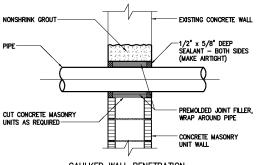
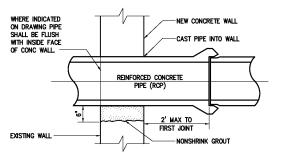


NEW CONCRETE WALL RESTRAINED JOINT STEEL BELL OR SPIGOT WALL FITTING OR SPIGOT WALL FITTING TONIER OF WALL). DIM "H"= 2" FOR PIPE 3" DIA AND SMALLER 3" FOR PIPE 42" TO 54" DIA 4" FOR PIPE 60" DIA AND LARGER STEEL PIPE CEMENT MORTAR LINING NONSHRINK GROUT 1/4" TYPICAL MORTAR PLACED AFTER INSTALLATION EXISTING CONCRETE WALL

1509229

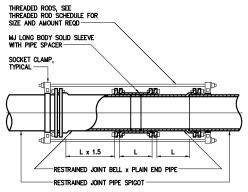


CAULKED WALL PENETRATION 1509217



REINFORCED CONCRETE PIPE WALL PENETRATION

1509218



RESTRAINED MJ SOLID SLEEVE 1509221

NONSHRINK GROUT TWO #5 BARS, ALL AROUND TWO STRIPS OF EXPANDING RUBBER WATERSTOP, EACH STRIP SHALL BE LAPPED 4, WITH THE LAP ABUTING SIDE BY SIDE. LAPS SHALL BE STAGGERED. #5 DOWELS WITH STANDARD HOOK #12' TYP EACH SIDE DOWEL ADHESIVE, TYP EXISTING CONCRETE WALL

NOTES:

1 ALL WALL PIPES SHALL BE CAST UNLESS OTHERWISE NOTED.

2 PROVIDE PIPE JOINT WITHIN TWO (2) FEET OF EXTERIOR FACE OF WALL AT CONNECTION TO ALL NEW AND EXISTING STRUCTURES OR MANHOLES.

3 COMBINATION WATERSTOP SHALL BE REQUIRED AT ALL NEW PIPE PENETRATIONS THROUGH EXISTING CONCRETE WALLS UNLESS OTHERWISE INDICATED ON THE CONTRACT DAWMINGS. SEE COMBINATION WATERSTOP DETAIL 1509222.

4 ALL NEW OPENINGS IN EXISTING CONCRETE WALLS SHALL BE ACCOMPUSHED WITH A CLEAN SAW—CUT. SURFACES SHALL BE ROUGHENED BY APPROVED METHODS.

ALL OPENINGS SHALL BE SAWCUT OR (SINGLE) CORE DRILLED AS REQUIRED.
USE OF JACKHAMMERS OR STITCH DRILLING IS NOT PERMITTED. THE PERIMETER
SURFACE OF THE OPENING SHALL BE SMOOTH.

WATERSTOP

1509222

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				DESIGNED	THIS DOCUMENT ORIGINALLY ISSUED FOR CONSTRUCTION AND SEALED BY ROBERT S. DIFIORE, SEAL NO. 22769 THIS DOCUMENT ORIGINALLY ISSUED FOR CONSTRUCTION AND SEALED BY RONALD L. TAYLOR, SEAL NO. 024649	RECORD DRAWING THIS DRAWING HAS BEEN MODIFIED TO REFLECT FIELD CHANGES REPORTED BY THE CONTRACTOR OR ANOTHER PARTY, BUT NOT VERIFIED BY THE CERTIFYING ENGINEER. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY DAVID A. NAILDR, 025455. THIS MEDIA SHALL NOT BE CONSIDERED A CERTIFIED DOCUMENT.	HAZEN AND SAWYER Environmental Engineers & Scientists 4011 WestChase Blvd, Raleigh, North Carolina 27607	CITY OF ROANOKE VIRGINIA	- MISCELLANEOUS STANDARD DETAILS	SHOWN BELOW MEASURES ONE INCH LONG ON	H & S JOB NUMBER	_
N	RECORD DRAWING CONSTRUCTION REGULATORY APPROVAL D. ISSUED FOR	JAN 2006 JAN 2004 NOV 2003 DATE	RLT RLT RLT	PROJ. ENGR. H & S APPROVED				REGIONAL WATER POLLUTION CONTROL PLANT PROCESS TRAIN IMPROVEMENTS		THE ORIGINAL DRAWING.		