City of Hudson Application to Break

☐ **Street** ☐ **Sidewalk** ☐ **Curb and Gutter** ☐ **Boulevard**

Applicant Name:	
Phone # or Email:	
Applicant Address:	
Work Being Done For:	
Project Location:	
Purpose:	

Application Date:		**Starting Date:**	
Completion Date:		**Extension Date:**	

We agree to comply with the City of Hudson's Standard Specifications and Detail Plates as provided. This permit is being issued in accordance with Chapter 212.2 of the Municipal Code.

We agree to maintain a clear walk, four feet wide, around any obstruction in the sidewalk; and we will not obstruct the drainage of the area. At all times we will keep the premises properly guarded by day and lighted by night with warning lights. At the expiration of this permit, we will leave said premises in as good condition as the date this permit is granted; and we will save the City harmless from any and all suits, damages and charges that may accrue from our use of said premises.

****SEE ATTACHED CONDITIONS WHICH BECOMES A PART OF THIS PERMIT****

Signature of Applicant:_____

OFFICE USE ONLY

Application Fee:	$100.00	Deposit (if applicable):	
Date Issued:		Receipt #:	

Applicant _____ Inspector _____ File _____

PRINT

CLEAR

11/12/2021

CONDITIONS

1. The Contractor shall furnish the City of Hudson Public Works Department with an Irrevocable Letter of Credit, Cashiers Check, or Bond for each street opening. The Public Works Superintendent shall determine the amount. The Contractor shall warranty each opening for a term of 1 year from the date of completion.

2. Water service abandonment shall be accomplished according to the City of Hudson Public Water Utility Specifications and approved by the Water Utility Director. The Water Utility shall be notified to be on-site prior to excavating and backfilling. (This shall also include Private Well abandonment's according to Wisconsin DNR regulations).

3. Sewer service abandonment shall be according to City of Hudson Public Works Department Specifications and approved by the Public Works Superintendent. The Public Works Department shall be notified to be on-site prior to excavating and backfilling. (This shall also include Private Sewer System abandonment's according to Wisconsin DNR regulations).

4. Sidewalks, curb, gutter and streets shall be restored to the current specifications of the City of Hudson Public Works Department.

5. The Contractor shall be in compliance with all Federal, State, and Local Safety regulations, including traffic control and notification to Diggers Hotline.

6. Specific City of Hudson requirements pertaining to this job also include:

CITY OF HUDSON
STANDARDS FOR BREAKING PERMITS

Permits are issued in accordance with Chapter 212-2, Streets and Sidewalks, of the City of Hudson Municipal Code.

CONCRETE CURB & GUTTER

1. Curb and gutter is to be removed and replaced as one.
2. Section to be removed shall be done with a clean vertical saw cut or to the closest joint.
3. Replacement to be as shown in standard construction details as provided.
4. The grade cannot be changed without authorization of the Common Council.
5. If replacement causes damage to street, the area damaged is to be cut out and repaired according to ordinance. If there is bituminous overlay in the gutter, curb and gutter replacement shall be done at the same grade as existing with overlay replaced at the same thickness.

DRIVEWAY

1. Refer to curb and gutter policy.
2. Approach to be shown in standard construction details as provided.
3. If driveway crosses sidewalk, the sidewalk must be at least 6 inches thick and shall be concrete.
4. All abandoned driveways must be removed and replaced with curb & gutter as per standards.
5. One driveway cut per lot unless authorized by Public Works Superintendent.
6. Widths are:
   14 foot maximum - single
   22 foot maximum - double
   22 foot maximum - shared driveway
7. Permit issued for driveway approach providing the driveway is extended into private property.

CONCRETE SIDEWALKS

1. Construction to be done as shown in typical sidewalk detail as provided.
2. Width shall match existing. New construction width is to be a minimum of 4 feet.
3. Thickness shall be a minimum of 4 inches. If a sidewalk crosses a driveway, it shall be a minimum of 6 inches.
4. All sidewalks shall be broomed and brushed.

All concrete shall have minimum compression strength of 3750 PSI.
The City Inspector will inspect all construction.

SECTION 32 13 14

CONCRETE WALKS, MEDIANS, AND DRIVEWAYS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Cast-in-place concrete walkways, medians, driveways, and valley gutters.

B. Related Sections:
   1. Section 00 52 10 - Agreement
   2. Section 02 41 13 - Selective Site Demolition
   3. Section 31 23 00 - Excavation and Fill
   4. Section 31 23 13 - Subgrade Preparation
   5. Section 32 11 23 - Dense Graded Base
   6. Section 32 12 01 - Flexible Paving (Municipal Projects

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:
   1. Concrete Sidewalk: Measurement shall be on the basis of in-place square yard, according to thickness of sidewalk:
      a. Payment of the Bid Item shall include the following:
         1) Concrete materials
         2) Subgrade and base preparation
         3) Placement of materials
         4) Labor and equipment
         5) Finishing
         6) Curing and protection
         7) Backfilling
      b. Excavation for concrete sidewalk shall be measured and compensated per Section 31 23 00.
      c. Dense graded base beneath concrete sidewalk shall be measured and compensated per Section 32 11 23.
   2. Remove and Replace Concrete Sidewalk: This Bid Item shall be used for all concrete sidewalk removed and replaced on this Project without regard to thickness and is assumed to be all hand placed. Measurement shall be on the basis of in-place square yard of sidewalk removed and replaced:
      a. Payment of the Bid Item shall include the following:
         1) Sawcutting at the removal limits
         2) Removal and disposal of existing concrete and excess aggregate materials per Section 02 41 13
         3) Excavation and subgrade preparation
         4) Dense graded base placement and preparation
         5) Concrete materials
         6) Placement of materials
         7) Labor and equipment
         8) Finishing
         9) Curing and protection

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10) Backfilling

3. Concrete Pedestrian Curb Ramp: Measurement shall be on the basis of square feet of ramp actually constructed:
   a. Measurement of ramp shall not include adjacent concrete curb and gutter, which shall be measured and compensated separately.
   b. Payment shall include the following:
      1) Sawcutting and removal of existing asphalt trail pavement, and disposal of excess material off the Site.
      2) Dense graded base preparation.
      3) Concrete materials, including material under truncated dome.
      4) Placement of materials.
      5) Labor and equipment.
      6) Finishing.
      7) Curing and protection.
      8) Backfilling.
   c. Excavation for concrete pedestrian ramp shall be measured and compensated per Section 31 23 00.
   d. Dense graded base beneath concrete sidewalk shall be measured and compensated per Section 32 11 23.
4. Remove and Replace Concrete Pedestrian Curb Ramp:
   a. Measurement of ramp shall be the final finished square feet of concrete placed.
   b. Measurement of ramp shall not include adjacent concrete curb and gutter, which shall be measured and compensated separately.
   c. Payment shall include the following:
      1) Sawcutting and removal of existing concrete pedestrian ramp, existing concrete sidewalk, or existing asphalt trail required to achieve the final size and shape as directed by the Engineer.
      2) Removal and disposal of existing concrete and excess aggregate materials per Section 02 41 13.
      3) Excavation and subgrade preparation
      4) Dense graded base placement and preparation
      5) Concrete materials, including material under truncated dome
      6) Placement of materials
      7) Labor and equipment
      8) Finishing
      9) Curing and protection
      10) Backfilling
5. Curb Ramp Detectable Warning Field: Measurement shall be on the basis of square feet installed:
   a. Payment shall include the following:
      1) Materials
      2) Placement of panels
      3) Joint sealing material
      4) Protection of panels during construction
   b. Radial Truncated domes will be measured along the long cord and multiplied by 2 feet to compute square footage.
6. Concrete Driveway Apron 6-Inch (Residential), Concrete Driveway Apron 7-Inch (Alley or Commercial): Measurement shall be on the basis of in-place square yard:
   a. Payment of the Bid Item shall include the following:
      1) Excavation and subgrade preparation
      2) Dense graded base placement and preparation
      3) Concrete materials (high early)
      4) Placement of materials

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5) Labor and equipment
6) Finishing
7) Curing and protection
8) Backfilling

b. Saw cutting at the removal limits and removal and disposal of existing concrete and aggregate materials will be measured and compensated per Section 02 41 13.

7. Remove and Replace Concrete Driveway Apron 6-Inch (Residential), Concrete Driveway Apron 7-Inch (Alley or Commercial): Measurement shall be on the basis of in-place square yard of Concrete Driveway Apron removed and replaced:
   a. Payment of the Bid Item shall include the following:
      1) Sawcutting at the removal limits
      2) Removal and disposal of existing concrete pavement and excess aggregate materials per Section 02 41 13
      3) Excavation and subgrade preparation
      4) Dense graded base placement and preparation
      5) Concrete materials (high early)
      6) Placement of materials
      7) Labor and equipment
      8) Finishing
      9) Curing and protection
      10) Backfilling
8. Concrete Median: Measurement shall be on the basis of in-place square yard, according to thickness of median:
   a. Payment of the Bid Item shall include the following:
      1) Excavation
      2) Dense graded base
      3) Concrete materials
      4) Subgrade and base preparation
      5) Placement of materials
      6) Labor and equipment
      7) Finishing
      8) Curing and protection
      9) Backfilling.
9. Remove and Replace Concrete Median: Measurement shall be on the basis of in-place square yard of median removed and replaced, regardless of thickness:
   a. Payment of the Bid Item shall include the following:
      1) Sawcutting at the removal limits
      2) Removal and disposal of existing concrete and excess aggregate materials per Section 02 41 13
      3) Excavation and subgrade preparation
      4) Dense graded base placement and preparation
      5) Concrete materials
      6) Placement of materials
      7) Labor and equipment
      8) Finishing
      9) Curing and protection
      10) Backfilling
10. Concrete Median Approach Nose: Measurement shall be on the basis of in-place square yard:
    a. Payment of the Bid Item shall include the following:
       1) Excavation
       2) Dense graded base
       3) Concrete materials
       4) Subgrade and base preparation

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5) Placement of materials
6) Labor and equipment
7) Finishing
8) Curing and protection
9) Backfilling

11. Remove and Replace Concrete Median Approach Nose: Measurement shall be on the basis of in-place square yard of median approach nose removed and replaced:
    a. Payment of the Bid Item shall include the following:
        1) Sawcutting at the removal limits
        2) Removal and disposal of existing concrete and excess aggregate materials per Section 02 41 13
        3) Excavation and subgrade preparation
        4) Dense graded base placement and preparation
        5) Concrete materials
        6) Placement of materials
        7) Labor and equipment
        8) Finishing
        9) Curing and protection
        10) Backfilling
12. Concrete Valley Gutter: Measurement shall be on the basis of in-place square yard:
    a. Payment of the Bid Item shall include the following:
        1) Saw cutting of existing pavement
        2) Removal and disposal of existing asphalt and all excess materials per Section 02 41 13
        3) Excavation and subgrade preparation
        4) Dense graded base
        5) Concrete materials (high early)
        6) Subgrade and dense graded base preparation
        7) Placement of materials
        8) Labor and equipment
        9) Reinforcement
        10) Finishing
        11) Curing and protection
        12) Patching adjacent asphalt pavement per Section 32 12 01
13. Remove and Replace Concrete Valley Gutter: Measurement shall be on the basis of in-place square yard:
    a. Payment of the Bid Item shall include the following:
        1) Sawcutting of existing pavement
        2) Removal and disposal of existing concrete, asphalt, and excess aggregate materials per Section 02 41 13
        3) Excavation and subgrade preparation
        4) Dense graded base
        5) Concrete materials (high early)
        6) Subgrade and dense graded base preparation
        7) Placement of materials
        8) Labor and equipment
        9) Reinforcement
        10) Finishing
        11) Curing and protection
        12) Patch adjacent asphalt pavement per Section 32 12 01
14. High Capacity Concrete Apron: Measurement shall be on the basis of each:
    a. Payment of the Bid Item shall include the following:
        1) Dense graded base
        2) Concrete materials (6" thick)

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3) Subgrade and dense graded base preparation
4) Placement of materials
5) Labor and equipment
6) Reinforcement
7) Finishing
8) Curing and protection
9) Backfilling

15. Concrete Spillway: Measurement will be by the square foot of spillway constructed:
    a. Payment of the Bid Item shall include the following:
        1) Excavation and subgrade preparation
        2) Removal and disposal of all excess materials per Section 02 41 13
        3) Dense graded base placement and preparation
        4) Concrete materials
        5) Placement of materials
        6) Labor and equipment
        7) Finishing
        8) Curing and protection
        9) Backfilling
16. Concrete Truck Apron: Measurement shall be on the basis of in-place square yard, according to thickness of apron:
    a. Payment of the Bid Item shall include the following:
        1) Concrete materials and tie bars
        2) Subgrade and base preparation
        3) Placement of materials
        4) Placement of tie bars at 36" spacing o.c. between the concrete pavement and any adjacent curb and gutter
        5) Finishing
        6) Curing and protection
        7) Backfilling
    b. Dense graded base beneath concrete pavement shall be measured and compensated per Section 32 11 23.
17. All other Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCES

A. Wisconsin Department of Transportation "Standard Specifications for Highway and Structure Construction", 2019 Edition (WisDOT Spec.):
    1. 105 - Control of the Work
    2. 207 - Embankment
    3. 415 - Concrete Pavement
    4. 501 - Concrete
    5. 602 - Concrete Sidewalks, Loading Zones, Safety Islands and Steps
    6. 716 - QMP Ancillary Concrete

1.04 SUBMITTALS

A. Submit one (1) 7-day and two (2) 28-day concrete cylinder test results per concrete mix per day.

B. Submit WisDOT approved design mix for each concrete mix designation used. If a WisDOT approved mix design is unavailable, the Engineer will establish the job mix proportions.

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1.05 SEQUENCING AND SCHEDULING

A. Prime Contractor is responsible for scheduling an onsite pre-pour meeting with the Owner, Engineer, Concrete Subcontractor (if appropriate), including the Concrete Forman a minimum 24 hours prior to the pouring operations.

