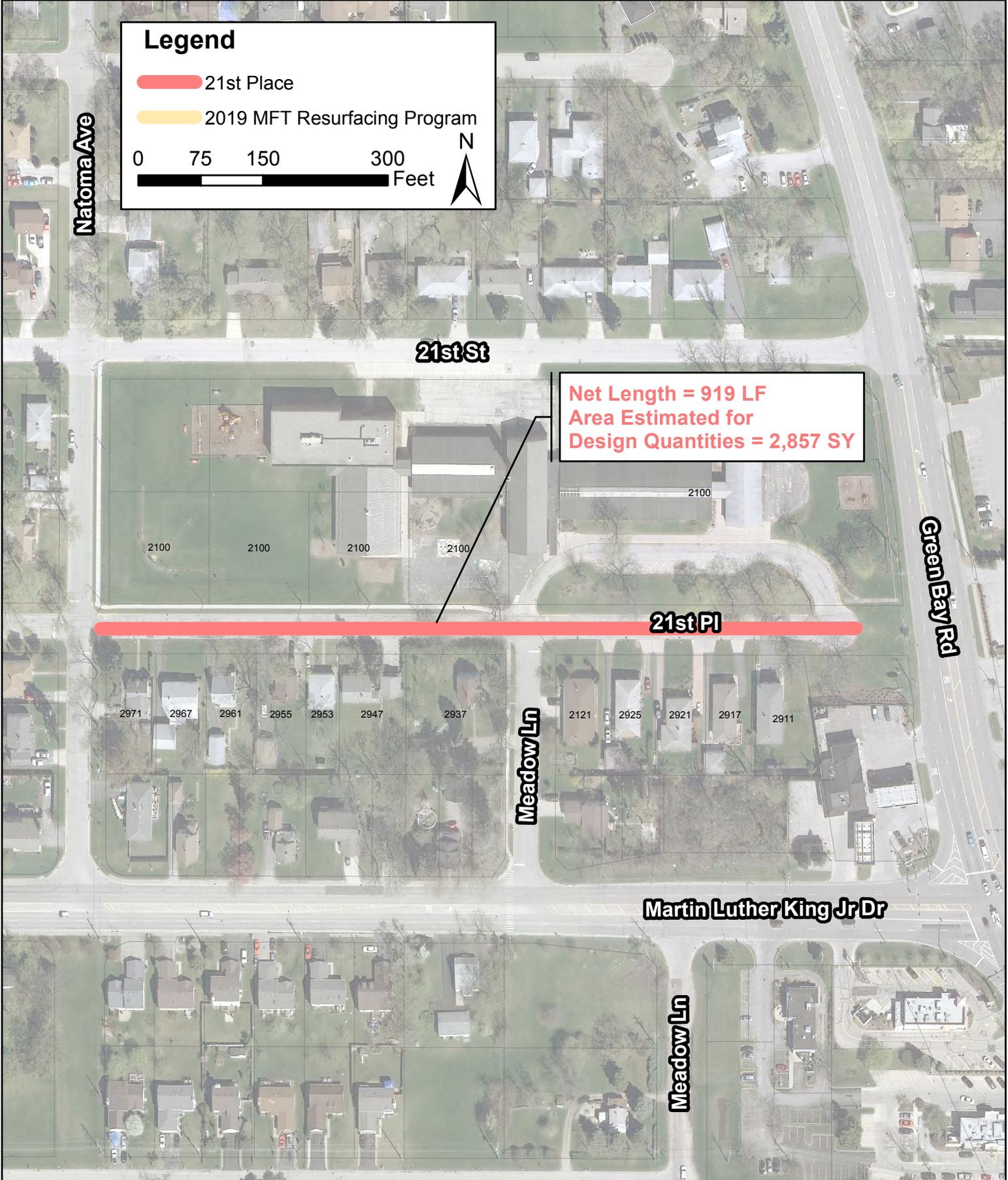
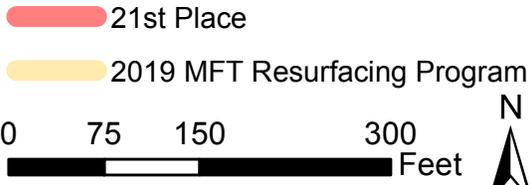


Proposed Typical Section  
15th Place  
West Terminus to Hillcrest Avenue

NET LENGTH (WEST TO EAST TERMINUS) = 667 LF  
AREA ESTIMATED FOR DESIGN QUANTITIES (WEST TO EAST TERMINUS) = 2,051 SY

- ① EXISTING GROUND
- ~~② EXISTING CURB AND GUTTER~~
- ③ EXISTING HOT-MIX ASPHALT (SEE CORE REPORTS)
- ④ EXISTING BASE COURSE (SEE CORE REPORTS)
- ~~⑤ CLASS B PATCHES, TYPE II, 0"~~
- ~~⑥ HOT MIX ASPHALT SURFACE REMOVAL, SPECIAL (2.5% MINIMUM AT CURB WITH 2% GROSS SLOPE)~~
- ⑦ PROPOSED BITUMINOUS MATERIALS (TACK) - 0.05 LB/SF FOR MILLED HMA/CONCRETE (TACK) - 0.025 LB/SF FOR HMA LIFTS (PRIME) - 0.25 LB/SF FOR AGGREGATE BASES
- ⑧ PULVERIZATION (SPECIAL)
- ~~⑨ PROPOSED HOT MIX ASPHALT LEVELING BANDER (HMA, N50, 3/4"~~
- ⑩ PROPOSED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2"
- ⑪ PROPOSED HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50, 2"
- ~~⑫ COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER~~
- ⑬ AGGREGATE SHOULDERS, TYPE B
- ⑭ GRADING AND SHAPING DITCHES
- ⑮ PARKWAY RESTORATION

**Legend**



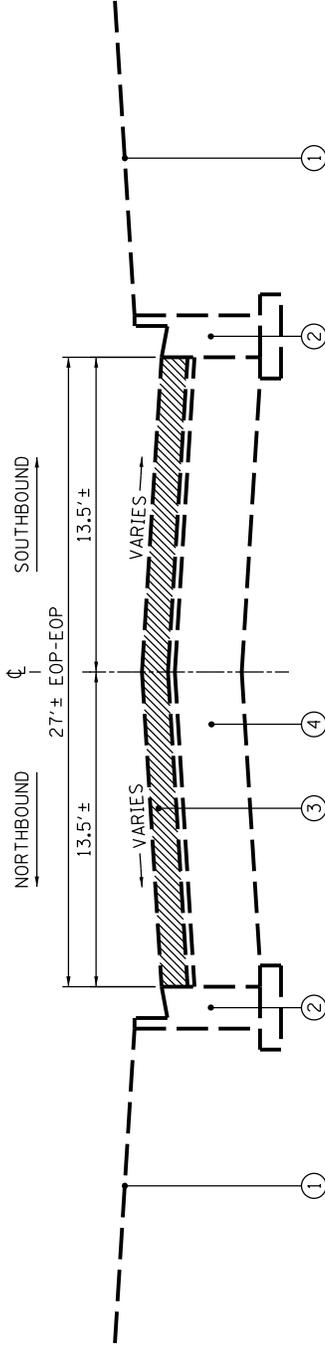
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Area Estimated for  
Design Quantities = 2,857 SY**



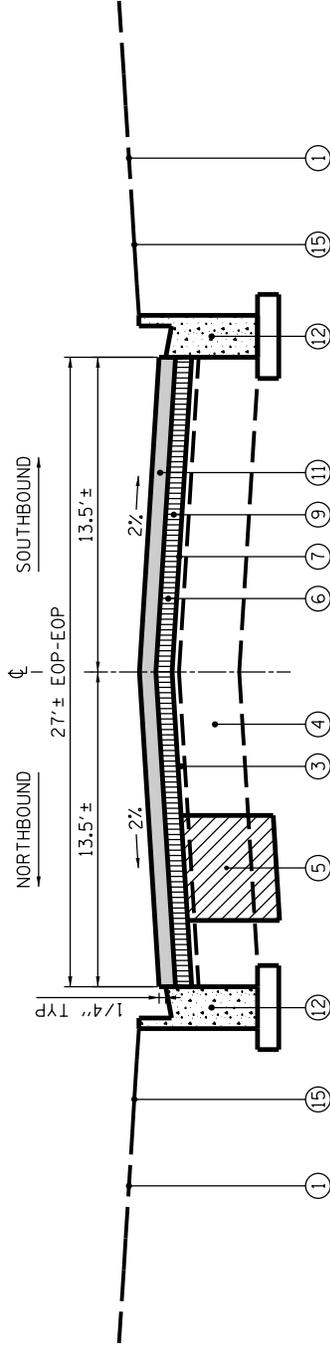
40W201 Wasco Road, Suite D St Charles, IL 60175  
P: 630-587-0470 F: 630-587-0475

**2019 MFT Resurfacing Program  
21st Place  
North Chicago, IL**

<b>Project No.:</b>	<b>Sheet Number  EX.5</b>
<b>Base File:</b>	
<b>Sheet File:</b>	
<b>Issue Date: May 28, 2019</b>	
<b>Scale: 1" = 150'</b>	



Existing Typical Section  
21st Place  
East Terminus to Natoma Avenue



Proposed Typical Section  
21st Place  
East Terminus to Natoma Avenue

NET LENGTH = 919 LF  
AREA ESTIMATED FOR DESIGN QUANTITIES = 2,857 SY

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>① EXISTING GROUND</li> <li>② EXISTING CURB AND GUTTER</li> <li>③ EXISTING HOT-MIX ASPHALT (SEE CORE REPORTS)</li> <li>④ EXISTING BASE COURSE (SEE CORE REPORTS)</li> <li><del>⑤ CLASS B PATCHES, TYPE II, 0"</del></li> </ul> | <ul style="list-style-type: none"> <li>⑥ HOT-MIX ASPHALT SURFACE REMOVAL, SPECIAL (2.5" MINIMUM AT CURB WITH 2% CROSS SLOPE)</li> <li>⑦ PROPOSED BITUMINOUS MATERIALS (TACK) - 0.05 LB/SF FOR MILLED HMA/CONCRETE (TACK) - 0.025 LB/SF FOR HMA LIFTS (PRIME) - 0.25 LB/SF FOR AGGREGATE BASES</li> <li><del>⑧ PULVERIZATION (SPECIAL)</del></li> <li>⑨ PROPOSED HOT-MIX ASPHALT LEVELING BINDER (MM), N50, 3/4"</li> </ul> | <ul style="list-style-type: none"> <li><del>⑩ PROPOSED HOT-MIX ASPHALT BINDER COURSE, TYPE B, N50, 2"</del></li> <li>⑪ PROPOSED HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50, 2"</li> <li>⑫ COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER</li> <li><del>⑬ AGGREGATE SHOULDERS, TYPE B</del></li> <li><del>⑭ GRADING AND SHAPING DITCHES</del></li> <li>⑮ PARKWAY RESTORATION</li> </ul> |
|--|--|---|

# STANDARD DETAILS

CNC Inlet Protection ER-7

CNC Sidewalk RD-1

CNC Driveways RD-2

CNC Combination Curb and Gutter RD-3

CNC Accessible Ramps RD-4

CNC Frame and Grate Schedule UT-4

IDOT Standard 000001-07

IDOT Standard 424001-11

IDOT Standard 424006-04

IDOT Standard 424011-04

IDOT Standard 424016-05

IDOT Standard 424021-05

IDOT Standard 424026-03

IDOT Standard 424031-02

IDOT Standard 442201-03

IDOT Standard 606001-07

IDOT Standard 701301-04

IDOT Standard 701501-06

IDOT Standard 701901-08

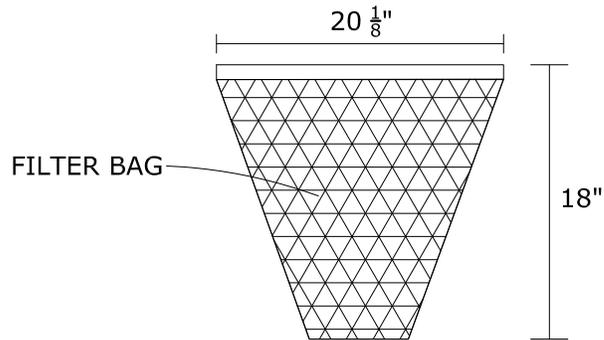
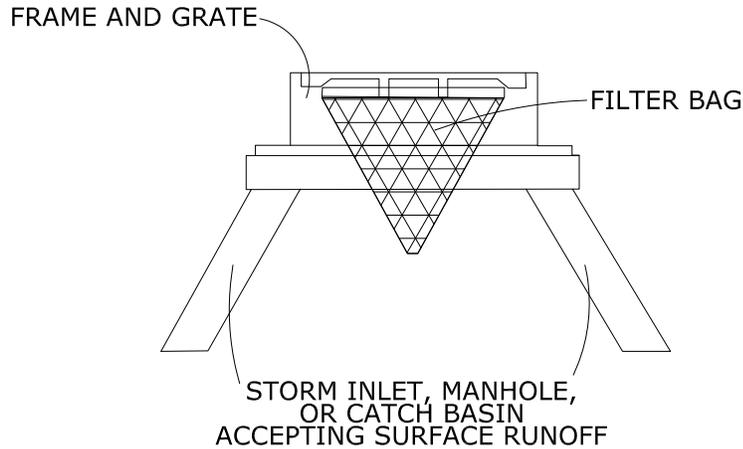
IDOT Standard 780001-05

IDOT Standard BLR 17-4

IDOT Standard BLR 18-6

District One Butt Joint and HMA Taper Details (TC-10)

District One Typical Pavement Markings (TC-13)



NOTES :

1. SEDIMENT BAG FABRICATED FROM NON-WOVEN POLYPROPYLENE GEOTEXTILE REINFORCED WITH POLYESTER MESH. BAG SECURED TO BASE RIM WITH A STAINLESS STEEL STRAP AND LOCK.
2. SEDIMENT BAGS REQUIRED FOR ALL DRAINAGE STRUCTURES RECEIVING SURFACE FLOW THAT LIE WITHIN PAVING AREAS.
3. A LAYER OF FILTER FABRIC IS REQUIRED AS A MINIMUM FOR ALL DRAINAGE STRUCTURES RECEIVING SURFACE FLOW IN LANDSCAPE AREAS.

INLET PROTECTION

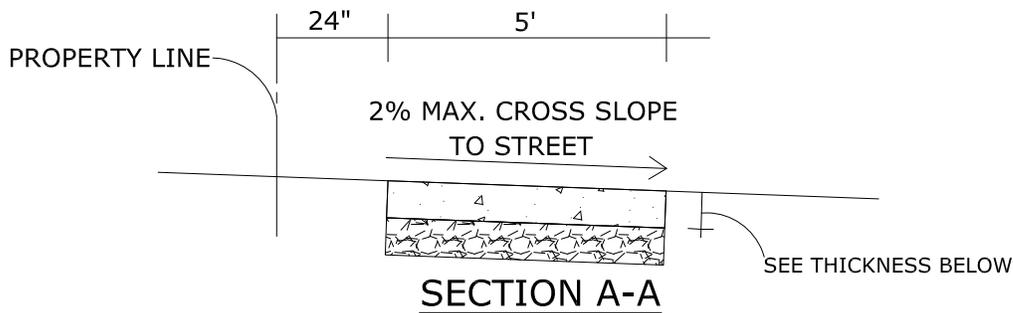
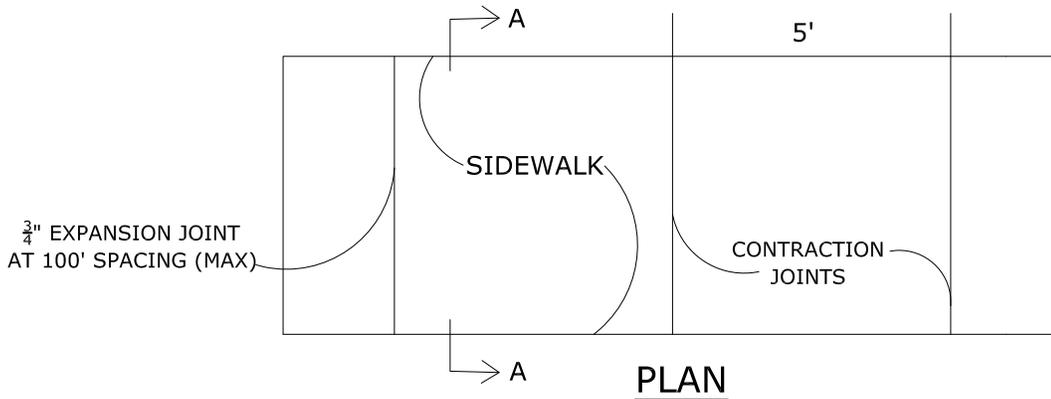
ER-7



CITY OF NORTH CHICAGO  
 1850 LEWIS AVENUE  
 NORTH CHICAGO, ILLINOIS 60064  
 TEL : 847-596-8691

CONSTRUCTION STANDARD

Last Revised 10-18-12



**NOTES :**

1. A FULL DEPTH, PERPENDICULAR, STRAIGHT JOINT SHALL BE CREATED BY SAWCUT AT THE ENDS OF ALL EXISTING SIDEWALK TO BE REMOVED.
2. INSTALL CONTRACTION JOINTS  $\frac{1}{8}$ " WIDE EVERY FIVE (5) LINEAL FEET.
3. INSTALL  $\frac{3}{4}$ " EXPANSION MATERIAL EVERY 100 LINEAL FEET.
4. INSTALL  $\frac{1}{2}$ " EXPANSION MATERIAL BETWEEN THE SIDEWALKS AND ALL STRUCTURES SUCH AS STREET LIGHT STANDARDS, TRAFFIC LIGHT STANDARDS, POLES, COLUMNS, OR ANY STRUCTURE WHICH EXTENDS THROUGH THE SIDEWALK.
5. SIDEWALK THICKNESS: 4" PORTLAND CEMENT CONCRETE (EXCEPT AT DRIVEWAY CROSSINGS)  
6" PORTLAND CEMENT CONCRETE (AT DRIVEWAY CROSSINGS)  
4" COMPACTED AGGREGATE BASE COURSE (CA-6 OR EQUAL)
6. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS.
7. THE CONTRACTOR SHALL NOTIFY THE STREET COMMISSIONER 48 HOURS PRIOR TO INSTALLATION.
8. INSTALL PROTECTIVE COATING ON ALL CONCRETE WORK.
9. SIDEWALK SHALL NOT BE POURED MONOLITHIC WITH DRIVEWAYS, DRIVEWAY APPROACHES, BARRIER CURB, OR COMBINATION CURB AND GUTTER.
10. SIDEWALK CONSTRUCTED ADJACENT TO CURB SHALL BE DOWELED INTO CURB WITH  $\frac{1}{2}$ " DIA. REBAR 12" LONG, 24" O.C.

**SIDEWALK**

**RD-1**



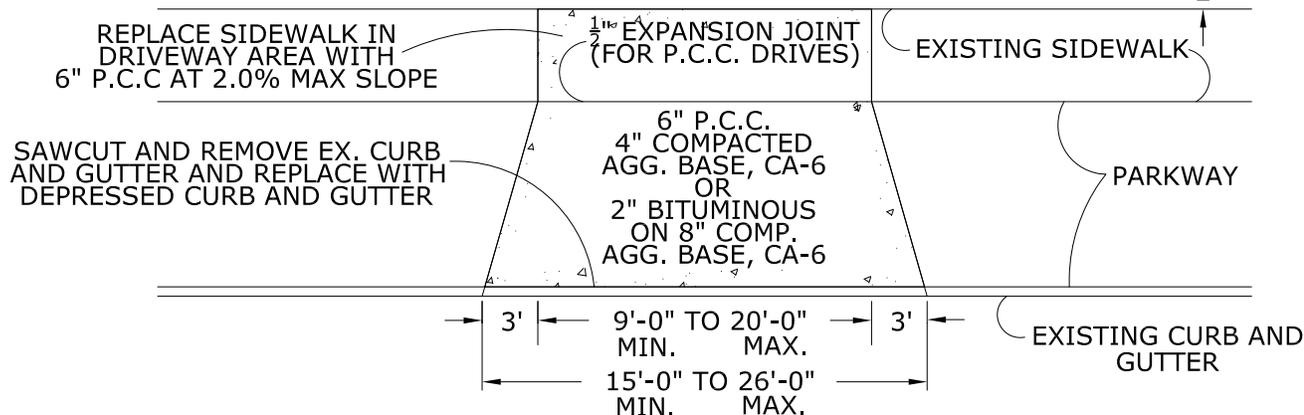
**CITY OF NORTH CHICAGO**

1850 LEWIS AVENUE  
NORTH CHICAGO, ILLINOIS 60064  
TEL : 847-596-8691

CONSTRUCTION STANDARD

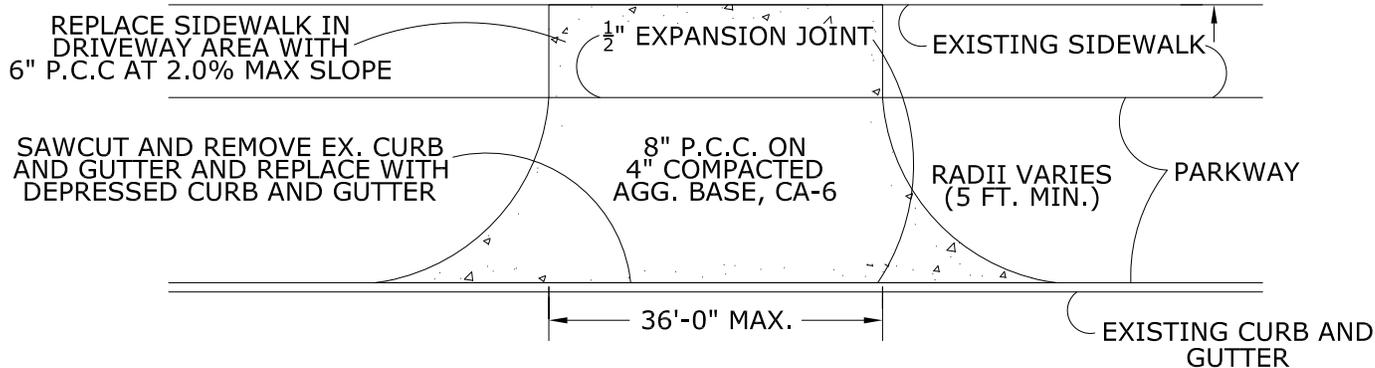
Last Revised 10-18-12

R.O.W.



### TYPICAL RESIDENTIAL DRIVEWAY

R.O.W.



