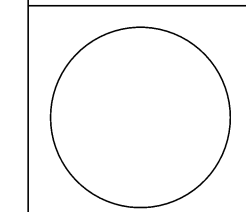


PROJECT LOCATION

CONSULTANT:

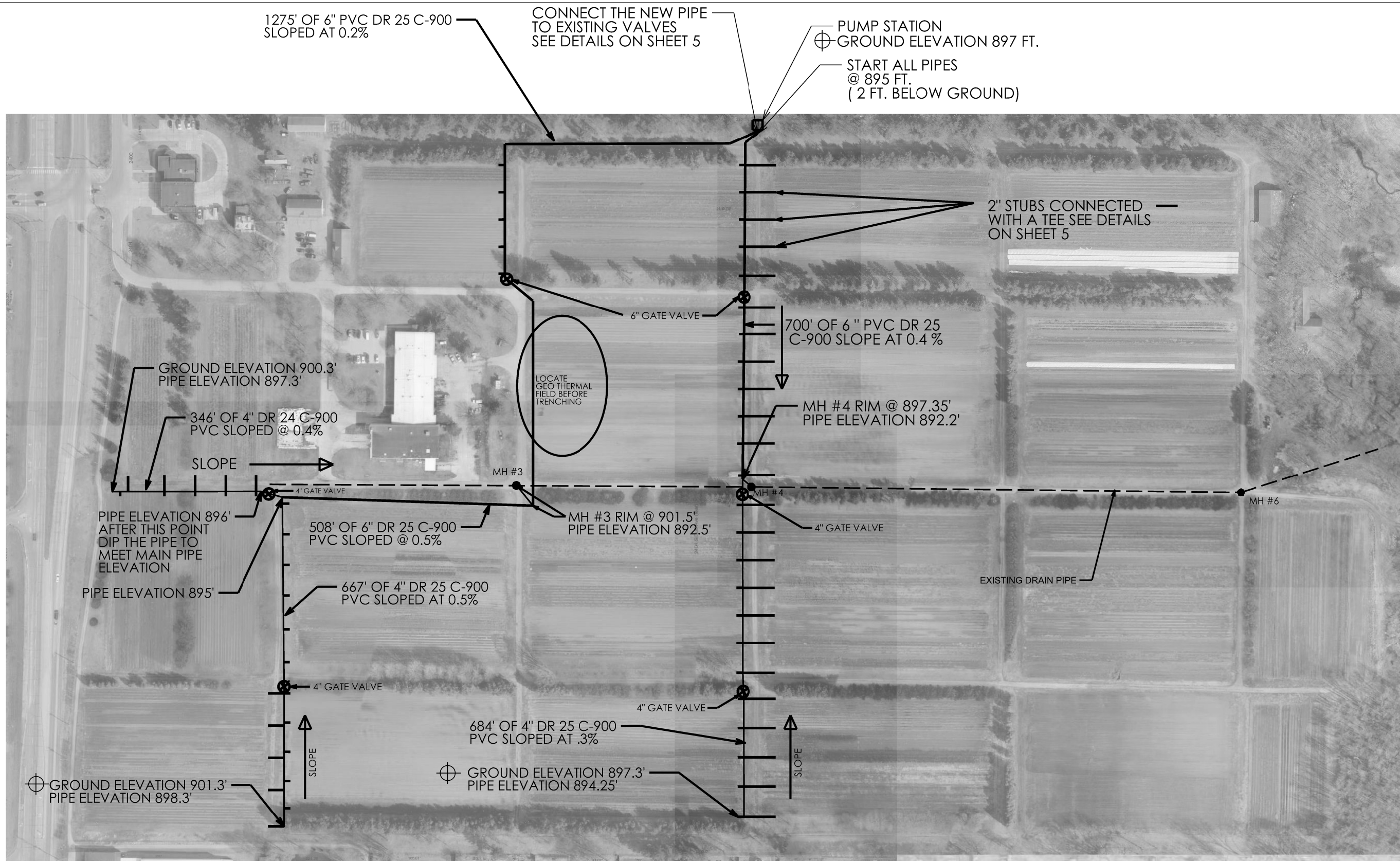


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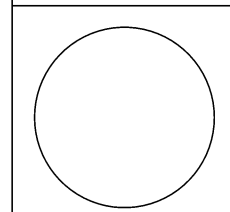
PROJECT LOCATION MAP
 IRRIGATION SYSTEM PHASE 2
STATE FOREST NURSERY
 STORY COUNTY

NO.	BY DATE	REVISION

DRAWN BY: PROJECT NUMBER:
 CHK'D BY: MH DATE: 06/07/2019
 SHEET No: **2**



CONSULTANT:



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ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

SITE PLAN

IRRIGATION SYSTEM PHASE 2

STATE FOREST NURSERY

STORY COUNTY

NO.	BY	DATE	REVISION

DRAWN BY: PROJECT NUMBER:
18-02-85-04

CHK'D BY: DATE:
MH 06/07/2019

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	MOBILIZATION	Lump Sum	1
2	CONNECT 6" PVC WITH 6" EXISTING VALVE	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 C900 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	CONNECT 2" DRAIN LINE TO MANHOLE	EACH	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 standard design specifications for public improvements (SUDAS).

Verify actual locations and elevations with DNR Engineer.

All work shall conform to and be performed in accordance with all applicable codes and ordinances.

The contractor shall visit the site and inspect the project area and thoroughly familiarize themselves with the actual job conditions prior to bidding and the start of work. Failure to visit the project site shall not relieve the contractor from performing the work in accordance to the plans, specification, special provisions and contract.

The contractor shall verify, at the site, all dimensions and conditions shown on the plans and shall notify the DNR Engineer of any discrepancies, omissions, and/or conflicts prior to proceeding with the work.

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans or approved by the DNR Engineer.

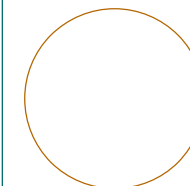
The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas will be subject to the approval of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

Where utilities and fixtures are shown as Existing on the plans or encountered within the construction area, it shall be the responsibility of the contractor to notify the DNR Engineer of those utilities prior to the beginning of any construction. The contractor shall be afforded access to these facilities for necessary modification of services. Underground facilities, structures and utilities have been plotted from available surveys and records and therefore their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the contractor's responsibility to determine their existence and exact location and to avoid damage thereto. No claims for additional compensation will be allowed to the contractor for any interference or delay caused by such work.

The contractor shall shape graded area to maintain surface drainage. All elevations are to finish grade.

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins or silt dikes.

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QUANTITIES AND GENERAL INFORMATION

