NOTE: SEE SPECIFICATIONS SECTION 02225 AND DETAIL NO. G-2 FOR DIMENSIONS AND MATERIALS
**GRAVITY SEWERS**

**PVC PIPE**
- O.D. + 2'-0" MAX.
- Crushed Stone

**DUCTILE IRON PIPE**
- O.D. + 2'-0" MAX.
- 0.25 x O.D. MIN.
- 8" MIN., I.D. ≤ 21" 12" MIN., I.D. ≥ 24"
- Crushed Stone

**FORCE MAIN**
- O.D. + 2'-0" MAX.
- 0.5 O.D.
- Compacted Earth

**TYPE 2**

**TYPE 3**
- 4" MIN.

*EXCEPT TRENCHES IN ROCK, WHERE MINIMUM TRENCH WIDTH IS THREE FEET*

---

**STANDARD DETAILS**

**PIPE BEDDING AND HAUNCHING**

**DATE:** FEB 2008
**SCALE:** NONE
**DETAIL NO.:** G-2
SOLID BRICK OR
SOLID CONC. BLOCK
(ONE PER PIPE JOINT, MIN.)
TACK COAT
2" TYPE "E" ASPHALTIC TOPPING
EXISTING CONCRETE PAVEMENT

6" BLACK BASE
FLOWABLE FILL
O.D. + 2'-0" MAX.

ASPHALT PAVEMENT

EXISTING CONCRETE PAVEMENT
CONCRETE (MATCH EXIST. PAVEMENT THICKNESS BUT 10" MIN.)
FLOWABLE FILL
O.D. + 2'-0" MAX.

STANDARD DETAILS
TYPE I PAVEMENT REPLACEMENT

DATE: FEB 2008
SCALE: NONE
DETAIL NO. G-4
TACK COAT
2" TYPE "E" ASPHALTIC TOPPING
EXISTING ASPHALT PAVEMENT

6" BLACK BASE
COMPACTED GRANULAR MATERIAL

O.D. + 2'-0" MAX.

SAW CUT VERTICAL EDGE

12" CUT BACK TYP. EACH SIDE

ASPHALT PAVEMENT

EXISTING CONCRETE PAVEMENT

CONCRETE (MATCH EXIST. PAVEMENT THICKNESS BUT 10" MIN.)
COMPACTED GRANULAR MATERIAL

O.D.

O.D. + 2'-0" MAX.

CONCRETE PAVEMENT

STANDARD DETAILS

TYPE II PAVEMENT REPLACEMENT

DATE: FEB 2008
SCALE: NONE
DETAIL NO. G-5
3" DIA. OR 2"x4" TREATED SOFT WOOD POST OR 1.5"x1.5" OAK POST OR 1.3 LB./FT. MIN. STEEL POST

FILTER FABRIC

FLOW

GROUND

TRENCH-IN & BACKFILL
BOTTOM OF FILTER FABRIC

SECTION

A
A

POSTS
@ 6'-0" C.C.

5"x5" HOGWIRE FENCE BACKING
(IF NECESSARY)

FILTER FABRIC NAILED, STAPLED,
POCKETED OR OTHERWISE SECURELY
FASTENED TO POSTS

ELEVATION

STANDARD DETAILS

BARROW COUNTY

SILT FENCE
SEDIMENT BARRIER

DATE: FEB 2008
SCALE: NONE
DETAIL NO. G-7
2 RE-BARS OR 2" X 2"
stakes 1 1/2' to 2' in ground

WIRE TIES

SECURELY BOUND
BALES REQUIRED
FOR DURABILITY

BALE TIES

FLOW

4"
HEADWALL

PIPE DIAMETER

WIDTH = 3 X PIPE DIAMETER

LENGTH = 6 X PIPE DIAMETER

PLAN

G.D.O.T. TYPE 3 STONE DUMPED RIP RAP 18" DEEP

SECTION

PLASTIC FILTER FABRIC

STANDARD DETAILS

STORM DRAIN

OUTLET PROTECTION

DATE: FEB 2008
SCALE: NONE
DETAIL NO. G-9
G.D.O.T. TYPE 3
STONE DUMPED
RIP RAP.