### TYPICAL COMMERCIAL DRIVEWAY

#### NOTES :

1. ALL MATERIAL AND WORKMANSHIP USED SHALL CONFORM TO THE LATEST EDITION OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS.
2. A FULL DEPTH, PERPENDICULAR, STRAIGHT JOINT SHALL BE CREATED BY SAWCUT AT THE ENDS OF ANY EXISTING ASPHALT OR CONCRETE TO BE REMOVED.
3. THE CONTRACTOR SHALL NOTIFY THE STREET COMMISSIONER 48 HOURS PRIOR TO INSTALLATION.
4. PROTECTIVE COATING SHALL BE APPLIED TO ALL CONCRETE DRIVEWAYS.
5. SEE CITY OF NORTH CHICAGO ZONING ORDINANCE, LATEST EDITION, FOR ADDITIONAL STANDARDS CONCERNING DIMENSIONING OF DRIVEWAYS.

## DRIVEWAYS

**RD-2**

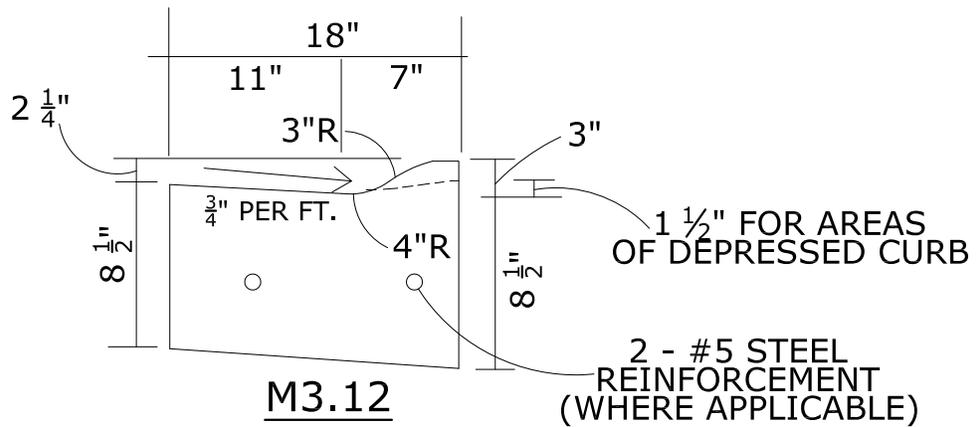
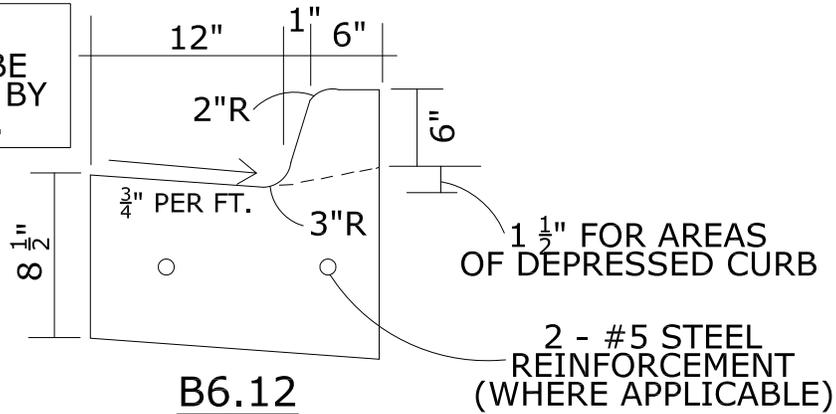


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 1850 LEWIS AVENUE  
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CONSTRUCTION STANDARD

Last Revised 10-18-12

REINFORCEMENT REQUIREMENTS MAY BE OMITTED IF APPROVED BY THE CITY ENGINEER.



NOTES :

1. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS.
2. A FULL DEPTH, PERPENDICULAR, STRAIGHT JOINT SHALL BE CREATED BY SAWCUT AT THE ENDS OF ALL CURB TO BE REMOVED.
3. THE CONTRACTOR SHALL NOTIFY STREET COMMISSIONER 48 HOURS PRIOR TO INSTALLATION.
4. APPLY PROTECTIVE COATING ON ALL CONCRETE WORK.
5. JOINTS SHALL BE PLACED IN THE CURB AND GUTTER AS DETAILED ON IDOT STANDARD 606001-02.
6. REPLACEMENT CURB AND GUTTER CROSSING OVER ANY NEW UTILITY TRENCH SHALL HAVE TWO NO.5 REINFORCEMENT BARS PLACED IN THE GUTTER SECTION. THE LENGTH OF THESE BARS SHALL BE THE TRENCH WIDTH PLUS FIVE FEET ON EITHER SIDE OF THE TRENCH WALLS.
7. TWO NO.6 BARS, 12 INCHES IN LENGTH, SHALL BE DRILLED AND GROUTED INTO EXISTING CURB AND GUTTER WHERE IT CONNECTS TO ANY NEW CURB AND GUTTER. THE BARS SHALL BE EMBEDDED SIX INCHES INTO THE EXISTING CURB AND GUTTER.
8. NO.6 DOWEL BARS, 18 IN. IN LENGTH, AT 24 INCH CENTERS SHALL BE DRILLED AND GROUTED INTO EX. CONCRETE PAVEMENT WHERE NEW CURB AND GUTTER IS CONSTRUCTED ADJACENT TO THE PAVEMENT. THE BARS SHALL BE EMBEDDED 9 IN. INTO THE EX. CONCRETE PAVEMENT.
9. ALL COMBINATION CURB AND GUTTER SHALL BE INSTALLED ON A MINIMUM OF 4" OF COMPACTED AGGREGATE, CA-6.

COMBINATION CURB AND GUTTER

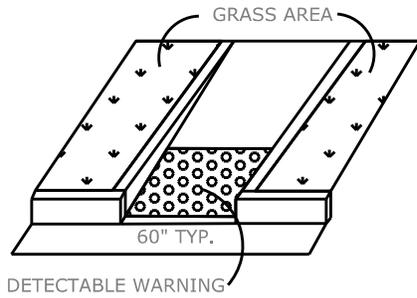
RD-3



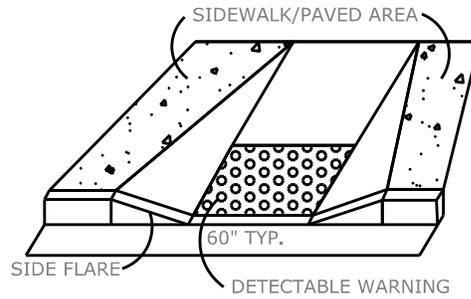
CITY OF NORTH CHICAGO  
 1850 LEWIS AVENUE  
 NORTH CHICAGO, ILLINOIS 60064  
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CONSTRUCTION STANDARD

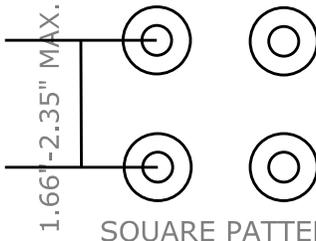
Last Revised 10-18-12



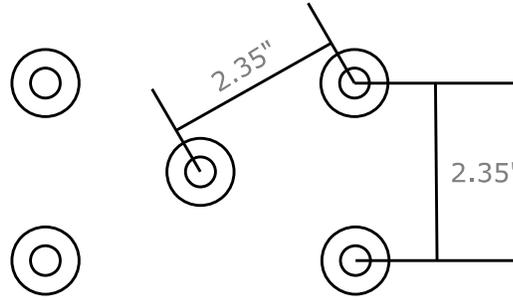
TYPE A



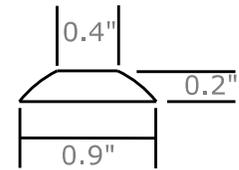
TYPE B



SQUARE PATTERN



DIAGONAL PATTERN



TRUNCATED DOME

DETECTABLE WARNING DETAIL

- NOTES :
1. FOR ADDITIONAL INFORMATION, SEE IDOT STANDARD 424001-05 AND THE ILLINOIS ACCESSIBILITY CODE.
  2. DETECTABLE WARNINGS SHALL BE CONTRASTING COLOR TO SIDEWALK/PAVED AREA
  3. UNLESS SPECIFIED OTHERWISE, CITY STANDARD IS TO USE MDMETALPANEL AS MANUFACTURED BY METADOME OR APPROVED EQUAL, YELLOW IN COLOR.
  4. SIDE FLARES FOR TYPE B RAMP SHALL BE 1:10, UNLESS THE WIDTH OF THE LANDING AREA IS LESS THAN 48", THEN THE FLARE SHALL BE 1:12.
  5. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS.
  6. APPLY PROTECTIVE COATING ON ALL CONCRETE WORK.
  7. THE CONTRACTOR SHALL NOTIFY THE STREET COMMISSIONER 48 HOURS PRIOR TO INSTALLATION.
  8. A FULL DEPTH, PERPENDICULAR, STRAIGHT JOINT SHALL BE CREATED BY SAWCUT WHERE REMOVALS ARE NEEDED.
  9. RAMPS SHALL BE LOCATED AS SHOWN ON PLANS IN ALIGNMENT WITH NORMAL SIDEWALK AND/OR CROSSWALK AND SHALL HAVE SUFFICIENT CURB LENGTH AT CORNER RADIUS TO PREVENT VEHICLE ENCROACHMENT.
  10. DETECTABLE WARNINGS SHALL BE INSTALLED AT CURB RAMPS, MEDIANS, AND PEDESTRIAN REFUGE ISLANDS, AT GRADE RAILROAD CROSSINGS, TRANSIT PLATFORM EDGES, AND OTHER LOCATIONS WHERE PEDESTRIANS ARE REQUIRED TO CROSS A HAZARDOUS VEHICLE WAY.
  11. DETECTABLE WARNINGS SHALL ALSO BE INSTALLED AT COMMERCIAL ENTRANCES WHEN PERMANENT TRAFFIC CONTROL DEVICES ARE PRESENT.
  12. WIDTH OF RAMP SHALL BE EQUAL TO THE WIDTH OF THE SIDEWALK.

**ACCESSIBLE RAMPS**

**RD-4**

CITY OF NORTH CHICAGO  
 1850 LEWIS AVENUE  
 NORTH CHICAGO, ILLINOIS 60064  
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CONSTRUCTION STANDARD

Last Revised 02-07-18

## FRAME AND GRATE/LID SCHEDULE

### STORM SEWER

<u>STRUCTURE TYPE</u>	<u>CONDITION</u>	<u>FRAME AND GRATE</u>
MANHOLE	CLOSED LID	R-1713, SOLID SELF SEALING LID IMPRINTED "STORM"
	PAVEMENT, OPEN LID	R-2504, TYPE D GRATE
	SWALE	R-4340-B
	PARKWAY, OPEN LID	R-2504, TYPE D GRATE
INLET	BARRIER CURB/GUTTER (B6.12)	R-3281-A OR AL
	BARRIER CURB/GUTTER (B6.18)	R-3278-A OR AL
	BARRIER CURB/GUTTER (B6.24)	R-3278-A OR AL
	DEPRESSED CURB/GUTTER	R-2504, TYPE D GRATE
	MOUNTABLE CURB/GUTTER (M3.12)	R-3501-E2
	MOUNTABLE CURB/GUTTER (M6.12)	R-3503-B
	SWALE	R-4340-B
CATCH BASIN	PAVEMENT, OPEN LID	R-2504, TYPE D GRATE
	PARKWAY, OPEN LID	R-2504, TYPE D GRATE
	SWALE	R-4340-B
	BARRIER CURB/GUTTER (B6.12)	R-3281-A OR AL
	BARRIER CURB/GUTTER (B6.18)	R-3278-A OR AL
	BARRIER CURB/GUTTER (B6.24)	R-3278-A OR AL
	DEPRESSED CURB/GUTTER	R-2504, TYPE D GRATE
	MOUNTABLE CURB/GUTTER (M3.12)	R-3501-E2
	MOUNTABLE CURB/GUTTER (M6.12)	R-3503-B

### SANITARY SEWER

<u>STRUCTURE TYPE</u>	<u>CONDITION</u>	<u>FRAME AND GRATE</u>
MANHOLE	CLOSED LID	R-1713, SOLID SELF SEALING LID IMPRINTED "SANITARY"

### WATER MAIN

<u>STRUCTURE TYPE</u>	<u>CONDITION</u>	<u>FRAME AND GRATE</u>
VALVE VAULT	CLOSED LID	R-1713, SOLID SELF SEALING LID IMPRINTED "WATER"

NOTES :

1. ALL FRAMES AND GRATES ARE SPECIFIED FROM NEENAH FOUNDRY COMPANY.
2. OTHER FRAMES AND GRATES FROM NEENAH FOUNDRY COMPANY OR OTHER COMPANIES MAY BE USED UPON CITY ENGINEER APPROVAL.
3. "CITY OF NORTH CHICAGO" IMPRINTED LIDS TO BE USED FOR PUBLIC UTILITIES.

## FRAME AND GRATE SCHEDULE

**UT-4**



CITY OF NORTH CHICAGO

1850 LEWIS AVENUE  
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CONSTRUCTION STANDARD

Last Revised 10-18-12

ABV	ABOVE	CU YD	CUBIC YARD	HD	HEAD	PED	PEDESTAL	STD	STANDARD
A/C	ACCESS CONTROL	CULV	CULVERT	HDW	HEADWALL	PNT	POINT	STB	STATE BOND ISSUE
AC	ACRE	C&G	CURB & GUTTER	HDUTY	HECTARE	PC	POINT OF INTERSECTION OF HORIZONTAL	SR	STATE ROUTE
ADJ	ADJUST	D	DEGREE OF CURVE	ha	HECTARE	PI	POINT OF INTERSECTION OF HORIZONTAL	STA	STATION
AS	AERIAL SURVEYS	DC	DEPRESSED CURVE	HMA	HOT MIX ASPHALT	PRC	CURVE OF REVERSE CURVE	SPBGR	STEEL PLATE BEAM GUARDRAIL
AGG	AGGREGATE	DET	DETECTOR	HWY	HIGHWAY	POT	POINT OF TANGENCY	SS	STORM SEWER
AH	AHEAD	DIA	DIAMETER	HORIZ	HORIZONTAL	PT	POINT OF TANGENCY	STY	STORY
APT	APARTMENT	DIST	DISTRICT	HSE	HOUSE	POT	POINT OF TANGENCY	STR	STRUCTURE
ASPH	ASPHALT	DOM	DOMESTIC	IL	ILLINOIS	POLYETH	POLYETHYLENE	e	ELEVATION RATE
AUX	AUXILIARY	DBL	DOUBLE	IMP	IMPROVEMENT	PCC	PORTLAND CEMENT CONCRETE	SURF	SURFACE
AUX	AUXILIARY GAS VALVE (SERVICE)	DSEL	DOWNSTEAM ELEVATION	IN DIA	INCH DIAMETER	PRM	PRIVATE ENTRANCE	S.E. RUN,	SURFELEVATION RUNOFF LENGTH
AX	AXIS OF ROTATION	DR	DRAINAGE INLET OR DRIVE	INLET	INLET	PP	PROFILE	SHK	SHOULDER MARKER
AX	BACK	DR	DRAINAGE INLET OR DROP INLET	INST	INSTALLATION	PROF	PROFILE	T	TANGENT DISTANCE
BB	BACK TO BACK	DSFL	DRAINAGE INLET OR DROP INLET	INSTR	INTERSECTION DESIGN STUDY	POL	PROFILE GRADELINE	T.R.	TANGENT RUNOUT DISTANCE
B	BACKPLATE	DIV	DIVERSION	INVER	INVERT	PROJ	PROFILE	TEL	TELEPHONE
B	BARN	DCT	DITCH	IP	IRON PIPE	PCJ	PROPERTY CORNER	TEL	TELEPHONE BOX
B	BARR	EACH	EACH	IR	IRON ROD	PC	PROPERTY CORNER	TP	TEMPORARY BENCH MARK
BARR	BARRICADE	EA	EASTBOUND	IT	JOINT	PR	PROPOSED	TEMP	TEMPORARY
BGN	BEGIN	ED	EDGE OF PAVEMENT	JOINT	JOINT	R	RADIUS	TB	TEMPORARY BENCH MARK
BGN	BENCHMARK	EOP	EDGE OF PAVEMENT	KG	KILOGRAM	RR	RAILROAD	TD	TILE DRAIN
BNM	BENCHMARK	E-CL	EDGE TO CENTERLINE	KM	KILOMETER	BRS	RAILROAD SPIKE	TBE	TO BE EXTENDED
BRND	BENCHMARK	E-E	EDGE TO EDGE	LS	LANDSCAPING	RPS	REFERENCE POINT STAKE	TBR	TO BE REMOVED
BRND	BENCHMARK	E-E	EDGE TO EDGE	LN	LANE	REF	REFLECTIVE	TBS	TO BE SAVED
BITM	BITUMINOUS	ENTR	ENTRANCE	LP	LIGHT POLE	RCCP	REINFORCED CONCRETE CULVERT PIPE	TWP	TOWNSHIP
BLVD	BOULEVARD	EXC	EXCAVATION	LGT	LIGHTING	REIN	REINFORCEMENT	TR	TRAFFIC SIGNAL
BRK	BRICK	EXPWY	EXPRESSWAY	LF	LITER OR LINEAR FEET	REM	REMOVAL	TR	TRAFFIC SIGNAL
BROX	BRICK BOX	E	EXTERNAL DISTANCE OF HORIZONTAL CURVE	L	LITER OR CURVE LENGTH	RC	REMOVE CROWN	TSCB	TRAFFIC SIGNAL CONTROL BOX
BLDG	BUILDING	E	EXTERNAL DISTANCE OF HORIZONTAL CURVE	LC	LONG CHORD	RC	REMOVE CROWN	TSC	TRAFFIC SIGNALS CENTER
CIP	CAST IRON PIPE	E	EXTERNAL DISTANCE OF HORIZONTAL CURVE	LNG	LONG CHORD	REP	REPLACE	TRVS	TRANSVERSE
C-C	CATCH BASIN	F-F	FACE TO FACE	L SUM	LUMP SUM	REST	RESTAURANT	TRVL	TRAVEL
CL	CENTER TO CENTER	FAI	FEDERAL AID INTERSTATE	MACH	MACHINE	RESURF	RESURFACING	TRN	TURN
CL-E	CENTERLINE OR CLEARANCE	FAP	FEDERAL AID PRIMARY	MB	MAIL BOX	RET	RETAINING	TY	TYPE
CL-F	CENTERLINE TO EDGE	FAS	FEDERAL AID SECONDARY	MH	MANHOLE	RT	RIGHT	TYP	TYPICAL
CL-F	CENTERLINE TO FACE	FAUS	FEDERAL AID URBAN SECONDARY	MATL	MATERIAL	ROW	RIGHT-OF-WAY	TYP	TYPICAL
CTS	CENTERS	FAUS	FEDERAL AID URBAN SECONDARY	MED	MEDIAN	RD	ROAD	UNDGND	UNDERGROUND
CERT	CERTIFIED	FP	FENCE POST	m	METER	RTE	ROUTE	USGS	U.S. GEOLOGICAL SURVEY
CHSLD	CHISELED	FE	FIELD ENTRANCE	METH	METHOD	SAN	SANITARY	USEL	UPSTREAM ELEVATION
CS	CITY STREET	FF	FIRE HYDRANT	M	MID-ORDINATE	SANS	SANITARY SEWER	UTIL	UTILITY
CP	CLAY PIPE	FL	FLOW LINE	mm	MILLIMETER	SEC	SECTION	VBOX	VALVE BOX
CLD	CLOSED	FB	FOOT BRIDGE	mm	MILLIMETER	SEED	SEEDING	VV	VALVE VAULT
CLD	CLOSED	FDN	FOUNDATION	mm DIA	MILLIMETER DIAMETER	SHAP	SHAPING	VLT	VAULT
CT	COAT OR COURT	FR	FRAME	MIX	MIXTURE	5	SHED	VLT	VAULT
COMB	COMBINATION	F&G	FRAME & GRATE	MOD	MODIFIED	SH	SHOULDER	VEH	VEHICLE
C	COMMERCIAL BUILDING	FRWAY	FREEWAY	MFT	MOTOR FUEL TAX	SHLD	SHOULDER	VP	VENT PIPE
CE	CONCRETE	GAL	GALLON	N & BC	NAIL & BOTTLE CAP	SW	SIDEWALK OR SOUTHWEST	VERT	VERTICAL
CONC	CONCRETE	GALV	GALVANIZED	N & C	NAIL & CAP	SIG	SIGNAL	VC	VERTICAL CURVE
CONST	CONSTRUCT	G	GARAGE	N & W	NAIL & WASHER	SODD	SODDING	VPC	VERTICAL POINT OF CURVATURE
CONTD	CONTINUED	GM	GAS METER	NOAA	NATIONAL OCEANIC ATMOSPHERIC	SOD	SOLID MEDIAN	VPI	VERTICAL POINT OF INTERSECTION
CONT	CONTINUOUS	GV	GAS VALVE	NC	NORMAL CROWN	SB	SOUTHBOUND	VPT	VERTICAL POINT OF TANGENCY
COR	CORNER	GRAN	GRANULAR	NE	NORTHBOUND	SPL	SPECIAL	WM	WATER METER
COR	CORNER	GR	GRATE	NW	NORTHWEST	SD	SPECIAL DITCH	WV	WATER VALVE
CORR	CORRUGATED	GRVL	GRAVEL	OLID	OPEN LID	SO FT	SQUARE FEET	WMAIN	WATER MAIN
CMP	CORRUGATED METAL PIPE	GND	GROUND	PAT	PATTERN	mm <sup>2</sup>	SQUARE MILLIMETER	WB	WESTBOUND
CNTY	COUNTY	GUT	GUTTER	PVD	PAVED	mm <sup>2</sup>	SQUARE MILLIMETER	W	WITHOUT
CH	COUNTY HIGHWAY	GUY	GUY POLE	PVMT	PAVEMENT MARKING	STB	STABILIZED		
CSE	COURSE	HH	HANDHOLE	PHI					
XSECT	CROSS SECTION	HATCH	HATCHING						
m <sup>3</sup>	CUBIC METER								
mm <sup>3</sup>	CUBIC MILLIMETER								

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS		STANDARD 00001-07	
DATE	REVISIONS		
1-1-19	Added new symbols.		
1-1-11	Updated abbreviations and symbols.		

