ADDENDUM NO. 2 – APRIL 13, 2017

CITY OF ABERDEEN
DEPARTMENT OF PUBLIC WORKS
BID NO. 17-01

Bus Stop Pads

City of Aberdeen Bus Stop Improvements

To the holders of specifications, the following additions, deletions and/or clarifications are hereby made a part of the contract documents. All other items remain unchanged.

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A. Concerning the Project Manual

(1) **ATTACH** Section 611 – Detectable Warning Surface Brick Pavers.
(2) **ATTACH** Maryland State Highway Administration 2016 Utility Permit Master Provisions.
(3) **DELETE** Paragraph 1.02.D of Section 01025 on Page 01025-1.
(4) **DISCARD** Document 00300 – Bid Form in its' entirety and **REPLACE** with the attached Bid Form.
(5) **DISCARD** Section 01025 – Measurement and Payment in its' entirety and replace with the attached Section 01025.

B. Concerning the Drawings

(1) **DELETE** Plate D-16 on Sheet No. C-6.
(2) **DELETE** Plates S-7, S-8 and S-10 on Sheet No. C-6 and **REPLACE** with the attached SHA Details MD 655.11, MD 655.12 and MD 655.40.
(3) **DELETE** the Curb Trench Restoration detail on Sheet No. C-6.

C. Miscellaneous

(1) Four original insurance certificates are required to be submitted per Article 19, Paragraph 19.01 on page 00100-10 of the Project Manual.
(2) Delivery tickets, not invoices, shall be submitted with the Contractor's Application for Payment for all materials delivered to the site.

(3) The two ramps on either side of the paved driveway at the MARC Station site do not require detectable warning surfacing to be installed.
(4) All new sidewalks shall be 5 feet wide and include a 5-foot long transition to match the existing sidewalk width.
(5) SHA Detail MD 811.01 – Handhole (Materials Detail) is provided and shall be used as the Junction Box specification.
(6) The conduit at the MARC Station site shall be turned up at the utility pole with a 90° bend.
(7) Extruded curb at the Girls and Boys Club site shall be replaced with curb and gutter at the new ramp.
(8) The proposed sidewalk shall be constructed behind the extruded curb at the Girls and Boys Club site.
(9) The contractor shall coordinate vertical adjustment of the Verizon box with the utility company, at the Walmart site so the box is level with the new sidewalk.
(10) The area behind the new sidewalk at the Walmart site shall be graded at 3:1 and seeded.
(11) Rain days will not be counted against the contract period.
(12) The existing handicapped ramp at the MARC Station site will remain and be modified to meet current ADA requirements.

BIDDERS MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPECIFIED PLACE ON THE BID FORM. THE ABSENCE OF THIS ACKNOWLEDGMENT WILL BE CAUSE FOR REJECTION OF THE BID.

END OF ADDENDUM NO. 2

DOCUMENT 00300

BID FORM

BIDDER (Name and Address):

PROJECT IDENTIFICATION: **CITY OF ABERDEEN, DEPARTMENT OF PUBLIC WORKS, BUS STOP IMPROVEMENTS – CONTRACT NO. 17-1**

CONTRACT IDENTIFICATION: General Construction

THIS BID IS SUBMITTED TO: **CITY OF ABERDEEN**
60 North Parke Street
P.O. Box 70
Aberdeen, MD 21001

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform and furnish all Work as specified or indicated in the Bidding Documents for the Contract Price and within the Contract Time(s) and in accordance with the other terms and conditions of the Bidding Documents.

2. Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for a period of 60 days from the date of Bid opening unless award is delayed by a required approval from a governmental agency, the sale of bonds, or the award of a grant or grants, in which event the Bids shall remain open for a period of 120 days from the date of Bid opening. Thirty-day extensions of the date for the award may be made by the mutual written consent of the Owner and the apparent Successful Bidder. Bidder agrees, if required by Owner prior to and as a condition of Contract award, to execute and sign any documents related to financing of the Project. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Documents within the number of days stated in the Owner's Notice of Intent to Award.

3. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

   3.1 Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Number

3.2 Bidder has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, performance, and furnishing of the Work;

3.3 Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.

3.4 Bidder has carefully studied all reports of explorations and tests of conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing structures at or contiguous to the site which have been identified in the Supplementary Conditions as provided in Paragraph 4.2.1 of the General Conditions. Bidder acknowledges that such reports and drawings are not Bidding Documents or Contract Documents and may not be complete for Bidder's purposes. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions at or contiguous to the site or otherwise which may affect cost progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price, and other terms and conditions of the Bidding Documents and Contract Documents.

3.5 Bidder is aware of the general nature of Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Bidding Documents and Contract Documents.

3.6 Bidder has correlated the information known to Bidder, information and observations obtained from visits to the site, reports and drawings identified in the Bidding Documents and Contract Documents and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents and Contract Documents.

3.7 Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and Contract Documents and the written resolution thereof by Engineer is acceptable to Bidder, and the Bidding Documents and Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

3.8 This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

4. Bidder will complete the Work for the following lump sum and unit prices price. Refer to Section 01025 for description of pay items.

SITE A – AFFINITY APARTMENTS

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price ($)	Extended Price In Figures ($)
A1	Construct Bus Stop Pad	SF	80	$_____	$_____
A2	Construct Sidewalk	SF	60	$_____	$_____
A3	Restore Seeded Areas	LS			$_____
A4	Maintenance of Traffic	LS			$_____
A5	Mobilization	LS			$_____

Total Site A (Figures):_____

SITE B – BOYS AND GIRLS CLUB OF HARFORD COUNTY

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price ($)	Extended Price In Figures ($)
B1	Construct Bus Stop Pad	SF	40	$_____	$_____
B2	Construct Sidewalk	SF	200	$_____	$_____
B3	Install Curb and Gutter	LF	10	S_____	$_____
B4	Install Detectable Warning Surface	SF	8	S_____	$_____
B5	Restore Seeded Areas	LS			$_____
B6	Maintenance of Traffic	LS			$_____
B7	Mobilization	LS			$_____

Total Site B (Figures):_____

SITE C – MARC STATION

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price ($)	Extended Price In Figures ($)
C1	Construct Bus Stop Pad	SF	208	$_____	$_____
C2	Construct Curb	LF	20	$_____	$_____
C3	Construct Sidewalk	SF	385	$_____	$_____

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price ($)	Extended Price In Figures ($)
C4	Install Detectable Warning Surface	SF	8	$_____	$_____
C5	Furnish and Install 2" Diameter PVC Conduit	LF	70	$_____	$_____
C6	Furnish and Install Electrical Junction Box	EA	1	$_____	$_____
C7	Remove Tree	EA	2	$_____	$_____
C8	Relocate(2) Signs	LS			$_____
C9	Restore Seeded Areas	LS			$_____
C10	Maintenance of Traffic	LS			$_____
C11	Mobilization	LS			$_____

Total Site C (Figures):_____

SITE D – WALMART

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price ($)	Extended Price In Figures ($)
D1.	Construct Bus Stop Pad	SF	40	$_____	$_____
D2	Construct Sidewalk	SF	245	$_____	$_____
D3	Replace Curb and Gutter	LF	10	$_____	$_____
D4	Restore Seeded Areas	LS			$_____
D5	Maintenance of Traffic	LS			$_____
D6	Mobilization	LS			$_____

Total Site D (Figures):_____

E- Contingency Items (Applicable to All Sites)

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price ($)	Extended Price In Figures ($)
E1	Miscellaneous Unclassified Excavation	CY	10	$_____	$_____
E2.	Miscellaneous Aggregate for Backfill and other Uses	CY	10	$_____	$_____

Quantities given above are not guaranteed. Final payment will be based on actual quantities. Any difference between estimated and final quantities, or increases in market value of Products and services will not be considered reason for increase of unit price. Payment for contingency items will not be made without prior written authorization by Engineer. **Extended prices for "Contingency Items" will be included in the total Bid Price used to evaluate Bids, but will <u>not</u> be included in the initial Contract Price**.

Total of Items A through E: BID PRICE (Figures): _____

BID PRICE (Words): _____

_____

5. Bidder agrees that the Work will be substantially complete on or before the dates or within the number of calendar days indicated in the Agreement.

   Bidder accepts the provisions of the Agreement as to liquidated and other damages in the event of failure to complete the Work on time.

6. The following documents are attached to and made a condition of this Bid:

   6.1 Required Bid Security in the form of _____.

   6.2 Experience Questionnaire; Document 00400.

   6.3 List of Proposed Subcontractors; Document 00450.

   6.4 Maryland Certificate of Registration may be submitted with the Bid, or prior to and as a condition of award of the Contract.

   6.5 License to operate in the state of Maryland may be submitted with the Bid, or prior to and as a condition of award of the Contract.

7. Communications concerning this Bid will be addressed to (Bidder's Contact Person):

   _____
   Phone: ( ) _____
   Fax: ( ) _____
   Company Email Address: _____

8. The terms used in this Bid are defined and have the meanings assigned to them in the General Conditions, as may be amended by the Supplementary Conditions, included as part of the Bidding Documents.

9. Bidder acknowledges that the Bid Price is based on Products and methods described and named in the Drawings and Specifications.

10. Bidder certifies that (s)he visited the site on_____, _____, 2017.

SUBMITTED on _____, 2017.

(If Bidder is an Individual)

Signature of Witness	Signature of Individual

Trading and doing business as:

Name of Business

Address of Business

(If Bidder is a Limited Liability Company – All Members Must Sign)

Name of Company

Address of Company

Signature of Witness	Signature of Member
Signature of Witness	Signature of Member
Signature of Witness	Signature of Member

(If Bidder is a Partnership - All General Partners Must Sign)

_____
Name of Partnership

_____
Address of Partnership

_____ _____
Signature of Witness Signature of Partner

_____ _____
Signature of Witness Signature of Partner

_____ _____
Signature of Witness Signature of Partner

(If Bidder is a Corporation)

Attest:

_____
Name of Corporation

_____ _____
Signature of Secretary or Assistant Secretary

Address of Principal Office

(Corporate Seal)

_____
State of Incorporation

_____
Signature of President or Vice President

Type or print name below each signature.

State here the names and addresses of all partners, if a partnership, or of three principal officers, if a corporation.

_____

_____

_____

END OF BID FORM

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Applications for Payment.

B. Payment for Tests and Inspections.

C. Measurement and Payment.

1.02 APPLICATIONS FOR PAYMENT

A. Submit four copies of Application for Payment at times specified in Paragraphs 14.2 and 14.12 of the General Conditions. Monthly Applications for payment shall be accompanied by weekly payroll certificates for the period on the form(s) attached to this Project Manual.

B. Submit Application for Payment on form attached to this Specification Section.

C. Contractor shall submit copies of bills of material invoices with each application for payment to the Owner for all materials delivered to the site.

D. Include following Contractor's signed certification on Application for Payment:

The undersigned Contractor certifies that (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied to discharge in full all obligations of Contractor incurred in connection with Work covered by prior Applications for Payment numbered 1 through ___ inclusive and that such payments have been made in compliance with the Pennsylvania Prompt Pay Act, Act 142 of 1994; (2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all liens, claims, security interests, and encumbrances (except such as covered by Bond acceptable to Owner indemnifying Owner against any such lien, claim, security interest, or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective, as that term is defined in the Contract Documents.

1.03 PAYMENT FOR TESTS AND INSPECTIONS

A. Include the costs of shop tests and shop inspections in the price of the manufactured Products, and no separate or extra payment will be made for such tests and inspections.

B. Contractor shall employ and pay for the services of an independent firm(s) to perform laboratory and field testing and inspections as required in the various Specification Sections. Obtain approval of the proposed testing and inspection firms from Engineer. Cost of such tests and inspections shall be included in the Contract Price and no separate or extra payment will be made.

1.04 PRODUCTS STORED ON PROJECT SITE

A. Payment will not be made for Products suitably stored on the Project site or at another location, but not yet incorporated in the Work.

1.05 MEASUREMENT AND PAYMENT

A. General:
   1. No additional payment will be made for removing/relocating trees, fences, signs, mailboxes, or other above or below grade physical obstacles, unless otherwise specified in this Section. These costs shall be included in the lump sum or unit price bid for the item requiring their removal/relocation.
   2. Contractor shall confine construction operations within the temporary and permanent right-of-way, and other limits of work, identified in the Drawings and Specifications. Repair to and restoration of paved, seeded and other areas, damaged by Contractor's operations, outside of the temporary and permanent right-of-way, and other limits of work, identified in the Drawings and Specifications, shall be at Contractor's expense. The repair/restoration work and products shall be as described in the Drawings and the Specifications, and may include, but not be limited to re-grading, topsoil placement, seeding, pavement reconstruction etc.
   3. The following costs shall also be included in the unit and lump sum prices, as applicable:
      a. Bonds and Insurance.
      b. Contractor's overhead and profit and other expenses as allowed by the Conditions of the contract.
      c. Storage and transportation of material to/from off-site locations.
      d. Transportation and disposal of construction debris and applicable fees, if any.
      e. Temporary services and stand-by equipment.
      f. Removal/relocation of existing above or below grade physical features.
      g. Costs associated with protection of underground utilities.
      h. Sheeting, Shoring and Bracing of excavated areas.

i. Dewatering of excavated areas.
j. Suitable borrowed (imported) excavated material backfill and topsoil.
k. Erosion and Sedimentation Control.

