

Public Works Standard Drawings Subcommittee Meeting

Monday, May 24, 2021
Microsoft Teams

Welcome and Introductions

Summary April 19, 2021

5070

- For straight pipe that comes in at the top, remove arrow and leave open on the right side.
- The detail starts to show how to build a manhole, but it should reference back to the manhole detail for barrel and cone.
- Add note, "Extend as directed by owner" and consider Lewisville detail to show this.

5080

- Remove the ball used as a connection piece.
- Show support (straps) 3'-4' apart minimum, reference Lewisville details.
- Add note, "4' maximum of spacing, 2' straps minimum,"
- As shown in the previous detail, resilient collar should surround the incoming pipe on drop.

5090

- Rename from "Line Intersection" to "Invert Detail."

5100

- Remove detail and replace with a detail for a wastewater access detail. Reference Dallas Water Utilities and Lewisville detail.

5110

- Add note, "Only to be used with express consent of the owner."
- Remove "Class C embedment for clay pipe."

5120

- On key change note to, "or tap"
- Add note, "Minimum 9' separation from water service."

5130-5160

- The wastewater lateral details should be cleaned up, it's unnecessary to have 5 drawings. However, they need to stay consistent with specification 502.10.4.1 on page 502-28. Mathew will provide feedback outside of meeting.

5140

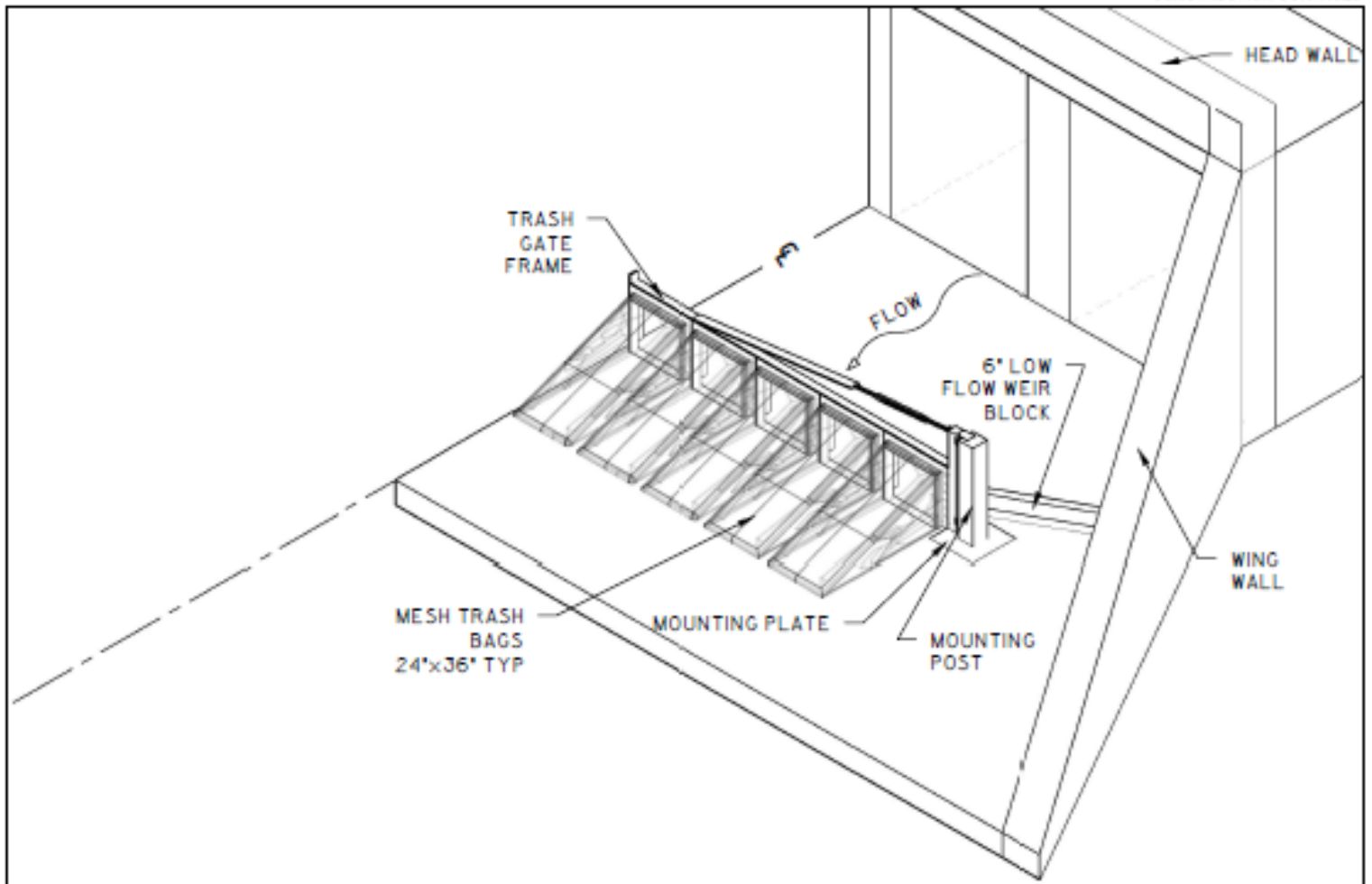
- Send this detail to Bass & Hays and ask if they use it or if it's relevant to them.

5170

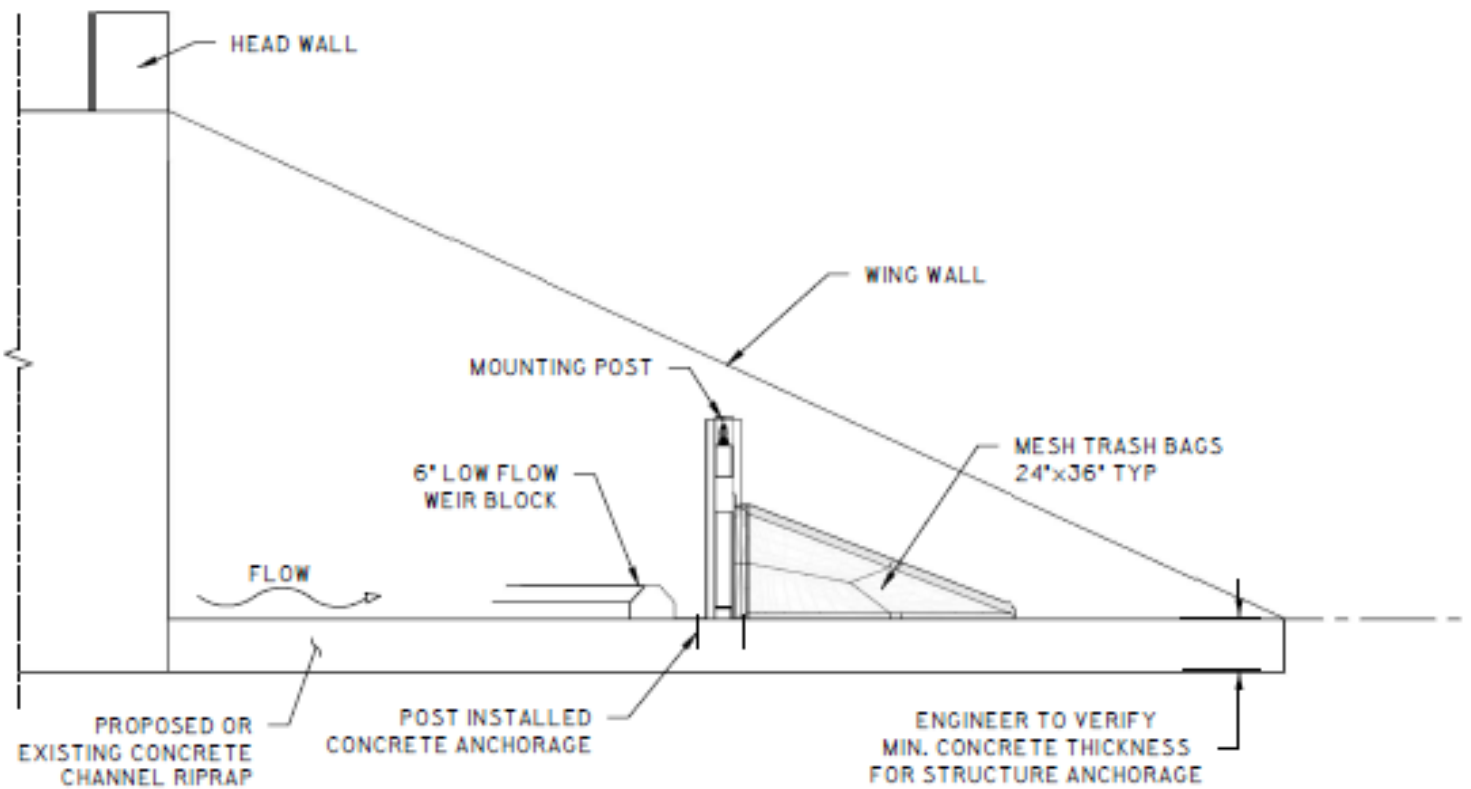
- Add a note pointed to the cone area, "Removal depth limited to 2' above ground or as directed by owner."

The subcommittee would like to add drawings for a wastewater access device, encasement pipe, tracer wire or tape, forced mains, manhole odor control (device to release gasses), and possibly a manhole detail.

Draft Frisco Trash Screen Detail

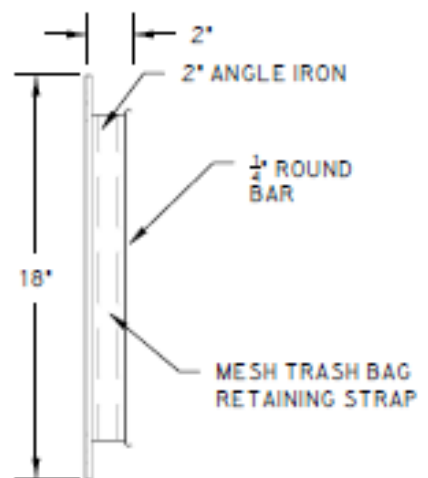
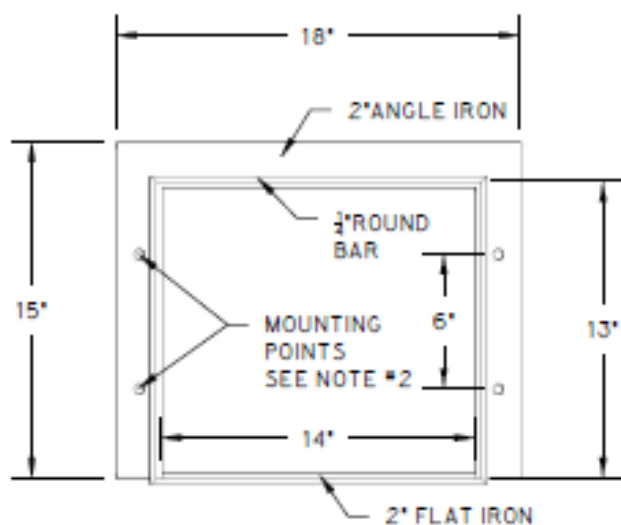
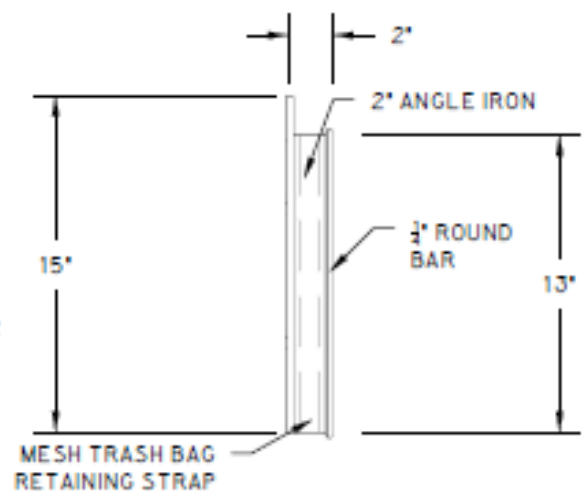
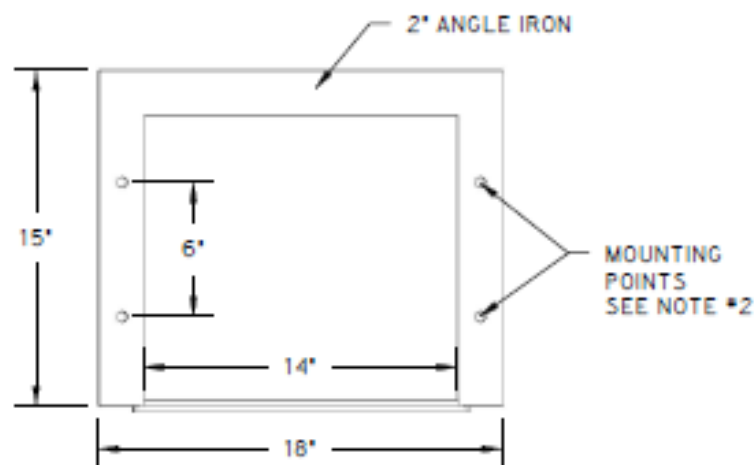
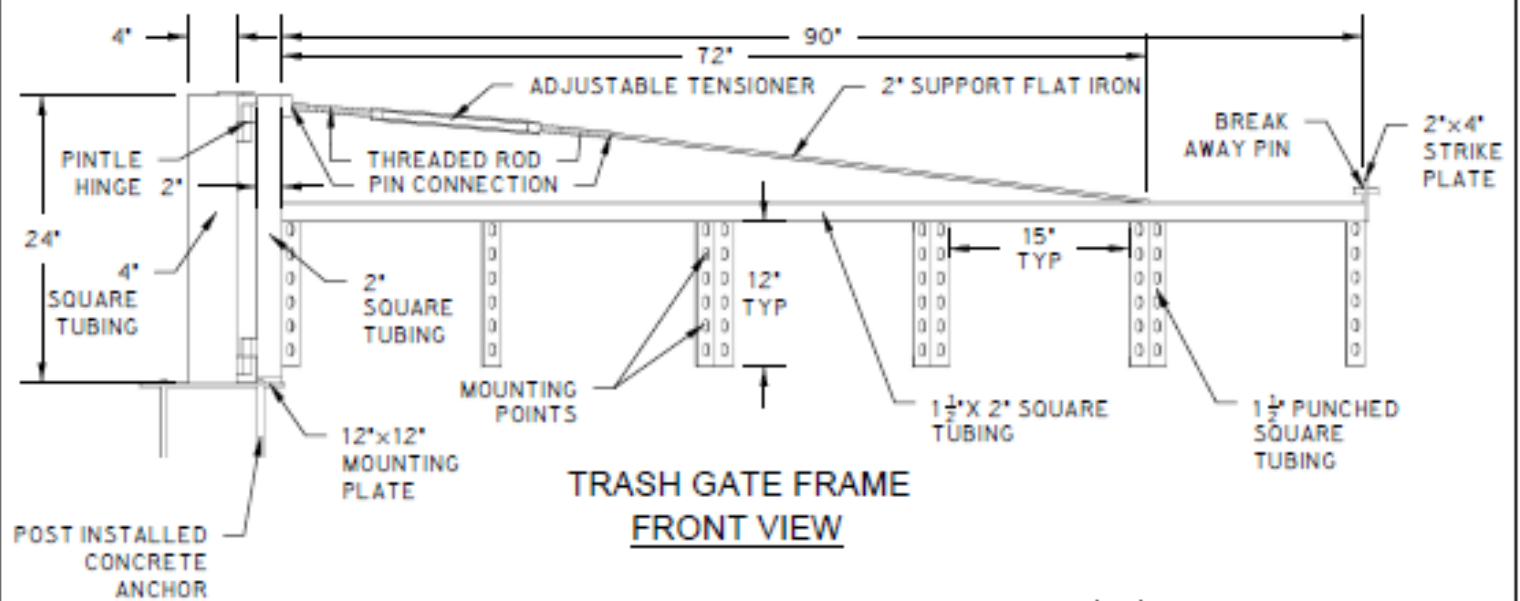


HALF ISOMETRIC VIEW



SIDE VIEW WITH HEADWALL

FIGURE X.XX TRASH GATE ISOMETRIC



NOTES:

1. ALL MATERIAL UNLESS OTHERWISE NOTED IS NUMBER 3 GAUGE PAINTED STEEL WELDED CONNECTIONS.
2. ATTACH USING 1/2" X 2" THREADED BOLTS WITH 1/2" WASHERS AND NUTS.

FIGURE X.XX TRASH GATE PLAN

From Ben Pylant at Halff:

This email is to follow-up your request to provide more information regarding the process to develop a scalable trash rack, similar to the detail from Frisco. Please see below for some comments and possible considerations for the design of the trash rack to make it scalable to other design sizes. As discussed, I am hesitant to simply change the sizes without documented assumptions and structural engineer evaluations. This could get a little effort intensive but might be worth the time and effort to the subcommittee. My biggest concern would be increasing the size of the baskets and any concerns with safety. The following was developed in coordination with our Senior Project Managers Levi Hein, copied on this email.

This proposed trash collection device is unique in the application because the intent appears to be for installation downstream of a culvert in a channel application. Typically, these devices are targeting end of line treatment on closed conduit system. Application of the trash collector to a roadway cross-culvert conveying a natural water course presents some potential challenges and considerations for the design. Either of these applications has the potential for a blockage in the system which could decrease conveyance and exacerbate flooding. Specifically for a channel application the concern is debris.

The Federal Highway Administration, FHWA, Hydraulic Engineering Circular No. 9, HEC-9, addresses the classification, evaluation of accumulation, impacts, and countermeasures for debris on bridges and culverts. This trash device is targeting very small buoyant debris and small floating debris, but should be evaluated for impacts of medium and large debris which have the potential to pass the culvert entrance. For culverts, medium and large debris in flood waters are typically mitigated with a trash rack bar screen design on the entrance of the culvert. These devices can have operation and maintenance concerns as well. As currently designed, the structure layout and geometry will influence how debris is collected during a flood event. The middle portion, as intended, will collect trash and debris of various sizes, however the horizontal gaps between the post and the headwall have the potential for retaining medium and large debris causing additional blockage during a flood event.

Possible approach to evaluate: structural integrity, drainage design, and environmental concerns

Structural integrity considerations

- The trash collection systems anchorage and structural members should be designed to withstand the hydraulic load of the culvert discharge assuming the a complete blockage.
- The trash rack as a cross-brace tensioning member has the potential to catch debris and reduce hydraulic capacity and should be designed to withstand the hydraulic load of the culvert discharge assuming the a complete blockage.

Drainage design considerations:

- Typical culvert hydraulic design considerations include evaluation of inlet/outlet control for the capacity. Depending on the situation, the implementation may require evaluation of the design for both of these conditions as well assuming a complete blockage of the system to ensure no adverse impacts.
- With the potential of a blockage in the centerline of the culvert and weir flow around the device, consider evaluation of the design for additional riprap protection downstream for potential higher velocities of the restricted flow.
- The current system is designed with breakaway conditions that appears to allow the system to pivot if it becomes clogged. The shear pin that allows the breakaway function to occur at the opportune time would require consideration depending on the size and specific situation of the system.

Health safety welfare, Environmental concerns:

- As designed the trash collection system has the potential for animal entrapment. Enlarging the opening of the device should consider these concerns as well as safety concerns.

