

DATE	5/13/2015	ALL DETAILS REVISED - PER CITY OF ELGIN ENGINEERING REVIEW
DATE	9/19/2016	UPDATED 122
DATE	10/17/2016	UPDATED 111

STANDARD DETAILS

CITY OF ELGIN

1900 Holmes Road
Elgin, IL 60123
www.cityofelgin.org

Phone: 847-931-5955
Fax: 847-931-5965

ENGINEERING DEPARTMENT

ELGIN
THE CITY IN THE SUBURBS

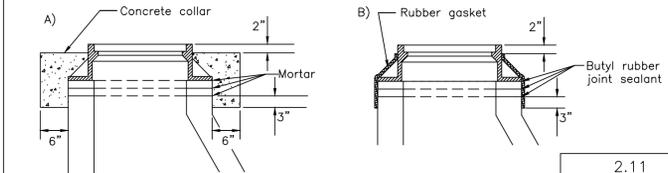
PROJ. MGR.:
PROJ. ENGR.:
DRAWN BY: M.L.H.
CHECKED BY:
DATE: 01-13-04
SCALE: N.T.S.

SHEET
1 OF 2

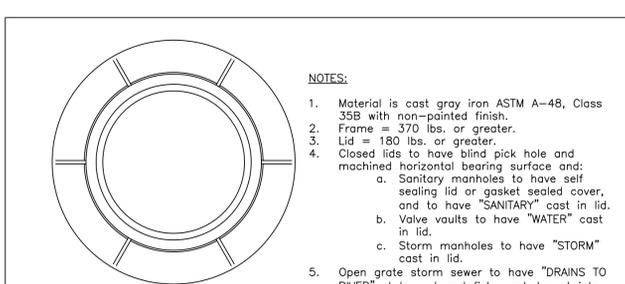
The City of Elgin Engineering Department has observed problems with the structural integrity of storm, sanitary and water structures. The adjusting ring and frames of these structures are occasionally displaced by surrounding construction operations, after the underground contractor has placed and sealed them. As a result, the displaced frames and adjusting rings lose the water tight nature of the structure and allows sub-base material to penetrate the structure leaving an underground void that creates damaging settlement including potholes.

This detail illustrates the policy for frames and adjusting rings required as part of the City of Elgin Engineering and Construction Standards.

- General**
- Adjusting rings and frames shall be aligned.
 - Adjusting rings shall be free of any cracks, chips and damage.
 - Maximum adjusting height shall be 12" for storm and water structures and 8" for sanitary structures.
 - Minimum number of adjusting rings shall be used. Maximum of two (2).
- A) All public and private utilities in hard surface areas (right of way or easements)**
- Adjusting rings and frames shall be set in place on full mortar bed.
 - A 6" wide concrete collar shall be installed from 3" below lowest ring to 2" below finish grade of top of frame in all water and sewer structures.
- B) All public and private utilities in landscaped areas**
- Adjusting rings and frames shall be set in place with a butyl rubber joint sealant (EZ STICK, Kent Seal).
 - An exterior rubber gasket shall be installed from 3" below lowest ring to 2" top of frame over all adjusting rings.

