

**Montgomery County Industrial Development Authority (MCIDA)  
Force Main Installation**

**BID FORM**

**FORCE MAIN INSTALLATION:**

**1. TOTAL LUMP SUM BID**

For work of this contract, the BIDDER proposes to perform the work required in accordance with contract documents, complete, for the lump sum price of:

Total Lump Sum Bid Amount (written in numbers):

\$ \_\_\_\_\_.

Total Lump Sum Bid Amount (written in words):

\_\_\_\_\_ Dollars and \_\_\_\_\_ Cents.

Bidder agrees to complete work within **14** days of the Notice to Proceed. The MCIDA will award the low bid based on the lowest responsible bid total.

Signature: \_\_\_\_\_ Title: \_\_\_\_\_

Company Name, Address, Telephone Number and Telefax Number:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dated: \_\_\_\_\_

## Montgomery County Industrial Development Authority (MCIDA) Force Main Installation

### PART 1 - SUMMARY

#### 1.1 SUMMARY

- A. Summary of Work: Work of this Contract consists of furnishing all materials, equipment and labor necessary for the installation of a new directionally drilled force main off of NYS Route 5S from the existing manhole as shown on the drawings until the property line of Vida Blend.
- B. Wage Rates: New York State wage rates apply for this project. Please reference the NYS prevailing wage rate for Montgomery County, NY for Heavy & Highway Construction.

#### 1.2 GENERAL REQUIREMENTS

- A. Protection of underground facilities and utilities, including any repairs required as a result of this work. Contact Dig Safely New York, the MCIDA, and the Town of Florida to determine locations of underground facilities prior to commencing any work.
- B. Provide traffic control, barricades, warning signs, detours, road plates, and lights necessary to direct personnel and public safely through or around work site and around hazards. Comply with NYS Department of Labor Industrial Code Subpart 23-3. Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and public of hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- C. Provide and maintain traffic devices for protection of vehicles and pedestrians consisting of drums, barriers, signs, lights, fences and uniformed traffic controllers as required or ordered by the Engineer or required by the local governing authorities. Contractor shall maintain all traffic lanes and pedestrian walkways at all times unless written approval from the appropriate governing agency is granted.
- D. Provide temporary facilities as required to perform work under this contract.
- E. Protection of environment, including erosion control and runoff control and protection from deleterious materials resulting from this work.
- F. Provide protection of persons and property from hazards associated with this work.
- G. Provide all necessary survey, stakeout and layout required to perform work under this contract.
- H. Provide quality control testing required for materials incorporated into this project.
- I. Proper disposal of spoil material, excess materials & debris, resulting from this work of this contract. Material shall be disposed of legally off-site.

### 1.3 CONTRACT SUMMARIES

#### A. Contract No. 1 – General Construction: Summary of Work

1. Furnish and install 1-1/2” HDPE DR 21 force main piping with an approximate total length of 110 linear feet, including all fittings and necessary appurtenances in the location shown on the drawings.
2. Directionally drill 1-1/2” HDPE DR 21 pipe to protect the existing driveway, as indicated in drawings. Existing driveway shall not be disturbed by this work.
3. Core existing manhole as shown on the drawings and specified for connection of proposed force main, including coring of existing concrete manhole, pipe boot, and all necessary appurtenances.
4. Connection and furnishing of curb box shall be by others.
5. Complete landscaping/restoration work to areas disturbed by work of this Contract using topsoil, seeding and mulch as required by engineer and as necessary to return the disturbed area to a condition as good or better than prior to construction.

## PART 2 – TECHNICAL SPECIFICATIONS

### 2.1 UTILITY DIRECTIONAL DRILLING

#### A. GENERAL

1. Follow all standards associated with directional drilling including NASST Horizontal Directional Drilling Good Practices Guidelines, ASTM F1962 and PPI TR-46.
2. Contractor shall provide Engineer and regulator with information required to complete permit process including information related to specific equipment, or process to be used (and for specific design which is Contractor’s responsibly i.e., excavated trench sheeting design).
3. Contractor will be completely responsible at his expense for all safety provisions, signs, fencing, lights, additional test pits, and all other temporary facilities necessary to perform work as may be required by agencies granting required permits.
4. Contractor shall submit description of proposed method of installation, including boring & receiving pit details & sheeting & bracing system to Engineer for approval.

