

NOTES:

1. SCUPPERS AND DRAIN PIPE SHALL BE GRAY IRON CASTINGS MEETING THE REQUIREMENTS OF AASHTO M 105, CLASS 30A (ASTM A48, CLASS 30A).
2. GRATES SHALL BE DUCTILE IRON CASTINGS MEETING THE REQUIREMENTS OF ASTM A536, GRADE 60-40-18.
3. ALL WALL AND FLANGE THICKNESSES FOR SCUPPERS SHALL BE 3/4" EXCEPT AS SHOWN.
4. FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/4".

ISSUED: 8/2015

RECOMMENDED:

REVISION

APPROVAL

APPROVED:

Muhammed Khalid
CHIEF ENGINEER

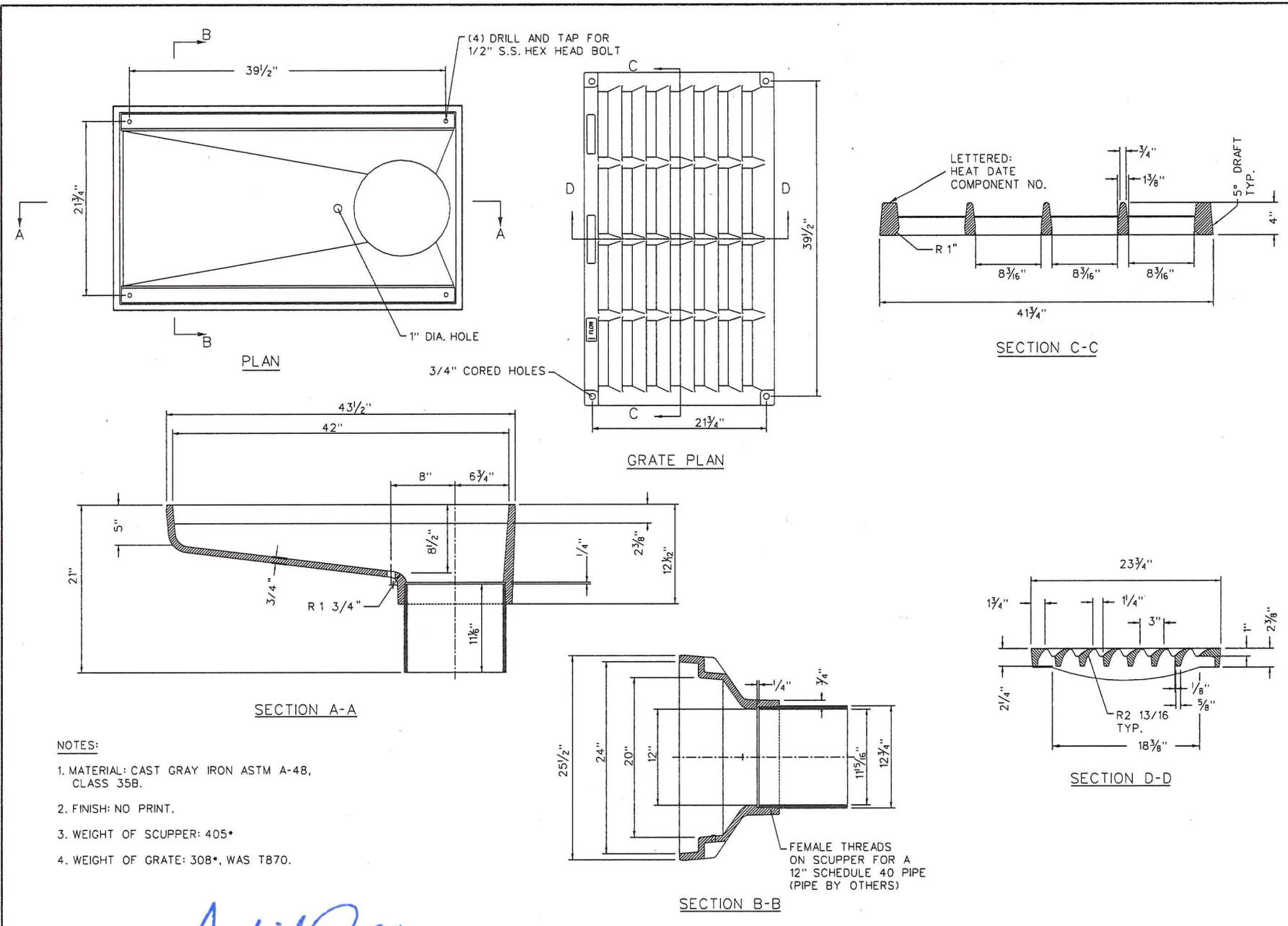
PROJECT MANAGER

DECK SCUPPER
TYPE "A"

d.

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 710.01



NOTES:

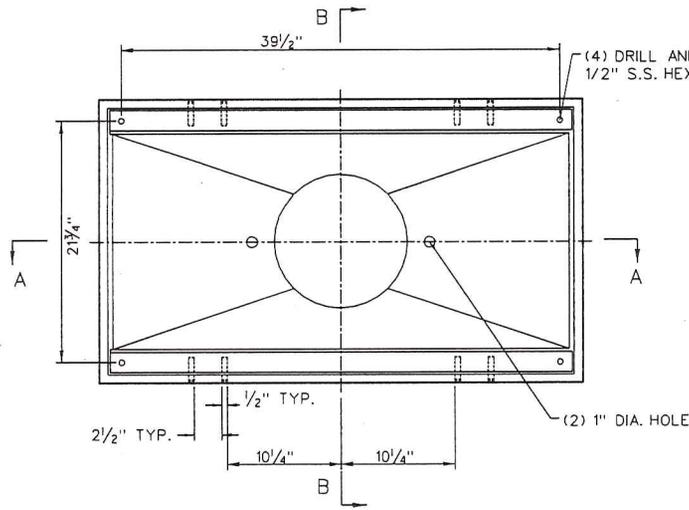
1. MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B.
2. FINISH: NO PRINT.
3. WEIGHT OF SCUPPER: 405*
4. WEIGHT OF GRATE: 308*, WAS T870.

ISSUED: 8/2015	RECOMMENDED: <i>Adil Rijj</i>
REVISION	APPROVAL
	PROJECT MANAGER
	APPROVED: <i>Muhammed Khalid</i>
	CHIEF ENGINEER

**DECK SCUPPER
TYPE "B"**

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 710.02

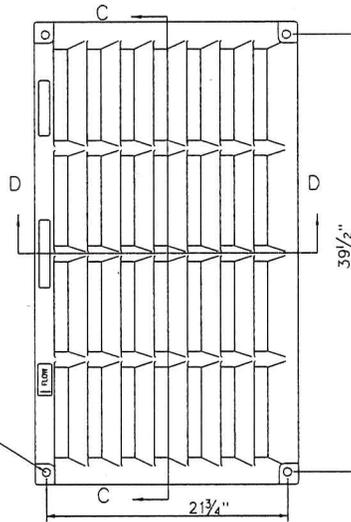


PLAN

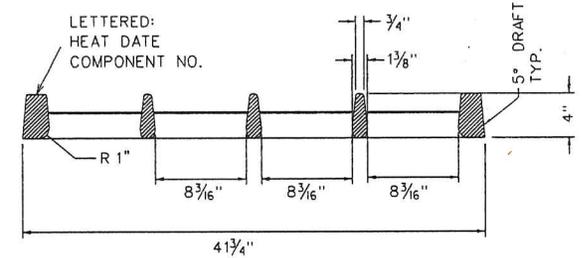
(4) DRILL AND TAP FOR
1/2" S.S. HEX HEAD BOLT

