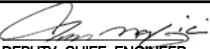




TYPE	H	A	B	C	D	E	REINFORCEMENT					F	G	J
							"d"	"b"	"c"	"d"	"e"			
I	22'-0" TO 20'-0"	2'-0"	5'-3"	5'-9"	13'-0"	2'-0"	9	9	6	10@12"	6@12"	1'-9"	8'-0"	3'-0"
	20'-0" TO 18'-0"	1'-9"	4'-9"	5'-0"	11'-6"	1'-9"	8	9	6	9@12"	6@12"	1'-9"	7'-6"	3'-0"
	18'-0" TO 16'-0"	1'-6"	4'-9"	4'-3"	10'-6"	1'-9"	8	8	6	8@12"	6@12"	1'-9"	6'-0"	3'-0"
II	16'-0" TO 14'-0"	1'-3"	4'-3"	4'-0"	9'-6"	1'-6"	7	8	-	8@12"	6@12"	1'-9"	5'-0"	-
	14'-0" TO 12'-0"	1'-3"	3'-9"	3'-6"	8'-6"	1'-6"	6	7	-	7@12"	6@12"	1'-9"	4'-6"	-
	12'-0" TO 10'-0"	1'-3"	3'-3"	3'-0"	7'-6"	1'-6"	7	-	-	6@12"	6@12"	1'-9"	-	-
	10'-0" TO 8'-0"	1'-3"	2'-9"	2'-6"	6'-6"	1'-3"	6	-	-	6@12"	6@12"	1'-9"	-	-
	8'-0" TO 6'-0"	1'-3"	2'-3"	2'-0"	5'-6"	1'-3"	6	-	-	6@12"	6@12"	1'-9"	-	-
	6'-0" OR LESS	1'-3"	1'-9"	1'-6"	4'-6"	1'-0"	6	-	-	6@12"	6@12"	1'-9"	-	-

TABLE OF WALL DATA

P:\031516.dwg - 04/16/2009 4:26:09 PM - 1' - 0" - UNCHANGED - 103-02.DWG  
 Friday, April 03, 2009 AT 04:24 PM

