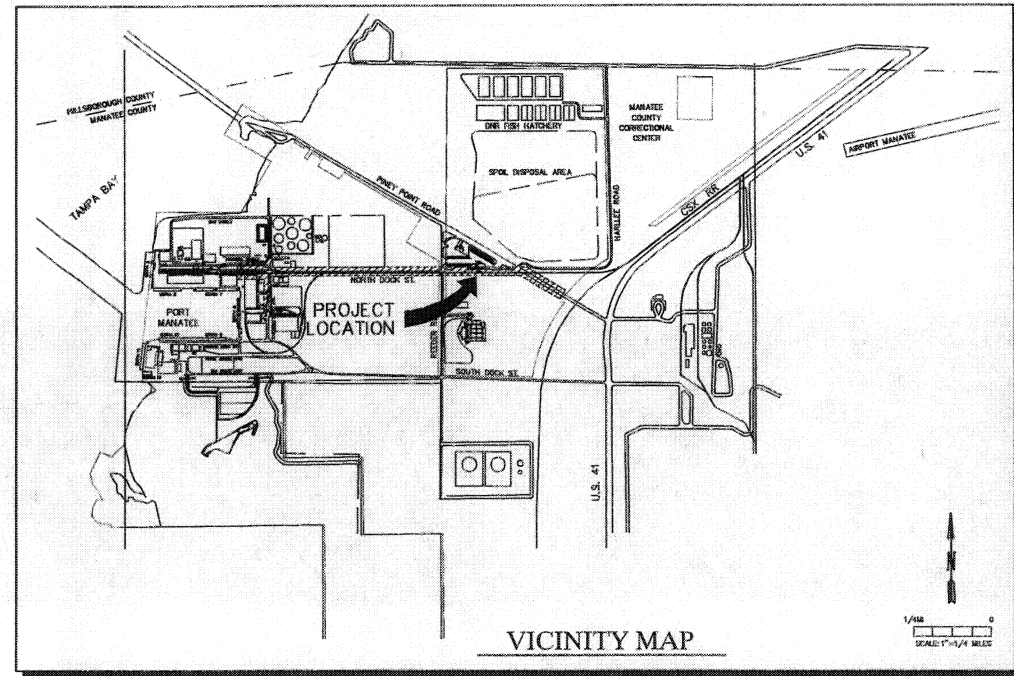
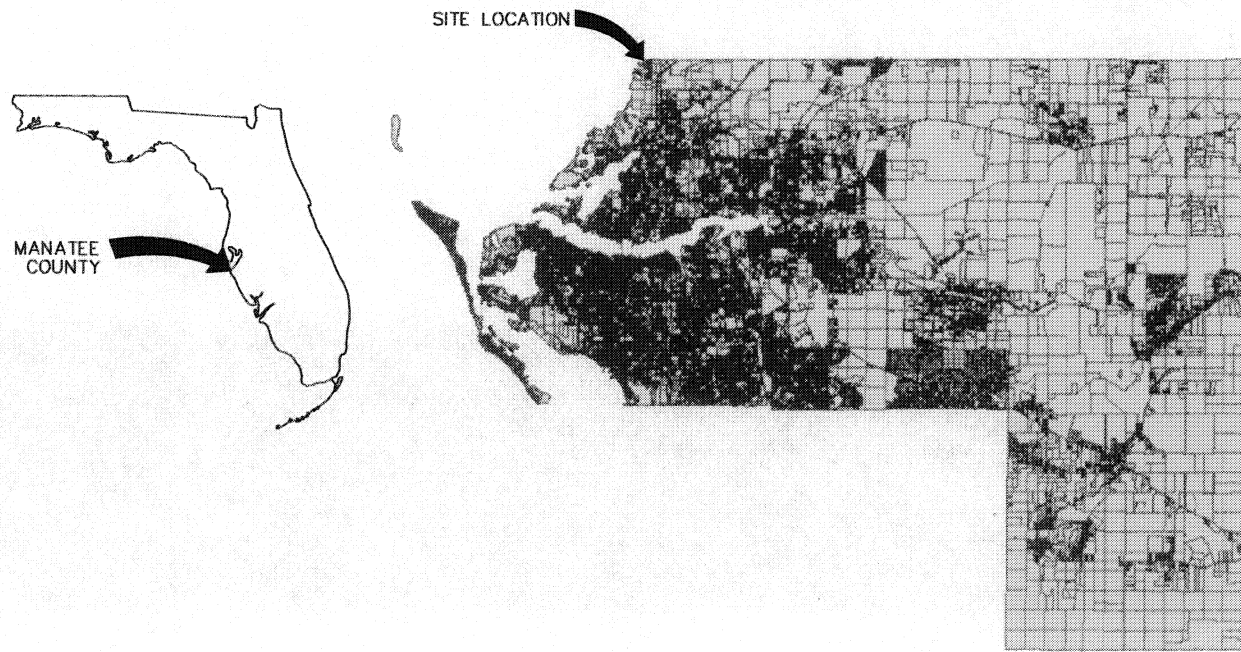