In order to evaluate and design typical 24" box and 48" box system we would need to define the typical criteria. These criteria could be drainage area, discharge, channel slope, culvert size, culvert hydraulic design control, culvert entrance (with, without bar screen), existing/proposed concrete apron thickness, etc.

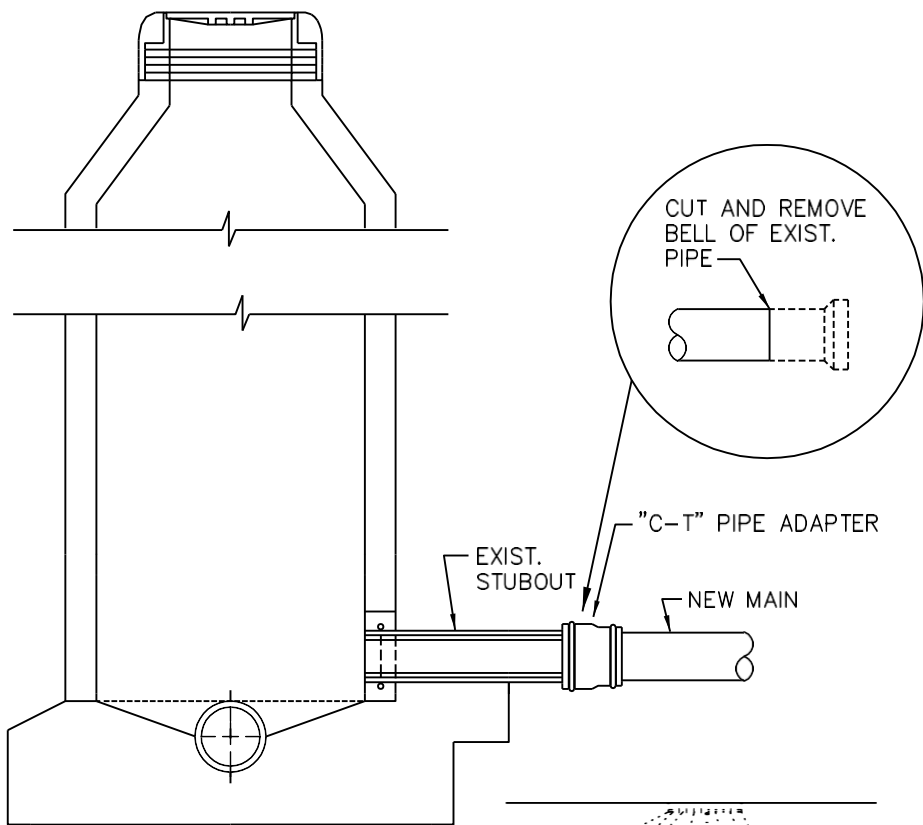
Division 5000: Wastewater Collection

DIVISION 5000 WASTEWATER COLLECTION

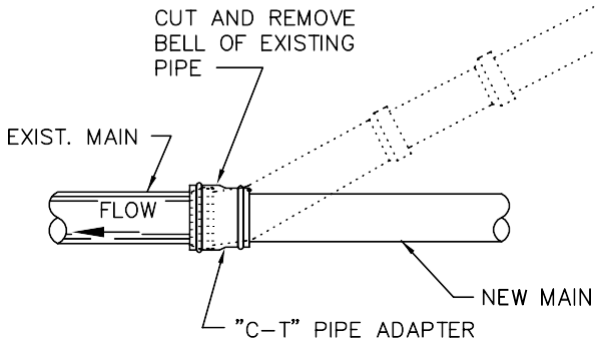
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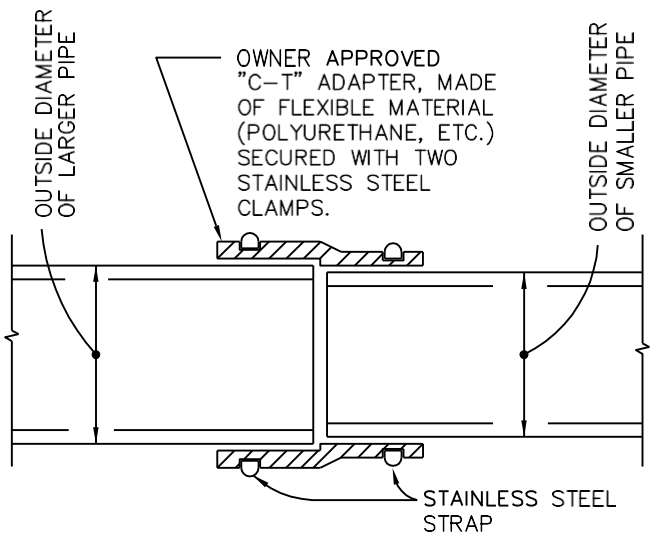
The subcommittee would like to add drawings for a wastewater access device, encasement pipe, tracer wire or tape, forced mains, manhole odor control (device to release gasses), and possibly a manhole detail.



AT STUBOUT
N.T.S.



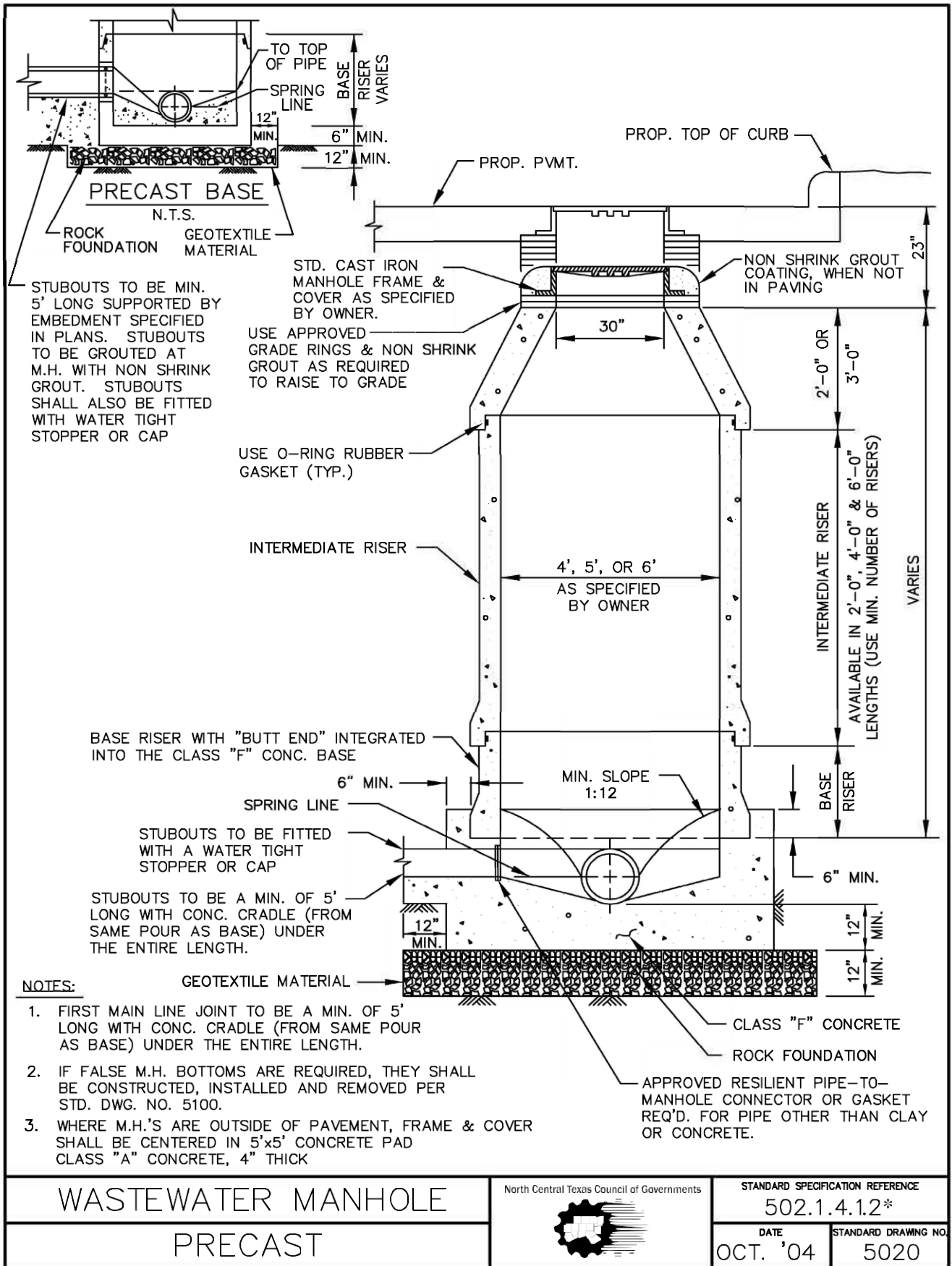
AT CLEANOUT
N.T.S.

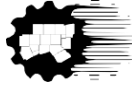


"C-T" PIPE ADAPTER
N.T.S.

NOTE:
THIS DETAIL FOR USE ONLY WHEN NEW MAIN WILL NOT MATE WITH EXISTING MAIN JOINT DUE TO DIFFERENT DIMENSIONS OR MATERIALS AND A MANHOLE IS NOT REQUIRED.

<p>WASTEWATER MAIN TIE-IN AT CLEANOUT OR M.H. STUBOUT</p>	<p>North Central Texas Council of Governments</p> 	<p>STANDARD SPECIFICATION REFERENCE 502.10</p>
	<p>DATE OCT. '04</p>	<p>STANDARD DRAWING NO. 5010</p>

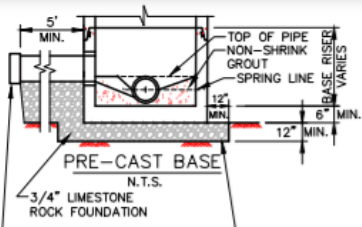


<h1>WASTEWATER MANHOLE</h1> <h2>PRECAST</h2>	North Central Texas Council of Governments 	STANDARD SPECIFICATION REFERENCE 502.1.4.1.2*
	DATE OCT. '04	STANDARD DRAWING NO. 5020

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

Missing manhole frame and cover that was in the Stormwater section, see also as a starting point: 502.1.4.6.

Reference Lewisville detail

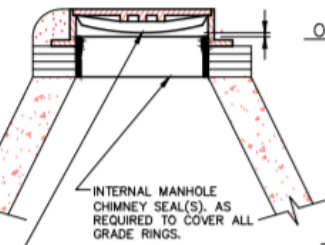


STUBOUTS TO BE MIN. 5' LONG SUPPORTED BY EMBEDMENT SPECIFIED IN PLANS. STUBOUTS TO BE GROUTED AT M.H. WITH NON SHRINK GROUT. STUBOUTS TO BE FITTED WITH WATER TIGHT PLUG OR CAP

1" MIN. CLEARANCE FROM PAN TO SEAL



O-RING & RAMNEK DETAIL N.T.S.

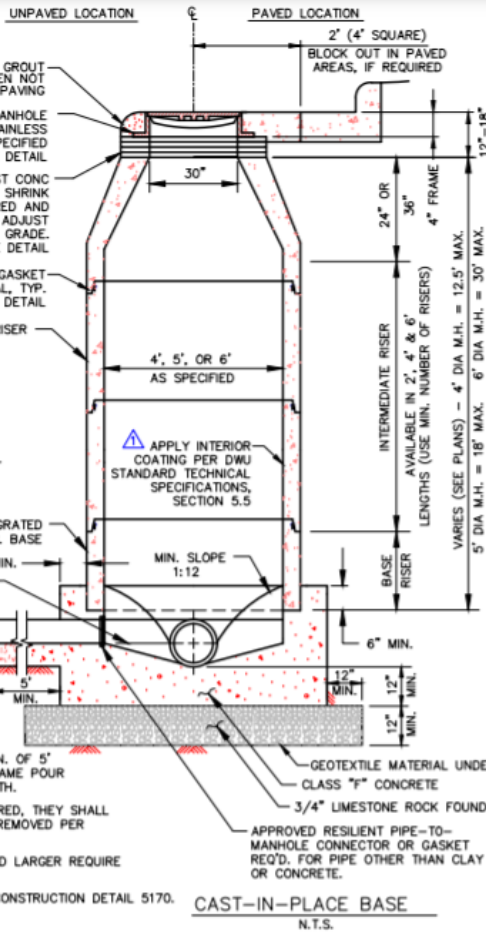


STAINLESS STEEL MANHOLE INSERT INSTALLED IN EACH MANHOLE UNLESS OTHERWISE APPROVED BY CITY ENGINEER.
APPROVED DEVICES:
1. S.S.I. SewerShield
2. Approved Equal

MANHOLE INSERT AND SEAL DETAIL N.T.S.

NOTES:

- FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER THE ENTIRE LENGTH.
- IF FALSE M.H. BOTTOMS ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED PER STD. DWG. NO. 5100.
- SANITARY SEWER LINES 24" DIA AND LARGER REQUIRE A MIN. 5' DIA MANHOLE.
- LOCATE MANHOLE PER STANDARD CONSTRUCTION DETAIL 5170.

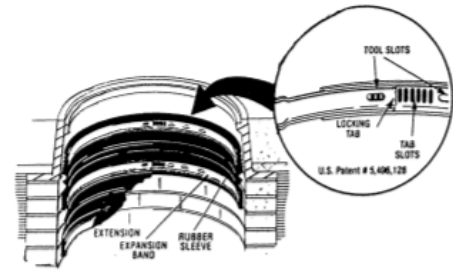


CAST-IN-PLACE BASE N.T.S.

INTERNAL MANHOLE CHIMNEY SEAL REQUIRED METHOD

COMPRESSION BAND

One piece uneven-legged channelled compression band, fabricated from corrosion resistant 16 ga. stainless steel conforming to ASTM A-240 (AISI type 304). The band shall compress the rubber sleeve against the inside surface of the manhole frame and chimney and allow a minimum range of adjustment of 2" on the diameter.



RUBBER SLEEVE

The rubber chimney seal sleeve shall be furnished in either 8"-10" width to suit manhole conditions. Extension sleeves shall be used as required. Material physical characteristics shall conform to ASTM C-923, as modified, with a minimum thickness of 1/8".

EXTERNAL MANHOLE CHIMNEY SEAL

USE ONLY WITH CITY APPROVAL

PHYSICAL PROPERTIES:

Tensile Strength	1200 psi
Elongation at Break	350% minimum
Hardness (Durometer)	40 ± 5
Accelerated Oven Aging	Min. 15% decrease of tensile, 20% of elongation
Chemical Resistance	No weight loss in 1% of sulphuric acid
Compression Set	25% max. decrease
Water Absorption	Max. 10% increase by weight
Ozone Resistance	Rating 0
Low Temperature Brittle Point	No fracture at -40°C
Tear Resistance	200 lb. f/in.
Splice Strength	180 band with no visible separation

North Central Area Council of Governments

NOTE: STANDARDS ARE ADOPTED FROM THE NCTCOG STANDARD DRAWINGS DATED NOV. '96, WITH LOCAL EXCEPTIONS.



STANDARD CONSTRUCTION DETAILS

SANITARY SEWER
MANHOLE: PRE-CAST

CITY OF COPPELL, DALLAS COUNTY, TEXAS

STD. SPEC. REFERENCE
501, 502, 702.

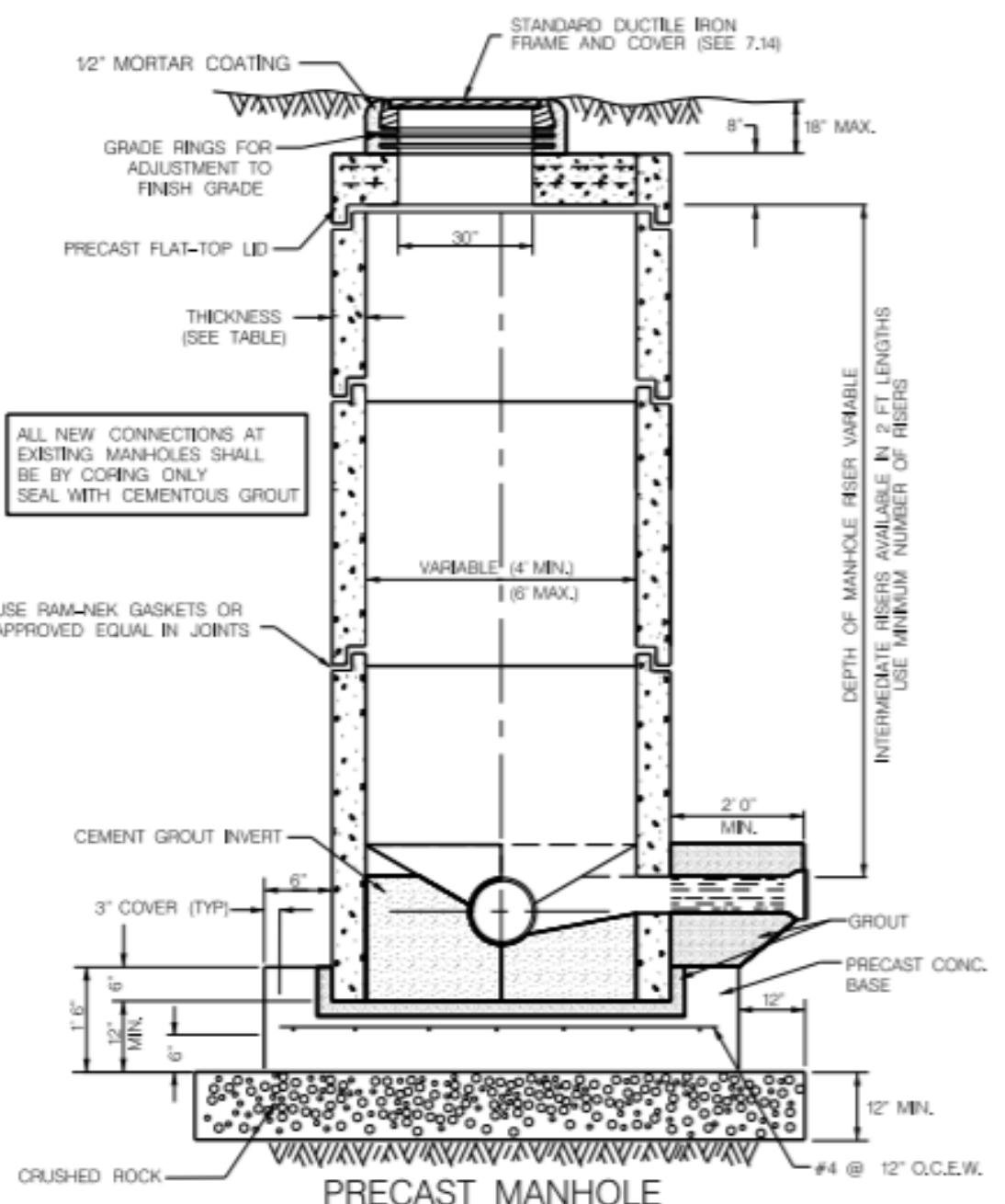
STANDARD DETAIL

5020

ADD NOTE FOR MANHOLE INTERNAL COATING.