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

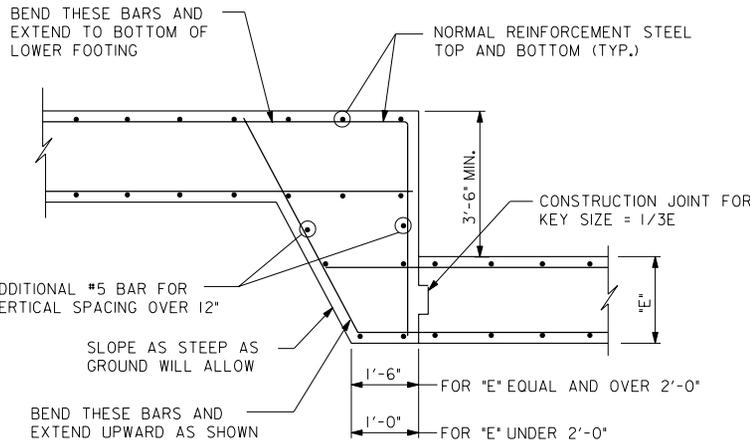
**REINFORCED CONCRETE  
 RETAINING WALL DATA  
 SPREAD FOOTINGS**

**d.**

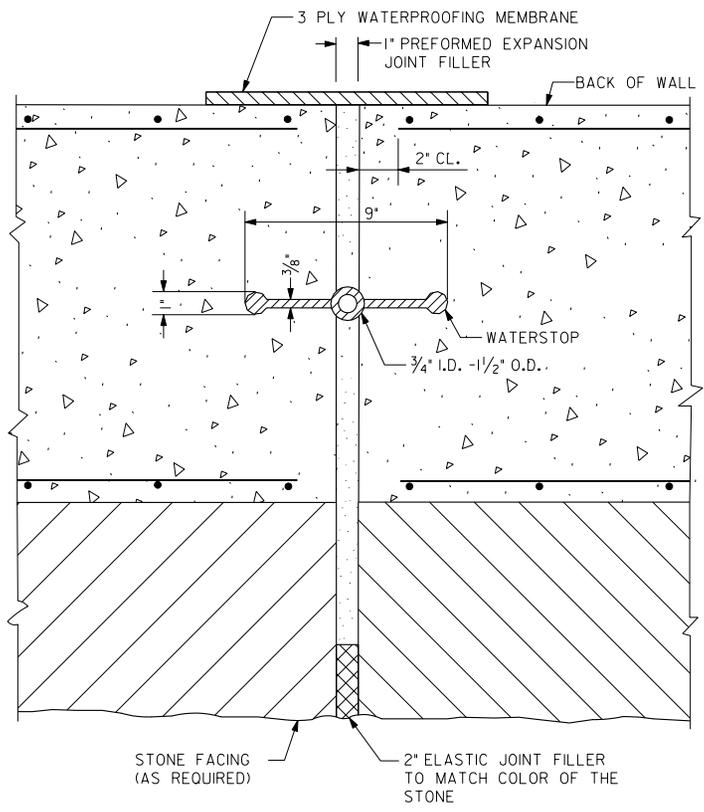
DISTRICT OF COLUMBIA  
 DEPARTMENT OF TRANSPORTATION

DWG. NO. 703.02





TYPICAL SECTION OF  
STEP IN WALL FOOTING



TYPICAL EXPANSION JOINT DETAIL

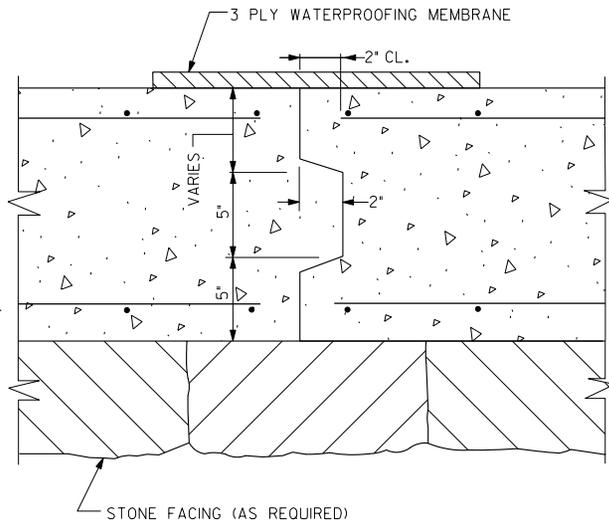
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			RECOMMENDED: <i>[Signature]</i> DEPUTY CHIEF ENGINEER
DATE	APPR.		APPROVED: <i>[Signature]</i>
REVISED			CHIEF TRANSPORTATION ENGINEER
ISSUED:		REFERENCE	

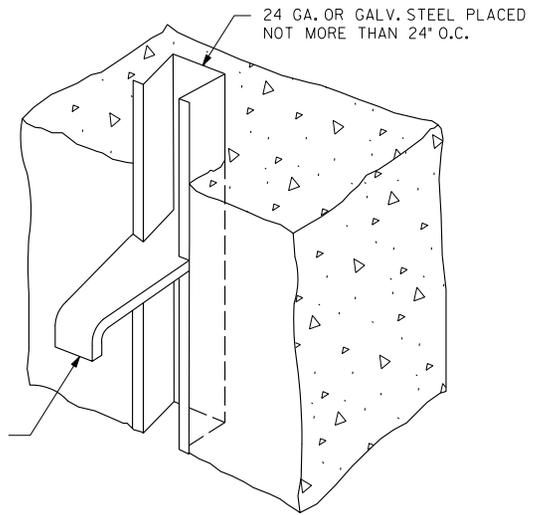
## REINFORCED CONCRETE RETAINING WALL DETAILS

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

DWG. NO. 703.04



TYPICAL VERTICAL  
CONTRACTION JOINT DETAIL



TYPICAL DOVETAIL ANCHOR  
FOR STONWORK

P:\031516.dwg: 04/28/09 12:48:09 PM: 2/26/09 12:48:09 PM: UNCHANGED: 703-05.DWG  
 P:\031516.dwg: 04/28/09 12:48:09 PM: 2/26/09 12:48:09 PM: UNCHANGED: 703-05.DWG

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

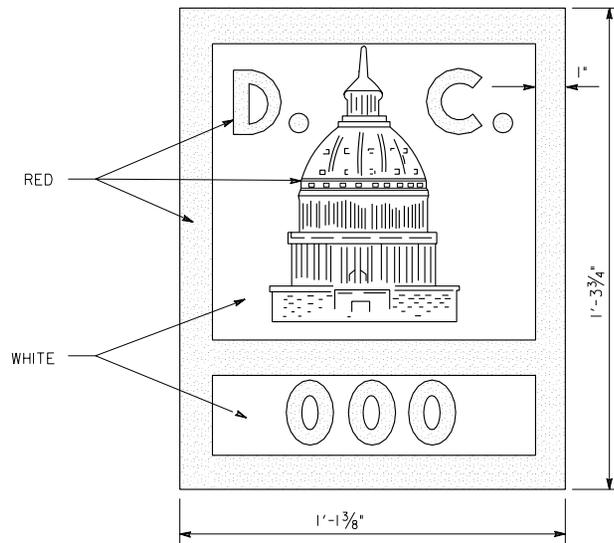
## REINFORCED CONCRETE RETAINING WALL DETAILS

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 703.05





MOSAIC EMBLEM

FOR NUMBER, (FILE NUMBER)  
SEE CONTRACT DOCUMENTS.

NOTE:

EACH BRIDGE SHALL HAVE A MOSAIC EMBLEM ON  
THE SUBSTRUCTURE CLEARLY VISIBLE FROM  
PUBLIC VIEW AS SHOWN ON PLANS.

P:\031515.dwg - 4/24/2009 4:23:58 PM - 1' - 11/16" - UNCHANGED - 103-07.DGN  
 P:\031515.dwg - 4/24/2009 4:23:58 PM - 1' - 11/16" - UNCHANGED - 103-07.DGN

