TYPICAL TRENCH DETAIL (FLEXIBLE PIPE):

Pipe Cover shall consist of coarse interlocking aggregate no. 57, 67, 68, 77, or 8.

Bedding shall consist of coarse interlocking aggregate no. 57, 67, 68, 77, or 8 for 60" or smaller diameter pipe. For 66" or larger diameter pipe no. 4 aggregate may also be used.

Premium Backfill shall consist of coarse interlocking aggregate no. 57, 67, 68, 77, 78, 8, or 9, also limestone screenings.

TRENCH WIDTH AND CONCRETE CRADLE WIDTH SHALL BE O.D. OF PIPE PLUS 9" ON EACH SIDE OF PIPE.

3000# Concrete

TYPICAL TRENCH DETAIL WITH CONCRETE CRADLE

For concrete and ductile iron pipe, pipe cover is to the springline or greater.

In paved areas coarse interlocking aggregate to the top of the trench on all types of pipe.

NOTE:
Lateral connections to have a minimum bedding depth of 3" coarse aggregate.

WARNING TAPE 12" ABOVE PIPE. TWO TAPES FOR PIPE > 24" DIAM.

TYPICAL TRENCH DETAIL FOR CONCRETE OR DUCTILE IRON PIPE

REVISIONS:

SCALE
NO
SCALE
DATE: DEC. 1998

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT

Sheet No. 11/27
REPAVING OVER SEWER TRENCH
IN BRICK OR STONE BLOCK PAVEMENTS WITH BASES

TYPICAL SECTION

Exist. Brick or Stone Block

Exist. Base

3/4" Dia. Hook Bolts @ 30" c/c

Bankfill as specified

Trench width variable

MIN.

MIN.

3/4" Dia. Hook Bolts @ 30" c/c

9" minimum Pavement, 4000# Concrete

NOTE:
Hook bolts shall be required when existing pavement or base is concrete. Drill and grout Hook Bolts.

REPAVING OVER SEWER TRENCH
IN PAVEMENTS WITHOUT BASES

TYPICAL SECTION

Exist. Pavement

3/4" Dia. Hook Bolts @ 30" c/c

Bankfill as specified

Trench width variable

MIN.

MIN.

9" Pavement, 4000# Concrete

REPAVING OVER SEWER TRENCH
IN ASPHALT PAVEMENT

TYPICAL SECTION

Exist. Asphalt Surface

Intermediate Course

Surface Course

Exist. Base

78° W. W. Mesh

9" Concrete 4000# Base

Undisturbed earth

MIN.

MIN.

MIN.

MIN.

9" Concrete 4000# Base

REVISIONS:

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NO SCALE

DATE: DEC. 1998

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT
NOTE:
Encasement required when pipe clearance is less than 18"

2'-0" Max., 9" Min.
Pipe Dia.

9" Min. and 2'-0" Max.
limited by vertical clearance between pipes

1/4 Pipe diameter 6" min.
6" Min., 18" Max. clearance between pipes
3000# Concrete

Min. 1'-0"
9" Min., 2'-0" Max.
to undisturbed earth
3000# Concrete

Bedding as specified, 6" Min.

SECTION A - A

SECTION B - B

CONCRETE ENCASEMENT
MONOLITHIC CRADLING OF UPPER PIPE

REVISIONS:

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT
NOTE:

House connections shall be connected into the top half of the sewer pipe.
six inch, class 200, cast iron pipe is required for all bored sewer service connections
including slip on rubber joints with an ANSI thickness classification No.25, also
6 inch, ductile iron cement lined pipe may be used including slip on rubber joints
with an ANSI thickness classification No. 53.
D.I. or C.I. Disc or Cap with a magnetic element imbedded

In pavement top of TEE shall be flush with finished grade.

2' x 2' x 4" pad is required in pavement.

Riser Section, Variable Length

Tee Section

3000" Concrete
for rigid pipe, coarse interlocking aggregate for flexible pipe.

6" x 6" TEST TEE & 6" RISER FOR STORM
AND SANITARY SEWERS.

NOTES:
The test tee riser section shall be installed when the connection is extended to the building.
Risers shall be furnished with stoppers upon which shall be placed a cast or ductile iron disc.
Cast or ductile iron disc shall be painted yellow on sanitary sewers.
Concrete encasement for Test Tees is required if ground cover to "T" elevation is less than 3' - 0". If greater than 3' - 0" use coarse interlocking aggregates.

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UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT
Frame and cover as specified

Apply cement grout for V.CLAY Pipe or CONCRETE Pipe
use premium gasket for flexible Pipe

Bedding as specified
6" Minimum

3000 # Concrete

6" Minimum

1" typ.
6" typ.
Steel frame angle

Catch basin trap (when required)

SECTION B - B

SECTION A - A

TRENCH DRAIN

REVISIONS:

SCALE NO SCALE DATE: DEC.1998

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT
NOTE:
8" Clean out shall be used for 8" sewer and larger.
Smaller size sewers and manhole covers shall have same size pipe.

C-LIDISC or CAP with magnetic element imbedded and mastict sealed.

3'-0" Sq. Min. /3000# Concrete

Ground level

Last length cast iron cut to field measurement ANSI class 25.