Illinois Department of Transportation

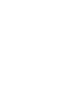
PASSED: *[Signature]* January 1, 2019

ENGINEER OF POLICY AND PROCEDURES

APPROVED: *[Signature]* January 1, 2019

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-07

<u>ADJUSTMENT ITEMS</u>	<u>EX</u>	<u>PR</u>
Structure To Be Adjusted		
Structure To Be Cleaned		
Main Structure To Be Filled		
Structure To Be Filled		
Structure To Be Filled Special		
Structure To Be Removed		
Structure To Be Reconstructed		
Structure To Be Reconstructed Special		
Frame and Grate To Be Adjusted		
Frame and Lid To Be Adjusted		
Domestic Service Box To Be Adjusted		
Valve Vault To Be Adjusted		
Special Adjustment		
Item To Be Abandoned		
Item To Be Moved		
Item To Be Relocated		
Pavement Removal and Replacement		

<u>ALIGNMENT ITEMS</u>	<u>EX</u>	<u>PR</u>
Baseline		
Centerline		
Centerline Break Circle		
Baseline Symbol		
Centerline Symbol		
PI Indicator		
Point Indicator		
Horizontal Curve Data (Half Size)	<p>CURVE</p> <p>P.L. STA=</p> <p>A=</p> <p>D=</p> <p>R=</p> <p>L=</p> <p>E=</p> <p>B=</p> <p>S.E. RUN=</p> <p>P.C. STA=</p> <p>P.T. STA=</p>	<p>CURVE</p> <p>P.L. STA=</p> <p>A=</p> <p>D=</p> <p>R=</p> <p>L=</p> <p>E=</p> <p>B=</p> <p>S.E. RUN=</p> <p>P.C. STA=</p> <p>P.T. STA=</p>

<u>BOUNDARIES ITEMS</u>	<u>EX</u>	<u>PR</u>
Dashed Property Line		
Solid Property/Lot Line		
Section/Grant Line		
Quarter Section Line		
Quarter/Quarter Section Line		
County/Township Line		
State Line		
Iron Pipe Found		
Iron Pipe Set		
Survey Marker		
Property Line Symbol		
Same Ownership Symbol (Half Size)		
Northwest Quarter Corner (Half Size)		
Section Corner (Half Size)		
Southeast Quarter Corner (Half Size)		

<u>DRAINAGE ITEMS</u>	<u>EX</u>	<u>PR</u>
Channel or Stream Line		
Culvert Line		
Grading & Shaping Ditches		
Drainage Boundary Line		
Paved Ditch		
Aggregate Ditch		
Pipe Underdrain		
Storm Sewer		
Flowline		
Ditch Check		
Headwall		
Inlet		
Manhole		
Summit		
Roadway Ditch Flow		
Swale		
Catch Basin		
Culvert End Section		
Water Surface Indicator		
Riprap		

<u>HYDRAULICS ITEMS</u>	<u>EX</u>	<u>PR</u>
Overflow		
Sheet Flow		
Hydrant Outlet		

**STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS**  
(Sheet 2 of 9)

STANDARD 000001-07

Illinois Department of Transportation

PASSED: 01/11/19 2019

ENGINEER OF POLICY AND PROCEDURES

APPROVED: 01/11/19 2019

ENGINEER OF DESIGN AND ENVIRONMENT

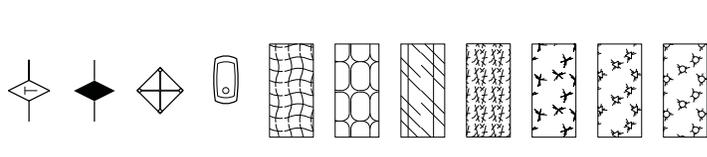
ISSUED 1-1-07

**EROSION & SEDIMENT CONTROL ITEMS**

**EX**

**PR**

- Cleaning & Grading Limits
- Dike
- Erosion Control Fence
- Perimeter Erosion Barrier
- Temporary Fence
- Ditch Check Temporary
- Ditch Check Permanent
- Inlet & Pipe Protection
- Sediment Basin
- Erosion Control Blanket
- Fabric Formed Concrete Revetment Mat
- Turf Reinforcement Mat
- Mulch Temporary
- Mulch Method 1
- Mulch Method 2 Stabilized
- Mulch Method 3 Hydraulic

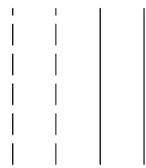


**CONTOUR ITEMS**

**EX**

**PR**

- Approx. Index Line
- Approx. Intermediate Line
- Index Contour
- Intermediate Contour



**NON-HIGHWAY IMPROVEMENT ITEMS**

**EX**

**PR**

- Noise Attn./Levee
- Field Line
- Fence
- Base of Levee
- Mailbox
- Multiple Mailboxes
- Pay Telephone
- Advertising Sign
- ITS Camera
- Wind Turbine
- Cellular Tower

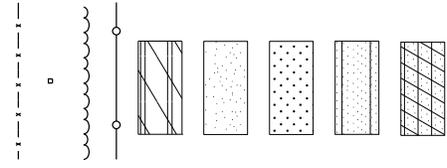


**LANDSCAPING ITEMS**

**EX**

**PR**

- Intelligent Transportation Systems
- Contour Mounding Line
- Fence
- Fence Post
- Shrubs
- Mowline
- Perennial Plants
- Seeding Class 2
- Seeding Class 2A
- Seeding Class 4
- Seeding Class 4 & 5 Combined

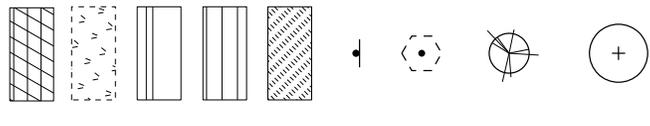


**EXISTING LANDSCAPING ITEMS (contd.)**

**EX**

**PR**

- Seeding Class 5
- Seeding Class 7
- Seedlings Type 1
- Seedlings Type 2
- Sodding
- Mowstake w/Sign
- Tree Trunk Protection
- Evergreen Tree
- Shade Tree
- Duct
- Conduit
- Electrical Aerial Cable
- Electrical Buried Cable
- Controller
- Underpass Luminaire
- Power Pole

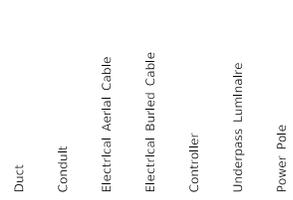


**LIGHTING**

**EX**

**PR**

- Electrical Aerial Cable
- Electrical Buried Cable
- Controller
- Underpass Luminaire
- Power Pole



**STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS**  
(Sheet 3 of 9)  
**STANDARD 000001-07**

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**LIGHTING  
(contd.)**

EX	PR

**PAVEMENT (MISC.)**

EX	PR

**PAVEMENT MARKINGS**

EX	PR

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**STANDARD SYMBOLS,  
 ABBREVIATIONS  
 AND PATTERNS**  
 (Sheet 4 of 9)  
 STANDARD 000001-07

**PAVEMENT MARKINGS**  
(contd.)

CL 2Ln 2Way  
RRPW 12.2 m (40') o.c.

CL 2Ln 2Way  
RRPW 80' (24.4 m) o.c.

CL Multilane Div.  
RRPW 40' (12.2 m) o.c.

CL Multilane Div.  
RRPW 80' (24.4 m) o.c.

CL Multilane Div. Dbl.  
RRPW 80' (24.4 m) o.c.

CL Multilane Undiv.

Two Way Turn Left Line

Urban Combination Left

Urban Combination Right

Urban Left Turn Arrow

Urban Right Turn Arrow

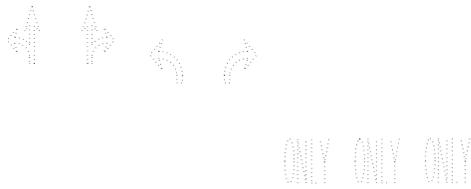
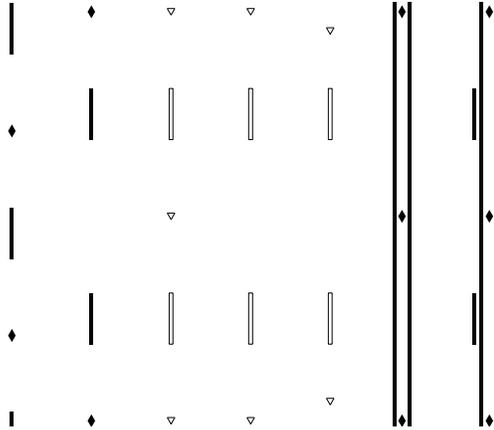
Urban Left Turn Only

Urban Right Turn Only

Urban Thru Only

EX

PR



ONLY ONLY ONLY

**RAILROAD ITEMS**

Abandoned Railroad

Railroad

Railroad Point

Control Box

Crossing Gate

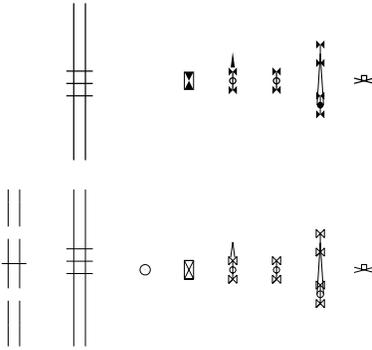
Flashing Signal

Railroad Cant. Mast Arm

Crossbuck

PR

EX



**REMOVAL ITEMS**

Removal Tic

Bituminous Removal

Hatch Pattern

Tree Removal Single

**RIGHT OF WAY ITEMS**

Future ROW Corner Monument

ROW Marker

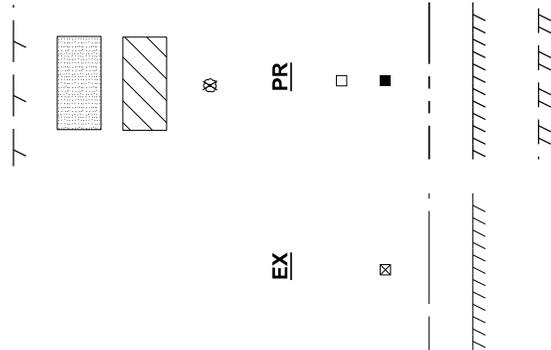
ROW Line

Easement

Temporary Easement

EX

PR



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**STANDARD SYMBOLS,  
ABBREVIATIONS  
AND PATTERNS**  
(Sheet 5 of 9)

STANDARD 000001-07

**PAVEMENT MARKINGS**  
**(contd.)**

Urban U-Turn			
Urban Combined U-Turn			
Rural Combination Left			
Rural Combination Right			
Rural Left Turn Arrow			
Rural Right Turn Arrow			
Rural Left Turn Only			
Rural Right Turn Only			
Rural Thru Only			
Bike Lane Symbol			
Bike Lane Text			
Bike Path Shared			
Bike Shared Roadway			


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**STANDARD SYMBOLS,  
 ABBREVIATIONS  
 AND PATTERNS**  
 (Sheet 6 of 9)  
**STANDARD 000001-07**

<u>RIGHT OF WAY ITEMS</u> (contd.)	<u>EX</u>	<u>PR</u>	<u>ROADWAY PROFILES</u>	<u>EX</u>	<u>PR</u>	<u>SIGNING ITEMS</u> (contd.)	<u>EX</u>	<u>PR</u>
Access Control Line	—	—	P.I. Indicator	△	△	Reverse Left W1-4L (Half Size)		
Access Control Line & ROW	— AC —	— AC —	Point Indicator	○	○	Reverse Right W1-4R (Half Size)		
Access Control Line & ROW with Fence	— AC —	— AC —	Earthworks Balance Point			Two Way Traffic Sign W6-3 (Half Size)		
Excess ROW Line	— XS —	— XS —	Begin Point			Detour Ahead W20-2(O) (Half Size)		
<b>ROADWAY PLAN ITEMS</b>			Vert. Curve Data	VPI = ELEV = L E =	VPI = ELEV = L E =	Left Lane Closed Ahead W20-5(L)(O) (Half Size)		
Cable Barrier	—	—	Ditch Profile Left Side	---	---	Right Lane Closed Ahead W20-5(R)(O) (Half Size)		
Concrete Barrier	—	—	Ditch Profile Right Side	---	---	Road Closed Ahead W20-3(O) (Half Size)		
Edge of Pavement	---	---	Roadway Profile Line	---	---	Road Construction Ahead W20-1(O) (Half Size)		
Bit Shoulders, Medians and C&G Line	---	---	Storm Sewer Profile Left Side	---	---	Single Lane Ahead (Half Size)		
Aggregate Shoulder	---	---	Storm Sewer Profile Right Side	---	---	Transition Left W4-2L (Half Size)		
Sidewalks, Driveways	---	---	<b>SIGNING ITEMS</b>			Transition Right W4-2R (Half Size)		
Guardrail	—	—	Cone, Drum or Barricade	○	○			
Guardrail Post	○	○	Barricade Type II					
Traffic Sign	—	—	Barricade Type III	TT	TT			
Corrugated Median	—	—	Barricade With Edge Line	—	—			
Impact Attenuator	—	—	Flashing Light Sign	○	○			
North Arrow with District Office (Half Size)	—	—	Panels I	▬	▬			
Match Line	---	---	Panels II	▬	▬			
Slope Limit Line	---	---	Direction of Traffic	↑	↑			
Typical Cross-Section Line	---	---	Sign Flag (Half Size)	◇	◇			

**STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS**  
(Sheet 7 of 9)

Illinois Department of Transportation PASSED: <i>[Signature]</i> January 1, 2019 ENGINEER OF POLICY AND PROCEDURES APPROVED: <i>[Signature]</i> January 1, 2019 ENGINEER OF DESIGN AND ENVIRONMENT	ISSUED 1-1-07
--	---------------

STANDARD 000001-07



**TRAFFIC SIGNAL ITEMS (contd.)**

Detector Raceway			<b>PR</b>
Aluminum Mast Arm			
Steel Mast Arm			
Veh. Detector Magnetic			
Conduit- Splice			
Controller			
Gulfbbox Junction			
Wood Pole			
Temp. Signal Head			
Handhole			
Double Handhole			
Heavy Duty Handhole			
Junction Box			
Ped. Pushbutton Detector			
Ped. Signal Head			
Power Pole Service			
Priority Veh. Detector			
Signal Head			
Signal Head w/Backplate			
Signal Post			
Closed Circuit TV			
Video Detector System			

**UNDERGROUND UTILITY ITEMS**

Cable TV			<b>PR</b>	<b>ABANDONED</b>
Electric Cable				
Fiber Optic				
Gas Pipe				
Oil Pipe				
Sanitary Sewer				
Telephone Cable				
Water Pipe				

**UTILITIES ITEMS**

Controller			<b>EX</b>	<b>PR</b>
Double Handhole				
Fire Hydrant				
GuyWire or Deadman Anchor				
Handhole				
Heavy Duty Handhole				
Junction Box				
Light Pole				
Manhole				
Monitoring Well (Gasoline)				
Pipeline Warning Sign				
Power Pole				
Power Pole with Light				
Sanitary Sewer Cleanout				
Splice Box Above Ground				
Telephone Splice Box Above Ground				
Telephone Pole				

**UTILITY ITEMS (contd.)**

Traffic Signal			<b>EX</b>	<b>PR</b>
Traffic Signal Control Box				
Water Meter				
Water Meter Valve Box				
Profile Line				
Aerial Power Line				

**VEGETATION ITEMS**

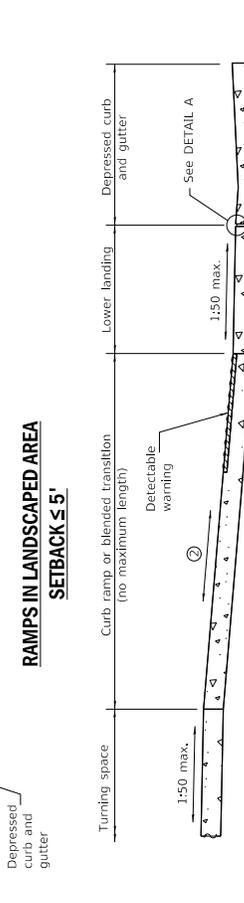
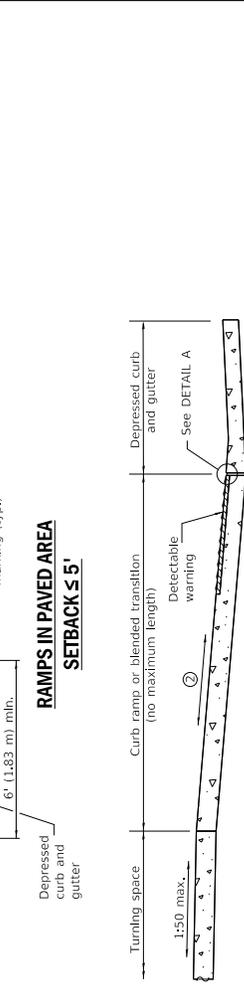
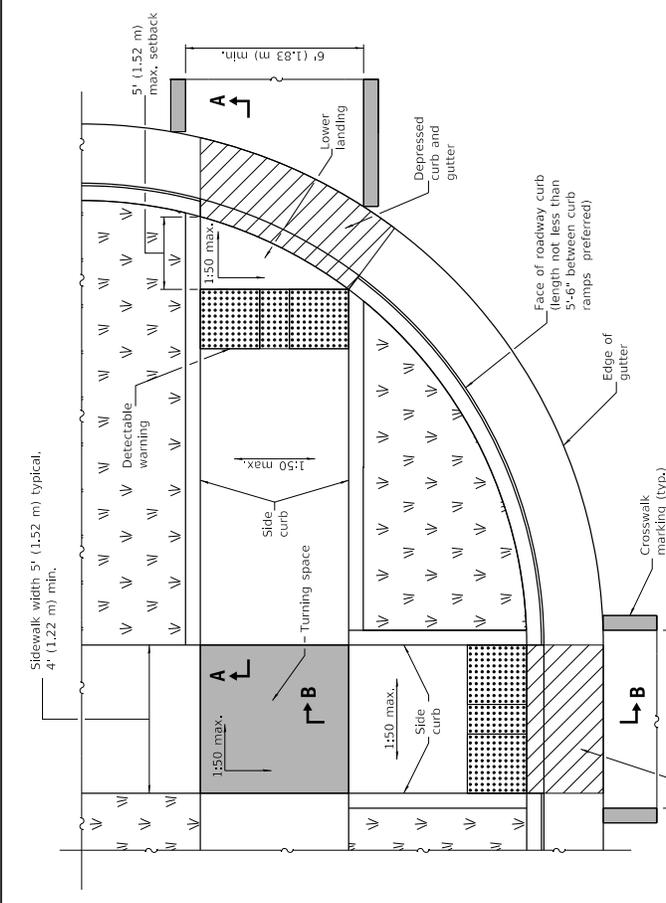
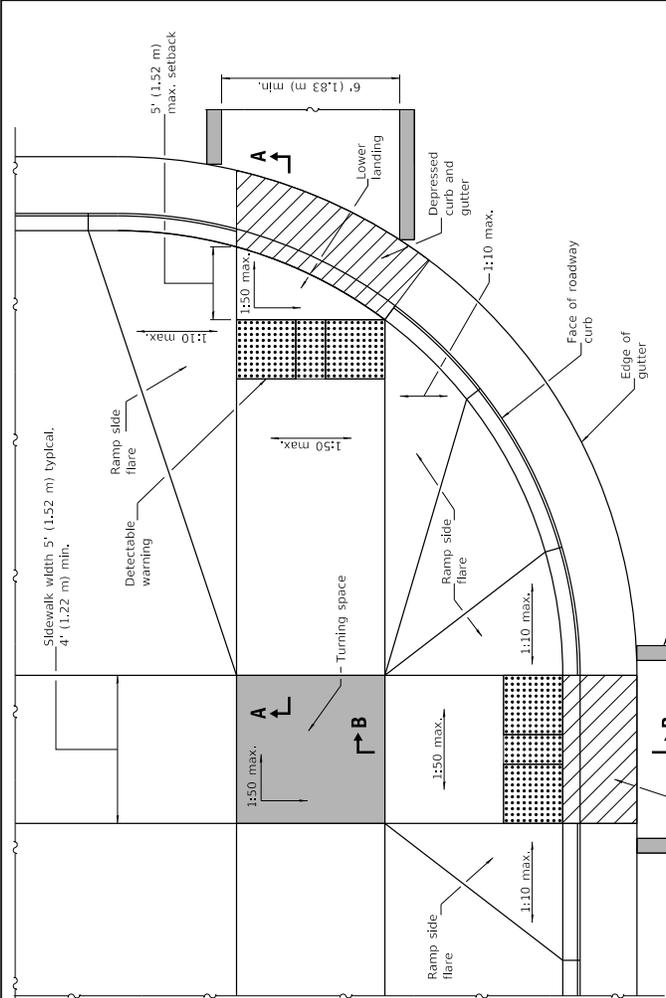
Deciduous Tree			<b>EX</b>	<b>PR</b>
Bush or Shrub				
Evergreen Tree				
Stump				
Orchard/Nursery Line				
Vegetation Line				
Woods & Bush Line				

**WATER FEATURE ITEMS**

Stream or Drainage Ditch			<b>EX</b>	<b>PR</b>
Waters Edge				
Water Surface Indicator				
Water Point				
Disappearing Ditch				
Marsh				
Marsh/Swamp Boundary				

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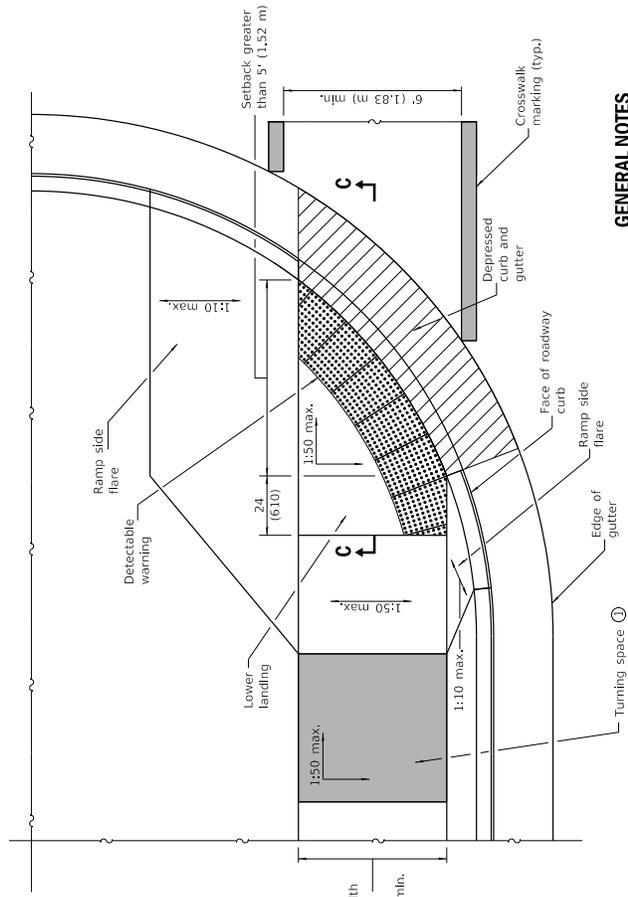
**STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS**  
 (Sheet 9 of 9)  
**STANDARD 000001-07**



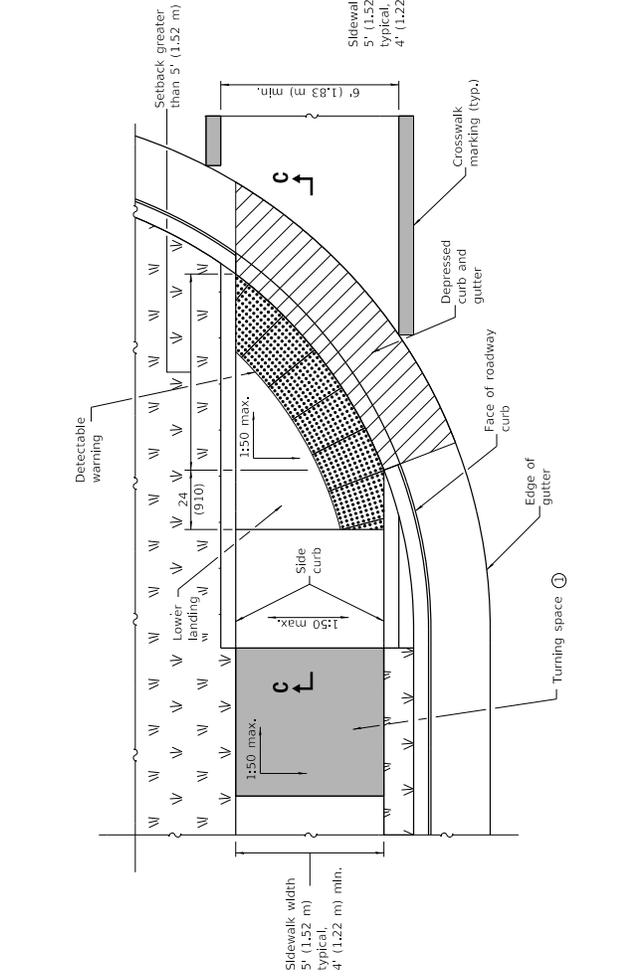
DATE	REVISIONS
1-1-19	Removed "15-foot rule", added "Blended transitions" and placement tolerances for detectable warnings.
1-1-18	Omitted diagonal slope at turning spaces and lower landings.

