DelDOT Standard Specifications & Details

2025 Development Summit

Andrew Short

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DELAWARE DEPARTMENT OF TRANSPORTATION

Excellence in Transportation

Every Trip.

We strive to make every trip taken in Delaware safe, reliable and convenient for people and commerce.

Every Mode.

We provide safe choices for travelers in Delaware to access roads, rails, buses, airways, waterways, bike trails and walking paths.

Every Dollar.

We seek the best value for every dollar spent for the benefit of all.

Everyone.

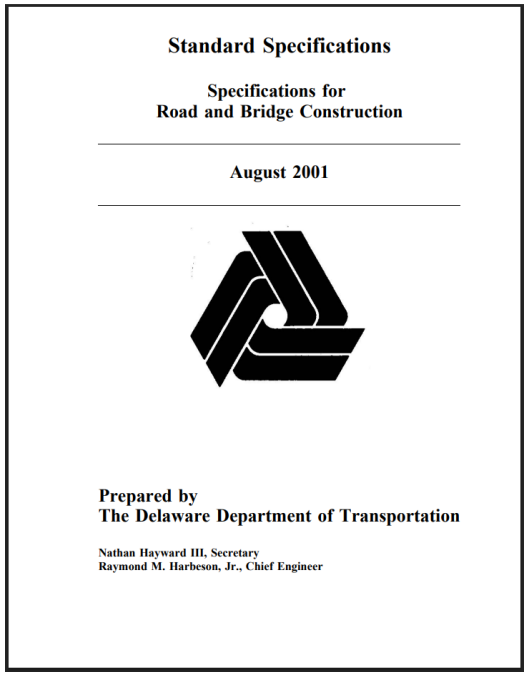
We engage our customers and employees with respect and courtesy as we deliver our services.

Overview

- Specifications
- Details
- Updates

DelDOT Specifications

deldot.gov/Publications/manuals/standard_specifications/

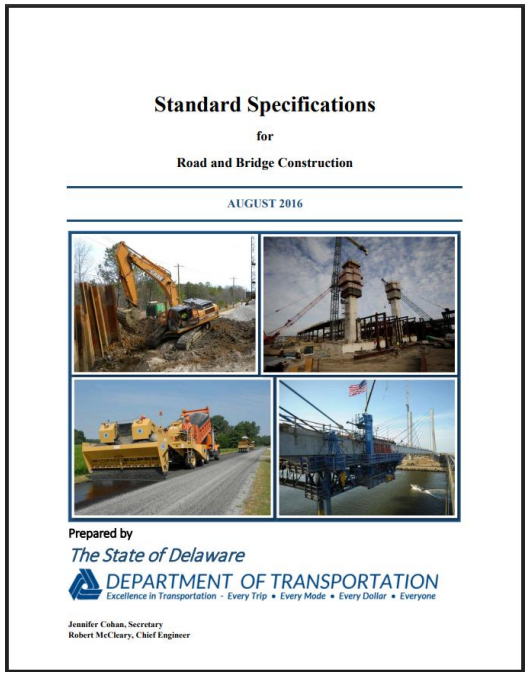

Standard Specifications

Specifications for
Road and Bridge Construction

August 2001

Prepared by
The Delaware Department of Transportation

Nathan Hayward III, Secretary
Raymond M. Harbeson, Jr., Chief Engineer


Standard Specifications

for

Road and Bridge Construction

AUGUST 2016

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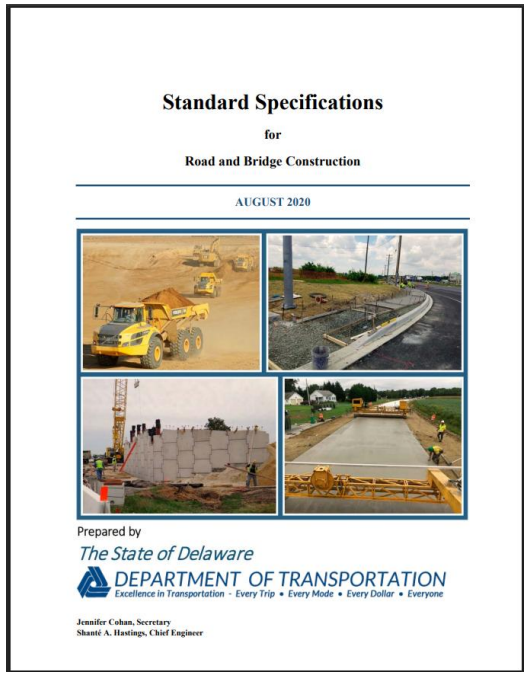
Jennifer Cohan, Secretary
Robert McCleary, Chief Engineer


Standard Specifications

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AUGUST 2020

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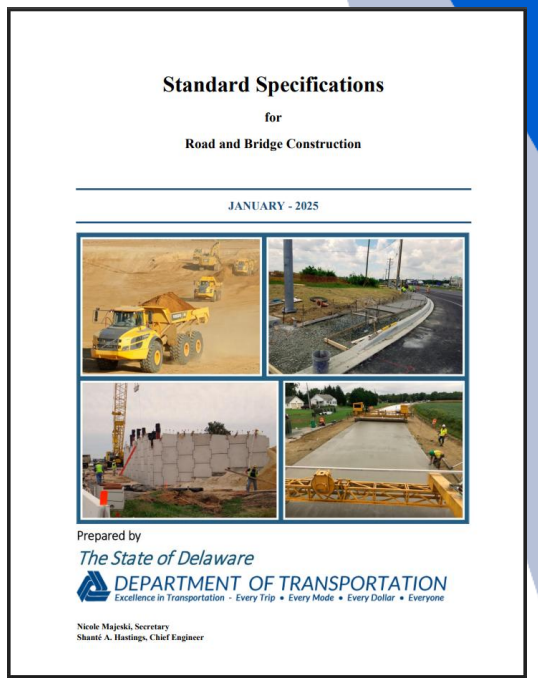
Jennifer Cohan, Secretary
Shanté A. Hastings, Chief Engineer