B. Construct Bus Stop Pad:
1. Measurement and payment per square foot at the unit price bid.
2. Payment shall include excavation, removal and disposal of excavated material, furnishing and placing aggregate base, and construction of concrete pad.
3. Final grading and restoration to seeded areas will be paid separately.

C. Construct Sidewalk:
1. Measurement and payment per square foot at the unit price bid.
2. Payment shall include excavation, removal and disposal of excavated material including existing sidewalk where applicable, furnishing and placing aggregate base, and construction of concrete sidewalk.
3. Final grading and restoration to seeded areas will be paid separately.

D. Construct Curb and Gutter:
1. Measurement and payment per linear foot at the unit price bid.
2. Payment shall include excavation, removal and disposal of excavated material including existing curb and gutter, furnishing and placing 3" bedding, construction of new curb and gutter as indicated on the Drawings; and curb trench and pavement restoration.

E. Furnish and Install 2" Diameter PVC Conduit:
1. Measurement and payment per linear foot at the unit price bid.
2. Payment shall include bedding, 2" diameter conduit with "fishing" wire (for future power wiring installation by others), detection tape and backfill to restoration depth; and restoration to curb, sidewalk and pavement.
3. Final grading and restoration to seeded areas will be paid separately.

F. Furnish and Install Electrical Junction Box:
1. Measurement and payment per each at the unit price bid.
2. Payment shall include excavation, removal and disposal of excavated material, furnishing and placing junction box and backfill.
3. Final grading and restoration to seeded areas will be paid separately.

G. Remove Tree:
1. Measurement and payment for each at the unit price bid.
2. Payment shall include removal and disposal of tree including the root system and furnishing and placing clean backfill to restoration depth.
3. Final grading and restoration to seeded areas will be paid separately.

H. Relocate Signs:
1. Measurement and payment at the lump sum price bid.

2. Payment shall include removal and installation of existing signs as directed by City.

I. Restore Seeded Areas:
   1. Measurement and payment at the lump sum price bid.
   2. Payment shall include furnishing and placing 6" topsoil, final grading, seeding and maintenance.

J. Miscellaneous Unclassified Excavation:
   1. Measurement and payment per cubic yard at the unit price bid.
   2. Payment includes excavation where required by Engineer and not paid for under another pay item, and test pits to locate unmarked or incorrectly marked utilities as directed by Engineer.

K. Miscellaneous Aggregate Backfill:
   1. Measurement and payment per cubic yard at the unit price bid.
   2. Payment includes 3" crushed aggregate for backfill and other uses where required by Engineer and not paid for under another pay item.

L. Detectable Warning Surface:
   1. Measurement and payment per square foot at the unit price bid.
   2. Payment shall include excavation, removal and disposal of excavated material, furnishing and installing bedding and detectable warning surface.

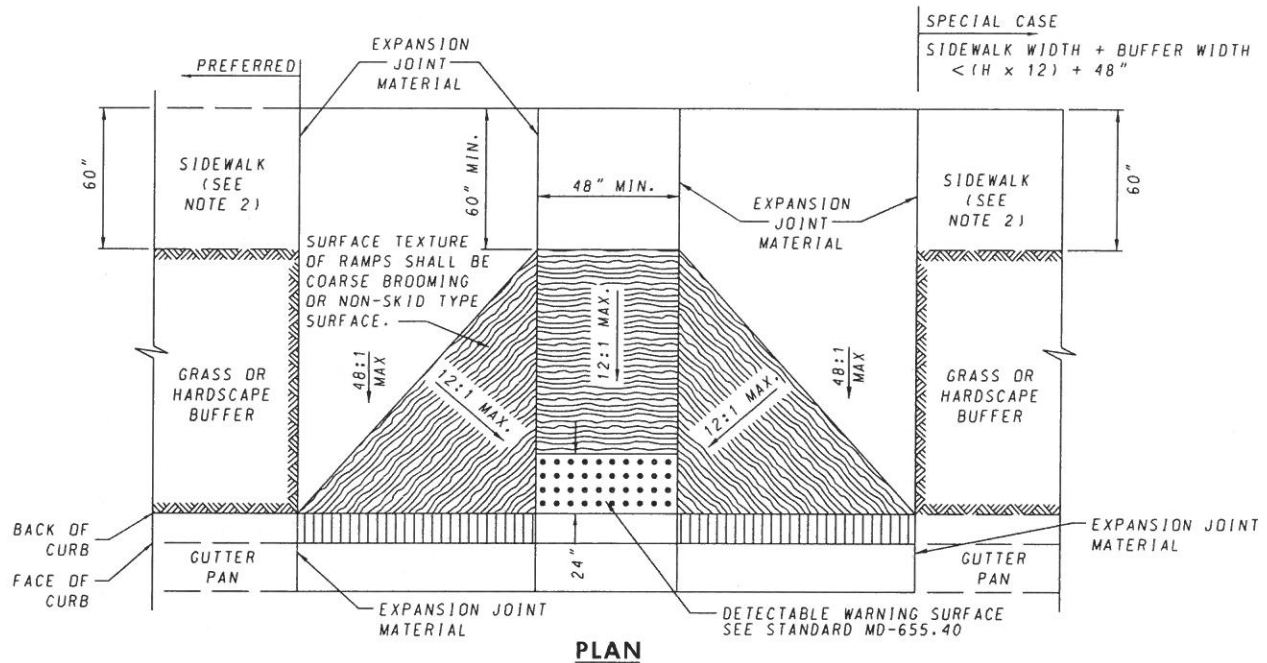
PART 2 - PRODUCTS

NOT APPLICABLE TO THIS SECTION

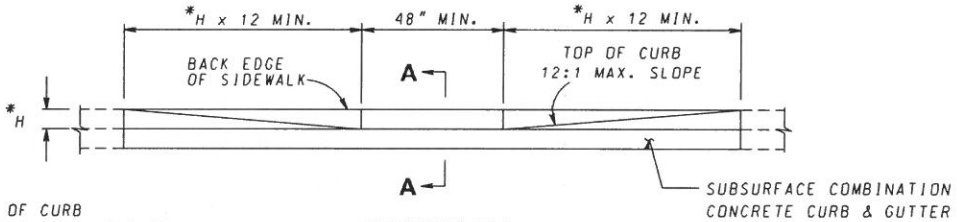
PART 3 - EXECUTION

NOT APPLICABLE TO THIS SECTION

END OF SECTION

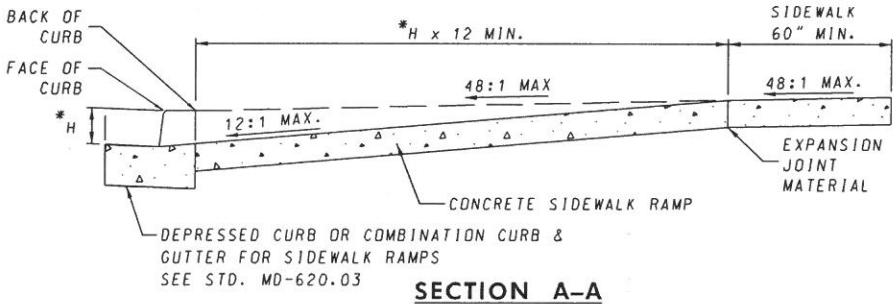


PLAN



* - H = HEIGHT OF CURB
ALL MEASUREMENTS IN INCHES

ELEVATION



SECTION A-A

NOTES

1. TO BE USED ON WIDE SIDEWALKS OR SIDEWALKS WITH SIGNIFICANT SEPARATION FROM THE ROADWAY WHERE THE GEOMETRY SPECIFIED IN THE DETAILS ABOVE CAN BE SATISFIED. MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
2. WHERE 60" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WAIVER MUST BE REQUESTED
3. NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 48:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
4. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STD. MD-655.01.
5. SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.
6. TRANSITION PANELS TO TIE INTO EXISTING SIDEWALK MUST BE A MINIMUM OF 5' IN LENGTH.

SPECIFICATION	CATEGORY CODE ITEMS
603 & 611	

APPROVED _____
DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED	3-25-08	REVISED	4-5-06
REVISED	6-2-14	REVISED	5-20-14
REVISED		REVISED	

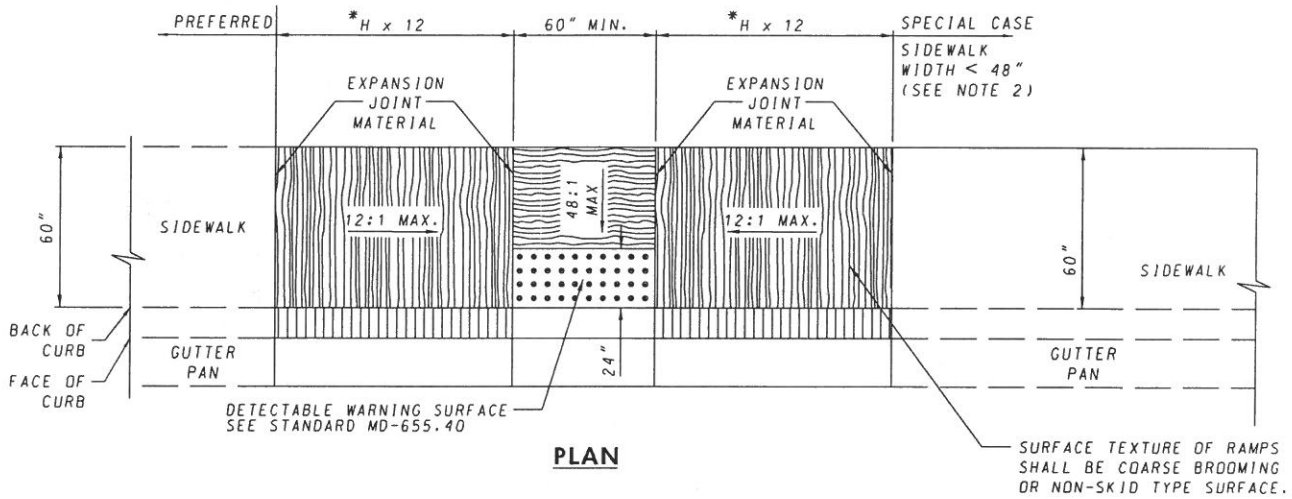
SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

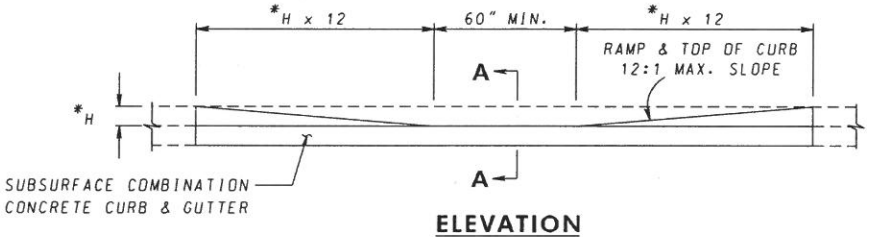
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SIDEWALK RAMPS PERPENDICULAR

STANDARD NO. MD 655.11

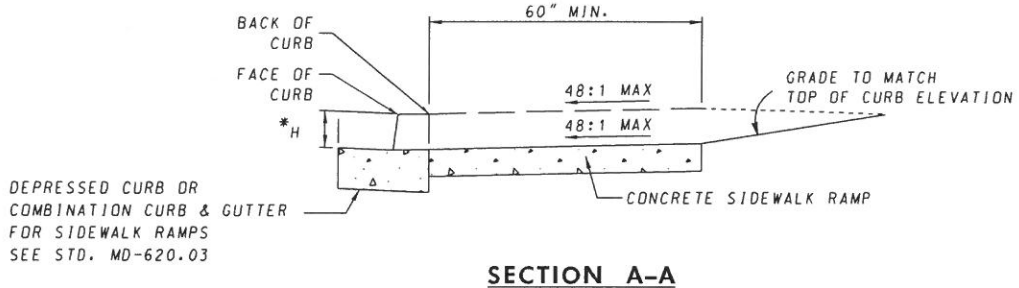


PLAN



ELEVATION

* - H = HEIGHT OF CURB
ALL MEASUREMENTS IN INCHES



SECTION A-A

NOTES

1. TO BE USED WHERE SIDEWALK IS ADJACENT TO THE CURB. THIS STANDARD MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
2. WHERE 60" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WAIVER MUST BE REQUESTED.
3. NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 48:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL. THE CROSS-SLOPE OF THE LANDING AREA CANNOT EXCEED GRADE OF ROADWAY
4. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STD. MD-655.01.
5. SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.
6. TRANSITION PANELS TO TIE INTO EXISTING SIDEWALK MUST BE A MINIMUM OF 5' IN LENGTH

SPECIFICATION	CATEGORY CODE ITEMS
603 & 611	

APPROVED _____
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	2-10-04	APPROVAL	3-31-04
REVISED	3-25-08	REVISED	4-5-06
REVISED	6-2-14	REVISED	5-20-14
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

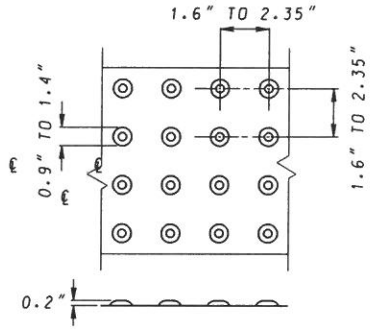
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SIDEWALK RAMPS PARALLEL

