



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 8, 2015
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative

Subject: Miscellaneous Corrections

Case 15-01A

PURPOSE: Add omitted text to section 735.1. Text was approved by Case 14-07 and merged into Case 13-15 both cases were approved in 2014.

REVISION:

REINFORCED CONCRETE PIPE

735.1 GENERAL:

These specifications cover reinforced concrete pipe and related structures intended to be used for conveyance of sewage, industrial waste, and storm and irrigation water.

Except as modified herein reinforced concrete pipe shall be manufactured and tested in conformance with the requirements of ASTM C76 for circular pipe, ASTM C506 [for arch pipe, and ASTM C507](#) for elliptical pipe.

Whatever struts or other protective methods proved necessary to furnish and install the pipe to meet the limitation of cracks as specified herein, shall be provided and maintained throughout pipe handling and transportation.

SECTION 710

710.3 MIX DESIGN REQUIREMENTS:

710.3.1 General: The mix design for asphalt concrete shall be prepared by a laboratory that is accredited through the AASHTO Accreditation Program (AAP) in Hot Mix Asphalt Aggregates and Hot Mix Asphalt. The laboratory shall be under the direct supervision of a Civil Engineer, registered by the State of Arizona, and who is listed by ADOT as a "Qualified Asphaltic Concrete Mix Design Engineer" within ADOT's latest list of approved laboratories. The latest list of approved laboratories is available on ADOT's web page www.azdot.gov. The date of the design shall not be older than one year from the date of submittal, unless supportive documentation is provided and approved by the Engineer.

The mix design report shall include the following elements as a minimum.

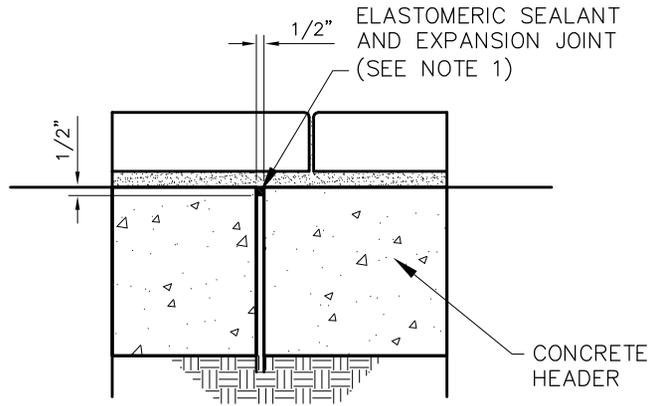
- (1) The name and address of the testing organization and the person responsible for the mix design report.
- (2) The mix plant identification and/or location, as well as the supplier or producer name.
- (3) A description of all products that are incorporated in the asphalt concrete along with the sources of all products, including admixtures and asphalt binder, and their method of introduction.
- (4) The supplier and grade of asphalt binder, the source and type of mineral aggregate, and the percentage of asphalt binder and mineral admixture used.
- (5) The percentage of RAP and RAP Binder being contributed to the total mix shall be included in the mix design report.
- (6) The mix design report whether Gyratory or Marshall shall state the traffic condition (low or high traffic) and size designation.
- (7) The results of all testing, determinations, etc., such as: specific gravity and gradation of each component, water absorption, sand equivalent, loss on abrasion, fractured coarse aggregate particles, Tensile Strength Ratio (ASTM D 4867), Marshall stability and flow, asphalt absorption, percent air voids, voids in mineral aggregate, and bulk density. Historical abrasion values may be supplied on existing sources. The submittal should include a plot of the gradation on the Federal Highway Administration's 0.45 Power Gradation Chart, plots of the compaction curves and the results of moisture sensitivity testing.
- (8) The laboratory mixing and compaction temperature ranges for the supplier and grade of asphalt binder used within the mix design.
- (9) A specific recommendation for design asphalt binder content and any limiting conditions that may be associated with the use of the design, such as minimum percentages of crushed or washed fine aggregate.
- (10) The supplier's product code, the laboratory Engineer's seal (signed and dated), and the date the design was performed.
- (11) If a Warm Mix Technology or additive is used; the following shall be included:
 - Technology type and supporting manufacturer information; including instructions pertaining to laboratory mixture temperatures and curing.
 - Amount (%) of additive (technology) used in the mixture.
 - Attached copy of the ADOT approved product list, showing additive/technology
 - Minimum plant production temperature shall not fall below manufacturer's recommendation.
 - Minimum field compaction temperature shall be identified.
 - Identify any special mixing or compaction temperatures or special methods to be used when conducting **QA** or **QC** testing of field collected samples. Example: if the field collected samples of warm mix asphalt can be treated as conventional hot asphalt mix, provide the equivalent conventional hot asphalt mix compaction temperature.

