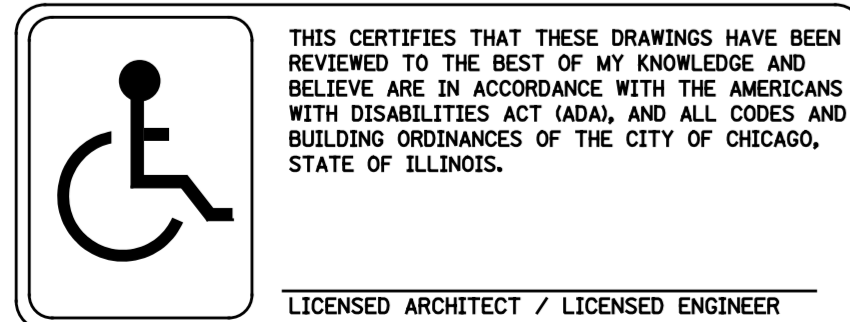


# CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES SEWER SECTION

## SEWER CONSTRUCTION DETAILS

A.01	Vitrified Clay Pipe Drain Connections
A.02	Ductile Iron Pipe Drain Connections
A.03	TBD
A.04	Connections 12" and larger
A.05	CONCRETE COLLAR DETAILS BETWEEN DISSIMILAR PIPE MATERIALS
A.06	Type A Manhole
A.07	Type "A" Manhole Precast Bases and Rings
A.08	Reinforcement for Type "A" Precast Manhole Bases
A.09	Base Tee for Type A Manholes, 42" & larger
A.10	Type "B" Manhole
A.11	Reinforcement for Type "B" Manhole Bases
A.12	Type "B" Manhole Configuration
A.13	Modified Type B Manhole
A.14	Type C Single Drop Manhole
A.15	Alternate Type C Single Drop Manhole
A.16	Alternate Type C Single Drop Manhole base
A.17	Type C Double Drop Manhole
A.18	Type C Bases for Double Drop Manhole
A.19	Precast Tumbling Basin Detail
A.20	Flat Top Slab
A.21	Manhole Lids and Frames
A.22	Drainage Structure Details
A.23	STORM ONLY/INFILTRATION SYSTEM DETAILS
A.24	Ladder Rungs
A.25	Abandoned Sewer Structure
A.26	Misc details
A.27	Drainage Structure Details- Private Development



DWM PM: \_\_\_\_\_

LAST REVISED	05/23/24
PUBLISHED	12/6/24

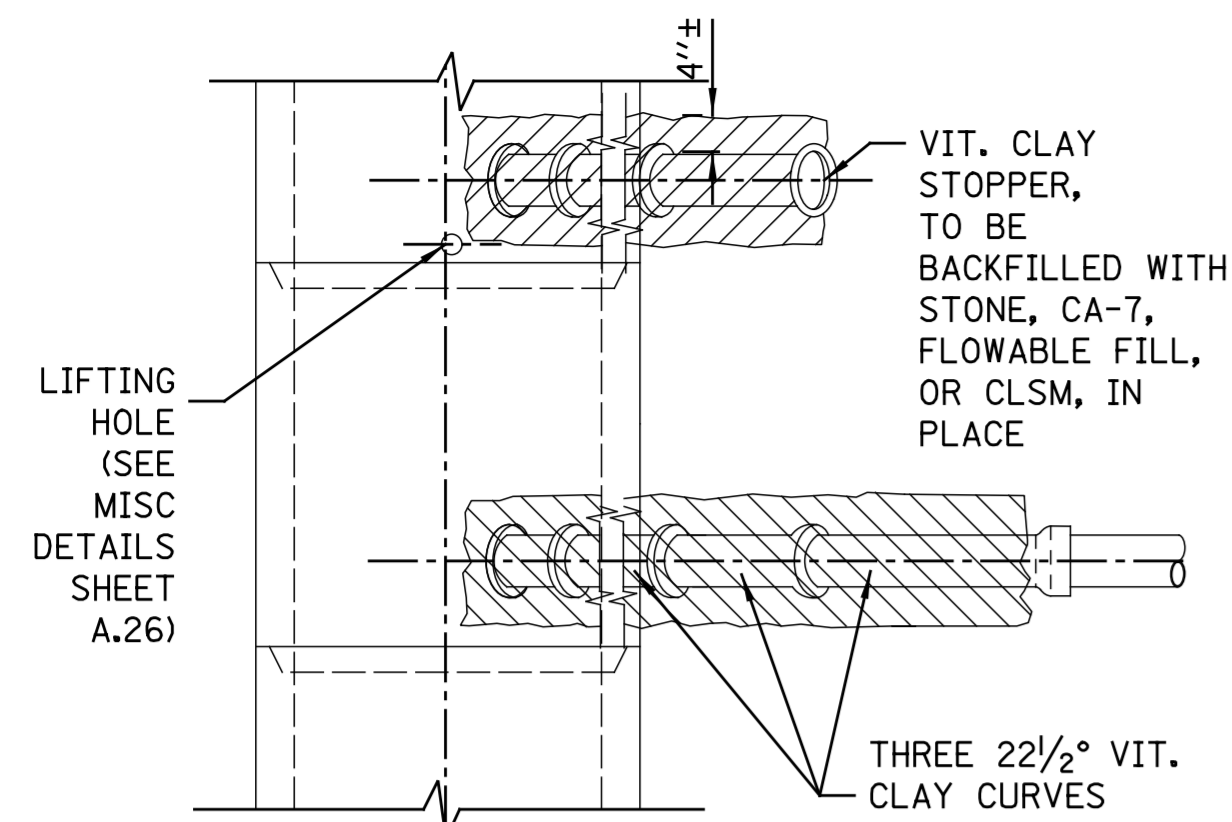
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PLOT DATE - WATER

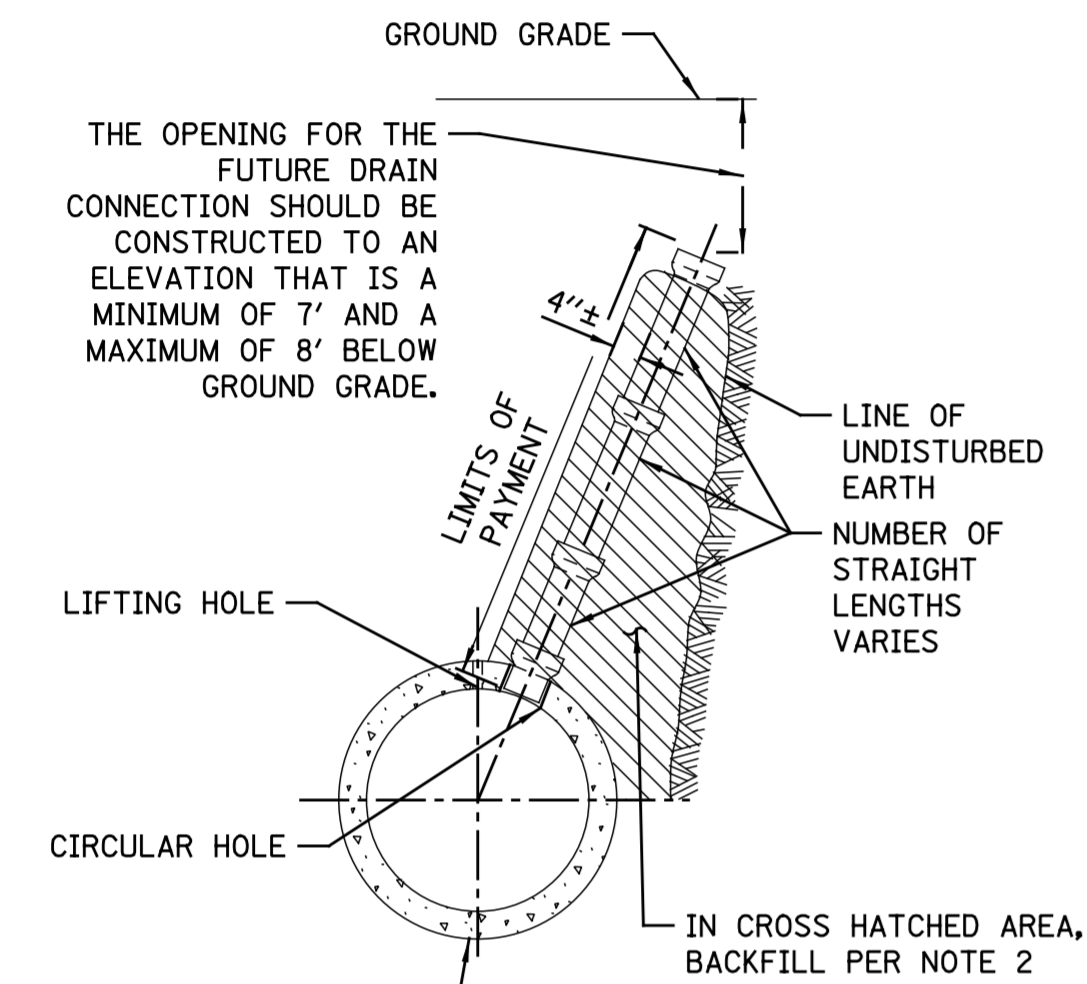
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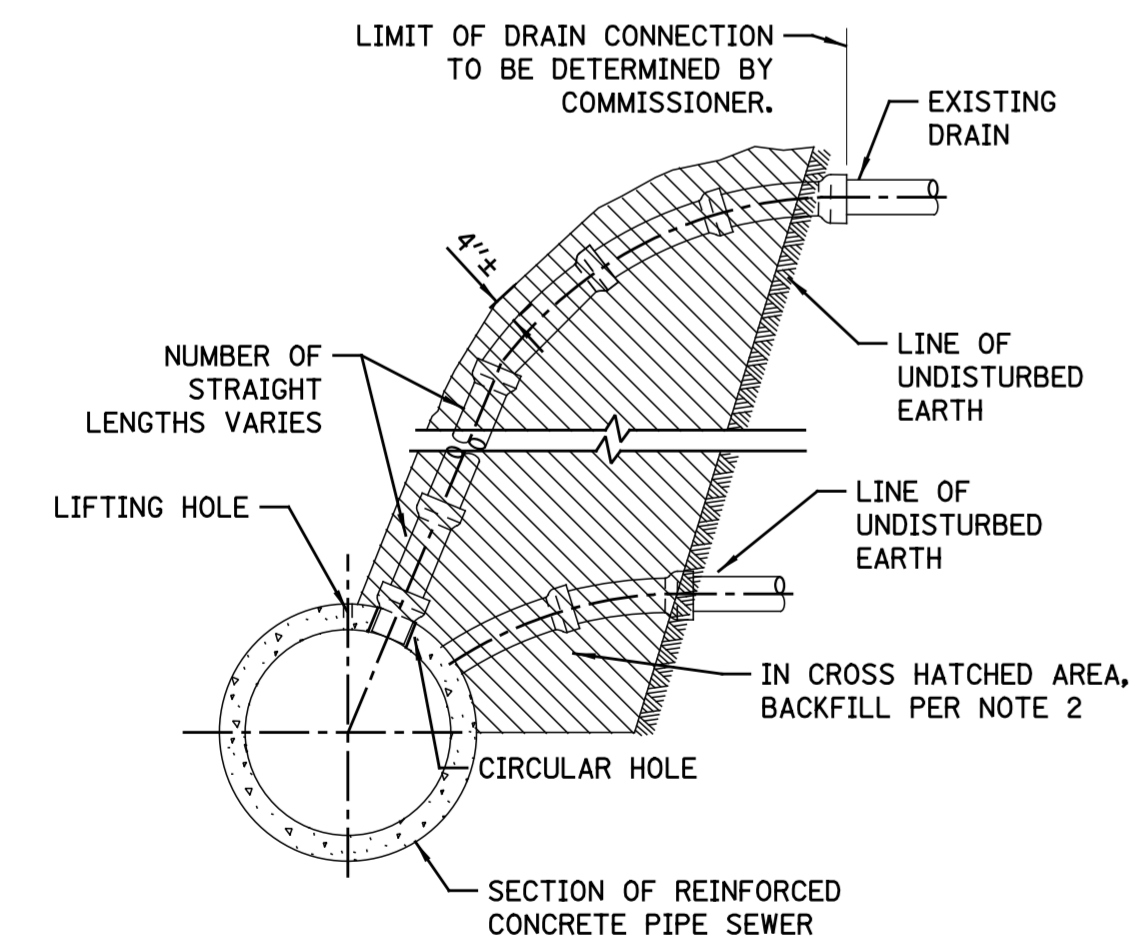


PLAN



ELEVATION

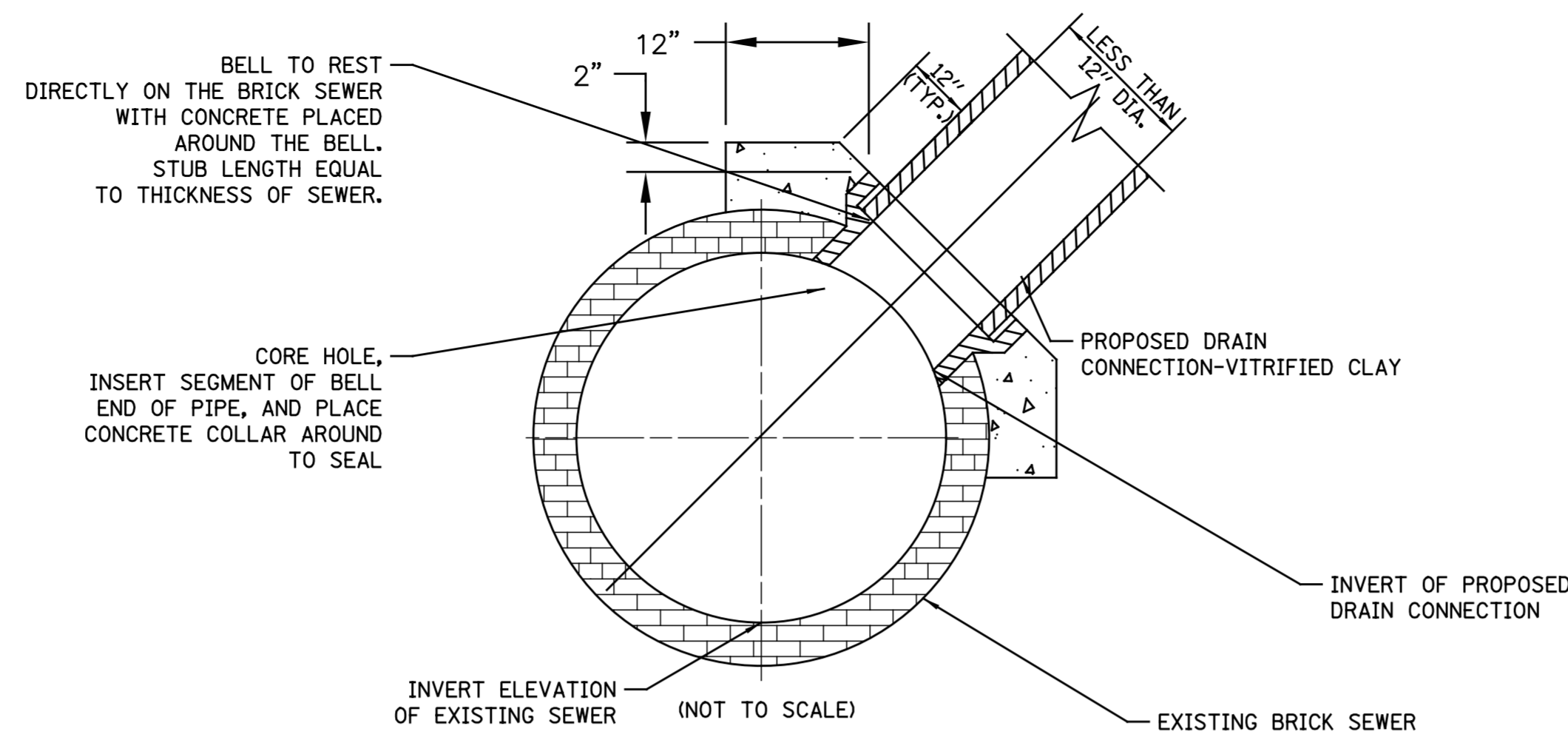
TYPICAL DRAIN STACKS FOR FUTURE USE



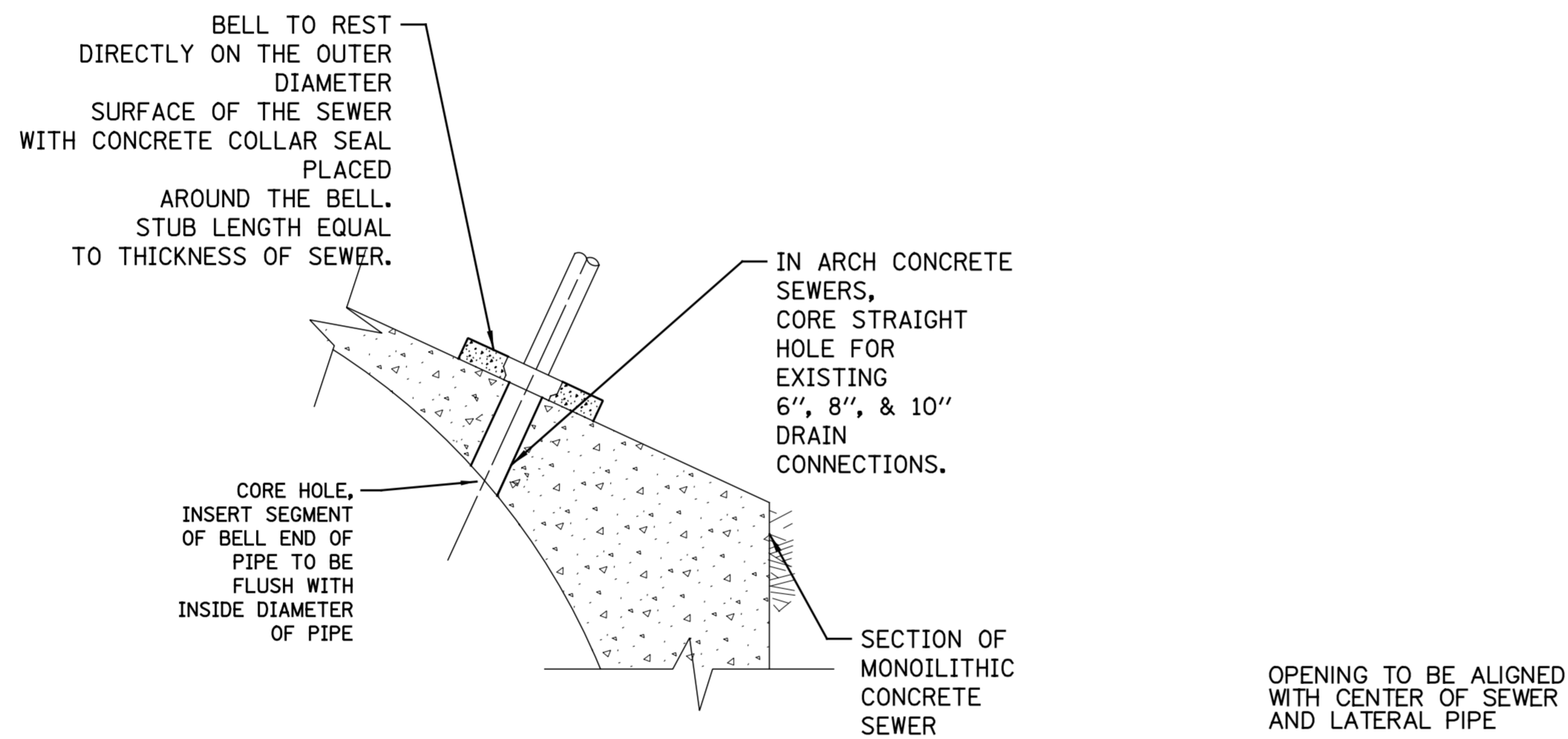
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TYPICAL DRAIN CONNECTIONS FOR EXISTING DRAINS

FOR CONCRETE SEWERS

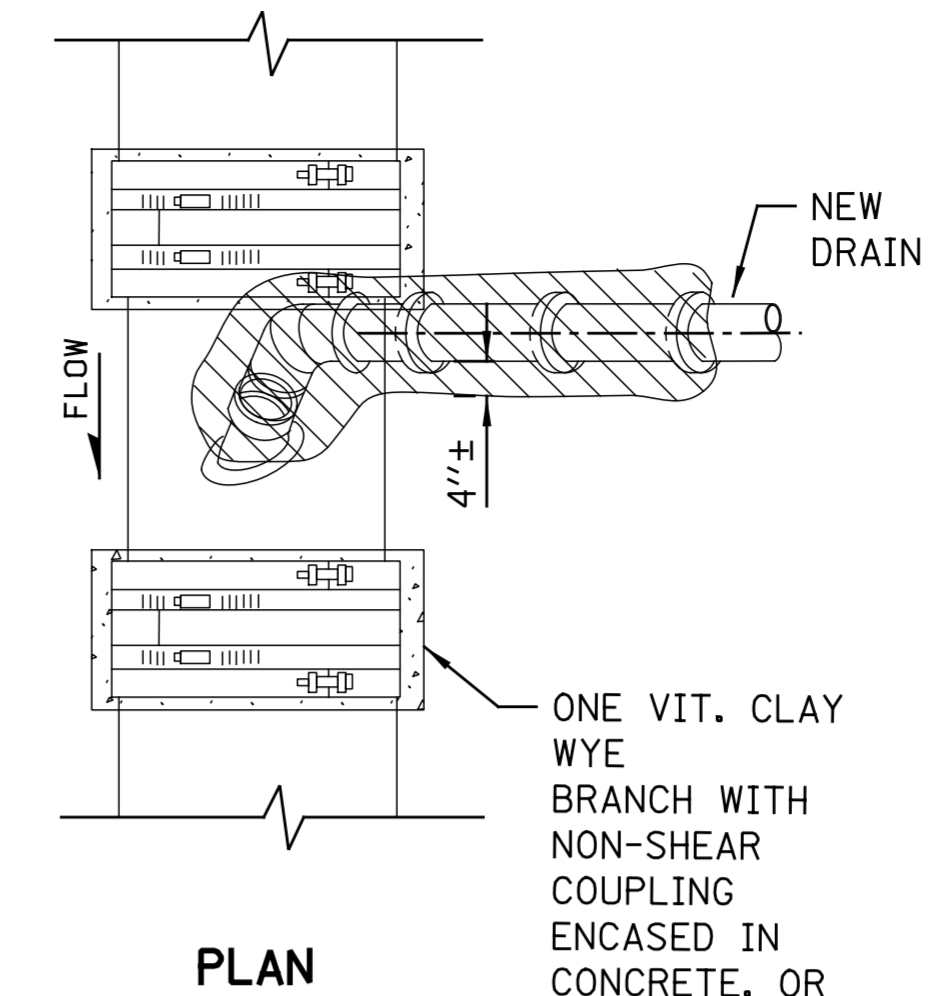


FOR BRICK SEWERS

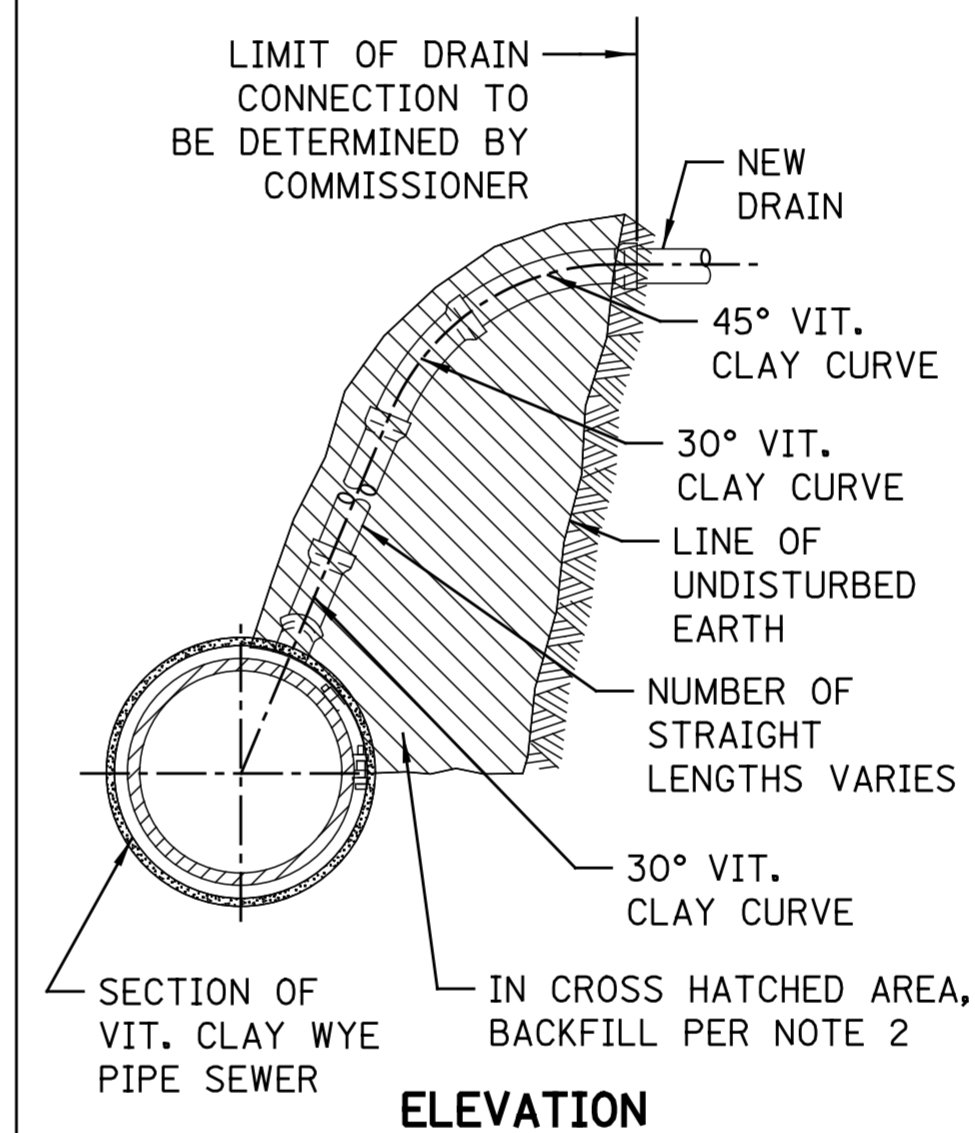


ELEVATION

FOR CONCRETE SEWERS



PLAN



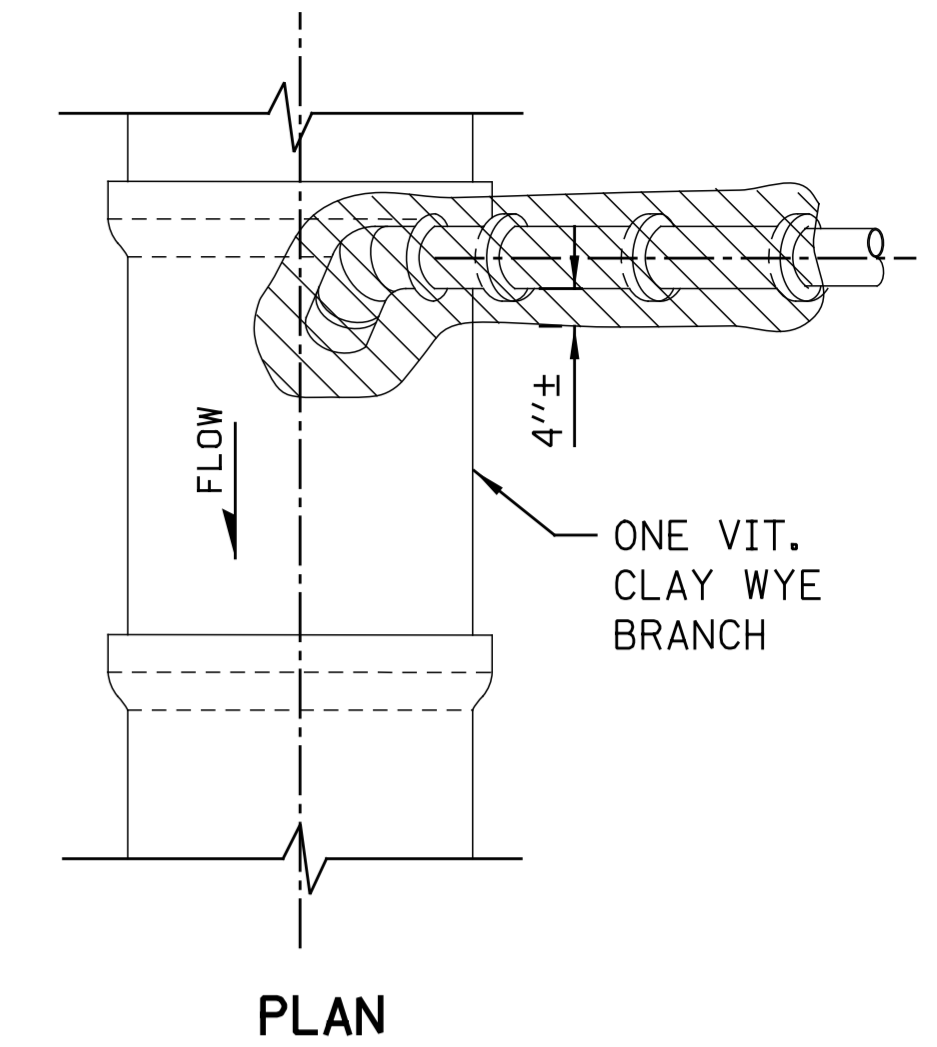
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NOTES:

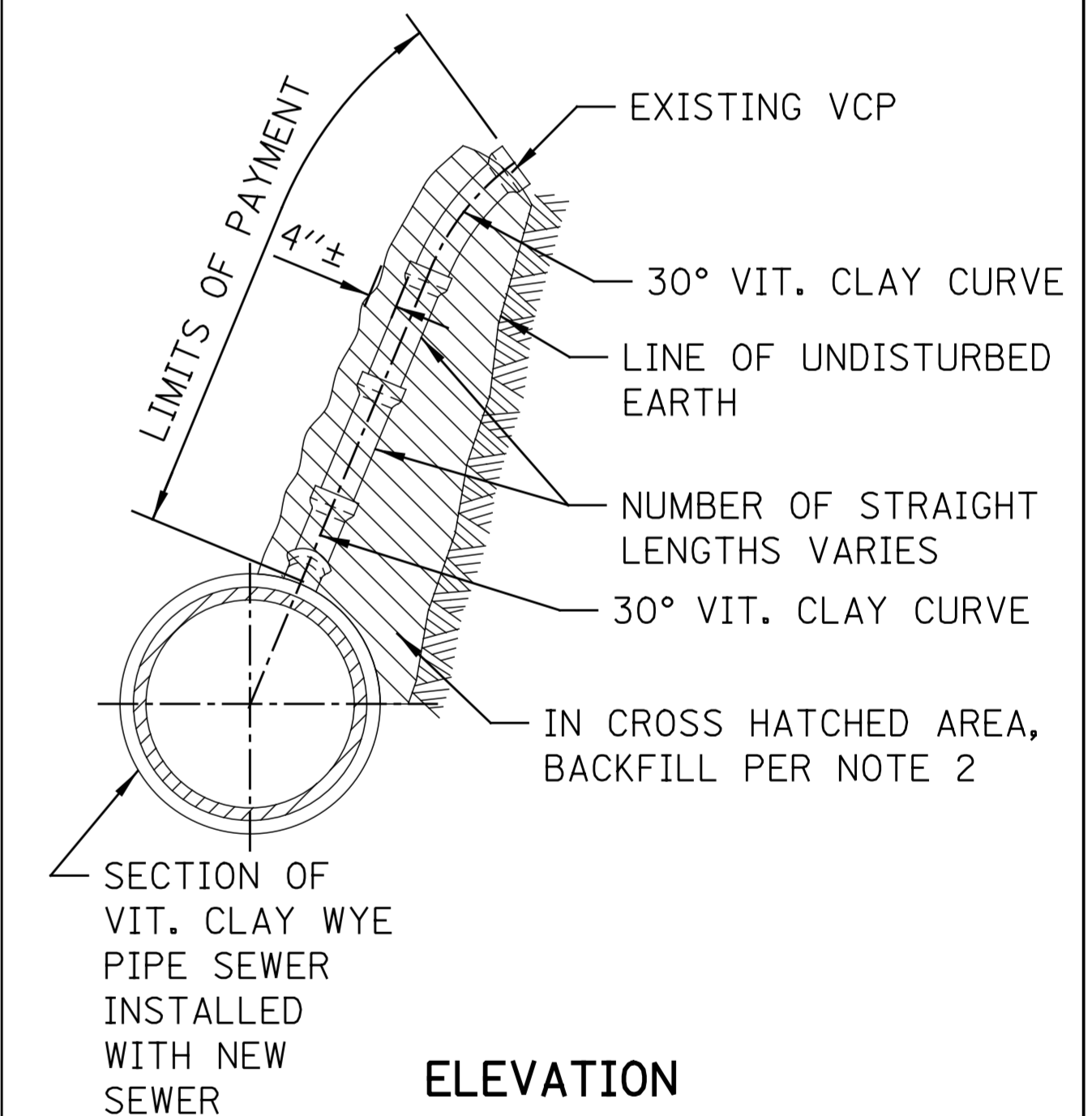
- Maximum of 6", 8", and 10" drains connections can be cored into minimum 12", 15", and 18" VCP sewers, respectively. All other sizes use new wyes with non-shear couplings encased in concrete.
- The installation of wye connections on lined sewers need prior approval from DWM

NEW DRAIN CONNECTION TO EXISTING VCP SEWER

FOR VITRIFIED CLAY SEWERS



PLAN



ELEVATION EXISTING DRAIN CONNECTION TO NEW SEWER MAIN

NOTES:

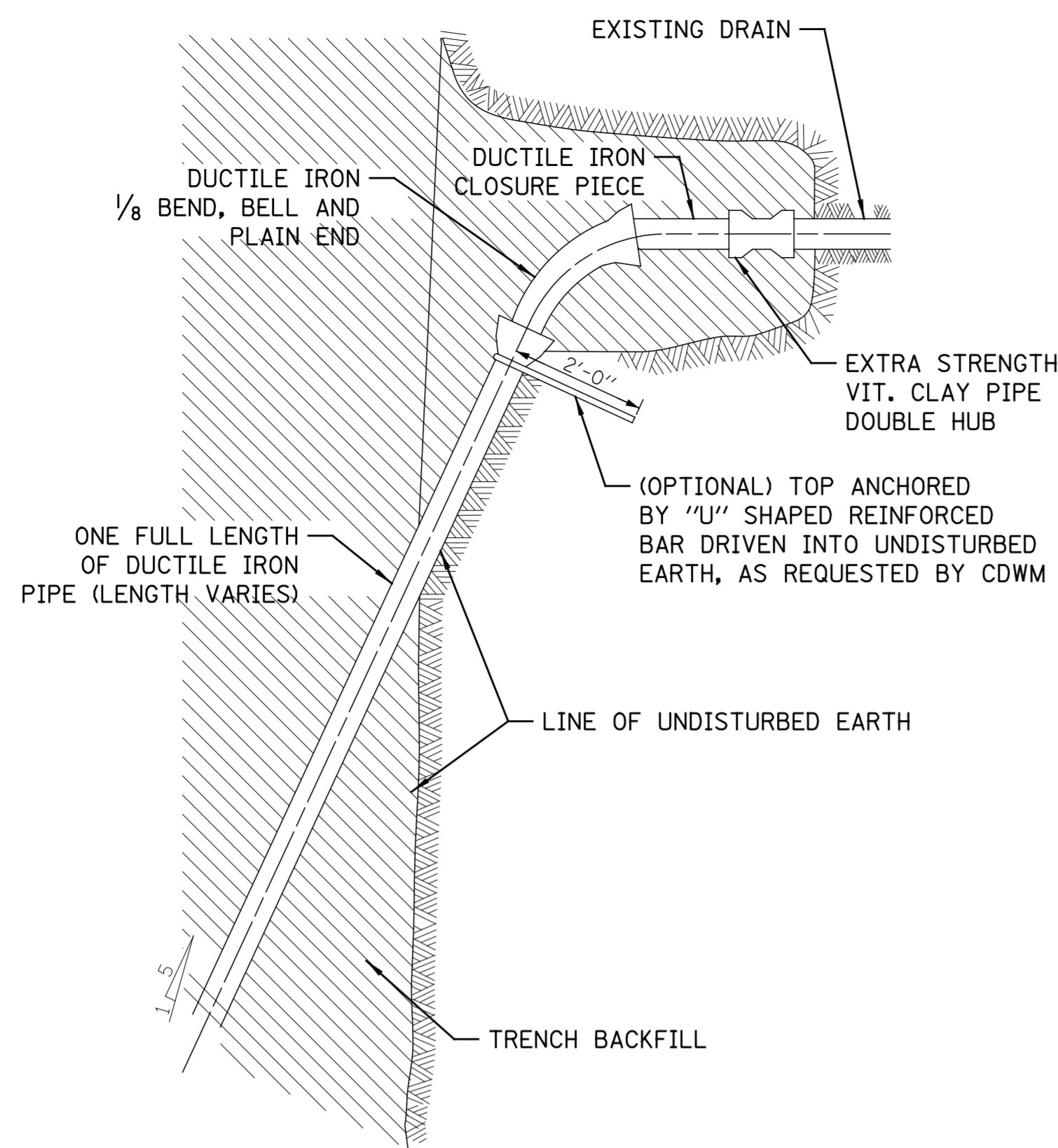
- ALL DRAIN CONNECTION JOINTS MUST BE MADE AS SPECIFIED IN SPECIFICATIONS..
- FOR BACKFILL OF HATCHED SUPPORT AREAS, USE CONCRETE, CA-11, FLOWABLE FILL, OR CLSM.
- CONNECTIONS TO CONCRETE/BRICK SEWERS SHALL BE A MINIMUM OF 4 FEET APART.

STANDARD REVISIONS	
DATE	DESCRIPTION
4/21/21	LAST REVISED
12/6/24	PUBLISHED

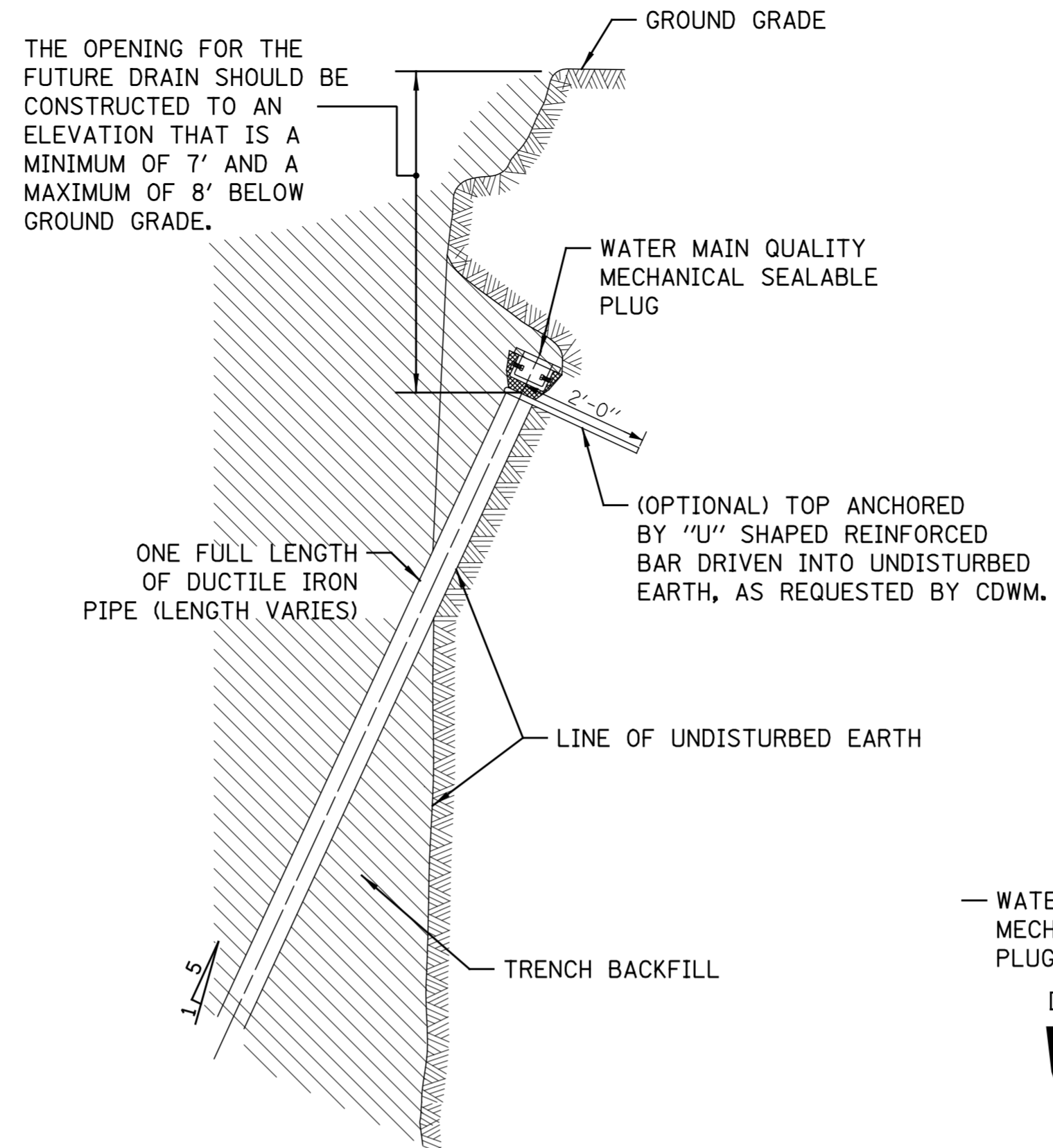
PERCENT COMPLETE	DATE
30	
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BULLETIN	

CITY OF CHICAGO	
DEPARTMENT OF WATER MANAGEMENT	
BUREAU OF ENGINEERING SERVICES	
VITRIFIED CLAY PIPE (VCP)	DRAIN CONNECTIONS

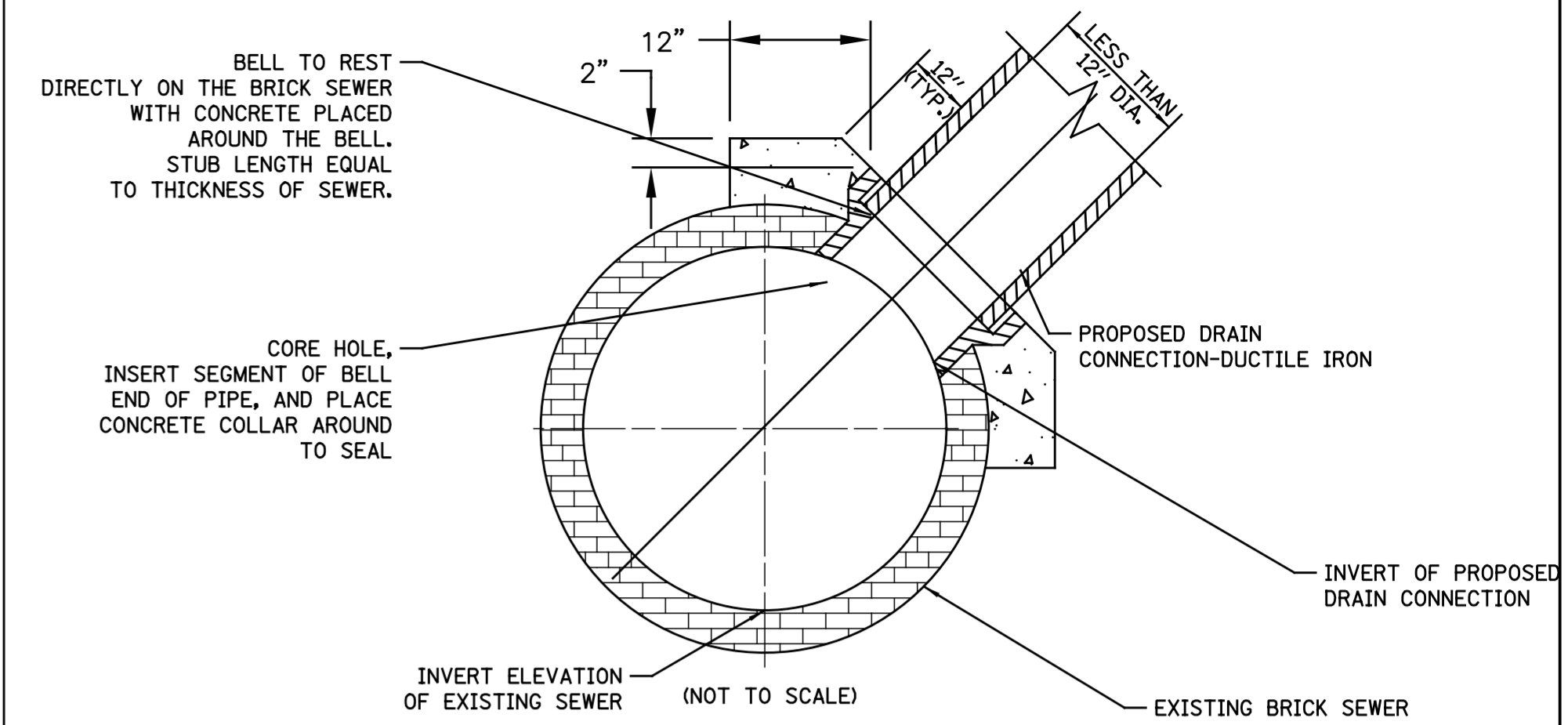
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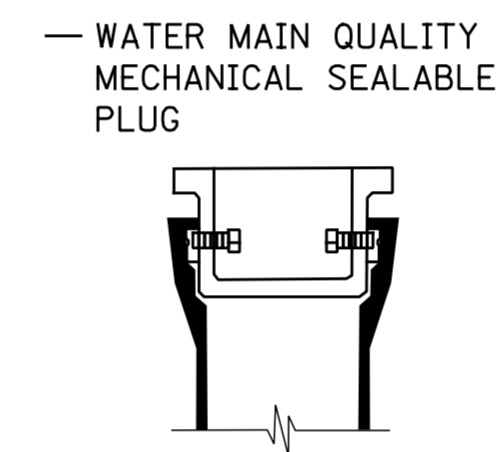
TYPICAL DRAIN CONNECTIONS FOR EXISTING DRAINS



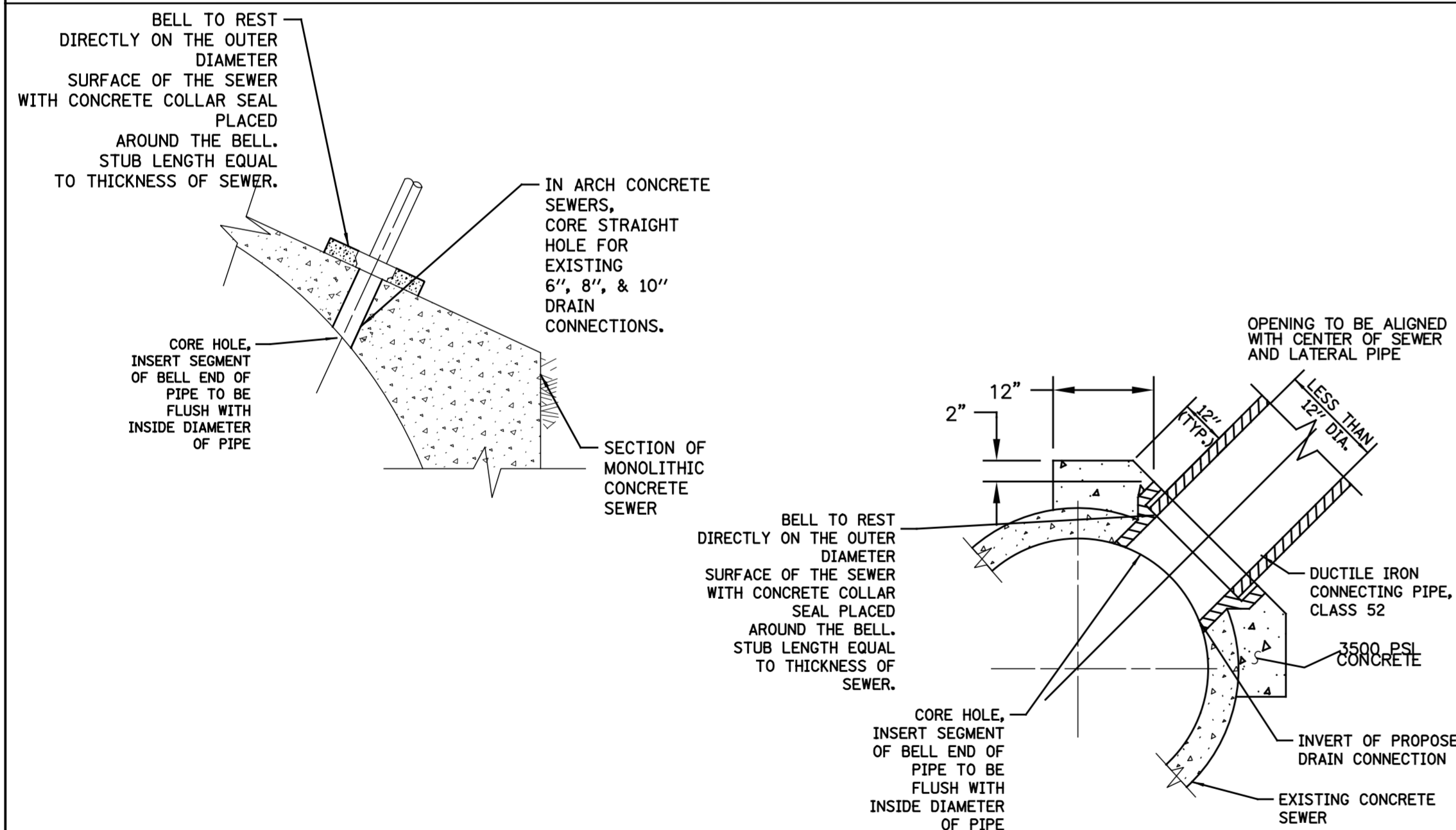
TYPICAL DRAIN STACKS FOR FUTURE USE



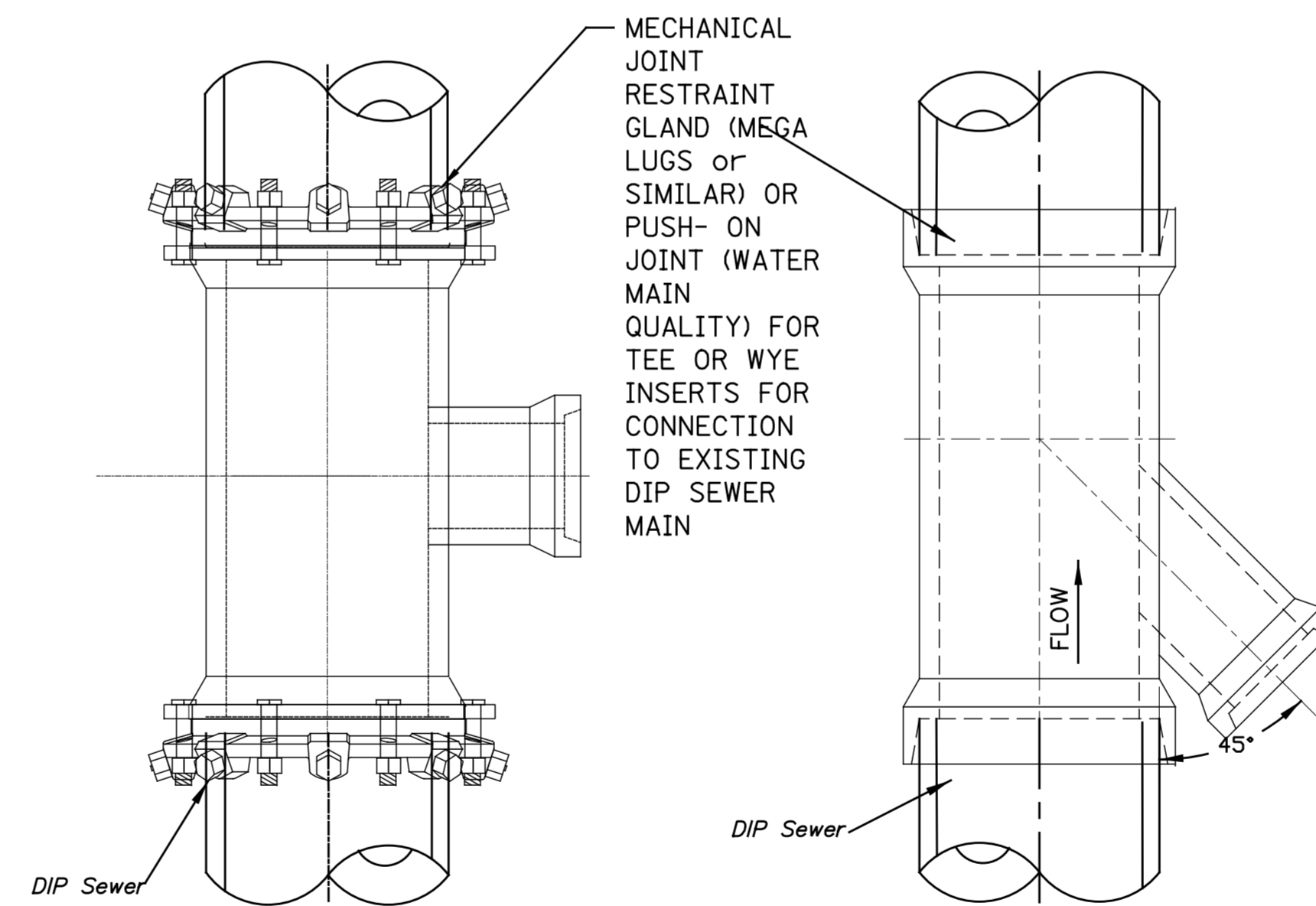
FOR BRICK SEWERS



— WATER MAIN QUALITY MECHANICAL SEALABLE PLUG

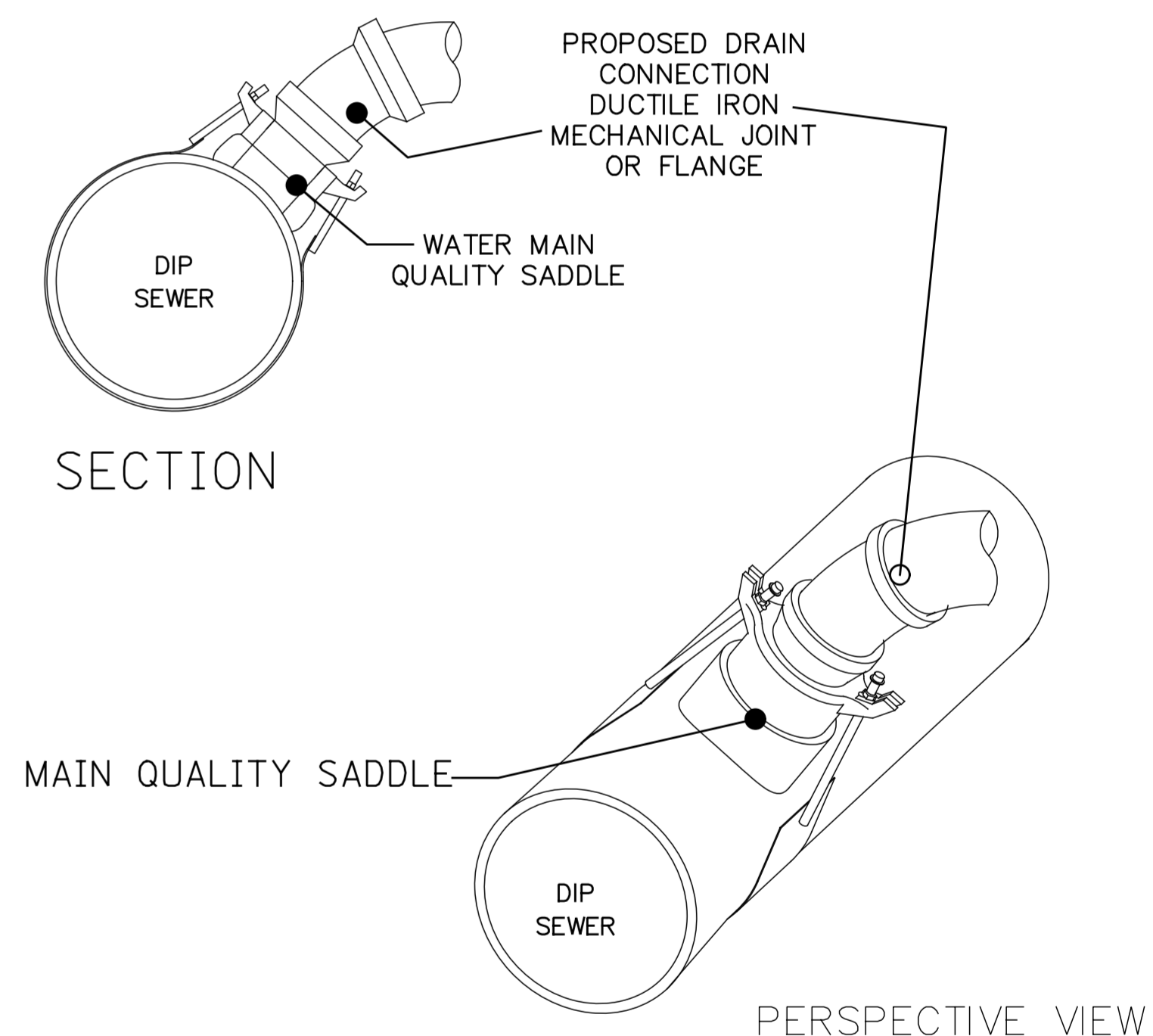


FOR CONCRETE SEWERS



DIP TO DIP SEWER CONNECTION (10" OR GREATER)

NOTE:  
THE INSTALLATION OF WYE OR TEE CONNECTIONS ON LINED SEWERS NEED PRIOR APPROVAL FROM DWM



DIP TO DIP SEWER CONNECTION (10" OR LESS)

NOTE:  
MAXIMUM OF 6", 8", AND 10" DRAINS CONNECTIONS CAN BE CORED INTO MINIMUM 12", 15", AND 18" DIP SEWERS, USING A WATER MAIN QUALITY SADDLE, RESPECTIVELY.  
ALL OTHER SIZES USE NEW WYES OR TEES WITH NON-SHEAR COUPLINGS ENCASED IN CONCRETE.

- GENERAL NOTES:
1. DUCTILE IRON PIPE MUST BE BELL END WITH PUSH -ON JOINTS CONFORMING TO ANSI SPECIFICATIONS A21.51 WITH CLASS 52 THICKNESS.
  2. ALL DUCTILE IRON PIPE AND FITTINGS MUST BE ENCASED IN POLYETHYLENE TUBING BEFORE BEING INSTALLED BLOCKED, OR BRACED.
  3. CONNECTIONS TO SEWERS SHALL BE A MINIMUM OF 4 FEET APART.

STANDARD REVISIONS	
DATE	DESCRIPTION
4/22/21	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
30	
60	
75	
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BULLETIN	

<b>CITY OF CHICAGO</b> DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
DUCTILE IRON PIPE DRAIN CONNECTIONS	

DRAWN: SEM DESIGNED: CHECKED: REVIEWED:	<b>A.2</b> OF PN
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STANDARD REVISIONS	
DATE	DESCRIPTION
3/22/21	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
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BULLETIN	

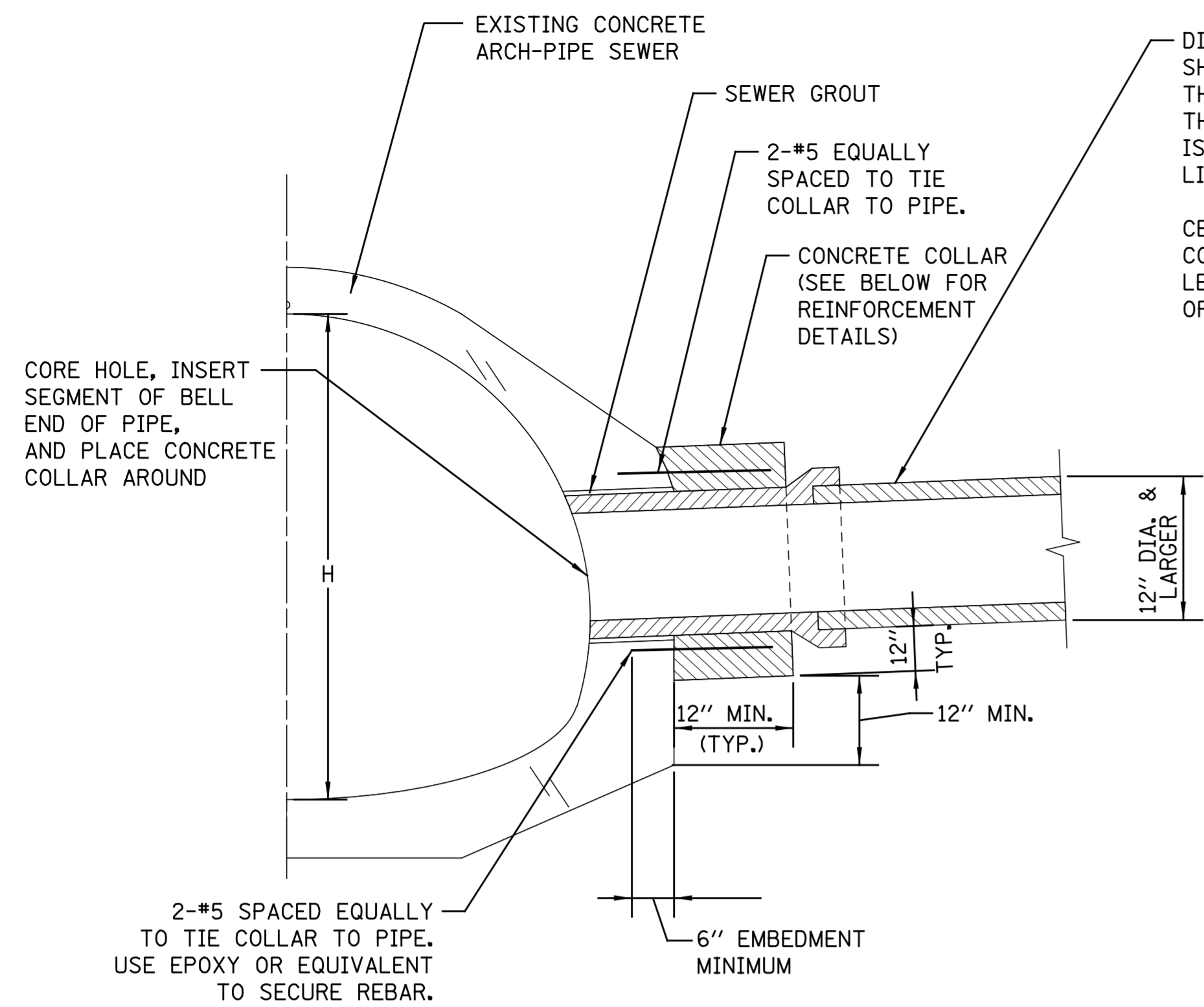
**CITY OF CHICAGO**  
DEPARTMENT OF WATER MANAGEMENT  
BUREAU OF ENGINEERING SERVICES

**DRAIN CONNECTIONS**

DRAWN: <u>  </u>	SEW
DESIGNED: <u>  </u>	
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REVIEWED: <u>  </u>	

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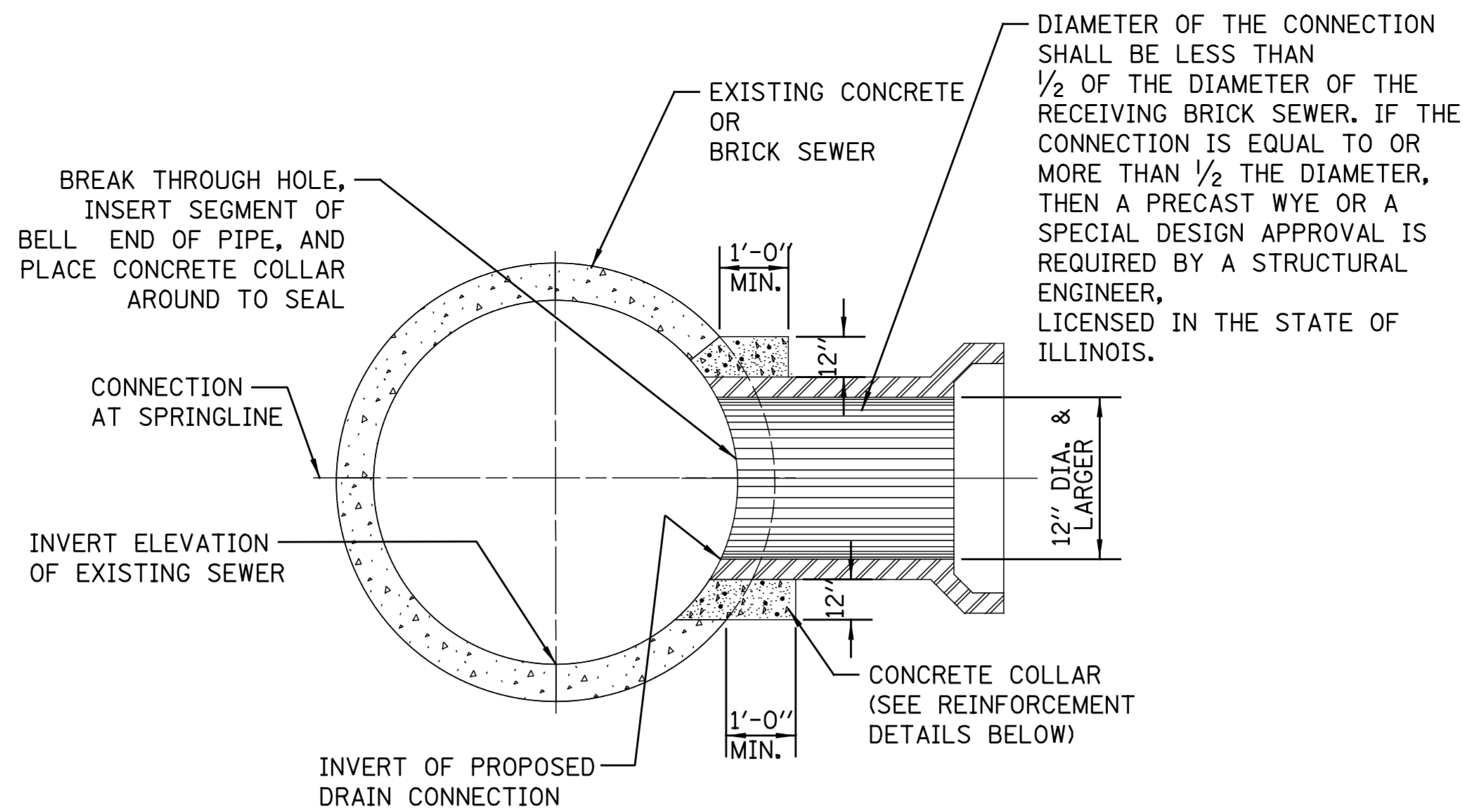


### SEWER CONNECTION TO ARCH PIPE SECTIONS

(NOT TO SCALE)

DIAMETER OF THE CONNECTION SHALL BE EQUAL TO OR LESS THAN H/3. IF DIAMETER IS MORE THAN H/3, A SPECIAL DESIGN APPROVAL IS REQUIRED BY A STRUCTURAL ENGINEER, LICENSED IN THE STATE OF ILLINOIS.