#### B. PRODUCTS

##### 1. HORIZONTAL DIRECTIONAL DRILLING

- a. Performance and Design Criteria:
  - 1) Drilling Steering System: Remote with continuous electronic monitoring of boring depth and location.
  - 2) Directional Change Capability: 90 degrees with 35-foot (11-m) radius curve.
  - 3) Minimum distance for single bores and between boring pits:
    - a) Pipe Size 1-1/2 Inches (25 to 38 mm): 150 feet (45 m).
  - 4) Ratio of Reaming Diameter to Pipe OD:
    - a) Nominal Pipe Diameter of 6 Inches (150 mm) and Smaller: Maximum of 1.5.
- b. Water Source:
  - 1) Potable.
  - 2) To be provided by Contractor
- c. Identification of Pipe: shall be permanent type provided by co-extruding longitudinal green stripes or other acceptable identification into the pipes outside surface. The stripping material

shall be the same material as the pipe material except for color. Printed or painted stripes are not acceptable.

- d. Trace Wire: Stainless Steel wire, 1/8" with 1,760 lbs minimum breaking strength.
  - 1) The trace wire shall be electrically continuous throughout the project.
  - 2) For pipe installed by the directional drilling method, the tracer wire shall be located on the pipe.
  - 3) Access Box: All tracer wires are to be connected to a combination cast iron & ABS tamper proof tracer wire access box. The lid shall be locked/opened with a standard pentagon head key wrench. The cover shall be labeled "Tracer Wire". Tracer wires shall be attached to stainless steel screws mounted to the underside of the lid. Sufficient slack shall be left in the wire length so cover can be lifted with wire intact. Tracer wire access box shall be located near every cleanout/air relief structure or where indicated on the plans. Access box as manufactured by Valvco.
- e. Materials:
  - 1) Drilling Fluid: Liquid bentonite clay slurry; totally inert with no environmental risk.
- f. Subsoil Fill: Type S2, excavated and reused soil with no rocks more than 6 inches (150 mm) in diameter, frozen earth, or foreign matter.

## 2.2 SANITARY PRESSURE SEWER PIPING

### A. GENERAL

- 1. Description of Work: Furnish & install All HDPE DR 21, fittings, thrust restraint, & accessories indicated on drawings and as specified herein. Furnish & install all plastic pipe, fittings, valves, accessories & specials indicated on drawings and as specified herein.
- 2. Follow all standards associated with the installation and of HDPE DR 21 sanitary pressure sewer piping including ASTM D 2241.
- 3. Perform Work according to Montgomery County Industrial Development Agency (MCIDA).