QC

QA

REVISE 'OA' TO QUALITY ASSURANCE
" 'OC' " " CONTROL

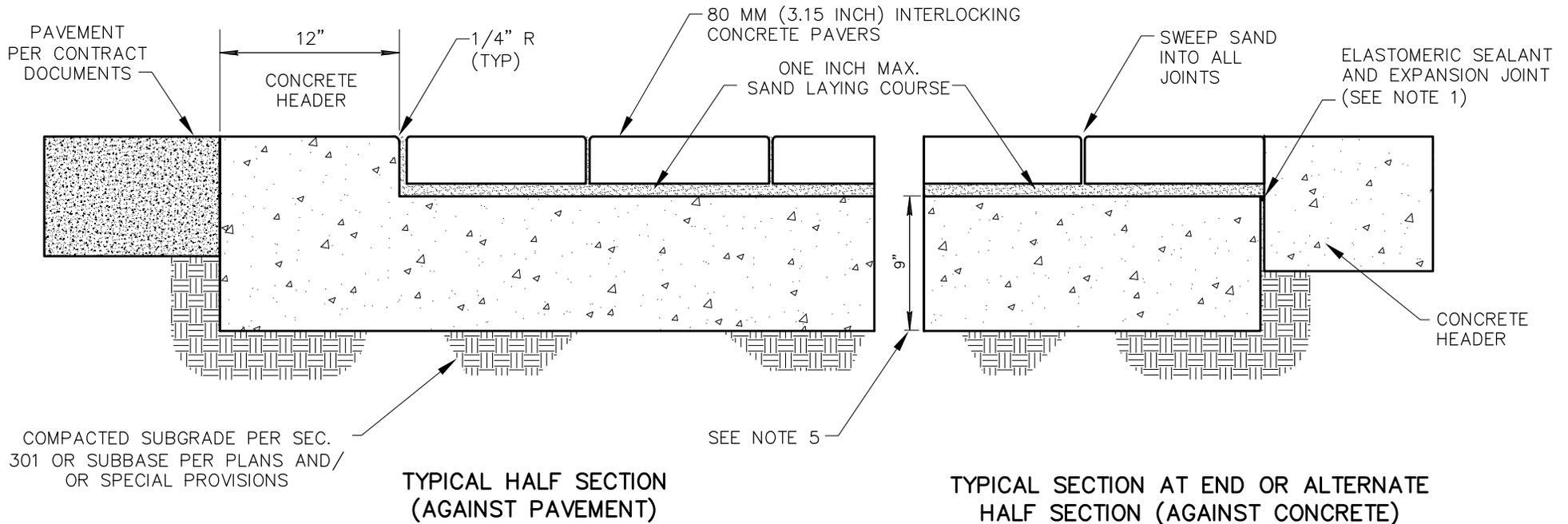
THE DEFINITIONS OF QA AND QC HAVE NOT BEEN IDENTIFIED.