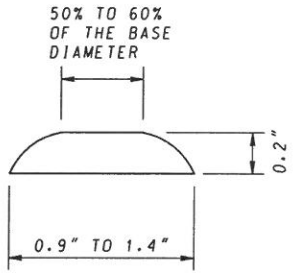
STANDARD NO. MD 655.12

MAT DETAILS

SEE PLACEMENT GUIDELINES BELOW

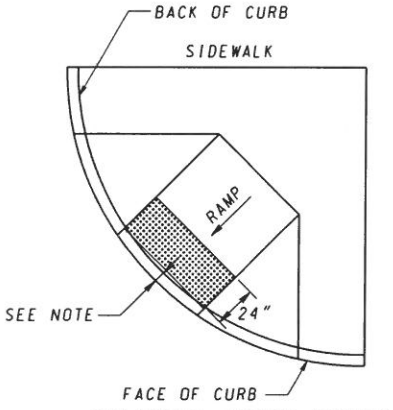


DOME SPACING

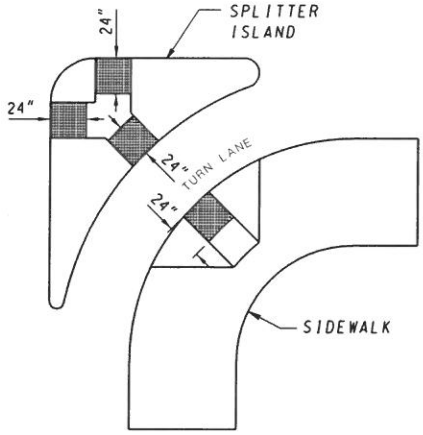


DOME SECTION

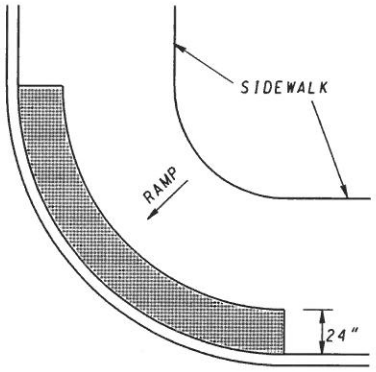
PLACEMENT GUIDELINES



SHARED CURB RAMP



REFUGE ISLAND



BLENDED CURB

WHERE ISLANDS OR MEDIANS ARE LESS THAN 6 FEET WIDE. THE DETECTABLE WARNING SHOULD EXTEND ACROSS THE FULL LENGTH OF THE CUT THROUGH THE ISLAND OR MEDIAN

NOTES

1. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF CURB.
2. FOR SKEWED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF CURB ARE NO LESS THAN 0.5" AND NO MORE THAN 3.0" FROM THE BACK OF CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.
3. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
4. DETECTABLE WARNING SURFACES ARE REQUIRED AT STREET CROSSING & SIGNALIZED INTERSECTIONS.

SPECIFICATION 611	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

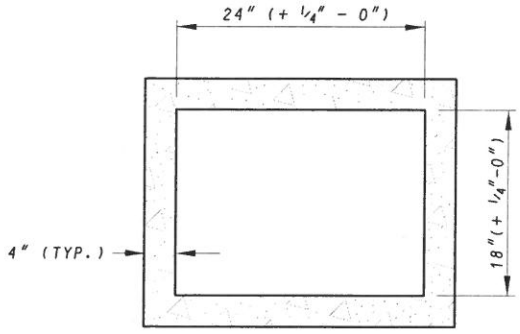
	APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	2-10-04	3-31-04
REVISED	4-17-06	4-5-06
REVISED		
REVISED		

SHA State Highway Administration

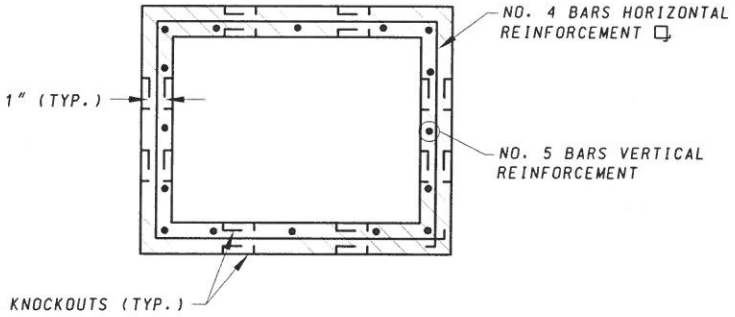
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

DETECTABLE WARNING SURFACES

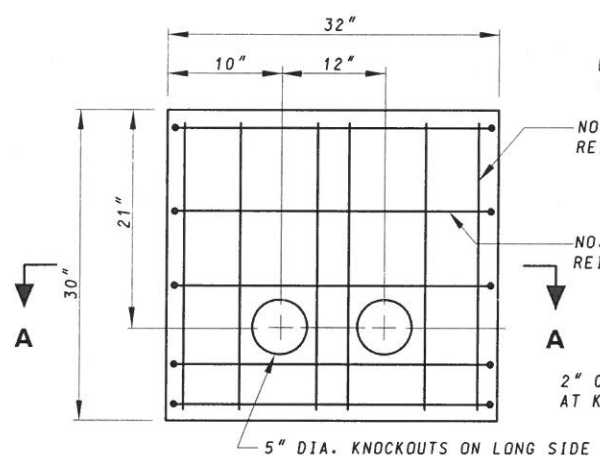
STANDARD NO. MD 655.40



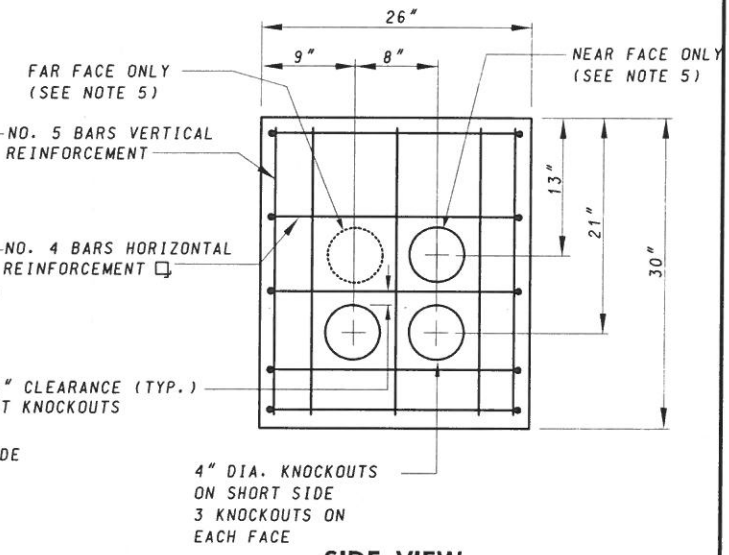
TOP VIEW



SECTION A - A



FRONT VIEW



SIDE VIEW

NOTES:

1. HANDHOLE CONCRETE SHALL BE MIX NO. 6.
2. ALL SPALLS AND VOIDS SHALL BE PATCHED.
3. ALL REINFORCEMENT SHALL BE CENTERED IN THE FORM WALLS PRIOR TO THE CONCRETE PLACEMENT.
4. CLEARANCE 1" MIN. FROM SIDE WALLS TO REINFORCEMENT.
5. TO BE USED FOR NON-INVASIVE PROBE INSTALLATION ONLY.

SPECIFICATION 811	CATEGORY CODE ITEMS

APPROVED _____
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	7-1-94	APPROVAL	7-1-94
REVISED	5-17-07	REVISED	5-2-07
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

HANDHOLE (MATERIALS DETAIL)

STANDARD NO. MD 811.01

CATEGORY 600
SHOULDERS

DELETE: SECTION 611 — DETECTABLE WARNING SURFACES in its entirety.

INSERT: The following.

SECTION 611 — DETECTABLE WARNING SURFACE BRICK PAVERS

611.01 DESCRIPTION. This work shall consist of furnishing and installing brick pavers for detectable warning surfaces on pedestrian ramps where noted on plans in accordance with the Specifications and these Special Provisions, as indicated on the plans and details, and as directed by the Engineer. The detectable warning surface shall conform to the latest accessibility guidelines of the American with Disabilities Act (ADA).

611.02 MATERIALS.

Base Course. Stone base course shall be in accordance with Maryland State Highway Administration Standard Specification 901, "Graded Aggregate Base."

Concrete Base. 5" Mix No. 3 concrete base shall be placed as specified in the Contract Document or as direct by the Engineer.

Brick Pavers. Brick pavers shall conform to the requirements of ASTM C902, Class SX, Type 1, and Application PX. The pavers shall be standard 4"x8" size having dimensions of 2 ½" x 4"x8", square edges, 12,500 psi minimum compressive strength and below 6% cold water absorption. Pavers shall meet requirements of the Americans with Disabilities Act and comply with Article 4.29.5 Detectable Warnings of the Federal Register.

All brick pavers shall have a Red Brick Color, and shall meet the ADA Accessibility Guidelines for a 70% light reflectance value (LRV) contrast to adjoining surfaces. The paver surface shall have a minimum friction coefficient of 0.8 when tested in conformance with C 1028. Pavers shall be obtained from a single source. Contractor shall submit sample of paver material and color for approval by the Engineer.

The Detectable Warning Surface Brick Pavers shall be 24" inches wide in the direction of pedestrian travel and extend the full width of the curb ramp, landing or blended transition. The Detectable Warning Surface shall consist of truncated domes aligned in a squared Grid.

Concrete Mix No. 3. Concrete shall conform to Section 902.10.03.

Concrete Admixture. Air entraining admixture shall conform to Section 902.06.01.

Curing Materials. Curing materials shall conform to Section 902.07.

Expansion Joint Filler. Expansion joint filler shall be Asphalt Impregnated Fiber Expansion Joint Filler, conforming to or meeting the requirements of ASTM D 1751, AASHTO M 213 and the Corps of Engineers CRD-C 508.

Expansion Joint Cap. Expansion joint cap shall be as per the recommendation of the Expansion Joint Filler manufacturer.

Form Release Compound. Form release compound shall conform to Section 902.08.

Joint Sealer. Joint sealer shall conform to Section 911.01.

Mortar. Mortar shall conform to Section 903.06.

Submittals. The Contractor shall construct a 2'x2' size sample panel for the Engineer's approval prior to ordering.

611.03 CONSTRUCTION.

Excavation. Excavation shall be made in accordance with the details or as directed by the Engineer. Excavation shall be to a width that permits installation and bracing of the forms. Unsuitable, unstable, or unconsolidated subgrade material shall be excavated. Where material has been removed from the subgrade, it shall be backfilled with suitable borrow material approved by the Engineer and the entire subgrade shall be compacted. The subgrade shall be compacted to at least 95% of AASHTO T-180 or ASTM D 1557 for cohesionless (sandy and gravely) soils.

Placement.

Base Course. Aggregate base course shall be installed to a minimum depth of three (6") inches, thoroughly compacted to pass a 95% compaction test and graded evenly to proper elevations. The base shall extend a minimum of six (6") inches beyond the edge of paver where not bounded by curbs.

Forms. Contractor shall use fixed form method. Fixed forms shall be of steel or wood and shall extend to the full depth of the concrete. All forms shall be straight, free from warp and of sufficient strength to resist the pressure of the concrete without displacement. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal. The forms shall be thoroughly cleaned and coated with a form release compound each time they are used. Forms shall not be stripped until the concrete has set for at least 12 hours, and every precaution shall be taken to avoid damaging the concrete.

Concreting. Before placing the concrete, the subgrade (when dry) shall be moistened. The concrete shall be mixed in conformance with Section 915.03.04. Volumetric batching and continuous mixing will be permitted. Concrete shall be deposited on the prepared subgrade in successive batches to the full width of the concrete base. It shall be thoroughly spaded along the

edges and shall be tamped to eliminate voids. It shall be struck off, screeded to the proper elevation for the installation of the Brick Paver.

Finishing the concrete. The surface shall be floated and broom finished. No plastering of the surface will be permitted.

Expansion Joints. Joints shall be ½" (inch) placed against all edges of detectable warning surface and shall match adjacent joints in curb or pavement as applicable and as directed by the Engineer. Expansion joint material shall extend the full depth of the concrete. Expansion materials shall be installed in accordance with the manufacturer's instructions.

Cold Weather Protection and Curing. Refer to Section 520.03.02 for cold weather protection and to Section 520.03.12 for concrete curing. During the curing period, all pedestrian and vehicular traffic is prohibited.

Brick Pavers with Detectable Warning Surface. Care shall be taken so that no damage occurs to the pavers during handling. All pavers shall be free of foreign matter before installation.

Whole pavers shall be used wherever possible. If required, pavers shall be cut with an approved cutter to fit accurately, neatly and without damaged edges. All cut pavers shall be a minimum of one quarter (1/4) paver in size unless approved by the Engineer.

All whole and cut paver edges shall be free of chips, spalls, or cracks. Pavers shall be placed on a ½" mortar bed to the concrete in a basket weave pattern as indicated on the plans and as directed by the Engineer. Bricks shall be tightly placed with no joints between the pavers.

Weather. Brick pavers shall not be installed during rain or snowfall conditions or upon frozen sub-grade. Stockpiles of materials shall be covered each day after construction and during each precipitation event so that the maximum moisture content is not exceeded at any time.