(2) 1" DIA. HOLE

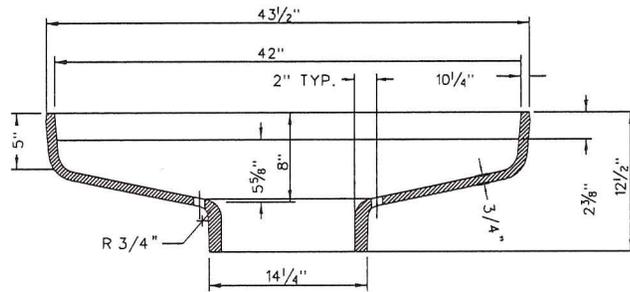
3/4" CORED HOLES



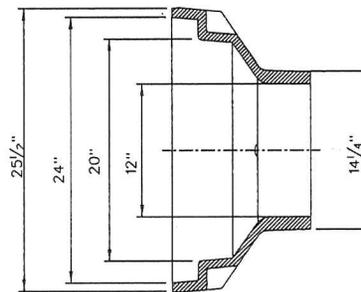
GRATE PLAN



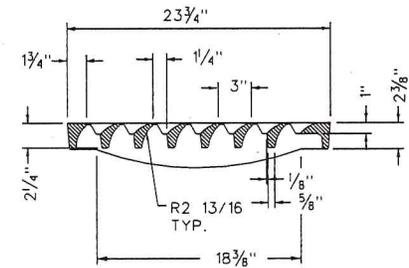
SECTION C-C



SECTION A-A



SECTION B-B



SECTION D-D

NOTES:

1. MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B.
2. FINISH: NO PRINT.
3. WEIGHT OF SCUPPER: 411*, WAS NF-T873.
4. WEIGHT OF GRATE: 308*, WAS T870.

ISSUED: 8/2015

REVISION APPROVAL

RECOMMENDED: *Adil Raza*
PROJECT MANAGER

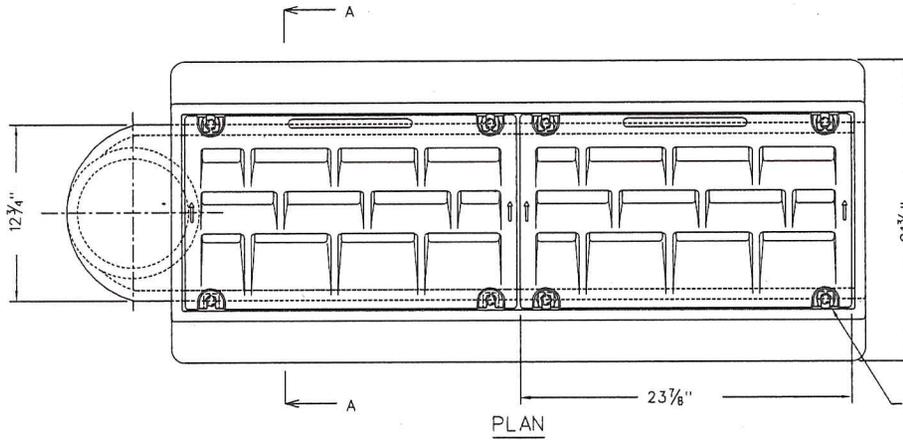
APPROVED: *Muhammed Ikholid*
CHIEF ENGINEER

DECK SCUPPER
TYPE "C"

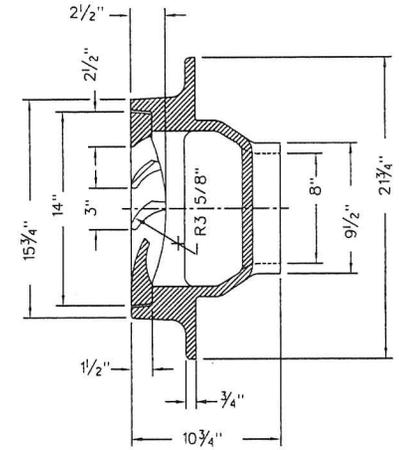
d.

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

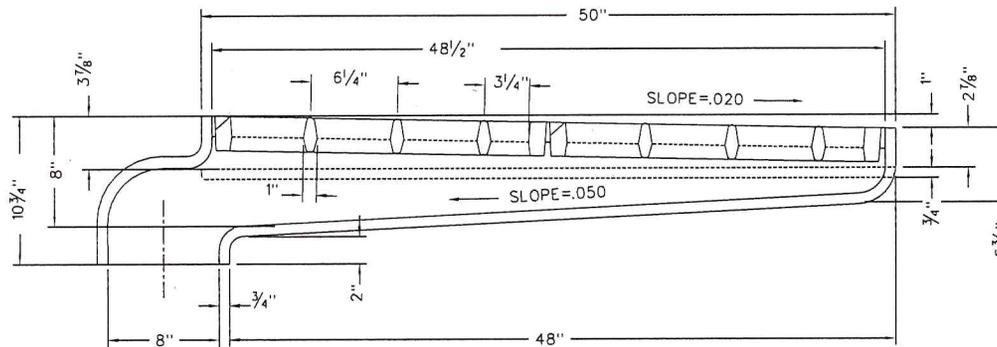
DWG. NO. 710.03



DRILL AND TAP SCUPPER FOR
 (8) 1/2 - 13UNC X 1 3/4
 STNL. STL. HEX BOLT AND
 GALV. WASHER (KIT #91540)



SECTION A-A



SECTIONAL ELEVATION

NOTES:

1. FREE OPEN AREA: 1.6 SQ. FT.
2. COMPONENT NO'S: SCUPPER 3951-0002, (2) GRATE 4999-3147
3. MATERIAL: CAST GRAY IRON ASTM-A48, CLASS 35B
4. FINISH: NO PAINT
5. WEIGHT: SCUPPER 498 LBS., GRATE 82 LBS./EA.