Standard Specifications

for

Road and Bridge Construction

JANUARY - 2025

Prepared by
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Nicole Majeski, Secretary
Shanté A. Hastings, Chief Engineer

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2020 Specifications Transition

- Supplemental Specifications are no more
- Voice & Mood
- Text Restructure
- Navigation Improvements
- Annual Publications

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2025 Specifications

- Screen Reader Accessibility Updates
- Major Construction Updates
  - Division 300 – Millings used as GABC
  - Division 400 – Tack Coat Application
  - Division 600 – Personnel Safety Grates & Drainage Inlet Accessibility
  - Division 800 - Striping

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- Screen Reader Accessibility Updates
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301.3 Construction.

A. Shape the subgrade to grade and cross section in accordance with the contract and Section 202.3.5.

B. Place material so that no segregation occurs. Use a water sprinkling device and rollers or compactors.

C. Place graded aggregate material in successive layers, with a maximum layer thickness of 8 uncompacted inches to prevent segregation and with a maximum surface deviation of 1/2-inch in 10--feet.

D. Compact each layer to 98 percent or more of the laboratory maximum density in accordance with AASHTO T99 Method C, Modified, and T310.

1. If bituminous millings are used as GABC within the roadway pavement box, compact with a sheepsfoot roller to the satisfaction of the engineer.

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- Screen Reader Accessibility Updates
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I. Tack Coat.

1. Dry and broom-clean surface ahead of tack coat application.

2. Use a distributor designed, equipped, calibrated, maintained, and operated to
uniformly on surfaces with varying widths and up to 15-feet wide. Provide a di
of maintaining a uniform distributing pressure and controlling the application
to be equipped with a tachometer, pressure gauges, accurate volume-measuri
calibrated tank, a thermometer for measuring temperatures of tank contents,
pump, and full circulation spray bars with lateral and vertical adjustments. Pro
according to the manufacturer's recommendations for the material selected f
hand-spraying equipment for small areas or locations with irregular shapes. M
distribution equipment in accordance with the manufacturer's recommendati
distributor tank cleaning records inside the distributor cabin and make records
Department upon request of the engineer.
3. Apply tack coat in advance of paving operation at a uniform coverage in accor
application rate shown in Table 401.3-2. Apply at a temperature in accordance
manufacturer's recommendations.
4. Do not permit activity on the tack surface until the material has set per the ma
recommendations, but no farther than needed for the current day's operation
humidity, and dampness will affect the breaking and setting of all emulsions.
5. The engineer may test the application rate and residual application rate in acc
ASTM D2995.

SECTION 1011 — TACK COAT

1011.1 Description.

Provide material in accordance with 1011.2 for thin lift maintenance applications, typically less than 1 1/4-inches thick. Provide material selected from the approved product list and in accordance with manufacturer recommendations for all other applications.

1011.2 Asphalt Cement (PG Graded).

Provide PG-64-22 (PG 64S-22) as tack coat in lieu of emulsified asphalts.

1011.3 Emulsified Asphalts.

A. Anionic emulsified asphalt in accordance with M140 except the sieve test requirement for field samples collected at the point of use shall be a maximum of 0.4 percent.

B. Cationic emulsified asphalt in accordance with M208 except the sieve test requirement for field samples collected at the point of use shall be a maximum of 0.4 percent.

C. Polymer-modified cationic emulsified asphalts in accordance with M316 except the sieve test requirement for field samples collected at the point of use shall be a maximum of 0.4 percent.

D. Non-Tracking emulsified asphalt in conformance with Table 1011.3-1.

Table 1011.3-1. Non-Tracking Emulsified Asphalt Requirements.

Property	Test Method	Requirement
Saybolt Viscosity at 77 F, (SFS)	AASHTO T59	15-100
Storage Stability Test, 24 hours, (%)	AASHTO T59	1 maximum
Residue by Distillation or Residue by Evaportation, (%)	AASHTO T59	50 minimum
Sieve Test, No. 20, (%)	AASHTO T59	0.4 maximum for field samples
Penetration at 77 F, 100 g, 5 s, (dmm)	AASHTO T49	10-40
Solubility in Trichloroethylene, (%)	AASHTO T44	97.5 minimum