### B. PRODUCTS

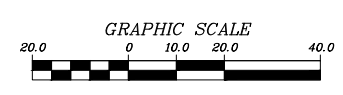
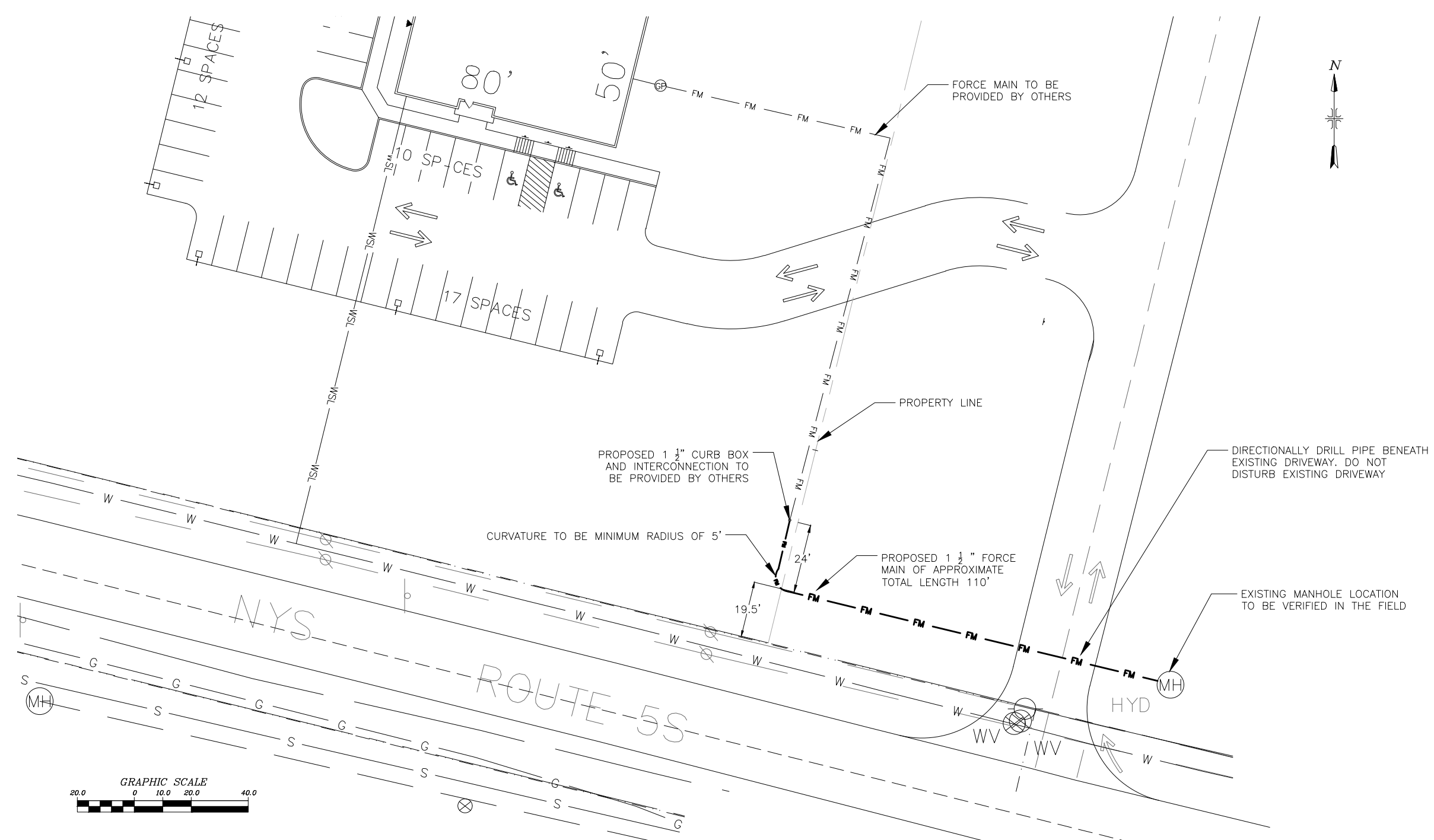
- 1. HDPE Pipe: Comply with ASTM D2241
  - a. 1.5" Diameter and Smaller: Shall be SDR 21 PVC pipe with integral bell gasketed joints. Pipe and gasket system shall be rated 200 psi minimum operating pressure.
  - b. Flexible Elastomeric Seals: Comply with ASTM D3139.
  - c. Seal Material:
    - 1) Elastomeric joints.
    - 2) Comply with ASTM F477
  - d. Fittings:
    - 1) Type: Socket.
    - 2) Schedule 40.
    - 3) Comply with ASTM D2466.
    - 4) Fittings and bends on piping shall be restrained from thrust and movement as per the standard details.
  - e. Solvent Cement: Comply with ASTM D2564

## 2. MATERIALS

- a. Detectable Tape: shall consist of 0.35 mil thick solid foil core encased in a protective plastic jacket that is resistant to alkalis, acids and other destructive elements commonly found in soil. The lamination shall have sufficient strength that the layers cannot be separated by hand. The total composite thickness shall be 4.3 mils minimum. The foil core is to be visible to ensure continuity.
  - 1) Detectable tape shall have a minimum tensile strength of 63 lbs. in the machine direction and 68 lbs. in the transverse direction per 3-inch strip.
  - 2) A continuous warning message repeated every 16 to 36 inches shall be imprinted on the tape surface. The tape shall be colored: designating the code appropriate to the type of line which the tape is protecting.

