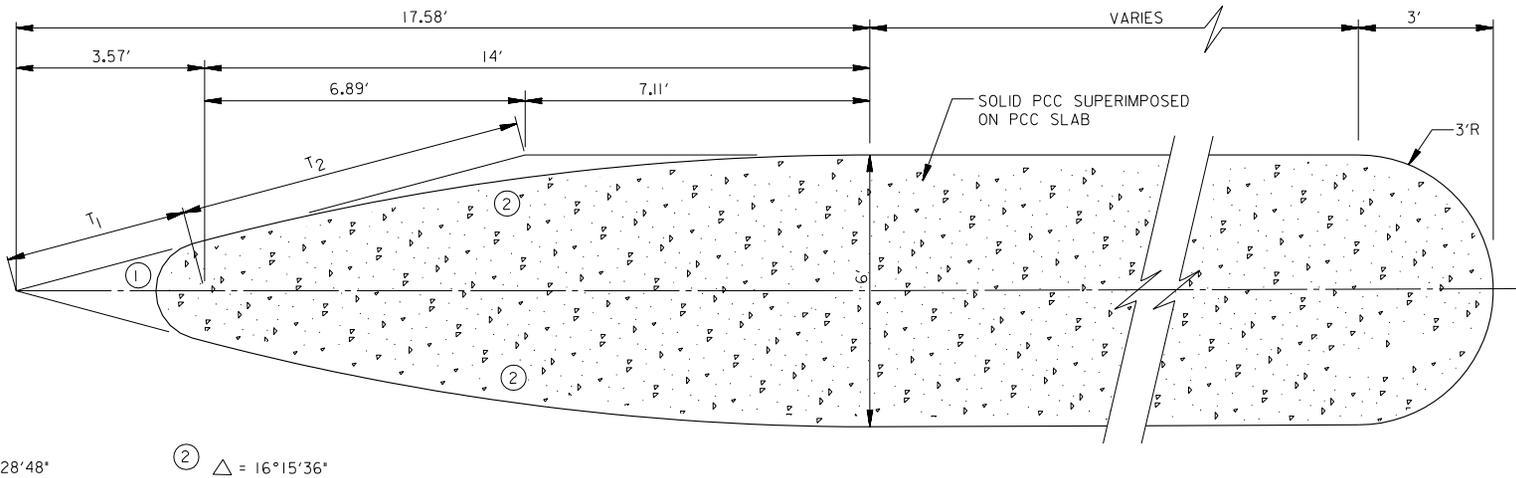


PLAN - 4' WIDE MEDIAN



PLAN - 6' WIDE MEDIAN

NOTES:

1. WHERE ISLANDS EXTEND ACROSS CROSSWALKS, CURB CUTS FOR HANDICAPPED SHALL BE CONSTRUCTED AS PART OF THE ISLANDS.
2. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE APPLICABLE TO A 90° CROSSING INTERSECTION. THESE DIMENSIONS SHALL BE ADJUSTED ACCORDINGLY FOR A SKEW CROSSING INTERSECTION.

PLAN IS TO BE USED FOR CONSTRUCTION. DIMENSIONS ARE UNCHANGED 601-0-1001  
 Friday, April 03, 2009 AT 12:16 PM

			RECOMMENDED: <i>[Signature]</i> DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:			
	REFERENCE		

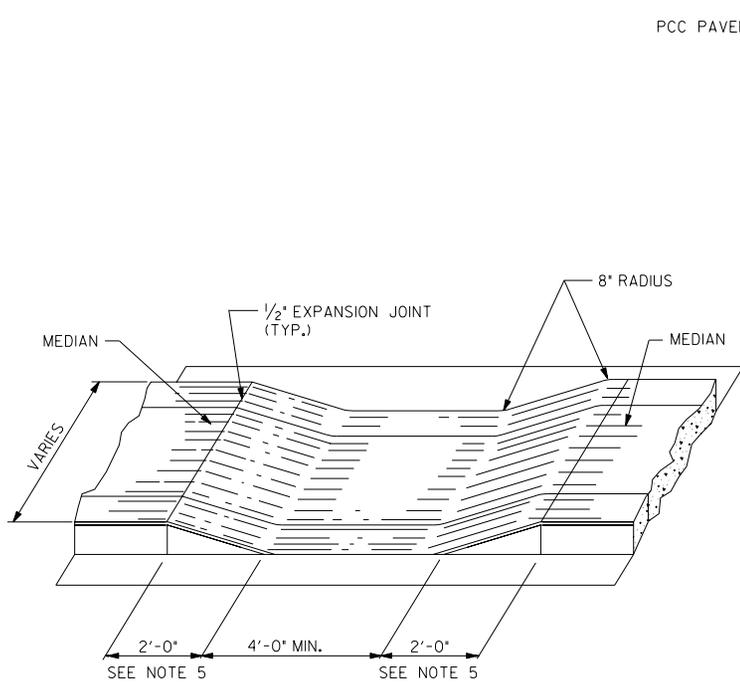
## DIRECTIONAL ISLANDS

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 601.01

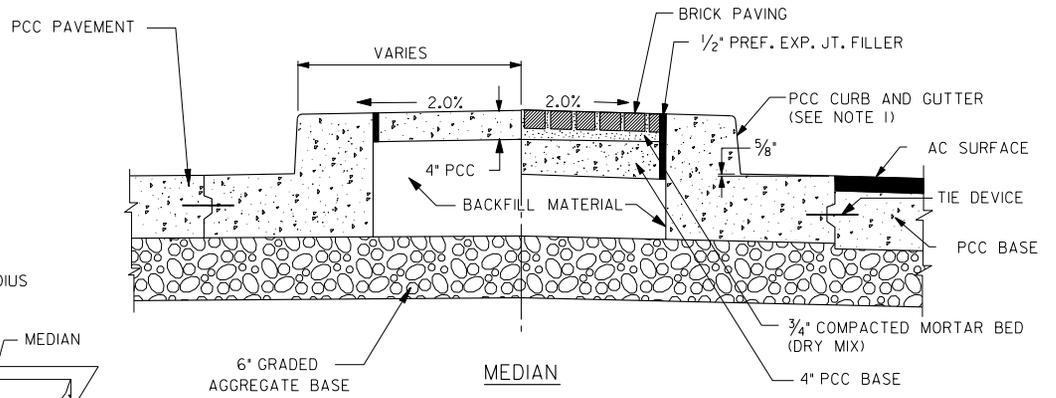




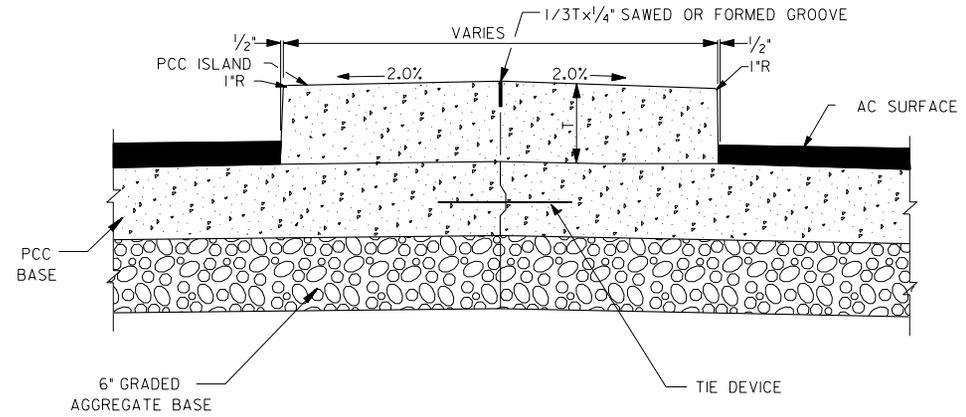
MEDIAN & ISLAND OPENINGS

NOTES:

1. CURBS MAY BE GRANITE, SEE DDOT STANDARD DRAWING NO. 609.02.
2. MEDIAN TREATMENT AS SHOWN ON THE CONTRACT PLANS.
3. CURB HEIGHTS AS SHOWN ON THE CONTRACT PLANS. 7" CURB REVEAL TYPICAL.
4. MIN. 2.00% CROSS SLOPE OR AS NOTED ON THE CONTRACT PLANS.
5. 2'-0" MIN. OR AS SHOWN ON THE CONTRACT PLANS.



MEDIAN



SUPERIMPOSED DIRECTIONAL ISLAND

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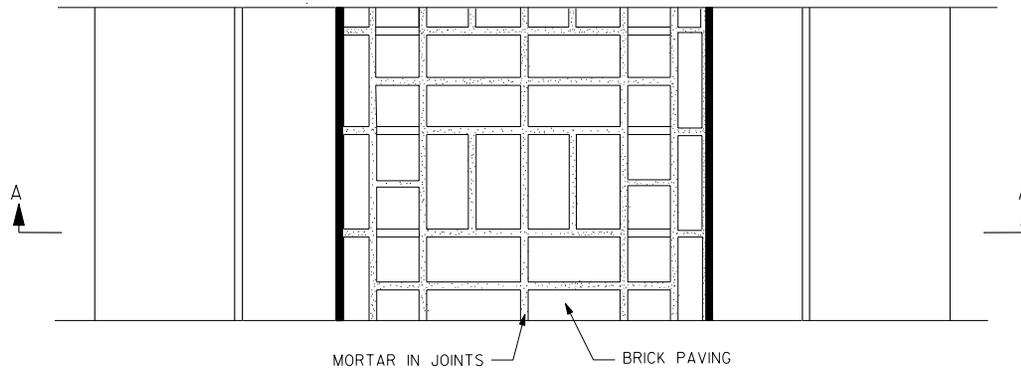
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REVISED		APPROVED:	<i>[Signature]</i> CHIEF TRANSPORTATION ENGINEER
ISSUED:	REFERENCE		

**MEDIAN AND PEDESTRIAN  
REFUGE ISLAND DETAIL**

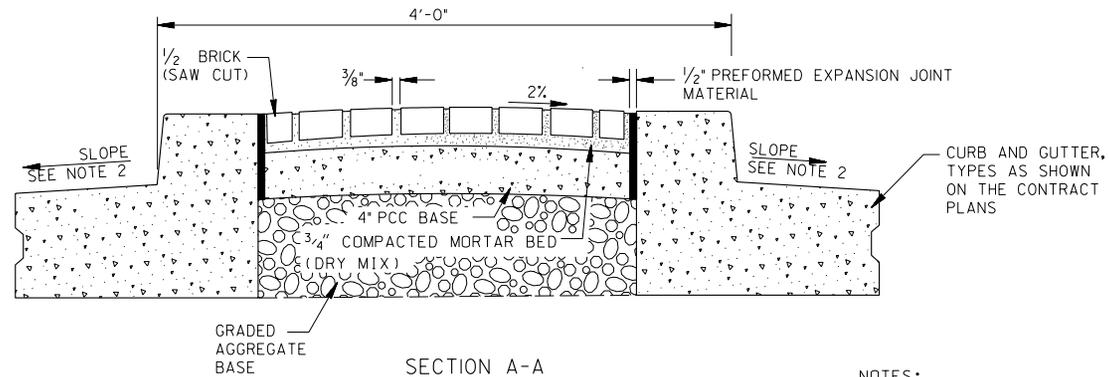
**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 601.03



PLAN



BRICK PATTERN FOR MEDIAN WALK

NOTES:

- PATTERN OF BRICK SHALL BE AS SHOWN UNLESS INDICATED OTHERWISE ON THE CONTRACT PLANS OR IN THE SPECIAL PROVISIONS.
- LOW SIDE 1" PER FT. TOWARDS CURB. HIGH SIDE 5/8" PER FT. AWAY FROM CURB.

P:\031515.dwg: as per spec 2/20/05: final UNCHANGED: 6/1/04:DCM  
 P:\031515.dwg: as per spec 2/20/05: final UNCHANGED: 6/1/04:DCM

			RECOMMENDED: <i>[Signature]</i> DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:			
		REFERENCE	

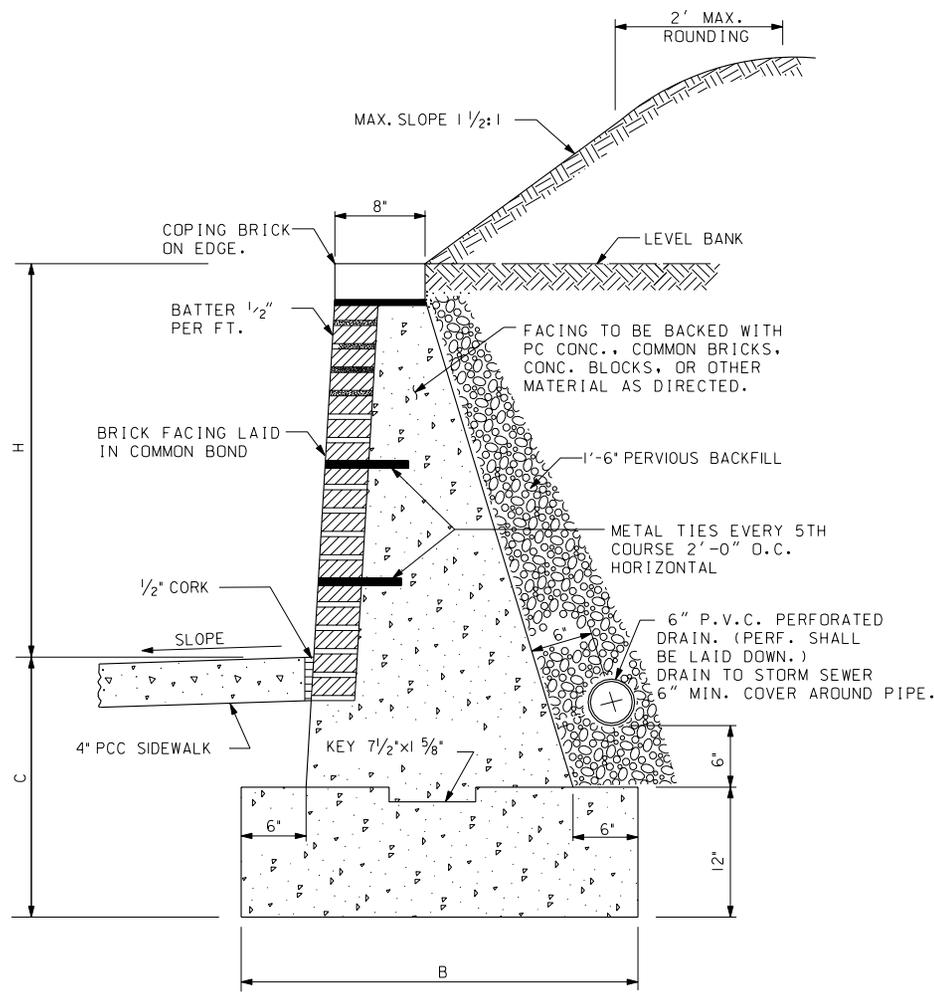
BRICK MEDIAN

d.

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 601.04





BRICK MASONRY GRAVITY RETAINING WALL

SLOPING SURCHARGE MAX. SLOPE 1 1/2:1

H FT.	B FT. IN.	C FT. IN.	QUANTITIES (CU. YD./LIN. FT.)	
			FOOTING	WALL
2'	2'-6"	2'-6" *	0.093	0.140
3'	3'-0"	2'-6" *	0.111	0.222
4'	3'-6"	2'-6" *	0.130	0.323
5'	4'-2"	2'-6" *	0.154	0.461
6'	4'-10"	2'-6" *	0.179	0.625
7'	5'-11"	2'-6"	0.219	0.880
8'	6'-8"	2'-6"	0.247	1.116
9'	7'-5"	2'-6"	0.275	1.379
10'	8'-1"	2'-6"	0.299	1.651
11'	8'-10"	2'-6"	0.327	1.968
12'	9'-8"	2'-6"	0.358	2.335

WITHOUT SURCHARGE-LEVEL BANK

H FT.	B FT. IN.	C FT. IN.	QUANTITIES (CU. YD./LIN. FT.)	
			FOOTING	WALL
2'	2'-3"	2'-6" *	0.083	0.124
3'	2'-7"	2'-6" *	0.096	0.188
4'	3'-0"	2'-6" *	0.111	0.272
5'	3'-4"	2'-6" *	0.123	0.361
6'	3'-9"	2'-6" *	0.139	0.475
7'	4'-6"	2'-6"	0.167	0.657
8'	5'-0"	2'-6"	0.185	0.822
9'	5'-6"	2'-6"	0.204	1.006
10'	6'-0"	2'-6"	0.222	1.208
11'	6'-6"	2'-6"	0.241	1.429
12'	7'-0"	2'-6"	0.259	1.668

NOTES:

1. THE ABOVE QUANTITY FOR WALLS INCLUDES BRICK FACING.
2. SPACING OF EXPANSION JOINTS 90' MAX. AND CONSTRUCTION JOINTS 30' MAX.

\* BELOW FROST LINE

PLAN 602.dwg - 4/24/2005 - 2:50:15 PM - Final UNCHANGED: 602-01.DWG  
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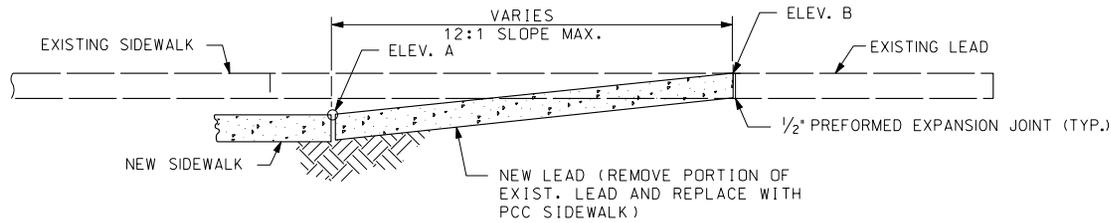
DATE	APPR.	RECOMMENDED:
REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

BRICK MASONRY  
GRAVITY RETAINING WALL

d.

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

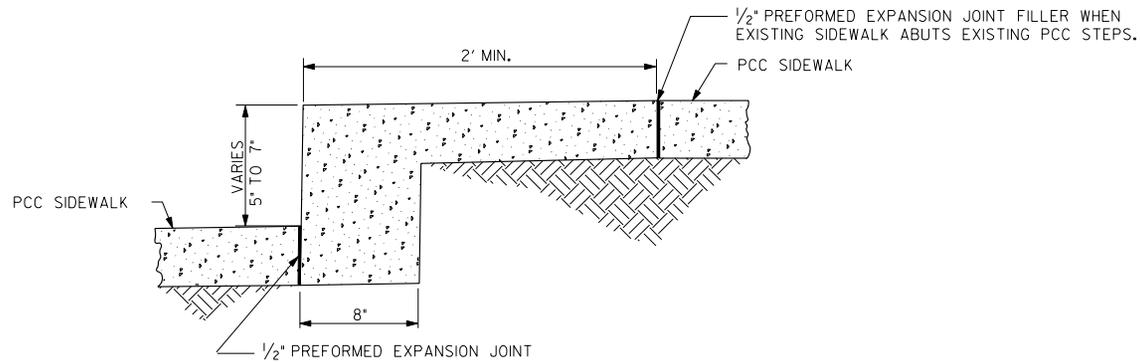
DWG. NO. 602.01



**NOTE:**

ELEVATIONS "A" AND "B" ARE SHOWN ON THE CONTRACT PLANS.

TYPE 1 STEP (LEAD)



TYPE 2 STEP

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 P:\031516.dwg: 04/26/05 2:45:00 PM: Final UNCHANGED: 602-02.DGN

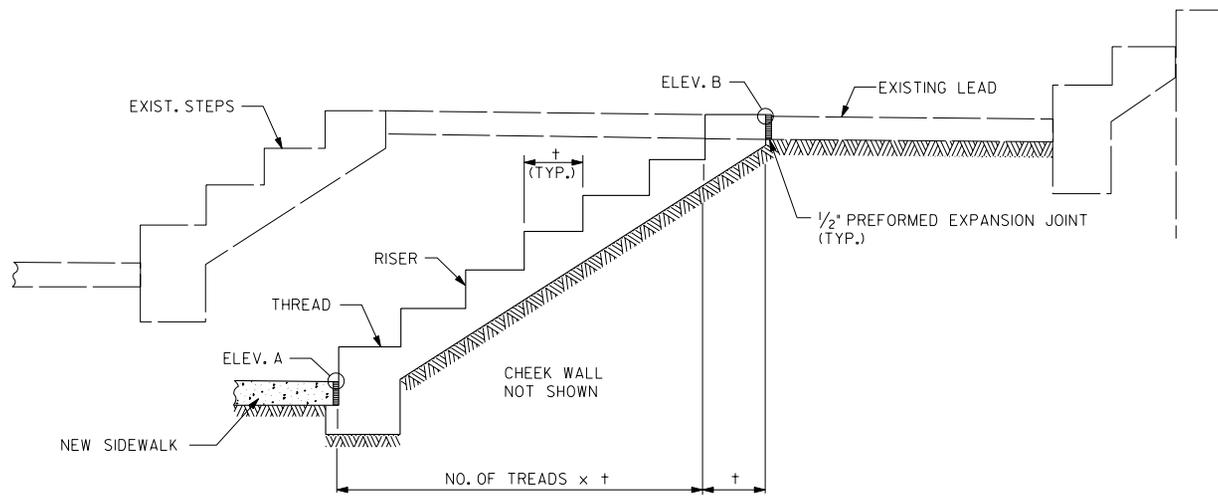
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DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

**STEPS AND LEADS**

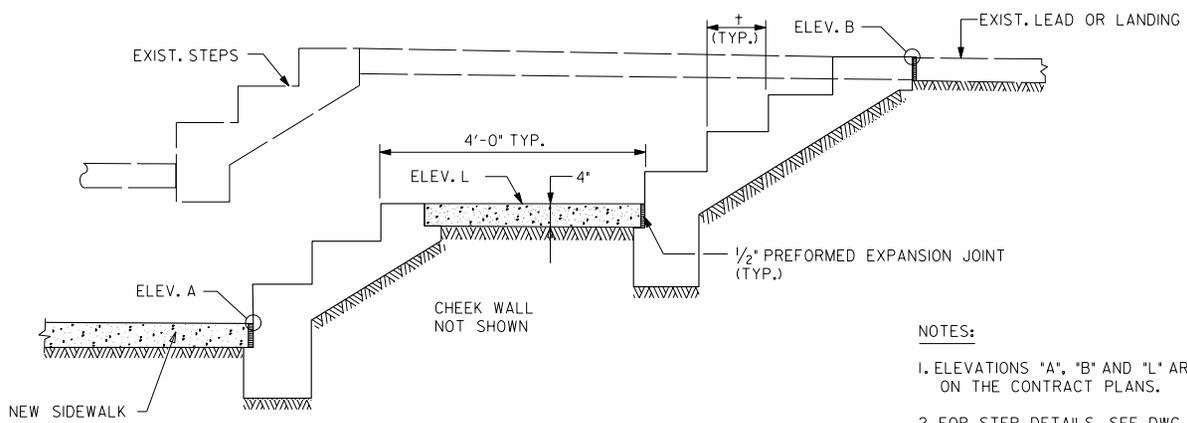
**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 602.02



TYPE 3 STEP



TYPE 4 STEP

NOTES:

1. ELEVATIONS "A", "B" AND "L" ARE SHOWN ON THE CONTRACT PLANS.
2. FOR STEP DETAILS, SEE DWG NO. 602.04.
3. t = 11" MINIMUM.

602.03 REV. 04/2005 BY: [Signature] Final UNCHANGED: 602-03.DGN  
 P1:000, APR 03, 2005 AT 10:11 PM

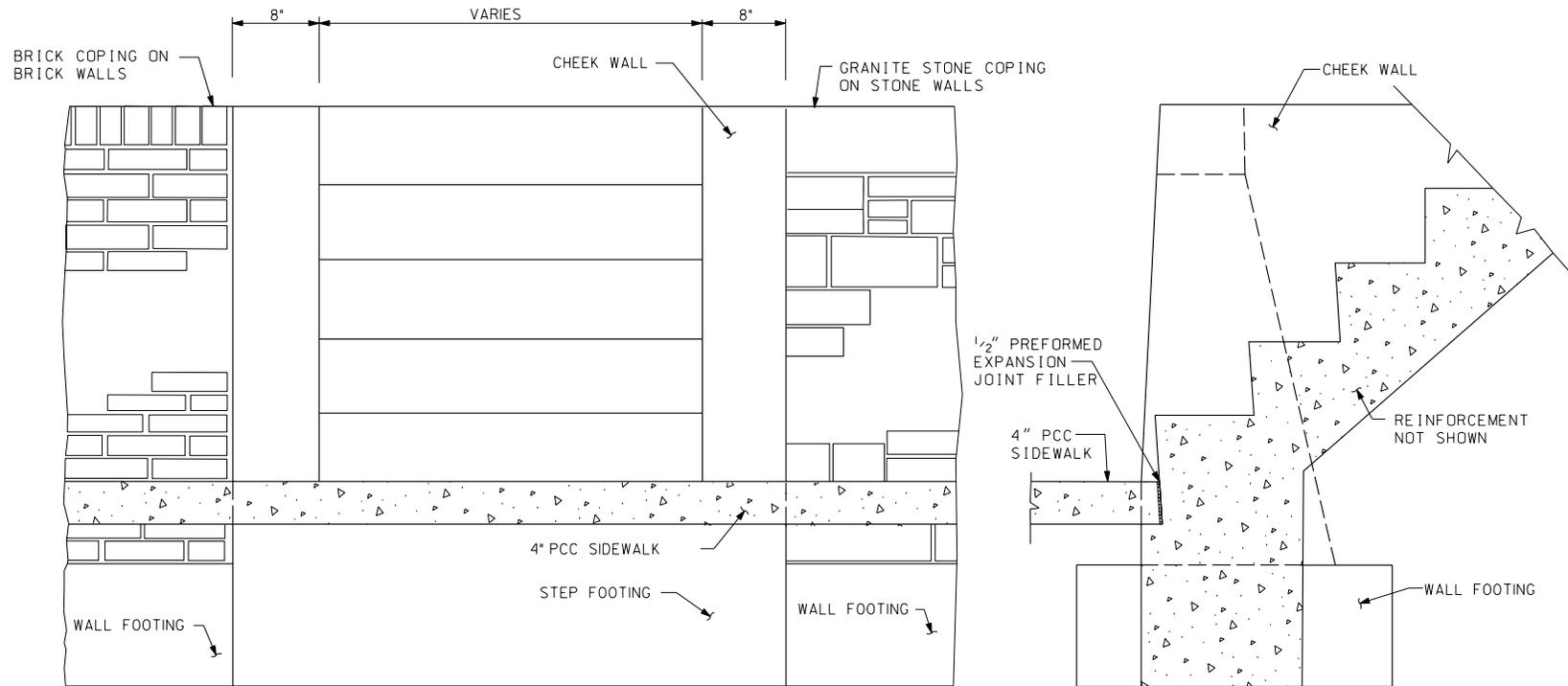
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DATE	APPR.		APPROVED: <i>[Signature]</i>
	REVISED		
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

TYPES OF STEPS

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 602.03





ELEVATION

SECTION

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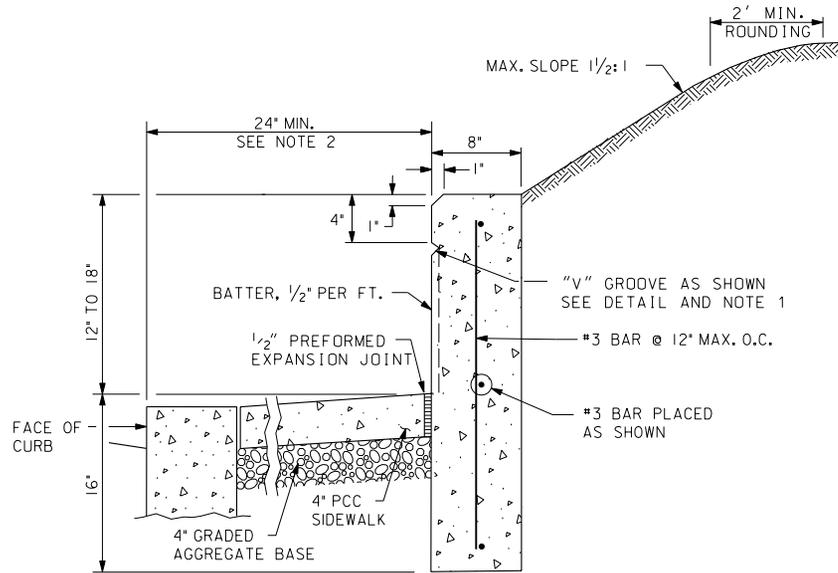
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DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

**CHEEK WALL FOR STEPS  
WITH RETAINING WALL**

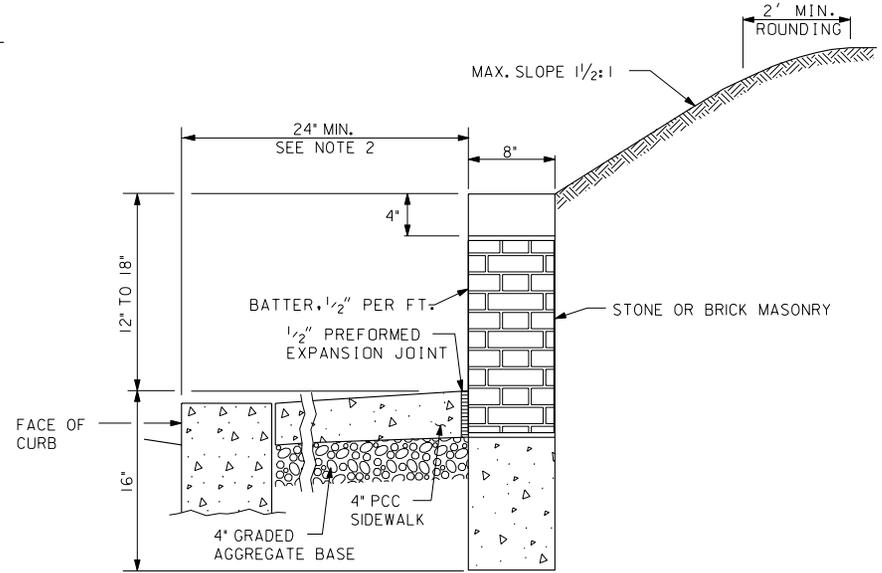
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DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

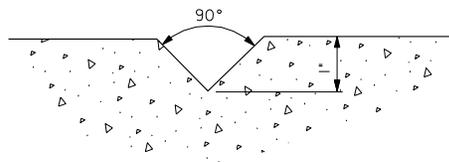
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SPECIAL CONCRETE COPING



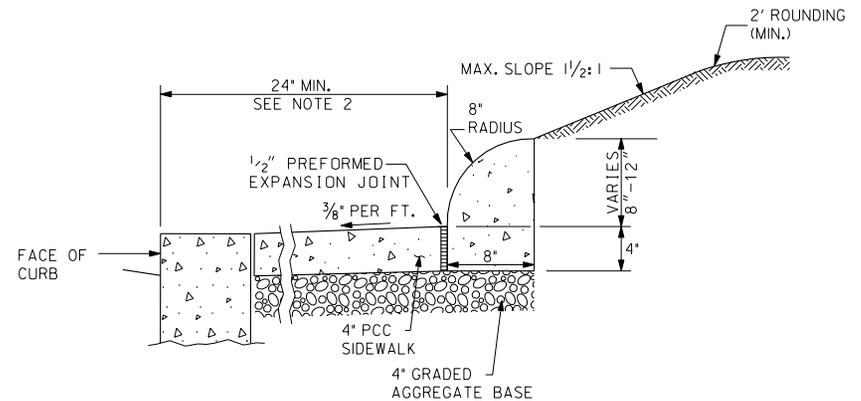
SPECIAL MASONRY COPING



VERTICAL AND HORIZONTAL "V" GROOVE DETAIL

NOTES:

1. VERTICAL "V" GROOVES SHALL BE LOCATED TO MATCH SIDEWALK JOINTS, TYPICALLY EVERY 9 FT., AND SHALL RUN FROM THE TOP OF SIDEWALK TO THE HORIZONTAL "V" GROOVE. IF MATCHING SIDEWALK JOINTS IS NOT PRACTICAL, VERTICAL "V" GROOVES SHALL BE SPACED EVERY 10 FEET.
2. FACE OF COPING SHALL BE 2 FT. MIN. FROM FACE OF CURB, UNLESS SHOWN OTHERWISE ON THE CONTRACT PLANS, OR AS DIRECTED BY THE ENGINEER.