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

MOSAIC EMBLEM

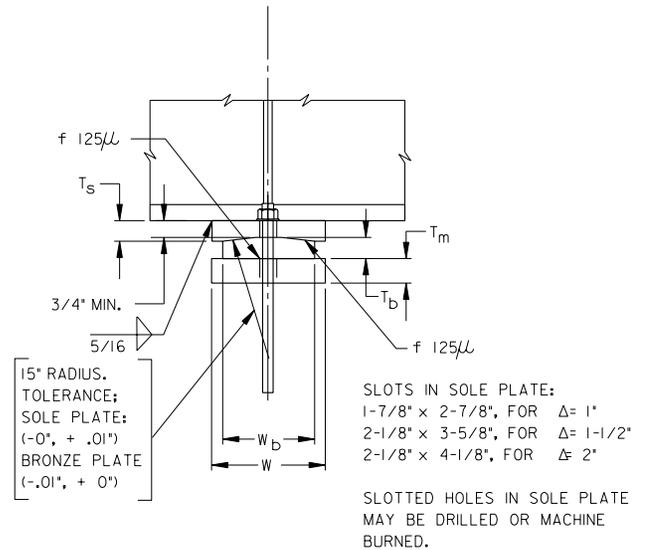
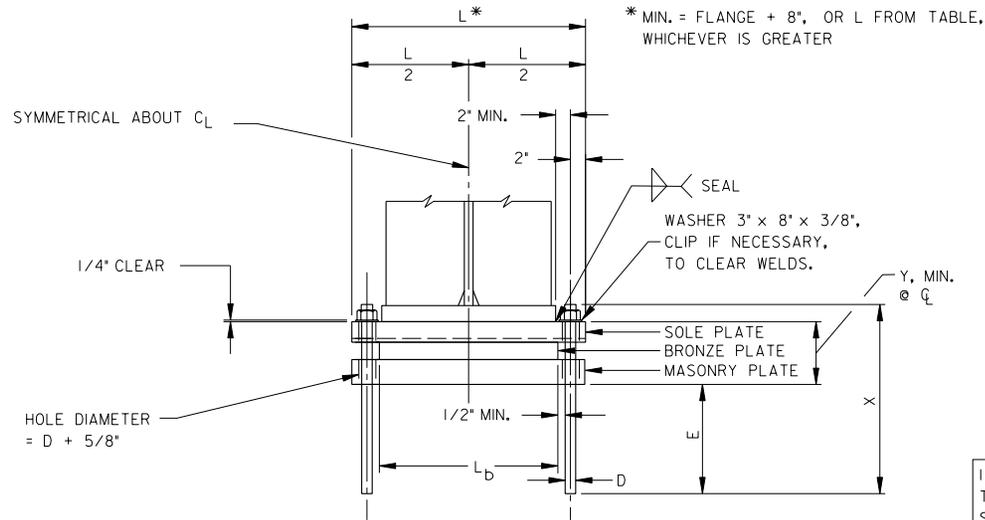
**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 703.07







**NOTES:**

1. SEE GENERAL NOTES, DWG. NO. 706.01.
2. ANCHOR BOLTS THROUGH SOLE PLATES ARE NECESSARY ONLY WHEN UPLIFT COULD OCCUR. WHEN BOLTS PASS THROUGH SOLE PLATES, EXTREME CARE SHALL BE EXERCISED IN PROPERLY LOCATING ANCHOR BOLTS.

R-KIPS	L*	W*	W <sub>b</sub> *	T <sub>s</sub> *	T <sub>m</sub> *	T <sub>b</sub> *	D*	E*	X*	Y*	Δ*
120	20	10	8	1-3/4	2	1-1/2	1-1/4	12	18-3/4	4-1/4	1
180	22	12	9-1/2	2	2-1/4	1-1/2	1-1/4	12	19	4-1/2	1
220	24	12-1/2	10	2-1/4	2-1/2	1-3/4	1-1/2	15	22-1/2	5	1-1/2
260	26	13-1/2	11	2-1/2	2-1/2	2	1-1/2	15	22-3/4	5-1/4	1-1/2
300	28	14	11	2-1/2	2-3/4	2	1-1/2	15	23	5-1/2	2
340	30	14-1/2	11-1/2	2-3/4	2-3/4	2	1-1/2	15	23	5-1/2	2
400	32	15-1/2	12-1/2	3	3	2-1/4	1-1/2	15	23-1/2	6	2

P:\031515.dwg, 04/16/03, 2:50:15 PM, Project: Final UNCHANGED: 706-01.DWG  
 Friday, April 03, 2003 AT 02:23 PM

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

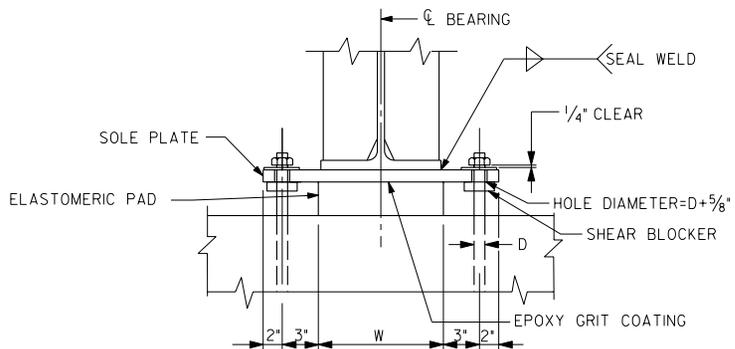
**EXPANSION BEARING, TYPE-1  
 REACTION R - TO 400 KIPS**