EXPANSION JOINT DETAIL

NOTES:

1. 1/2 INCH EXPANSION JOINT, ASTM D-1751 PER SEC. 729 AND ELASTOMERIC SEALANT PER SEC. 342
2. CONTRACTION JOINTS PER SEC. 342
3. MATERIALS AND CONSTRUCTION PER SEC. 342
4. PORTLAND CEMENT CONCRETE SHALL BE CLASS A
5. DESIGN PARAMETERS FOR THE THICKNESS IS BASED ON:
 ASSUMES MODULUS OF SUBGRADE REACTION (K) = 100 pci
 CONCRETE WORKING STRESS (f_t) = 300 psi
 TERMINAL SERVICABILITY INDEX (P_t) OF 2.5 OVER 20 YEARS
 AND 1 MILLION TOTAL EQUIVALENT 18-KIP SINGLE-AXLE
 LOAD APPLICATIONS



TYPICAL HALF SECTION (AGAINST PAVEMENT)

TYPICAL SECTION AT END OR ALTERNATE HALF SECTION (AGAINST CONCRETE)

DETAIL NO.

225



STANDARD DETAIL
ENGLISH

CONCRETE PAVERS

REVISED

01-01-2016

DETAIL NO.

225



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: June 3, 2015 Revised 7/9/2015

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Miscellaneous Corrections **Case 15-01 D**

PURPOSE: Correction titles on Detail 270 and correct the Grade Adjustment Detail.

REVISION:

Correction 1 – Detail 270 Title

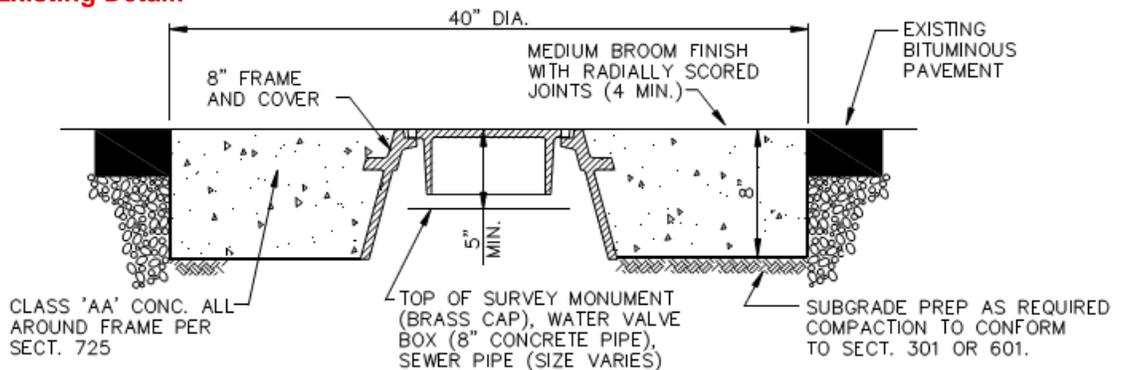
Title shown on current Detail: FRAME AND COVER
Requested corrected Detail title: **FRAME AND COVER AND GRADE ADJUSTMENT**

Title shown in current index: FRAME AND COVER (AND GRADE ADJUSTMENTS)
 Title shown in index prior to 2001: FRAME & COVER AND GRADE ADJUSTMENT

Correction 2 – Revise the grade adjustment detail.

