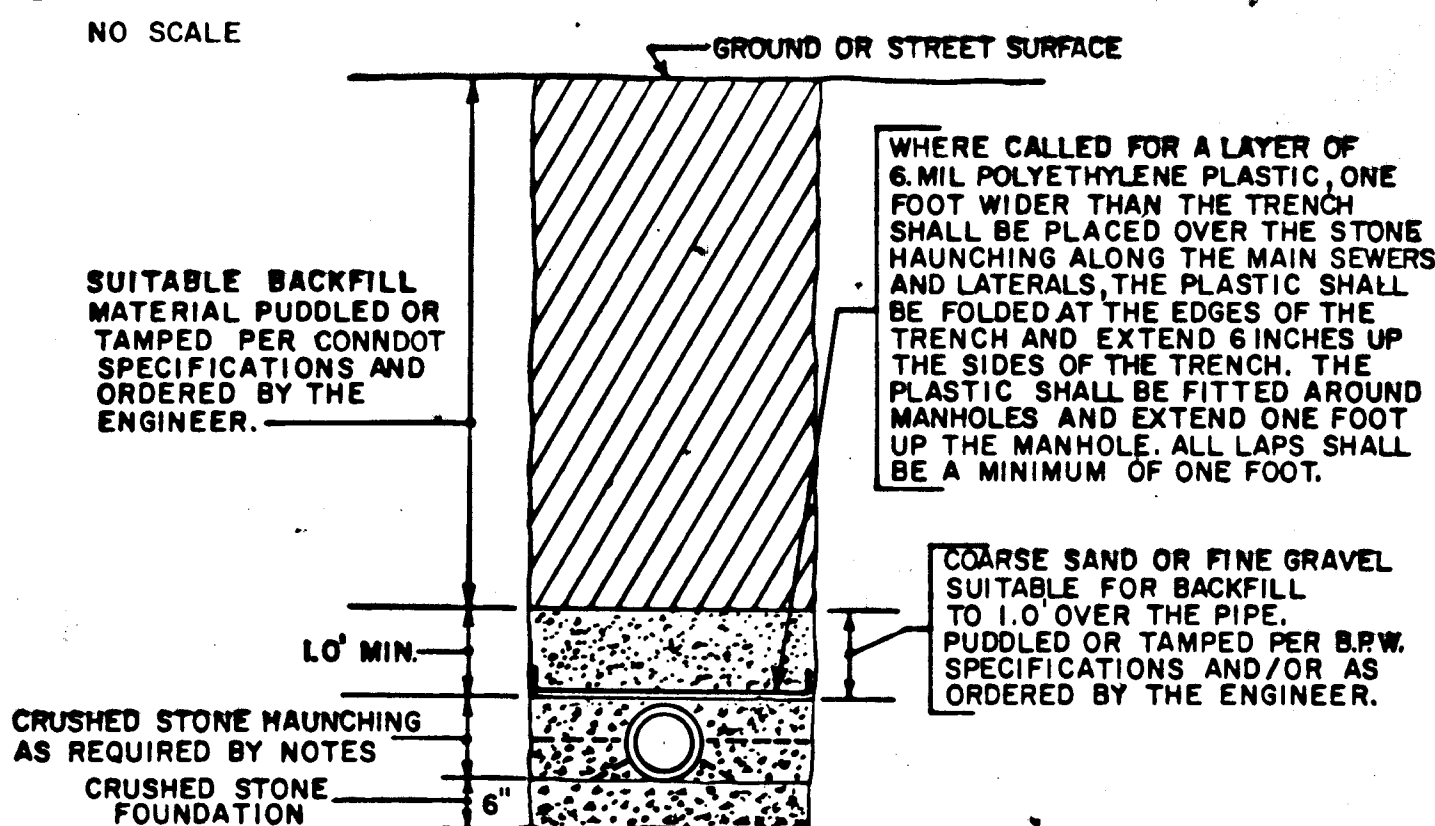


F.H.W.A. REGION NO.	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	HARTFORD				1-91	916	