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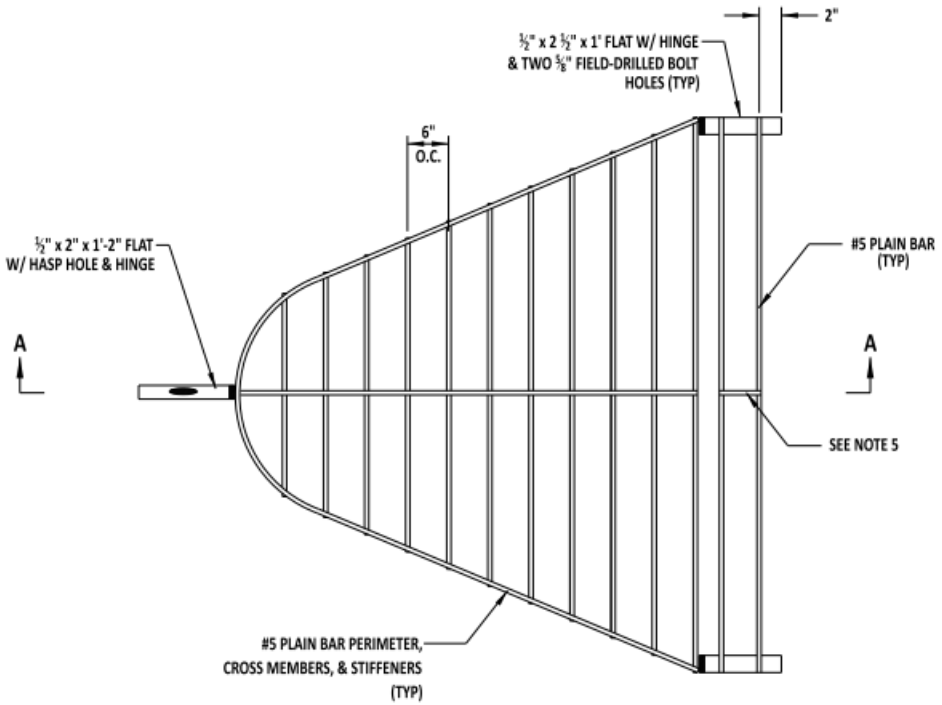
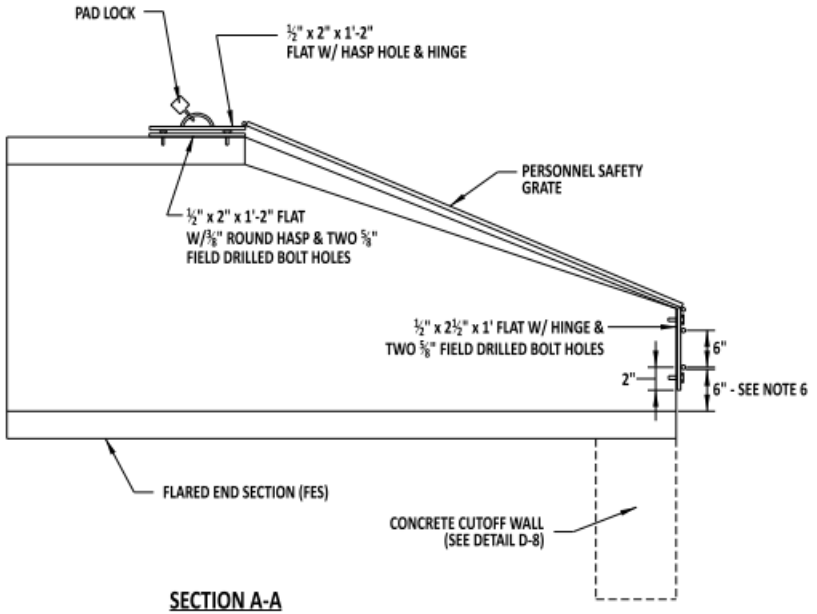
SCALE : NTS



PLAN VIEW



SECTION A-A

NOTES:

1). INSTALL PERSONNEL SAFETY GRATES (PSG) ON THE INLETS OF STORM WATER PIPES 12" OR LARGER IN DIAMETER THAT ARE NOT STRAIGHT FROM THE INLET TO THE OUTFALL.
2). IF A TRAVERSABLE GRATE OR AN INTERNAL ENERGY DISSIPATER IS INSTALLED ON THE OUTLET OF A STORM WATER PIPE 12" OR LARGER IN DIAMETER, A PSG MUST BE INSTALLED ON THE INLET.
3). FIT THE GRATE TO THE OUTSIDE PERIMETER OF THE FLARED END SECTION (FES) ± ¼".
4). DRILL ALL BOLT HOLES IN THE FIELD.
5). INSTALL A STIFFENER WHERE TWO OR MORE BARS ARE USED.
6). PLACE BOTTOM BAR 6" ABOVE INVERT OF FES.
7). ATTACH ALL HARDWARE IN CONCRETE USING APPROVED TAMPER PROOF ANCHORS.

DelDOT	Andrew Shaw ENGINEERING SUPPORT 10/15/2024 DATE RECOMMENDED	PERSONNEL SAFETY GRATE FOR PIPE INLET	REVIEWED DEPUTY DIRECTOR - DESIGN 23 October 2024 DATE
		STANDARD NO. D-3 (2025) SHT. 2 OF 2	APPROVED CHIEF ENGINEER 10/25/2024 DATE

2025 Specifications

- Screen Reader Accessibility Updates
- Major Construction Updates
  - Division 300 – Millings used as GABC
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  - Division 800 - Striping

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2025 Specifications

8. For drainage inlets, manholes, and junction boxes that use a removable top slab or are 4-feet or deeper when measured from the top of grate or cover to the invert of the lowest pipe, install steps at an accessible location. Ensure that the steps have a minimum embedment of 3-inches into the wall and protrude out 6 inches from the wall. Begin steps within 24-inches of the top of grate or lid and place the last step no more than 12-inches above the lowest invert except where a pipe is in the ~~backwall~~ same wall as the steps in which case the last step must be placed such that the last step is no more than 12-inches from the top of the pipe. Place steps vertically 12-inches apart.

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2025 Specifications

- Screen Reader Accessibility Updates
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2024 Specifications

SECTION 817 — PAVEMENT MARKINGS

817.1 Description.

This work consists of supplying, installing, and removing temporary or permanent pavement markings.