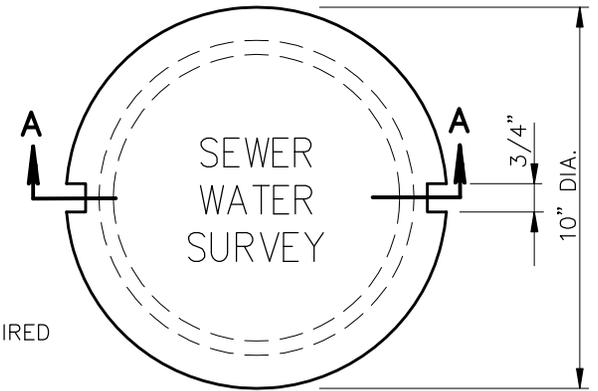
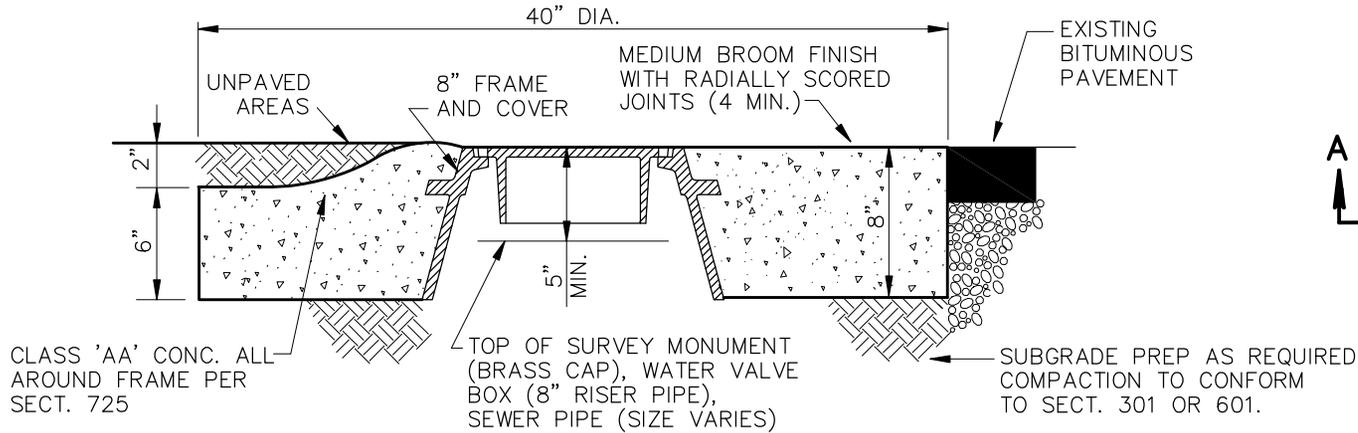
Revise the title, show both paved and unpaved conditions, and replace (8" CONCRETE PIPE) with (8" RISER PIPE).

Existing Detail:

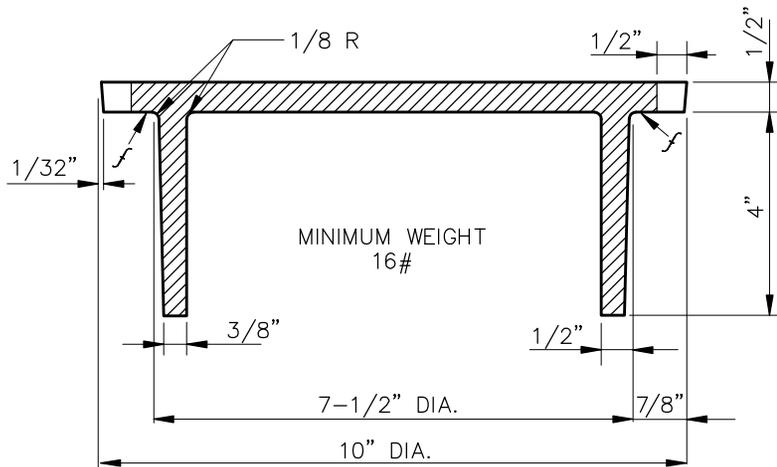


CLEAN OUT FRAME & GRADE ADJUSTMENT
WATER VALVE, SURVEY MONUMENT, OR SEWER

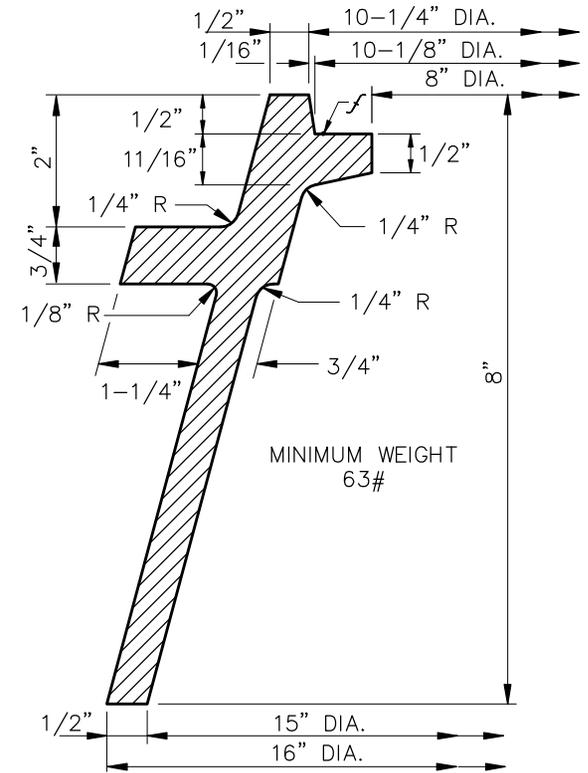
Revised Title: GRADE ADJUSTMENT FOR FRAME AND COVER