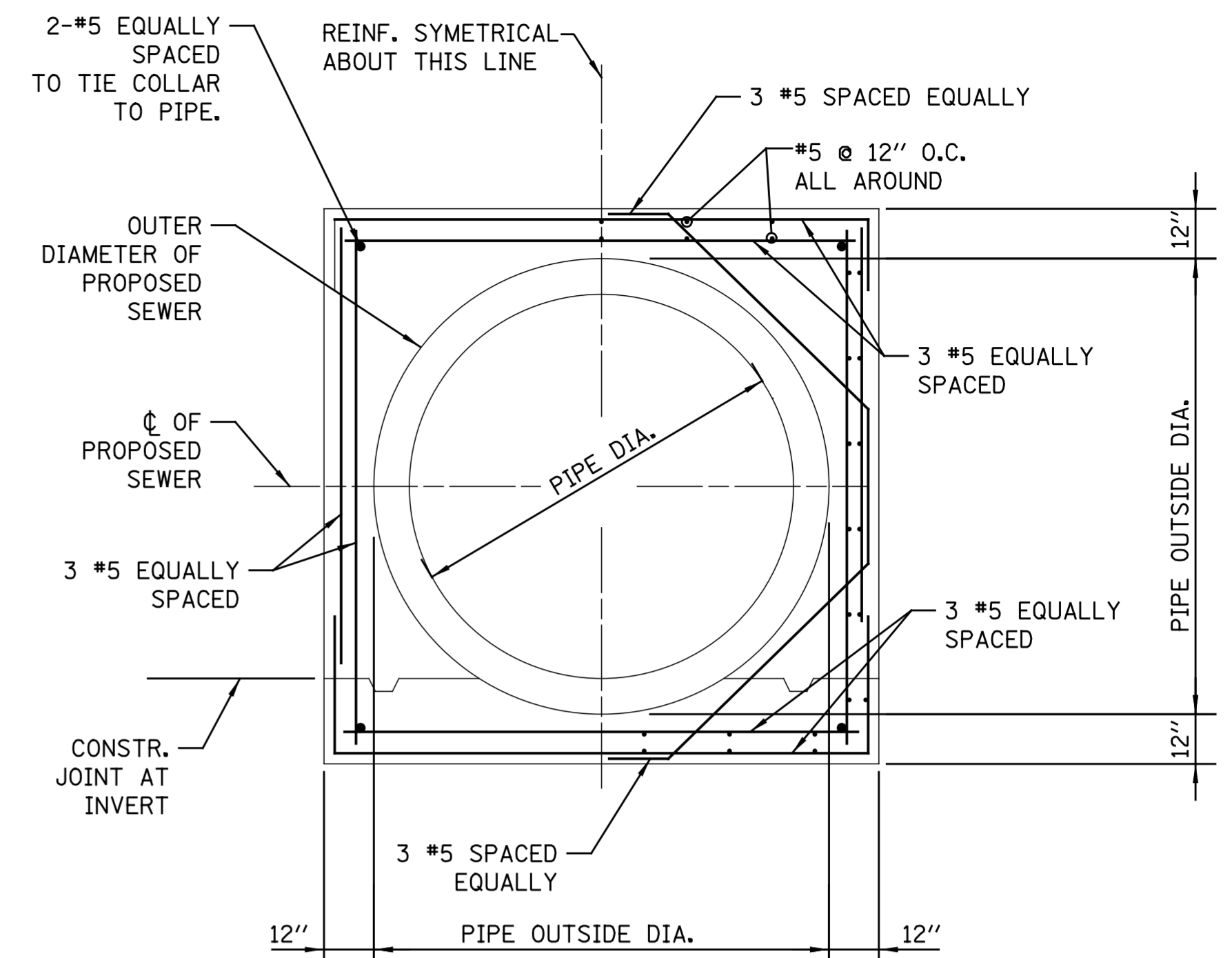
CENTER TO CENTER SPACING OF LATERAL CONNECTIONS TO ARCH PIPES SHALL BE NO LESS THAN 6 TIMES THE DIAMETER OF THE CONNECTION SIZE.



### TYPICAL SEWER CONNECTION

GENERAL NOTES:

- UTILIZE TYPE B OR MODIFIED TYPE B MANHOLES FOR PIPE SIZES UP TO 60" DIAMETER, WHEN APPLICABLE



### EXAMPLE CONCRETE COLLAR REINFORCEMENT - SECTION

(NOT TO SCALE)

CONCRETE COLLAR GENERAL NOTES:

- ALL ITEMS AND MATERIALS SHALL CONFORM TO THE LATEST IDOT SSRBC SPECIFICATIONS, UNLESS OTHERWISE NOTED IN SUPPLEMENTAL SPECIFICATIONS FOR THE SPECIFIC PROJECT BEING CONSTRUCTED.
- ALL CONCRETE SHALL CONFORM TO IDOT SSRBC ARTICLE 1020.04, CLASS SI, WITH A COMPRESSIVE STRENGTH OF 3500 PSI.
- ALL EPOXY COATED REINFORCEMENT BARS SHALL CONFORM TO IDOT SSRBC SECTION 508, AND ARTICLE 1006.10.
- UNLESS OTHERWISE SHOWN, THE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS: A.) CONCRETE CAST AGAINST PERMANENTLY EXPOSE EARTH: 3" B.) ALL OTHER REINFORCING BARS: 2"
- CONCRETE COLLARS SHALL BE USED AT ALL EXISTING/PROPOSED PIPE CONNECTIONS. TRIM EXISTING PIPE END TO PROVIDE FLUSH BUTT JOINT, INSTALL REBAR, AND PLACE CONCRETE COLLAR.
- THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO THE EXISTING SEWER DURING CONSTRUCTION. CONTRACTOR SHALL ADEQUATELY BRACE OR SHORE EXISTING SEWER IF REQUIRED TO MAINTAIN INTEGRITY OF SEWER DURING CONSTRUCTION. SUBMIT DESIGN AND DETAILS, SEALED AND SIGNED BY AN ILLINOIS LICENSED STRUCTURAL ENGINEER, SHOWING TEMPORARY BRACING FOR THE EXISTING SEWER DURING CONSTRUCTION FOR REVIEW PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING STRUCTURE IS RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL DIVERT ALL FLOW FROM THE EXISTING SEWER PRIOR TO CONSTRUCTION SO THAT THE WORK CAN BE PERFORMED IN THE DRY CONDITION. SEWER MUST BE MAINTAINED IN SERVICE AT ALL TIMES. SUBMIT MEANS OF FLOW DIVERSION FOR REVIEW PRIOR BREAKING INTO EXISTING BRICK SEWER. ALL EXCAVATION SHALL BE KEPT DEWATERED DURING CONSTRUCTION OPERATIONS UNTIL BACKFILL IN PLACE. PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS FROM FREEZING OR FLOODING AT ALL TIMES. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE SHALL BE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE OF THE WORK.

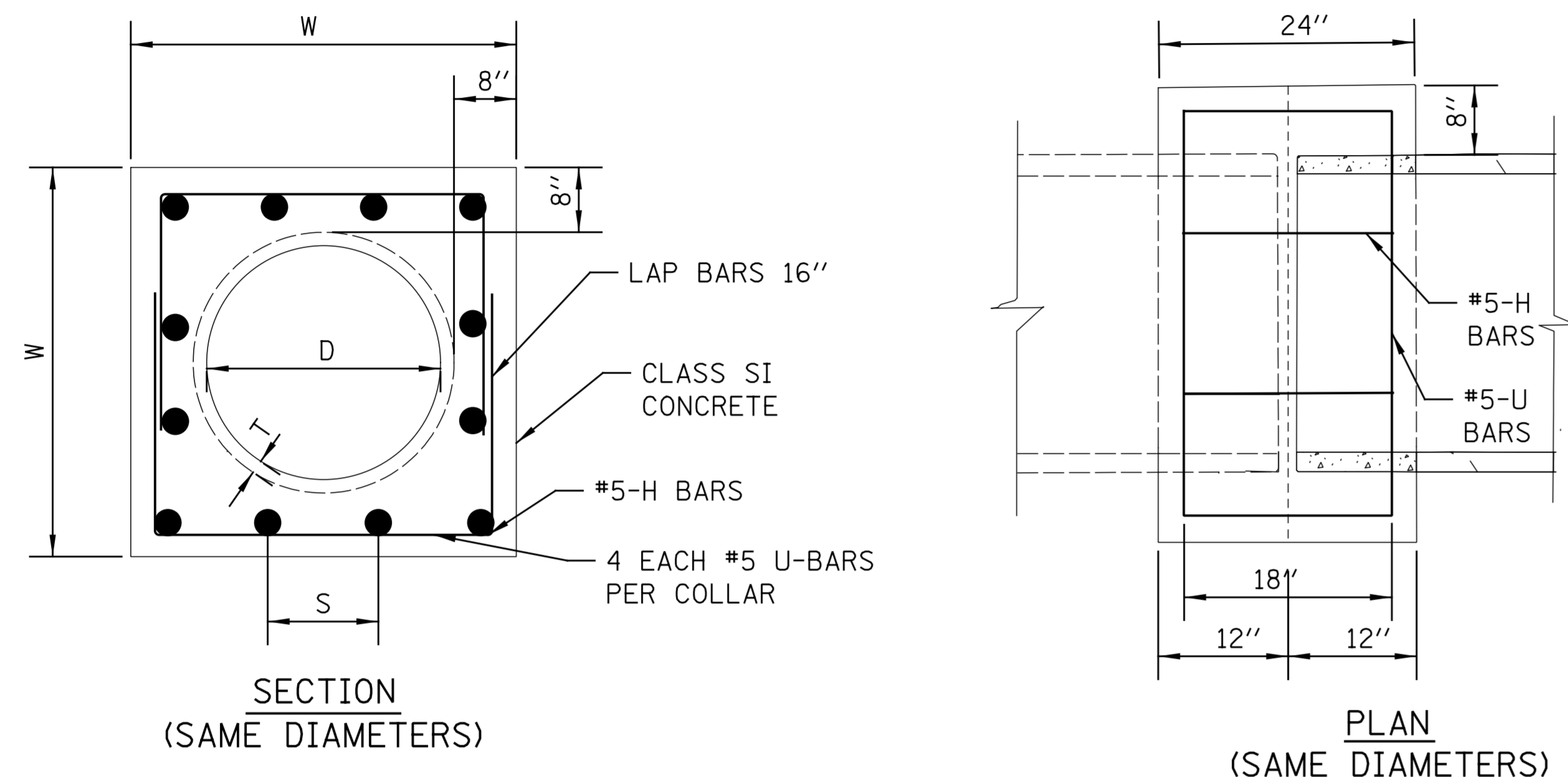
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DATE	DESCRIPTION
11/23/20	LAST REVISED
12/6/24	PUBLISHED

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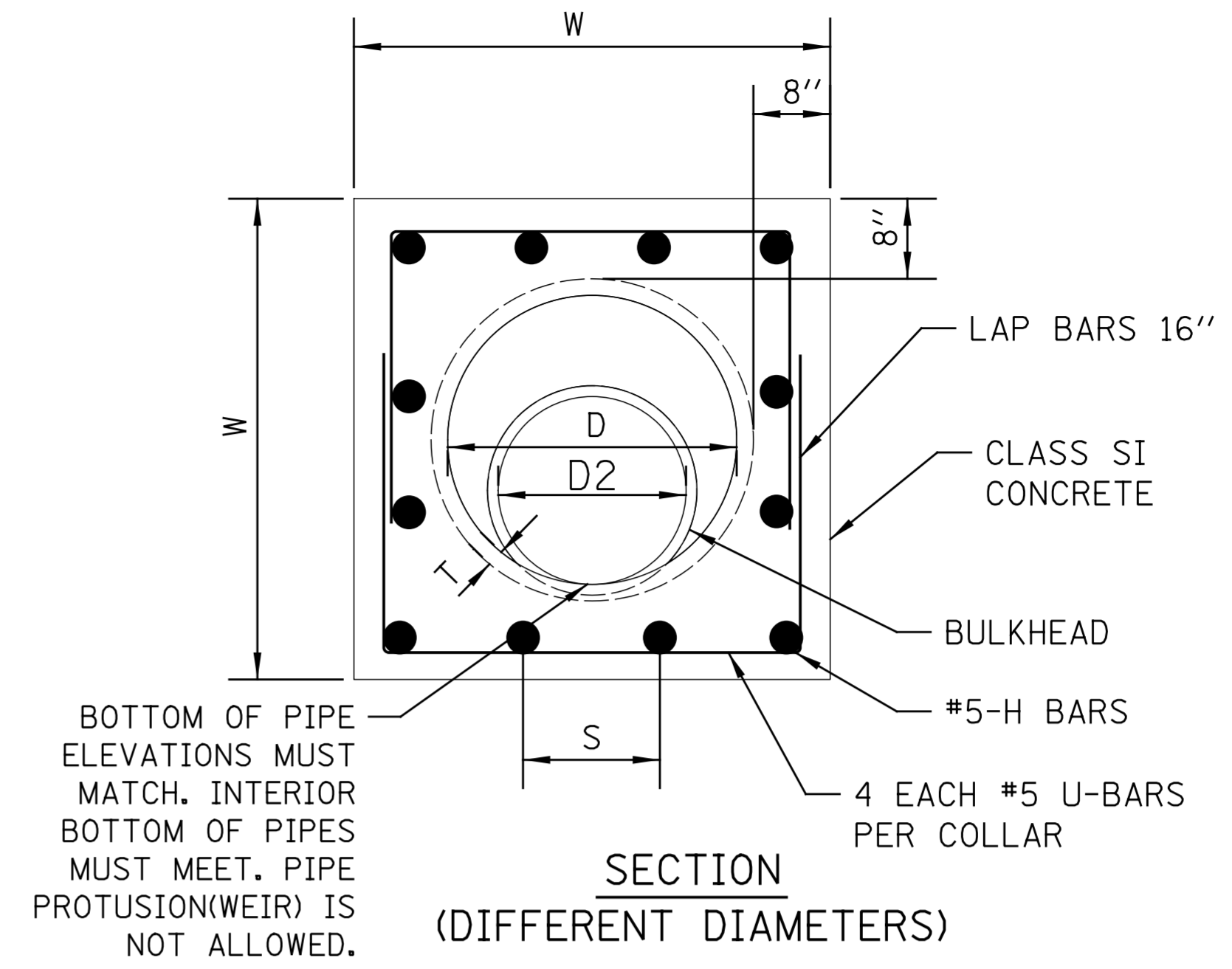
<b>CITY OF CHICAGO</b>	
DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
SIDE SEWER CONNECTIONS 12" DIA. & LARGER VARIED SEWER TYPES	

DRAWN: <b>SEB</b>	<b>A.4</b>
DESIGNED: <b> </b>	
CHECKED: <b> </b>	
REVIEWED: <b> </b>	OF <b> </b>
PN <b> </b>	

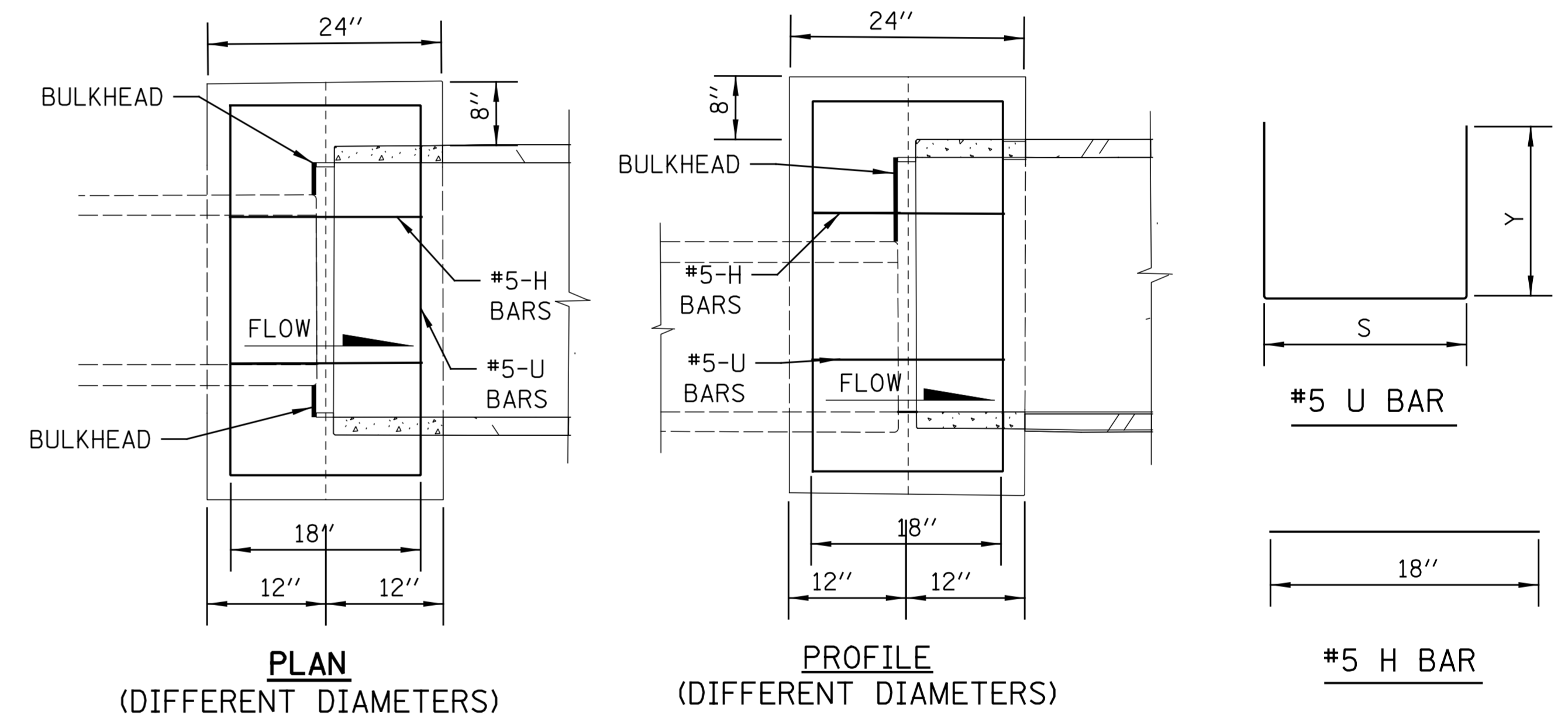


**REINFORCED CONCRETE COLLAR CONNECTION  
BETWEEN SAME DIAMETER PIPES**

SCALE: N.T.S.



**SECTION  
(DIFFERENT DIAMETERS)**



**PLAN  
(DIFFERENT DIAMETERS)**

**PROFILE  
(DIFFERENT DIAMETERS)**

**#5 H BAR**

D	T	W	U BAR				H BAR			CLASS SI CONCRETE	#5 EPOXY REBAR
			X	Y	QTY	LENGTH	S	QTY	LENGTH		
(IN)	(IN)	(IN)	(IN)	(IN)	(EACH)	(FT)	(IN)	(EACH)	(FT)	(CU YD)	(LBS)
24	3.00	46.0	40.00	28.00	4	32.0	9 5/8	16.0	24.0	0.72	58.4
27	3.25	49.5	43.50	29.75	4	34.3	10 1/2	16.0	24.0	0.81	60.8
30	3.50	53.0	47.00	31.50	4	36.7	11 3/8	16.0	24.0	0.89	63.3
33	3.75	56.5	50.50	33.25	4	39.0	9 4/5	20.0	30.0	0.98	72.0
36	4.00	60.0	54.00	35.00	4	41.3	10 1/2	20.0	30.0	1.07	74.4
42	4.50	67.0	61.00	38.50	4	46.0	9 7/8	24.0	36.0	1.26	85.5
48	5.00	74.0	68.00	42.00	4	50.7	11 1/8	24.0	36.0	1.46	90.4
54	5.30	86.0	80.00	48.00	4	58.7	11 1/8	28.0	42.0	1.82	105.0
60	6.00	92.0	85.00	51.00	4	62.7	10 1/2	32.0	48.0	2.02	115.5

NOTE: SPECIAL SE DESIGNED COLLAR REQUIRED FOR LARGER SIZES

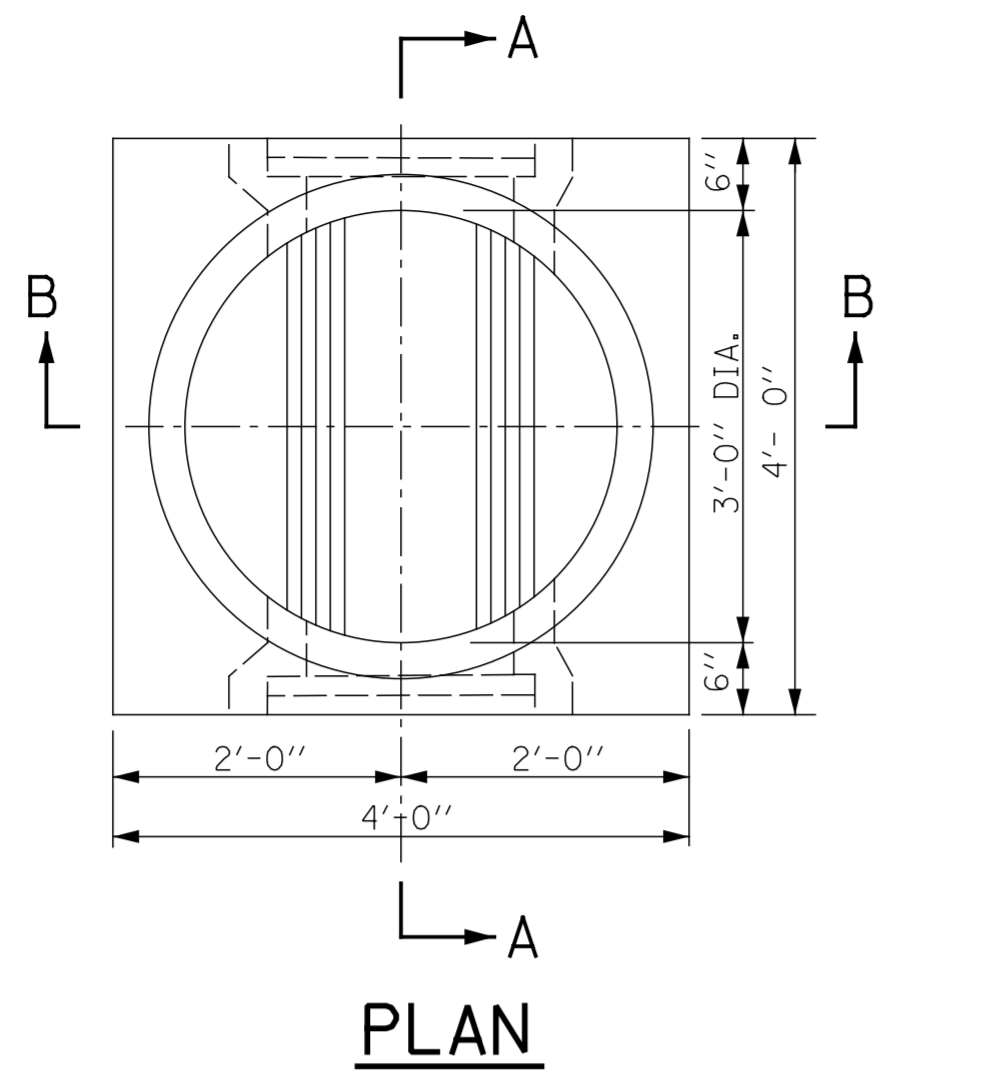
**NOTES**

- IF DIFFERENT PIPE SIZES ARE BEING CONNECTED, STEEL REINFORCEMENT BARS SHALL BE SUPPLIED AS GIVEN IN TABLE BELOW FOR THE LARGER DIAMETER PIPE.
- CONTRACTOR SHALL PROVIDE BULKHEAD TO KEEP CONCRETE FROM SPILLING INTO LARGER PIPE. BULKHEAD MUST BE REMOVED, OR LEFT IN PLACE, ONLY AS APPROVED BY THE COMMISSIONER.

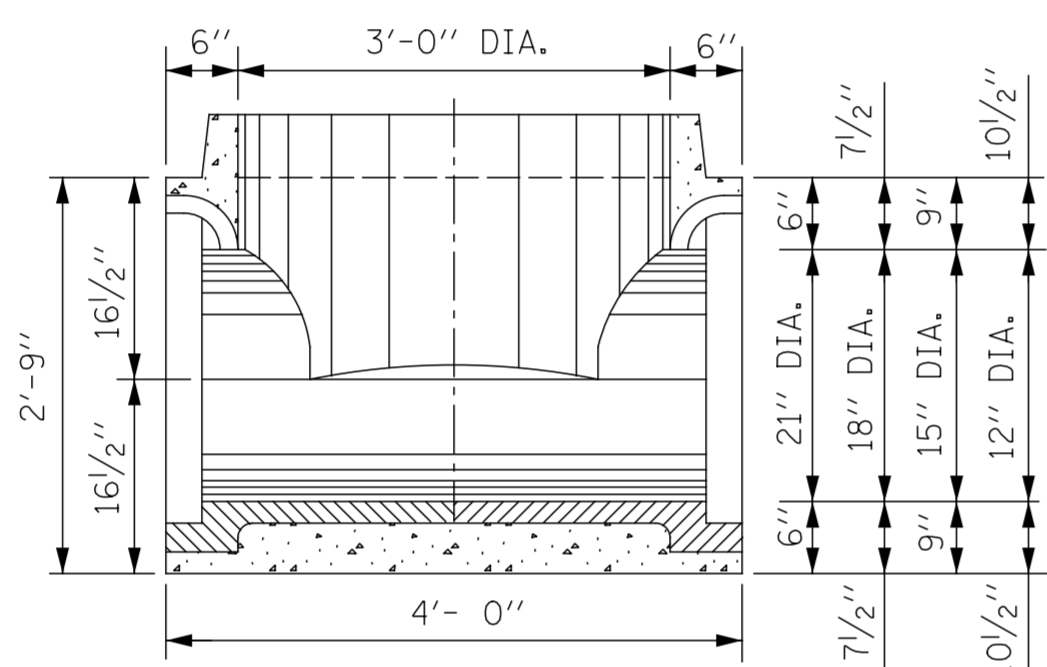
**REINFORCED CONCRETE COLLAR CONNECTION  
BETWEEN DIFFERENT DIAMETER PIPES**

SCALE: N.T.S.

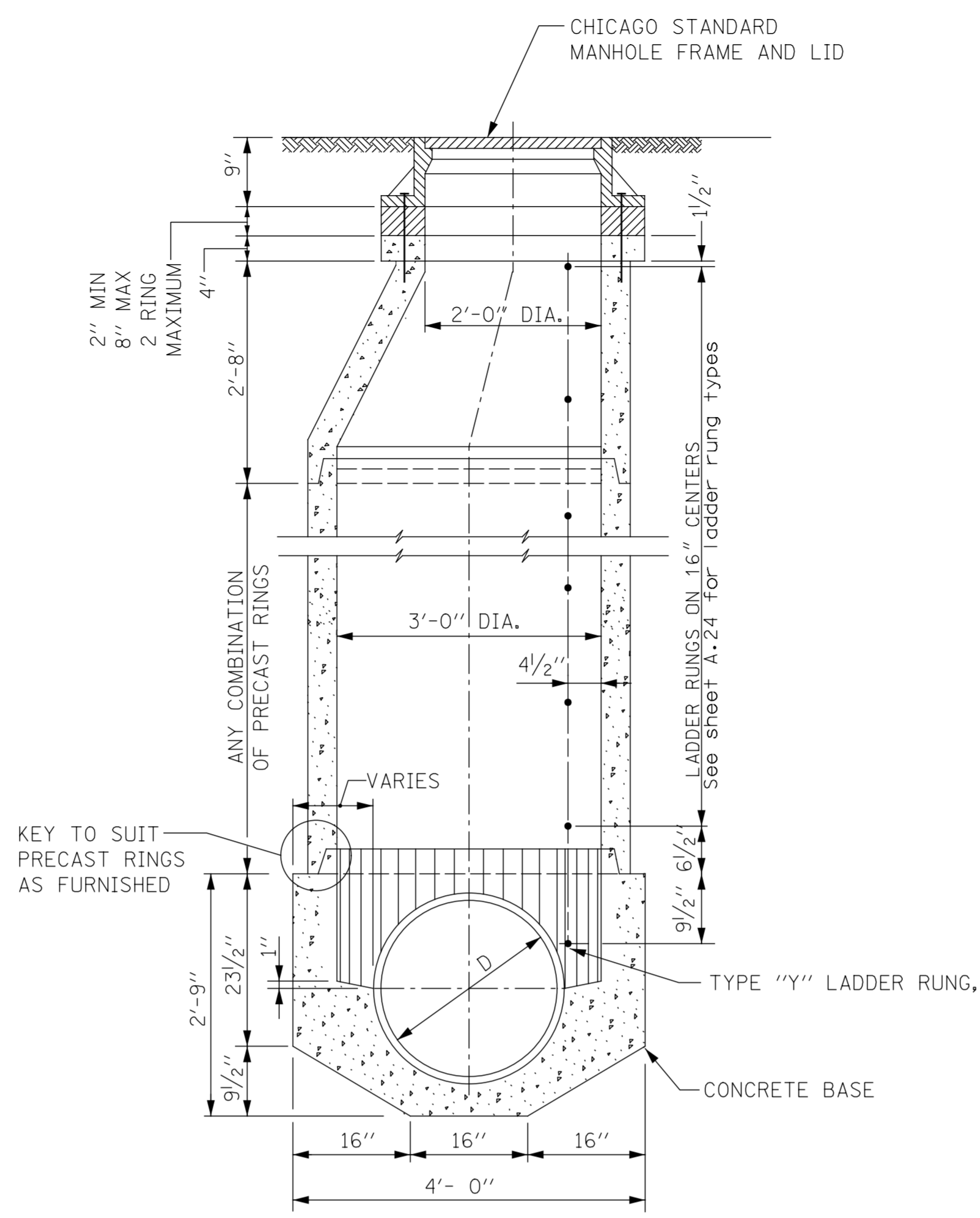
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DATE	DESCRIPTION				
1/4/23	LAST REVISED	30		CONCRETE COLLAR DETAILS BETWEEN DISSIMILAR PIPE MATERIALS	A.5
12/6/24	PUBLISHED	60			
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		90			
		100			
		BULLETIN			PN _____



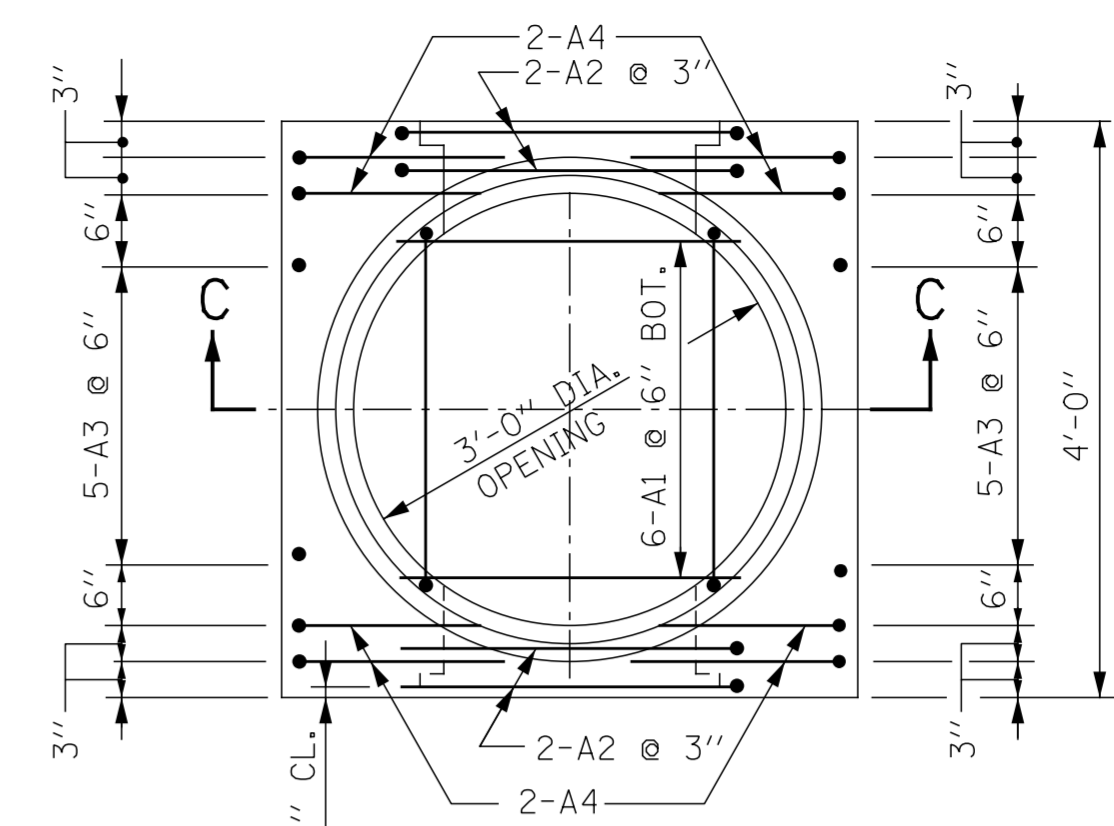
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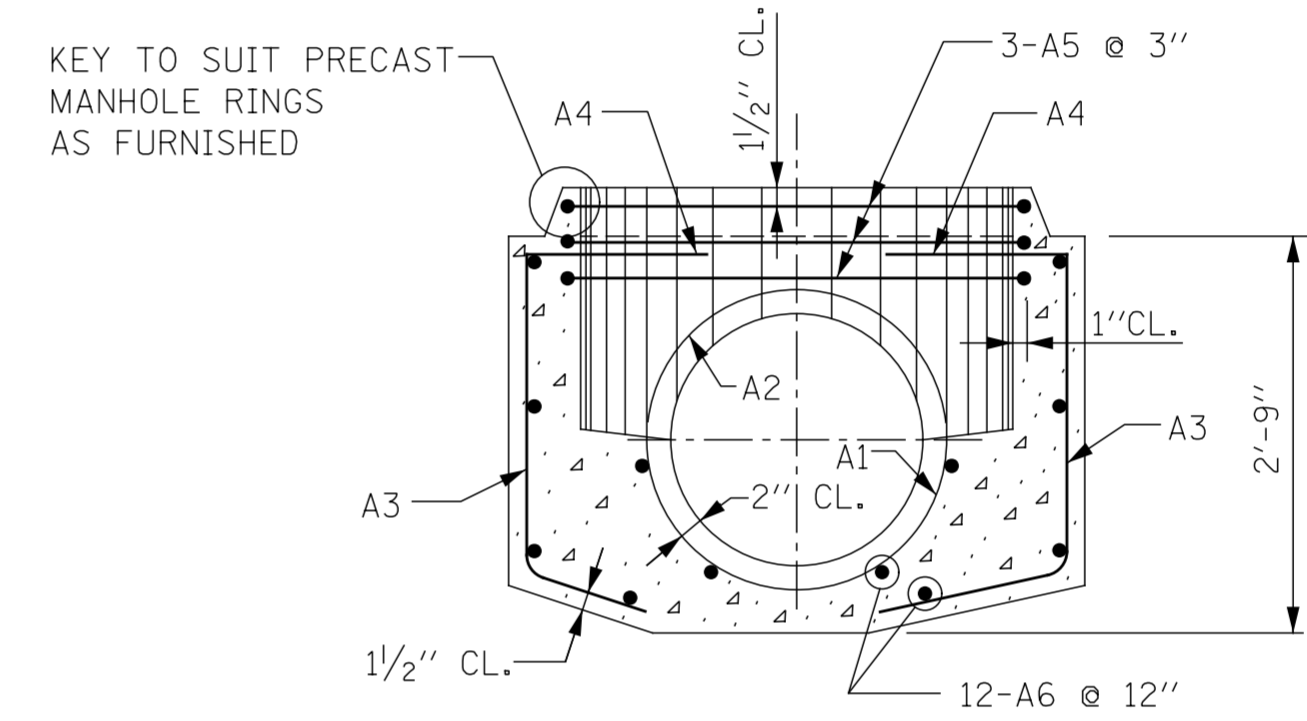
**SECTION A-A**



**SECTION B-B**



**PLAN  
PRECAST BASE**



**SECTION C-C**

NOTE:  
6" MINIMUM GRANULAR EMBEDMENT  
UNDER ALL PRECAST MANHOLE BASES

**SCHEDULE OF REINFORCEMENT**

STRUCTURE	REINFORCEMENT BAR						BENDING DIMENSIONS												
	MARK	SIZE NO.	TYPE	LENGTH	NO. REQD.	WEIGHT - LBS EACH	A	B	C	D	E	F	G	H	J	K	O	R	
BASES FOR TYPE "A" MANHOLES (PRECAST)	21" DIA.	21A1	6	9	3'-1"	6	4.63		3'-1"						11/4"		2'-1"	12 3/4"	
		21A2	6	T3	8'-8"	4	13.02										2'-0"	2'-1 1/2"	
		21A3	5	12	3'-3"	10	3.39			22"	17"				14 1/2"	8 3/4"			
		21A4	5	12	4'-6"	8	4.69		15"	22"	17"				14 1/2"	8 3/4"			
		21A5	5	T3	11'-11"	3	12.43										20"	3'-3 1/4"	
		21A6	4	STR	3'-8"	12	2.45												
		TOTAL					219												
	18" DIA.	18A1	6	9	2'-8 1/2"	6	4.07		2'-8 1/2"						9 3/4"		22"	11 1/4"	
		18A2	6	T3	7'-10 1/2"	4	11.83										2'-0"	22 1/2"	
		18A3	5	12	3'-3"	10	3.39			22"	17"				14 1/2"	8 3/4"			
		18A4	5	12	4'-6"	8	4.69		15"	22"	17"				14 1/2"	8 3/4"			
		18A5	5	T3	11'-11"	3	12.43										2'-0"	3'-3 1/4"	
18A6		4	STR	3'-8"	12	2.45													
	TOTAL					202													
15" DIA.	15A1	6	9	2'-3 1/2"	6	3.44		23 1/2"						8 1/4"		19"	9 3/4"		
	15A2	6	T3	7'-1"	4	10.64										2'-0"	19 1/2"		
	15A3	5	12	3'-3"	10	3.39			22"	17"				14 1/2"	8 3/4"				
	15A4	5	12	4'-6"	8	4.69		15"	22"	17"				14 1/2"	8 3/4"				
	15A5	5	T3	11'-11"	3	12.43										20"	3'-3 1/4"		
	15A6	4	STR	3'-8"	12	2.45													
	TOTAL					202													
12" DIA.	12A1	6	9	1'-11"	6	2.88		23"						6 3/4"		16"	8 1/4"		
	12A2	6	T3	6'-1"	4	9.14										2'-0"	16 1/2"		
	12A3	5	12	3'-3"	10	3.39			22"	17"				14 1/2"	8 3/4"				
	12A4	5	12	4'-6"	8	4.69			22"	17"				14 1/2"	8 3/4"				
	12A5	5	T3	11'-11"	3	12.43										20"	3'-3 1/4"		
	12A6	4	STR	3'-8"	12	2.45													
	TOTAL					193													

STANDARD REVISIONS	
DATE	DESCRIPTION
9/5/17	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
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75	
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BULLETIN	

**CITY OF CHICAGO**  
DEPARTMENT OF WATER MANAGEMENT  
BUREAU OF ENGINEERING SERVICES

TYPE "A" PRECAST  
MANHOLE FOR SEWERS  
21" DIA. AND SMALLER

DRAWN: **SEB**  
DESIGNED:  
CHECKED:  
REVIEWED:

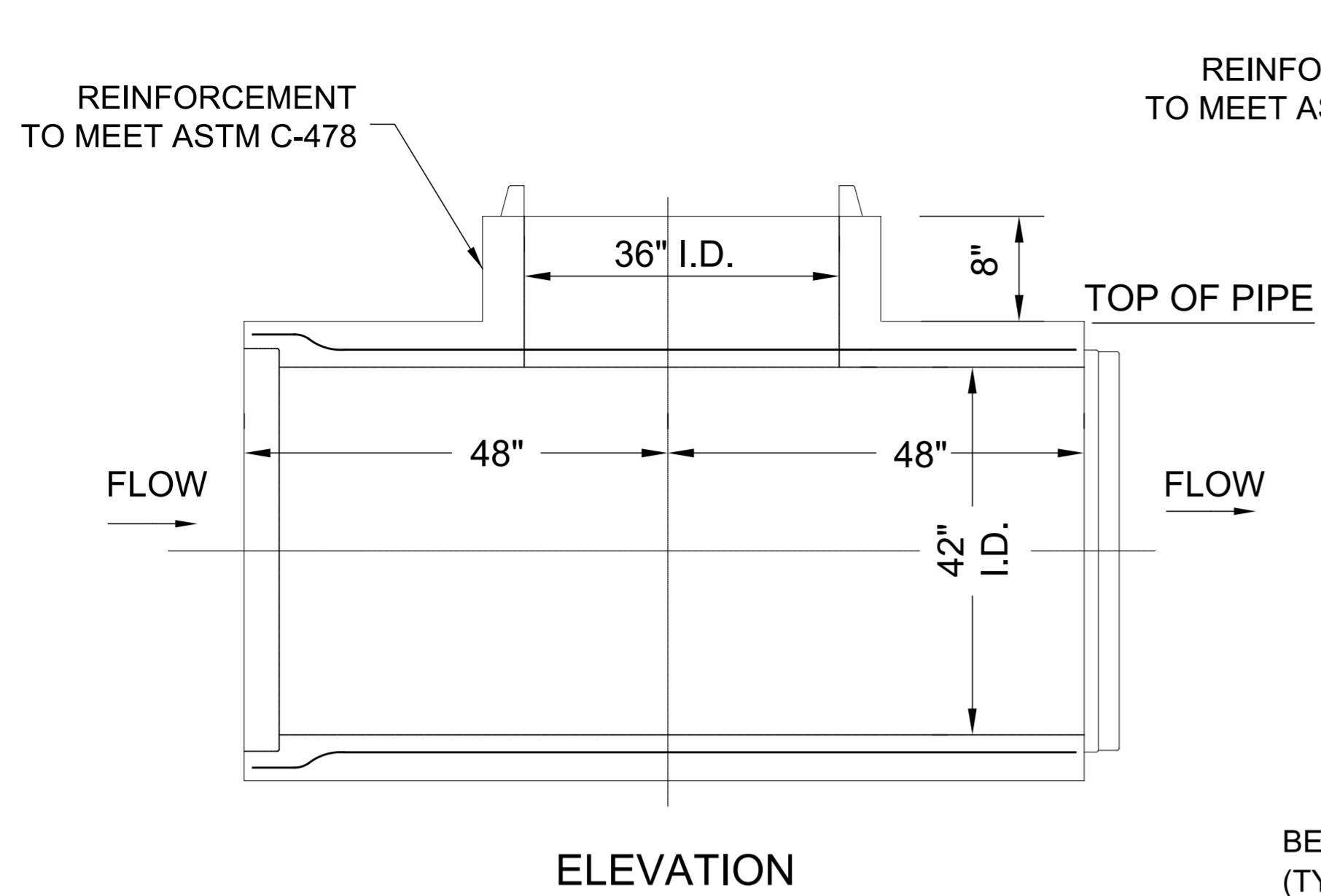
**A.6**

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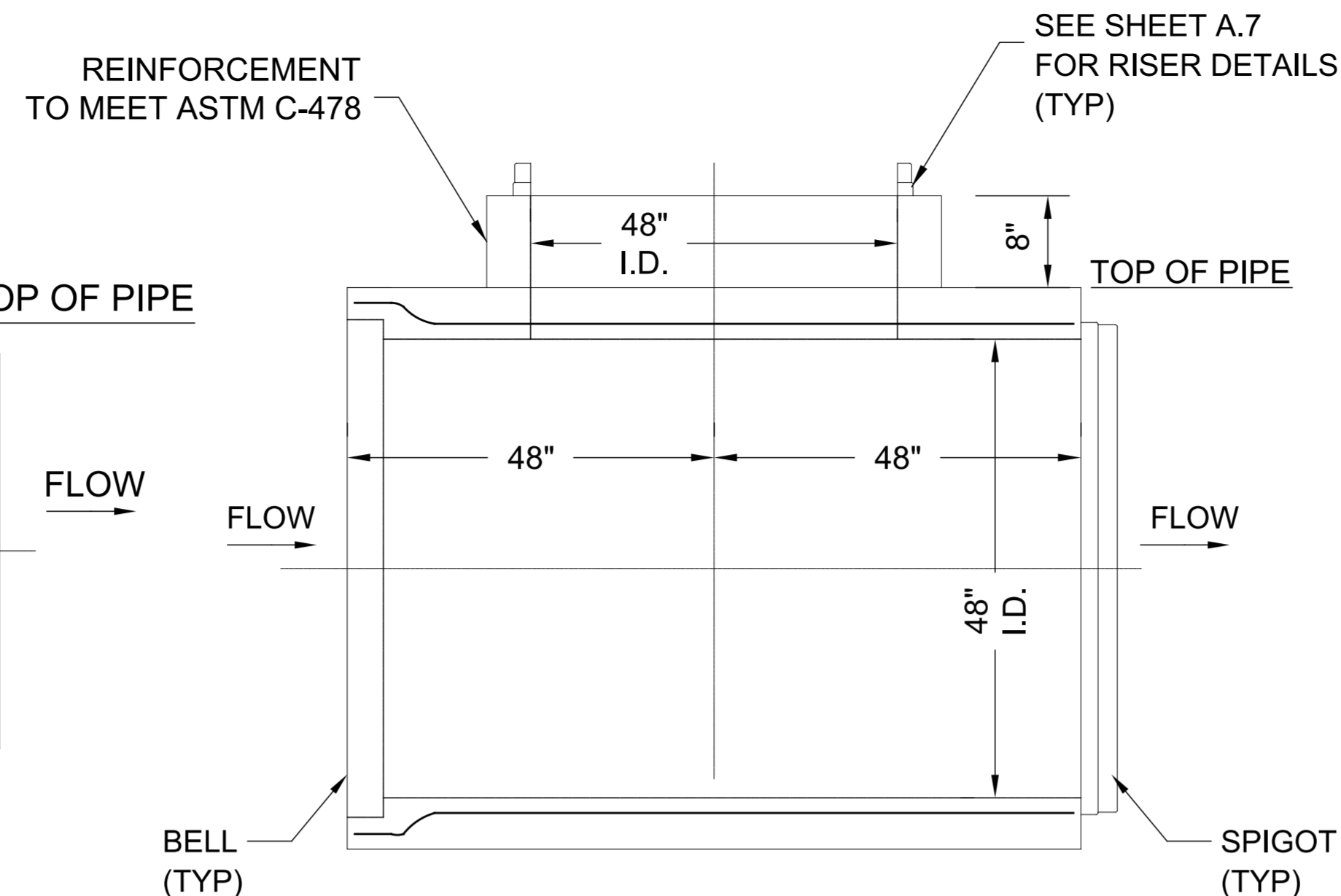




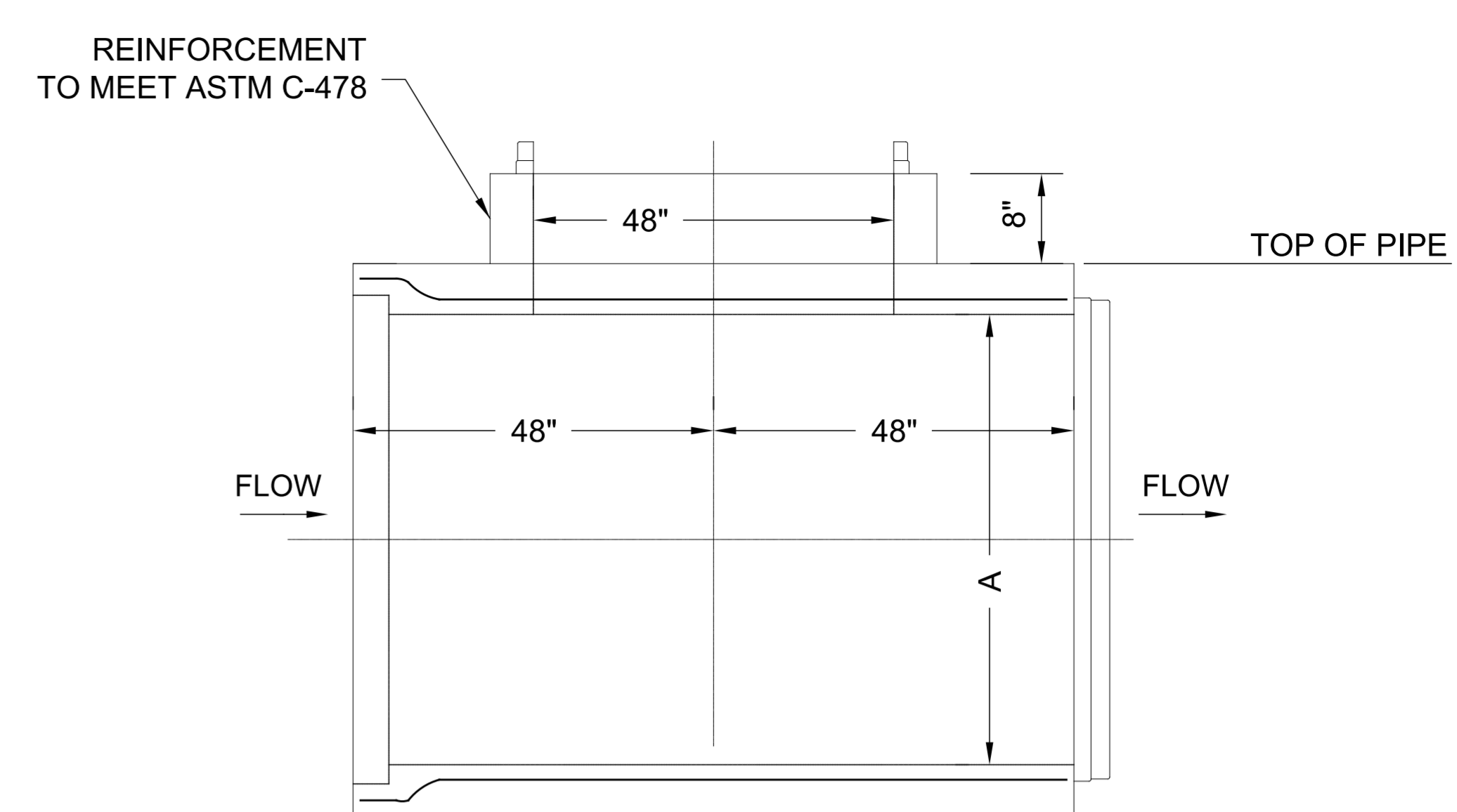




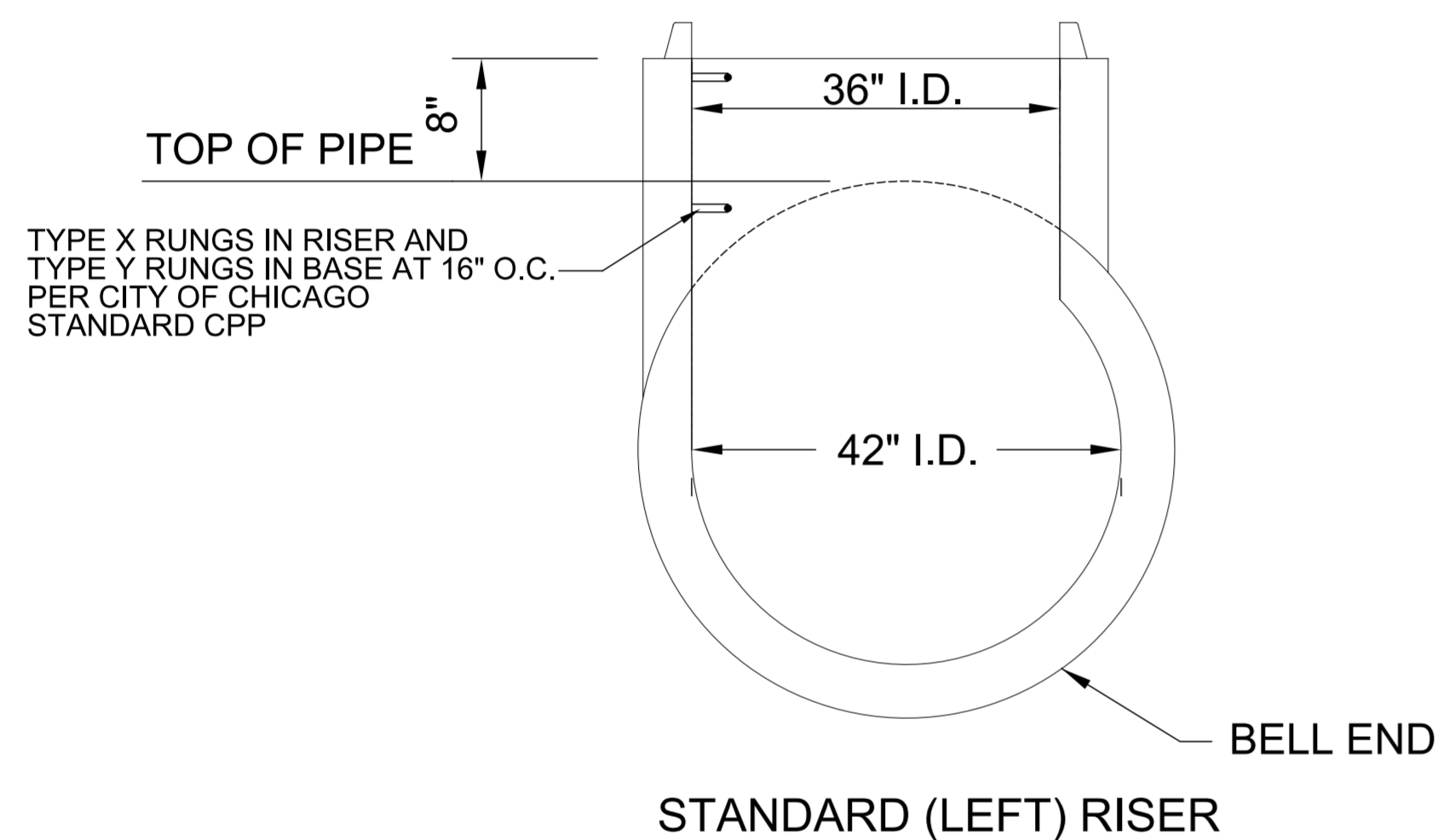
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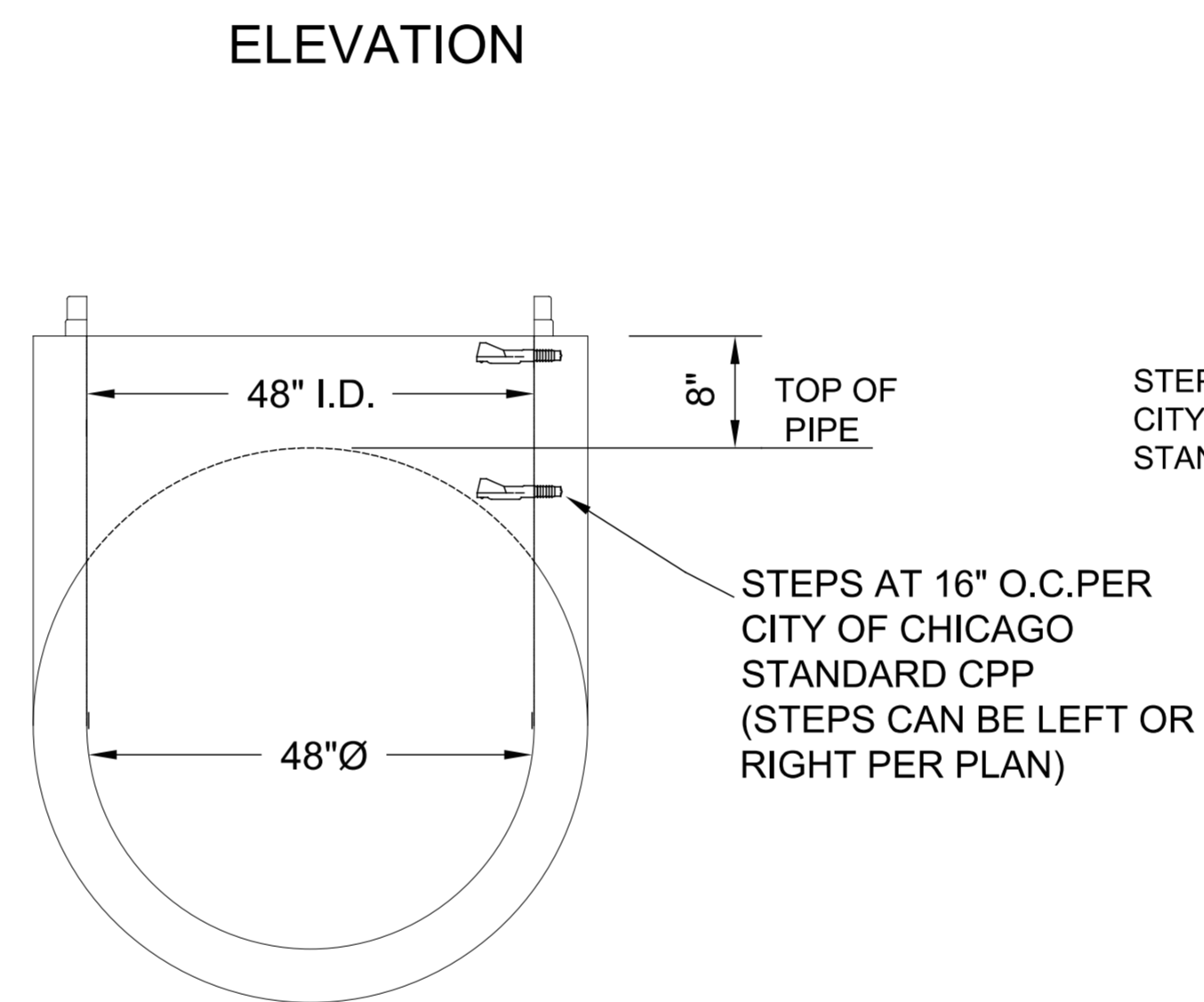
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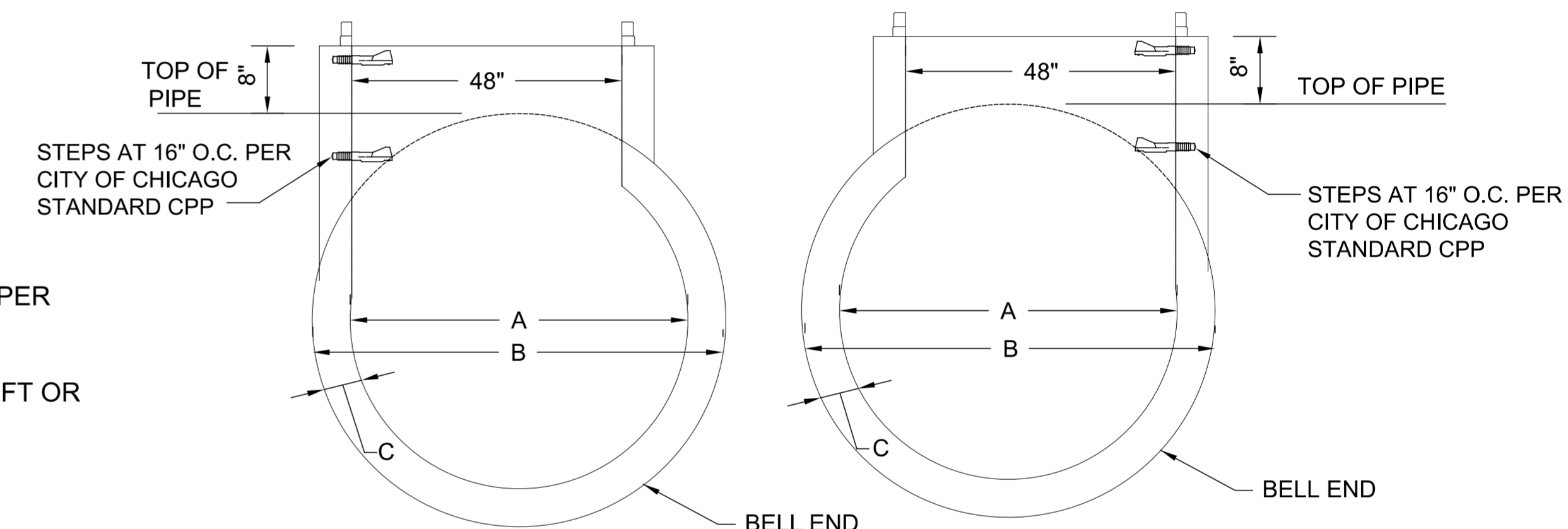
ELEVATION