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

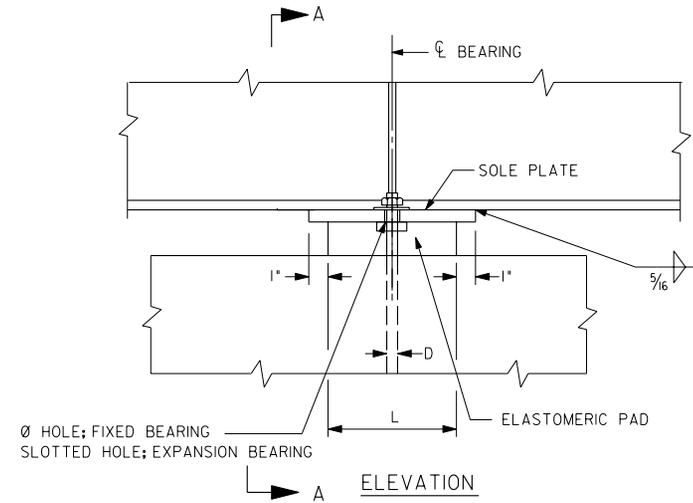
DWG. NO. 706.02







SECTION A-A



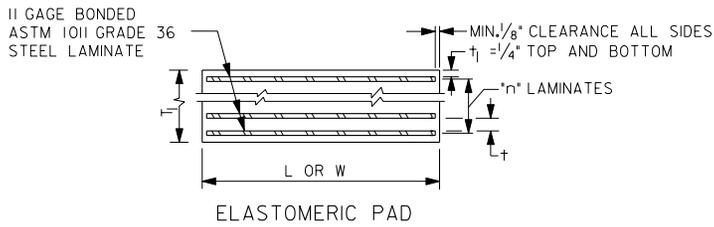
ELEVATION

TYPE	SPAN'	REACTION NO IMPACT R K	WIDTH W"	LENGTH L"	THICKNESS t"	NO. OF LAMINATES n	EFFECTIVE THICKNESS T"	HORIZONTAL $\Delta$ "	TOTAL T <sub>1</sub> "	D"	COMPRESSIVE DEFLECTION ( $\Delta_s$ )	
											INTERIOR LAYER	COVER LAYER
SIMPLE SPAN OR 2 SPAN CONT.	20	50	12	10	1/2"	0	1/2	1/4	1/2	1	0.015	--
SIMPLE SPAN OR 2 SPAN CONT.	30	60	12	11	1/2"	2	1	1/2	1 1/4	1	0.014	0.0106
SIMPLE SPAN OR 2 SPAN CONT.	70	100	15	12	1/2"	4	2	1	2 1/2	1 1/4	0.015	0.011
2 OR 3 SPAN CONT.	70	140	16	14	1/2"	4	2	1	2 1/2	1 1/4	0.0163	0.010
2 OR 3 SPAN CONT.	90	180	18	15	1/2"	5	2 1/2	1 1/4	3 3/8	1 1/4	0.0163	0.009
2 OR 3 SPAN CONT.	100	220	18	17	1/2"	5	2 1/2	1 1/4	3 3/8	1 1/4	0.0175	0.009
2 OR 3 SPAN CONT.	120	260	20	16	1/2"	6	3	1 1/2	3 3/4	1 1/2	0.0188	0.009
2 OR 3 SPAN CONT.	140	300	20	18	1/2"	7	3 1/2	1 3/4	4 3/8	1 1/2	0.0189	0.0106
2 OR 3 SPAN CONT.	160	340	22	18	1/2"	8	4	2	5	1 1/2	0.0188	0.011
2 OR 3 SPAN CONT.	200	400	22	21	1/2"	10	5	2 1/2	6 1/4	1 1/2	0.0175	0.0105

SLOTS IN SOLE PLATE:  
 1-7/8" x 2-7/8", FOR  $\Delta_s = 1"$  AND UNDER  
 2-1/8" x 3-5/8", FOR  $\Delta_s = 1-1/4"$  TO 1-3/4"  
 2-1/8" x 4-1/8", FOR  $\Delta_s \geq 2"$  AND OVER

SLOTTED HOLES IN SOLE PLATE  
 MAY BE DRILLED OR MACHINE  
 BURNED.

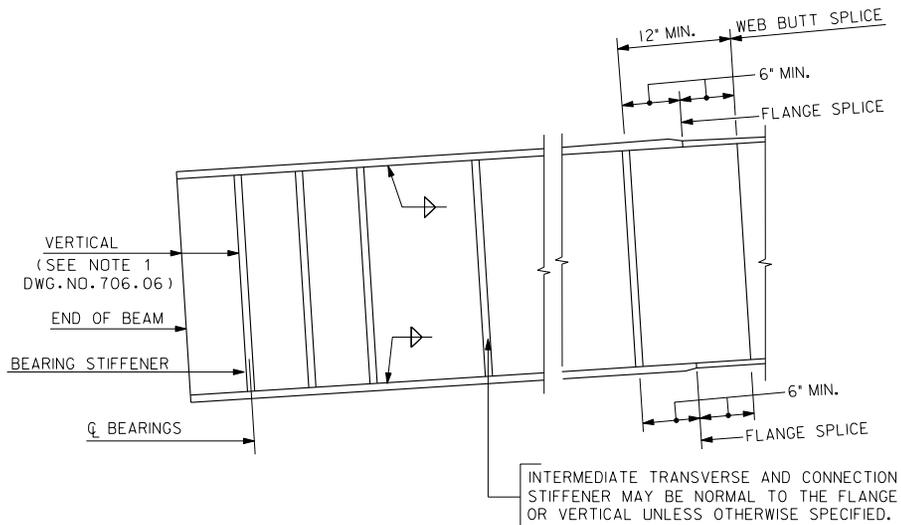
EFFECTIVE THICKNESS T = SUMMATION OF t + t<sub>1</sub>  
 TOTAL THICKNESS T<sub>1</sub> = T + (n) x (LAMINATE THICKNESS)