B. Provide notice by 2:00 pm of the day prior to any concrete curb and placement to allow for scheduling of the following activities. Notice must include mix designation, start time of placement, plant producing concrete, and Forman onsite during placement:
   1. Dense graded base density tests (per Section 32 11 23) prior to any concrete curb being placed.
   2. Inspection of curbing operations by a City representative. No curbing will be allowed or accepted without inspection.
   3. Concrete field and plant testing if required.

C. Complete construction of concrete pedestrian ramps prior to the paving of asphalt path and construction of the concrete sidewalk.

D. Complete construction of concrete sidewalks following the paving of the asphalt lower lift and following the installation of Private Utilities.

E. Begin construction of the concrete driveway aprons no sooner than 24 hours after placement of the adjacent concrete curb and gutter with completion within 5 days of curb placement, or per applicable in Milestones per Section 00 52 10.

F. Construct concrete medians no sooner than 72 hours after placement of the concrete curb and gutter.

G. Construct concrete valley gutter after asphalt lower lift placement and prior to placement of asphalt upper lift:
   1. On street rehabilitation projects, Valley Gutters shall be constructed in halves to provide access for residents.

H. Complete the Patch Concrete Driveway to allow access to driveway within 7 calendar days, beginning on the day of the removals, or per applicable in Milestones per Section 00 52 10.

I. All concrete placed after October 1 must be high early strength concrete, unless otherwise approved by City Engineer.

J. Concrete placement will not be allowed after October 15, unless otherwise approved by City Engineer.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete to conform to WisDOT Spec. 501, except as modified herein:
   1. Portland Cement: Conform to WisDOT Spec. 501.2.1:
      a. Concrete shall be air-entrained.
   2. Air-Entraining Admixtures: conform to WisDOT Spec. 501.2.2:
      a. Not to be added to the concrete mixtures in the field without approval from Engineer.
   3. Mix Designation and Classification:
      a. Sidewalk, Driveways, Pedestrian Ramps, and Medians: Grade A.

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b. Valley gutters: Must use high early strength.
c. 28-day compressive strength requirement: 4,500 psi.

B. Curb Ramp Detectable Warning Field: Approved products:
1. East Jordan Iron Works - Natural Patina
2. Neenah Foundry Company - Natural Patina

C. Joint Filler: Conform to WisDOT Spec. 415.2.3.

D. Curing Compound: Conform to WisDOT Spec. 415.2.4:
1. Curing compound shall contain a fugitive dye.

E. Sub-Grade Base Material:
1. Granular Backfill: Conform to Section 31 23 00.
2. Dense Graded Base: Conforming to Section 32 11 23.

F. High Early Concrete:
1. Conform to WisDOT 501.2, except as modified herein:
a. High early concrete shall be designed to provide a maximum water/cementitious ratio of 0.40.
b. High early concrete shall be designed to provide a minimum flexural strength of 500 psi and a minimum compressive strength of 3,000 psi in 48 hours.
c. Concrete valley gutter shall be constructed using high early concrete.
d. High early concrete may be included as a separate Bid Item or as an Engineer ordered material. In absence of a separate Bid Item for high early strength concrete, compensation will be at an agreed upon price not to exceed 20 percent above the Contract cubic yard price for standard strength concrete for the quantity ordered by the Engineer. The price shall be agreed upon prior to placement.

PART 3 EXECUTION

3.01 GENERAL

A. Provide copies of batch tickets for concrete mix at the time of material delivery to Site.

B. Construct concrete sidewalk, pedestrian ramps, driveways, medians, median approach noses, and valley gutters at the locations and elevations indicated on the Drawings.

C. Construct sidewalks and medians to conform to the typical section shown on the Drawings.

D. Construct concrete driveway aprons to conform to Standard Detail Plates STR-3, STR-4 and STR-5.

E. Construct concrete median approach nose per Standard Plate STR-33.

F. Construct concrete valley gutters to conform to Standard Detail Plate STR-11.

G. Construct High Capacity Concrete Apron to conform to Standard Detail Plate STR-34 and STR-35.

H. Construct concrete curb ramp to conform to WisDOT Standard Details, current version.

I. Verify locations with Engineer in the field prior to construction.

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J. The completed concrete work shall give the appearance of uniformity in surface contour and texture, and shall be accurately constructed to line and grade. The required joints, edges, and flow lines shall show neat workmanship. The concrete work shall be in full accordance with the Standard Detail Drawings. Any deviations from the Standard Detailed Drawings may be cause for removal and replacement at the Contractor's expense. No price reductions will be allowed as a means to correct deviations.

K. Re-tempering of concrete which has partially hardened with or without additional materials or water is prohibited.

L. Remove and Replace Concrete Sidewalks, Concrete Pedestrian Ramps, Concrete Driveways, Concrete Medians, Concrete Median Approach Noses:
   1. Perform patching at locations shown on the Drawings or as directed by the Engineer per Standard Detail STR-12, STR-13 and STR-14.
   2. Remove existing concrete per Section 02 41 13.
   3. Saw cut existing concrete per Section 02 41 13.
   4. Excavate to the bottom of the dense graded base layer and dispose of the material per Section 31 23 00.
   5. Place dense graded base per Section 32 11 23.
   6. Place concrete pavement.

M. Construct Concrete Spillway:
   1. Construct a concrete spillway at locations shown on the Drawings or as directed by the Engineer.
   2. 6 inches thick (minimum).
   3. 5 feet wide (minimum).
   4. Construct spillway such that the storm water is conveyed directly to the bottom of the drainage way, thereby minimizing erosion in the general area.

N. Concrete washout locations shall conform to the requirements of the NPDES Permit.

3.02 FOUNDATION PREPARATIONS

A. Placement of the dense graded base or granular material to support the concrete work shall conform to Section 32 11 23 or Section 31 23 13. Compaction of subgrade base shall conform to WisDOT Spec. 207.3.6.3, Special Compaction.

B. The foundation shall be approved by the Engineer prior to placement of concrete material.

3.03 FORMS

A. Conform to WisDOT Spec. 602.3.2.2.

3.04 JOINT CONSTRUCTION

A. Conform to WisDOT Spec. 602.3.2.5, except as modified herein:
   1. Match joints of adjacent concrete work.
   2. Transverse expansion joints for sidewalk:
      a. Concrete areas that are poured separately.
   3. Contraction joints shall be sawed.

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3.05 METAL REINFORCEMENT

A. Conform to WisDOT Spec. 602.3.2.4:
   1. Install 3 No. 4 steel reinforcing rods in lower portion of the valley gutter section with minimum 2-inches coverage on all sides.

3.06 PLACING AND FINISHING

A. Conform to WisDOT Spec. 602.3.2.3, except as modified herein:
   1. Any deviation in the design curvature of concrete edges in excess of 3/8 of an inch, measured with a 10-foot straight edge, will be considered unacceptable.
   2. Any surface area allowing the entrapment of water at a depth 1/8 inch or greater will be considered unacceptable.
   3. Unacceptable work shall be removed and replaced with acceptable Work as directed by the Engineer. Acceptance of Work by price reduction will not be allowed.

B. Curb Ramp Detectable Warning Field:
   1. Panels - Conform to the manufacturer's recommendations for placement.
   2. Panels shall be placed (wet set) on a minimum of 6-inches concrete and prior to finishing the adjacent concrete surface of the pedestrian ramp. The joint between the panel and concrete shall be finished with 1/2-inch radius edging tool.
   3. Conform to WisDOT Standard Detail Drawing 8D5-19f for specified surface pattern dimensions. Refer to the Drawings for actual ramp size, shape, and slopes.
   4. Multiple panels shall be rectangular or radial plates of equal size and shall be joined together per the manufacturer's recommendation.
   5. Joint space between panels shall be no greater than 1/4-inch in width.

3.07 CONCRETE CURING AND PROTECTION

A. Conform to WisDOT Spec. 415.3.12.1 and 415.3.12.2 (Impervious Coating Method), except as modified herein:
   1. Coat all surfaces with membrane curing compound within 30 minutes after finishing at the specified rate.
   2. The curing compound must contain a fugitive dye and be applied at 2 different directions perpendicular to each other to provide a uniform solid white opaque coverage (equal to a white sheet of typing paper) on all exposed concrete surfaces.
   3. A second application of membrane curing compound shall be applied 4 to 8 hours after the first application at the specified rate.
   4. Protect concrete against hot weather conditions as defined in the PCA Design and Control of Concrete Mixtures as when the rate of evaporation of bleed water per hour exceeds 0.2 lb. of water per square foot per hour. A chart published by the ACI and PCA can be used to predict the bleed water rate
   5. Cold weather curing, when temperatures fall below 40 degrees F during placement or within the following 24 hours, shall conform to WisDOT Spec. 415.3.15, except as modified below:
      a. If temperatures are projected to fall below 32 degrees within 24 hours of concrete placement, insulated blankets shall be using for curing.
      b. All costs associated with blanket curing shall be incurred by the Contractor.
   6. Failure to comply with these provisions will result in a price reduction for the concrete Bid Item involved in accordance with WisDOT Spec. 105.3.
   7. The freshly finished surface shall be protected, surfaces pitted by rain will be considered unacceptable.

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8. The Contractor is responsible for protecting their work until final acceptance. Removal and replacement of any concrete section damaged by pedestrians, bicycles, automobile traffic, rain, cold weather, or other causes occurring prior to final acceptance shall be the responsibility of the Contractor.

3.08 BACKFILLING

A. Conform to WisDOT Spec. 602.3.2.7, except as modified herein,
   1. Backfill to protect the concrete no sooner than 72 hours after placement of the concrete.

3.09 FIELD QUALITY CONTROL

A. Any sidewalk, driveway, pedestrian ramp, etc. damaged by the Contractor shall be removed and replaced by the Contractor, and will be incidental to the Project.

B. Visual Inspection - Placement of any concrete panel with defects or damage caused during construction as noted below shall be removed and replaced by the Contractor, and will be incidental to the Project:
   1. Pop outs exceeding 7 occurrences per square yard.
   2. Mortar Flaking.
   3. Scaling.
   4. Any cracking not following contraction or expansion joints.
   5. Shrinkage cracking.

C. Conform to WisDOT Spec. 716.2.1, except as modified herein:
   1. 1 set of three compressive strength cylinders per mix, per placement method, per day.

D. The Owner may have an independent testing laboratory perform random QV testing. The test locations shall be determined by the Engineer:
   1. 1 air entrainment test per day, per Project (per concrete mix).
   2. 1 slump test per day, per Project (per concrete mix).
   3. 1 set of cylinders for compression tests per day, per Project (per concrete mix):
      a. An additional cylinder will be cast to be tested when concrete has reached maturity.

END OF SECTION

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SECTION 32 16 13

CONCRETE CURBS AND GUTTERS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Cast-in-place concrete curb and gutter.

B. Related Sections:
   1. Section 00 52 10 - Agreement Form
   2. Section 02 41 13 - Selective Site Demolition
   3. Section 31 10 00 - Site Clearing
   4. Section 32 11 23 - Dense Graded Base
   5. Section 32 12 01 - Flexible Paving (Municipal Projects)
   6. Section 32 12 14 - Concrete Walks, Medians, and Driveways

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment:
   1. Concrete Curb and Gutter: Measurement shall be by the linear foot measured along the face of the curb at the gutter line for each type. Payment shall include materials, preparation, placement, finishing, curing, protection, reinforcement, and backfilling. Measurement shall not include frames/castings that are located along the face of curb.
   2. Remove and Replace Concrete Curb and Gutter: This Bid Item shall be used for all concrete curb and gutter removed and replaced on this Project without regard to type or size and is assumed to be all hand placed. Measurement will be per linear foot along the face of curb. Payment will include all costs, including labor, materials, and equipment necessary to complete the work, including sawcutting at the removal limits and disposal of the material per Section 02 41 13, stripping and offsite disposal of soil per Section 31 10 00, construction of new curb and gutter, and patching of adjacent street.
   3. No separate measurement or payment for modifications at driveways, pedestrian ramps, transition sections, or D24 curb installed at catch basins and radii.
   4. All other Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCES

A. American Society of Testing Materials (ASTM):
   1. C260 - Air-Entraining Admixtures for Concrete

B. Wisconsin Department of Transportation "Standard Specifications for Highway and Structure Construction", 2019 Edition (WisDOT Spec.):
   1. 415 - Concrete Pavement
   2. 501 - Concrete
   3. 601 - Concrete Curb and Gutter
   4. 716 - QMP Ancillary Concrete

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1.04 SUBMITTALS

A. Submit one (1) 7-day and two (2) 28-day concrete cylinder test results per concrete mix per day.

B. Submit WisDOT approved design mix for each concrete mix designation used. If a WisDOT approved mix design is unavailable, the Engineer will establish the job mix proportions.

1.05 SEQUENCING AND SCHEDULING

A. Prime Contractor is responsible for scheduling an onsite pre-pour meeting with the Owner, Engineer, Concrete Subcontractor (if appropriate), including the Concrete Forman a minimum 24 hours prior to the pouring operations.

B. Provide notice by 2:00 pm of the day prior to any concrete curb and placement to allow for scheduling of the following activities. Notice must include mix designation, start time of placement, plant producing concrete, and Forman onsite during placement:
   1. Dense graded base density tests (per Section 32 11 23) prior to any concrete curb being placed.
   2. Inspection of curbing operations by a City representative, no curbing will be allowed or accepted without inspection.
   3. Concrete field and plant testing if required.

C. All temporary stockpiles located within the boulevard area or other areas behind the concrete curb and gutter must be removed prior to curb placement.

D. Concrete curb and gutter construction precedes installation of pavement.

E. Horizontal and vertical alignment established with "stringline" and or forms for concrete curb and gutter placement shall be approved by the Engineer prior to concrete placement. Notify the Engineer a minimum of 4 hours (one half day) prior to placement of concrete to allow for review and approval of "stringline" or forms.