ISSUED: 8/2015
 REVISION APPROVAL

RECOMMENDED: *Adil Riaz*
 PROJECT MANAGER

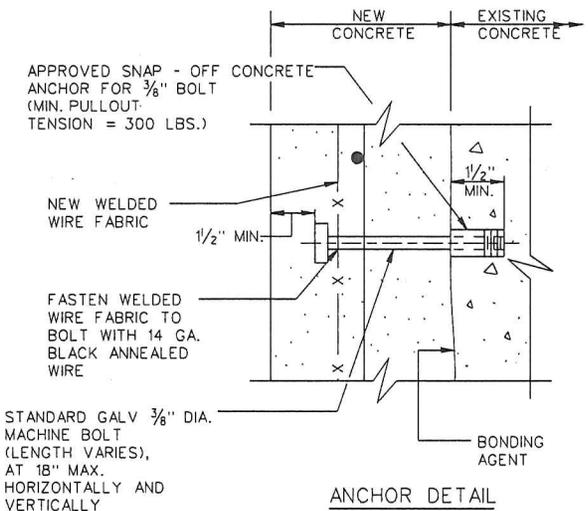
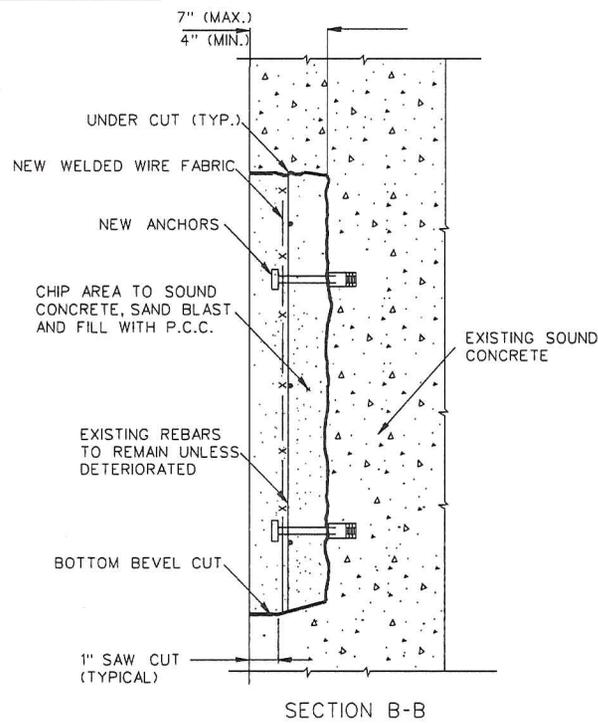
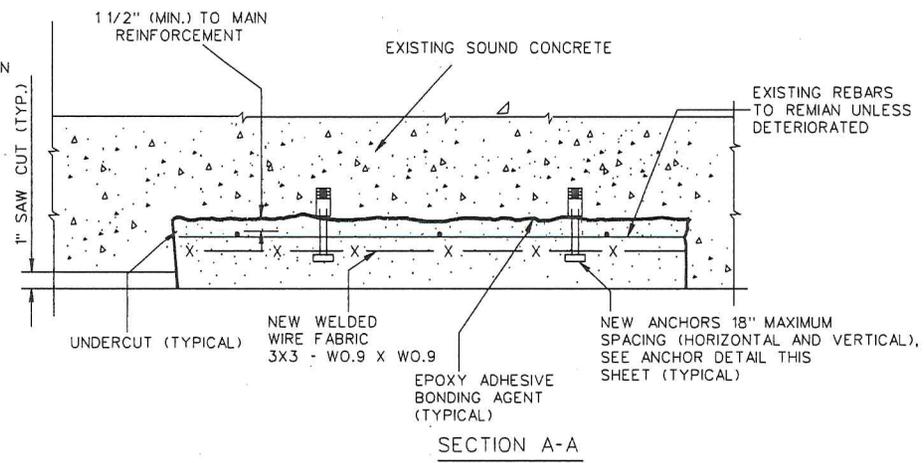
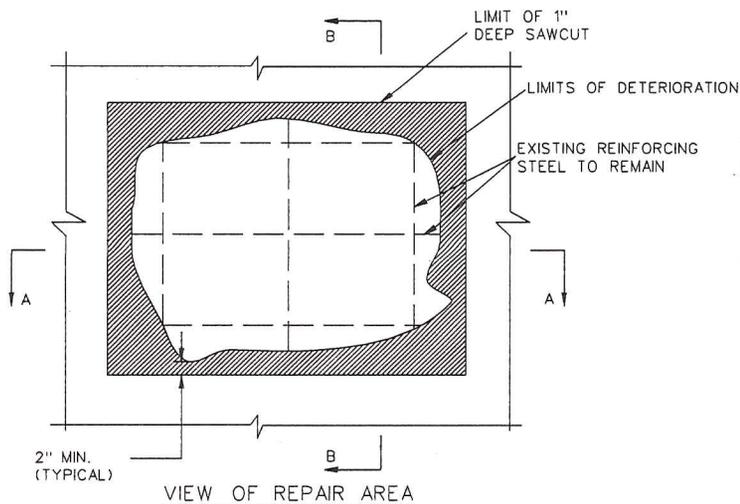
APPROVED: *Muhammed Kholid*
 CHIEF ENGINEER

DECK SCUPPER
 TYPE "D"

d.

DISTRICT OF COLUMBIA
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 710.04



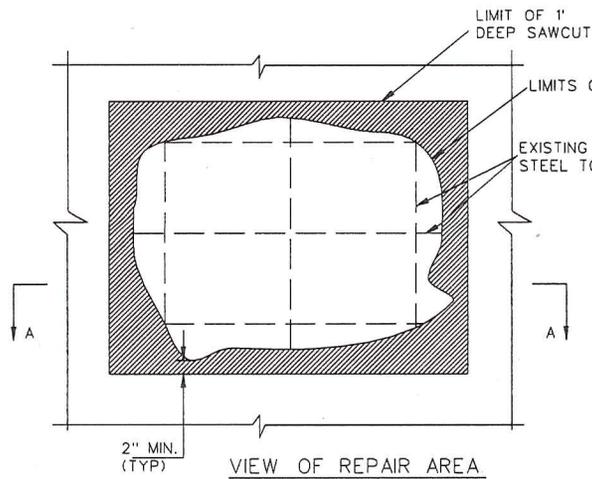
- NOTES:
1. TYPE 1 REPAIR IS APPLICABLE WHEN THE DEPTH OF DETERIORATION IS GREATER THAN 4".
 2. WELDED WIRE FABRIC AND ANCHORS ARE REQUIRED IN REPAIR AREAS THAT HAVE DETERIORATED REBARS, MISSING REBARS, AND LARGE REPAIR AREAS (SURFACE AREA GREATER THAN 22 SQUARE FEET).
 3. PRIOR APPROVAL BY THE ENGINEER REQUIRED FOR CUTTING DEPTH MORE THAN 7"

ISSUED: 8/2015	RECOMMENDED: <i>Adil Raza</i>
REVISION	APPROVAL
	PROJECT MANAGER
	APPROVED: <i>Muhammad Kholid</i>
	CHIEF ENGINEER

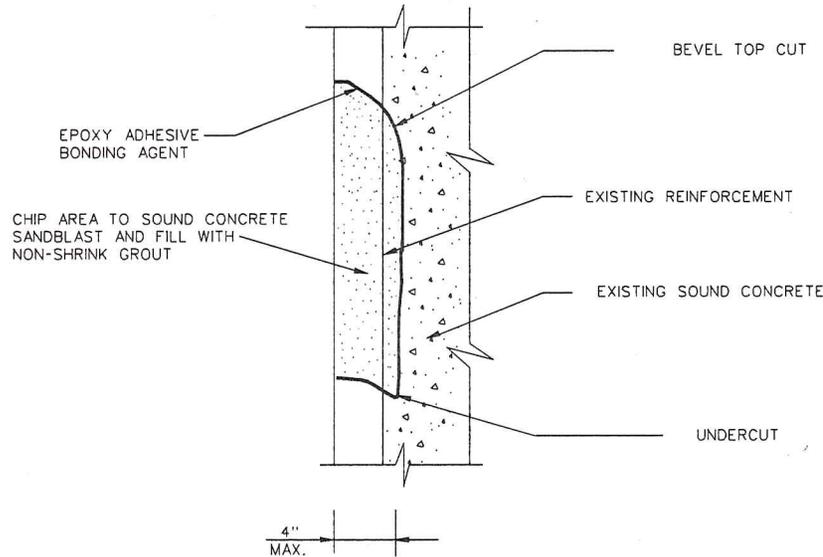
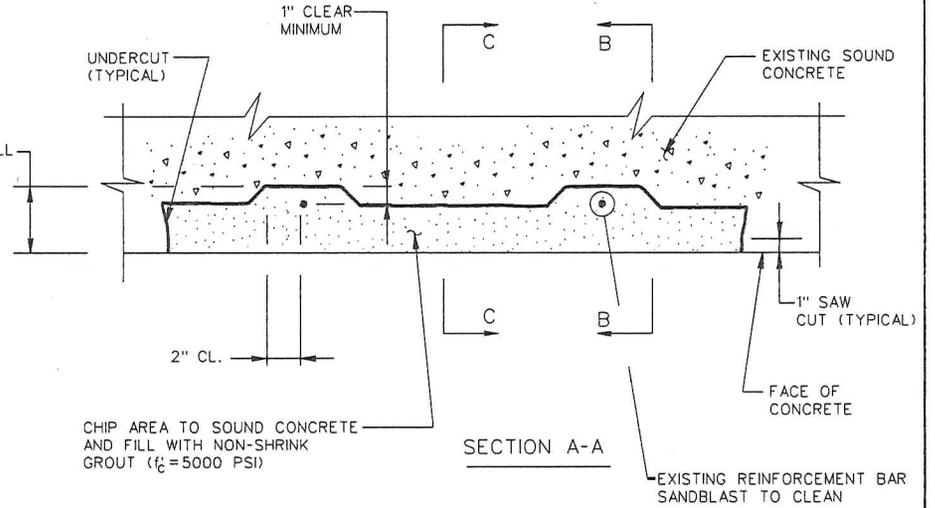
CONCRETE REPAIR
TYPE 1