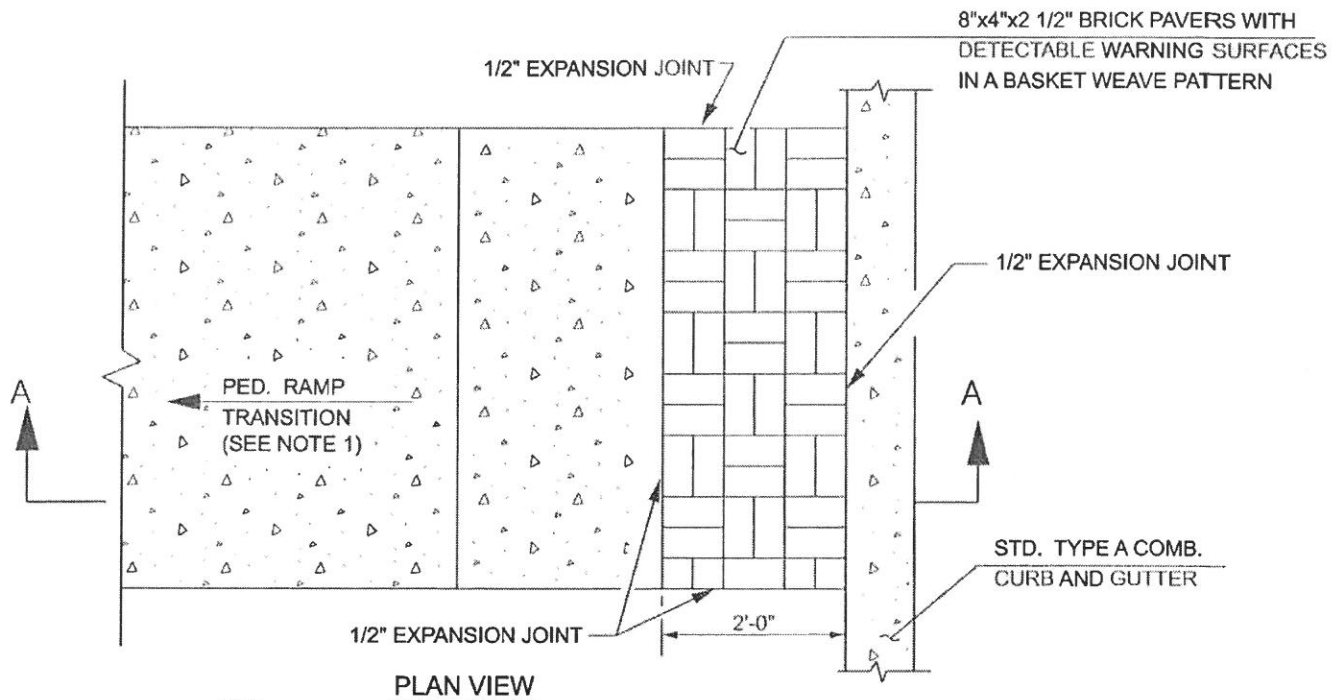
Joint Sealing. Expansion joints shall be cleaned or dirt or other foreign material prior to placement of the joint sealing compound. Joint walls and all surfaces to which the sealing material is to adhere shall be surface dry for at least three hours prior to sealing. No sealing material shall be used until the joints are acceptable to the Engineer. The surface of the sealing compound shall be a minimum of 1/8" (inch) below the level of the sidewalk surface.

611.04 MEASUREMENT AND PAYMENT. Detectable warning surface brick pavers shall be measured and paid for at the Contract unit price per Square Foot, complete and in place. The payment shall be full compensation for brick pavers, mortar, joint sealer, and all labor, equipment, tools and incidentals to complete the work as specified.

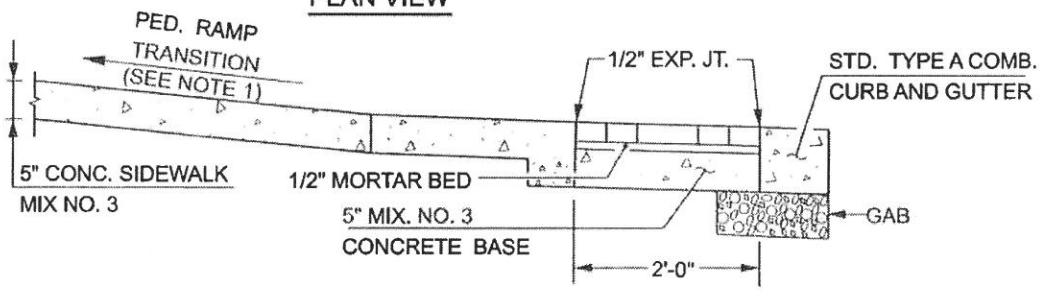
The 5" Concrete Base will be measured and paid for at the Contract unit price per Square Foot for 5" Concrete Sidewalk, which shall include full compensation for excavation, disposal of unsuitable material, backfill, base course and sub-grade preparation, forms, concreting, joints,

cold weather protection and curing, finishing, joint sealer and for all material, labor, equipment, tools and incidentals necessary to complete the work.

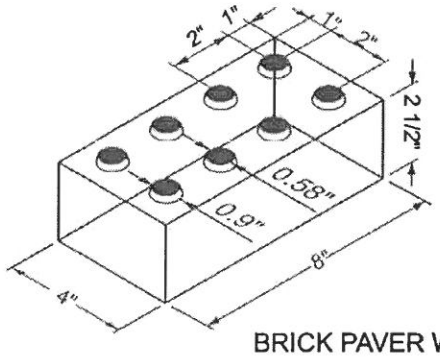
CONTRACT NO.



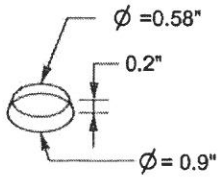
PLAN VIEW



SECTION A-A



BRICK PAVER WITH DETECTABLE
WARNING SURFACES



DOME DETAIL

NOTE:

1: REFER TO STD. NO. 655.11, 655.12, 655.13 FOR SIDEWALK RAMP DETAILS.

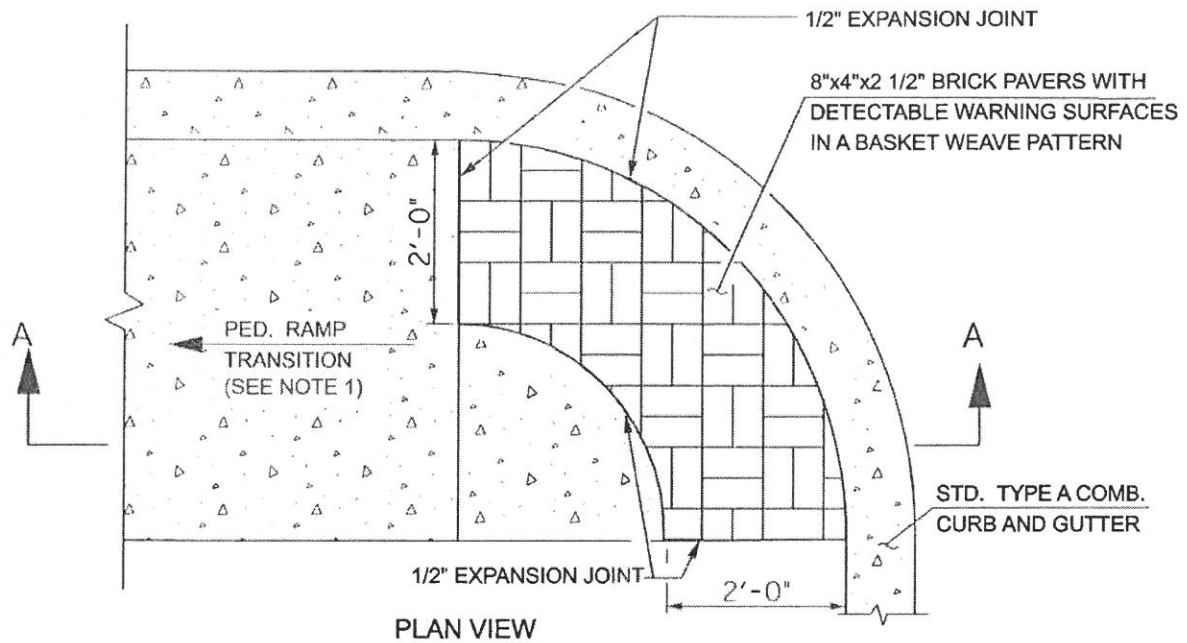
PERPENDICULAR PEDESTRIAN RAMP

BRICK PAVERS WITH DETECTABLE WARNING SURFACES

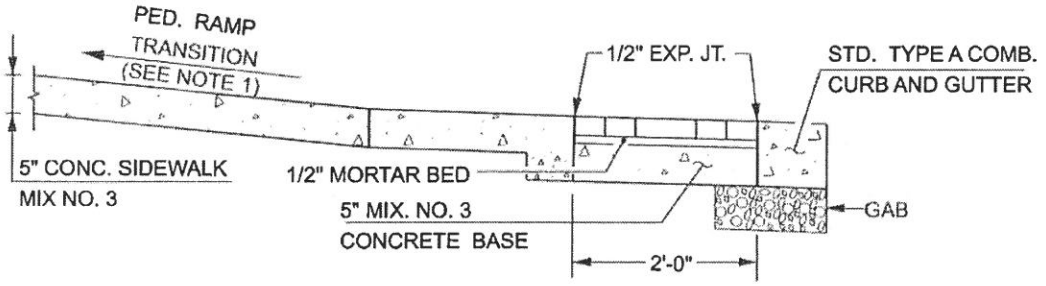
NOT TO SCALE

D-4 ESDT Detail-1 (Jan.-20-06)

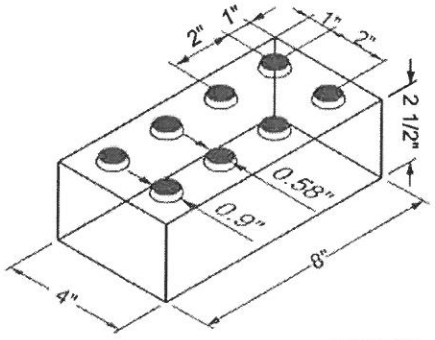
CONTRACT NO.

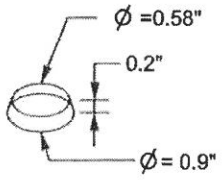


PLAN VIEW



SECTION A-A





DOME DETAIL

NOTE:

1: REFER TO STD. NO. 655.11, 655.12, 655.13 FOR SIDEWALK RAMP DETAILS.

BRICK PAVER WITH DETECTABLE WARNING SURFACES

SHARED PEDESTRIAN RAMP

BRICK PAVERS WITH DETECTABLE WARNING SURFACES

NOT TO SCALE

D-4 ESDT Detail-2 (Jan.-20-06)

MARYLAND STATE HIGHWAY ADMINISTRATION
2016 UTILITY PERMIT MASTER PROVISIONS

ARE HEREBY PROVIDED TO:

So far as the Maryland State Highway Administration (SHA) has the right and power to grant same, _____ to perform limited work within various state right of ways as identified by individual Utility Construction Permits, Utility Infrastructure Maintenance/Emergency Permits (Blanket Permits), Tree Trimming Permits, and Utility Relocation Permits (for SHA projects), (hereinafter collectively referred to as Work Order Utility Permits) approved and authorized for the term beginning January 1, 2015 continuing through and ending December 31, 2016 .

A copy of these Utility Permit Master Provisions are hereby provided to the above mentioned permittee and must be attached to all individual Work Order Permits along with attachments, plans and addenda in order to constitute a Complete Authorized Utility Permit.

- The Utility Permit Master Provisions alone or the individual Work Order Permits alone DOES NOT grant permission to the permittee to work within state right of ways.

1. GENERAL PROVISIONS

A. It is agreed and understood that the issuance of any Complete Authorized Utility Permit will be construed to indicate complete acceptance of the terms and specifications outlined herein.

B. All work shall be performed in accordance with the provisions of any Complete Authorized Utility Permit.

C. The SHA reserves the right to modify or revoke any permit or permit provision at any time.

D. The SHA reserves the right to halt any operation that can be considered to be in any manner detrimental to the safe operation of our highway system.

E. The SHA reserves the right to revoke any Complete Authorized Utility Permits in the event that the permittee fails to comply with any condition of the permit.

F. Permission, when granted, to place utility facilities within the limits of our right of way is revocable at any time by the SHA.

G. A copy of the Complete Authorized Utility Permit must be on the job site at all times during the performance of all work identified in the individual Work Order Permits in order that the permittee's personnel and/or the permittee's contractor is in a position to comply with the requirements of the Complete Authorized Utility Permit. The Permit Inspector shall have the option of closing down projects where the permittee's representative does not have a copy of the Complete Authorized Utility Permit on the job site and/or is not familiar with the contents of the permit.

H. In the event future road improvements require the relocation, adjustment and/or removal of facilities installed under any Complete Authorized Utility Permit, all costs associated with the relocation, adjustment and/or removal of said facilities shall be borne by the permittee.