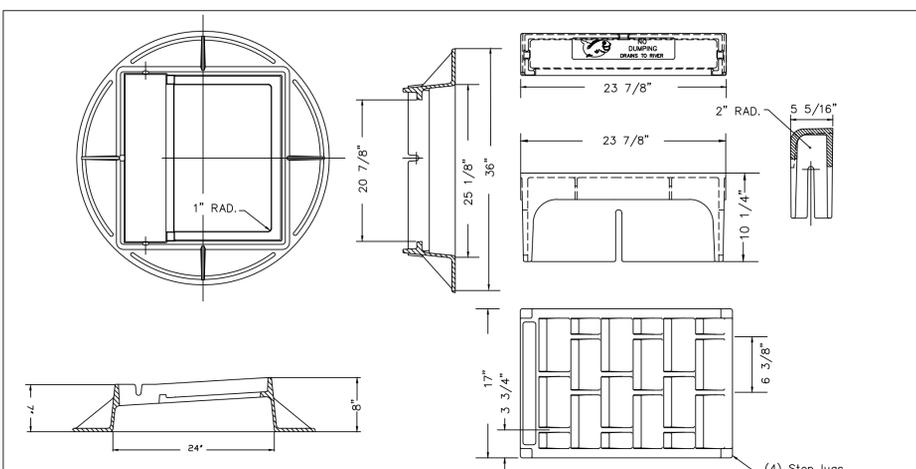


2.11
CITY OF ELGIN
UNDERGROUND
STRUCTURE
FRAME COLLAR
REVISED: MAY 2015



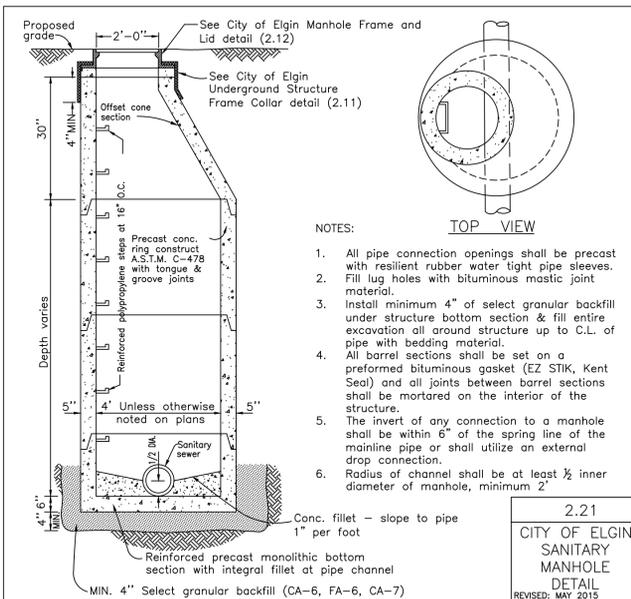
- NOTES:**
- Material is cast gray iron ASTM A-48, Class 35B with non-painted finish.
 - Frame = 370 lbs. or greater.
 - Lid = 180 lbs. or greater.
 - Closed lids to have blind pick hole and machined horizontal bearing surface and:
 - Sanitary manholes to have self sealing lid or gasket sealed cover, and to have "SANITARY" cast in lid.
 - Valve vaults to have "WATER" cast in lid.
 - Storm manholes to have "STORM" cast in lid.
 - Open grate storm sewer to have "DRAINS TO RIVER" statement and fish symbol cast into grate.
 - Common model: NEENAH R-1712

2.12
CITY OF ELGIN
MANHOLE
FRAME AND
LID DETAIL
REVISED: MAY 2015



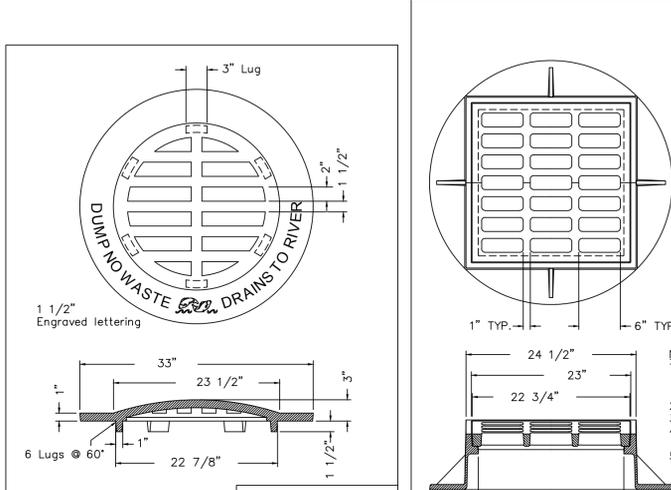
- Note:**
- Use manufacturer's recommended bolts to secure curb box to frame.
 - Material: cast gray iron ASTM A-48, Class 35B, Finish: No paint
 - Weight: Frame - 185 lbs., Curb box - 81 lbs., Grate - 71 lbs.
 - Common model: EJ 7010 Type M4 Grate for flowthrough or Type M1 for low points; NEENAH R-306S w/ open curb box and Type L Grate for flowthrough or Type A for low points.