LOCAL EXCEPTION

SWL APR '20
BY DATE



ALL NEW CONNECTIONS AT EXISTING MANHOLES SHALL BE BY CORING ONLY SEAL WITH CEMENTOUS GROUT

USE RAM-NEK GASKETS OR APPROVED EQUAL IN JOINTS


DEPTH OF MANHOLE RISER VARIABLE
INTERMEDIATE RISERS AVAILABLE IN 2 FT LENGTHS
USE MINIMUM NUMBER OF RISERS

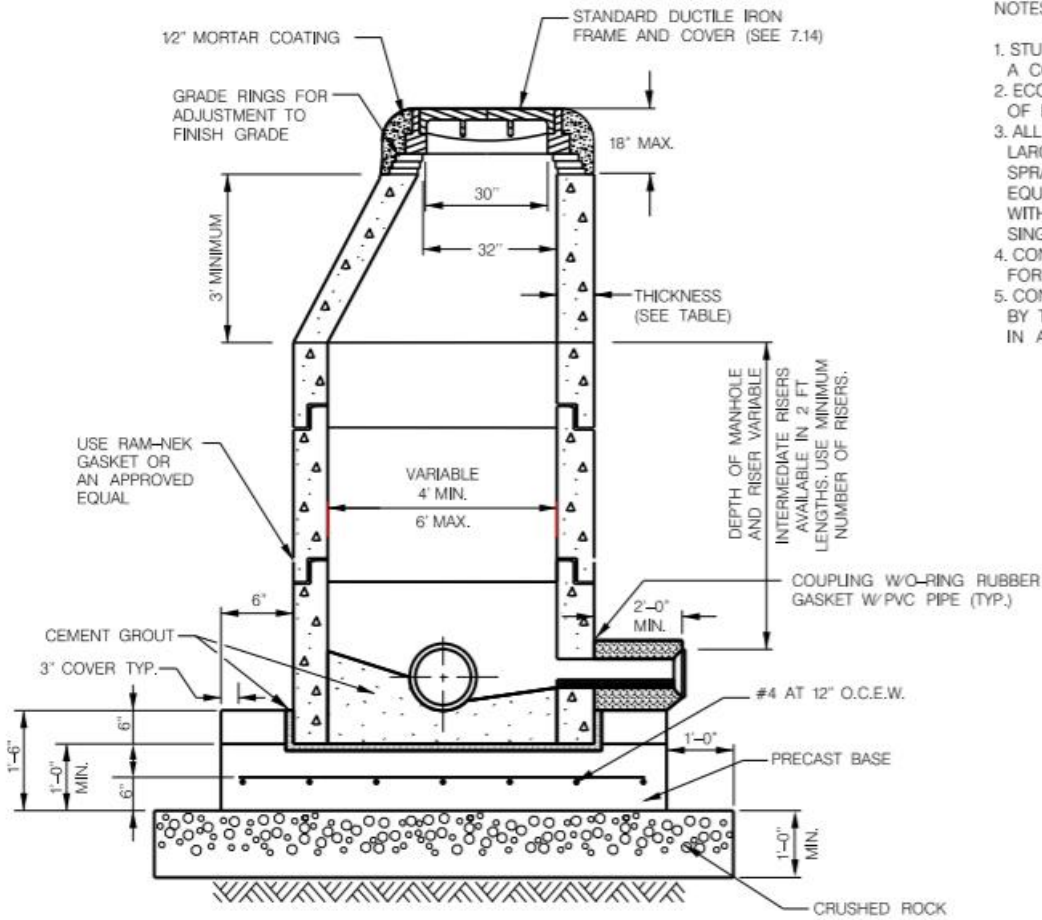
**PRECAST MANHOLE
FLAT TOP**

NOTE:
DETAIL SUBJECT TO CHANGE PER DIRECTION
OF CITY OF LEWISVILLE ENGINEERING DIVISION.

- * MANHOLE NOTES**
1. ALL SANITARY SEWER MANHOLES FOR SEWERS LARGER THAN 12" DIA SHALL BE SPRAYED WITH WARREN EPOXY 301-14 OR APPROVED EQUAL 100% SOLIDS EPOXY CONTAINING NO VOC's, WITH MIN THICKNESS OF 150 MILS IN A SINGLE APPLICATION
 2. CONSHIELD CONCRETE ADMXTURE MAY BE USED FOR NEW CAST-IN-PLACE OR PRECAST MANHOLES.
 3. CONTRACTOR AND EQUIPMENT SHALL BE CERTIFIED BY THE MANUFACTURER TO ENSURE PROFICIENCY IN APPLYING THE EPOXY OR ADDITIVE PRODUCTS

MIN. MANHOLE THICKNESS	
48" MH	5" WALL
60" MH	6" WALL
72" MH	7" WALL
PER ASTM C7-06a NCTCOG 502.111(3)	

Date: 06-10-10 Date: 09-04-2019 Sheet: 7.3	Engineering Department Date: 09-04-2019 Sheet: 7.3
Revisions: No. 1 Description:	Standard Details Precast Manhole Flat Top
	



NOTES:

1. STUBOUTS TO BE A MINIMUM OF 2' LONG WITH A CONCRETE CRADLE UNDER THE ENTIRE LENGTH.
2. ECCENTRIC MANHOLES TO BE USED AT DISCRETION OF ENGINEER.
3. ALL SANITARY SEWERS MANHOLES FOR SEWERS LARGER THAN 12-INCHES IN DIAMETER MUST BE SPRAYED WITH WARREN EPOXY 301-14 OR APPROVED EQUAL 100% SOLIDS EPOXY CONTAINING NO VOC'S WITH MINIMUM THICKNESS OF 150 MILS. IN A SINGLE APPLICATION.
4. CONSHIELD CONCRETE ADMIXTURE MAY BE USED FOR NEW CAST-IN-PLACE OR PRECAST MANHOLES.
5. CONTRACTOR AND EQUIPMENT SHALL BE CERTIFIED BY THE MANUFACTURER TO ENSURE PROFICIENCY IN APPLYING THE EPOXY OR ADDITIVE PRODUCTS.

MIN. MANHOLE THICKNESS	
48"MH	5" WALL
60"MH	6" WALL
72"MH	7" WALL
PER ASTM C7-08a NCTCOG 502.111(3)	

NOTE:
DETAIL SUBJECT TO CHANGE PER DIRECTION
OF CITY OF LEWISVILLE ENGINEERING DEPARTMENT.



Standard Details
Precast Manhole
Eccentric

Revisions:

No.	Description	Date

Engineering
Department

Office No. 972-219-3400

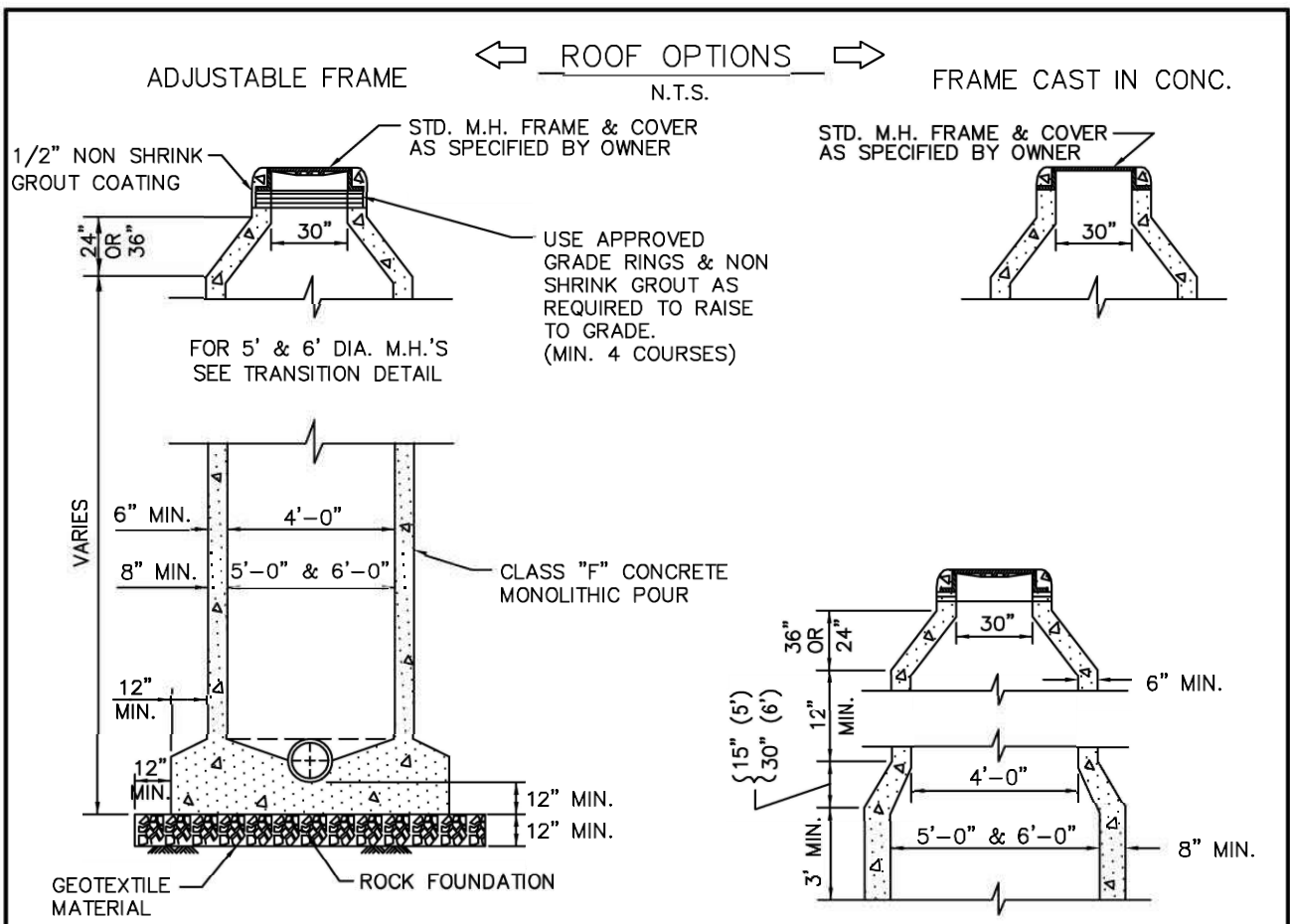
www.cityoflewisville.com

Date: 4-27-10

Date: 08-25-2019

Sheet

7.5



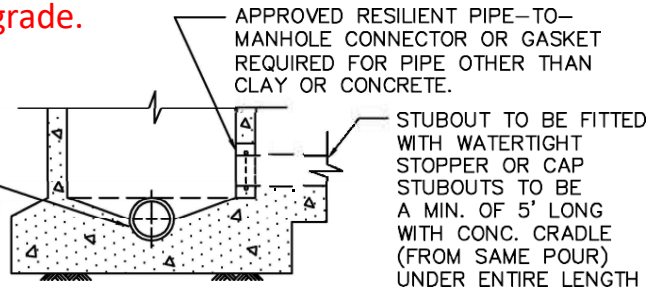
NOTES

1. WHERE M.H.'S ARE IN "PROPOSED" PAVING, FRAME & COVER SHALL BE SET 23" BELOW THE PROPOSED TOP OF CURB.
2. IF FALSE M.H. BOTTOMS ARE REQUIRED THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED. PER STD. DWG. NO. 5100.
3. WHERE M.H.'S ARE OUTSIDE OF PAVEMENT, FRAME & COVER SHALL BE CENTERED IN 5'x5' CONCRETE PAD CLASS "A" CONCRETE, 4" THICK

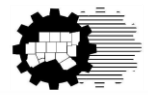
top of pavement or as required to construct pavement section, including subgrade.

Make a note, "Poly wrap around manhole or just cone and riser section; and/or a chimney seal (inside the riser), a rain pan could be inside the manhole cover."

FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER ENTIRE LENGTH.

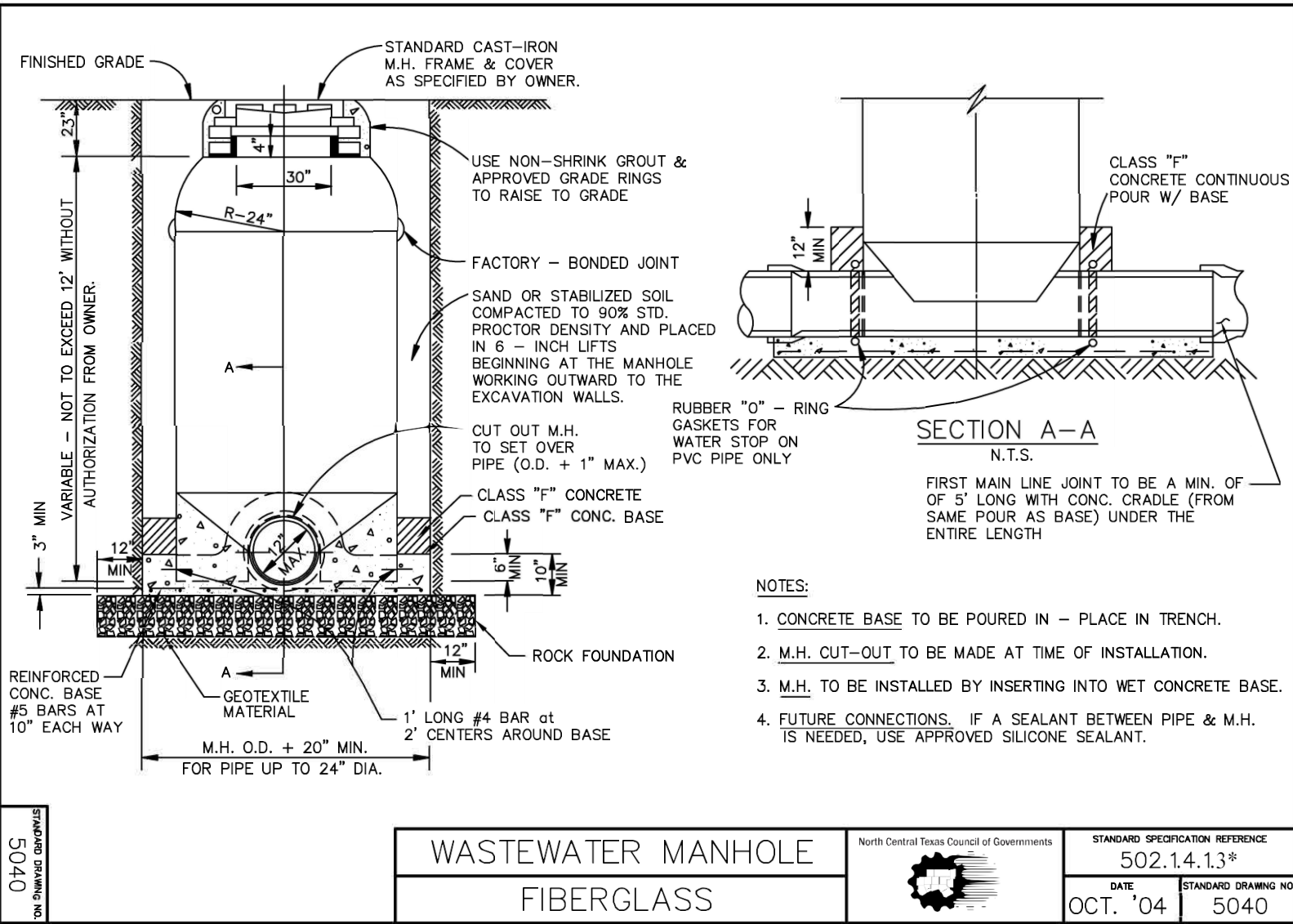


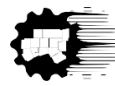
STUBOUT CONNECTION
N.T.S.

<h1>WASTEWATER MANHOLE</h1> <h2>CAST-IN-PLACE</h2>	North Central Texas Council of Governments 	STANDARD SPECIFICATION REFERENCE 502.1.4.1.1*
		DATE OCT. '04

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth



<p>STANDARD DRAWING NO. 5040</p>	<p>WASTEWATER MANHOLE</p>	<p>North Central Texas Council of Governments</p> 	<p>STANDARD SPECIFICATION REFERENCE 502.1.4.1.3*</p>
	<p>FIBERGLASS</p>		<p>DATE OCT. '04</p>

Add note that this is just one alternative material – other materials could be used, per approval of by city engineer

CONCRETE CONE ← ROOF OPTIONS → REINFORCED CONCRETE SLAB

N.T.S.

SLAB

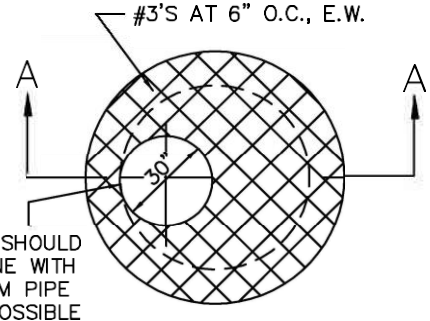
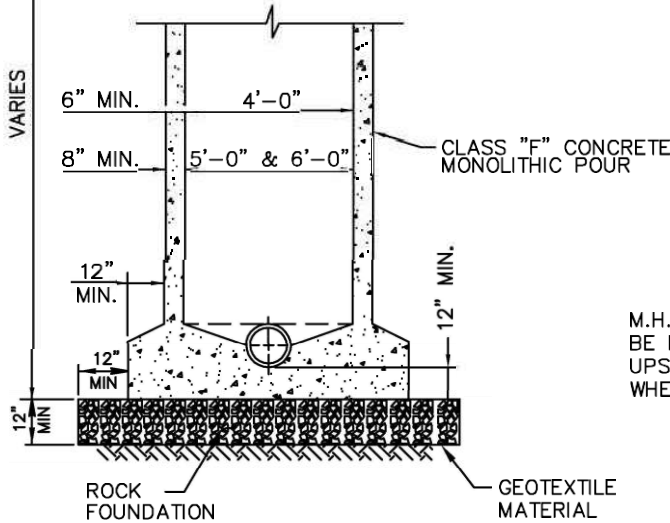
PRESSURE-TYPE M.H. FRAME & COVER AS SPECIFIED BY OWNER. M.H. FRAME CAST IN ROOF W/ CONTINUOUS POUR FROM BASE.

CONSTRUCTION JOINT WITH KEY WAY WATERSTOP, AND #3'S AT 12" O.C. EXTENDING 9" INTO WALL (NOT REQ'D FOR CONTINUOUS POUR)

SECTION A - A
N.T.S.



FOR 5' & 6' DIA. M.H.'S SEE TRANSITION DETAIL



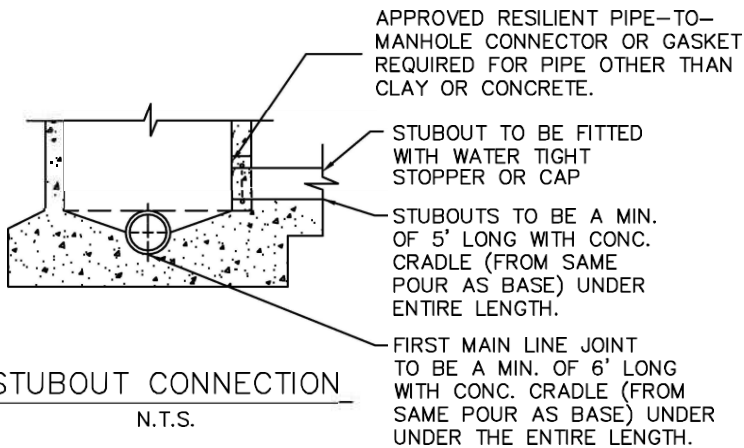
ROOF STEEL LAYOUT
N.T.S.

M.H. LID SHOULD BE IN LINE WITH UPSTREAM PIPE WHERE POSSIBLE

Show flat top with standard and bolt down frame and cover.