STANDARD PCC COPING

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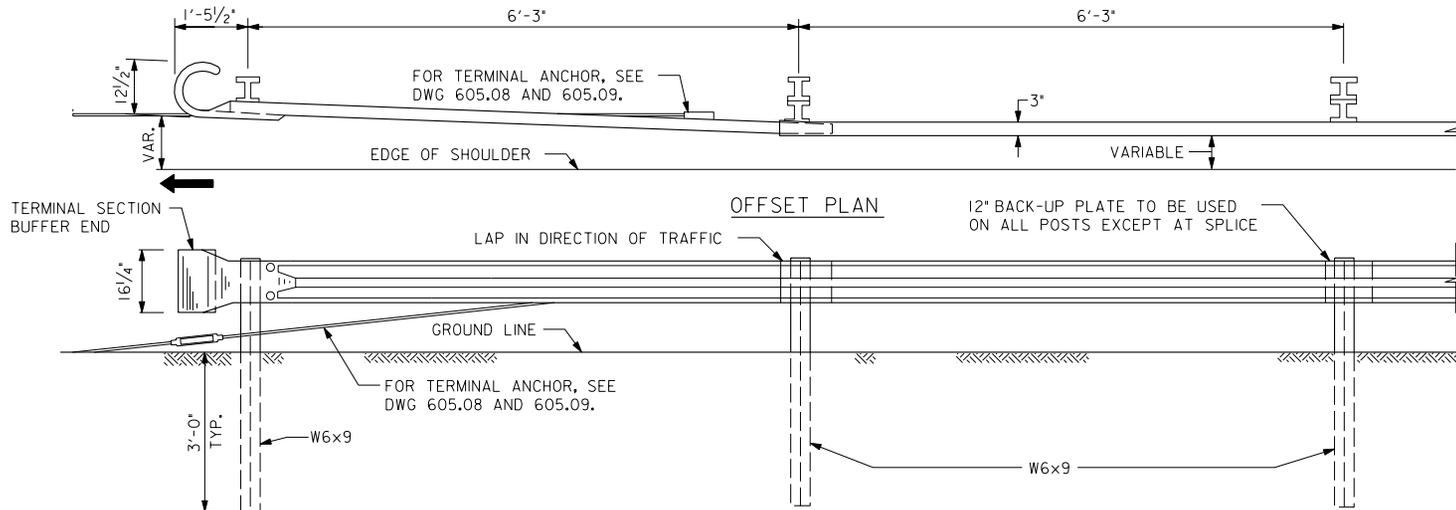
DATE	APPR.	RECOMMENDED:
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REFERENCE		CHIEF TRANSPORTATION ENGINEER

COPINGS

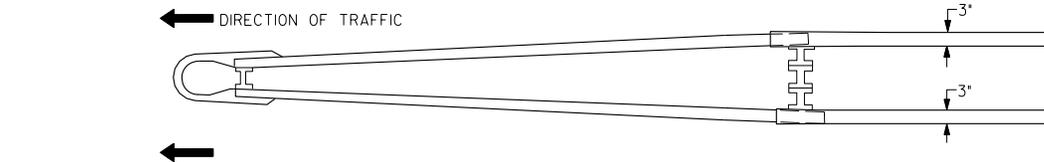
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DEPARTMENT OF TRANSPORTATION

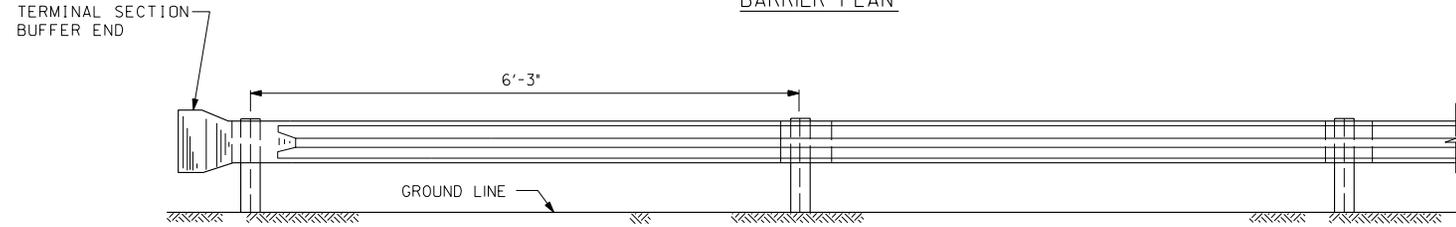
DWG. NO. 602.06



ELEVATION



BARRIER PLAN



ELEVATION

NOTES:

1. RAIL SECTIONS TO BE 12'-6" LONG, 12 GAUGE (MIN.), AASHTO SPEC. M180 CLASS A (25' LENGTHS OPTIONAL).
2. STANDARD TERMINALS FOR TRAILING EDGE INSTALLATIONS.
3. SEE CONTRACT PLANS FOR OFFSETS.

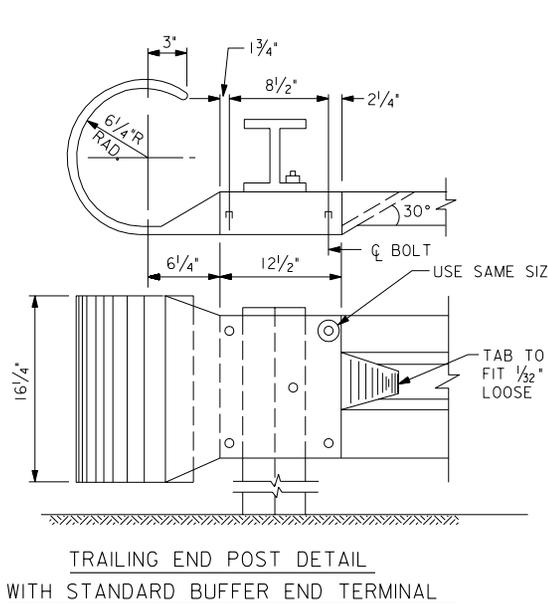
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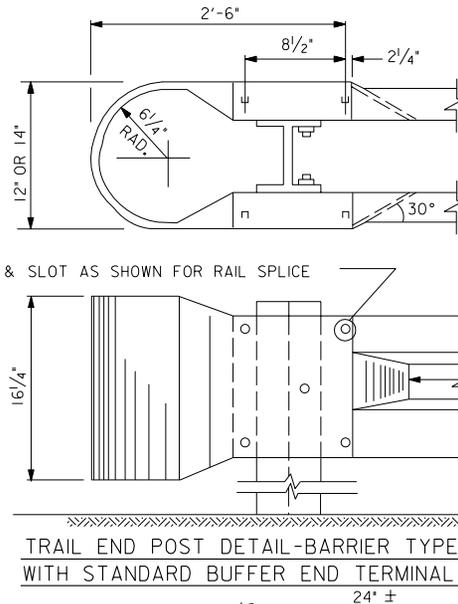
**W-BEAM GUARDRAIL  
TRAILING END TERMINAL**

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

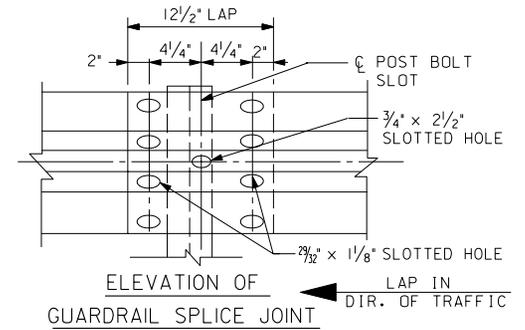
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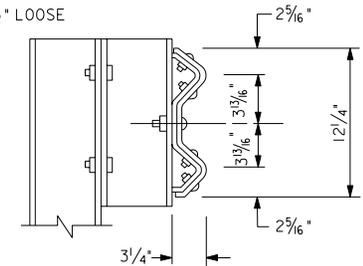
TRAILING END POST DETAIL  
WITH STANDARD BUFFER END TERMINAL



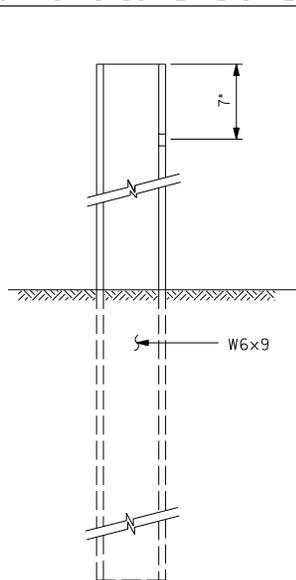
TRAIL END POST DETAIL-BARRIER TYPE  
WITH STANDARD BUFFER END TERMINAL



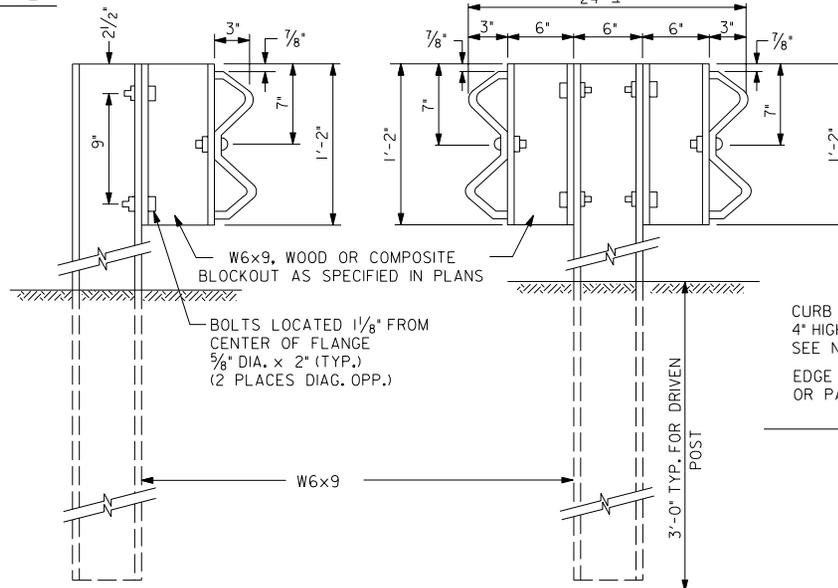
ELEVATION OF  
GUARDRAIL SPLICE JOINT



GUARDRAIL SPLICE

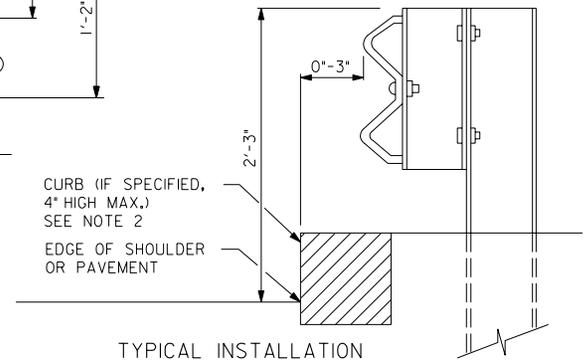


END POST DETAIL



LINE POST DETAIL-OFFSET PLAN

LINE POST DETAIL-BARRIER PLAN



TYPICAL INSTALLATION

NOTES:

1. ALL POST RAILS AND FITTINGS SHALL BE GALVANIZED.
2. GUARDRAIL CURB COMBINATION SHALL NOT BE USED ON HIGH SPEED FACILITIES.

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DATE	APPR.	REFERENCE
REVISED		
ISSUED:		

RECOMMENDED: *[Signature]*  
DEPUTY CHIEF ENGINEER

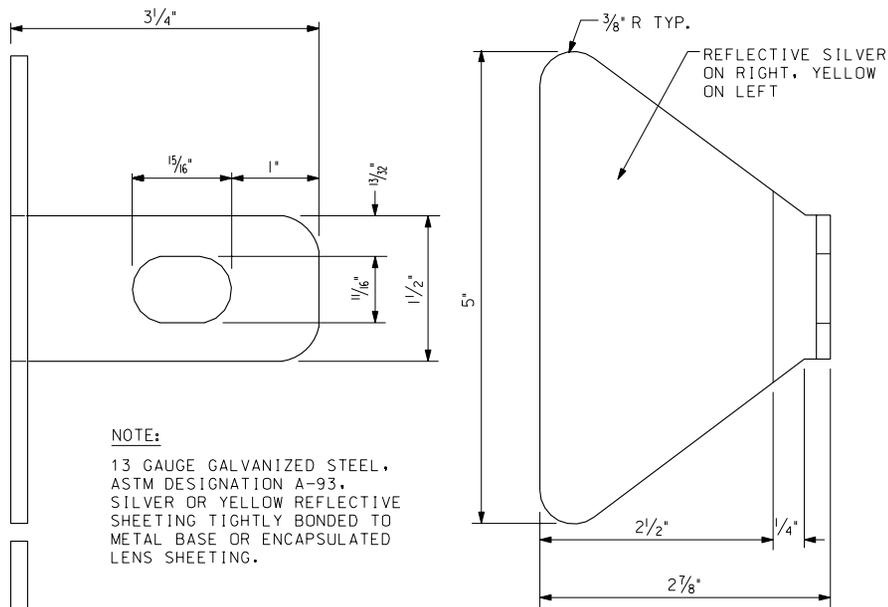
APPROVED: *[Signature]*  
CHIEF TRANSPORTATION ENGINEER

## W-BEAM GUARDRAIL DETAILS - 1

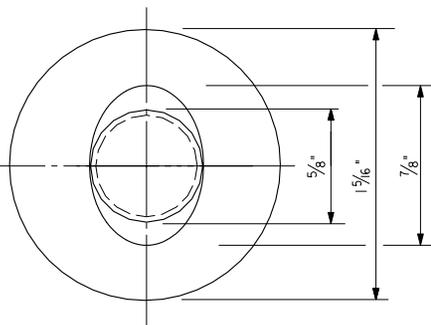
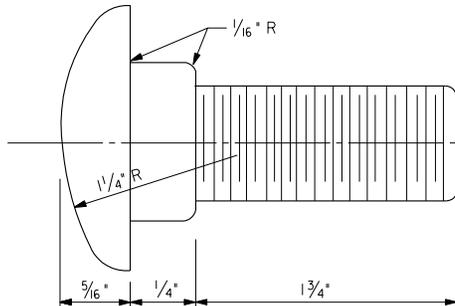
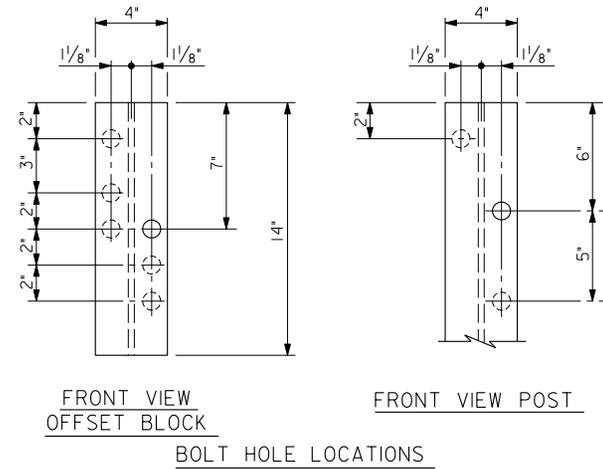
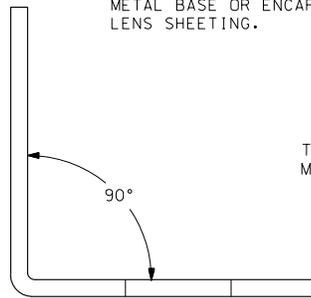
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DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

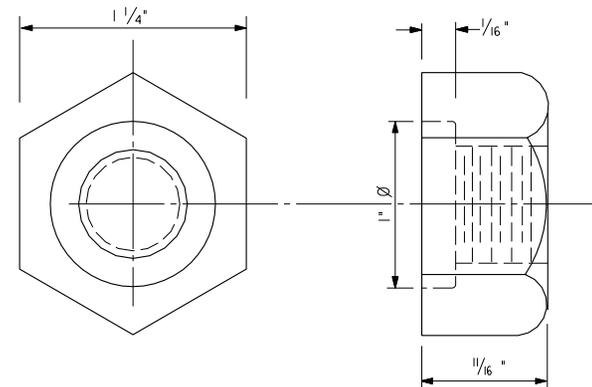
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GUARDRAIL REFLECTOR  
TO BE USED ON EVERY FOURTH POST,  
MOUNTED WITH SPLICE OR BLOCK BOLT



BOLT AND NUT DETAIL



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 Friday, April 01, 2005 AT 08:17 PM

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DEPUTY CHIEF ENGINEER

APPROVED: *[Signature]*  
CHIEF TRANSPORTATION ENGINEER

**W-BEAM GUARDRAIL  
DETAILS - 2**

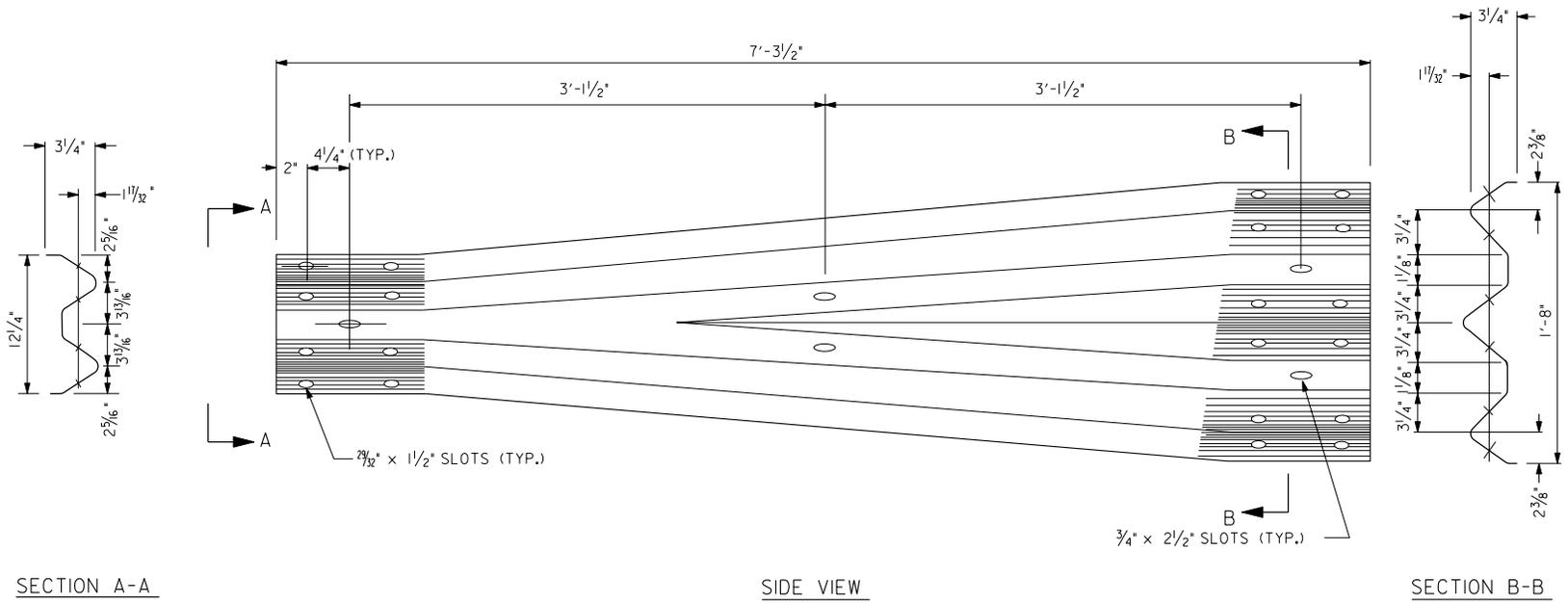
**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.03







SECTION A-A

SIDE VIEW

SECTION B-B

**NOTE:**

- EXTENSION PANEL SUPPLIED BY MANUFACTURER TO FIT THRIE BEAM.

PA-031516.dwg: as per Rev. 2, 2/20/03, Final UNCHANGED: 605-66JDN  
 P-1000, April 03, 2003 AT 08:17 PM

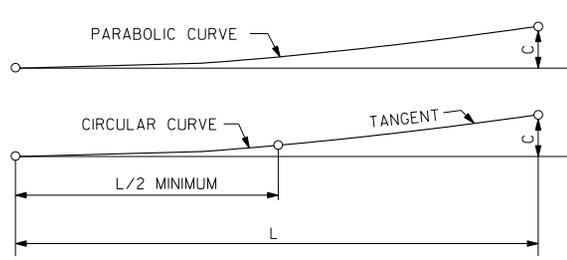
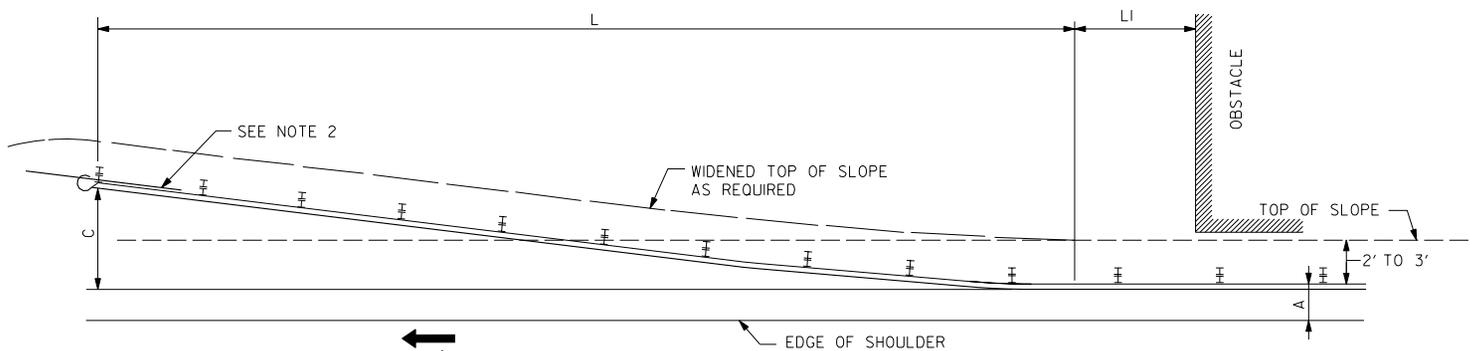
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REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

**W-BEAM TO  
THRIE BEAM TRANSITION PANEL**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

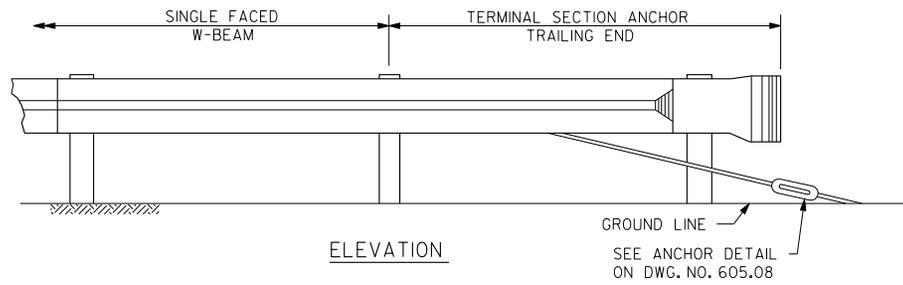
DWG. NO. **605.06**



ALTERNATE TYPES OF FLARE

C = 4' MIN. (2' SPECIAL CASES; 8'-10' DESIRABLE IN MEDIAN.)  
 L = 15C DESIRABLE; 10C MINIMUM.  
 A = REQUIRED SHY DISTANCE  
 L1 = TRANSITION LENGTH

FLARED TRAILING TERMINAL  
SECTION FOR GUARDRAIL



ELEVATION

NOTES:

1. DIRECTION OF TRAFFIC. →
2. TERMINAL SECTION ANCHOR MAY BE USED AT TRAILING END OF GUARDRAIL.
3. SEE PLANS FOR TYPE TO BE USED AND LENGTH OF FLARE.
4. SEE PLANS FOR DIMENSIONS 'A' AND 'C'.
5. FLARE ONLY REQUIRED IF ADJACENT ROADWAY HAS TWO-WAY TRAFFIC.

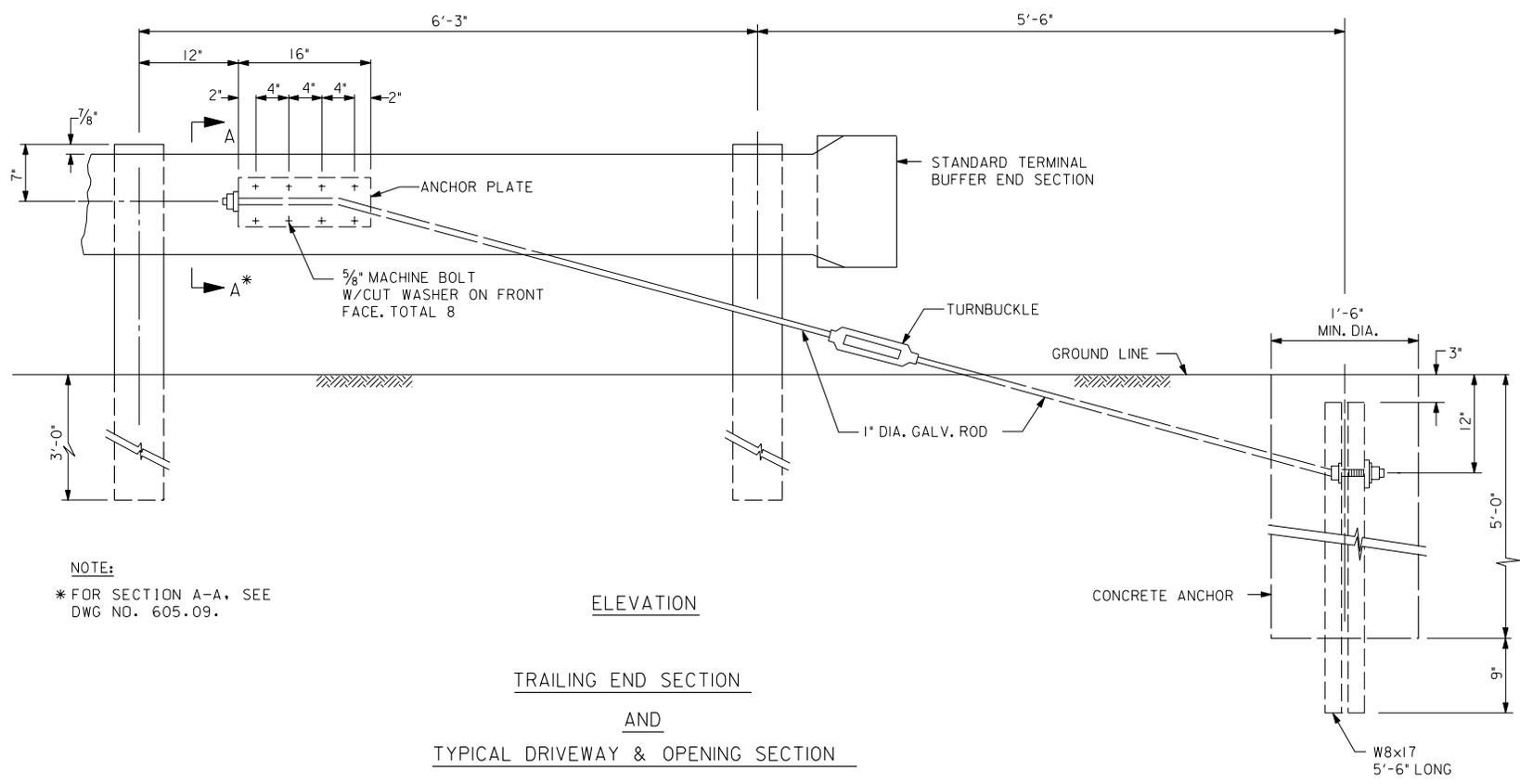
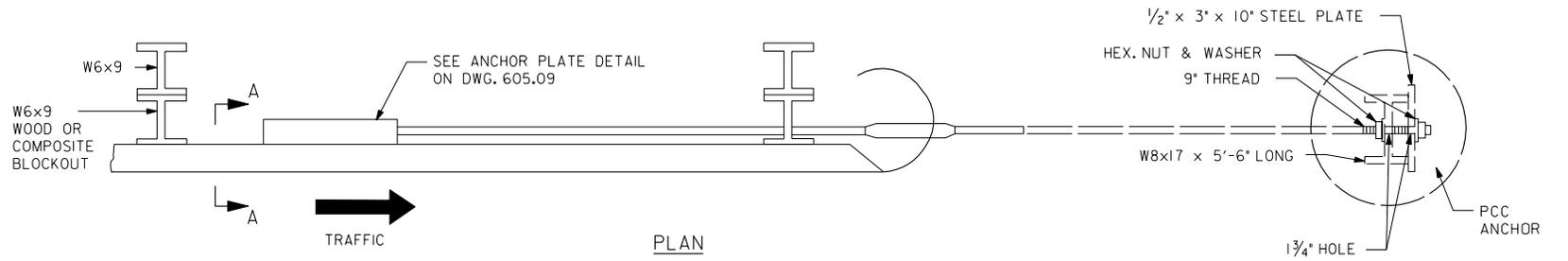
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		REFERENCE	

**W-BEAM**  
**TRAILING TERMINAL SECTION**  
**ANCHOR AND FLARE CRITERIA**

**d.** DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.07



NOTE:  
\* FOR SECTION A-A, SEE  
DWG NO. 605.09.

605.08 (Rev. 04/03/2005) - Final Unchanged: 605-08.DGN  
 P:\03\605.08.dwg, Apr 03, 2005 AT 12:17 PM

DATE	APPR.	RECOMMENDED:
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ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

**W-BEAM  
TRAILING TERMINAL  
SECTION ANCHOR**

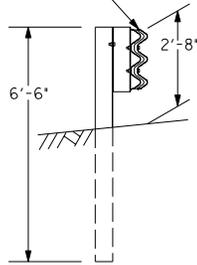
**d.** DISTRICT OF COLUMBIA  
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DWG. NO. 605.08

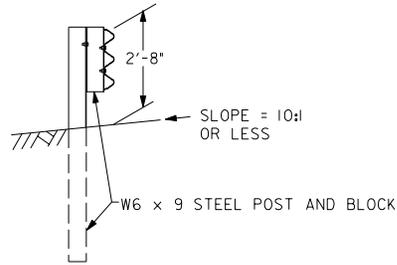




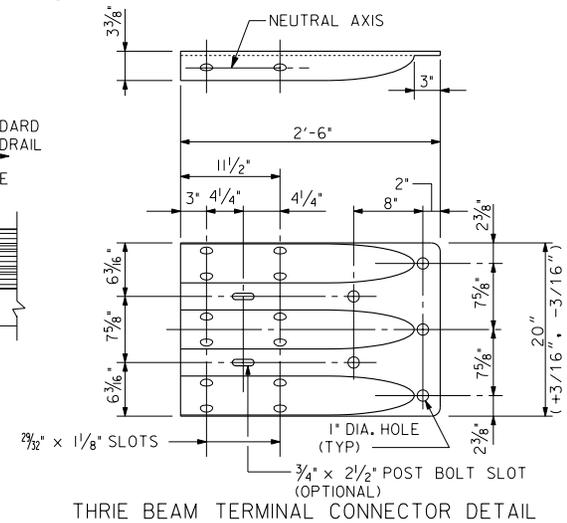
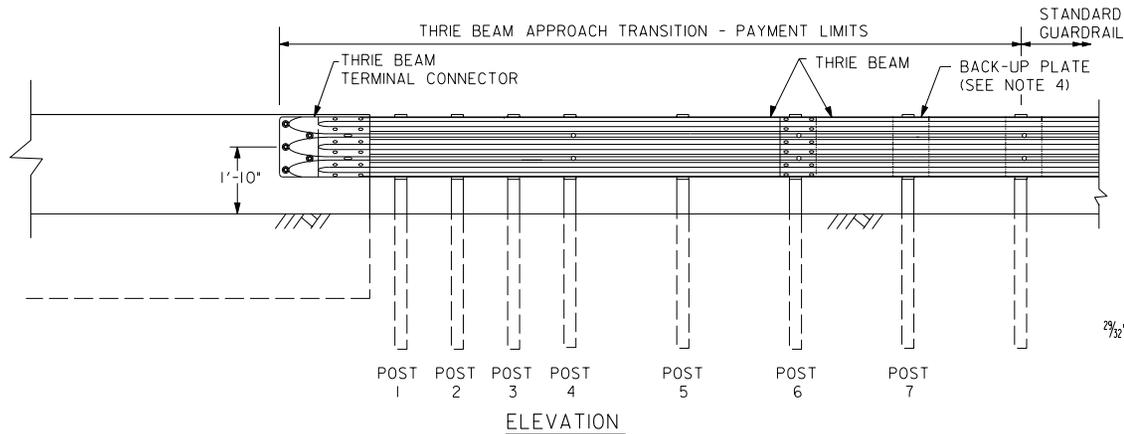
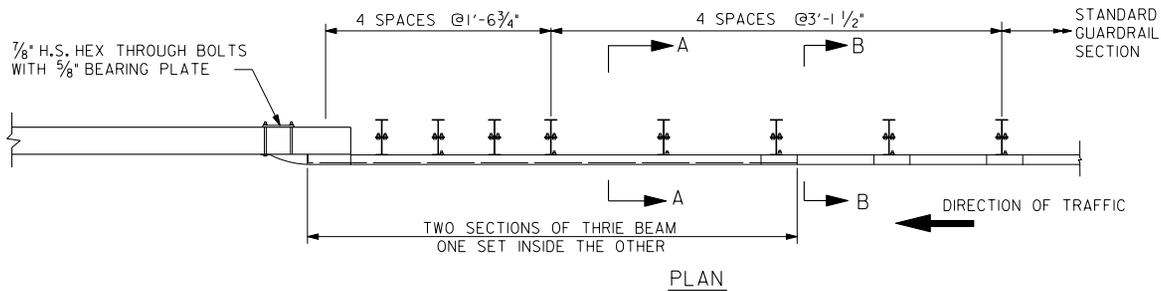
TWO SECTIONS OF THRIE BEAM  
ONE SET INSIDE THE OTHER



SECTION A-A



SECTION B-B



NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A VERTICAL CONCRETE SHAPE AND SHOULD NOT BE CONNECTED DIRECTLY TO A CONCRETE SAFETY SHAPE. CONCRETE SAFETY SHAPE BARRIERS SHOULD BE TRANSITIONED TO A VERTICAL SHAPE AT THE GUIDERAIL CONNECTION.
2. BRIDGE BARRIER ENDS AND BRIDGE PARAPETS SHALL BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.
3. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. AT POST 7 BACK-UP PLATE BOLTED TO BLOCK ONLY.
5. THIS TRANSITION MAY BE CONNECTED TO A STANDARD W-BEAM GUARDRAIL SECTION BY ADDING A W-THRIE BEAM TRANSITION PANEL PER DRAWING NO. 605.12.