STANDARD (LEFT) RISER

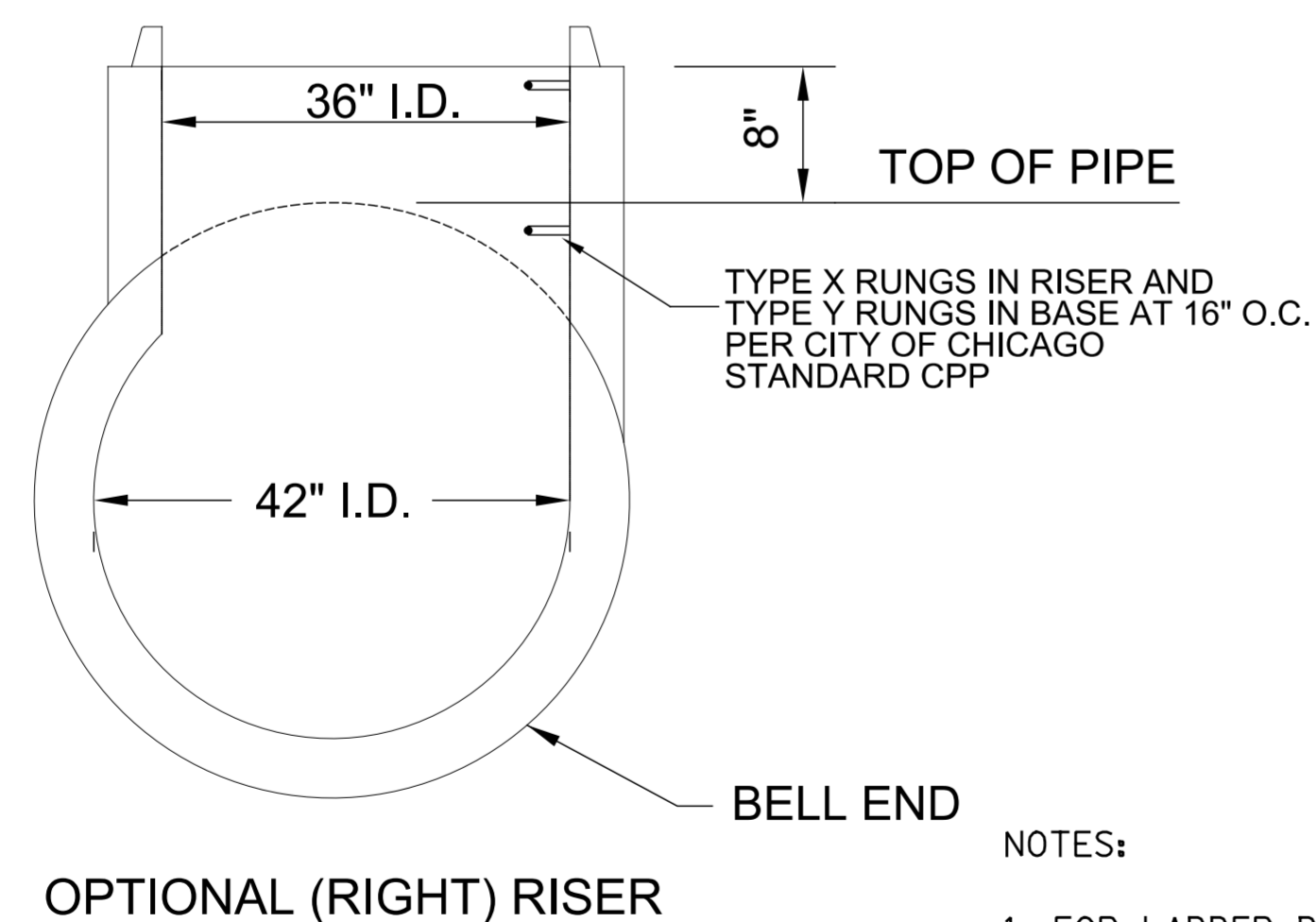


48" x 48" RCP BASE TEE



STANDARD (LEFT) RISER

OPTIONAL (RIGHT) RISER



OPTIONAL (RIGHT) RISER

42" x 36" RCP BASE TEE

NOTES:

1. FOR LADDER DETAILS, SEE DETAIL SHEET A.24
2. FOR RISER DETAILS, SEE DETAIL SHEET A.7
3. ALL BASE TEES SHALL BE ASTM C76 CLASS V.
4. THE BASE TEE MUST BE COMPATIBLE WITH THE ADJOINING PIPE, AND GASKET JOINTS COMPLYING WITH ASTM C-76 AND C-443, RESPECTIVELY.
5. ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

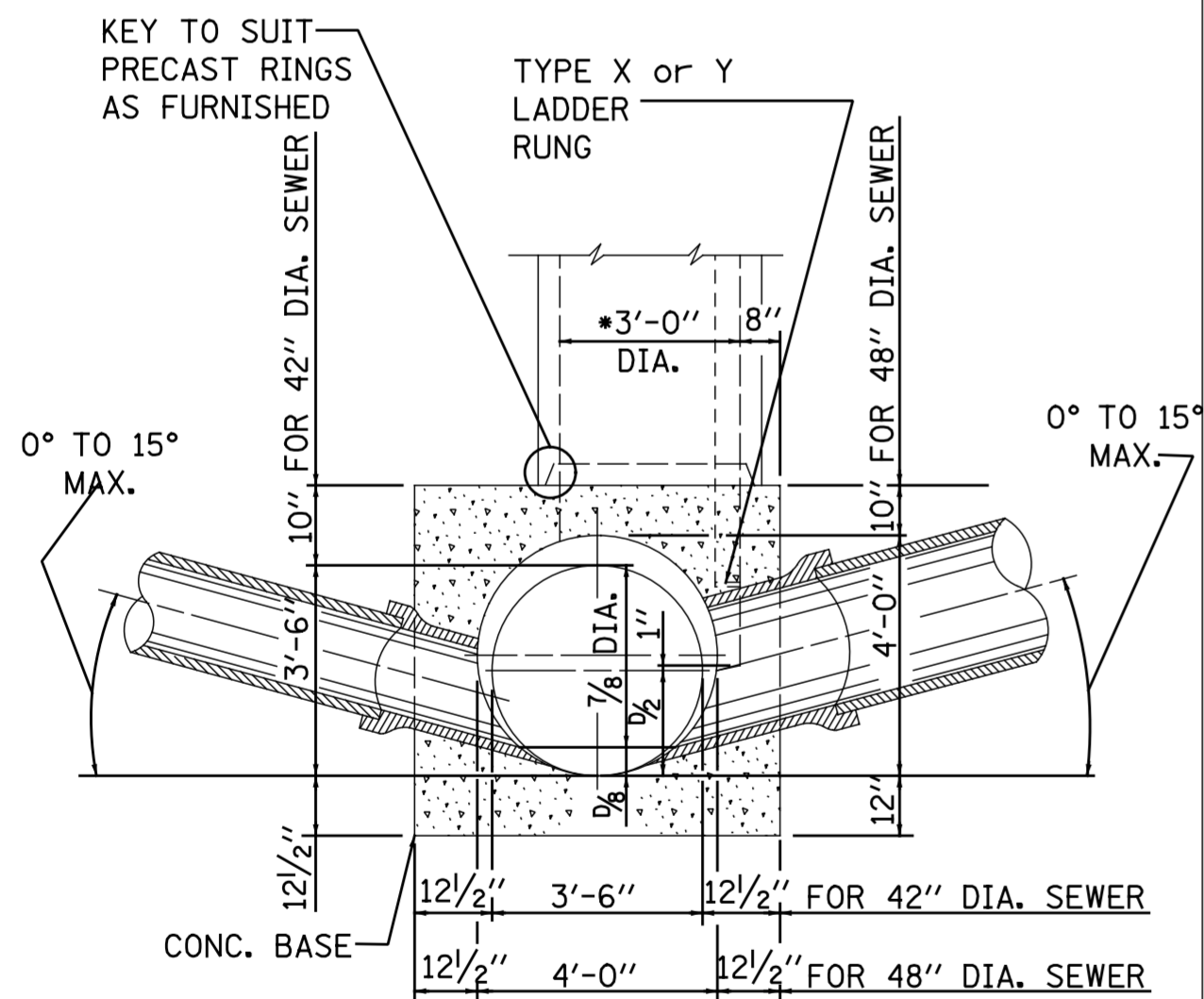
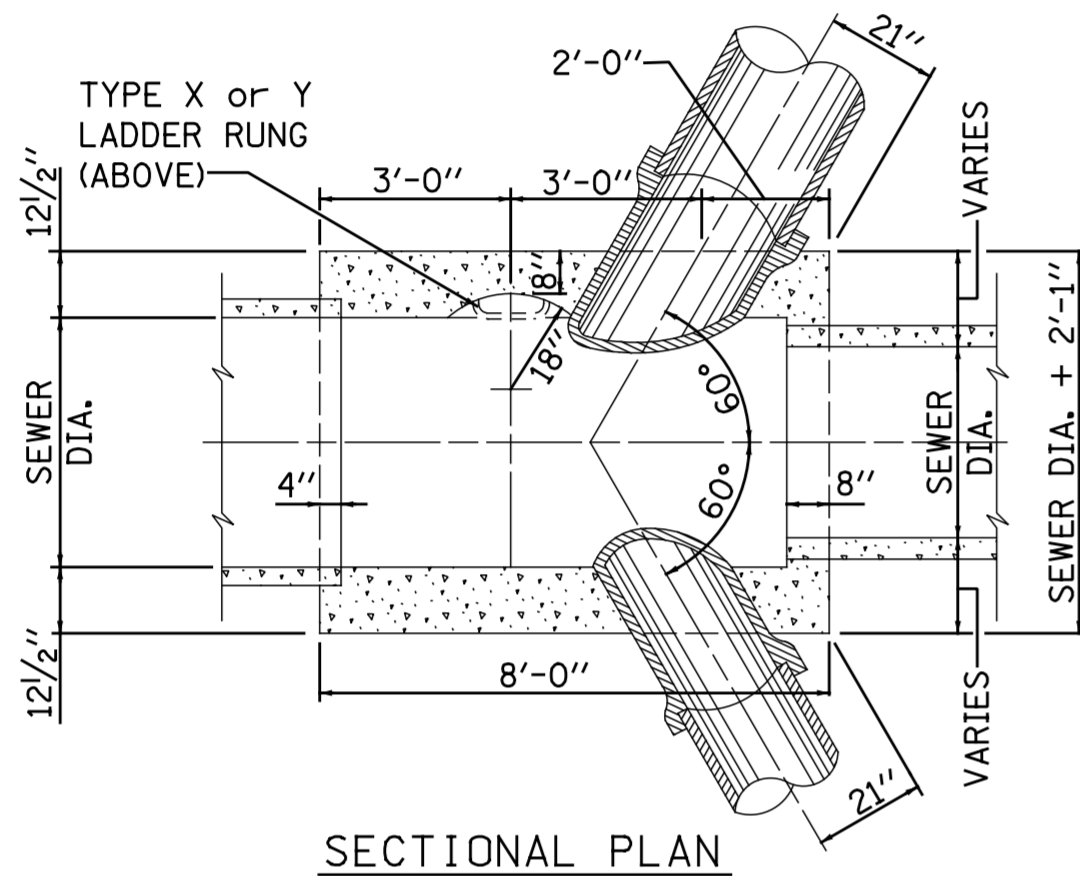
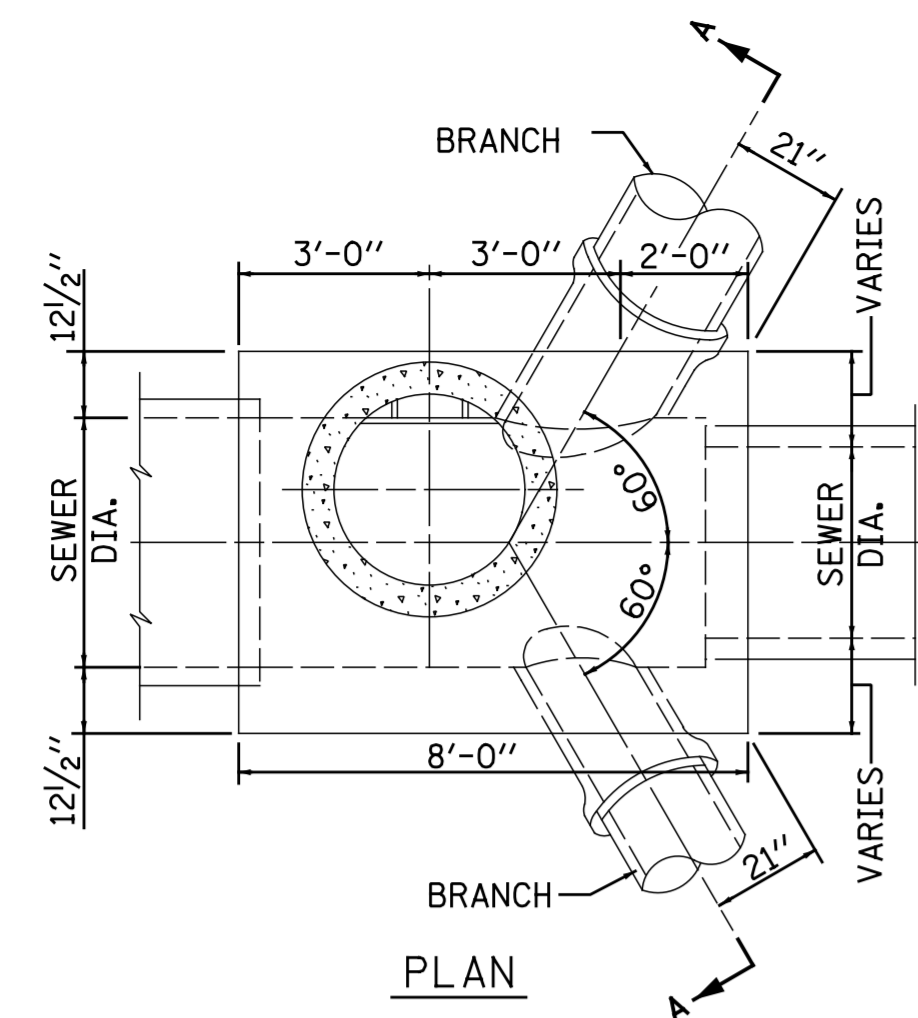
>= 54" x 48" RCP BASE TEE

DIMENSIONS OF PRECAST MANHOLE BASE			
A	B	C	RUNGS
120"	142"	11"	6
108"	128"	10"	6
96"	114"	9"	5
84"	101 1/2"	8 3/4"	4
78"	94 1/2"	8 1/4"	4
72"	87 1/2"	7 3/4"	4
66"	80 1/2"	7 1/4"	3
60"	73 1/2"	6 3/4"	3
54"	66 1/2"	6 1/4"	3
48"	59 1/2"	5 3/4"	3
42"	52 1/2"	5 1/4"	3

STANDARD REVISIONS	
DATE	DESCRIPTION
6/25/20	LAST REVISED
12/6/24	PUBLISHED

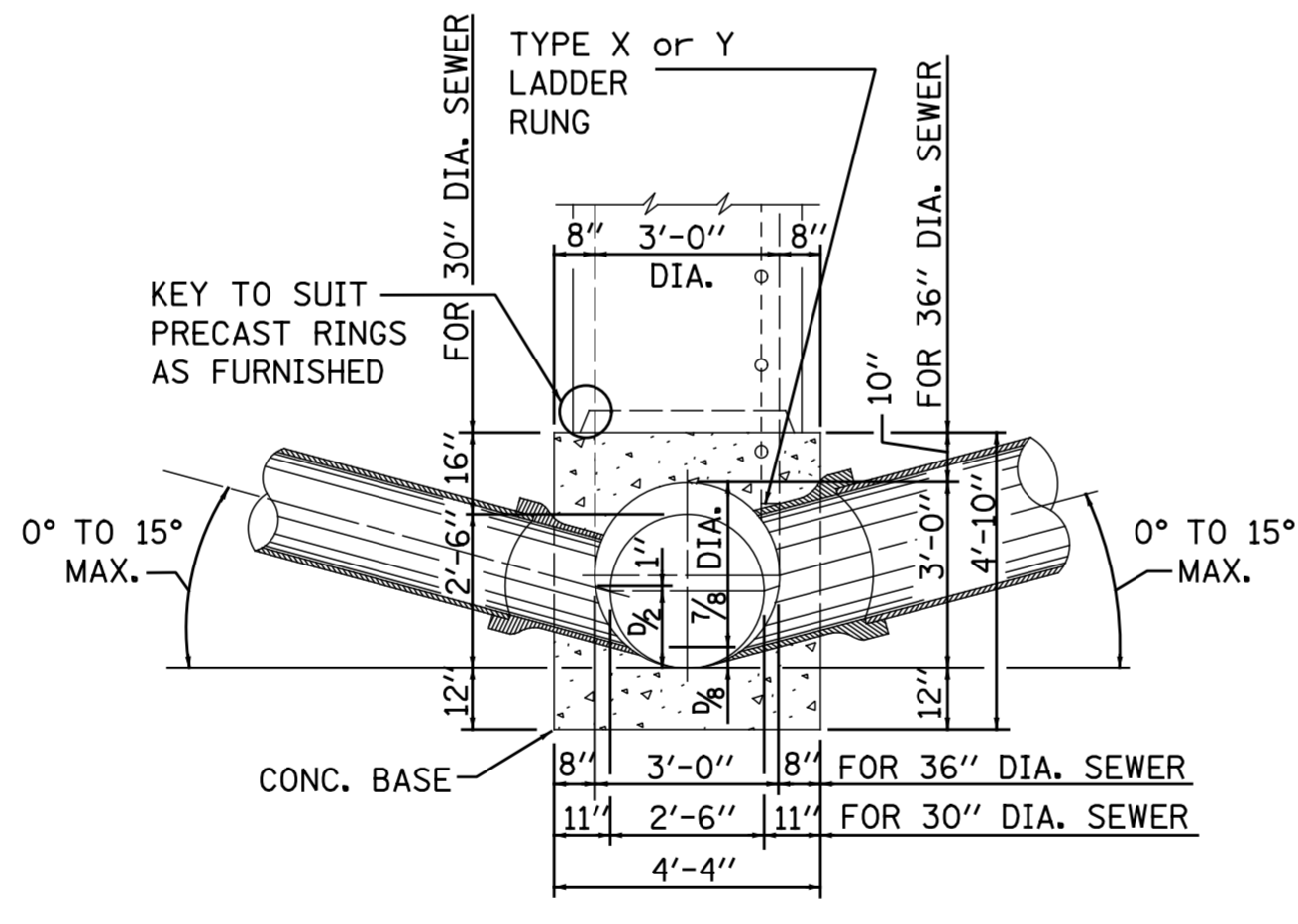
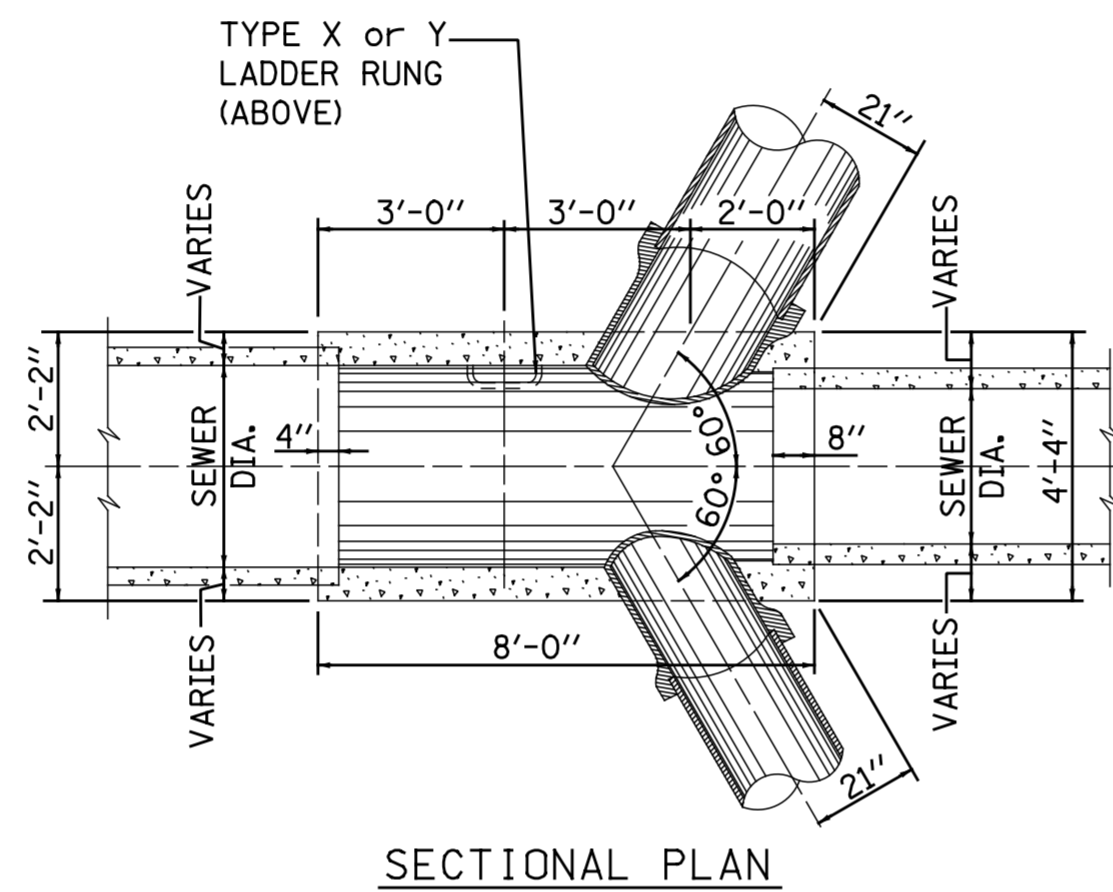
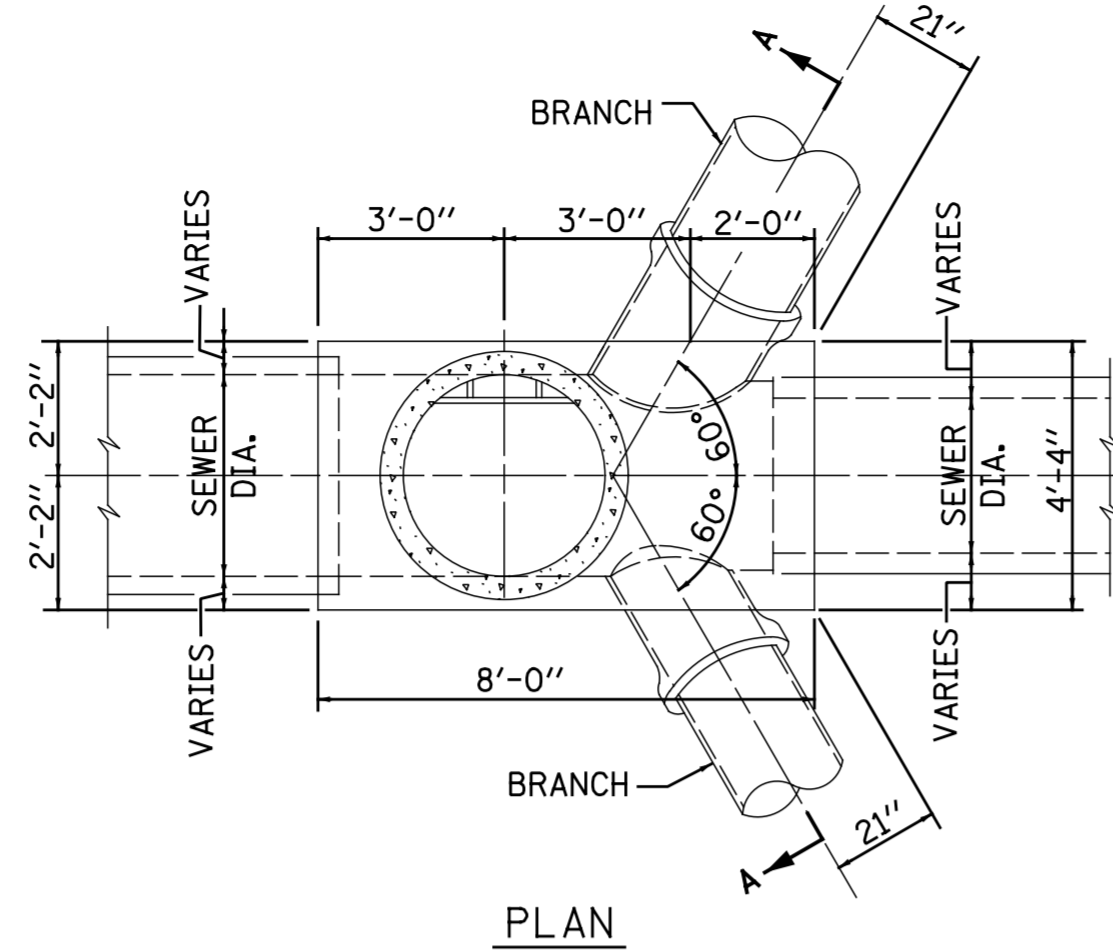
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<b>CITY OF CHICAGO</b> DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES		DRAWN: DESIGNED: CHECKED: REVIEWED:	<b>A.9</b>
TYPE "A" BASE TEE MANHOLE BASES 42" AND LARGER			OF PN



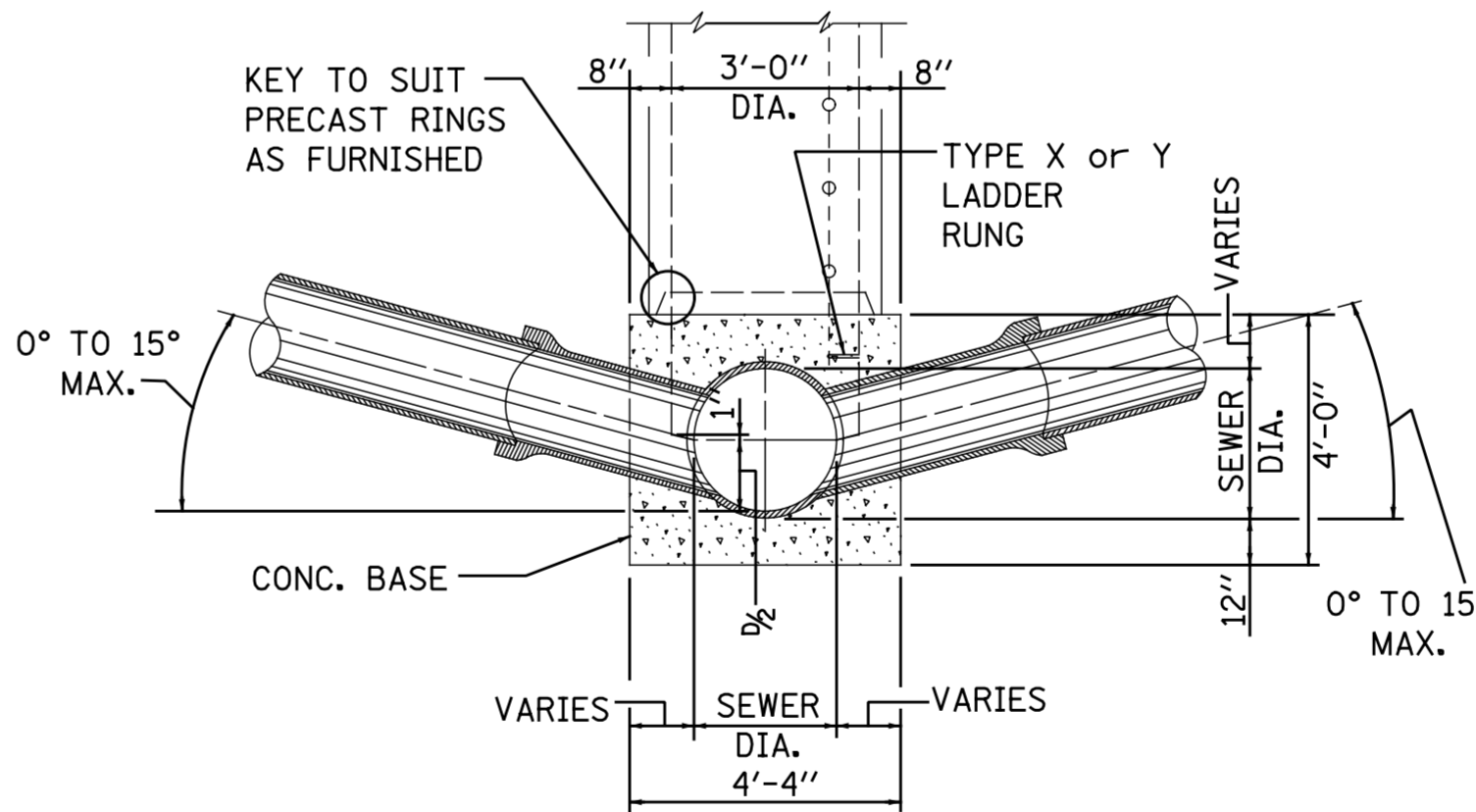
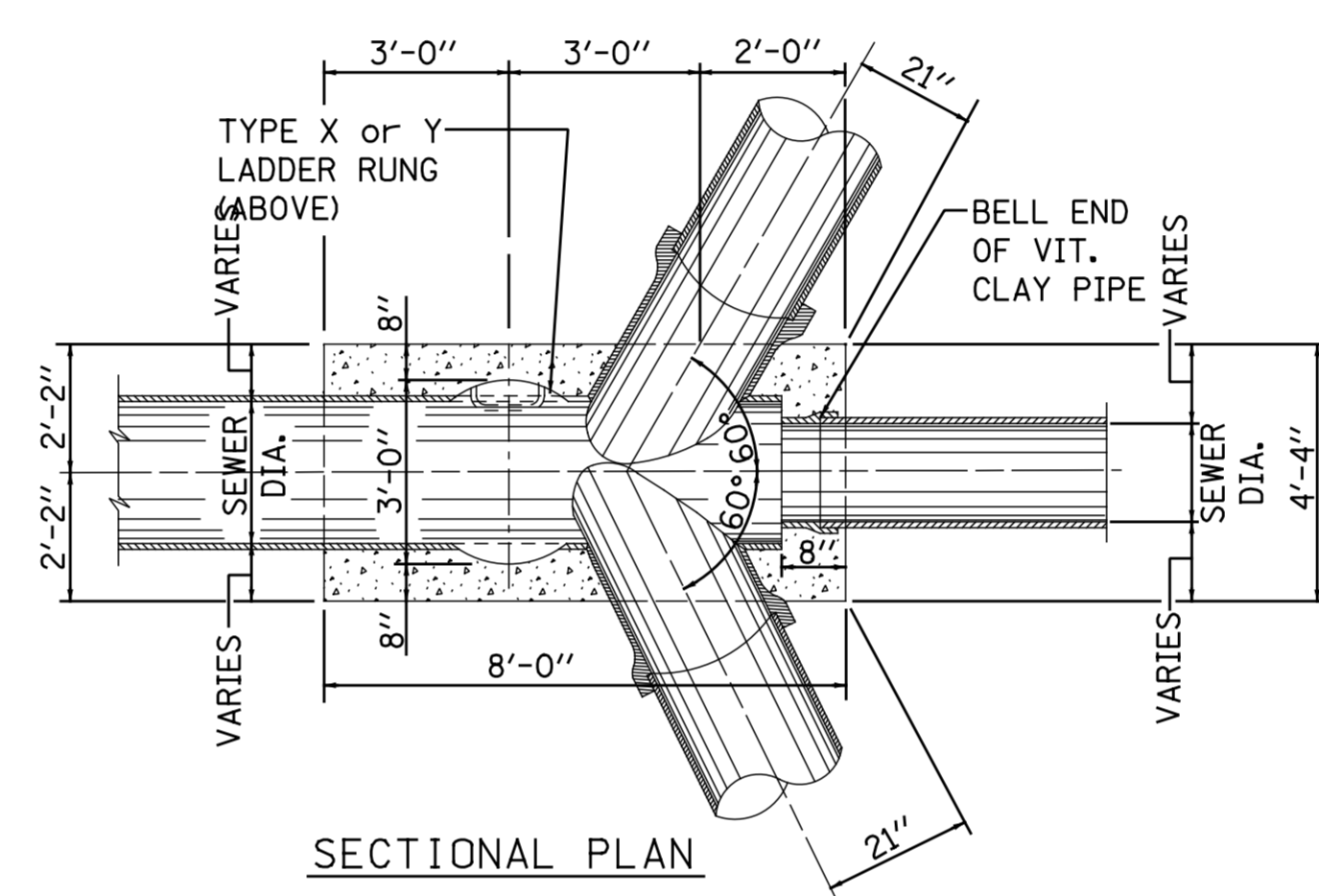
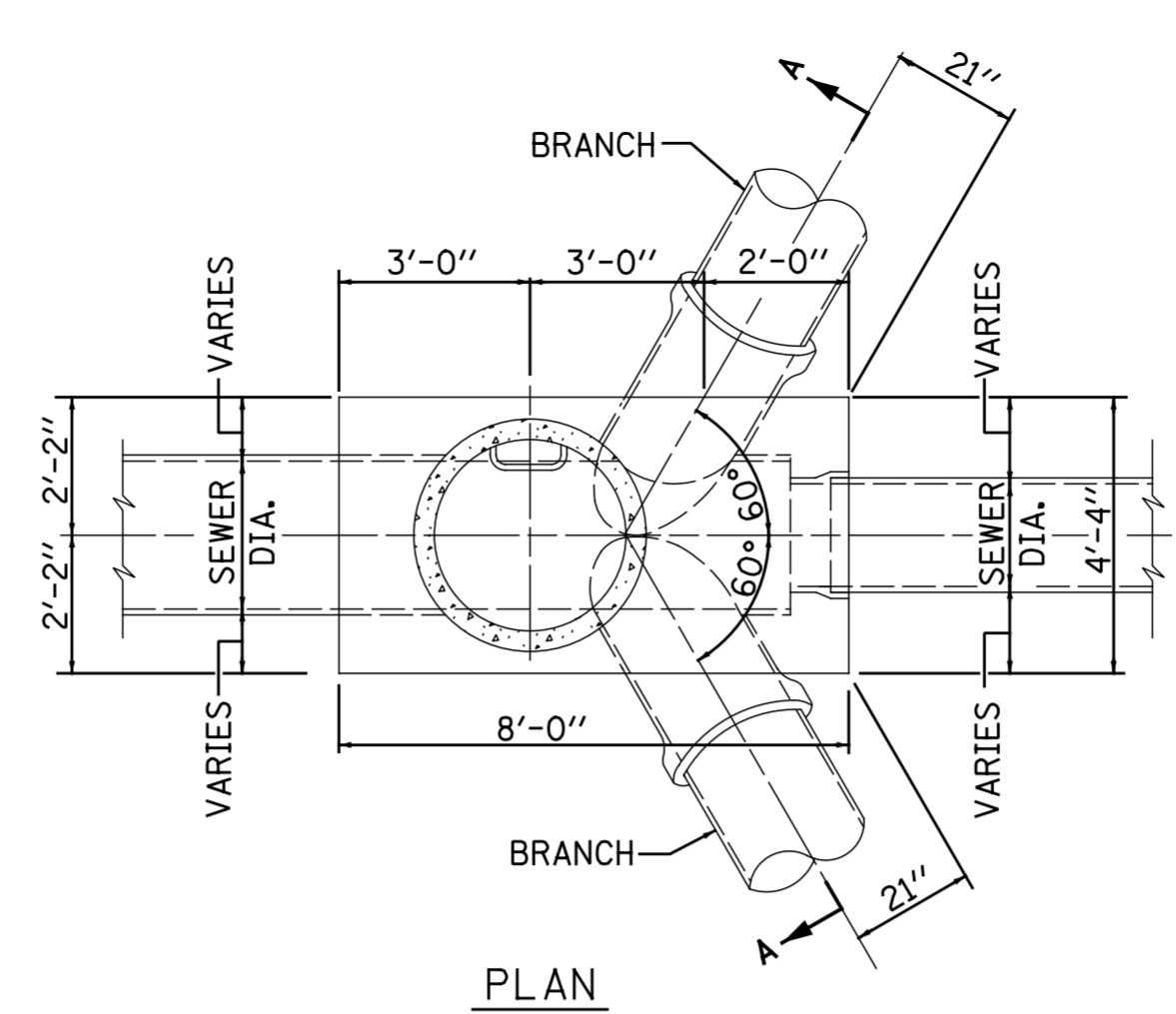
SECTION A-A  
**TYPE "B" MANHOLE  
 FOR SEWERS 48" DIA. & 42" DIA.**

Not To Scale



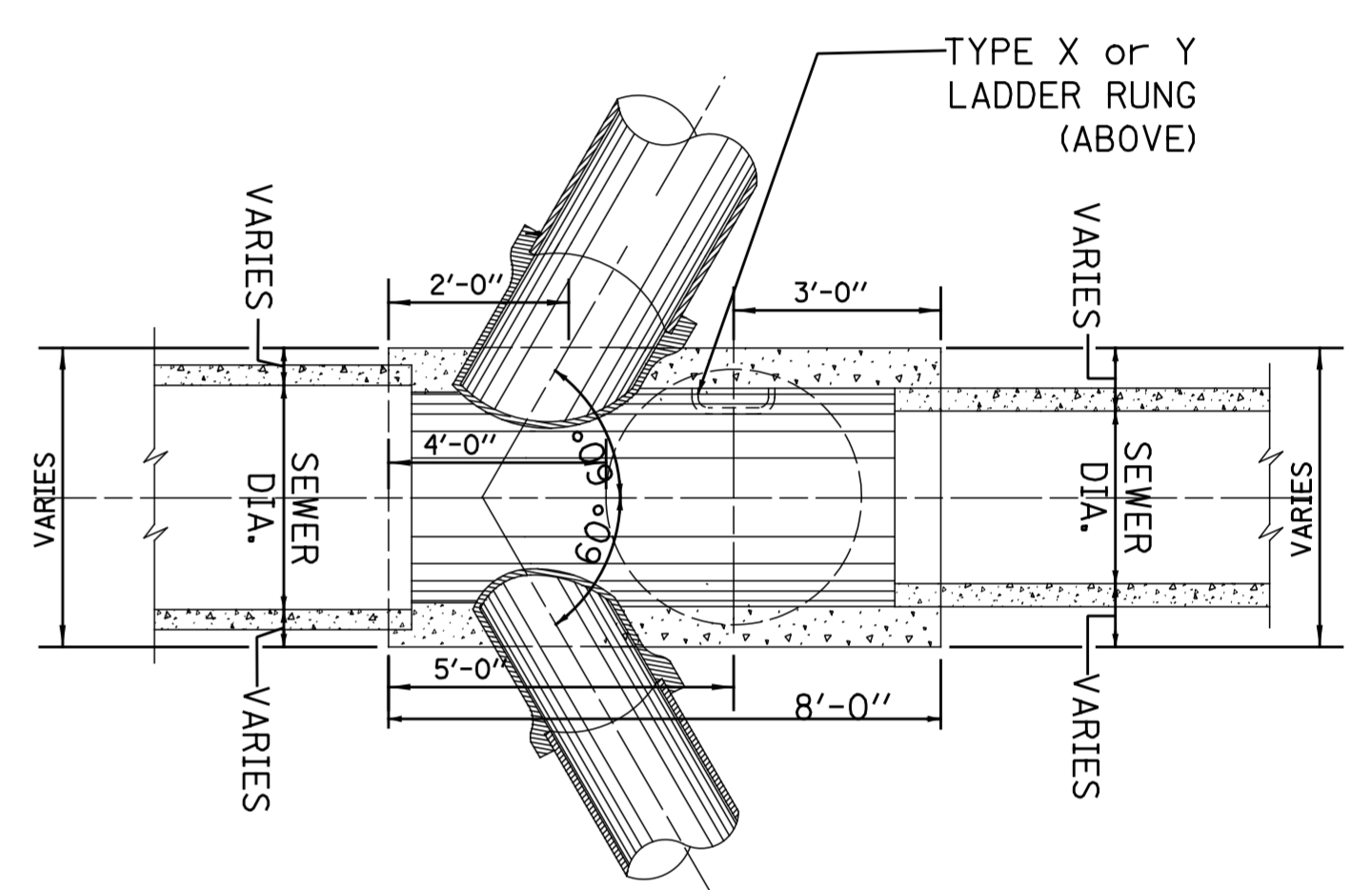
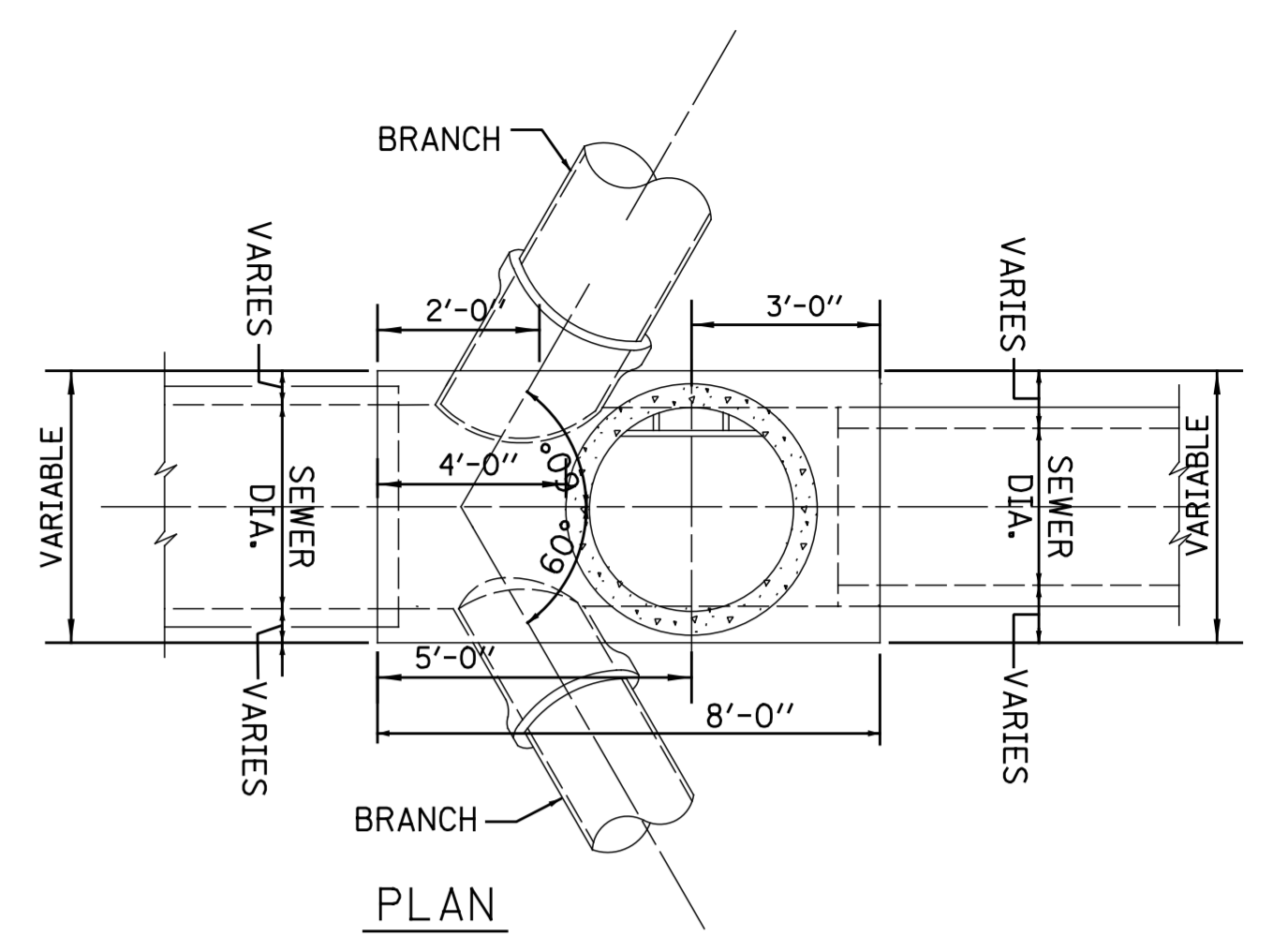
SECTION A-A  
**TYPE "B" MANHOLE  
 FOR SEWERS 36" DIA. & 30" DIA.**

Not To Scale



SECTION A-A  
**TYPE "B" MANHOLE  
 FOR SEWERS 24" DIA. & SMALLER**

Not To Scale



SECTIONAL PLAN

**TYPICAL REVERSE TYPE "B" MANHOLE**

Not To Scale

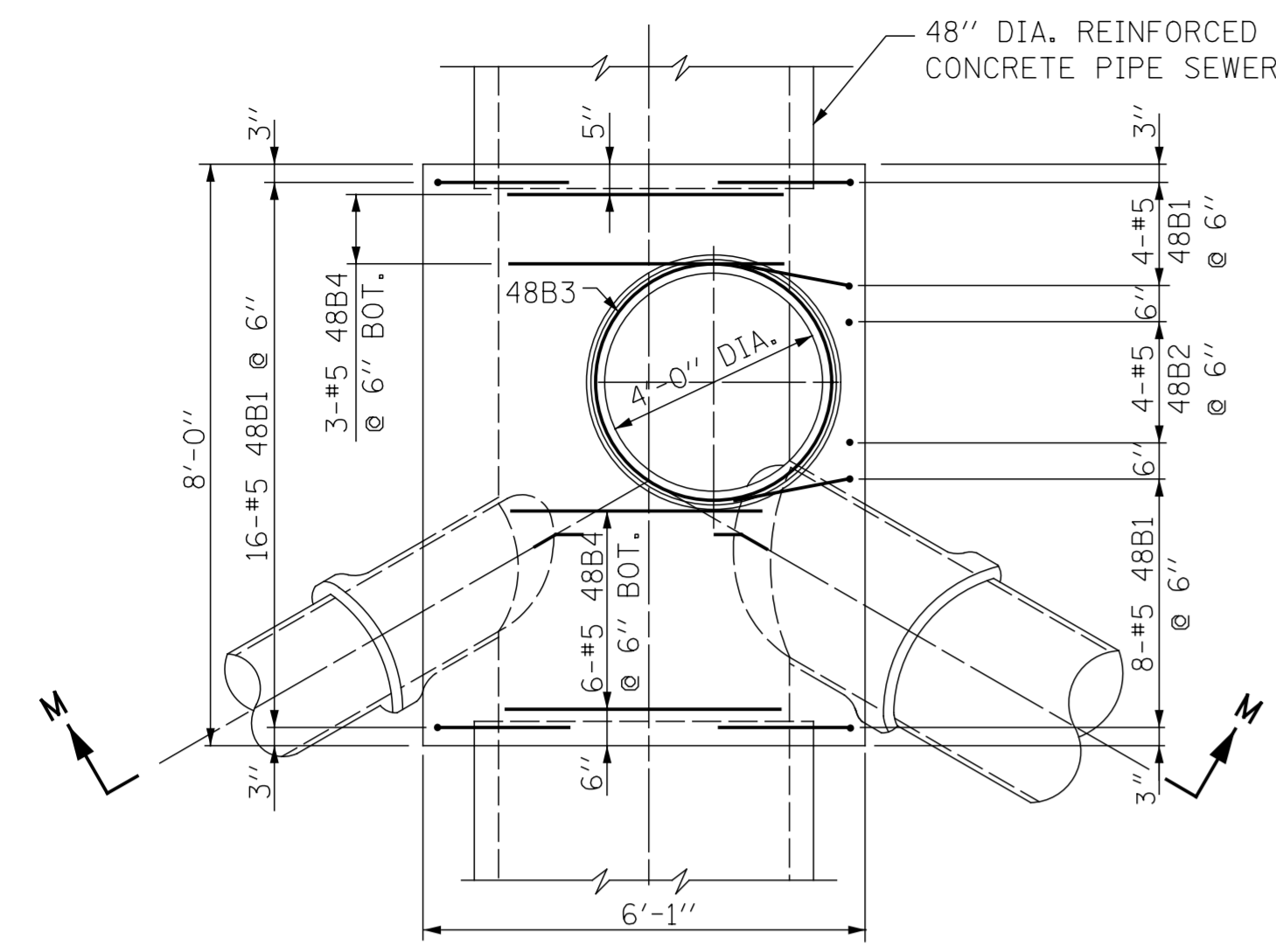
- NOTES:
1. CONTRACTOR MUST SUBMIT SHOP DRAWINGS OF ALL PROPOSED MANHOLE CONFIGURATIONS FOR APPROVAL PRIOR TO SUBMISSION OF MATERIAL ORDERS.
  2. CONNECTION BELLS MAY BE INSTALLED AT MANUFACTURER'S SITE, OR MORTARED IN PLACE IN THE FIELD. SEE SHEET A.12 FOR FURTHER CONFIGURATION DETAILS.
  3. BASES MUST BE PRECAST WITH THE CORRECT NUMBER OF PIPE OPENINGS, CORRESPONDING TO THE REPRESENTATION IN THE PLAN AND PROFILE SHEETS.
  4. PATCHING, BRICKING, OR OTHER MATERIAL METHODS OF CLOSING UNUSED HOLES WILL NOT BE ACCEPTED.
  5. 6" MINIMUM GRANULAR EMBEDMENT UNDER ALL PRECAST MANHOLE BASES
  6. ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

STANDARD REVISIONS	
DATE	DESCRIPTION
9/19/17	LAST REVISED
12/6/24	PUBLISHED

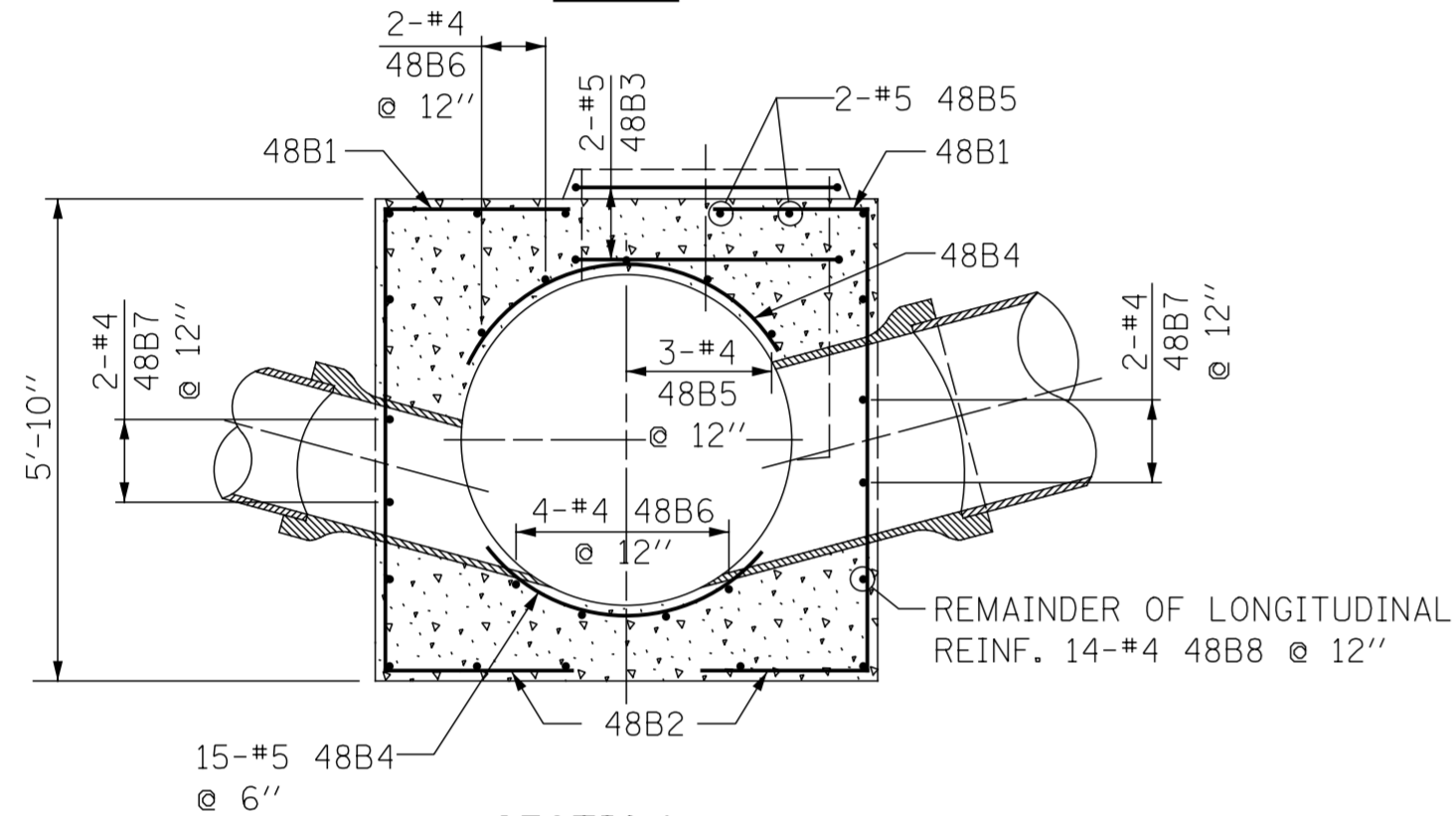
PERCENT COMPLETE	DATE
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BULLETIN	

<b>CITY OF CHICAGO</b>	
DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
TYPE "B" MANHOLE	

DRAWN: SEM	A.10
DESIGNED:	
CHECKED:	
REVIEWED:	OF
	PN

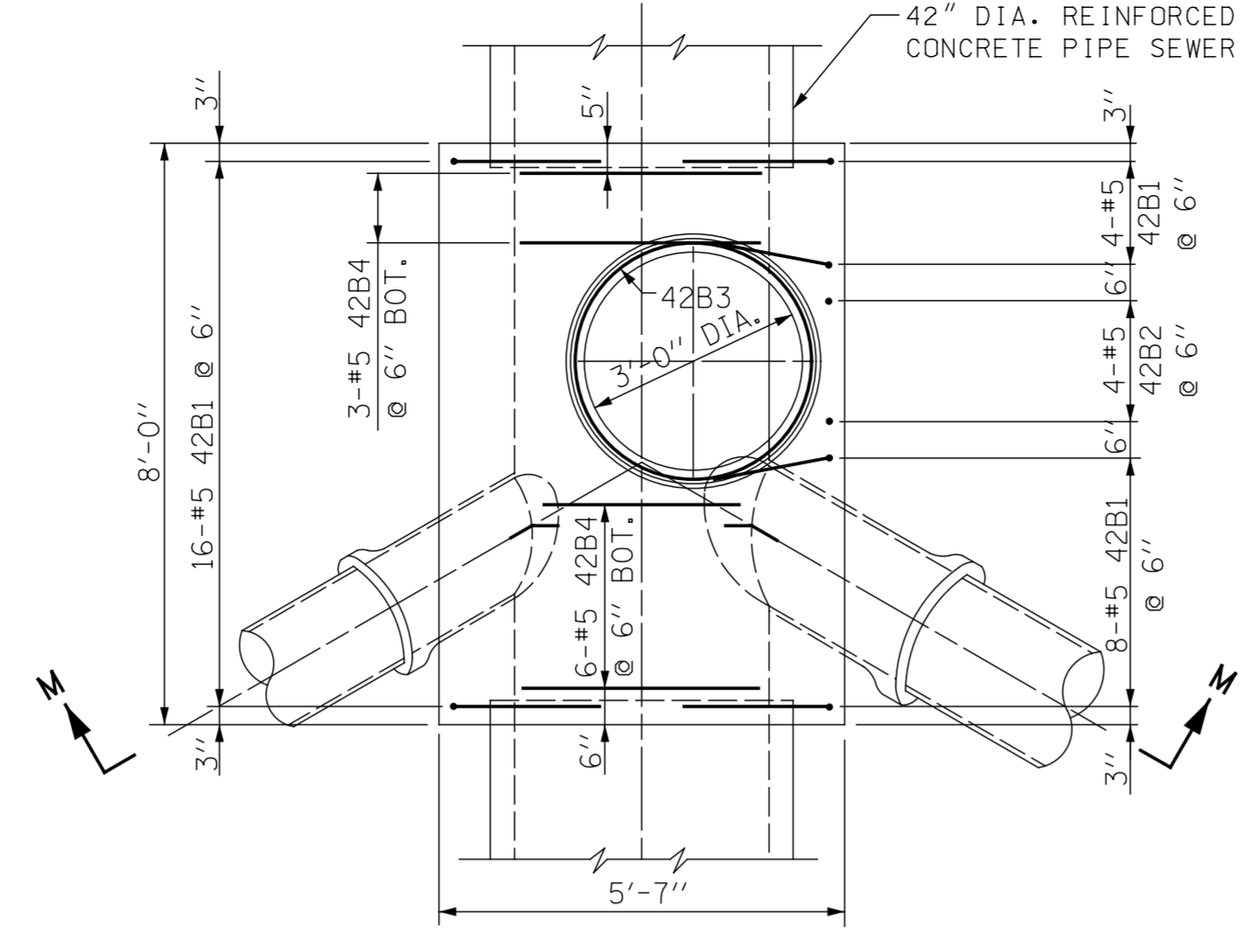


PLAN

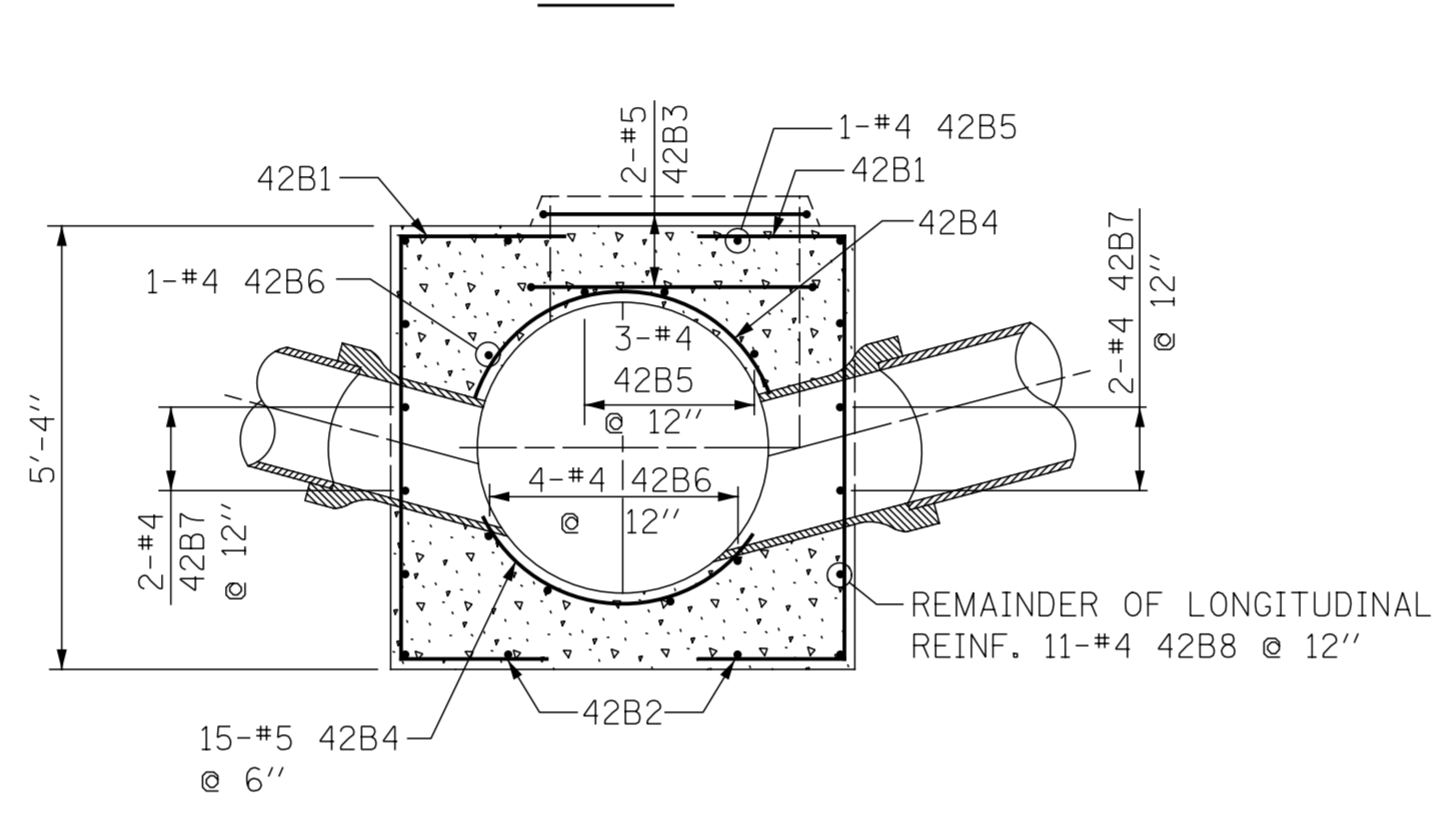


SECTION M-M

**48" DIA. SEWER**

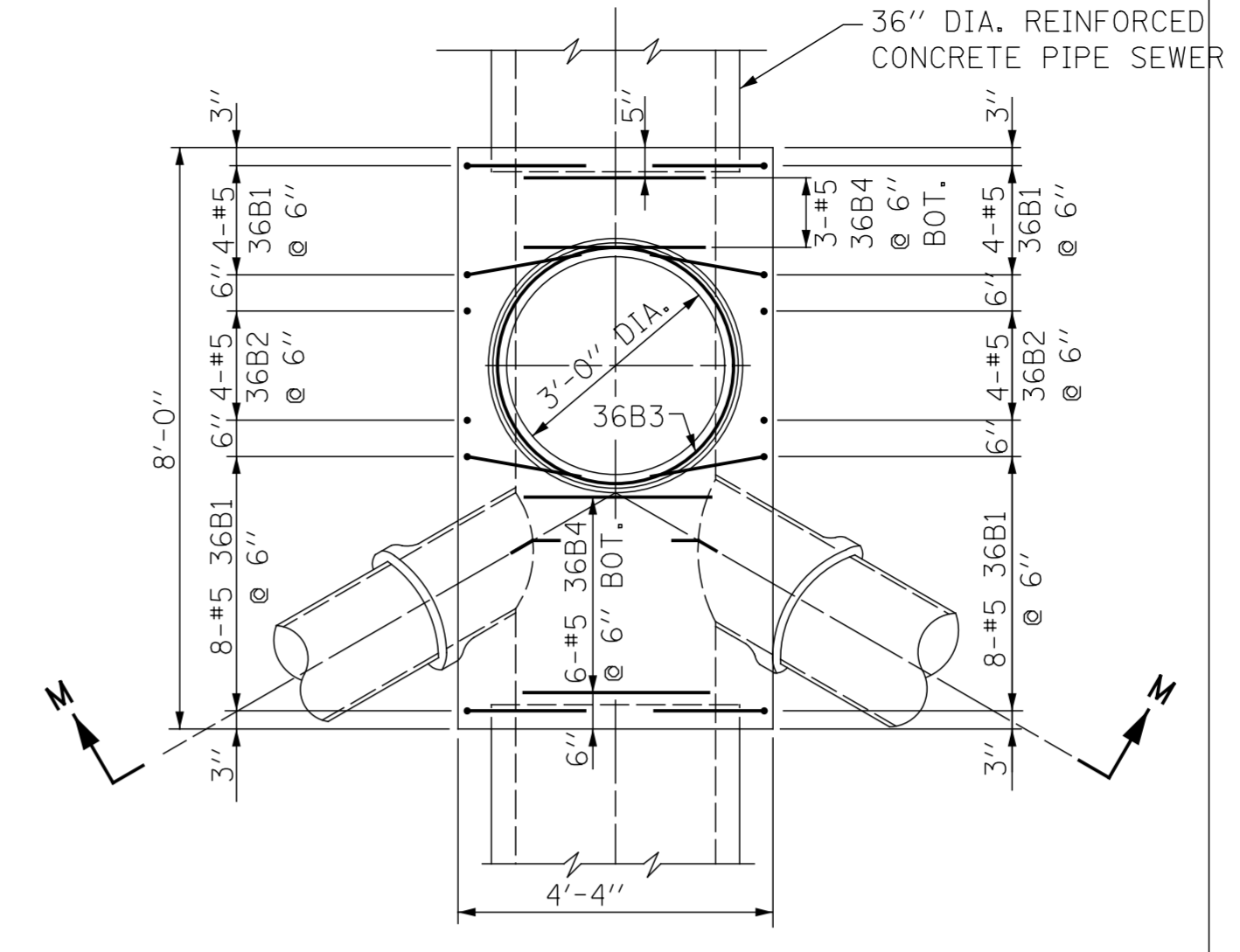


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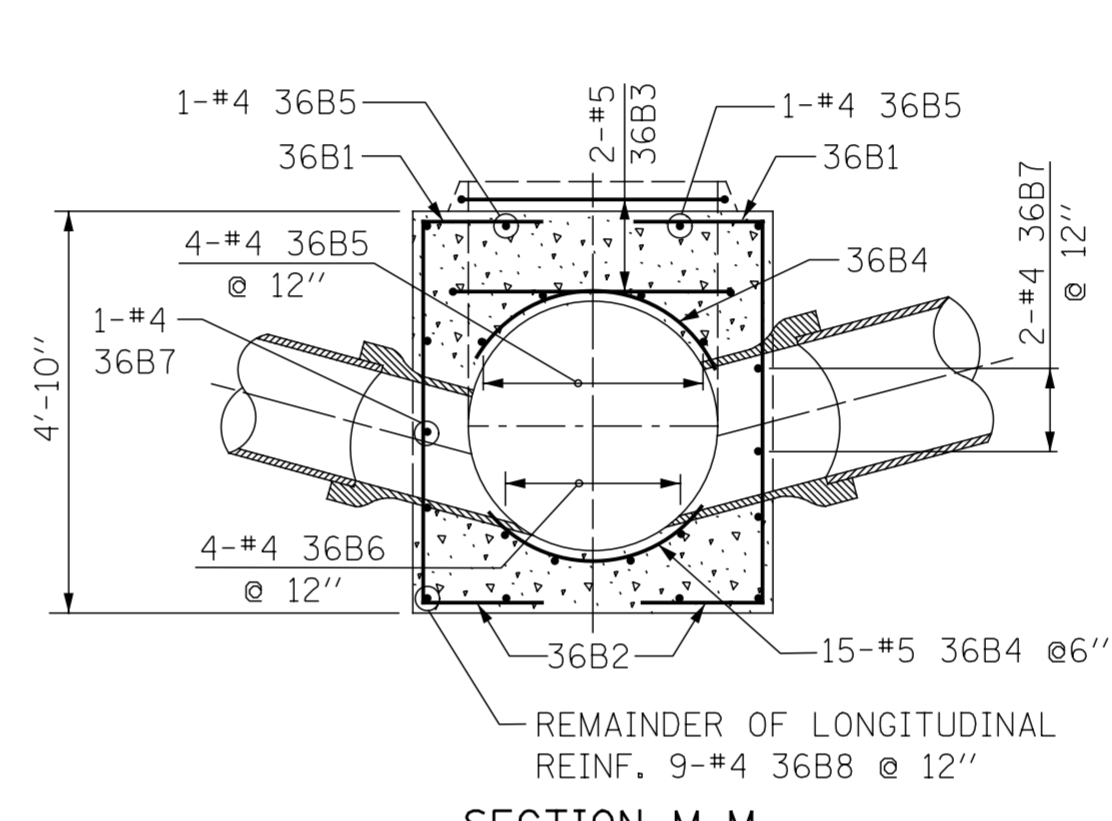