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

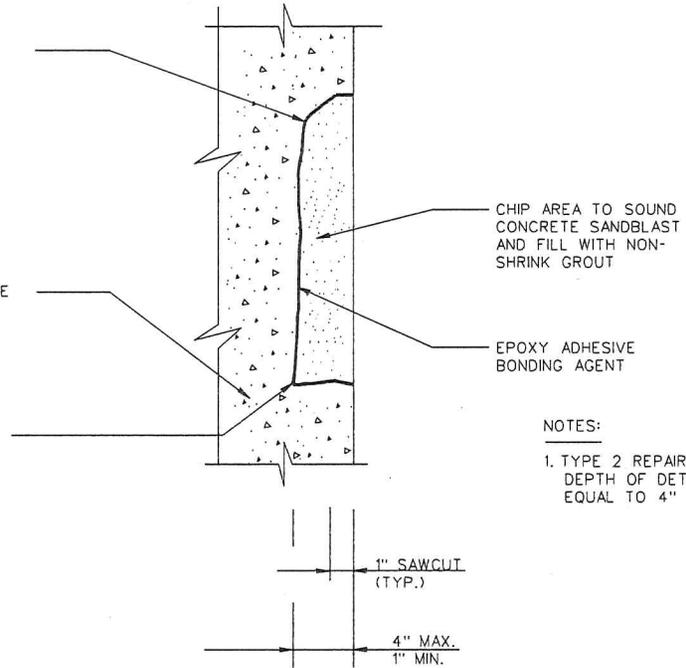
DWG. NO. 716.01



DEPTH OF SPALL
4" MAXIMUM
1" MINIMUM



SECTION B-B
(REINFORCEMENT STEEL ENCOUNTERED)



SECTION C-C
(REINFORCEMENT STEEL NOT ENCOUNTERED)

NOTES:

1. TYPE 2 REPAIR IS APPLICABLE WHEN THE DEPTH OF DETERIORATION IS LESS THAN OR EQUAL TO 4"

ISSUED:	8/2015
REVISION	APPROVAL

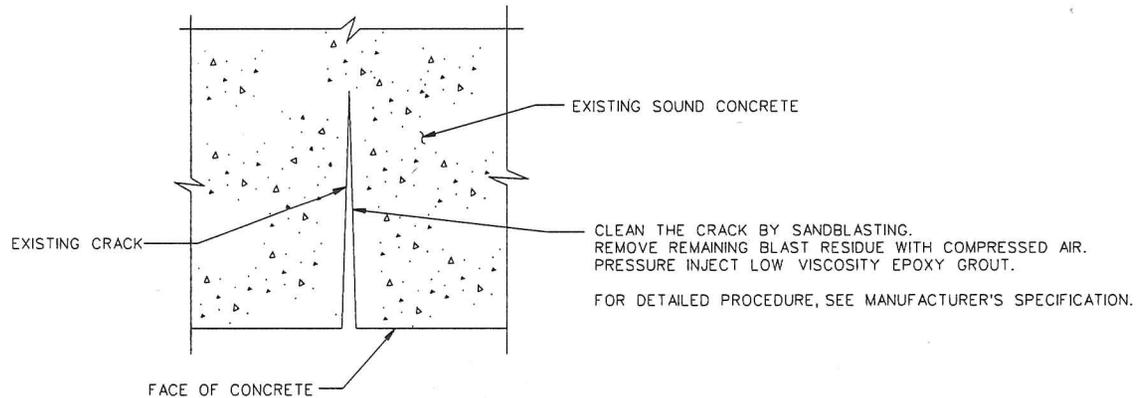
RECOMMENDED: *Adil Raza*
PROJECT MANAGER

APPROVED: *Muhammed Khalid*
CHIEF ENGINEER

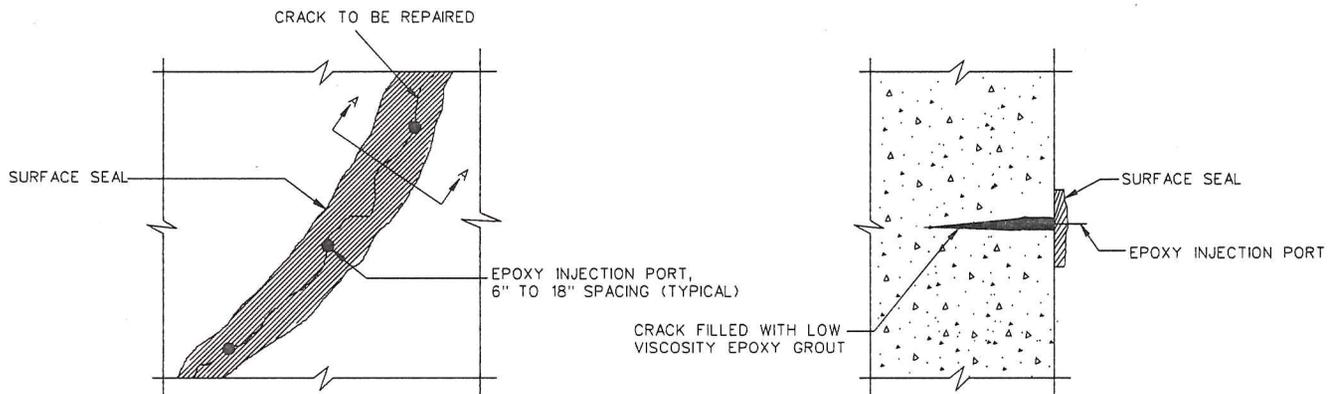
CONCRETE PATCH REPAIR
TYPE 2

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 716.02



VIEW OF EXISTING CRACK



VIEW OF REPAIR AREA

SECTION A-A

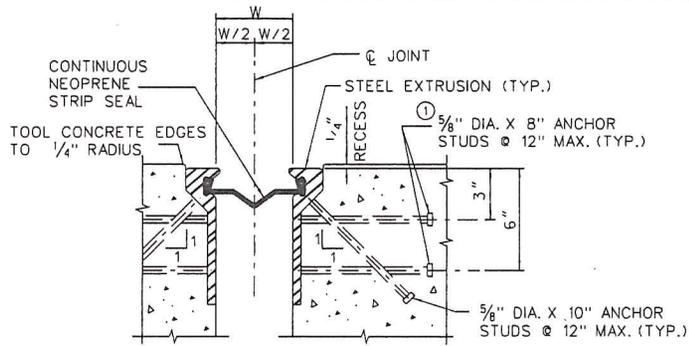
NOTES:
 1. ALL INJECTION PORTS AND SURFACE SEAL TO BE REMOVED AFTER INJECTION IS COMPLETE

ISSUED: 8/2015	RECOMMENDED: <i>Adil Riaz</i>
REVISION	APPROVAL
	PROJECT MANAGER
	APPROVED: <i>Muhammed Khelid</i>
	CHIEF ENGINEER