605.12.dwg: 04/26/02: 2:50:15 PM: Final UNCHANGED: 605-11.DWG  
 P:\03\15\04\04\02\02.dwg: 03/27/03 10:03:15 AM

DATE	APPR.	RECOMMENDED:	 DEPUTY CHIEF ENGINEER
REVISED		APPROVED:	
ISSUED:		REFERENCE	

## THRIE BEAM APPROACH TRANSITION

### CONCRETE BARRIER END THRIE BEAM - STEEL POSTS

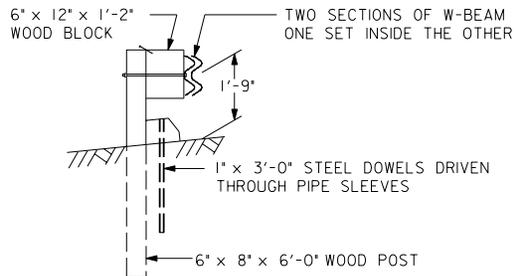
d.

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

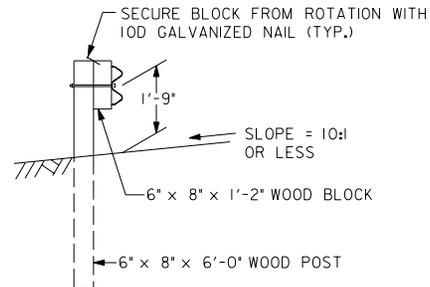
DWG. NO. 605.11







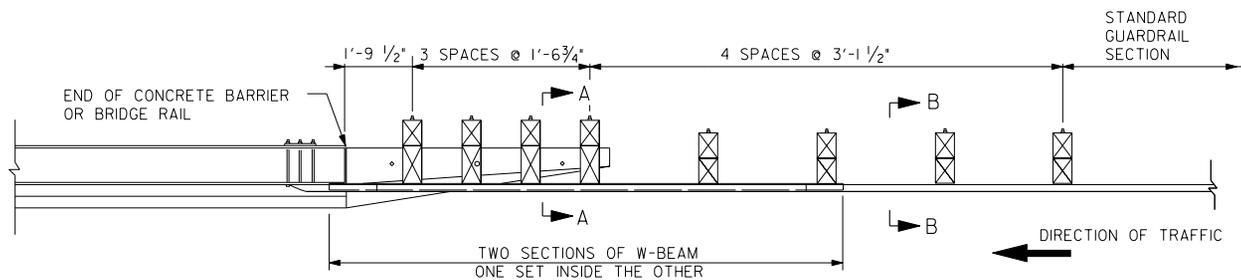
SECTION A-A



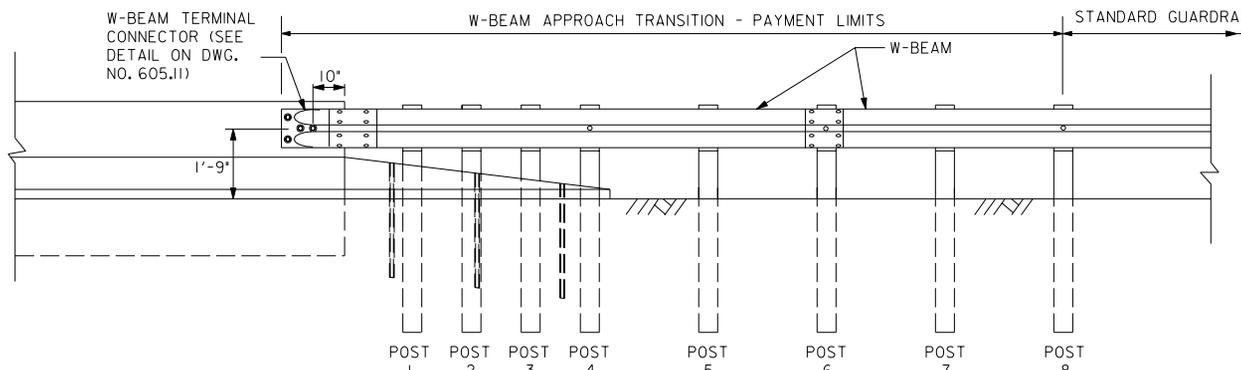
SECTION B-B

NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A CONCRETE SAFETY SHAPE.
2. BRIDGE BARRIER ENDS AND BRIDGE PARAPETS SHALL BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.
3. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. W-BEAM IS NOT BOLTED TO POSTS AND BLOCKS AT POSTS 1, 2, 3, 5, AND 7. BLOCKS ARE BOLTED DIRECTLY TO POSTS.
5. FOR DETAILS OF SAFETY SHAPE, SEE DWG. NO. 605.15.



PLAN



ELEVATION

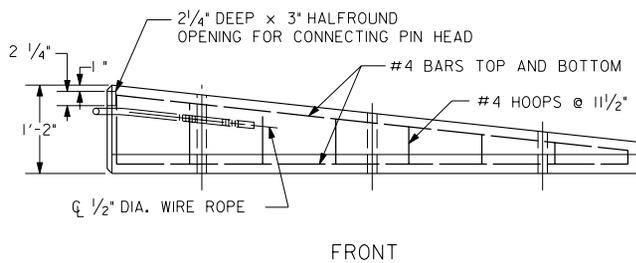
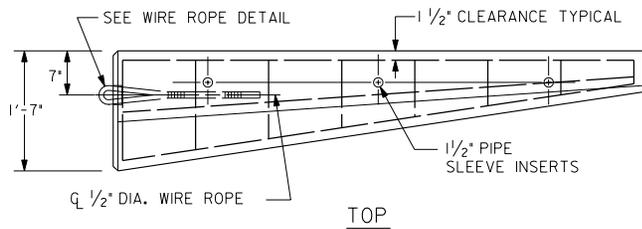
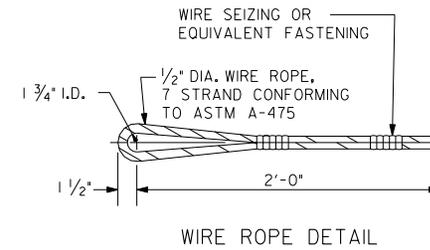
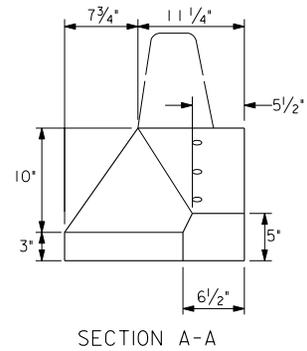
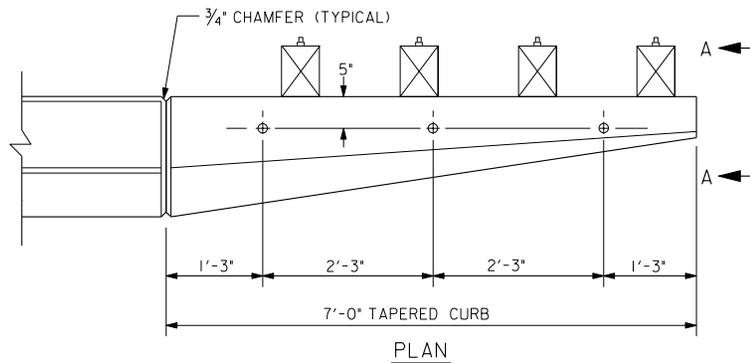
PA-605.15.dwg: s412462.dwg: 2/20/05: Final UNCHANGED: 605-4.DGN  
 P1:000, APR 03, 2005 AT 08:17 PM

DATE	APPR.	RECOMMENDED:
REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

**W-BEAM APPROACH TRANSITION**  
**CONNECTION TO SAFETY SHAPE BARRIER**  
**WOOD POST WITH CURB**  
**GUARDRAIL DETAILS**

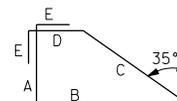
**d.** DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.14



LENGTH	BENT BARS				
	A	B	C	D	E
4' - 7 1/2"	11"	1' - 4"	1' - 1 1/2"	8"	3 1/2"
4' - 1 1/2"	9 1/2"	1' - 2"	1' - 0"	7"	3 1/2"
3' - 9"	8"	1' - 0 1/2"	10 1/2"	6 1/2"	3 1/2"
3' - 2 1/2"	7"	10 1/2"	8 1/2"	5 1/2"	3 1/2"
2' - 10"	6"	9"	7"	5"	3 1/2"
2' - 4"	4 1/2"	7"	5"	4"	3 1/2"
1' - 11 1/2"	3 1/2"	5 1/2"	4"	3"	3 1/2"
1' - 5"	2"	3 1/2"	2"	2 1/2"	3 1/2"

STRAIGHT BARS ALL #4 6'-9"



#4 HOOP DIMENSIONS OUT TO OUT

PLAN 60515.dwg: 04/26/2009 2:40:13 PM: Final UNCHANGED: 605-15.DWG  
 P:1000, APR 03, 2009 AT 08:17 PM

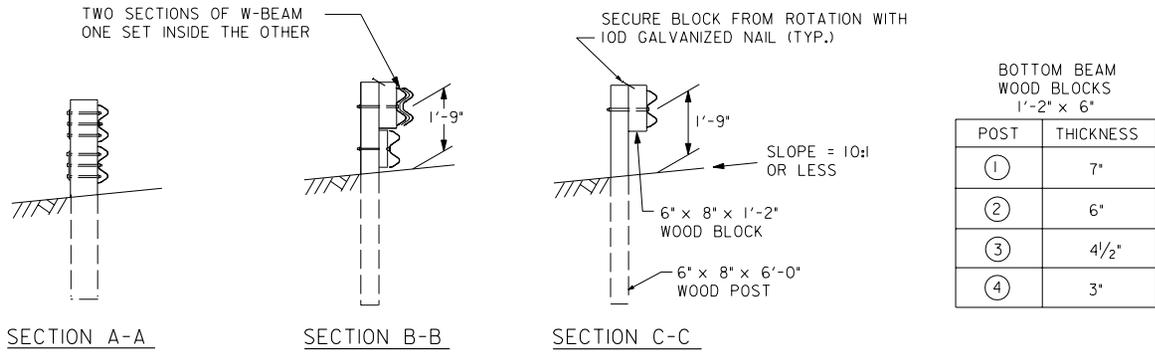
			RECOMMENDED: <i>[Signature]</i> DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			
ISSUED:			
	REFERENCE		CHIEF TRANSPORTATION ENGINEER

**W-BEAM APPROACH TRANSITION**  
**CONNECTION TO SAFETY SHAPE**  
**WOOD POST WITH CURB**  
**CURB DETAILS**

**d.**

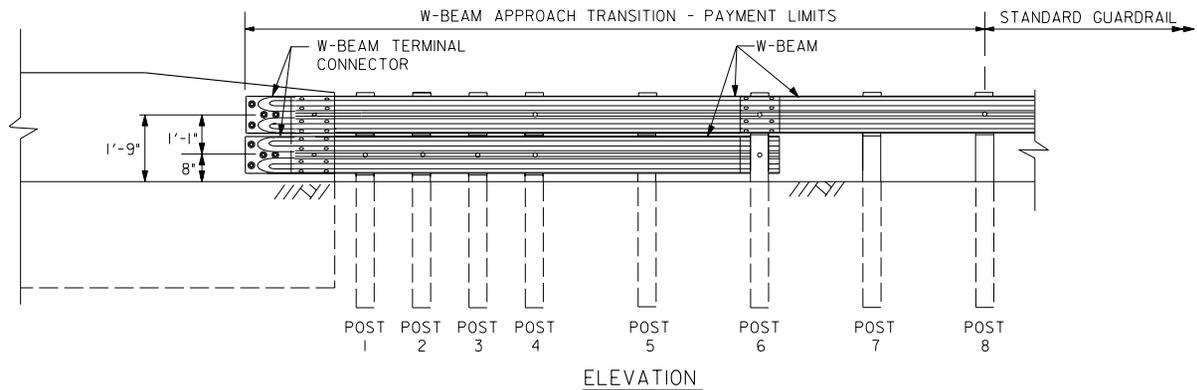
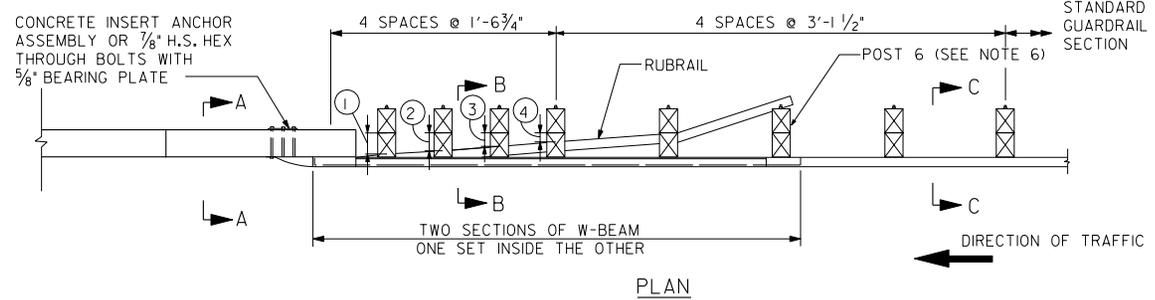
DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.15



**NOTES:**

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A VERTICAL CONCRETE SHAPE AND SHOULD NOT BE CONNECTED DIRECTLY TO A CONCRETE SAFETY SHAPE. CONCRETE SAFETY SHAPE BARRIERS SHOULD BE TRANSITIONED TO A VERTICAL SHAPE AT THE GUARDRAIL CONNECTION.
2. BRIDGE BARRIER ENDS AND BRIDGE PARAPETS SHALL BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.
3. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. THE RUBRAIL SHALL BE SHOP BENT IN THE LAST 3 FEET TO FACILITATE INSTALLATION.
5. BOTTOM WOOD BLOCKS, LOCATED ON POSTS 1, 2, 3, AND 4, ARE ATTACHED WITH 5/8" CARRIAGE BOLTS CENTER DRILLED AND SECURED.
6. POSTS 1, 2, 3, 4, AND 6 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKS AND/OR LOWER BEAM.



PA-60516.dwg: s1424262.dwg: s1424262.dwg: Final UNCHANGED: 605-16.DWG  
 P:\03\16\05\16.dwg: s1424262.dwg: s1424262.dwg: Final UNCHANGED: 605-16.DWG  
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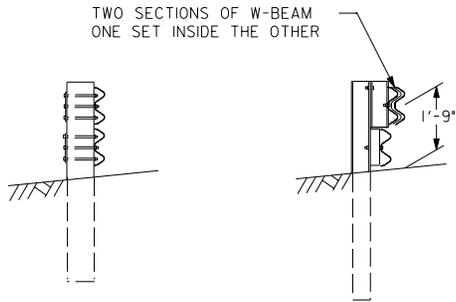
DATE	APPR.	RECOMMENDED:
REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

## W-BEAM APPROACH TRANSITION VERTICAL CONCRETE BARRIER END W-BEAM WITH RUBRAIL - WOOD POSTS

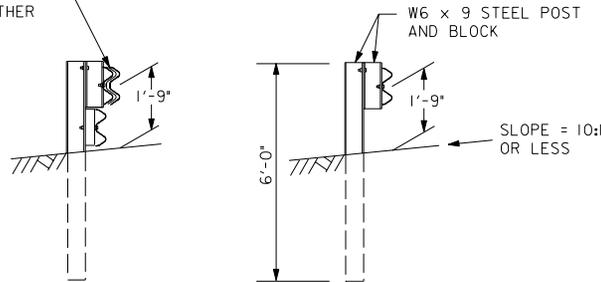
**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

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DWG. NO. **605.16**



SECTION A-A



SECTION B-B

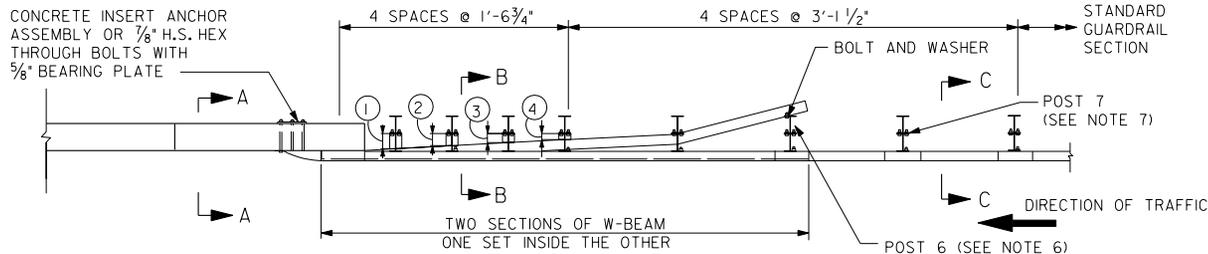
SECTION C-C

BOTTOM BEAM WOOD BLOCKS  
1'-2" x 4 1/2"

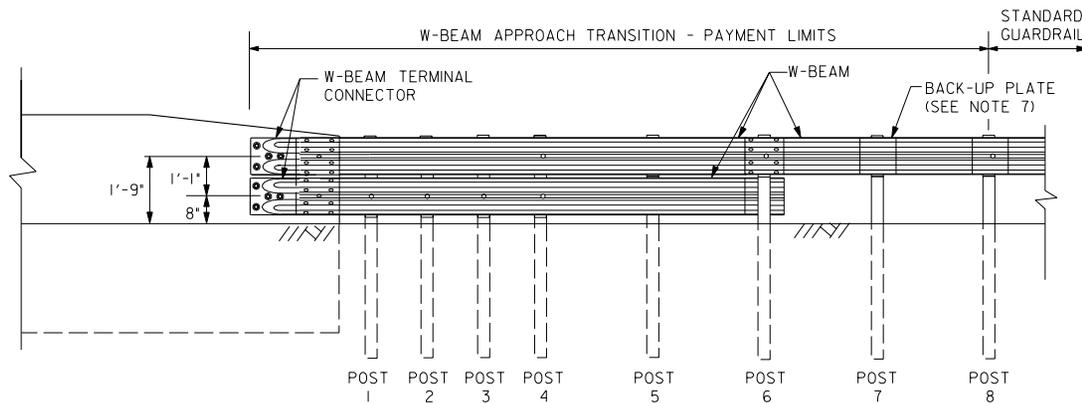
POST	THICKNESS
①	5"
②	4"
③	3"
④	2"

NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A VERTICAL CONCRETE SHAPE AND SHOULD NOT BE CONNECTED DIRECTLY TO A CONCRETE SAFETY SHAPE. CONCRETE SAFETY SHAPE BARRIERS SHALL BE TRANSITIONED TO A VERTICAL SHAPE AT THE GUARDRAIL CONNECTION.
2. BRIDGE BARRIER ENDS AND BRIDGE PARAPETS SHALL BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.
3. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. BOTTOM BEAM BLOCKS ARE OFFSET DRILLED TO SIT SQUARELY ON THE POST FLANGE. BLOCKS ARE ATTACHED WITH 5/8" CARRIAGE BOLTS.
5. THE RUBRAIL SHALL BE SHOP BENT IN THE LAST 3 FEET TO FACILITATE INSTALLATION.
6. POSTS 1, 2, 3, 4, AND 6 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKS AND/OR LOWER BEAM.
7. AT POST 7 BACK-UP PLATE BOLTED TO BLOCK ONLY.



PLAN



ELEVATION

PA-631E, Vol. 04-2005, 2/2005, Final UNCHANGED, 605-17.DGN  
 P1:000, APR 03, 2005 AT 08:17 PM

DATE	APPR.	RECOMMENDED:
REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

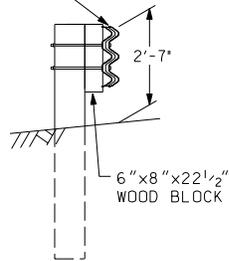
**W-BEAM APPROACH TRANSITION  
 VERTICAL CONCRETE BARRIER END  
 W-BEAM WITH RUBRAIL -  
 STEEL POSTS**

**d.**

DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

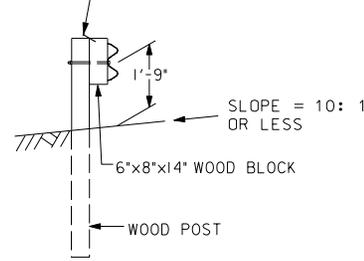
DWG. NO. 605.17

TWO SECTIONS OF THRIE BEAM  
ONE SET INSIDE THE OTHER



SECTION A-A

SECURE BLOCK FROM ROTATION WITH  
10D GALVANIZED NAIL

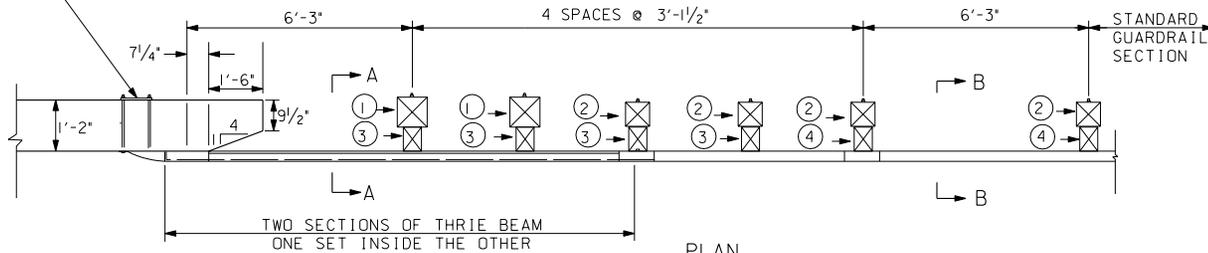


SECTION B-B

NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A TAPERED CONCRETE BARRIER END SHAPE AS SHOWN.
2. BRIDGE BARRIER ENDS AND BRIDGE PARAPETS SHALL BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.
3. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.

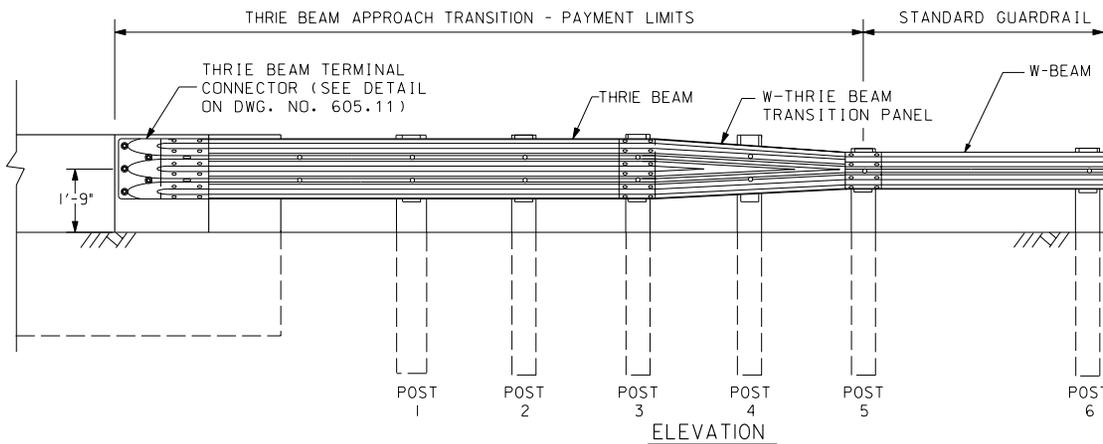
7/8" H.S. HEX THROUGH BOLTS  
WITH 5/8" BEARING PLATE (SEE  
DETAIL ON DWG. NO. 605.13)



PLAN

POST AND BLOCK DIMENSIONS

①	10" x 10" x 6'-0"
②	8" x 8" x 6'-0"
③	6" x 8" x 22 1/2"
④	6" x 8" x 14"



ELEVATION

PA-605.13.dwg: s141242.dwg: 2/20/05: Final UNCHANGED: 605-18.BDN  
 P1: bby, April 03, 2005 AT 12:17 PM

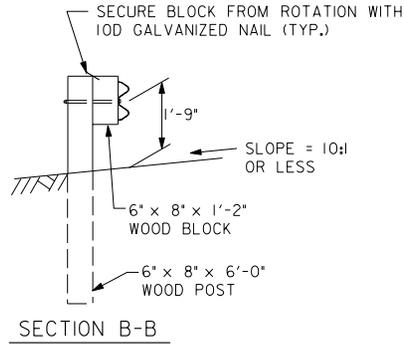
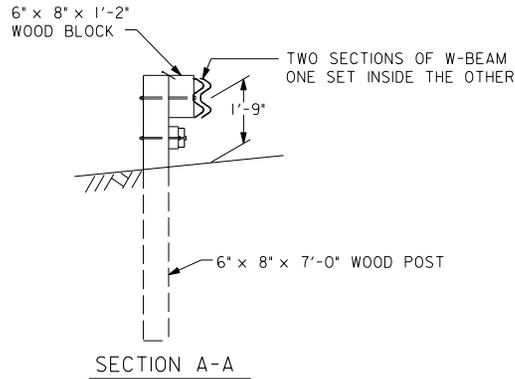
DATE	APPR.	RECOMMENDED:
REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

**THRIE BEAM APPROACH TRANSITION  
TAPERED CONCRETE BARRIER END  
THRIE BEAM - WOOD POSTS**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.18

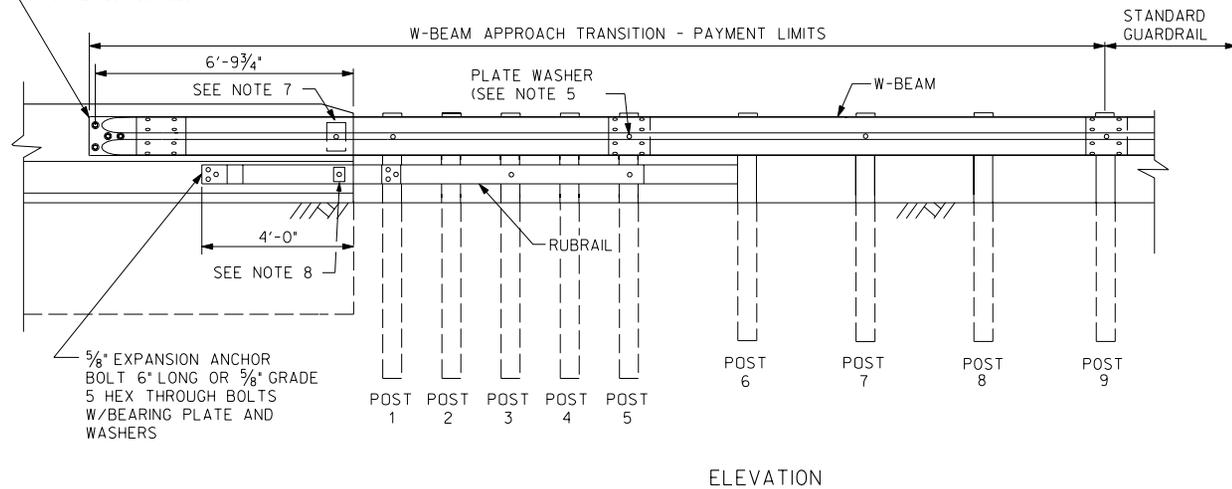
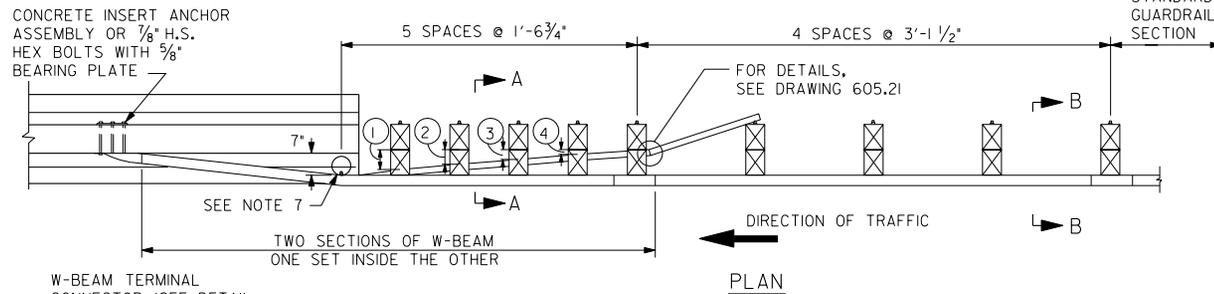


RUBRAIL  
WOOD BLOCKS  
7" x 6"

POST	THICKNESS
①	6 <sup>1</sup> / <sub>4</sub> "
②	4 <sup>5</sup> / <sub>8</sub> "
③	3 <sup>1</sup> / <sub>8</sub> "
④	1 <sup>1</sup> / <sub>2</sub> "

NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A CONCRETE SAFETY SHAPE.
2. BRIDGE BARRIER ENDS AND BRIDGE PARAPETS SHALL BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.
3. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. RUBRAIL WOOD BLOCKS, LOCATED ON POSTS 1 THROUGH 4, ARE CENTER DRILLED AND SECURED WITH 5/8" CARRIAGE BOLTS.
5. POSTS 1 THROUGH 6 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKS AND/OR LOWER RUBRAIL.
6. W-BEAM IS NOT BOLTED TO POSTS AND BLOCKS AT POSTS 2, 3, 4, 6 AND 8. BLOCKS ARE BOLTED DIRECTLY TO POSTS. BOLTED AT POST 5.
7. STEEL SPACER TUBE, SCHEDULE 40 GALVANIZED PIPE, 6" (I.D.) x 9", AND ATTACHED BY A 5/8" CARRIAGE BOLT AND RECTANGULAR PLATE WASHER.
8. SEE DRAWING 605.21 FOR DETAILS. BLOCK IS ATTACHED BY A 3/8" x 3" BOLT.



605.19.dwg - 04/24/2005 - 2:00pm - Final UNCHANGED: 605-19.DWG  
 P:\03\15\05 - 04/24/2005 - 2:00pm - Final UNCHANGED: 605-19.DWG

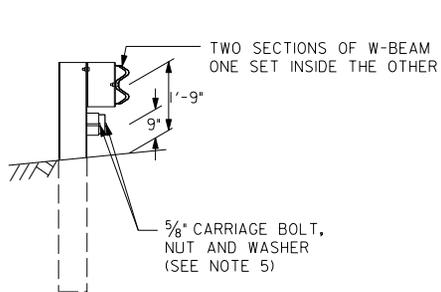
DATE	APPR.	RECOMMENDED:
REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

**W-BEAM APPROACH TRANSITION  
CONNECTION TO SAFETY SHAPE  
WOOD POST WITH RUBRAIL**

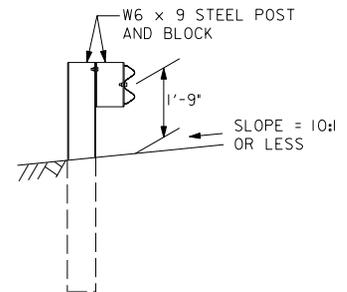
**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.19



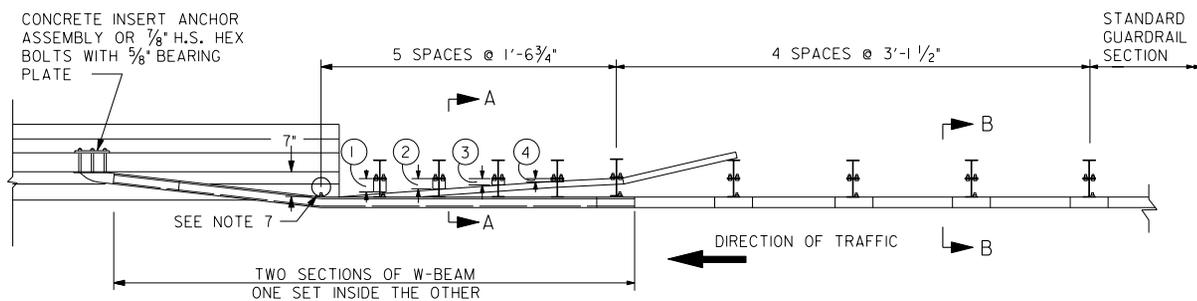
SECTION A-A



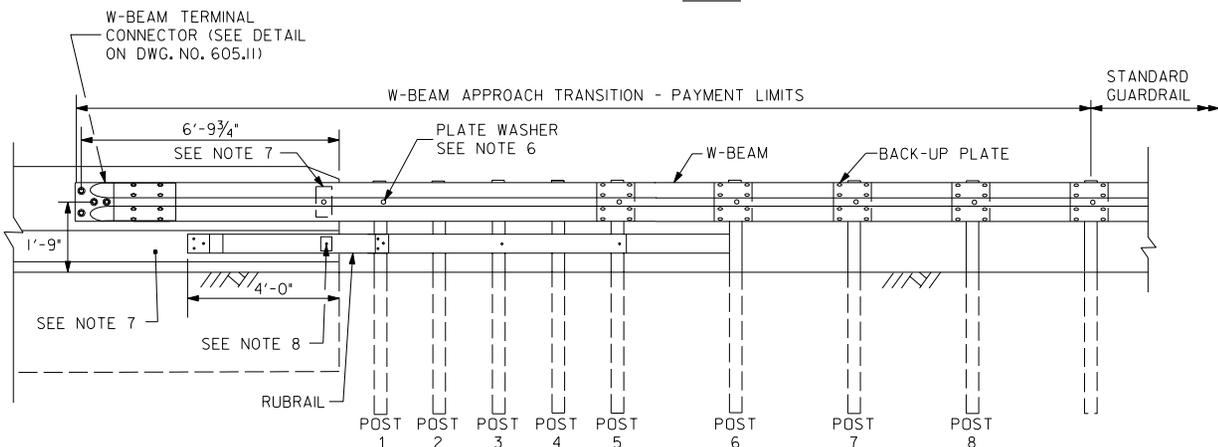
SECTION B-B

RUBRAIL WOOD BLOCKS  
7' x 4"

POST	THICKNESS
①	4 1/4"
②	3 1/4"
③	2"
④	1"



PLAN



ELEVATION

NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A CONCRETE SAFETY SHAPE.
2. BRIDGE BARRIER ENDS AND BRIDGE PARAPETS SHALL BE OF ADEQUATE STRENGTH TO ACCEPT FULL IMPACT LOADING.
3. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. POSTS 1-6 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKS AND/OR RUBRAIL.
5. RUBRAIL WOOD BLOCKS LOCATED ON POSTS 1 THROUGH 4 ARE OFFSET DRILLED AND SECURED WITH 5/8" CARRIAGE BOLTS TO POSTS 2 AND 4; RUBRAIL AND POSTS AT POSTS 1, 3 AND 5.
6. W-BEAM IS NOT BOLTED TO POSTS AT POSTS 2 THROUGH 4 AND POSTS 6 AND 8. BOLTED AT POST 1.
7. STEEL SPACER TUBE, SCHEDULE 40 GALVANIZED PIPE, 6" (I.D.) x 9", AND ATTACHED BY A 5/8" CARRIAGE BOLT AND RECTANGULAR PLATE WASHER.
8. SEE DWG. NO. 605.21 FOR DETAILS. BLOCK IS ATTACHED BY 3/8" X 3" BOLT.

