IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTS FOR STATE FOREST NURSERY IRRIGATION SYSTEM PHASE 2 STORY COUNTY, IOWA

PROJECT # 18-02-85-04

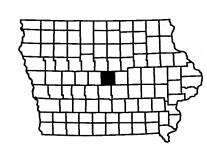


I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

dhah 6/3 Shahid Hameed

My license renewal date is December 31, 2020.

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PROJECT DESCRIPTION

This is the second phase of a two phase project and consists of installing roughly 4180 LF. of 6" & 4" PVC water main along with 2900 LF of the feeder pipe. Also to improve the efficiency of the system, multiple new gate valves will be installed to control the zones for better pressure and zone isolation.



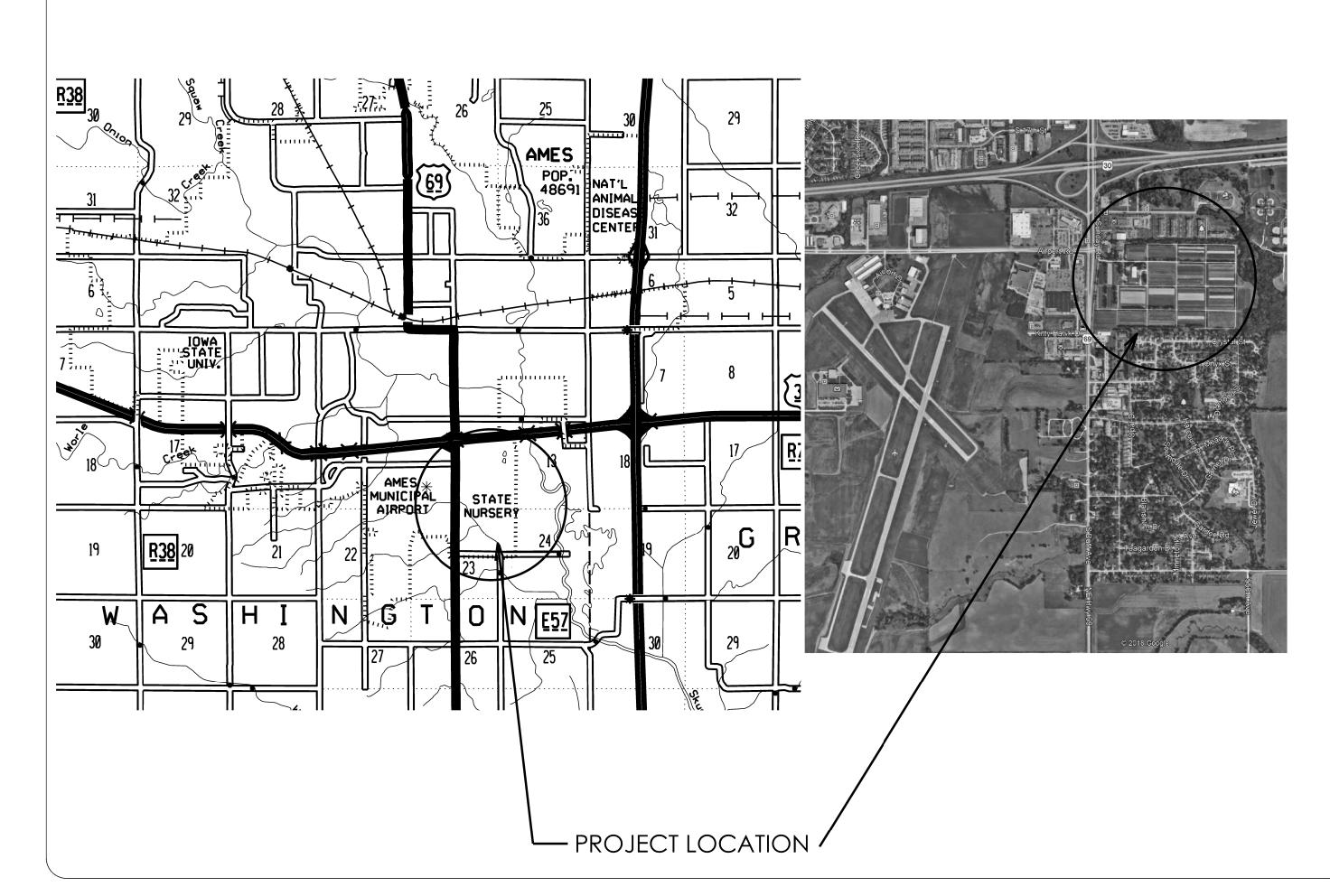
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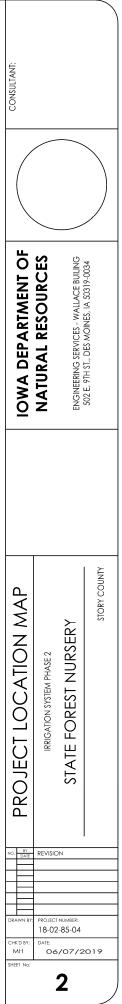
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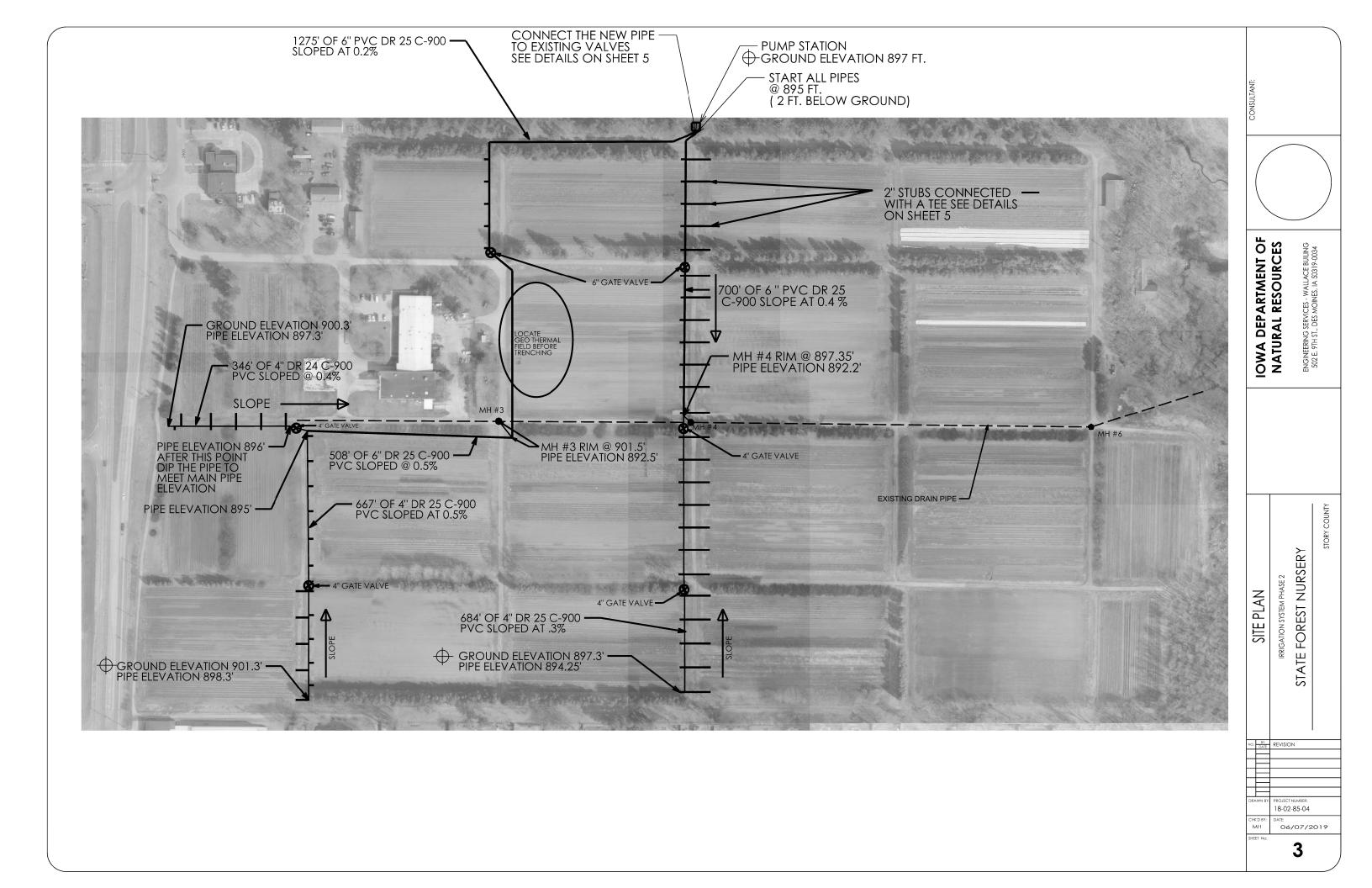
DIRECTORY