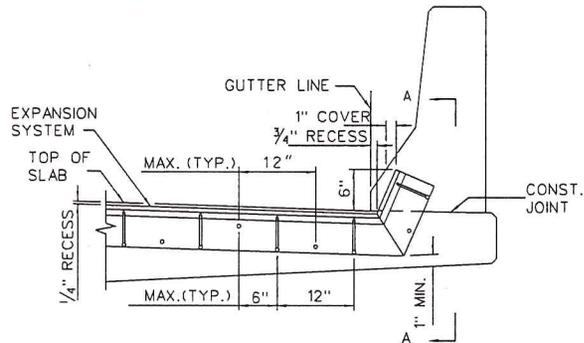
CONCRETE CRACK REPAIR
 TYPE 3

d. DISTRICT OF COLUMBIA
 DEPARTMENT OF TRANSPORTATION

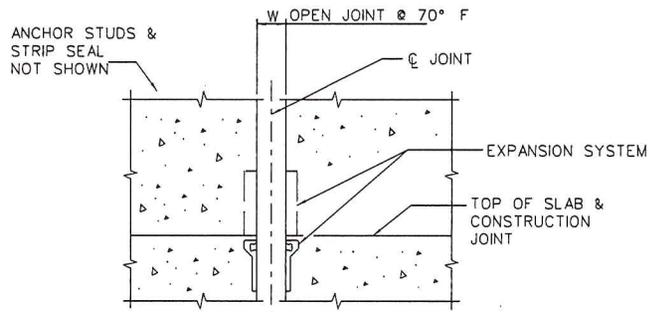
DWG. NO. 716.03



TYPICAL SECTION
STRIP SEAL EXPANSION JOINT



ELEVATION ALONG JOINT
AT BARRIER PARAPET



SECTION A-A

NOTES:

1. PROVIDE THE STRIP SEAL EXPANSION JOINT IN ACCORDANCE WITH SECTION 717 OF THE STANDARD SPECIFICATIONS.
2. PROVIDE STRIP SEAL JOINTS THAT CONFORM TO THE CROWN OF THE FINISHED ROADWAY.
3. FABRICATION AND INSTALLATION OF THE EXPANSION JOINTS SHALL BE AS PER THE CURRENT AASHTO SPECIFICATIONS AND CURRENT DDOT STANDARD SPECIFICATIONS FOR HIGHWAY & BRIDGES. THE NUMBER OF SPLICES (INCLUDING THE LENGTH OF THE STEEL EXTRUSION) SHALL BE APPROVED BY THE ENGINEER.
4. SUBMIT THE INSTALLATION PLAN TO THE ENGINEER FOR ACCEPTANCE PRIOR TO INSTALLATION.
5. FABRICATE AND CONSTRUCT THE STRIP SEAL MOUNTING IN THE BARRIER SO THAT THE STRIP SEAL GLAND MAY BE REMOVED FOR FUTURE MAINTENANCE.
6. PROVIDE 5/8" DIA. HEADED STUDS THAT MEET THE REQUIREMENTS OF SECTION 717 OF THE STANDARD SPECIFICATIONS. ELECTRICALLY WELD ALL STUDS.
7. FIELD BEND SLAB REINFORCING AS REQUIRED TO CLEAR ANCHOR STUDS.
8. PROVIDE CHECKERED STEEL COVER PLATE CONFORMING TO THE LATEST AASHTO M 270, GRADE 36.
9. STRIP SEAL SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.
10. IF M EXTRUSION IS TO BE USED, SIMILAR DETAIL SHALL BE SUBMITTED TO THE ENGINEER.

NOTE TO DESIGNER:

THIS DRAWING FURNISHED FOR INFORMATION ONLY. ALL DIMENSIONS SHOWN ARE SHEET SPECIFIC. ANY USE OF THIS DESIGN AND DRAWING, INCLUDING DIMENSIONS, MUST BE CHECKED BY THE DESIGNER TO ENSURE DESIGN IS ADEQUATE FOR THE INTENDED USE. ALL DRAWINGS MUST BE SIGNED AND SEALED BY A DC LICENSED PROFESSIONAL ENGINEER WHEN USED.

DESIGNER TO FILL IN MOVEMENT TABLE AND FILL IN APPROPRIATE DESIGNATION OF STRIP SEAL SIZE.

TOTAL MOVEMENT SHALL INCLUDE ALLOWANCE FOR GIRDER END ROTATION UNDER LIVE LOAD AND RACKING CAUSED BY SKEW ANGLE.

① ALTERNATE LOCATION OF STUDS AS SHOWN IN ELEVATION DETAILS.

MOVEMENT TABLE

LOCATION	EXPANSION (THERMAL)	CONTRACTION (THERMAL)	CONTRACTION (SHRINKAGE)	JOINT WIDTH "W" AT 70°F	TOTAL RATED MOVEMENT	Δ TEMP. ± 10° F.

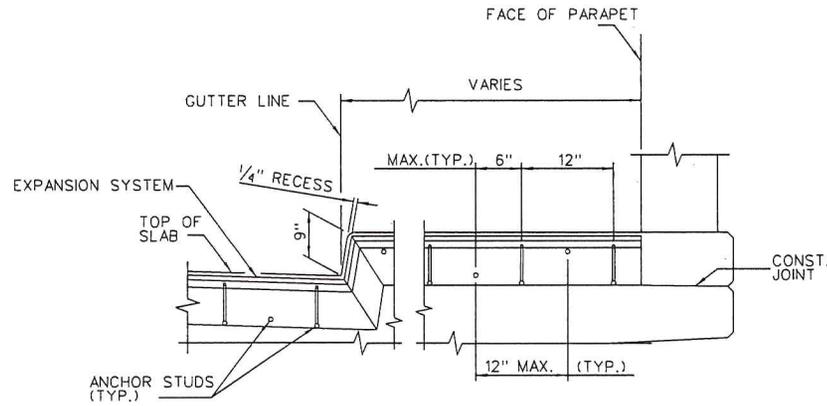
ISSUED: 8/2015	RECOMMENDED: <i>Adil Riaz</i>
REVISION	APPROVAL
	PROJECT MANAGER
	APPROVED: <i>Muhammed Kholid</i>
	CHIEF ENGINEER

EXPANSION JOINTS
(P EXTRUSION SHOWN)

d.

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

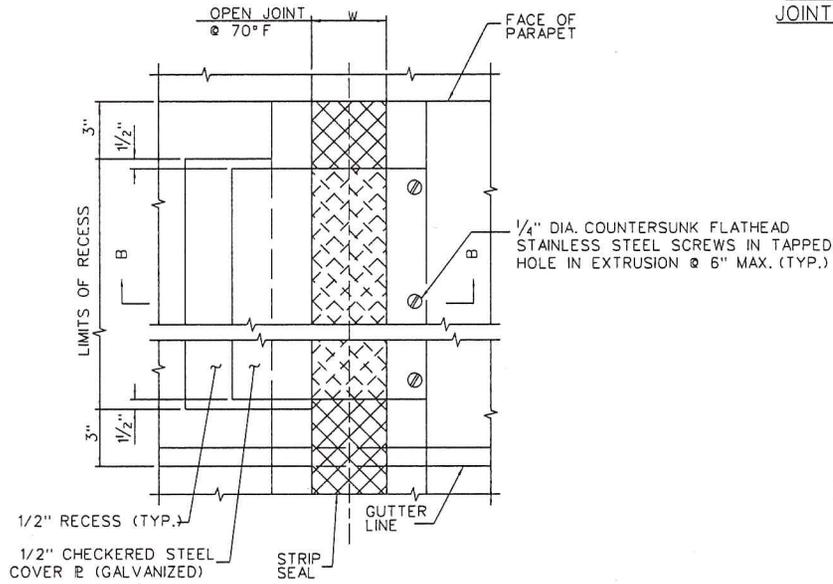
DWG. NO. 717.01



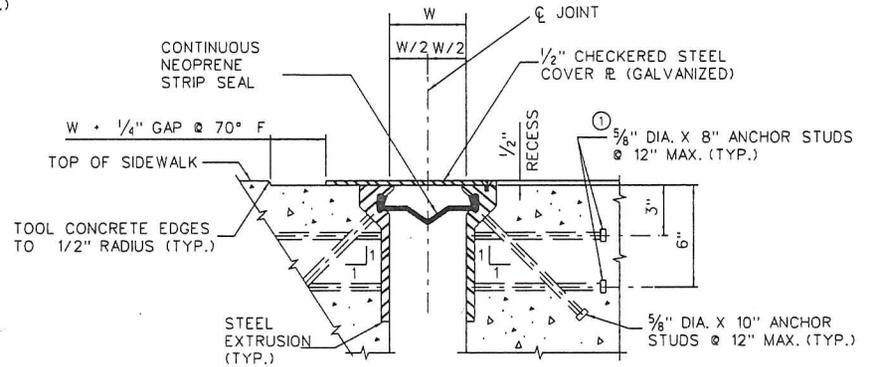
ELEVATION ALONG JOINT AT SIDEWALK

NOTES:

1. PROVIDE CONCRETE SURFACE TREATMENT TO ALLOW COVER PLATE TO SLIDE.
2. DETAILS ARE SHOWN FOR 90 DEGREE SKEW. MODIFY DETAILS AS NEEDED FOR DIFFERENT DEGREES OF SKEW.
3. REFERENCE DWG NO. 717.01 FOR OTHER NOTES AND MOVEMENT TABLE.



PART PLAN - COVER PLATE AT SIDEWALK



SECTION B-B

① ALTERNATE LOCATION OF STUDS AS SHOWN IN ELEVATION DETAILS.

ISSUED: 8/2015
REVISION APPROVAL

RECOMMENDED: *Adil Raza*
PROJECT MANAGER

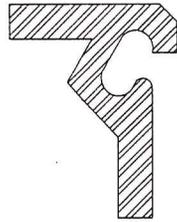
APPROVED: *Muhammed Khalid*
CHIEF ENGINEER

EXPANSION JOINTS ON SIDEWALK (P EXTRUSION SHOWN)

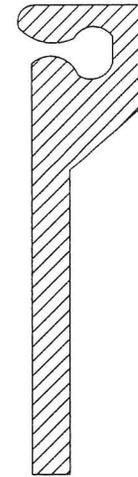
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DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION

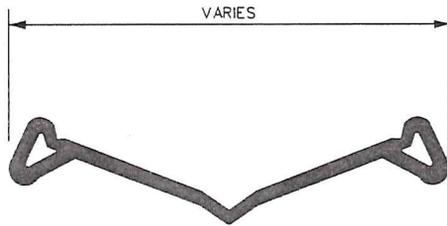
DWG. NO. 717.02



TYPE "M" EXTRUSION



TYPE "P" EXTRUSION



NEOPRENE STRIP SEAL

NOTES:

1. FABRICATION AND INSTALLATION OF BRIDGE JOINT ASSEMBLY SYSTEM SHALL BE AS PER THE CURRENT AASHTO SPECIFICATIONS.
2. FOR ADDITIONAL INFORMATION SEE DWG NO. 717.01
3. SUBMIT MOVEMENT TABLE AS SHOWN ON DWG NO. 717.01
4. TOTAL MOVEMENT, MAXIMUM JOINT WIDTH AND MINIMUM INSTALLATION WIDTH FOR EACH STRIP SEAL SHALL BE PER MANUFACTURE'S RECOMMENDATIONS.

ISSUED:	8/2015
REVISION	APPROVAL

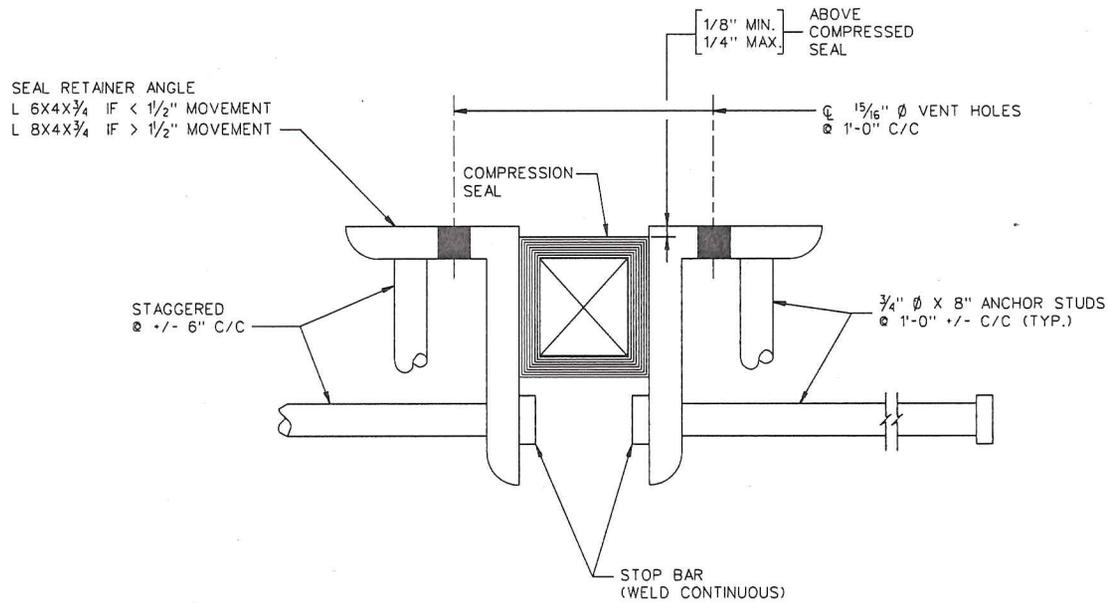
RECOMMENDED: *Adil Raza*
PROJECT MANAGER

APPROVED: *Muhammed Khalid*
CHIEF ENGINEER

STRIP SEAL, EXTRUSION
AND BRACKET

d. DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 717.03



NOTES:

1. ANCHOR STUDS SHALL BE WELDED IN ACCORDANCE WITH CURRENT AASHTO/AWS D1.5M/D1.5.
2. SUBMIT MOVEMENT TABLE AS SHOWN ON DWG NO. 717.01.
3. COMPRESSION SEAL AND RETAINER ANGLE SHALL BE DESIGNED AND INSTALLED AS PER THE LATEST AASHTO SPECIFICATION.

ISSUED: 8/2015
 REVISION APPROVAL

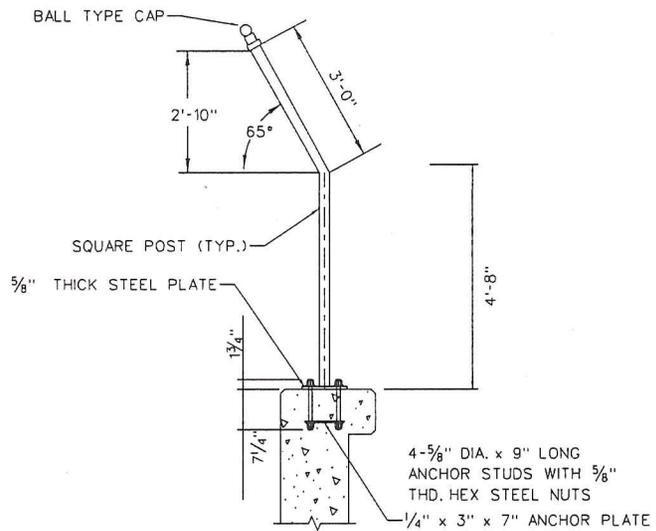
RECOMMENDED: *Adil Raza*
 PROJECT MANAGER