# Construction Plans North Dock Street 16" Watermain Replacement Manatee County, Florida



SECTION 1, TOWNSHIP 33S, RANGE 17E  
SECTION 6, TOWNSHIP 33S, RANGE 18E

R:\Rosendo\ConcePlanePh\14.02\WP.dwg Plotted 11/29/2007 4:15 pm By: tleah Model Plot Scale: 1=10 Xref: Jmg's

William G. Lorenzo, P.E.  
Fig. P.E. No. 54491

DSGN	TAK						
DR	TAK						
CHK	WGL	2	5/5/09	MC 100% PLANS COMMENTS	BJK	WGL	
APVD	JDM	1	2/3/09	MC 90% PLANS COMMENTS	BJK	WGL	
		NO.	DATE	REVISION	BY	APVD	

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

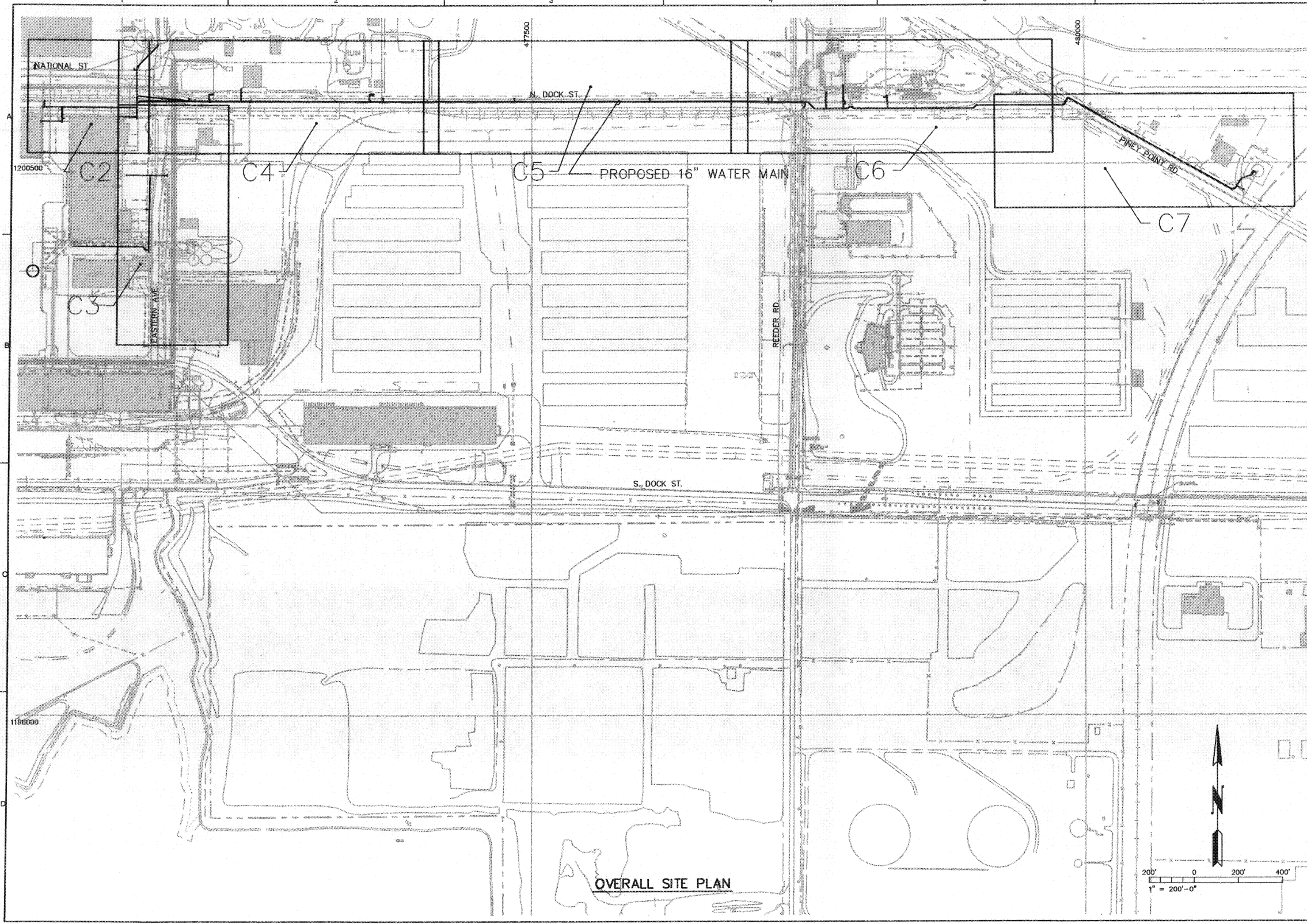
**CH2MHILL**  
1905 INTERMODAL CIRCLE SUITE 330  
PALMETTO, FLORIDA 34221-6608  
LB 0002934 AA C000956