## RECONSTRUCTION OF I-91

# TYPICAL TRENCH CROSS-SECTION SHOWING CRUSHED STONE FOUNDATION AND HAUNCHING, AND BACKFILL



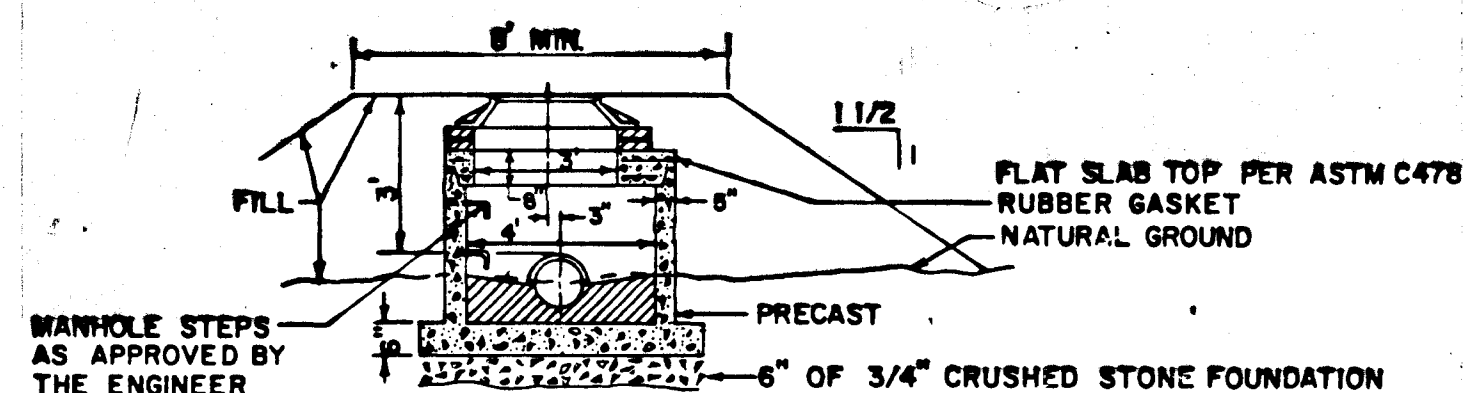
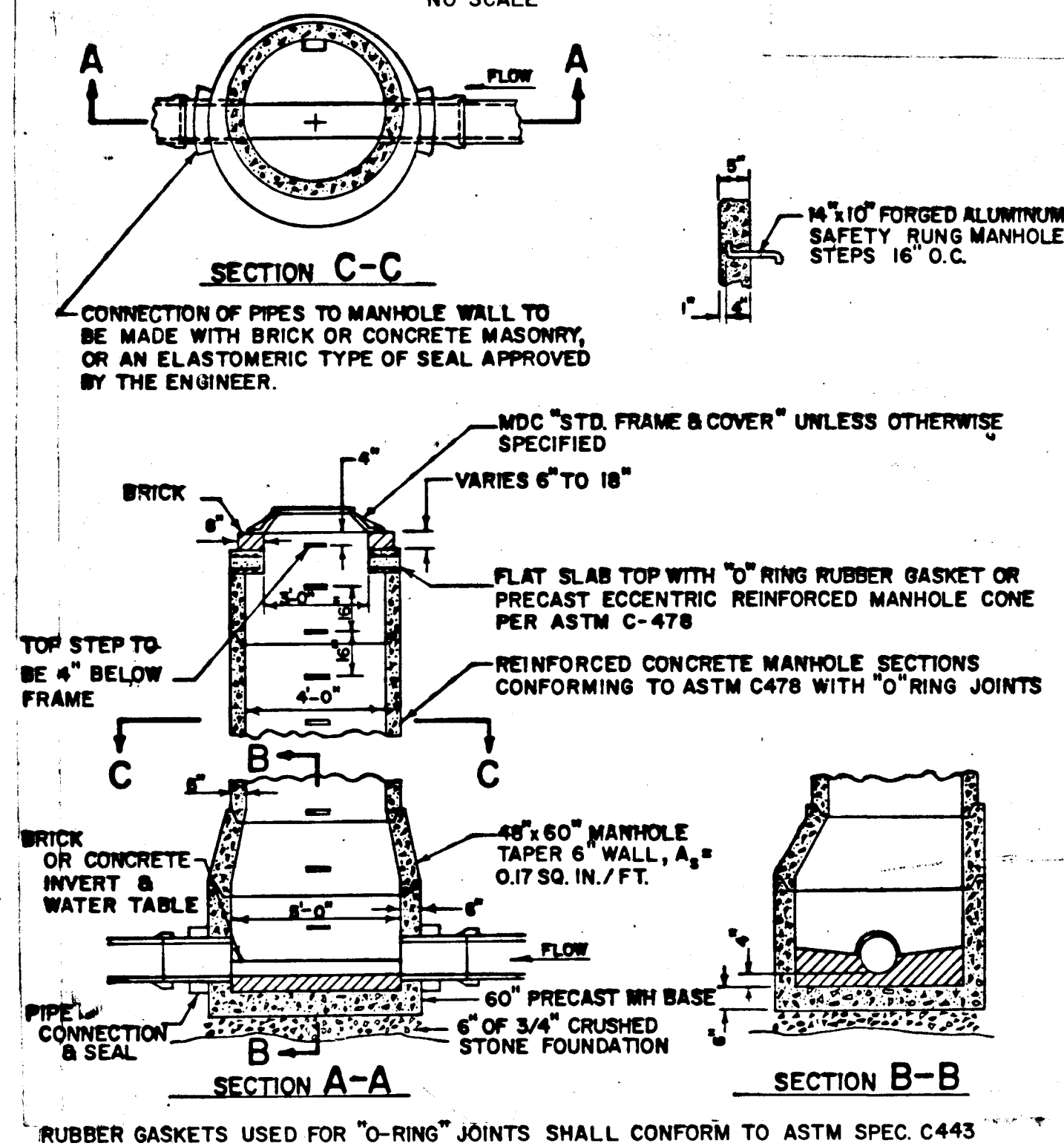
NOTE: CRUSHED STONE FOUNDATION 3/4 INCH MAXIMUM SIZE, SHALL BE PLACED 6-INCHES UNDER THE PIPE AND UP TO THE PIPE GRADE. THE PIPE LAID THEREON, CRUSHED STONE PULLED AGAINST THE PIPE SIDES TO FIRMLY HOLD THE PIPE IN PLACE.