F. All concrete placed after October 1 must be high early strength concrete, unless otherwise approved by City Engineer.

G. Concrete placement will not be allowed after October 15, unless otherwise approved by City Engineer.

PART 2 PRODUCTS

2.01 MATERIALS

A. Concrete to Conform to WisDOT Spec. 501, except as modified herein:
   1. Portland Cement: Conform to WisDOT Spec. 501.2:
      a. Concrete shall be air-entrained.
   2. Air-Entraining Admixtures: Conform to WisDOT Spec. 501.2.2:
      a. Not to be added to the concrete mixtures in the field without approval from Engineer.
   3. Mix Designation and Classification for Concrete Curb and Gutter:
      a. Manual Placement: Grade A.
      b. Slip Form Placement: Grade A or A-S2.
      c. 28-day compressive strength requirement: 4,500 psi.

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B. High Early Strength Concrete
   1. Conform to WisDOT Spec. 501.2, except as modified herein:
      a. High early concrete shall be designed to provide a maximum water/cementitous ratio of 0.40.
      b. High early concrete shall be designed to provide a minimum flexural strength of 500 psi and a minimum compressive strength of 3,000 psi in 48 hours.
      c. High early concrete may be included as a separate Bid Item or as an Engineer ordered material. In absence of a separate Bid Item for high early strength concrete, compensation will be at an agreed upon price not to exceed 20 percent above the Contract cubic yard price for standard strength concrete for the quantity ordered by the Engineer. The price shall be agreed upon prior to placement.

C. Joint Filler: Conform to WisDOT Spec. 415.2.3.

D. Curing Compound: Conform to WisDOT Spec. 415.2.4:
   1. Curing compound shall contain a fugitive dye.

PART 3 EXECUTION

3.01 GENERAL

A. Provide copies of batch tickets for concrete mix at the time of material delivery to the Site.

B. Construct concrete curb and gutter at the locations and elevations indicated on the Drawings. Any concrete curb and gutter that is longer than 200 linear feet continuously, shall be placed using slip form placement.

C. Construct the style or type of curb and gutter as shown on the Drawings.

D. Construct intersection curb radii and transitions sections to conform to the detail on the Drawings.

E. Construct transition sections at inlet structures to conform to the detail on the Drawings.

F. Construct concrete curb ramp depressions to conform to the detail on the Drawings.

G. Construct curb transitions for driveways to conform to the detail on the Drawings. Locations to be verified by Engineer at the time of construction.

H. The completed concrete work shall give the appearance of uniformity in surface contour and texture, and shall be accurately constructed to line and grade. The required joints, edges, and flow lines shall show neat workmanship. The concrete curb shall be in full accordance with the Standard Detail Drawings. Any deviations from the Standard Detailed Drawings may be cause for removal and replacement at the Contractor's expense. No price reduction will be allowed as a means to correct the deviations.

I. Re-tempering of the concrete which has partially hardened with or without additional materials or water is prohibited.

J. Concrete curb and gutter damaged by the Contractor during construction operations shall be removed and replaced in accordance to the City's Standard Detail Drawings and requirements.

K. Concrete washout locations shall conform to the requirements of the NPDES.

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3.02 FOUNDATION PREPARATIONS

A. Support on a compacted dense graded base extending 1 foot behind the back of curb:
   1. Conform to typical sections as shown on the Drawings.
   2. Conform to Section 32 11 23 and WisDOT Spec. 301.3.4.3.

3.03 FORMS

A. Conform to WisDOT Spec. 601.3.3.

3.04 JOINT CONSTRUCTION

A. Conform to WisDOT Spec. 601.3, except as modified herein:
   1. Contraction joints: 10-foot intervals.
   2. Transverse expansion joints:
      a. 10' from inlet
      b. 300' intervals
      c. Adjacent to hand placed curb
   3. Contraction joints shall be formed.

3.05 METAL REINFORCEMENT

A. Conform to WisDOT Spec. 415.2.2:
   1. Metal reinforcement not required 10' on each side of catch basins or service trenches.

3.06 PLACING AND FINISHING

A. Conform to WisDOT Spec. 601.3.4 and 601.3.5, except as modified herein:
   1. The top surface of the curb and gutter shall have a brush finish at right angles to the curb line.

3.07 CONCRETE CURING AND PROTECTION

A. Conform to WisDOT Spec. 415.3.12.1 and 415.3.12.2 (Impervious Coating Method), except as modified herein:
   1. Coat all surfaces with membrane curing compound within 30 minutes of concrete placement unless otherwise directed by Engineer.
   2. The curing compound must be applied in 2 different directions perpendicular to each other to provide a uniform solid white opaque coverage (equal to a white sheet of typing paper) on all exposed concrete surfaces.
   3. A second application of membrane curing compound shall be applied 4 to 8 hours after the first application at the specified rate.
   4. Protect concrete against hot weather conditions as defined in the PCA Design and Control of Concrete Mixtures as when the rate of evaporation of bleed water per hour exceeds 0.2 lb. of water per square foot per hour. A chart published by the ACI and PCA can be used to predict the bleed water rate.
   5. Cold weather curing, when temperatures fall below 40 degrees during placement or within the following 24 hours, shall conform to WisDOT Spec. 415.3.15, except as modified below:
      a. If temperatures are projected to fall below 32 degrees within 24 hours of concrete placement, insulated blankets shall be using for curing.
      b. All costs associated with blanket curing shall be incurred by the Contractor.
   6. Failure to comply with these provisions will result in a price reduction for the concrete curb and gutter Bid Item involved in accordance with WisDOT Spec. 105.3.

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7. The freshly finished surface shall be protected. Surfaces pitted by rain will be considered unacceptable.
8. The Contractor is responsible for protecting their work until final acceptance. Removal and replacement of any curb section damaged by pedestrians, bicycles, automobile traffic, rain, cold weather, or other causes occurring prior to final acceptance shall be the responsibility of the Contractor.

3.08 BACKFILLING

A. Initial Backfilling:
   a. Follow the 72-hours curing period with completion within 6 days of original placement, or per applicable in Milestones per Section 00 52 10.
   b. Must be flush with top of curb elevation.

B. Final Grading:
   a. Following completion of private utility work by others.

C. Curb damaged during backfilling is the responsibility of the Contractor.

3.09 WORKMANSHIP AND FINISH

A. Conform to WisDOT Spec. 601.3, except as modified herein:
   1. Any deviation in the design curvature of concrete edges in excess of 3/8 of an inch, measured with a 10-foot straight edge, will be considered unacceptable.
   2. Acceptance of Work by price reduction will not be allowed.

3.10 FIELD QUALITY CONTROL

A. Any curb damaged by the Contractor shall be removed and replaced by the Contractor, and will be incidental to the Project.

B. Visual Inspection - Placement of any concrete panel with defects or damage caused during construction as noted below shall be removed and replaced by the Contractor, and will be incidental to the Project:
   1. Popouts exceeding 7 occurrences per square yard
   2. Mortar Flaking
   3. Scaling
   4. Any cracking not following contraction or expansion joints
   5. Shrinkage cracking

C. Conform to WisDOT Spec. 716.2.1, except as modified herein:
   1. 1 set of three compressive strength cylinders per mix, per placement method, per day.

D. The Owner may have an independent testing laboratory perform random QV testing. The test locations shall be determined by the Engineer:
   1. 1 air entrainment test per day, per Project (per concrete mix).
   2. 1 slump test per day, per Project (per concrete mix).
   3. 1 set of cylinders for compression tests per day, per Project (per concrete mix):
      a. An additional cylinder will be cast to be tested when concrete has reached maturity.

END OF SECTION

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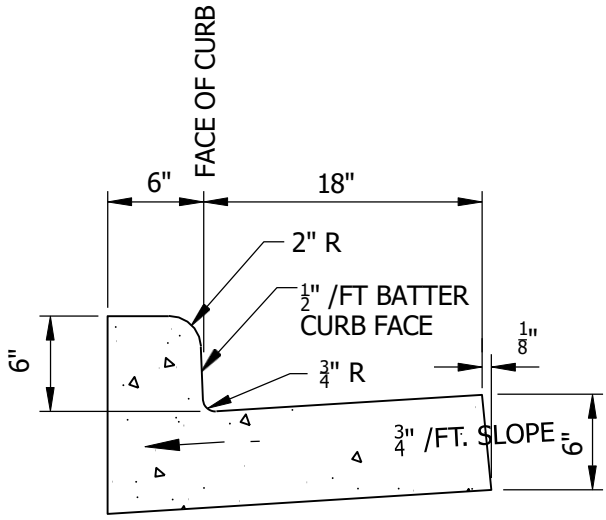
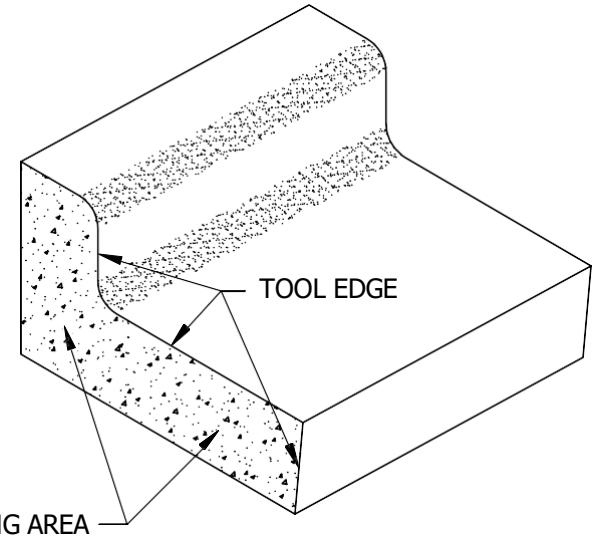
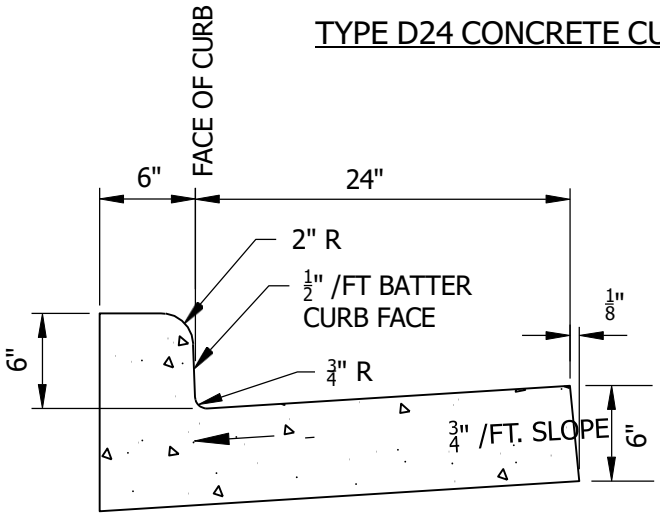
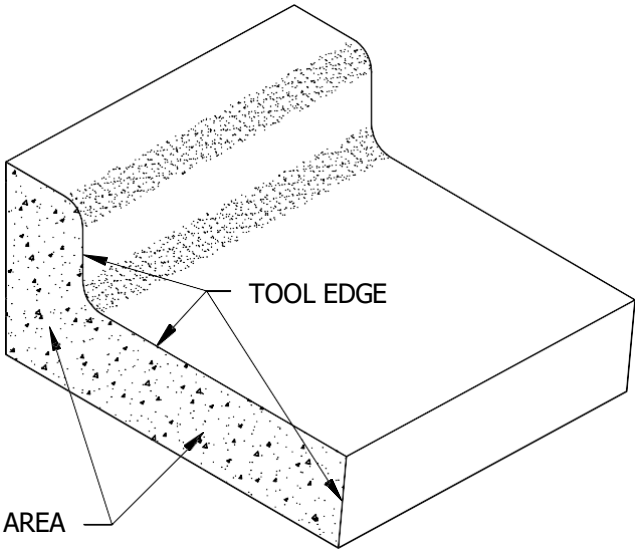




TYPE D24 CONCRETE CURB AND GUTTER





TYPE D30 CONCRETE CURB AND GUTTER

NOTES:

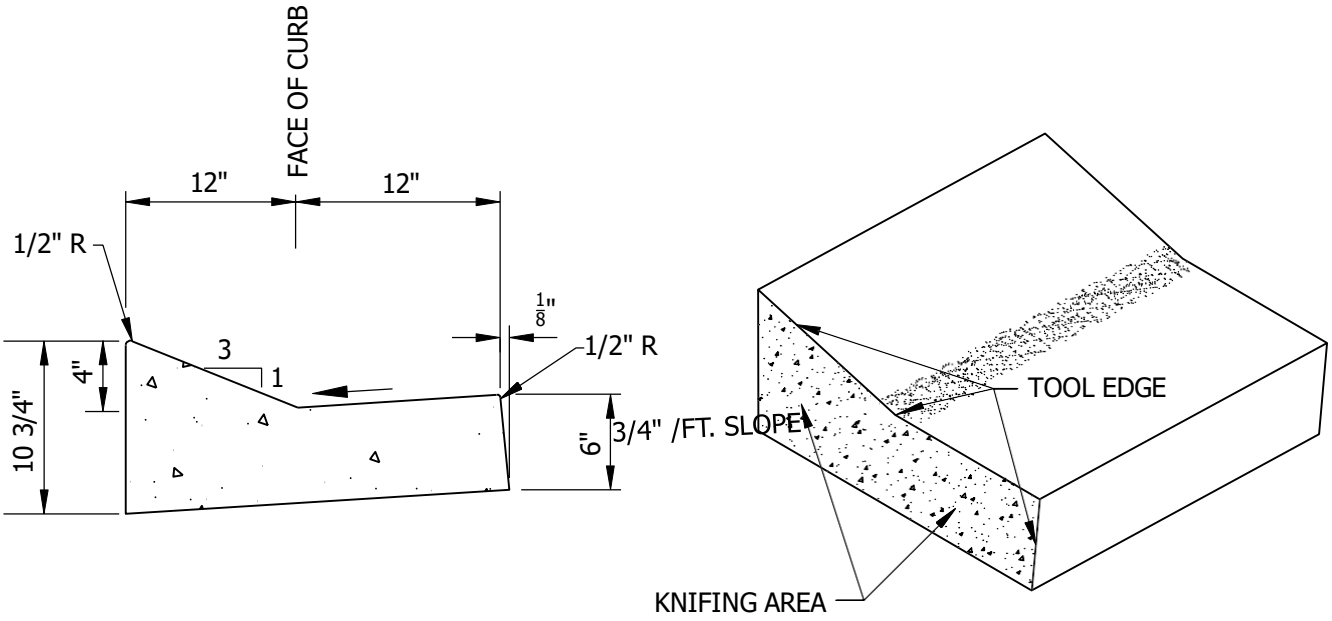
1. ALL EXPANSION AND CONSTRUCTION JOINTS SHALL BE TOOLED ALONG ENTIRE TOP AND FACE OF CURB AND GUTTER AND KNIFED THROUGH THE ENTIRE DEPTH.