## C. EXECUTION

1. Connections: Connect new force mains to existing mains and manholes as shown on drawings. Make test holes to verify existing sizes, conditions, and locations of sewer mains prior to start of work.
2. Ensure 5' cover over the newly installed pipe
3. Field quality control shall be performed by performing pressure and leakage tests according to AWWA C600.
4. A deflection test shall be conducted
5. Compaction testing according to ASTM D1557



- NOTE:
1. FORCE MAIN MAYBE DIRECTIONALLY DRILLED THE FULL LENGTH OR DIRECTIONALLY DRILLED TO MINIMUM OF 10' FROM PAVEMENT AND OPEN TRENCH CUT FOR THE REMAINING DISTANCE
  2. A MINIMUM OF 5' COVER IS REQUIRED FROM THE FINAL GRADE TO THE TOP OF PIPE
  3. RESTORE ALL AREAS WITHIN CONSTRUCTION LIMIT TO A CONDITION AS GOOD OR BETTER THAN PRIOR TO CONSTRUCTION

NO.	DATE	REVISION	BY
00	07/2020	ORIGINAL ISSUE	BSN


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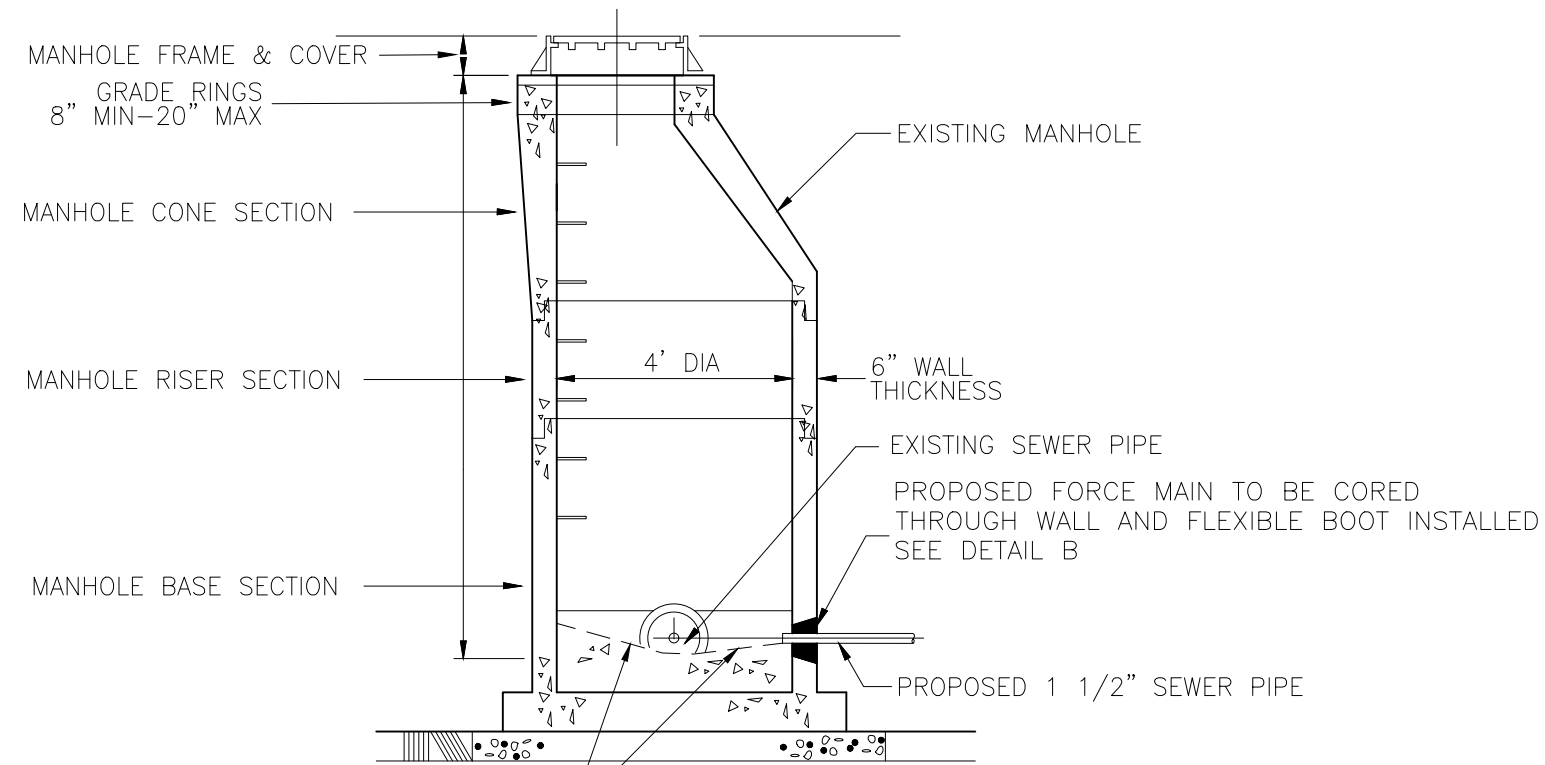
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TOWN OF FLORIDA  
 MONTGOMERY COUNTY  
  