Illinois Department of Transportation PASSED: <i>[Signature]</i> January 1, 2019 ENGINEER OF POLICY AND PROCEDURES APPROVED: <i>[Signature]</i> January 1, 2019 ENGINEER OF DESIGN AND ENVIRONMENT		ISSUED 1-1-19
<b>PERPENDICULAR CURB RAMPS FOR SIDEWALKS</b> (Sheet 1 of 2)		
<b>STANDARD 424001-11</b>		

See Sheet 2 for GENERAL NOTES.

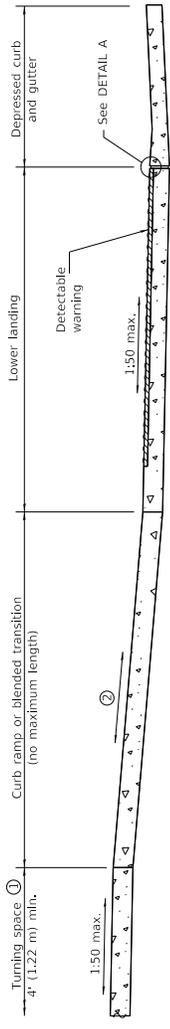


**RAMP IN LANDSCAPED AREA**  
**SETBACK > 5'**



**RAMP IN PAVED AREA**  
**SETBACK > 5'**

**GENERAL NOTES**  
All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V/H).  
Where the turning space is constrained on a side opposite a ramp, the minimum length of the turning space in the direction of the ramp-run shall be 5' (1.52 m).  
Where 1:50 maximum slope is shown, 1:64 is preferred.  
Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.  
Side Border - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in width is allowed.  
Curb Set-Back - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.  
See Standard 606001 for details of depressed curb adjacent to curb ramp.  
All dimensions are in inches (millimeters) unless otherwise shown.



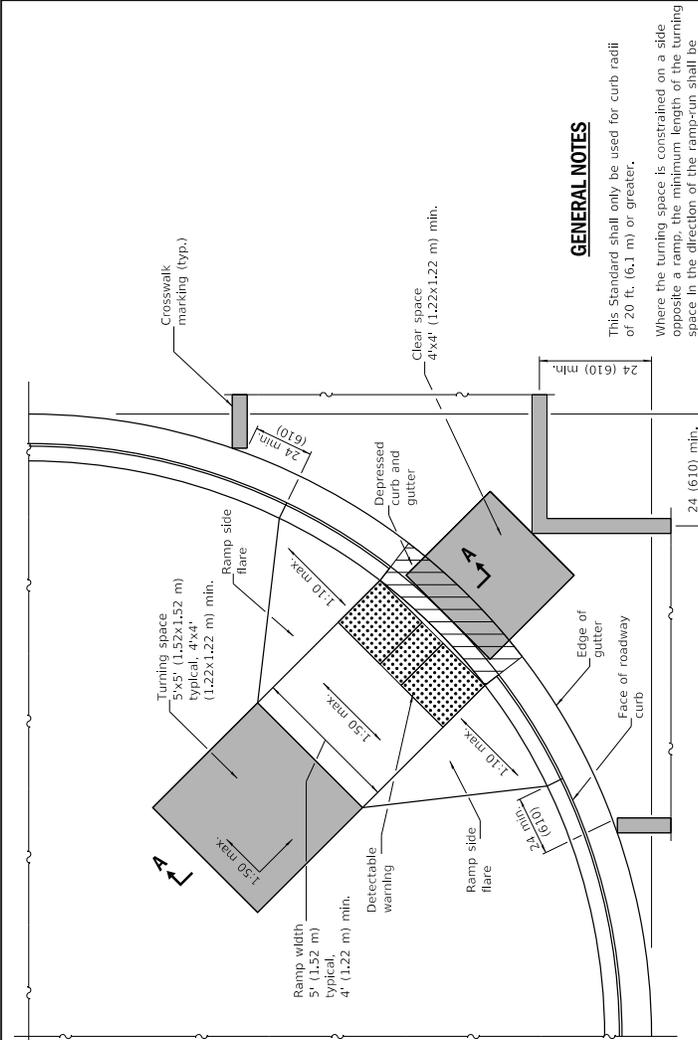
**SECTION C-C**

- ① This turning space not required for blended transitions.
- ② The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.

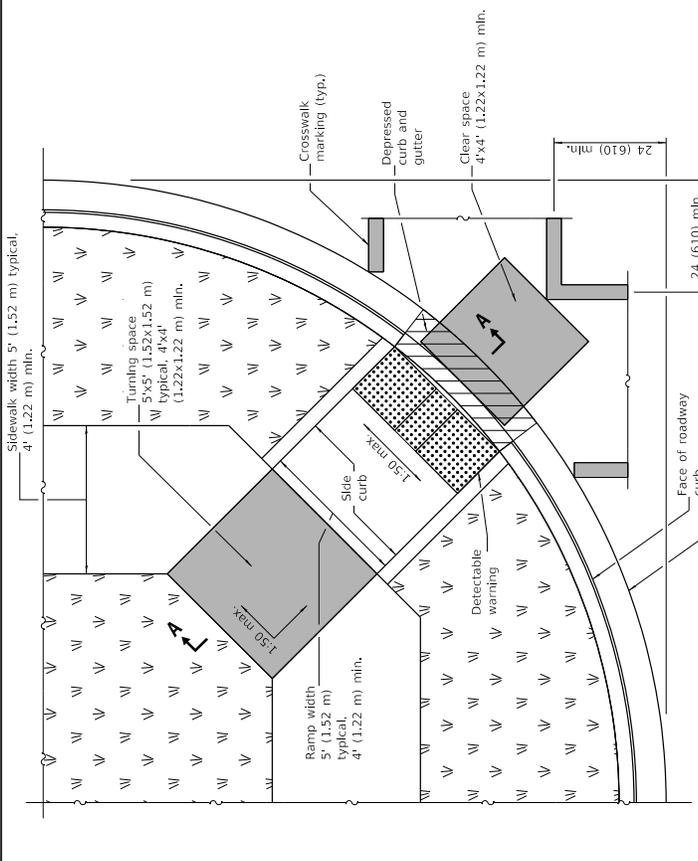
**PERPENDICULAR CURB RAMPS FOR SIDEWALKS**  
(Sheet 2 of 2)

**STANDARD 424001-11**

Illinois Department of Transportation  
 PASSED: January 1, 2019  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED: January 1, 2019  
 ENGINEER OF DESIGN AND ENVIRONMENT



**RAMP IN LANDSCAPED AREA**



**RAMP IN PAVED AREA**

**GENERAL NOTES**

This Standard shall only be used for curb radii of 20 ft. (6.1 m) or greater.

Where the turning space is constrained on a side opposite a ramp, the minimum length of the turning space in the direction of the ramp-run shall be 5' (1.52 m).

Where 1:50 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

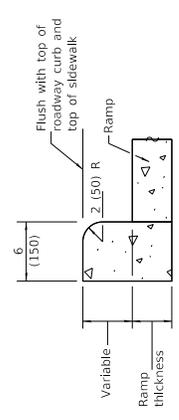
Side Border - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in width is allowed.

Curb Set-Back - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

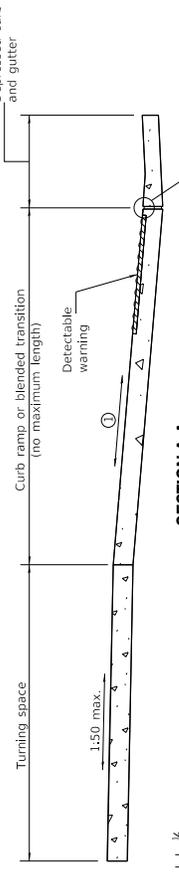
All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

See Standard 606001 for details of depressed curb adjacent to curb ramp.

All dimensions are in inches (millimeters) unless otherwise shown.



**SIDE CURB DETAIL**



**SECTION A-A**

① The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.

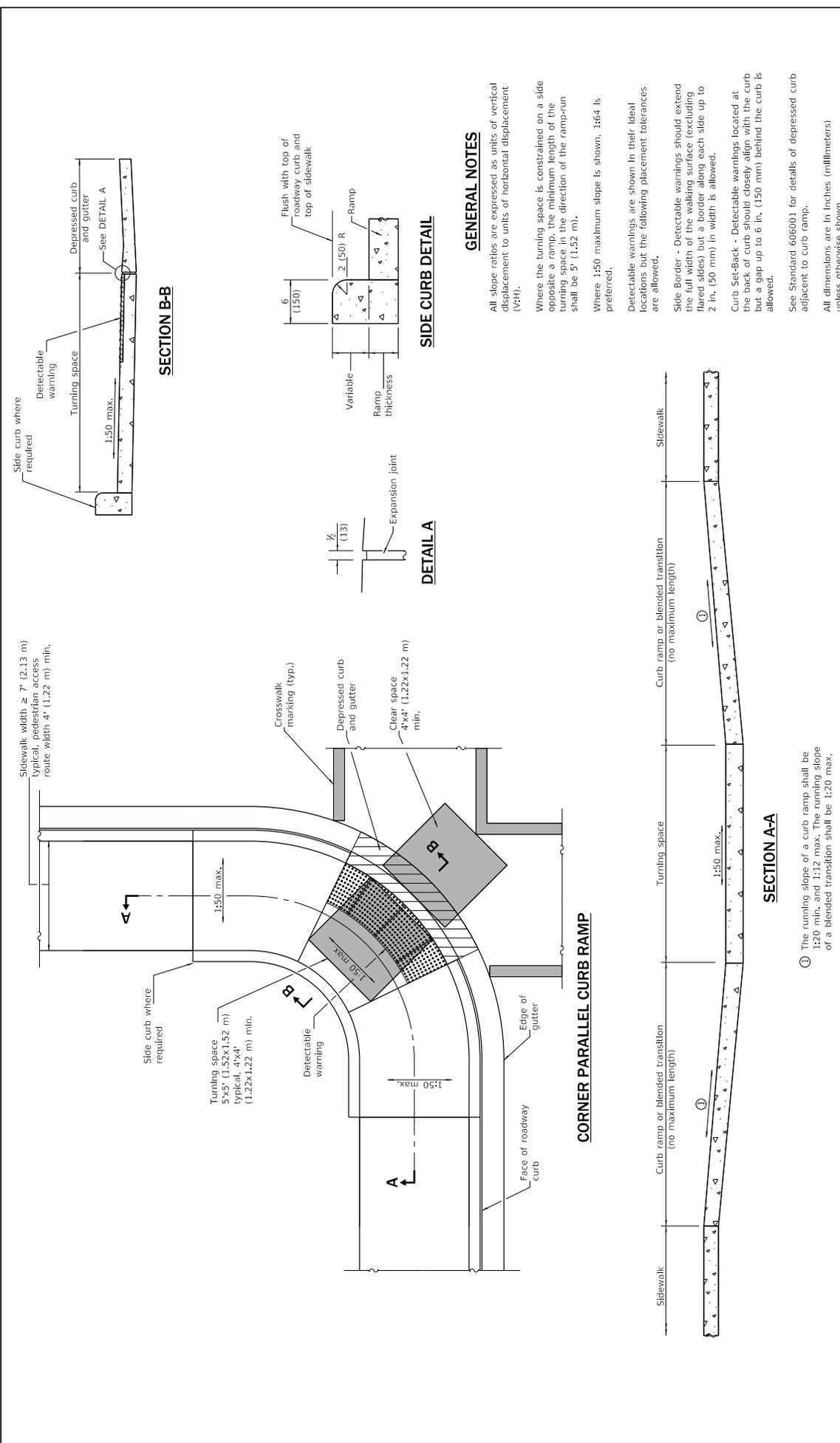
**DETAIL A**

DATE	REVISIONS
1-1-19	Removed "15-foot rule", added "blended transitions" and placement tolerances for detectable warnings.
1-1-18	Omitted diagonal slope at turning spaces.

**DIAGONAL CURB RAMPS FOR SIDEWALKS**

**STANDARD 424006-04**

Illinois Department of Transportation  
 PASSED January 1, 2019  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED January 1, 2019  
 ENGINEER OF DESIGN AND ENVIRONMENT



Sidewalk width  $\geq$  7' (2.13 m)  
 Typical, pedestrian access  
 route width 4' (1.22 m) min.

Side curb where  
 required

Turning space  
 5'x5' (1.52x1.52 m)  
 typical, 4'x4'  
 (1.22x1.22 m) min.

Clear space  
 4'x4' (1.22x1.22 m)  
 min.

Face of roadway  
 curb

Side curb where  
 required

Turning space  
 1:50 max.

Depressed curb  
 and gutter  
 See DETAIL A

Expansion joint

Flush with top of  
 roadway curb and  
 top of sidewalk

Variable  
 Ramp  
 thickness

1/2 (13)

2.5 (50) R

6 (150)

1:50 max.

1:50 max.

**SECTION B-B**

**SECTION A-A**

**DETAIL A**

**DETAIL B**

**CORNER PARALLEL CURB RAMP**

**GENERAL NOTES**

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V/H).

Where the turning space is constrained on a side opposite a ramp, the minimum length of the turning space in the direction of the ramp-on shall be 5' (1.52 m).

Where 1:50 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

Side Border - Detectable warnings should extend the full width of the walking surface (excluding flared slides) but a border along each side up to 2 in. (50 mm) in width is allowed.

Curb Set-Back - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

See Standard 606001 for details of depressed curb adjacent to curb ramp.

All dimensions are in inches (millimeters) unless otherwise shown.

**REVISIONS**

DATE	REVISIONS
1-1-19	Removed upper landing, added blended transition and detectable warning tolerances.
1-1-17	Revised sidewalk width to include 24 (610) buffer behind curb.

**CORNER PARALLEL CURB RAMP**

1 The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.

**DATE**

**REVISIONS**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

PASSED: *[Signature]* JANUARY 1, 2019

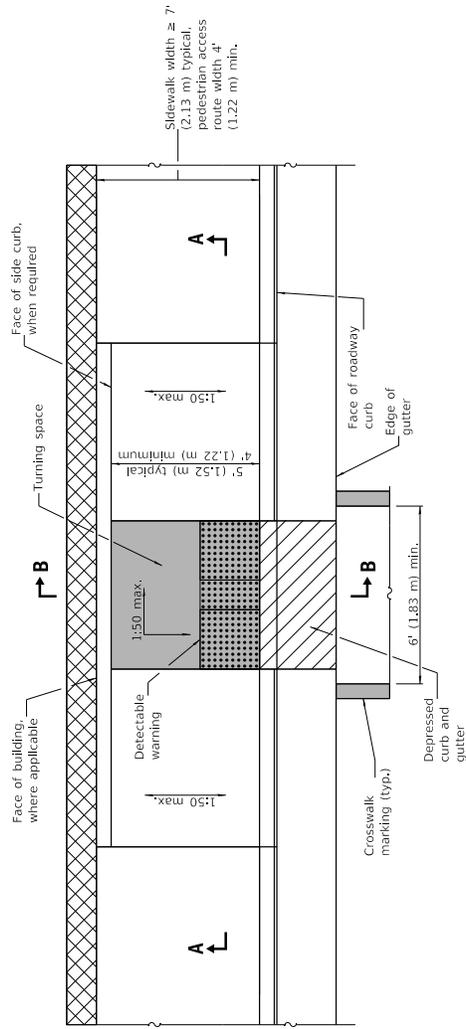
ENGINEER OF POLICY AND PROCEDURES

APPROVED: *[Signature]* JANUARY 1, 2019

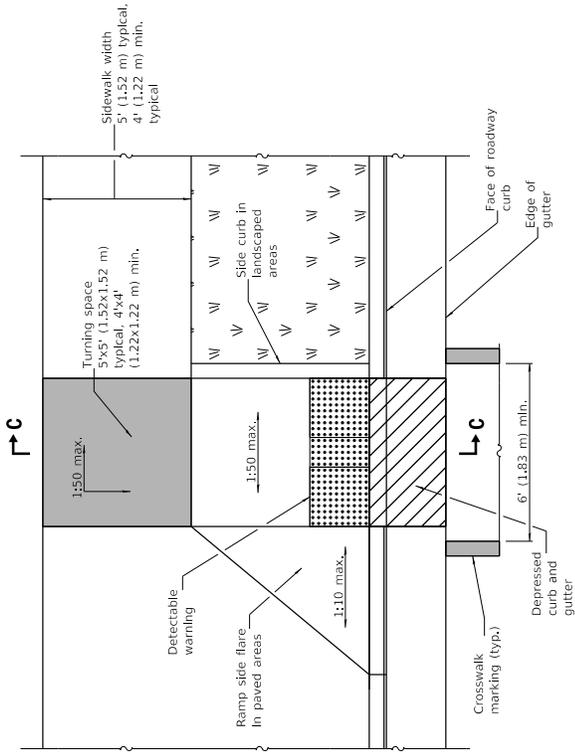
ENGINEER OF DESIGN AND ENVIRONMENT

**CORNER PARALLEL CURB RAMP**

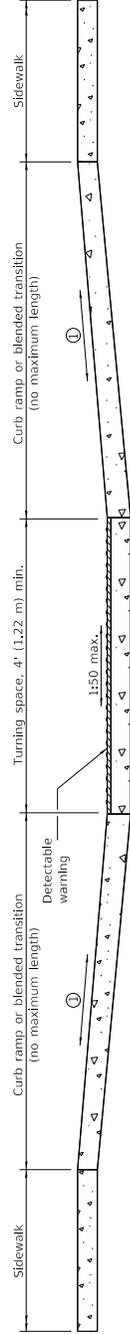
**STANDARD 424011-04**



**PARALLEL MID-BLOCK CURB RAMP**

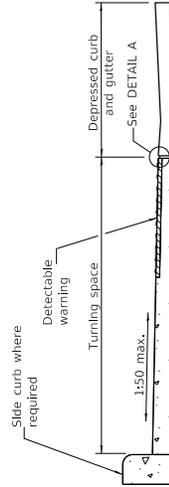


**PERPENDICULAR MID-BLOCK CURB RAMP**

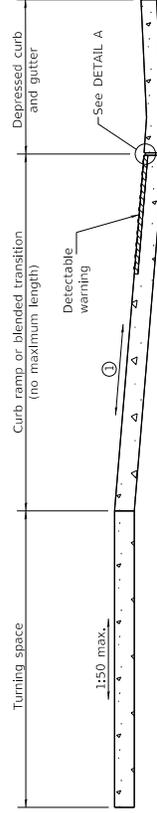


**SECTION A-A**

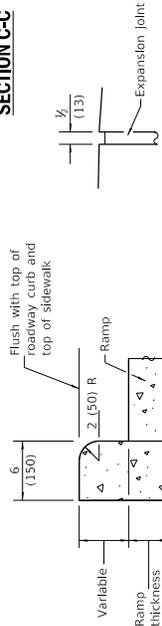
- ① The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.



**SECTION B-B**



**SECTION C-C**



**SIDE CURB DETAIL**

**DETAIL A**

**GENERAL NOTES**

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

Where the turning space is constrained on a side opposite a ramp, the minimum length of the turning space in the direction of the ramp-run shall be 5' (1.52 m).

Where 1:50 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

**Side Border** - Detectable warnings should extend the full width of the walking surface (excluding flared slides) but a border along each side up to 2 in. (50 mm) in width is allowed.

**Curb Set-Back** - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

See Standard 606001 for details of depressed curb adjacent to curb ramp.

All dimensions are in inches (millimeters) unless otherwise shown.