CITY OF HUDSON

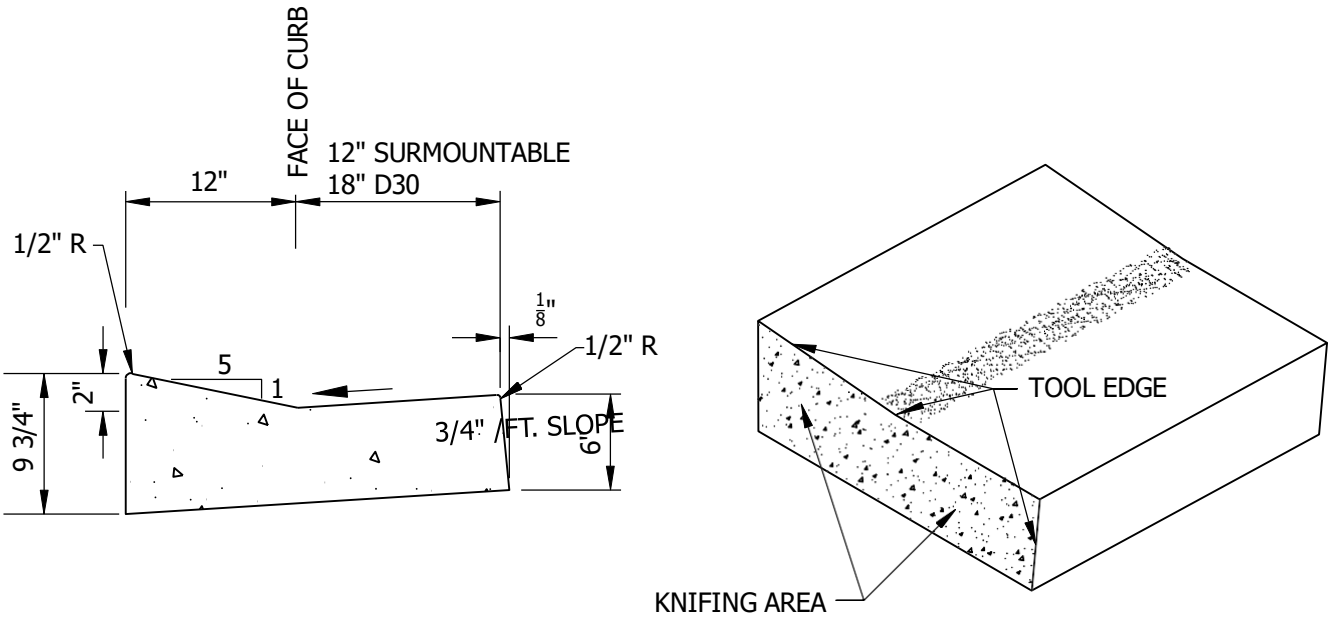
CURB AND GUTTER

LAST REVISION:
March 2019

PLATE NO.
STR-1



SURMOUNTABLE CONCRETE CURB AND GUTTER



DRIVEWAY CONCRETE CURB AND GUTTER

NOTES:

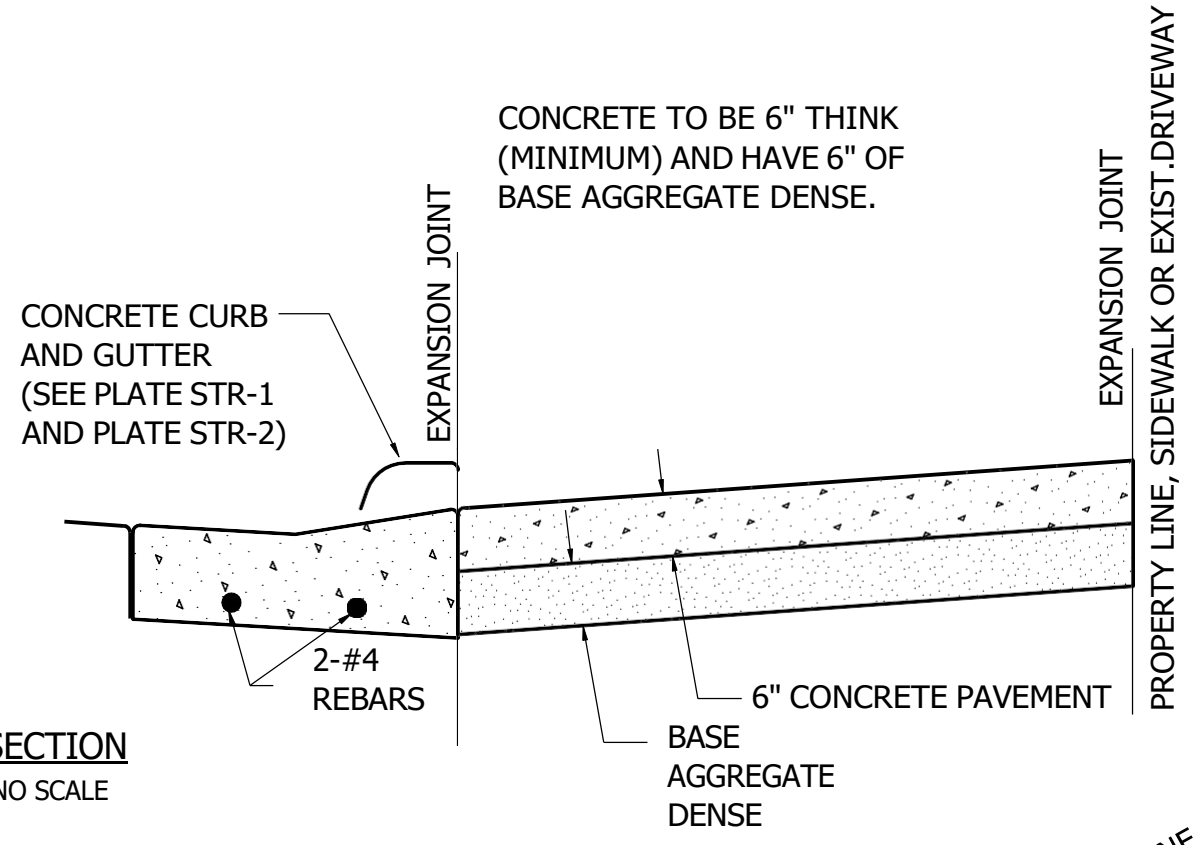
1. ALL EXPANSION AND CONSTRUCTION JOINTS SHALL BE TOOLED ALONG ENTIRE TOP AND FACE OF CURB AND GUTTER AND KNIFED THROUGH THE ENTIRE DEPTH.

CITY OF HUDSON

SURMOUNTABLE AND DRIVEWAY CURB AND GUTTER

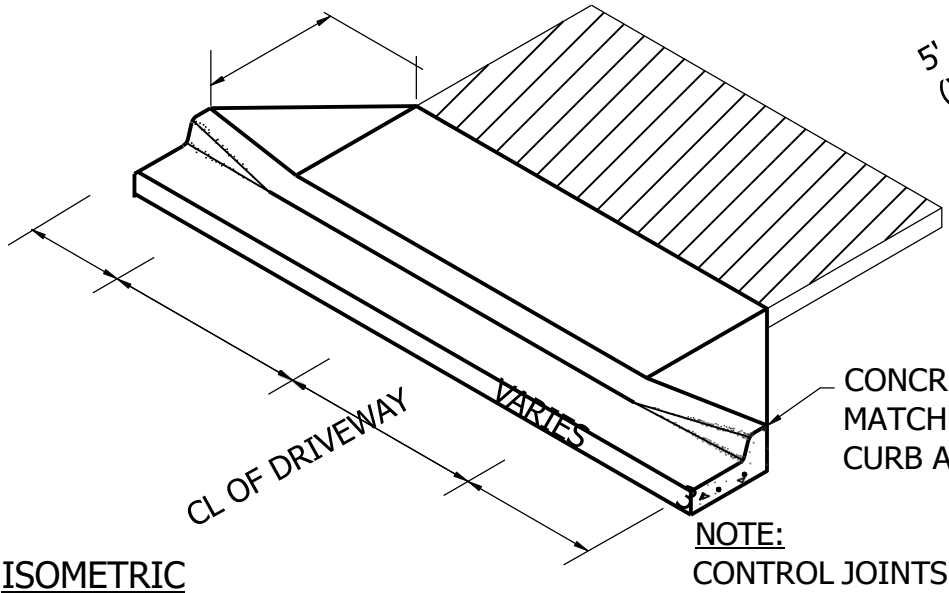
LAST REVISION:
March 2019

PLATE NO.
STR-2



SECTION

NO SCALE



ISOMETRIC

NO SCALE

NOTE:

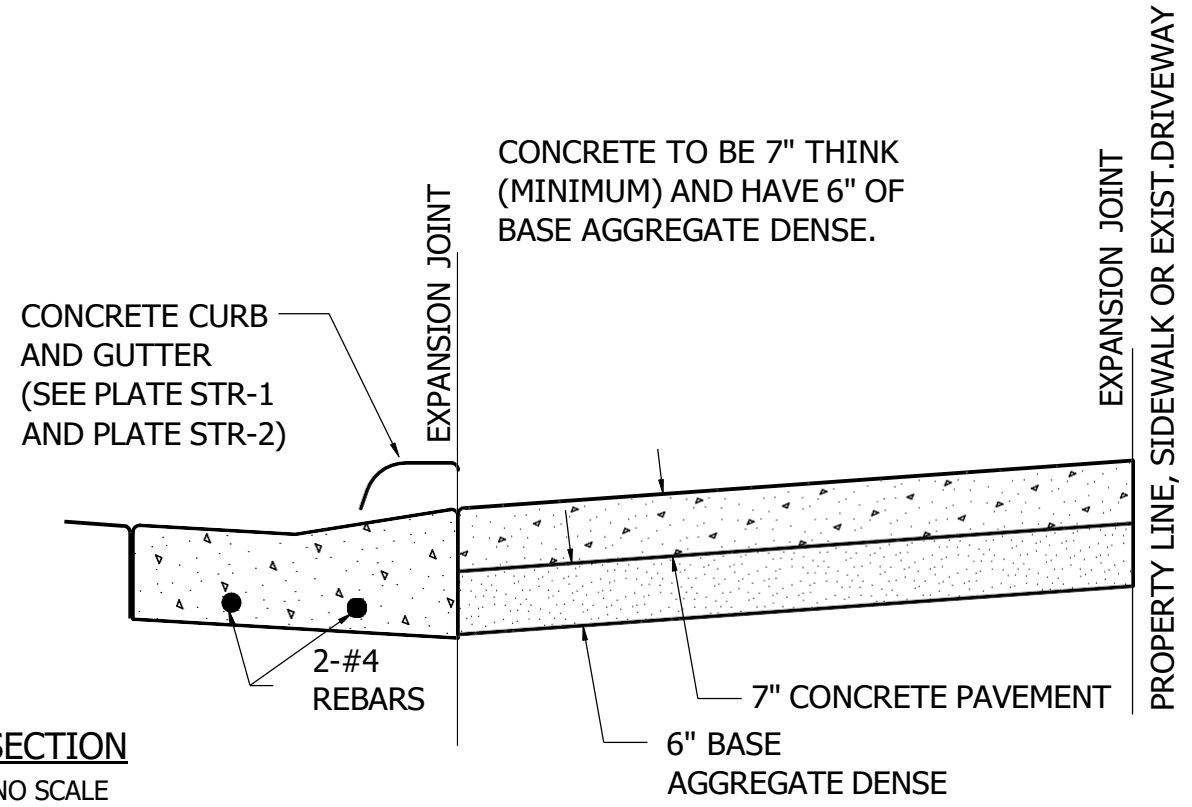
CONTROL JOINTS IN CONCRETE CURB NOT TO EXCEED 10' SPACING THROUGH DRIVEWAY SECTION.