I. The permittee shall be responsible for, defend (at the State's option), indemnify and hold harmless the State of Maryland, MDOT and SHA, their respective members, officers, agents, and employees, against and from any and all liability or claim of liability for bodily injury (including death) or property damage (including reasonable attorneys' fees) related to, involving or arising, in whole or in part from any act or failure to act or out of the use,

occupancy, conduct, or operation, construction, maintenance or management of or upon any portion of state rights-of-way (as approved and authorized in the any Complete Authorized Utility Permit) by the permittee, its principals, contractors, employees, agents, licensees, lessees or invitees, including, by way of example only: (a) any work or thing whatsoever done or not done on state rights-of-way (as approved and authorized in any Complete Authorized Utility Permit) by or on behalf of the permittee; or (b) any breach, default or Event of Default by the permittee in performing any of its obligations under the provisions of these Utility Permit Master Provisions, individual Work Order Permits or applicable law. The Company agrees that the indemnification as described in this Section shall include any liability or claim of liability that occurs during the Term (or that occurs after the Term where the permittee has obligations under any Complete Authorized Utility Permit that remain following the expiration or termination of the Term), even if the injury does not become apparent or does not manifest itself until after expiration of any Complete Authorized Utility Permit. In no event shall the mention of "any portion of state rights-of -ways" within this Section be interpreted to grant the permittee rights to use portions of state rights-of -ways other than those expressly approved by the State on any Complete Authorized Utility Permit, nor shall any mention of "licensees", "lessees" in this Section be interpreted to allow the permittee to assign or otherwise transfer any rights or obligations it has under any Complete Authorized Utility Permit.

J. Nothing in any Complete Authorized Utility Permit shall constitute a waiver of any immunity to which the State of Maryland, MDOT or SHA may be entitled under any federal law or under the laws of the State of Maryland, as they may be amended from time to time.

K. The permittee shall comply with all Federal, State, and local laws, regulations and ordinances applicable to their activities.

L. The SHA reserves the right to assign inspection forces while work is being accomplished within SHA right of way at the expense of the permittee.

M. Complete Authorized Utility Permits are not assignable. The use of any Complete Authorized Utility Permit by any party not specifically indicated on the Master Utility Permit Provisions AND the individual Work Order Utility Permit shall constitute the immediate revocation of the permit.

N. The permittee will be responsible for the cost of any repairs to roadway embankments, drainage facilities, or any other facilities owned or maintained by the SHA should they become necessary or as caused by the construction, existence or failure of this utility or utility facility.

O. Upon completion of work, SHA right of way affected by any Complete Authorized Utility Permit shall be restored to its original condition.

2. NOTIFICATIONS

A. Lane Closures: All State roads require a Lane Closure Permit from the District office. Please coordinate with the District Utility Engineer to obtain a lane closure permit if required. The permittee must comply with all Lane Closure Notification Procedures.

B. Roadside Tree Care: The permittee is responsible for contacting the Maryland Forest Service prior to the start of construction and obtain any necessary permit, if any, in order to comply with the Roadside Tree Care Section of the Annotated Code of Maryland. Forest Service representatives can be contacted at (301) 473-8417.

C. Landscaping: The permittee must notify Mr. Curt Childress, 410-545-8584, Landscape Operations Division, prior to performing any work that will require replacement of existing trees, shrubs, flower beds or other planting materials.

D. SHA Signal Facilities: Care shall be exercised when working adjacent to traffic signal facilities. **The following offices having jurisdiction over the traffic signals involved must be notified a minimum of three (3) business days before the start of construction work in order to coordinate any work to be performed near SHA traffic signal facilities:**

1) Richard Daff, Chief of Traffic Operations (410) 787-7630
2) Bob Snyder, Office of Traffic and Safety (410) 787-7631
3) Ed Rodenhizer, Office of Traffic & Safety (410) 787-7650
4) Maryland SHA Traffic Signal Department (Phone 410-787-7650) before 4:00 PM.

E. SHA Lighting Facilities: Care shall be exercised when working adjacent to SHA signs and street lighting facilities. The Resident Maintenance Engineer in the appropriate SHA Maintenance Facility must be notified a minimum of three (3) business days before the start of construction work in order to coordinate any work to be performed near SHA signs and street lighting facilities.

F. SHA Communication Facilities: Care shall be exercised when working adjacent to SHA communication facilities (fiber optic, telecom, etc.). Mr. Philip Lazarus at the state Radio Shop, 410-747-8598 must be notified a minimum of three (3) business days before the start of construction work in order to coordinate any work to be performed near SHA communication facilities.

G. SHA Automated Traffic Counting Stations (ATR's): Care shall be exercised when working adjacent to ATR facilities. Mr. Barry Balzana at 410-545-5509 must be notified a minimum of three (3) business days before the start of construction work in order to coordinate any work to be performed near SHA ATR facilities.

H. SHA Construction Projects: If any work under any Complete Authorized Utility Permit is to be performed in any proximity of a SHA construction project, or will have any effect whatsoever on any work performed on a SHA construction project, or will effect Maintenance of Traffic concerning any other roadway network system in conjunction with any SHA construction project, the permittee is required to notify the Project Engineer for that project at least 48 hours in advance of any commencement of work and is, therefore, required to coordinate all work performed under any Complete Authorized Utility Permit with the SHA Project Engineer.

I. SHA Maintenance Projects: If any work under any Complete Authorized Utility Permit is to be performed in any proximity of a SHA maintenance project, or will have any effect whatsoever on any work performed on a SHA maintenance project, or will effect Maintenance of Traffic concerning any other roadway network system in conjunction with any SHA maintenance project, the permittee is required to notify the Resident Maintenance Engineer for that area at least 48 hours in advance of any commencement of work and is, therefore, required to coordinate all work performed under any Complete Authorized Utility Permit with the Resident Maintenance Engineer.

J. Miss Utility: The permittee must call "Miss Utility", 1-800-257-7777, two (2) business days in advance of performing any excavating or similar work. **The Maryland State Highway is now apart of Miss Utility and we do charge fees for locate requests. Please contact your local utility engineer for fee schedule.**

SHA District Utility Office: Permittee shall notify the SHA District Office a minimum of three (3) business days before the start of construction, in accordance with the Complete Authorized Utility Permit requirements, with the name of its representative on the job; verify that the permittee has notified all other offices previously listed; and that the permittee has coordinated work with said offices. Failure to do so will result in immediate suspension of work until proper notifications are made. At least forty eight hours prior to starting any work under this permit, the permittee must notify the SHA District Utility Office.

3. DESIGN AND CONSTRUCTION STANDARDS, PROCEDURES AND POLICIES

A. Design and construction associated with this permit shall be performed in complete conformance with standards, procedures and policies of the following Maryland SHA publications:

1) Maryland Manual on Uniform Traffic Control Devices (MDMUTCD)
2) Standard Specifications for Construction and Materials (SSCM)
3) Book of Standards for Highway & Incidental Structures (BSHIS)
4) Maryland Standard Method of Tests, Materials Manual, Laboratory and Field Procedures
5) Policy on the Accommodation of Utilities within SHA Right of Way
6) Accessibility Policy and Guidelines for Pedestrian Facilities Along State Highways

Note: Copies of the above mentioned publications can be obtained from the Maryland SHA website: http://www.roads.maryland.gov/ in the drop down menu: Business Center, Business Standards and Specifications

B. Any changes to these Utility Permit Master Provisions will be noted in the individual permit.

C. The permittee is responsible for compliance with all laws and regulations including, but not limited to, those of the Federal Highway Administration, Maryland Public Service Commission, National Electric Safety Code, Maryland Occupational Safety and Health Administration, County or Municipal Planning and Zoning Boards, Army Corps of Engineers, Maryland Department of Natural Resources, and Maryland Department of Environment. This permit DOES NOT release the permittee from acquiring any additional permits that these or other agencies may require.

D. The permittee is responsible for obtaining required permits prior to performing any work on or adjacent to railroad facilities or right of way thereof.

E. All underground utility facilities placed within the right-of-ways of the SHA MUST maintain a minimum cover of **5** feet from top of facility to existing ground as outlined in the State of Maryland Utility Policy Chapter 3, Section 3.03. The District Utility Engineer reserves the right to require any facility to be placed at depths greater than 3 feet along secondary roadways and **5 feet** along interstates and expressways at his/her discretion to facilitate operations of the SHA.

F. The SHA reserves the right to stipulate modifications to the approved construction plans whenever necessary. The permittee shall be entirely responsible for all additional costs and expenses associated with these changes.

G. It is agreed and understood that significant deviation from the plans submitted shall be reported immediately to the SHA, District Utility Engineer's Office, and a revised plan showing changes shall be submitted to the SHA District Utility Engineer for approval prior to performance of work. Relocation and/or adjustment of any public or private utility shall be the responsibility of the permittee.

4. MAINTENANCE OF TRAFFIC

A. Work Zone Traffic Control is to be in complete conformance with specifications, standards, provisions and policies of Section 3 DESIGN AND CONSTRUCTION STANDARDS, PROCEDURES AND POLICIES.

B. An approved Work Zone Traffic Control Plan is required for all work performed within SHA right of way. This plan must be in complete accordance with Temporary Traffic Control Typical Applications detailed in the SHA's BSHIS. A copy of the approved Work Zone Traffic Control Plan is to be attached to the permit at all times. All closures are to be performed in complete accordance with the approved Work Zone Traffic Control Plan.

C. All changes, modifications or alterations to the approved Work Zone Traffic Control Plan must be submitted in writing to the District Utility Engineer in advance for review and approval.

D. The SHA reserves the right to modify and/or expand the methods of traffic control specified if in the opinion of the Engineer or Inspector, the Contractor's operations are a detriment to the safe and efficient flow of traffic.

E. In the event that the SHA is required to provide traffic control, due to the permittee failing to maintain a safe work zone, all costs and applicable overhead shall be billed directly to the permittee.

F. **A SHA certified Traffic Manager must be specifically designated for each permit application.** This identification must include a 24 hour contact telephone number. The Traffic Manager will be responsible for ensuring the proper implementation and maintenance of the Work Zone Traffic Control Plan as well as conducting regular day and night inspections of the traffic control devices and overall traffic operations.

G. All traffic control devices including: signs, cones, barricades, drums, warning lights, arrow panels, variable message screens, and tubular markers must meet the "Acceptable" requirements of the American Traffic Safety Services Association (ATSSA), "Quality Standards for Work Zone Traffic Control Devices-1992".

H. All traffic control devices must comply with performance criteria published in the National Cooperative Highway Research Program (NCHRP) Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

I. Traffic Control signs or devices identified as unsatisfactory by the District Utility Engineer or his/her representative must be replaced immediately.

J. High performance wide-angle retro-reflective sheeting for signs, fluorescent orange in color, shall be used on projects along interstate highways and other freeways, unless otherwise specified.

K. Type VI (vinyl micro prismatic) retro-reflective sheeting conforming to Federal Highway Administration's Standard Specifications for Constructions of Roads and Bridges and ASTM D 4956 is acceptable for use on roll up signs and channelizing devices.

L. Flashing arrow boards as early warning devices shall be used whenever a lane is closed unless considered unnecessary by the District Engineer.

M. Under certain circumstances, a variable message sign (VMS) may be required. The corresponding job-specific permit will provide details about what message must be displayed, how much advance notice must be given, etc.

N. Travel lanes and shoulders must be restored immediately in the event of precipitation. Lane and shoulder closures on wet roadways are strictly prohibited.

O. Travel lanes and shoulders must be restored immediately in the event of accident or emergency within or adjacent to the work area.

P. All lane and shoulder closures will be cleared immediately at the specific direction of any representative of the Maryland SHA.

Q. The permittee is responsible to coordinate all lane closure activities with adjacent contractors.

R. When a lane, ramp or shoulder closure is in effect, work must begin within one hour after the lane is closed. Once work is completed, travel lanes and shoulders are to be restored immediately.

S. The permittee is required to notify the appropriate TOC for the district that they are working. The district utility engineer will provide this information upon your request of all lane, ramp and shoulder closures on Interstate Highways one hour prior to closure, and within 10 minutes of restoring any travel lane, ramp or shoulder.

T. Full or temporary roadway closures are not permitted without prior approval of the District Utility Engineer.

U. The permittee is responsible for coordinating Maryland State Police assistance for any temporary roadway closure. No temporary roadway closure can exceed 15 minutes in duration.

V. The permittee must provide a minimum of two Variable Message Screens for any temporary roadway detour or roadway closure. Screen messages must be approved by the District Utility Engineer prior to display.

W. The delay to motorists travelling through work zone lane, ramp or shoulder closures is not to exceed fifteen (15) minutes.

X. No travel lane shall be reduced to less than ten (10) feet in width at any time.

Y. Prior to reopening, all travel lanes and shoulders must be completely cleared of all materials, equipment and debris.

Z. The use of emergency crossovers is strictly prohibited.

AA. Pedestrian traffic is to be maintained through or around work areas at all times.

BB. All flagging operations are to be performed by individuals who have successfully completed SHA's Approved Flagger training course. Each flagger is to have in their possession an approved SHA flagger training card at all times. Flagging is to be conducted utilizing stop/slow paddles in complete accordance with Part VI Section 6F of the current edition of the MdMUTCD. Flaggers are to be appropriately attired at all times. Flaggers must wear a reflective vest at all times while flagging.

CC. Precautions shall be taken, particularly in freezing temperatures, to keep water off travel lanes.

DD. Vehicular access to private and public driveways, entrances and roadways is to be maintained at all times.

EE. Access to fire hydrants, firehouses, hospitals and mailboxes is to be maintained at all times.

FF. Working Hours:

1) Work is permitted Monday through Friday only. Working hours for roadway and shoulder closures are restricted to between 9:00 AM and 3:00 PM and 9:00 PM and 5:00 AM. Work within a lane within 15 feet of the nearest edge line (open section roadway), or within 2 feet of the face of curb (closed section roadway), is prohibited during peak hours 6 A.M. – 9 A.M. and 3 P.M. – 7 P.M.., Monday – Friday. Also, such work is not permitted on Saturdays, Sundays, National or State holidays, or days preceding and following said holiday. Exceptions to these hours may be specified in the individual permit. All requests for additional special exceptions must be provided in writing to the office of the District Utility Engineer. **(See attachment for lane closure restrictions)**
2) Night work is prohibited in residential areas.
3) No work is allowed on the day(s) of major holidays or holiday weekends, or days preceding and following said holiday(s) or holiday weekends. Holiday restrictions may vary by location. Information regarding specific holiday restrictions can be obtained from the Office of the District Utility Engineer prior to each holiday. The National holidays mentioned are listed as follows: (These may or may not be the same as the State holiday).