SECTION M-M

**42" DIA. SEWER**

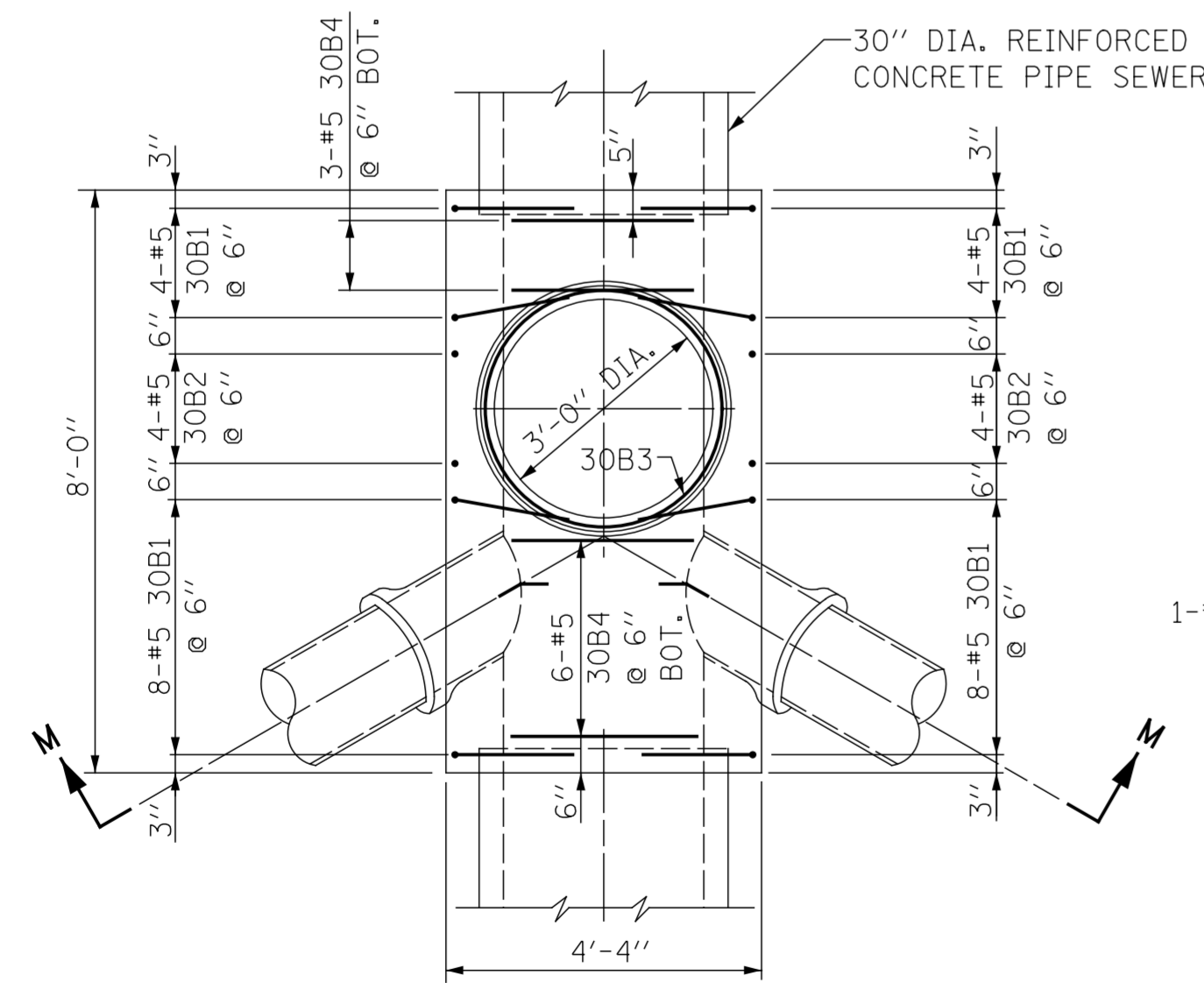


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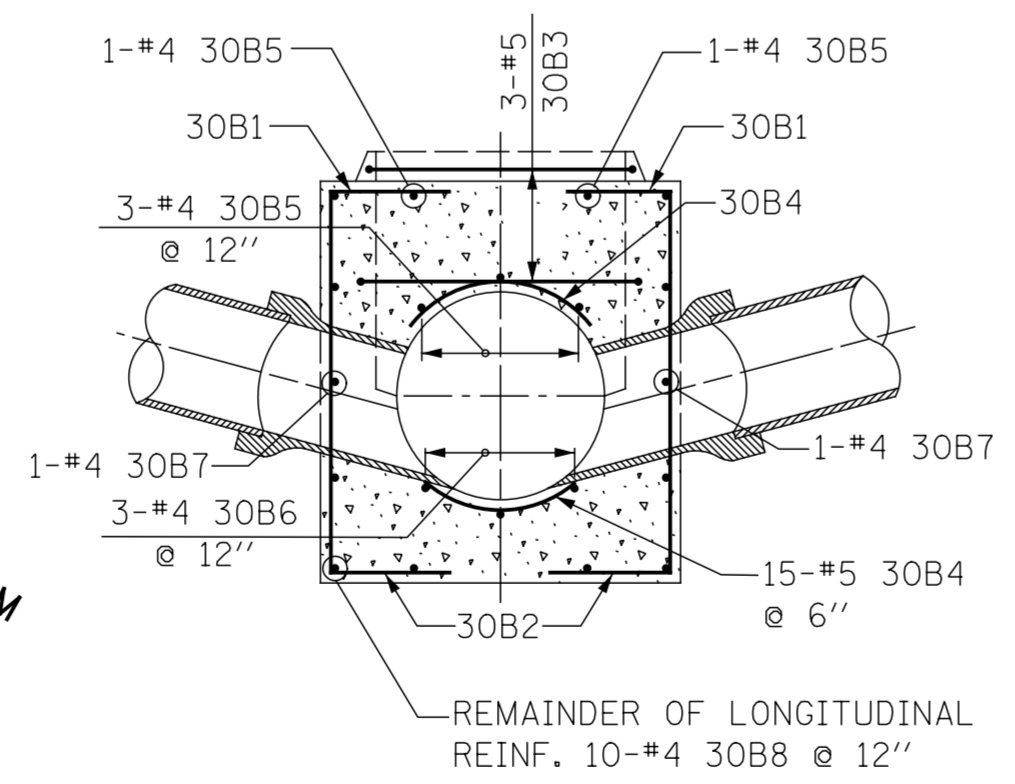


SECTION M-M

**36" DIA. SEWER**

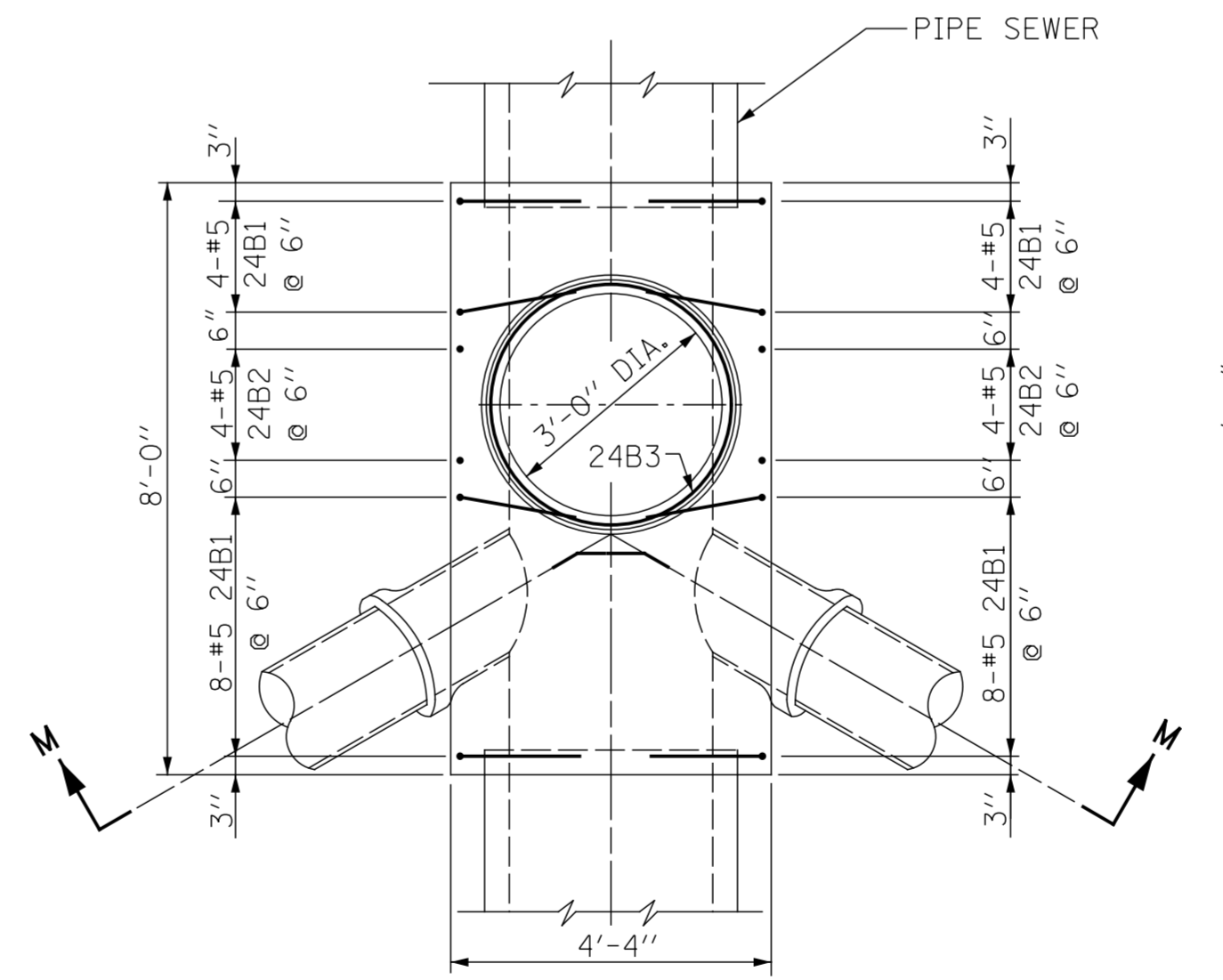


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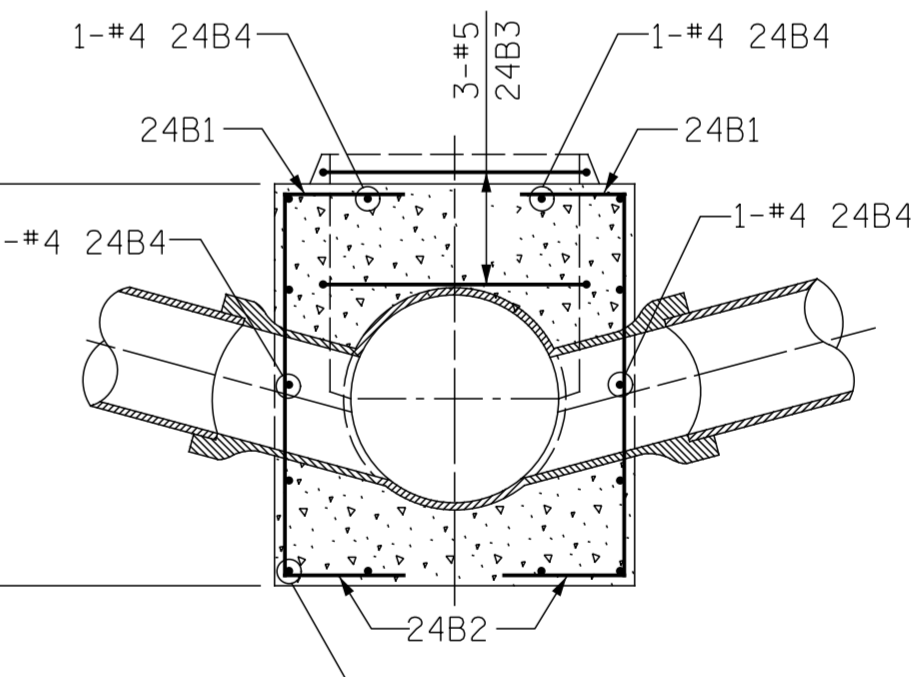


SECTION M-M

**30" DIA. SEWER**



PLAN



SECTION M-M

**24" DIA. SEWERS & SMALLER**

- NOTES:
1. CONTRACTOR MUST SUBMIT SHOP DRAWINGS OF ALL PROPOSED MANHOLE CONFIGURATIONS FOR APPROVAL PRIOR TO SUBMISSION OF MATERIAL ORDERS.
  2. CONNECTION BELLS MAY BE INSTALLED AT MANUFACTURER'S SITE, OR MORTARED IN PLACE IN THE FIELD. SEE SHEET A.11 FOR FURTHER CONFIGURATION DETAILS.
  3. BASES MUST BE PRECAST WITH THE CORRECT NUMBER OF PIPE OPENINGS, CORRESPONDING TO THE REPRESENTATION IN THE PLAN AND PROFILE SHEETS.
  4. PATCHING, BRICKING, OR OTHER MATERIAL METHODS OF CLOSING UNUSED HOLES WILL NOT BE ACCEPTED.
  5. ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

STANDARD REVISIONS	
DATE	DESCRIPTION
9/19/17	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
30	
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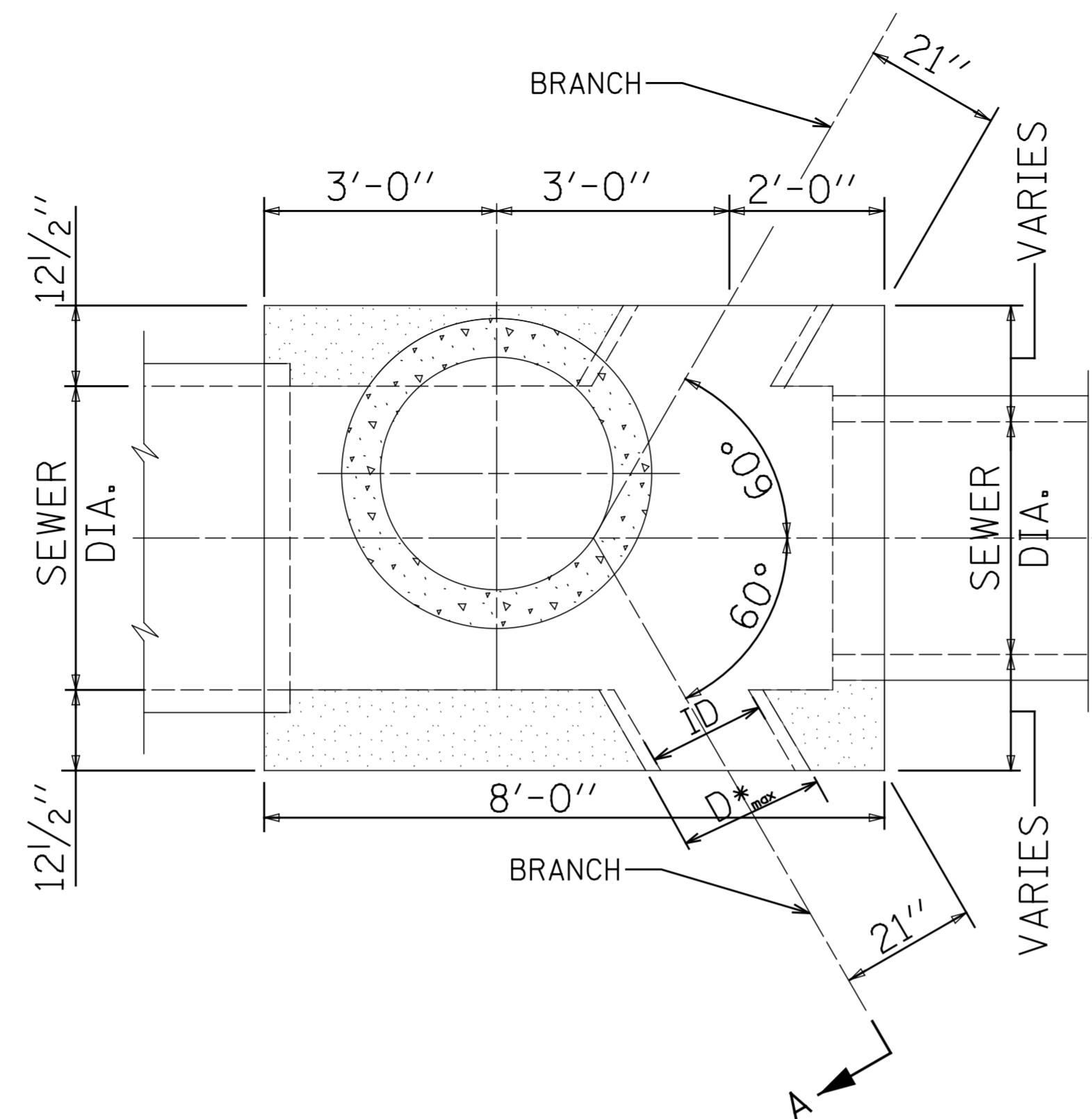
**CITY OF CHICAGO**  
DEPARTMENT OF WATER MANAGEMENT  
BUREAU OF ENGINEERING SERVICES

REINFORCEMENT FOR  
TYPE "B" MANHOLE BASES

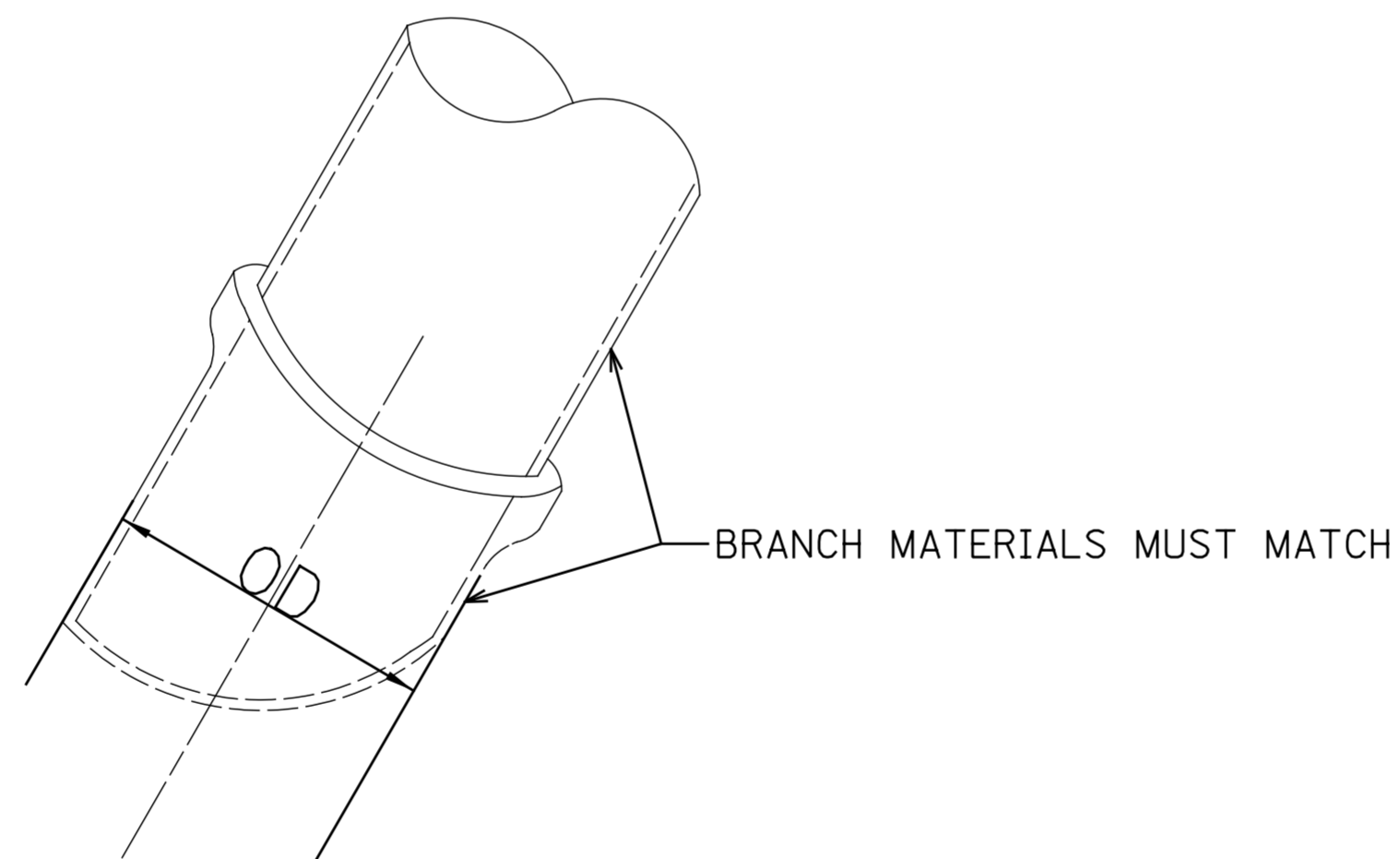
DRAWN: SEB  
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CHECKED:    
REVIEWED:  

**A.11**

\_\_\_ OF \_\_\_  
PN \_\_\_



TYPICAL 4 OPENING TYPE B MANHOLE



- NOTES:
1. CONTRACTOR MUST SUBMIT SHOP DRAWINGS OF ALL PROPOSED MANHOLE CONFIGURATIONS FOR APPROVAL PRIOR TO SUBMISSION OF MATERIAL ORDERS.
  2. CONNECTION BELLS MAY BE INSTALLED AT MANUFACTURER'S SITE, OR MORTARED IN PLACE IN THE FIELD.
  3. BASES MUST BE PRECAST WITH THE CORRECT NUMBER OF PIPE OPENINGS, CORRESPONDING TO THE REPRESENTATION IN THE PLAN AND PROFILE SHEETS.
  4. PATCHING, BRICKING, OR OTHER MATERIAL METHODS OF CLOSING UNUSED HOLES WILL NOT BE ACCEPTED.
  5. ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

BRANCH SIZING CHART

ID PIPE (in.)	MATERIAL	OD PIPE (in.)	D* <sub>max</sub> (in.)
12	VCP	14.36	18.36
15	VCP	17.8	21.8
18	VCP	21.48	25.48
21	VCP	25.54	31.54
8	DIP	9.05	13.05
10	DIP	11.1	15.1
12	DIP	13.2	17.2
14	DIP	15.3	19.3
16	DIP	17.4	21.4
18	DIP	19.5	23.5
20	DIP	21.6	25.6
24	DIP	25.8	29.8
24	RCP III (Wall B)	30	34
27	RCP III (Wall B)	33.5	37.5
30	RCP III (Wall B)	37	41
33	RCP III (Wall B)	40.5	44.5
36	RCP III (Wall B)	44	48
42	RCP III (Wall B)	51	55
48	RCP III (Wall B)	58	62
Notes:			
1. If the pipe class and wall size is not shown on this table, then D* <sub>max</sub> = OD pipe + 4"			
2. D* <sub>max</sub> indicates the maximum size of branch opening to be cast or cut into structure.			

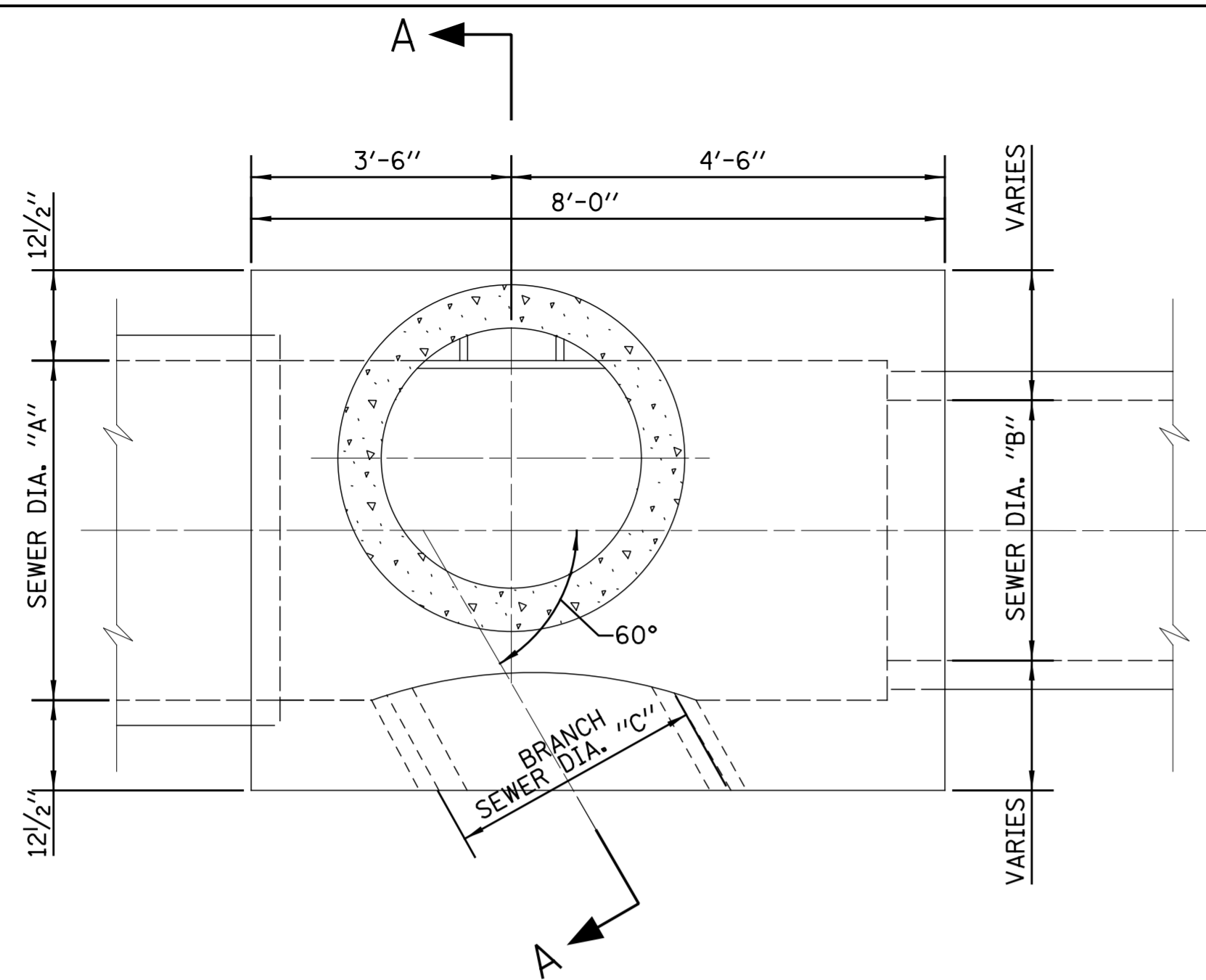
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DATE	DESCRIPTION
9/10/21	LAST REVISED
12/6/24	PUBLISHED

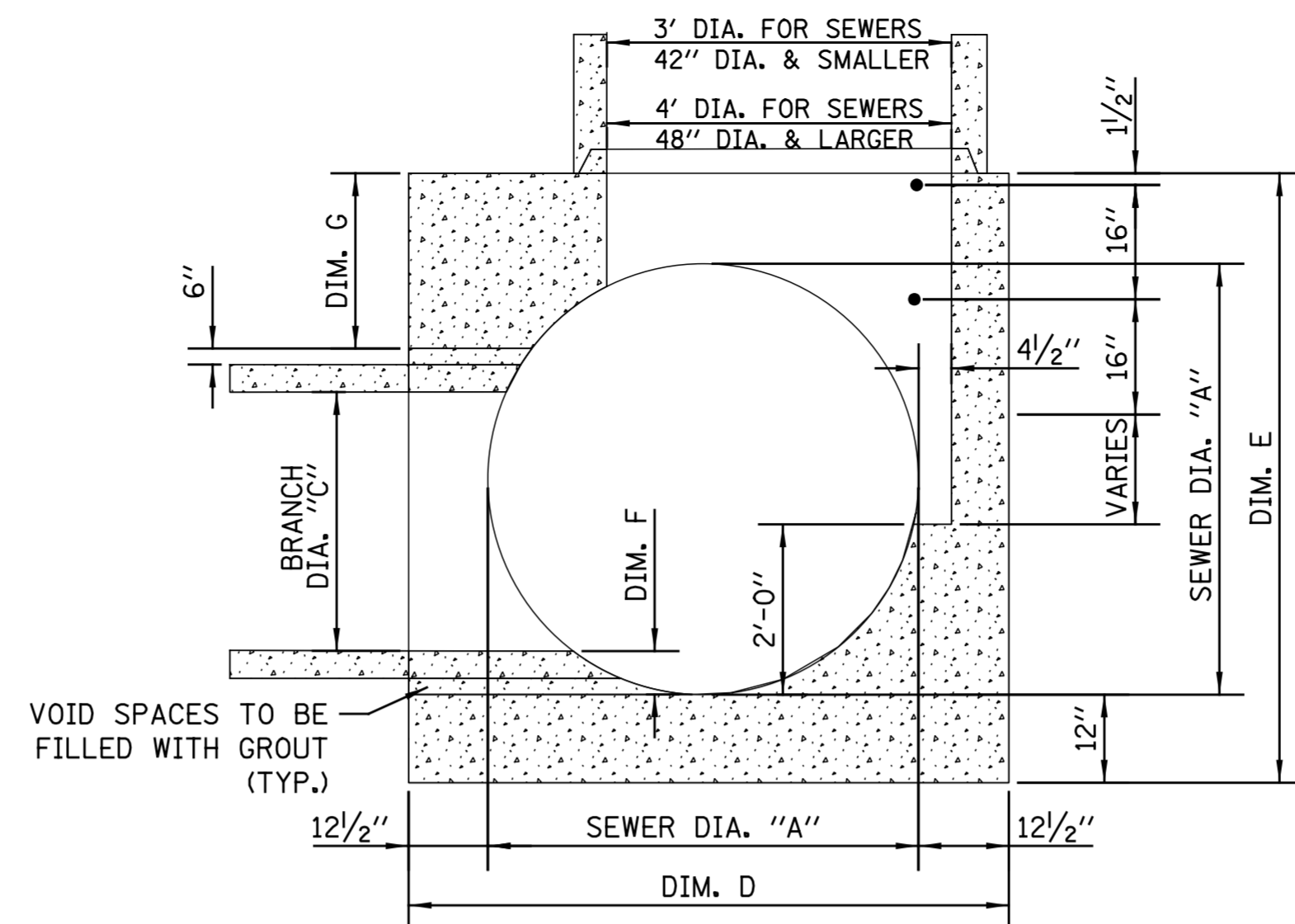
PERCENT COMPLETE	DATE
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BULLETIN	

<b>CITY OF CHICAGO</b> DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
TYPE "B" MANHOLE CONFIGURATIONS	

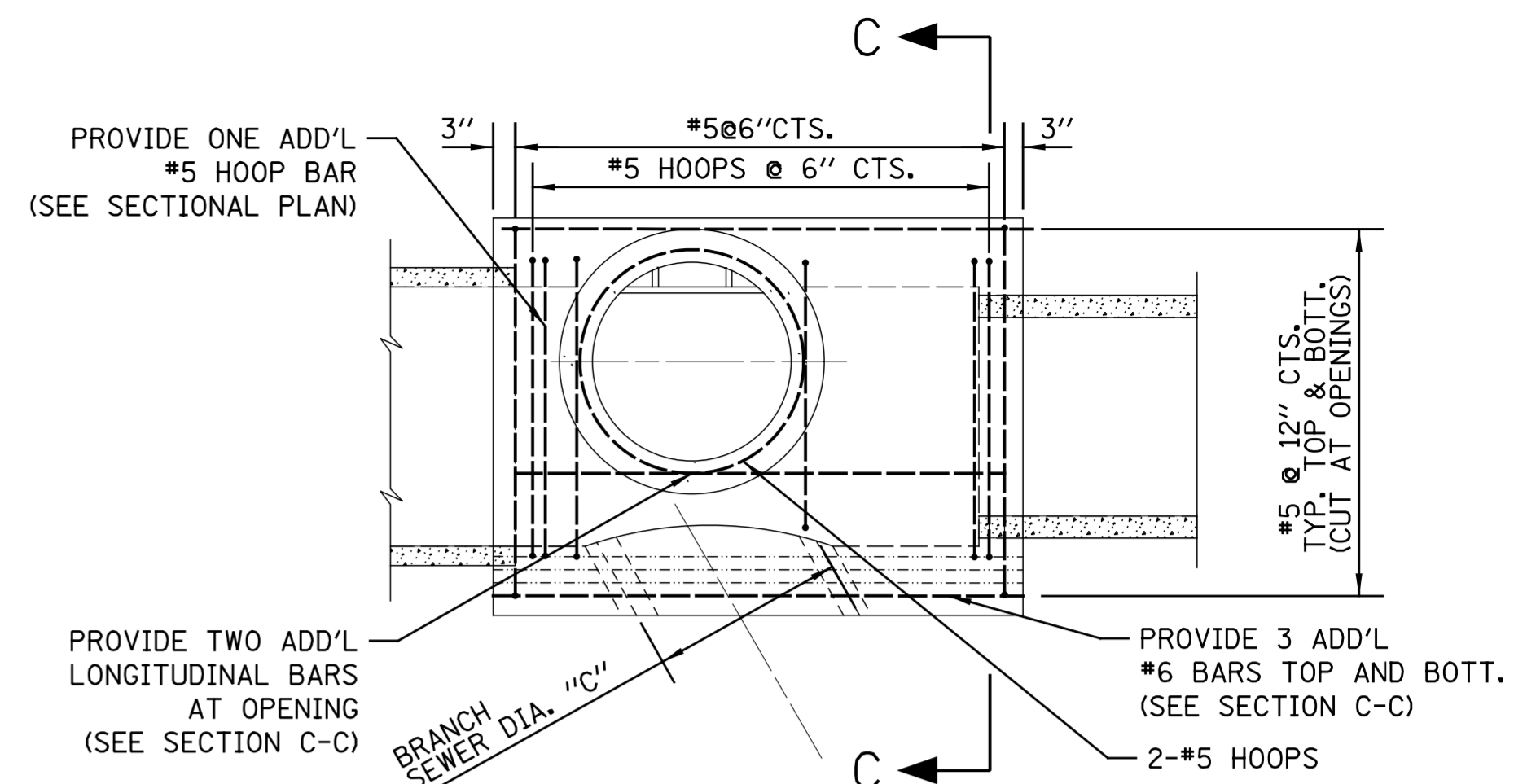
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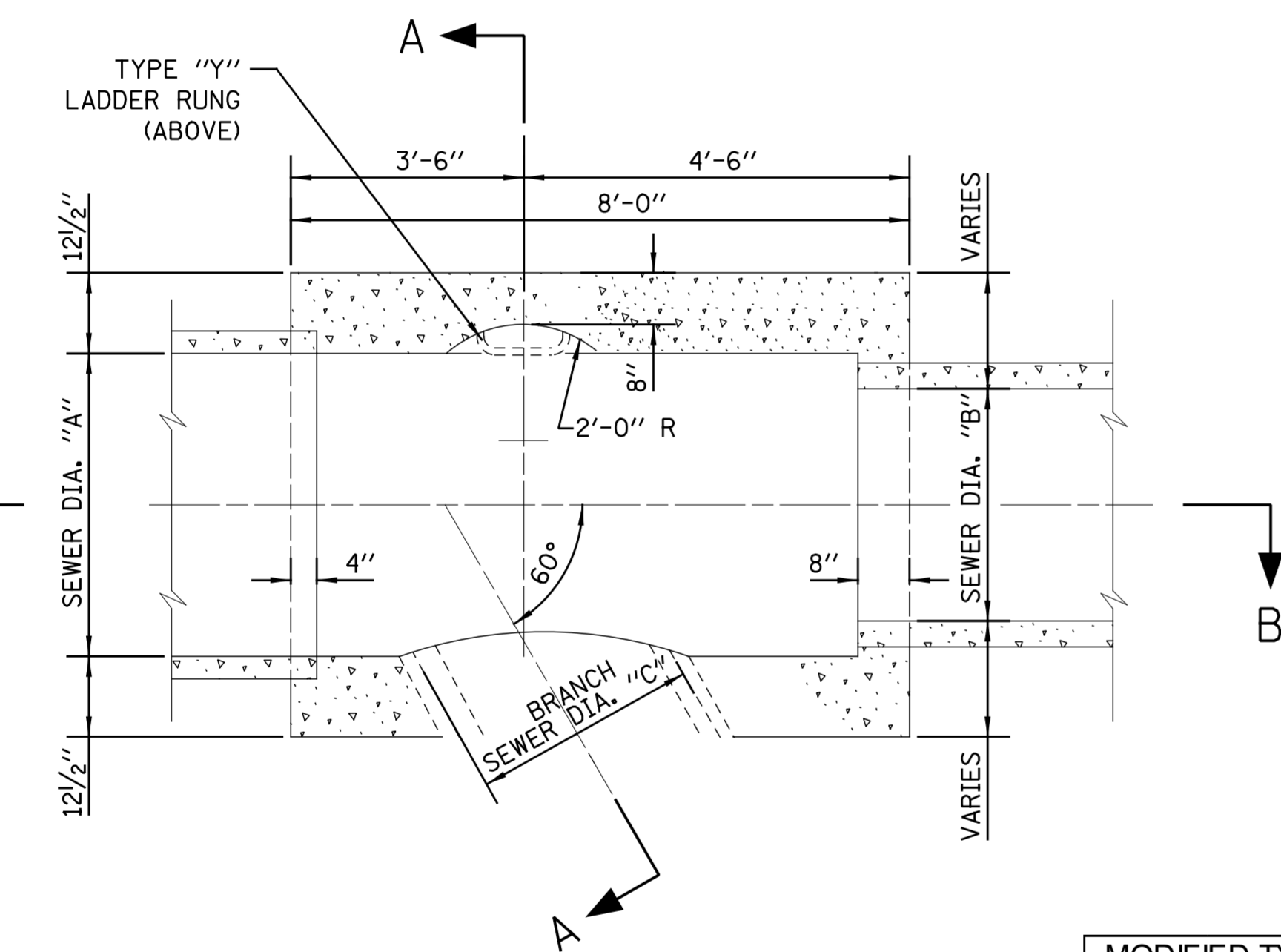
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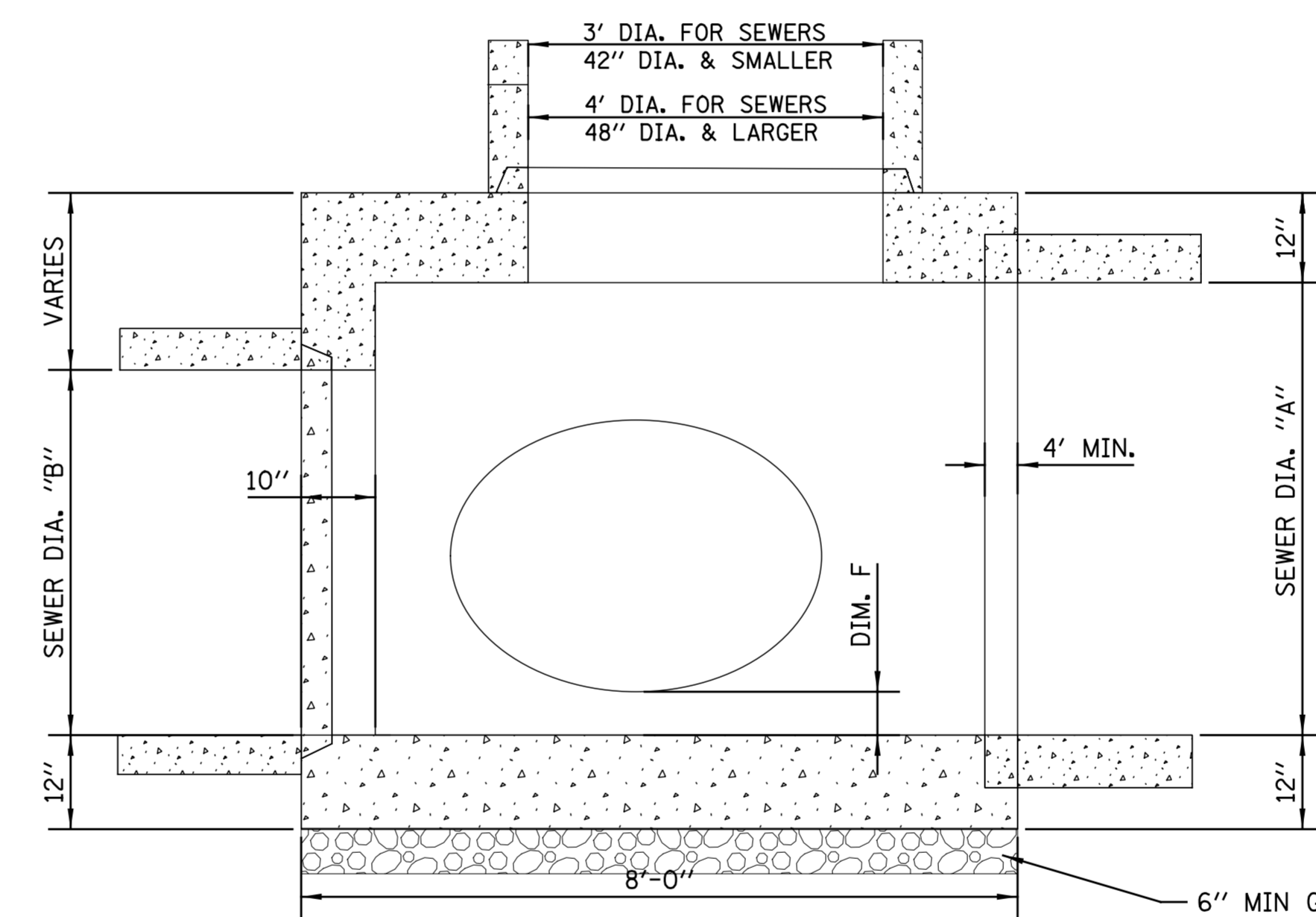
SECTION A-A



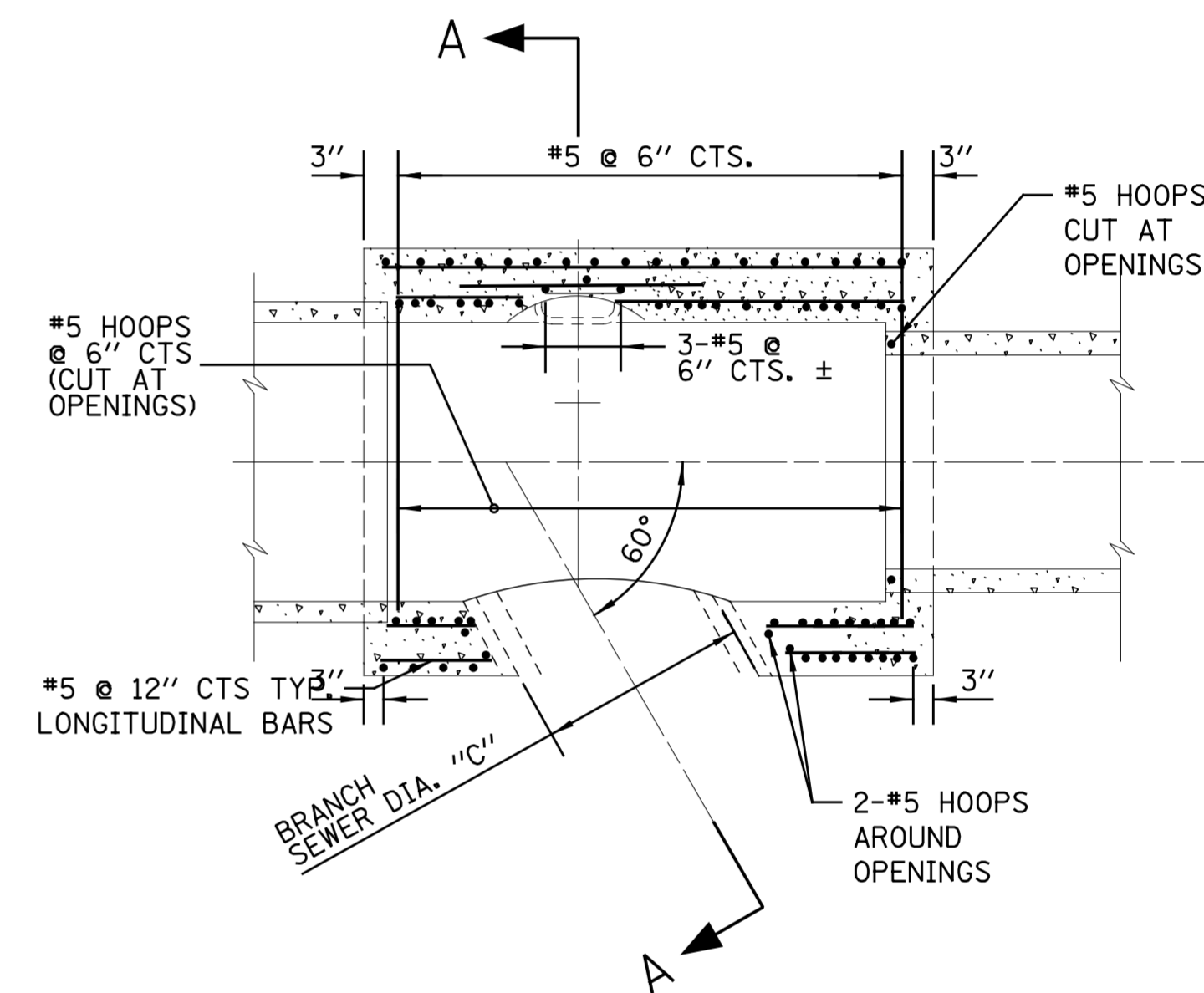
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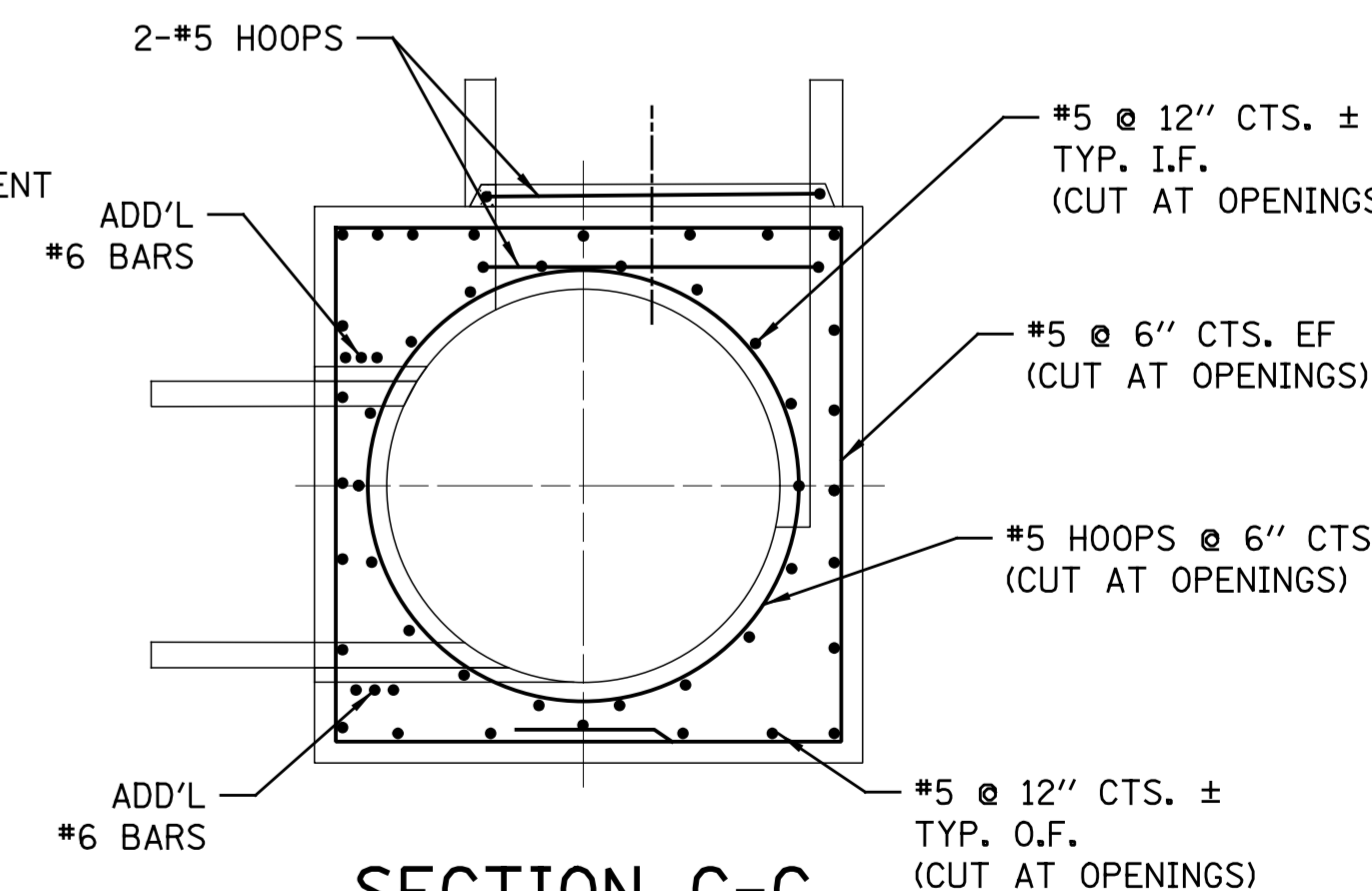
SECTIONAL PLAN



SECTION B-B



SECTIONAL PLAN



SECTION C-C

- NOTES:
- CONTRACTOR MUST SUBMIT SHOP DRAWINGS OF ALL PROPOSED MANHOLE CONFIGURATIONS FOR APPROVAL PRIOR TO SUBMISSION OF MATERIAL ORDERS.
  - CONNECTION BELLS MAY BE INSTALLED AT MANUFACTURER'S SITE, OR MORTARED IN PLACE IN THE FIELD. SEE SHEET A.11 FOR FURTHER CONFIGURATION DETAILS.
  - BASES MUST BE PRECAST WITH THE CORRECT NUMBER OF PIPE OPENINGS, CORRESPONDING TO THE REPRESENTATION IN THE PLAN AND PROFILE SHEETS.
  - PATCHING, BRICKING, OR OTHER MATERIAL METHODS OF CLOSING UNUSED HOLES WILL NOT BE ACCEPTED.
  - 6" MINIMUM GRANULAR EMBEDMENT UNDER ALL PRECAST MANHOLE BASES
  - ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

MODIFIED TYPE B MANHOLES			FOR 42", 36", & 30" BRANCHES			
SEWER SIZE	BRANCH SIZE		DIMENSION			
A	B	C	D	E	F	G
60	60	42	85	84	6	18
60	60	36	85	84	6	24
60	60	30	85	84	6	30
54	54	42	79	78	6	12
54	54	36	79	78	6	18
54	54	30	79	78	6	24
48	48	42	73	78	6	12
48	48	36	73	72	6	12
48	48	30	73	72	6	18
42	42	36	67	72	6	12
42	42	30	67	66	6	12
36	36	36	58	66	6	12
36	36	30	58	66	6	12
30	30	30	55	66	6	12

ALL MEASUREMENTS ARE IN INCHES  
 NOTE: WHEN B IS SMALLER THAN A, GAP SHALL BE FILLED WITH CONCRETE DURING CASTING.  
 SIMILAR REBAR DESIGN SHALL BE USE.

STANDARD REVISIONS	
DATE	DESCRIPTION
3/7/19	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
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BULLETIN	

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 DEPARTMENT OF WATER MANAGEMENT  
 BUREAU OF ENGINEERING SERVICES

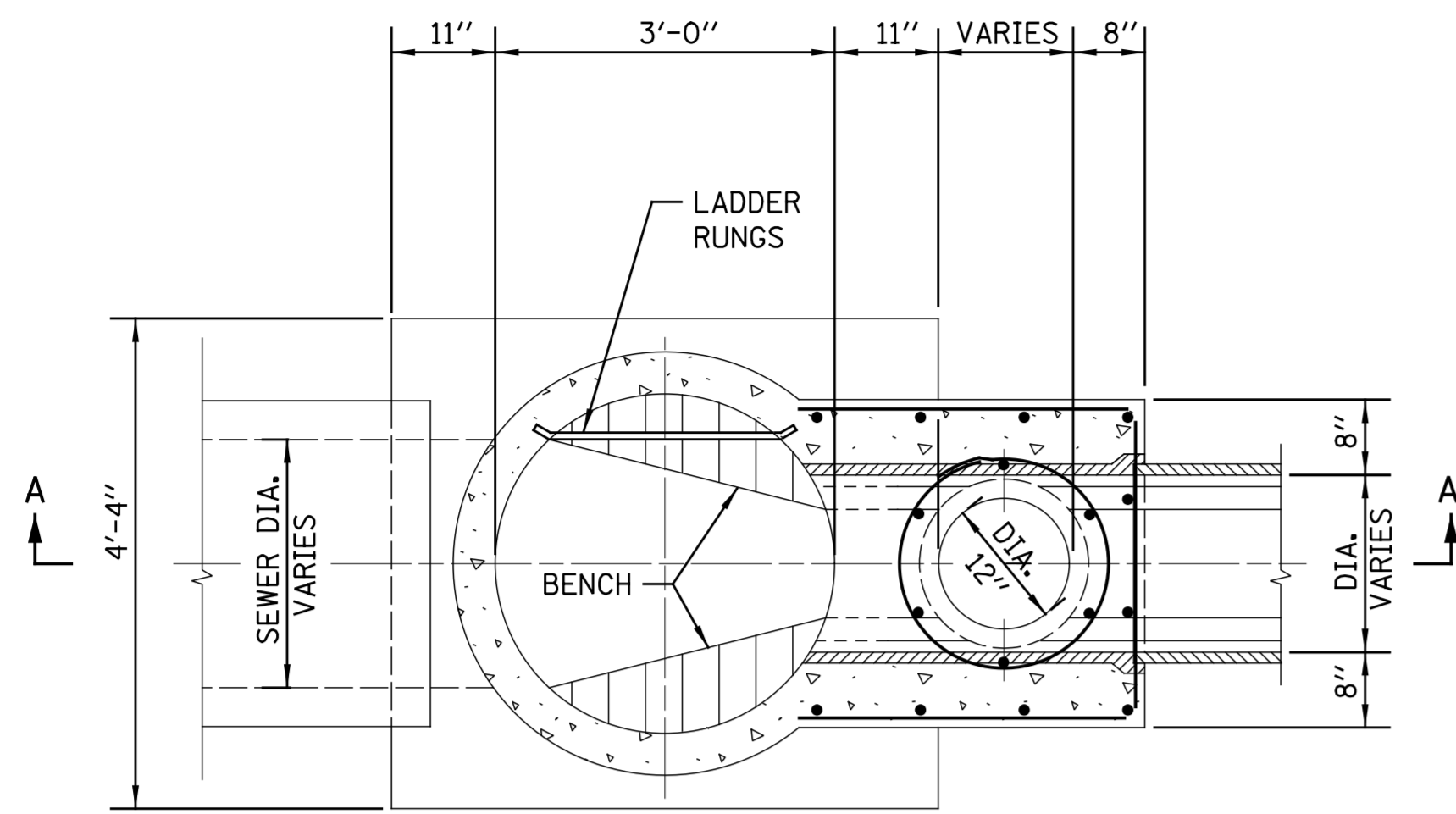
MODIFIED TYPE "B" MANHOLE

DRAWN: SEB  
 DESIGNED: [ ]  
 CHECKED: GD, GC, SO  
 REVIEWED: [ ]

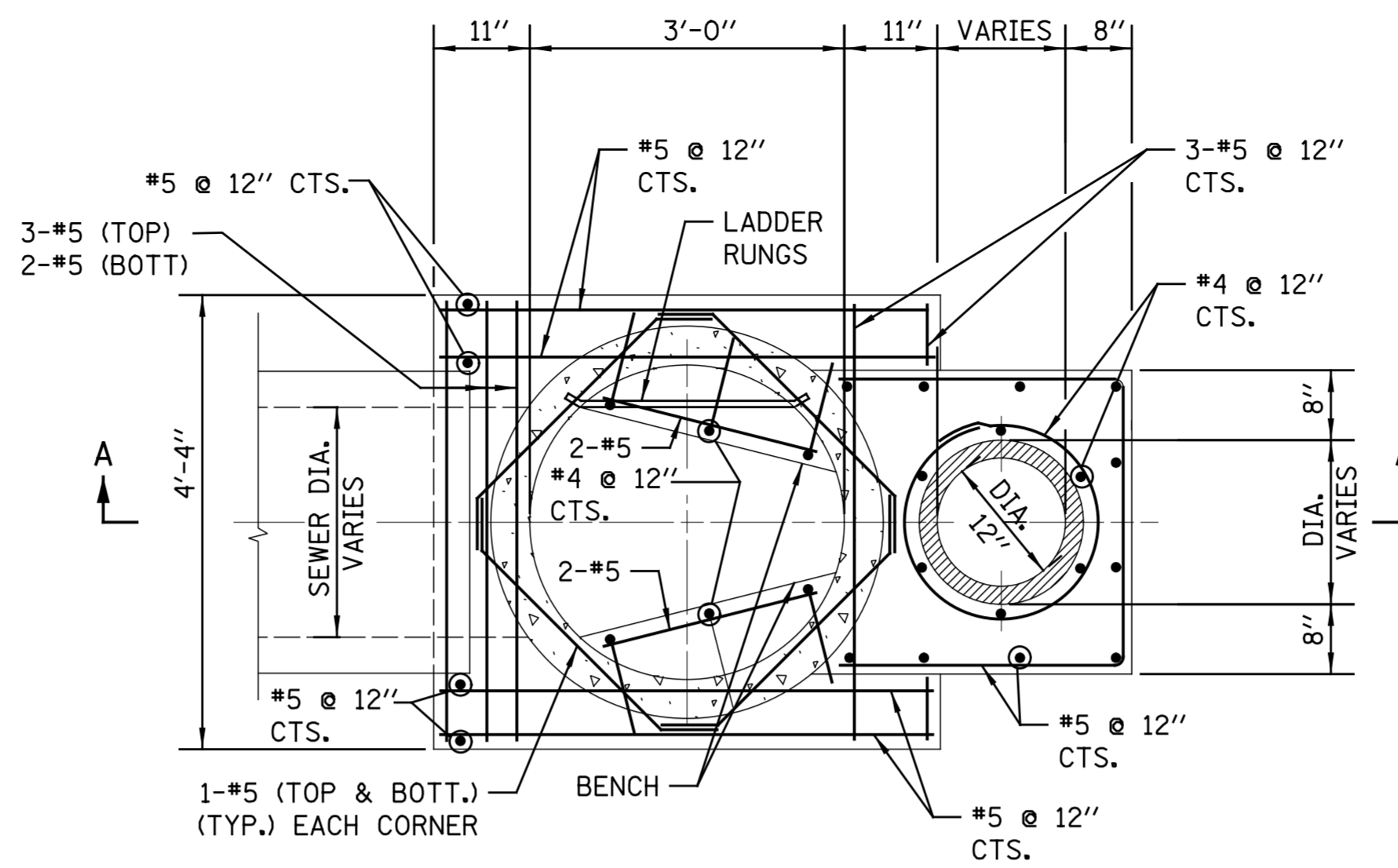
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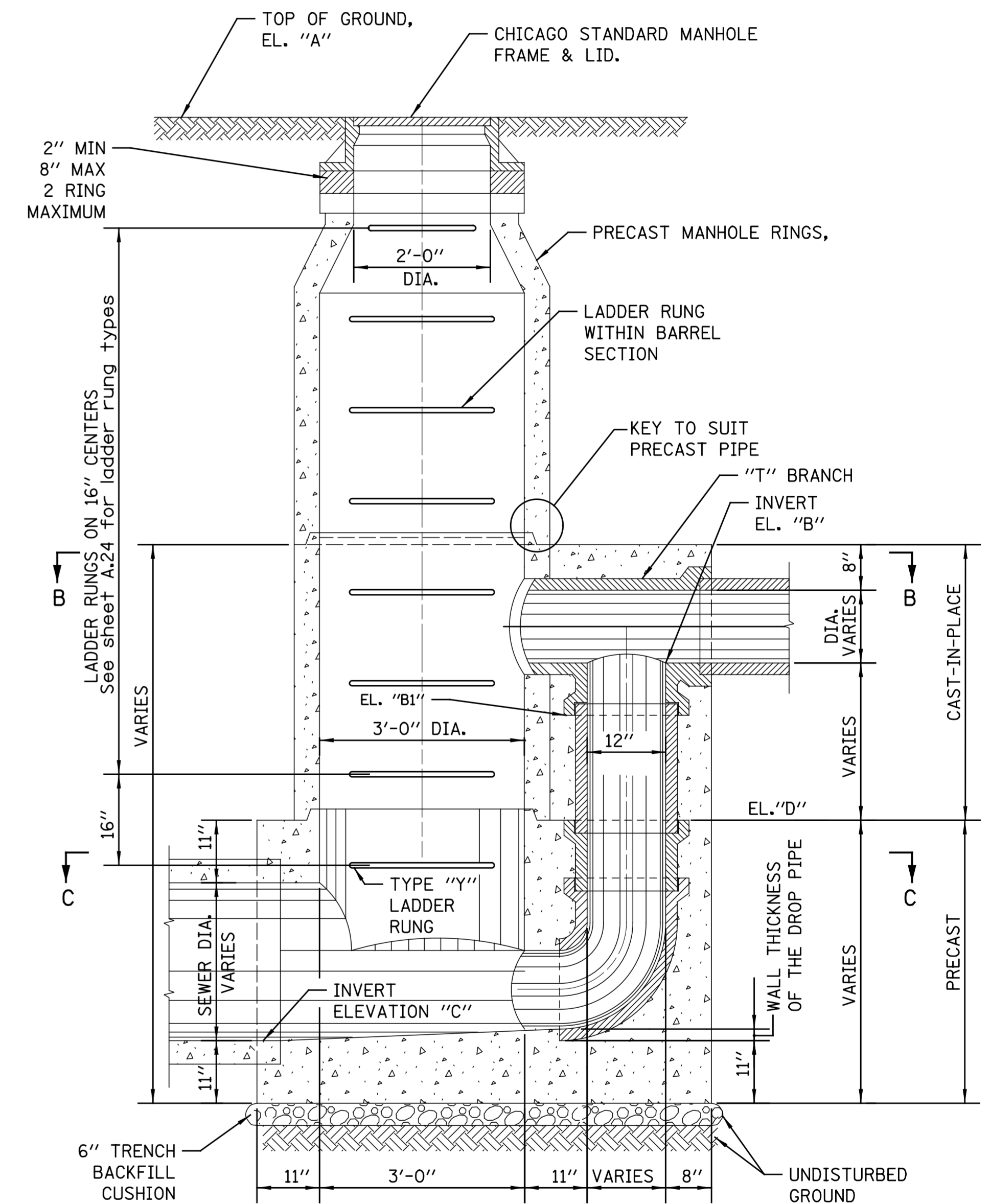
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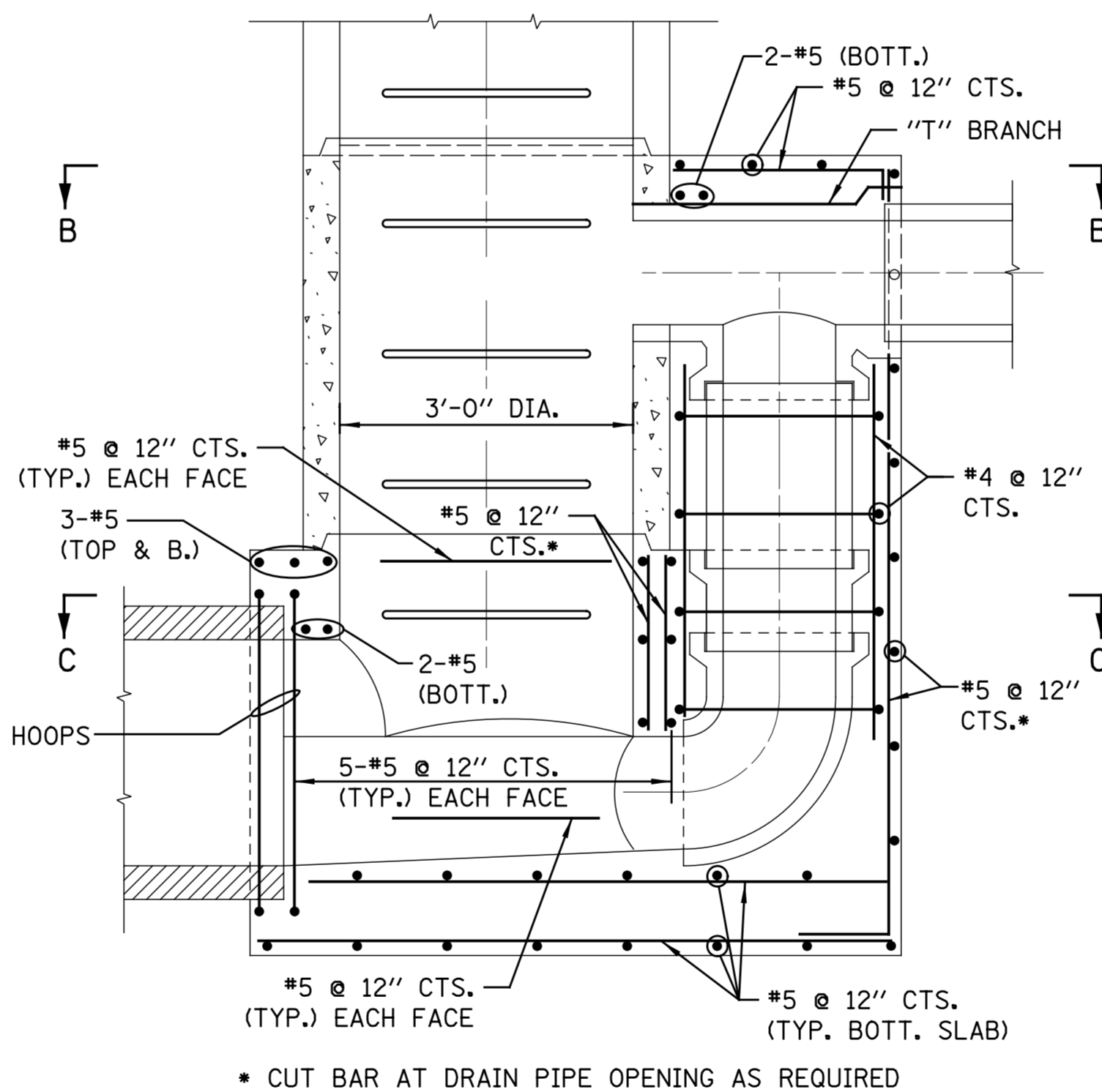
SECTIONAL PLAN-B



SECTIONAL PLAN-C



SECTION A-A



SECTION A-A

LOCATION	SHEET NO.	ELEVATION				
		"A"	"B"	"B1"	"C"	"D"

Note: Minimum distance between outer walls of top and bottom pipes > 1.5'

NOTE:  
1. UNLESS OTHERWISE NOTED ALL PIPE AND FITTINGS 21" AND UNDER ARE STANDARD STRENGTH VCP.