IRRIGATION SYSTEM PHASE 2

STATE FOREST NURSERY

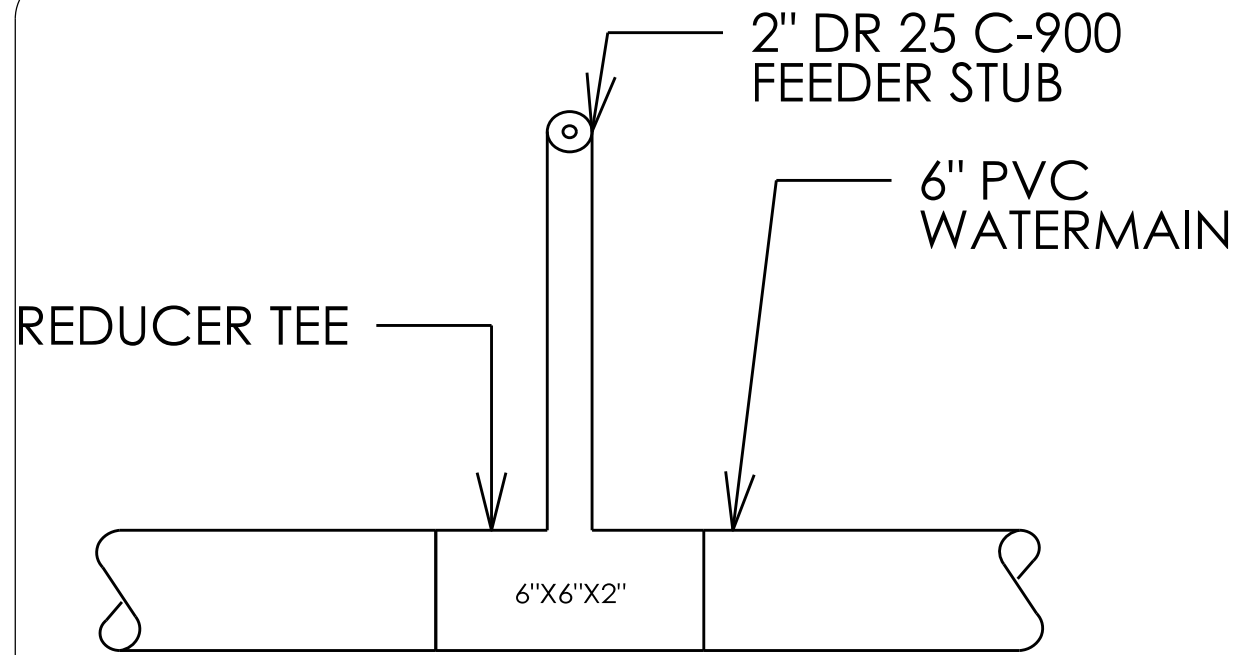
STORY COUNTY

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