PROJECT	MANAGER	CONSTRUCTION INSPECTOR		
COMPANY IOWA DEPARTMENT OF NATURAL RESOURCES		COMPANY IOWA DEPARTMENT OF NATURAL RESO		
ADDRESS	502 EAST 9TH STREET	ADDRESS		
CITY,STATE,ZIP	DES MOINES, IA, 50319	CITY,STATE,ZIP		
CONTACT	MIKE HAMEED	CONTACT	DON LABATE	
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FAX		FAX		
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6	DRAIN BACK DETAILS	Ó		
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ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	Lump Sum	1	
2	LUMP SUM	1	
3	6" CI GATE VALVES WITH VALVE BOX & STEM EXTENSION	EACH	2
4	4" CI GATE VALVES WITH VALVE BOX & STEM EXTENSION	EACH	4
5	2" PLUG VALVES WITH VALVE BOX & STEM EXTENSION	EACH	2
6	6" PVC DR 25 C900 PVC PIPE	LF	2483
7	4" PVC DR 25 C9OO PVC PIPE	LF	1697
8	2" PVC DR 25 C900 PVC PIPE	LF	2900
9	6"X 6"X 2" Ts INSTALLED	EACH	5
10	6"X 6"X 2"X 2" CROSS	EACH	12
11	4"X 4"X 2"X 2" CROSS	EACH	17
12	4"X 4"X 2" Ts INSTALLED	EACH	16
13	13 CONNECT 2" DRAIN LINE TO MANHOLE		2
14	SITE RESTORATION	LUMP SUM	1
	ESTIMATE REFERENCE INFORMATION		

ITEM NO.	DESCRIPTION
2	THIS PRICE WILL INCLUDE CONCRETE SUPPORT BLOCKS & CONNECTIONS TO EXISTING VALVES & OTHER PLUMBING AS NEEDED
3, 4, 5	THE LENGTH OF VALVE BOX WILL EXTEND 12" ABOVE GRADE WITH A HOLE IN THE COVER, ALLOWING FOR AN EXTRA LONG ROD EXTENDING UP AN ADDITIONAL 18" BEYOND VALVE BOX. THE TOP OF THE ROD SHALL HAVE A WHELL OPERATOR FABRICATED TO BOLT TO THE ROD THAT WILL REMAIN IN PLACE AT EACH VALVE.
6, 7, 8	INCLUDES FITTINGS FOR THE COMPLETE FUNCTIONING OF THE WATERMAIN
9,10, 11, 12	THE EXACT LOCATION OF THE FEEDRES WILL BE FIELD ADJUSTED AS PER DNR ENGINEER
14	ALL DISTURBED AREAS WILL BE RESTORED TO CURRENT CONDITION

GENERAL NOTES

All construction shall be in accordance with statewide urban stanc for public improvements (SUDAS).

Verify actual locations and elevations with DNR Engineer.

All work shall conform to and be performed in accordance with al ordinances.

The contractor shall visit the site and inspect the project area and themselves with the actual job conditions prior to bidding and the visit the project site shall not relieve the contractor from performi to the plans, specification, special provisions and contract.

The contractor shall verify, at the site, all dimensions and conditio shall notify the DNR Engineer of any discrepancies, omissions, and proceeding with the work.

It shall be the contractor's responsibility to provide waste areas or material (excavated material or broken concrete) which is not des into the work involved on this project. No payment for overhaul v hauled to these sites. No material shall be placed within the rightstated in the plans or approved by the DNR Engineer.