2. FOR DESIGN ONLY- USE 12" DROP PIPE FOR THE FOLLOWING DEPTHS OF DWF:  
6" DWF-42" LATERAL  
7" DWF-36" LATERAL  
8" DWF-< 24" LATERAL

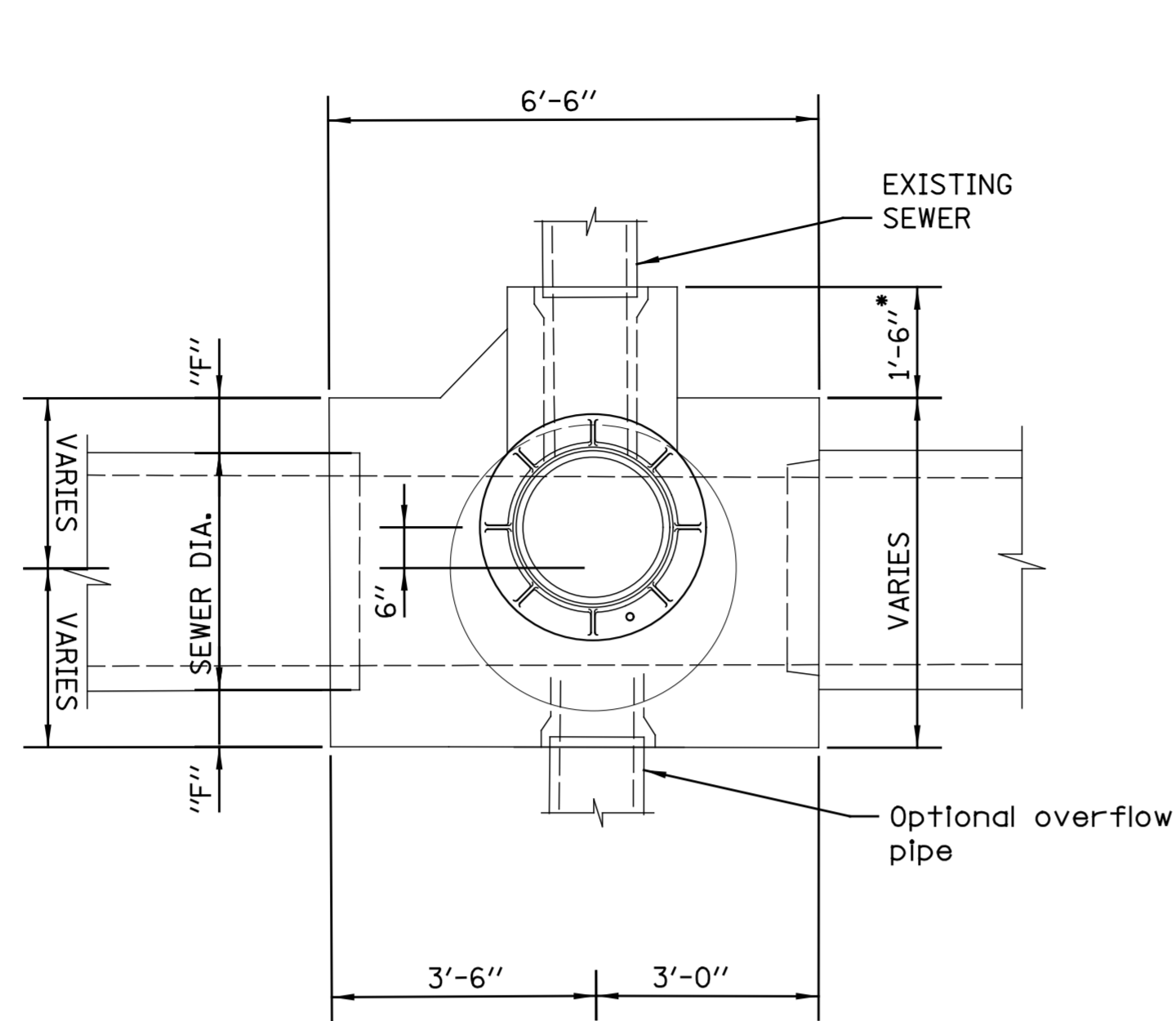
3. ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

STANDARD REVISIONS	
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10/8/20	LAST REVISED
12/6/24	PUBLISHED

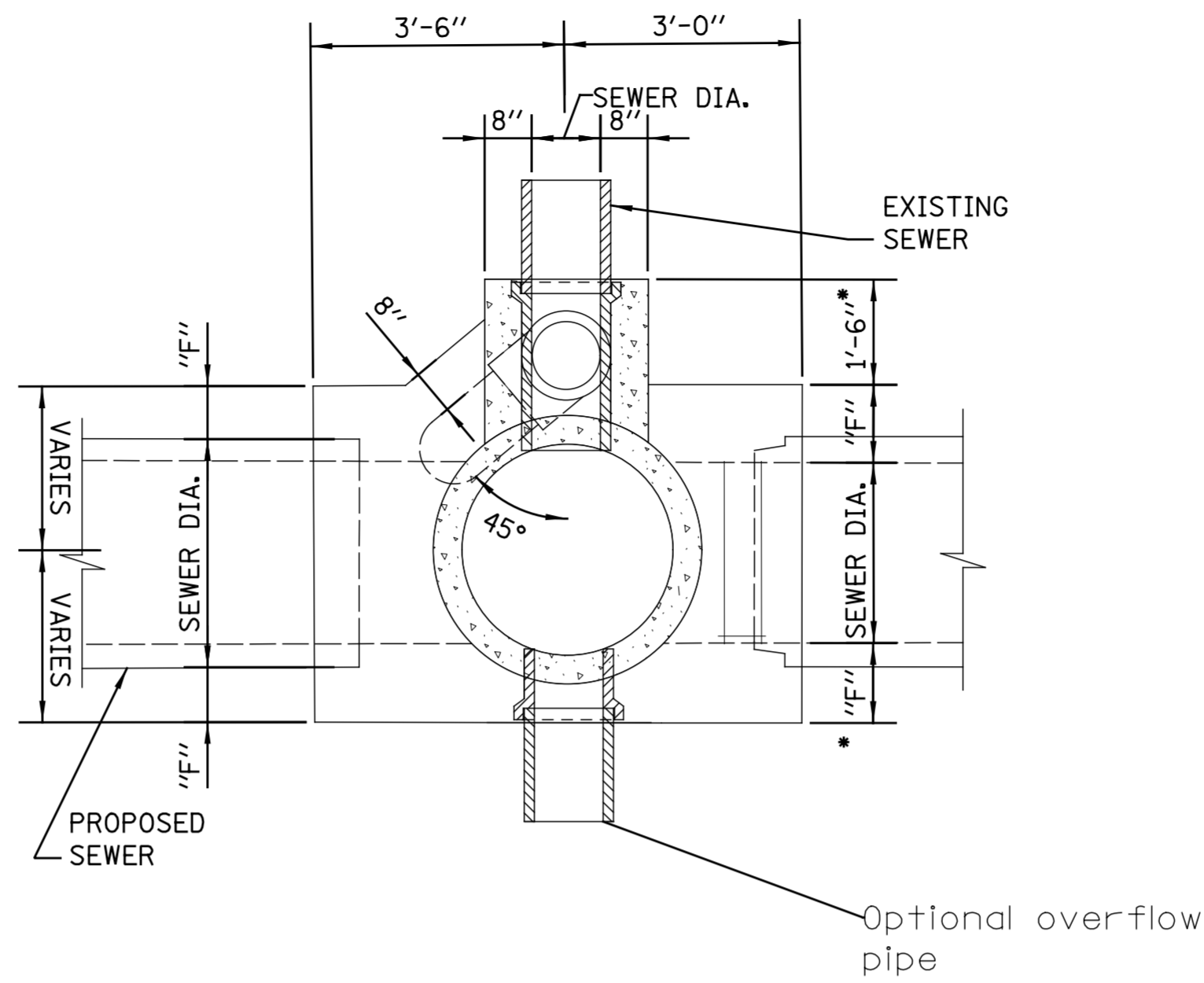
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BULLETIN	

CITY OF CHICAGO	
DEPARTMENT OF WATER MANAGEMENT	
BUREAU OF ENGINEERING SERVICES	
TYPE C	
SINGLE DROP MANHOLE	

DRAWN	SEB
DESIGNED	
CHECKED	
REVIEWED	
	A.14

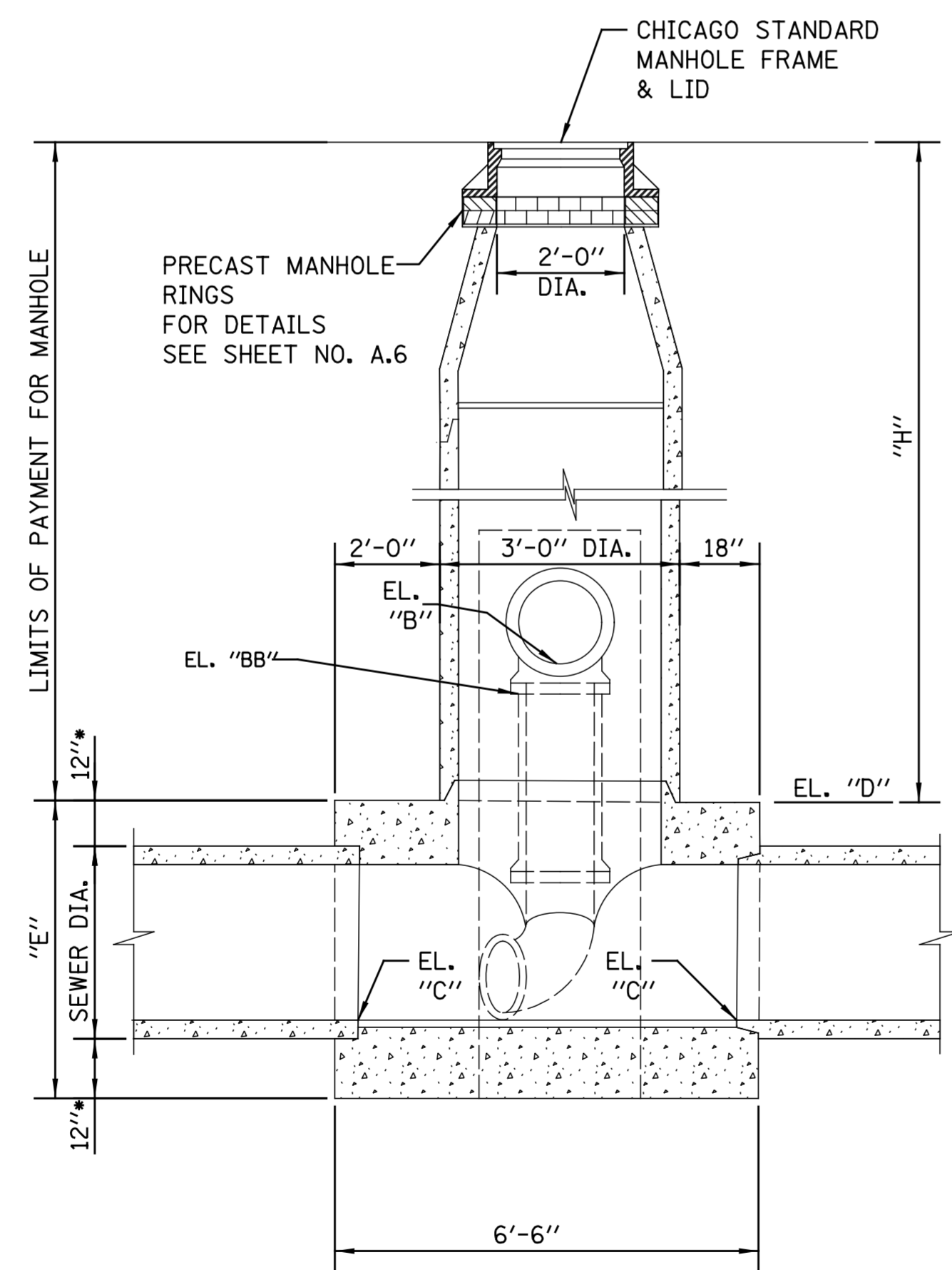


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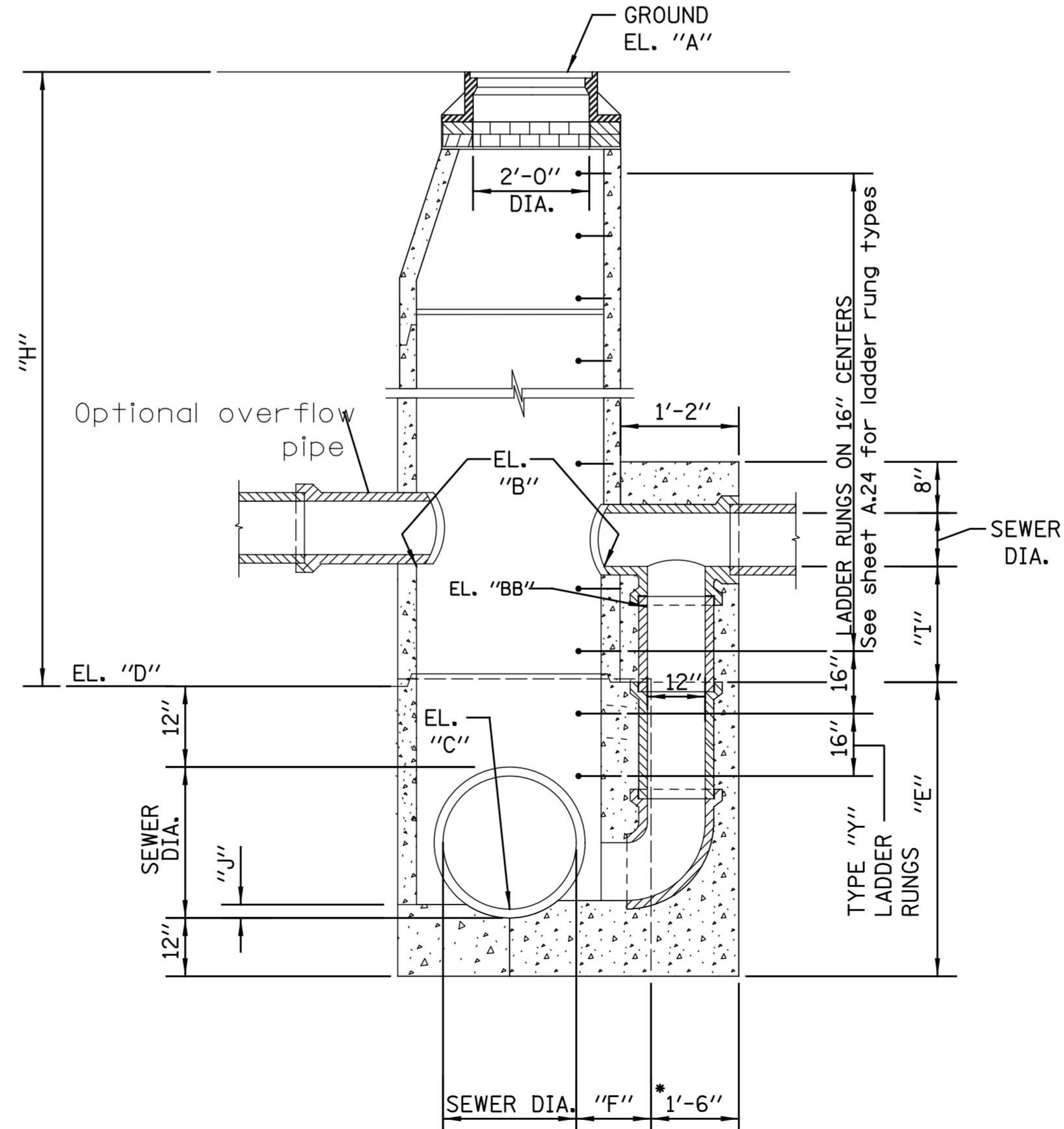


SECTIONAL PLAN

\* 1'-8" FOR 24" DIA. SEWERS



SECTION A-A



SECTION B-B

- NOTE:
- UNLESS OTHERWISE NOTED ALL PIPE AND FITTINGS 21" AND UNDER ARE STANDARD STRENGTH VCP.
  - FOR DESIGN ONLY- USE 12" DROP PIPE FOR THE FOLLOWING DEPTHS OF DWF:  
 6" DWF-42" LATERAL  
 7" DWF-36" LATERAL  
 8" DWF-< 24" LATERAL
  - ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE," A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

LOCATION	SHEET NO.	ELEVATION				
		"A"	"B"	"BB"	"C"	"D"

Note: Minimum distance between outer walls of top and bottom pipes > 1.5'

STANDARD REVISIONS	
DATE	DESCRIPTION
10/9/20	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
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BULLETIN	

**CITY OF CHICAGO**  
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 BUREAU OF ENGINEERING SERVICES

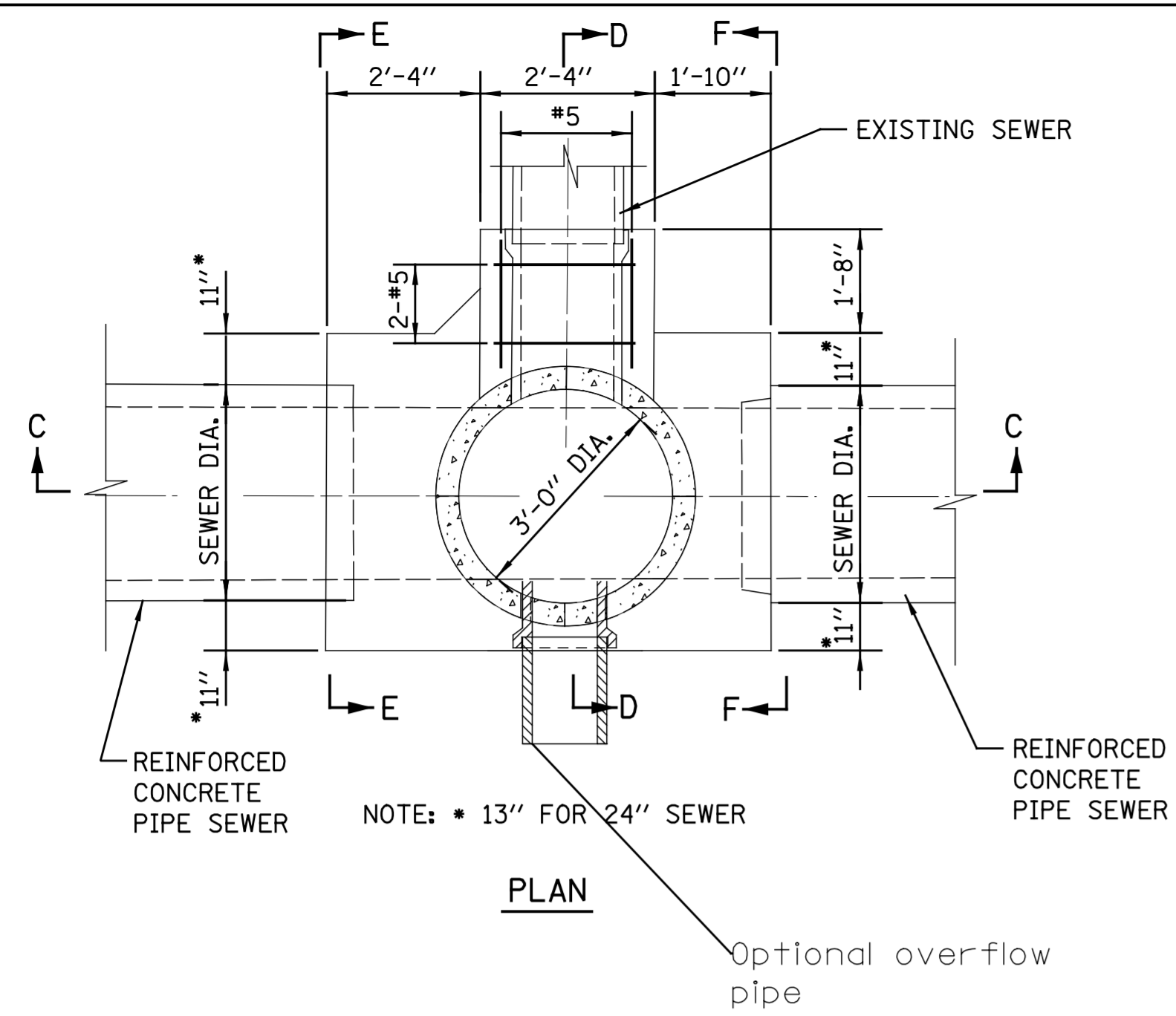
TYPE C  
 SINGLE DROP MANHOLE

DRAWN:        
 DESIGNED:        
 CHECKED:        
 REVIEWED:      

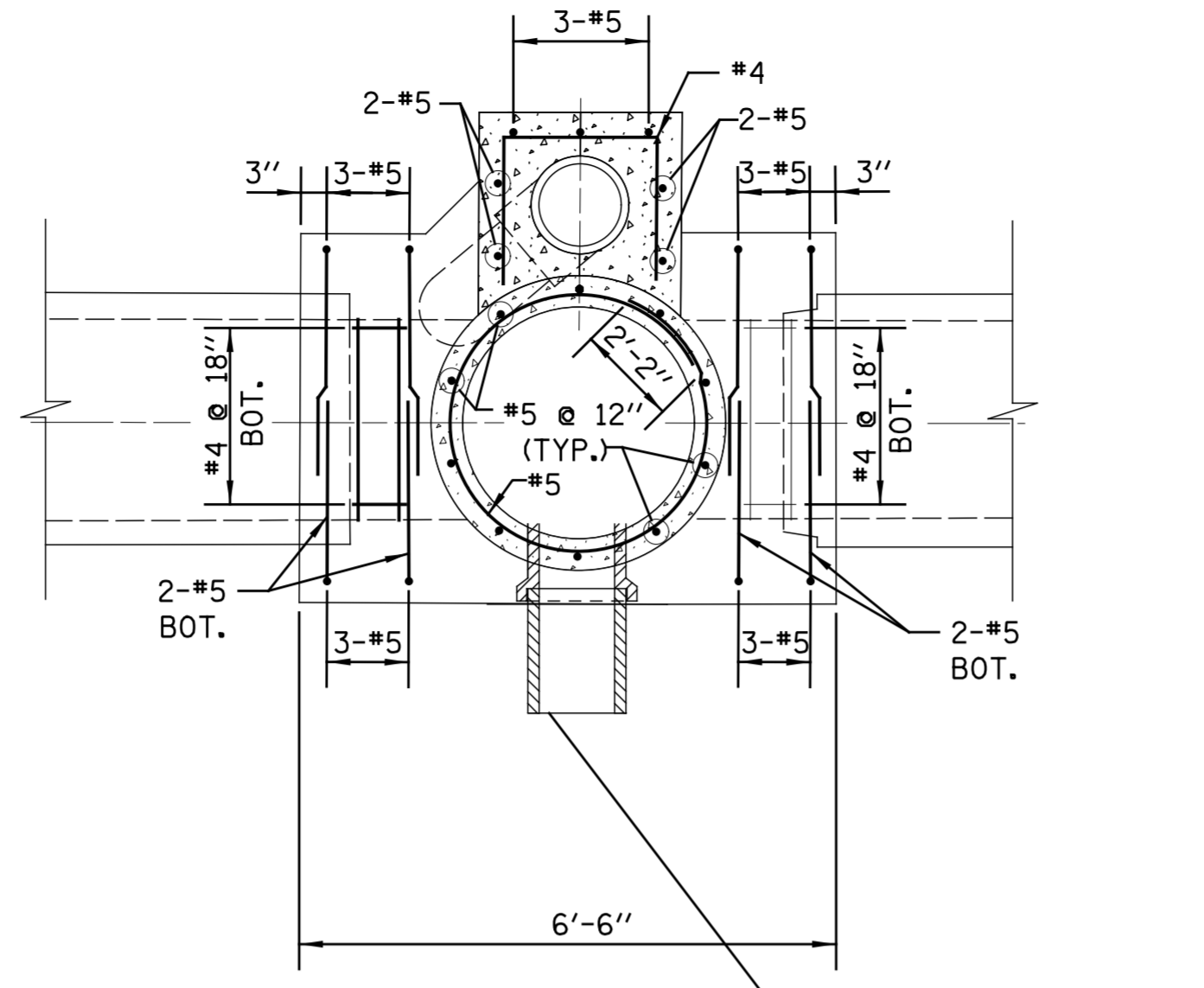
**A.15**

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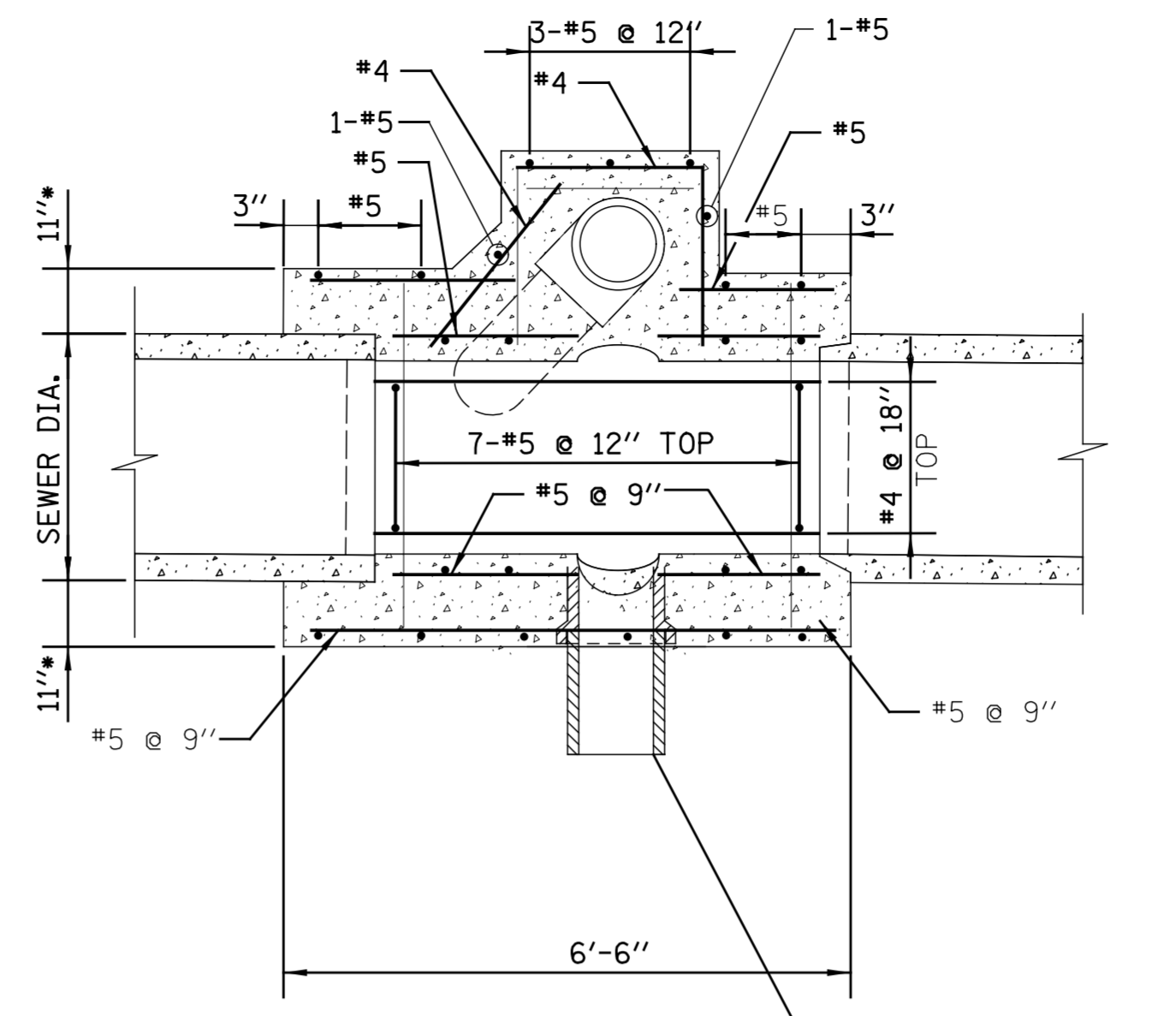




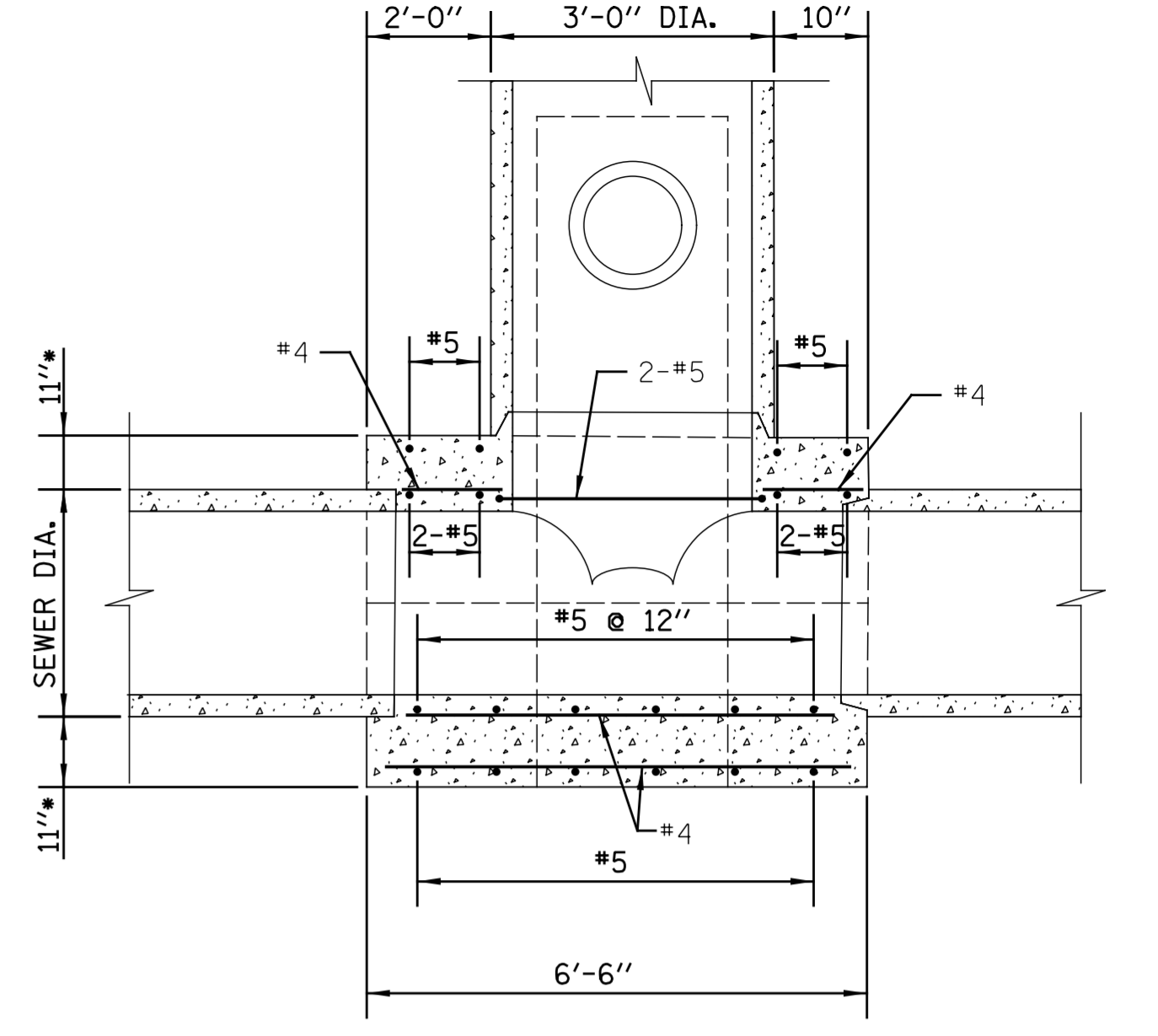
PLAN



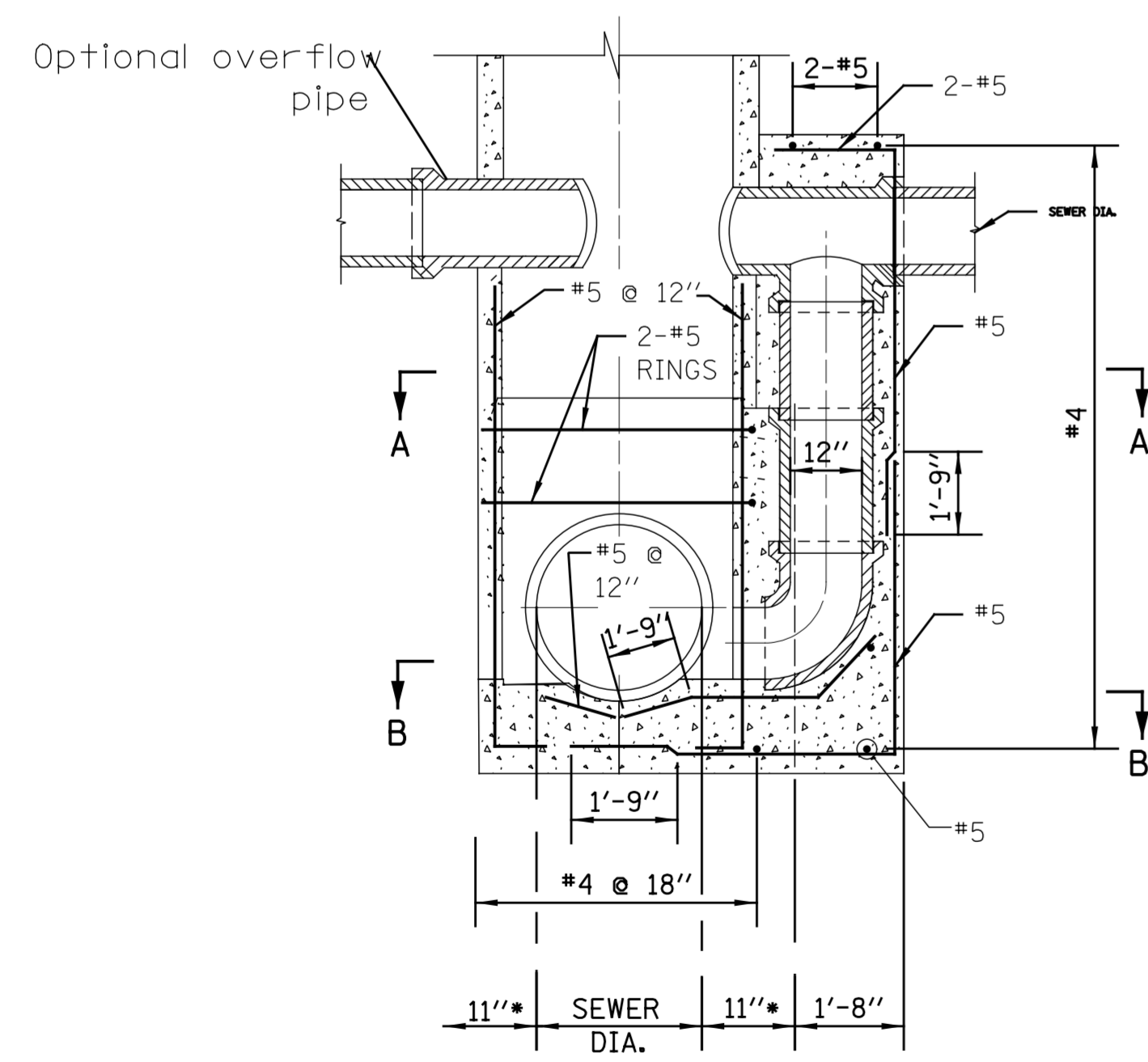
SECTION A-A



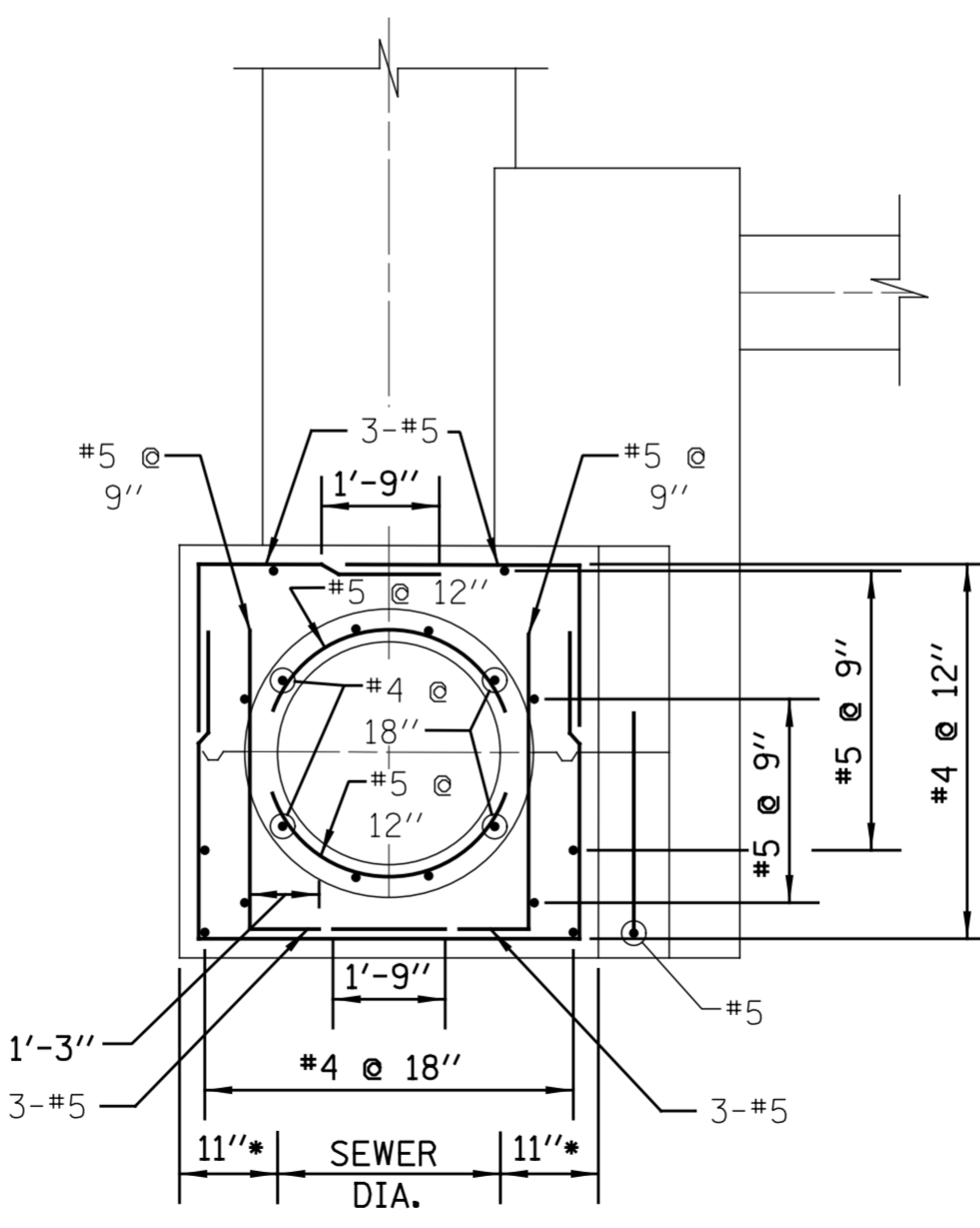
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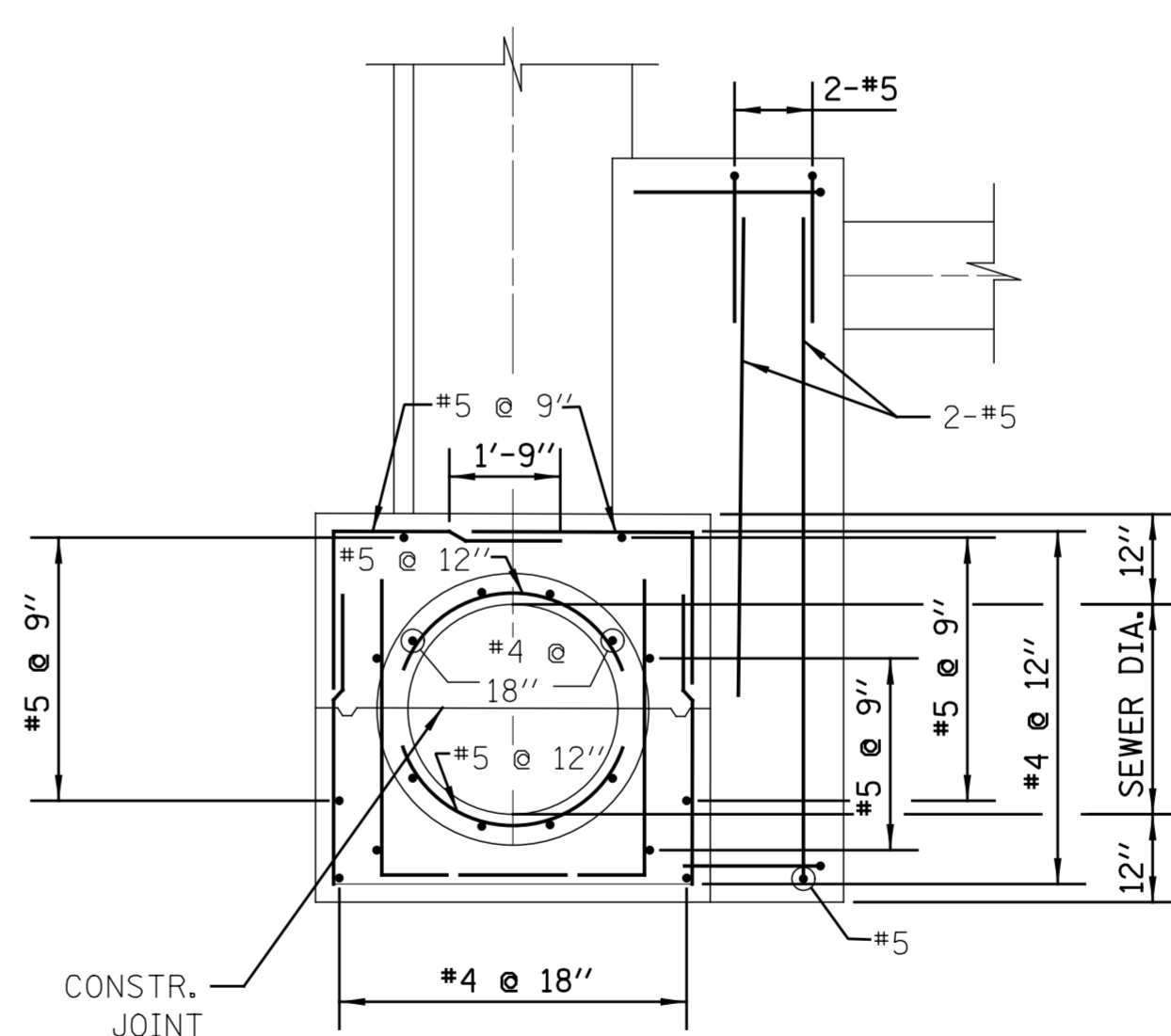
SECTION C-C



SECTION D-D



ELEVATION E-E



ELEVATION F-F

Note: For Design only- Use 12" Drop pipe for the following depths of DWF:  
 6" DWF-42" lateral  
 7" DWF-36" lateral  
 8" DWF-24" lateral

**FOR CONCRETE PIPE SEWERS  
 24" DIA. TO 48" DIA.**

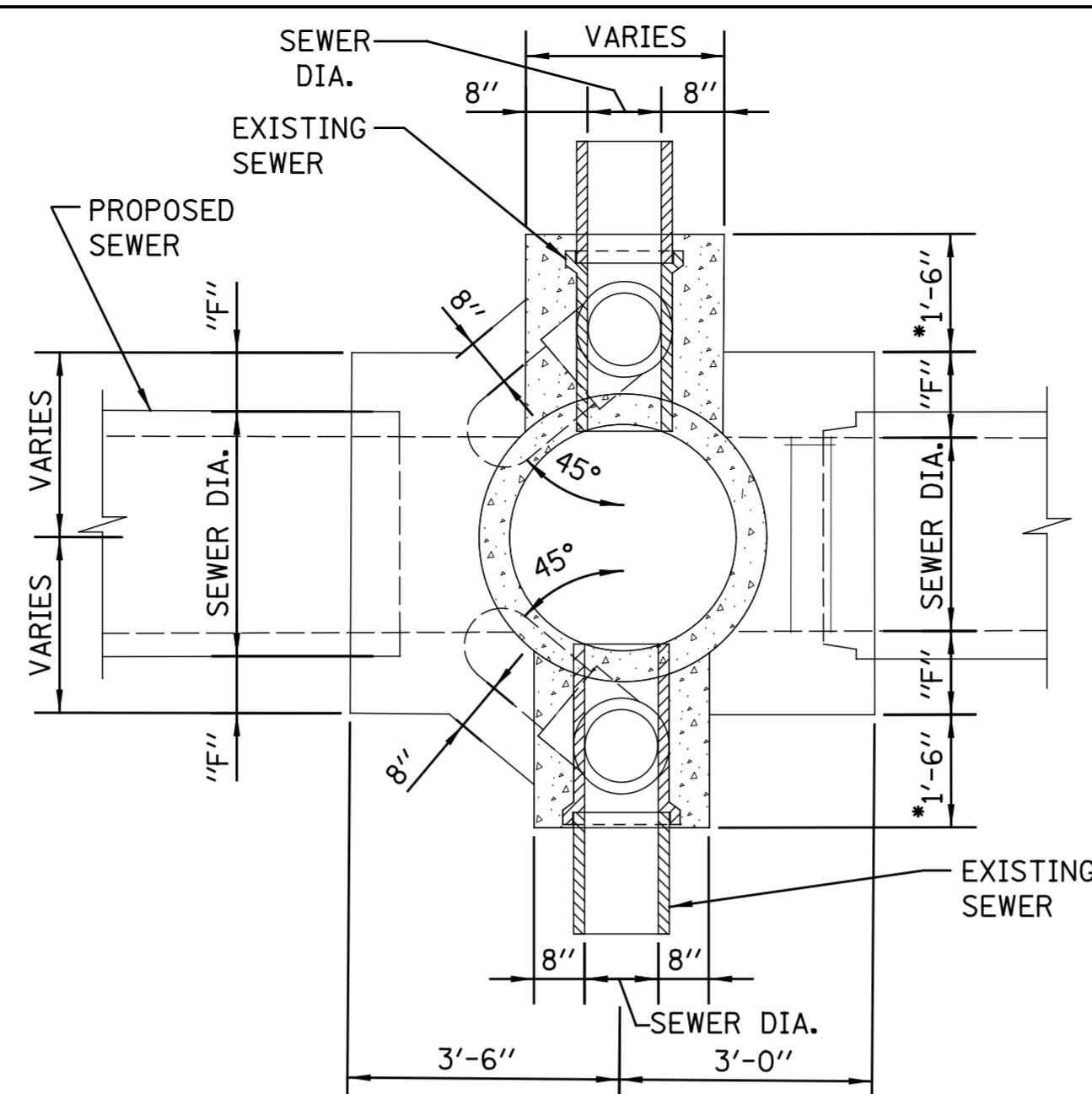
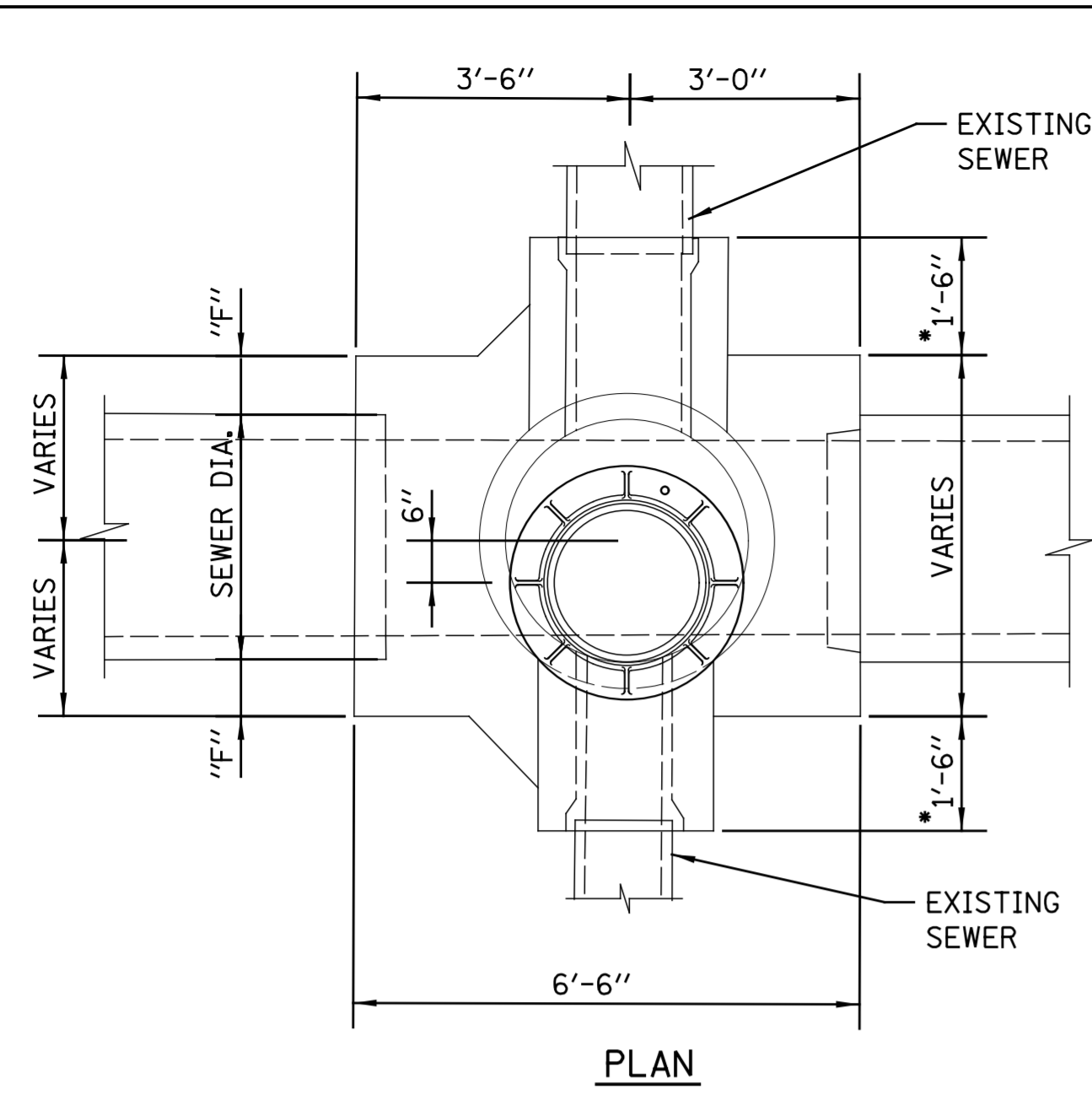
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DATE	DESCRIPTION
10/21/16	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
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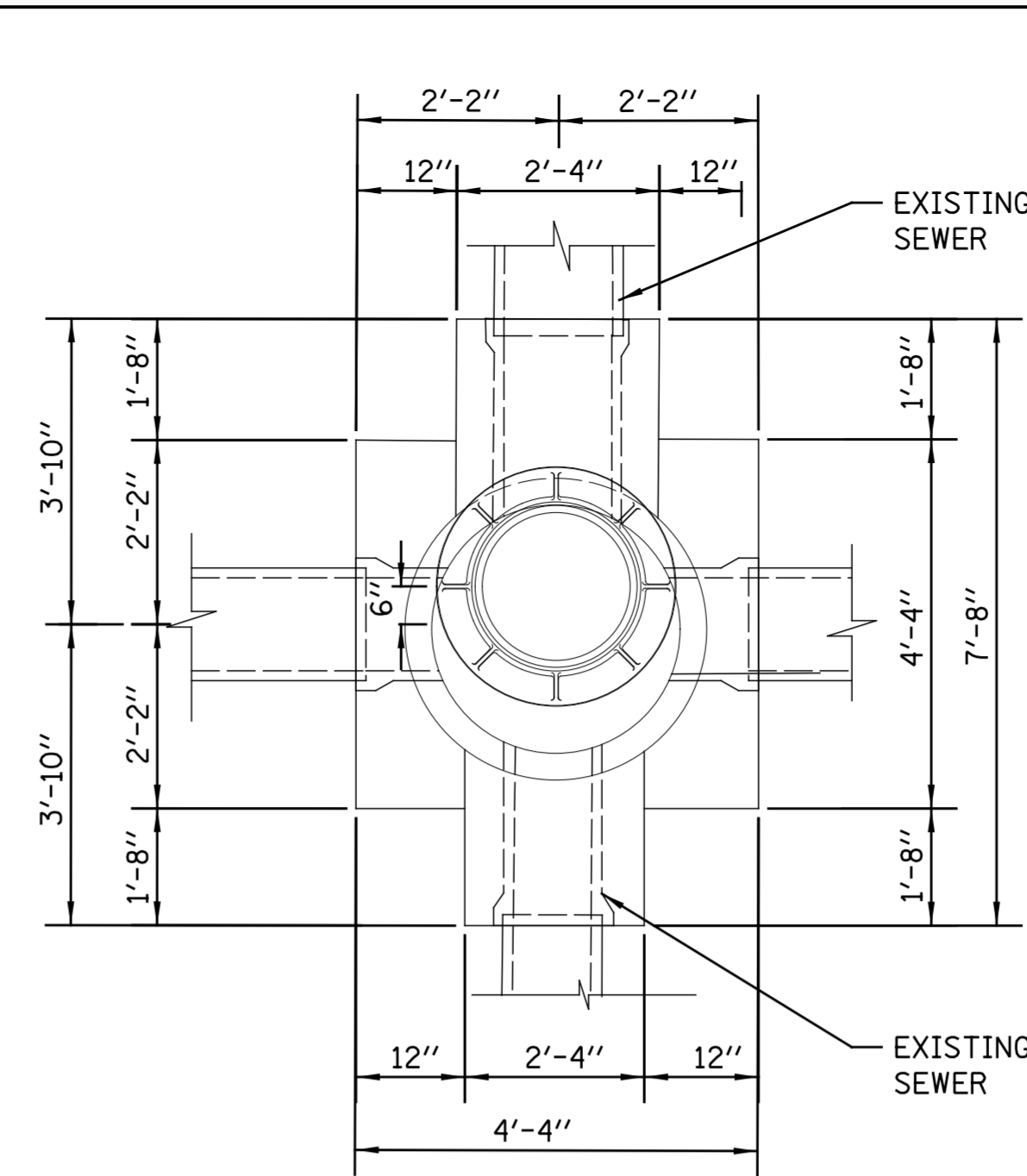
**CITY OF CHICAGO**  
 DEPARTMENT OF WATER MANAGEMENT  
 BUREAU OF ENGINEERING SERVICES

BASES FOR TYPE C  
 SINGLE DROP MANHOLE

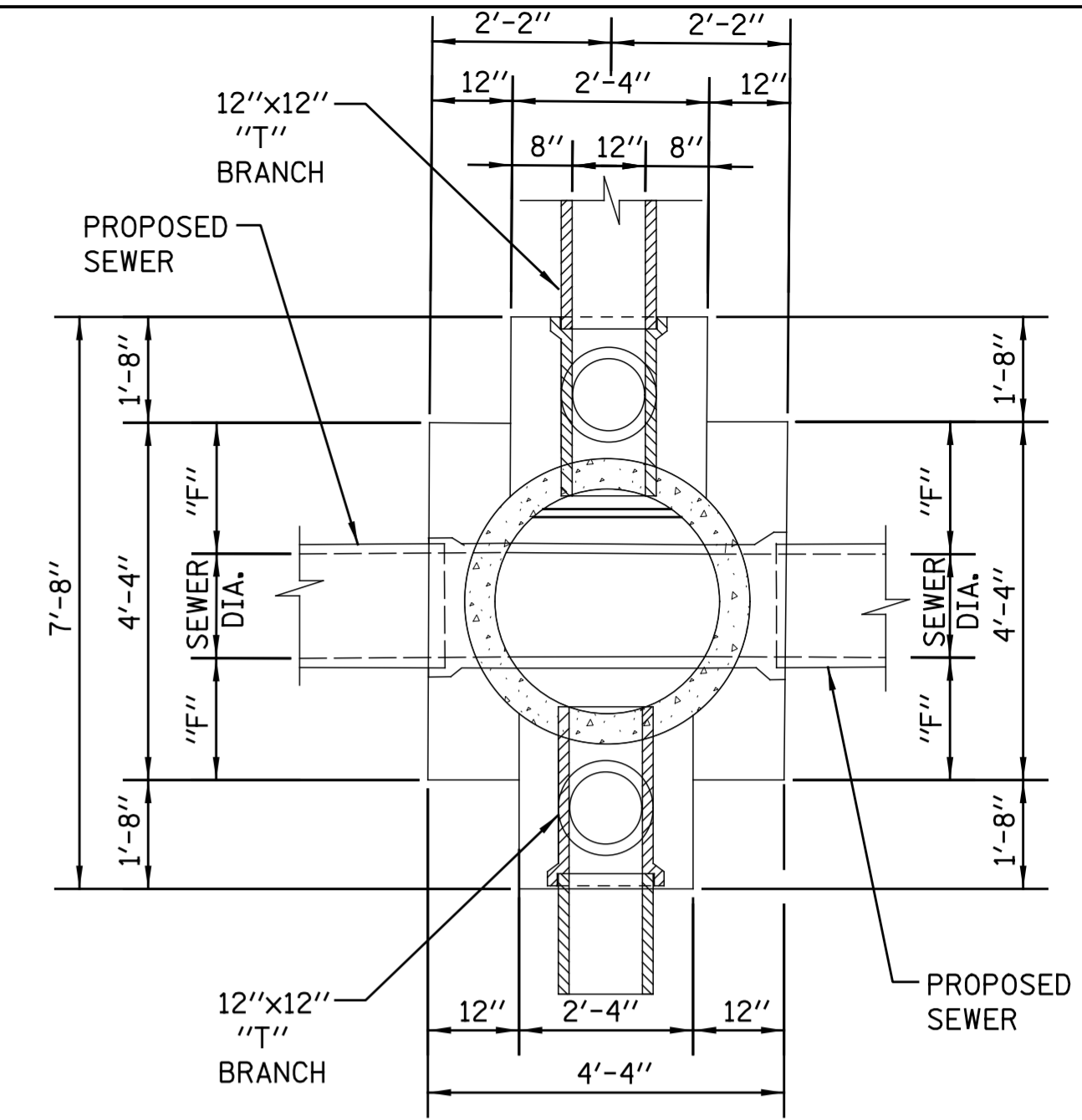
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 DESIGNED:   
 CHECKED:   
 REVIEWED:   
**A.16**  
 OF   
 PN