2.13
CITY OF ELGIN
CURB & GUTTER
FRAME AND
GRATE DETAIL
REVISED: MAY 2015



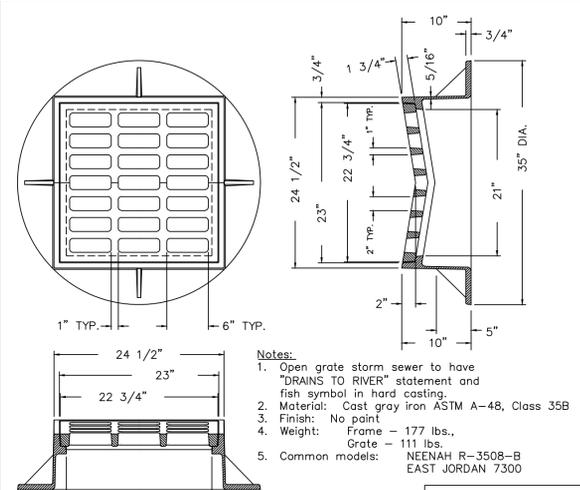
- NOTES:**
- All pipe connection openings shall be precast with resilient rubber water tight pipe sleeves.
 - Fill lug holes with bituminous mastic joint material.
 - Install minimum 4" of select granular backfill under structure bottom section and fill entire excavation all around structure up to C.L. of pipe with bedding material.
 - All barrel sections shall be set on a preformed bituminous gasket (EZ STIK, Kent Seal) and all joints between barrel sections shall be mortared on the interior of the structure.
 - The invert of any connection to a manhole shall be within 6" of the spring line of the mainline pipe or shall utilize an external drop connection.
 - Radius of channel shall be at least 1/2 inner diameter of manhole, minimum 2"

2.21
CITY OF ELGIN
SANITARY
MANHOLE
DETAIL
REVISED: MAY 2015



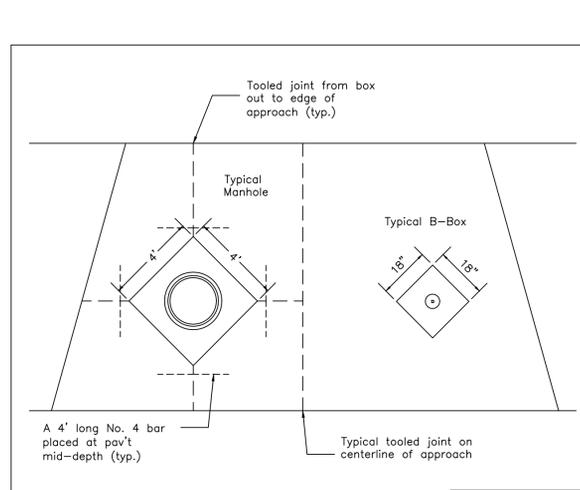
- Note:**
- Material: Cast gray iron ASTM A-48, Class 35B
 - Finish: No paint
 - Weight: 181 lbs.
 - Common models: NEENAH R-4340-B EAST JORDAN 6527N

2.22
CITY OF ELGIN
BEEHIVE GRATE
WITH FISH LOGO
DETAIL
REVISED: MAY 2015



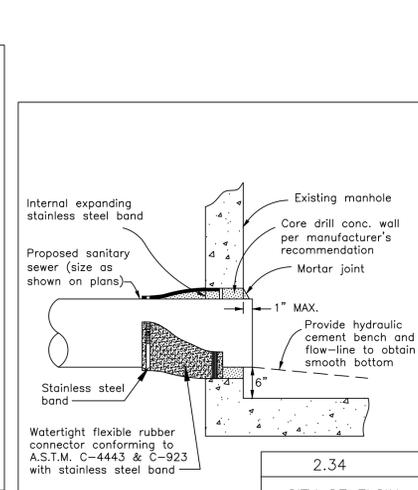
- Notes:**
- Open grate storm sewer to have "DRAINS TO RIVER" statement and fish symbol in hard casting.
 - Material: Cast gray iron ASTM A-48, Class 35B
 - Finish: No paint
 - Weight: Frame - 177 lbs., Grate - 111 lbs.
 - Common models: NEENAH R-3508-B EAST JORDAN 7300