ALL COSTS FOR THIS CRUSHED STONE FOUNDATION SHALL BE INCLUDED IN THE PRICE FOR ALL PIPE.

CRUSHED STONE HAUNCHING, 3/4-INCH MAXIMUM SIZE, SHALL BE BROUGHT TO A LEVEL TO THE TOP OF THE PIPE AND OUT TO THE TRENCH WALL AT THIS ELEVATION FOR ALL PIPE TO AND INCLUDING 12-INCH SIZE AND FOR ALL PLASTIC PIPE.

ALL COSTS FOR THIS CRUSHED STONE HAUNCHING SHALL BE INCLUDED IN THE PRICE BID FOR PIPE UP TO AND INCLUDING 10-INCH SIZE AND FOR ALL PLASTIC PIPE. (SEE SPECIAL PROVISIONS FOR THESE REQUIREMENTS AND FOR ADDITIONAL CRUSHED STONE REQUIREMENTS.)

## TYPE VI MANHOLE TYPICAL PRECAST MANHOLE NO SCALE



## TYPE V SHALLOW MANHOLE WITH OR WITHOUT EMBANKMENT

## WATER NOTES:

- Gate valve operations for this proposed project shall be right to open.
- All gate valves & blow-offs shall be furnished with gate boxes to grade.
- All fittings shall be mechanical joint unless otherwise specified.
- Min. depth of cover over water main shall be 4.5 ft.
- Pipe shall be 12-inch ductile iron, CI-54.
- Hydrant Note: Install 12"x6" tee & gate valve (open right) with M.D.C. approved hydrant, rod or restrain all pipe fittings from 12"x6" TEE TO hydrant, location contingent upon City Fire Chief's approval.
- All water services shall be installed under permit issued by Utility Services, Dept. of M.D.C.
- 24-inch envelope shall be pre-stressed concrete pipe with restrained joints.

## SANITARY SEWER STANDARDS

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH METROPOLITAN DISTRICT STANDARDS AND SPECIFICATIONS.

THE SANITARY SEWER SHALL BE CONSTRUCTED UNDER A DEVELOPER'S PERMIT-AGREEMENT BETWEEN CITY OF HARTFORD AND THE METROPOLITAN DISTRICT, AND SHALL BE BUILT BY A LICENSED DRAIN LAYER UNDER PERMIT BY AND UNDER SUPERVISION OF THE DEPUTY MANAGER FOR ENGINEERING AND PLANNING.

SANITARY SEWERS ARE FOR SANITARY SEWAGE ONLY. ALL STORM WATER, COOLING WATER, SURFILL DRAINAGE, AND OBJECTS OF INDUSTRIAL WASTES ARE EXCLUDED FROM SANITARY SEWERS BY DISTRICT ORDINANCE.

SURFILL AND SURFACE DRAINAGE SHALL BE CONNECTED TO NEAREST STORM DRAIN OR WATERCOURSE, AS APPROVED BY APPROPRIATE AUTHORITY.

ROADS SHALL BE FILLED TO AT LEAST 3 FEET ABOVE TOP OF PIPE OR TO ESTABLISHED GRADE BEFORE INSTALLATION OF SANITARY SEWER.

ANY PROPOSED WATER MAIN SHALL BE INSTALLED AFTER THE SANITARY SEWER.

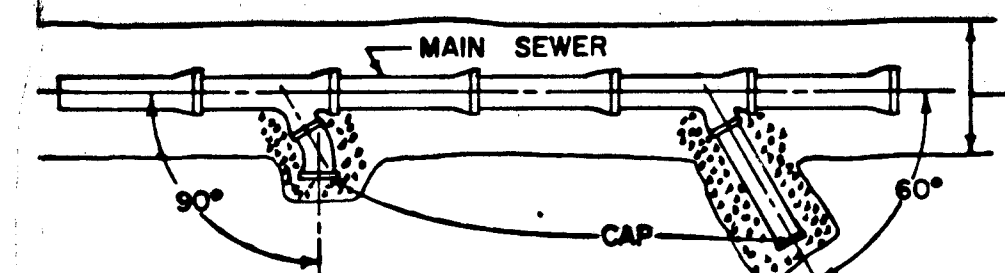
ANY COMPLETION BETWEEN THE PROPOSED SANITARY SEWER, EXISTING UTILITIES AND DRAINAGE SHALL BE RESOLVED AT THE EXPENSE OF THE DEVELOPER.

"CALL BEFORE YOU DIG" - THE CONTRACTOR IS HERBY REMINDED THAT TITLE 16, CHAPTER 293 OF THE CONNECTICUT GENERAL STATUTES REQUIRES NOTIFICATION TO UTILITY COMPANIES OF PENDING EXCAVATION AT OR NEAR PUBLIC UTILITIES. THE CONTRACTOR SHALL CALL 1-800-922-4499 AT LEAST 48 HOURS PRIOR TO BEGINNING THE EXCAVATION.