24" opening at the bottom is no longer sufficient, it should be 30".

Monolithic pour is heavy burden for the industry

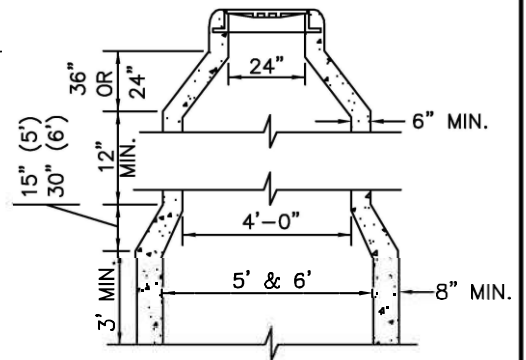


STUBOUT CONNECTION
N.T.S.

APPROVED RESILIENT PIPE-TO-MANHOLE CONNECTOR OR GASKET REQUIRED FOR PIPE OTHER THAN CLAY OR CONCRETE.

STUBOUT TO BE FITTED WITH WATER TIGHT STOPPER OR CAP
STUBOUTS TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER ENTIRE LENGTH.

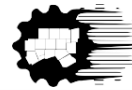
FIRST MAIN LINE JOINT TO BE A MIN. OF 6' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER THE ENTIRE LENGTH.



TRANSITION DETAIL FOR 5' & 6' DIA. M.H.'S
N.T.S.

WASTEWATER MANHOLE
PRESSURE-TYPE

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE
502.1.4.1.5*

DATE OCT. '04 STANDARD DRAWING NO. 5050

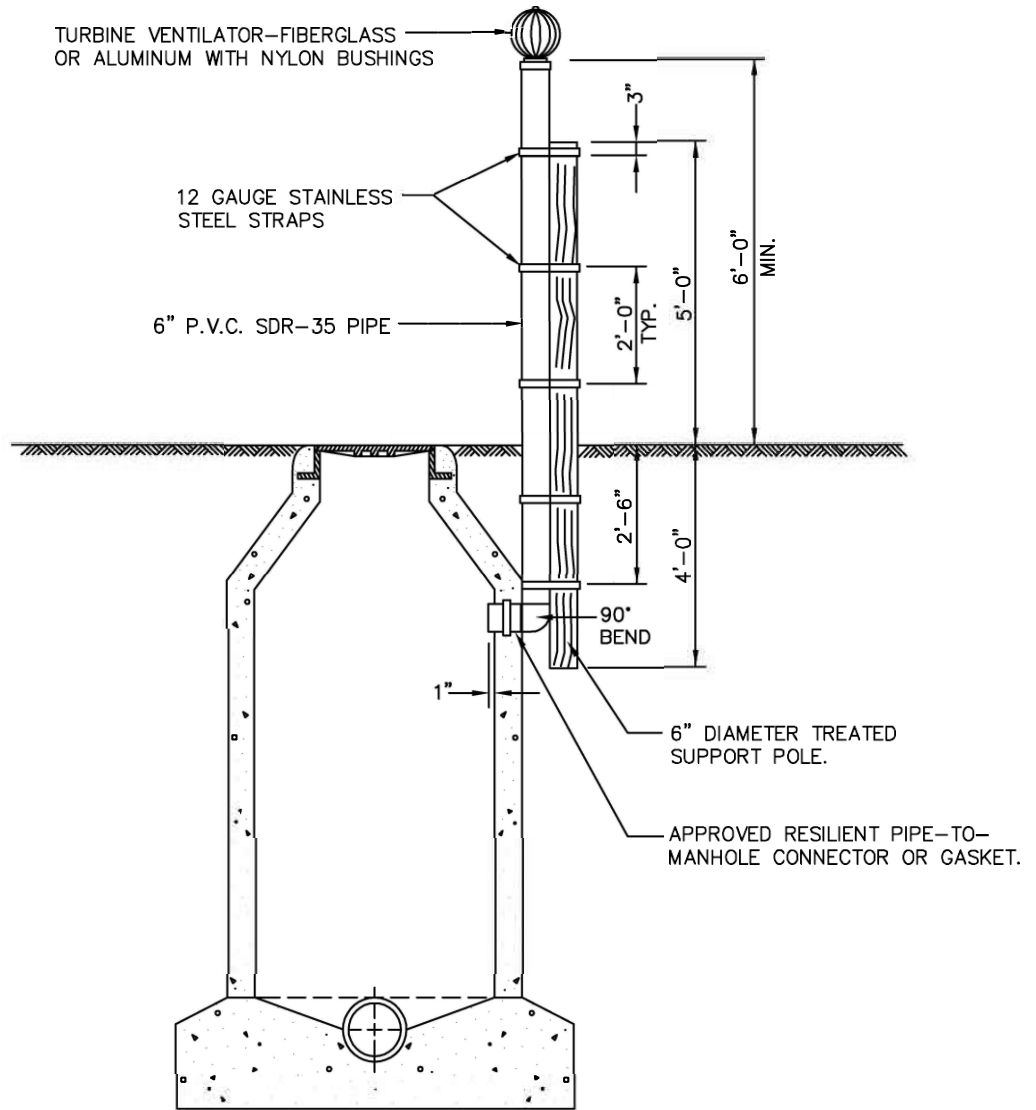
*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

An access chamber with clean outs is referenced in the specifications but is missing from the drawing.

TCEQ 217 rule should be added as a note for the height outlet above the floodplain.

Add a dimension for a minimum burial vent pipe.

Add embedment or flowable fill to add stability.



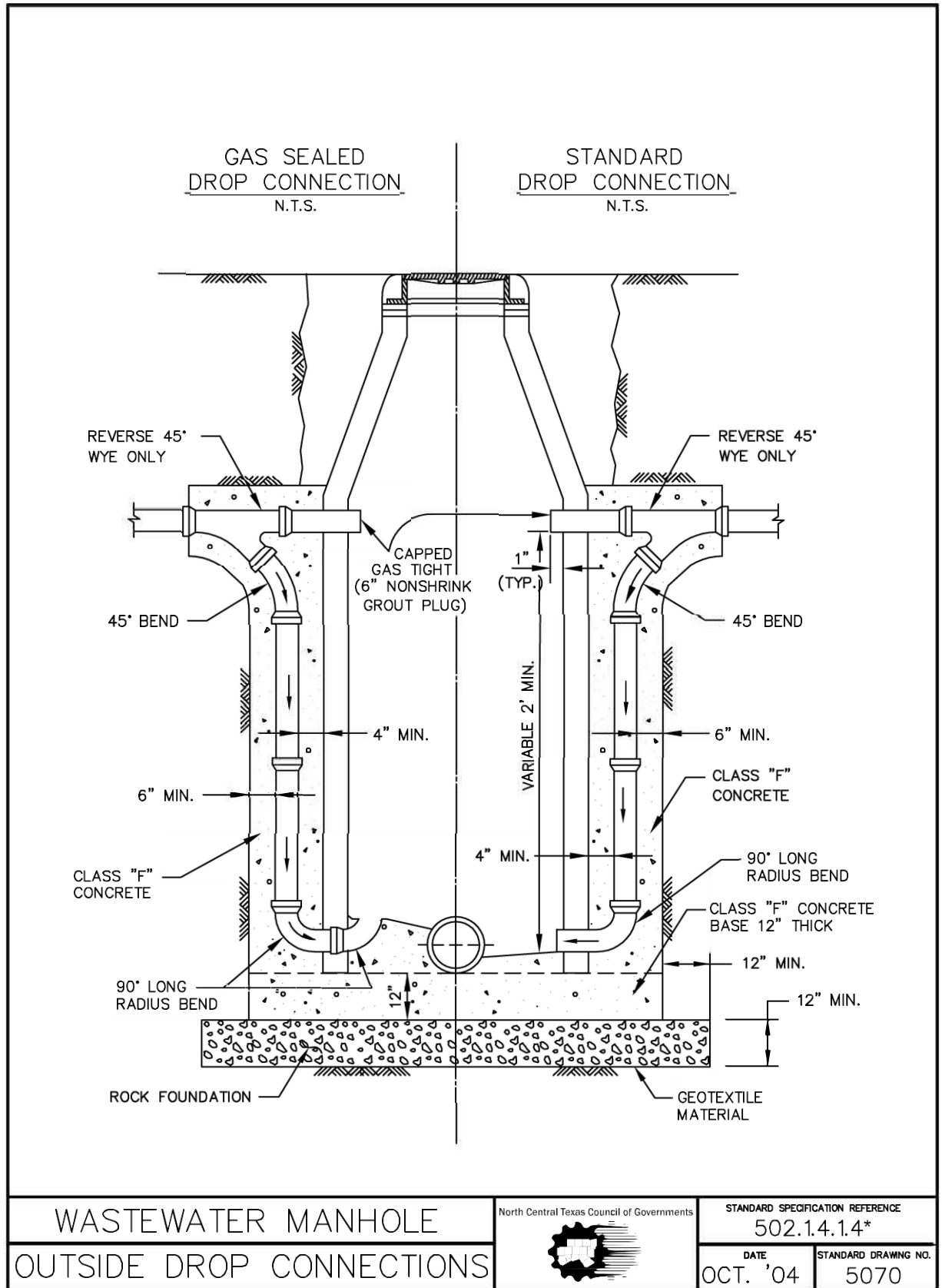
<p>WASTEWATER MANHOLE</p> <p>VENTED</p>	<p>North Central Texas Council of Governments</p> 	<p>STANDARD SPECIFICATION REFERENCE</p> <p>502.14.2*</p>	
		<p>DATE</p> <p>OCT. '04</p>	<p>STANDARD DRAWING NO.</p> <p>5060</p>

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

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The detail starts to show how to build a manhole but it should reference back to the manhole detail for barrel and cone.

Add note, "Extend as directed by owner" and consider Lewisville detail to show this.



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Revisions:

No.	Description

Standard Details
 EXTERNAL DROP CONNECTION
 MANHOLE

INSTALL 12" MORTAR COATING OR
 INFI-SHIELD EXTERNAL
 MANHOLE SEAL OR EQUAL
 PER MANUFACTURER SPECIFICATION

PRECAST CONCRETE ADJUSTMENT
 RINGS SET IN MORTAR BED AND
 BRING TO GRADE MAX RING
 ADJUSTMENT: 18"

TYPICAL DROP TEE

MIN. 3" THICK
 3000 PSI
 CONCRETE

DROP PIPE
 CONCRETE
 ENCASEMENT
 (6" MIN.)

DROP PIPE SHALL
 BE THE SAME
 SIZE AS SANITARY
 SEWER MAIN

FRAME AND
 COVER
 (SEE 7.14)

2.4" MAX.
 ADJUSTMENT

2.4"

5' AND 6"
 DIAMETER

8" MIN. (TYP)

EXTEND PIPE
 6"-8" INTO MH
 WITH TOP CUT
 OFF

MONOLITHIC CONCRETE
 SHALL HAVE A MINIMUM
 COMPRESSIVE STRENGTH
 OF 4000 PSI AT 28 DAYS

FLUSH WITH
 INSIDE FACE
 OF MANHOLE

SANITARY
 SEWER
 MAIN

12"
 (MIN.)

12"

9'- 0" (MIN.)

* NOTES:

1. CONCRETE SHALL BE A MONOLITHIC POUR.
2. PIPE CONNECTIONS SHALL BE CORE DRILLED WITH SEALS.
3. EXTERNAL DROP TO BE INSTALLED IN THE FOLLOWING CONDITIONS:
 - A. ON SANITARY SEWER MAINS 24-INCHES IN DIAMETER AND LARGER.
 - B. WHEN 4-FOOT CLEARANCE BETWEEN THE INTERNAL DROP BOWL AND THE OPPOSITE MANHOLE WALL CANNOT BE MET.
 - C. WHEN THERE ARE MORE THAN TWO PIPES ENTERING THE DROP MANHOLE.
 - D. UPON WRITTEN APPROVAL OF THE CITY ENGINEER.

NOTE:
 DETAIL SUBJECT TO CHANGE PER DIRECTION
 OF CITY OF LEWISVILLE ENGINEERING DEPARTMENT

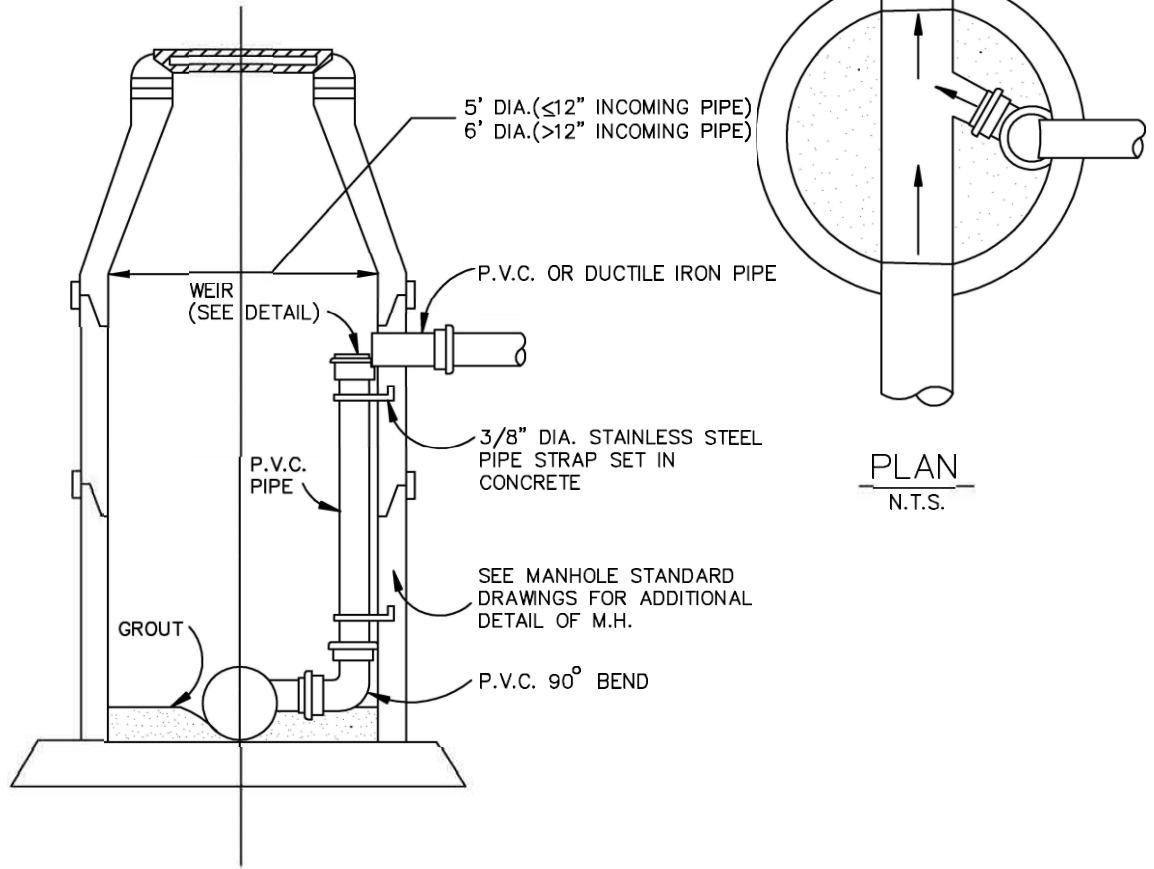


Remove the ball used as a connection piece.

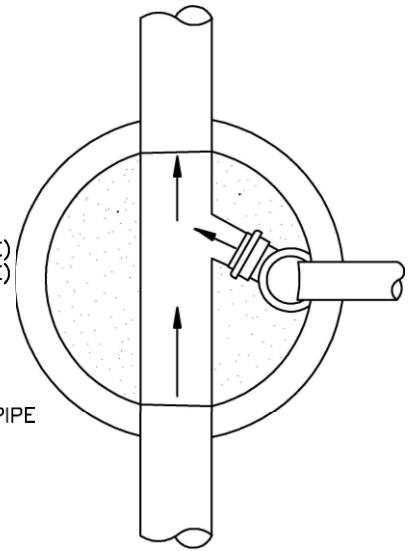
Show support (straps) 3'-4' apart minimum, reference Lewisville details.

Add note, "4' maximum of spacing, 2 straps minimum,"

As shown in the previous detail, resilient collar should surround the incoming pipe on drop.

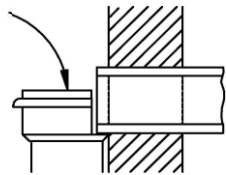


ELEVATION
N.T.S.



PLAN
N.T.S.

REMOVE PORTION OF DROP PIPE TO CONNECT AS SHOWN

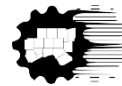


WEIR DETAIL
N.T.S.

NOTE:
FLOW LINE OF SURCHARGE LINE NORMALLY PLACED AT TOP OF EXISTING WASTEWATER LINE UNLESS NOTED OTHERWISE ON PLANS.