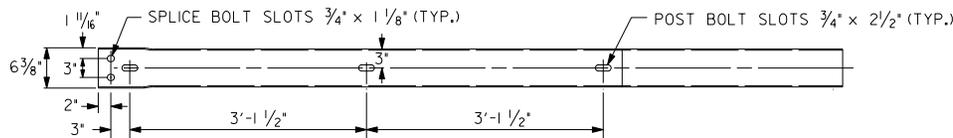
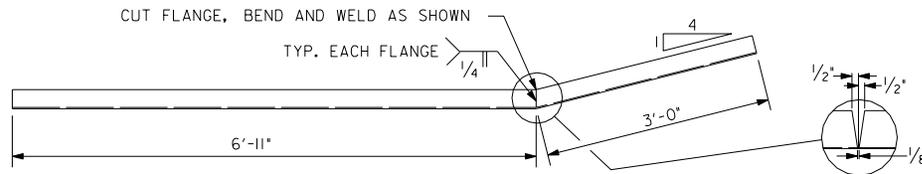
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REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

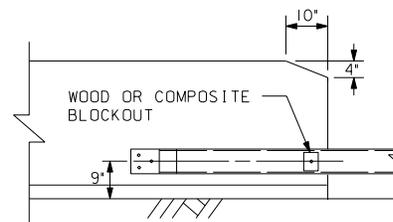
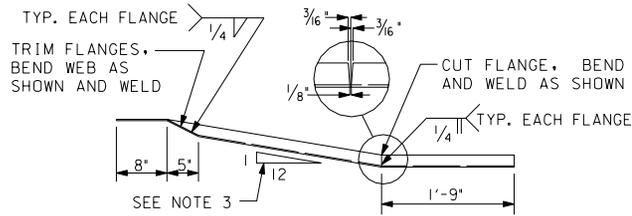
**W-BEAM APPROACH TRANSITION  
 CONNECTION TO SAFETY SHAPE  
 STEEL POST WITH RUBRAIL**

**d.** DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

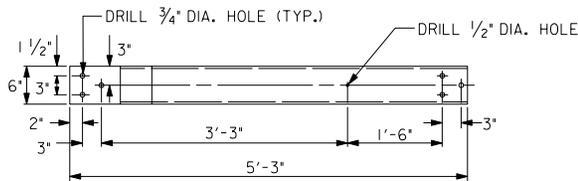
DWG. NO. 605.20



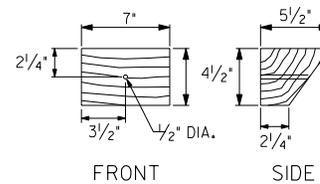
BENT PLATE RUBRAIL (MODIFIED) DETAIL



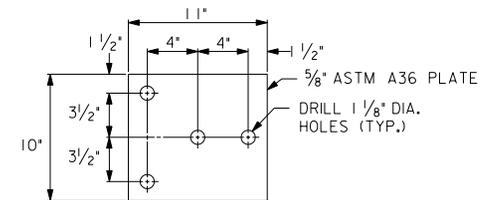
RUBRAIL ATTACHMENT TO SAFETY SHAPE



C6X8.2 RUBRAIL DETAIL



WOOD OR COMPOSITE BLOCKOUT FOR RUBRAIL DETAIL



BEARING PLATE DETAIL

NOTES:

- STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
- SEE FIGURES DWG. NO. 605.19 AND DWG. NO. 605.20 FOR MORE INFORMATION.
- THE RUBRAIL END MUST BE ATTACHED FLUSH WITH SLOPED TOE OF THE SAFETY SHAPE. INSTALLATION CAN BE GREATLY SIMPLIFIED BY FABRICATING OR SHOP TWISTING THE RUBRAIL END (MODIFIED) TO BE CONSISTENT WITH THE SLOPE OF SAFETY SHAPE. RUBRAIL ENDS TWISTED BOTH CLOCKWISE AND COUNTERCLOCKWISE MAY BE REQUIRED IN MOST SITUATIONS.
- THE RUBRAIL END ATTACHMENT TO THE CONCRETE SAFETY SHAPE REQUIRES THREE CLOSELY DRILLED HOLES. APPROPRIATE EPOXY BOLT ANCHORS SHALL BE USED TO REDUCE THE RISK OF SPLITTING THE CONCRETE.

EN-60519.dwg - 04/24/2002 - 2:00pm - Final UNCHANGED: 605-2.DWG  
 Friday, April 03, 2003 AT 12:11 PM

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REVISED		APPROVED:	<i>[Signature]</i>
ISSUED:		CHIEF TRANSPORTATION ENGINEER	
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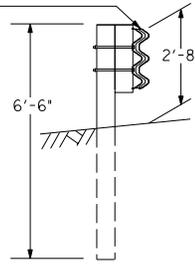
**W-BEAM APPROACH TRANSITION  
CONNECTION TO SAFETY SHAPE  
RUBRAIL DETAILS**

**d.**

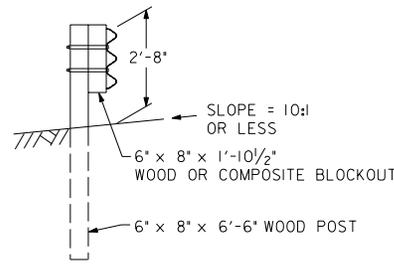
DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.21

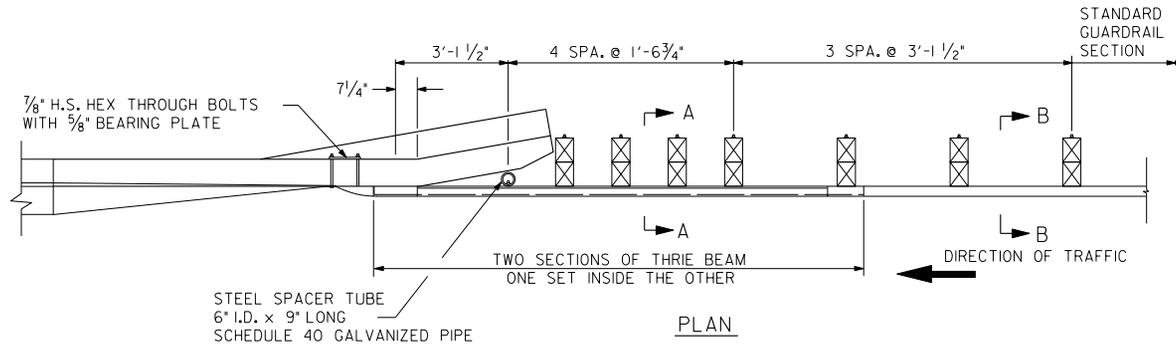
TWO SECTIONS OF THRIE BEAM  
ONE SET INSIDE THE OTHER



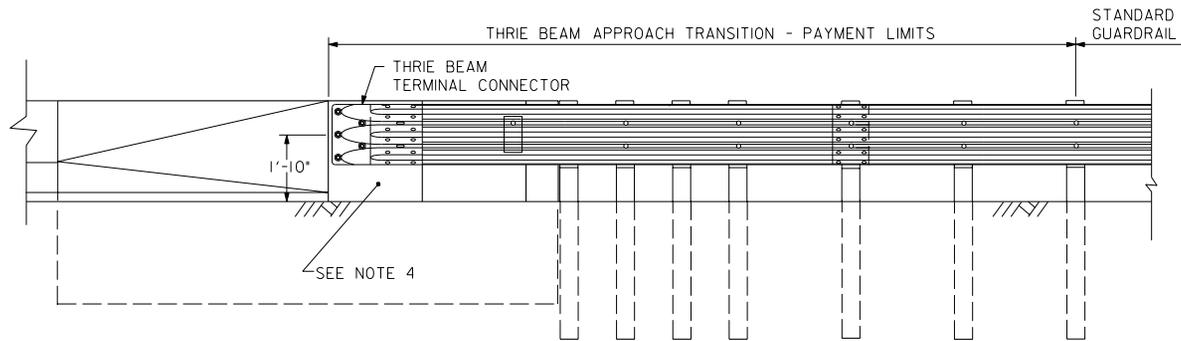
SECTION A-A



SECTION B-B



PLAN



ELEVATION

NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A VERTICAL FLARED BACK CONCRETE SHAPE AND SHOULD NOT BE CONNECTED DIRECTLY TO A CONCRETE SAFETY SHAPE. CONCRETE SAFETY SHAPE BARRIERS SHALL BE TRANSITIONED TO A VERTICAL SHAPE AT THE GUIDERAIL CONNECTION.
2. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
3. THE STEEL SPACER TUBE IS CONNECTED ONLY TO THE GUARDRAIL BEAM. BLOCK-OUTS MADE OF WOOD AND STEEL ARE NOT RECOMMENDED IN THIS TRANSITION.
4. FOR DETAILS OF THE CONCRETE SHAPE TRANSITION, SEE DWG. NO. 605.25.

PA-60525.dwg: 04/24/2009 2:45:13 PM: Final UNCHANGED: 605-22.DGN  
 P1:000, APR 03, 2009 AT 08:17 PM

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REFERENCE		CHIEF TRANSPORTATION ENGINEER

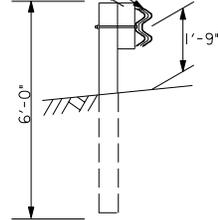
**THRIE BEAM APPROACH TRANSITION**  
**VERTICAL FLARED BACK CONCRETE**  
**BARRIER END**  
**THRIE BEAM - WOOD POSTS**

**d.**

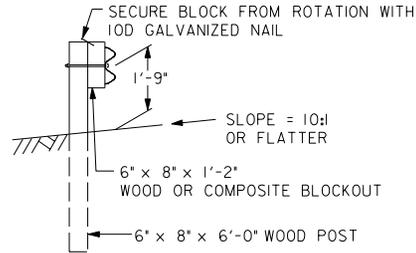
DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.22

TWO SECTIONS OF W-BEAM  
ONE SET INSIDE THE OTHER

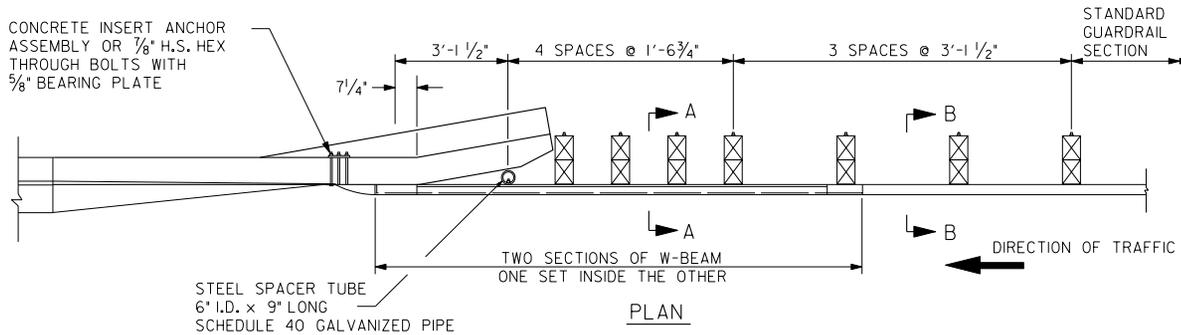


SECTION A-A

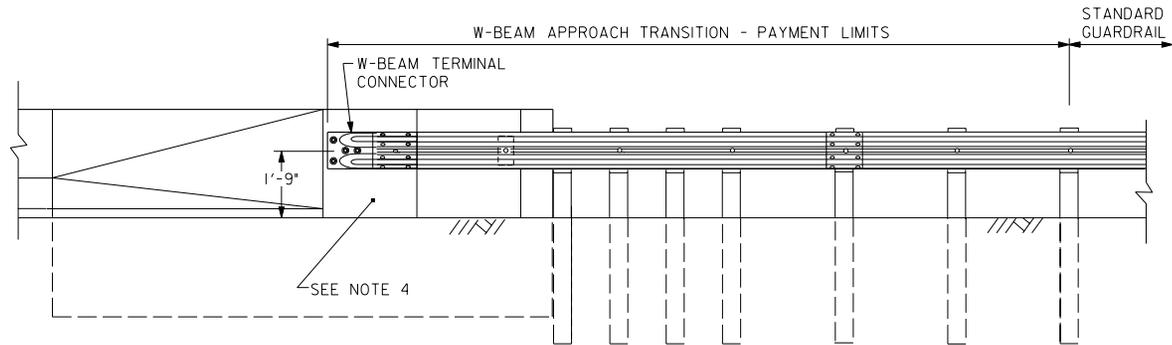


SECTION B-B

CONCRETE INSERT ANCHOR  
ASSEMBLY OR 1/8" H.S. HEX  
THROUGH BOLTS WITH  
5/8" BEARING PLATE



PLAN



ELEVATION

NOTES:

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A VERTICAL FLARED BACK CONCRETE SHAPE AND SHOULD NOT BE CONNECTED DIRECTLY TO A CONCRETE SAFETY SHAPE. CONCRETE SAFETY SHAPE BARRIERS SHOULD BE TRANSITIONED TO A VERTICAL SHAPE AT THE GUIDERAIL CONNECTION.
2. STANDARD BARRIER HARDWARE HAS BEEN USED TO DEVELOP THIS GUARDRAIL TRANSITION. SEE THE CURRENT EDITION OF "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE", AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
3. THE STEEL SPACER TUBE IS CONNECTED ONLY TO THE GUARDRAIL BEAM. BLOCK-OUTS MADE OF WOOD AND STEEL ARE NOT RECOMMENDED IN THIS TRANSITION.
4. FOR DETAILS OF CONCRETE SHAPE TRANSITION, SEE DWG. NO. 605.25.

PA-605.25.dwg: 04/26/05 2:26:03 PM: Final UNCHANGED: 605-23.DGN  
 P1:000, APR 03, 2005 AT 02:18 PM

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		REFERENCE		

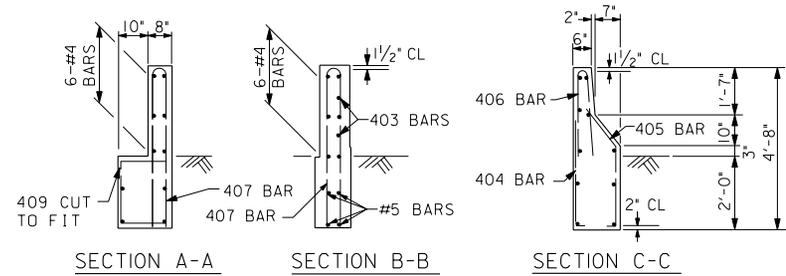
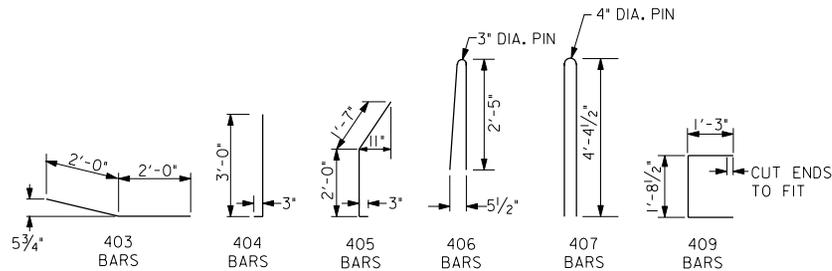
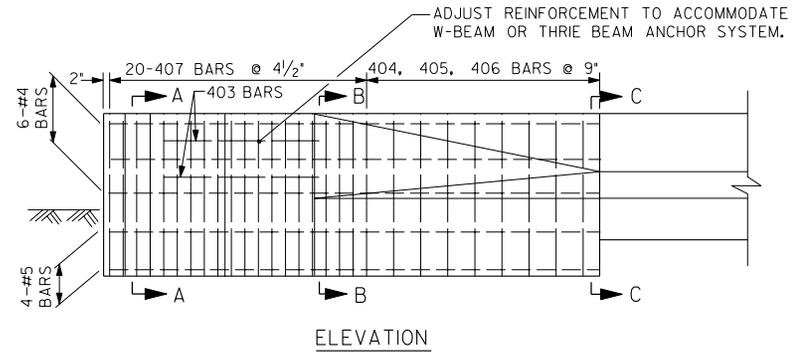
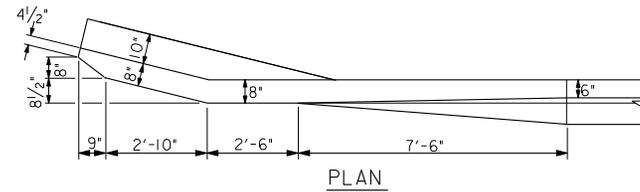
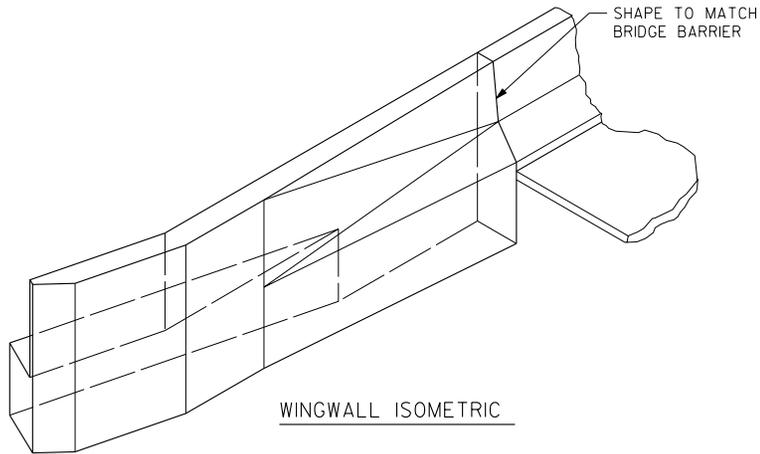
**W-BEAM APPROACH TRANSITION**  
**VERTICAL FLARED BACK CONCRETE BARRIER**  
**END W-BEAM - WOOD POSTS**

**d.**

DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.23





NOTE:  
USE #4 BARS UNLESS OTHERWISE NOTED.

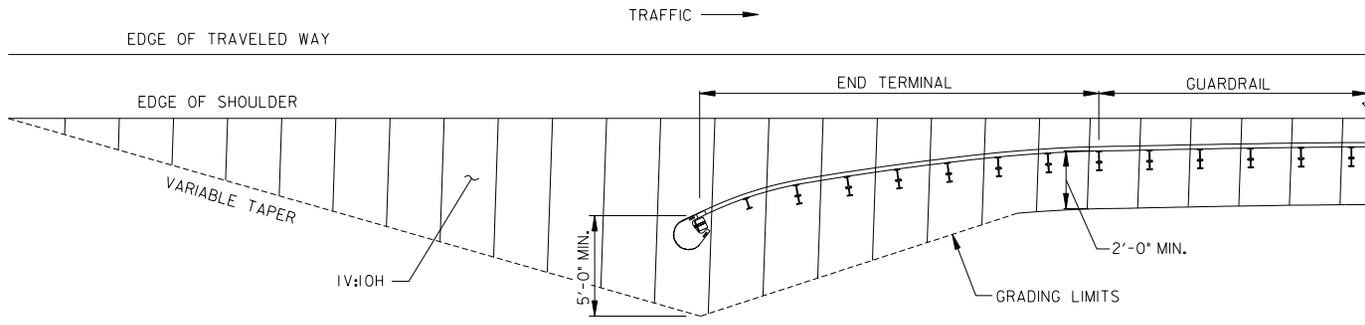
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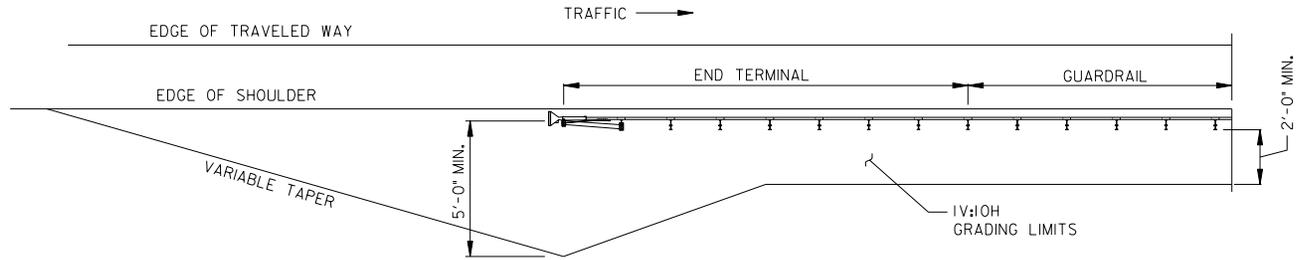
## GUARDRAIL APPROACH TRANSITIONS FLARED BACK PARAPET WALL AND SAFETY SHAPE TRANSITION

DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

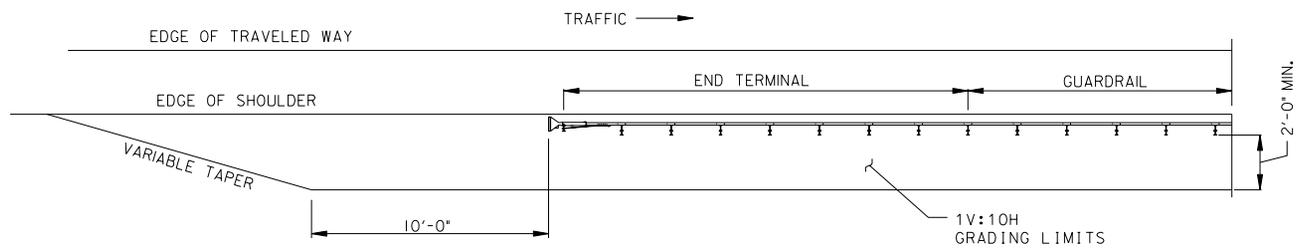
DWG. NO. **605.25**



GRADING FOR FLARED GUARDRAIL END TREATMENT



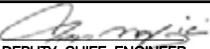
PREFERRED GRADING



ALTERNATIVE GRADING

GRADING FOR NON-FLARED GUARDRAIL END TREATMENT

PA-031516.dwg: 04/18/2005 2:50:10pm: Final UNCHANGED: 605-26.DGN  
 P1:000, APR 18, 2005 AT 2:50:10 PM

			RECOMMENDED: 
			DEPUTY CHIEF ENGINEER
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REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:			
	REFERENCE		

**GUARDRAIL APPROACH END  
TREATMENT GRADING**

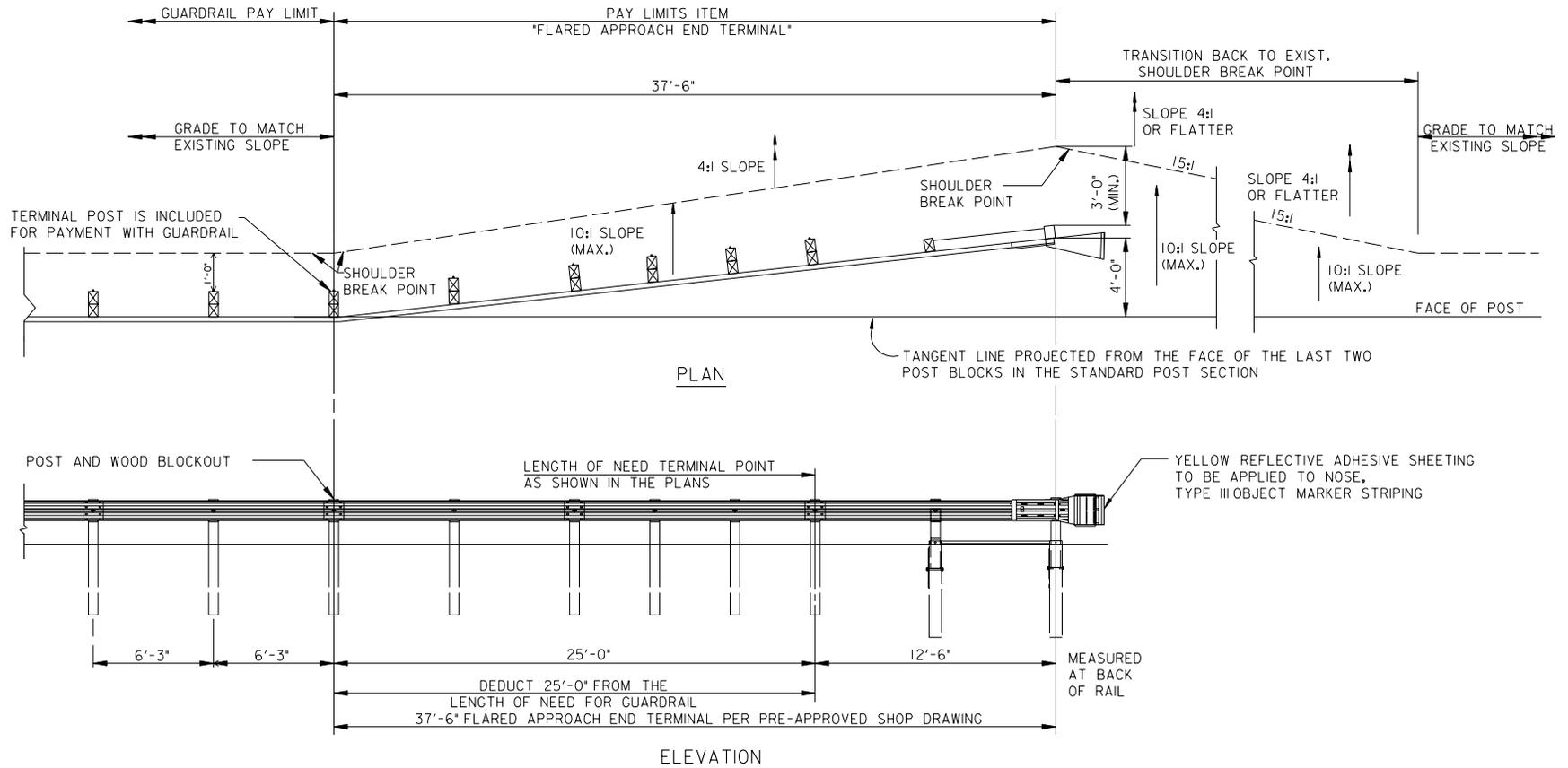
**d.**

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DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.26







- NOTES:**
- SEE PRE-APPROVED SHOP DRAWINGS FOR DETAILS OF FLARED APPROACH END TERMINAL (STRAIGHT LAYOUT). SHOP DRAWING SHALL INCLUDE NCHRP REPORT 350, TL-3 CERTIFICATION.
  - ALL MATERIALS USED SHALL MEET THE APPLICABLE REQUIREMENTS OF SECTION 813 OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES.
  - THE POST OFFSET DIMENSIONS ARE GIVEN TO THE CENTER OF THE TRAFFIC FACE OF THE BLOCKOUTS; EXCEPT AT THE FIRST POST, WHERE THE DIMENSION IS TO THE CENTER OF THE TRAFFIC FACE OF THE POST. OFFSET POINTS ARE TO BE LOCATED BY MEASUREMENTS AT THE BACK OF RAIL EQUAL TO THE NOMINAL POST SPACINGS SHOWN ON PRE-APPROVED SHOP DRAWINGS. POSTS ARE TO BE SET APPROXIMATELY RADIAL TO THE RAILING AT EACH LOCATION.
  - WHEN A WOOD BLOCK IS USED ADJACENT TO A WOOD POST, THE BLOCK SHALL BE NAILED TO THE POST WITH A GALVANIZED STEEL 10D COMMON NAIL. THE NAIL IS TO BE DRIVEN INTO THE CENTER OF THE TOP OR BOTTOM OF THE BLOCK.
  - THE COST OF FURNISHING AND INSTALLING THE FLARED APPROACH END TERMINAL, COMPLETE WITH ALL MISCELLANEOUS HARDWARE AND PARTS AS DETAILED ON THE PRE-APPROVED SHOP DRAWINGS, IS TO BE INCLUDED IN THE UNIT PRICE FOR "FLARED APPROACH END TERMINAL".
  - YELLOW RETROREFLECTIVE TYPE III SHEETING SHALL COVER THE ENTIRE NOSE OF THOSE TERMINALS WITH A FLAT IMPACT HEAD. THOSE TERMINALS WITH A ROUNDED IMPACT HEAD SHALL BE COVERED WITH A 1'-0" x 3'-0" YELLOW RETROREFLECTIVE TYPE III SHEETING.

P:\031516.dwg: s1414242.dwg: 2/20/2005 11:04:11 AM: Final UNCHANGED: 605-29.DWG  
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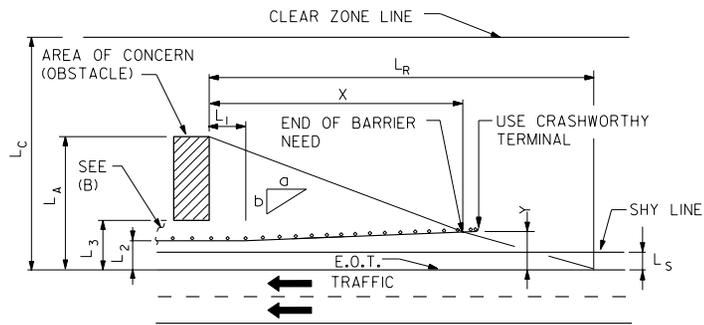
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DATE	APPR.	APPROVED: <i>[Signature]</i> CHIEF TRANSPORTATION ENGINEER
REVISED		
ISSUED:	REFERENCE	

## FLARED APPROACH END TERMINAL STRAIGHT LAYOUT

d.

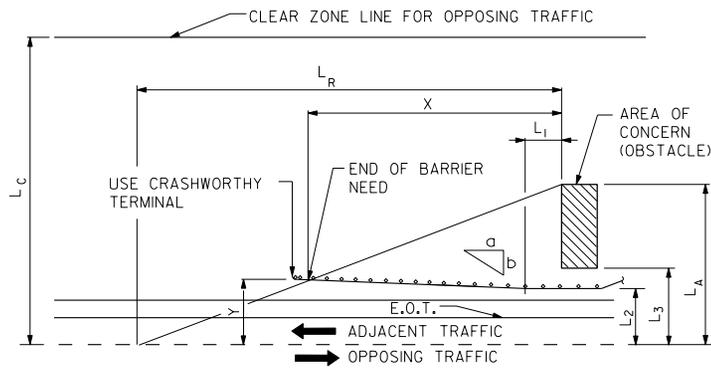
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DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.29



(A)

APPROACH BARRIER LAYOUT VARIABLES



(B)

APPROACH BARRIER LAYOUT FOR OPPOSING TRAFFIC

DESIGN SPEED (MPH)	DESIGN TRAFFIC VOLUME (ADT)				SHY LINE OFFSET $L_S$ (FT)	FLARE RATE ( $a:b$ ) BEYOND SHY LINE **	FLARE RATE ( $a:b$ ) BEYOND SHY LINE *
	OVER 6000	2000-6000	800-2000	UNDER 800			
70	475	445	395	360	10.0	15:1	20:1
60	425	400	345	330	8.0	14:1	18:1
55	360	345	315	280	8.0	12:1	16:1
50	330	300	260	245	7.0	11:1	14:1
45	260	245	215	200	6.0	10:1	12:1
40	230	200	180	165	5.0	9:1	10:1
30	165	165	150	130	4.0	7:1	8:1

\*VALUES ARE FOR RIGID BARRIER SYSTEM.

\*\*VALUES ARE FOR YIELDING BARRIER (2' DYNAMIC DEFLECTION) SYSTEM.

DESIGN PARAMETERS FOR ROADSIDE BARRIER LAYOUT

NOMENCLATURE

- $L_C$  CLEAR ZONE (FIG. 3.1b AASHTO, "ROADSIDE DESIGN GUIDE", CURRENT EDITION.)
- $L_A$  DISTANCE FROM E.O.T. TO FAR EDGE OF OBSTACLE (AREA OF CONCERN)
- $L_R$  RUNOUT LENGTH OF BARRIER (SEE TABLE ABOVE)
- $L_S$  SHY LINE OFFSET
- $X$  LENGTH OF NEED (LOFN) - SEE PLANS
- $Y$  LATERAL OFFSET TO BEGINNING OF LOFN
- $L_1$  UPSTREAM TANGENT SECTION (TABLE III-E-1 AASHTO, "GUIDE FOR SELECTING, LOCATING AND DESIGNING TRAFFIC BARRIERS AND PLANS")
- $L_2$  DISTANCE FROM E.O.T. (OR CENTERLINE) TO TANGENT SECTION OF BARRIER
- $L_3$  AS MEASURED
- E.O.T. EDGE OF THROUGH TRAVELED WAY

NOTES:

1. REFERENCES ARE AASHTO "GUIDE FOR SELECTING, LOCATING AND DESIGNING TRAFFIC BARRIERS", CURRENT EDITION, AND "ROADSIDE DESIGN GUIDE", CURRENT EDITION.
2. ALTHOUGH THE DRAWING SHOWS STRAIGHT LINE BARRIER ON THE FLARE, A PARABOLIC LAYOUT SHOULD BE INSTALLED IN ACCORDANCE WITH FHWA TECHNICAL ADVISORY T5040.23 (1984).
3. UPSTREAM FLARE NOT REQUIRED ON A DIVIDED HIGHWAY. END ANCHORAGE WILL BE REQUIRED.
4. CRASHWORTHY TERMINALS MAY BE STEEL OR WOOD POST.