GRADE ADJUSTMENT FOR FRAME AND COVER



COVER SECTION A-A



8" C.I. FRAME AND COVER

NOTES:

1. CASTING TO CONFORM TO SECT. 787.
2. LETTERS ON COVER TO BE AS FOLLOWS:
"SEWER", "WATER", OR "SURVEY" AS DIRECTED TOTAL WIDTH OF WORD "SEWER" OR "WATER" 3-3/4". TOTAL WIDTH OF WORD "SURVEY" 4-1/2". LETTER SIZE 5/8" x 3/4", RAISED 1/16" ABOVE LEVEL OF COVER, TYPE OF LETTERS TO BE SUBMITTED FOR APPROVAL.
3. \int INDICATES MACHINE FINISHED SURFACE.

DETAIL NO.

270



STANDARD DETAIL
ENGLISH

**FRAME AND COVER
AND GRADE ADJUSTMENT**

REVISED

01-01-2016

DETAIL NO.

270



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: June 23, 2015
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative
Subject: Miscellaneous Corrections

Case 15-01 E

PURPOSE: Remove a conflict between specification Section 206 (STRUCTURE EXCAVATION AND BACKFILL) and Section 601 (TRENCH EXCAVATION, BACKFILLING AND COMPACTION) concerning structural backfill requirements for manholes.

Section 206.1 identifies manholes as a structure type covered by section 206. Section 206.4.2 requires backfill to be Select Material, Type A or B in Table 702-1 and Section 206.4.4 only allows ½ sack or 1 sack controlled low strength material as an alternative backfill material. Section 601.2.6 requires the excavation be backfilled with the same material required for the adjoining pipe line trench. Section 601.4.5 allows “sound earthen material with no piece larger than 4 inches and be free from broken concrete, broken pavement, wood or other deleterious material” for final backfill.

REVISIONS:

601.2.6 Excavation for Manholes, Valves, Inlets, Catch Basins and Other Accessories: The Contractor may place concrete directly against excavated surfaces for cast-in-place items, provided that the faces of the excavation are firm, unyielding, and are at all points outside the structure lines shown on the plans. If the native material is such that it will not stand without sloughing or if precast structures are used, the Contractor shall excavate as needed to place bracing, shoring, and forms or to place the precast structure. ~~The excavation shall be backfilled with the same material required for the adjoining pipe line trench and compacted per Table 601-2.~~

Any unnecessary excavation below the elevation indicated for the foundation of any structure shall be replaced with the same class of concrete specified for the structure or with 1½ sack controlled low strength material as specified in Section 728. When the replacement material is structural concrete, the material shall be placed at the same time as the structure. However, when using 1½ sack controlled low strength material, placement of the material shall be per Section 604 which requires a time lag between placement of the controlled low strength material and the structural concrete. The placement of the additional material shall be at no cost to the Agency.

625.3.1 Manholes: (revise the eighth paragraph as shown)

Backfilling shall be done in accordance with the requirements for trench backfilling as stated in Section ~~601~~206.

REFERENCES:

206.1 DESCRIPTION:

Structure excavation shall consist of the removal of material for the construction of foundations for bridges, manholes, retaining walls, box culverts, head walls for culverts, and other structures, and other excavation designated on the plans or in these specifications or in the special provisions as structure excavation.

Structure backfill shall consist of furnishing material, if necessary, and placing and compacting backfill material around structures to the lines designated on the plans or specified or directed by the Engineer.

Structure excavation and structure backfill shall include the furnishing of all materials and equipment and the providing of other facilities which may be necessary to perform the excavations and place and compact the backfill, and the subsequent removal of these facilities, except where they are required or permitted by the plans, special provisions or Engineer to remain in place.