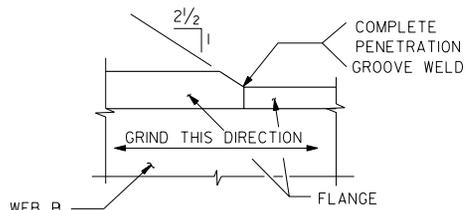
ELASTOMERIC PAD

EN-0315-06-01-01-02-03-04-05-06-07-08-09-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-1044-1045-1046-1047-1048-1049-1050-1051-1052-1053-1054-1055-1056-1057-1058-1059-1060-1061-1062-1063-1064-1065-1066-1067-1068-1069-1070-1071-1072-1073-1074-1075-1076-1077-1078-1079-1080-1081-1082-1083-1084-1085-1086-1087-1088-1089-1090-1091-1092-1093-1094-1095-1096-1097-1098-1099-1100-1101-1102-1103-1104-1105-1106-1107-1108-1109-1110-1111-1112-1113-1114-1115-1116-1117-1118-1119-1120-1121-1122-1123-1124-1125-1126-1127-1128-1129-1130-1131-1132-1133-1134-1135-1136-1137-1138-1139-1140-1141-1142-1143-1144-1145-1146-1147-1148-1149-1150-1151-1152-1153-1154-1155-1156-1157-1158-1159-1160-1161-1162-1163-1164-1165-1166-1167-1168-1169-1170-1171-1172-1173-1174-1175-1176-1177-1178-1179-1180-1181-1182-1183-1184-1185-1186-1187-1188-1189-1190-1191-1192-1193-1194-1195-1196-1197-1198-1199-1200-1201-1202-1203-1204-1205-1206-1207-1208-1209-1210-1211-1212-1213-1214-1215-1216-1217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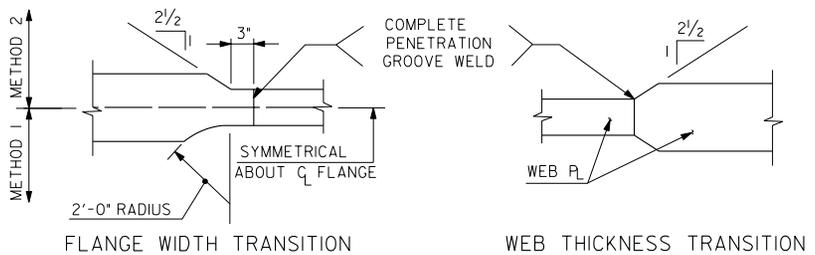




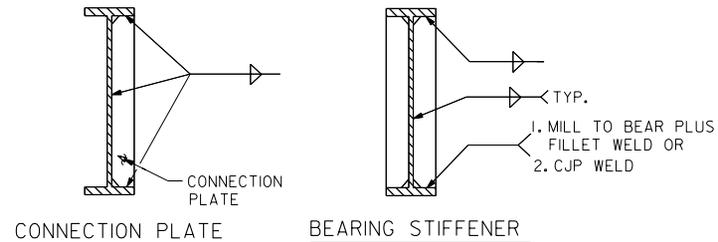
TYPICAL GIRDER DETAIL



ELEVATION  
FLANGE SPICE DETAILS



GIRDER WELDED SPICE DETAILS



DETAIL @ END OF STIFFENER  
OR CONNECTION PLATE

SHOW STIFFENER PLATE AND FILLET WELD SIZES ON THE PLAN

$$X = 1/4 \cdot 1/8$$

$$Y = 1/2 \cdot 1/4$$

$$Z = \begin{cases} 2 1/2 \text{ FOR } 1/2 \text{ WEB} \\ 3 \text{ FOR } 3/16 \text{ WEB} \\ 4 \text{ FOR } 3/4 \text{ WEB} \end{cases}$$

\* 0" FOR GROOVE WELD.

NOTES:

- A. STIFFENER SIZE MUST BE SHOWN ON PLANS.
- B. FILLET WELD SIZE SHALL BE SHOWN ON PLANS UNLESS MINIMUM WELD SIZE AS PER AASHTO/AWS D1.5M/D1.5 IS TO BE USED.
- C. IF A BEARING STIFFENER IS USED AS A CONNECTION PLATE FOR CROSS FRAMES OR DIAPHRAGMS, FILLET WELDS ARE REQUIRED.
- D. WHEN LONGITUDINAL STIFFENERS ARE REQUIRED, PLACE ALL TRANSVERSE STIFFENERS ON ONE SIDE OF WEB AND PLACE THE LONGITUDINAL STIFFENER ON OPPOSITE SIDE.