CITY OF HUDSON

CONCRETE DRIVEWAY APRON - RESIDENTIAL

LAST REVISION:
March 2019

PLATE NO.
STR-3



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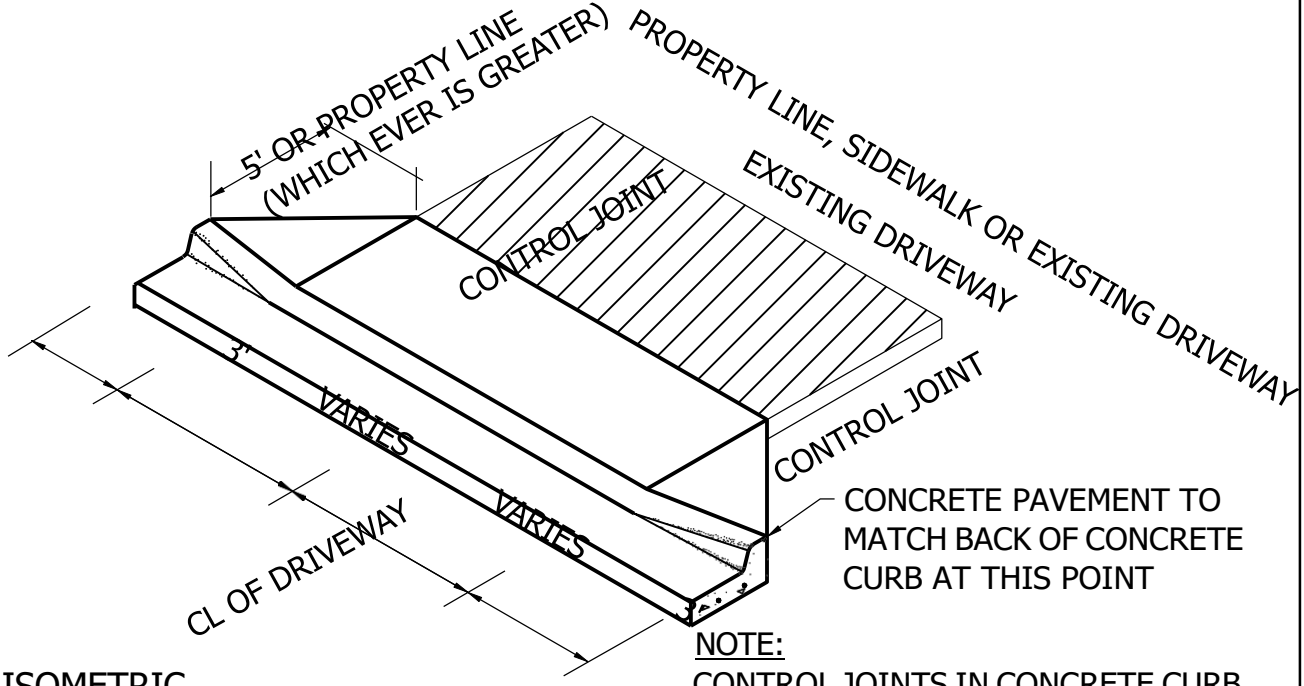


ISOMETRIC

NO SCALE

NOTE:

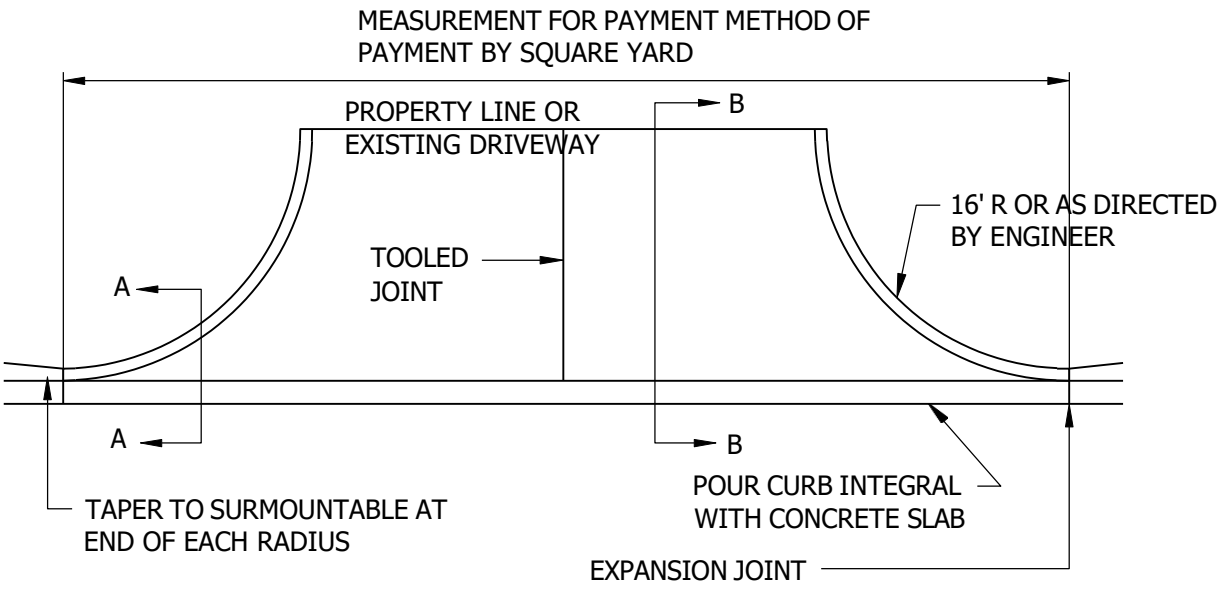
CONTROL JOINTS IN CONCRETE CURB NOT TO EXCEED 10' SPACING THROUGH DRIVEWAY SECTION.

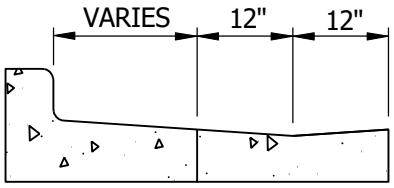
CITY OF HUDSON

CONCRETE DRIVEWAY APRON - ALLEY

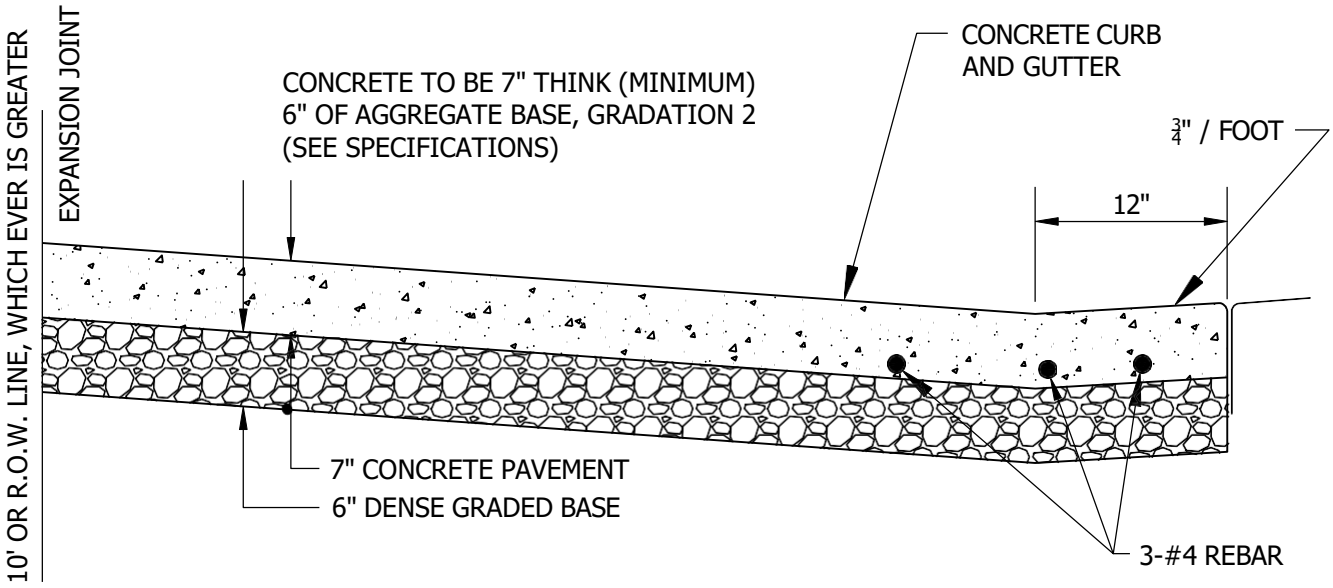
LAST REVISION:
March 2019

PLATE NO.
STR-4





SECTION A-A



SECTION B-B THRU CONCRETE APRON

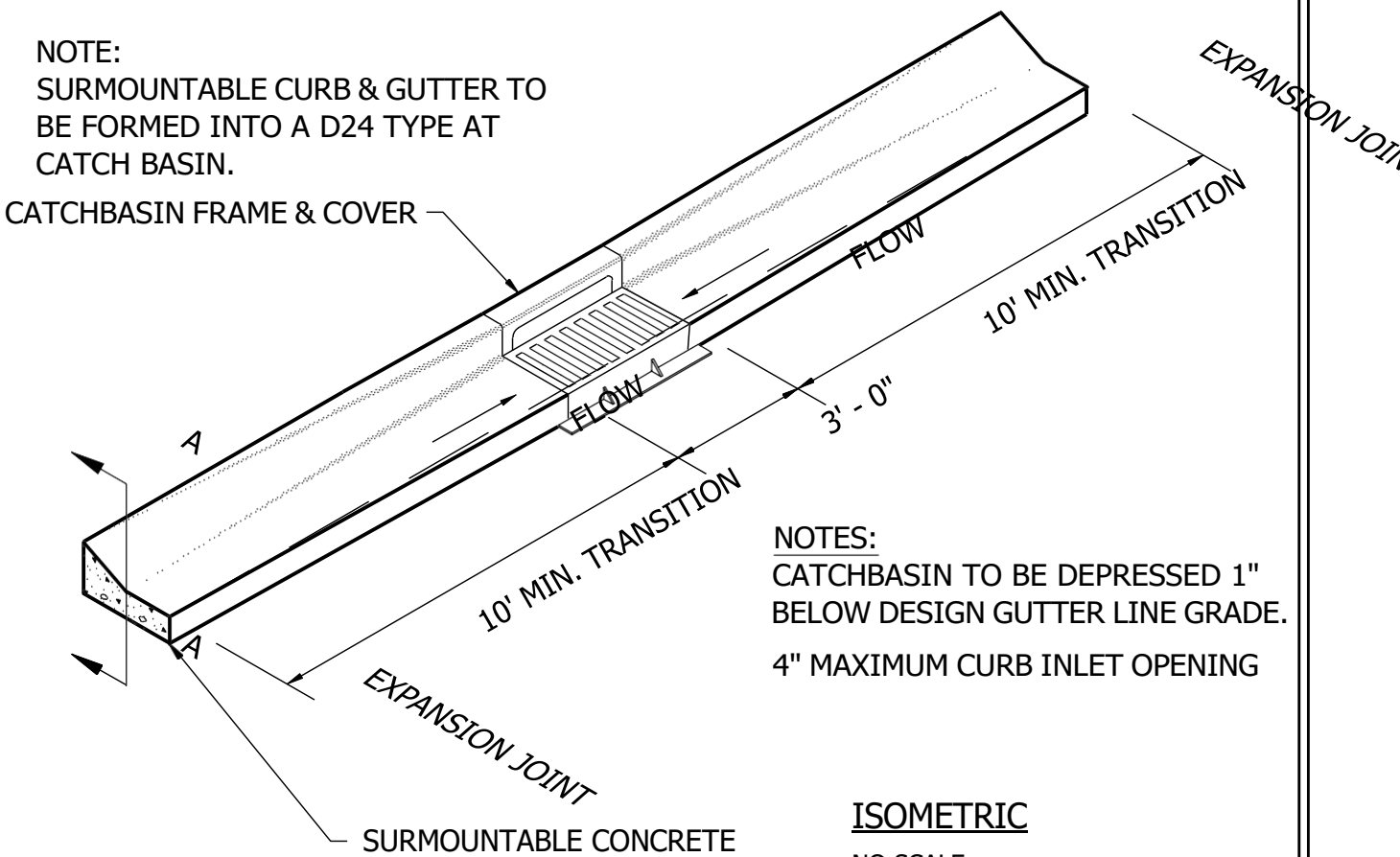
CITY OF HUDSON

COMMERCIAL DRIVEWAY CONCRETE APRON WITH CURB

LAST REVISION:
March 2019

PLATE NO.
STR-5

NOTE:
SURMOUNTABLE CURB & GUTTER TO BE FORMED INTO A D24 TYPE AT CATCH BASIN.

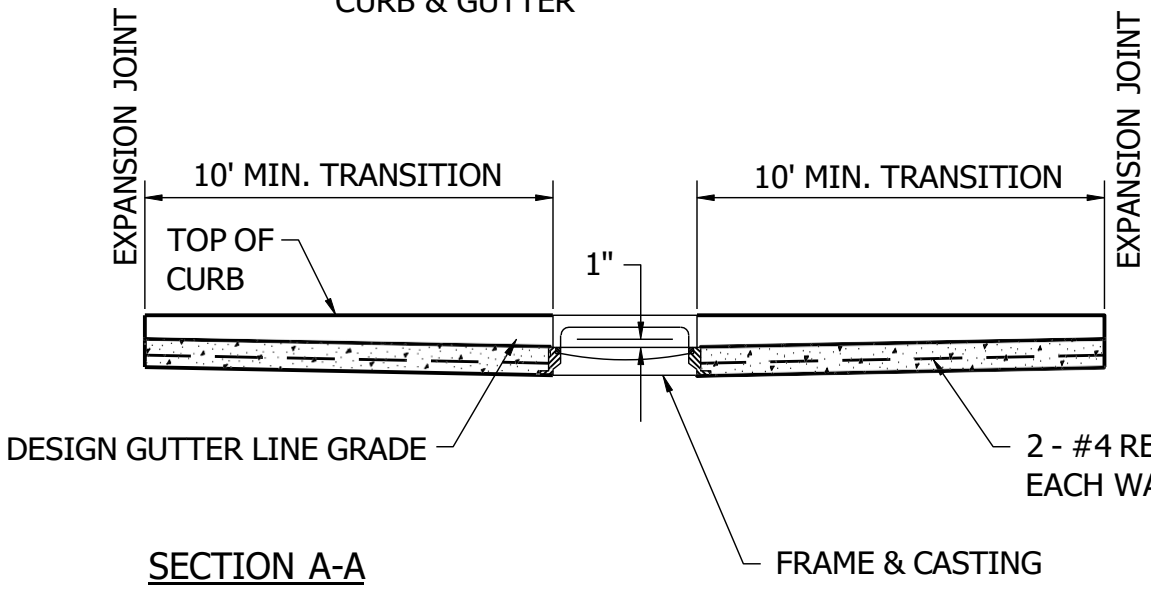


NOTES:
CATCHBASIN TO BE DEPRESSED 1" BELOW DESIGN GUTTER LINE GRADE.