   NATIONAL HOLIDAYS:

   New Year's Day, January 1
   Martin Luther King's Birthday, the third Monday in January
   Washington's Birthday, the third Monday in February
   Memorial Day, the last Monday in May
   Independence Day, July 4
   Labor Day, the first Monday in September
   Columbus Day, the second Monday in October
   Veteran's Day, November 11
   Thanksgiving Day, the fourth Thursday in November
   Christmas Day, December 25
4) Work may also be restricted for special events occurring along specific routes. Information regarding specific special event restrictions can be obtained from the Office of the District Utility Engineer prior to any special event.
5) Additional work restrictions, if any, will be noted in the individual Work Order Utility Permit.
6) Any deviation from the approved traffic control standard for the individual Work Order Utility Permit must be approved by the SHA Permit Inspector prior to the commencement of work.
7) The SHA reserves the right to modify and/or restrict working hours, or deny permission to work within SHA rights-of-way at any time if, in the opinion of the Engineer or Inspector, the Contractor's operations are a detriment to the safe and efficient flow of traffic.

GG. Specific Signing Instructions:

1) Sign details are available from the Office of Traffic & Safety, Traffic Engineering Design Division.

2) Construction Identification signs (Hat and Shovel) G2-1(1), G2-1(2), or G2-1(3) shall be installed at each approach and end of all projects greater than two months in duration, unless otherwise noted or directed by the Engineer.

   a) The initial sign will be installed between the one-mile and one-half mile advance warning signs unless otherwise specified.

3) The ROADWORK (W20-1) sign and END ROAD WORK (G20-2) sign shall be installed at each approach and end of all projects greater than two months in duration, unless otherwise noted or directed by the Engineer.

   a) The Hat and Shovel sign installed near the end of the project will not replace the End Road Work sign.

4) When highway alignment changes occur throughout the work area due to phase changes, install a supplemental panel beneath the Construction Length sign stating "NEW TRAFFIC PATTERNS". The supplemental panel shall remain up for a maximum of 30 days unless otherwise specified.

5) Where parts of a mile are designated on a sign, fractions to the nearest 1/2-mile shall be used instead of decimals.

6) In areas where longitudinal paving joints are left exposed to traffic, warning signs shall be erected indicating UNEVEN PAVEMENT & motorcycle uneven pavement .

   a) They shall be placed in advance of the uneven joints and spaced at appropriate 1500' intervals throughout the area of the uneven joint.

   b) In areas of exposed lateral paving joints, the warning sign message shall be BUMP (W8-1).

   c) When milling a pavement, (removing the top layer to smooth the roadway) a ROUGH ROAD (W8-8) sign or a GROOVED PAVEMENT {W8-8(1)} sign shall be the warning message.

7) Along two and three-lane, two-way roadways where a standard centerline is not provided and passing is not permitted (due to resurfacing, etc.), DO NOT PASS (R4-1) signs shall be erected at the beginning of such zones along the right side and at appropriate intervals throughout the project.

   a) A NO PASSING ZONE pennant (W14-3) shall be erected at the beginning of such zones on the left-hand side of the roadway across from the first DO NOT PASS sign.

   b) The NO PASSING ZONE pennants shall be used only at the beginning of such zones and shall not be placed at intermediate points throughout the zone.

   c) Standard no passing centerlines may be installed at the direction of the Engineer or Inspector if site conditions (at a particular location) or past accident history indicates that this would be a prudent thing to do.

8) When complete pavement markings are not in place, and passing may be permitted, sign(s) shall be erected indicating WARNING: PASSING ZONES UNMARKED {W14-3(1)} with supplemental plate "NEXT X MILES".

   a) These signs shall be placed in advance of the unmarked zone and at appropriate intervals throughout the unmarked zone where passing is permitted.

9) **Identification:** The permittee is required to install signs identifying his organization and telephone number. Signs shall be at least 48" in height by 48" in width. They shall have white letters and numerals on a dark blue background and must provide all of the following information or unless approved by the District Office:

   a) the name of the owner of the utility

   b) the name of the contractor that is performing the work

   c) a 24-hour telephone number for the contractor

   d) Overall dimensions may be modified to fit the name of the permittee with approval of he District Engineer.

   e) The number and spacing of these identifying signs shall be subject to the approval of the SHA District Utility Engineer.

   f) SHA facilities will not be used to provide or install the signs or their supports. Identifying signs shall be erected immediately before the start of the permittee's work operations and must be removed immediately upon completion of permanent construction and restoration.

HH. Pavement Drop-Off: During construction and maintenance activities involving pavement surfacing and resurfacing work, including shoulders, it often becomes necessary to maintain traffic along side or near lanes and shoulders having different elevations (drop-offs). Special traffic control devices are needed to safely protect and guide traffic through such areas. The following are the traffic control requirements for pavement drop-off situations:

1) Uneven joints where traffic can be anticipated to cross are to be tapered with a minimum of two feet of a bituminous concrete product for the entire width of the travel lane crossing.

2) **Pavement Drop-offs of 2 ½ inches or less (between Traffic Lanes):**

   a) Adjacent pavement elevation differences, drop-offs, of 2 ½ inches or less may be freely crossed by traffic.

   b) Drop-offs of 2 ½ inches or less shall be indicated to traffic through the use of the UNEVEN PAVEMENT warning sign placed in advance of and repeated throughout the limits of the drop-off in accordance with Standard No. MD 104.06-11. When needed, the GROOVED warning supplemental sign plate shall be mounted below each sign.

   c) The UNEVEN PAVEMENT warning sign is to be placed supplemental to other work zone traffic control. The sign size and spacing, and how it complements other traffic control devices is covered in the SSMC and the MdMUTCD.

   d) Temporary transverse tie-in transitions during the paving operation shall be in accordance with SSMC Section 504.03.09. The transverse tie-in shall be completed prior to traffic being allowed on the pavement.

3) **Pavement Edge Drop-offs of 2 ½ Inches or Less (between Traffic Lanes and Shoulder):**

   a) Drop-offs of 2 ½ inches or less shall be indicated to traffic through the use of the UNEVEN PAVEMENT warning sign placed in advance of and repeated throughout the limits of the drop-off in accordance with Standard No. MD 104.06-12.

b) The UNEVEN PAVEMENT warning sign is to be placed supplemental to other work zone traffic control. The sign size and spacing, and how it complements other traffic control devices is covered in the SSMC and the MdMUTCD.

4) **Pavement Drop-offs of Greater Than 2 ½ inches (between Traffic Lanes):**

a) Adjacent pavement elevation differences, drop-offs exceeding 2 ½ inches shall be paved to match with the abutting lanes or shoulders on the same working day in accordance with SSMC Section 504.03.08. As a result of this, the complete pavement section including shoulders shall be at the same elevation at the end of each working day.

b) Drop-offs of 2 ½ inches or less shall be indicated to traffic through the use of the UNEVEN PAVEMENT warning sign placed in advance of and repeated throughout the limits of the drop-off in accordance with Standard No. MD 104.06-11. When needed, the GROOVED warning supplemental sign plate shall be mounted below each sign.

c) The UNEVEN PAVEMENT warning sign is to be placed supplemental to other work zone traffic control. The sign size and spacing, and how it complements other traffic control devices is covered in the SSMC and the MdMUTCD.

d) While it is intended that traffic traveling in the same direction drive to one side of the drop-off or the other, such traffic may be permitted to drive along both sides under properly controlled conditions, but such traffic may not be permitted to freely cross.

e) Temporary transverse tie-in transitions during the paving operation shall be accordance with SSMC Section 504.03.09. The transverse tie-in shall be completed prior to traffic being allowed on the pavement.

5) **Pavement Edge Drop-offs Greater Than 2 ½ Inches, But Equal to or Less Than 5 Inches (between Traffic Lanes and Shoulder):**

a) Drop-offs between lane and shoulder or shoulder and earth grading, exceeding 2½ inches, but equal to or less than 5 inches shall be provided with an abutting wedge with a slope of 4:1 or flatter at all times while no work is being performed. See Standard No. MD 104.01-28 for wedge detail.

b) Drums or other suitable channelizing devices are used to mark the area even when a traversable wedge is in place.

c) Drop-offs exceeding 2½ inches, but equal to or less than 5 inches shall be indicated to traffic through the use of the UNEVEN PAVEMENT warning sign placed in advance of and repeated throughout the limits of the drop-off in accordance with Standard No. MD 104.06-13.

d) The UNEVEN PAVEMENT warning sign is to be placed supplemental to other work zone traffic control. The sign size and spacing, and how it complements other traffic control devices is covered in the SSMC and the MdMUTCD.

6) **Pavement Edge Drop-offs Greater Than 5 Inches WITHOUT an Adjacent Lane Closure:**

a) Continuous drop-offs exceeding 5 inches if next to or within 12 feet of a lane of traffic, shall be provided with a temporary concrete barrier or other suitable barrier as may be approved by the Engineer or Inspector, to preclude crossing the drop-off throughout its entire length. See Standard No. MD 104.06.14.

b) The sign size and spacing, and how it complements other traffic control devices is covered in the SSMC and the MdMUTCD.

7) **Pavement Edge Drop-offs Greater Than 5 Inches WITH an Adjacent Lane Closure:**

a) Continuous drop-offs exceeding 5 inches, but greater than 12 feet away from traffic (and not protected with an approved barrier) shall be provided with an abutting wedge with a slope of 4:1 or flatter at all times while no work is being performed. See Standard No. MD 104.01-28.

b) Drums or other suitable channelizing devices are required to mark the area. When traffic is permitted to occupy the adjacent lane(s) to this work, drums or other suitable channelizing devices shall be placed in front of and completely across the excavated area, in addition to the traffic control requirements for the lane or shoulder work.

c) For a series of drop-offs within a lane or shoulder, typically as a result of concrete joint or pavement repair, all areas where the pavement material has been removed shall be repaired the same working day.

d) The decision to use barrier to separate the workspace from traffic will be determined by the Utility Permit Inspector. The Inspector should consider such things as traffic volumes, vehicle speeds and weaving, trucks, highway geometrics, length of workspace, duration of work, etc.

e) The sign size and spacing, and how it complements other traffic control devices is covered in the SHA Standards and Specifications and the MUTCD.

II. Traffic Markings, Signing, Lighting and Signalization:

1) Traffic signs are not to be removed or relocated without permission of the District Utility Engineer.

2) The permittee is to exercise extreme caution when in the vicinity of signalized intersections so as to protect and maintain in good working order, all traffic signal poles, wires, conduits and equipment associated with traffic signalization.

3) All pavement markings and symbols shall be completely replaced immediately upon the completion of milling or resurfacing, prior to the reopening to traffic.

5. SAFETY

A. The permittee may excavate only as far as can be backfilled in the same working day.

B. Cuts or excavation will not normally be permitted to remain open overnight and at any time when work is not in progress at the cut or excavation area. Trenches which must remain open during non-working hours must be steel plated or protected by a positive barrier. Existing guardrail, permanent concrete barrier, or temporary concrete barrier wall will be required to meet MOSHA and SHA regulations. Suitable protective measures, approved by the SHA, will be required at any excavation.

C. No excavated or construction material shall be stored within thirty feet (30') of the edge of the existing traveled pavement. Material shall be stored in a way, which does not reduce driver sight distances nor interfere with roadway drainage.

D. All equipment and material shall be removed from the SHA right of way or located a minimum of thirty feet (30') from the edge of the existing traveled pavement of SHA roadway during non-working hours and when not being used in daily construction operations. In no case will construction material or equipment be allowed to remain in the median or a divided highway when the materials or equipment is not in use.

E. All mud and debris tracked or spilled on the state highway shall be removed promptly to eliminate potential hazards.

F. Precautions shall be taken, particularly in freezing temperatures, to keep water off the traveled lane.

G. No access is permitted from interstate roadways or from any connecting ramp for purposes of construction, maintenance or expansion to another facility.

H. Private automobiles and non-essential construction vehicles will not be parked on the SHA right of way. The contractor must transport workers to the job site from a safe parking site procured by the contractor.

6. **PROTECTION OF HIGHWAYS**

A. No metallic tread equipment shall be driven or towed on any SHA road surface or surfaced shoulder.

B. Material or equipment not provided with wheels will not be dragged or skidded across paved surfaces.

C. **No excavated or backfill material is to be placed or stockpiled on any improved surface within the jurisdiction of the SHA (or within SHA right-of-ways.)**

7. **QUALITY CONTROL**

A. All work performed under this permit shall be done under the supervision and to the complete satisfaction of the Maryland SHA. The SHA reserves full control over said roads, highways and right of way and the subject matter of this permit.

B. The permittee is responsible for providing effective on site supervision at all times to ensure compliance with all plans and permit specifications, regulations and conditions.

C. All work areas are to be continuously maintained in a neat and clean condition.

D. The permittee will be responsible for maintaining its utility facilities, installed within SHA right-of-way, in a safe working condition.

E. The permittee shall be responsible to respond to, and correct citizen complaints regarding work performed adjacent to private properties immediately upon notification.