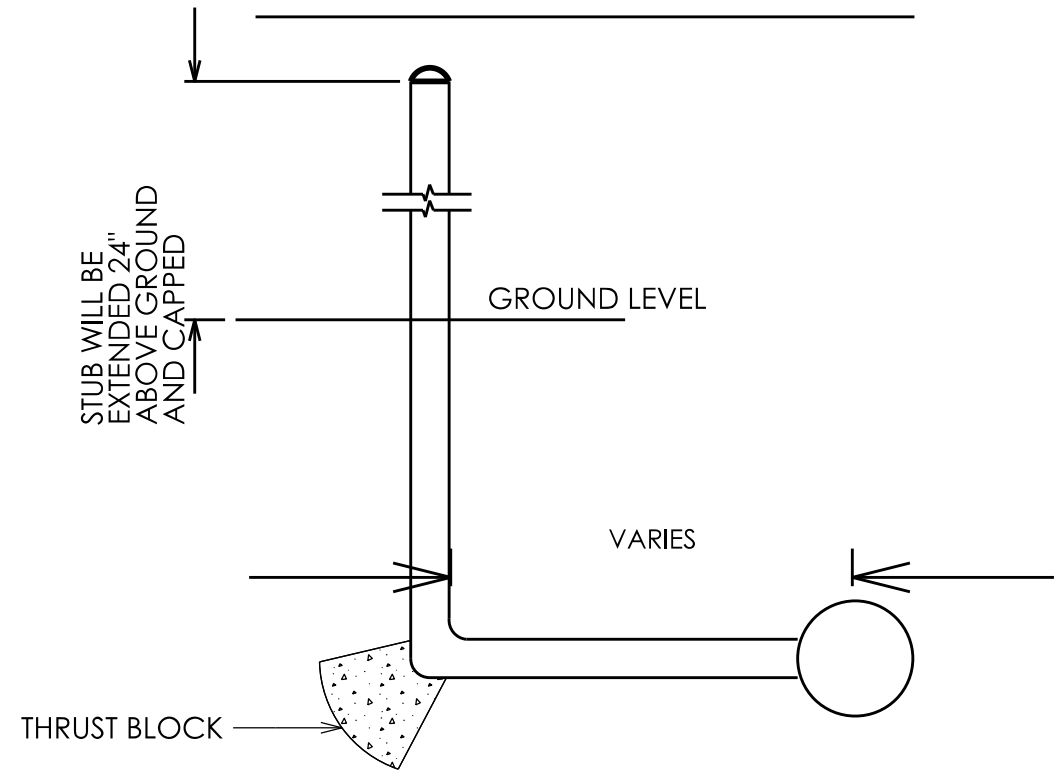
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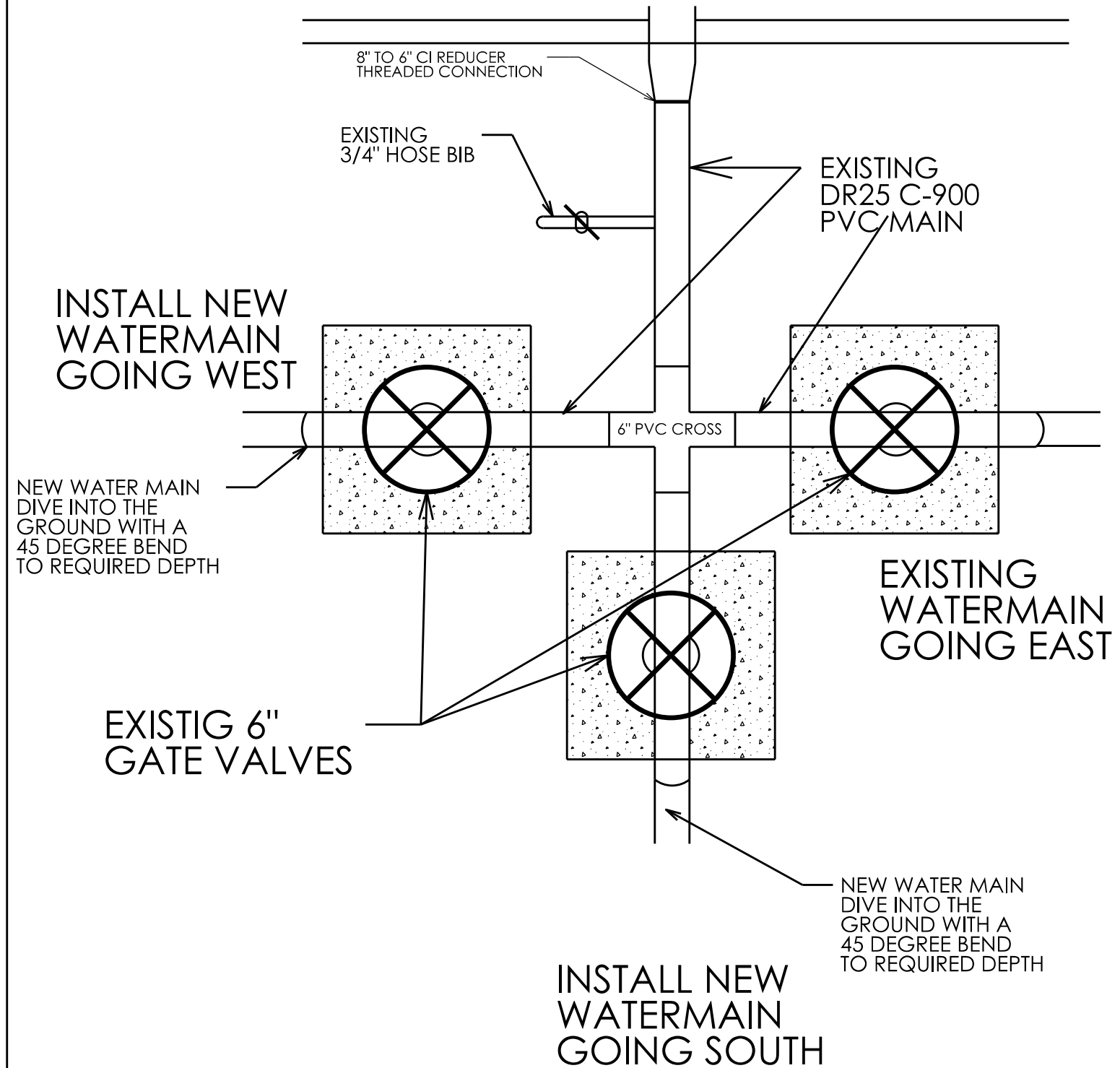