4" MAXIMUM CURB INLET OPENING

ISOMETRIC

NO SCALE



SECTION A-A

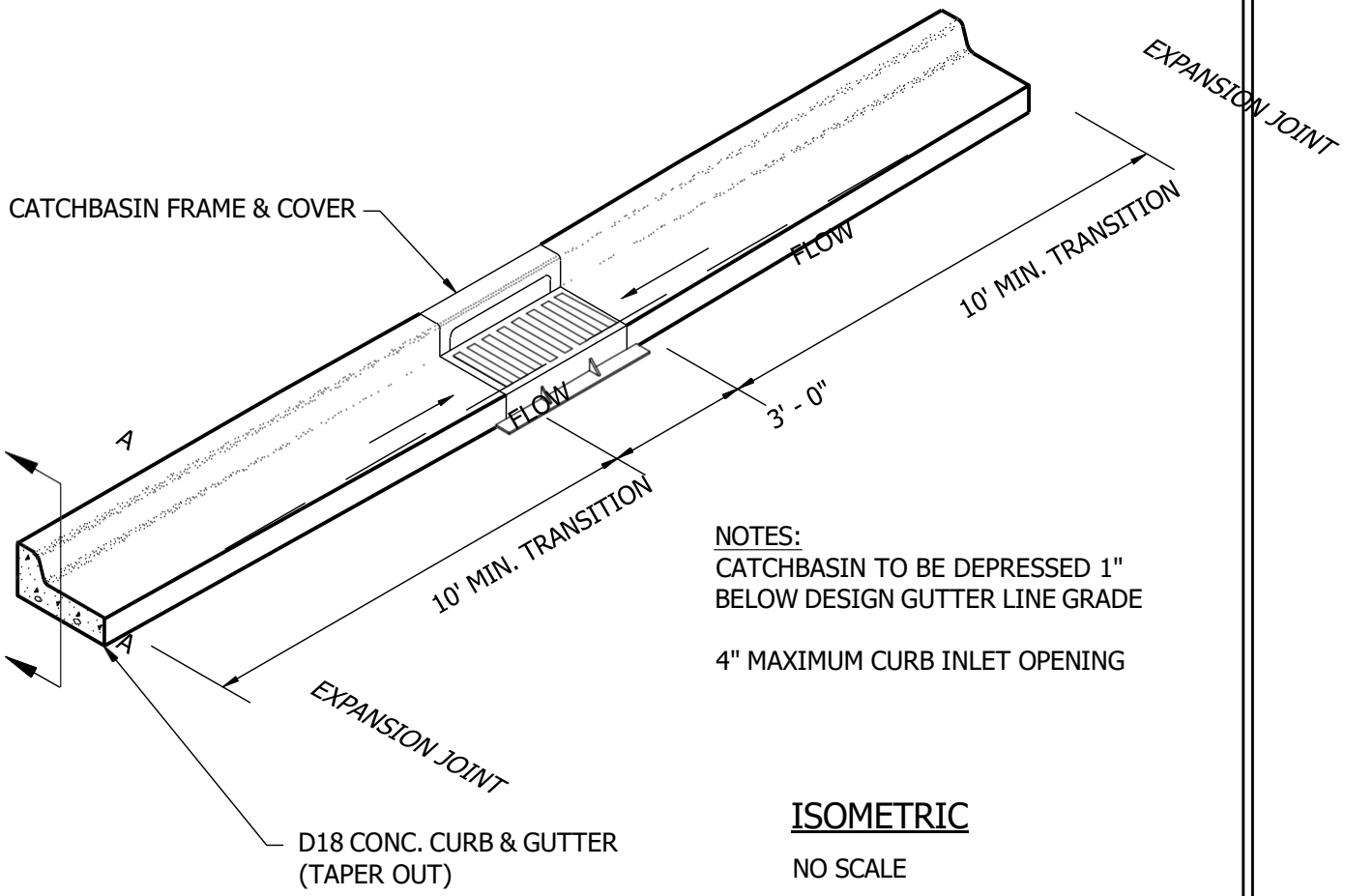
NO SCALE

CITY OF HUDSON

SURMOUNTABLE CURB & GUTTER CONSTRUCTION AT CATCH BASIN

LAST REVISION:
March 2019

PLATE NO.
STR-6

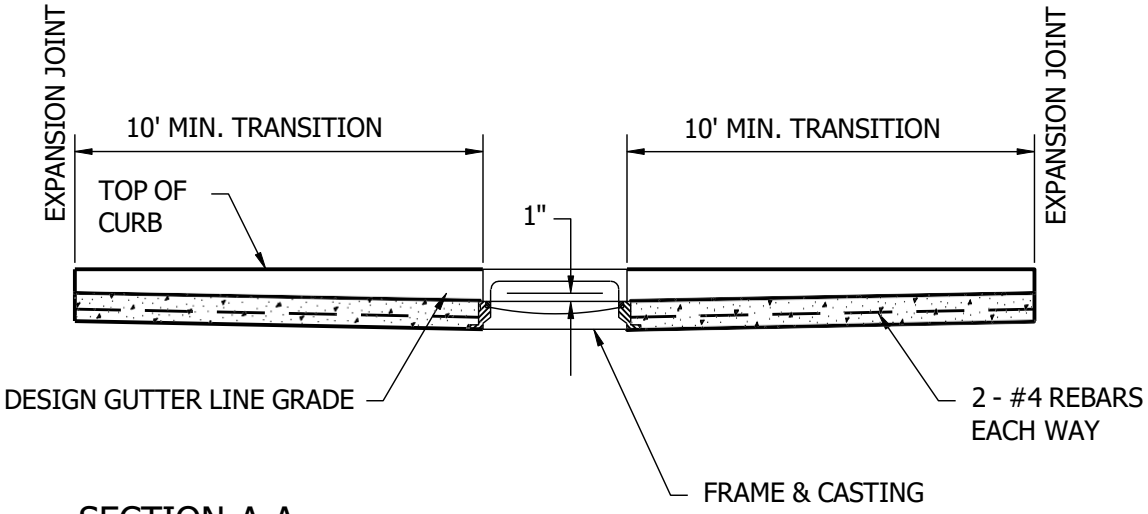


NOTES:
CATCHBASIN TO BE DEPRESSED 1" BELOW DESIGN GUTTER LINE GRADE

4" MAXIMUM CURB INLET OPENING

ISOMETRIC

NO SCALE



SECTION A-A

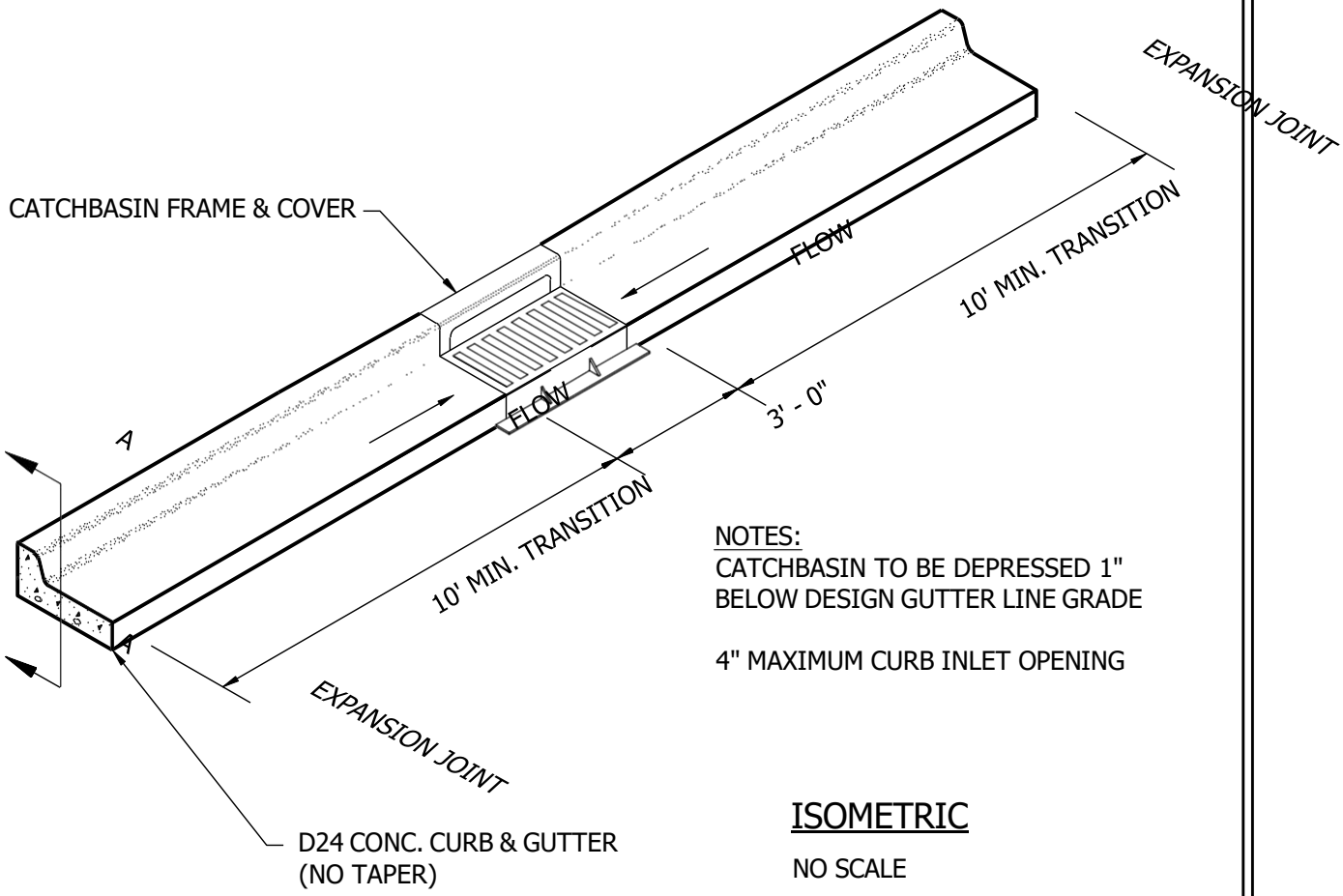
NO SCALE

CITY OF HUDSON

D18 CURB & GUTTER CONSTRUCTION AT CATCH BASIN

LAST REVISION:
March 2019

PLATE NO.
STR-7

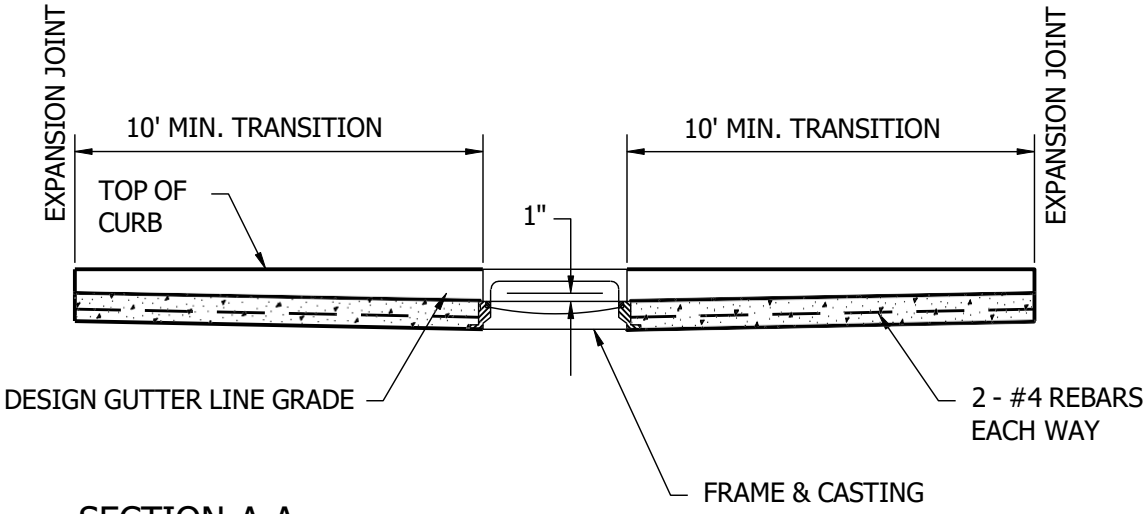


NOTES:
CATCHBASIN TO BE DEPRESSED 1" BELOW DESIGN GUTTER LINE GRADE

4" MAXIMUM CURB INLET OPENING

ISOMETRIC

NO SCALE



SECTION A-A

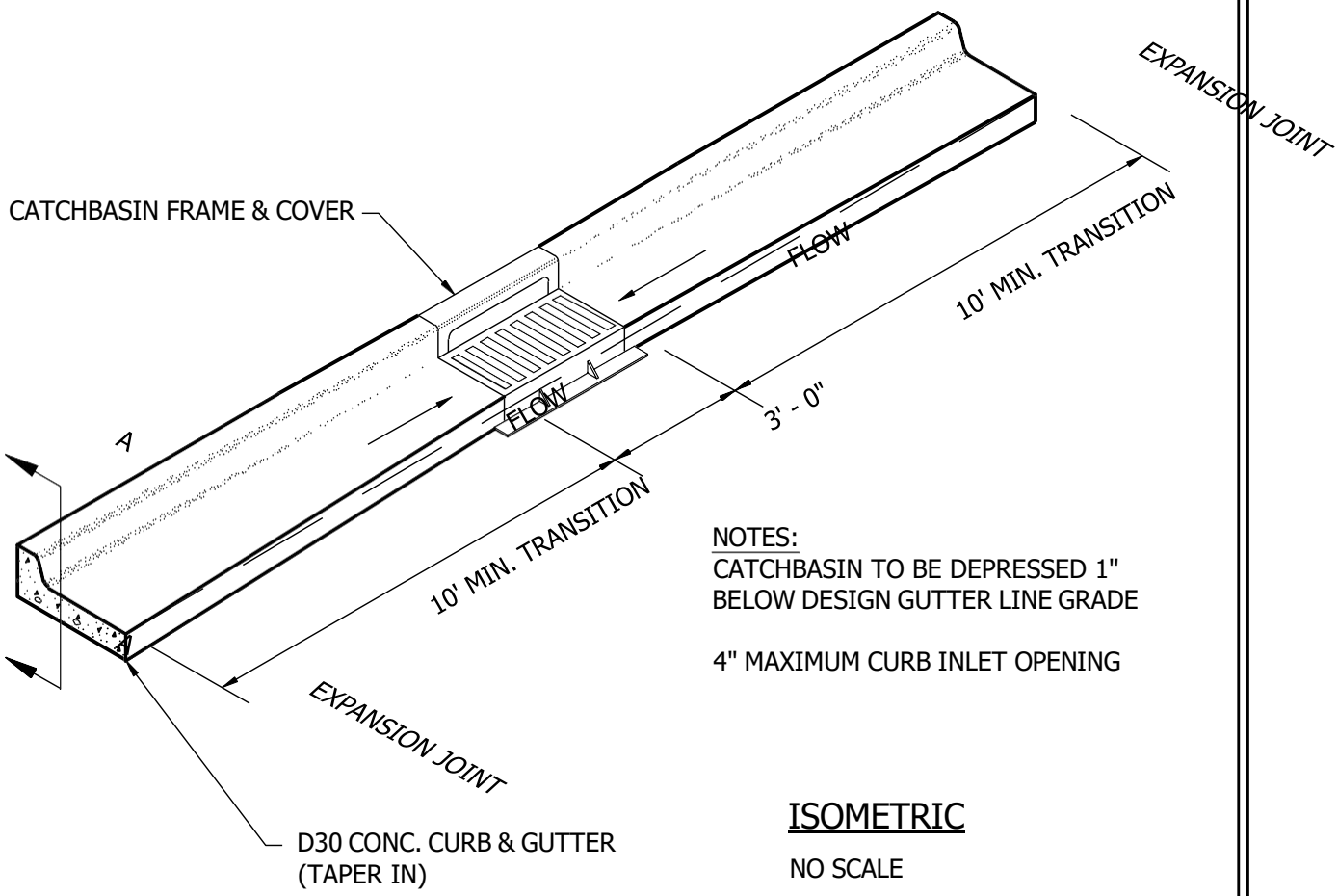
NO SCALE

CITY OF HUDSON

D24 CURB & GUTTER CONSTRUCTION AT CATCH BASIN

LAST REVISION:
March 2019

PLATE NO.
STR-8

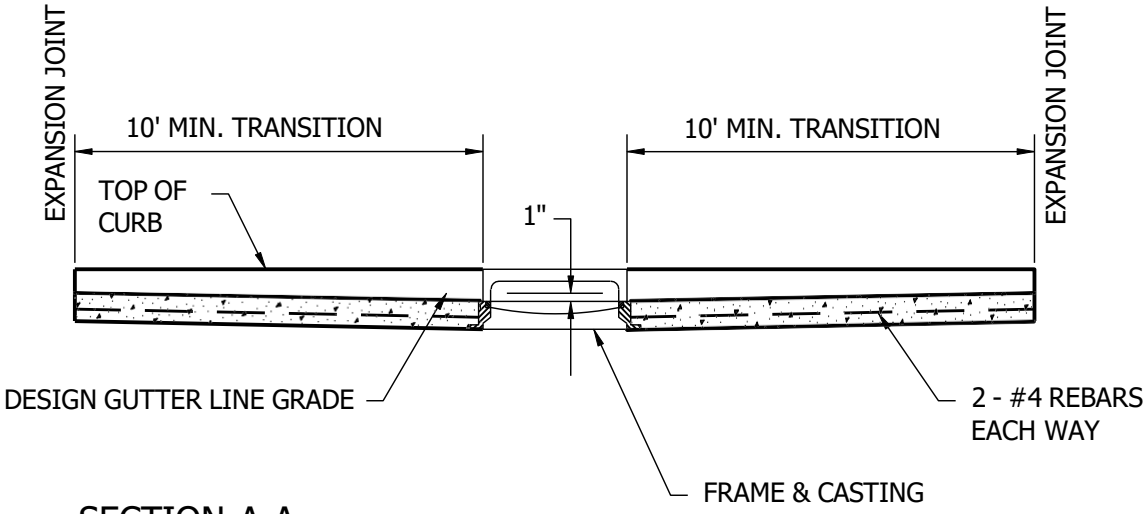


NOTES:
CATCHBASIN TO BE DEPRESSED 1" BELOW DESIGN GUTTER LINE GRADE

4" MAXIMUM CURB INLET OPENING

ISOMETRIC

NO SCALE



SECTION A-A

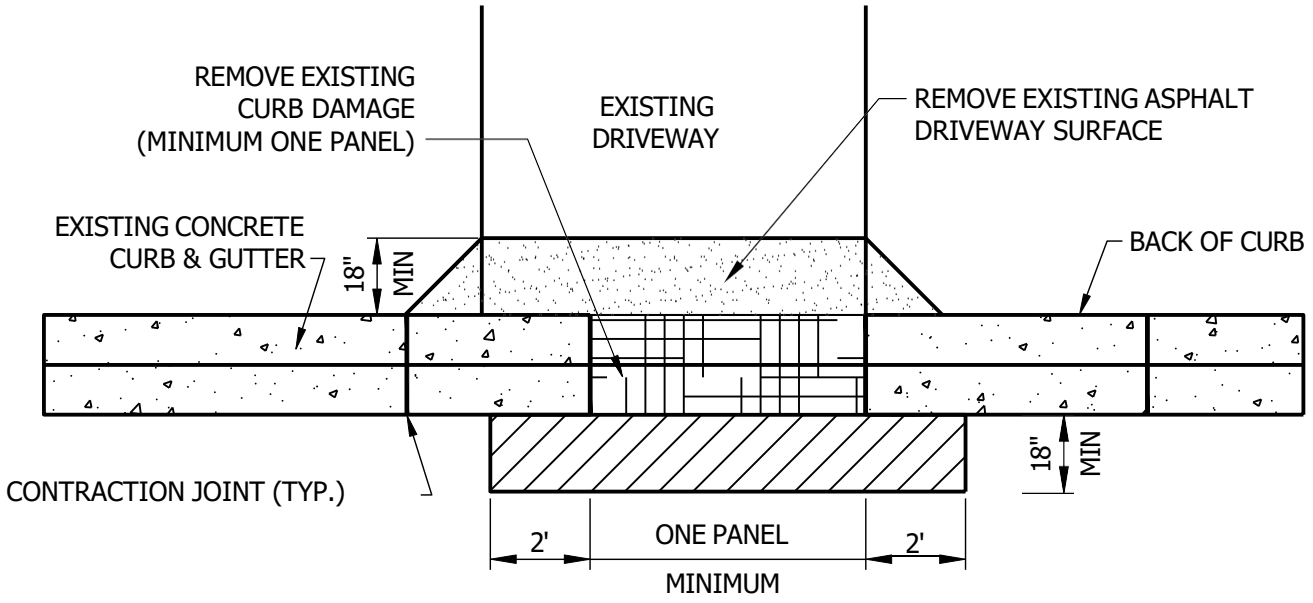
NO SCALE

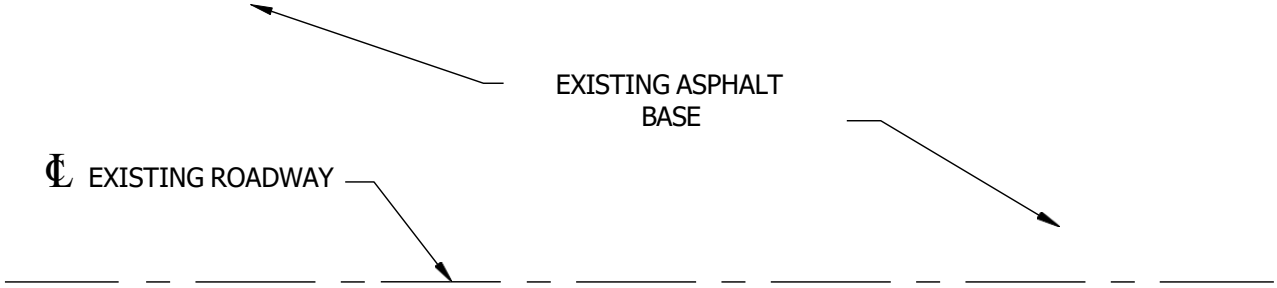
CITY OF HUDSON

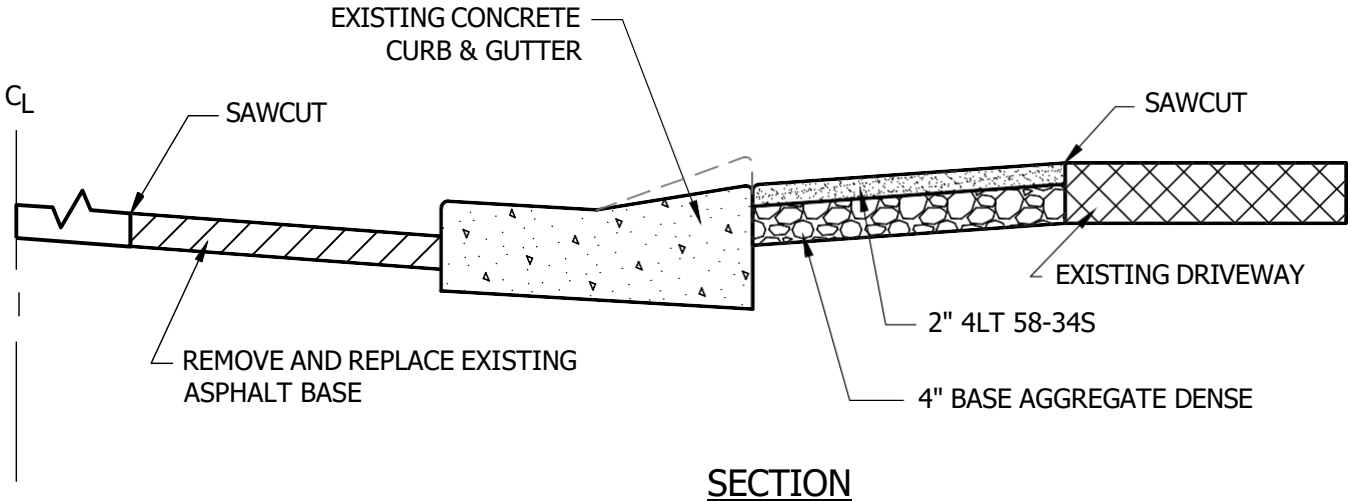
D30 CURB & GUTTER CONSTRUCTION AT CATCH BASIN