PA-6031E (05-01) 04/03/05 04/03/05 Final UNCHANGED 605-3000N  
 P1809, APRIL 03, 2005 AT 09:18 PM

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ISSUED:	REFERENCE		

BARRIER LAYOUT

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 605.30







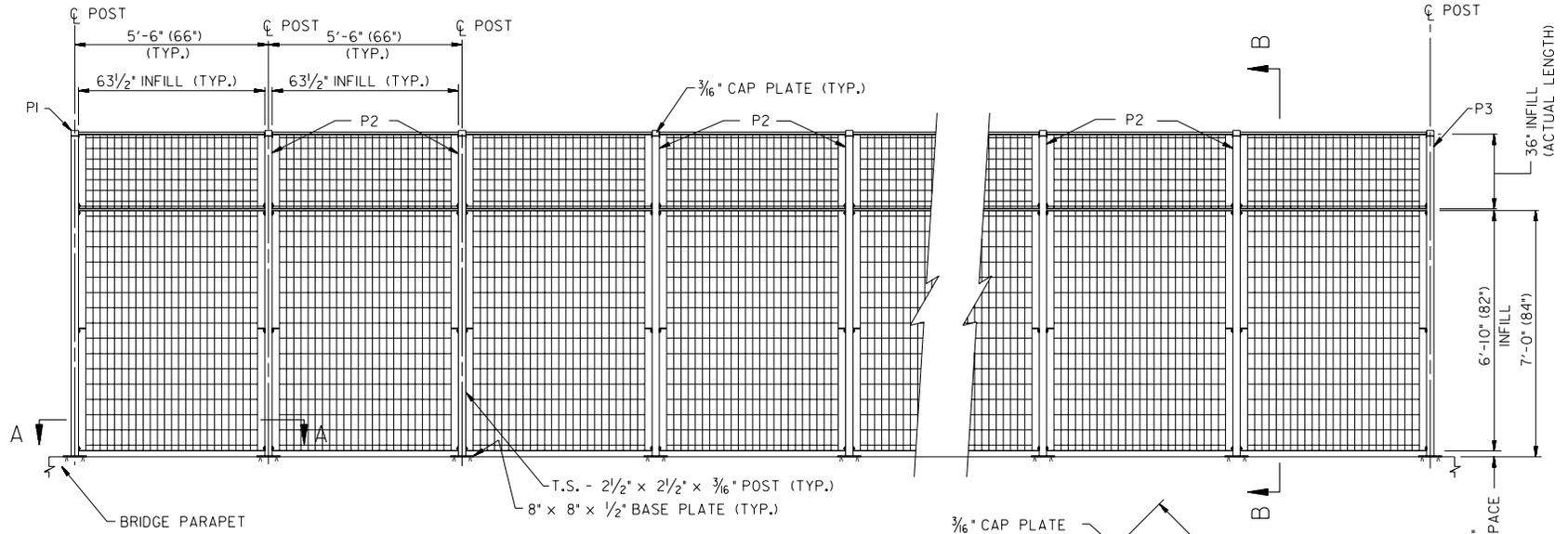




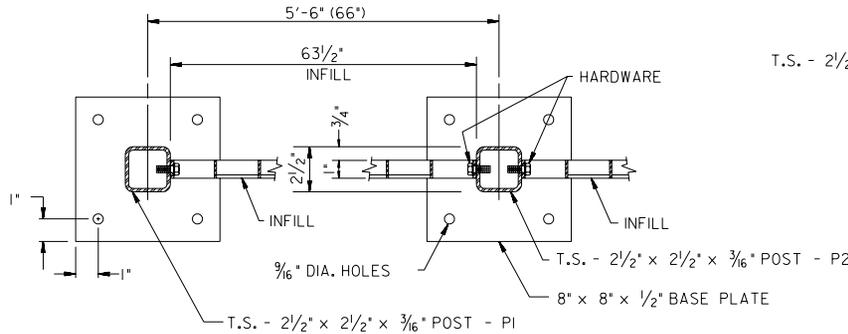




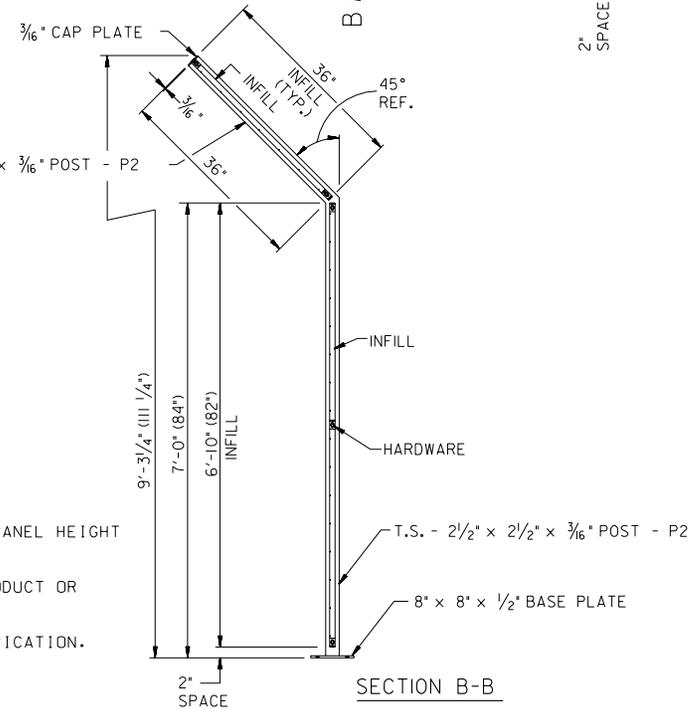




FENCING ELEVATION



SECTION A-A



SECTION B-B

NOTES:

1. THIS DRAWING IS FOR STANDARD HEIGHT ORNAMENTAL BRIDGE FENCE. SEE DRAWING NO. 607.10 FOR PANEL HEIGHT AND CONNECTION ALTERNATIVES.
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

607.10.dwg, 04/24/2003, 2:40:15 PM, Final UNCHANGED:607-09.DWG  
 P:\607.dwg, 04/24/2003, 2:40:15 PM

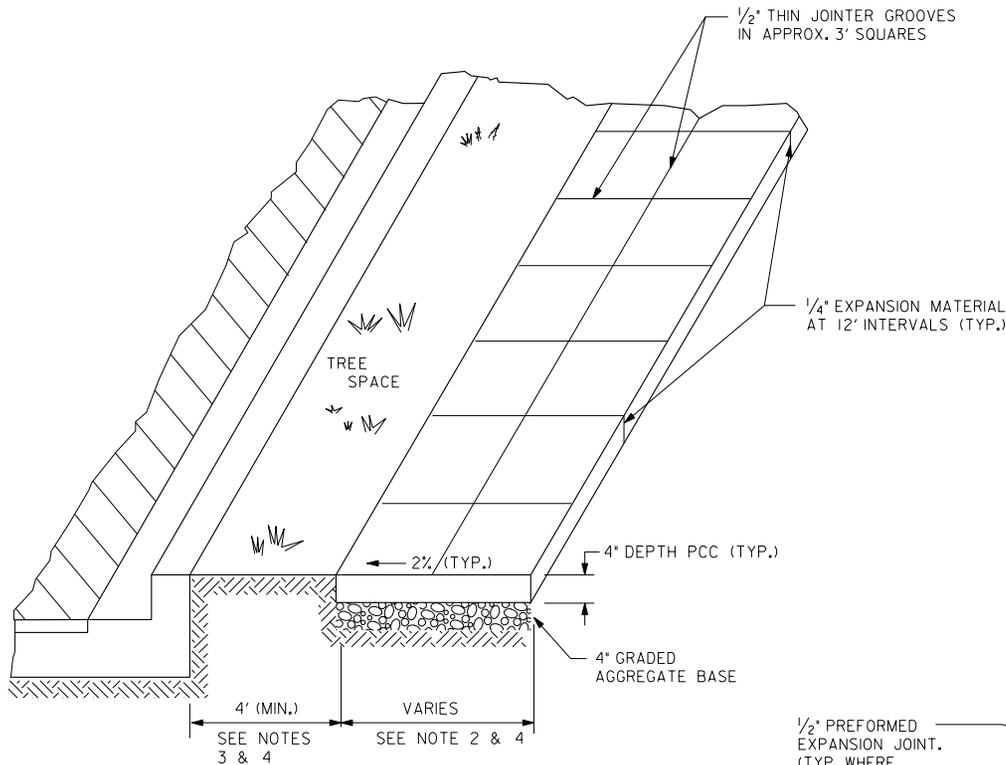
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REVISED		APPROVED:	<i>[Signature]</i> CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

ORNAMENTAL BRIDGE  
FENCE DETAILS - 1

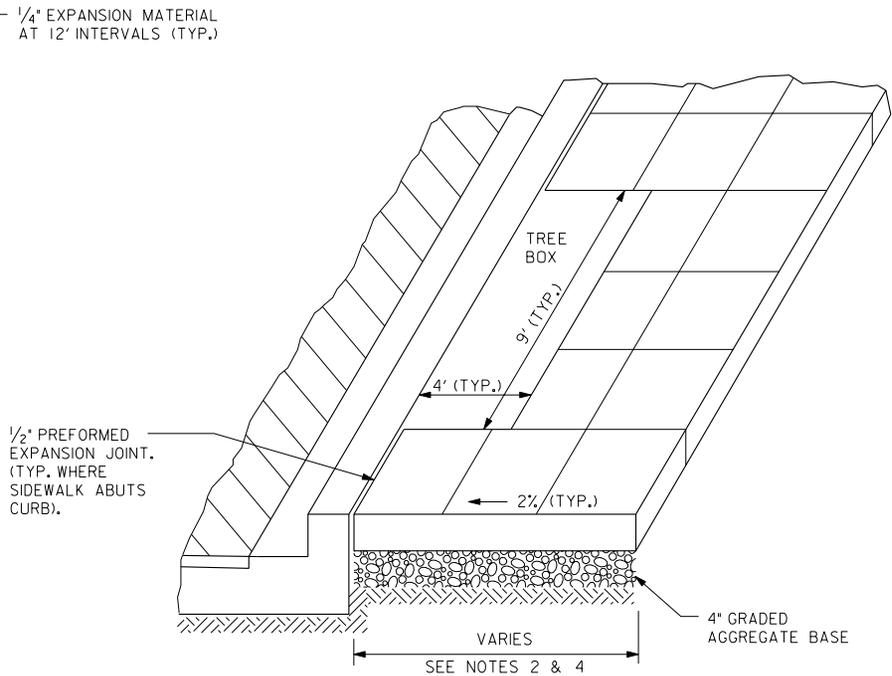
**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 607.09





SIDEWALK WITH TREESPACE SECTION



SIDEWALK WITH TREE BOX SECTION

NOTES:

1. STANDARD TRANSVERSE SLOPE OF SIDEWALK IS 2% TOWARDS CURB.
2. PREFERRED SIDEWALK WIDTH = 6 FT. MINIMUM SIDEWALK WIDTH = 5 FT. IN VERY CONSTRAINED AREAS, SUCH AS AROUND OBSTACLES THAT CANNOT BE MOVED, I.E. TREES, WALLS ETC., A MINIMUM SIDEWALK WIDTH = 3 FT. MUST BE MAINTAINED FOR PASSAGE.
3. WHEN MINIMUM SIDEWALK WIDTH REQUIREMENTS ARE MET, A WIDER TREESPACE SHALL BE PROVIDED IF THE RIGHT-OF-WAY ALLOWS.
4. ANY EXCEPTIONS TO MINIMUM SIDEWALK OR TREESPACE REQUIREMENTS REQUIRE THE ENGINEER'S APPROVAL.

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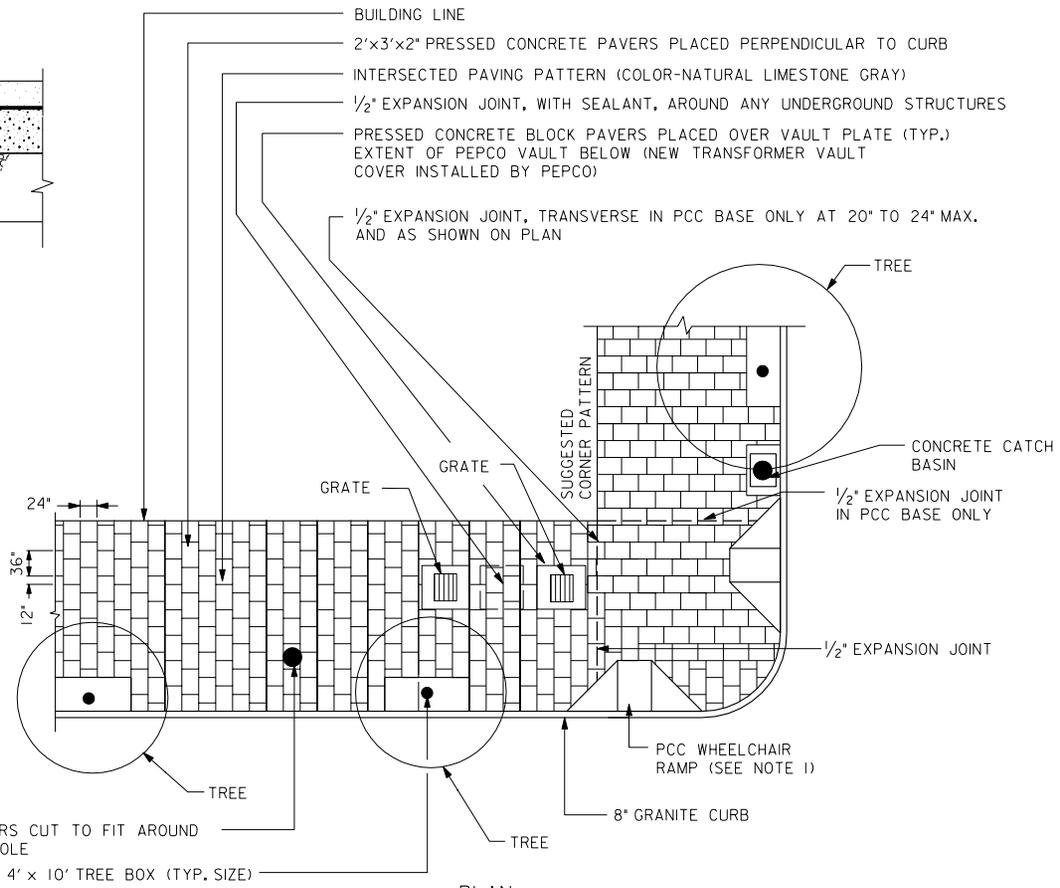
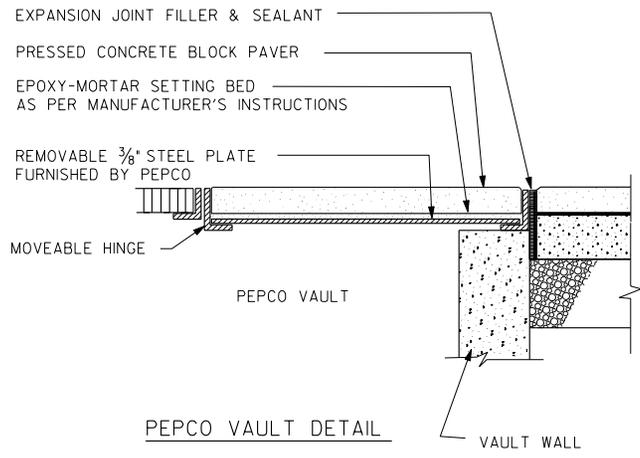
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TYPICAL SIDEWALK SECTIONS

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DEPARTMENT OF TRANSPORTATION

DWG. NO. 608.01





NOTE:  
1. SEE CONTRACT PLANS FOR EXACT  
LOCATION OF WHEELCHAIR RAMPS.

PA-031516.dwg: s412402.dwg: 2/20/2019 11:51 AM: Final UNCHANGED: 608-03.DGN  
 P1:000, April 03, 2009 AT 09:18 PM

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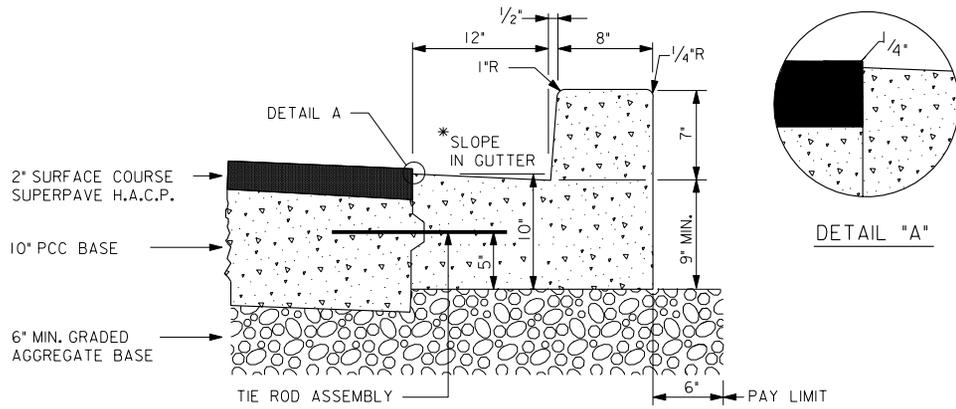
**PRESSED CONCRETE BLOCK  
PAVER PATTERN**

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

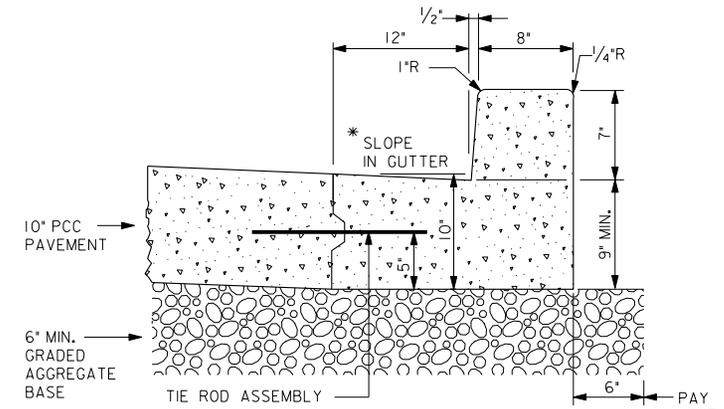
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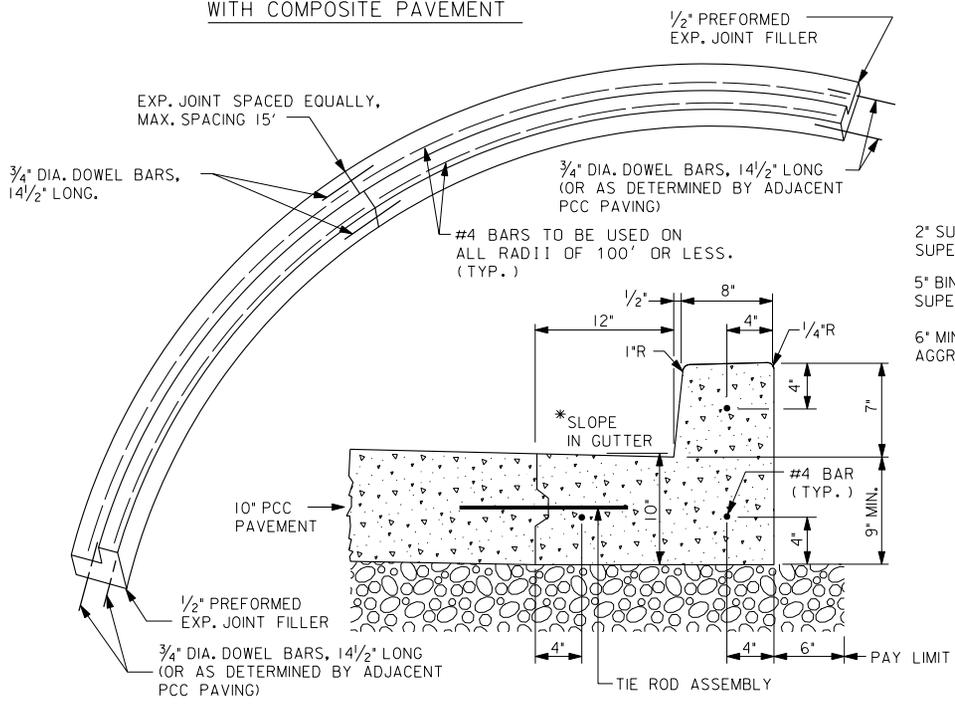




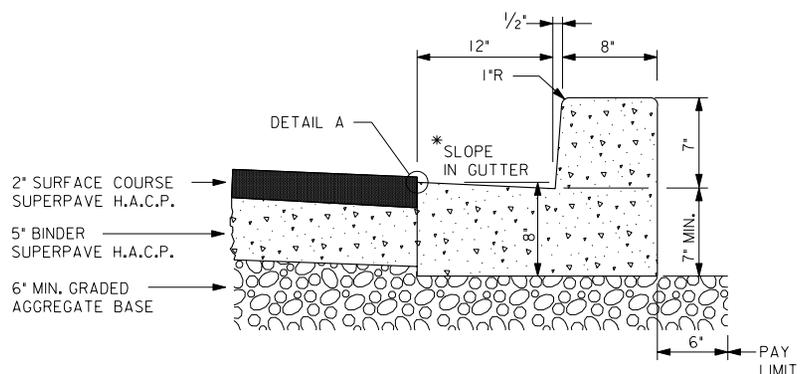
PCC CURB AND GUTTER WITH COMPOSITE PAVEMENT



PCC CURB AND GUTTER WITH CONCRETE PAVEMENT



CIRCULAR REINFORCED PCC CURB AND GUTTER, RADII = 100' OR LESS (SHOWN WITH CONCRETE PAVEMENT SECTION)



PCC CURB AND GUTTER WITH FLEXIBLE PAVEMENT

- NOTES:
1. TIE ROD ASSEMBLY TO BE INSTALLED AT 5 IN. OF THE INITIAL POUR.
  2. #4 BARS SHALL NOT EXTEND THROUGH THE EXPANSION JOINT.
  3. \* LOW SIDE - 1 IN. PER FT. TOWARD CURB.  
\* HIGH SIDE - 5/8 IN. PER FT. AWAY FROM CURB.
  4. 6 IN. MIN. DEPTH GRADED AGGREGATE BASE APPLIES TO AREA BENEATH ROADWAY AND CURB AND GUTTER.

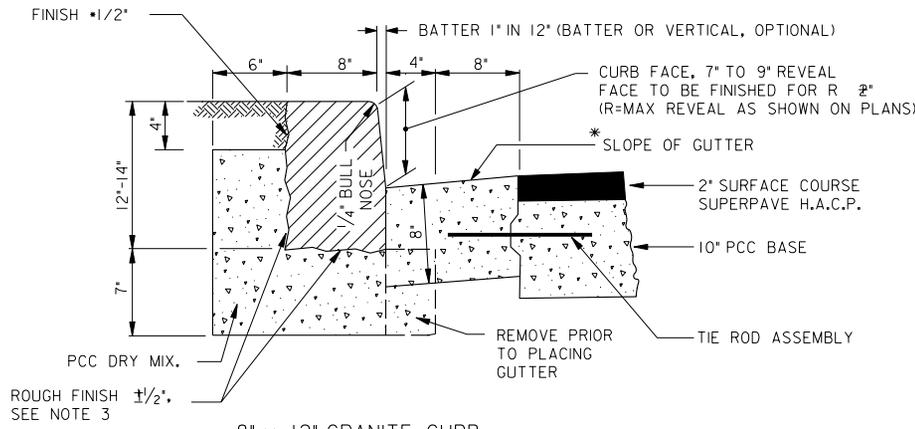
EN-0315, Iss. 04/2005, 2nd Edition, Final UNCHANGED, 609-01.DGN  
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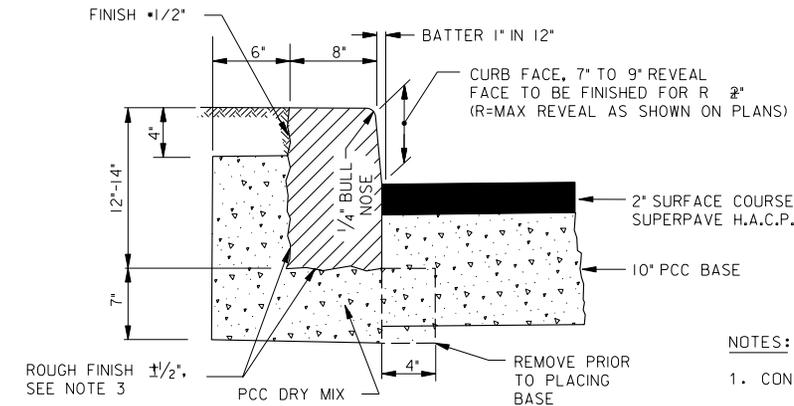
## TYPES OF PCC CURB & GUTTER

**d.** DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.01



8" x 12" GRANITE CURB  
(WITH PCC GUTTER)



8" x 12" GRANITE CURB  
(WITHOUT PCC GUTTER)

NOTES:

1. CONDITIONS AT BACK OF CURB VARY AND ARE AS SHOWN ON THE CONTRACT PLANS.
2. PCC DRY MIX SHALL BE PER DDOT STANDARD SPECIFICATIONS, SECTION 801. IT SHALL MAINTAIN THE SAME TIME LIMITS AS PCC AND SHALL BE WATERED DOWN AFTER SETTING OF GRANITE CURB.
3. THE MINIMUM DEPTH TO CONCAVE SURFACE ON ROUGH FINISH SHALL BE 10 IN.
4. GRANITE CURBS ARE SHOWN WITH A COMPOSITE PAVEMENT SECTION.
5. \* LOW SIDE - 1 IN. PER FT. TOWARD CURB  
\* HIGH SIDE - 5/8 IN. PER FT. AWAY FROM CURB
6. A 6 IN. MIN. LAYER OF GRADED AGGREGATE BASE SHALL BE PLACED BENEATH THE ROADWAY AND CURB AND GUTTER AND IS NOT SHOWN FOR CLARITY.

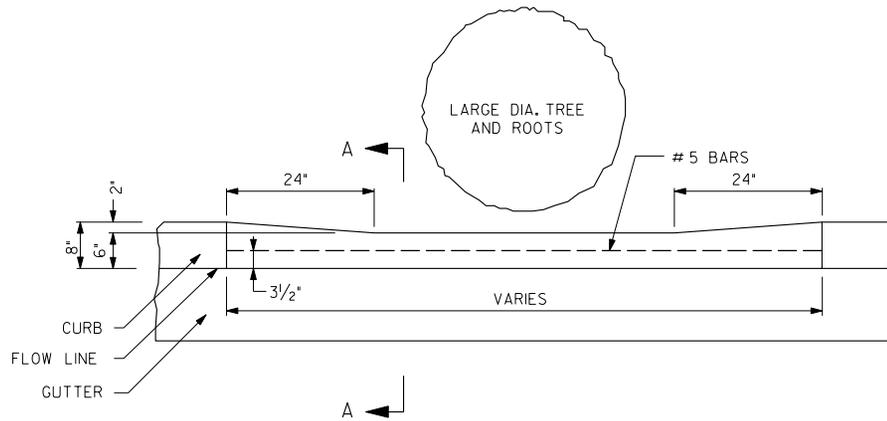
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 P1:000, APR 03, 2003 AT 02:08 PM

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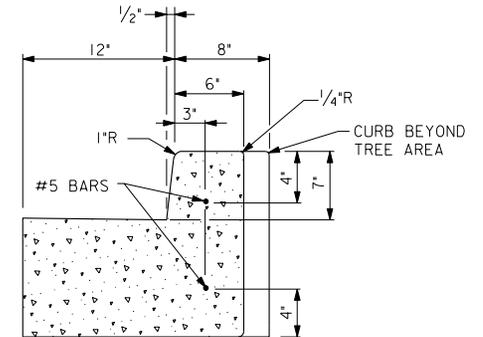
TYPES OF GRANITE CURBS

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

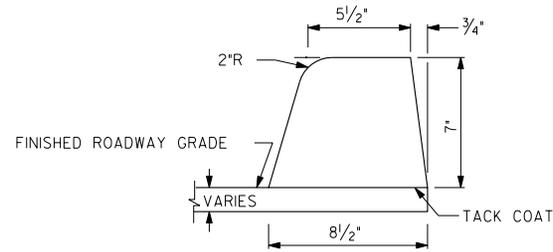
DWG. NO. 609.02



STRAIGHT REINFORCED CONCRETE CURB - PLAN  
(WITH REDUCED WIDTH)



SECTION A-A



ASPHALT CURB

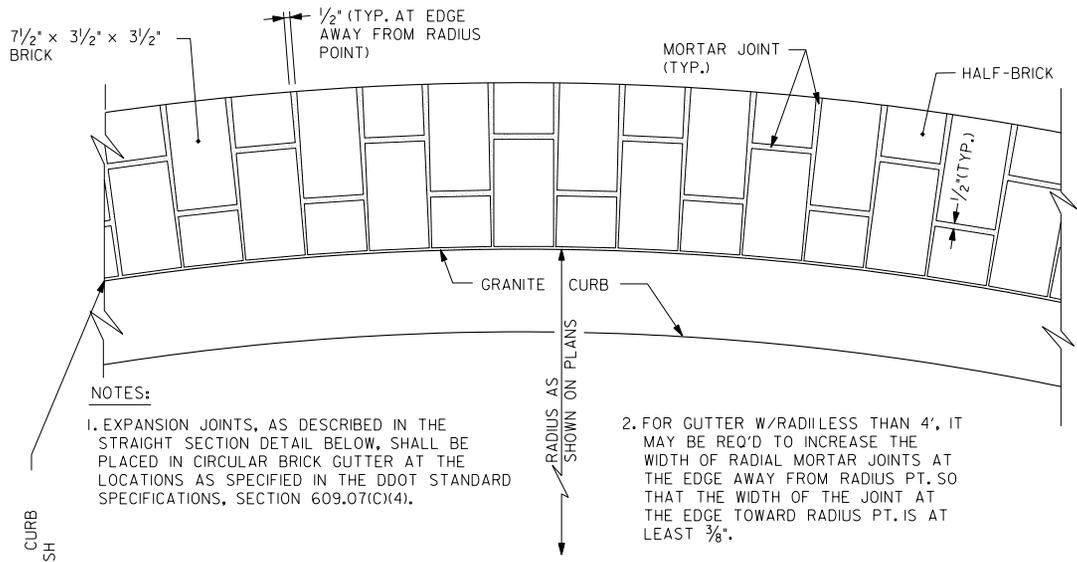
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DATE	APPR.		APPROVED: <i>[Signature]</i>
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**TYPES OF CURBS  
MISCELLANEOUS**

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.03



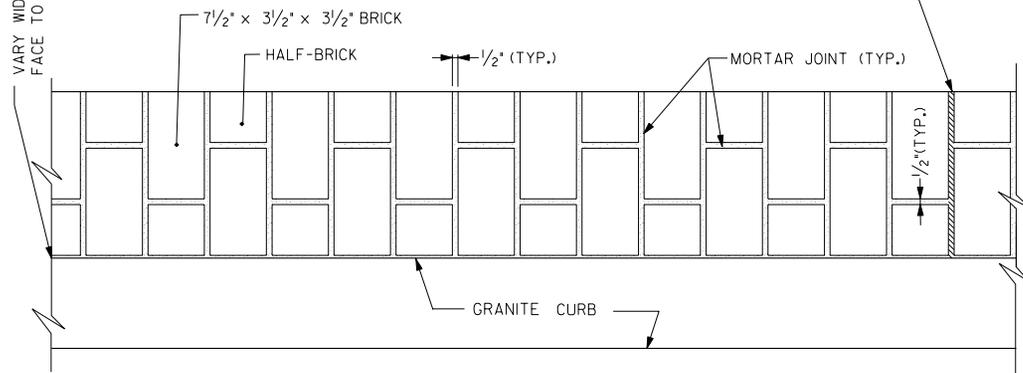
**NOTES:**

1. EXPANSION JOINTS, AS DESCRIBED IN THE STRAIGHT SECTION DETAIL BELOW, SHALL BE PLACED IN CIRCULAR BRICK GUTTER AT THE LOCATIONS AS SPECIFIED IN THE DDOT STANDARD SPECIFICATIONS, SECTION 609.07(C)(4).
2. FOR GUTTER W/RADIUS LESS THAN 4', IT MAY BE REQ'D TO INCREASE THE WIDTH OF RADIAL MORTAR JOINTS AT THE EDGE AWAY FROM RADIUS PT. SO THAT THE WIDTH OF THE JOINT AT THE EDGE TOWARD RADIUS PT. IS AT LEAST 3/8".

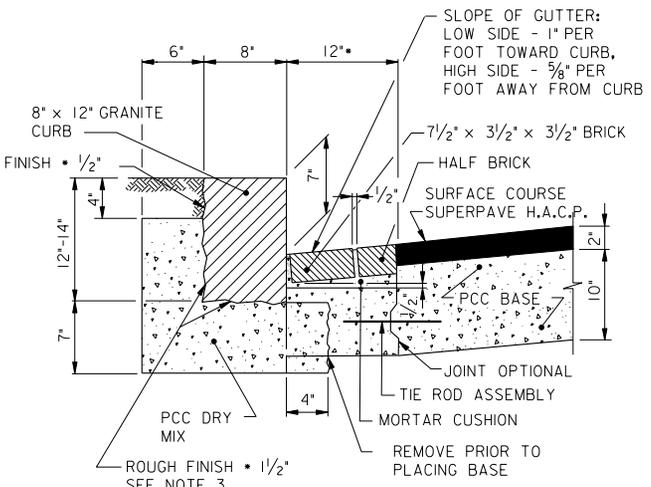
**CIRCULAR SECTION**

VARY WIDTH OF MORTAR JOINT AT CURB FACE TO ACCOMMODATE CURB FINISH

1/2" PREFORMED EXPANSION JOINT FOR FULL DEPTH OF BRICK GUTTER, INCLUDING PCC BASE, AT THE LOCATIONS AS SPECIFIED IN THE DDOT STANDARD SPECIFICATIONS, SECTION 609.07(C)(4).