 FORCE MAIN INSTALLATION AT MCIDA

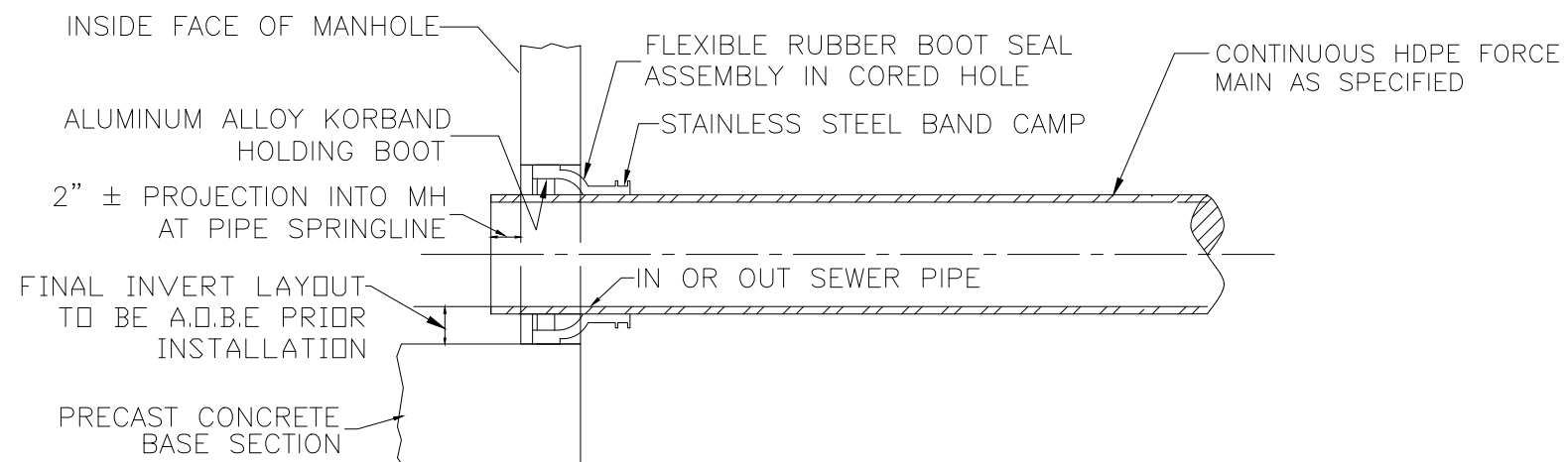
SHEET TITLE:  
  
 PLAN

SCALE:	AS NOTED	SHEET NO.:  <b>A1</b>
FILE NO.:	48-1701-XX	
DATE:	JULY 2020	




PROPOSED BENCH SHAPE TO PITCH FROM PROPOSED FORCE MAIN INVERT TO EXISTING GRAVITY SEWER INVERT

**A**  
B1 PRECAST CONCRETE MANHOLE  
NOT TO SCALE




**B**  
B1 CORED HOLE FLEXIBLE BOOT DETAIL  
NOT TO SCALE

NO.	DATE	REVISION	BY
00	08/2018	ORIGINAL ISSUE	MAL
01	09/28/18	REVISED REVIEW ISSUE	MAL
02	10/02/18	BID ISSUE	MAL



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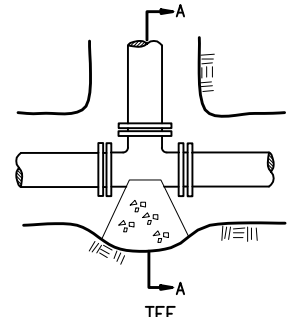
TOWN OF FLORIDA  
MONTGOMERY COUNTY