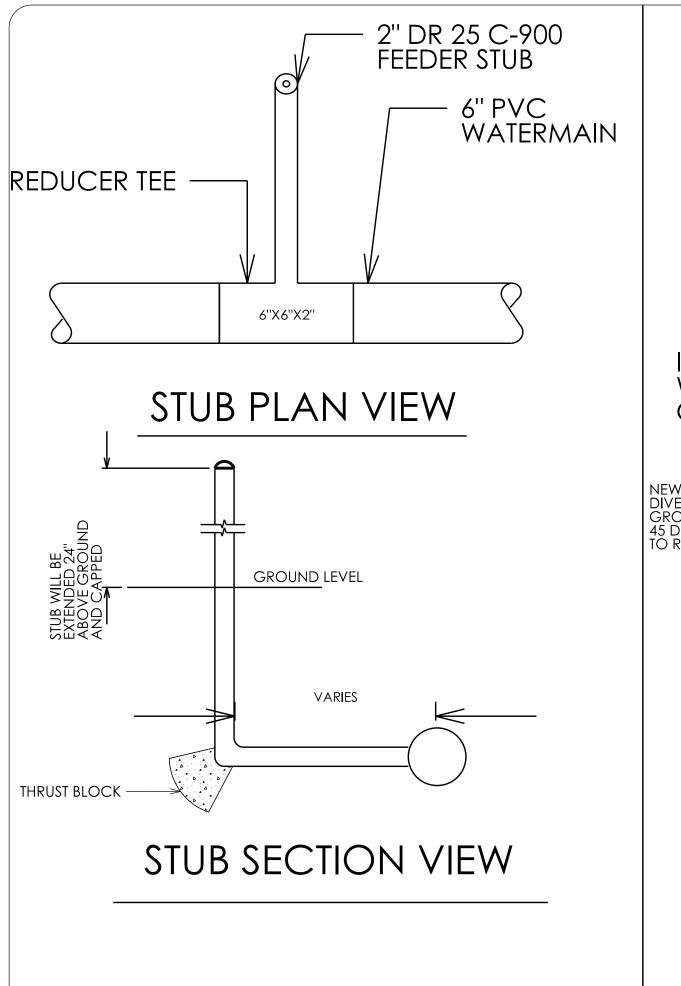
The contractor shall not disturb desirable grass areas and desirabl construction limits. The contractor will not be permitted to park of equipment or use these areas for storage of materials. Storage, p will be subject to the approval of the DNR Engineer.