2.23
CITY OF ELGIN
ROLL FRAME AND
GRATE DETAIL
REVISED: MAY 2015



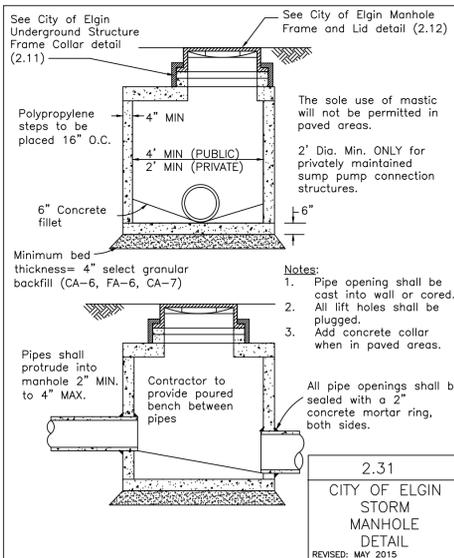
- Notes:**
- 1/2" Fiber expansion material on all faces of box out; B-box, manhole frame or other structure frame shall be flush with top of concrete approach.

2.24
CITY OF ELGIN
STRUCTURE
BOX OUT
DETAIL
REVISED: MAY 2015



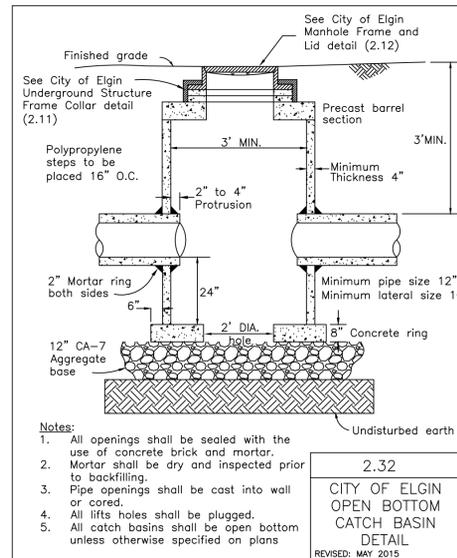
- Notes:**
- Watertight flexible rubber connector conforming to A.S.T.M. C-4443 & C-923 with stainless steel band

2.34
CITY OF ELGIN
SANITARY PIPE TO
EXIST. MANHOLE
CONNECTION
DETAIL
REVISED: MAY 2015



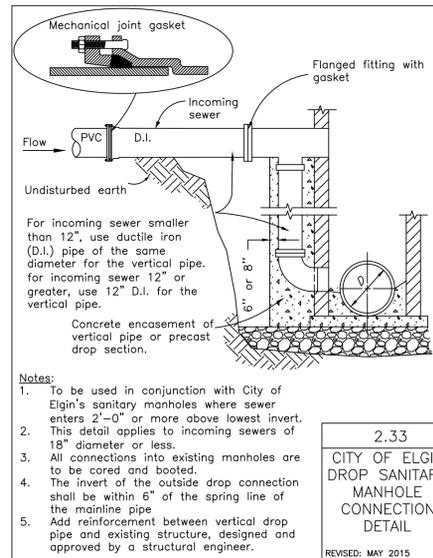
- Notes:**
- Pipe opening shall be cast into wall or cored.
 - All lift holes shall be plugged.
 - Add concrete collar when in paved areas.

2.31
CITY OF ELGIN
STORM
MANHOLE
DETAIL
REVISED: MAY 2015



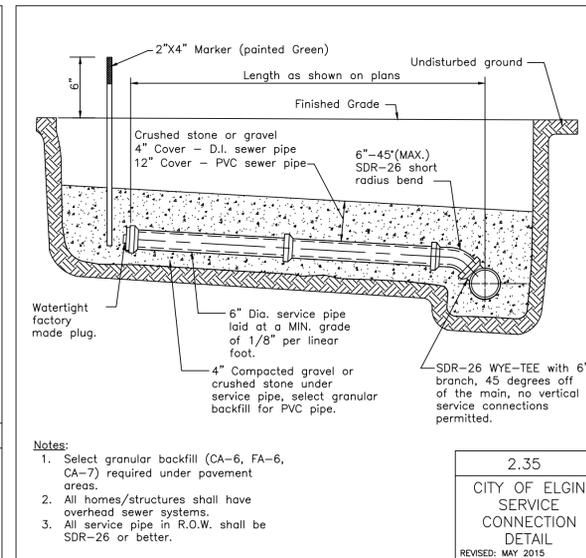
- Notes:**
- All openings shall be sealed with the use of concrete brick and mortar.
 - Mortar shall be dry and inspected prior to backfilling.
 - Pipe openings shall be cast into wall or cored.
 - All lift holes shall be plugged.
 - All catch basins shall be open bottom unless otherwise specified on plans