817.2 Materials.

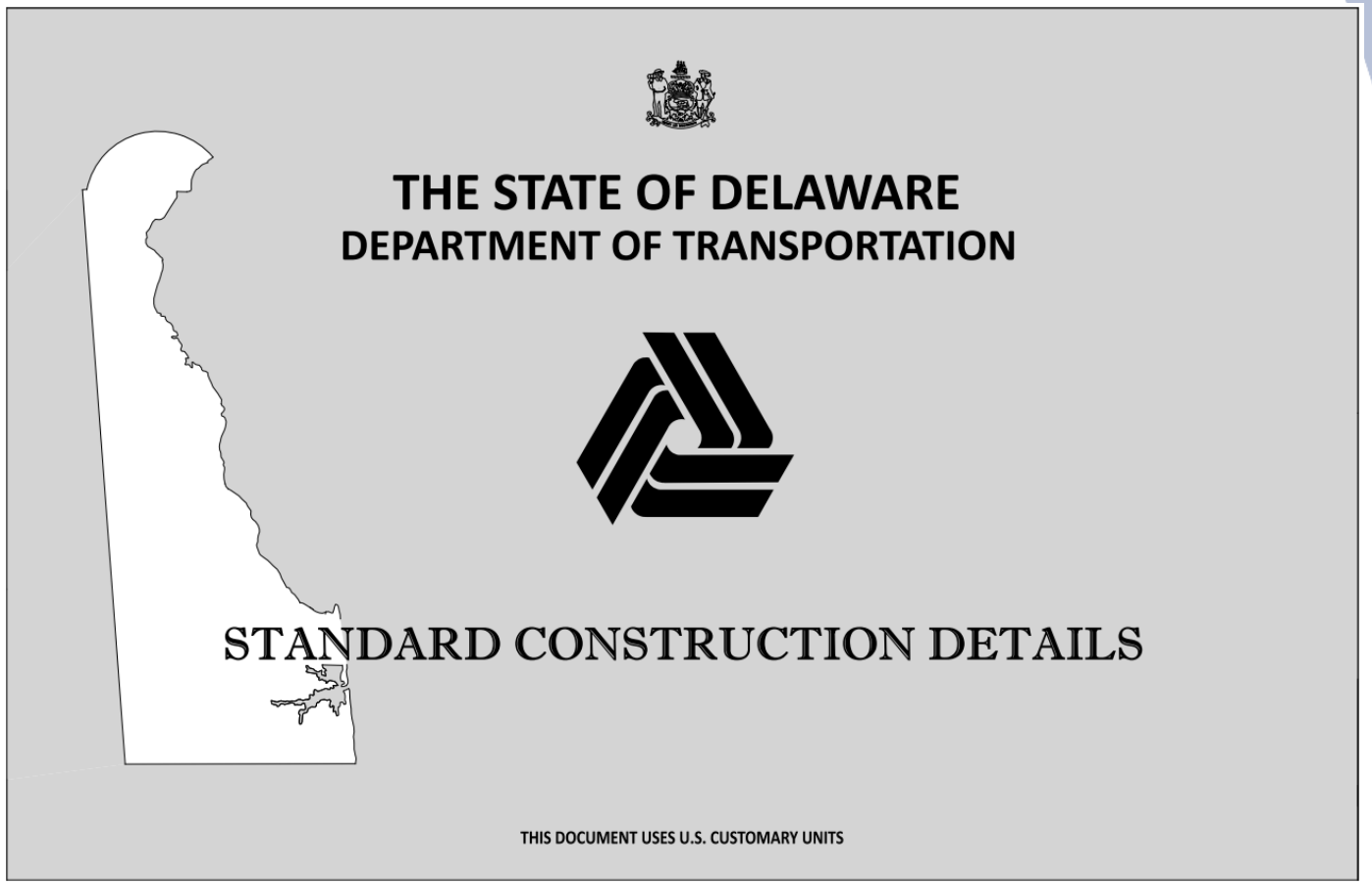
A. Latex Pavement Markings	
1. Latex Paint	Section 1071.1.1.A
2. Glass Beads	Section 1071.1.1.B
B. Epoxy Pavement Markings	
1. Epoxy Paint	Section 1071.2.1.A
2. Glass Beads	Section 1071.2.1.B
3. Black Epoxy Contrast Markings	Section 1071.2.1.C
C. Alkyd Type Thermoplastic	Section 1071.3.1
F. Preformed Thermoplastic Striping	Section 1071.3.2
C. Pavement Marking Tape	
1. Temporary Tape	Section 1071.3.3.A
2. Blackout Tape	Section 1071.3.3.B
3. Preformed Tape	Section 1071.3.3.C
E. Raised/ Recessed Pavement Marker	
1. Marker Housing	Section 1071.4.1.A
2. Marker Lens	Section 1071.4.1.B
3. Epoxy Resin Adhesive	Section 1071.4.1.D

2025 Specifications

DelDOT Standard Construction Details

deldot.gov/Publications/manuals/const_details/index.shtml

- Annual Publications



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2025 Standard Construction Details

- Major Construction Updates
  - Laydown Curb at End Treatments (2024 update)
  - Guardrail Anchorage
  - Concrete Barrier Shape
  - Drainage Inlet Depth