WASTEWATER MANHOLE
INSIDE DROP CONNECTION

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

502.1.4.1.4*

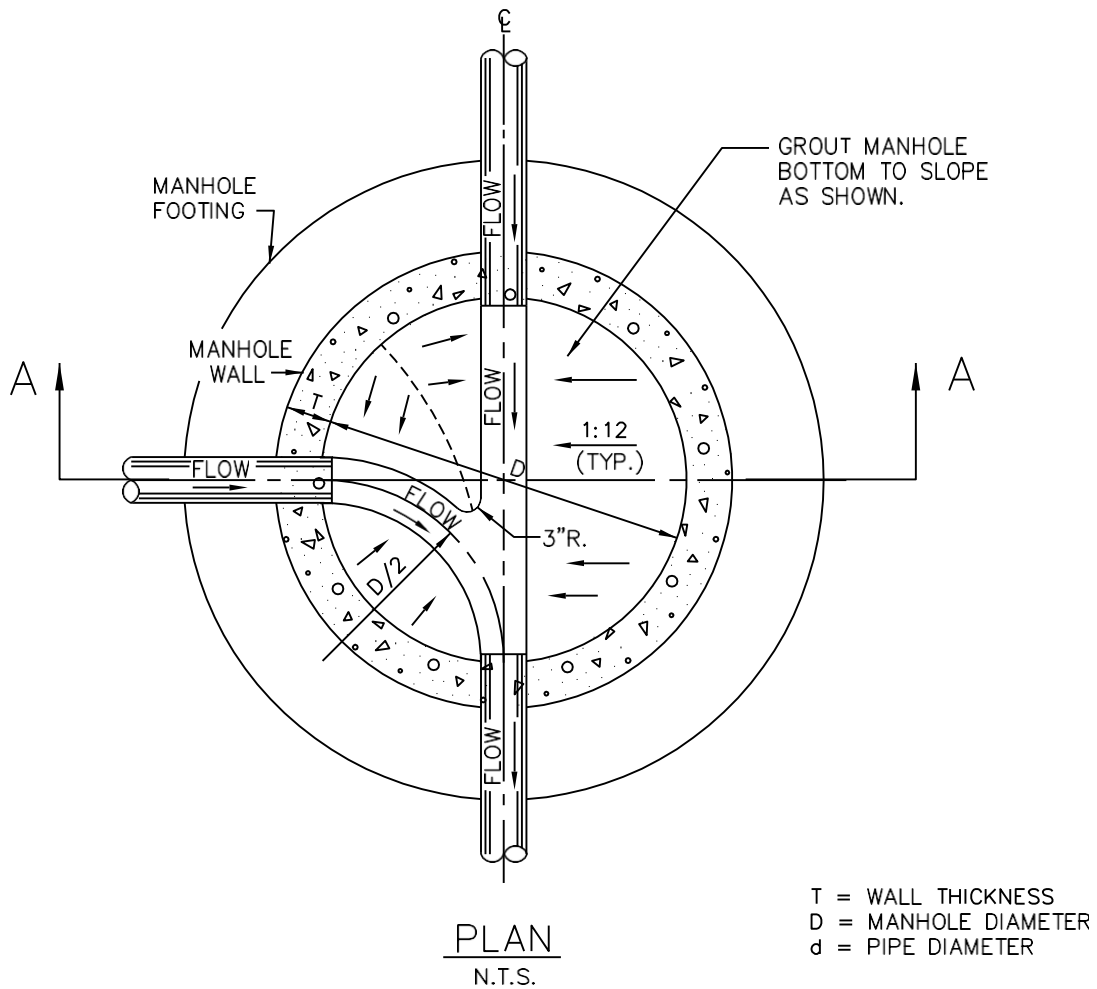
DATE

OCT. '04

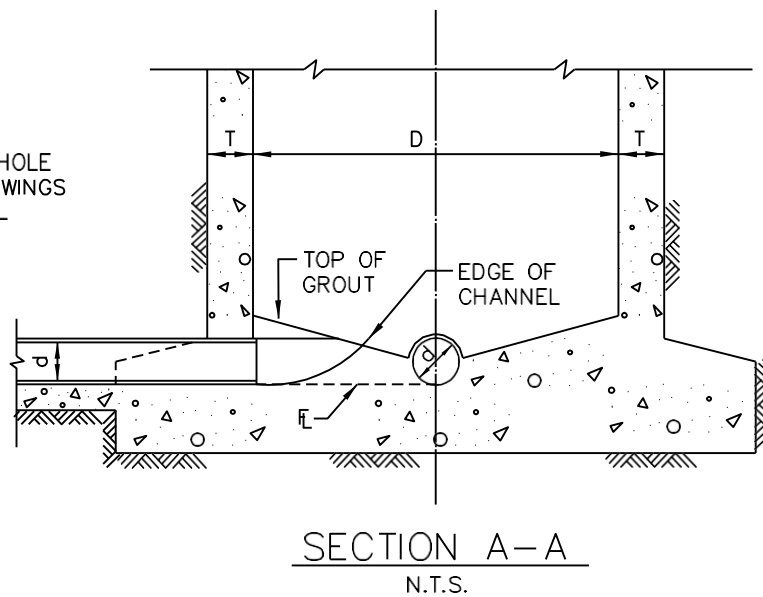
STANDARD DRAWING NO.

5080

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

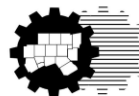


NOTE:
REFER TO MANHOLE
STANDARD DRAWINGS
FOR ADDITIONAL
DETAIL OF M.H.



WASTEWATER MANHOLE
LINE INTERSECTION

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE
502.1

DATE
OCT. '04

STANDARD DRAWING NO.
5090

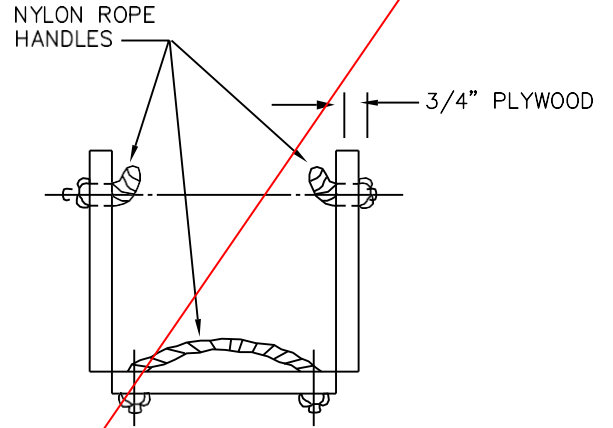
Rename from "Line Intersection" to "Invert Detail."

INSTALLATION

FALSE MANHOLE BOTTOM SHALL BE FURNISHED AND INSTALLED IN ALL MANHOLES CONSTRUCTED IN ADVANCE OF PAVING. THESE FALSE MANHOLE BOTTOMS WILL BE INSTALLED AT A TIME DIRECTED BY THE ENGINEER BUT WILL USUALLY BE AFTER ALL WORK IS COMPLETED ON THE WASTEWATER SYSTEM INCLUDING THE AIR TEST, BUT PRIOR TO THE FINAL INSPECTION.

REMOVAL

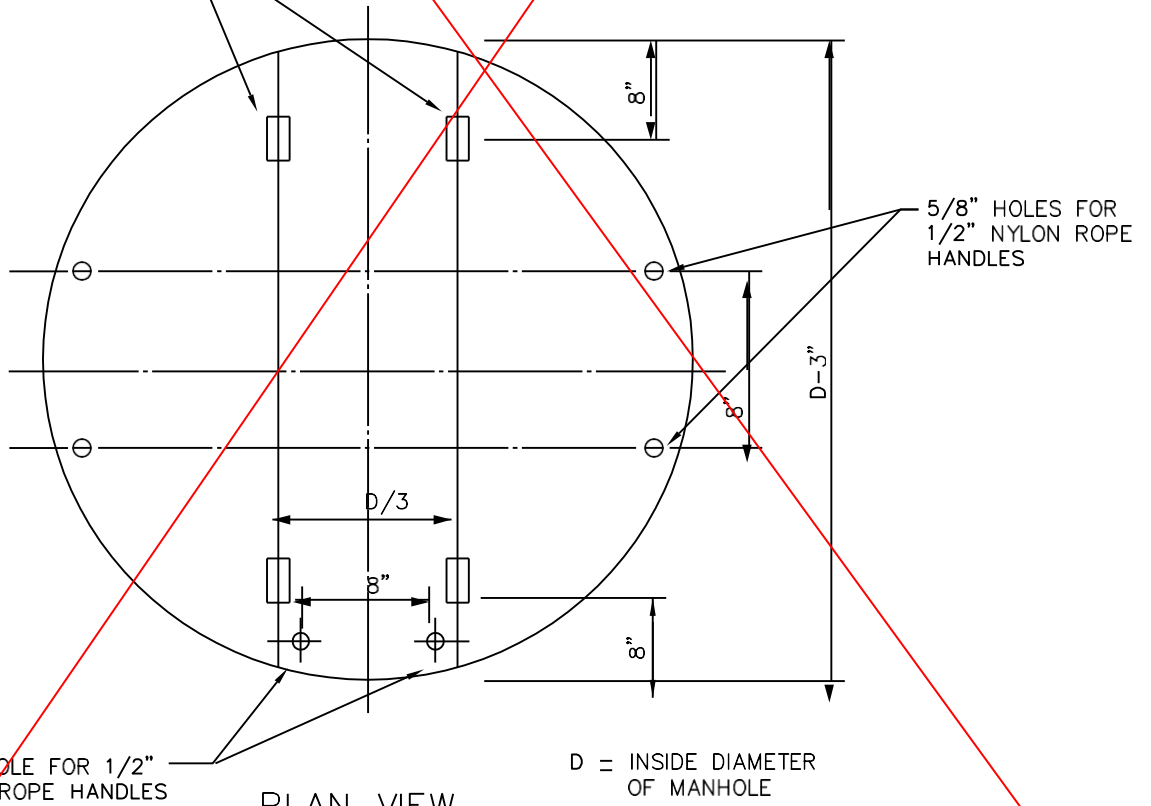
FALSE MANHOLE BOTTOM SHALL BE REMOVED AFTER THE FINAL APPURTENANCE ADJUSTMENT INSPECTION. THE PAVING CONTRACTOR AND OWNER'S REPRESENTATIVE WILL COORDINATE THE REMOVAL OF THE FALSE MANHOLE BOTTOMS.



METAL STRAP HINGES (MIN. 3" LONG) W/BOLTS

INSTALLATION AND REMOVAL POSITION

N.T.S.



PLAN VIEW

N.T.S.

WASTEWATER MANHOLE
FALSE BOTTOM

North Central Texas Council of Governments



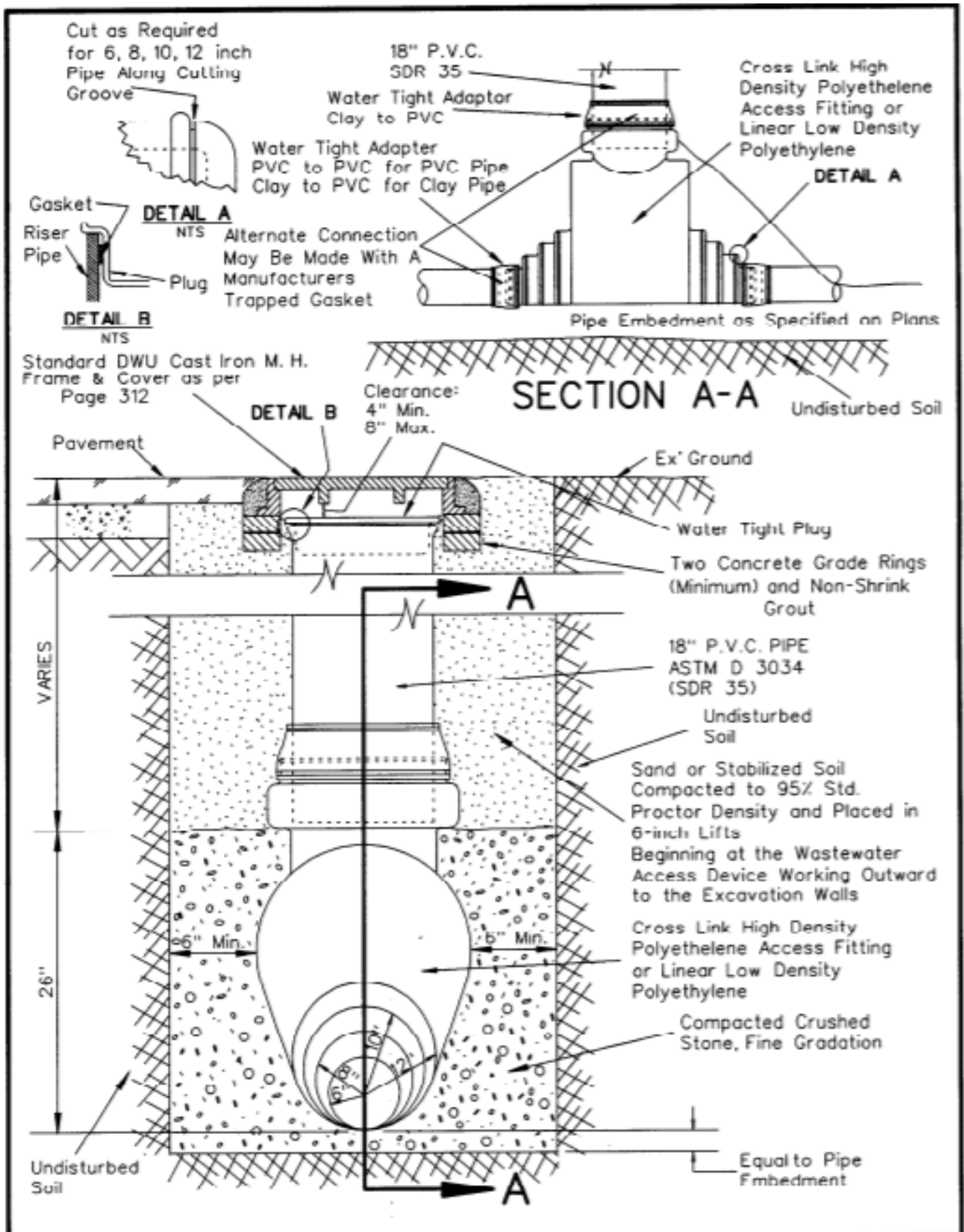
STANDARD SPECIFICATION REFERENCE

502.1

DATE STANDARD DRAWING NO.

OCT. '04 5100

Replace with a detail for a wastewater access detail. Reference Dallas Water Utilities and Lewisville detail.

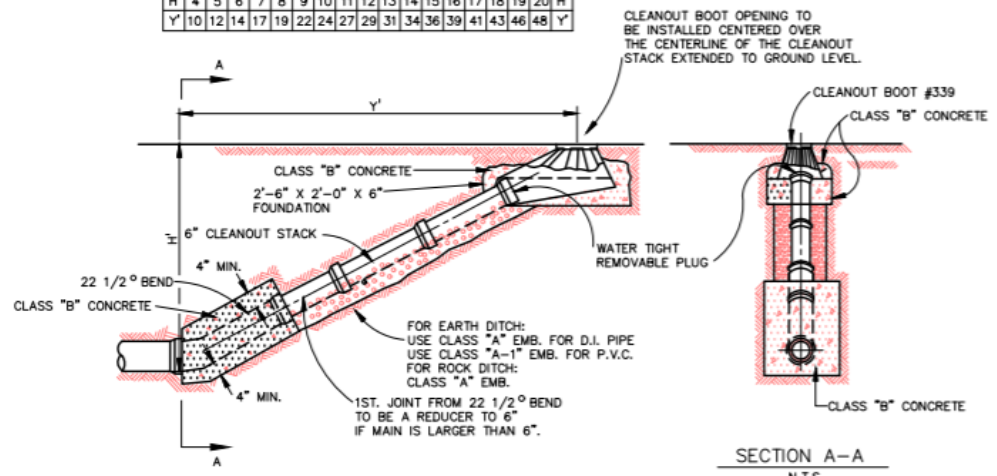


WASTEWATER ACCESS DEVICE

DWU	328
DATE	OCT. '99

(Page No.)

H'	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	H'
Y'	10	12	14	17	19	22	24	27	29	31	34	36	39	41	43	46	48	Y'



NOTES:

1. CLEANOUTS MAY BE LOCATED IN PAVING OR SIDEWALKS WITH APPROVAL OF THE CITY ENGINEER.
2. REFER TO THE CITY OF COPPELL WATER UTILITIES LIST OF APPROVED MATERIALS AND PRODUCTS FOR APPROVED BRANDS AND MODELS OF CLEANOUTS AND RELATED ITEMS.
3. IDENTIFY CLEANOUT LOCATION PER STANDARD CONSTRUCTION DETAIL 5170.

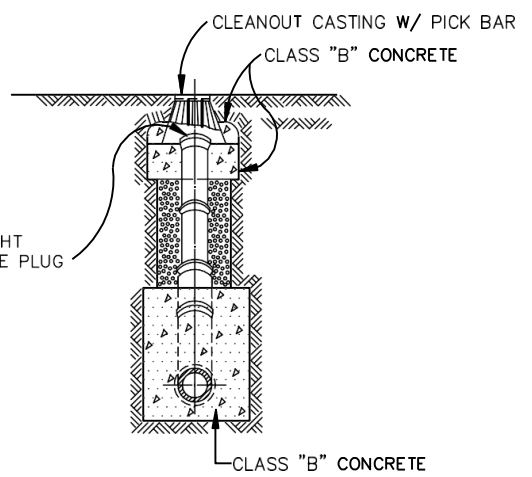
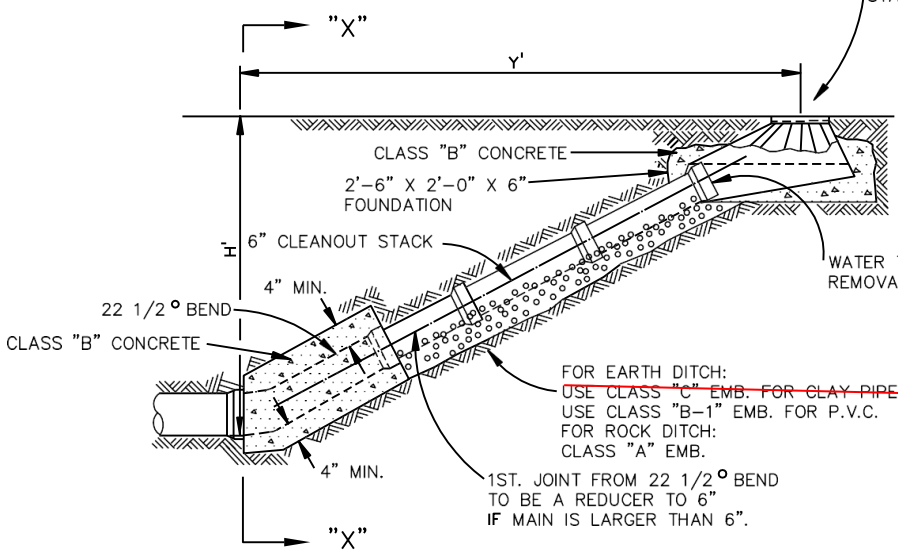
North Central Texas Council of Governments
 NOTE: STANDARDS ARE ADOPTED FROM THE NCTCOG STANDARD DRAWINGS DATED NOV. '96, WITH LOCAL EXCEPTIONS.

NO.	LOCAL EXCEPTION	BY	DATE

	STANDARD CONSTRUCTION DETAILS	STD. SPEC. REFERENCE
	SANITARY SEWER 6" COMMERCIAL CLEANOUT	501.502..504..702
CITY OF COPPELL DALLAS COUNTY, TEXAS	STANDARD DETAIL 5110	

H'	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	H'
Y'	10	12	14	17	19	22	24	27	29	31	34	36	39	41	43	46	48	Y'

CLEANOUT CASTING OPENING TO BE INSTALLED CENTERED OVER THE CENTERLINE OF THE CLEANOUT STACK EXTENDED TO GROUND LEVEL.



SECTION "X - X"
N.T.S.

PROFILE VIEW
N.T.S.

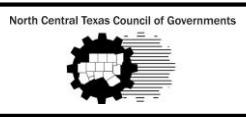
NOTES:

1. IF CLEANOUT IS PLACED IN ADVANCE OF PAVEMENT PLACE SAND AROUND CLEANOUT CASTING IN LIEU OF CLASS "B" CONCRETE.
2. IF CLEANOUT IS OUTSIDE OF PAVEMENT, CENTER CASTING IN 15"x15" CLASS "A" CONCRETE PAD "4" THICK.

FOR EARTH DITCH:
~~USE CLASS "C" EMB. FOR CLAY PIPE~~
USE CLASS "B-1" EMB. FOR P.V.C.
FOR ROCK DITCH:
CLASS "A" EMB.
1ST. JOINT FROM 22 1/2 ° BEND
TO BE A REDUCER TO 6"
IF MAIN IS LARGER THAN 6".