STUB PLAN VIEW

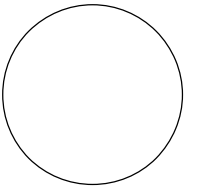


STUB SECTION VIEW

PUMP STATION



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VALVE & FEEDER STUB

IRRIGATION SYSTEM PHASE 2

STATE FOREST NURSERY

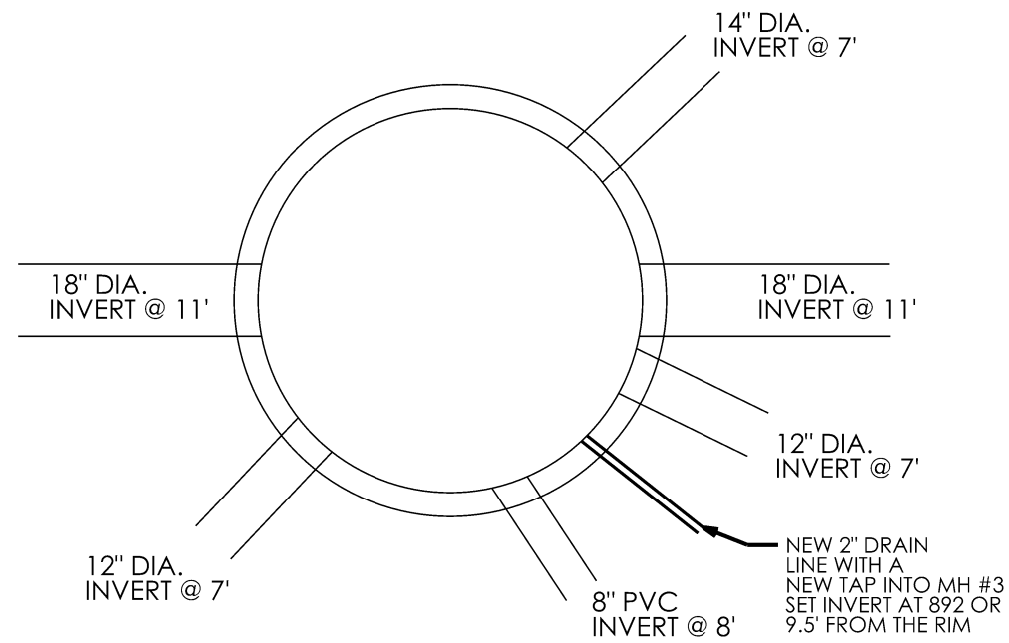