LAST REVISION:
March 2019

PLATE NO.
STR-9







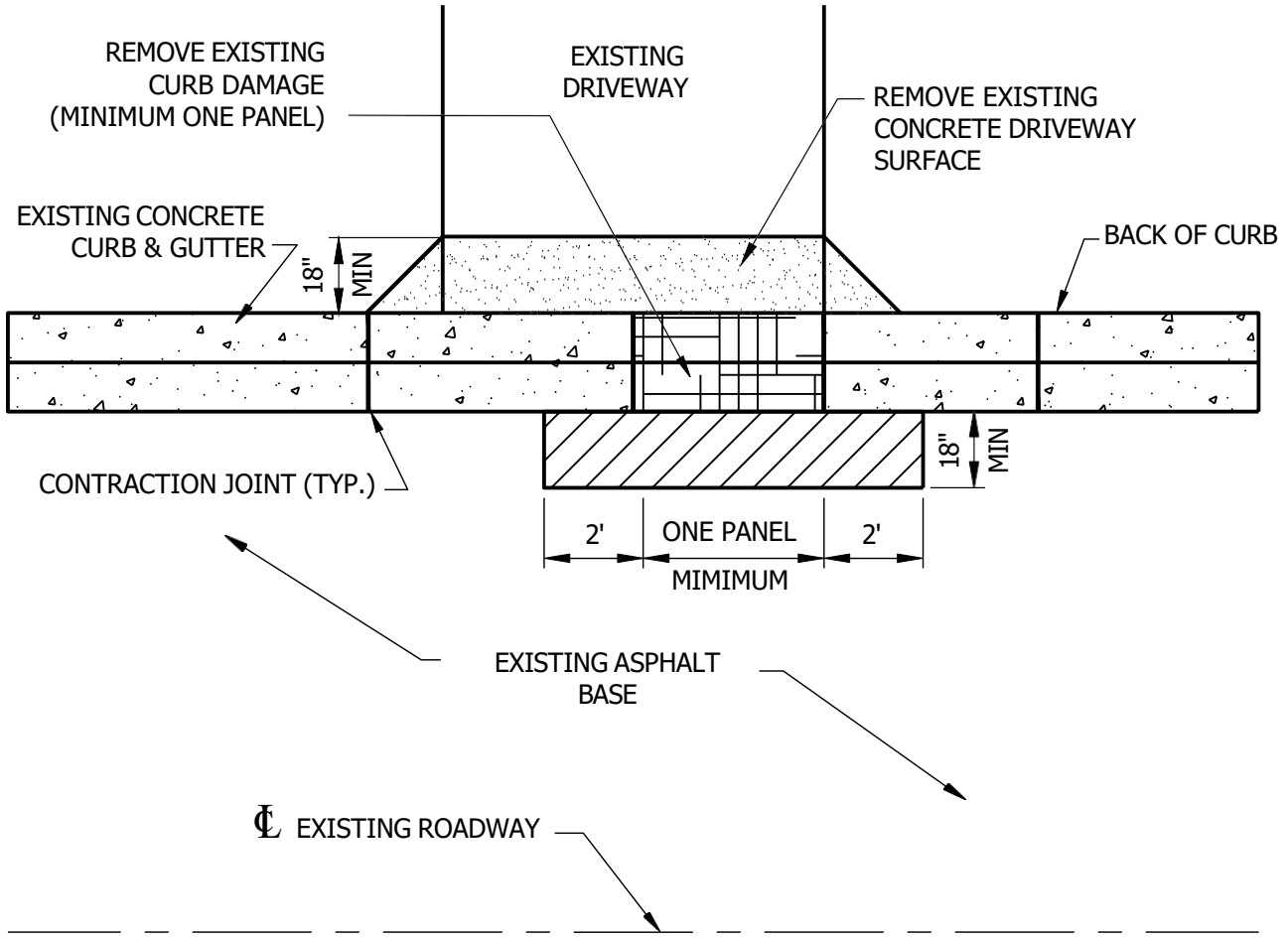
SECTION

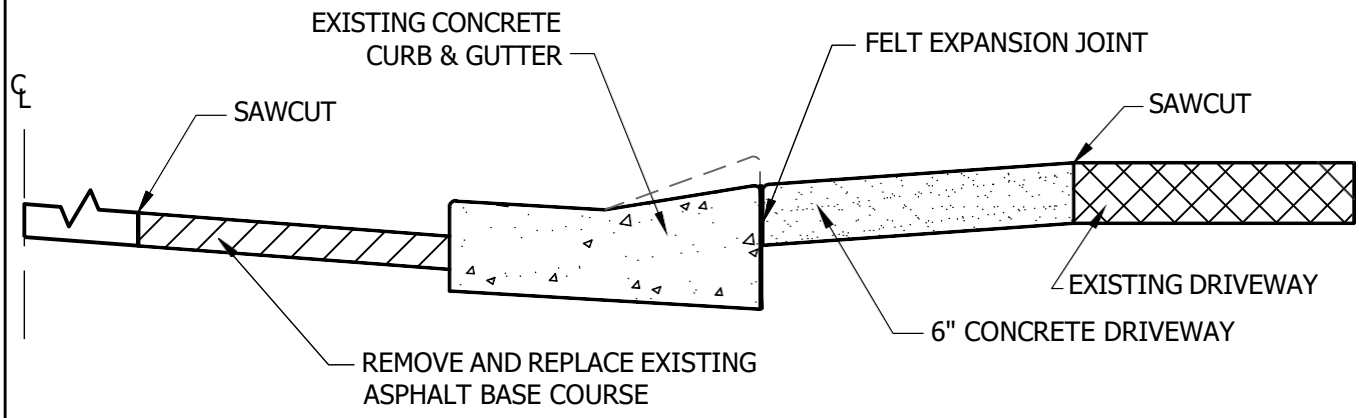
CITY OF HUDSON

CONCRETE CURB REPLACEMENT DRIVE LOCATION (ASPHALT D/W APRON)

LAST REVISION:
March 2019

PLATE NO.
STR-12





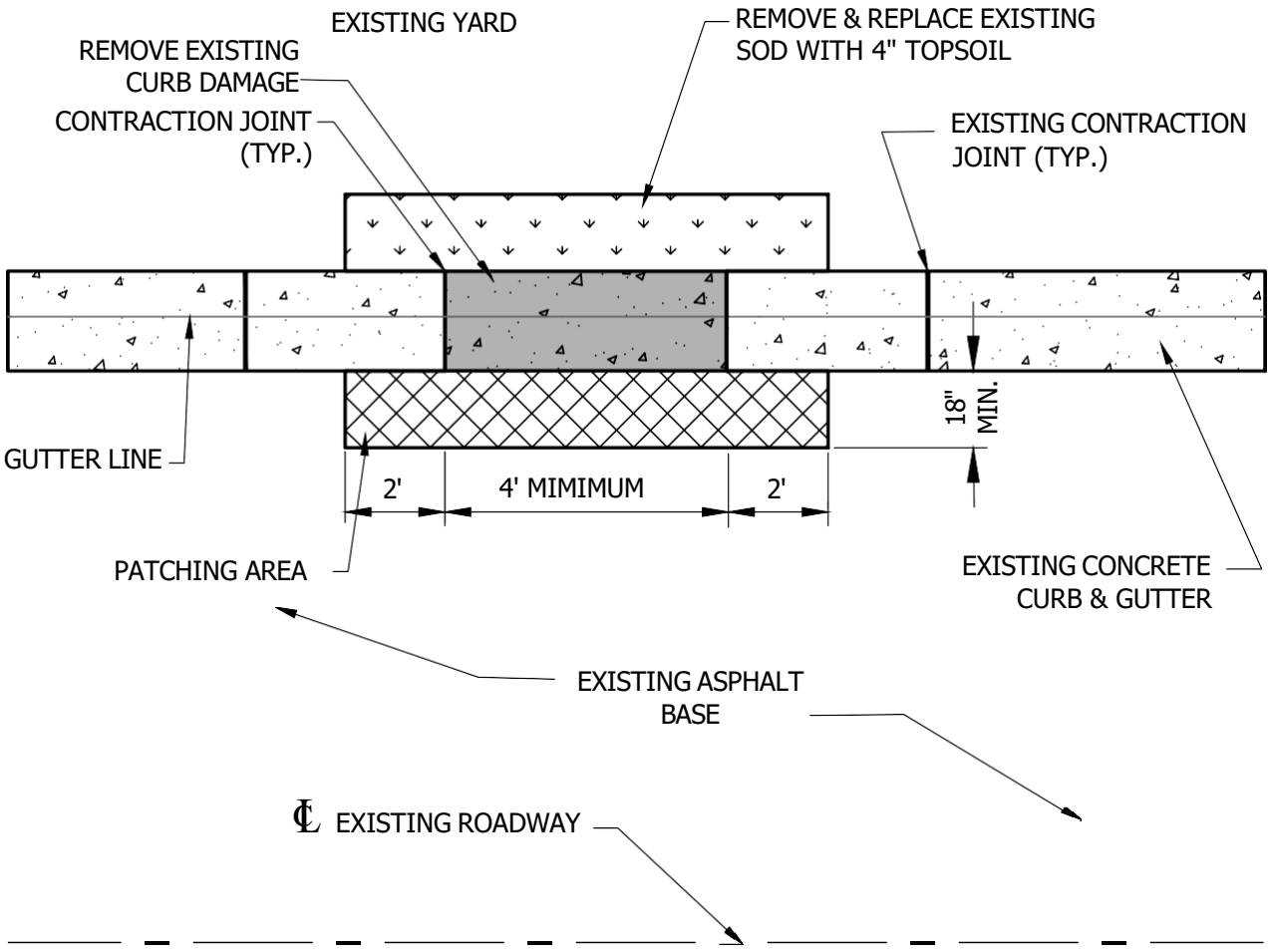
SECTION

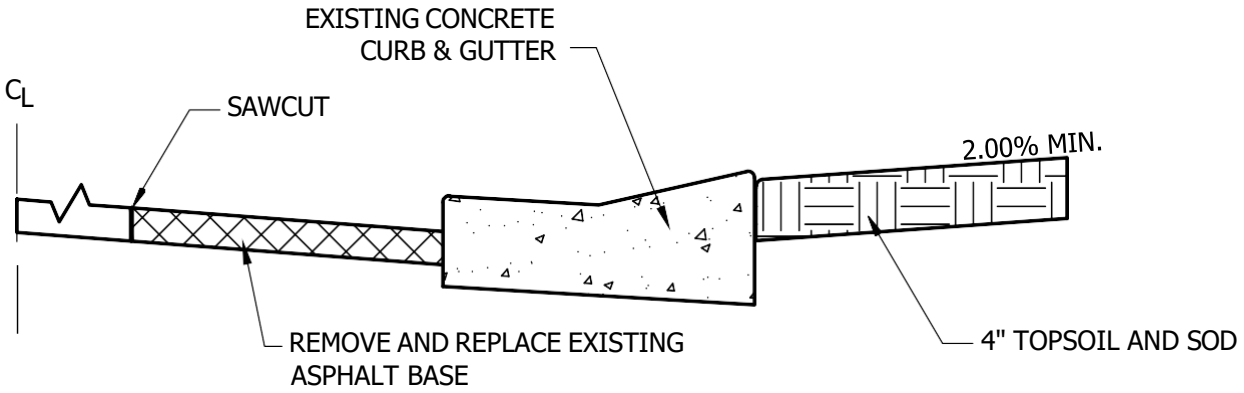
CITY OF HUDSON

CONCRETE CURB REPLACEMENT DRIVE LOCATION (CONCRETE D/W APRON)

LAST REVISION:
March 2019

PLATE NO.
STR-13





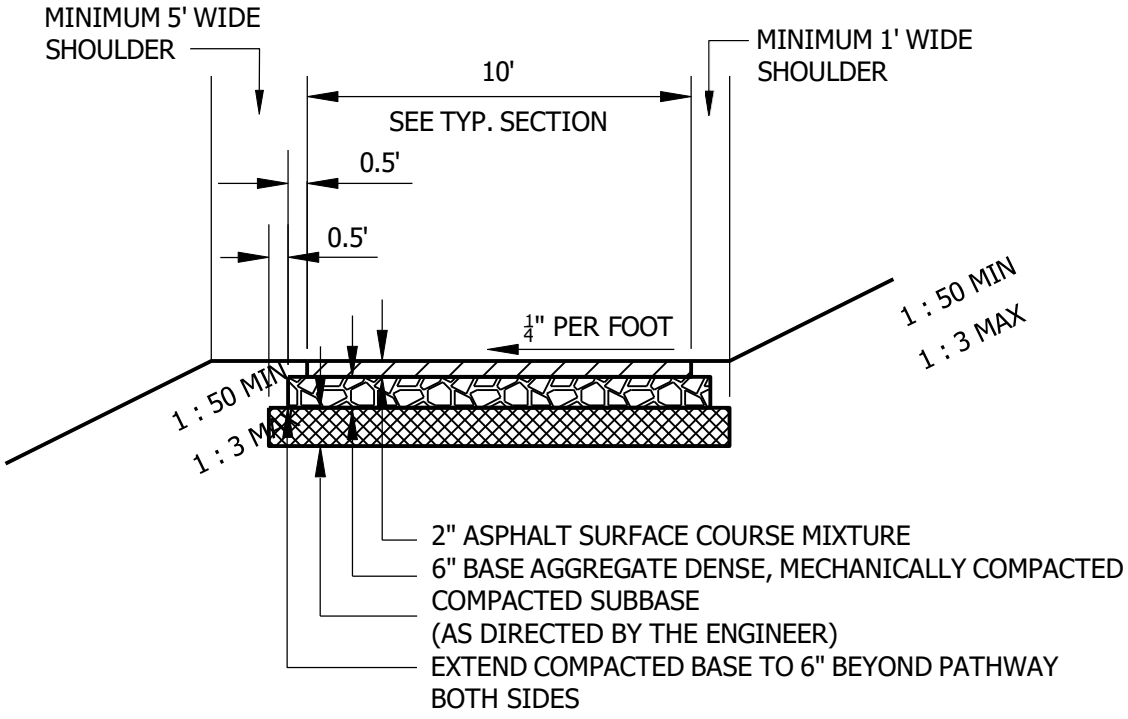
SECTION

CITY OF HUDSON

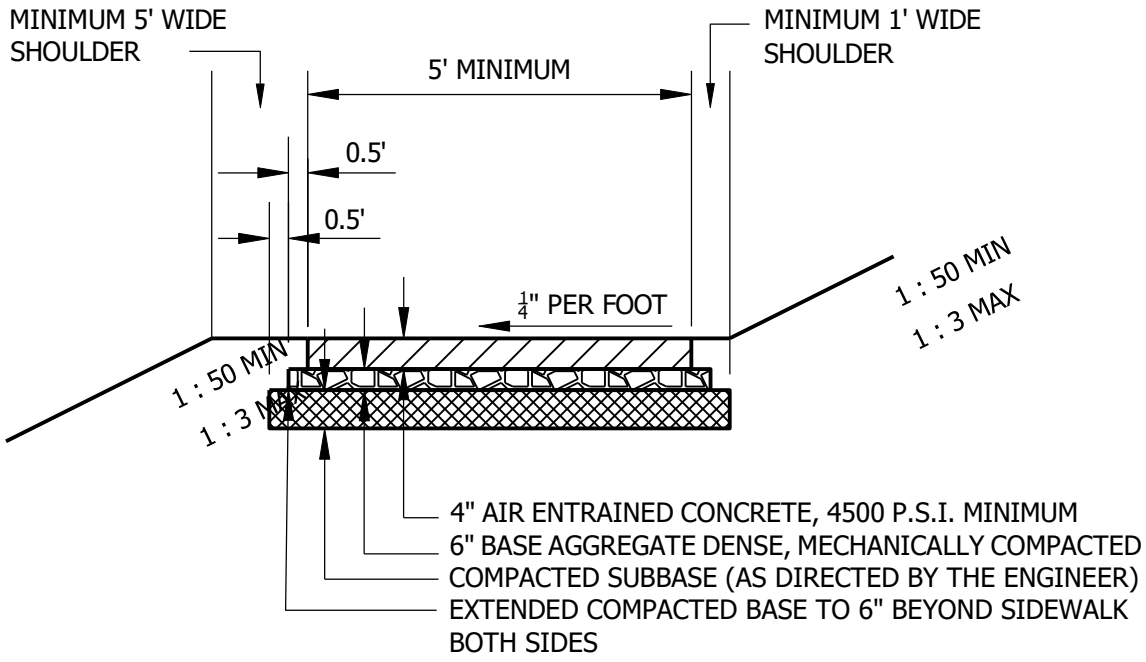
CONCRETE CURB REPLACEMENT NON DRIVEWAY LOCATION

LAST REVISION: March 2019

PLATE NO. STR-14



ASPHALT TRAIL



CONCRETE SIDEWALK

CITY OF HUDSON

TYPICAL SECTION FOR ASPHALT TRAIL AND CONCRETE SIDEWALK

LAST REVISION:
March 2019

PLATE NO.
STR-15