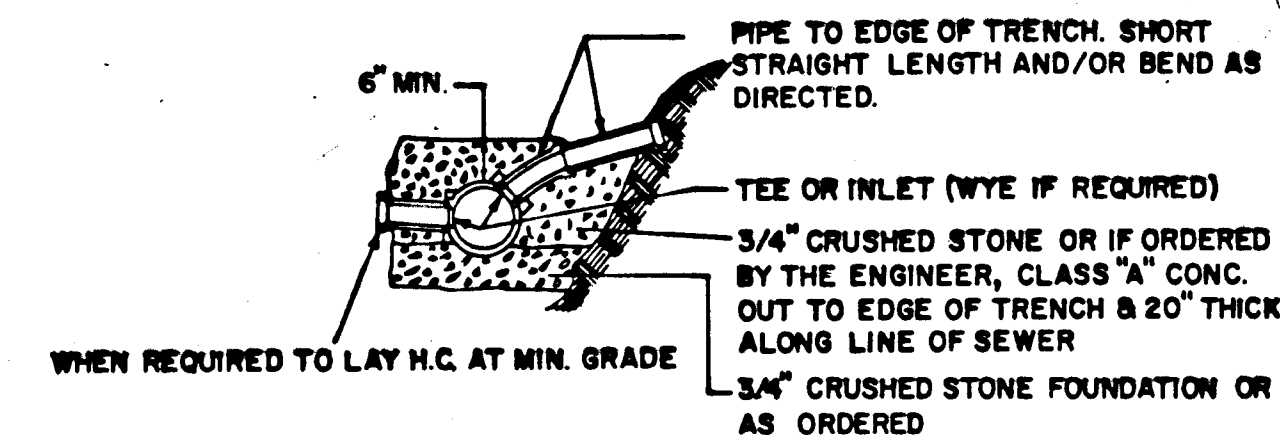
ALL LATERALS SHALL BE A MINIMUM OF 6 INCHES IN DIAMETER AND SHALL BE INSTALLED AT NOT LESS THAN 1.0% GRADE. LATERALS TO THE STREET LINE SHALL BE BUILT BY THE CONTRACTOR IN CONJUNCTION WITH THE MAIN SEWER CONSTRUCTION. CONNECTIONS FROM LATERALS AT STREET LINE TO BUILDINGS SHALL BE CONSTRUCTED UNDER INDIVIDUAL HOUSE CONNECTION PERMITS FROM THE METROPOLITAN DISTRICT FOR EACH HOUSE CONNECTION.

BACKFILL IN TRENCHES IN TRAVELED WAY, UNDER WALKS, SHALL BE BANK RUN GRAVEL, SAND, OR ACCEPTABLE NATURAL SOIL SATISFACTORY TO THE CITY OF HARTFORD.

BACKFILL: A LAYER OF 6-MIL POLYETHYLENE PLASTIC, ONE FOOT WIDER THAN THE TRENCH, SHALL BE PLACED OVER THE STONE HAUNCHING ALONG THE MAIN SEWERS AND LATERALS. THE PLASTIC SHALL BE FOLDED AT THE EDGES OF THE TRENCH AND EXTEND 6 INCHES UP THE SIDES OF THE TRENCH. THE PLASTIC SHALL BE FITTED AROUND MANHOLES AND EXTEND ONE FOOT UP THE MANHOLE. ALL LAPS IN THE PLASTIC SHALL BE A MINIMUM OF ONE FOOT.