INTERMEDIATE AND BEARING

STIFFENER DETAILS

EN-031516.dwg - 04/03/2005 2:40:12 PM - Project: 03 - Final UNCHANGED: 706-07.DGN  
 P: 0303, April 03, 2005 AT 02:42 PM

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

**GIRDER WELDED SPICE DETAILS  
AND  
INTERMEDIATE AND BEARING  
STIFFENER DETAILS**

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

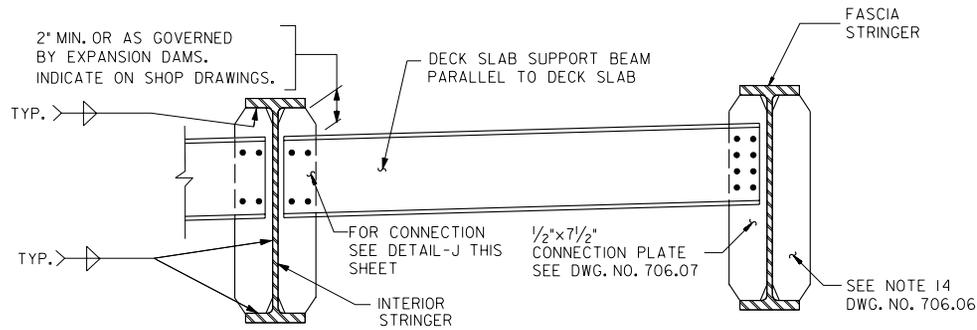
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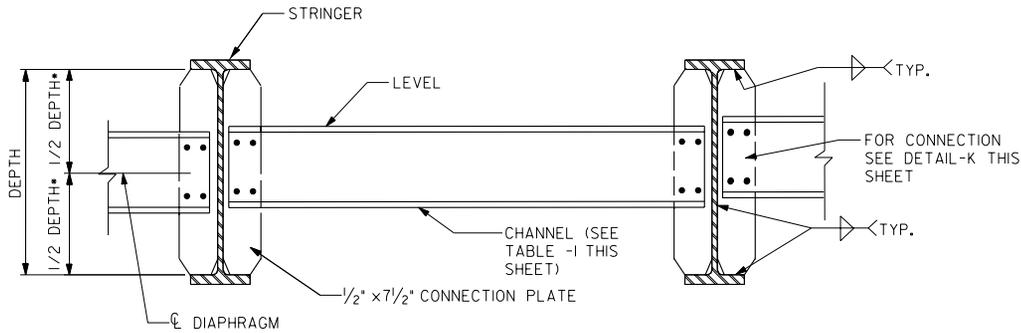








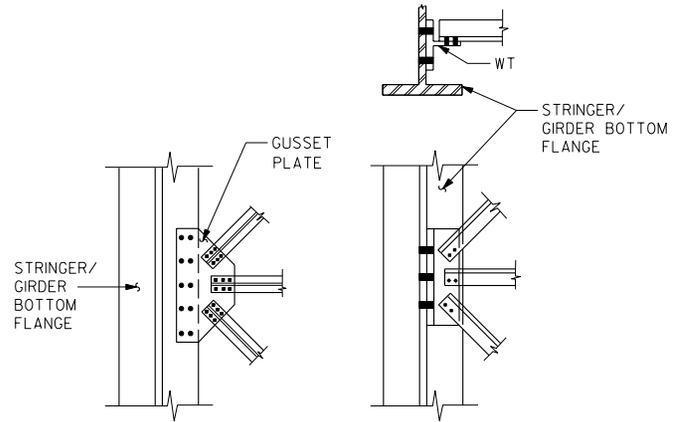
END DIAPHRAGM FOR ROLLED SECTIONS



• - WHEREVER POSSIBLE

INTERMEDIATE DIAPHRAGM FOR ROLLED SECTIONS

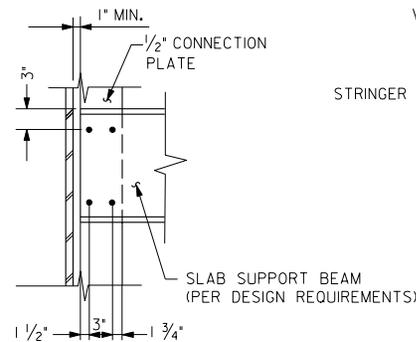
TABLE -I		
STRINGER SIZE	DIAPHRAGM SIZE	NO. OF BOLTS
≥ 27" DEPTH	C 15X33.9	8
UP TO 24" DEPTH	C 12X25	6



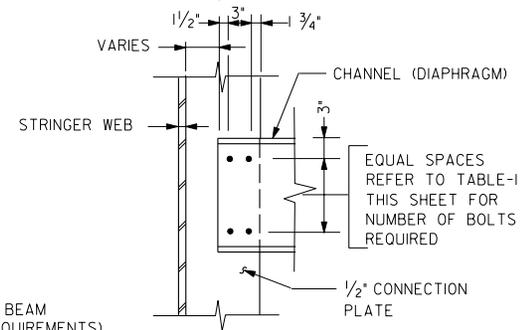
BOLTED ATTACHMENT (CATEGORY B)

ALTERNATE BOLTED ATTACHMENT (CATEGORY B)

LATERAL BRACING ATTACHMENTS



DETAIL-J END DIAPHRAGM (SEE NOTE 3 & 8 DWG. NO. 706.06)



DETAIL-K INTERMEDIATE DIAPHRAGM (SEE NOTE 6, DWG NO. 706.06)

EN-031516.dwg - 04/02/2009 2:40:13 PM - Project: 03 - Final UNCHANGED: 706-12.DGN  
 P1: 03/03/2009 12:24 PM

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

ROLLED BEAM  
DIAPHRAGM DETAILS AND  
LATERAL BRACING ATTACHMENTS

d.