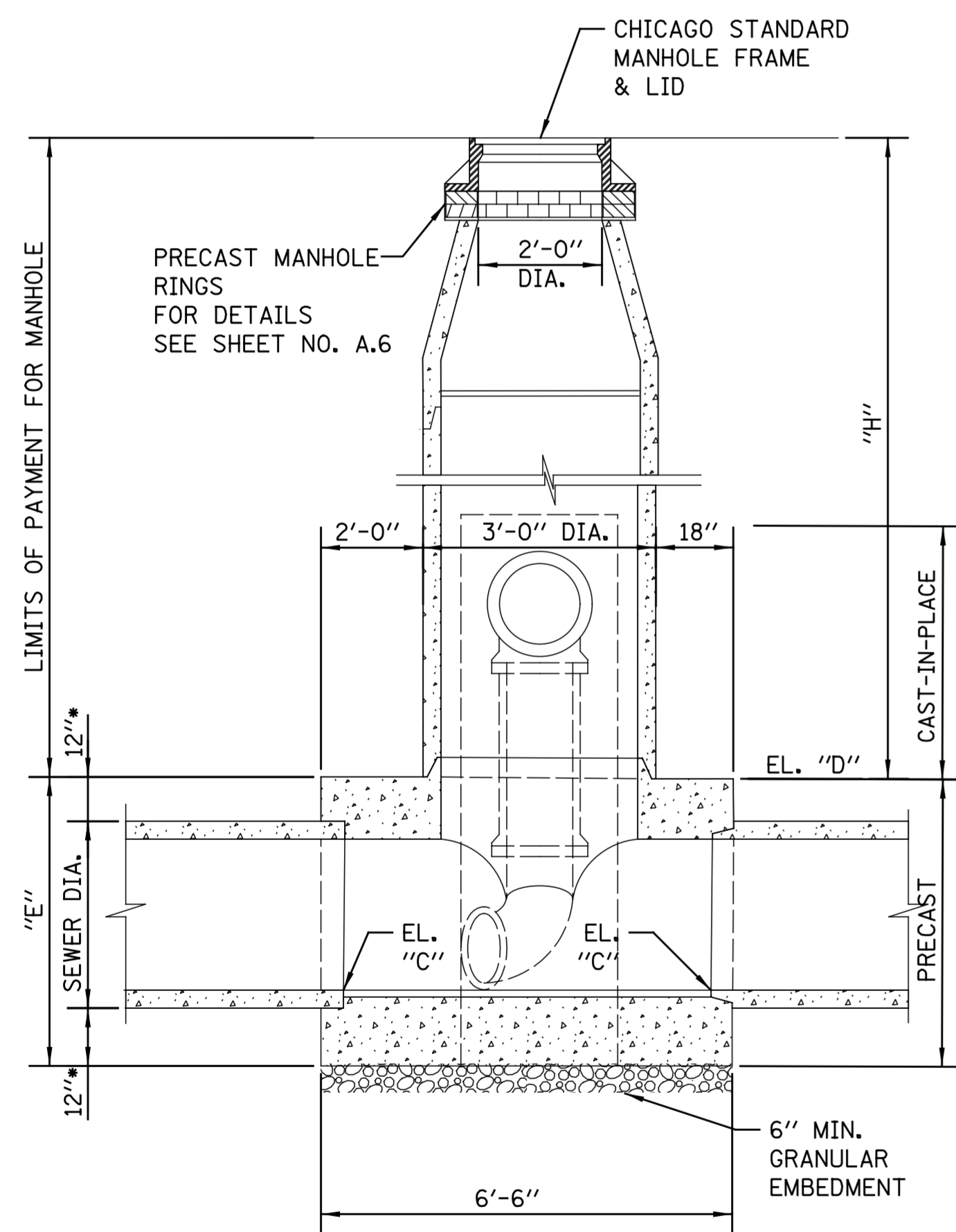
**SECTIONAL PLAN**  
 • 1'-8" FOR 24" DIA. SEWERS



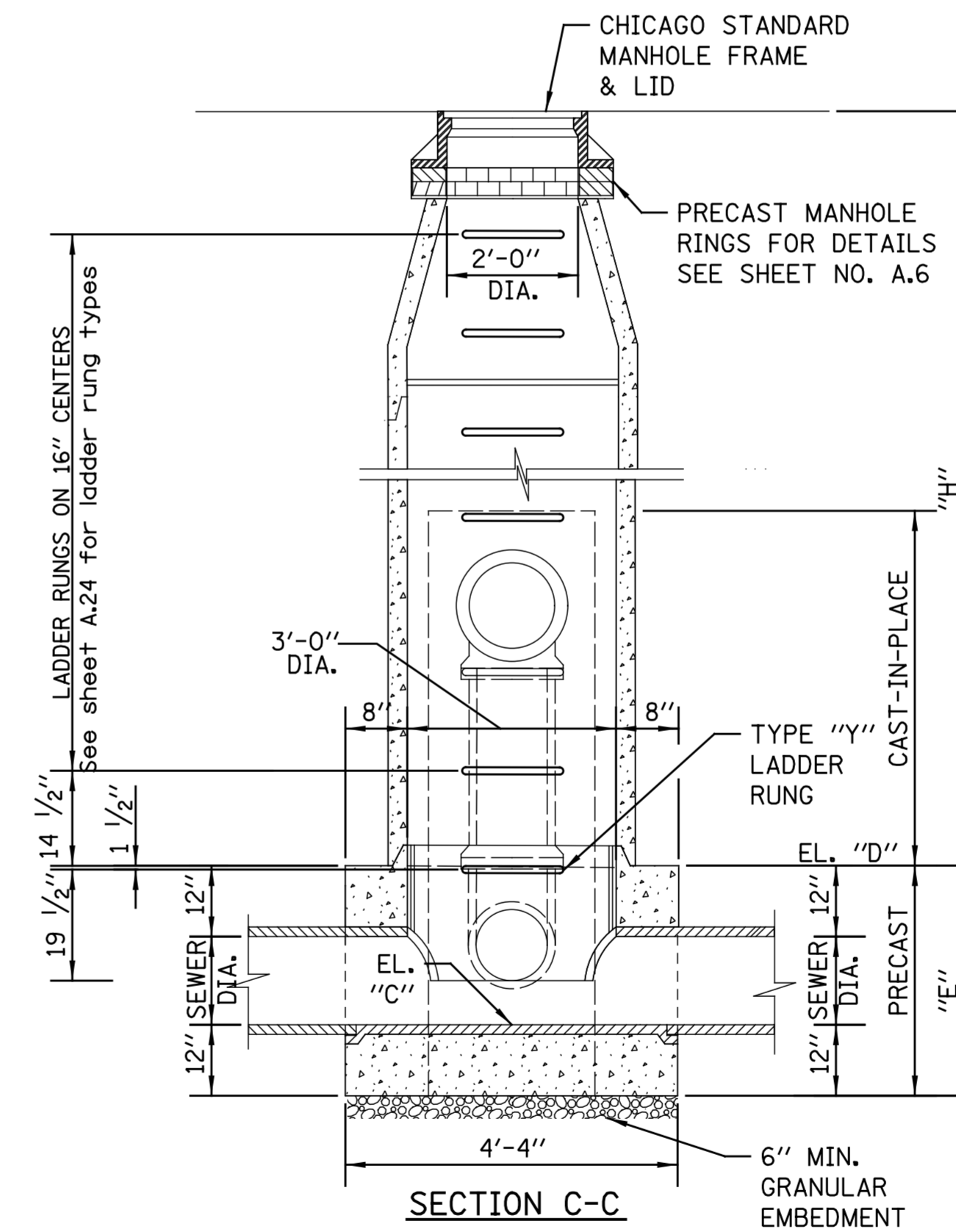
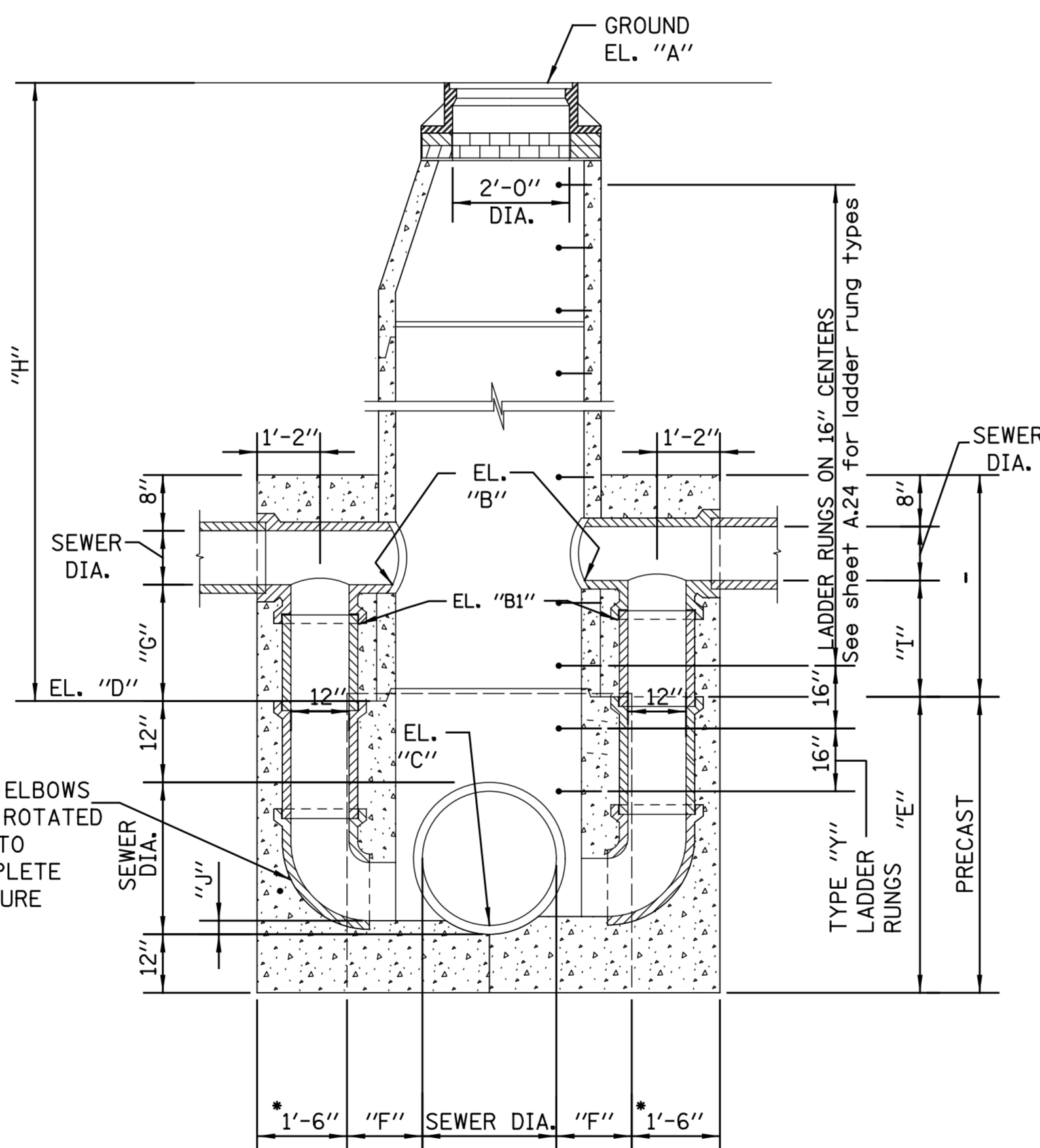
**PLAN**



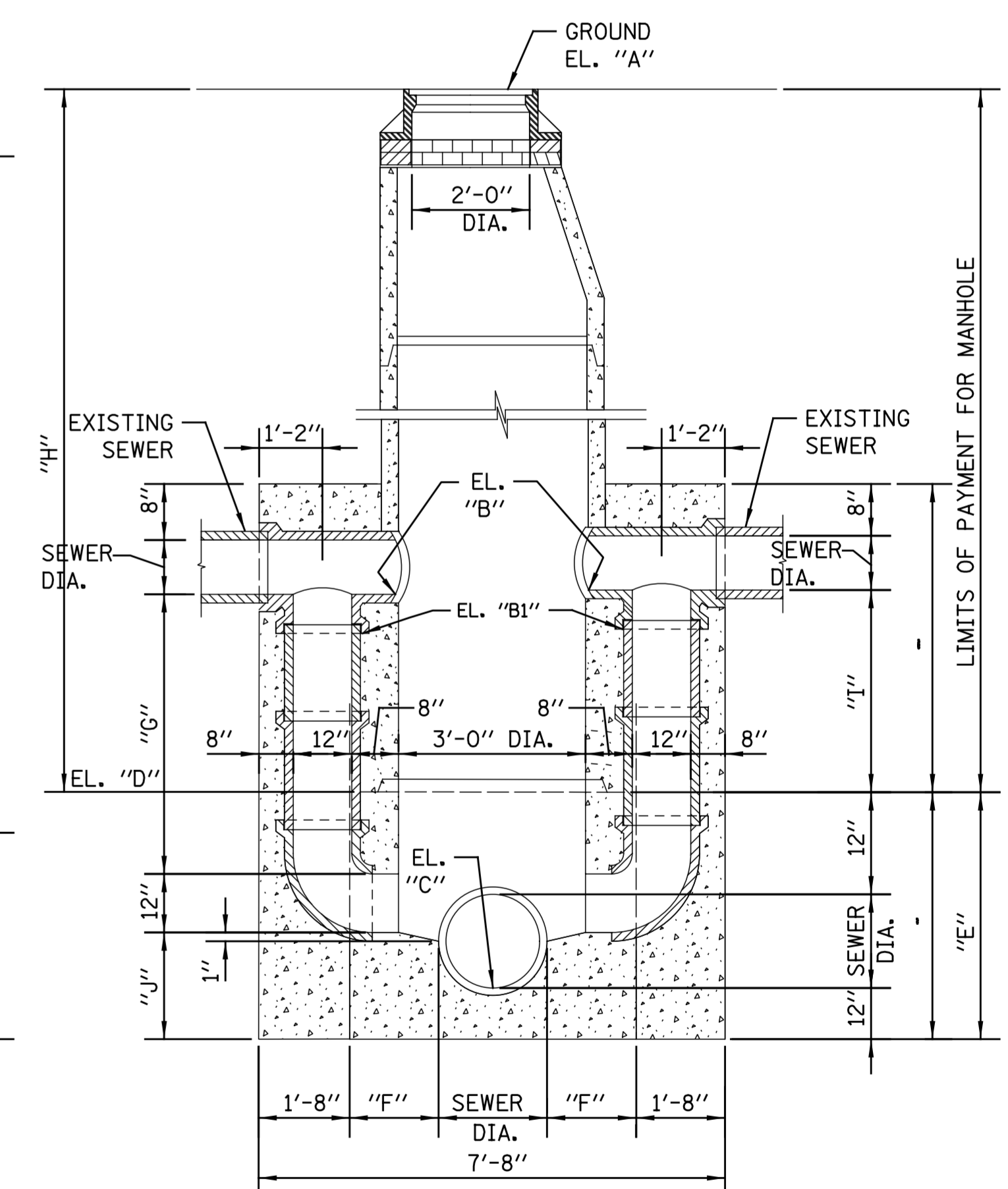
**SECTIONAL PLAN**



**SECTION A-A FOR CONCRETE PIPE SEWERS SECTION B-B**  
**24" DIA. TO 48" DIA.**



**SECTION C-C**



**SECTION D-D**

NOTE:  
 1. UNLESS OTHERWISE NOTED ALL PIPE AND FITTINGS 21" AND UNDER ARE STANDARD STRENGTH VCP.  
 2. FOR DESIGN ONLY- USE 12" DROP PIPE FOR THE FOLLOWING DEPTHS OF DWF:  
 6" DWF-42" LATERAL  
 7" DWF-36" LATERAL  
 8" DWF-< 24" LATERAL

3. ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT

Note: Minimum distance between outer walls of top and bottom pipes > 1.5'

LOCATION	SHEET NO.	ITEM NO.	ELEVATION					DIMENSIONS						
			"A"	"B"	"B1"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	

STANDARD REVISIONS	
DATE	DESCRIPTION
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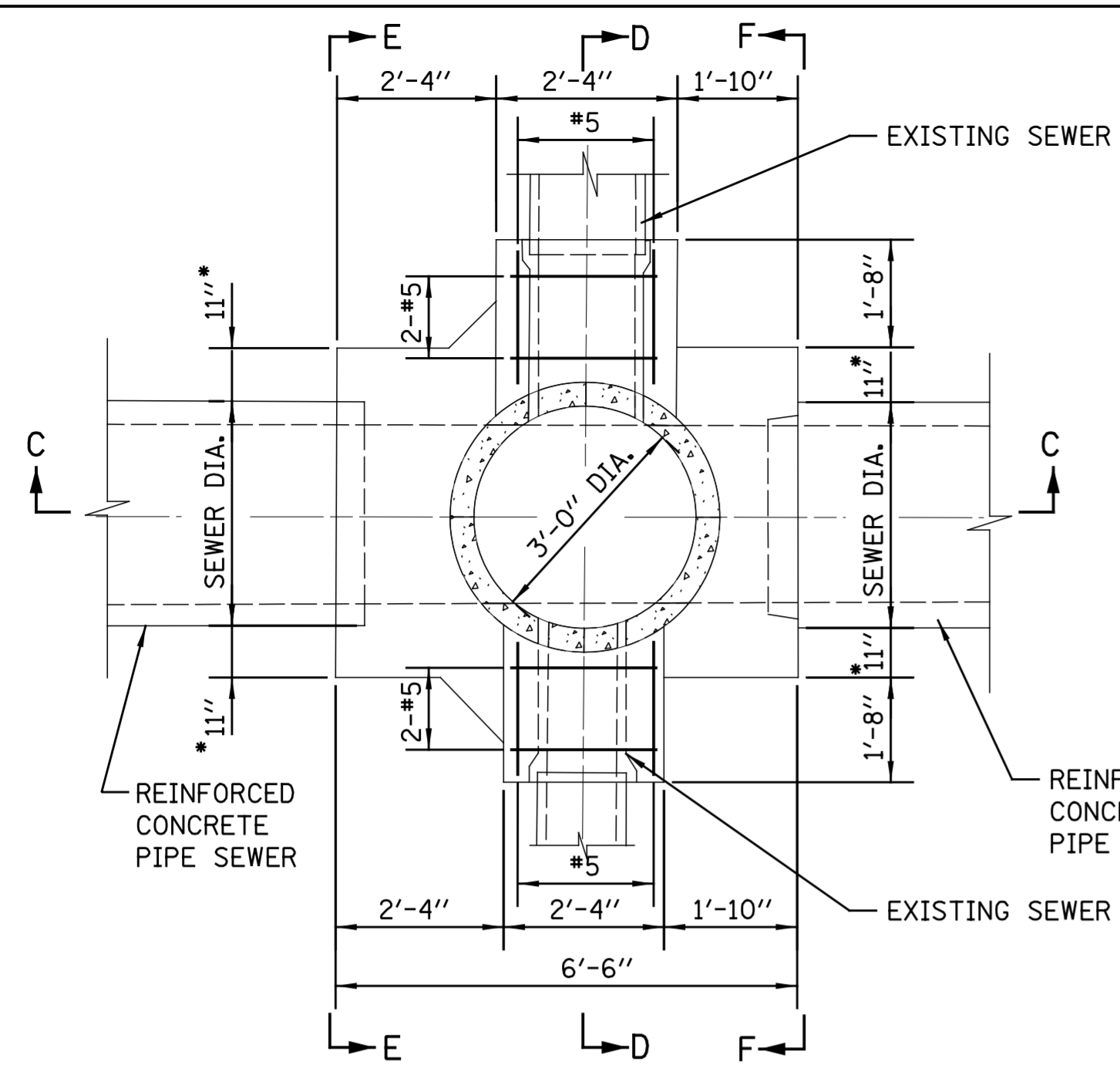
**CITY OF CHICAGO**  
 DEPARTMENT OF WATER MANAGEMENT  
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**TYPE C**  
**DOUBLE DROP MANHOLE**

DRAWN: **SEB**  
 DESIGNED: **SEB**  
 CHECKED: **SEB**  
 REVIEWED: **SEB**

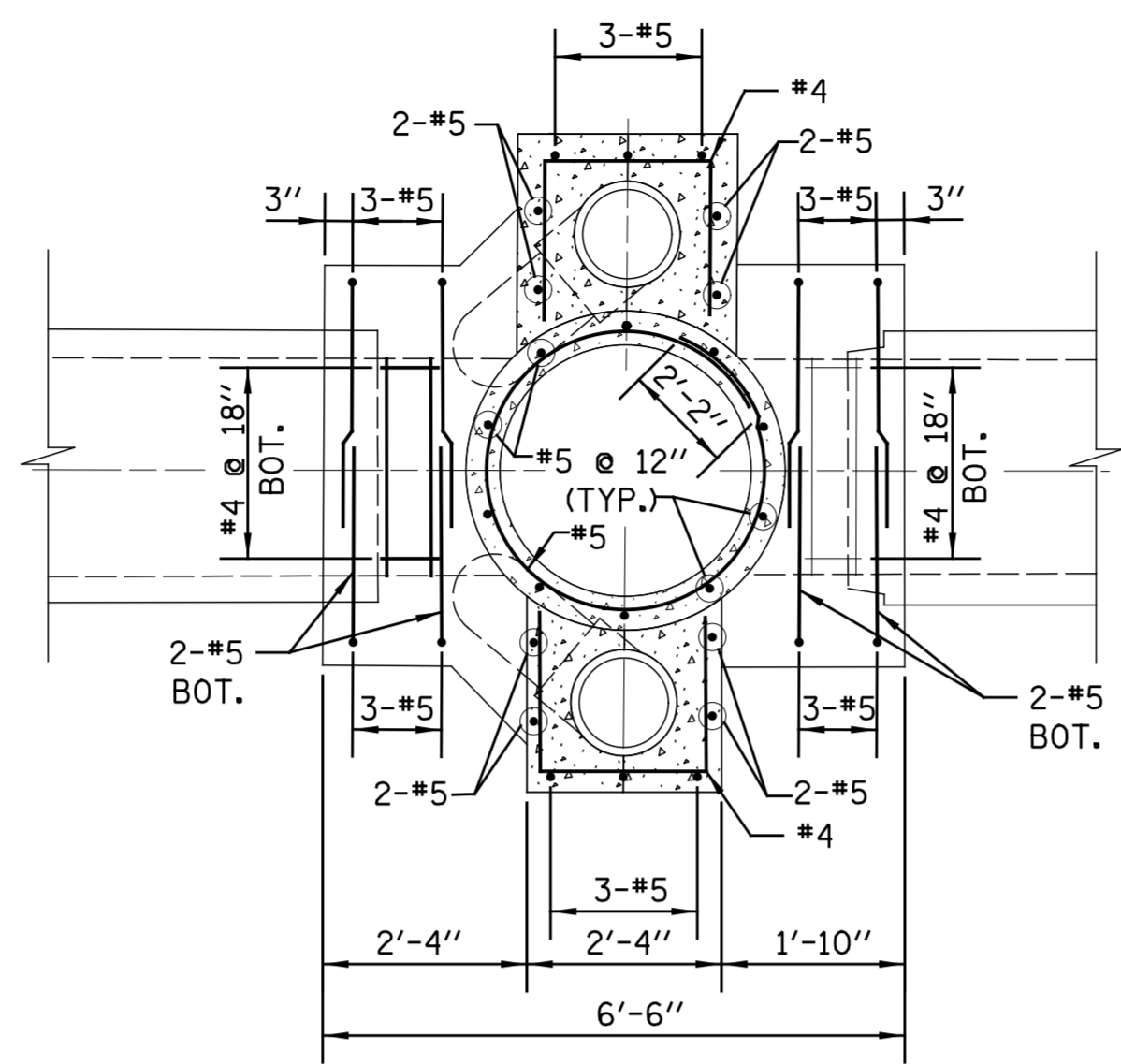
**A.17**

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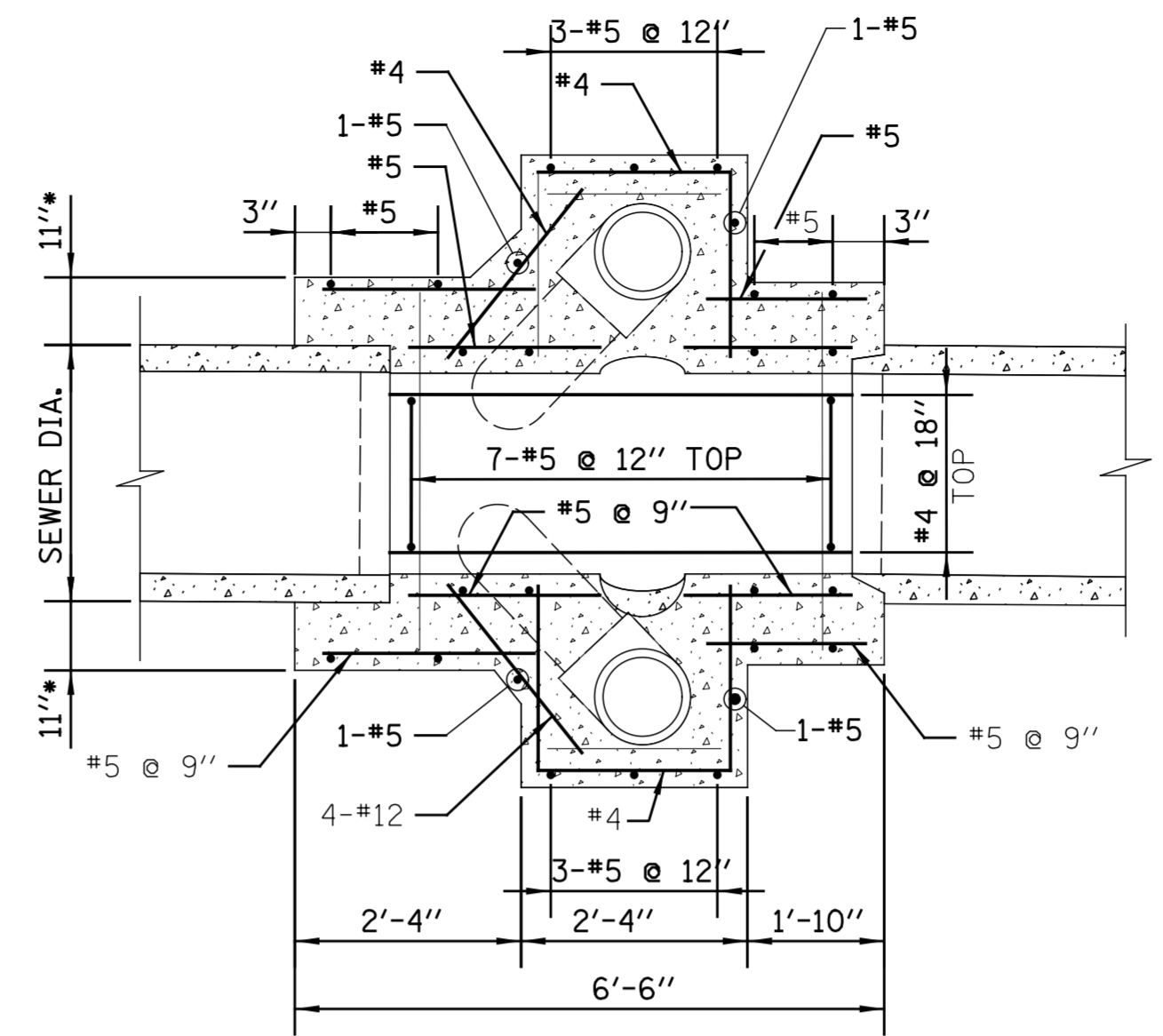


NOTE: \* 13" FOR 24" SEWER

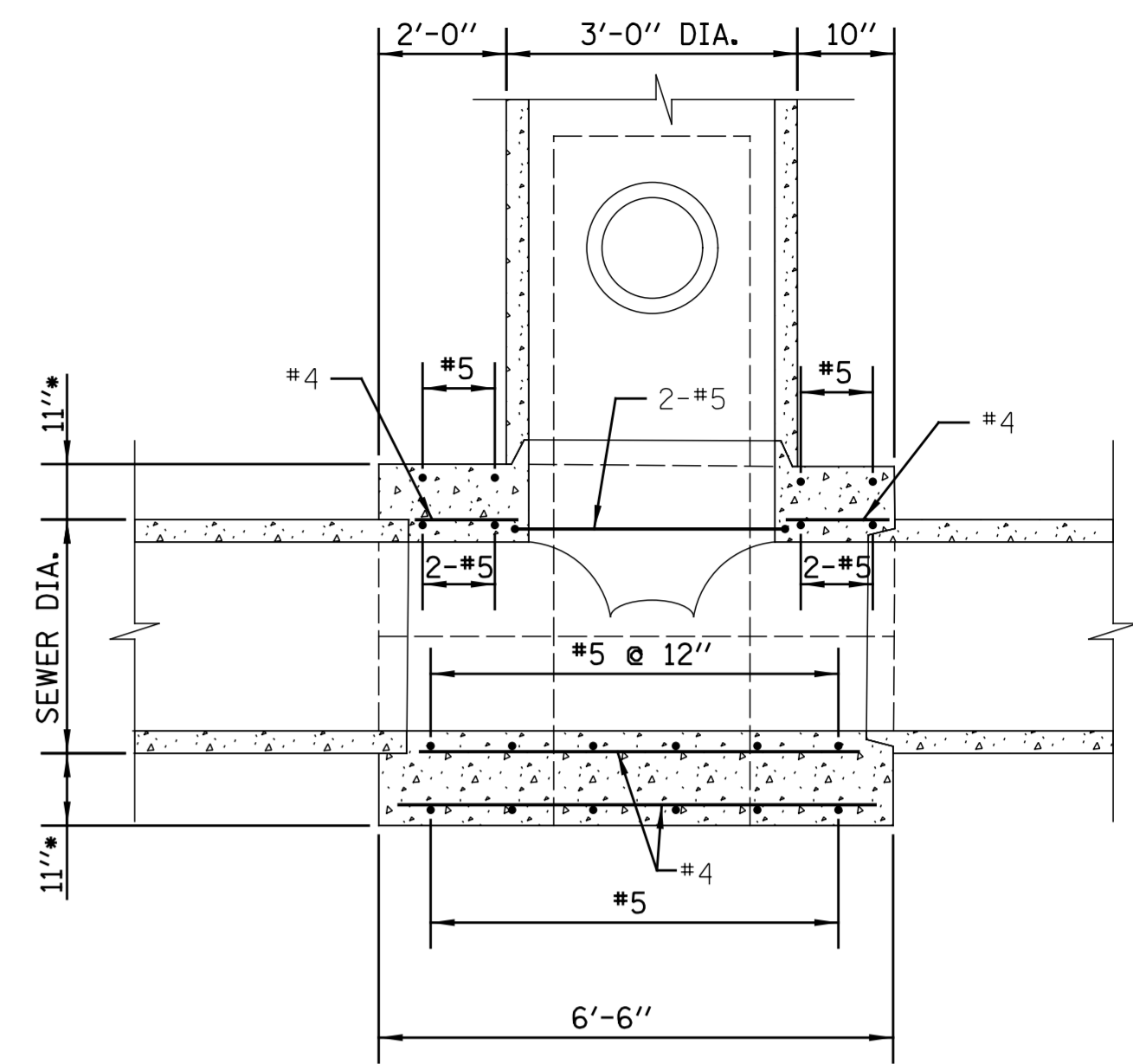
PLAN



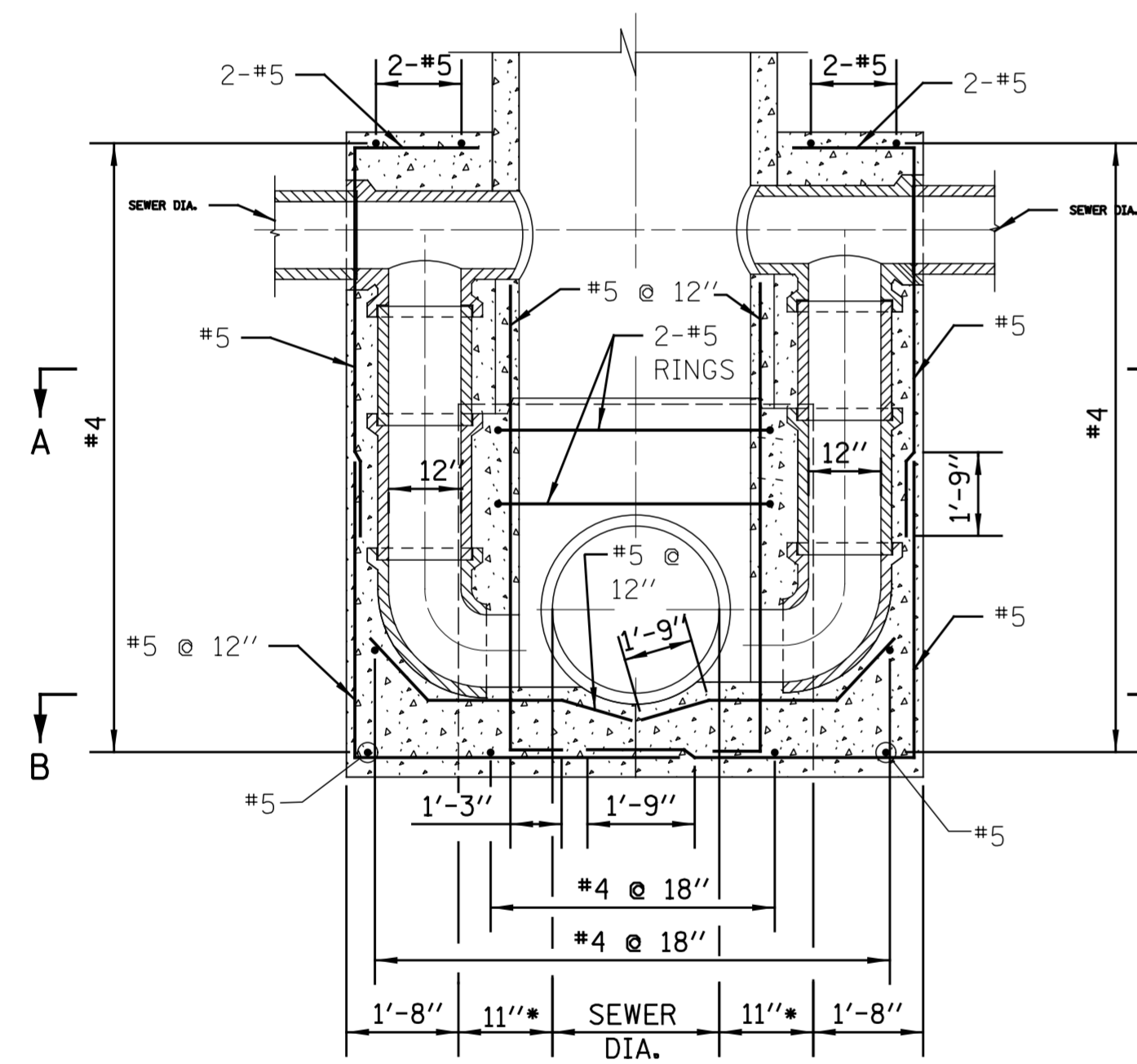
SECTION A-A



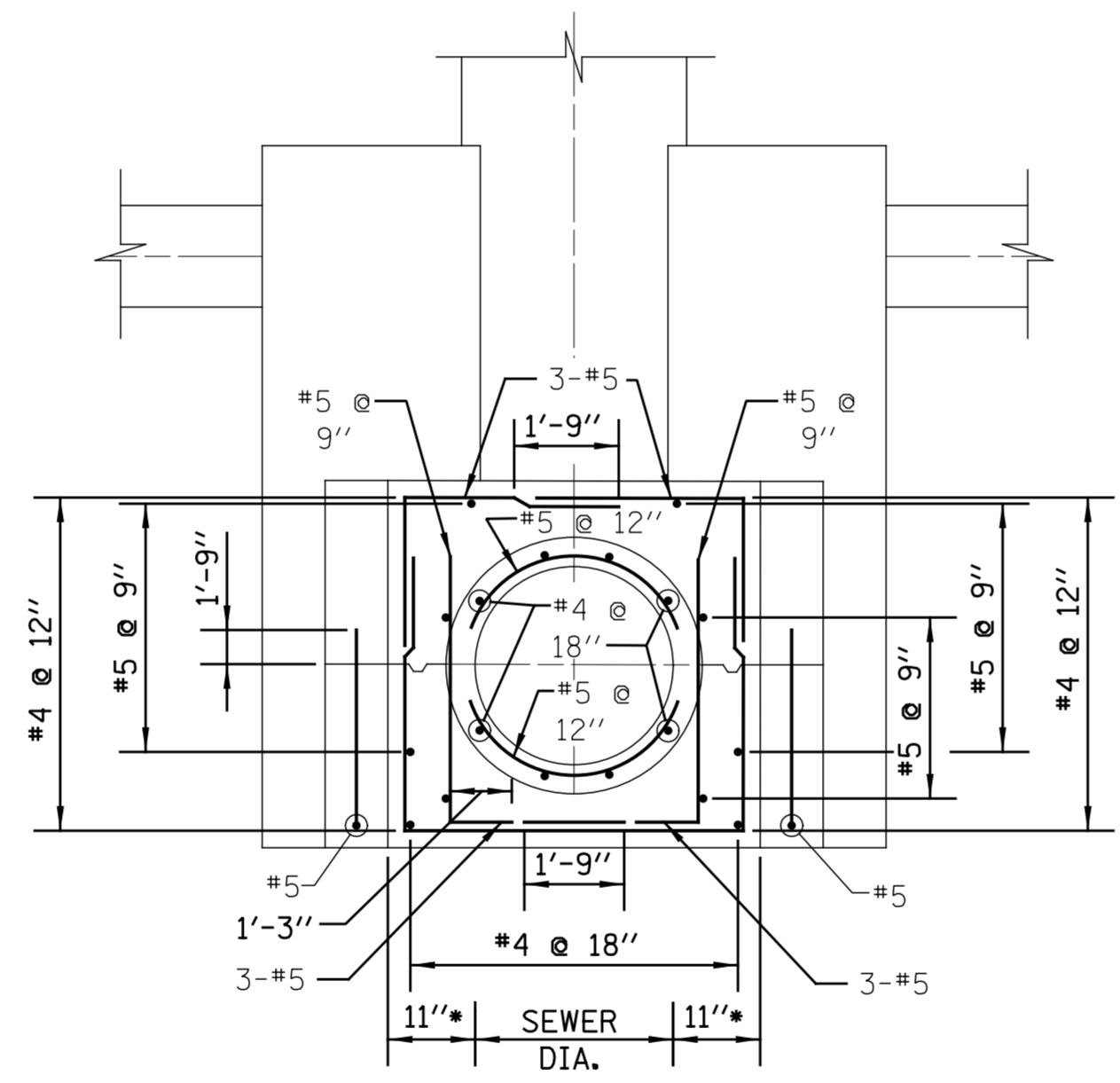
SECTION B-B



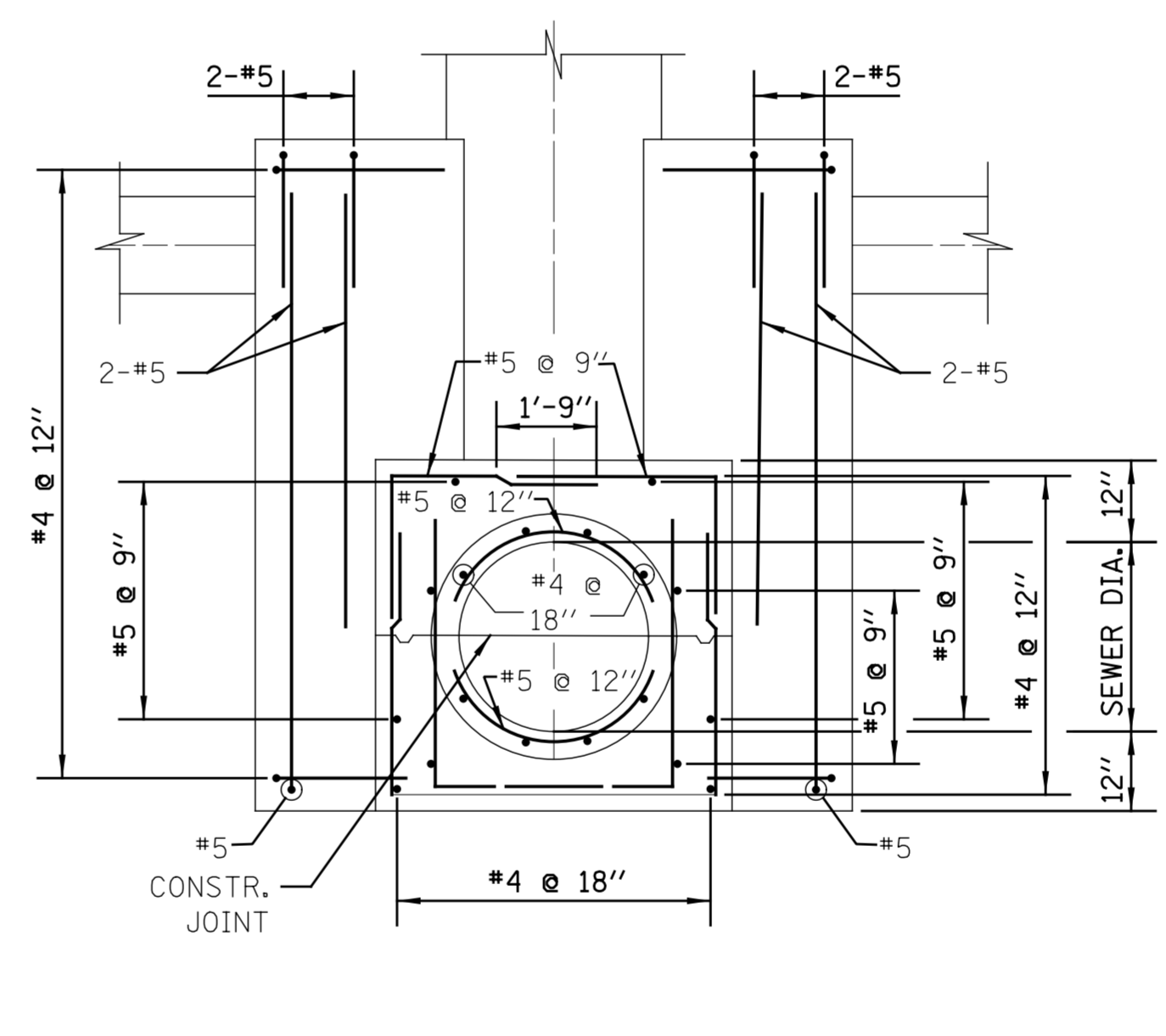
SECTION C-C



SECTION D-D



ELEVATION E-E



ELEVATION F-F

**FOR CONCRETE PIPE SEWERS  
24" DIA. TO 48" DIA.**

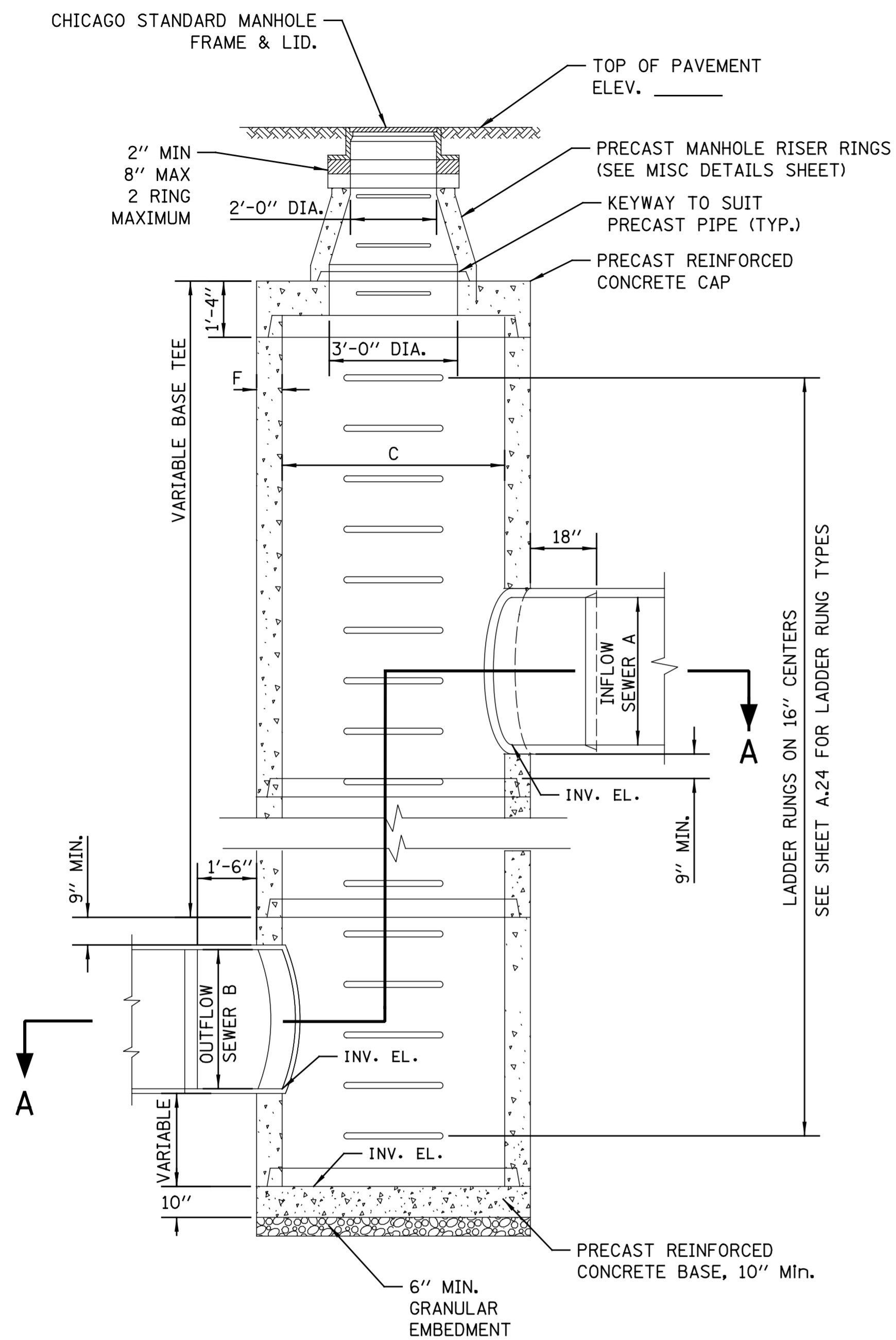
NOTE: FOR DESIGN ONLY- USE 12" DROP PIPE  
FOR THE FOLLOWING DEPTHS OF DWF:  
6" DWF-42" LATERAL  
7" DWF-36" LATERAL  
8" DWF-< 24" LATERAL

STANDARD REVISIONS	
DATE	DESCRIPTION
9/19/17	LAST REVISED
12/6/24	PUBLISHED

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<b>CITY OF CHICAGO</b>	
DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
BASES FOR TYPE C DOUBLE DROP MANHOLE	

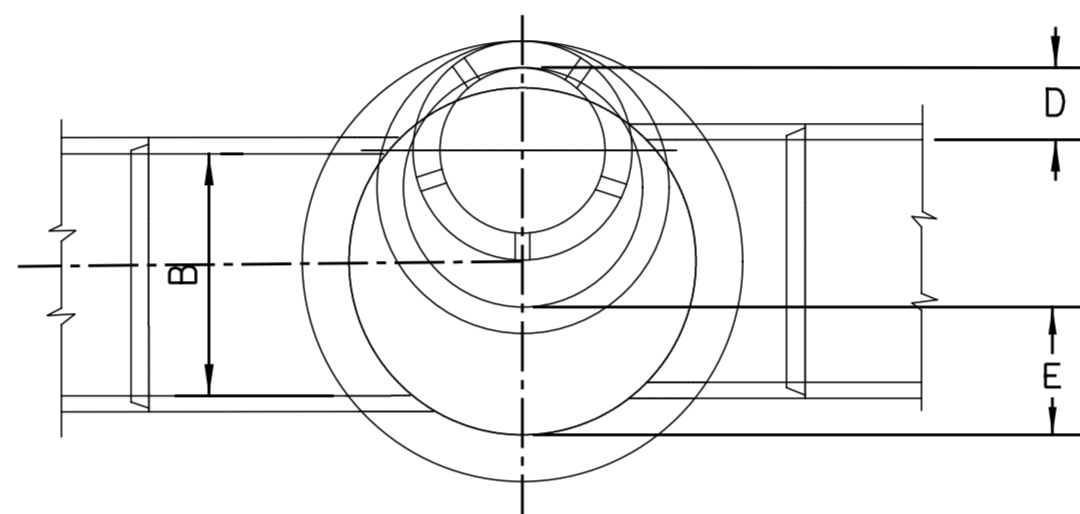
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DESIGNED: _____	
CHECKED: _____	
REVIEWED: _____	_____ OF _____
	PN _____



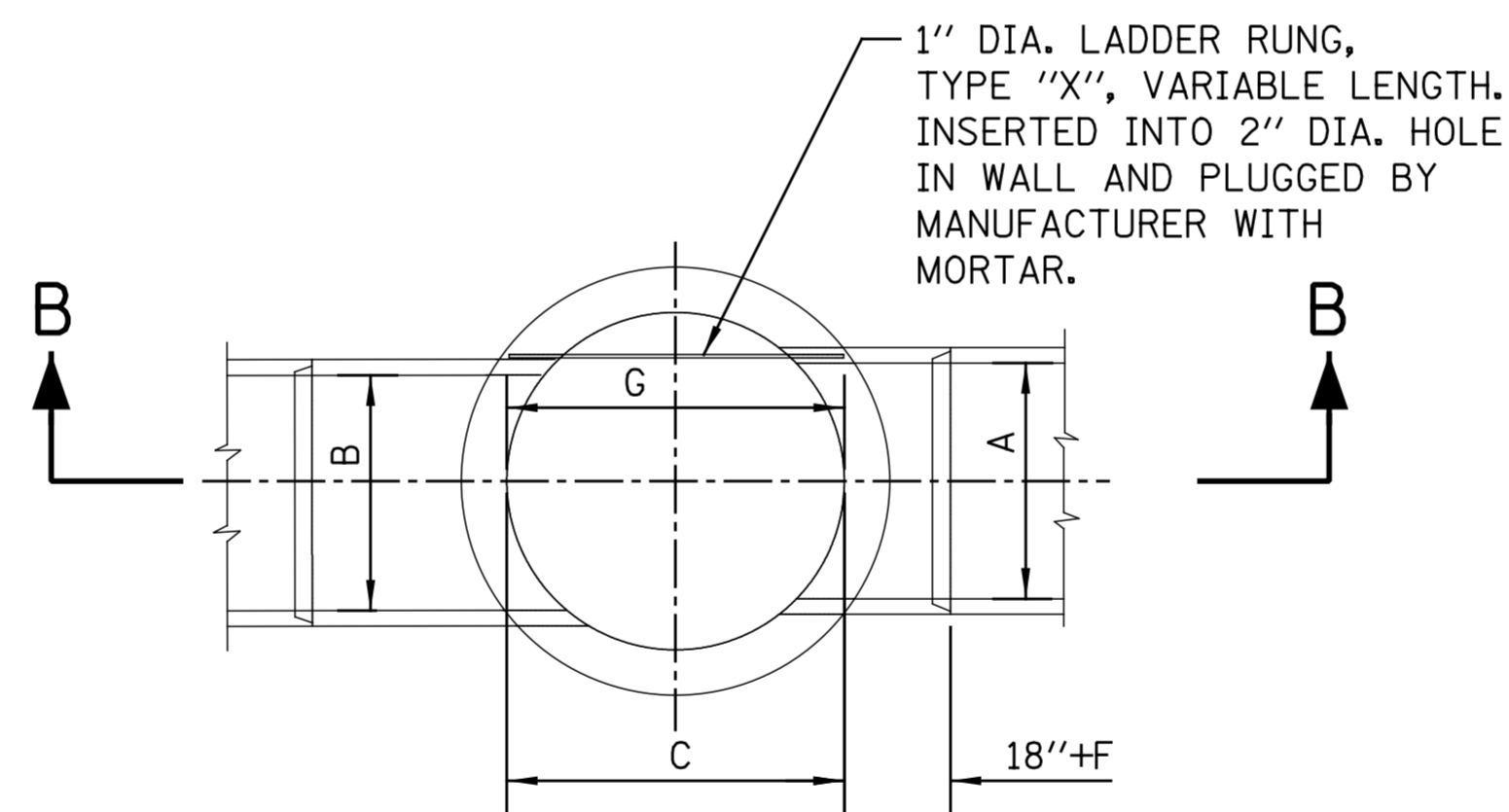
**SECTION B-B**  
SCALE: N.T.S.

PRECAST COMPONENT TABLE				WALL THICKNESS	CAP & BASE		LADDER RUNG LENGTH
BASE TEE					C	E	
A	B	C*	D	F	C	E	G
60	60	84	12	8	84	48	48.5
54	54	84	12	7 1/2	78	42	46.5
48	48	72	12	7	72	36	44
42	42	60	9	6	60	24	40
36	36	60	12	6	60	24	40
30	30	48	9	5	48	12	35
24	24	48	12	5	48	12	35

**NOTE: ALL MEASUREMENTS ARE IN INCHES**  
**\*DIAMETERS >84" UP TO 144" ARE AVAILABLE IN 1' INCREMENTS**



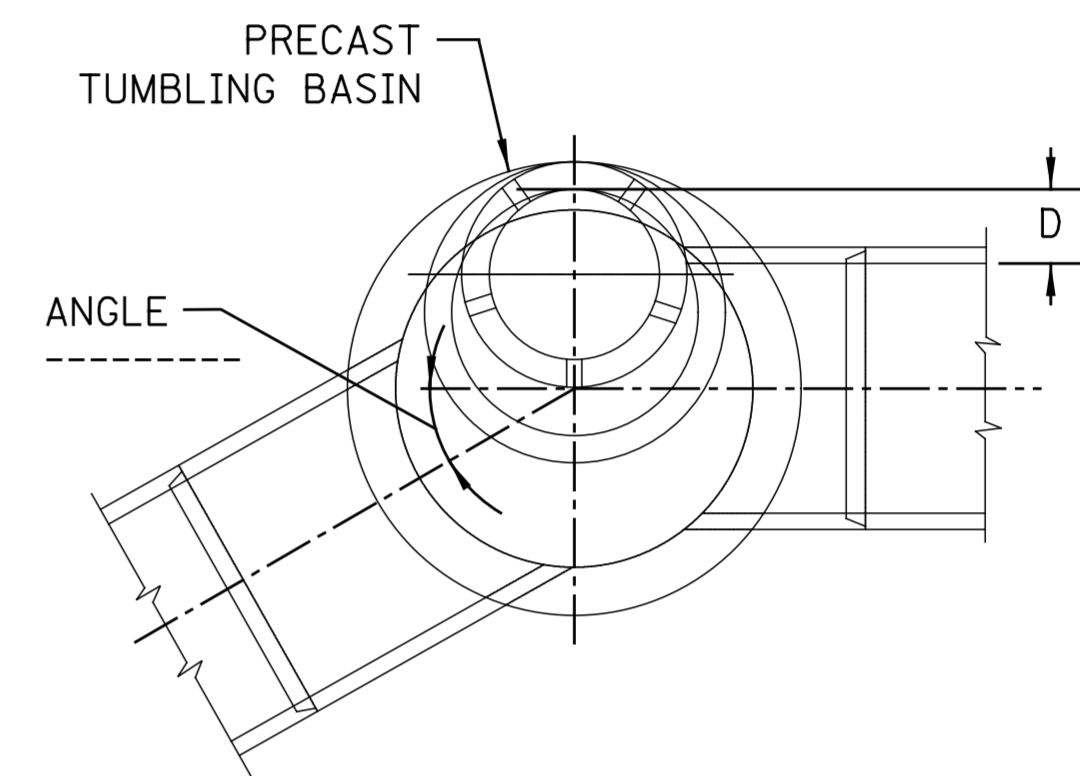
**PLAN**



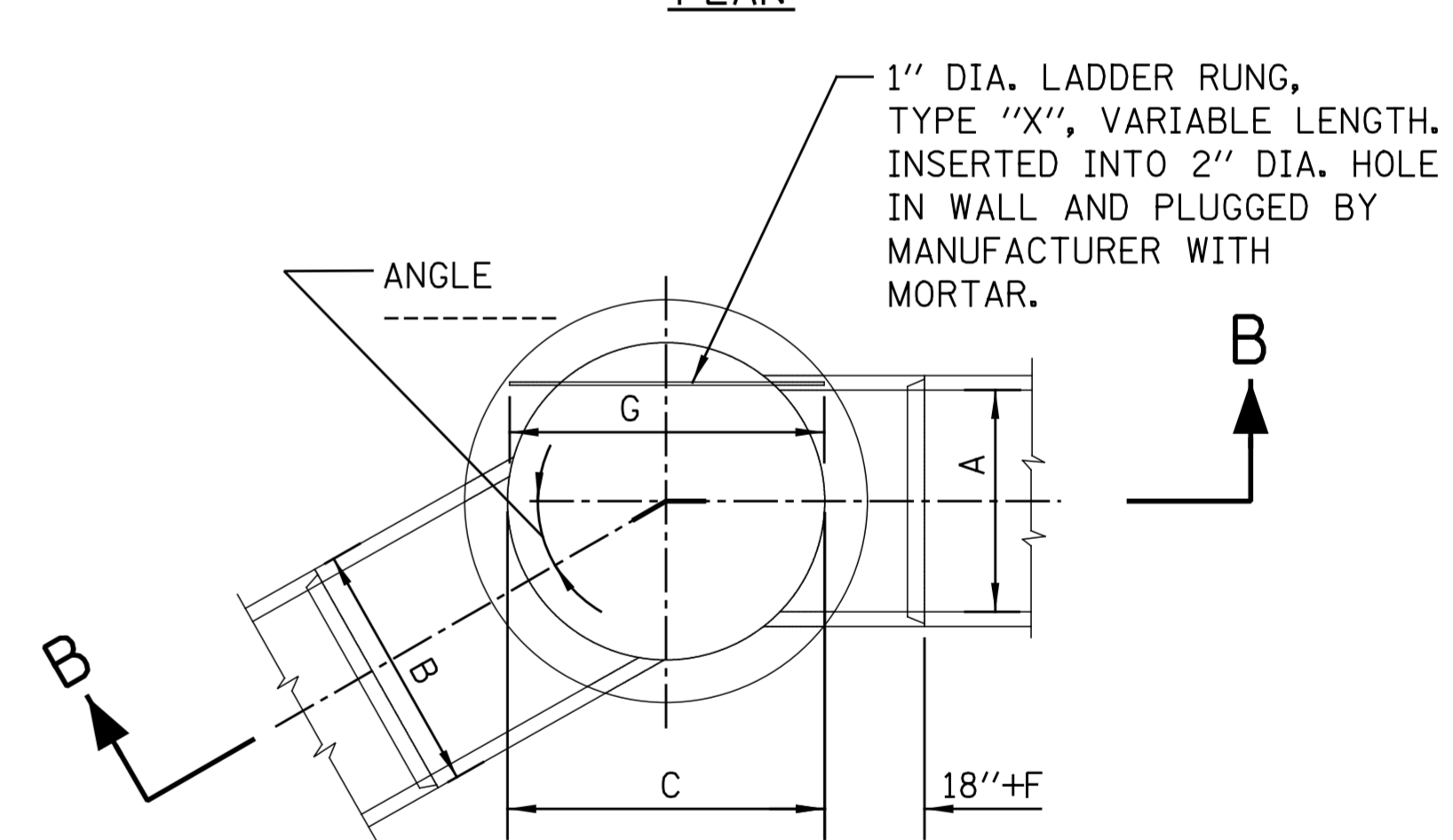
**SECTIONAL PLAN A-A**

**OPTION: W/O BEND**

SCALE: N.T.S.



**PLAN**



**SECTIONAL PLAN A-A**

**OPTION: WITH BEND**

SCALE: N.T.S.

**NOTES:**

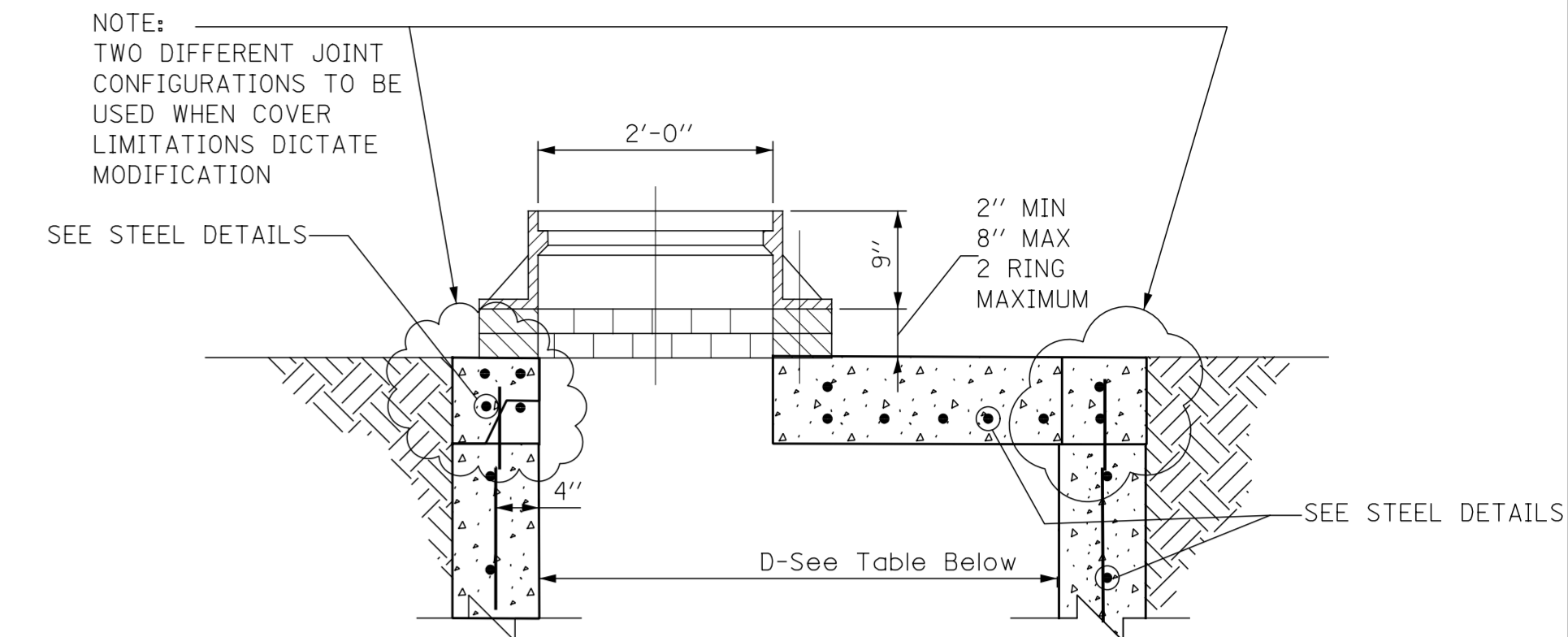
- FOR CONTRACTOR'S RESPONSIBILITY REGARDING STRUCTURAL DRAWING, SEE SPECIFICATIONS, BOOK 3.
- ALL PIPE AND FITTINGS 24 INCHES IN DIAMETER AND LARGER MUST BE CLASS III, IV AND V REINFORCED CONCRETE PIPE AS SPECIFIED IN THE SPECIFICATIONS FOR "REINFORCED CONCRETE CULVERT STORM DRAIN, AND SEWER PIPE." A.S.T.M. DESIGNATION C76, TABLE III, IV AND V, WALL B OR WALL C WITH CIRCULAR OR ELLIPTICAL REINFORCEMENT;
- FOR ADDITIONAL INFORMATION, SEE SPECIFICATIONS, BOOK 3.