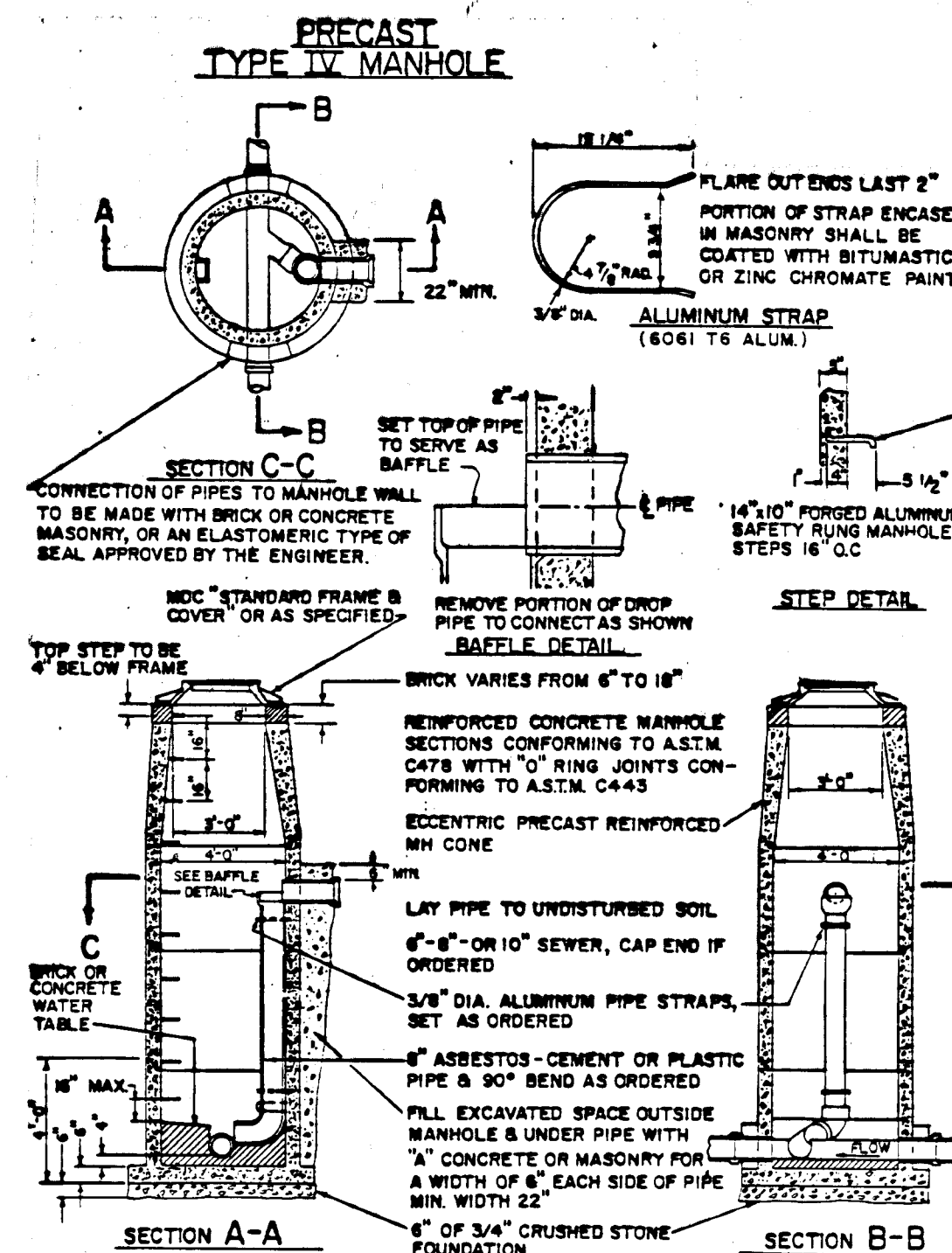
## TYPICAL WYE BRANCH FOR SEWERS



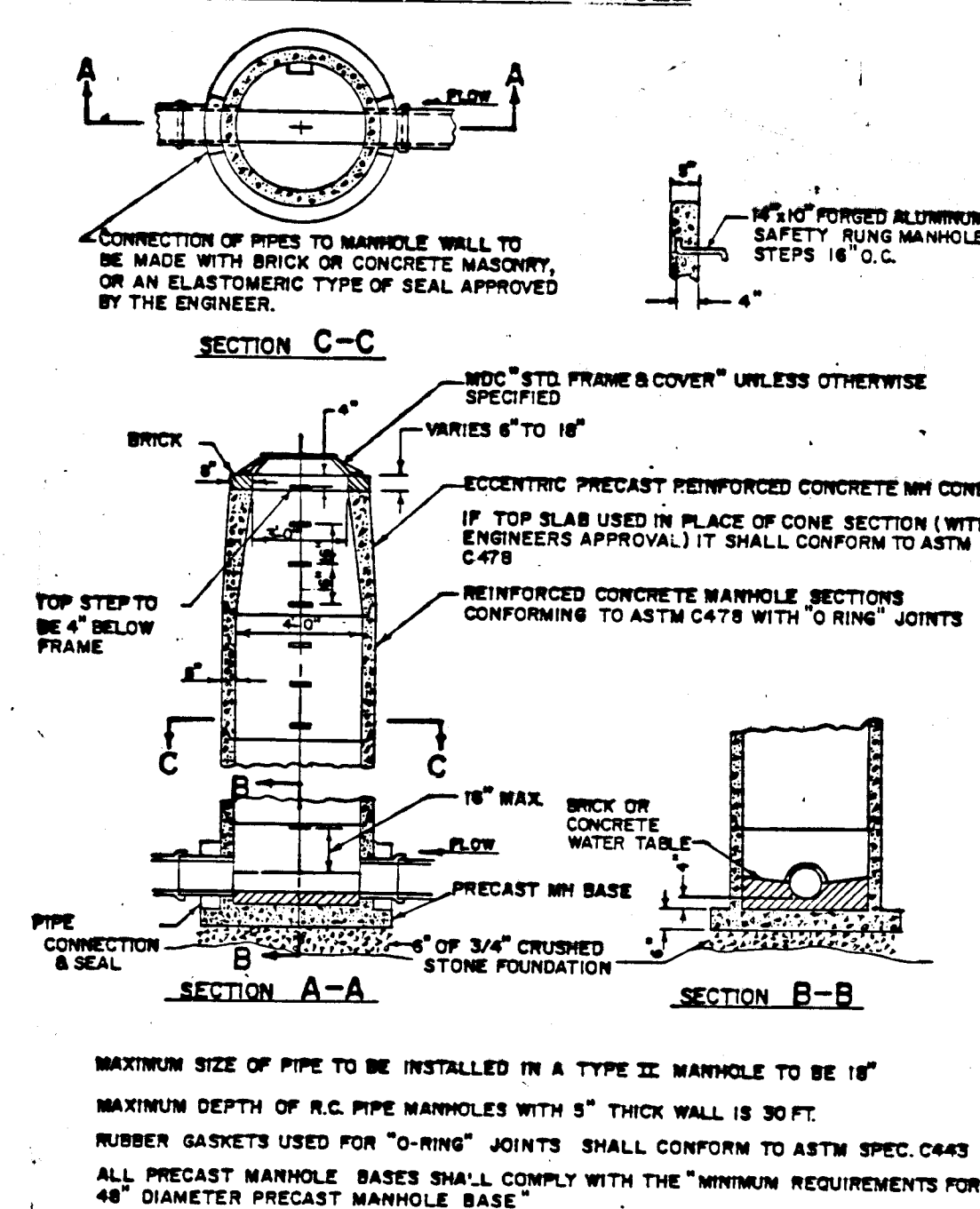
## TYPICAL CAPPED BRANCH FOR MAIN SEWERS 12" OR LARGER

## TYPICAL CONNECTION BRANCHES

NO SCALE



## TYPE II MANHOLE TYPICAL PRECAST MANHOLE



MAXIMUM SIZE OF PIPE TO BE INSTALLED IN A TYPE II MANHOLE TO BE 18"

MAXIMUM DEPTH OF R.C. PIPE MANHOLES WITH 5" THICK WALL IS 30 FT.