8. **CONSTRUCTION:**

A. All work must be performed in complete conformity with the approved construction plans.

B. All changes, modifications or alterations to the approved construction plans must be submitted in writing to the District Utility Engineer for review and approval.

C. Attachments to bridges and other structures are prohibited unless specifically authorized in individual permit applications.

D. Open cutting of any paved surface is strictly prohibited except when authorized by individual permit applications.

E. The adjustment and or relocation of any public, private or SHA owned facility or utility required by work performed in accordance with this permit will be the complete responsibility of the permittee.

F. All buried facilities must be placed at a minimum depth of five feet below finished grade or proposed final grade. In pavement areas, buried facilities must be placed at least three feet below subgrade. A minimum of five feet of clearance between the top of any buried duct or cable and finished grade or pavement subgrade is to be maintained at all times.

G. All permit activities performed within the limits of any SHA construction or maintenance project must be coordinated with the appropriate SHA Project Engineer or Resident Maintenance Engineer. The permittee is responsible that all work be performed in complete accordance with plans associated with SHA Maintenance or Construction activities.

H. The permittee is responsible to verify the location of all existing buried facilities within or adjacent to the work area to prevent damaging existing utilities.

I. The permittee is responsible for maintaining vertical and horizontal clearances from all existing utility facilities as required by the respective utility agencies.

9. **EXCAVATION:**

A. All trenching is to be performed in complete accordance with all requirements set forth by Maryland Occupational Safety and Health regulations.

B. Where the distance between of the roadside edge of any excavation is less than the depth of excavation of the excavation tight sheeting will be required. The roadside face must be tightly sheeted and braced securely against skeleton sheeting on the opposite or far side of the excavation.

C. Cuts or excavations will not be permitted to remain open at the end of a work shift, or when work is not actively in progress. In the event that excavation cannot be completed within a single shift, the excavation shall be covered with steel plates, or protected behind concrete barrier wall. The perimeter of all open excavations shall be secured using four foot high orange safety fencing suitably posted.

D. **All spoil material is to be completely removed from SHA right of way.**

E. **The permittee will be responsible for repairing any damage due to settlement of backfill for a period of one year after the release of permit; not from when the repair was completed.**

F. **Sheeting:** Tight sheeting will be required where the distance off the roadside edge of any excavation is less than the depth of the excavation. The roadside face must be tightly sheeted and braced securely against skeleton sheeting on the opposite or far side of the excavation. When, in the opinion of the Permit Inspector, and field conditions dictate, tight sheeting may be required. The permittee shall install all tight sheeting in accordance with all MOSHA regulations. All sheeting must be completely removed upon the completion of excavation and backfill activities. Metal sheeting systems may be used with prior approval and pulled only as tamped fill progresses. If the excavation is to be left open, it must be tight sheeted and the permittee must notify the SHA Permit Inspector. A trench box support may be used with the prior approval of the SHA.

G. **Steel Plates:** Whenever steel plates are required, the following provisions will apply:

1) The Permit Inspector must be notified at least 48 hours in advance of any steel plates being placed in the roadway.

2) Steel plates are to be monitored and maintained by the permittee at least twice daily, seven (7) days a week including, but not limited to nights, weekends, and holidays until they are removed.

3) Steel plates will not be left in the roadway longer than 7 calendar days, without prior permission of the SHA. Steel plates that are placed longer than 7 calendar days must be recessed.

4) All steel plates must be at least one-inch (1") thick and sized to effectively carry traffic without excessive flexing.

5) Steel plates must be large enough to allow a minimum of one foot (1') of bearing on all four sides of the pavement surrounding the excavation and securely held in place with pins installed on all corners.

6) In the event that more than one plate is required, the steel plates shall be large enough to allow a minimum of two feet (2') of bearing on three (3) sides of the plate and securely held in place with pins installed on all corners of each plate. The permittee will be restricted to no more than 50 feet of steel plating; unless specified in the particular permit.

7) When placing multiple plates, the SHA shall determine which of the following methods may be used by the permittee:

   a) Two plates or more shall be welded together. This consists of placing three welds 12 inches in length on each abutting plate. One weld placed one foot from each edge and one weld placed in the center of the plate (6 inches from center in each direction).

   b) Two plates or more shall be held together. This consists of placing three 6 inch by 12 inch by one-inch blocks to one side of plate. One block to be placed one foot from each edge and one block placed in the center of the plate. The two end blocks on underside of plate, middle block to be placed on topside of plate.

8) To minimize the hazard to the traveling public, the use of a bituminous concrete product is required on all exposed edges of the plates to ensure a smooth transition from the pavement to the surface of the steel plate. The material must be tapered from the height of the steel plate to the existing road surface and extend a minimum distance of one foot (1') to provide a suitable taper.

9) Plates must be removed from the state highway right of way within 24 hours once they are removed from the roadway. Plates may never be left within the roadway, shoulders or any other area within the right of way, which could jeopardize motorist safety.

10) At the sole discretion of the SHA, the permittee may be required to be recess the steel plate such that the top of the steel plate is flush with the surrounding pavement and pinned in place. All steel plates must be recessed from Oct 15 to April 15 unless approved by SHA.

11) Should an emergency condition occur that SHA forces must correct, the permittee shall be charged for any and all costs, including but not limited to; labor equipment, overtime, overhead, inspection, etc., associated with restoring the condition to a safe and acceptable level. The permittee shall be responsible for any additional costs incurred by SHA for emergency repairs performed during Snow Emergencies.

12) **Signing: Steel Plates**

   a) "STEEL PLATE" warning signs, W8-8(4), shall be 48" x 48" and shall conform to MDMUTCD and Maryland's Sign Standard Book.

   b) When steel plates are used to bridge open cut excavations within SHA pavement areas, signs shall be placed approximately 500 feet in advance of the steel plates.

   c) Location and spacing of these signs will depend on field conditions and is subject to approval by the SHA's Permit Inspector.

d) The identification of the Utility Company, contact individual and 24 hour telephone number shall be clearly marked on the rear face of the "STEEL PLATES" warning sign.

e) From October through April, steel plates shall be additionally identified by the placement of a grade stake located at the pavement edge immediately adjacent to the steel plates for identification during snow events. The stake is to be at least three feet high, painted international orange and must be visible to the traveling public.

f) The identification of the Utility Company must be clearly marked in orange paint on the surface of the steel plate or adjacent roadway.

10. <u>BLASTING:</u>

A. Blasting within SHA right of way is strictly prohibited without prior approval. To obtain authorization, a blasting plan (of type, charge, pattern and method) must be submitted for approval a minimum of 45 days in advance of the anticipated commencement of work. Blasting cannot begin until the blasting plan is approved and authorized by the SHA and all other appropriate agencies.

B. A licensed blaster is required to perform all blasting work associated with the work to be accomplished under the terms of this permit. The permittee is required to furnish proof of a Maryland Blaster's License before beginning any blasting operation.

C. The permittee may be required to provide proof of additional insurance in an amount to be specified by the SHA prior to commencing any blasting activity.

D. The District Utility Engineer must be notified 72 hours prior to beginning any blasting work.

E. All blasting is to be performed in complete compliance with the approved blasting plan.

F. Blasting is not to be performed within 100 feet of any residence or structure.

G. A thorough site inspection, including representatives of SHA, the permittee and other affected parties shall be conducted prior to the commencement of blasting. The existing conditions of all culverts, inlets, retaining walls, and other structures is to be fully documented using photographs and/or video tape supplied at the expense of the permittee. A copy of a complete set of this documentation is to be provided to the SHA District Utility Engineer prior to the commencement of blasting. A follow up inspection is to be performed upon the completion of blasting to identify any new damage to existing facilities. All damage to existing facilities shall be repaired to the complete satisfaction of the Maryland SHA at the sole expense of the permittee. All necessary repair or replacement work is to begin immediately and be completed as soon as practical.

H. The permittee is solely responsible to resolve to the complete satisfaction of the SHA all damage claims resulting from any activity associated with blasting performed under this permit. The permittee shall provide all required repair or replacement of facilities damaged by blasting operations at no cost to the SHA.

I. All shots shall be matted to control flying rock and debris so as to prevent damage to persons or structures.

J. Equipment used for drilling blast holes shall use a positive means of dust control.

K. Seismic readings may be required to monitor blasting operations. A copy of readings indicating peak particle velocities shall be made available to a representative of the SHA after each shot when required.

L. Blasting shall not be performed closer than 50 feet from any water, gas, sewer, cable, or conduit unless said facilities have been completely exposed, definitely located and suitably backfilled prior to blasting in strict accordance with the specific requirements of the representative utility agencies. In no case will blasting be permitted closer than two feet from any utility facility ten inches or smaller in diameter, and no closer than five feet from any utility facility larger than ten inches in diameter.

M. All possible caution is to be exercised to ensure that drilling and blasting operations minimize overbreak and blast damage to adjacent unexcavated ground.

N. All blasting is to be carefully balanced and controlled to provide a uniform distribution of charge that will fracture the rock so that it may be excavated to the required contours without fracturing rock beyond the excavation limits. Modify the blasting round as necessary to achieve the best obtainable results and to keep the air blast over pressure, vibrations and noise within the limits herein specified. Exercise all possible care in drilling and blasting operations to minimize overbreak and blast damage of adjacent unexcavated ground. It shall be the permittee's responsibility to produce a satisfactory excavated surface by determining the proper relationships of the factors of burden, spacing, depth of charge, amount and type of explosive, hole size and delay pattern, and other necessary considerations to achieve the required results.

O. Controlled blasting is a method used to remove rock in which the various elements of the blast, hole size, depth, spacing, burden, charge size, explosive charge weight per delay, distribution, delay sequence, are carefully balanced and controlled to provide a distribution of the charge that will fracture the rock so it may be excavated to the required contours and minimize overbreak and fracturing of the rock beyond the contour line. Smooth wall blasting, pre-splitting, cushion blasting and line drills are examples of operation included in the term "controlled blasting".

P. The permittee shall be responsible for providing material to replace broken rock that is unsuitable for trench backfill use.

Q. In the event that air blast pressure, vibration, noise, flying debris, or overbreakage exceed specified limits, all blasting operations are to be immediately suspended until a modified blasting plan is submitted and approved.

11. TEST PITS

A. All test pits performed in pavement areas shall be by core drilling a cylindrical area of diameter not to exceed 10 inches and then shall be performed by the vacuum method.

B. Upon completion, the test hole is to be backfilled with sand up to the final one foot, which is to be composed of 10 inches of Portland cement concrete covered with 2 inches of HMA surface SC.

C. Repairs are to be completed within 48 hours.

D. When a utility company, contractor or local municipality open cuts or digs test pits in the pavement of a state roadway, the cut shall be marked with the appropriate color code as designated by Miss Utility (see Section MARKING ROAD REPAIRS). The initials of the utility company are required to be painted within the cut area.

12. TRENCHLESS INSTALLATIONS

A. Trenchless installation activities are to be performed in complete accordance with submitted plans and specifications approved by the SHA.

B. Permittee assumes responsibility in the event of any roadway failure to replace any or all pavement as required in the opinion of the District Engineer and/or Resident Maintenance Engineer's Office.

C. The permittee shall submit, with the application, the proposed specifications of materials to be used as tunnel liners, sleeves, or carrier pipes installed in SHA rights-of-ways. These materials and thickness should be adequate for the intended purpose and be approved by the SHA.

D. Tunneling:

1) All plans for tunneling operations must be approved by a Professional Engineer.

2) A heavy timber shaft at either end of the tunnel must be provided in order to prevent failure of the embankments and to maintain access to the tunnel.

3) The tunnel liner plates shall be installed by tunnel methods using an approved method to support the face and periphery of the excavation, which support shall be adequately strong, braced and shored. This support shall be maintained during non-working hours in order to prevent cave-ins. The permittee shall have approved plans, and of a method to support the face and periphery of the excavation, before doing any work.

4) Tunnel excavation shall be advanced in increments not to exceed two feet. Tunnel liner plates shall be installed immediately upon the completion of each excavation increment. Excavation is to be conducted so that the voids behind the tunnel liner plate are kept to a minimum.

5) Voids behind tunnel liner plates are to be filled with grout placed under pressure. At least two grout plugs are to be provided per ring to appropriately fill all voids.

6) Grouting is to begin as soon as a sufficient length of tunnel liner plate has been installed to insure a proper seal. Grouting is to proceed progressively with each adjacent set of holes provided in liner plates. All voids shall be completely filled prior to the end of each shift.

7) Bulkheads must be sufficiently secure to insure proper seal and prevent the leakage of grout under pressure.

8) Grouting equipment shall have a minimum capacity of one-half (½) cubic yard to assure that adequate grouting material is available within a reasonable period of time to avoid the setting up of grout from the previous batch.

9) Upon the completion of grouting, all holes are to be plugged with an appropriate fitting provided.

10) Access to the shaft is to be protected at all times to deny unauthorized pedestrian entry.

E. Jacking & Boring:

1) All plans for jacking and boring operations must be approved by a Professional Engineer.

2) A heavy timber shaft at either end of the jacking pit is required to prevent embankment failure and maintain access to the pit. This support shall be continuously maintained to prevent cave-ins.

3) Pipes and sleeves shall have sufficient length to extend beyond the ditchline or shoulder edges as directed by the SHA.

4) Excavation in shoulder areas to push or install pipes or sleeves is prohibited.

5) For jacked and bored pipe crossings under SHA roadways, the bore hole diameter is not to exceed the outside diameter of the pipe or sleeve.