APPROVED: *Muhammed Kholid*
 CHIEF ENGINEER

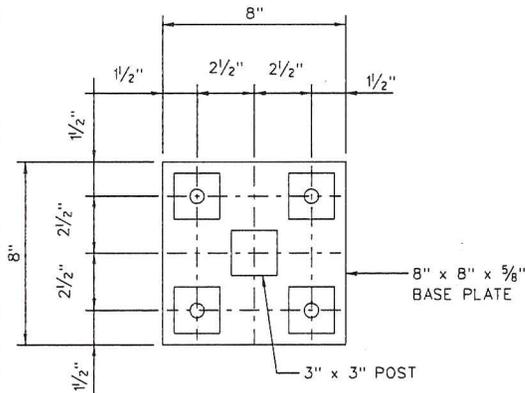
COMPRESSION SEAL JOINT
 AND
 RETAINER ANGLE DETAILS

d. DISTRICT OF COLUMBIA
 DEPARTMENT OF TRANSPORTATION

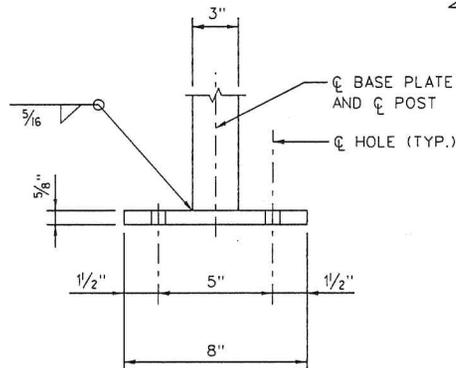
DWG. NO. 718.01



TYPICAL PARAPET SECTION WITH ORNAMENTAL FENCE TYPE I



FENCE POST BASE PLATE DETAILS



ORNAMENTAL FENCE TYPE I ELEVATION

NOTES:

1. FENCE POSTS SHALL BE PLUMB.
2. ANCHOR BOLTS SHALL CONFORM TO A-276, TYPE 430 OR TYPE 304 STAINLESS STEEL ANNEALED, HOT FINISHED, ULTIMATE STRENGTH 70,000 PSIMIN., 20% MIN. ELONGATION. THREADS MAY BE ROLLED OR CUT.
3. PLATES SHALL BE STEEL, CONFORMING TO A-709 GRADE 36.

ISSUED:	8/2015
REVISION	APPROVAL

RECOMMENDED: *Adil Raza*
PROJECT MANAGER

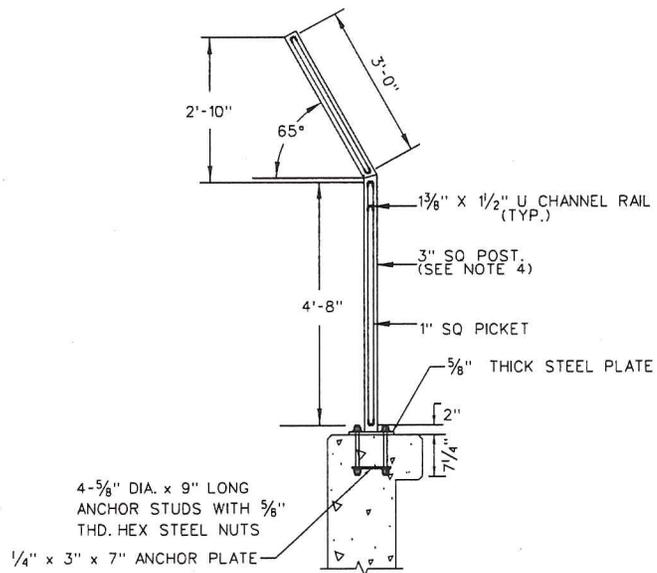
APPROVED: *Muhammed Khalid*
CHIEF ENGINEER

ORNAMENTAL BRIDGE
FENCE TYPE 1

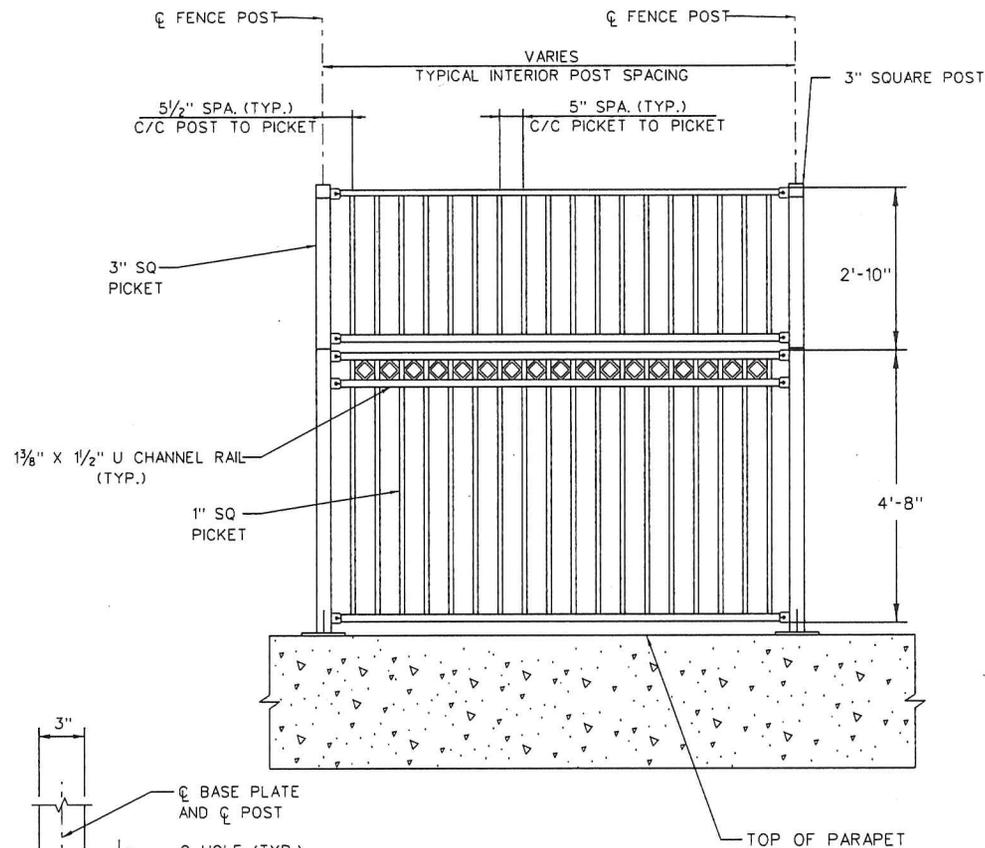
d.

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

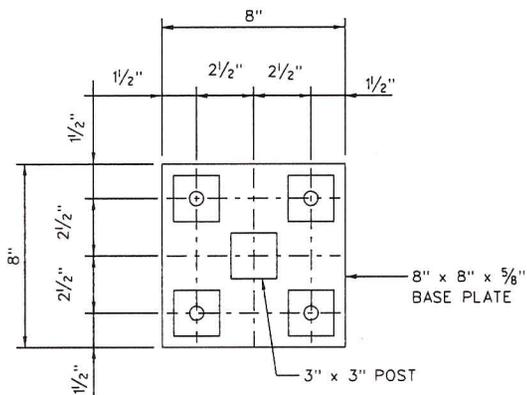
DWG. NO. 721.01



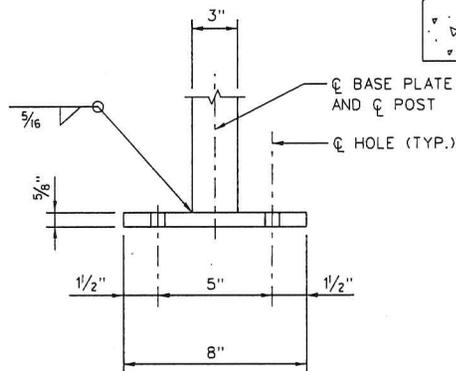
TYPICAL PARAPET SECTION WITH ORNAMENTAL FENCE TYPE II



ORNAMENTAL FENCE TYPE II ELEVATION



FENCE POST BASE PLATE DETAILS



NOTES:

1. FENCE POSTS SHALL BE PLUMB.
2. ANCHOR BOLTS SHALL CONFORM TO A-276, TYPE 430 OR TYPE 304 STAINLESS STEEL ANNEALED, HOT FINISHED, ULTIMATE STRENGTH 70,000 PSI MIN., 20% MIN. ELONGATION. THREADS MAY BE ROLLED OR CUT.
3. PLATES SHALL BE STEEL, CONFORMING TO A-709 GRADE 36.
4. DESIGNER OF RECORD TO CHECK ALL MEMBER SIZES.