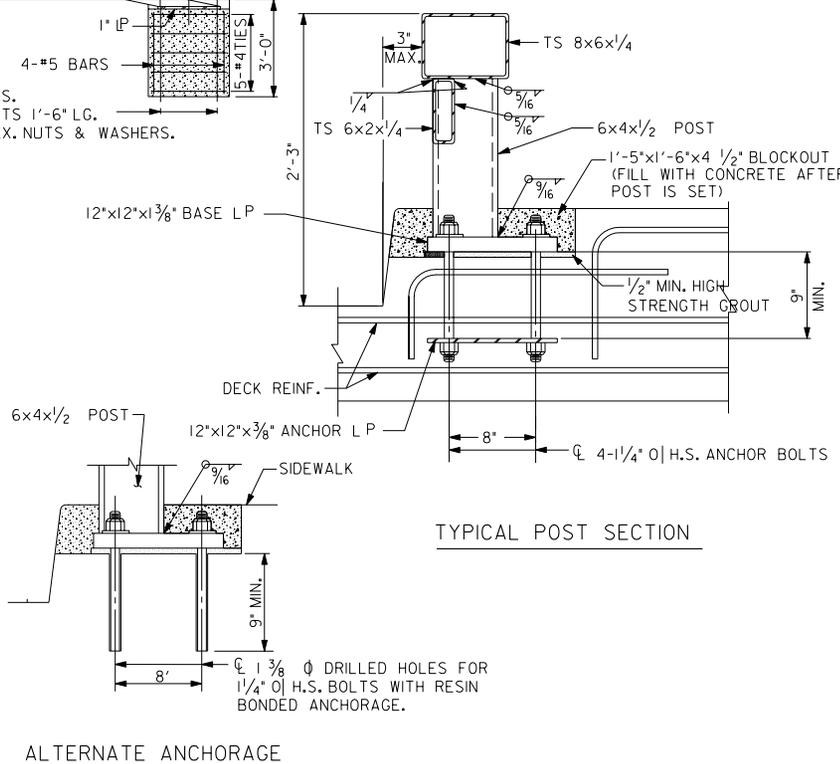
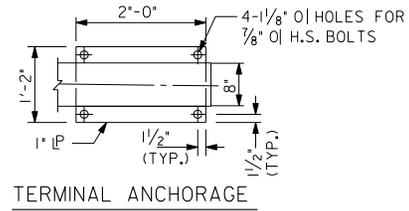
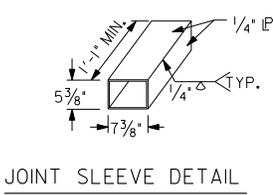
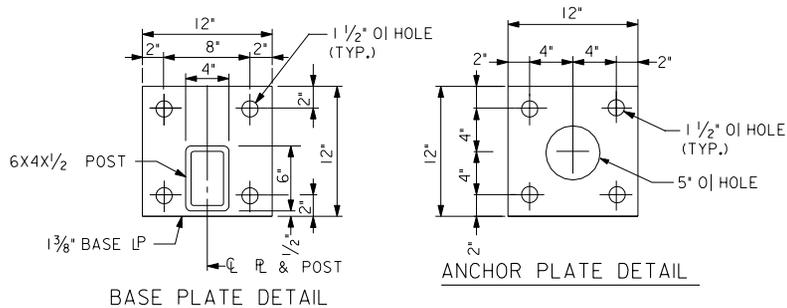
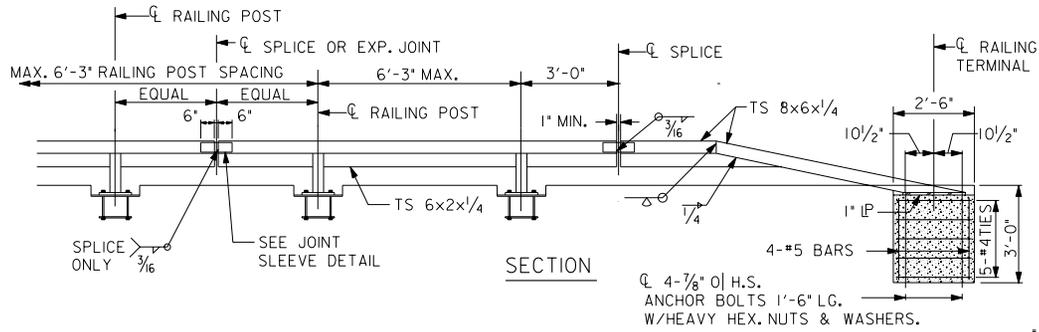
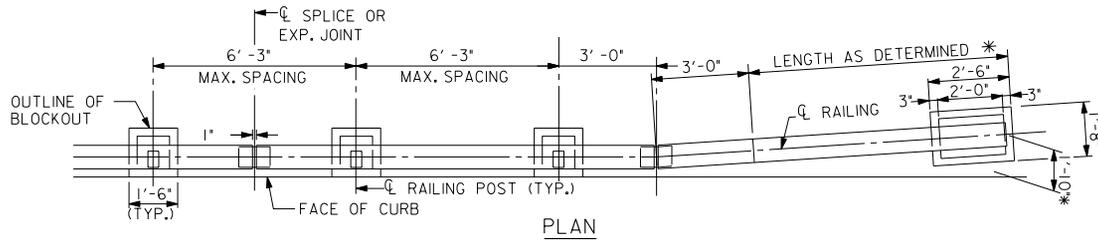
DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 706.12









\* OFFSET DISTANCE AND LENGTH ARE BASED ON AASHTO ROADSIDE DESIGN GUIDE AND MAY BE ADJUSTED TO ALLOW FOR PLACEMENT OF GRANITE CURB.