2.32
CITY OF ELGIN
OPEN BOTTOM
CATCH BASIN
DETAIL
REVISED: MAY 2015



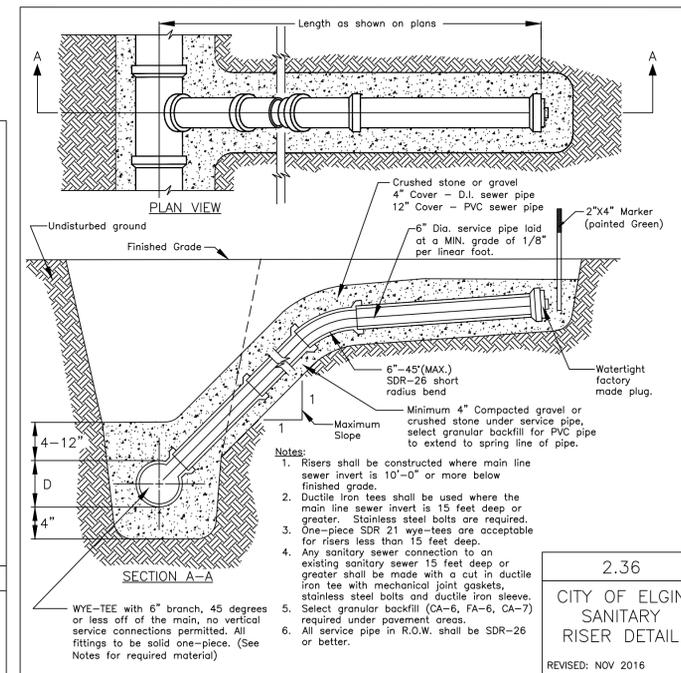
- Notes:**
- To be used in conjunction with City of Elgin's sanitary manholes where sewer enters 2'-0" or more above lowest invert.
 - This detail applies to incoming sewers of 18" diameter or less.
 - All connections into existing manholes are to be cored and booted.
 - The invert of the outside drop connection shall be within 6" of the spring line of the mainline pipe.
 - Add reinforcement between vertical drop pipe and existing structure, designed and approved by a structural engineer.

2.33
CITY OF ELGIN
DROP SANITARY
MANHOLE
CONNECTION
DETAIL
REVISED: MAY 2015



- Notes:**
- Select granular backfill (CA-6, FA-6, CA-7) required under pavement areas.
 - All homes/structures shall have overhead sewer systems.
 - All service pipe in R.O.W. shall be SDR-26 or better.

2.35
CITY OF ELGIN
SERVICE
CONNECTION
DETAIL
REVISED: MAY 2015



- Notes:**
- Risers shall be constructed where main line sewer invert is 10'-0" or more below finished grade.
 - Ductile iron tees shall be used where the main line sewer invert is 15 feet deep or greater. Stainless steel bolts are required.
 - One-piece SDR 21 wye-tees are acceptable for risers less than 15 feet deep.
 - Any sanitary sewer connection to an existing sanitary sewer 15 feet deep or greater shall be made with a cut in ductile iron tee with mechanical joint gaskets, stainless steel bolts and ductile iron sleeve.
 - Select granular backfill (CA-6, FA-6, CA-7) required under pavement areas.
 - All service pipe in R.O.W. shall be SDR-26 or better.

2.36
CITY OF ELGIN
SANITARY
RISER DETAIL
REVISED: NOV 2016

DATE	5/13/2015	ALL DETAILS REVIEWED	PER: CITY OF ELGIN ENGINEERING REVIEW
REVISIONS		ADDED SANITARY RISER DETAIL	
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