STANDARD DRAWING NO.
5110

WASTEWATER MAIN
CLEANOUT

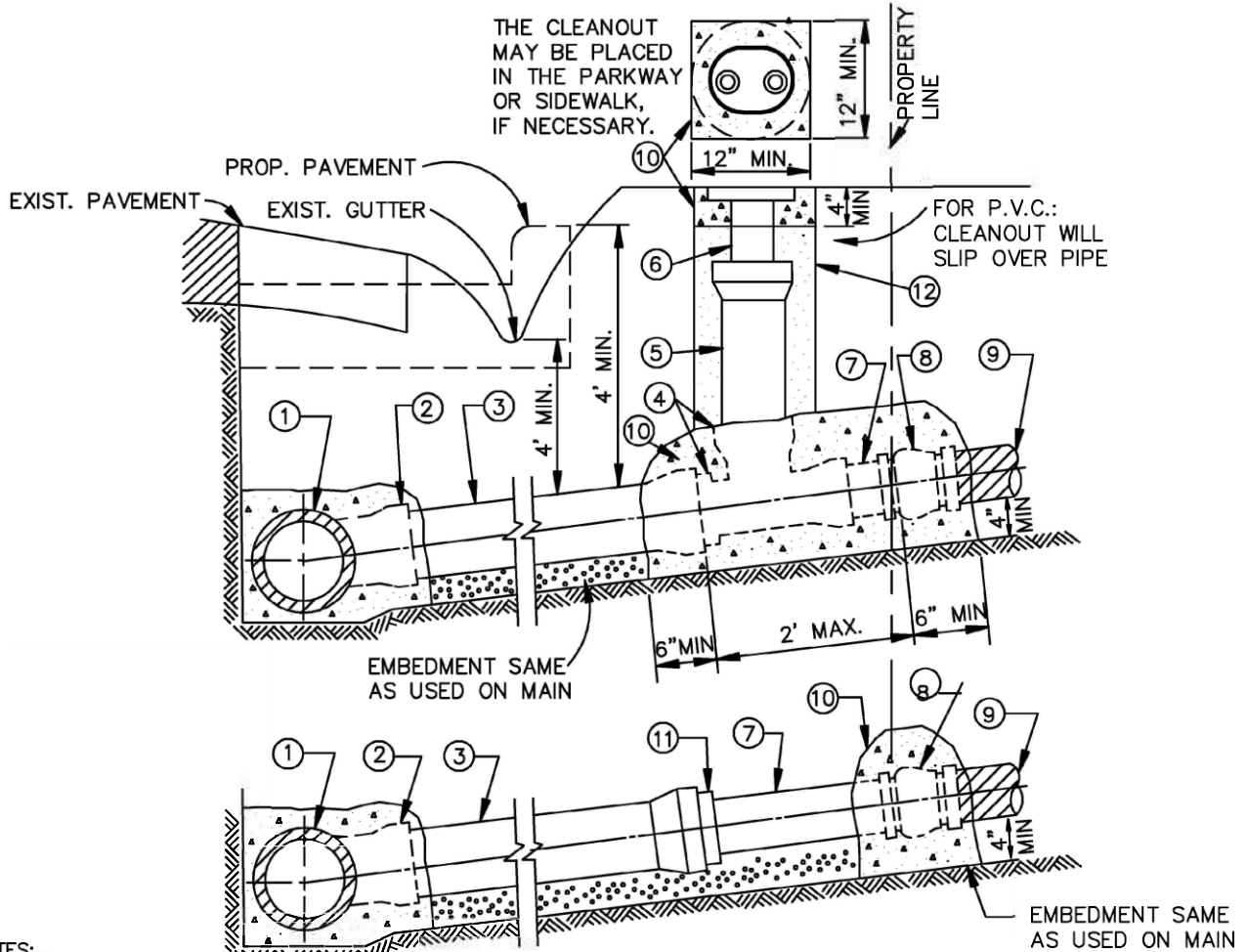


STANDARD SPECIFICATION REFERENCE 502.2	
DATE OCT. '04	STANDARD DRAWING NO. 5110

Add note, "Only to be used with express consent of the owner."

KEY:

- ① WASTEWATER MAIN
- ② 4" WYE **or tap**
- ③ 4" WASTEWATER LAT. (LENGTH VARIES)
- ④ 4" X 4" TEE OR WYE AS REQ'D. BY OWNER.
- ⑤ 4" STACK (LENGTH VARIES)
- ⑥ 4" WASTEWATER LAT. CLEANOUT CASTING
- ⑦ 4" WASTEWATER PIPE (LENGTH VARIES)
- ⑧ ADAPTOR
- ⑨ BUILDING SEWER LAT.
- ⑩ CLASS "B" CONCRETE
- ⑪ 6" X 4" REDUCER
- ⑫ COMPACTED AS SPECIFIED, OR INUNDATED SAND



NOTES:

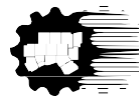
1. CLEANOUT CASTING TO BE FURNISHED AND PLACED PER SPECIAL CONDITIONS. IN VEHICLE TRAFFIC AREAS AND FOR COMMERCIAL MAINLINE LATERALS, WASTEWATER CLEANOUT SHALL BE OF CAST IRON.
2. SLOPE OF LATERAL TO BE 2% MIN., UNLESS INSTRUCTED OTHERWISE BY OWNER.
3. THE WASTEWATER LATERAL SHALL BE CONNECTED TO BUILDING LATERAL AND CONSTRUCTED IN SUCH MANNER AS TO CLEAR EXISTING UTILITES AND PROPOSED FACILITIES SUCH AS STORM SEWER MAINS, PAVING, SIDEWALKS, RETAINING WALLS, ETC. VERTICAL BENDS (22.5° MAX.) MAY BE USED IF APPROVED BY OWNER.
4. THE MAINLINE LATERAL CONNECTION TO THE PRIVATE BUILDING LATERAL SHALL BE AS CLOSE TO THE PROPERTY LINE AS POSSIBLE.
5. INSTALL 4" STOPPER OR CAP AT PROPERTY LINE IF BUILDING LATERAL DOES NOT EXIST.
6. SUBSTITUTE 4" FOR 6" FITTINGS IF PLANS OR SPEC. COND. CALL FOR 4" LATERALS.
7. THE CLEANOUT STACK & CASTING MAY BE PLACED IN THE PARKWAY, VEHICLE TRAFFIC AREAS, OR SIDEWALK, IF NECESSARY.
8. FOR 6" SERVICES OR LARGER, INSTALL A MANHOLE.

Add note,
"Minimum
9'
separation
from water
service."

WASTEWATER LATERALS

WITH & WITHOUT CLEANOUT

North Central Texas Council of Governments



STANDARD SPECIFICATION REFERENCE

502.10.4.2*

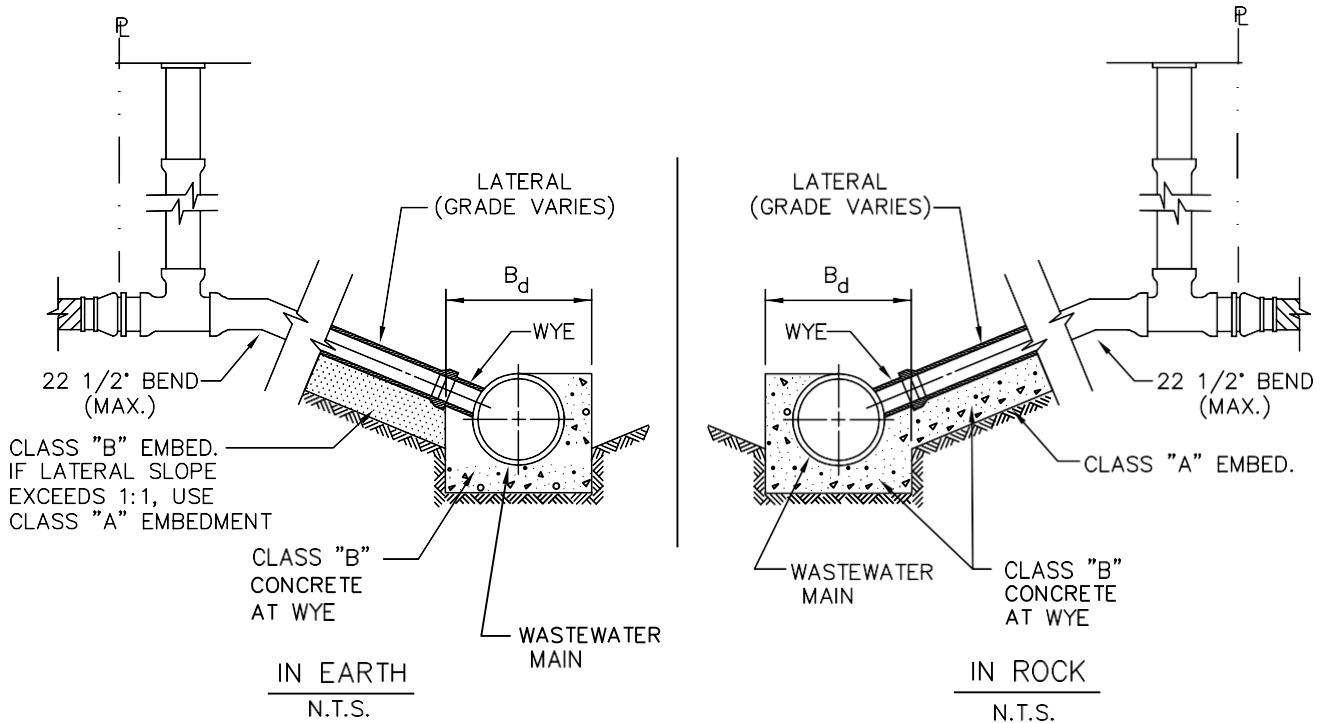
DATE

OCT. '04

STANDARD DRAWING NO.

5120

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



TRENCH WITH SLOPING SIDES

N.T.S.

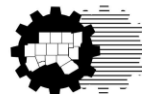
NOTES:

1. WYE SHALL BE SUPPORTED AS SHOWN FOR WYE CONNECTION SUPPORT.
2. LATERALS ARE TO CLEAR ALL EXISTING UTILITIES. 11 1/4" OR 22 1/2" BEND, ONLY, MAY BE REQUIRED.

WASTEWATER LATERAL CONNECTIONS

IN EARTH & IN ROCK

North Central Texas Council of Governments

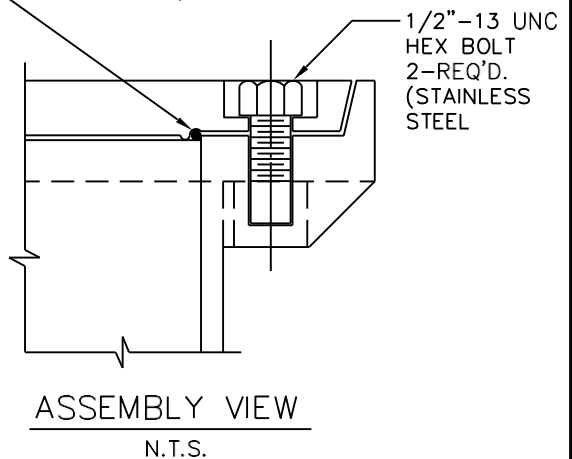
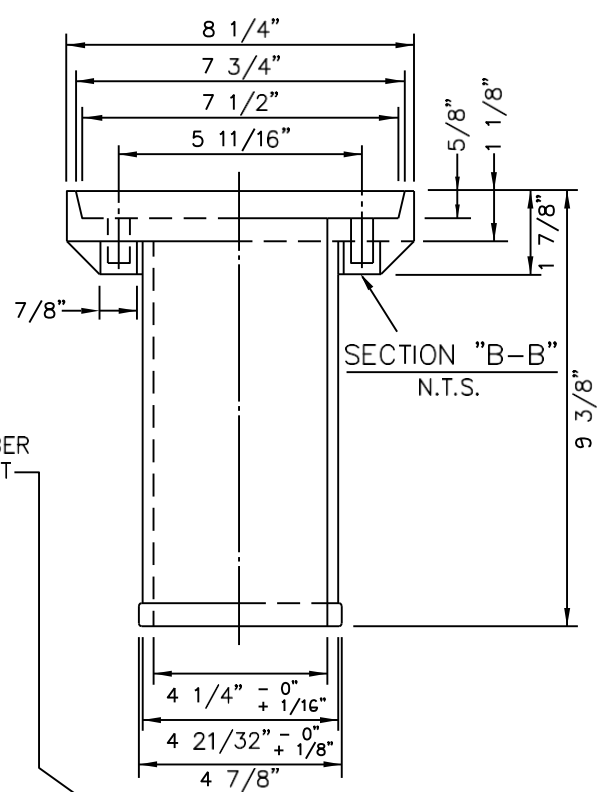
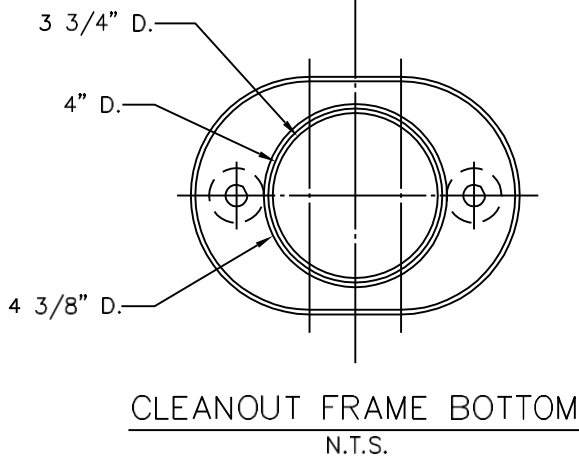
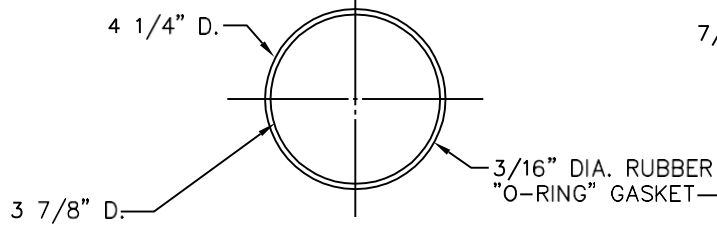
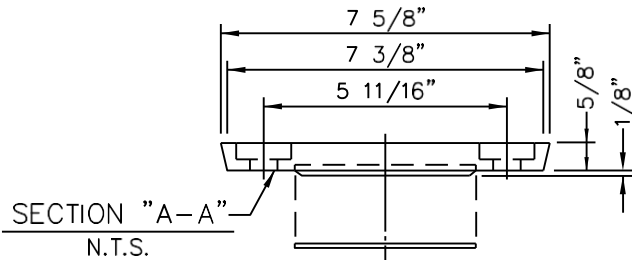
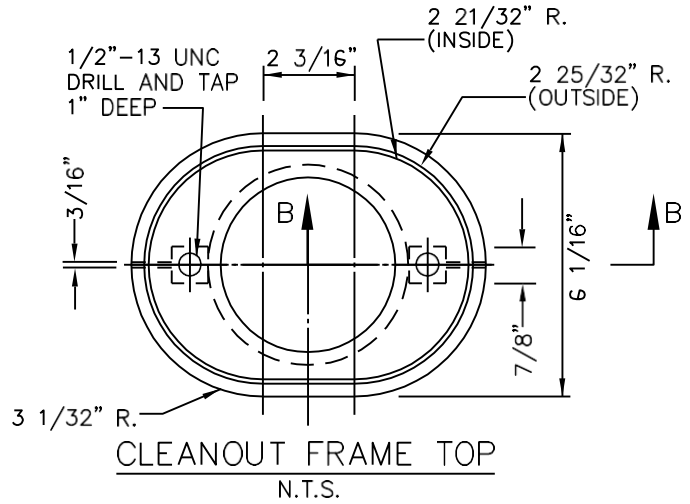
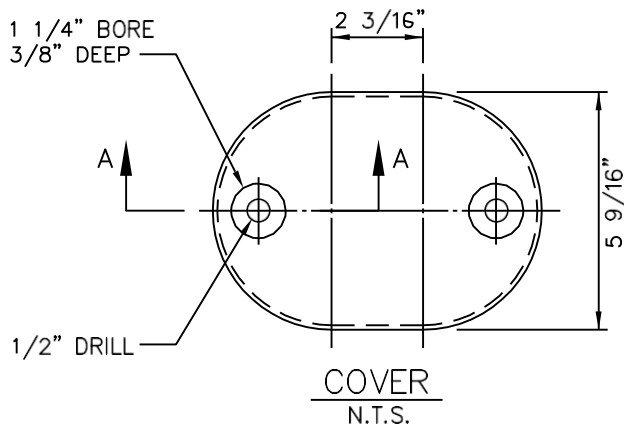


STANDARD SPECIFICATION REFERENCE
502.10

DATE
OCT. '04

STANDARD DRAWING NO.
5130

Send this detail to Bass & Hays and ask if they use it or if it's relevant to them.



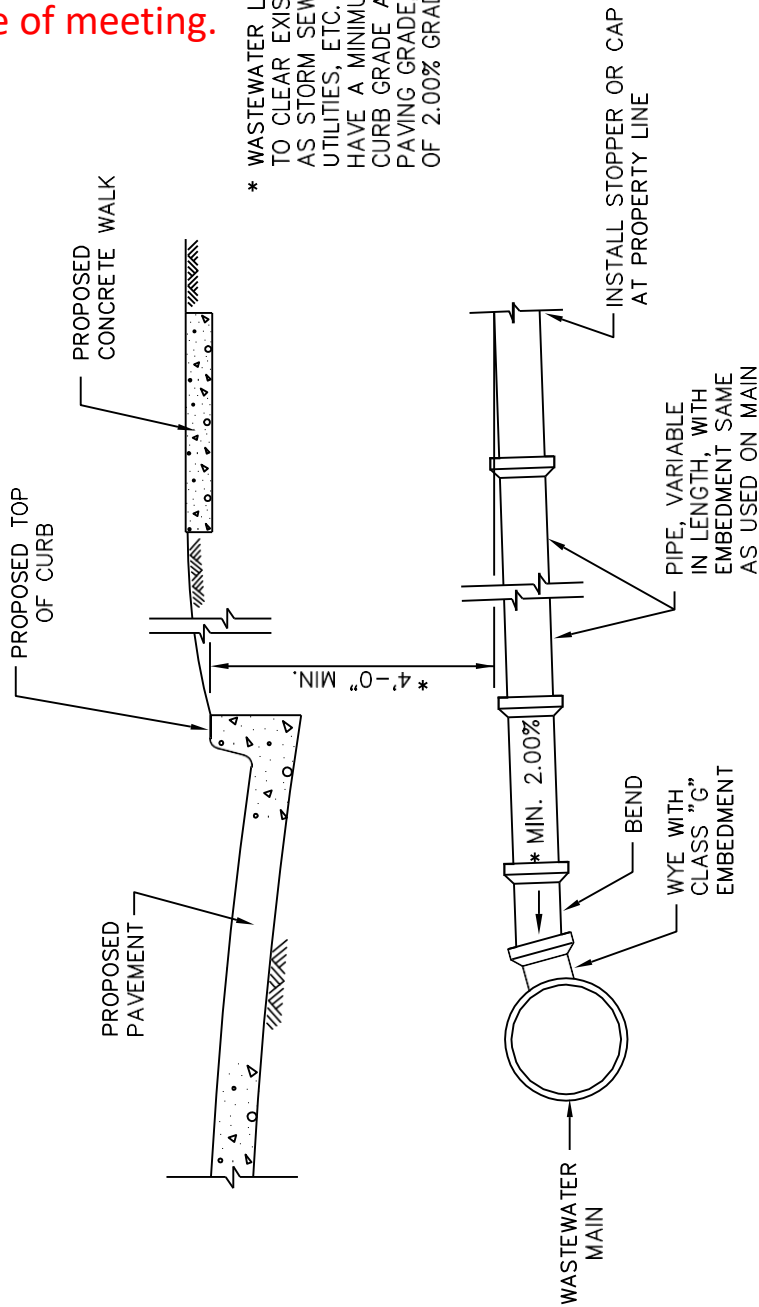
NOTES:

1. THE WORDS "WASTEWATER LATERAL CLEANOUT" SHALL BE CAST INTO TOP OF COVER.
2. MATERIALS TO BE CAST IRON, P.V.C. OR ABS PLASTIC.