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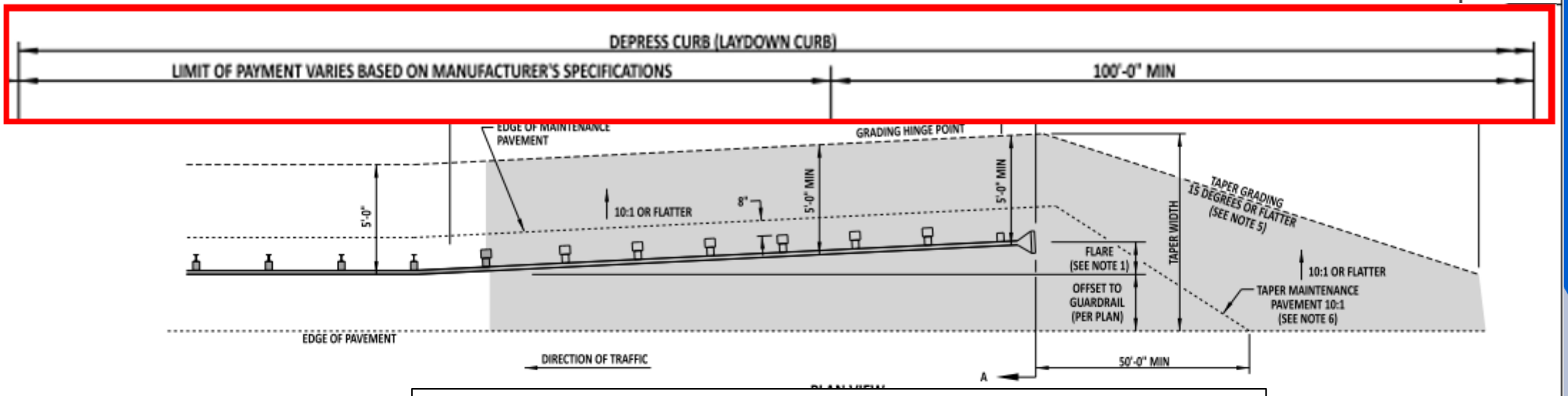
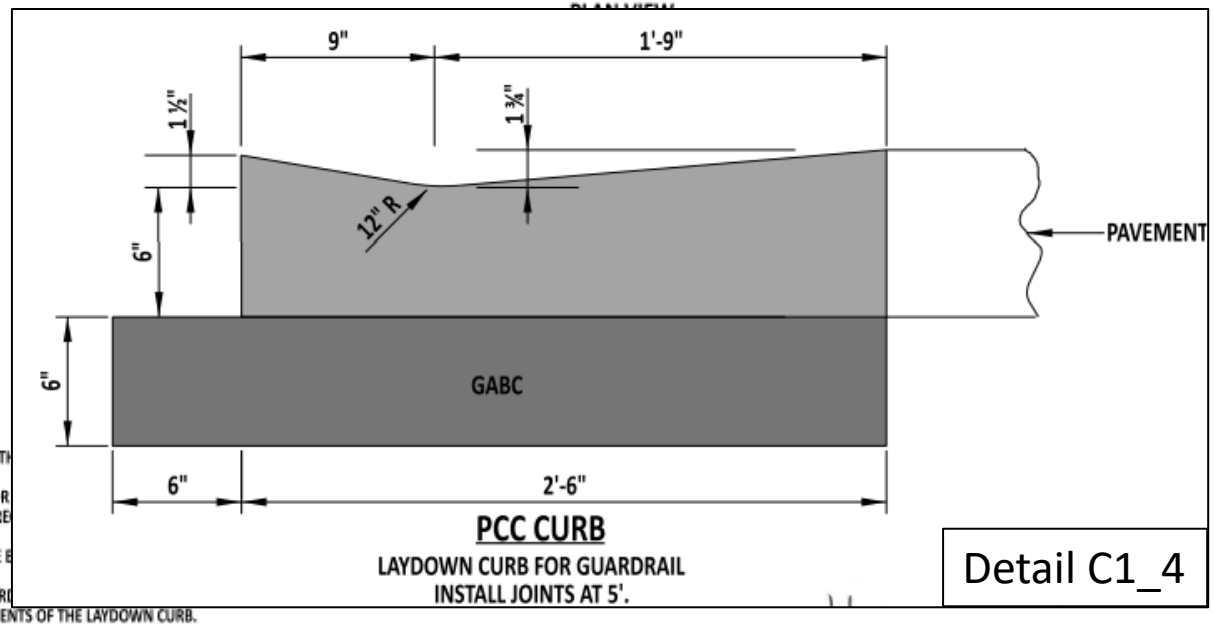
SCALE : NTS





= NO OBSTRUCTIONS IN SHADED AREA

PCC CURB

LAYDOWN CURB FOR GUARDRAIL
INSTALL JOINTS AT 5'.

Detail C1_4

NOTES:

1). FLARE THE END TREATMENT AWAY FROM THE ROAD IN ACCORDANCE WITH SPECIFICATIONS UNLESS OTHERWISE INDICATED ON THE PLANS.
2). THIS DETAIL WAS SOLELY CREATED TO SHOW THE GRADING REQUIRED FOR TREATMENT AND IS APPLICABLE IN THE ABSENCE OF SPECIFIC GRADING RE GUARDRAIL END TREATMENT MANUFACTURER.
3). IF CURB IS PRESENT, INSTALL LAYDOWN CURB WITHIN THE LIMITS OF THE E THROUGH THE LENGTH OF THE TAPER GRADING.
4). DO NOT PLACE GUARDRAIL REFLECTORS WITHIN THE LIMITS OF THE GUARD
5). IF LAYDOWN CURB IS PRESENT, EXTEND THE TAPER GRADING TO THE EXTENTS OF THE LAYDOWN CURB.
6). SEE DETAIL B-1, SHEET 3 FOR MAINTENANCE PAVEMENT MATERIAL DIMENSIONS.
7). PROVIDE GUARDRAIL END TREATMENTS IN ACCORDANCE WITH SECTION 721.
   A) TYPE 1 - TANGENT END TREATMENT.
   B) TYPE 2 - FLARED END TREATMENT.