NOTES:

1. RAILING POST SHALL BE SET VERTICAL. RAILS SHALL FOLLOW THE GRADE OF THE ROADWAY.
2. RAILS SHALL BE CONTINUOUS OVER TWO OR MORE POSTS. EXPANSION SPLICES SHALL BE PLACED IN ANY PANEL WHERE EXPANSION JOINTS OCCUR.
3. ALL STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500, GRADE B.
4. ALL BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 325.
5. ALL STRUCTURAL SHAPES, PLATES AND BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36 (ASTM A709 GRADE 36).

EN-031516.dwg: 04/24/2005 2:46:05 PM: 2:46:05 PM: 03/24/2005 AT 02:24 PM

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

HISTORIC BRIDGE RAIL

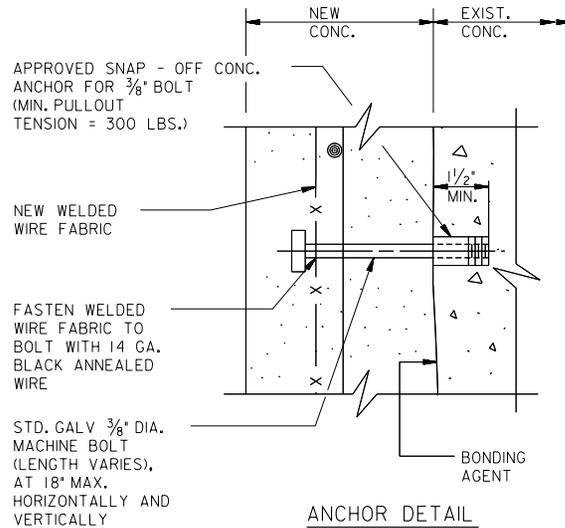
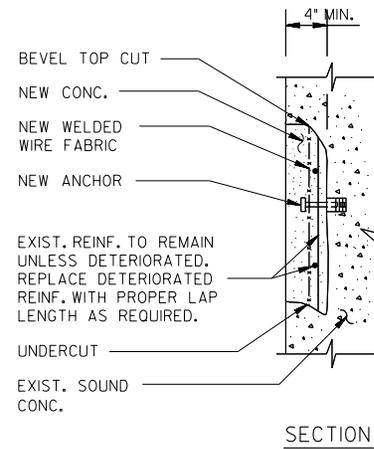
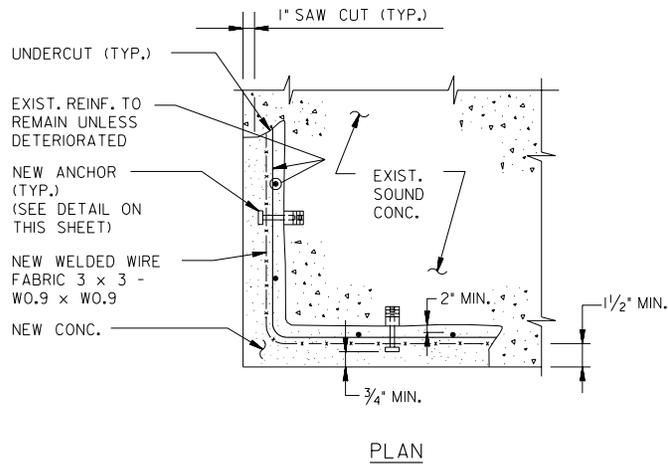
**d.** DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 709.03









PA-031516.dwg: as per 2002 District's Final Unchanged T16-01.DWG  
 P1:000, APR 03, 2005 AT 02:24 PM

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

## CONCRETE REPAIR

**d.**

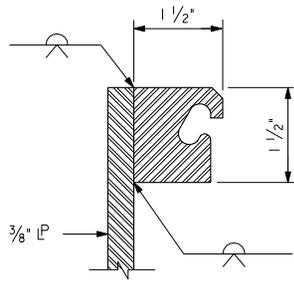
DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 716.01

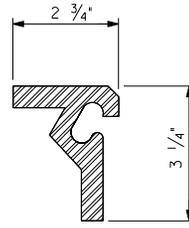




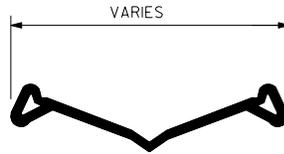




TYPE "E" EXTRUSION



TYPE "M" EXTRUSION



NEOPRENE STRIP SEAL

STRIP SEAL DIMENSION TABLE			
TYPE	MOVEMENT	MAXIMUM JOINT WIDTH	MINIMUM INSTALLATION WIDTH
1	3.0"	3.0"	1.5"
2	4.0"	4.0"	1.5"
3	5.0"	5.0"	2.0"

NOTE:

THE STEEL EXTRUSION TYPES, NEOPRENE STRIP SEAL AND DIMENSION TABLE SHOWN ARE MANUFACTURED BY WATSON BOWMAN ACME. THE PRODUCT SHALL BE WATSON BOWMAN ACME OR AN APPROVED EQUAL.

P:\031515.dwg - 4/24/2005 12:24 PM  
 P:\031515.dwg - 4/24/2005 12:24 PM  
 P:\031515.dwg - 4/24/2005 12:24 PM

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

**STRIP SEAL, EXTRUSION AND BRACKET**

**d.**

DISTRICT OF COLUMBIA  
DEPARTMENT OF TRANSPORTATION

DWG. NO. 717.02