**STRAIGHT SECTION**



**8" x 12" GRANITE CURB WITH BRICK GUTTER**

**NOTES:**

1. CONDITIONS AT BACK OF CURB VARY AND ARE AS SHOWN ON THE CONTRACT PLANS.
2. PCC DRY MIX SHALL BE PER DDOT STANDARD SPECIFICATIONS, SECTION 801. IT SHALL MAINTAIN THE SAME TIME LIMITS AS PCC AND SHALL BE WATERED DOWN AFTER SETTING OF GRANITE CURB.
3. THE MINIMUM DEPTH TO CONCAVE SURFACE ON ROUGH FINISH SHALL BE 10 IN.
4. GRANITE CURB IS SHOWN WITH A COMPOSITE PAVEMENT SECTION.
5. A 6 IN. MIN. LAYER OF GRADED AGGREGATE BASE SHALL BE PLACED BENEATH THE ROADWAY AND CURB AND GUTTER AND IS NOT SHOWN FOR CLARITY.

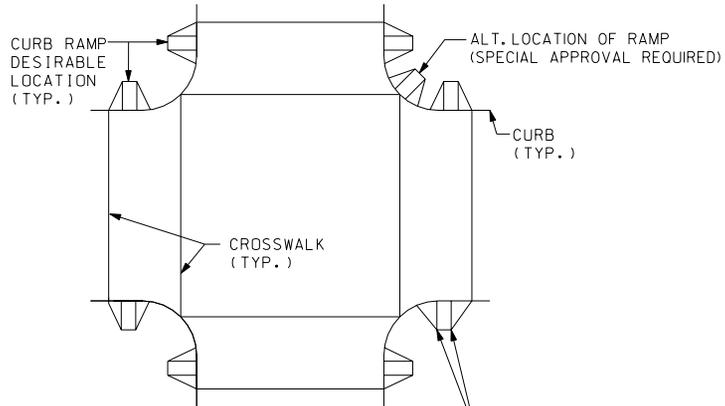
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 Friday, April 03, 2009 12:18 PM

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**PATTERNS FOR BRICK GUTTER**

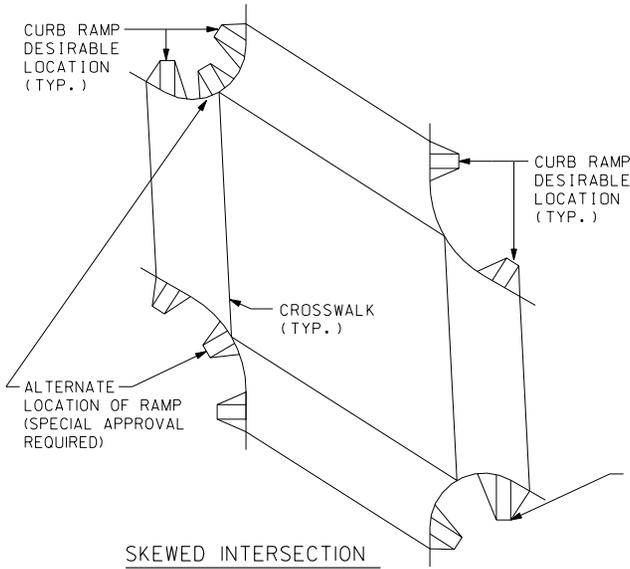
**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.04



EXTEND SIDE FLARE(S) IF REQUIRED TO ACHIEVE MAXIMUM 12:1 SLOPE IN FLARE(S) (WHERE 12:1 LONGITUDINAL SLOPE IN CENTER OF RAMP AND 4'-0" CLEAR SIDEWALK SPACE IN BACK OF RAMP CANNOT BE OBTAINED).

RIGHT-ANGLE INTERSECTION



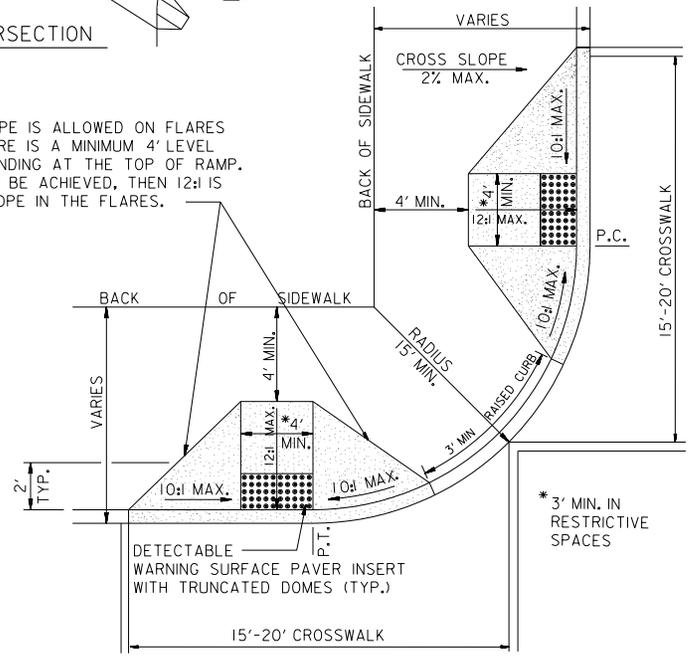
EXTEND SIDE FLARE(S) IF REQUIRED TO ACHIEVE MAXIMUM 12:1 SLOPE IN FLARE(S) (WHERE 12:1 LONGITUDINAL SLOPE IN CENTER OF RAMP AND 4'-0" CLEAR SIDEWALK SPACE IN BACK OF RAMP CANNOT BE OBTAINED).

SKewed INTERSECTION

NOTES:

1. AT FOUR LEGGED INTERSECTIONS, IT IS REQUIRED TO CONSTRUCT TWO RAMPS, ONE FOR EACH DIRECTION OF CROSSING. IF THERE ARE SPACE LIMITATIONS THAT DO NOT PERMIT THE CONSTRUCTION OF TWO INDEPENDENT RAMPS, SUCH AS TELEPHONE POLES, FIRE HYDRANTS, STORM DRAIN INLETS, ETC., PROVISIONS SHOULD BE MADE TO RELOCATE THE OBSTRUCTION. IF THE 12:1 LONGITUDINAL SLOPE CANNOT BE ACHIEVED WHERE RAMPS ARE SHOWN, SPECIAL APPROVAL SHALL BE OBTAINED TO CONSTRUCT ONE RAMP AT THE CORNER AND MODIFY THE CROSSWALKS. SEE DRAWINGS 609.06 AND 609.07 FOR DETAILS.
2. RAMP LOCATION SHALL BE GOVERNED BY CROSSWALK WIDTH, 15'-20' AS DIRECTED. ALL RAMPS, INCLUDING SIDE FLARES, SHALL BE LOCATED WITHIN A CROSSWALK. ONE SIDE FLARE SHALL ALIGN WITH THE BACK EDGE LINE OF THE CROSSWALK.
3. FOR SKEWED INTERSECTION, ACUTE CORNER SHALL DETERMINE THE LOCATION OF LIGHT POLES, RAMPS AND CROSSWALKS.
4. ALL RAMPS SHALL CONFORM TO THE LATEST AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) CRITERIA.
5. DIMENSIONS SHOWN ARE FOR NEW CONSTRUCTION. FOR ALTERATIONS WHEN THESE DIMENSIONS ARE IMPRACTICAL, REVIEW ADAAG FOR LESS STRICT DIMENSIONS.
6. INSTALL DETECTABLE WARNING SURFACE PAVERS WITH TRUNCATED DOMES FOR A DISTANCE OF 24" FROM THE BACK OF THE CURB AS SHOWN.
7. THE SURFACE OF THE RAMP SHALL BE BROOM FINISHED (STEEL BRISTLE).
8. RAMP SHALL BE CONSTRUCTED WITH PCC SIDEWALK CONCRETE (NO DARKENING AGENTS).
9. ANY LIGHT POLE FOUNDATION SHALL BE CONSTRUCTED INDEPENDENTLY OF RAMP.
10. DESIGN STORM DRAIN SYSTEMS TO SHED WATER AWAY FROM RAMPS.
11. FINAL LOCATION OF RAMP WILL BE DECIDED BY THE ENGINEER ON SITE.

10:1 MAX. SLOPE IS ALLOWED ON FLARES ONLY IF THERE IS A MINIMUM 4' LEVEL (2% MAX.) LANDING AT THE TOP OF RAMP. IF 4' CANNOT BE ACHIEVED, THEN 12:1 IS THE MAX. SLOPE IN THE FLARES.



DETAIL: WHEELCHAIR - BICYCLE RAMP(S)  
DESIRABLE LOCATION (TYP.)

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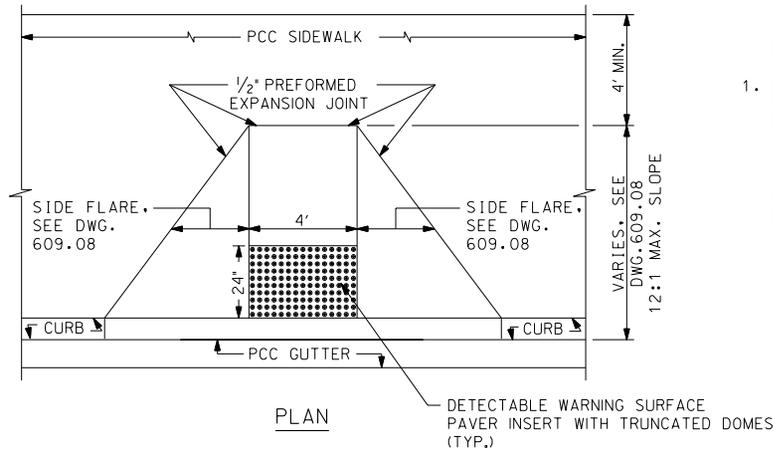
**WHEELCHAIR - BICYCLE RAMPS  
LOCATIONS**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

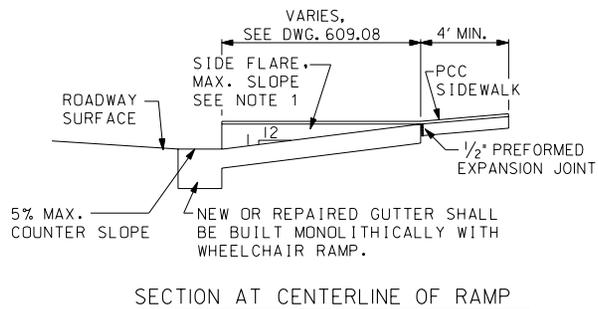
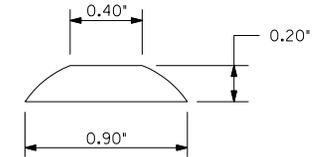
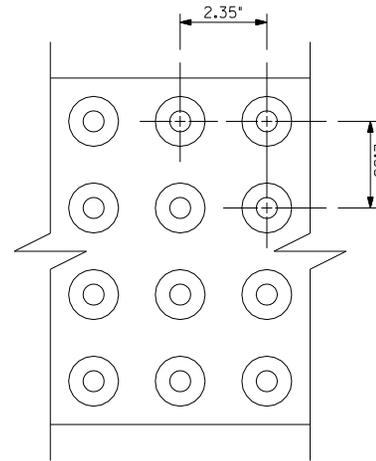
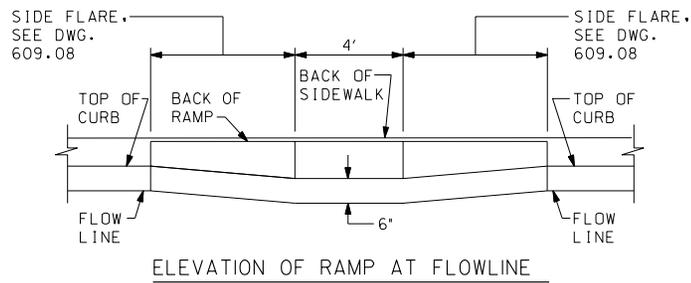
DWG. NO. 609.05





**NOTES:**

1. EITHER (1) SIDEWALK SLOPE BEHIND RAMP SHALL BE REDUCED, BUT NOT LESS THAN 0.5%, OR (2) IF RIGHT-OF-WAY AND PHYSICAL CONDITIONS PERMIT, SIDEWALK SHALL BE EXTENDED, SO THAT MAXIMUM SLOPE OF 12:1 ALONG CENTERLINE OF RAMP IS ACHIEVED. IF 12:1 SLOPE CANNOT BE ACHIEVED BY (1) OR (2) ABOVE, THEN MAXIMUM SLOPE IN AT LEAST ONE SIDE FLARE SHALL BE 12:1.



**DETECTABLE WARNING SURFACE PAVER/TRUNCATED DOME NOTES:**

1. DETECTABLE WARNING SURFACE PAVER/TRUNCATED DOME INSERT SHALL BE INSTALLED 24" FROM THE BACK OF THE CURB AS SHOWN.
2. DETECTABLE WARNING SURFACE PAVER SHALL CONSIST OF A SURFACE OF TRUNCATED DOMES ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
3. DETECTABLE WARNING SURFACE PAVER/TRUNCATED DOME INSERT SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES.

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## WHEELCHAIR-BICYCLE RAMPS DETAILS

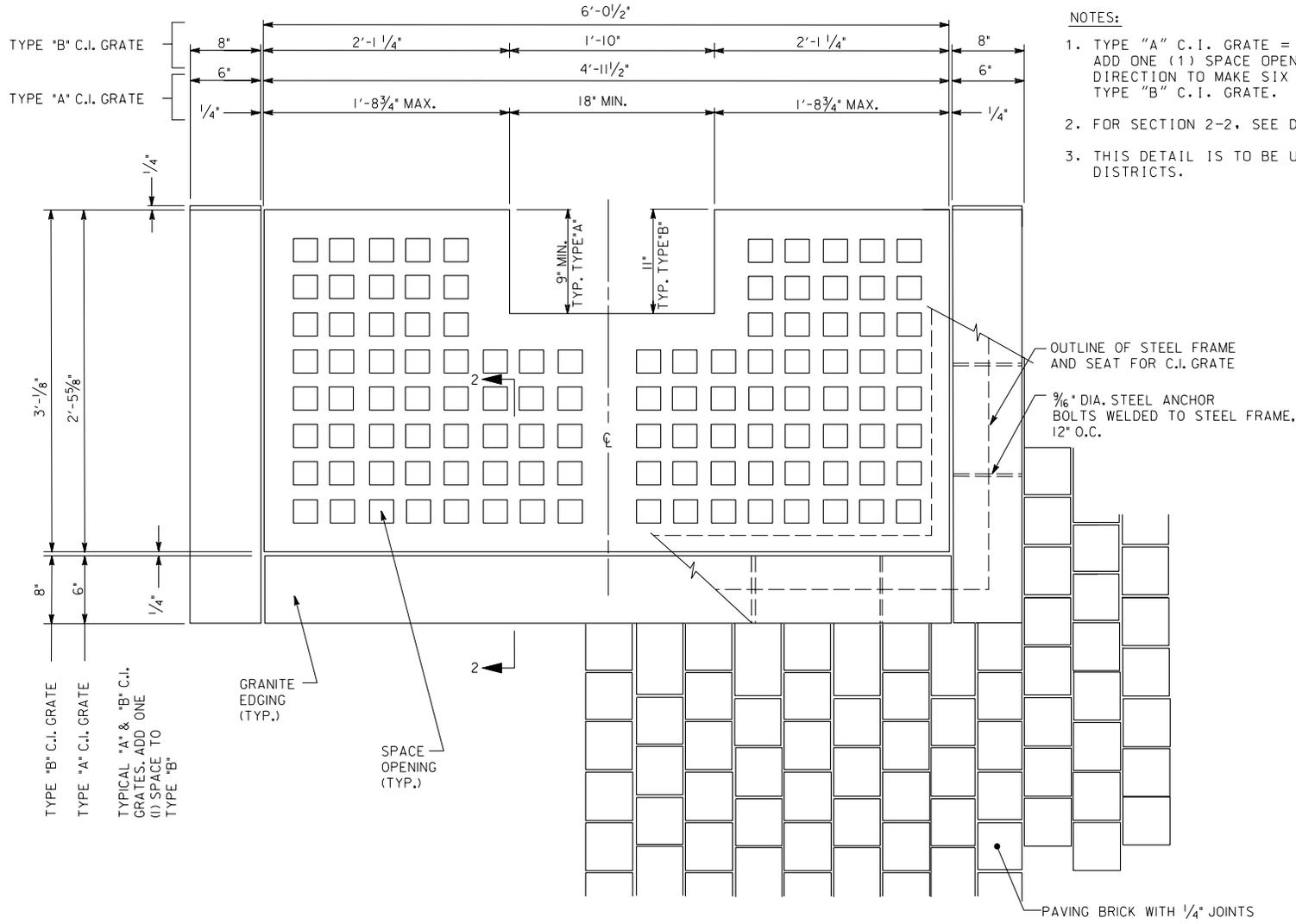


DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 609.07







- NOTES:
1. TYPE "A" C.I. GRATE = 5 SPACE OPENING. ADD ONE (1) SPACE OPENING EACH DIRECTION TO MAKE SIX (6) FOR TYPE "B" C.I. GRATE.
  2. FOR SECTION 2-2, SEE DWG. NO. 611.03.
  3. THIS DETAIL IS TO BE USED IN HISTORIC DISTRICTS.

DETAIL OF CAST IRON GRATE  
TYPE "A" AND "B"

(FOR MEDIAN LOCATION ONLY, NOT FOR CURB LINE ALONG SIDEWALK)

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DATE	APPR.	REFERENCE
REVISED		
ISSUED:		

RECOMMENDED: *[Signature]*  
DEPUTY CHIEF ENGINEER

APPROVED: *[Signature]*  
CHIEF TRANSPORTATION ENGINEER

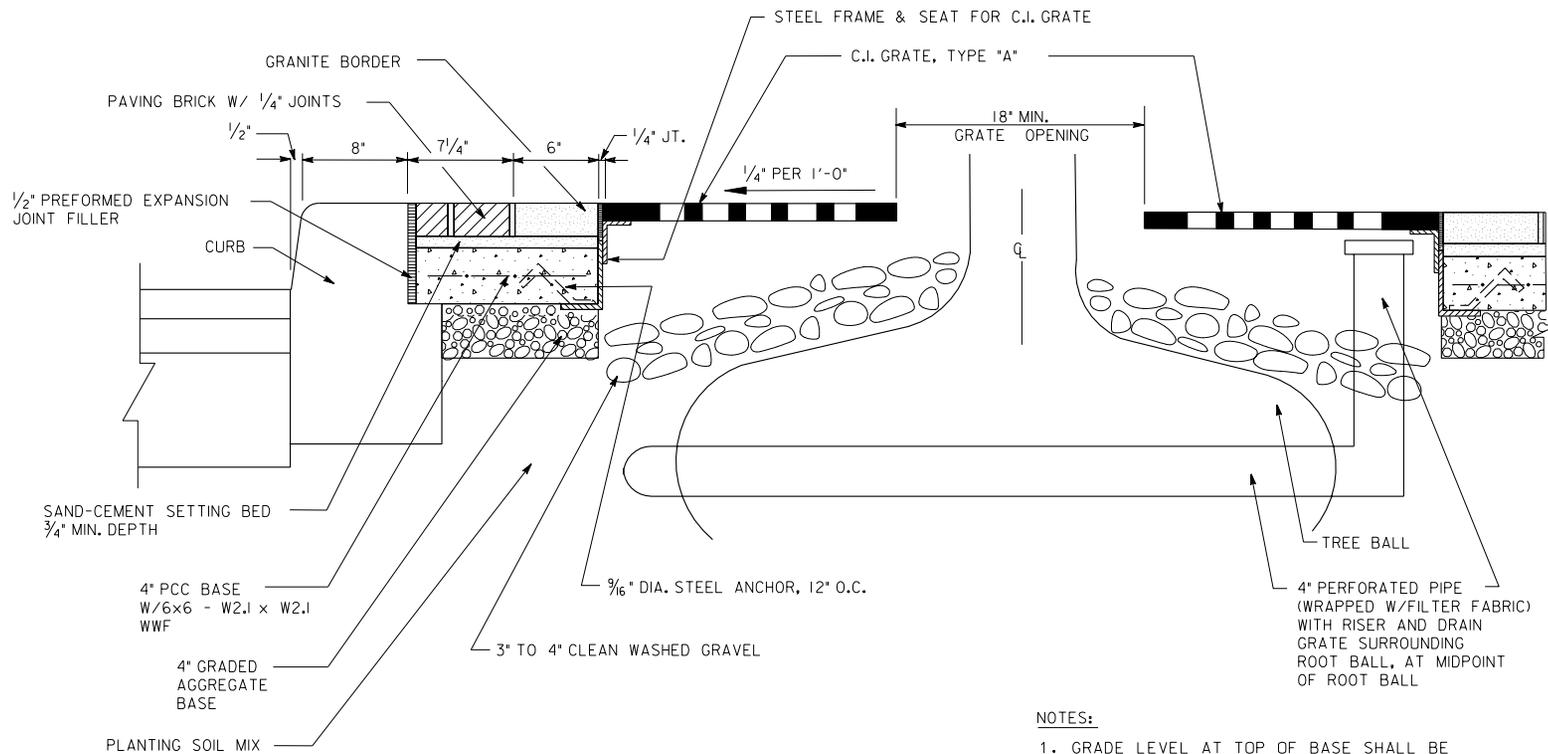
TYPE "A" AND "B" CAST IRON GRATE  
AND TYPICAL PAVING

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.01







**NOTES:**

1. GRADE LEVEL AT TOP OF BASE SHALL BE CONSIDERED GRADE LINE FOR PURPOSE OF TREE PLANTING.
2. THIS DETAIL IS TO BE USED IN HISTORIC DISTRICTS.

**SECTION 3-3**

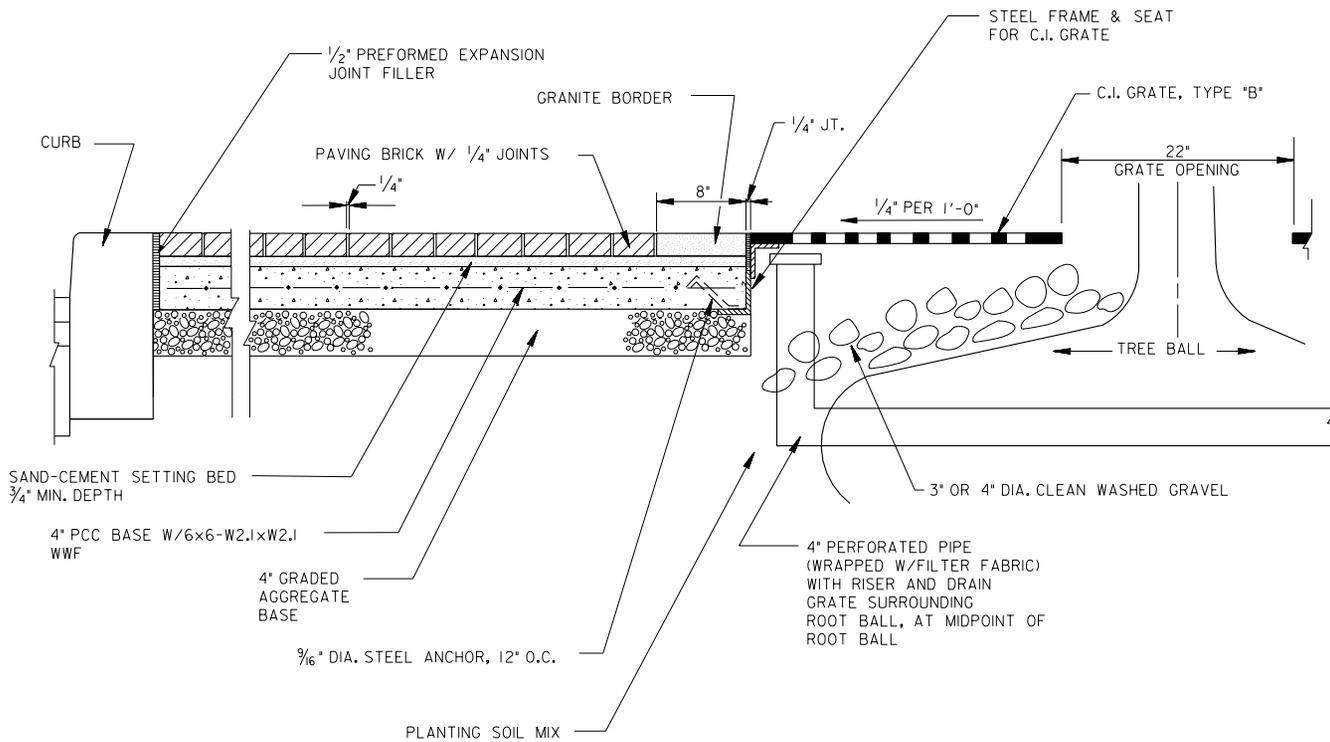
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**TYPE "A" TREE WELL  
TYPICAL SECTION**

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.04



SECTION 4-4

NOTES:

1. GRADE LEVEL AT TOP OF BASE SLAB SHALL BE CONSIDERED GRADE LINE FOR PURPOSE OF TREE PLANTING.
2. THIS DETAIL IS TO BE USED IN HISTORIC DISTRICTS.

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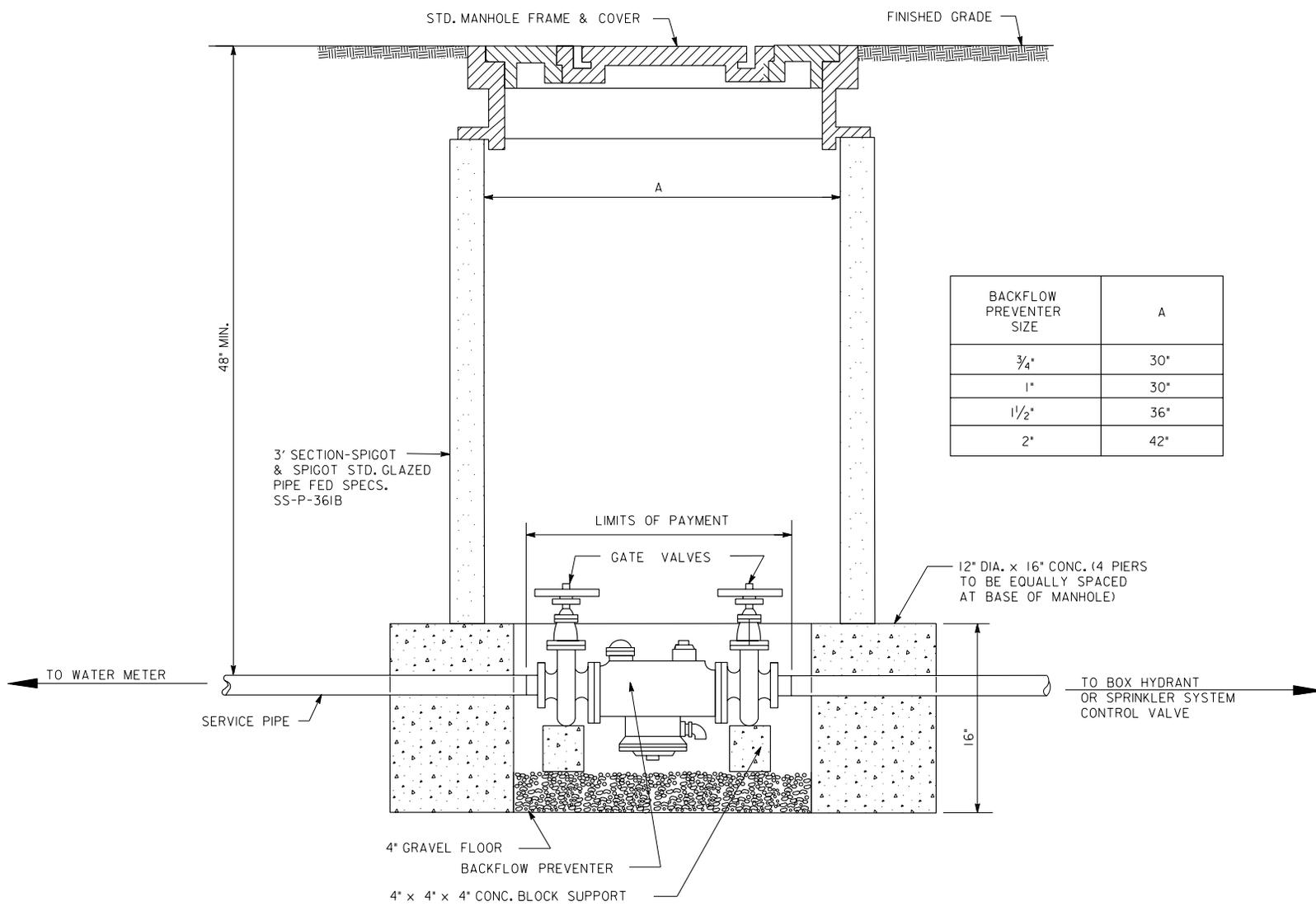
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REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

**TYPE "B" TREE WELL  
TYPICAL SECTION**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.05



BACK FLOW PREVENTER DETAIL

611.06 SEE ALSO: 611.06-1, 611.06-2, 611.06-3, 611.06-4, 611.06-5, 611.06-6, 611.06-7, 611.06-8, 611.06-9, 611.06-10, 611.06-11, 611.06-12, 611.06-13, 611.06-14, 611.06-15, 611.06-16, 611.06-17, 611.06-18, 611.06-19, 611.06-20, 611.06-21, 611.06-22, 611.06-23, 611.06-24, 611.06-25, 611.06-26, 611.06-27, 611.06-28, 611.06-29, 611.06-30, 611.06-31, 611.06-32, 611.06-33, 611.06-34, 611.06-35, 611.06-36, 611.06-37, 611.06-38, 611.06-39, 611.06-40, 611.06-41, 611.06-42, 611.06-43, 611.06-44, 611.06-45, 611.06-46, 611.06-47, 611.06-48, 611.06-49, 611.06-50, 611.06-51, 611.06-52, 611.06-53, 611.06-54, 611.06-55, 611.06-56, 611.06-57, 611.06-58, 611.06-59, 611.06-60, 611.06-61, 611.06-62, 611.06-63, 611.06-64, 611.06-65, 611.06-66, 611.06-67, 611.06-68, 611.06-69, 611.06-70, 611.06-71, 611.06-72, 611.06-73, 611.06-74, 611.06-75, 611.06-76, 611.06-77, 611.06-78, 611.06-79, 611.06-80, 611.06-81, 611.06-82, 611.06-83, 611.06-84, 611.06-85, 611.06-86, 611.06-87, 611.06-88, 611.06-89, 611.06-90, 611.06-91, 611.06-92, 611.06-93, 611.06-94, 611.06-95, 611.06-96, 611.06-97, 611.06-98, 611.06-99, 611.06-100.

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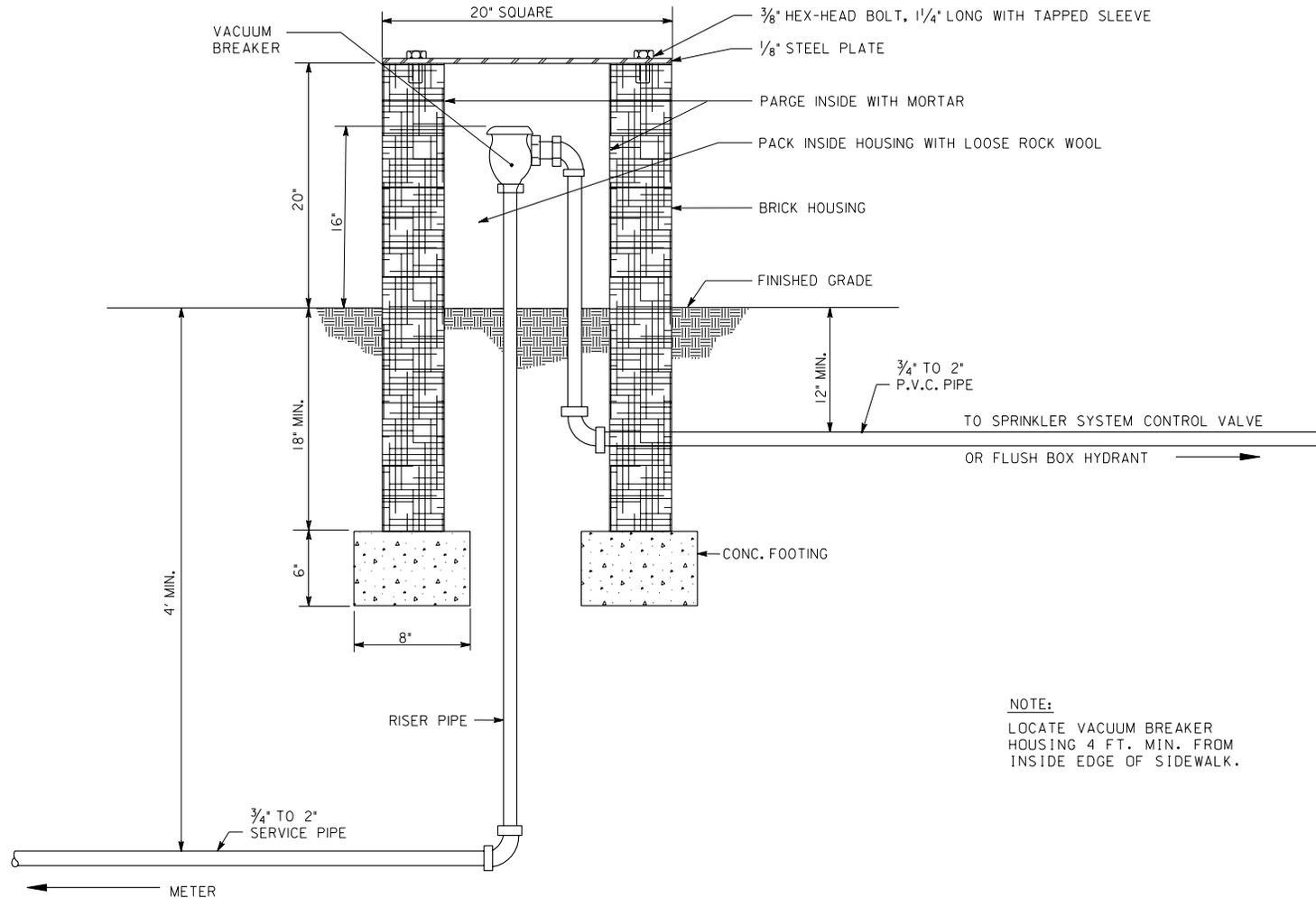
RECOMMENDED: *[Signature]*  
 DEPUTY CHIEF ENGINEER

APPROVED: *[Signature]*  
 CHIEF TRANSPORTATION ENGINEER

**IRRIGATION SYSTEM  
 BACK FLOW PREVENTER**

**d.** DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.06



NOTE:  
 LOCATE VACUUM BREAKER  
 HOUSING 4 FT. MIN. FROM  
 INSIDE EDGE OF SIDEWALK.