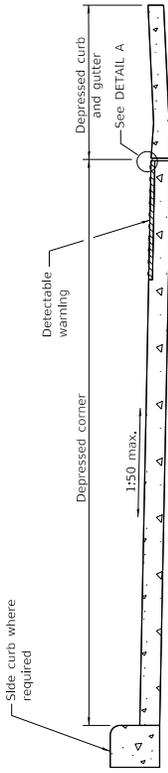
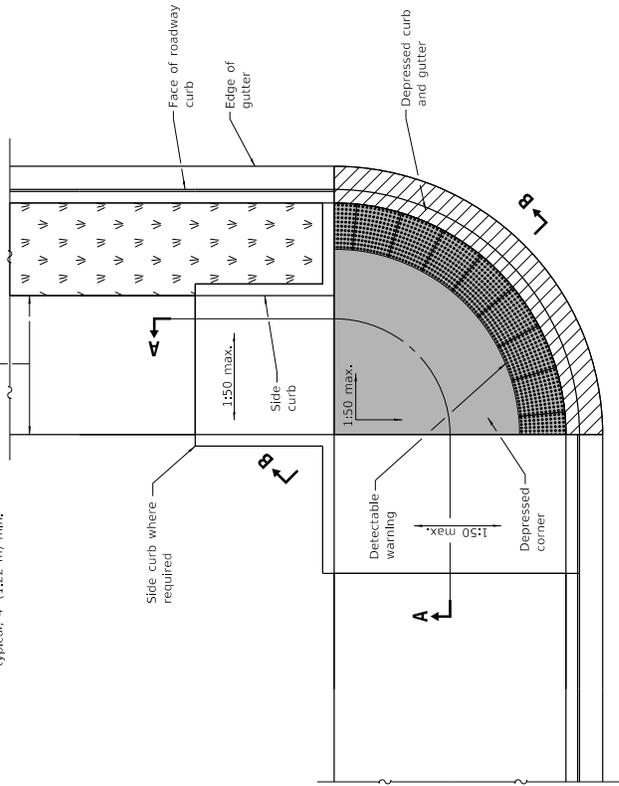
DATE	REVISIONS
1-1-19	Removed upper landing, added blended transitions and detectable warning tolerances.
1-1-18	Omitted diagonal slope at turning spaces and upper landings.

**MID-BLOCK CURB RAMPS FOR SIDEWALKS**

**STANDARD 424016-05**

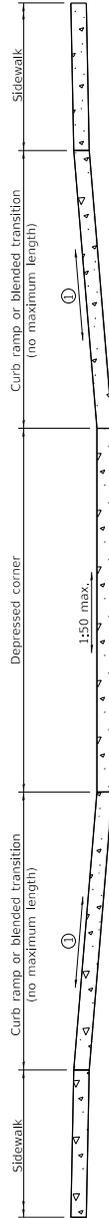
Illinois Department of Transportation  
 PASSED: January 1, 2019  
 APPROVED: January 1, 2019  
 ENGINEER OF POLICY AND PROCEDURES  
 ENGINEER OF DESIGN AND ENVIRONMENT

Sidewalk width 5' (1.52 m) typical, 4' (1.22 m) min.



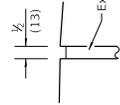
SECTION B-B

**DEPRESSED CORNER**

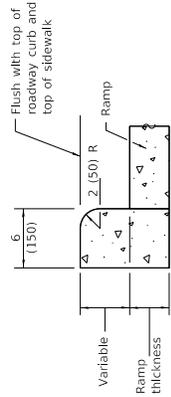


SECTION A-A

① The running slope of a curb ramp shall be 1:20 min. and 1:12 max. The running slope of a blended transition shall be 1:20 max.



DETAIL



SIDE CURB DETAIL

**GENERAL NOTES**

This standard shall only be used for curb radii of 6 ft. (1.83 m) or greater.

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

Where 1:50 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal tolerances but the following placement tolerances are allowed.

**Side Border** - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in. width is allowed.

**Curb Set-Back** - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

See Standard 606001 for details of depressed curb adjacent to curb ramp.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-19	Removed upper landings, added blended transition and detectable warning tolerances.
1-1-18	Omitted diagonal slope at turning spaces and upper landings.

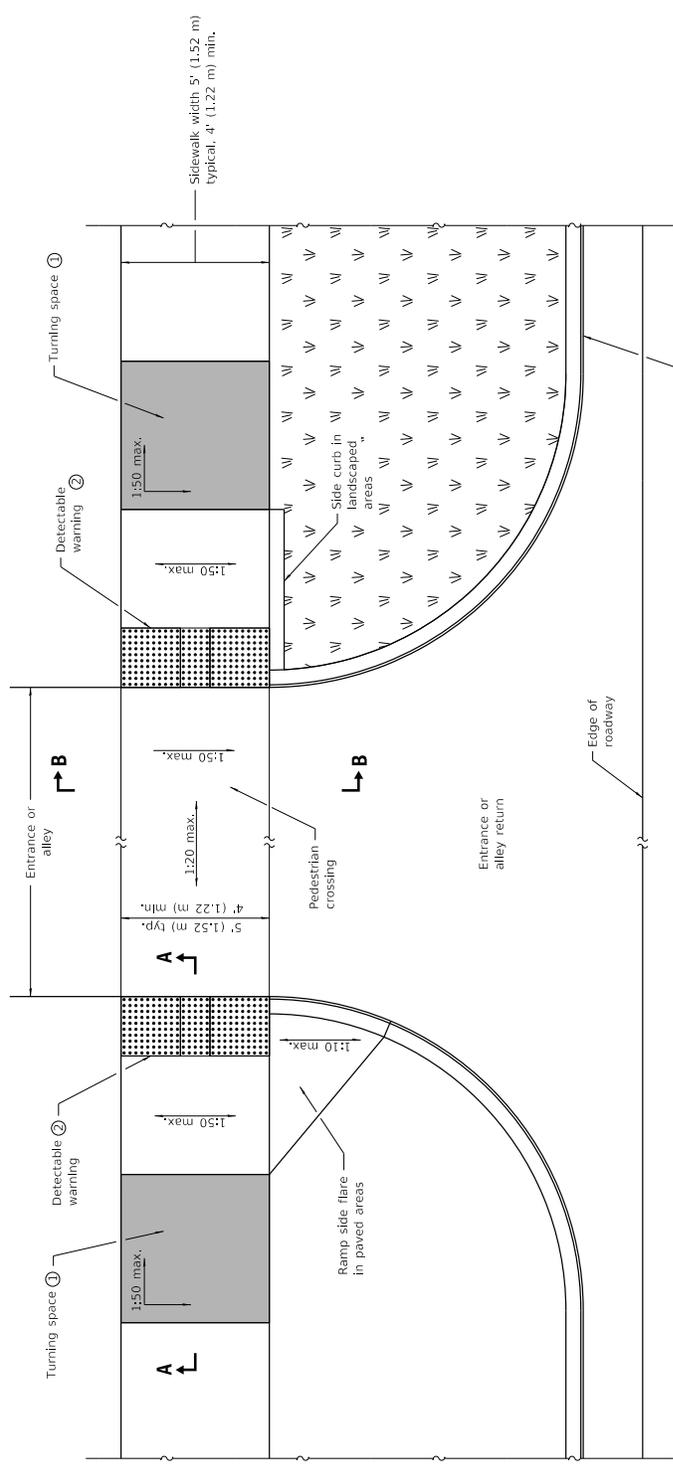
**DEPRESSED CORNER FOR SIDEWALKS**

STANDARD 424021-05

Illinois Department of Transportation

PASSED January 1, 2019  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED January 1, 2019  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-12



- ② Detectable warning shall only be installed at entrances/alleys with permanent traffic control devices (i.e. stop signs, signals).
- ③ Where possible, maintain the grade of the sidewalk across the entrance/alley to avoid the need for ramps and turning spaces.

**ENTRANCE / ALLEY PEDESTRIAN CROSSING**

**GENERAL NOTES**  
All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

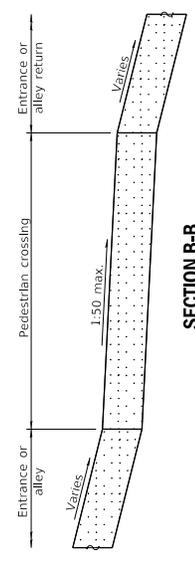
Where 1:50 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

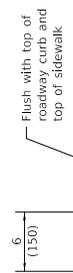
**Side Border** - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in width is allowed.

**Curb Setback** - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

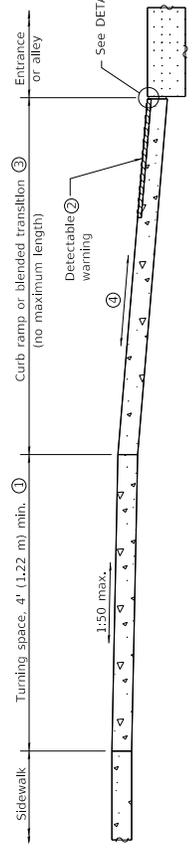
All dimensions are in inches (millimeters) unless otherwise shown.



**SECTION B-B**

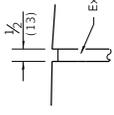


**SIDE CURB DETAIL**



**SECTION A-A**

- ① Turning space not required for blended transitions.
- ④ The running slope of a curb ramp shall be 1:20 min and 1:12 max. The running slope of a blended transition shall be 1:20 max.



**DETAIL A**

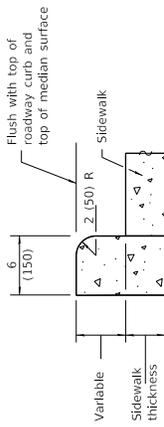
DATE	REVISIONS
1-1-19	Added blended transitions and placement tolerances for detectable warnings.
1-1-18	Omitted diagonal slope at upper landings.

**ENTRANCE / ALLEY PEDESTRIAN CROSSINGS**

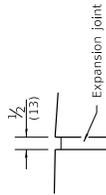
**STANDARD 424026-03**

Illinois Department of Transportation  
 PASSED: [Signature] January 1, 2019  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED: [Signature] January 1, 2019  
 ENGINEER OF DESIGN AND ENVIRONMENT

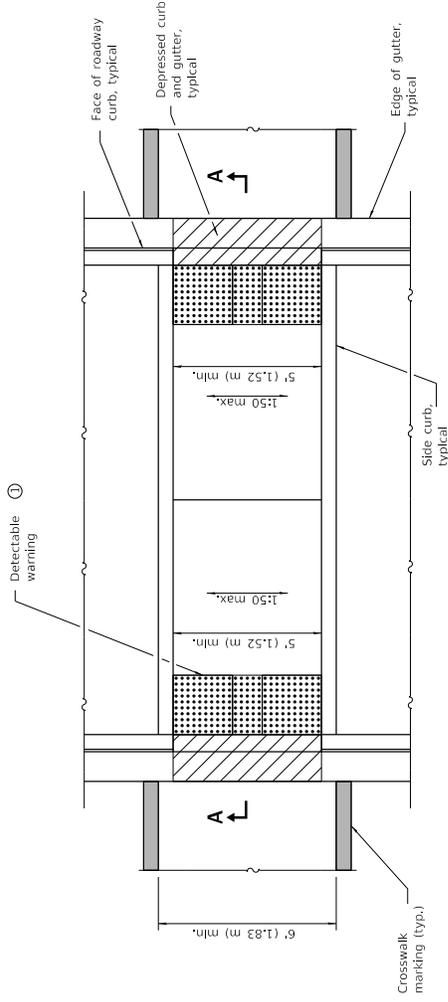
ISSUED 1-1-12



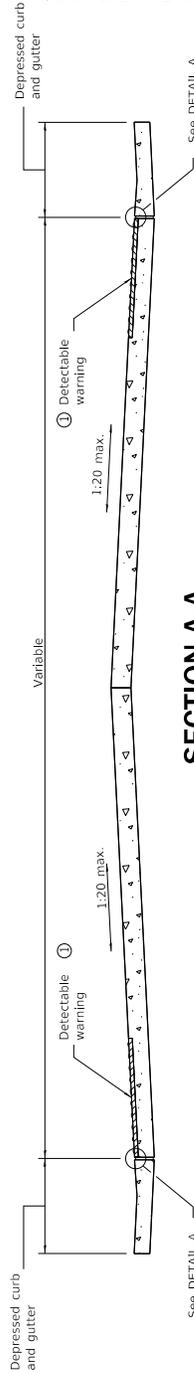
**SIDE CURB DETAIL**



**DETAIL A**



**MEDIAN PEDESTRIAN CROSSING**



**SECTION A-A**

① Omit detectable warnings when distance between back of curbs is less than 6' (1.83 m).

**GENERAL NOTES**

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

Where 1:50 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

**Side Border** - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in width is allowed.

**Curb Set-Back** - Detectable warnings located at the back of curb should closely align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

See Standard 606001 for details of depressed curb adjacent to curb ramp.

All dimensions are in inches (millimeters) unless otherwise shown.

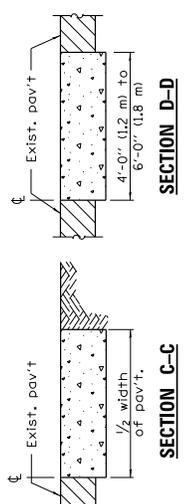
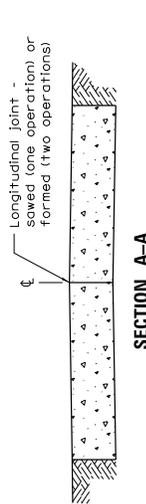
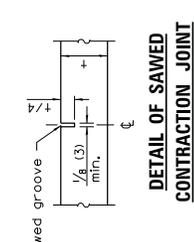
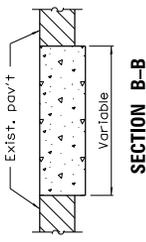
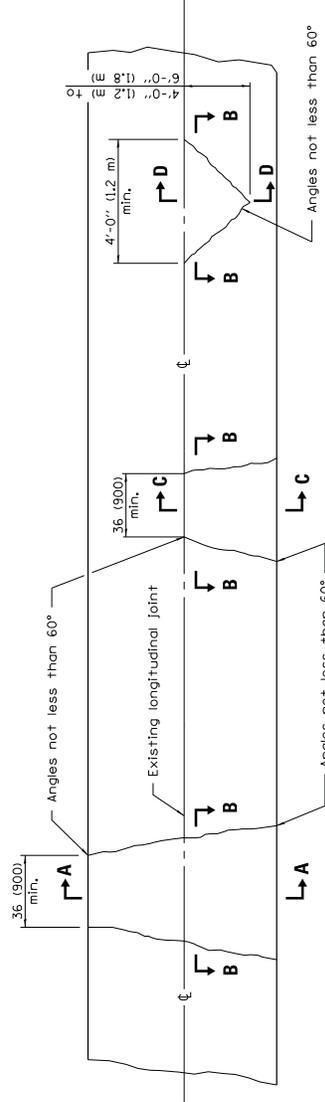
Illinois Department of Transportation PASSED 04/11/19 ENGINEER OF POLICY AND PROCEDURES APPROVED 04/11/19 ENGINEER OF DESIGN AND ENVIRONMENT	ISSUED 1-1-12
	January 1, 2019 January 1, 2019

DATE	REVISIONS
1-1-19	Added placement tolerances for detectable warnings.
1-1-12	Widened crosswalk to 6' (1.83 m) min. inside dimension.
	Revised General Notes.

**MEDIAN PEDESTRIAN CROSSINGS**

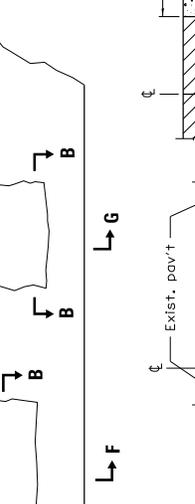
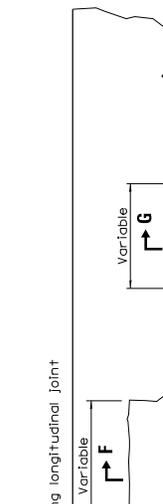
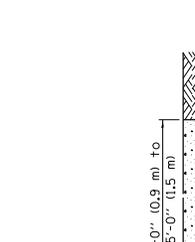
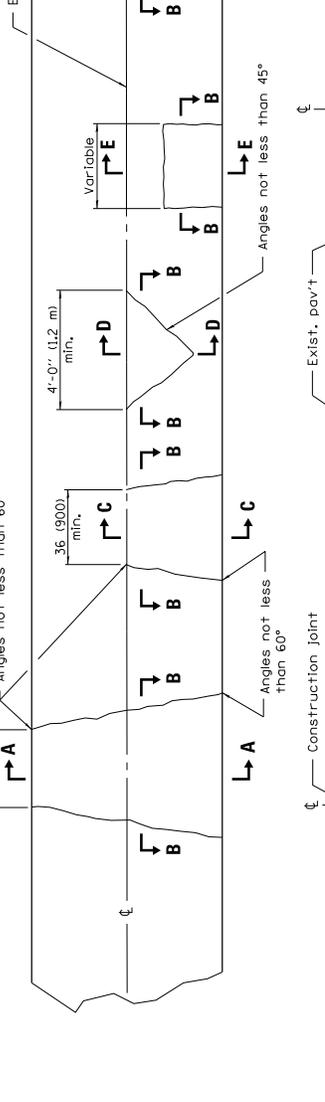
**STANDARD 424031-02**

**CLASS C**



Note: Longitudinal joints shall be as detailed on Standard 420001, except tie bars are not required for patches 20'-0" (6.0 m) or less in length.

**CLASS D**



**SECTION A-A**

(Built in two operations)

**SECTION B-B**

**SECTION C-C**

**SECTION D-D**

**SECTION E-E**

**GENERAL NOTES**  
Existing tie bars shall be either cut or removed.  
Marginal bars shall be cut.  
All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-08	Switched units to English (metric).
1-1-07	Revised Note for Class C patches.

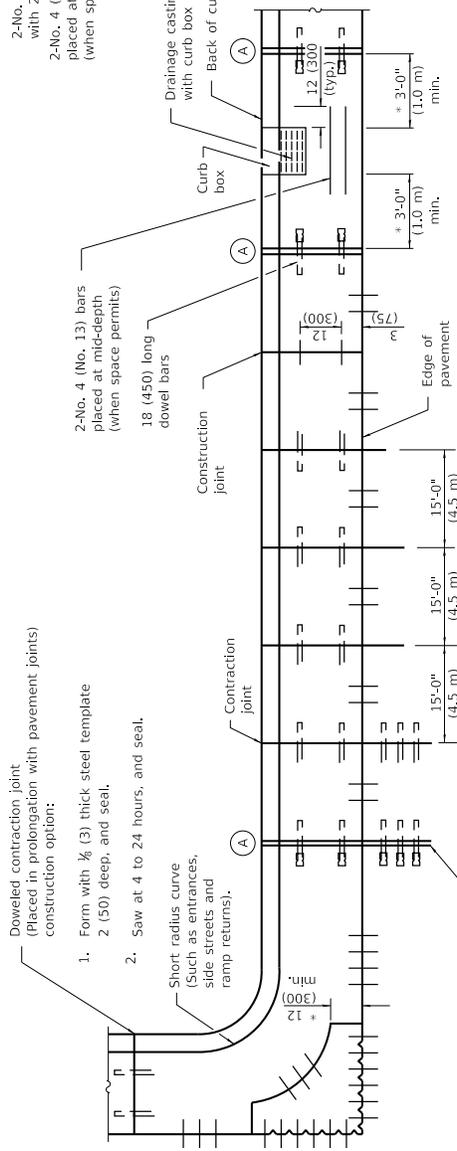
Illinois Department of Transportation PASSED JANUARY 1, 2008 ENGINEER OF POLICY AND PROCEDURES APPROVED JANUARY 1, 2008 ENGINEER OF DESIGN AND ENVIRONMENT	ISSUED 1-1-97
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**CLASS C and D PATCHES**

**STANDARD 442201-03**

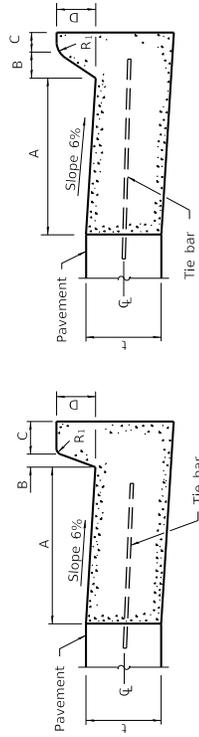
Doweled contraction joint  
(Placed in prolongation with pavement joints)  
construction option:

- Form with 3/8 (3) thick steel template 2 (50) deep, and seal.
- Saw at 4 to 24 hours, and seal.



**PLAN**

**ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE**



**TABLE OF DIMENSIONS BARRIER CURB**

TYPE	A	B	C	D	R <sub>1</sub>	R <sub>2</sub>
B-6.06*	6	1	6	6	1	
(B-15.15)	(150)	(25)	(150)	(150)	(25)	
B-6.12	12	1	6	6	1	
(B-15.3)	(300)	(25)	(150)	(150)	(25)	
B-6.18	18	1	6	6	1	
(B-15.45)	(450)	(25)	(150)	(150)	(25)	
B-6.24	24	1	6	6	1	
(B-15.60)	(600)	(25)	(150)	(150)	(25)	
B-9.12	12	2	5	9	1	
(B-22.30)	(300)	(50)	(125)	(225)	(25)	
B-9.18	18	2	5	9	1	
(B-22.45)	(450)	(50)	(125)	(225)	(25)	
B-9.24	24	2	5	9	1	
(B-22.60)	(600)	(50)	(125)	(225)	(25)	

\* For corner islands only.