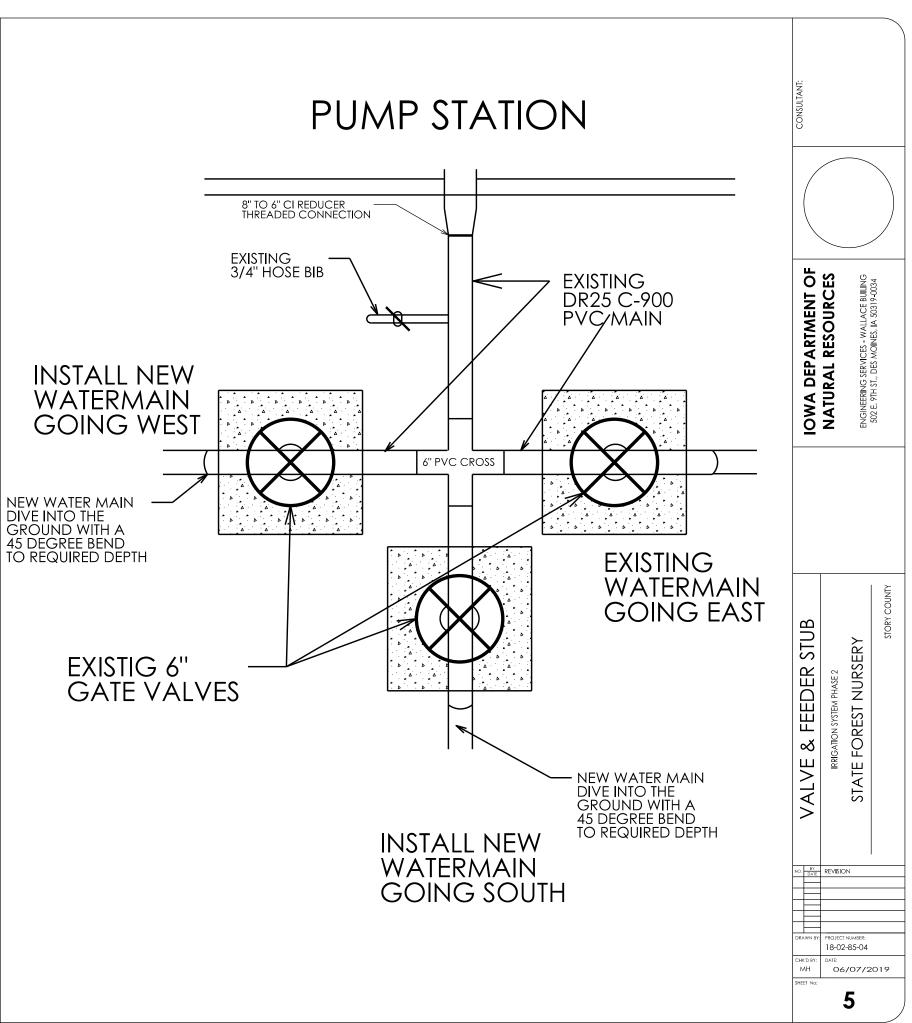
Where utilities and fixtures are shown as Existing on the plans or econstruction area, it shall be the responsibility of the contractor to of those utilities prior to the beginning of any construction. The contracters to these facilities for necessary modification of services. Un structures and utilities have been plotted from available surveys a their locations must be considered approximate only. It is possible existence of which is presently not known or shown. It is the contracter determine their existence and exact location and to avoid damage additional compensation will be allowed to the contractor for any caused by such work.

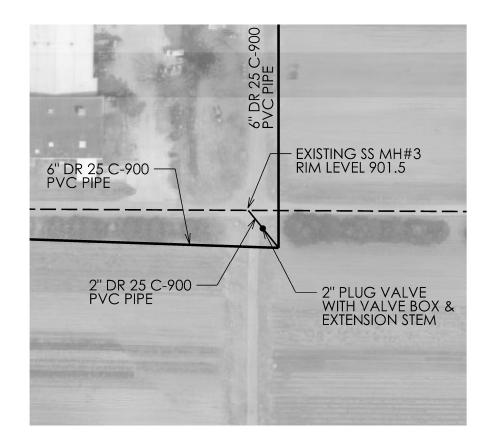
The contractor shall shape graded area to maintain surface draina finish grade.

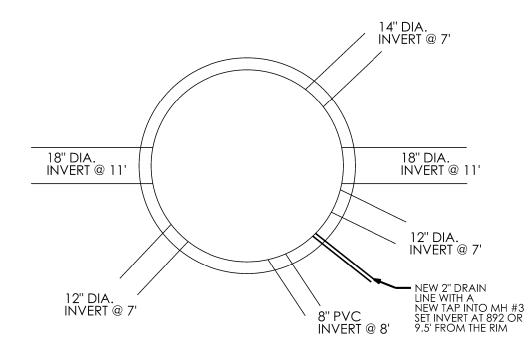
The contractor is expected to have materials, equipment, and labe to install and maintain erosion control features on the project. The fence, rock ditch checks, silt basins or silt dikes.