DelDOT

Andrew Shot 12/22/2023
ENGINEERING SUPPORT DATE
RECOMMENDED

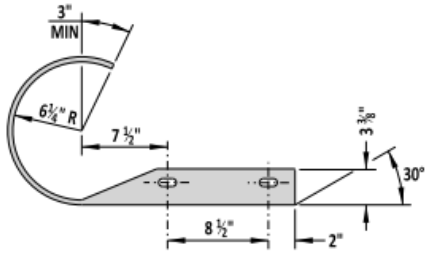
GRADING FOR GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1 & TYPE 2

STANDARD NO. B-2 (2024) | SHT. 1 OF 2

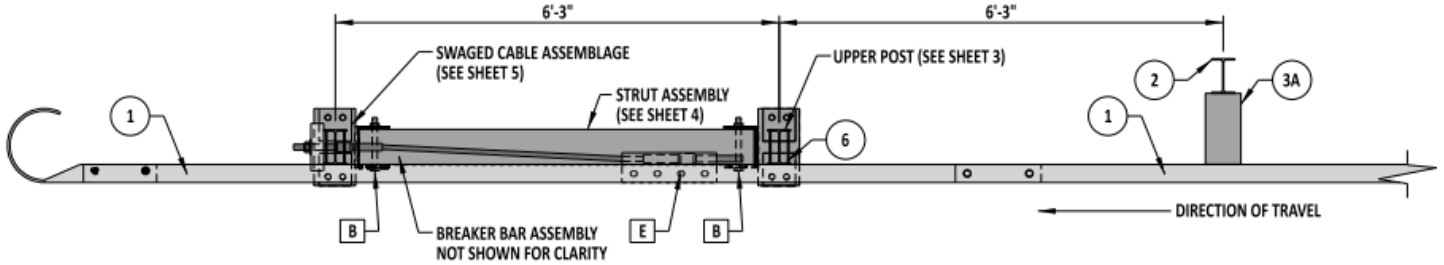
REVIEWED — DEPUTY DIRECTOR - DESIGN — 22 December 2023 DATE

APPROVED — CHIEF ENGINEER — 01/11/2024 DATE

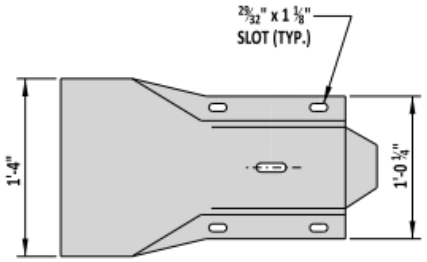
SCALE : NTS



END SECTION PLAN



PLAN VIEW



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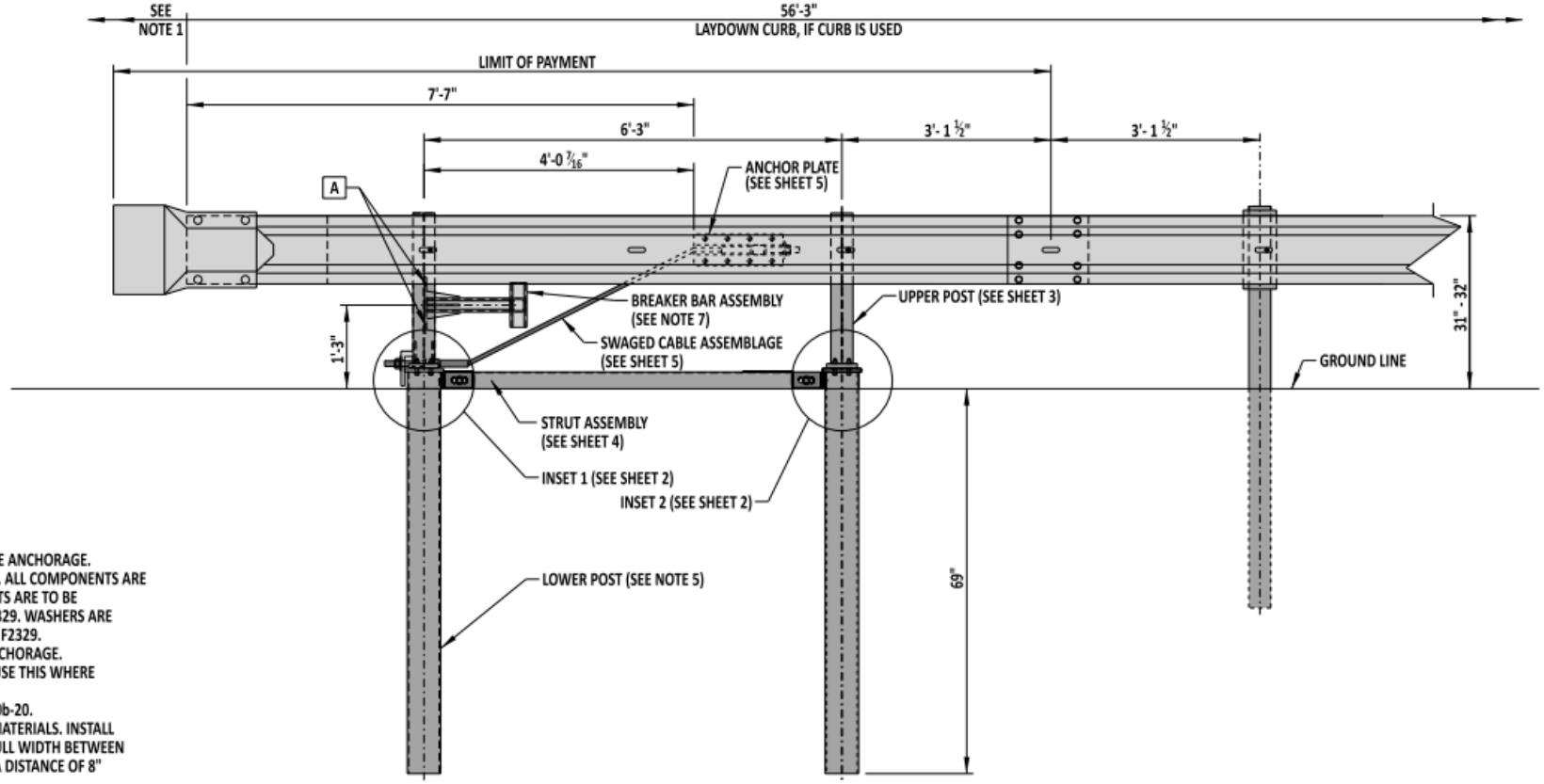