ISSUED: 8/2015

REVISION APPROVAL

RECOMMENDED:

APPROVED:

Muhammed Kholid
CHIEF ENGINEER

PROJECT MANAGER

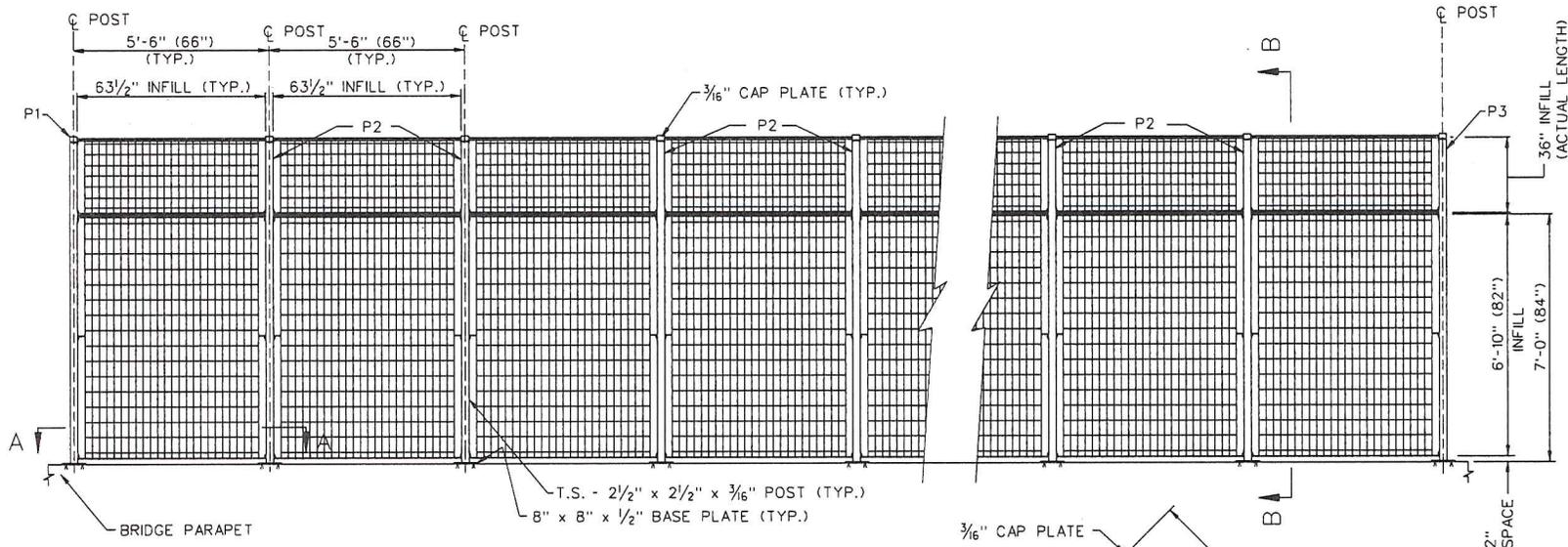
ORNAMENTAL BRIDGE
FENCE TYPE 2

d.

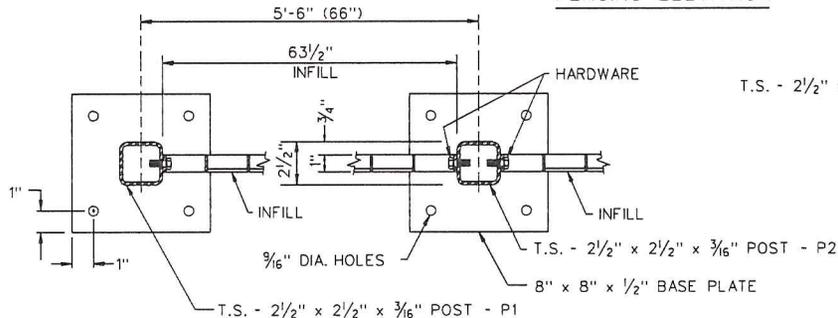
DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 721.02

NOTE: THIS DRAWING IS INCLUDED FOR MAINTENANCE PURPOSES BUT NOT FOR USE ON NEW BRIDGES.



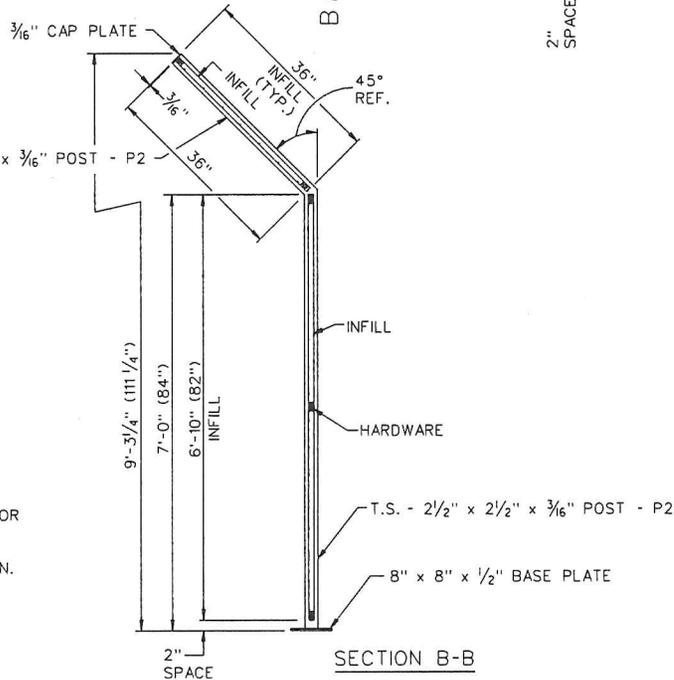
FENCING ELEVATION



SECTION A-A

NOTES:

1. THIS DRAWING IS FOR STANDARD HEIGHT ORNAMENTAL BRIDGE FENCE.
2. THIS DRAWING IS BASED ON AN AMETCO MANUFACTURING CORPORATION PRODUCT. AN AMETCO FENCE PRODUCT OR AN APPROVED EQUAL SHALL BE ACCEPTABLE.
3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND A DETAILED DESIGN FOR APPROVAL PRIOR TO FABRICATION.
4. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
5. T.S. = TUBULAR SECTION



SECTION B-B

ISSUED: 8/2015

RECOMMENDED:

Adil Raza
PROJECT MANAGER

REVISION APPROVAL

APPROVED:

Muhammed Khalid
CHIEF ENGINEER

ORNAMENTAL BRIDGE
FENCE TYPE - 3

d.

DISTRICT OF COLUMBIA
DEPARTMENT OF TRANSPORTATION

DWG. NO. 721.03