RUBBER GASKETS USED FOR "O-RING" JOINTS SHALL CONFORM TO ASTM SPEC. C443

ALL PRECAST MANHOLE BASES SHALL COMPLY WITH THE MINIMUM REQUIREMENTS FOR 48" DIAMETER PRECAST MANHOLE BASE

WHENEVER POSSIBLE, THE SANITARY SEWER SHALL BE LOCATED A MINIMUM OF 10 FEET HORIZONTALLY FROM ANY EXISTING (OR PROPOSED) WATER MAIN. WHEN LOCAL CONDITIONS PREVENT THIS, A LESSER DISTANCE IS ALLOWED IF: (A) THE WATER MAIN IS LOCATED IN A SEPARATE TRENCH OR (B) IT IS LOCATED IN THE SAME TRENCH TO ONE SIDE OR A BRANCH OF UNDISTURBED EARTH AT LEAST TWELVE INCHES (AND PREFERABLY EIGHTEEN INCHES) FROM THE SIDE OF THE SEWER TRENCH. IN EITHER CASE, THE BOTTOM OF THE WATER MAIN SHALL BE EIGHTEEN INCHES ABOVE THE TOP OF THE SEWER PIPE.

TEMPORARY AND PERMANENT PAVEMENT REPAIRS SHALL BE MADE IN ACCORDANCE WITH DISTRICT AND TOWN AND/OR STATE SPECIFICATIONS.

THE SEWER LINE SHALL BE TESTED FOR LEAKAGE USING LOW PRESSURE AIR IN ACCORDANCE WITH SPECIFICATIONS FURNISHED BY THE METROPOLITAN DISTRICT. ANY SECTION OF PIPELINE FAILING THE TEST SHALL BE REPAIRED OR REPLACED AND RETESTED BEFORE CONNECTIONS WILL BE PERMITTED. AIR TESTS SHALL BE PERFORMED UNDER THE SUPERVISION OF THE METROPOLITAN DISTRICT.

ELEVATIONS ARE BASED UPON THE METROPOLITAN DISTRICT DATUM OR THE NATIONAL GEODETIC VERTICAL DATUM (N.G.V.D.) OF 1929 (Designate Applicable Datum).

POSSIBLE CONNECTION CHARGE OR OTHER MONETARY CHARGE IS DUE IN AN AMOUNT BASED UPON PREVAILING RATES IN EFFECT AT THE TIME OF ISSUANCE OF THE HOUSE CONNECTION PERMIT.

DEFERRED DEVELOPER'S OUTLET CHARGE IS DUE IN AN AMOUNT BASED UPON PREVAILING RATES IN EFFECT AT THE TIME PAYMENT IS MADE PRIOR TO ISSUANCE OF THE HOUSE CONNECTION PERMIT.

PIPE DESIGNATIONS: (Approved Designations, Delete As Applicable)

A-746 ASTM A-746 DUCTILE-IRON GRAVITY SEWER PIPE.

NOTE: PIPE WALL THICKNESS SHALL CONFORM TO CLASS 92.

D-303A ASTM D-303A TYPE POLY(VINYL CHLORIDE) (PVC) SEWER PIPE AND FITTINGS, DESIGNATION SUR-35 (4", 6", 8", 10", 12" AND 15").

CITY OF HARTFORD, CONNECTICUT  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF ENGINEERING SERVICES

TYPICAL DETAILS FOR  
SANITARY SEWER  
ON  
PROPOSED EAST SERVICE ROAD  
HARTFORD, CONN.

SUBMITTED	RECOMMENDED	APPROVED
PROJECT ENGINEER	DIVISION MANAGER	CITY ENGINEER ESB
DRAWN SBN	SCALE	DAYBOOK NO. 011074M
CHECKED C.B.	AS NOTED	DATE APRIL, 1987