206.4.2 Structure Backfill for Earth Retaining Structures: Structure Backfill to be placed against concrete structures designed to retain earth loads, such as bridge abutment backwalls and wingwalls, box culvert outside walls and wingwalls, and retaining walls:

(A) Shall conform to the material and the graduation requirements for Select Material, Type A or B in Table 702-1 unless otherwise approved by the Engineer.

206.4.4 Structure Backfill for Structures within Paved Areas: Where a structure is located within an existing street, proposed street, or paved area shall be compacted to the minimum density specified in Table 601-2, for Type I or shall be filled with ½ sack or 1 sack controlled low strength material as specified in Sections 604 and 728.

| Backfill Type | Location | From Surface To 2 feet Below Surface | From 2 feet Below Surface To 1 foot Above Top of Pipe | From 1 foot Above Top of Pipe to Bottom of Pipe |
|----------------------|--|---|--|--|
| I | Under any existing or proposed pavement, curb, gutter, attached sidewalk, roadway shoulders, and other areas within right-of-way subject to vehicular traffic, or when any part of the trench excavation is within 2-feet of the existing pavement, curb, or gutter. | 100% for granular 95% for non-granular | 95% | 95% |
| II | On any utility easement or right-of-way outside limits of Type I backfill. | 85% | 85% | 90% |
| III | Around any structures (manholes, etc.) or exposed utilities outside limits of Type I backfill. | 95% in all cases | | |

601.4.5 Final Backfill: Material placed above the initial backfill to the top of the trench or to the bottom of the road base material. Final backfill shall be placed in lifts that shall not exceed 2 feet and the lift height shall not be more than can be compacted to the required density with the equipment and methods being used.

Final backfill shall be ABC per Section 702 or sound earthen material with no piece larger than 4 inches and be free from broken concrete, broken pavement, wood or other deleterious material.



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: July 8, 2015
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative
Subject: Miscellaneous Corrections

Case 15-01 F

PURPOSE: Correct wrong reference in Section

REVISION: Replace 'Section 712' with 'Section 718' in the third paragraph of Section 334.3.

SECTION 334

PRESERVATIVE SEAL FOR ASPHALT CONCRETE

334.1 DESCRIPTION:

The asphalt concrete preservative seal shall be composed of an emulsified asphalt or asphalt rejuvenate, or an asphalt sealant to preserve the asphalt concrete pavement.

Preservative seals are applicable for asphalt pavements as directed on the plans, special provisions, or the Engineer.

334.2 MATERIALS:

The preservative seal shall be one of the following materials as specified by the Engineer:

| <u>Type</u> | <u>Description</u> | <u>Material Conformance</u> |
|-------------|--|-----------------------------|
| A | Rejuvenating emulsion | Section 718 |
| B | Petroleum hydrocarbon emulsion | Section 718 |
| C | "Filled" asphalt sealer such as TRMSS or equal | Section 718 |
| D | Acrylic polymer emulsion | Section 718 |
| Other | Diluted asphalt emulsion, CSS-1 or SS-1h | Section 713 |

334.3 CONSTRUCTION METHOD:

The material shall be approved by the Engineer in accordance to this specification. The application rates, dilution and curing shall be directed by the Engineer in accordance with this specification.

The contractor shall be responsible to clean the pavement to be treated free of trash, debris, earth or other deleterious substances present in sufficient quality to not interfere with the work to be performed.

The application rate will be based upon a typical surface condition test site with application rate trials to determine the needed rate. All application rates specified in [Section 712](#) shall be a diluted 50-50 emulsified asphalt and water, except as recommended by the manufacturer for Type B and C. Any over applied seal will be sanded as directed by the Engineer. Application equipment shall be in accordance with [Section 330](#).

Before opening a treated area to traffic, the surface shall be checked for slipperiness and/or tackiness. If the treated portion of the roadway must be opened to traffic prior to the disappearance of slipperiness and/or tackiness, the surface shall be sanded with a minimum of 1 ½ pounds per square yard or as directed by the Engineer. Sand Blotter shall comply with [Section 333](#).