FORCE MAIN INSTALLATION AT MCIDA

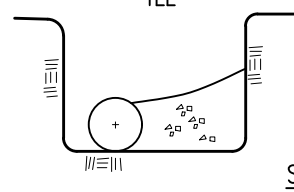
SHEET TITLE:

MANHOLE DETAILS

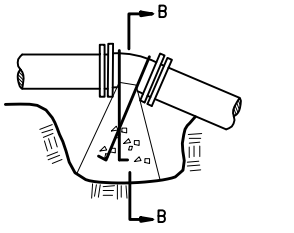
SCALE: AS NOTED	SHEET NO.:  <b>B1</b>
FILE NO.: 48-1701-XX	
DATE: AUGUST 2018	



TEE



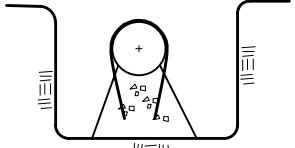
STANDARD ELEVATION



TEE W/PLUG

SECTION A-A

ELEVATION WHEN LIMITED BY LACK OF COVER



HORIZONTAL BEND

SECTION B-B ELEVATION

- FOR THE REQUIRED BEARING END DIMENSIONS D & W SEE TABLE. VALUES OF D & W OTHER THAN THOSE SHOWN IN THE TABLE MAY BE USED PROVIDED THEY YIELD A BEARING AREA EQUAL TO OR LARGER THAN THAT REQUIRED.
- CONCRETE SHALL NOT OVERLAP ANY JOINT.
- CONCRETE TO BE PLACED SO NOT TO INTERFERE WITH REMOVING OR INSTALLING ANY JOINTING HARDWARE.
- APPROXIMATE VOLUME OF CONCRETE THRUST BLOCK:
 
$$V = \frac{W \times D \times (Y + I.D.) - I.D.^3}{81}$$

V = VOLUME -CY-  
 W = WIDTH OF BLOCK -FT-  
 D = DEPTH OF BLOCK -FT-  
 I.D. = INSIDE DIAMETER OF PIPE -FT-  
 Y = AS REQUIRED DISTANCE -FT-

CONCRETE THRUST BLOCKS – REQUIRED BEARING AREAS & DIMENSIONS

FITTING PIPE I.D. -IN-	TEE		90 BEND		45 BEND		22.5 BEND		11.25 BEND	
	AREA -SF-	DIMENSIONS D' X W'	AREA -SF-	DIMENSIONS D' X W'	AREA -SF-	DIMENSIONS D' X W'	AREA -SF-	DIMENSIONS D' X W'	AREA -SF-	DIMENSIONS D' X W'
4	2.0	1.0 X 2.0	2.9	1.0 X 3.0	1.6	1.0 X 2.0	0.8	1.0 X 1.0	0.4	0.5 X 1.0
6	4.2	1.5 X 3.0	5.9	1.5 X 4.0	3.2	1.0 X 3.5	1.6	1.0 X 2.0	0.8	1.0 X 1.0
8	7.2	2.0 X 4.0	10.2	2.0 X 5.5	5.5	1.5 X 4.0	2.8	2.0 X 1.5	1.4	1.0 X 1.5
10	10.9	2.5 X 4.5	15.4	2.5 X 6.0	8.3	2.0 X 5.0	4.2	2.0 X 2.5	2.1	2.0 X 2.0
12	15.4	3.5 X 5.5	21.8	3.0 X 7.5	11.8	2.0 X 6.0	6.0	2.0 X 3.0	3.0	2.0 X 1.5
14	20.7	3.5 X 6.0	29.3	3.5 X 8.5	15.8	2.5 X 6.5	8.1	2.5 X 3.5	4.1	2.0 X 2.5
16	26.8	4.0 X 7.0	37.8	4.0 X 9.5	20.5	3.0 X 7.5	10.4	3.0 X 4.0	5.2	2.0 X 3.0
18	33.6	4.5 X 7.5	47.5	4.5 X 11.0	25.7	3.0 X 9.0	13.1	3.0 X 4.5	6.6	2.5 X 3.0
20	41.2	5.0 X 8.5	58.3	5.0 X 12.0	31.6	3.5 X 9.5	16.1	3.5 X 5.0	8.1	2.5 X 3.5
24	58.8	6.0 X 10.0	83.2	6.0 X 14.0	45.0	4.0 X 11.5	22.9	4.0 X 6.0	11.5	3.0 X 4.5