FLOW

3:1 MAX

2:1 MAX

18"

STONE CHECK DAM (TYP)

L = THE DISTANCE SUCH THAT POINTS A & B ARE OF EQUAL ELEVATION

*** NOTE TO DESIGNER: SHOW CHECK DAMS AT APPROXIMATE LOCATIONS ON PLAN BASED UPON LENGTH (L).***

STANDARD DETAILS

STONE CHECK DAM

DATE: FEB 2008
SCALE: NONE
DETAIL NO. G-10
HARD SURFACE / PUBLIC ROAD

50' MINIMUM

6" MINIMUM

PLASTIC FILTER FABRIC

20' MINIMUM

N.S.A.R.-SIZE R-2 (1.5" - 3.5")
COARSE AGGREGATE
NOTES:
1. CONNECTION TO NEW SEWER SHALL BE WITH TEE OR WYE.
2. NO TCE'S OR WYES ON SEWERS LARGER THAN 18"Ø.

EASEMENT LINE OR R/W

FLOW

WYE

6" SERVICE CONNECTION LINE

FLOW

EXISTING GROUND

SEE DETAIL NO. SS-3 FOR DETAIL

WYE OR TEE

MIN. GRADE 1/4" PER FT.

MIN. GRADE 1/4" PER FT.

STANDARD DETAILS
SERVICE CONNECTION ON NEW SEWERS

DATE: FEB 2008
SCALE: NONE
DETAIL NO. SS-1
NOTE: 1.) HOLE IN EXISTING SEWER SHALL BE CORED.
2.) CONNECT SERVICE TO SEWER WITH:
   – TAPPING SADDLE ON DIP SEWERS
   – MANUFACTURED SADDLE ON PVC PIPE SEWERS
NOTE: TOP OF CONCRETE PAD SHALL BE FLUSH WITH FINAL SURFACE IN SIDEWALKS AND PAVED AREAS

COUNTERSUNK BRASS CLEANOUT PLUG

CONC. PAD

CONC. ENCASEMENT

SEWER SERVICE

6" Ø

1'-6" SQ.

9"

4 - # 4

6" Ø DI OR PVC PIPE

FITTING (1/8 BEND)

NO CONCRETE ON THESE JOINTS

PLUG OR EXTEND AS REQUIRED
BLOCK/RESTRAIN PLUG
AS NECESSARY WHEN
AIR TESTING MAIN SEWER

"Y" FITTING

18" MIN.
COLLAR TO EXTEND MIN. 2'-0" INTO UNDISTURBED SOIL EACH SIDE

WATERSTOP COLLAR

SEWER

O.D. + 2'-0"

FENCE WIDTH

PLAN

REINFORCEMENT NOT SHOWN IN PLAN VIEW

SECTION

3'-0" MIN.

O.D.

#4 EACH FACE

3" CLEAR ON ALL FACES.

COLLAR TO EXTEND MIN. 2'-0" INTO UNDISTURBED EARTH

STANDARD DETAILS

WATER COLLAR

DATE: FEB 2008
SCALE: NONE
DETAIL NO. SS-4
SIDE OR TOP VIEW

END VIEW

<table>
<thead>
<tr>
<th>SEWER SIZE</th>
<th>ASTM D3034 SDR35</th>
<th>ASTM F679 T-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5.46</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>7.28</td>
<td>N/A</td>
</tr>
<tr>
<td>10</td>
<td>9.09</td>
<td>N/A</td>
</tr>
<tr>
<td>12</td>
<td>10.79</td>
<td>N/A</td>
</tr>
<tr>
<td>15</td>
<td>13.20</td>
<td>N/A</td>
</tr>
<tr>
<td>18</td>
<td>N/A</td>
<td>16.13</td>
</tr>
<tr>
<td>21</td>
<td>N/A</td>
<td>19.00</td>
</tr>
<tr>
<td>24</td>
<td>N/A</td>
<td>21.36</td>
</tr>
</tbody>
</table>

EQUAL TO 95% OF BASE INSIDE DIAMETER

STANDARD DETAILS

DEFLECTION TEST MANDREL

DATE: FEB 2008
SCALE: NONE
DETAIL NO. SS-5
**PLAN**

- **Baffles**
- **Manhole Ring & Cover or 20" x 20" Lid**
- **Clean Out**
- **Flow**
- **Section A**