STANDARD REVISIONS	
DATE	DESCRIPTION
6/29/20	LAST REVISED
12/6/24	PUBLISHED

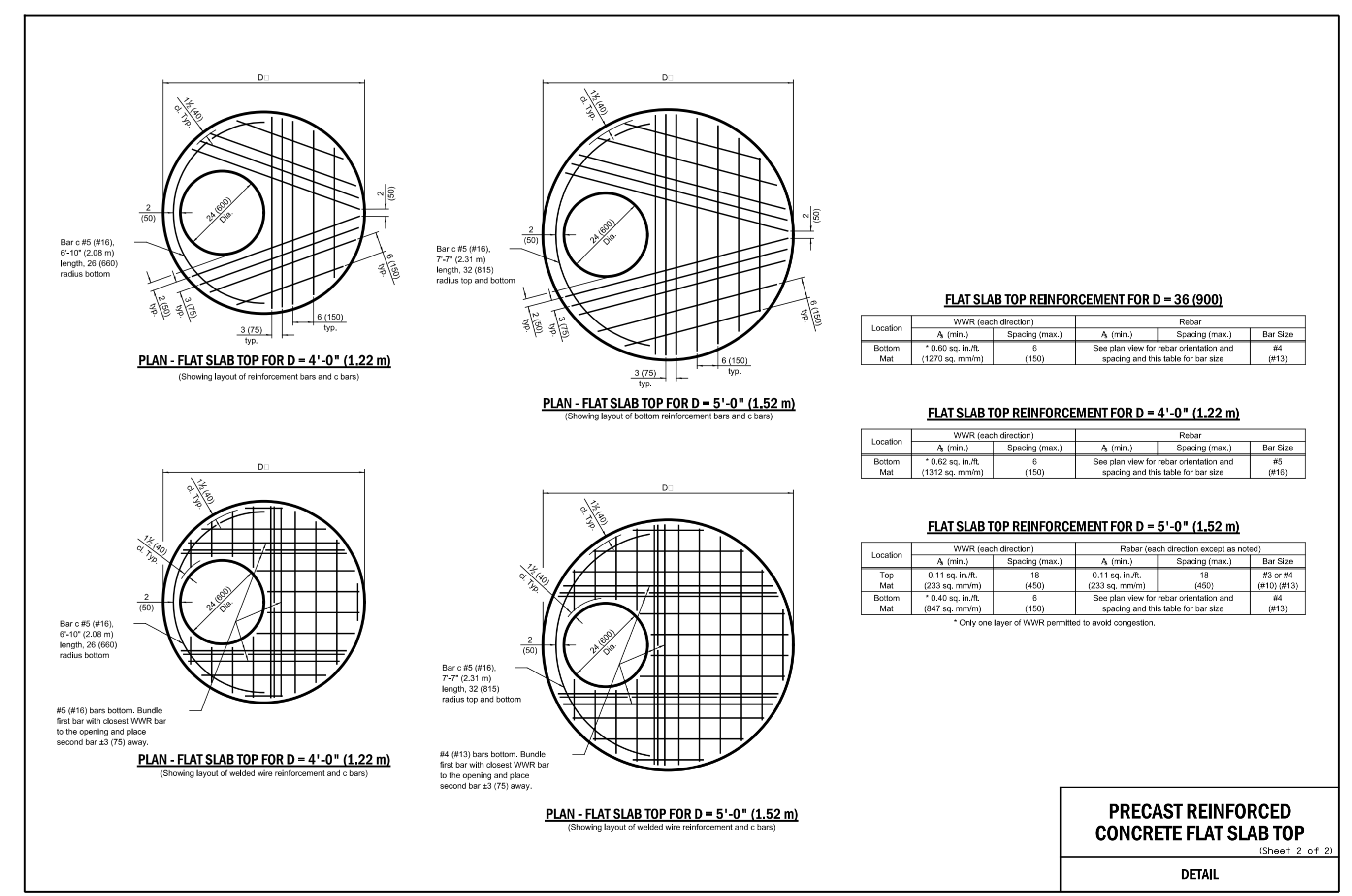
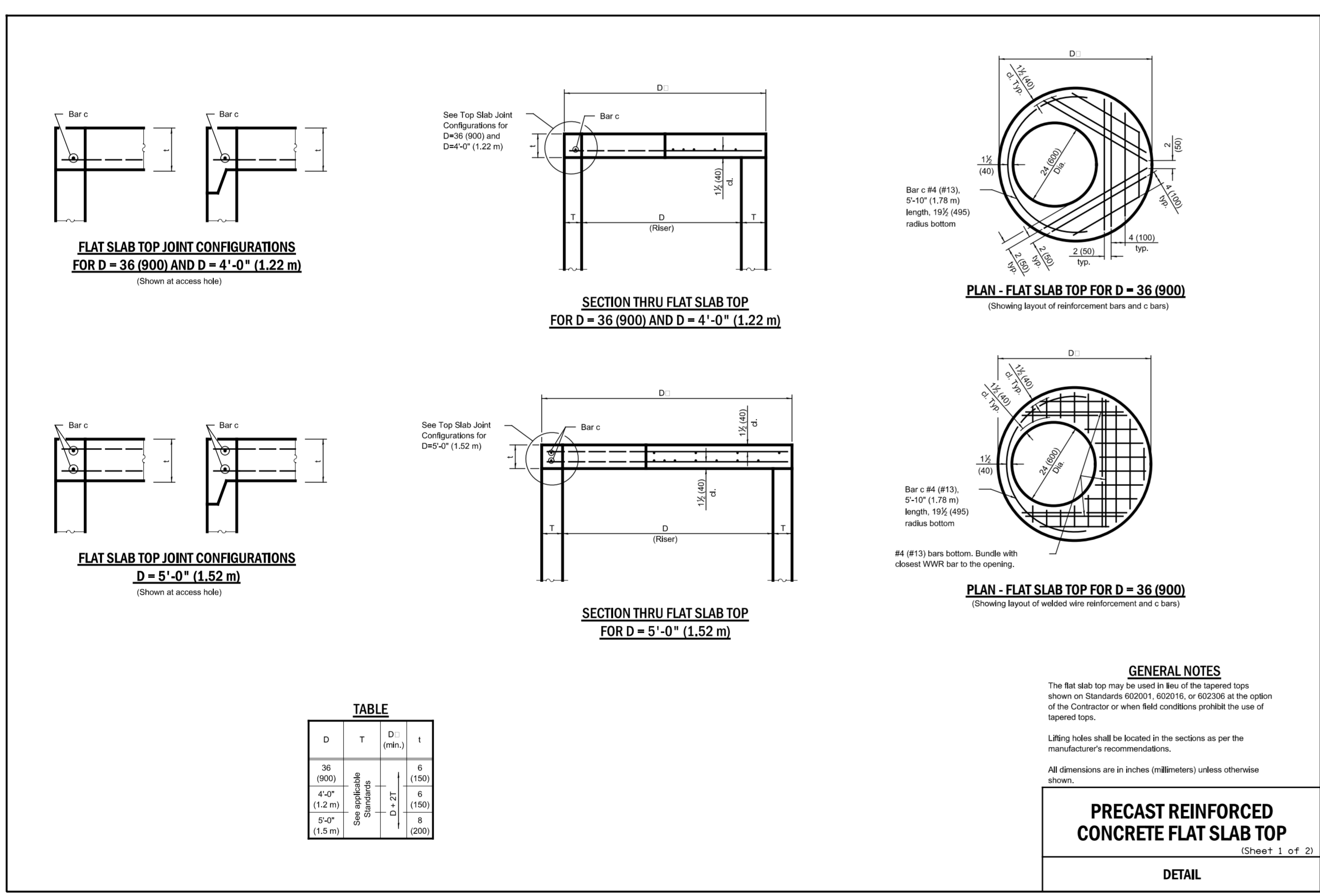
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BULLETIN	

<b>CITY OF CHICAGO</b> DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
PRECAST TUMBLING BASIN DETAILS	

DRAWN: SEM	<b>A.19</b>
DESIGNED: _____	
CHECKED: _____	
REVIEWED: _____	____ OF ____
	PN _____



**STANDARD FLAT TOP SLAB  
FOR CATCH BASINS**



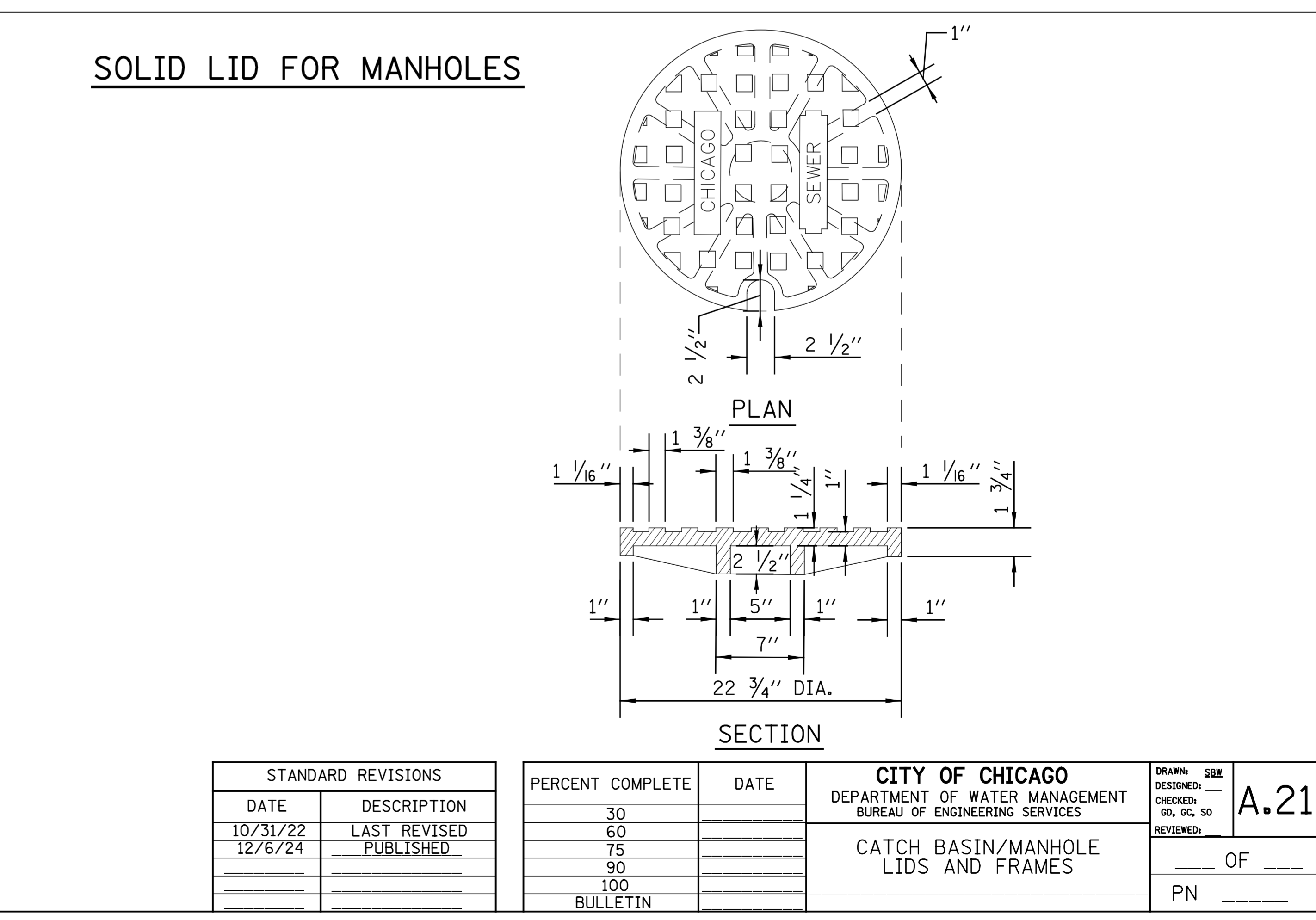
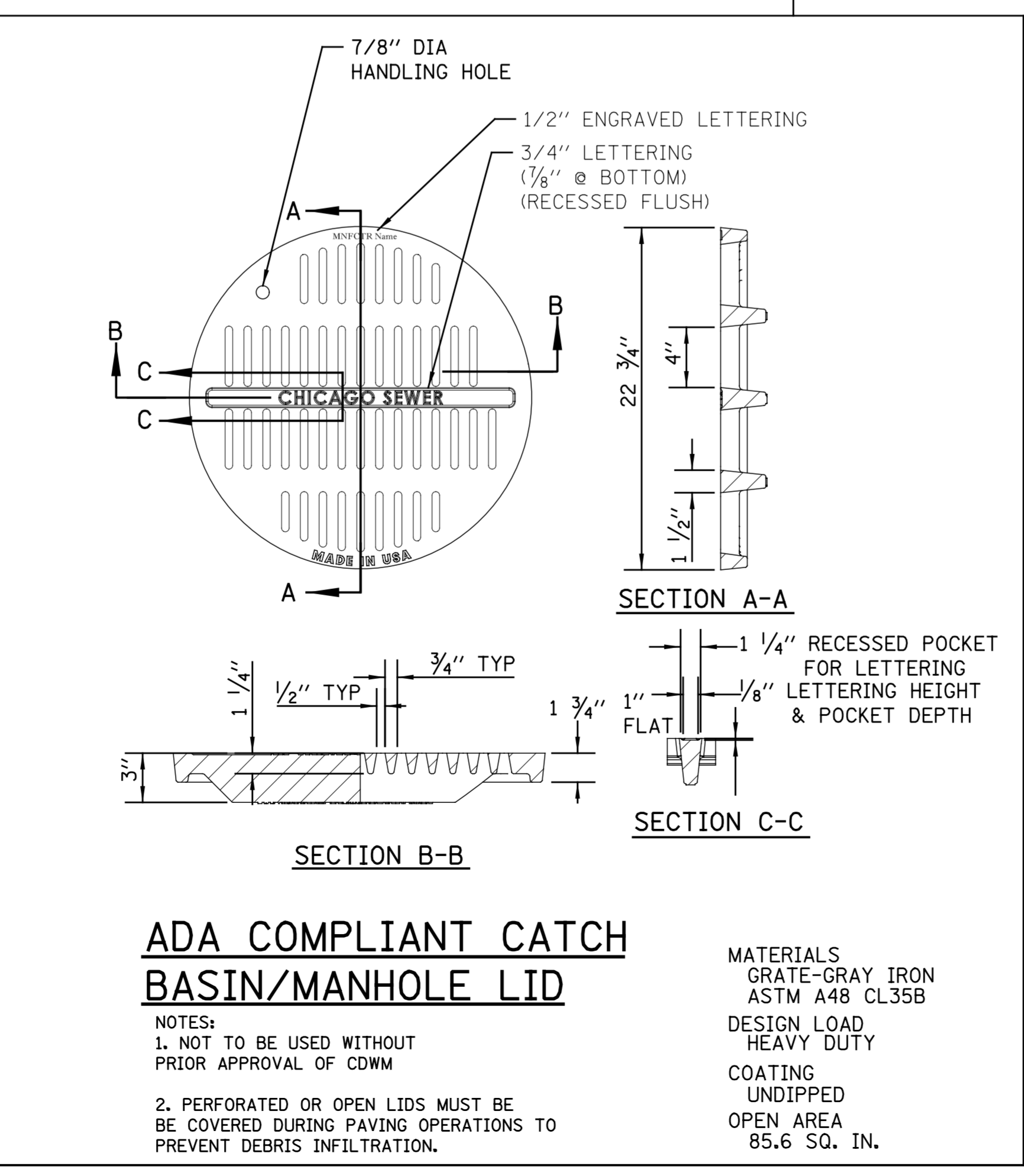
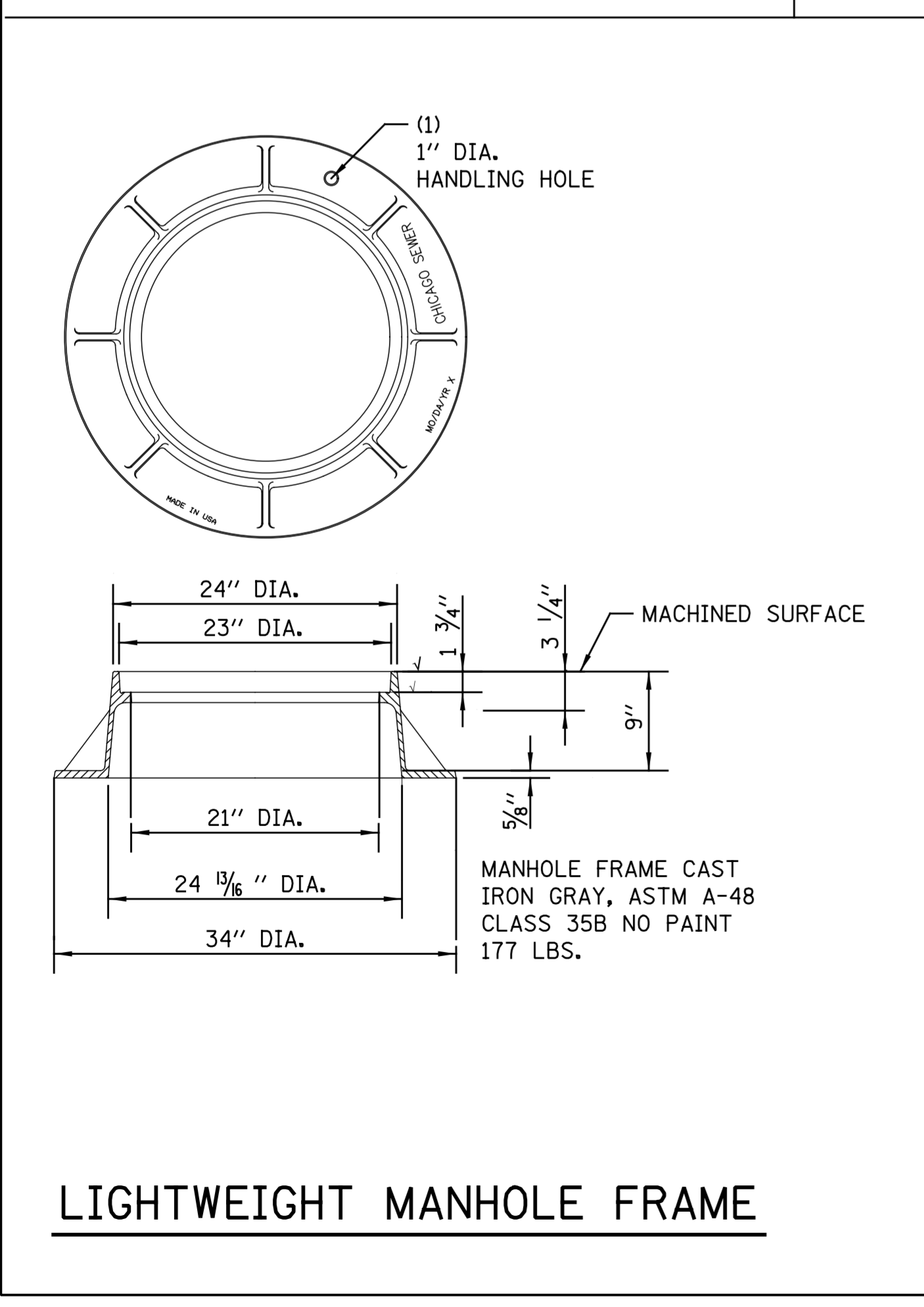
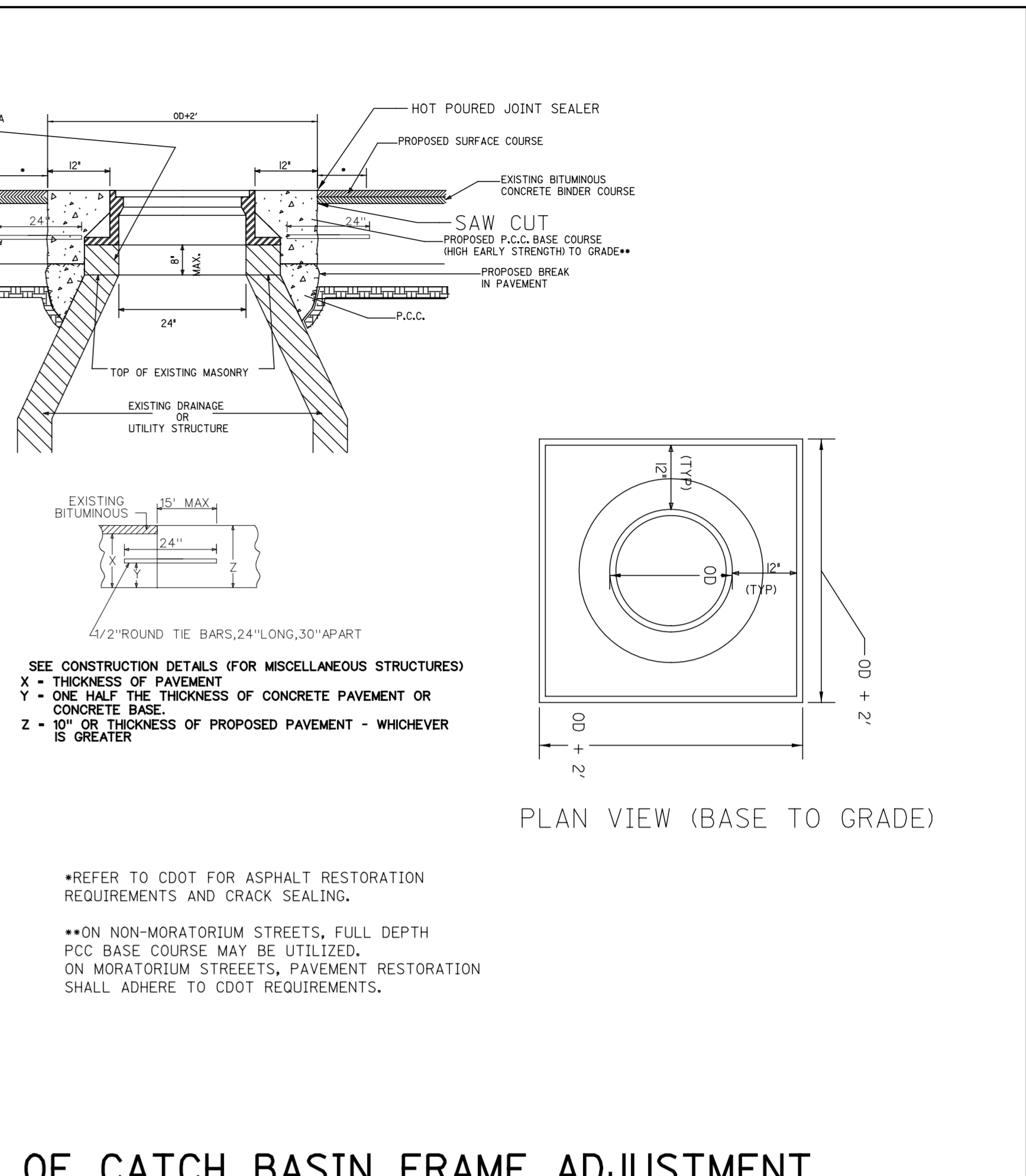
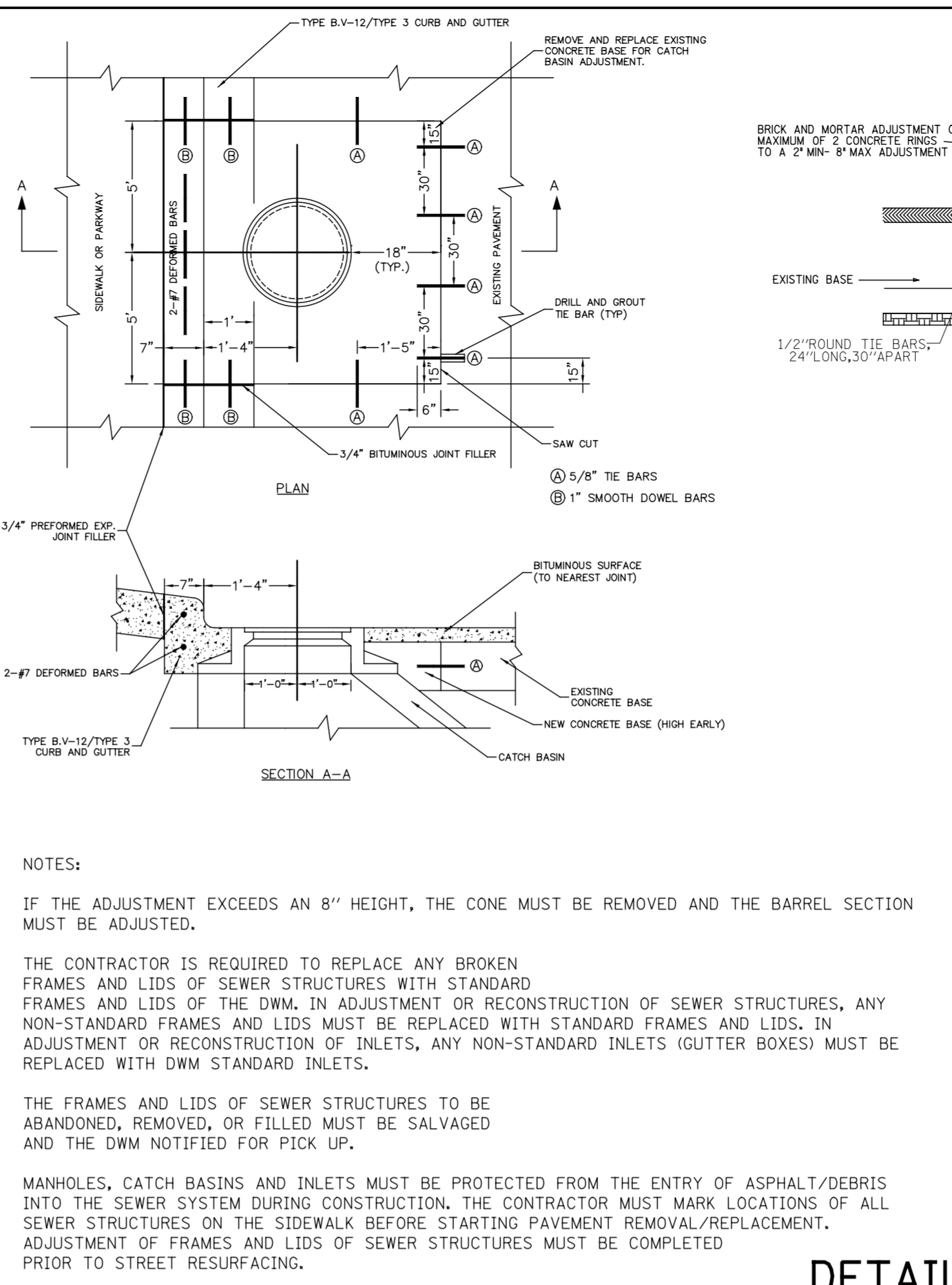
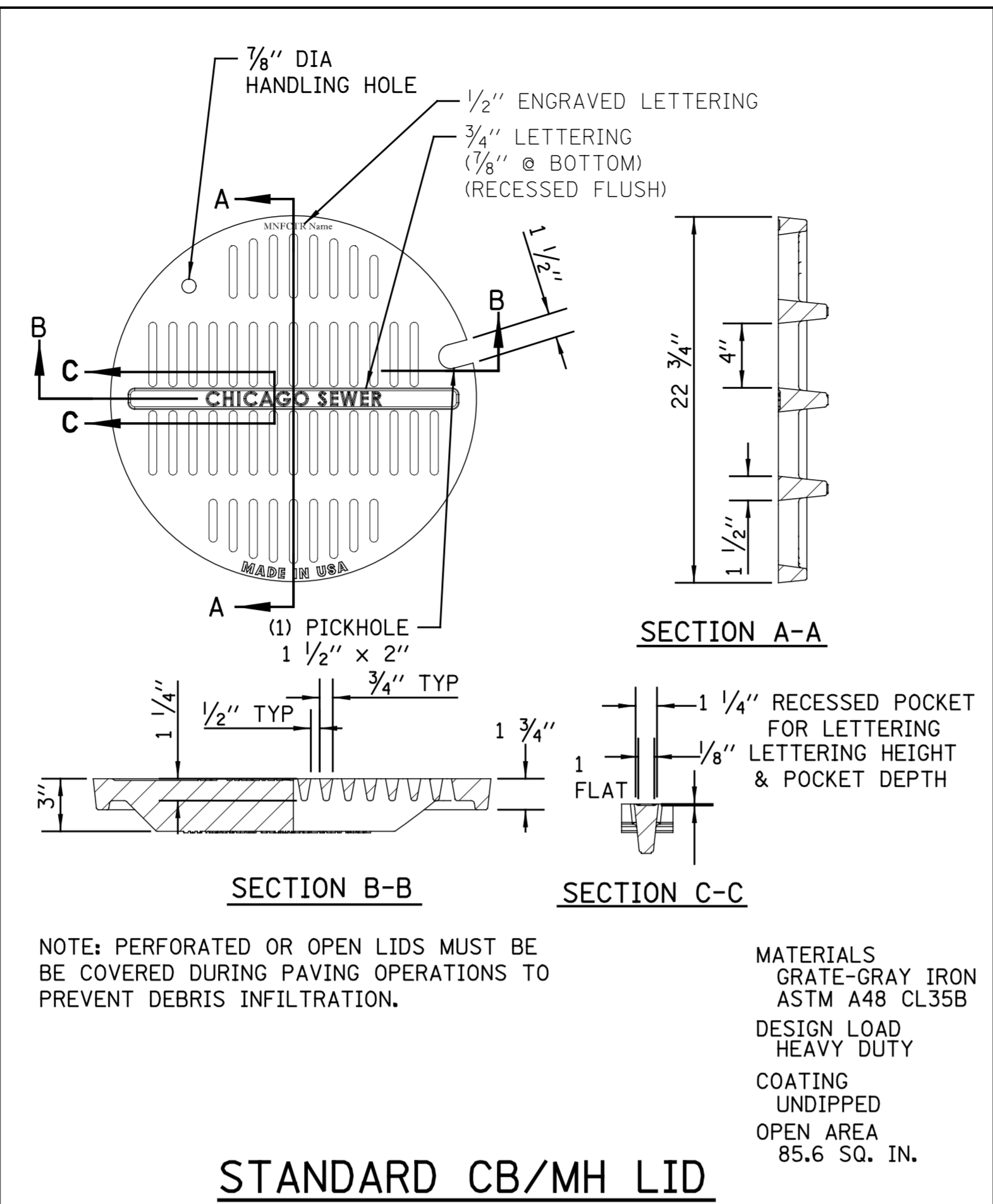
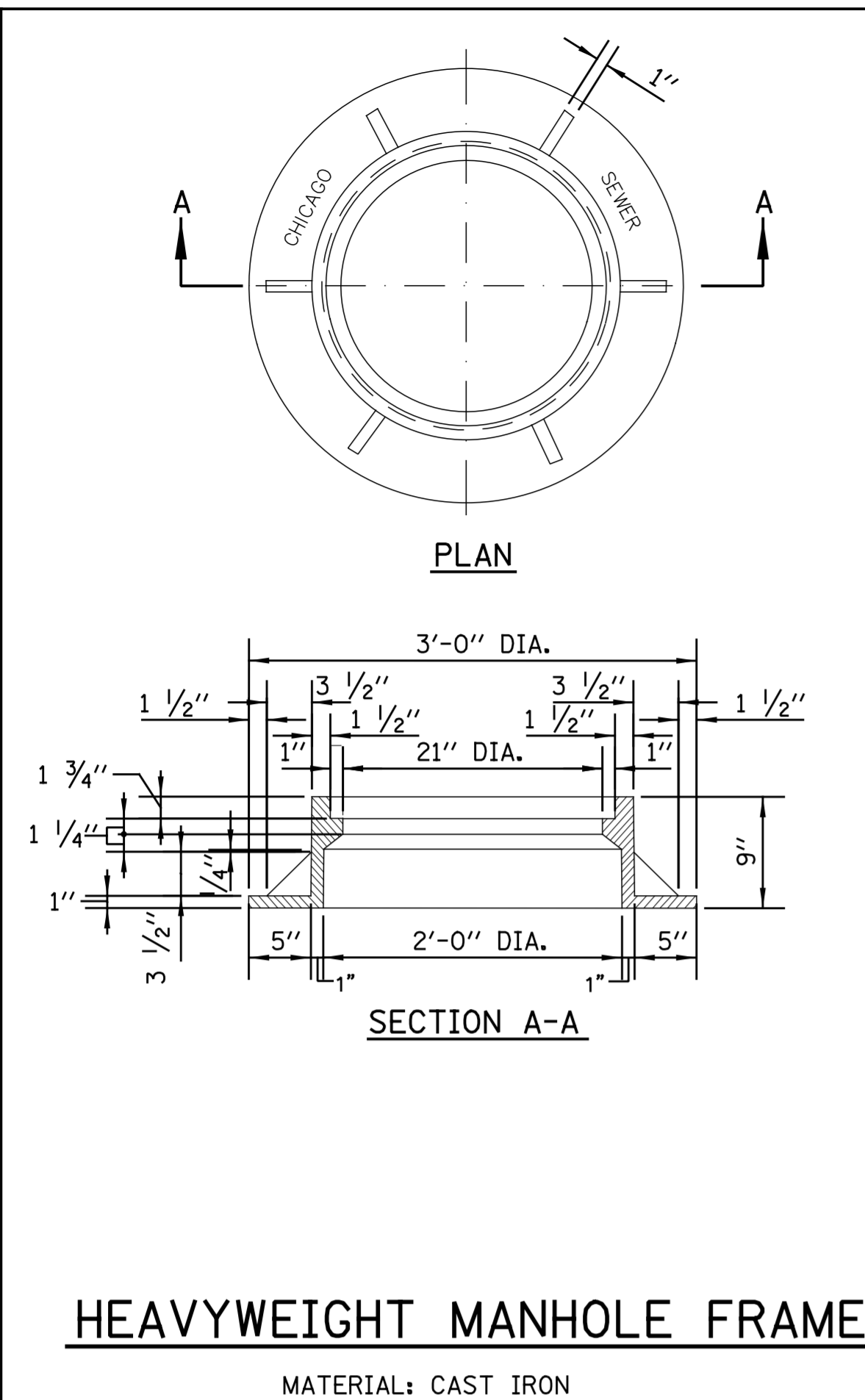
NOTES:  
FLAT TOP SLAB APPLICATION CAN ONLY BE USED WITH WRITTEN PERMISSION FROM CDWM.  
USE LATEST IDOT DETAIL, \*602601-06, AS REFERENCED ON THE IDOT WEBSITE.

STANDARD REVISIONS	
DATE	DESCRIPTION
4/22/21	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
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BULLETIN	

**CITY OF CHICAGO**  
DEPARTMENT OF WATER MANAGEMENT  
BUREAU OF ENGINEERING SERVICES  
**FLAT TOP SLAB DETAILS**

DRAWN: **SEB**  
DESIGNED: **SEB**  
CHECKED: **SEB**  
REVIEWED: **SEB**  
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OF  
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STANDARD REVISIONS	
DATE	DESCRIPTION
10/31/22	LAST REVISED
12/6/24	PUBLISHED

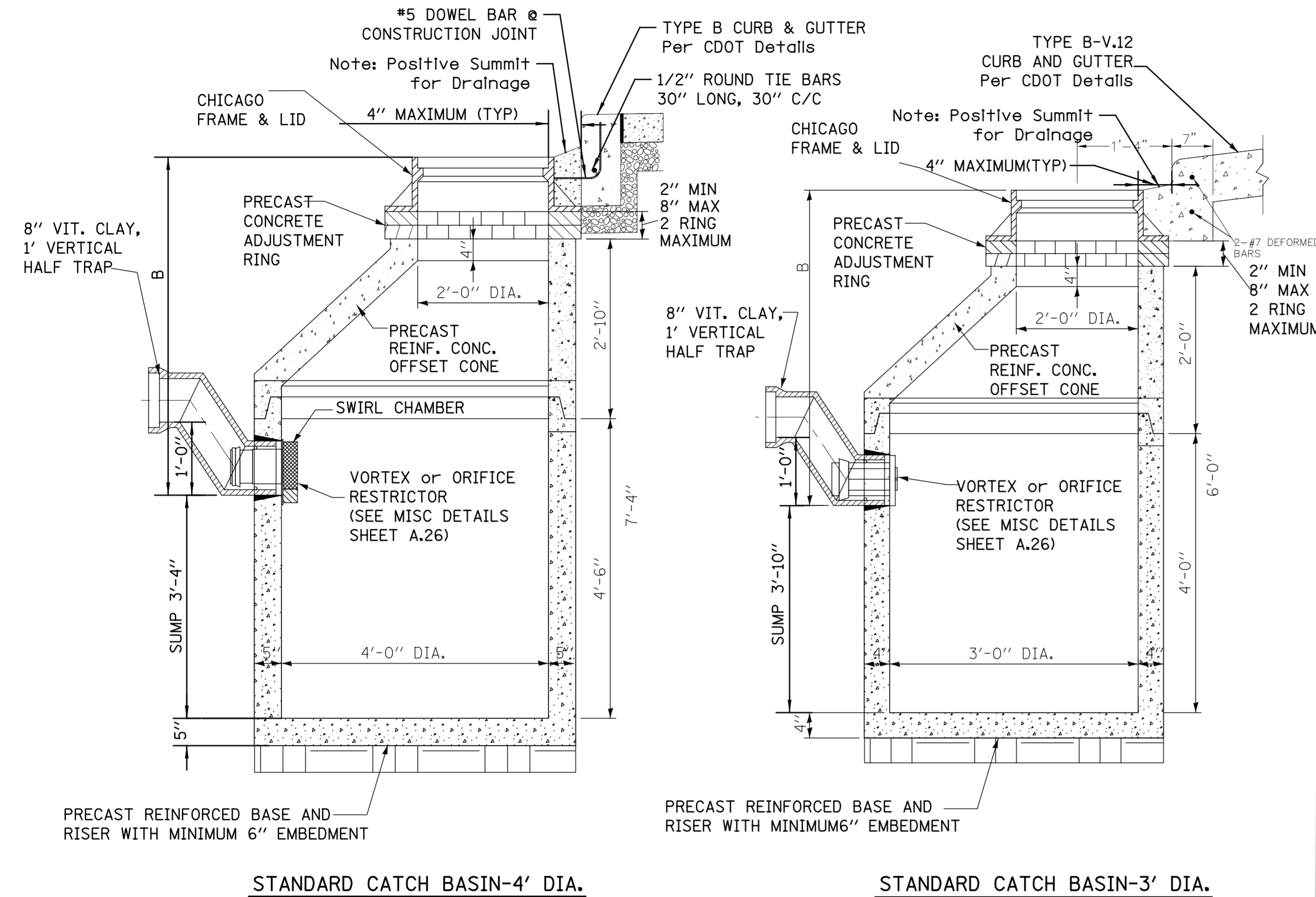
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CITY OF CHICAGO	
DEPARTMENT OF WATER MANAGEMENT	
BUREAU OF ENGINEERING SERVICES	
CATCH BASIN/MANHOLE LIDS AND FRAMES	

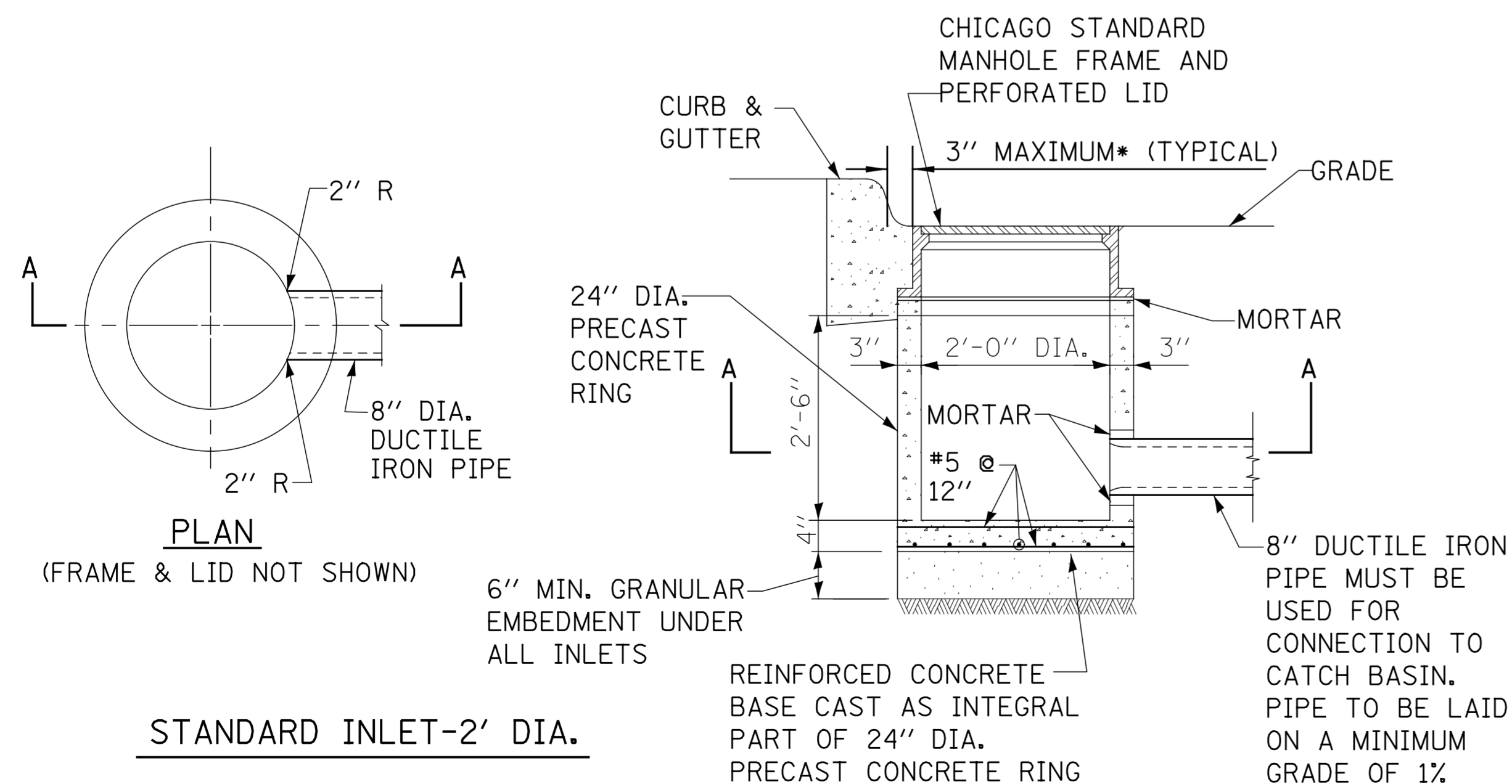
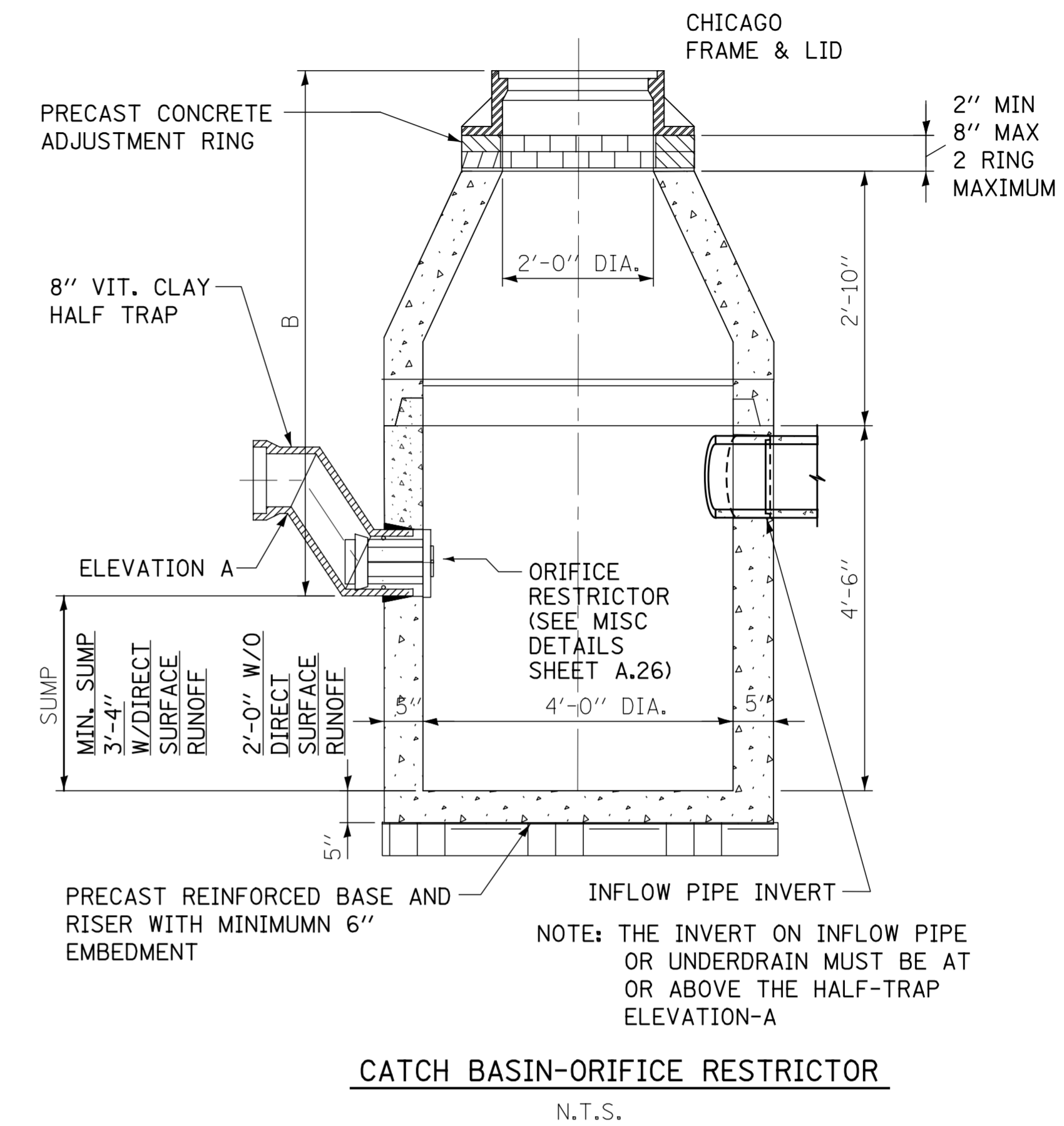
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DESIGNED: GD, GC, SO	
CHECKED: GD, GC, SO	
REVIEWED: GD, GC, SO	

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## STANDARD DRAINAGE STRUCTURES FOR PUBLIC STREETS



## STANDARD DRAINAGE STRUCTURES FOR PUBLIC ALLEYS



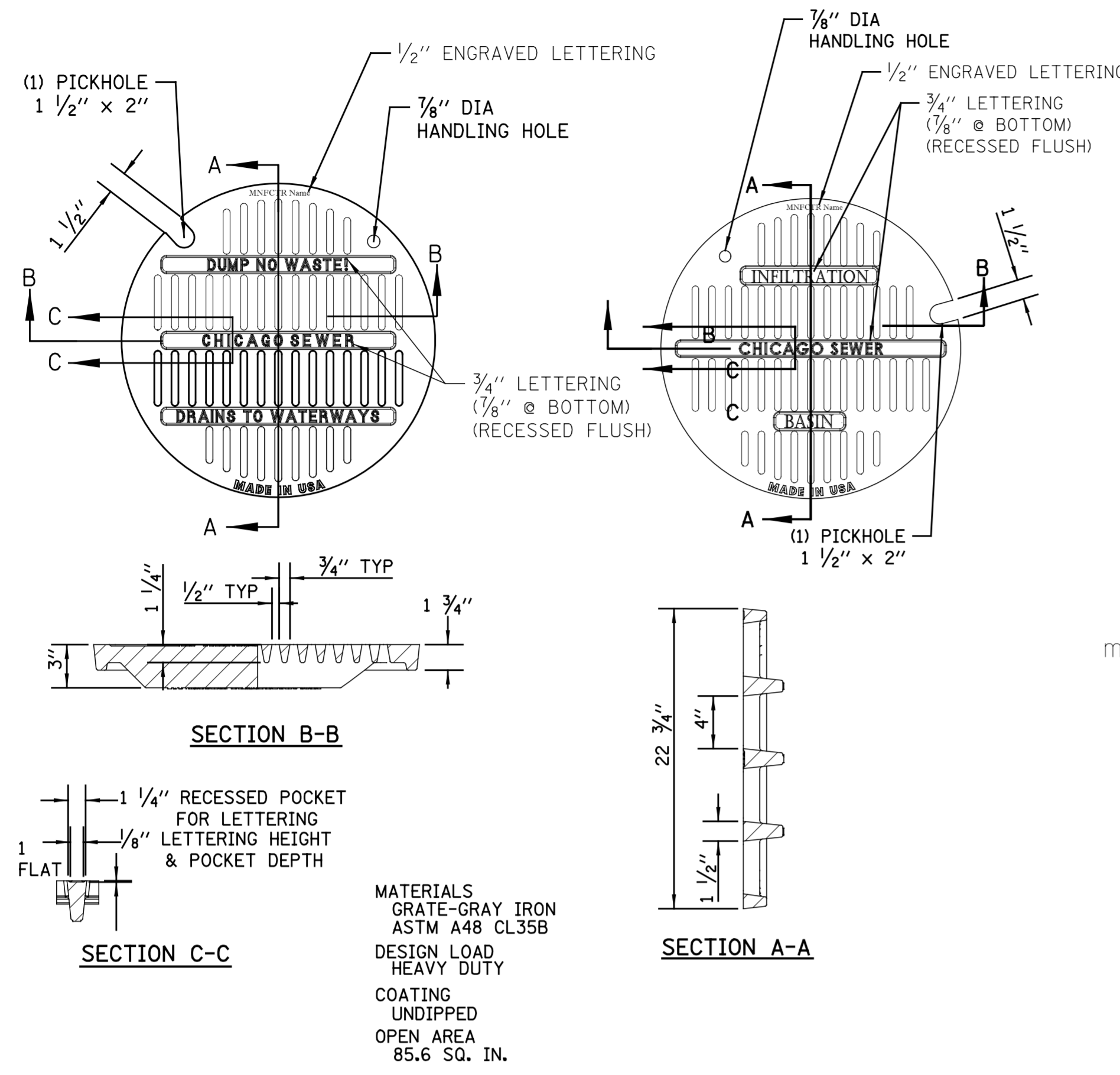
### GENERAL NOTES:

1. CATCH BASIN TO CATCH BASIN CONNECTIONS ARE ALLOWED IN PRIVATE SITES & ALLEYS. ONLY THE DOWNSTREAM CATCH BASIN IS REQUIRED TO HAVE A HALF-TRAP.
2. IF B < 4 FEET, THEN USE A FLAT TOP SLAB CATCH BASIN AS NECESSARY.
3. FOR TRENCH BACKFILL, REFER TO IDOT SSRBC, ARTICLE 1003.04.
4. FOR GRANULAR EMBEDMENT, USE CA-11, CRUSHED GRAVEL, CRUSHED STONE, OR CRUSHED CONCRETE.
5. FOR STABILIZATION STONE, 12" OF CA-1 STONE IS ONLY REQUIRED WHEN UNSTABLE MATERIAL IS ENCOUNTERED AT TRENCH BOTTOM.
6. INLETS AND 3' DIAMETER CATCH BASINS ARE TO BE USED ONLY WITH PRIOR APPROVAL OF THE DEPT. OF BUILDINGS STORMWATER REVIEWER.
7. IF COVER OVER VCP IS LESS THAN 3', USE 45 DEGREE DIP BENDS WITH 1 FOOT DROP AS HALF TRAPS AS NEEDED FOR IEPA CLEARANCE REQUIREMENTS

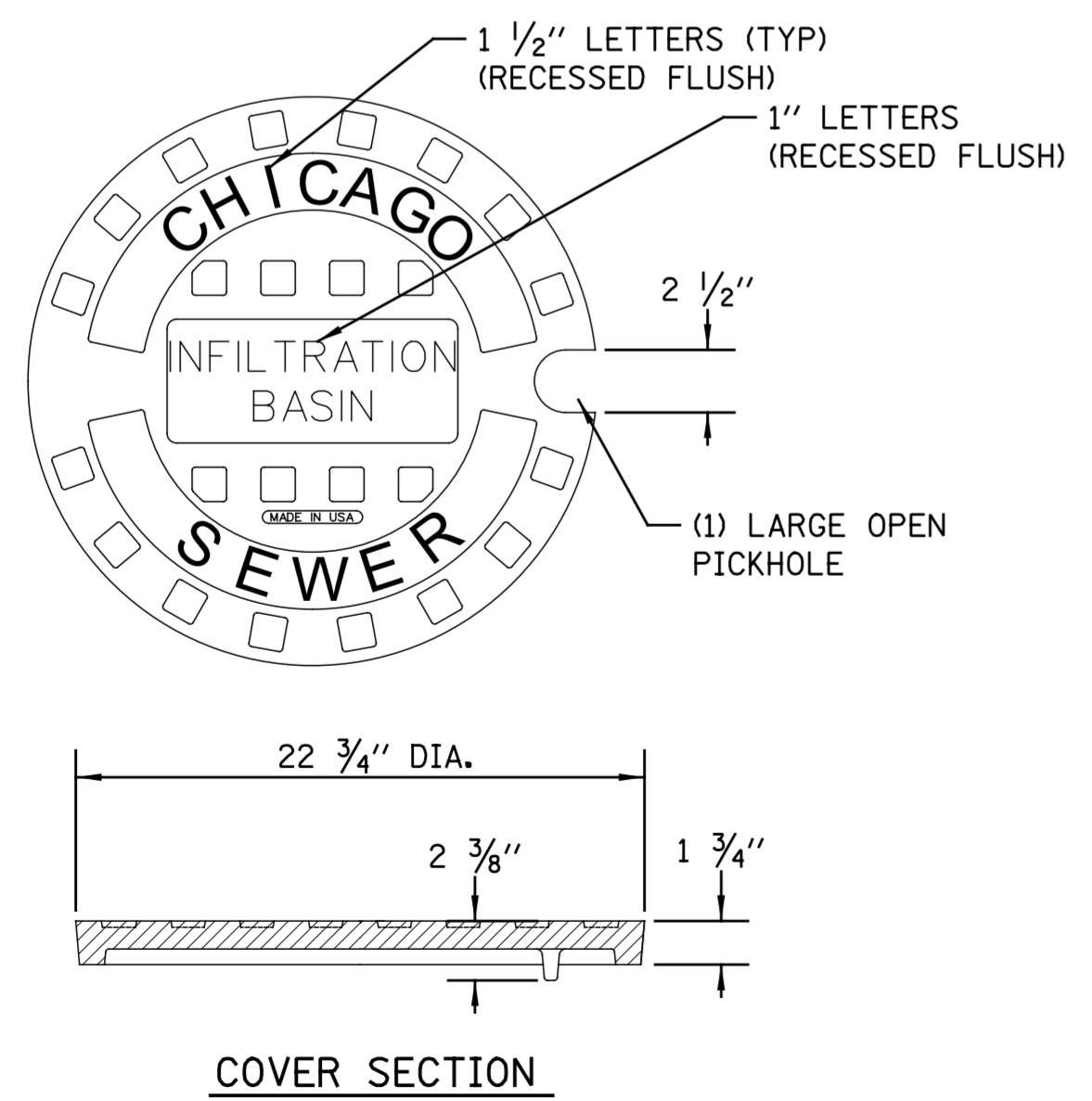
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12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
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BULLETIN	

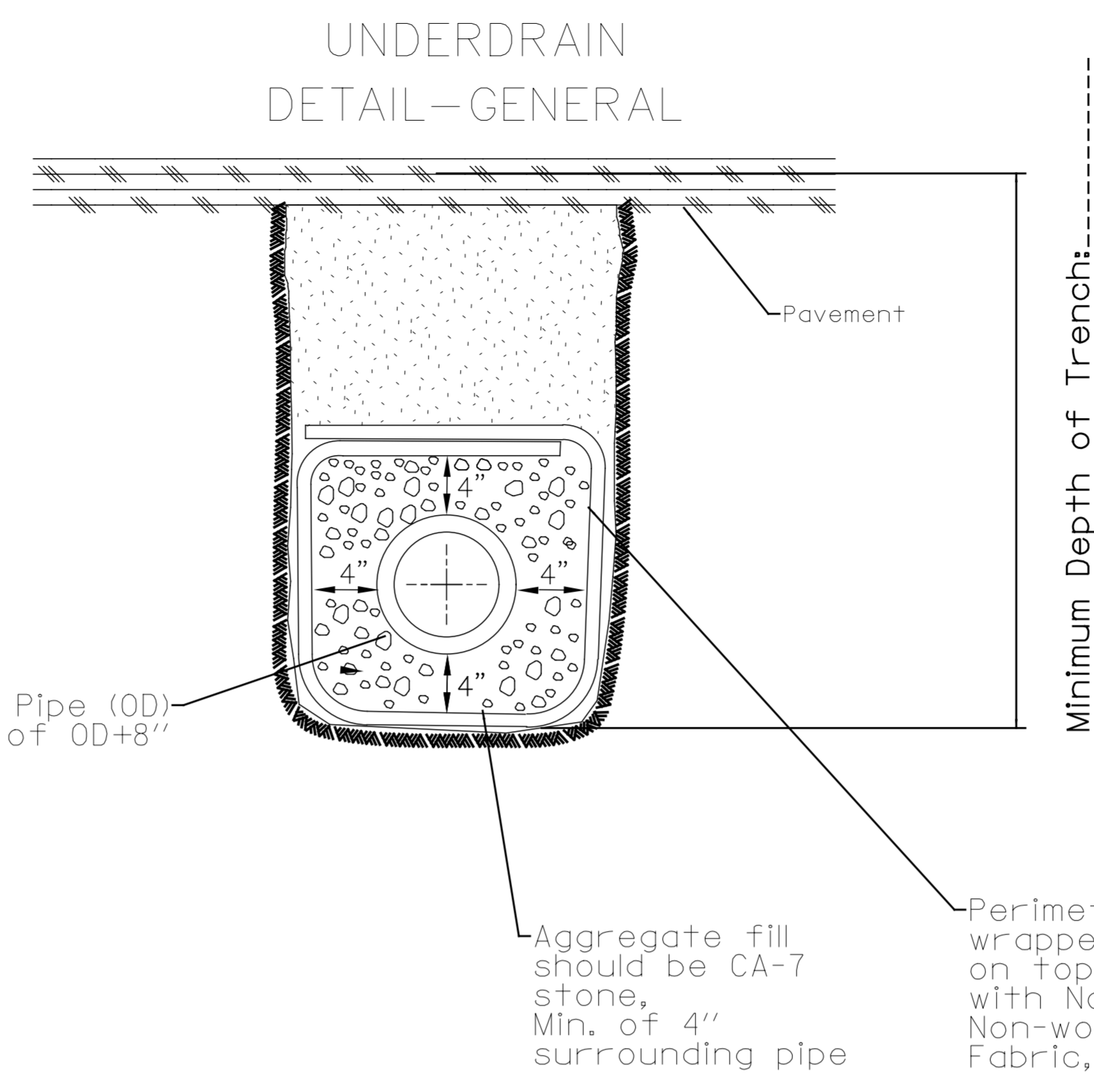
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BUREAU OF ENGINEERING SERVICES		CHECKED: <small> </small>
DRAINAGE STRUCTURE DETAILS		REVIEWED: <small> </small>
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		OF <small> </small>
		PN <small> </small>



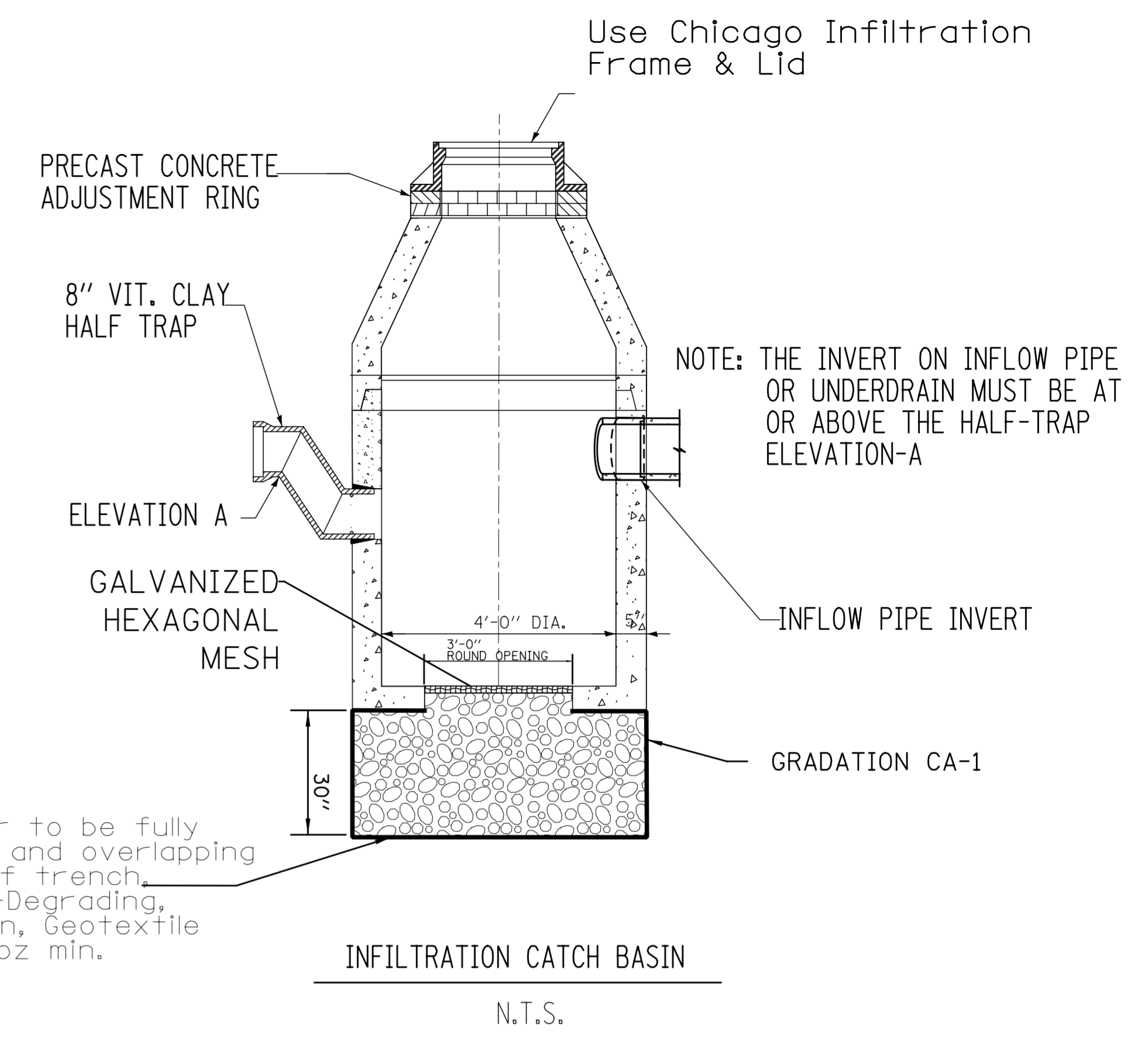
**STANDARD LID FOR STORM ONLY/  
INFILTRATION SYSTEMS**



**INFILTRATION SOLID LID FOR  
CATCH BASIN**



- UNDERDRAIN NOTES:**
- FOR ANY DRAIN TILE CONNECTION, THE WATER TABLE MUST BE AT LEAST 3.5 FEET BELOW ELEVATION A.
  - PVC UNDERDRAINS MUST BE 4" MINIMUM DIAMETER, (6" RECOMMENDED) AND MUST BE WRAPPED IN GEOTECH FABRIC.
  - USE INFILTRATION LIDS FOR UNDERDRAINS



- INFILTRATION CATCH BASIN-NOTES:**
- THE GALVANIZED HEXAGONAL WIRE MESH STRENGTH REQUIREMENTS SHALL BE IN ACCORDANCE WITH ASTM A975. THE DIAMETER OF THE MESH SHALL BE 0.120 INCHES AND THE COATING SHALL BE FINISH 5, CLASS 3 ZINC COATING ASTM A-641 TESTED IN ACCORDANCE WITH ASTM A370. THE MESH OPENING SHALL BE 60 MM X 80 MM
  - REFER TO SHEET A.27 FOR PRIVATE CATCH BASIN DETAILS AND HALF TRAP REQUIREMENTS.