Base material (coarse interlocking aggregate) Mastic sealed joint (clay pipe).

8" rigid pipe encased in 3000 psi concrete as shown.
Flexible pipe in paved areas encased up to here. In non paved areas use coarse interlocking aggregate to the bottom of concrete slab.

Vit. clay stopper sealed
ASTM C-24 or appropriate flexible pipe stopper sealed
ASTM 3212 joint

2' Length of pipe

8" x 8" Y branch

SPECIAL INLET

CLEANOUT

REVISIONS: SCALE DATE:
NO SCALE DEC. 1998

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT

Sheet No. 11/27
NOTE:

Grout pipe opening with cement mortar mix 1:2 if pipe is either CLAY or CONCRETE. Use premium joint if pipe is flexible.

Locations where the 3' minimum is not possible lesser depths are acceptable.

Square catch basins will be accepted as an alternative. Catch basin will be constructed per G.O.T. item No. 604 and 706.13. PRECAST will have a minimum of 4" reinforced wall.

SQUARE CATCH BASIN CASTINGS - EAST JORDAN No. 5110
sinusoidal grate type M-4 or NEENAH R-4859-C.
All grates shall be bicycle safe.

YARD TYPE
CATCH BASIN
All reinforcing shall be #4 deformed bars.
Concrete shall be ODOT class "C" #4000 PSI in 28 days.
RECTANGULAR PRECAST CONCRETE INLET BASIN

NOTE:
All reinforcing shall be #4 deformed bars
Concrete shall be ODOT class "C" #4000 PSI
in 28 days.

SECTION "A - A"

5 - #4 Bars in bottom slab

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT

REVISIONS: SCALE NO. SCALE DATE DEC.1998
NOTE:
APCO SERIES 440 SCAV. MODEL 443
Attachments, as follows:
2. 2" Brass gate valve or approved equivalent.
Precast manholes (see sheet No. 4/27)
Install a drain when sewers are available.
Waterproof outside walls.

SECTION A - A

SANITARY FORCE MAIN
AIR RELEASE VALVE
CHAMBER

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT
NOTE:
Approximate capacity is 1120 gallons
4000# concrete pad - 4" when grease trap is not in the street.
4000# concrete pad - 6" (H = 20 loading) when grease trap is in paved areas.
Bedding under piping thoroughly compacted.

SECTION A-A
5 bars @ 8" both ways - 4" of compacted gravel

SECTION B-B
SHOWING REINFORCING LAYOUT

5 Bars @ 6" c/c  Additional 5 bars around opening

11'-0"  3'-0"
Frame and cover as specified Brass cap

4'-8"  1'-6"
Variable length of D.I.P or PVC pipe

6" D.I.P or PVC pipe  6" D.I.P pipe

Stainless Steel bolts  # 5 bars @ 8" c/c both ways

# 4000# concrete

TYPICAL STANDARD GREASE TRAP

REVISIONS:

UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT
All precast concrete shall meet O.
D.O.T. 706.13 requirement.

**NOTE:**
Grout pipe opening with cement mortar mix 1:2 if pipe is either CLAY or CONCRETE. Use premium joint if pipe is PVC.

**CATCH BASIN CASTINGS** - East Jordan frame and grate No. 5110 type or Neenah R = 4899 with type C cover.

**INLET BASIN CASTINGS** - East Jordan No. 8313 grate No. 8313 M = 2 or Neenah R = 1878 and grate No. R = 1878 A90.

**NOTE:**
Locations where the 3' minimum is not possible lesser depths are acceptable. Round catch basins will be accepted as an alternative. Catch basins will be constructed per O.
D.O.T. ITEM No. 504. CAST IN PLACE will have a minimum of 8" reinforced walls, Precast shall have a minimum of 6" reinforced concrete walls. All grates shall be bicycle safe.
NOTE:
Casing pipe to have I.D. Minimum of 2" larger than bell O.D. of carrier pipe. Casing pipe to have a minimum wall thickness of 0.250.

BLOCKS:
3 sets of treated hardwood blocks per 18' length of pipe.
4 sets of treated hardwood blocks per 20' length of pipe.
Two blocks spaced 30" from joints. Additional blocks evenly spaced.

Uncoated, unprotected steel casing installed by jacking or boring methods.

Section A - A

Space between sewer main and steel pipe to be filled with sand or grout.

1/2" Steel bands completely around the pipe and blocks.

BoRINg details for paved areas
Vent required if outlet exceeds 10 ft. developed length. Main or branch vent must be installed within 3 ft. of interceptor.

3" Min. Local vent separately through the roof

4" Cleanout
Bolted and gasketed gas tight lid

4" outlet

Inlet 4" Minimum

if inlet pipe is over 25' - 0" in developed length a vent is required. (Industrial)
4101:2 51 - 24 (O&O)

NOTE:
For Minimum sizes refer to Plumbing code chapter 4101:2-51.

TYPICAL GARAGE OIL INTERCEPTOR

REVISIONS:

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UNIFORM STANDARDS: CLEVELAND --- CUYAHOGA COUNTY --- NORTHEAST OHIO REGIONAL SEWER DISTRICT