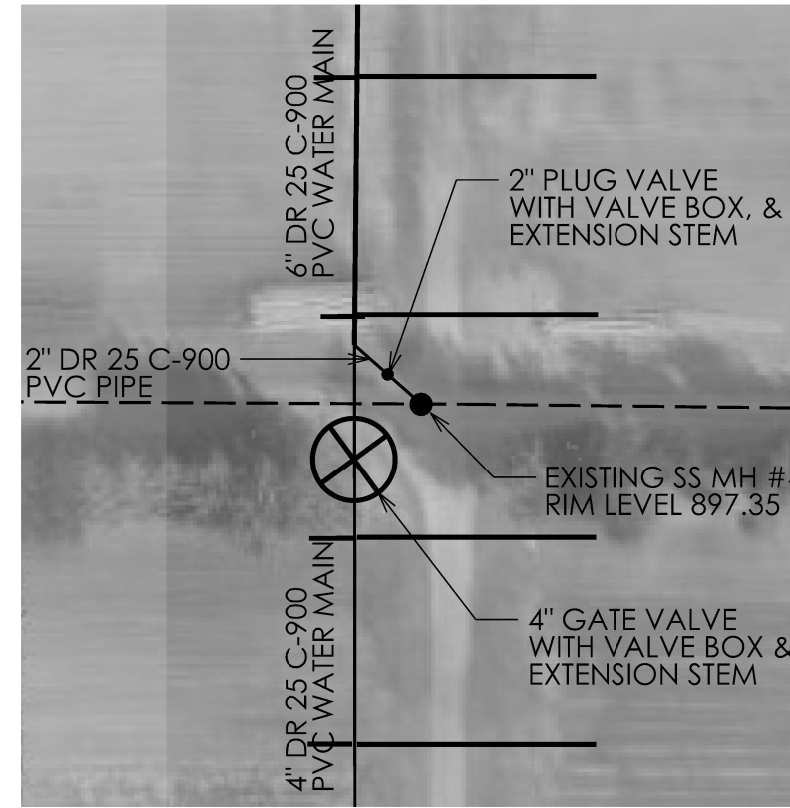
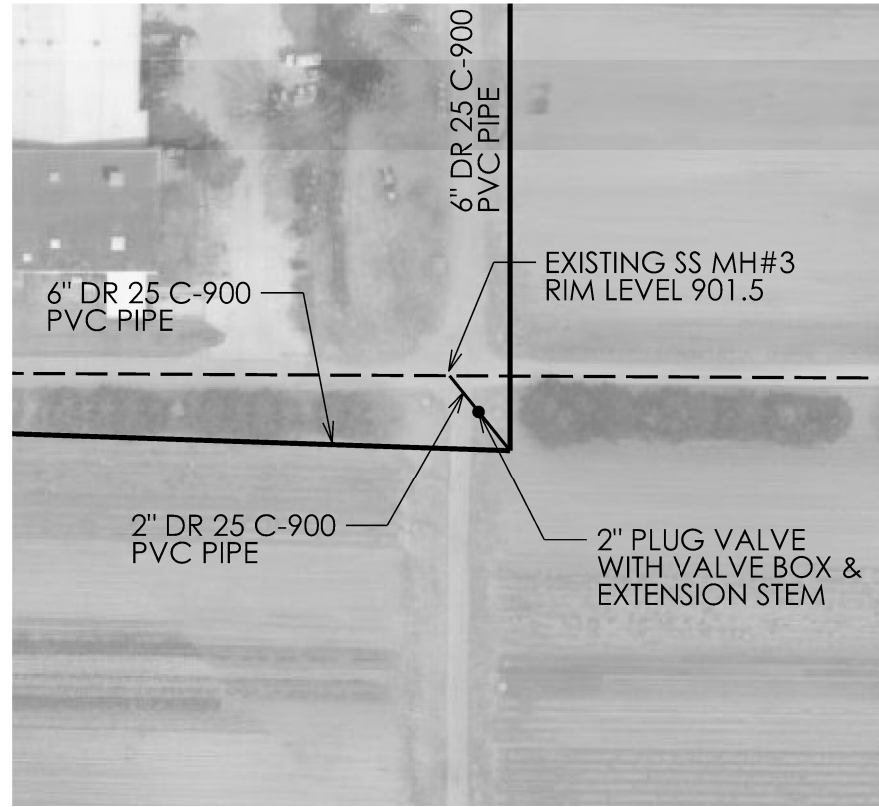
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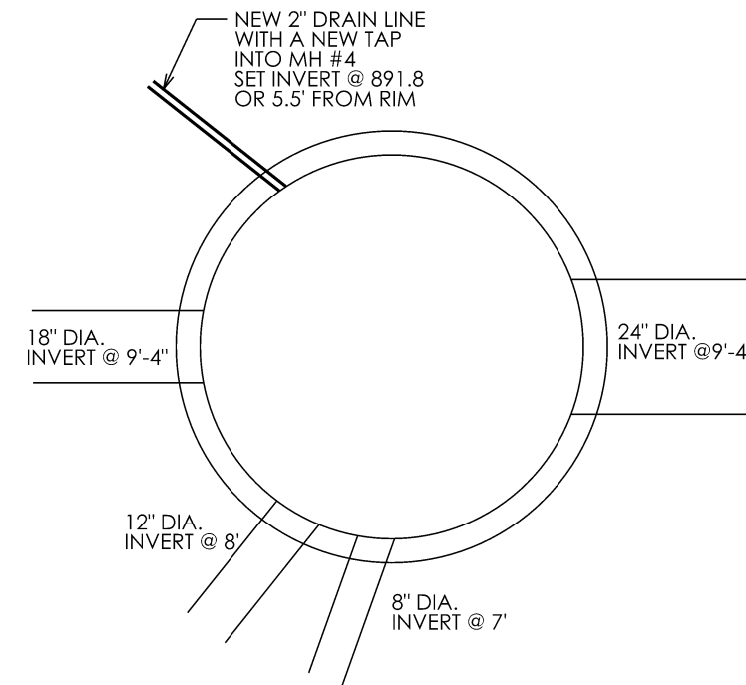
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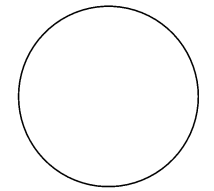