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dard design specifications	CONSULTANT:	
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ll applicable codes and		
d thoroughly familiarize e start of work. Failure to		
hing the work in accordance		
ons shown on the plans and d/or conflicts prior to	E C	034 034
	OWA DEPARTMENT OF NATURAL RESOURCES	ENGINEERING SERVICES - WALLACE BUILING 502 E. 9TH ST., DES MOINES, IA 50319-0034
or disposal sites for excess sirable to be incorporated	ARTA RESC	CES - WA MOINES, I
will be allowed for material t-of-way, unless specifically	DEP	NG SERVI H ST., DES
le trees outside the	DWA	ENGINEER 502 E. 9T
or service vehicles and parking and service areas	<u> </u>	
encountered within the		
to notify the DNR Engineer contractor shall be afforded Jnderground facilities,		
and records and therefore le there may be others, the		
tractor's responsibility to e thereto. No claims for y interference or delay	NO	NTY
	MATI	STORY COUNTY
age. All elevations are to	NFOR FRY	ST
oor available on a daily basis his may involve seeding, silt	RAL IN PHASE 2 NI IRS	
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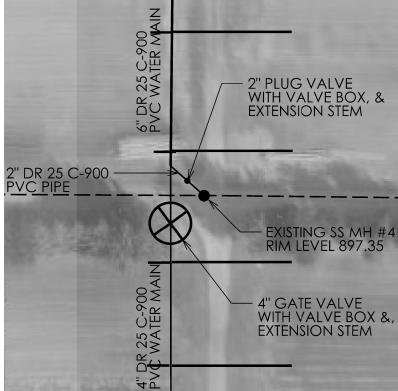


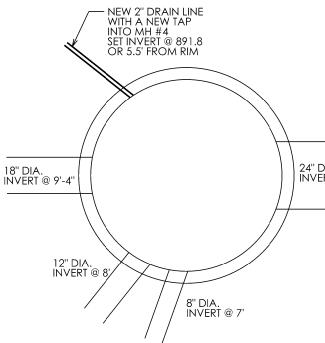






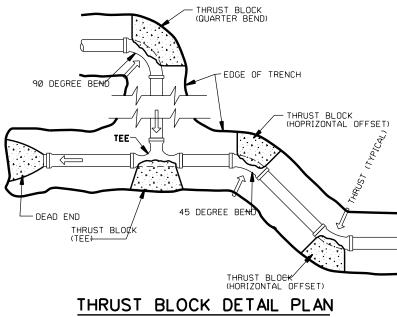
MH #3





MH #4

24" DIA. INVERT @9'-4"



NOT TO SCALE

TH	RUST	BLOCK	SIZING SC	CHEDULE
PIPE SIZE	DEAD END OR TEE	90 DEGREE BE	ND45 DEGREE BENI) 22 1/2 DEGREE BEN
4"	1.0	1.0	1.0	1.0
6"	1.5	2.0	1.0	1.0
8"	2.5	3.0	2.0	1.0
10"	3.5	5.0	3.0	1.5
12"	5.0	7.5	4.0	2.0
14"	7.0	10.0	5.5	2.5
16"	9.0	13.0	7.0	3.5
18"	12.0	16.5	9.0	4.5
20"	14.5	20.5	11.0	5.5
24"	21.0	29.5	16.0	8.0

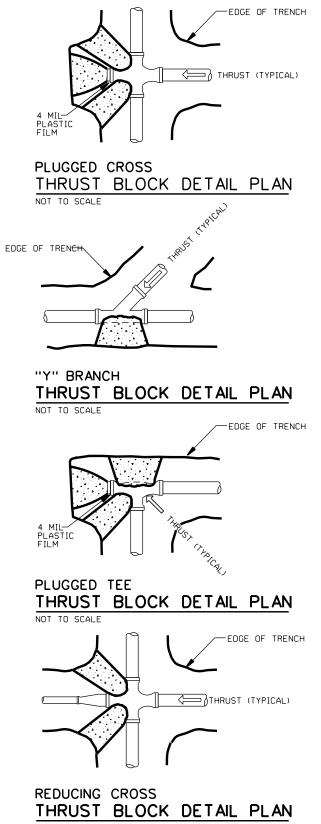
NOTES

1. PROVIDE THRUST BLOCKS AT ALL ABRUPT CHANGES IN DIRECTION; TEES, BENDS, DEAD ENDS AND HYDRANTS.

2. POUR OR WEDGE AGAINST SOLID, UNDISTURBED TRENCH WALL.

3. SIZE THRUST BLOCK IN SQUARE FEET OF BEARING AREA AGAINST UNDISTURBED EARTH.

4. DO NOT EXTEND CONCRETE BEYOND FITTING BELL.



NOT TO SCALE