**SECTION B**

<table>
<thead>
<tr>
<th>Tank Capacity Liquid Gallons</th>
<th>L</th>
<th>W</th>
<th>D</th>
<th>Inlet Invert</th>
<th>Outlet Invert</th>
<th>Approx. Wt. of Tank in Lbs.</th>
<th>Minimum Dimensions for Excavation Length x Width x Depth</th>
<th>No. Lids</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>8' - 6&quot;</td>
<td>4'</td>
<td>5' - 0&quot;</td>
<td>10&quot;</td>
<td>12&quot;</td>
<td>9431</td>
<td>9' - 6&quot; x 5' - 0&quot; x 6' - 0&quot;</td>
<td>3</td>
</tr>
<tr>
<td>1500</td>
<td>10' - 0&quot;</td>
<td>5' - 6&quot;</td>
<td>5' - 0&quot;</td>
<td>10&quot;</td>
<td>12&quot;</td>
<td>13088</td>
<td>12' - 0&quot; x 7' - 0&quot; x 6' - 0&quot;</td>
<td>3</td>
</tr>
</tbody>
</table>

**Note:** Dimensions shown are suggested for tank capacities shown. Design shown is for non-traffic areas. Provide structural design adequate for particular installation.

**STANDARD DETAILS**

- **Barrow County**
- **Grease Trap**
- **Date:** FEB 2008
- **Scale:** None
- **Detail No.:** SS-6
150 PSI TEST PRESSURE
2000 PSF SOIL BEARING

<table>
<thead>
<tr>
<th>BLOCKING DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>X&quot;</td>
</tr>
<tr>
<td>---</td>
</tr>
</tbody>
</table>
| 12" | 1'-0" | 3'-0" | 5'-6" | 3'-6"
| 10" | 1'-0" | 2'-6" | 4'-9" | 3'-0"
| 8" | 0'-10" | 2'-6" | 4'-0" | 2'-6"
| 6" | 0'-8" | 1'-6" | 2'-9" | 1'-9"
| 12" | 1'-0" | 4'-0" | 6'-9" | 4'-3"
| 10" | 1'-0" | 3'-0" | 5'-9" | 3'-6"
| 8" | 0'-10" | 2'-6" | 4'-9" | 3'-0"
| 6" | 0'-8" | 1'-6" | 3'-6" | 2'-9"
| 12" | 1'-0" | 2'-3" | 5'-3" | 3'-3"
| 10" | 1'-9" | 2'-3" | 4'-6" | 2'-9"
| 8" | 0'-10" | 1'-6" | 3'-6" | 2'-3"
| 6" | 0'-8" | 1'-3" | 2'-6" | 1'-6"
| 12" | 1'-0" | 1'-6" | 3'-6" | 2'-3"
| 10" | 1'-0" | 1'-3" | 3'-0" | 2'-0"
| 8" | 0'-10" | 1'-0" | 2'-6" | 1'-6"
| 6" | 0'-8" | 1'-0" | 1'-9" | 1'-3"
| 12" | 1'-0" | 1'-6" | 2'-6" | 1'-6"
| 10" | 1'-0" | 1'-0" | 2'-3" | 1'-3"
| 8" | 0'-10" | 1'-0" | 1'-9" | 1'-0"
| 6" | 0'-8" | 1'-0" | 1'-6" | 0'-6"

X" = DIAMETER OF PIPE TO BE BLOCKED

STANDARD DETAILS

TYPICAL BLOCKING

DATE: FEB 2008
SCALE: NONE
DETAIL NO. SS-7
Combination Air/Vacuum Valve Assembly to be:

APCO Model 445 or

ValMatic Model 802A
FOOTING IN EARTH

FOUNDATION IN ROCK

NOTE: MAXIMUM PIER SPACING IS 20'.

STANDARD DETAILS

CONCRETE PIER

DATE: FEB 2008
SCALE: NONE
DETAIL NO. SS-9
PIPE I.D. | "Y" | "Z" | VERT. REINF. | HOOPS
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot;-16&quot;</td>
<td>24&quot;</td>
<td>12&quot;</td>
<td>@12&quot; O.C.</td>
<td>#5</td>
</tr>
</tbody>
</table>

NOTES:
1. FOOTING REINF. SAME AS VERT. REINF. EA. WAY TOP & BOTTOM.

2. WHEN BASE IS IN ROCK OMIT FOOTING & GROUT VERTICAL CORNER BARS 8" INTO ROCK.
1- 1"Ø x 12"LONG ST.STL. ANCHOR BOLT WITH 2" HOOK & 2" PROJ. AND 3" ST. STL. WASHER

4" x 3/8" ST. STL. STRAP

4" x 3/8" NEOPRENE STRAP AROUND PIPE (360°)

1:2 GROUT AFTER PIPE IS BROUGHT TO LINE AND GRADE

D.P. I.D. 120°

2" TYP.