**TABLE OF DIMENSIONS MOUNTABLE CURB**

TYPE	A	B	C	D	R <sub>1</sub>	R <sub>2</sub>
M-2.06	6	2	4	2	3	2
(M-5.15)	(150)	(50)	(100)	(50)	(75)	(50)
M-2.12	12	2	4	2	3	2
(M-5.30)	(300)	(50)	(100)	(50)	(75)	(50)
M-4.06	6	4	3	4	3	NA
(M-10.15)	(150)	(100)	(75)	(100)	(75)	NA
M-4.12	12	4	3	4	3	NA
(M-10.30)	(300)	(100)	(75)	(100)	(75)	NA
M-4.18	18	4	3	4	3	NA
(M-10.45)	(450)	(100)	(75)	(100)	(75)	NA
M-4.24	24	4	3	4	3	NA
(M-10.60)	(600)	(100)	(75)	(100)	(75)	NA
M-6.06	6	6	2	6	2	NA
(M-15.15)	(150)	(150)	(50)	(150)	(50)	NA
M-6.12	12	6	2	6	2	NA
(M-15.30)	(300)	(150)	(50)	(150)	(50)	NA
M-6.18	18	6	2	6	2	NA
(M-15.45)	(450)	(150)	(50)	(150)	(50)	NA
M-6.24	24	6	2	6	2	NA
(M-15.60)	(600)	(150)	(50)	(150)	(50)	NA

Illinois Department of Transportation

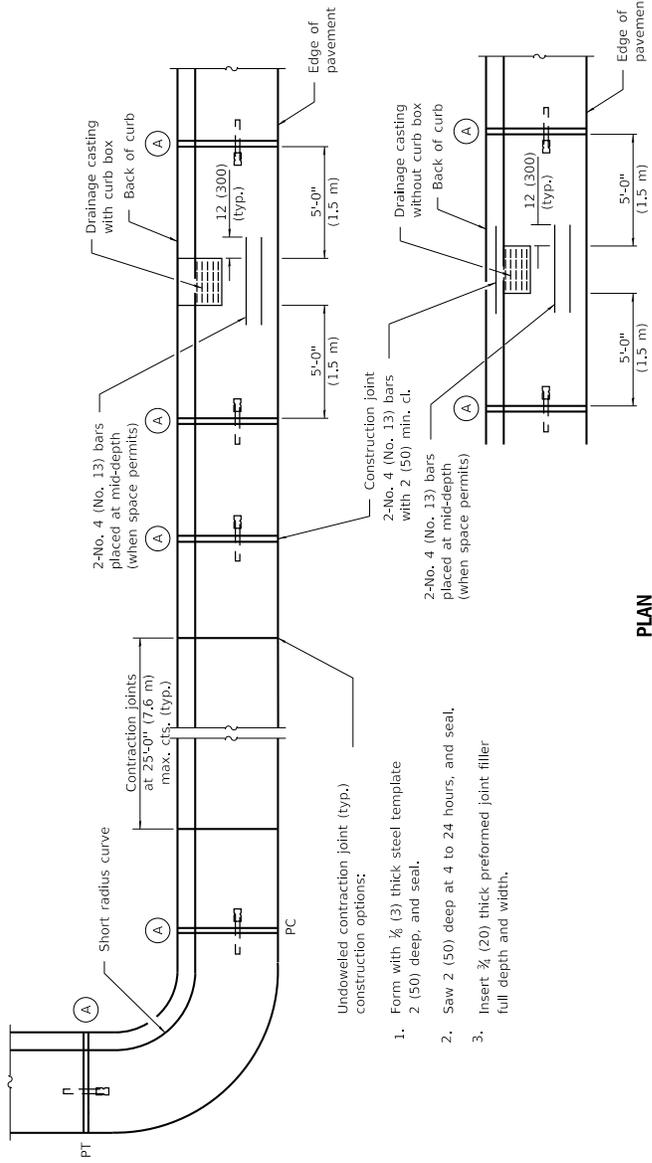
PASSED January 1, 2018  
 Michael Board  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED January 1, 2018  
 [Signature]  
 ENGINEER OF DESIGN AND ENVIRONMENT

**REVISIONS**

DATE	REVISIONS
1-1-18	Revised General Note for tie bar spacing to 36 (900) cls.
1-1-15	Added B-6.06 (B-15.15) barrier curb and gutter to table (corner islands only).

**CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER**  
 (Sheet 1 of 2)

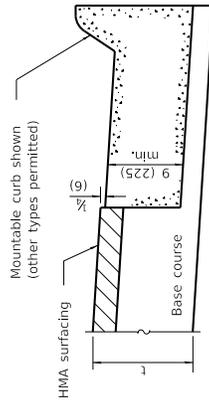
**STANDARD 606001-07**



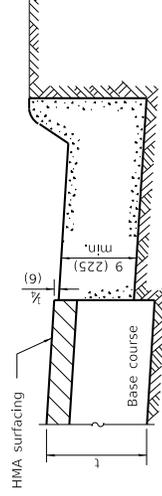
**PLAN**

Undoweled contraction joint (typ.) construction options:

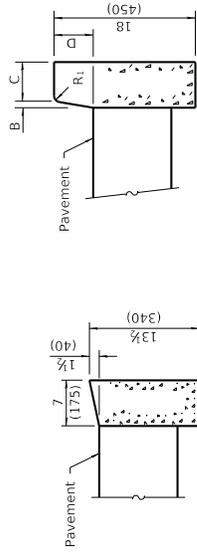
1. Form with  $\frac{3}{8}$  (3) thick steel template 2 (50) deep, and seal.
2. Saw 2 (50) deep at 4 to 24 hours, and seal.
3. Insert  $\frac{3}{8}$  (20) thick preformed joint filler full depth and width.



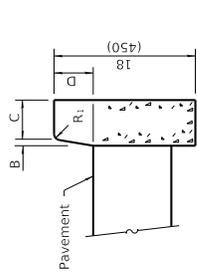
**ON DISTURBED SUBGRADE**



**ON UNDISTURBED SUBGRADE**

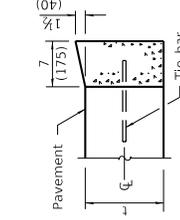


**DEPRESSED CURB**

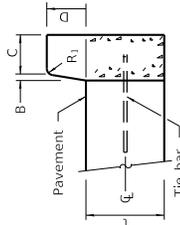


**BARRIER CURB**

**ADJACENT TO FLEXIBLE PAVEMENT**



**DEPRESSED CURB**



**BARRIER CURB**

**ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE**

**CONCRETE CURB TYPE B**

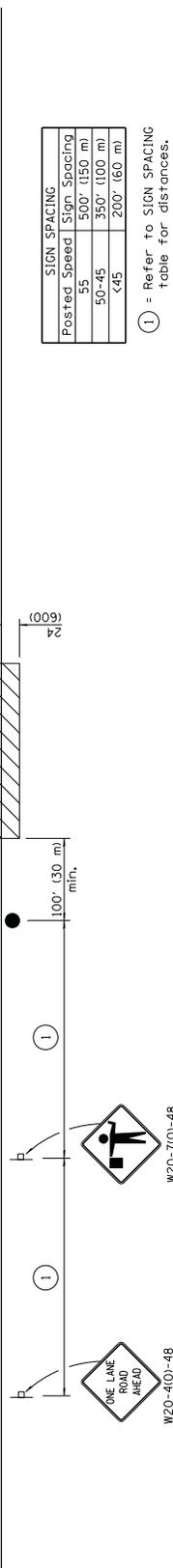
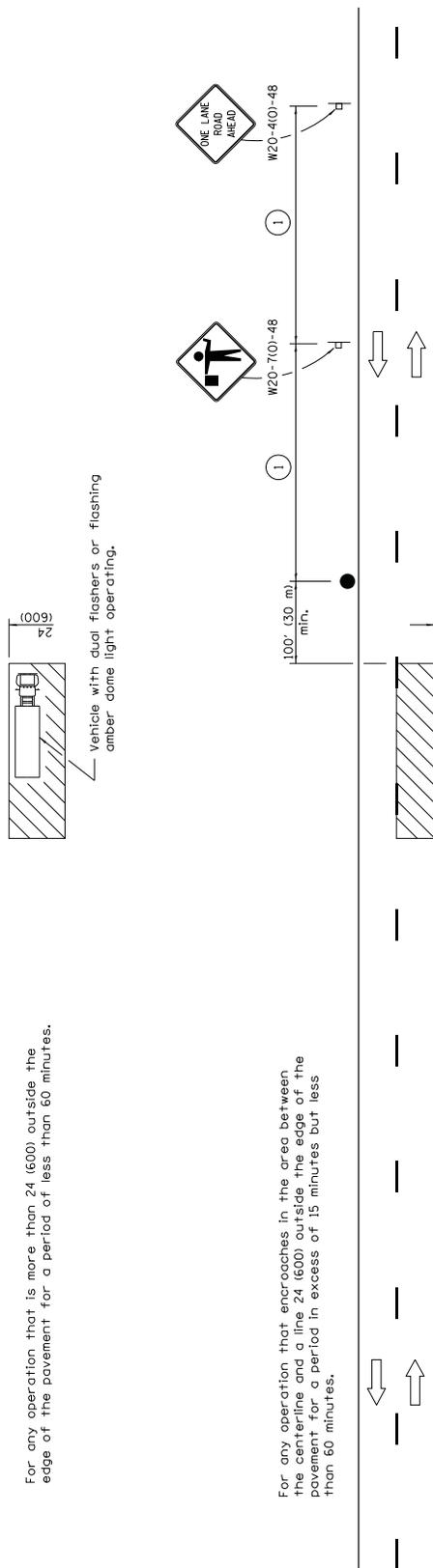
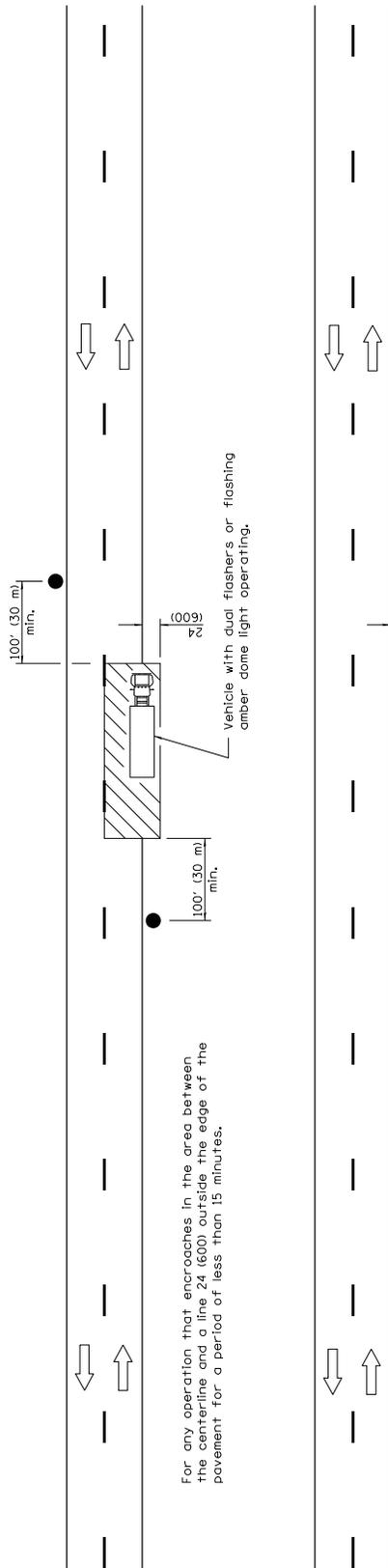
**ADJACENT TO FLEXIBLE PAVEMENT**

**CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER**

(Sheet 2 of 2)

STANDARD 606001-07

	PASSED January 1, 2018 <i>Michael Beard</i> ENGINEER OF POLICY AND PROCEDURES	ISSUED 1-1-07
	APPROVED January 1, 2018 <i>Thomas R. Bales</i> ENGINEER OF DESIGN AND ENVIRONMENT	



All dimensions are in inches (millimeters) unless otherwise shown.

# LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS

STANDARD 701301-04

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English metric.

### SYMBOLS

- Work area
- Sign on portable or permanent support
- Flagger with traffic control sign

### TYPICAL APPLICATIONS

- Marking patches
- Field survey
- String line
- Utility operations
- Cleaning up debris on pavement

Illinois Department of Transportation

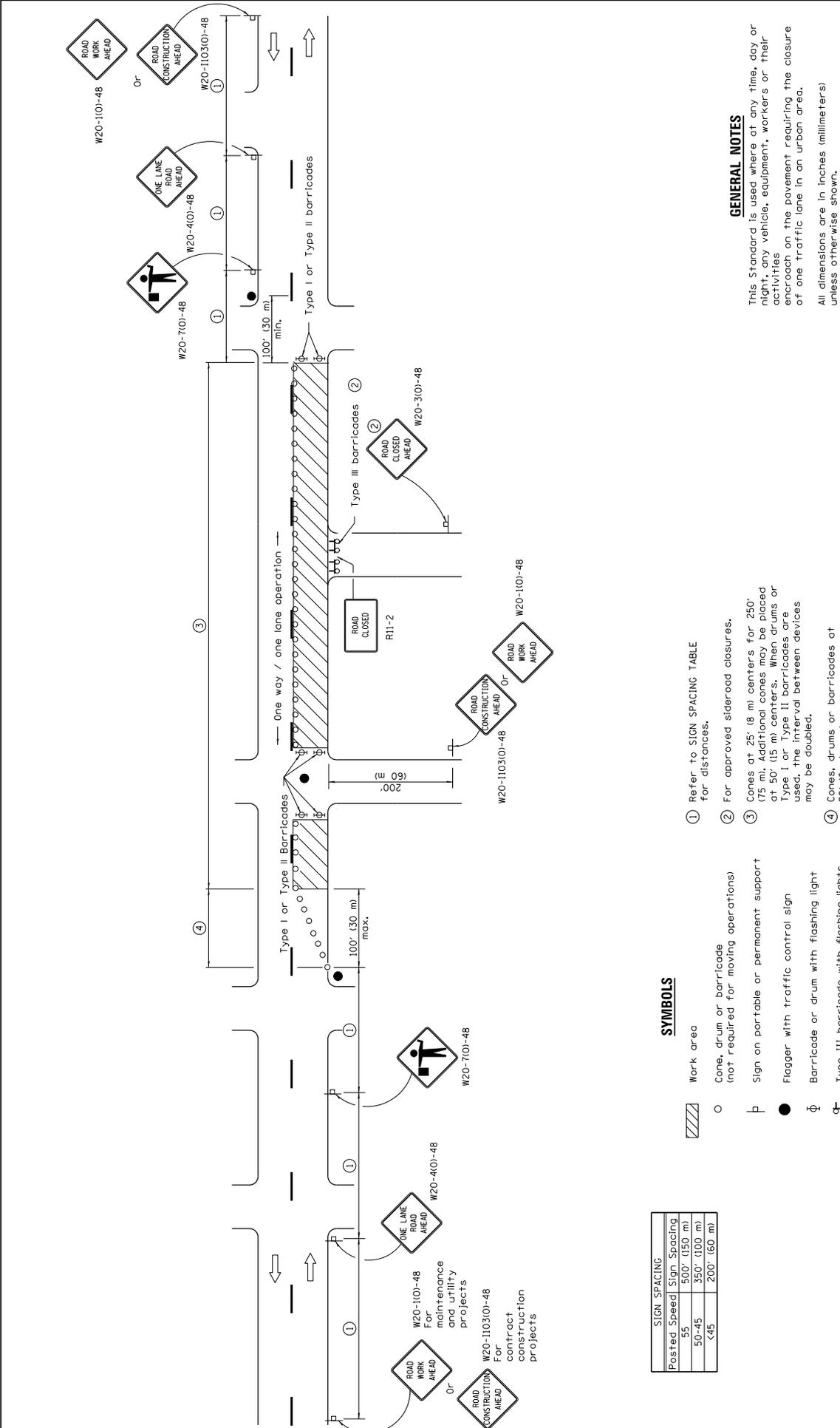
ISSUED 1-1-97

APPROVED *[Signature]* JANUARY 2011

ENGINEER OF SAFETY ENGINEERING

APPROVED *[Signature]* JANUARY 1, 2011

ENGINEER OF DESIGN AND ENVIRONMENT



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

**SYMBOLS**

- Work area
- Cone, drum or barricade (not required for moving operations)
- Sign on portable or permanent support
- Flagger with traffic control sign
- Barricade or drum with flashing light
- Type III barricade with flashing lights

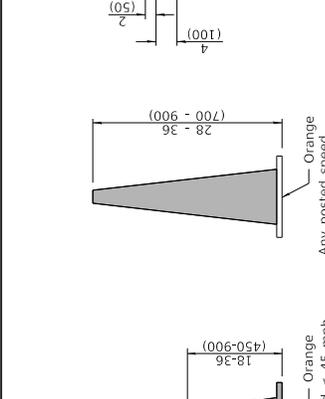
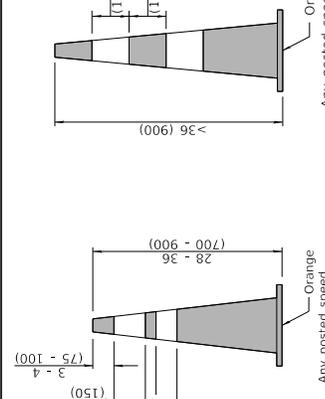
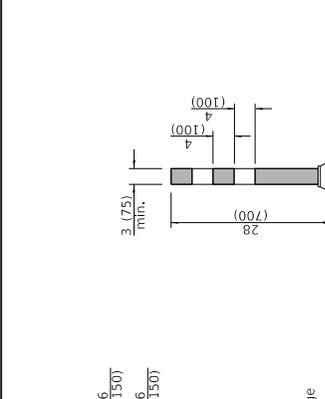
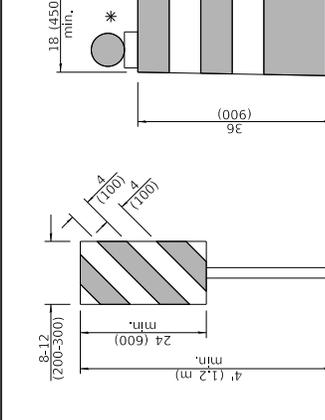
- ① Refer to SIGN SPACING TABLE for distances.
- ② For approved sideroad closures.
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Cones, drums or barricades at 20' (6 m) centers.

**GENERAL NOTES**

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.  
All dimensions are in inches (millimeters) unless otherwise shown.

URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED	
STANDARD 701501-06	
DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

Illinois Department of Transportation	
APPROVED	JANUARY 2011
 ENGINEER OF SAFETY ENGINEERING	
APPROVED	JANUARY 1, 2011
 ENGINEER OF DESIGN AND ENVIRONMENT	
ISSUED 1-1-97	



**DAYTIME USE**

**DAY OR NIGHTTIME USE**

**TUBULAR MARKER**

**VERTICAL PANEL POST MOUNTED**

**DRUM**

**CONES**

**TYPE I BARRICADE**

**TYPE II BARRICADE**

**TYPE III BARRICADE**

**DIRECTION INDICATOR BARRICADE**

**VERTICAL BARRICADE**

**DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE**

**GENERAL NOTES**

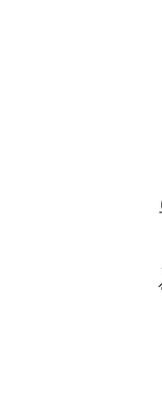
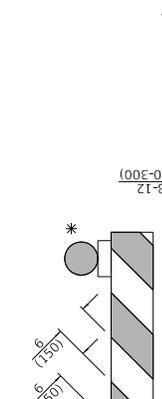
**TRAFFIC CONTROL DEVICES**

**STANDARD 701901-08**

All heights shown shall be measured above the pavement surface.

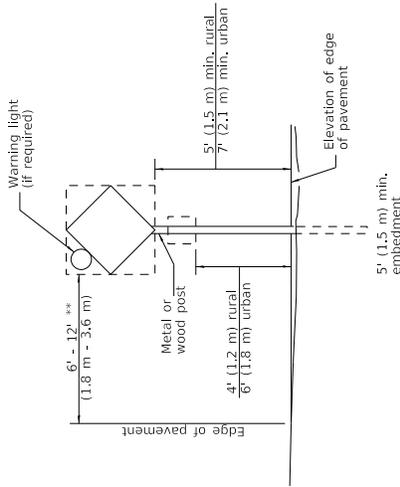
All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-19	Revised cone usage and added cones >36" (900 m) height.
1-1-18	Revised END WORK ZONE SPEED LIMIT sign from orange to white background.



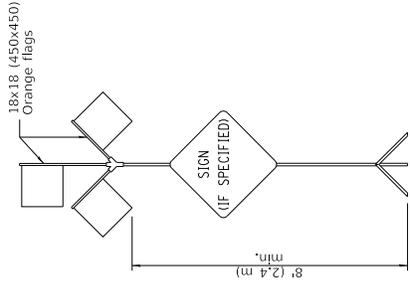
\* Warning lights (if required)

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 APPROVED: [Signature] January 1, 2019  
 ENGINEER OF SAFETY PROC. AND ENGINEERING  
 APPROVED: [Signature] January 1, 2019  
 ENGINEER OF DESIGN AND ENVIRONMENT



**POST MOUNTED SIGNS**

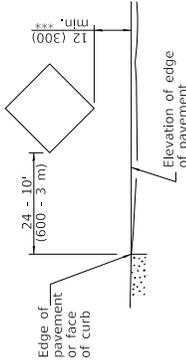
\*\* When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



**HIGH LEVEL WARNING DEVICE**

**SIGNS ON TEMPORARY SUPPORTS**

\*\*\* When work operations exceed four days, this dimension shall be 5' (1.5 m) to the top of the sign. The height shall be sufficient to be seen completely above the devices.



ROAD CONSTRUCTION NEXT X MILES  
G20-1104(0)-6036

END CONSTRUCTION  
G20-1105(0)-6024

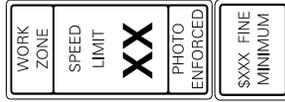
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

**WORK LIMIT SIGNING**



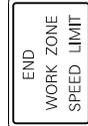
W21-1115(0)-3618

R2-1-3648

R10-1108p-3618 \*\*\*\*

R2-1106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.

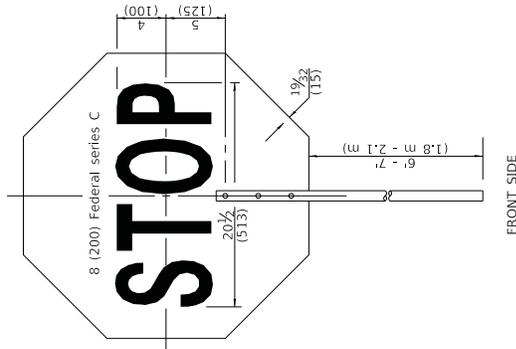


G20-1103-6036

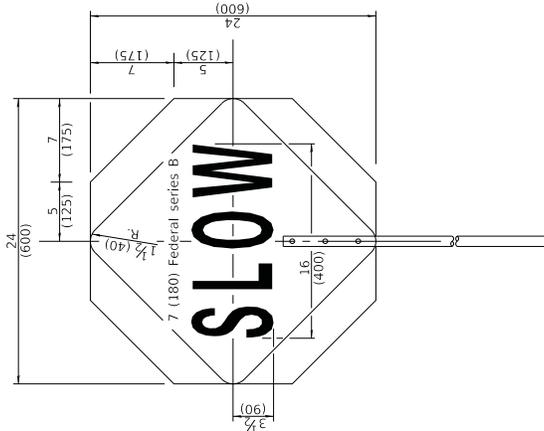
This sign shall be used when the above sign assembly is used.

**HIGHWAY CONSTRUCTION SPEED ZONE SIGNS**

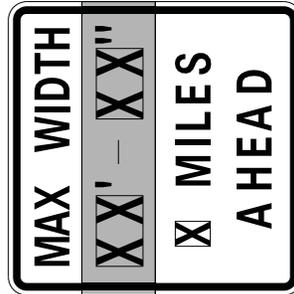
\*\*\*\* R10-1108p shall only be used along roadways under the jurisdiction of the State.



FRONT SIDE



REVERSE SIDE



W12-1103-4848

**WIDTH RESTRICTION SIGN**

XX-XX" width and X miles are variable.