MH #3



MH #4

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DRAIN BACK DETAIL FOR MH 6

IRRIGATION SYSTEM PHASE 2

STATE FOREST NURSERY

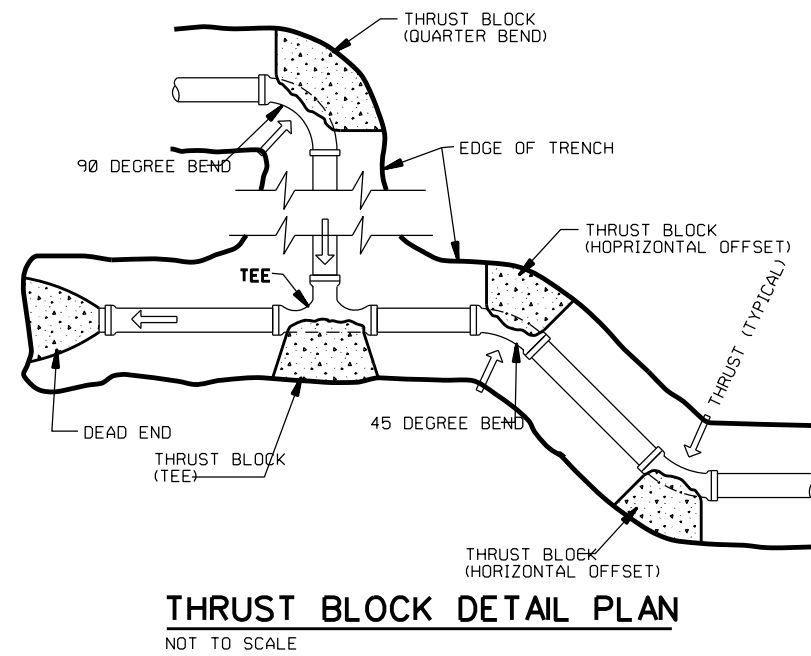
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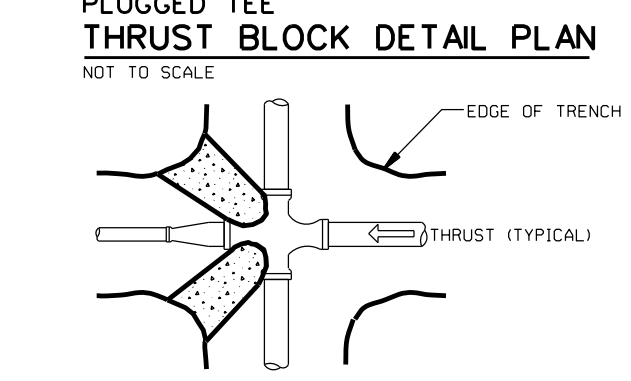
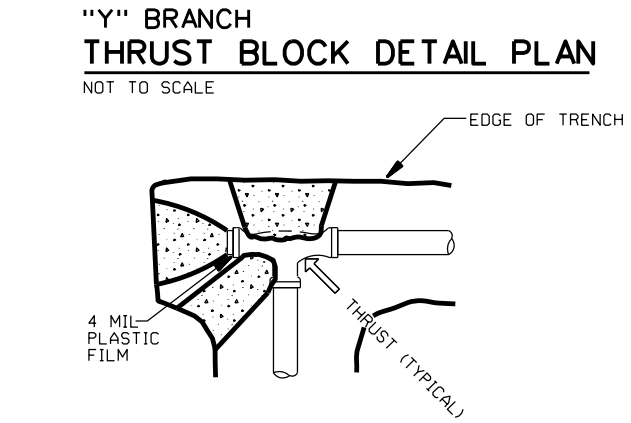
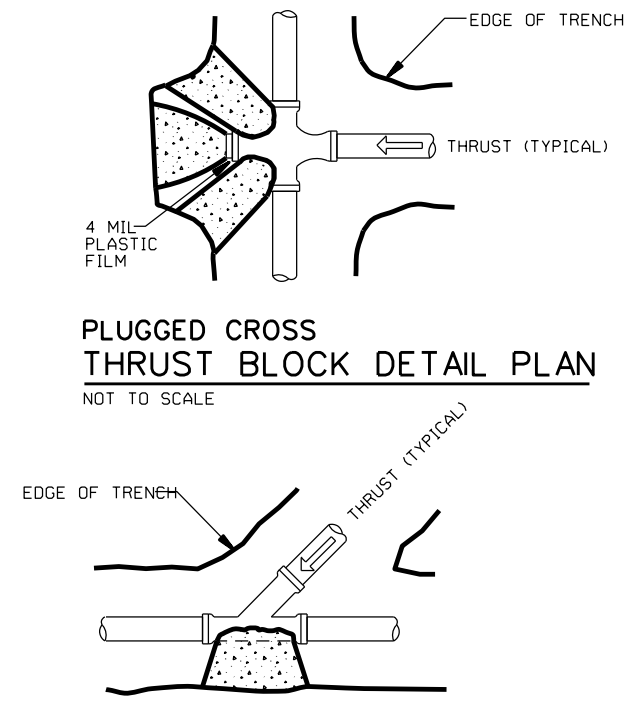
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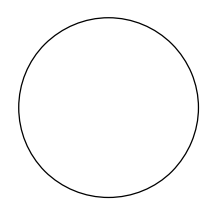


THRUST BLOCK SIZING SCHEDULE				
PIPE SIZE	DEAD END OR TEE	90 DEGREE BEND	45 DEGREE BEND	22 1/2 DEGREE BEND
4"	1.0	1.0	1.0	1.0
6"	1.5	2.0	1.0	1.0
8"	2.5	3.0	2.0	1.0
10"	3.5	5.0	3.0	1.5
12"	5.0	7.5	4.0	2.0
14"	7.0	10.0	5.5	2.5
16"	9.0	13.0	7.0	3.5
18"	12.0	16.5	9.0	4.5
20"	14.5	20.5	11.0	5.5
24"	21.0	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.



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THRUST BLOCK DETAILS

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