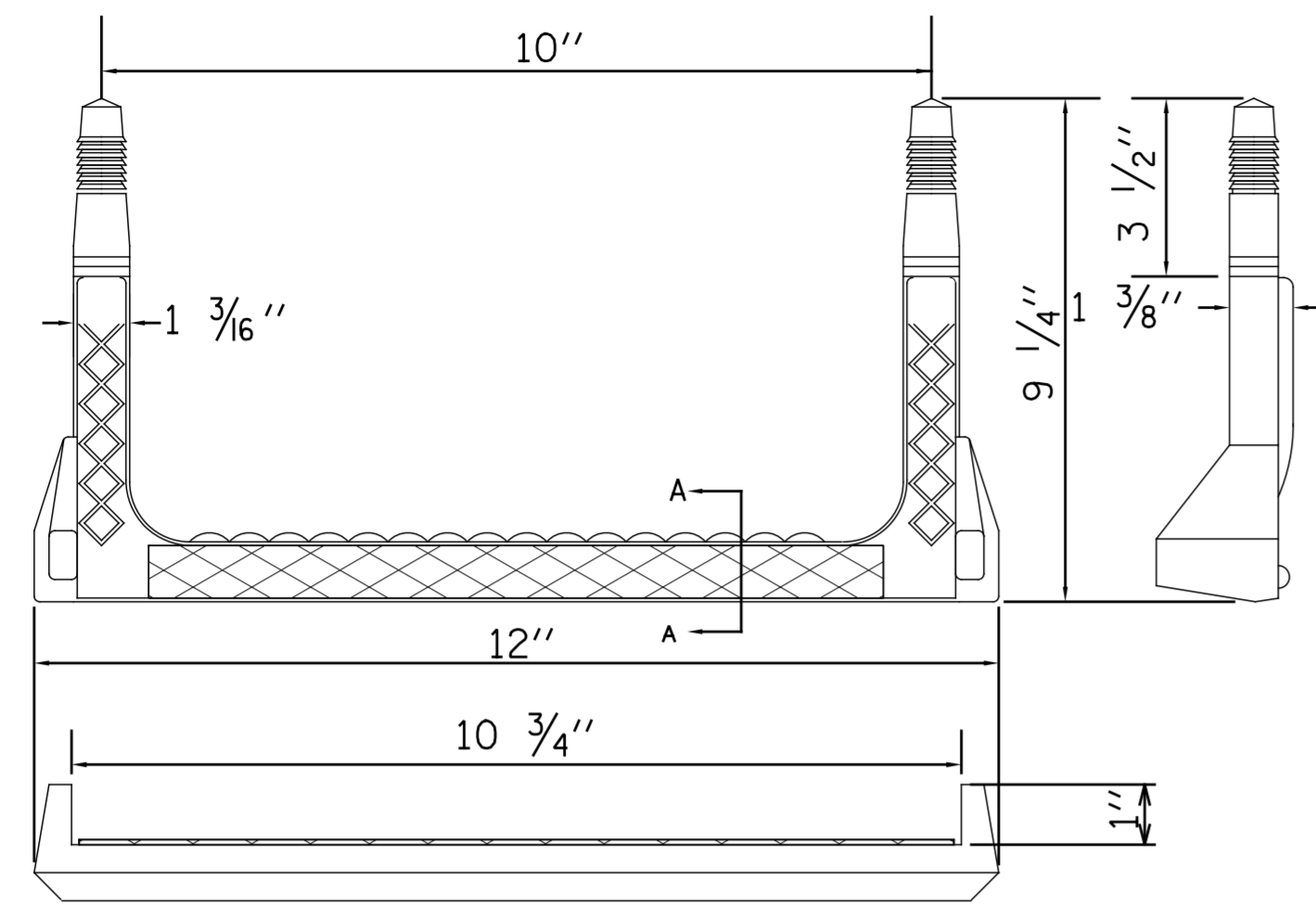
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DATE	DESCRIPTION
10/25/24	LAST REVISED
1/7/2025	PUBLISHED

PERCENT COMPLETE	DATE
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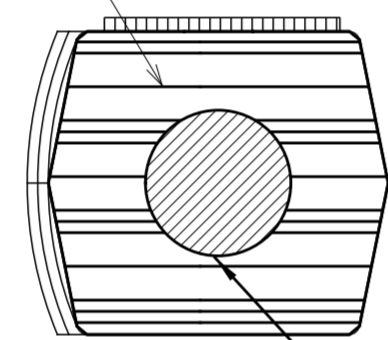
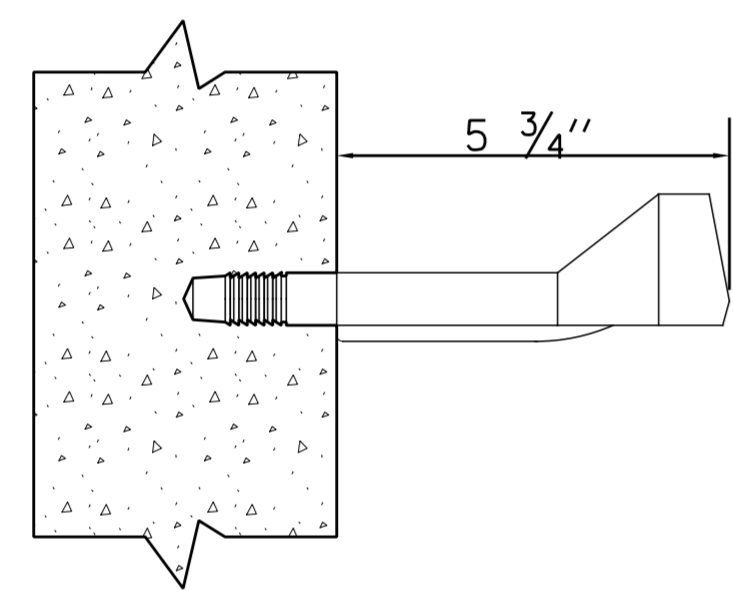
**CITY OF CHICAGO**  
 DEPARTMENT OF WATER MANAGEMENT  
 BUREAU OF ENGINEERING SERVICES  
 STORM ONLY/INFILTRATION  
 SYSTEM DETAILS

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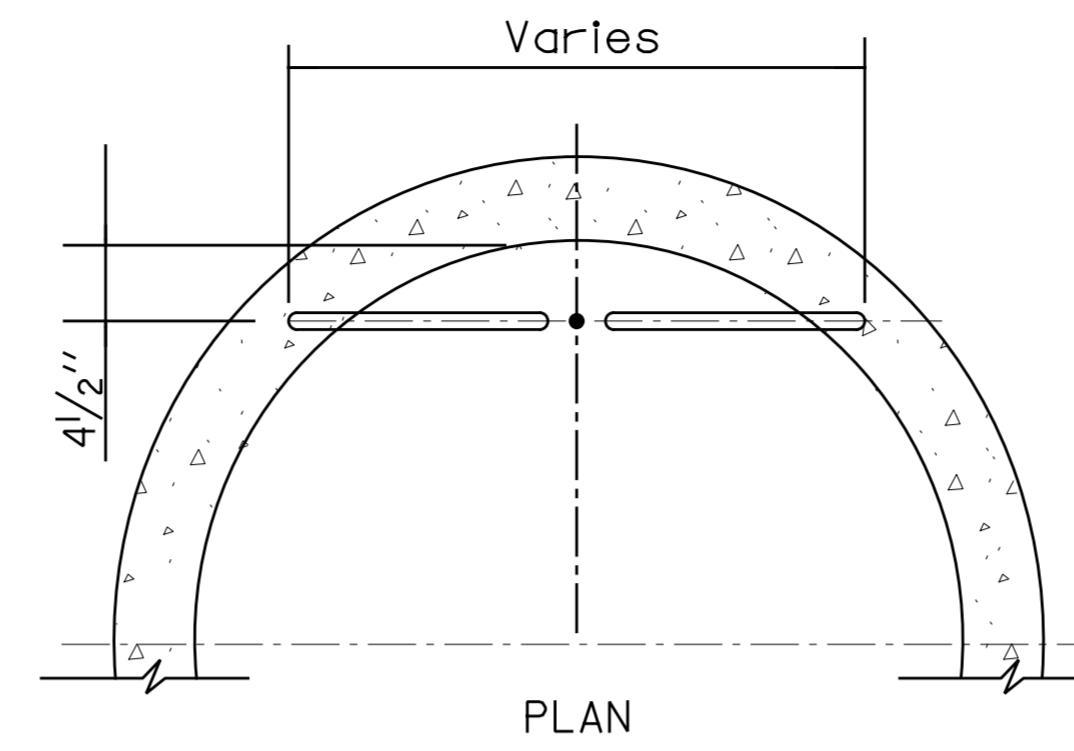


3/16" SOLID ALUMINUM BAR REINFORCEMENT

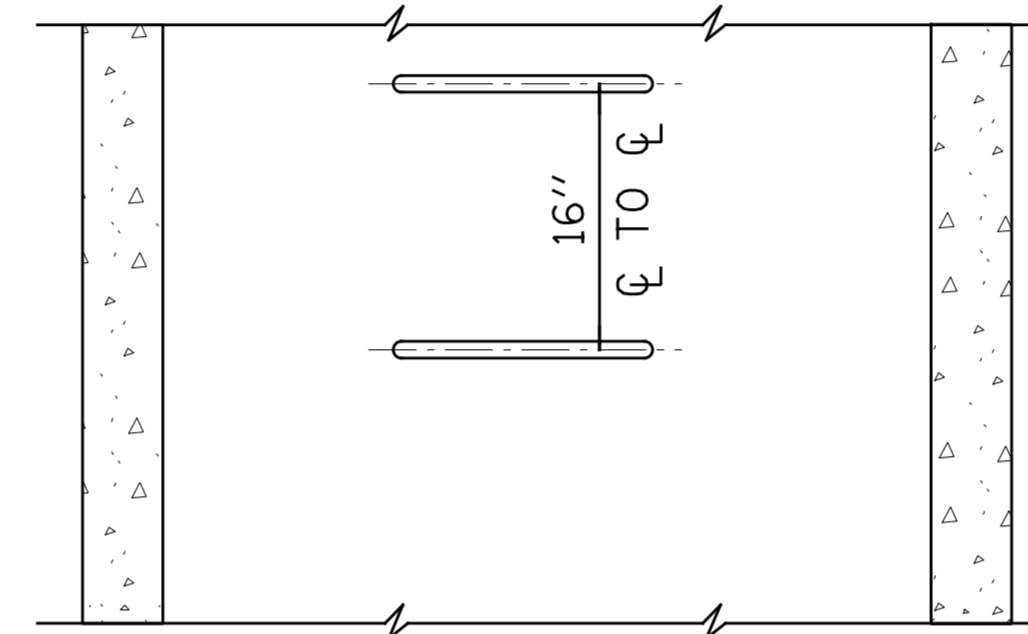
SECTION-A

RECTANGULAR STEP LADDER RUNG

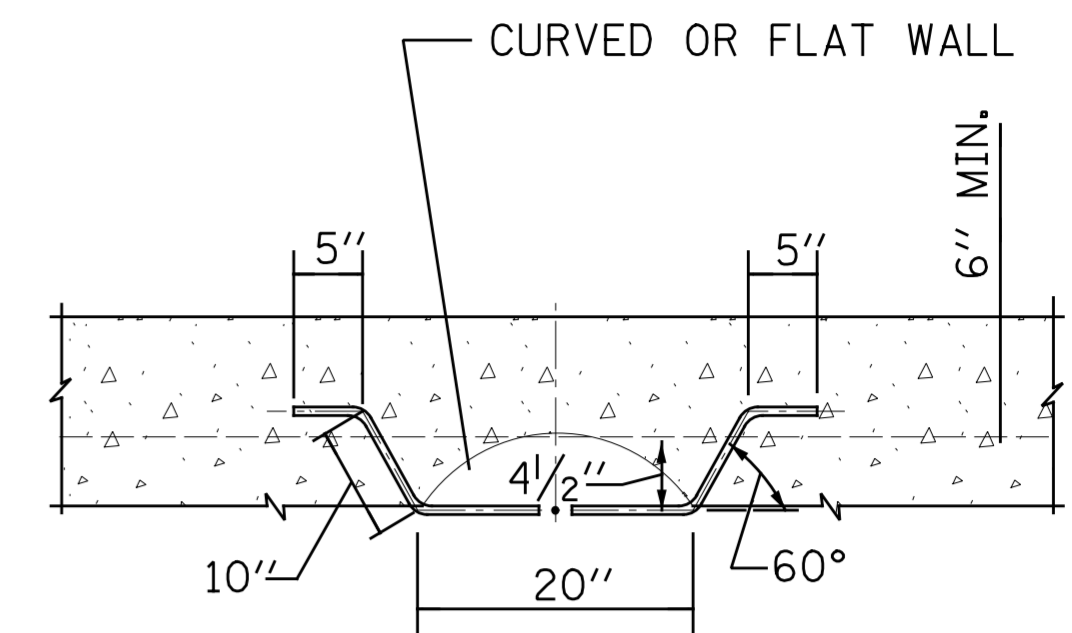
FOR USE ONLY IN 48" DIAMETER AND LARGER MANHOLES.



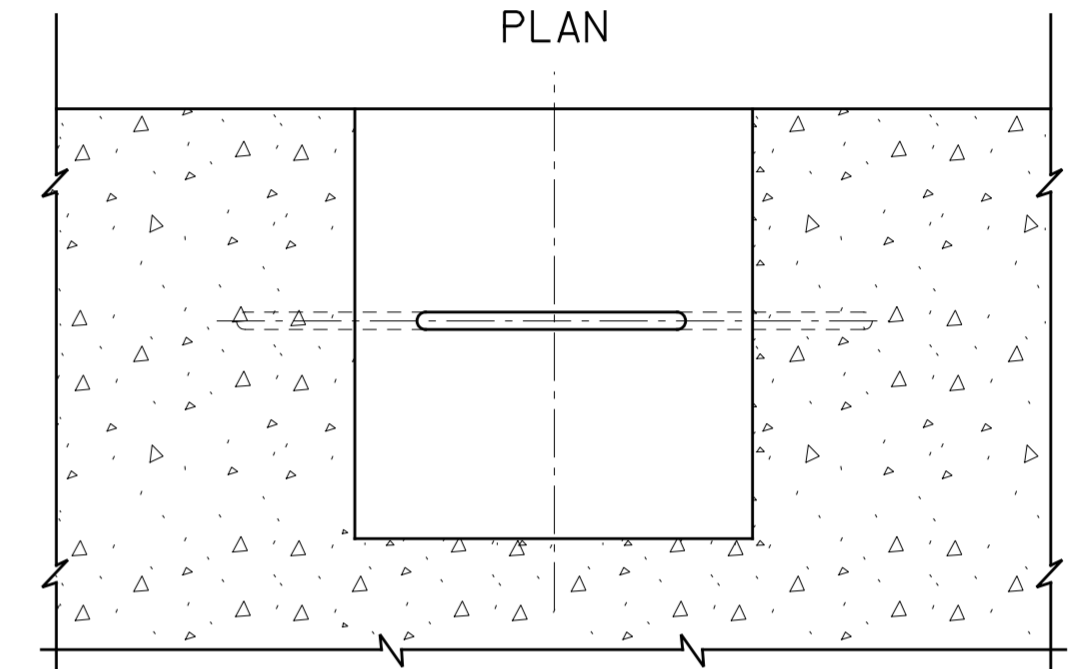
PLAN



ELEVATION  
TYPE X  
RISER



PLAN



ELEVATION  
TYPE Y  
BASE

NOTES:

1. VERTICAL SPACING = 16" O.C., ON VERTICAL WALL ONLY.
2. STEPS SHALL MEET THE REQUIREMENTS OF ASTM C478 IN ADDITION TO A HORIZONTAL PULL-OUT LOAD OF 1000 LBS. WHEN INSTALLED.
3. ALL STEPS SHALL BE VERTICALLY ALIGNED IN A STRAIGHT LINE.
4. MINIMUM CONCRETE STRENGTH MUST BE 3000 PSI
5. HOLES- PREFORMED/DRILLED
  - A. HOLES MUST BE PARALLEL
  - B. HOLES MUST BE 10" CENTERED, 1" DIAMETER
  - C. MINIMUM DEPTH- 3 1/2" TO 3 3/4"

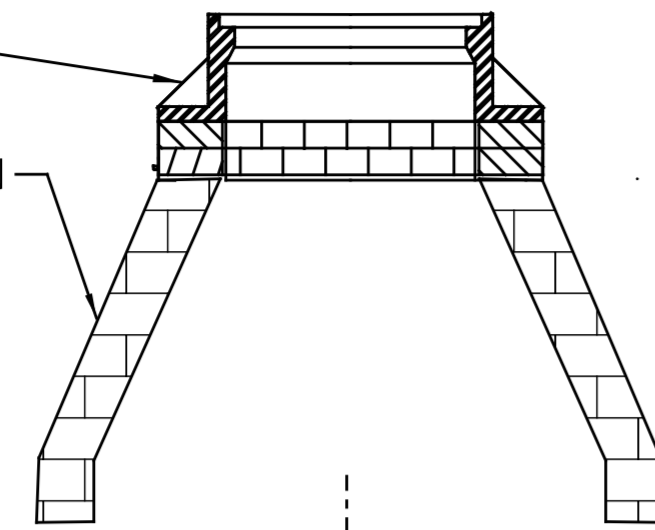
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DATE	DESCRIPTION
5/8/17	LAST REVISED
12/6/24	PUBLISHED

PERCENT COMPLETE	DATE
30	
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BULLETIN	

<b>CITY OF CHICAGO</b> DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
LADDER RUNGS	

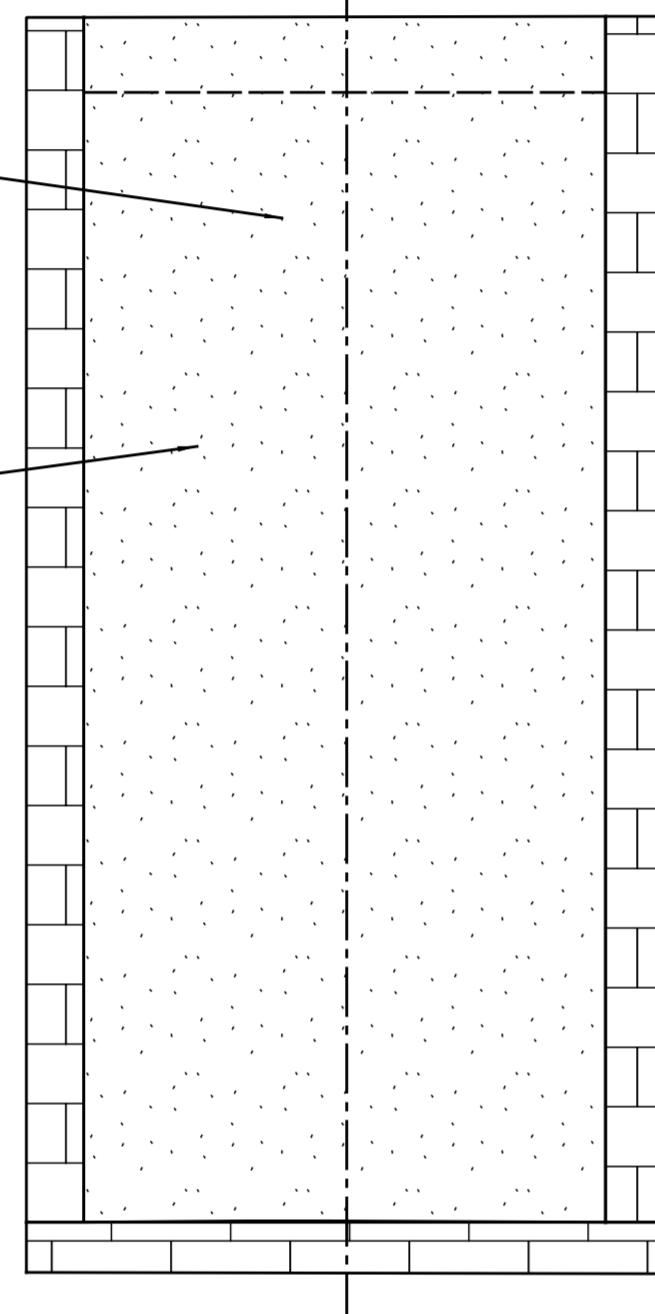
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REMOVE FRAME, LID AND  
ADJUSTING RINGS  
REMOVE CONE SECTION



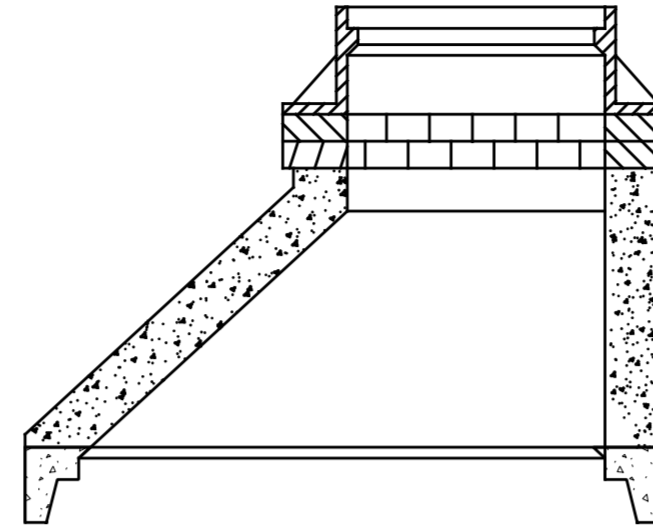
FILL WITH SAND OR  
CLSM/FLOWABLE FILL

SEAL ALL OPENINGS  
WITH BRICK  
AND MORTAR

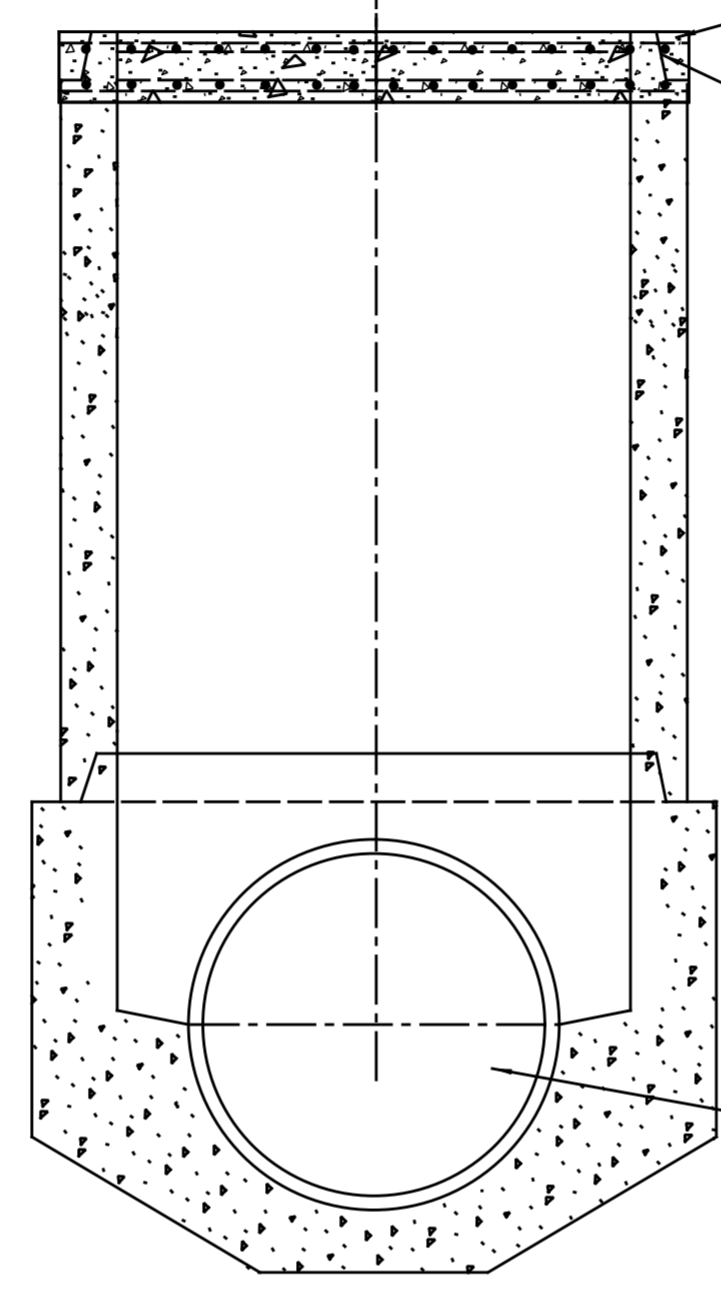


**ABANDON CATCH BASIN**

REMOVE FRAME, LID AND  
ADJUSTING RINGS  
REMOVE CONE SECTION



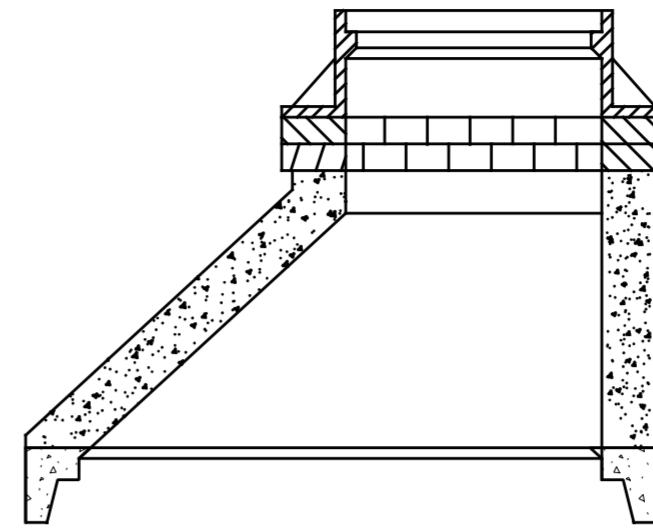
REINFORCED FLAT  
TOP SLAB (SEE NOTE BELOW)  
USE MORTAR  
OR SEALER



MAINTAIN FLOW  
IF PIPE IS NOT  
ABANDONED

**ABANDON MANHOLES**

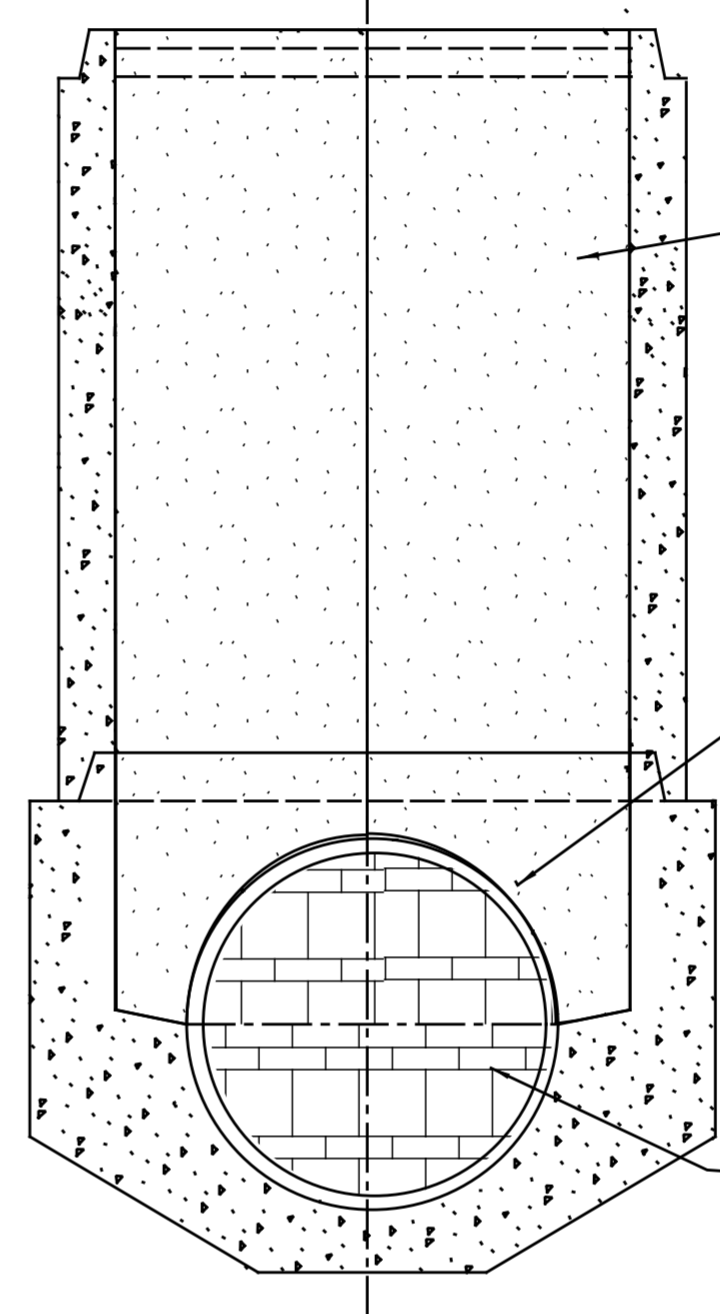
REMOVE FRAME, LID AND  
ADJUSTING RINGS  
REMOVE CONE SECTION



FILL WITH SAND OR  
CLSM/FLOWABLE FILL

FILL WITH CLSM/FLOWABLE  
FILL TO 6" ABOVE  
SEWER CROWN

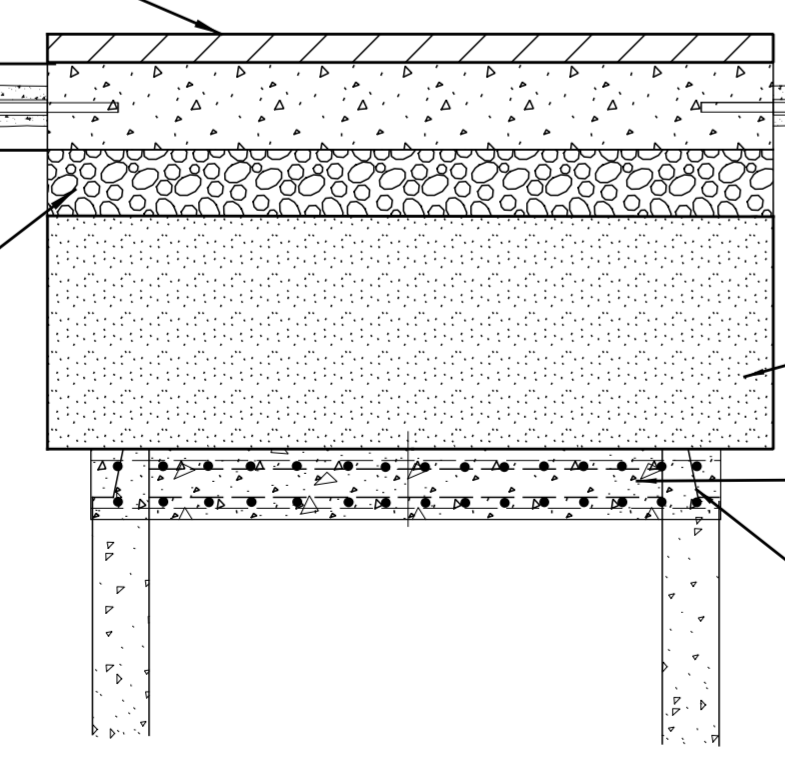
SEAL ALL OPENINGS WITH BRICK  
AND MORTAR IF PIPE TO BE ABANDONED  
IS LESS THAN 24"



HMA SURFACE COURSE  
MIX "D", 1 1/2",  
TYPE TO MEET  
STREET CLASSIFICATION  
P.C. CONCRETE BASE COURSE,  
DEPTH BASE TO GRADE  
SUB-BASE GRANULAR MATERIAL,  
TYPE B, 6" MIN.

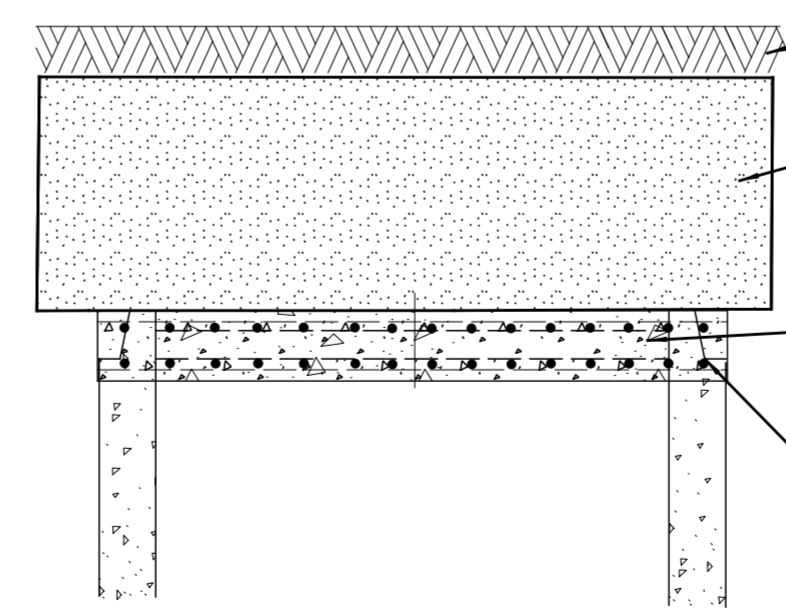
#5 TIE BARS, 18" LONG,  
DRILLED AND GROUTED  
INTO EXISTING BASE, 30"  
C/C AS REQUIRED (TYP.)

TRENCH BACKFILL  
REINFORCED FLAT  
TOP SLAB  
USE MORTAR  
OR SEALER



**IN PAVEMENT AREA**

4" TOPSOIL  
TRENCH BACKFILL  
REINFORCED FLAT  
TOP SLAB  
USE MORTAR  
OR SEALER



**IN LANDSCAPE AREA**

NOTE  
REINFORCED FLAT TOP SLAB.  
SEE IDOT STD. 602601-03 OR CURRENT  
MODIFIED WITH NO ACCESS HOLE

STANDARD REVISIONS	
DATE	DESCRIPTION
10/15/15	LAST REVISED
12/6/24	PUBLISHED

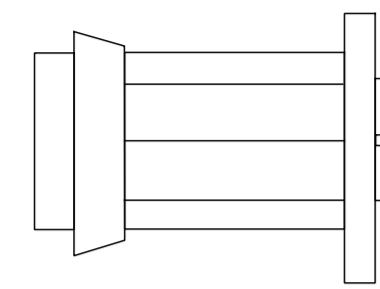
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BULLETIN	

**CITY OF CHICAGO**  
DEPARTMENT OF WATER MANAGEMENT  
BUREAU OF ENGINEERING SERVICES

ABANDONED SEWER STRUCTURE  
DETAILS

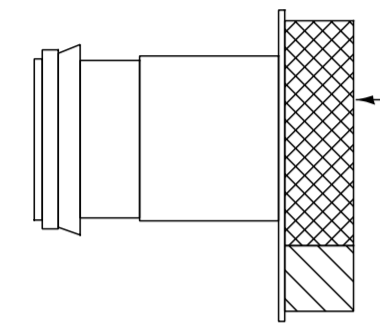
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OF  
PN

# DRAINAGE STRUCTURES RESTRICTORS



ORIFICE RESTRICTOR

INSERT THE RESTRICTOR INTO THE HALF-TRAP. UPON TIGHTENING OF THE CENTER NUT ON THE FACE OF THE RESTRICTOR, THE RUBBER O-RINGS WILL EXPAND INSIDE THE HALF TRAP, PROVIDING A WATER-TIGHT SEAL. PULL ON RESTRICTOR TO VERIFY THAT A TIGHT FIT IS MADE.



VORTEX RESTRICTOR

PULL ON RESTRICTOR TO VERIFY THAT A TIGHT FIT IS MADE.

INSERT THE RESTRICTOR WITH THE OPENING DOWN. UPON TIGHTENING OF THE 2 BOLTS ON THE FACE OF THE RESTRICTOR, THE RUBBER O-RINGS WILL PROVIDE A WATER-TIGHT SEAL.

**GENERAL NOTES:**

1. CATCH BASIN TO CATCH BASIN CONNECTIONS ARE ALLOWED IN PRIVATE SITES & ALLEYS. ONLY THE DOWNSTREAM CATCH BASIN IS REQUIRED TO HAVE A HALF-TRAP.

2. IF B < 4 FEET, THEN USE A DUCTILE IRON PIPE HALF TRAP AND FLAT TOP SLAB CATCH BASIN AS NECESSARY.

3. INLETS AND 3' DIAMETER CATCH BASINS ARE TO BE USED ONLY WITH PRIOR APPROVAL OF DWM FIELD INSPECTOR.

**RESTRICTOR NOTES:**

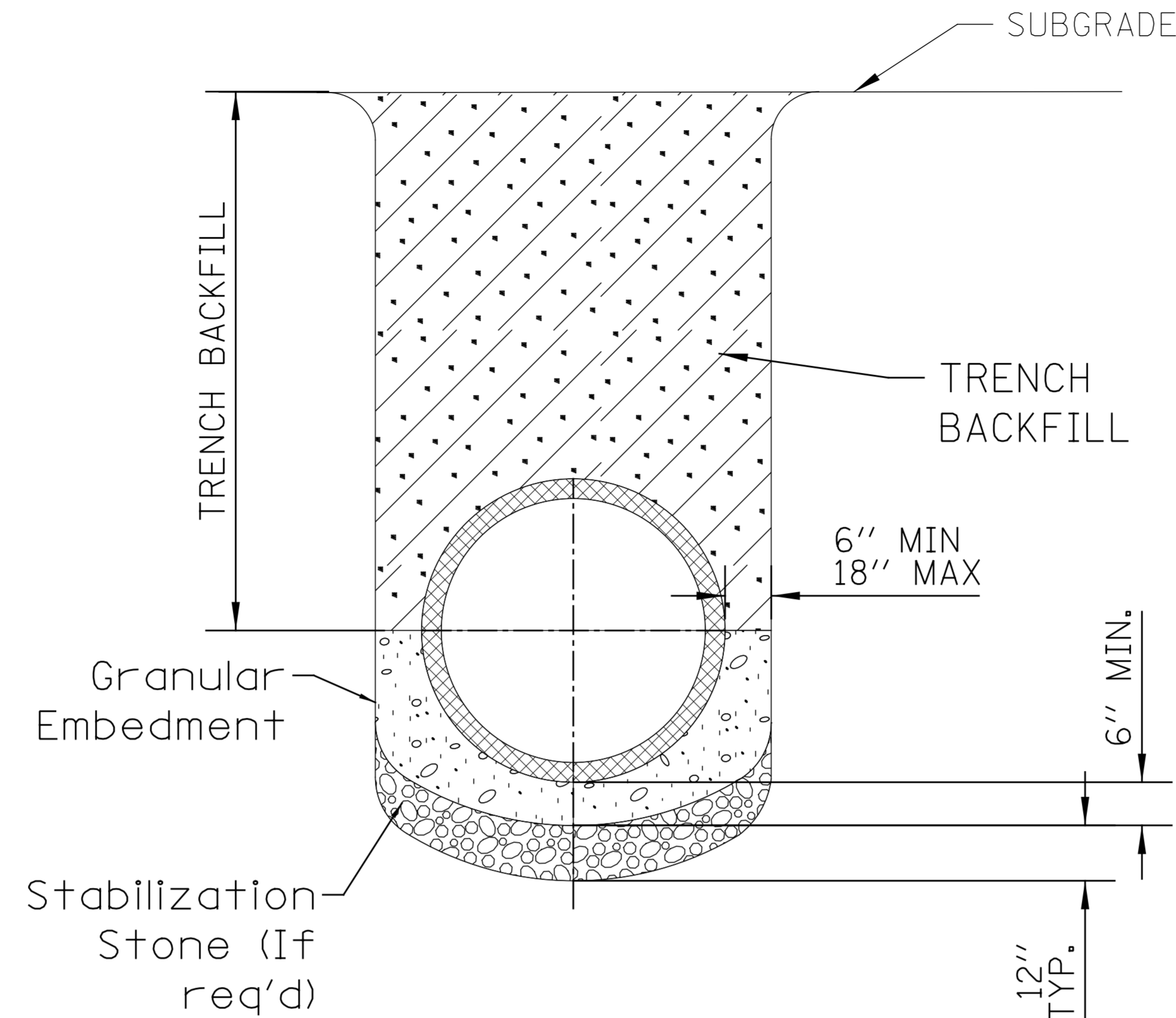
THE DWM'S RAIN BLOCKER RESTRICTOR PROGRAM MUST BE MAINTAINED WITH ANY ROADWAY IMPROVEMENT.

THE DESIGN OF ANY ROADWAY IMPROVEMENT MUST CONSIDER LIMITING THE NUMBER OF CATCH BASINS TO THE EXTENT PRACTICAL. THE NUMBER OF EXISTING STRUCTURES SHOULD NOT BE INCREASED.

THE RESTRICTORS CAN BE OBTAINED FROM DWM CENTRAL DISTRICT AT 3901 S. ASHLAND AVE. THE CONTRACTOR SHOULD ARRANGE FOR PICK UP BY CONTACTING 312-747-8736 (7AM TO 3PM, M-F). CONTRACTOR MUST CALL 48 HOURS IN ADVANCE OF PICK UP DATE AND TIME.

FLOW RESTRICTORS MUST BE INSTALLED IN ALL CATCH BASINS OUTSIDE OF THE CENTRAL BUSINESS DISTRICT (LIMITS: NORTH AVE, CERMAK AVE, HALSTED AVE, LAKE MICHIGAN). RESTRICTORS MUST NOT BE INSTALLED IN CATCH BASINS IN CLOSE PROXIMITY TO VIADUCT AREAS, BUS STOPS, OR EMERGENCY ENTRANCES. THE DWM MUST APPROVE THE NON-INSTALLATION OR REMOVAL OF ANY RESTRICTOR. REQUIREMENTS FOR RESTRICTOR INSTALLATION ARE AS FOLLOWS:

- \*ARTERIAL STREETS: 3-INCH ORIFICE RESTRICTOR
- \*BUS ROUTES: 3-INCH ORIFICE RESTRICTOR
- \*RESIDENTIAL STREETS: 3-INCH VORTEX RESTRICTOR
- \*ALLEYS: 3-INCH ORIFICE RESTRICTOR IN THE LAST CB.
- \*CLOSED LIDS ARE REQUIRED ON ALL MANHOLES EXCEPT AT INTERSECTIONS WHERE A PERFORATED LID SHALL BE USED.



**NOTE:**

1. FOR TRENCH BACKFILL, REFER TO IDOT SSRBC, ARTICLE 1003.04.

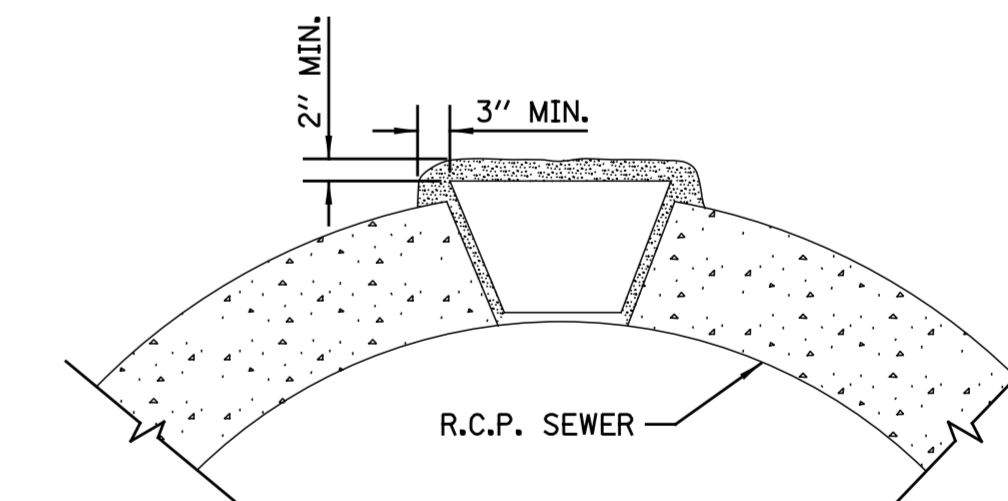
2. FOR GRANULAR EMBEDMENT, USE CA-11, CRUSHED GRAVEL, CRUSHED STONE, OR CRUSHED CONCRETE.

3. FOR STABILIZATION STONE, 12" OF CA-1 STONE IS ONLY REQUIRED WHEN UNSTABLE MATERIAL IS ENCOUNTERED AT TRENCH BOTTOM.

4. AGGREGATE PLACED FOR TEMPORARY SURFACE RESTORATION WILL NOT BE PAID SEPARATELY AND SHALL BE INCIDENTAL TO THE CONTRACT.

## SEWER TRENCH DETAIL

**NOTE:**  
PLUG TO BE COATED WITH MORTAR AND DRIVEN INTO PLACE WITH A WOODEN MALLET AND THEN SEALED WITH MORTAR.



### LIFTING HOLE PLUG DETAIL FOR CONCRETE PIPE

- NOTE:**
1. ALL PLUG MATERIALS MUST COMPLY WITH 1042.16 OF THE IDOT SSRBC.
  2. LIFT HOLES ON COMBINED SEWERS ARE PROHIBITED WHEN THE WATER TABLE IS WITHIN 2 FEET OF THE PIPE INVERT, OR IF THE PIPE IS FULLY SUBMERGED UNDER NORMAL CONDITIONS.

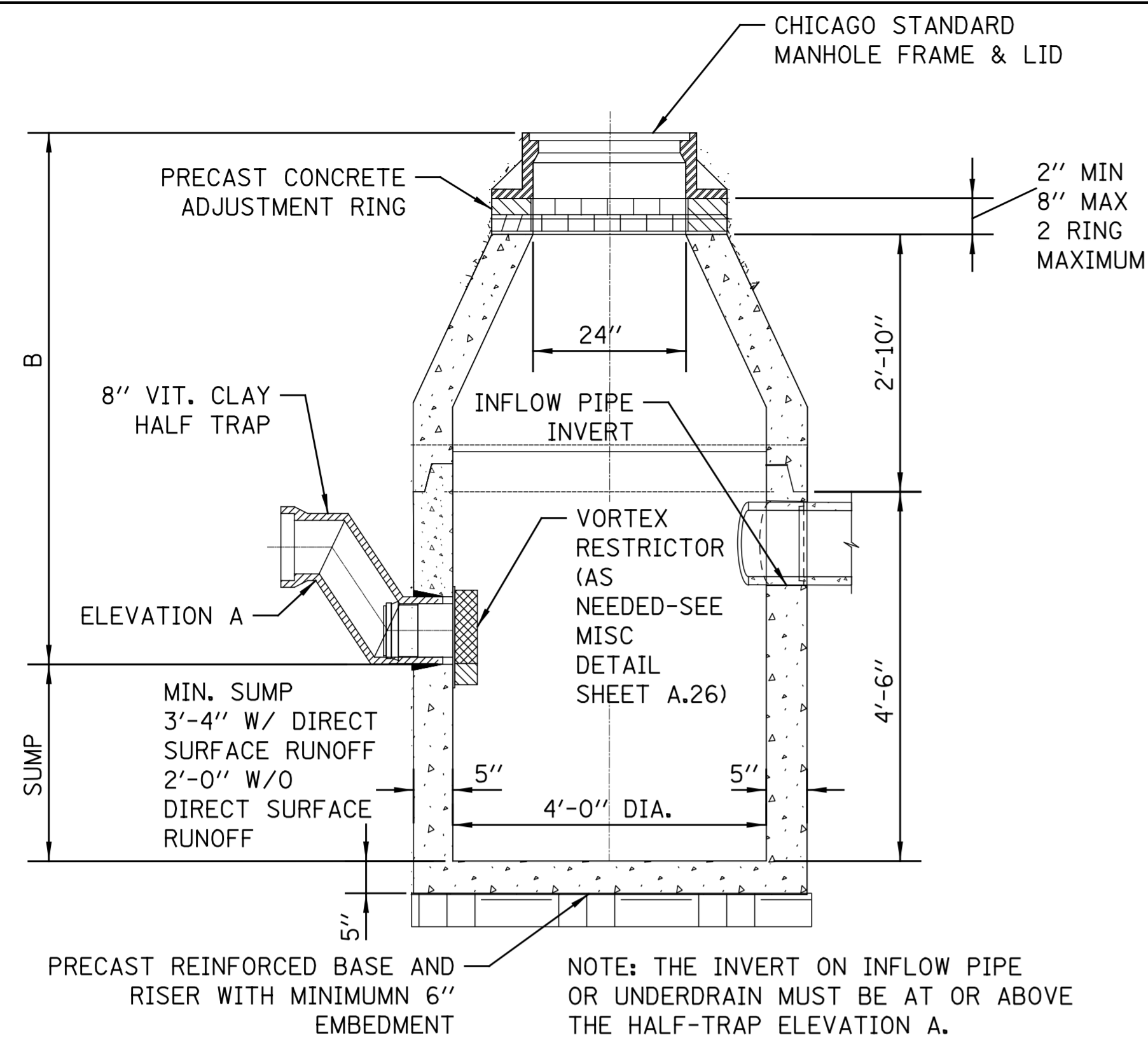
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STANDARD REVISIONS	
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2/5/21	LAST REVISED
12/6/24	PUBLISHED

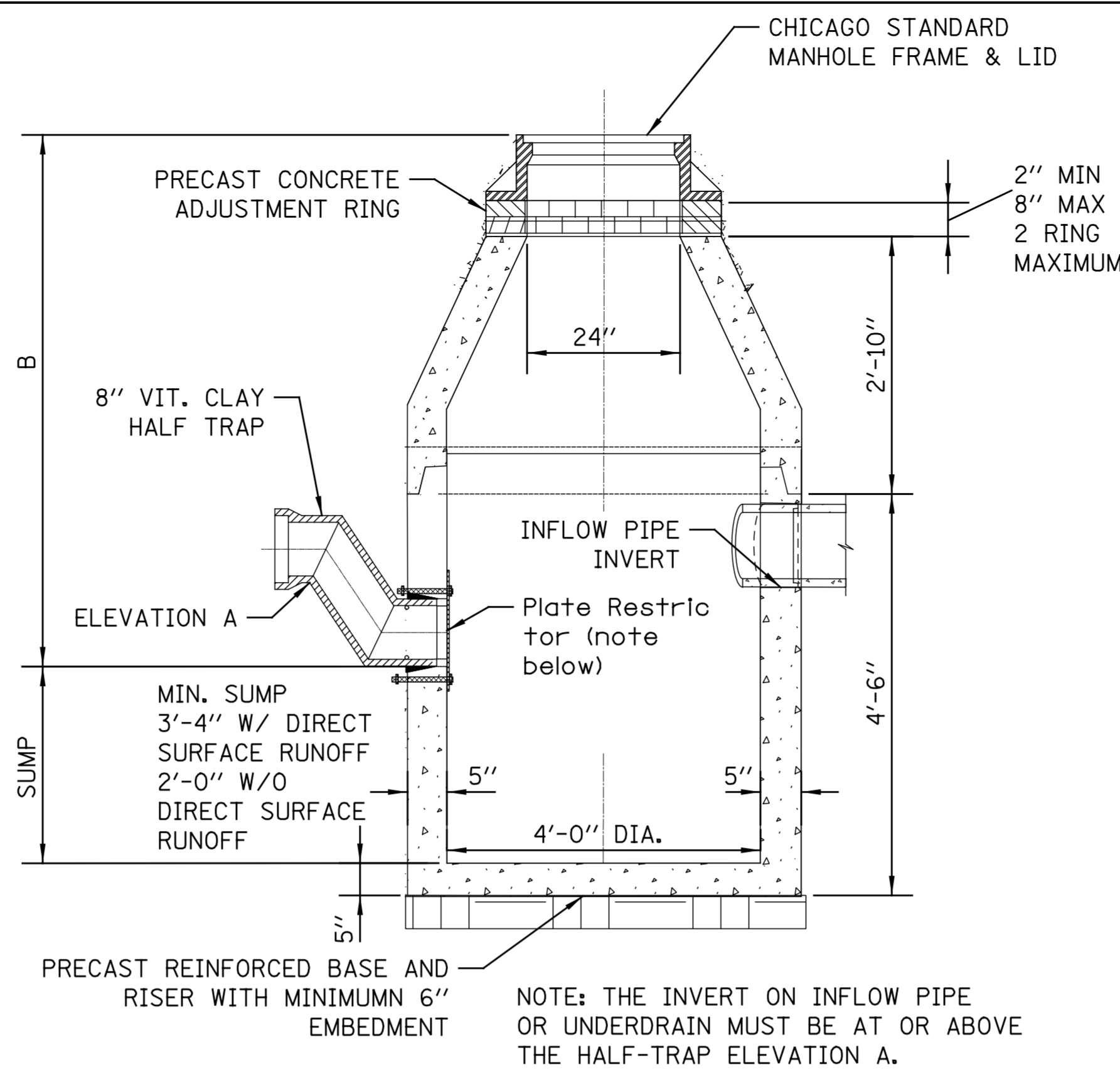
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<b>CITY OF CHICAGO</b> DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
MISCELLANEOUS DETAILS	

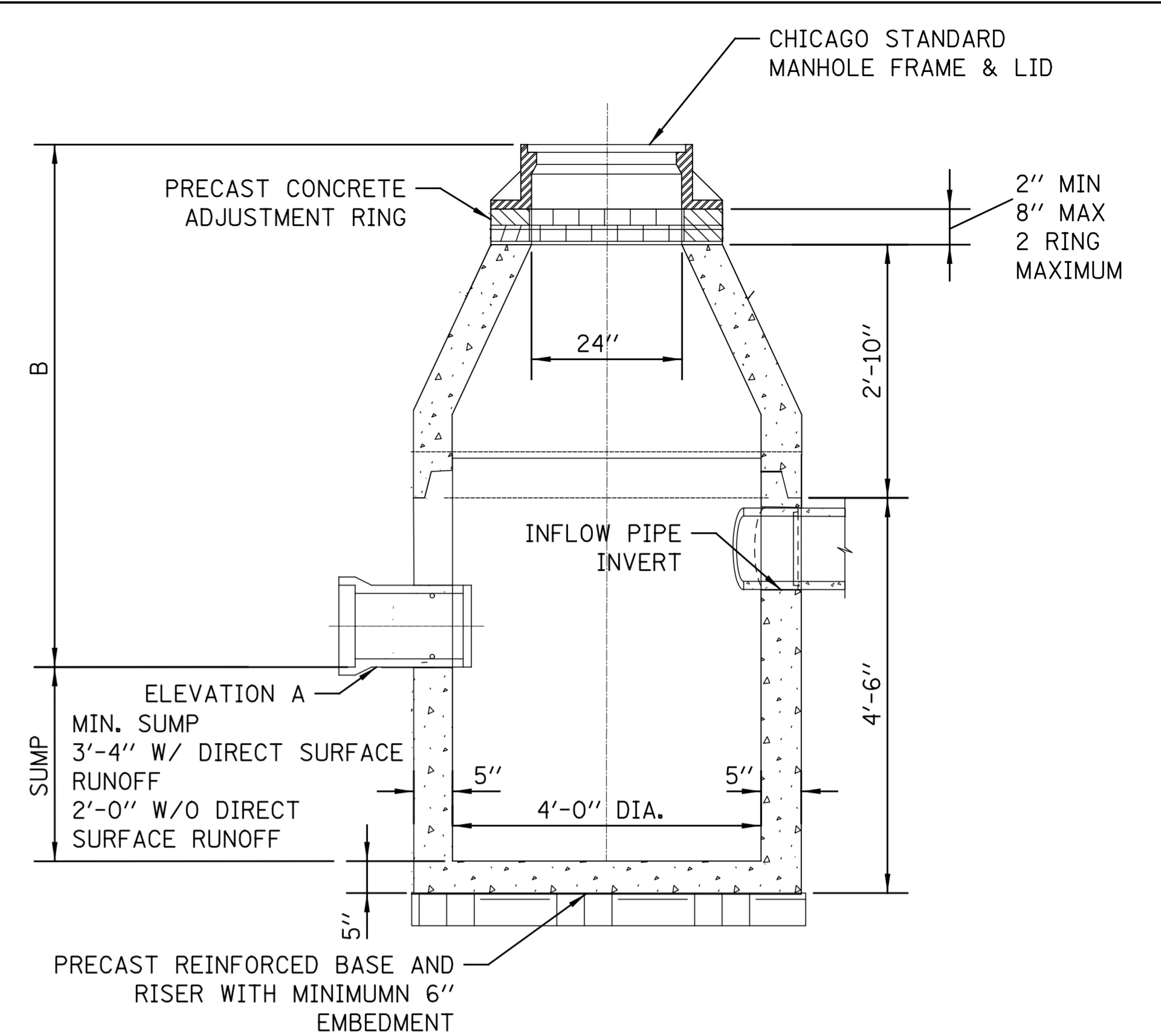
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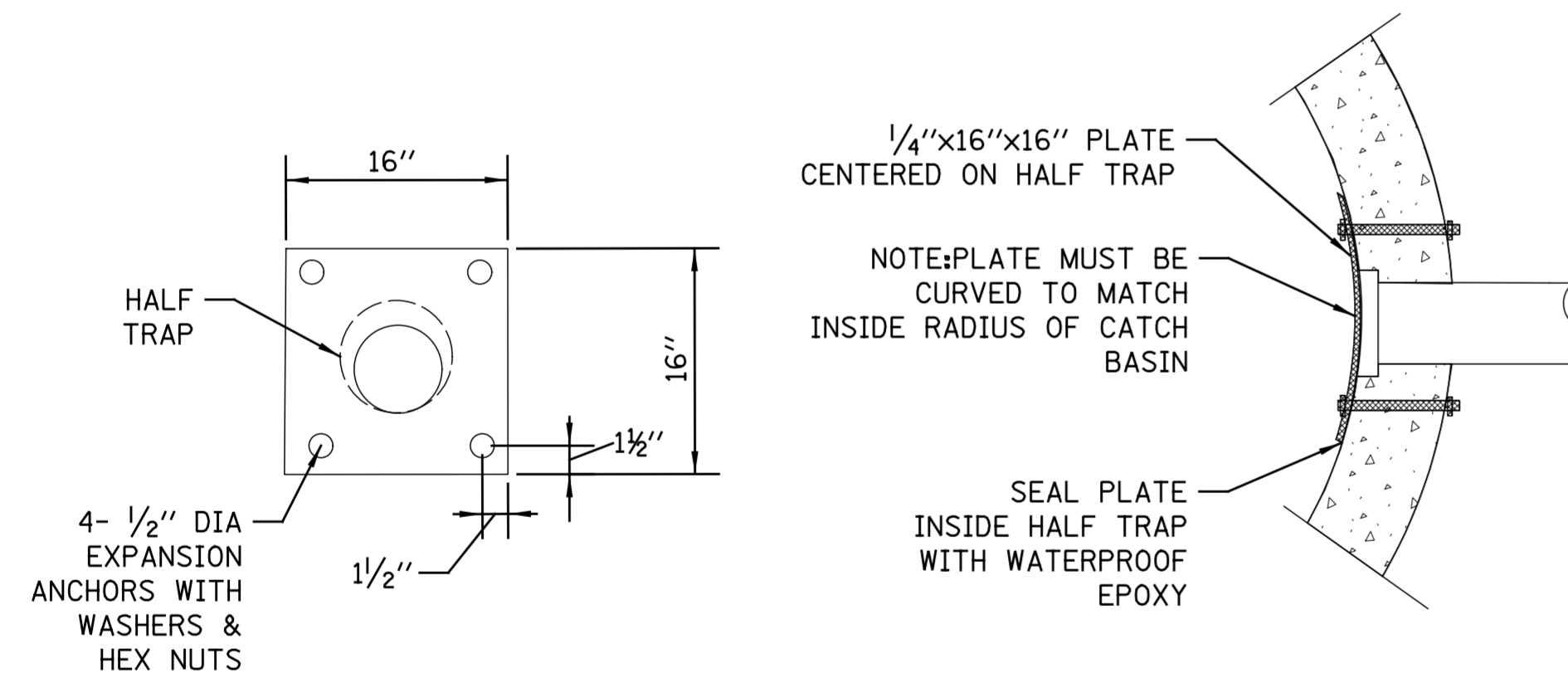
**VORTEX RESTRICTOR CATCH BASIN**  
**CONICAL SECTION**  
 N.T.S.



**DOWNSTREAM RESTRICTOR CATCH BASIN**  
**CONICAL SECTION**  
 N.T.S.

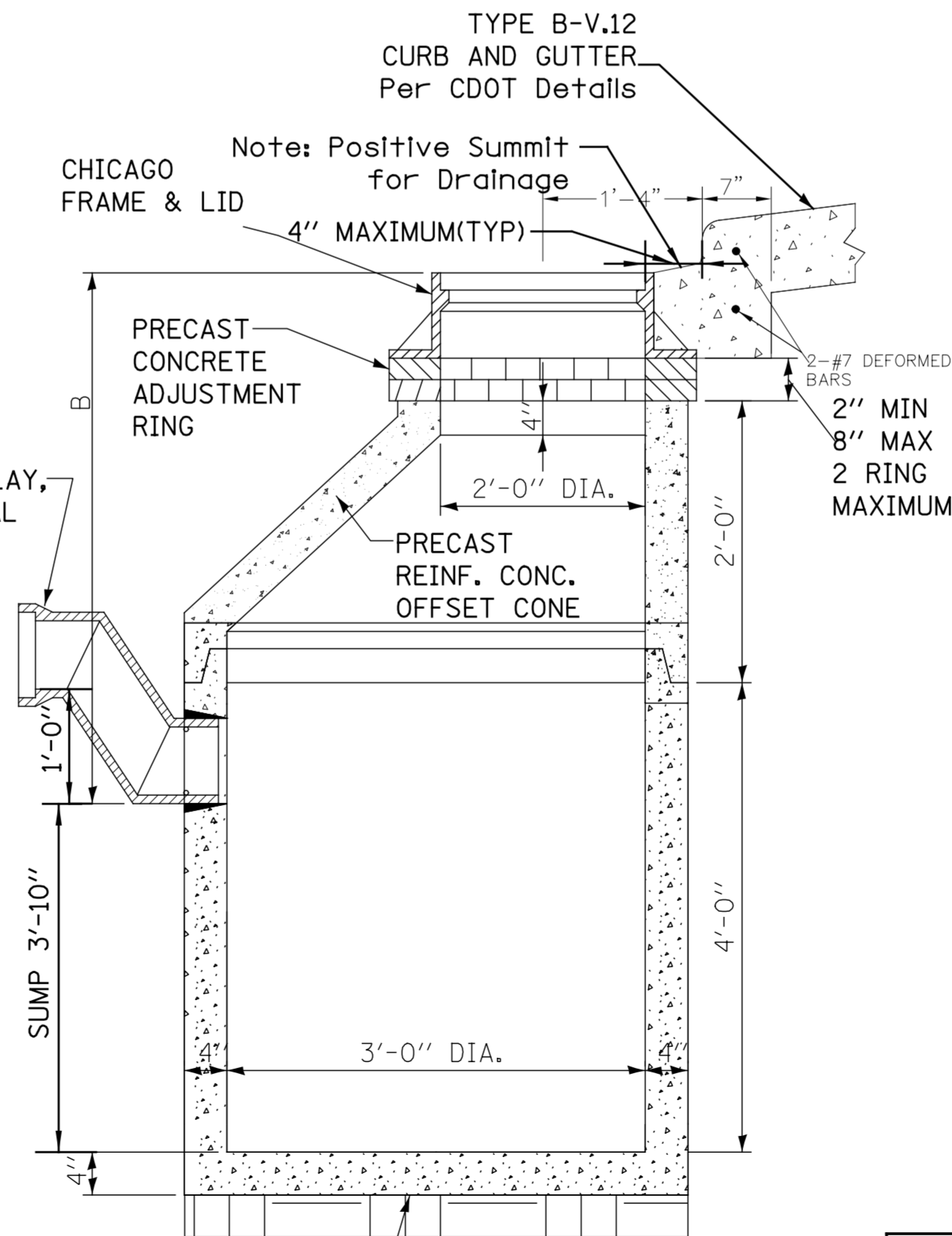


**UPSTREAM CATCH BASIN**  
**CONICAL SECTION**  
 N.T.S.



**PLATE RESTRICTOR NOTES:**

1. THE RESTRICTOR MUST BE INSTALLED IN CATCH BASINS OR MANHOLES WITH 2' MIN. SUMPS.
2. PLATE AND FASTENERS MUST BE FABRICATED IN STAINLESS STEEL, DUCTILE IRON, OR EQUIVALENT WATERPROOF/WEATHER PROOF MATERIALS.
3. MIN. ORIFICE SIZE= 2.5" DIA.



**STANDARD CATCH BASIN-3' DIA.**

**GENERAL NOTES:**

1. CATCH BASIN TO CATCH BASIN CONNECTIONS ARE ALLOWED IN PRIVATE SITES & ALLEYS. ONLY THE DOWNSTREAM CATCH BASIN IS REQUIRED TO HAVE A HALF-TRAP.
2. IF B < 4 FEET, THEN USE A FLAT TOP SLAB CATCH BASIN AS NECESSARY.
3. FOR TRENCH BACKFILL, REFER TO IDOT SSRBC, ARTICLE 1003.04.
4. FOR GRANULAR EMBEDMENT, USE CA-11, CRUSHED GRAVEL, CRUSHED STONE, OR CRUSHED CONCRETE.
5. FOR STABILIZATION STONE, 12" OF CA-1 STONE IS ONLY REQUIRED WHEN UNSTABLE MATERIAL IS ENCOUNTERED AT TRENCH BOTTOM.
6. INLETS AND 3' DIAMETER CATCH BASINS ARE TO BE USED ONLY WITH PRIOR APPROVAL OF THE DEPT. OF BUILDINGS STORMWATER REVIEWER.
7. IF COVER OVER VCP IS LESS THAN 4', USE 45 DEGREE DIP BENDS WITH 1 FOOT DROP AS HALF TRAPS AS NEEDED FOR IEPA CLEARANCE REQUIREMENTS
8. VORTEX RESTRICTORS ARE ALLOWED IN 3' CATCH BASINS IF UTILITY CONFLICTS ARE PRESENT. SEE SHEET A.26 FOR RESTRICTOR DETAIL INFORMATION.

STANDARD REVISIONS	
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12/6/24	PUBLISHED

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<b>CITY OF CHICAGO</b>	
DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
DRAINAGE STRUCTURE DETAILS FOR PRIVATE DEVELOPMENT	

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