Illinois Department of Transportation  
APPROVED January 1, 2019  
Cynthia C. [Signature]  
ENGINEER OF SAFETY PROC. AND ENGINEERING  
APPROVED January 1, 2019  
S. [Signature]  
ENGINEER OF DESIGN AND ENVIRONMENT

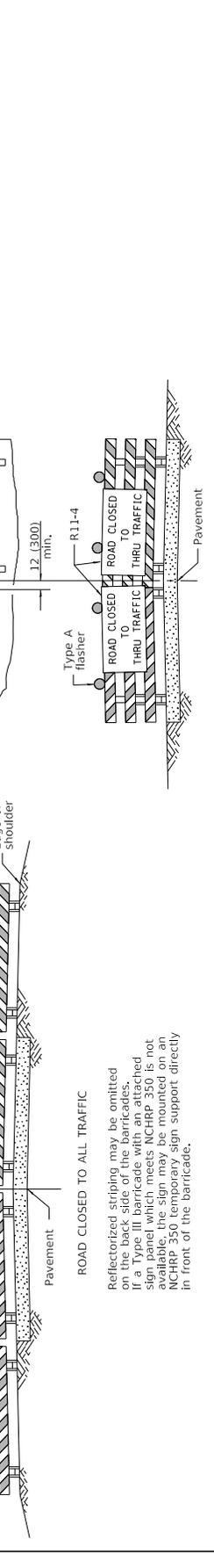
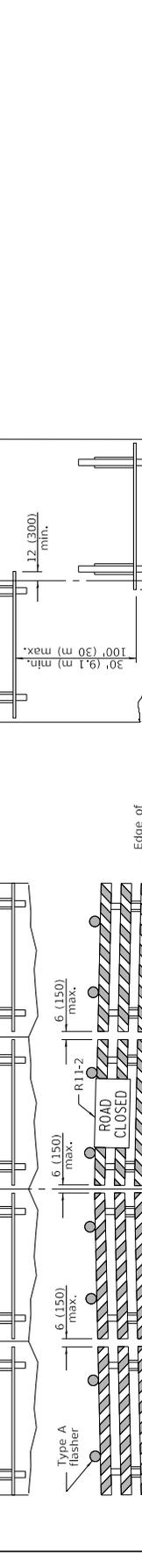
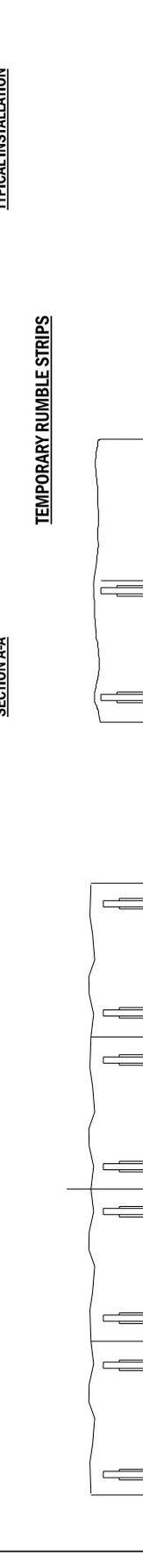
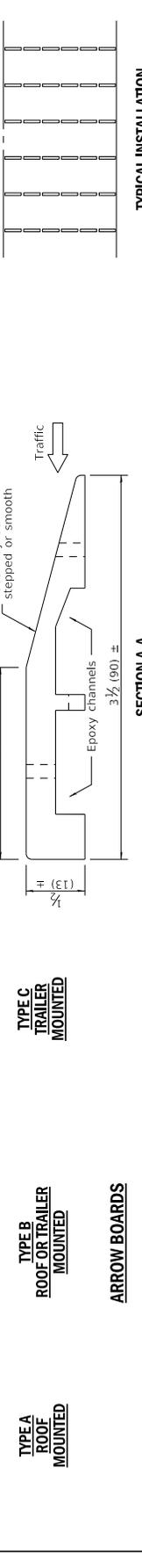
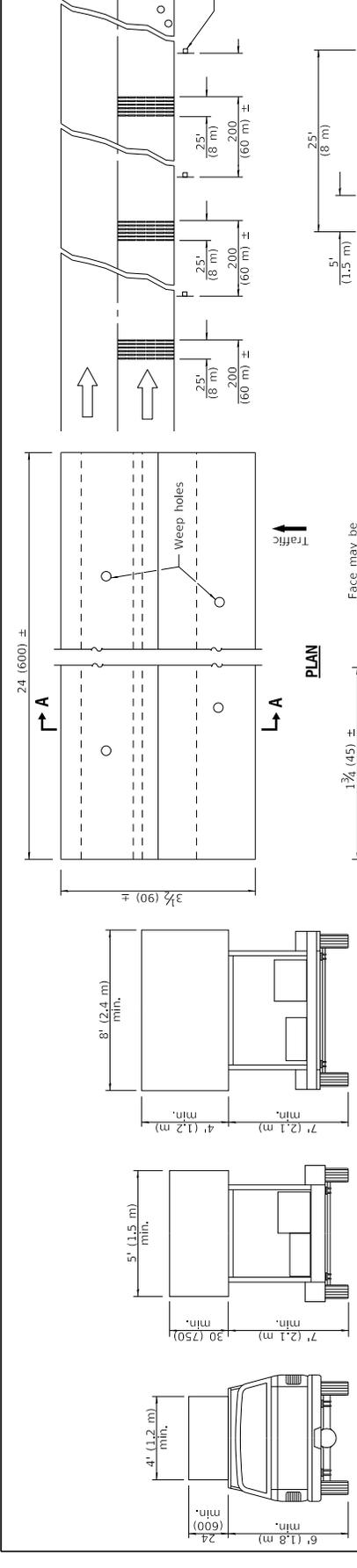
ISSUED 1-1-13

**TRAFFIC CONTROL DEVICES**

(Sheet 2 of 3)

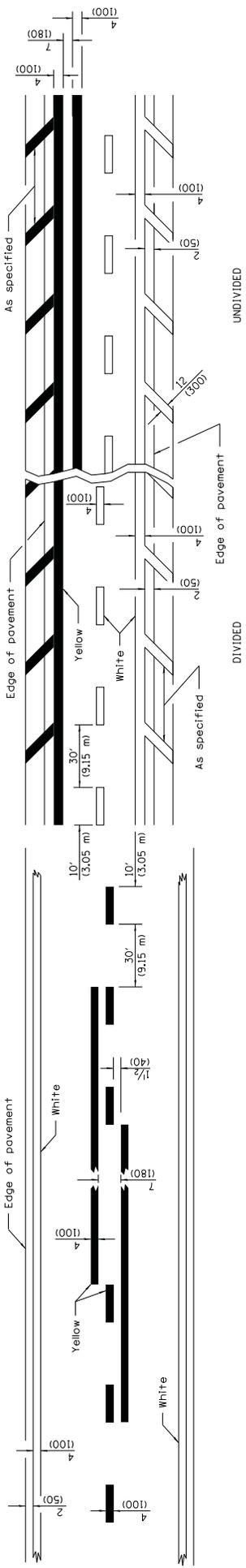
**STANDARD 701901-08**

**FLAGGER TRAFFIC CONTROL SIGN**



ReflectORIZED striping may be omitted on the back side of the barricades. If a Type III barricade will be used, the striping may be omitted. If striping is not available, the sign may be mounted on an MCHRP 350 temporary sign support directly in front of the barricade.

ReflectORIZED striping shall appear on both sides of the barricades. If a Type III barricade will be used, the striping may be omitted. If striping is not available, the signs may be mounted directly in front of the barricade.

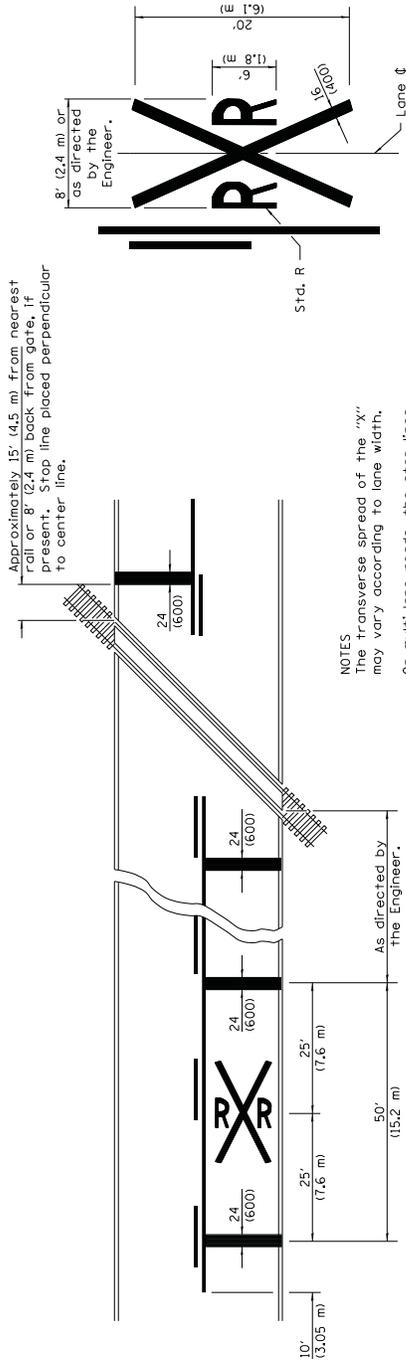


**2 LANE**

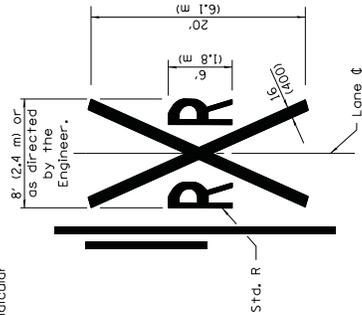
**MULTI LANE**

**UNDIVIDED MULTI LANE**

**LANE AND EDGE LINES**



**NOTES**  
 The transverse spread of the "X" may vary according to lane width. On multi-lane roads, the stop lines shall extend across all approach lanes and separate RRR symbols shall be placed adjacent to each other in each lane. When the pavement marking symbol is used, a portion of the symbol should be located directly adjacent to the advance warning Sign (M10-1) as placed by Table 2C-4, Condition B of the MUTCD.



**PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING**

DATE	REVISIONS
1-1-15	Added symbols. Revised note
1-1-14	Added bike symbol. Renamed 'LANE DROP ARROW' detail to 'LANE-REDUCTION ARROW'.

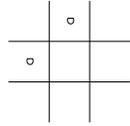
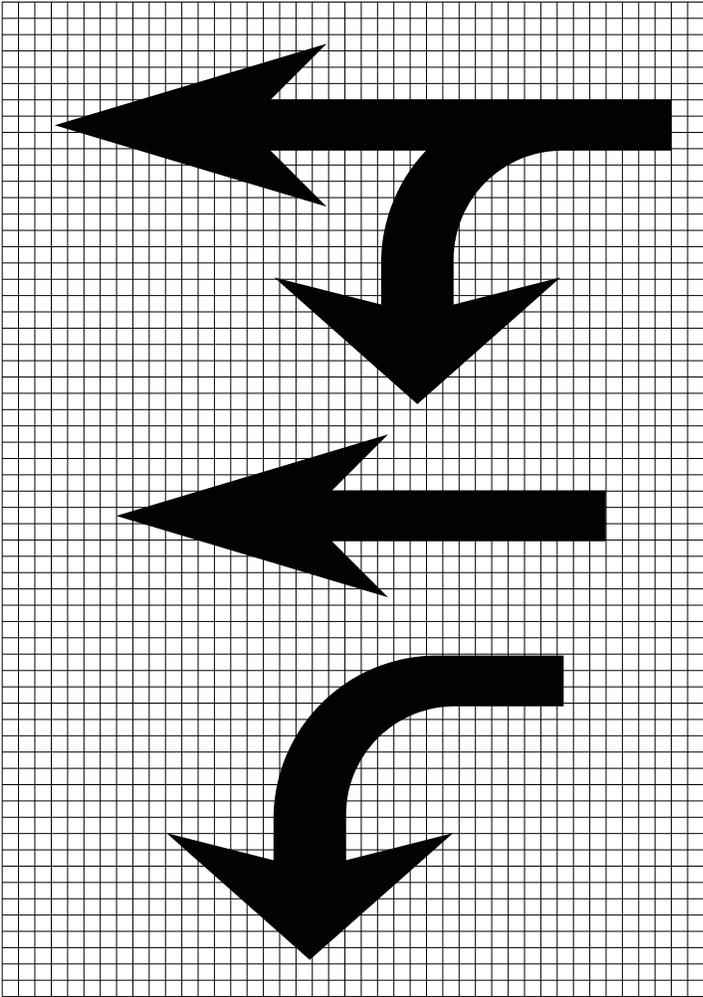
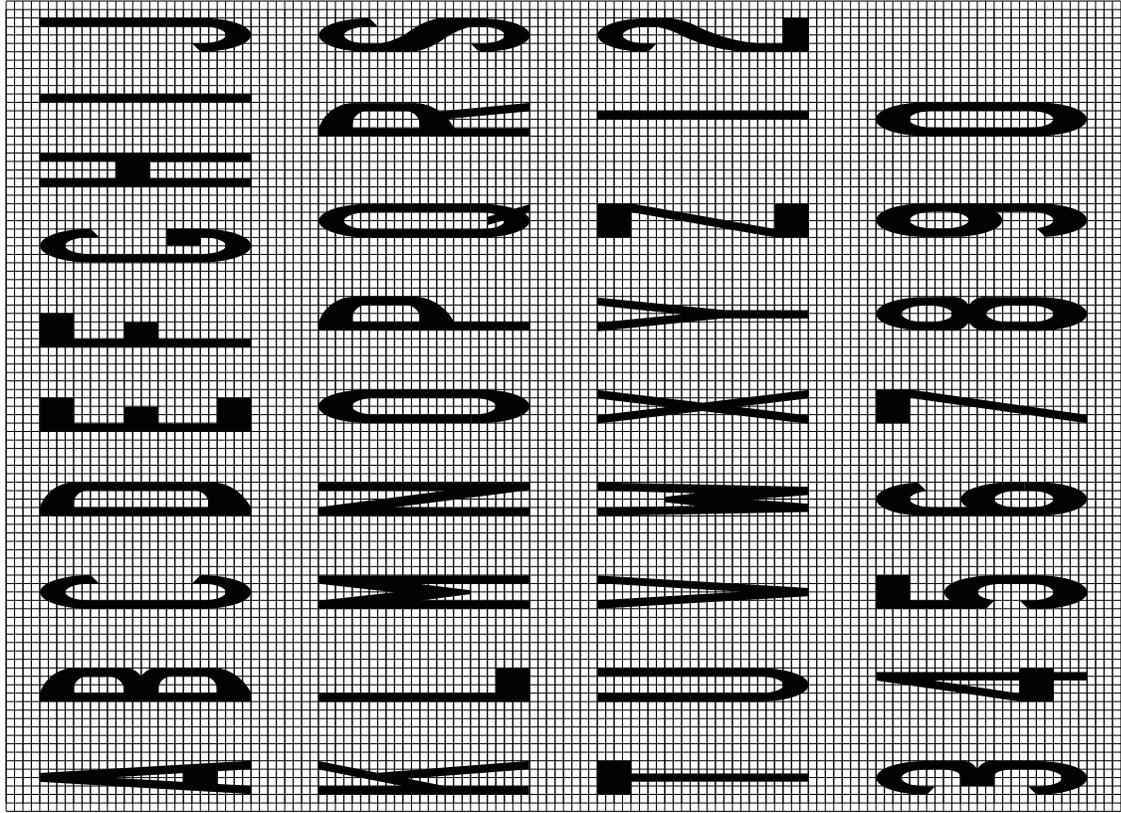
All dimensions are in inches (millimeters) unless otherwise shown.

**TYPICAL PAVEMENT MARKINGS**

**STANDARD 780001-05**

(Sheet 1 of 3)

APPROVED ENGINEER OF OPERATIONS APPROVED ENGINEER OF DESIGN AND ENVIRONMENT	January 1, 2015 January 1, 2015	Illinois Department of Transportation ISSUED 1-1-97
--	------------------------------------	--



Legend Height	Arrow Size	o
6' (1.8 m)	Small	2.9 (74)
8' (2.4 m)	Large	3.8 (96)

The space between adjacent letters or numerals should be approximately 3 (75) for 6' (1.8 m) legend and 4 (100) for 8' (2.4 m) legend.

**LETTER AND ARROW GRID SCALE**

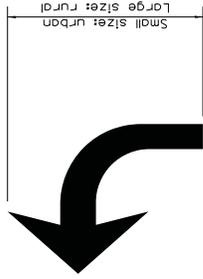
Illinois Department of Transportation  
 APPROVED January 1, 2015  
 ENGINEER OF OPERATIONS  
 APPROVED January 1, 2015  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**TYPICAL PAVEMENT MARKINGS**

(Sheet 2 of 3)

STANDARD 780001-05

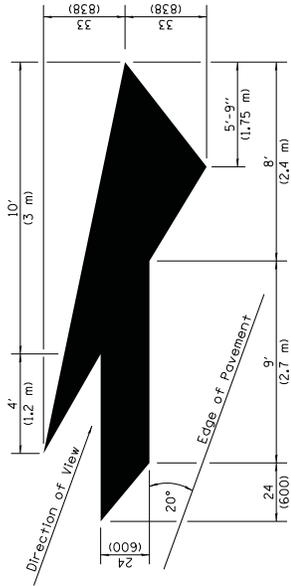


20' (6 m): urban  
50' (15 m): rural  
(Between arrow  
and word or  
between words)

**ONLY**

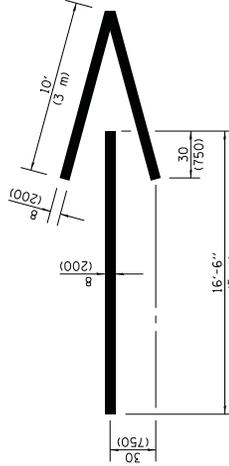
6' (1.8 m): urban  
8' (2.4 m): rural

**WORD AND ARROW LAYOUT**

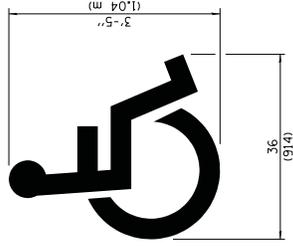


**LANE-REDUCTION ARROW**

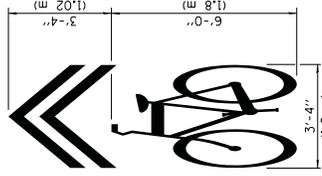
Right lane-reduction arrow shown.  
Use mirror image for left lane.



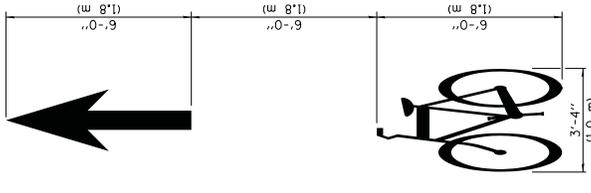
**WRONG WAY ARROW**



**INTERNATIONAL  
SYMBOL OF  
ACCESSIBILITY**



**SHARED LANE  
SYMBOL**



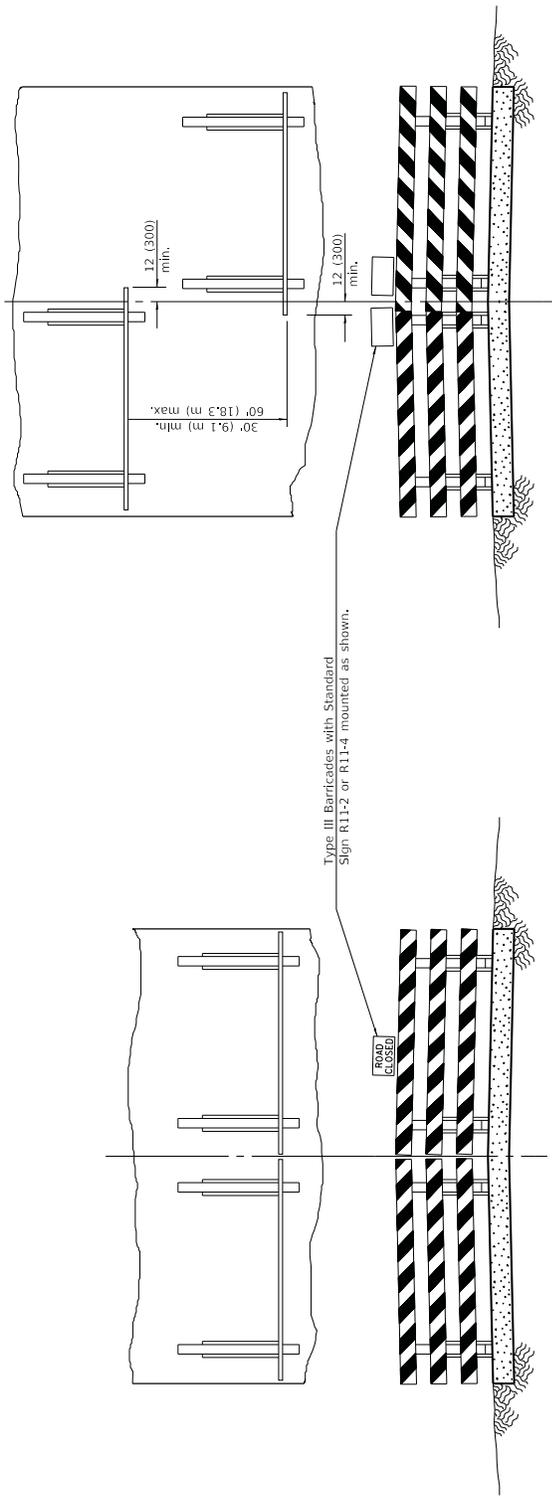
**BIKE SYMBOL**  
(Arrow is optional.)

Illinois Department of Transportation  
APPROVED January 1, 2015  
ENGINEER OF OPERATIONS  
APPROVED January 1, 2015  
ENGINEER OF DESIGN AND ENVIRONMENT

**TYPICAL PAVEMENT  
MARKINGS**

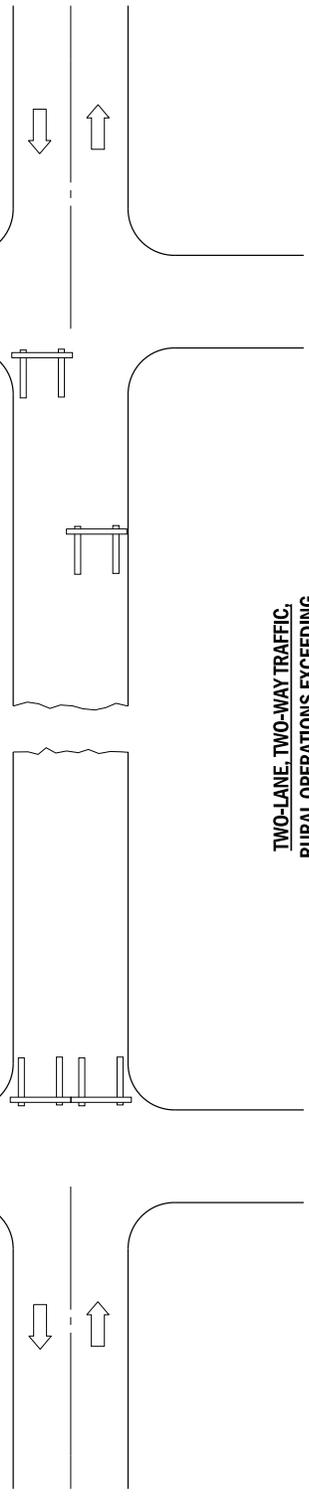
(Sheet 3 of 3)

STANDARD 780001-05



Resident traffic and day labor force's equipment to use road shoulder for passing barricade.