1/8" BEFORE NUT IS TIGHTENED

STANDARD DETAILS
PIPE ANCHORAGE

DATE: FEB 2038
SCALE: NONE
DETAIL NO. SS-11
1'-0" MIN. TOP OF PIPE OPENING TO LIP OF BASE

4'-0"
DIA.

JOINT SEALANT
SHELF

GROUT INVERT

SEE DETAIL NO. MH-2

CRUSHED STONE

SEE DETAIL NO. MH-5 FOR CONNECTION
6" MIN. BOTTOM OF PIPE OPENING TO INSIDE OF BASE

CRUSHED STONE

MH STEPS @ 16" O.C.

GROUT INVERT & SHELF

SEE DETAIL NO. MH-2

NOTE:
1. SHELF AND INVERT SHALL BE TROWEL FINISHED
2. IF BRICK USED AS FILLER, PROVIDE MINIMUM 2 INCHES GROUT OVER BRICK
TOP AT GRADE

C.I. FRAME & COVER
SET IN MORTAR

BRICK & MORTAR
FOR ADJUSTMENT
(3 COURSES MAX)

MH. STEPS
@ 16" O.C.

TOP ABOVE GRADE

C.I. FRAME & COVER
CAST 'N CONE SECTION

ECCENTRIC
CONE SECTION

RISER
SECTION

4'-0" DIA.

NOTE: FRAME & COVER SHALL BE CAST IN ALL CONE SECTIONS
UNLESS FRAME & COVER IS TO BE FLUSH WITH FINAL GRADE.

STANDARD DETAILS

MANHOLE
RISER AND CONE

DATE: FEB 2008
SCALE: NONE
DETAIL NO. MH-2
COVER BACK

COVER SECTION

FRAME PLAN

4 EQ. SPACED
3/4" HOLES

SEWER

COVER FACE

FRAME SECTION

NOTE: PICKHOLE SHALL BE
MIN 1 1/4" WIDE,
TWO PER COVER

VULCAN MODEL V-1357 OR INTERCHANGEABLE

STANDARD DETAILS

STANDARD FRAME AND COVER

DATE: FEB 2008
SCALE: NONE
DETAIL NO. MH-3
FRAME MAY HAVE CAST ON LUGS AT BOLT HOLES IN LIEU OF FULL INNER RING

(4) 1" CORED ANCHOR HOLES

DRILL & TAP 4 EQ. SPACED HOLES FOR 5/8" BOLTS

5/8"x 2" HEX. HD. ST.STL. BOLTS

1/8" CONTINUOUS NEOPRINE GASKET

COVER BACK

COVER SECTION

FRAME PLAN

COVER FACE

WATERTIGHT DETAIL

SEWER

BOLT HOLES

WATERTIGHT DETAIL

O P I C S L O T D E T A I L

APPROX. WEIGHTS
FRAME 135 LBS.
COVER 295 LBS.
TOTAL 430 LBS

VULCAN MODEL V-2358 OR INTERCHANGEABLE

STANDARD DETAILS
WATERTIGHT FRAME AND COVER

DATE: FEB 2008
SCALE: NONE
DETAIL NO. MH-4
SHAPED FLOW TROUGHS

8" MIN. CONCRETE AROUND PIPE

SEWER SIZE | DROP SIZE
---|---
SEWER SIZE < 12" | 12"
16"-20" | 12"
24"-30" | 18"

PLAN

CUT AT WALL LINE

SEE DETAIL MH-2

MH. STEPS @ 16" O.C.

JOINT SEALANT

GROUT INVERT

1'-0" MIN.

2'-0" MIN.

2'-0" MIN.

12" MIN.

BRICK JOINT SEALANT

1'-0" MIN.

CRUSHED STONE

NON-SHRINK GROUT

CONCRETE

TRANSITION SLEEVE

SEWER PIPE

DUCTILE IRON PIPE

MIN. 5 FT. LONG

OUTSIDE PIPE

1-90° OR 2-45° DIP BENDS

VARIES: MATCH CROWNS WITH MAIN SEWER

NOTE: POUR CONCRETE AGAINST UNDISTURBED EARTH OR FORM. IF FORMED, FILL VOID UNDER PIPE WITH CRUSHED STONE.

STANDARD DETAILS

MANHOLE BASE WITH DROP CONNECTION

DATE: FEB 2008
SCALE: NONE
DETAIL NO. MH-7

BARROW COUNTY
JOINT SEALANT

MH. STEPS @ 16" O.C.