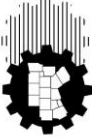
<p>WASTEWATER LATERAL CLEANOUT FRAME & COVER</p>	<p>North Central Texas Council of Governments</p> 	<p>STANDARD SPECIFICATION REFERENCE 502.10</p>
	<p>DATE OCT. '04</p>	<p>STANDARD DRAWING NO. 5140</p>

The wastewater lateral details should be cleaned up, it's unnecessary to have 5 drawings. However, they need to stay consistent with specification 502.10.4.1 on page 502-28. Mathew will provide feedback outside of meeting.

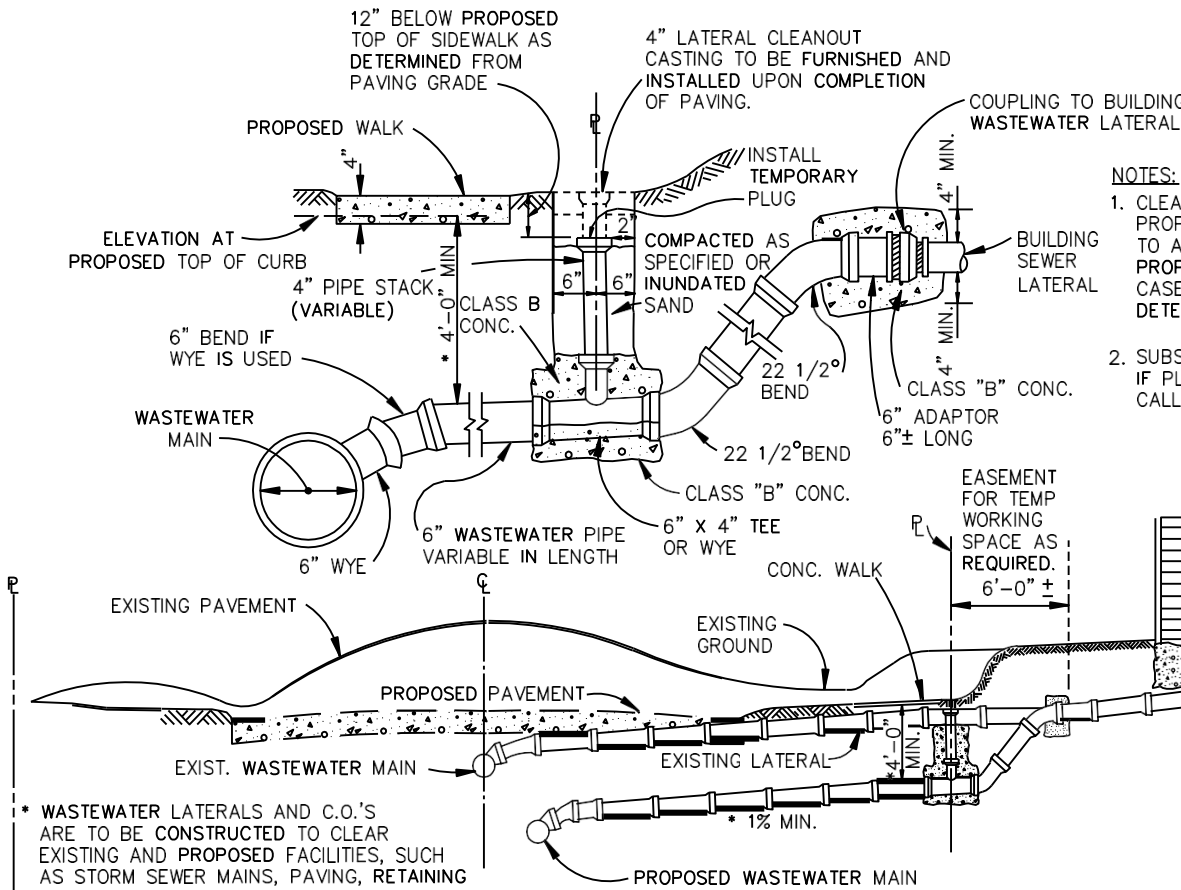
* WASTEWATER LATERALS ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM SEWER MAINS, RETAINING WALLS, OTHER UTILITIES, ETC. THE WASTEWATER LATERAL SHALL HAVE A MINIMUM COVER OF 4'-0" BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, DETERMINED FROM PAVING GRADE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 2.00% GRADE, OR AS DIRECTED BY THE OWNER.



WASTEWATER LATERAL STUBOUT
(FOR FUTURE CONNECTION, 4" OR 6" AS SPECIFIED)
N.T.S.

 North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.10	STANDARD DRAWING NO. 5150
	DATE OCT. '04	
WASTEWATER LATERAL STUBOUT		IN ADVANCE OF PAVING
STANDARD DRAWING NO. 5150		

The wastewater lateral details should be cleaned up, it's unnecessary to have 5 drawings. However, they need to stay consistent with specification 502.10.4.1 on page 502-28. Mathew will provide feedback outside of meeting.



NOTES:

1. CLEANOUT TO BE INSTALLED ON PROPERTY LINE EXCEPT AS REQUIRED TO AVOID CONFLICT WITH EXISTING OR PROPOSED FACILITIES IN WHICH CASE THE LOCATION SHALL BE DETERMINED BY THE OWNER.
2. SUBSTITUTE 4" FOR 6" FITTINGS IF PLANS OR SPEC. CONDITION CALL FOR 4" LATERALS.

* WASTEWATER LATERALS AND C.O.'S ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM SEWER MAINS, PAVING, RETAINING WALLS, OTHER UTILITIES, ETC. THE WASTEWATER LATERAL SHALL HAVE A MIN. COVER OF 4' BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 1.00% GRADE, OR AS DIRECTED BY THE OWNER.

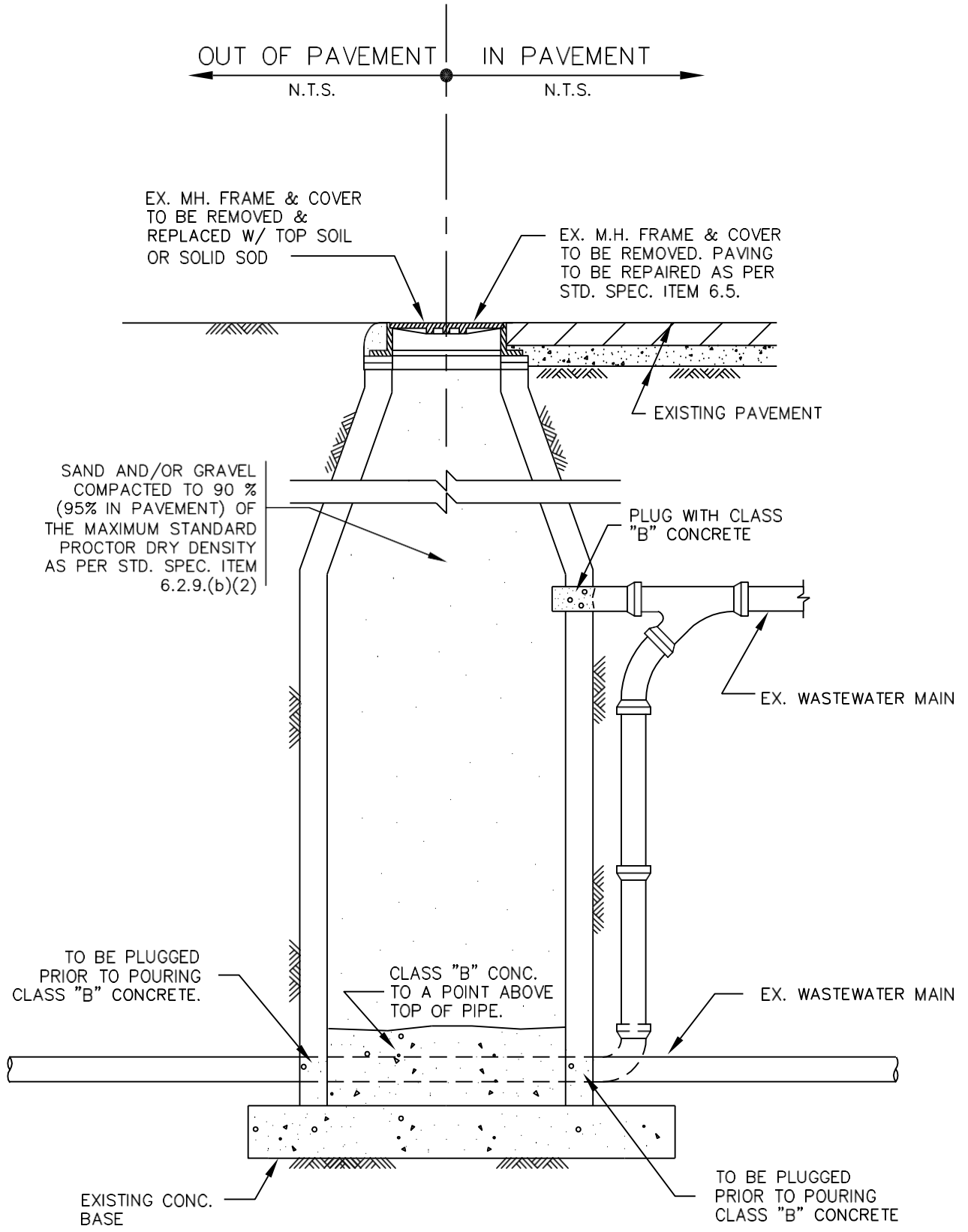
WASTEWATER LATERAL REPLACEMENT

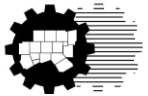
N.T.S.

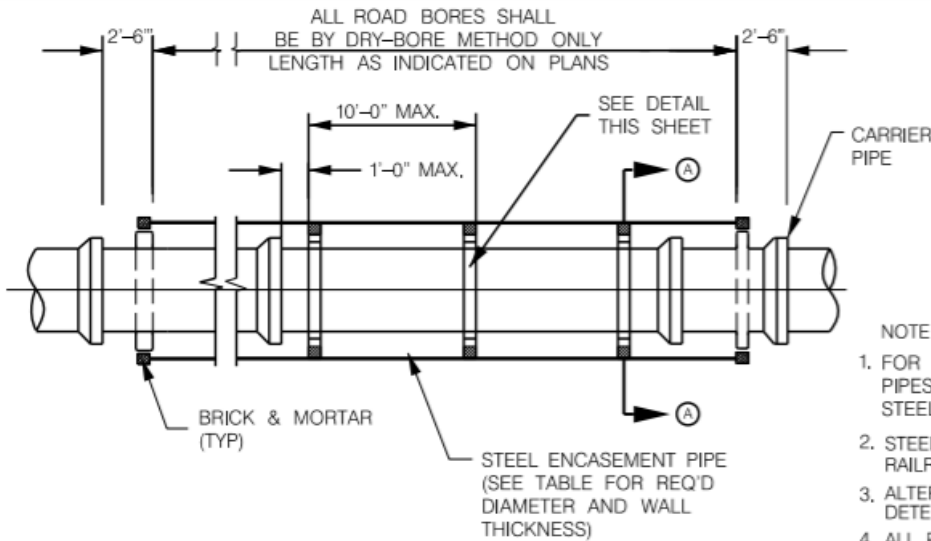
STANDARD DRAWING NO. 5160

WASTEWATER LATERAL REPLACEMENT IN ADVANCE OF PAVING	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.10
		DATE OCT. '04
		STANDARD DRAWING NO. 5160

Add a note pointed to the cone area, "Removal depth limited to 2' above ground or as directed by owner."



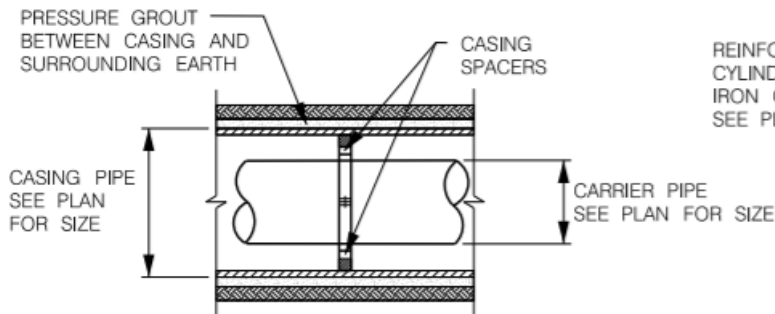
ABANDONMENT OF MANHOLE IN OR OUT OF PAVEMENT	North Central Texas Council of Governments 	STANDARD SPECIFICATION REFERENCE 504	
		DATE OCT. '04	STANDARD DRAWING NO. 5170



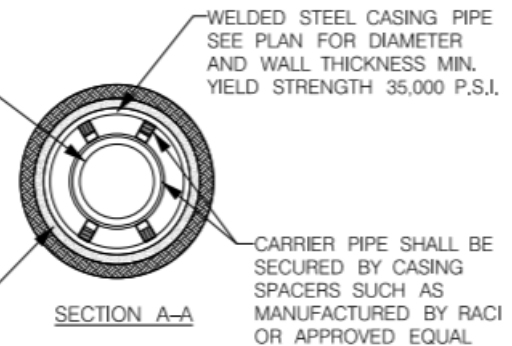
CARRIER PIPE SIZE (IN)	STEEL ENCASUREMENT O.D. (IN)	STEEL ENCASUREMENT WALL THICKNESS (IN)
6	14	3/8
8	18	3/8
12	20	3/8
18	26	1/2
21	30	1/2
24	36	1/2
27	40	1/2

NOTE:

1. FOR ALL CARRIER PIPES OVER 27"; THE STEEL ENCASUREMENT PIPE SHALL BE 12" LARGER THAN THE CARRIER PIPE AND THE STEEL ENCASUREMENT WALL THICKNESS SHALL BE 1/2".
2. STEEL ENCASUREMENT PIPE THICKNESS FOR BORE UNDER ALL RAILROAD SHALL BE 1/2" MINIMUM.
3. ALTERNATE CONCRETE ENCASUREMENT PIPE MAY BE USED AS DETERMINED BY CITY.
4. ALL PIPE SHALL BE LAID TO GRADE AS SHOWN ON THE PLANS.



REINFORCED CONCRETE CYLINDER PIPE, DUCTILE IRON OR PVC CARRIER PIPE SEE PLAN FOR SIZE



BORED CROSSING WITH ENCASUREMENT DETAIL

NOTE:
DETAIL SUBJECT TO CHANGE PER DIRECTION
OF CITY OF LEWISVILLE ENGINEERING DIVISION



Standard Details

Encasement Pipe Requirements

Revisions:

No.	Description	Date

Engineering
Department

Office No. 972-219-3490

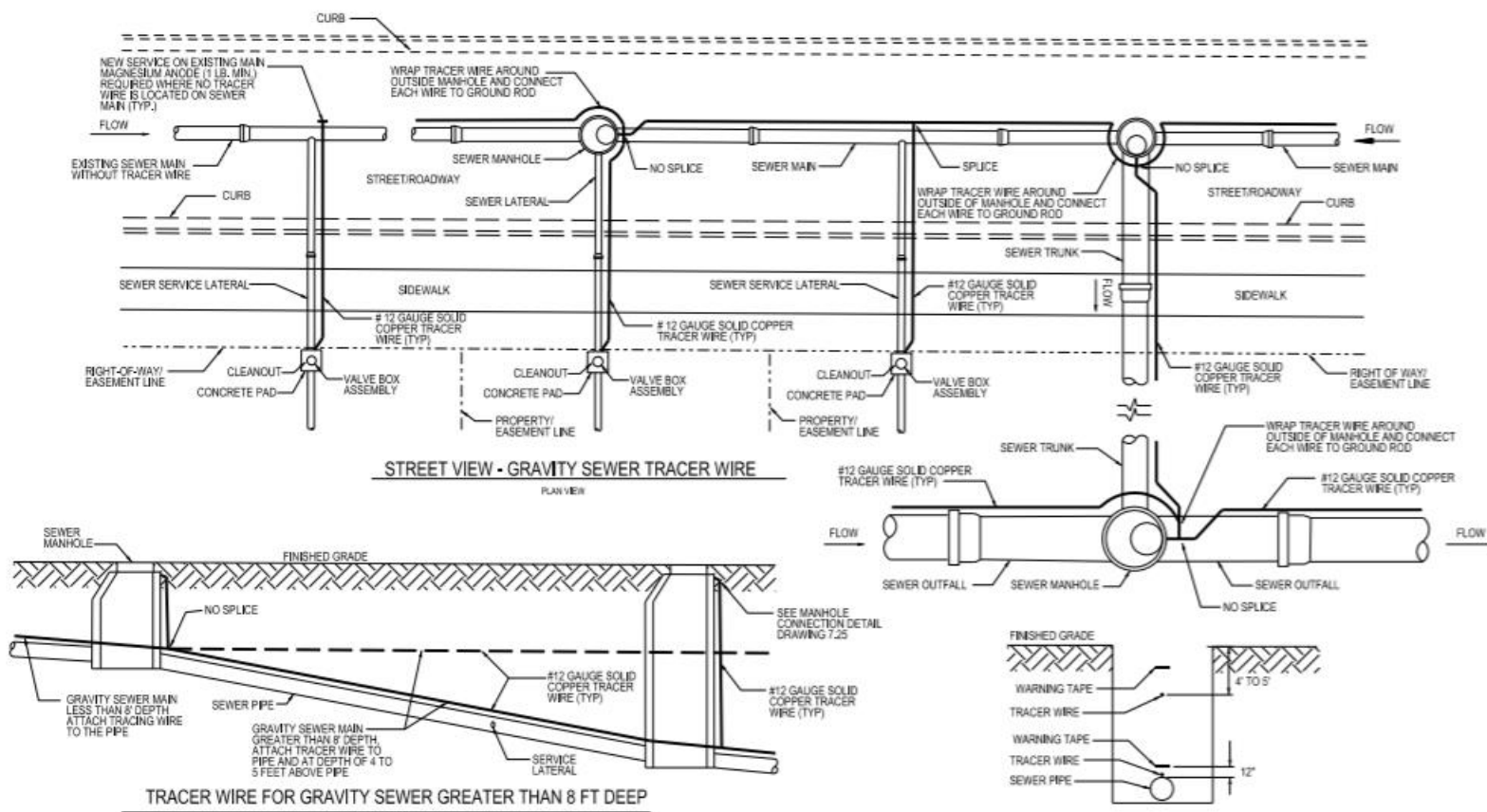
www.cityoflewisville.com

Date: 8-10-15

Date: 08-05-2018

Sheet

7.24



- NOTES**
1. TRACER WIRES SHOWN AWAY FROM PIPE FOR CLARITY
 2. TRACER WIRES TO BE INSTALLED IMMEDIATELY ADJACENT TO SEWER PIPE.
 3. FASTEN TRACER WIRE TO PIPE WITH ZIP TIES AT 10-FOOT INTERVALS.
 4. TRACER WIRE TO BE SOLID COPPER #12 GAUGE WITH 30 MILS GREEN HOPE INSULATION.