VACUUM BREAKER WITH BRICK HOUSING DETAIL

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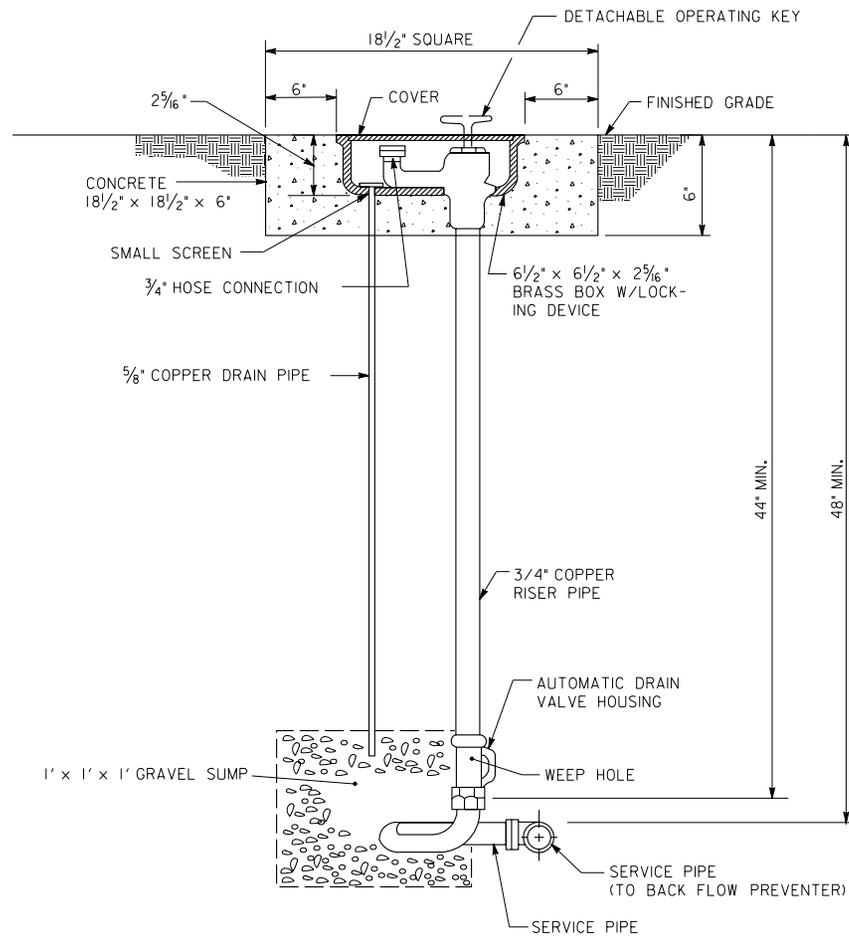
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**IRRIGATION SYSTEM  
 VACUUM BREAKER WITH  
 BRICK HOUSING**

**d.**

DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.07



FLUSH NON-FREEZE BOX HYDRANT DETAIL

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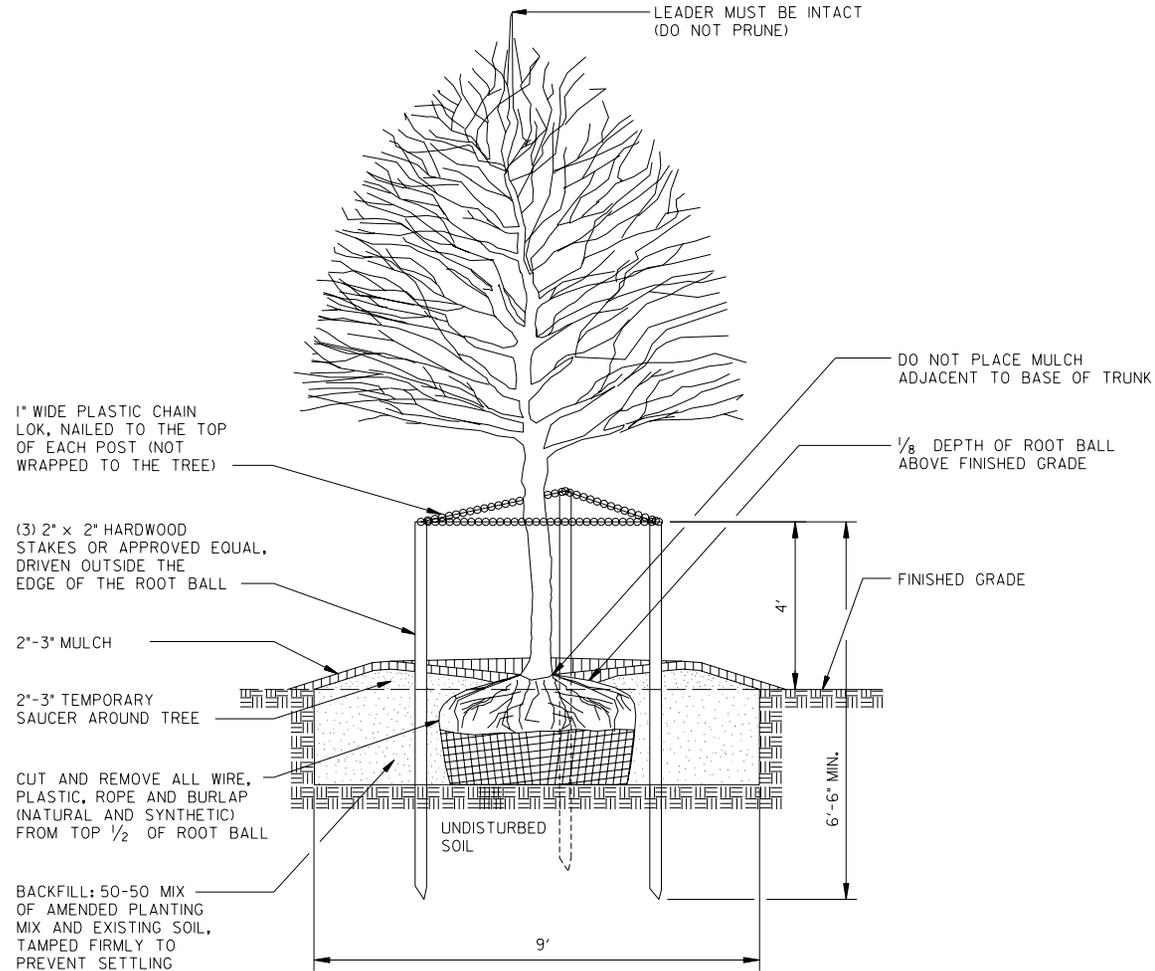
**IRRIGATION SYSTEM**  
**FLUSH NON-FREEZE BOX HYDRANT**

**d.**

DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.08





DECIDUOUS TREE PLANTING W/ STAKES  
(TREES 3 IN. CALIPER OR LESS)

TREE STAKING NOTES:

- 1. ALL STAKING MATERIALS TO BE REMOVED AT THE END OF THE PLANT ESTABLISHMENT PERIOD.

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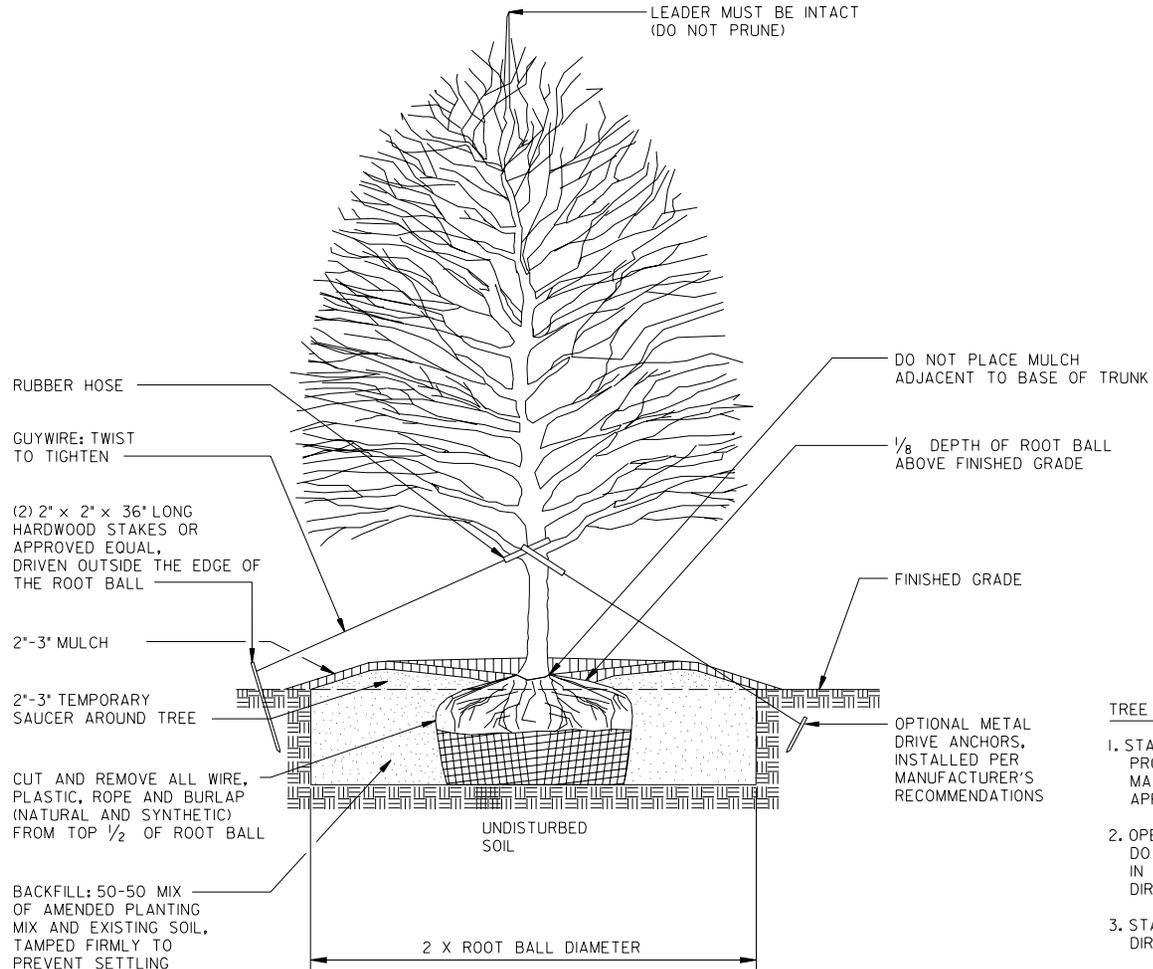
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DATE	APPR.		APPROVED: <i>Kenneth Perry</i>
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

STANDARD PLANTING DETAILS  
TREES - 1

d.

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.10



**DECIDUOUS TREE PLANTING W/ STAKES**

(TREES LARGER THAN 3 IN. CALIPER)

**TREE STAKING NOTES:**

1. STAKING MATERIALS AND PROCEDURES PER DRAWING 611.10 MAY BE USED IF RECOMMENDED AND APPROVED BY THE ENGINEER.
2. OPEN AREAS, SUCH AS PARKS, DO NOT REQUIRE STAKING UNLESS IN A HIGH WIND AREA OR AS DIRECTED BY THE ENGINEER.
3. STAKES SHALL BE ALIGNED IN THE DIRECTION OF THE PREVAILING WIND.
4. PLACE 2 GUYS PER TREE.
5. ALL STAKING MATERIALS TO BE REMOVED AT THE END OF THE PLANT ESTABLISHMENT PERIOD.
6. GUYWIRE SHALL ONLY BE TIGHTENED TO PREVENT SLIPPING. ALLOW FOR TRUNK MOVEMENT.
7. PROVIDE TURNBUCKLES FOR TREES OVER 6" CALIPER.

METALLIC GROUND ANCHOR SCHEDULE	
TREE CAL.	ANCHOR SIZE
3" - 6"	4"
6" - 8"	6"
8" - 10"	8"
10" - 12"	10"

BURIAL DEPTH OF ANCHOR IS 30" MIN.

611.11E, Use as intended. No changes. Final UNCHANGED 01-11-2009  
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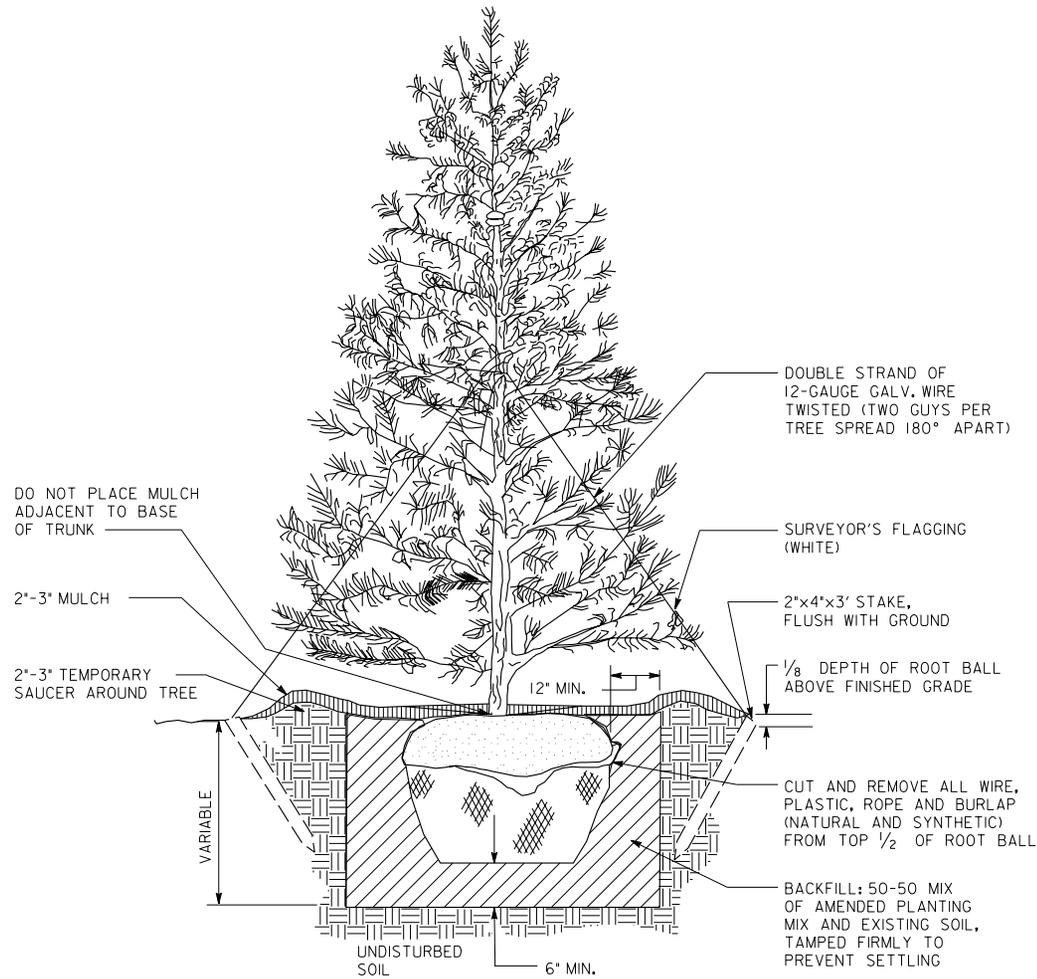
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**STANDARD PLANTING DETAILS  
TREES - 2**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.11



PLANTING AND GUYING DETAILS  
(FOR EVERGREEN TREES 6' TO 12' IN HEIGHT)

TREE STAKING NOTES:

1. OPEN AREAS, SUCH AS PARKS, DO NOT REQUIRE STAKING UNLESS IN A HIGH WIND AREA OR AS DIRECTED BY THE ENGINEER.
2. STAKES SHALL BE ALIGNED IN THE DIRECTION OF THE PREVAILING WIND.
3. PLACE 2 GUYS PER TREE.
4. ALL STAKING MATERIALS TO BE REMOVED AT THE END OF THE PLANT ESTABLISHMENT PERIOD.
5. PLANTING AND STAKING DETAILS FOR EVERGREEN TREE UNDER 6' SHALL BE PER DWG. 611.I0.
6. PLANTING AND STAKING DETAILS FOR EVERGREEN TREES OVER 12' SHALL BE PER DWG. 611.I1.

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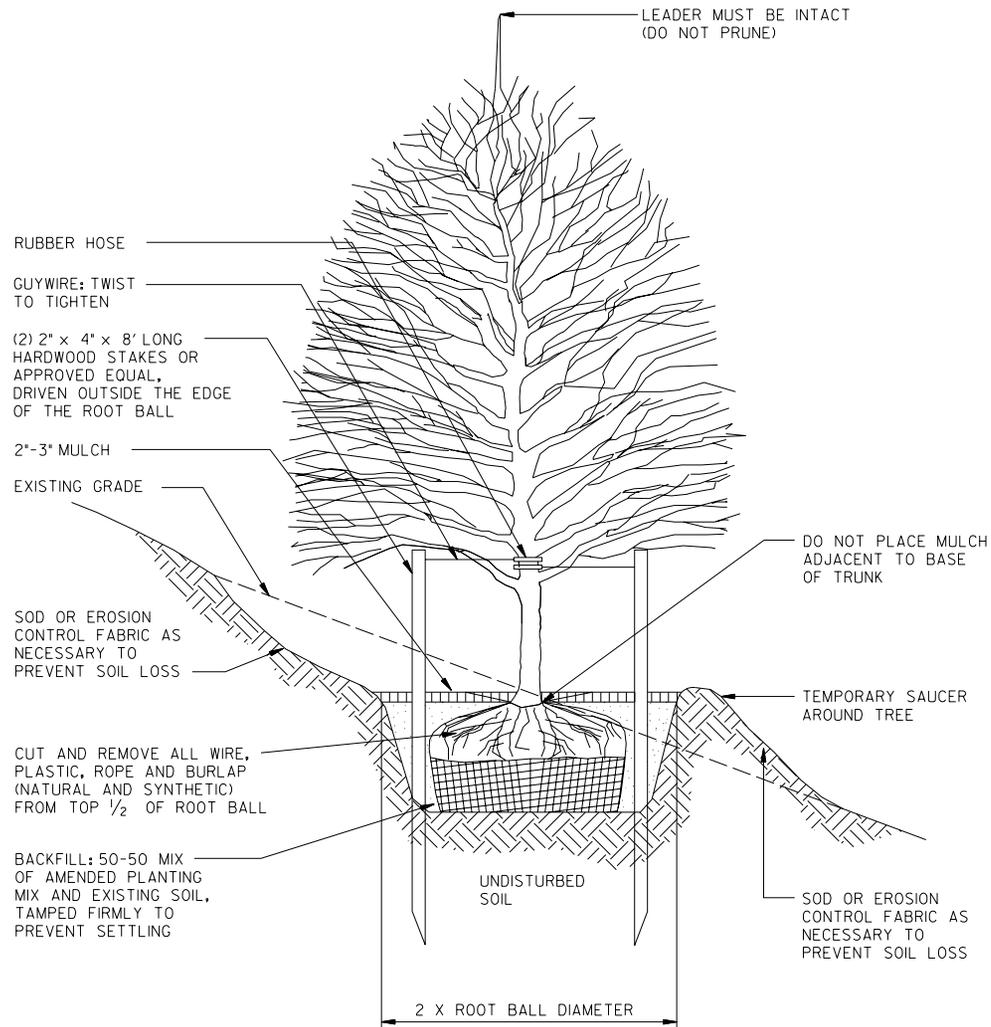
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**STANDARD PLANTING DETAILS  
TREES - 3**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.12



TREE PLANTING ALONG SLOPE

**TREE STAKING NOTES:**

1. OPEN AREAS, SUCH AS PARKS, DO NOT REQUIRE STAKING UNLESS IN A HIGH WIND AREA OR AS DIRECTED BY THE ENGINEER.
2. STAKES SHALL BE ALIGNED IN THE DIRECTION OF THE PREVAILING WIND.
3. PLACE 2 GUYS PER TREE.
4. ALL STAKING MATERIALS TO BE REMOVED AT THE END OF THE PLANT ESTABLISHMENT PERIOD.
5. GUYWIRE SHALL ONLY BE TIGHTENED TO PREVENT SLIPPING. ALLOW FOR TRUNK MOVEMENT.
6. PROVIDE TURNBUCKLES FOR TREES OVER 6" CALIPER.

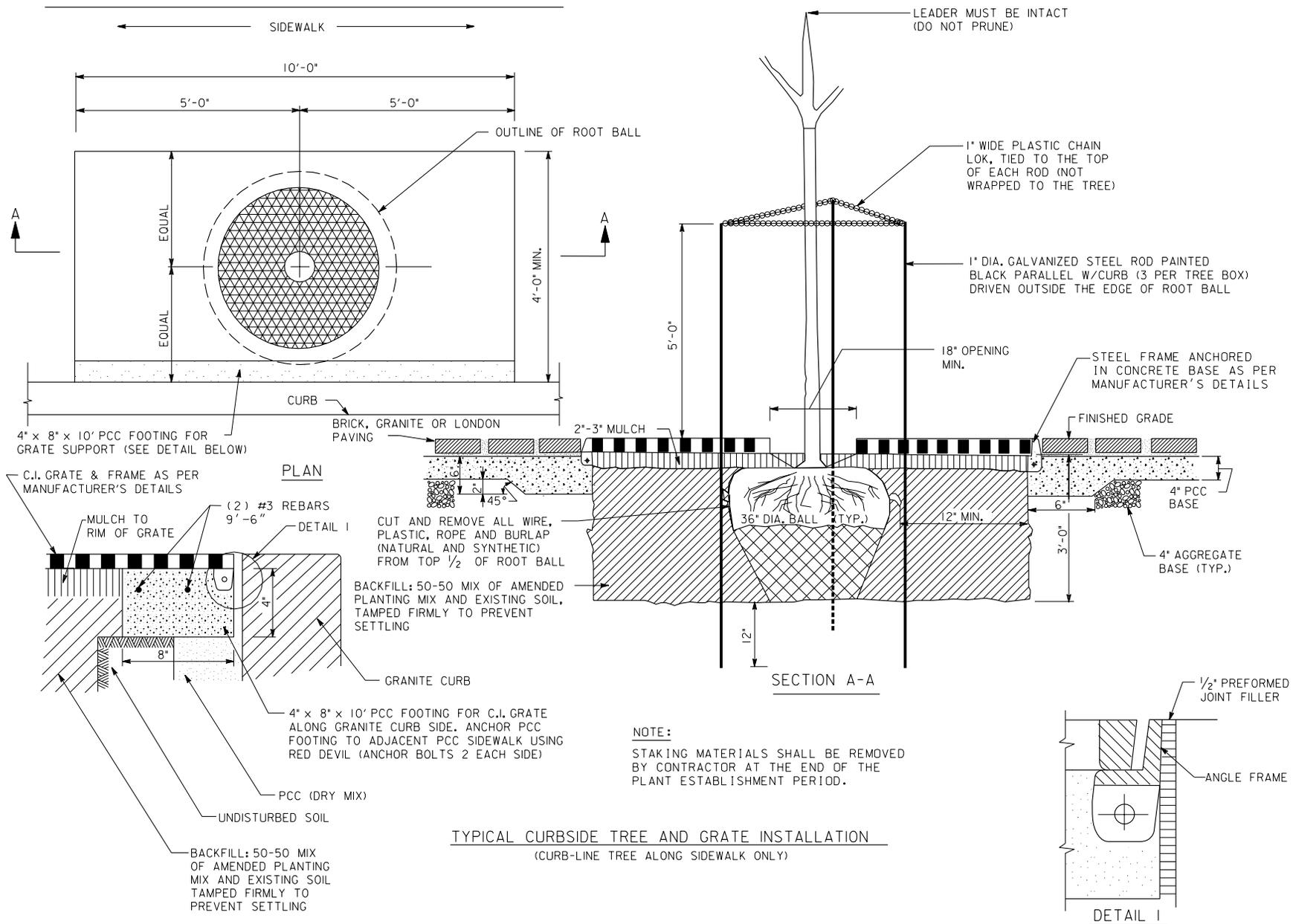
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 P:\031516.dwg - standard tree planting Final UNCHANGED 01-13-09  
 P:\031516.dwg - standard tree planting Final UNCHANGED 01-13-09

			RECOMMENDED: <i>[Signature]</i> DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

**STANDARD PLANTING DETAILS  
TREES - 4**

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.13



TYPICAL CURBSIDE TREE AND GRATE INSTALLATION  
(CURB-LINE TREE ALONG SIDEWALK ONLY)

NOTE:  
STAKING MATERIALS SHALL BE REMOVED  
BY CONTRACTOR AT THE END OF THE  
PLANT ESTABLISHMENT PERIOD.

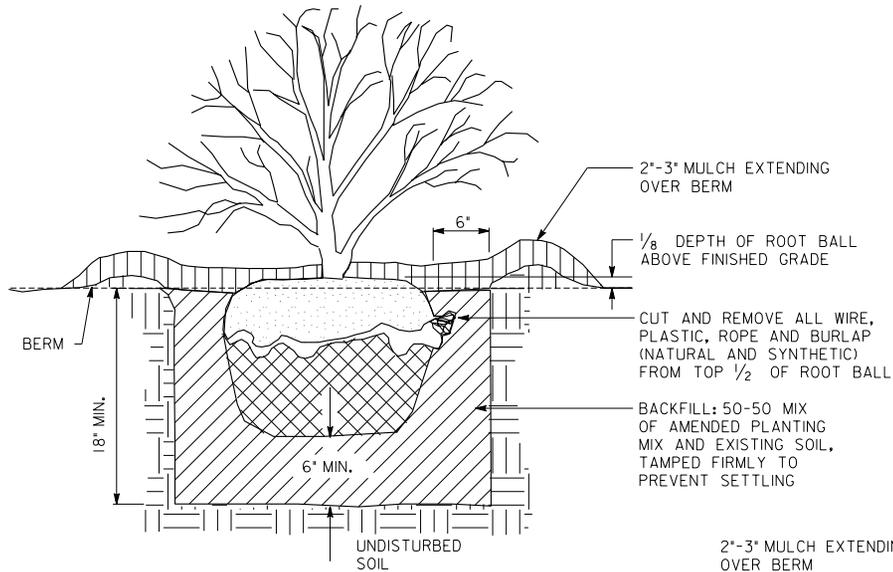
6/14/03 E:\cadd\std\std-5.dwg, 2/14/03, 11:40 AM, Final UNCHANGED (6/14/03)  
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DATE	APPR.	RECOMMENDED:
REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

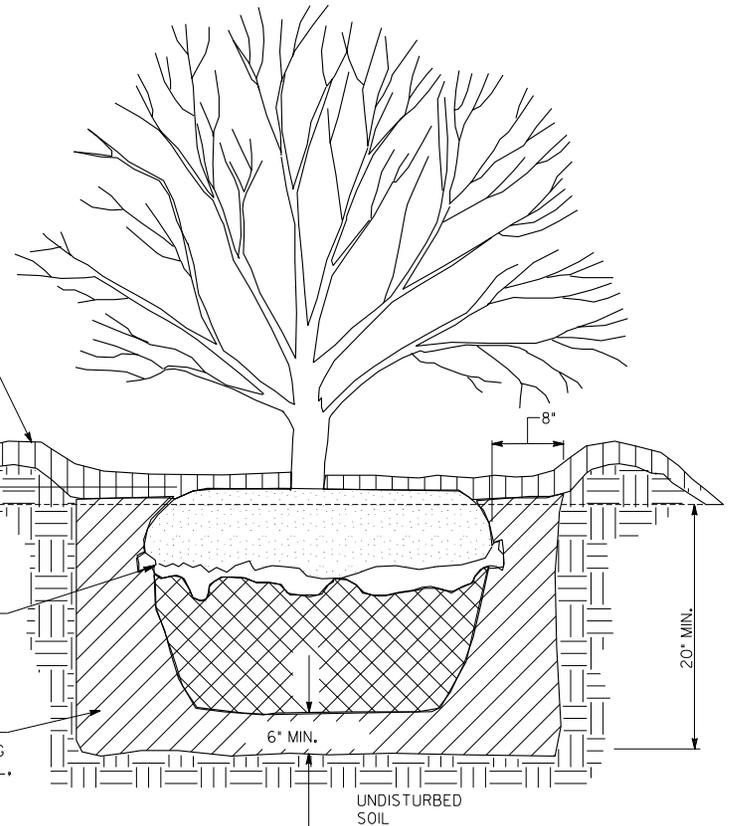
STANDARD PLANTING DETAILS  
TREES - 5

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

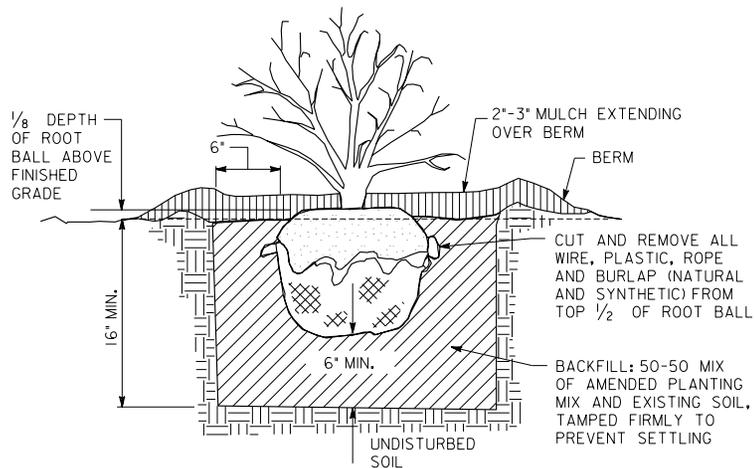
DWG. NO. 611.14



FOR SHRUBS 2' TO 4' IN HEIGHT



FOR SHRUBS 4' IN HEIGHT AND OVER



FOR SHRUBS UNDER 2' IN HEIGHT

611.15E.dwg - standard planting details - final (UNCHANGED) 6/15/08  
 P:\611.15.dwg - standard planting details - final (UNCHANGED) 6/15/08 AT 12:19 PM

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REVISED		DEPUTY CHIEF ENGINEER
ISSUED:		APPROVED:
REFERENCE		CHIEF TRANSPORTATION ENGINEER

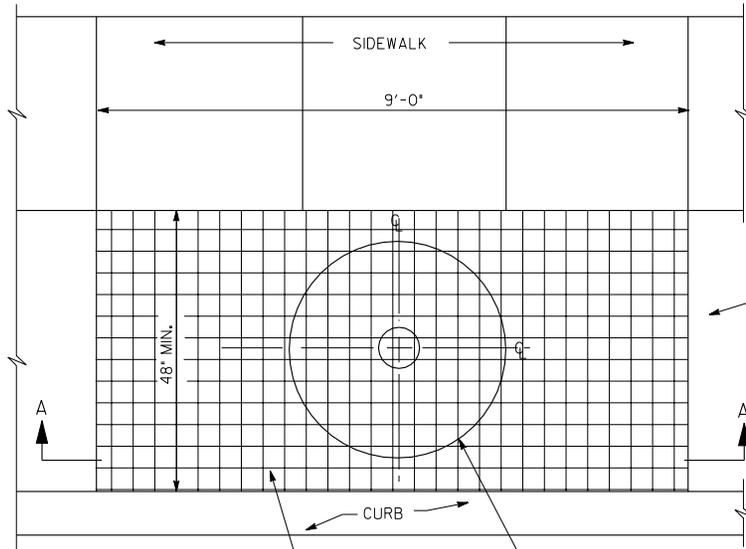
## STANDARD PLANTING DETAILS SHRUBS

d.