PRECAST CONC. RISER

SEE DETAIL NO. MH-2

PRECAST OR SAWCUT OPENING

1" MIN., 2" MAX.

GROUT INVERT & SHELF

EXIST. SEWER

12" MIN.

6" MIN.

CONCRETE

EXISTING PIPE INVERT

PIPE O.D. + 2" MIN.
PIPE O.D. + 4" MAX.

CRUSHED STONE

SEE DETAIL NO. MH-2

1'-0" MIN., TOP OF PIPE OPENING TO LIP OF BASE

JOINT SEALANT

GROUT INVERT

5" MIN.

CRUSHED STONE

EXISTING PIPE INVERT

NOTE: SAW CUT EXISTING PIPE AT ITS C. ON SIDES

STANDARD DETAILS

MANHOLE OVER EXISTING SEWER

BARROW COUNTY

DATE: FEB 2008
SCALE: NONE
DETAIL NO. MH-8
### STANDARD MANHOLE SCHEDULE

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>ANGLE &quot;A&quot;</th>
<th>MH. DIA.</th>
<th>&quot;T&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>8&quot; TO 15&quot;</td>
<td>0° TO 90°</td>
<td>4'-0&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>18&quot; TO 24&quot;</td>
<td>0° TO 60°</td>
<td>4'-0&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>18&quot; TO 24&quot;</td>
<td>60° TO 90°</td>
<td>5'-0&quot;</td>
<td>6&quot;</td>
</tr>
</tbody>
</table>

**NOTE:**
- Minimum & radius (R) of M.H. invert
  - \( \leq 1.5 \times \text{PIPE DIAMETER} \)
FORCE MAIN DISCHARGE
MANHOLE TYPE 1

STANDARD DETAILS

DATE: FEB 2008
SCALE: NONE
DETAIL NO. MH-11
PLAN

SEE DETAIL MH-2 FOR TOP

4'-0" DIA.

PRECAST CONC. MH.

FORCE MAIN

MJ-BEND

3"

GROUT

FORCE MAIN

3"

GRAVITY SEWER

CRUSHED STONE

SECTION

(END OF LINE CONNECTION)

STANDARD DETAILS

FORCE MAIN DISCHARGE
MANHOLE TYPE 2

DATE: FEB 2008
SCALE: NONE
DETAIL NO. MH-12
FILL VOID BETWEEN PIPE AND MANHOLE WALL WITH NON-SHRINK GROUT BEFORE FORMING MANHOLE COLLAR

MANHOLE COLLARS SHALL BE USED FOR SEWER CONNECTIONS TO MANHOLES:
1.) IF EXIST, MANHOLE IS BRICK
2.) IF MANHOLE IS CONSTRUCTED OVER EXIST. SEWER

MANHOLE OPENING

8" MIN. ABOVE TOP OF PIPE

CRUSHED STONE

8" MIN. BELOW BOTTOM OF PIPE

SECTION

PLAN

STANDARD DETAILS

MANHOLE COLLAR

DATE: FEB 2008
SCALE: NCWE
DETAIL NO. MH-13
POLYPROPYLENE PLASTIC

1/2" Ø OR NO. 3 DEFORMED GRADE 60 STEEL ROD

SECTION

STEPS SHALL BE PLACED INTO WET CONCRETE WALL DURING MANUFACTURE OR MORTORED INTO HOLES AFTER CONCRETE HAS SET.
3" S.S. VENT DUCT WITH S.S. INSECT SCREEN

EL 7
EL 7

STAINLESS STEEL FLOAT BRACKET

MULTI-TRODE LEVEL SENSOR (10 SENSORS)

ROTATED FOR CLARITY
INVERT IN
HIGH WATER ALARM
LAC PUMP ON
LEAD PUMP ON

BACKUP PUMP STATION FLOATS
HIGH/LOW LEVEL FLOATS FOR PRIMARY PUMPS

PUMPS OFF
LOW LEVEL ALARM
BOTTOM WETWELL

PUMP STATION
N.T.S.

STANDARD DETAILS
BARROW COUNTY
MULTI-TRODE LEVEL SENSOR
DATE: FEB 2008
SCALE: NONE
DETAIL NO. PS-5
8" SCH. 40 STEEL PIPE
(PAINTED YELLOW)

GRADE

CONCRETE ENCASMENT

FILL PIPE W/CONCRETE

SAND, GRAVEL, OR CRUSHED STONE

4" MIN.

3'-0"

6" 6"

4'-0"

7'-0"