ELEVATION VIEW

NOTES:

1). IF CURB IS USED, EXTEND LAYDOWN CURB 50'-0" DOWNSTREAM OF THE ANCHORAGE.
2). SEE SHEET 5 FOR COMPONENT LIST AND CONNECTION HARDWARE LIST. ALL COMPONENTS ARE TO BE GALVANIZED IN ACCORDANCE WITH ASTM A123. BOLTS AND NUTS ARE TO BE GALVANIZED IN ACCORDANCE WITH ASTM A153, B695 CLASS 55, OR F2329. WASHERS ARE TO BE GALVANIZED IN ACCORDANCE WITH ASTM A123, ASTM A153, OR F2329.
3). DO NOT PLACE GUARDRAIL REFLECTORS WITHIN THE LIMITS OF THE ANCHORAGE.
4). THIS IS DESIGNED TO ACT AS A DOWNSTREAM END ANCHOR. DO NOT USE THIS WHERE HEAD ON IMPACTS ARE EXPECTED.
5). THIS DETAIL IS BASED ON TESTING PERFORMED REPORT NO. TRP 03-370b-20.
6). SEE DETAIL B-1, SHEET 3 FOR MAINTENANCE PAVEMENT DEPTHS AND MATERIALS. INSTALL MAINTENANCE PAVEMENT WITHIN THE LIMITS OF PAYMENT, TO THE FULL WIDTH BETWEEN THE EDGE OF PAVEMENT, OR BACK OF CURB IF CURB IS INSTALLED, TO A DISTANCE OF 8" BEHIND THE BACK OF POST.
7). TIGHTEN SWAGE CABLE ASSEMBLAGE UNTIL CABLE IS TAUT. DO NOT OVER TIGHTEN OR TWIST THE CABLE. SEE SHEET 5 FOR ADDITIONAL DETAIL ON SWAGE CABLE ASSEMBLAGE.

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Andrew Short 10/15/2024
ENGINEERING SUPPORT DATE
RECOMMENDED