6) The jetting of pipes or sleeves is not permitted.

7) Pipes and sleeves shall be installed simultaneously with augering so as to prevent cave-ins.

8) In the event of false start, the void will be backfilled by grouting or other method approved by SHA.

9) The permittee is responsible to repair or replace any pavement area or areas damaged as a result of jacking and boring operations. The extent of repairs or replacement shall be determined at the sole discretion of the SHA. Repairs or replacement shall be performed immediately.

10) Jack and bore pits shall be protected at all times to prohibit unauthorized vehicular and pedestrian access.

F. Directional Boring:

1) All plans for directional-boring operations must be approved by a Professional Engineer.

2) A minimum of 5 ft. cover is required from existing grade to the top of all buried cables and ducts must be maintained under paved sections.

3) The top of all cables and ducts must be buried a minimum of four feet below streambed when crossing waters or wetlands.

4) The discharge of all effluent resulting from directional boring operations is to be directed into a tank or truck and suitably disposed of at an authorized waste site.

5) Exposed cables and ducts at splicing locations are to be protected utilizing orange safety fence installed a minimum height of four feet. Perimeter safety fencing around ducts and cables is to be securely maintained at all times.

6) Support for exposed cables or ducts at splicing locations must be installed by the permittee. The temporary attachment of cables or ducts to existing poles, signs, trees or other existing fixed objects is strictly prohibited.

7) Splicing and handhole installation is to proceed with cable or duct installation.

8) Restoration activities must be commenced within seven days of the placement of cable or duct between each handhole location.

G. Other Methods: Prior approval from SHA must be obtained prior to any construction using any other methods of trenchless installation. The permittee must request, in writing, permission from the SHA to use any other methods of trenchless installation, attaching plans and specifications for SHA's review.

13. **EROSION & SEDIMENT CONTROL:**

A. All erosion and sediment control measures and devices shall be constructed in conformance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control published by the Maryland Department of the Environment, Water Management Administration, and all revisions thereof.

B. The permittee is required to install and maintain all sediment control devices specified in assigned job-specific permit or other permits which have or should have been obtained by the permittee. The permittee is solely responsible for securing all permits necessary to accomplish the work outlined in the assignment permit.

C. The permittee is responsible for compliance with all state and local sediment control regulations.

D. All disturbed areas are to be temporarily seeded and mulched within 48 hours upon completion of excavation activities.

E. Restoration and permanent stabilization of all areas is to be completed within seven days of the completion of excavation activities.

F. The discharge of any material or liquid, other than clean water, into any drainage facility is strictly prohibited.

G. The discharge of any material or liquid into Waters of the United States is strictly prohibited.

H. Stabilized construction entrances are required for access to work areas adjacent to roadways.

I. Any work or activity within 25 feet of any wetland area is strictly prohibited.

J. All dewatering is to be performed utilizing an approved dewatering device to ensure the removal of sediment from effluent.

K. All surface drains, swales and ditches are to be maintained free of debris at all times.

L. Permittee shall take all steps necessary to keep erosion and siltation into the SHA's right of way to a minimum during construction.

M. Drainage: All drainage structures must function while work is in progress, as well as, upon completion of work. Storm drain facilities; including, but not limited to, pipe, inlets, headwalls, underdrain, and ditches etc., if damaged, shall be replaced "in kind" in accordance with SHA publications heretofore referenced. (Section 3, DESIGN) Should any disturbances be made to the existing surface drain ditches, it will be necessary to restore the drainage ditches to their original condition and to leave them in a neat and orderly condition to the satisfaction of the SHA. All streambeds must be left free of debris so as to provide for a free flow of water at all times. Concrete ditch reconstruction shall be in accordance with standards.

14. **VALVES AND MANHOLES**

When valves or manholes are placed in the roadway or shoulder areas, the SHA shall not be responsible for repair of any damage to the structure and the utility company will assume the full responsibility for injury to our personnel and equipment as a result of our equipment striking this type of structure.

15. BACKFILL AND TEMPORARY PATCHING

A. The permittee shall backfill all excavated areas as per the approved permit drawings or as specified in the SHA Utility Permit or as directed by the District Utility Engineer.

B. All excavation within pavement areas is to be **full depth saw cut prior to removal**. The permittee can only saw cut areas of work that will be completed during that construction season. All saw cuts must be crack sealed prior to any project shutdown lasting more than 4 weeks.

C. For areas approved to be backfilled with excavated material or selected backfill material. All backfill is to be placed in horizontal layers not to exceed six inches in depth. Each layer is to be uniformly tamped and compacted by means of mechanical or vibratory compacting device in accordance with SSMC Sections 210 and 916.

1) When the excavation is located within pavement areas, the backfill will be placed to within one foot of the bottom of the specified permanent patch depth; the remaining depth of the trench shall be backfilled with dense graded aggregate and compacted and approved by the SHA before repairing the road.

D. For areas approved to be backfilled with flowable fill, the permittee shall place and cure the flowable fill as directed by the District Utility Engineer and in accordance with Section 313 of the specification.

E. The permittee shall upon completion of backfilling the excavation, immediately repair all disturbed areas. The permittee may use only HMA to temporary patch the disturbed areas otherwise all repairs will be permanent. **The use of cold mix asphalt is strictly prohibited.**

F. Temporary repair of areas outside the paved section backfilled with excavated material shall be restored to its original condition, including replacing topsoil, reseeding, and resodding where directed by the District Utility Engineer.

G. Temporary repair of shoulder areas after backfilling shall consist of a minimum of 3" of HMA placed in to the excavated shoulder area and mechanically compacted as directed by the District Utility Engineer.

H. The SHA may, at its discretion, allow a temporary patch of roadway area for a short period of time, not to exceed twenty-one (21) days. The period of time subject to weather conditions allowing the work to be completed. Temporary repair of bituminous concrete areas after backfilling shall consist of a minimum of 6" HMA placed into the excavated roadway area and mechanically compacted or as directed by District Utility Engineer.

16. ROADWAY AND SHOULDER REPAIR AND RESTORATION

A. The permittee shall permanently repair all roadway and shoulder areas (including intersecting roads and streets) in accordance with SHA's Book of Standards for Highway & Incidental Construction (BSHIC), SHA's Standard Specifications for Construction Materials (SSCM). SSCM Standard 578.01 is a minimum guideline only and SHA reserves the right to change permit repair specifications to suit any changes that may occur on site.

B. Final pavement restoration is to occur within 30 days of the completion of temporary pavement repairs.

C. Permanent repair of shoulder and roadway areas excavated by the permittee shall consist of the removal of any temporary repairs placed and must extend a minimum of two feet beyond

crosswalks. It is mandatory, therefore, should this work include NEW or RECONSTRUCTED curbs or sidewalks, that these facilities be provided and constructed in accordance with the SHA's SSCM and BSHIC.

G. Landscape Restoration:

1) Landscape restoration is to begin immediately upon the completion of excavation activities.
2) Topsoil will be salvaged or replaced to a minimum depth of two inches.
3) All disturbed areas are to be topsoiled, fertilized, seeded and mulched in accordance with SHA's SSCM Section 705, Turf Establishment.
4) Solid sodding is required in all residential areas.
5) The permittee is responsible for all watering necessary to ensure the adequate reestablishment of turf and replacement planting material.
6) All trees, shrubs, flower beds and other existing planting material disturbed by, or a result of construction under this permit will be replaced in kind to the complete satisfaction of the Maryland SHA.
7) The permittee must coordinate the replacement of all planting material with a representative of the SHA Office of Environmental Design, Landscape Operation Division at 410-554-8584.

18. MARKING ROAD REPAIRS

1. When a utility company, contractor or local municipality open cuts within SHA right-of-way, the cut shall be marked with the appropriate color code as designated by Miss Utility (see below). The initials of the utility company are required to be painted within the cut area.
2. When the utility company, contractor or local municipality open cuts pavement of a state roadway, they shall mark the repaired road or shoulder area with the appropriate color as designated by Miss Utility. The initials of the utility company are also required to be painted within the repaired area.
3. Utility Color Codes as designated by Miss Utility:

Color	Utility
Red	Electric Power Lines, Cables, Conduit and Lighting Cables
Yellow	Gas, Oil, Steam, Petroleum or Gaseous Materials
Orange	Communication, Alarm or Signal Lines, Cables or Conduit incl. CATV
Blue	Water, Irrigation and Slurry Lines
Green	Storm Drain Lines/Sewer
Pink	Survey Markings
White	Proposed Excavation

State Highway Administration

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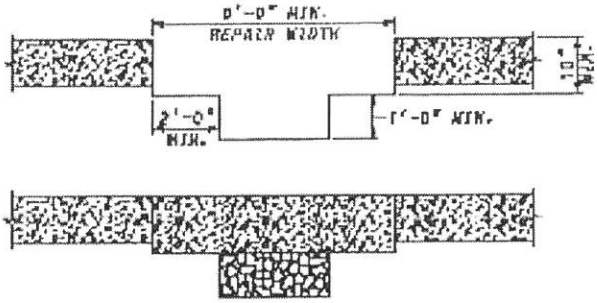
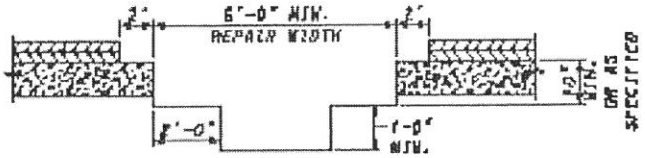
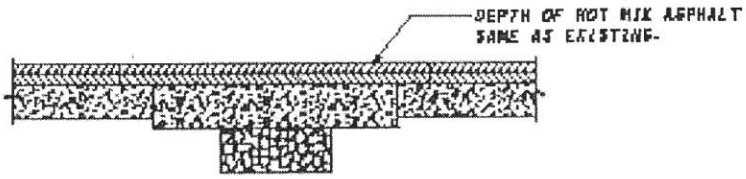
For Metropolitan District Engineer

Master Permit Expires 12/31/2015

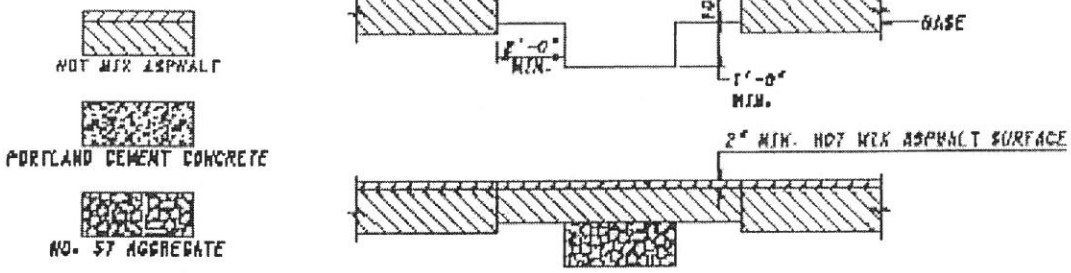


RIGID PAVEMENT





HOT MIX ASPHALT PAVEMENT WITH PORTLAND CEMENT CONCRETE BASE



FLEXIBLE PAVEMENT

NOTES

1. THIS STANDARD IS TO BE USED IN ACCORDANCE WITH SECTIONS 306 AND 322. THE ROADWAY SHALL BE PATCHED WITH THE SAME TYPE MATERIAL REMOVED UNLESS NOTED ON THE SPECIFICATIONS. PORTLAND CEMENT CONCRETE PAVEMENT REPAIR SHALL BE IN ACCORDANCE WITH STANDARDS 577.02, 577.03, 577.04, 577.05, 577.06, OR 577.10.
2. THE TOP 1 FT. OF THE TRENCH SHALL BE FILLED WITH NO. 57 AGGREGATE. TRENCH TO BE EXTENDED TO DITCH LINE.
3. WHEREVER A TRENCH CROSSES A CONCRETE ROADWAY THAT HAS JOINT INSTALLATIONS THE ENTIRE SLAB BETWEEN THE EDGE OF THE TRENCH AND NEAREST JOINT SHALL BE REMOVED IF THE DISTANCE IS LESS THAN 6 FT.
4. CLEAN AND WET EDGES OF CUT AND SUBBASE BEFORE PLACING CONCRETE.
5. ALL WORK SUCH AS TRENCH BACKFILL, CURING OF CONCRETE, MATERIALS USED, ETC. SHALL BE IN ACCORDANCE WITH SECTIONS 201, 505 AND 520 OF THE SPECIFICATIONS OR AS SPECIFIED IN THE PERMIT.
6. ALL COSTS FOR SAWCUTS, TRENCH EXCAVATION, BACKFILL, HOT MIX ASPHALT, CONCRETE, NO. 57 AGGREGATE, MATERIALS, TOOLS, LABOR AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE OF THE UTILITY ITEMS.
7. RIGID PAVEMENT REPAIRS AS SHOWN SHALL BE MADE USING CONCRETE MIX NO. 9 (NINE) MEETING THE REQUIREMENTS OF SECTION 902 OF THE SPECIFICATIONS UNLESS OTHERWISE SPECIFIED IN THE SPECIAL PROVISIONS, ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

SPECIFICATION 600	CATEGORY CODE ITEMS
APPROVED	K. L. G. Mueller
	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL + SHA REVISIONS	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 3-3-86	APPROVAL 3-18-86
REVISED 9-20-94	REVISED
REVISED 3-23-10	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REPAIRING PAVEMENT OPENINGS FOR UTILITY TRENCHES

STANDARD NO. MD 578.01