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

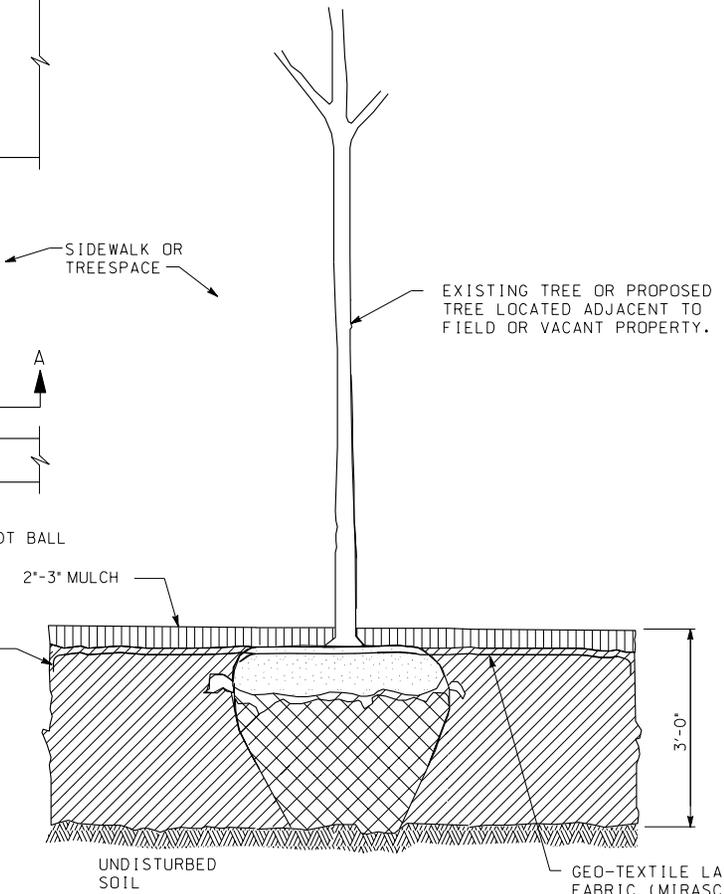
DWG. NO. 611.15





LANDSCAPE FABRIC COVERED WITH 2"-3" DEPTH OF MULCH SEE NOTE 1.

PLAN

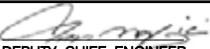


SECTION A-A

NOTE:

1. LANDSCAPE FABRIC IS NOT RECOMMENDED AND SHOULD BE USED/APPROVED BY THE ENGINEER ONLY UNDER SPECIAL CIRCUMSTANCES.

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 P:\031516.dwg - 04/16/2009 2:49:13 PM - Final UNCHANGED @ 11:11 AM

			RECOMMENDED: 
			DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: 
REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:			
	REFERENCE		

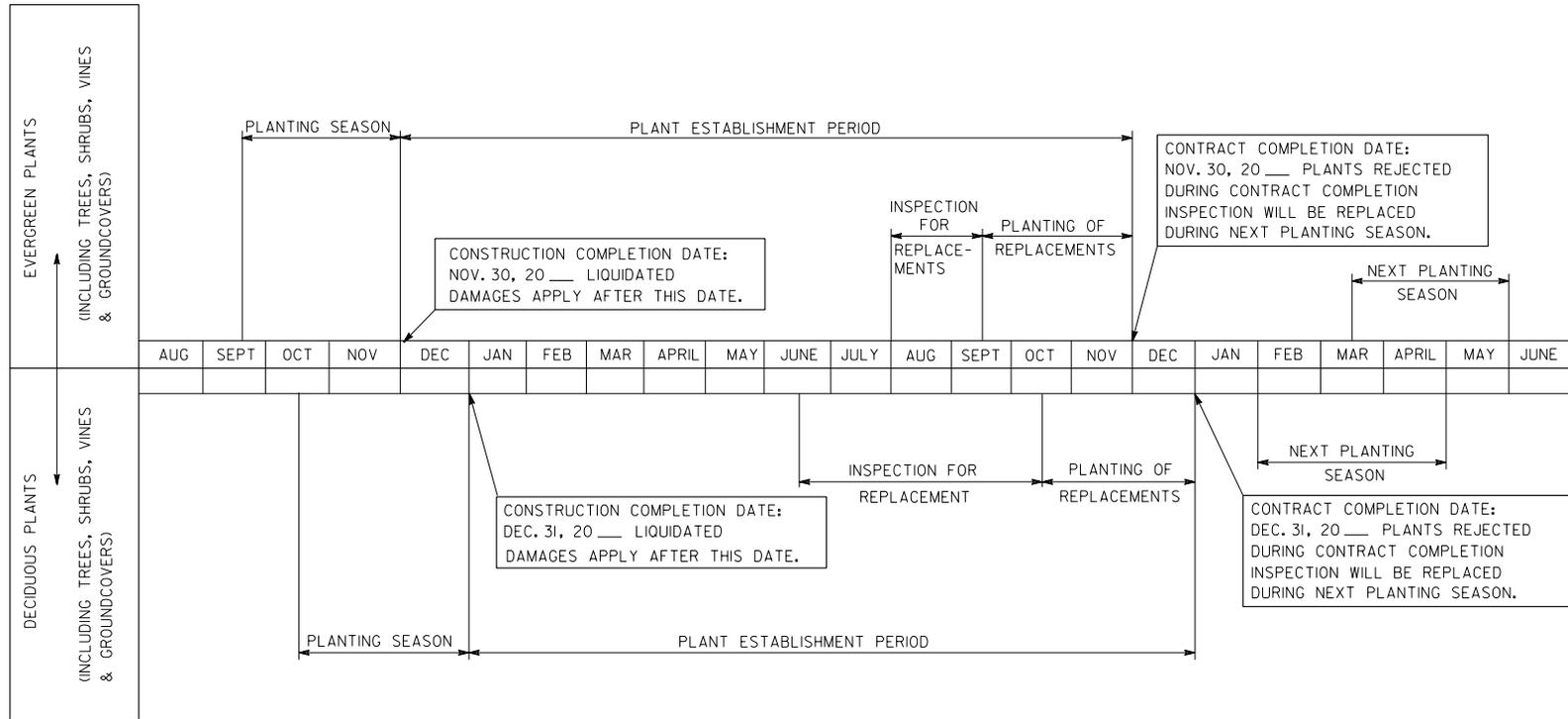
## LANDSCAPE FABRIC DETAILS

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 611.17





**NOTE:**  
I. FOR DURATION OF CONTRACTOR'S LIABILITY, SEE DDOT STANDARD SPECIFICATION, 611.02.

P:\031515.dwg - 04/11/2005 11:00 AM - Final UNCHANGED @ 11:00 AM  
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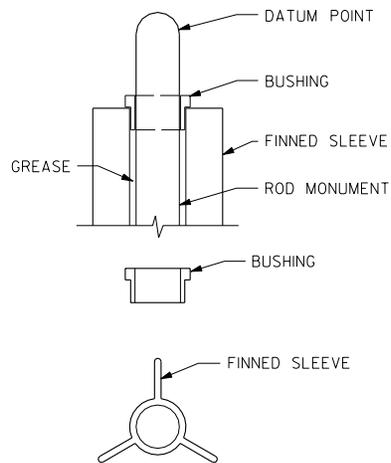
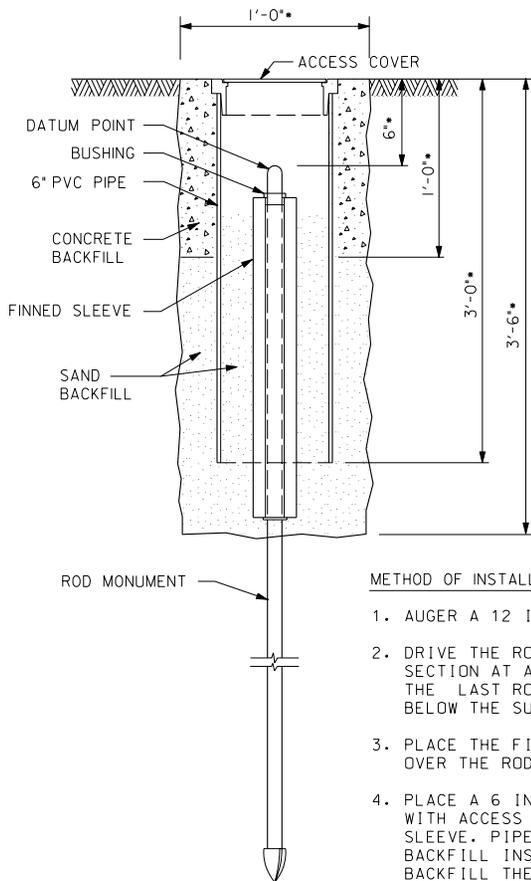
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REVISED		APPROVED:	<i>[Signature]</i> CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

**PLANTING & PLANT  
ESTABLISHMENT PERIODS  
FALL PLANTING SEASON**

**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

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DWG. NO. **611.19**



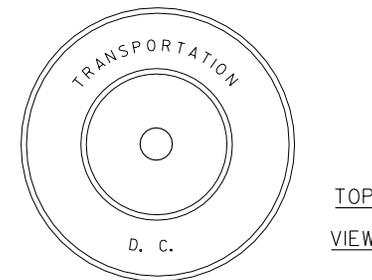
METHOD OF INSTALLATION:

1. AUGER A 12 INCH HOLE TO A DEPTH ABOUT 3 1/2 FEET.
2. DRIVE THE ROD MONUMENT INTO THE GROUND, A SECTION AT A TIME, TO REFUSAL. THE TOP OF THE LAST ROD SHOULD BE ABOUT 6 INCHES BELOW THE SURFACE.
3. PLACE THE FINNED SLEEVE (FILLED WITH GREASE) OVER THE ROD AND ADD A DATUM POINT.
4. PLACE A 6 INCH DIAMETER PVC PIPE 3 FEET LONG, WITH ACCESS COVER GLUED ON, OVER THE FINNED SLEEVE. PIPE SHOULD NOT TOUCH THE FINNS. BACKFILL INSIDE THE PVC PIPE WITH SAND. BACKFILL THE HOLE WITH SAND. BACKFILL THE TOP 12 INCHES OF THE HOLE WITH CONCRETE.

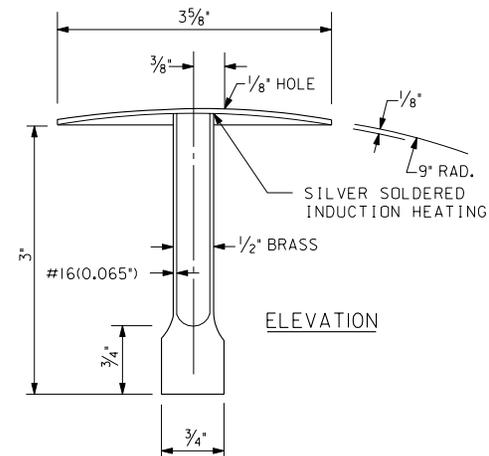
MATERIALS:

MATERIALS SHALL BE BERNTSEN SURVEY MONUMENTS OR APPROVED EQUAL.

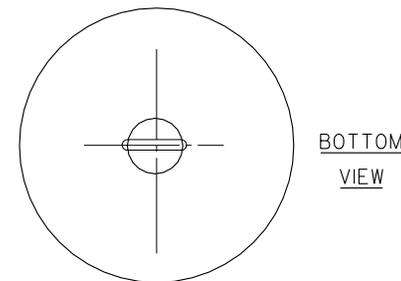
FIRST ORDER BENCHMARK



TOP VIEW



ELEVATION



BOTTOM VIEW

REFERENCE MARK

61337E.dwg: 4/14/2005 2:49:13 PM: Final UNCHANGED: 613-01.DWG  
 P1: 03/03/2005 AT 09:19 PM

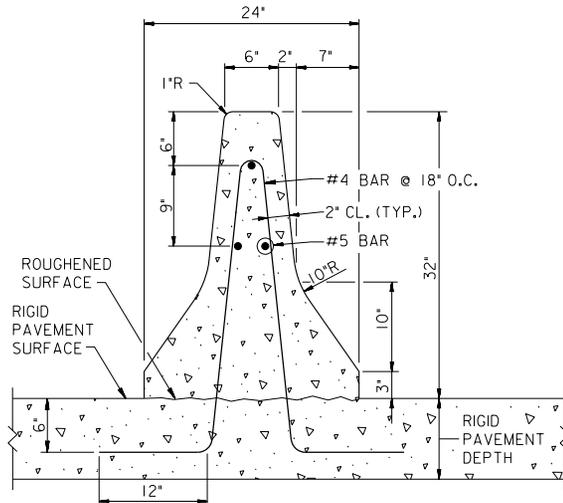
			RECOMMENDED: <i>[Signature]</i> DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			
ISSUED:			
	REFERENCE		CHIEF TRANSPORTATION ENGINEER

**PERMANENT BENCHMARK AND  
REFERENCE MARK**

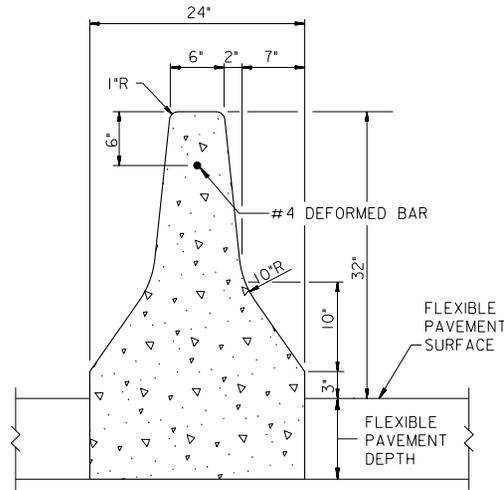
**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 613.01

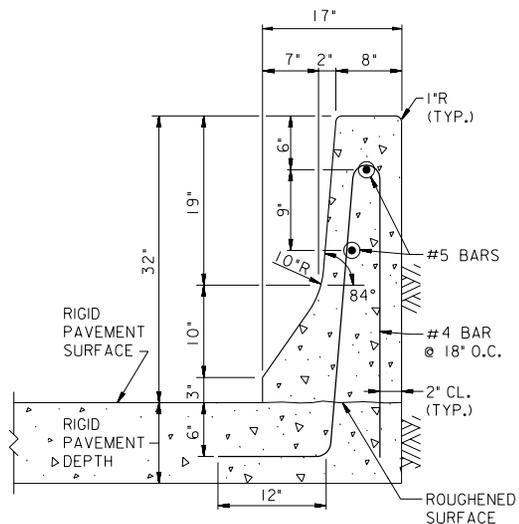




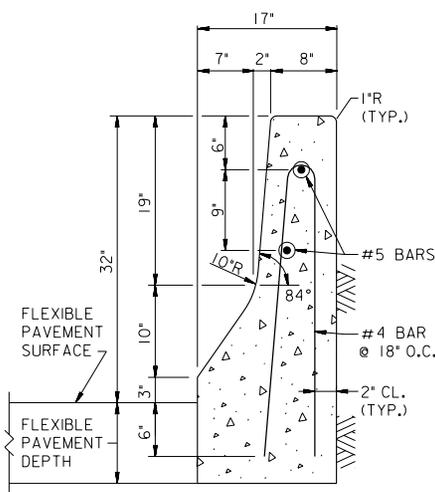
TYPICAL NEW JERSEY-SHAPE  
(DOUBLE FACE ROADWAY BARRIER - RIGID PAVEMENT)



TYPICAL NEW JERSEY-SHAPE  
(DOUBLE FACE ROADWAY BARRIER - FLEXIBLE PAVEMENT)



TYPICAL NEW JERSEY-SHAPE  
(SINGLE FACE ROADWAY BARRIER - RIGID PAVEMENT)



TYPICAL NEW JERSEY-SHAPE  
(SINGLE FACE ROADWAY BARRIER - FLEXIBLE PAVEMENT)

NOTES:

1. TYPE AND LOCATION OF CONSTRUCTION JOINTS SHALL MATCH THE PAVEMENT JOINTS.
2. CONTRACTION JOINTS SHALL BE FORMED AS PLANES OF WEAKNESS AS SPECIFIED IN THE STANDARD SPECIFICATIONS, SECTION 501.14.
3. EXPANSION JOINTS SHALL BE OF PREFORMED JOINT MATERIAL MEETING THE REQUIREMENTS OF AASHTO, M-153, TYPE II. JOINT MATERIAL SHALL BE 1/2 IN. THICK UNLESS OTHERWISE SPECIFIED AND SHALL BE RECESSED 1/2 IN. FROM THE FACES AND TOP OF THE BARRIER.
4. WHEN THE PCC PAVEMENT JOINTS ON EACH SIDE OF THE BARRIER DO NOT ALIGN TRANSVERSELY, THE JOINT PATTERN ON THE BARRIER SHALL ALIGN WITH PAVEMENT PATTERN ON ONE SIDE. THE PAVEMENT JOINTS ON THE OTHER SIDE OF THE BARRIER SHALL NOT CARRY THROUGH THE BARRIER.
5. WHEN CONSTRUCTED WITH FLEXIBLE PAVEMENT, THE BARRIER SHALL HAVE PLANE OF WEAKNESS JOINTS 15'-0" ON CENTERS AND EXPANSION JOINTS 45'-0" ON CENTERS.
6. CONCRETE SHALL BE CLASS B.
7. SINGLE FACE BARRIER MAY HAVE A SOIL OR WALL BACKUP. SEE CONTRACT DOCUMENTS.
8. SIMILAR DETAIL MAY BE USED WHEN ADDING BARRIER TO AN EXISTING RIGID PAVEMENT ROADWAY.
9. THE USE OF PCC BARRIERS AS A PARAPET WALL OR OTHER SIMILAR STRUCTURE(S) AND ITS DESIGN AND REINFORCEMENT SHALL BE AS PER THE CONTRACT DOCUMENTS.

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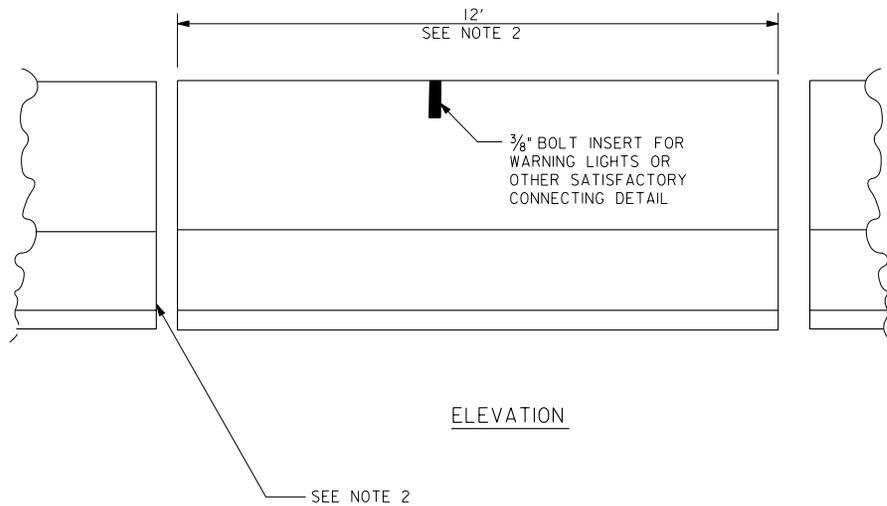
			RECOMMENDED:	<i>Chambers</i>
				DEPUTY CHIEF ENGINEER
			APPROVED:	<i>Kenneth Perry</i>
				CHIEF TRANSPORTATION ENGINEER
DATE	APPR.			
REVISED				
ISSUED:				
		REFERENCE		

PERMANENT PCC BARRIER  
NEW JERSEY - SHAPE

d.

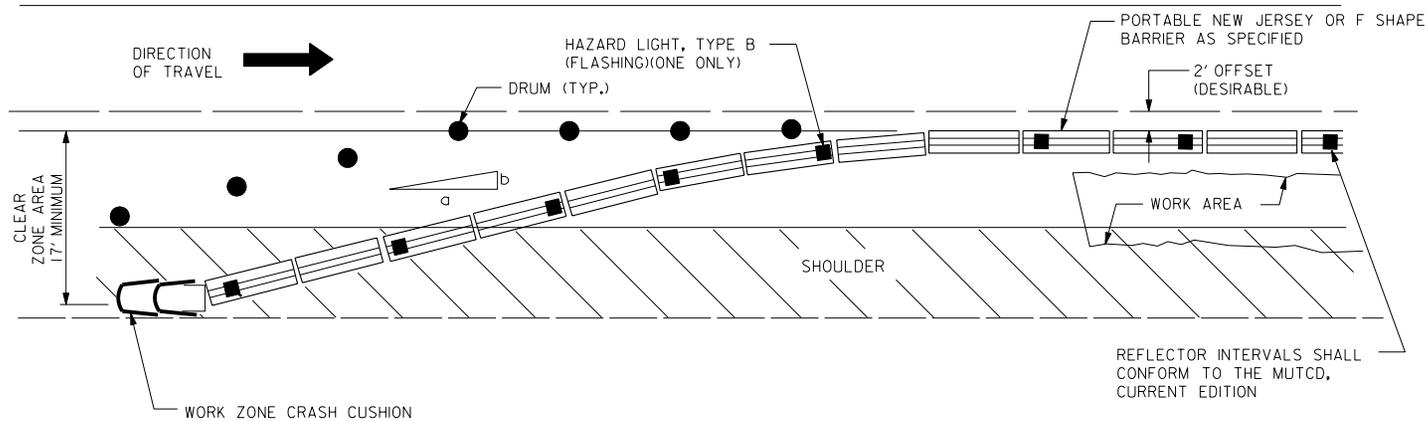
DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 614.02



**NOTES:**

1. THE SECTION SHALL BE THE NEW JERSEY OR F SHAPE.
2. THE UNIT LENGTH, REINFORCING, CONNECTION AND OTHER DETAILS VARY WITH MANUFACTURERS.
3. BARRIER TO BE USED MUST BE APPROVED BY DDOT PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL SUBMIT NCHRP REPORT 350, TL-3 CERTIFICATION.



TYPICAL INSTALLATION

MINIMUM BARRIER FLARE RATE, a:b

- 60 MPH = 13:1
- 50 MPH = 11:1
- 40 MPH = 9:1
- 30 MPH = 6:1

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DATE	APPR.	RECOMMENDED:
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REFERENCE		CHIEF TRANSPORTATION ENGINEER

**PRECAST TEMPORARY CONCRETE  
BARRIER FOR TRAFFIC  
MAINTENANCE DURING  
CONSTRUCTION**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 614.03





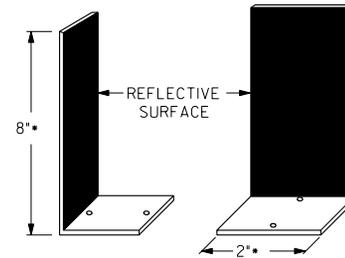




**REFLECTOR BODY**

THE REFLECTOR SHALL BE MADE OF A HIGH IMPACT, WEATHERABLE, ENGINEERING THERMO-PLASTIC MATERIAL WHICH CONFORMS TO THE FOLLOWING:

PROPERTY	RESULT	METHOD ASTM TEST
THICKNESS (MIN.)	0,90"	-
TENSILE STRENGTH (MIN)	5,500	D638
IMPACT STRENGTH @ 20°F (FT-LBS/IN AT NOTCH)	3.2	D256 METHOD A
IMPACT STRENGTH @73°F (FT-LBS/IN AT NOTCH)	140	D256 METHOD A
FLEXURAL STRENGTH PSI @ 73°F	8,000	D790
FLEXURAL MODULUS PSI @ 73°F	300,000	D790
ELONGATION @ YIELD	30%	D638

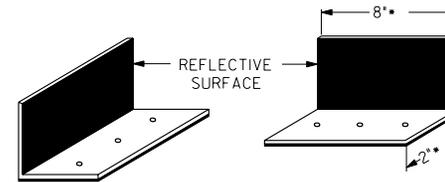


AMBER OR WHITE 1-WAY, REFLECTIVE SHEETING ON SURFACE

**REFLECTIVE SURFACE**

THE REFLECTOR SHALL BE A RETRO-REFLECTIVE ACRYLIC MICROPRISM MATERIAL WITH ACRYLIC BACKING, WITH A MINIMUM AREA OF 16 SQ. IN. PROVIDING THE FOLLOWING MINIMUM OPTICAL PERFORMANCE WITH AN OBSERVATION ANGLE OF 0.1° MEASURE IN CANDLEPOWER:

ENTRANCE ANGLE	SPECIFIC INTENSITY
AMBER 4°	75
AMBER 30°	36
WHITE 4°	125
WHITE 30°	55



CONCRETE BARRIER REFLECTOR

**INSTALLATION**

THE REFLECTOR SHALL BE MOUNTED TO THE TOP OF THE CONCRETE BARRIER AS SPECIFIED BY THE MANUFACTURER.

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DATE	APPR.		APPROVED: <i>[Signature]</i>
	REVISED		
ISSUED:			CHIEF TRANSPORTATION ENGINEER
	REFERENCE		

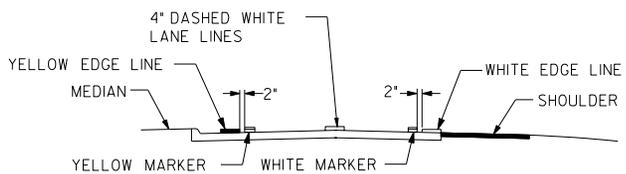
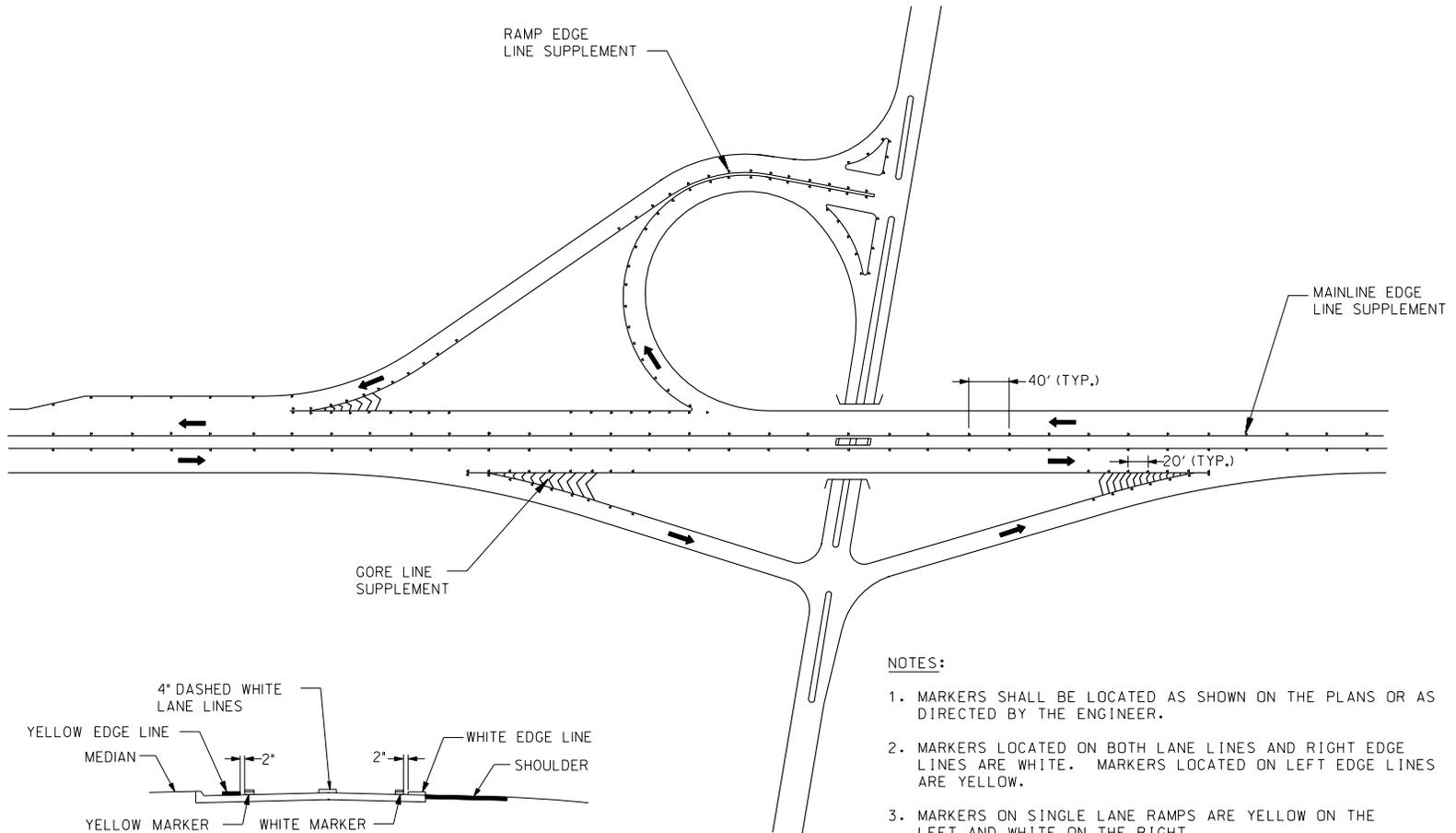
**CONCRETE BARRIER REFLECTORS SPECIFICATIONS**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 614.08





TYPICAL ROADWAY SECTION SHOWING  
LOCATION OF RAISED MARKERS

**NOTES:**

1. MARKERS SHALL BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. MARKERS LOCATED ON BOTH LANE LINES AND RIGHT EDGE LINES ARE WHITE. MARKERS LOCATED ON LEFT EDGE LINES ARE YELLOW.
3. MARKERS ON SINGLE LANE RAMPS ARE YELLOW ON THE LEFT AND WHITE ON THE RIGHT.
4. WHITE MARKERS ON DASHED LINES SHALL BE CENTERED BETWEEN LINE SEGMENTS AND SPACED ACCORDING TO THE MUTCD SECTIONS 3A.06G, 3B.13 AND 3B.14.
5. RAISED REFLECTIVE PAVEMENT MARKERS MAY BE RECESSED IN PAVEMENT OR SURFACE MOUNTED AS SPECIFIED ON THE PLANS.
6. FOR DETAILS OF RECESSED RAISED REFLECTIVE MARKER, SEE DRAWING NO. 616.02.

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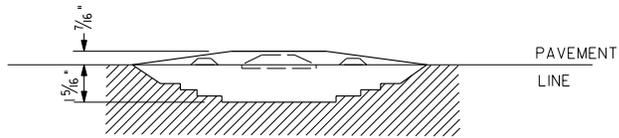
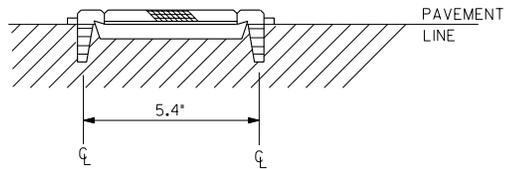
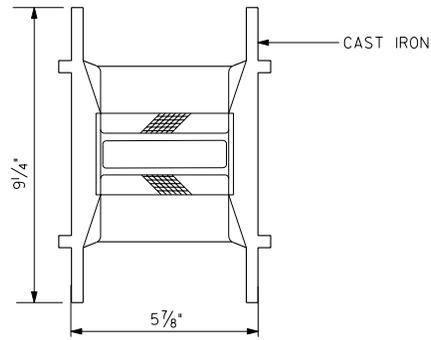
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DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			
ISSUED:			CHIEF TRANSPORTATION ENGINEER
		REFERENCE	

**RAISED REFLECTIVE PAVEMENT MARKERS  
TYPICAL LOCATION**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

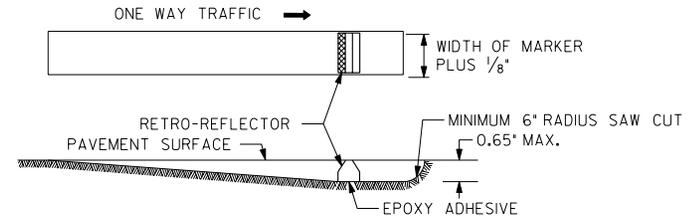
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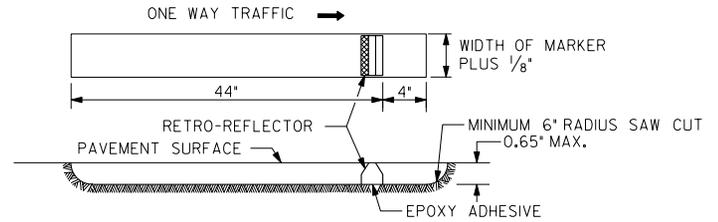
TYPICAL RECESSED RAISED REFLECTIVE PAVEMENT MARKERS

NOTES:

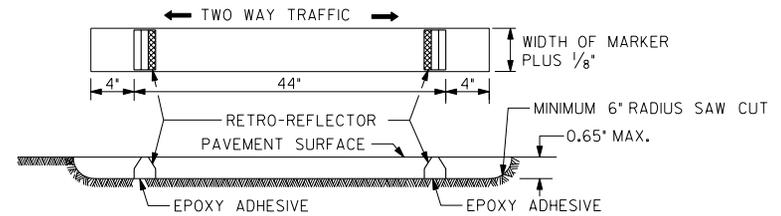
1. SURFACE MOUNT MARKERS ARE NORMALLY USED. RECESSED MARKERS MAY BE SPECIFIED IN CERTAIN ROADWAY AREAS WHERE CONSIDERATION FOR SNOW PLOWING CONDITIONS WARRANT.
2. SLOT IN PAVEMENT SURFACE FOR CAST IRON BODY IS TO BE PROVIDED BY GRINDING.



STANDARD METHOD - ONE WAY TRAFFIC



ALTERNATE METHOD - ONE WAY TRAFFIC



STANDARD METHOD - TWO WAY TRAFFIC

TYPICAL RECESSED RAISED PAVEMENT MARKER SLOT DETAILS

PA-0315 (Rev. 04/2005) - Final Unchecked 06-02-08  
 Filebox, April 03, 2005 AT 09:19 PM

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REFERENCE		CHIEF TRANSPORTATION ENGINEER

RECESSED RAISED  
REFLECTIVE PAVEMENT MARKERS

d.

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 616.02