Use when shoulders are too narrow for passage of traffic.



**GENERAL NOTES**

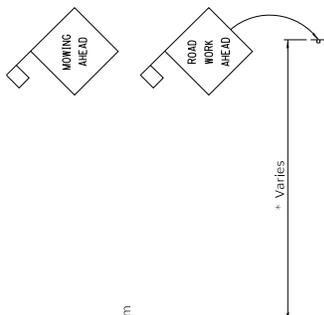
Type III barricades to be width of pavement only.  
 ReflectORIZED striping shall appear on both sides of barricades. Barricades shall be positioned so that stripes slope downward toward the side on which traffic is to pass.  
 Although not shown, advance warning signs with minimum dimensions of 36x36 (900x900) and black legends on orange reflectORIZED backgrounds shall be utilized where needed.  
 This case is for use on rural local roads where the local authority considers this protection to be appropriate for the specific job conditions.  
 All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation  
 PASSED January 1, 2009  
*Charles J. Leonard*  
 ENGINEER OF RURAL ROADS AND STREETS  
 APPROVED January 1, 2009  
*Lee S. Ho*  
 ENGINEER OF DESIGN AND ENVIRONMENT

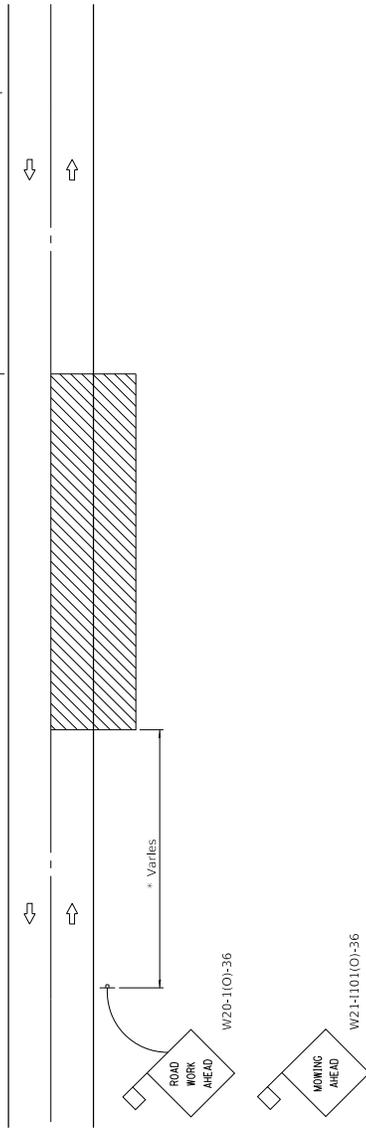
DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-98	Rev. "R11-1" to "R11-4".
	Rev. 4th General Note.

**TRAFFIC CONTROL DEVICES - DAY LABOR CONSTRUCTION**

STANDARD B.L.R. 17-4



\* Minimum distance between the sign and the work area is 700' (215 m). Maximum distance to be determined by the local authority but in no case to exceed the length of one-half day's operation or 4 miles (6 km), whichever is less.



**TWO-LANE, TWO-WAY TRAFFIC  
RURAL OPERATIONS ONLY  
DAY OPERATIONS ONLY**

**SYMBOLS**

- Work area
- Sign with 18x18 (450x450) min. orange flag attached.

**TYPICAL APPLICATIONS**

- MOWING
- SPREADING AGGREGATE
- WEED SPRAYING
- SURFACE MAINTENANCE
- BITUMINOUS RESURFACING
- CRACK POURING
- SHOULDER REPAIR
- CLEANING DITCHES

**GENERAL NOTES**

Maintenance operations shall be confined to one traffic lane, leaving the opposite lane open to traffic. At least 500' (150 m) of both traffic lanes shall be available for traffic movement between work areas at intervals not greater than 1000' (300 m).

When operations are on the pavement and stationary or moving at a speed less than 4 mph (6 kph), a ONE LANE AHEAD, or other appropriate sign, shall be installed in each direction between the ROAD WORK AHEAD sign and the work area. The distance between this sign and the work area shall be a minimum of 400' (122 m) but in no case to exceed the length of one-half day's operation or 4 miles (6 km), whichever is less. The distance between the two signs shall be approximately 400' (120 m).

All signs are to be removed at completion of the day's operation.

Any unattended obstacle, excavation, or pavement drop off greater than 3 (75) in the work area shall be protected by Type I or Type II barricades with flashing lights.

Longitudinal dimensions may be adjusted slightly to fit field conditions.

All vehicles, equipment, men, and their activities are restricted at all times to one side of the pavement.

Flashing lights or rotating beacons are required for all maintenance vehicles while in operation.

Applicable operations illustrated in Standard 701301 may be used when operations do not exceed 15 minutes on the pavement or 60 minutes on the shoulder respectively.

All warning signs shall have minimum dimensions of 36x36 (900x900) and have black legend on an orange reflectorized background.

When fluorescent signs are used, orange flags are not required.

This case is for use on rural local roads where the local authority considers this protection to be appropriate for the specific job conditions.

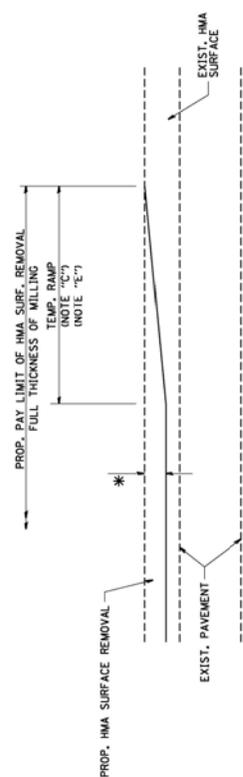
All dimensions are in inches (millimeters) unless otherwise shown.

PASSED January 1, 2015 <i>James K. Klein</i> ENGINEER OF LOCAL ROADS AND STREETS	ISSUED 1-1-07
	APPROVED January 1, 2015  ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-15	Corrected RWA sign number.
1-1-09	Switched units to English (metric). Moved one General Note.

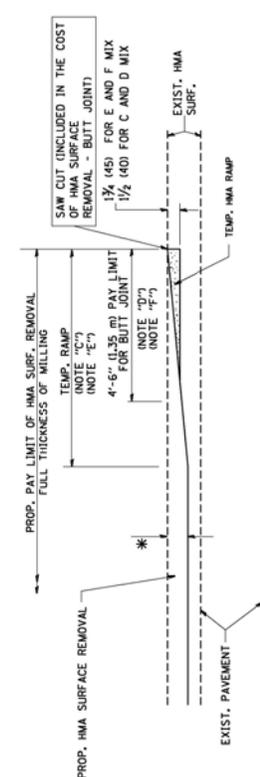
**TRAFFIC CONTROL DEVICES-  
DAY LABOR MAINTENANCE**

**STANDARD B.L.R. 18-6**



MILLED TEMPORARY RAMP  
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

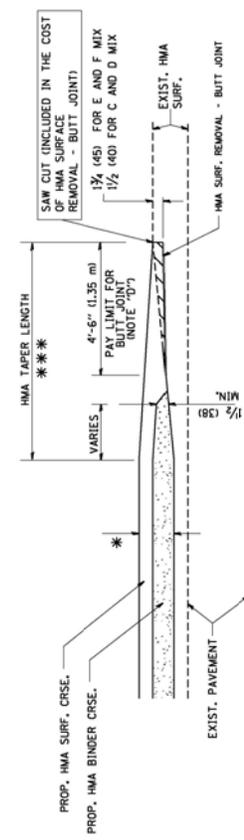
**OPTION 1**



HMA CONSTRUCTED TEMPORARY RAMP  
(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

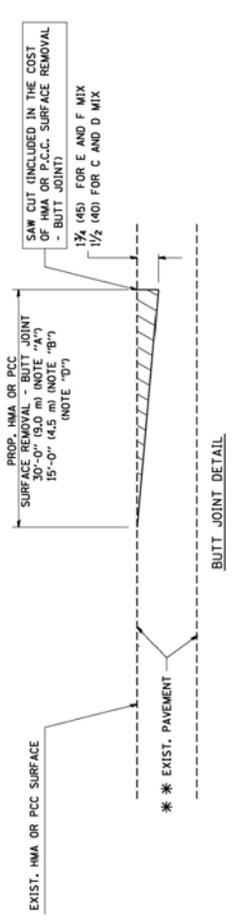
**OPTION 2**

**TYPICAL TEMPORARY RAMP**

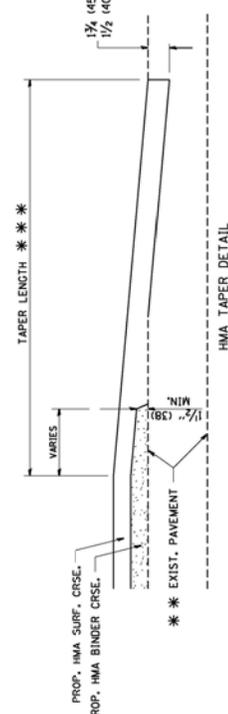


BUTT JOINT AND HMA TAPER

**TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING**



BUTT JOINT DETAIL



**TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY**

\*\* PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

**NOTES**

- A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.
- B: MINOR SIDE ROADS.
- C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.
- D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.
- E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.
- F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT
- G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL - BUTT JOINT".
- \*\* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.
- \*\* 20'-0" (6.1 m) PER 1 (25) RESURFACING NOTE "A"
- \*\* 10'-0" (3.0 m) PER 1 (25) RESURFACING NOTE "B"

**BASIS OF PAYMENT:**

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) OF HMA SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL - BUTT JOINT".

ALL DIMENSIONS ARE IN INCHES MILLIMETERS UNLESS OTHERWISE SHOWN.

FILE NAME : W:\projects\02-24\140223p	DESIGNED - M. DE YONG	REVISION - R. SHAH 10-25-94	SECTION	NO. OF SHEETS
DRAWN - A. ABBAS 03-21-97	CHECKED - M. GOMEZ 04-06-01	REVISION - R. BORO 01-01-07	BD400-05 B032	CONTRACT NO.
PLOT DATE = 1/4/2008	DATE = 05-13-90			
			SCALE: NONE	SHEET NO. 1 OF 1 SHEETS STA. TO STA.
			<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	
			<b>BUTT JOINT AND HMA TAPER DETAILS</b>	



Construction Monitoring &  
Observations  
Construction Materials Testing  
Tunnels and Underground Openings  
Geotechnical Engineering &  
Evaluation

**SEECO Consultants Inc.**  
CONSULTING ENGINEERS

Subsurface Explorations  
Foundation Analysis & Design  
Structural Rehabilitation  
Condition Surveys  
Dams and Drainage Studies

April 24, 2019

Trotter & Associates, Inc.  
40W201 Wasco Rd., Ste. D  
St. Charles, IL 60175  
Attn: Mr. Steve Cieslica, P.E.

RE: Full Depth Pavement Coring and Summary  
Report for the 2019 Road Resurfacing,  
Various Streets, North Chicago, IL  
SEECO Job No. 12156G

Dear Mr. Cieslica:

The scope of work for this project consists of obtaining fourteen (14) pavement cores with base course samples and subgrade hand auger samples to determine the thickness and type of materials of the existing pavement for the existing roadways at various locations in the City of North Chicago, Illinois. The approximate locations of the pavement cores are shown on the **Coring Location Plan** in the **Appendix** of this report. On April 23, 2019, a total of fourteen (14) pavement cores (C-1 to C-14) with base course samples and hand auger subgrade samples were obtained from the existing pavement sections by field representatives from SEECO Consultants, Inc. at various locations in the City of North Chicago, Illinois. The coreholes were located in the field by a representative of SEECO Consultants Inc.

This scope of work was authorized by you, Mr. Steve Cieslica, P.E., Vice President of Trotter and Associates, Inc. through a SEECO Consultants, Inc. proposal and contract dated March 13, 2019 which was signed by you, Mr. Cieslica and returned to SEECO Consultants, Inc. on April 15, 2019 via email.

These pavement cores were obtained from the existing pavement at various street locations throughout the City of North Chicago, Illinois using a 4" diameter diamond bit tipped core barrel attached to a portable coring machine by a senior field technician from SEECO Consultants Inc. Refer to **Table No. 1-Core Locations, North Chicago, Illinois** given below and refer to the **Coring Location Plan** given in the **Appendix** of this report for the approximate core locations. The base

course sample and the thickness were obtained with a 3" diameter steel tubular hand auger into the subgrade soil to approximate termination depths 11 inches to 14 inches below the existing pavement surface grade level. The thickness of the pavement cores and base course were measured in the field at the time of drilling and sampling and a portion of the subgrade soil was obtained with hand auger sampling and placed into glass jars with screw type lids. The pavement cores, base course samples, and subgrade samples were analyzed in SEECO Consultants Materials Testing Laboratory and data summary is given in the following table: **Table No. 2-Core Summary Table**.

**Table No. 1 – Core Locations, North Chicago, Illinois**

Core Number	Core Location – Approximate Adjacent House Address and Lane Direction
C-1	2161 Meadow Lane, SBL
C-2	2121 Meadow Lane, NBL
C-3	2925 21 <sup>st</sup> Place, WBL
C-4	2961 21 <sup>st</sup> Place, EBL
C-5	On Hillcrest Avenue, East of 101 Casimer Pulaski Drive, NBL
C-6	3128 Vickie Lane, WBL
C-7	3107 Vickie Lane, EBL
C-8	On Hillcrest Avenue, East of 3101 Vickie Lane, SBL
C-9	3116 15 <sup>th</sup> Street, WBL
C-10	3010 15 <sup>th</sup> Street, EBL
C-11	On Hillcrest Avenue, West of 3030 15 <sup>th</sup> Place, NBL
C-12	3125 15 <sup>th</sup> Place, EBL
C-13	3023 15 <sup>th</sup> Place, WBL
C-14	1540 Hillcrest Avenue, SBL

- EBL= East Bound Lane                      NBL= North Bound Lane
- WBL= West Bound Lane                  SBL= South Bound Lane

**Table No. 2- Core Summary Table**

Core No.	Approximate Bituminous Concrete Pavement Thickness (Inches)		Approximate Base Course Thickness (Inches)	Base Course Description	Subgrade Description	Remarks
C-1	Surface	1.5	9.5+	Crushed Stone	Core was terminated at 14" and subgrade was not encountered	Core Sample had 2 Asphalt Surface Course Layers, and 1 Asphalt Binder Course Layer
	Surface	1.0				
	Binder	2.0				
	<b>Total</b>	<b>4.5</b>				

Core No.	Approximate Bituminous Concrete Pavement Thickness (Inches)		Approximate Base Course Thickness (Inches)	Base Course Description	Subgrade Description	Remarks
C-2	Surface	1.5	3.5+	Well Graded Sand, Brown	Core was terminated at 14" and subgrade was not encountered	Core Sample had 1 Asphalt Surface Course Layer, 1 Asphalt Leveling Binder Course Layer and 3 Asphalt Binder Course Layers
	Leveling Binder	0.75				
	Binder	1.75				
	Binder	2.5				
	Binder	4.0				
	<b>Total</b>	<b>10.5</b>				
C-3	Surface	1.5	2	Well Graded Sand, Brown	Fill: Silty Clay, Dark Brown and Gray, Trace Sand and Gravel (CL)	Core Sample had 1 Asphalt Surface Course Layer, and 3 Asphalt Binder Course Layers
	Binder	2.5				
	Binder	3.0				
	Binder (broken up)	3.0				
	<b>Total</b>	<b>10.0</b>				
C-4	Surface	1.25	2	Well Graded Sand, Brown	Fill: Silty Clay, Dark Brown and Brown, Trace Black, Trace Sand and Gravel (CL)	Core Sample had 1 Asphalt Surface Course Layer, 1 Asphalt Binder Course Layer, and 1 Highly Deteriorated and Broken Up Asphalt Binder Course Layer
	Binder	2.75				
	Binder (highly deteriorated)	5.0				
	<b>Total</b>	<b>9.0</b>				
C-5	Surface	1.25	8.5	Crushed Stone	Fill: Silty Clay, Dark Brown and Brown, Trace Sand (CL)	Core Sample had 1 Asphalt Surface Course Layer, and 1 Asphalt Binder Course Layer
	Binder	1.25				
	<b>Total</b>	<b>2.5</b>				
C-6	Binder	2.0	6.5	Crushed Stone	Fill: Silty Clay, Dark Brown and Dark Gray, Trace Sand and Gravel (CL)	Core Sample had 1 Asphalt Surface Course Layer, and 1 Asphalt Binder Course Layer
	Binder	2.5				
	<b>Total</b>	<b>4.5</b>				

Core No.	Approximate Bituminous Concrete Pavement Thickness (Inches)		Approximate Base Course Thickness (Inches)	Base Course Description	Subgrade Description	Remarks
C-7	Binder	1.75	5.5	Crushed Stone	Fill: Silty Clay, Dark Brown and Dark Gray, Trace Sand and Gravel (CL)	Core Sample had 1 Asphalt Surface Course Layer, and 2 Asphalt Binder Course Layers
	Binder	1.25				
	Binder	2.5				
	<b>Total</b>	<b>5.5</b>				
C-8	Surface	1.75	8.25	Crushed Stone	Fill: Silty Clay, Dark Brown, Little Sand (CL)	Core Sample had 1 Asphalt Surface Course Layer, and 1 Asphalt Binder Course Layer
	Binder	2.0				
	<b>Total</b>	<b>3.75</b>				
C-9	Surface	1.75	9.75	Crushed Stone	Core was terminated at 14" and subgrade was not encountered	Core Sample had 1 Asphalt Surface Course Layer, and 1 Asphalt Binder Course Layer
	Binder	2.5				
	<b>Total</b>	<b>4.25</b>				
C-10	Surface	1.0	7.0	Crushed Stone	Fill: Well Graded Sand and Gravel, Brown (GW-SW)	Core Sample had 1 Asphalt Surface Course Layer, and 1 Asphalt Binder Course Layer
	Binder	2.0				
	<b>Total</b>	<b>3.0</b>				
C-11	Surface	1.5	4.5	Crushed Stone	Fill: Silty Clay, Dark Gray, Trace Sand and Gravel (CL)	Core Sample had 1 Asphalt Surface Course Layer, and 2 Asphalt Binder Course Layers
	Binder	2.5				
	Binder (Broken Up)	0.5				
	<b>Total</b>	<b>4.5</b>				
C-12	Surface	0.5	-	None Encountered	Fill: Silty Clay, Dark Brown and Gray, Trace Sand and Gravel (CL)	Core Sample had 1 intact Asphalt Surface Course Layer, and Highly Deteriorated and Broken Up Old Asphalt Layer
	Old Asphalt Layer (Highly Deteriorated)	8.0				
	<b>Total</b>	<b>8.5</b>				
C-13	Surface	2.0	-	None Encountered	Fill: Silty Clay, Gray, Trace Gravel (CL)	Core Sample had 2 Asphalt Surface Course Layers, and 2 Asphalt Binder Course Layers
	Surface	2.5				
	Binder	2.0				

Core No.	Approximate Bituminous Concrete Pavement Thickness (Inches)		Approximate Base Course Thickness (Inches)	Base Course Description	Subgrade Description	Remarks
	Binder	2.5				
	Total	9.0				
C-14	Surface	1.5	3.5	Crushed Stone	Fill: Silty Clay, Gray, Trace Gravel (CL)	Core Sample had 1 Asphalt Surface Course Layer, and 2 Asphalt Binder Course Layers
	Binder	2.0				
	Binder	2.0				
	Total	5.5				

Water injection was utilized during the pavement coring process to cool the portable coring bit, therefore the subgrade soil natural moisture contents and pocket penetrometer readings for the cohesive soils were disregarded due to disturbance. It should be noted that core C-4 had 5 inches of highly deteriorated and broken up asphalt binder course layer and core C-12 had 8 inches of highly deteriorated and broken up old asphalt layer.

We believe that this information is satisfactory for your present requirements. If you have any questions regarding this letter, please call the undersigned at your convenience.

Sincerely yours,

Sandip Dahal, M.S.C.E., E.I.  
 Geotechnical Staff Engineer



Collin W. Gray, S. E., P.E.  
 President

SD:arm

**APPENDIX**

**CORING LOCATION PLAN**



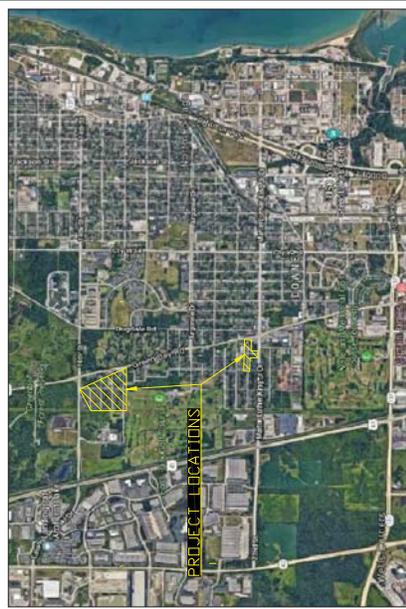
**LEGEND**

 C-1 = APPROXIMATE CORING LOCATION

 Project Sites



VICINITY MAP  
SCALE: NONE



NO.	DATE	REVISIONS	BY: DRAWN BY	SD
			DATE	SD
			APPROVED	CNC
 <b>SEECO Consultants, Inc.</b> 7350 Duwain Drive, Winley Park, Illinois 60477 OFFICE: (708) 423-1666 FAX: (708) 423-1688				
			CLIENT	Trotter & Associates, Inc.
			PROJECT NAME & LOCATION	Proposed 2019 Road Resurfacing Project Various Locations, North Chicago, IL
			DATE	4/24/2019
			SCALE	NONE
			JOB NO.	12156G
			SHEET	1 of 1
			<b>CORING LOCATION PLAN</b>	