NOTES:

- VALUES FOR TEES ALSO APPLY FOR PLUGS, CAPS, AND TAPPING SLEEVES.
- REQUIRED BEARING AREAS ARE BASED ON 150 PSI WORKING PRESSURE PLUS 75 PSI SURGE ALLOWANCE RESULTING IN 225 PSI TOTAL INTERNAL PRESSURE.
- FOR PRESSURES GREATER THAN 150 PSI WORKING PRESSURE, BEARING AREAS MAY BE MODIFIED BY THE ENGINEER BY MULTIPLYING THE AREA GIVEN BY THE ADJUSTMENT FACTOR AS CALCULATED BELOW:
 
$$\frac{\text{ACTUAL PRESSURE} \times 1.5}{225} = \text{ADJUSTMENT FACTOR}$$
- REQUIRED BEARING AREAS ARE BASED ON ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF FOR SAND. DUE TO OTHER SOIL CONDITIONS ENCOUNTERED, BEARING AREAS MAY BE MODIFIED BY THE ENGINEER BY MULTIPLYING THE AREA GIVEN IN THE TABLE FOR THE APPROPRIATE PIPE SIZE AND FITTING BY THE CORRECTIONS FACTORS LISTED.
- IN MUCK, PEAT, OR RECENTLY PLACED FILL, ALL THRUSTS SHALL BE RESISTED BY PILES OR THE RODS TO SOLID FOUNDATIONS; OR THE REMOVAL OF SUCH UNSUITABLE MATERIAL AND REPLACED WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THE THRUSTS. ALL AS REQUIRED BY ENGINEER.
- FOR PIPES SMALLER THAN 4" IN DIAMETER USE THE 4" PIPE ROW FOR THRUST BLOCK DIMENSIONS.

THRUST REACTIONS – T [LBS.] PER 100 PSI INTERNAL PRESSURE

PIPE DIA. -IN-	TEE	90	45	22.5	11.25
4	1810	2560	1390	710	350
6	3740	5290	2860	1460	730
8	6430	9100	4920	2510	1260
10	9680	13690	7410	3780	1900
12	13680	19350	10470	5340	2680
14	18390	26000	14070	7170	3600
16	23780	33630	18200	9280	4660
18	29860	42230	22860	11650	5850
20	36640	51820	28050	14300	7180
24	52280	73930	40010	20400	10250

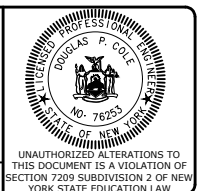
SOIL	ALLOWABLE SOIL PRESSURE -PSF-	CORRECTION FACTOR
SOFT CLAY	1000	2.0
SAND	2000	1.0
SAND & GRAVEL	3000	0.67
SAND & GRAVEL CEMENTED W/ CLAY	4000	0.50
HARD SHALE	10000	0.20

A THRUST BLOCK DETAILS  
B8 NOT TO SCALE

NO.	DATE	REVISION	BY
00	8/2019	ORIGINAL ISSUE	CJJ

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TOWN OF FLORIDA  
MONTGOMERY COUNTY

FORCE MAIN INSTALLATION AT MCIDA

SHEET TITLE:

THRUST BLOCK DETAILS

SCALE: AS SHOWN

FILE NO.: 48-1701-xx

DATE: JULY 2020

SHEET NO.: B2