STEEL-POST END ANCHORAGE, TYPE 31
PLAN AND ELEVATION VIEW

STANDARD NO. B-5 (2025) SHT. 1 OF 5

REVIEWED
DEPUTY DIRECTOR - DESIGN 23 October 2024
DATE

APPROVED
CHIEF ENGINEER 10/25/2024
DATE

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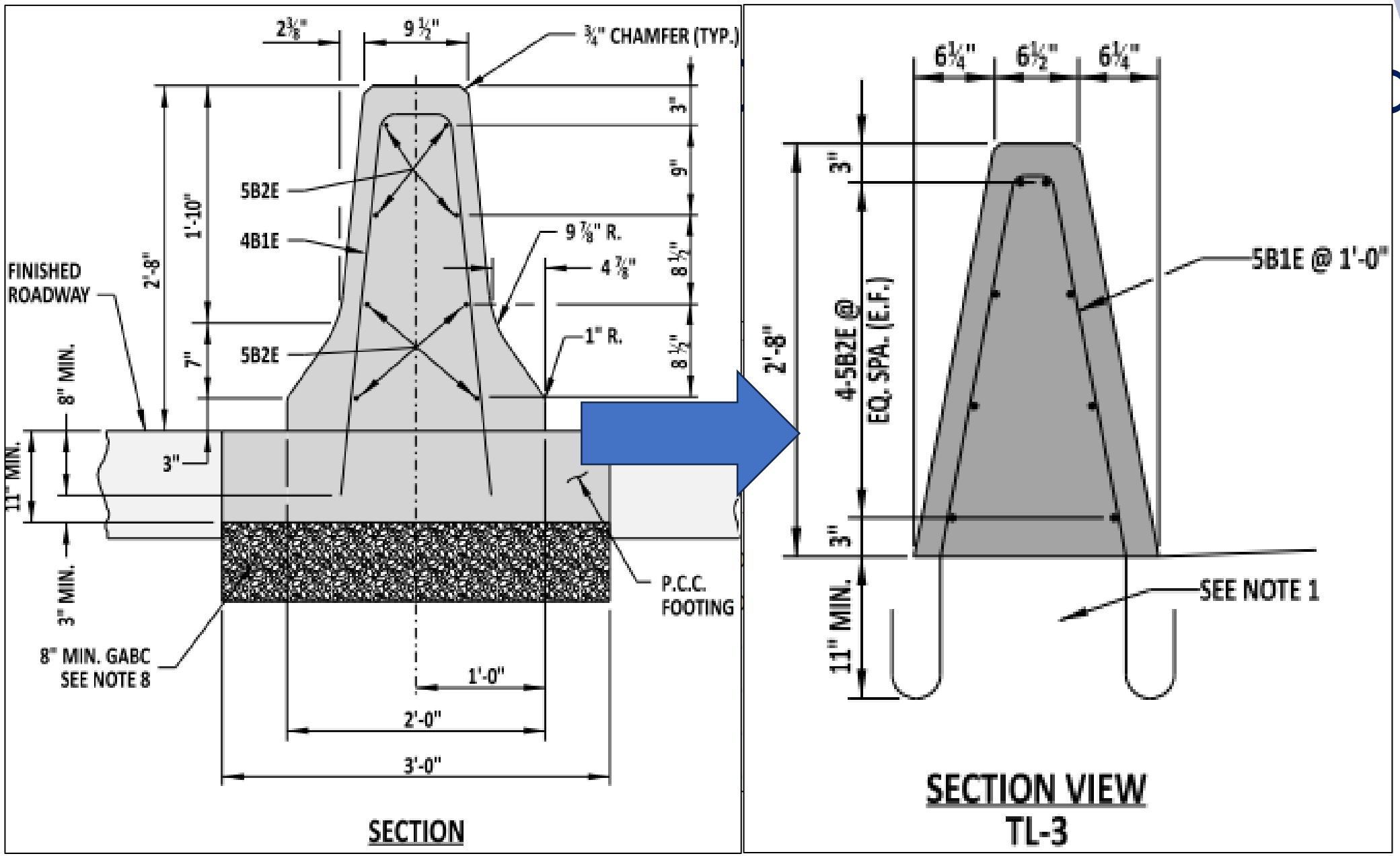
2⅜"
9½"
¾" CHAMFER (TYP.)
3"
9"
8½"
8½"
5B2E
4B1E
9⅞" R.
4⅞"
1" R.
5B2E
1'-10"
2'-8"
7"
FINISHED ROADWAY
8" MIN.
3"
11" MIN.
3" MIN.
P.C.C. FOOTING
8" MIN. GABC SEE NOTE 8
1'-0"
2'-0"
3'-0"
SECTION
6¼"
6½"
6¼"
3"
2'-8"
4-5B2E @ EQ. SPA. (E.F.)
3"
11" MIN.
5B1E @ 1'-0"
SEE NOTE 1
SECTION VIEW
TL-3

INLET BOX SIZE		COVER SLAB SIZE (L X W)	DRAINAGE INLET TOP UNIT	INLET TOP UNIT REBAR LENGTH	INLET TOP UNIT LIMIT OF PAYMENT	INLET TOP UNIT BAR BENDING DIAGRAM	FRAME & GRATE (SEE DETAIL D-5, SHEET 2) SEE NOTE 6	MAXIMUM PIPE SIZE (SEE NOTE 1)		MAXIMUM HEIGHT (INVERT TO TOP OF GRATE)
L	W							L	W	
17⅝"	11⅝"	NO COVER SLAB	TYPE 5 (FRAME & GRATE COMBO)	N/A	N/A	N/A	TYPE 5 (FRAME & GRATE COMBO)	N/A	N/A	4'-0"
24"	24"	NO COVER SLAB	TYPE 6 (FRAME & GRATE COMBO)	N/A	N/A	N/A	TYPE 6 (FRAME & GRATE COMBO)	15"	15"	4'-0"
34"	18"	NO COVER SLAB (D-5, SHEET 7)	TYPES A, C, D, & E (D-5, SHEET 7)	79"	82"	S504 (D-5, SHEET 7)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	24"	N/A	4'-0"
34"	24"	NO COVER SLAB (D-5, SHEET 6)	TYPES A, B, C, D, E, & S (SEE NOTE 3)	79"	82"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	24"	15"	4'-0"
48"	30"	60" x 42" (D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 4)	93"	96"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	36"	21"	11'-4"
48"	48"	60" x 60" (D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 4)	93"	96"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	36"	36"	11'-4"
66"	30"	78" x 42" (D-4, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 4)	111"	114"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	48"	21"	11'-4"
66"	48"	78" x 60" (D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 4)	111"	114"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	48"	36"	11'-4"
66"	66"	78" x 78" (D-5, SHEET 4)	TYPES A, B, C, D, E & S (SEE NOTE 4)	111"	114"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	48"	48"	11'-4"
72"	24"	84" x 36" (D-5, SHEET 5)	TYPES A, B, C, D, E & S (SEE NOTE 4)	117"	120"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	54"	15"	4'-0"
72"	48"	84" x 60" (D-5, SHEET 5)	TYPES A, B, C, D, E & S (SEE NOTE 4)	117"	120"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	54"	36"	11'-4"
72"	72"	84" x 84" (D-5, SHEET 5)	TYPES A, B, C, D, E & S (SEE NOTE 4)	117"	120"	S501 (SEE NOTE 4)	TYPES 1 THRU 4 AND 7 GRATE STANDARD DRAINAGE INLET FRAME	54"	54"	11'-4"

D_R

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QUESTIONS &
COMMENTS

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THANK YOU!

https://linktr.ee/delawaredot