NOTE:
DETAIL SUBJECT TO CHANGE PER DIRECTION
OF CITY OF LEWISVILLE ENGINEERING DIVISION



Standard Details

Gravity Sewer Tracer Wire

Revisions:

No.	Description	Date

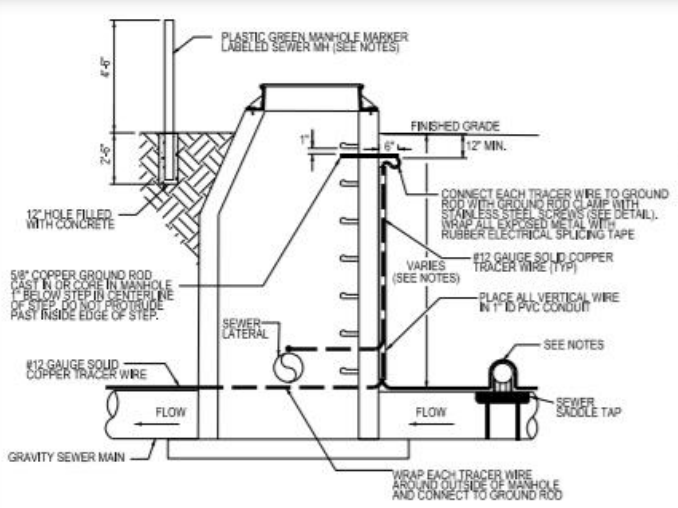
Engineering Department

Office No. 973-019-3490

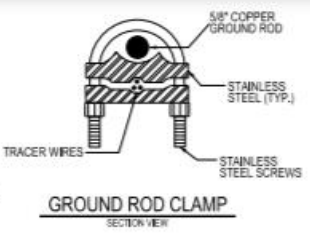
www.cityoflewisville.com

Date: 8-13-07
Date: 10-24-19

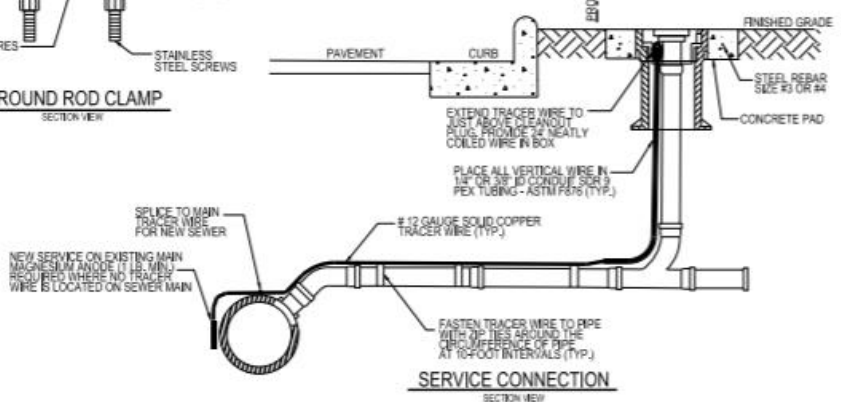
Sheet 7.26



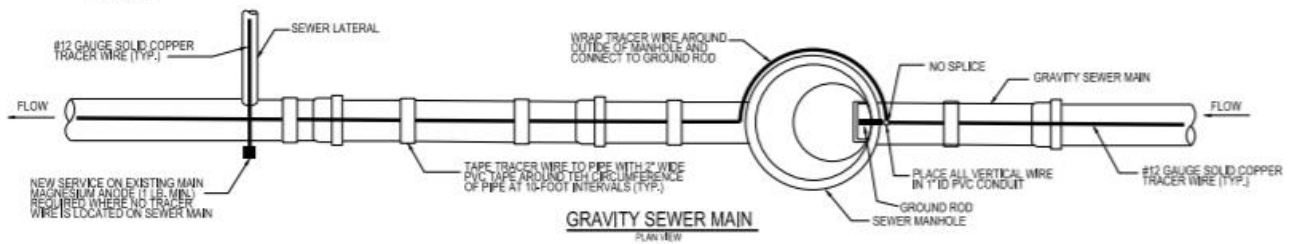
GRAVITY SEWER MAIN AND MANHOLE MARKER



GROUND ROD CLAMP



SERVICE CONNECTION



GRAVITY SEWER MAIN

NOTES

1. TRACER WIRE TO BE AWG #12 GAUGE SOLID COPPER WITH 30 MILS GREEN HOPE INSULATION.
2. FOR GRAVITY MAIN AND LATERAL INSTALLATIONS LESS THAN 8 FEET DEEP, ATTACH TRACER WIRE TO THE PIPE.
3. LAY TRACER WIRE FLAT AND SECURELY AFFIX TO THE PIPE AT 10-FOOT INTERVALS USING ZIP TIES. FOR LATERAL AND GRAVITY LINES GREATER THAN 8-FOOT DEPTH, ATTACH THE TRACER WIRE TO THE PIPE AND AT A DEPTH 4 TO 5 FEET DIRECTLY ABOVE THE SEWER PIPE.
4. PROTECT THE WIRE FROM DAMAGE DURING EXECUTION OF WORK; NO BREAKS OR CUTS IN THE TRACER WIRE WILL BE PERMITTED.
5. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, DO NOT PLACE THE TRACER WIRE BETWEEN THE SADDLE AND THE MAIN.
6. SPLICES IN THE PRIMARY TRACER WIRE ALONG THE SEWER MAIN INCLUDE 3-FEET OF SLACK WIRE ON EACH SIDE OF EACH SPLICE.
7. WHEN INSTALLING A NEW LATERAL ON AN EXISTING MAIN WITH TRACER WIRE, ONLY SPLICE TO EXISTING WIRE WITH 3-FEET OF SLACK ON NEW LATERAL.
8. PLACE MANHOLE MARKERS ADJACENT TO MANHOLES AT THE DISCRETION OF THE ENGINEER OR THE ENGINEER'S REPRESENTATIVE.
9. TRACER WIRE TO BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. WHERE SPLICES ARE REQUIRED, SECURELY BOND SPLICES TOGETHER WITH AN APPROVED INDUSTRIAL CONNECTOR TO PROVIDE ELECTRICAL CONTINUITY.
10. USE COPPER CONNECTORS AND REPAIR INSULATION TO SEAL OUT MOISTURE AND CORROSION. INSTALL INSULATION TO PREVENT ANY UNINSULATED WIRE EXPOSURE (SEE DETAIL DWG 7.27).
11. THE CLEANOUT AT THE RIGHT-OF-WAY OR EASEMENT WILL SERVE AS THE TEST PORT.
12. SPLICED CONNECTIONS ARE ALLOWED BETWEEN THE MAIN LINE TRACER WIRE AND THE LATERAL TRACER WIRE.
13. FOR NEW SEWER TAPS ON EXISTING MAINS VOID OF ANY TRACER WIRE, PROVIDE A 1 LB. MAGNESIUM ANODE FOR THE TRACING WIRE TERMINATION AT THE POINT OF THE NEW TAP ON THE EXISTING SEWER. PLACE THE ANODE AT THE BOTTOM EDGE OF THE TRENCH AWAY FROM THE MAIN AND THE LATERAL.
14. BEFORE ACCEPTANCE (POST PUNCH LIST) EACH WIRE SEGMENT MUST PASS A CONDUCTIVITY TEST WITNESSED BY THE ENGINEER OR THE ENGINEER'S REPRESENTATIVE.

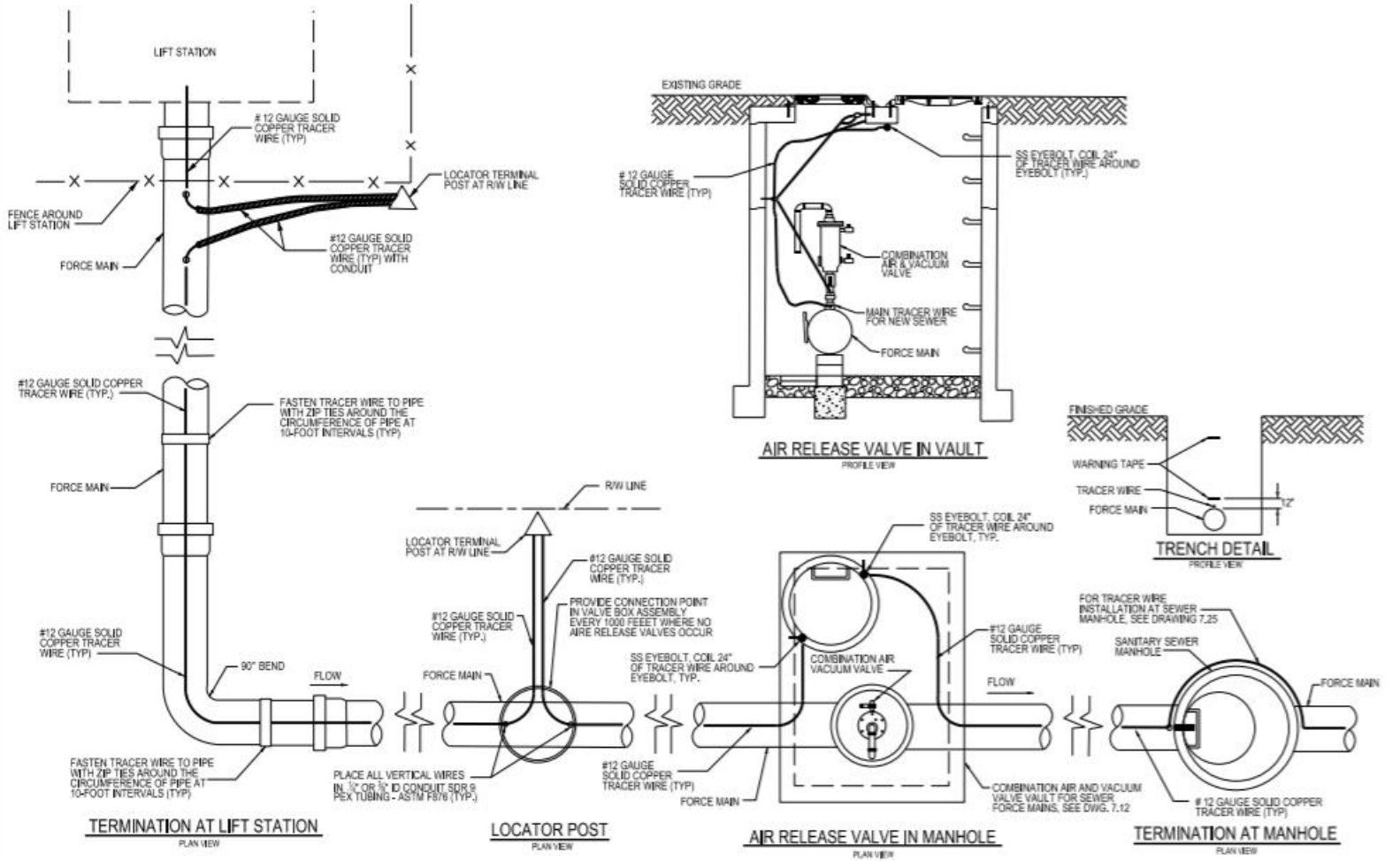
NOTE:
DETAIL SUBJECT TO CHANGE PER DIRECTION
OF CITY OF LEWISVILLE ENGINEERING DIVISION



Standard Details
Tracer Wire
Gravity Sewer Details

Revisions:		
No.	Description	Date

Engineering Department	Date: 5-17-2021
	Date:
Office No. 973-215-3400	Sheet 7.27
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NOTE:
 DETAIL SUBJECT TO CHANGE PER DIRECTION
 OF CITY OF LEWISVILLE ENGINEERING DIVISION



Standard Details
 Force Main
 Tracer Wire Details

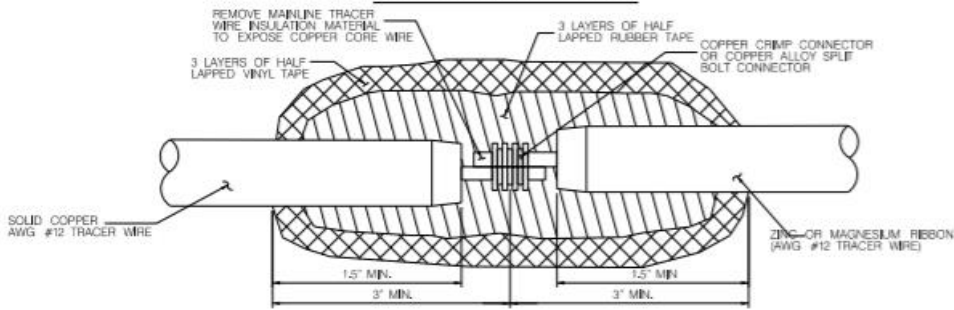
Revisions:

No.	Description	Date

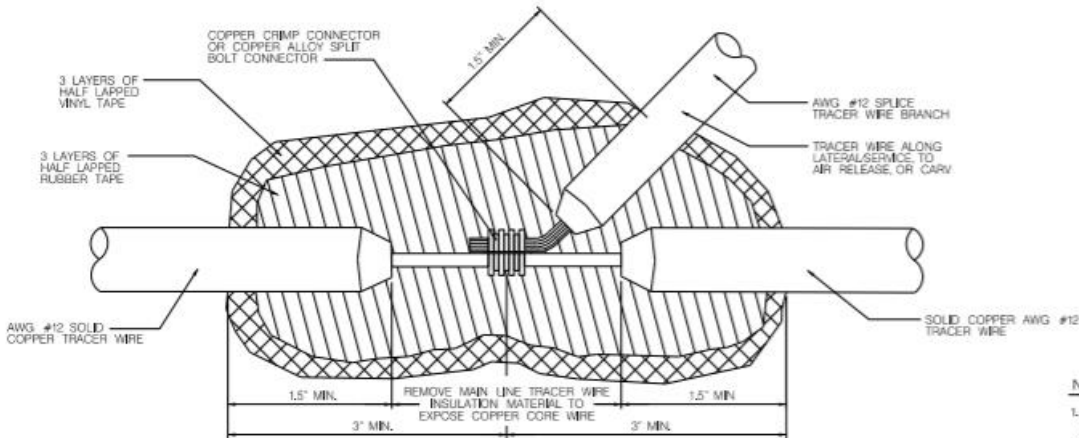
Engineering Department
 City No. 973-219-3490
 www.cityoflewisville.com

Date: 3-17-2021
 District:
 Sheet: 7.28

IN-LINE OR REPAIR SPLICE



BRANCH IN-LINE SPLICE FOR SERVICE/LATERAL, TEE, AIR RELEASE, OR CARV



NOTES

1. LIMIT IN LINE SPLICES TO THE GREATEST EXTENT POSSIBLE. TRACER WIRE SHALL BE AS CONTINUOUS AS POSSIBLE.
2. IN-LINE SPLICES SHALL INCLUDE 3 FEET OF SLACK WIRE ON EACH SIDE OF EACH SPLICE.
3. BRANCH SPLICES ON EXISTING WIRE SHALL INCLUDE 3 FEET OF SLACK WIRE ON THE NEW BRANCH WIRE.
4. BRANCH SPLICES ON NEW MAIN INSTALLATION SHALL INCLUDE 3 FEET OF SLACK WIRE ON EACH SIDE OF THE SPLICE IN EACH DIRECTION.

NOTE:
DETAIL SUBJECT TO CHANGE PER DIRECTION
OF CITY OF LEWISVILLE ENGINEERING DIVISION



Standard Details
Sewer Main Tracer Wire Splice Detail

Revisions:

No.	Description	Date

Engineering Department

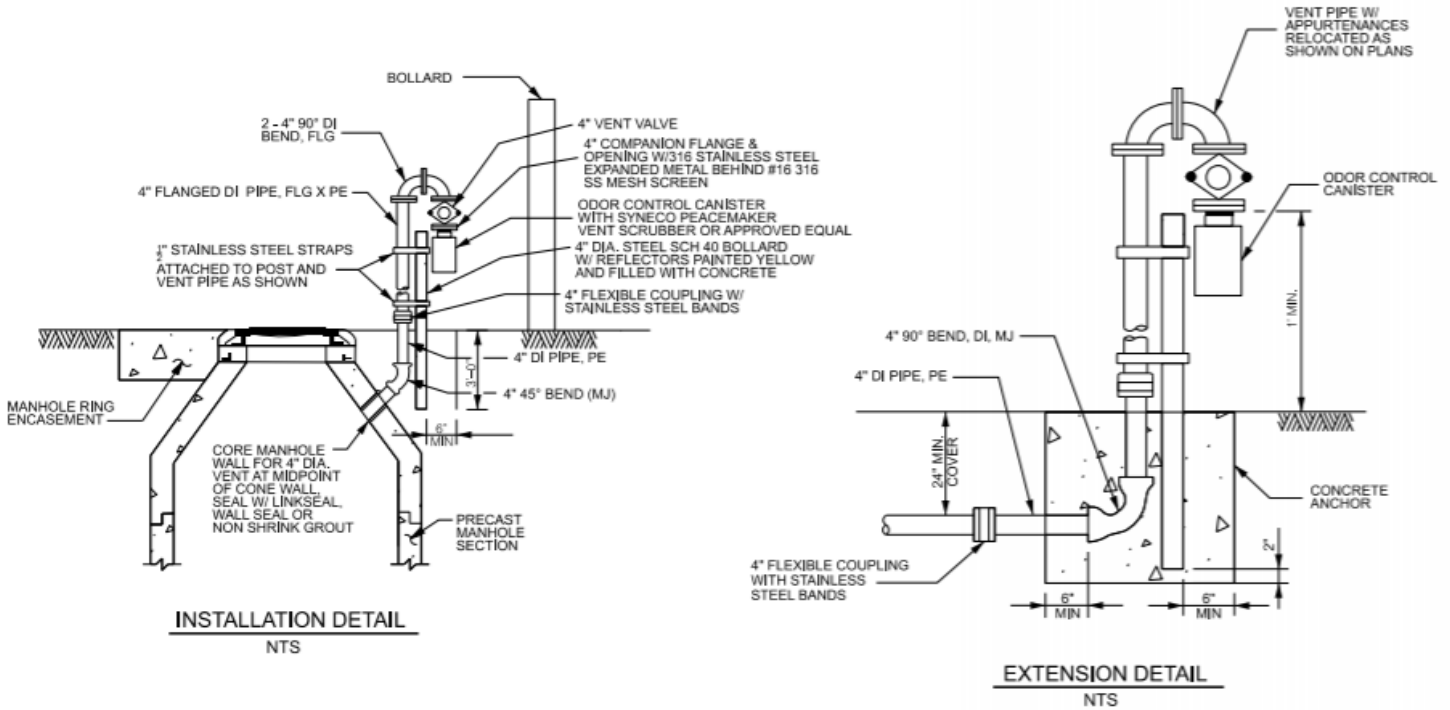
Office No. 972-219-3400

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Detail 3-17-2021

Date:

Sheet 7.29



INSTALLATION DETAIL
NTS

EXTENSION DETAIL
NTS

NOTES

1. DUCTILE IRON PIPE TO BE LINED WITH EPOXY AS PER SPECIFICATIONS.
2. DI HARDWARE TO BE STAINLESS STEEL.

NOTE:
DETAIL SUBJECT TO CHANGE PER DIRECTION
OF CITY OF LEWISVILLE ENGINEERING DEPARTMENT.



Standard Details
**MANHOLE ODOR CONTROL
TYPICAL DETAIL**

Revisions:

No.	Description	Date

Engineering
Department

Office No. 972-219-3400

www.cityoflewisville.com

Date: 11/20/2020

Drawn:

Sheet:

7.10

Next Steps

- Determine action items for Subcommittee Members and NCTCOG staff

Next Standard Drawings Meetings

June 28, 2021
10am-11:30am

Teams

Committee Webpage:

<https://www.nctcog.org/envir/committees/public-works-council/standard-drawings-subcommittee>