NORTH DOCK STREET  
16" WATERMAIN REPLACEMENT  
MANATEE COUNTY, FLORIDA

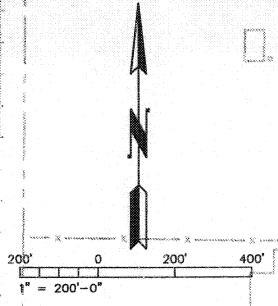
TITLE SHEET

SHEET	T1
DWG	
DATE	MARCH 2009
PROJ	361714





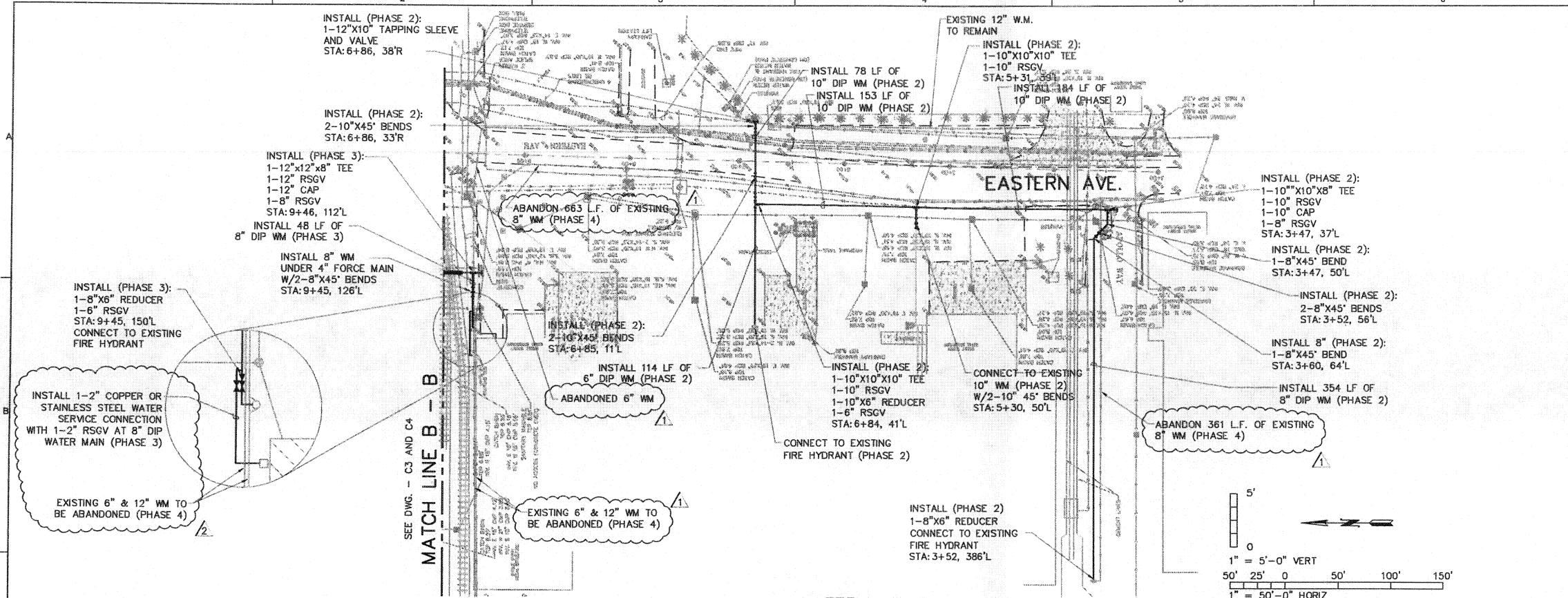
OVERALL SITE PLAN



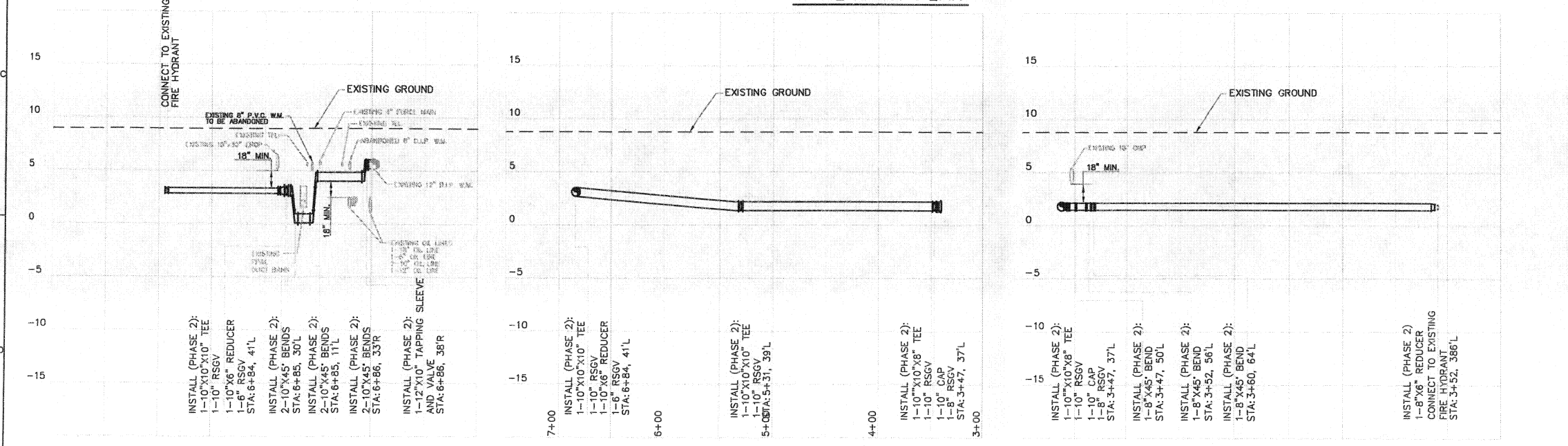
<p><b>CH2MHILL</b></p> <p>CIVIL</p> <p>OVERALL SITE PLAN</p>		<p>1906 INTRAMODAL CIRCLE SUITE 530 PALMETTO, FLORIDA 34221-6688 18002394 AAC 000656 WILLIAM G. LORENZO PE24491</p>	
		<p>MANATEE COUNTY NORTH DOCK ST 16" WATER MAIN REPLACEMENT MANATEE COUNTY, FLORIDA PROJECT No. 0112570</p>	
<p>VERIFY SCALE BAR IS ONE INCH CH ORIGINAL DRAWING.</p>		<p>DATE MARCH 2003 PROJ 381714 DWG C1</p>	
<p>NO. DATE DESG. DR. CHK. REVISION</p>		<p>BY APVD</p>	
<p>100% DESIGN REVIEW</p>		<p>William G. Lorenzo, P.E. Fla. P.E. No. 54491</p>	

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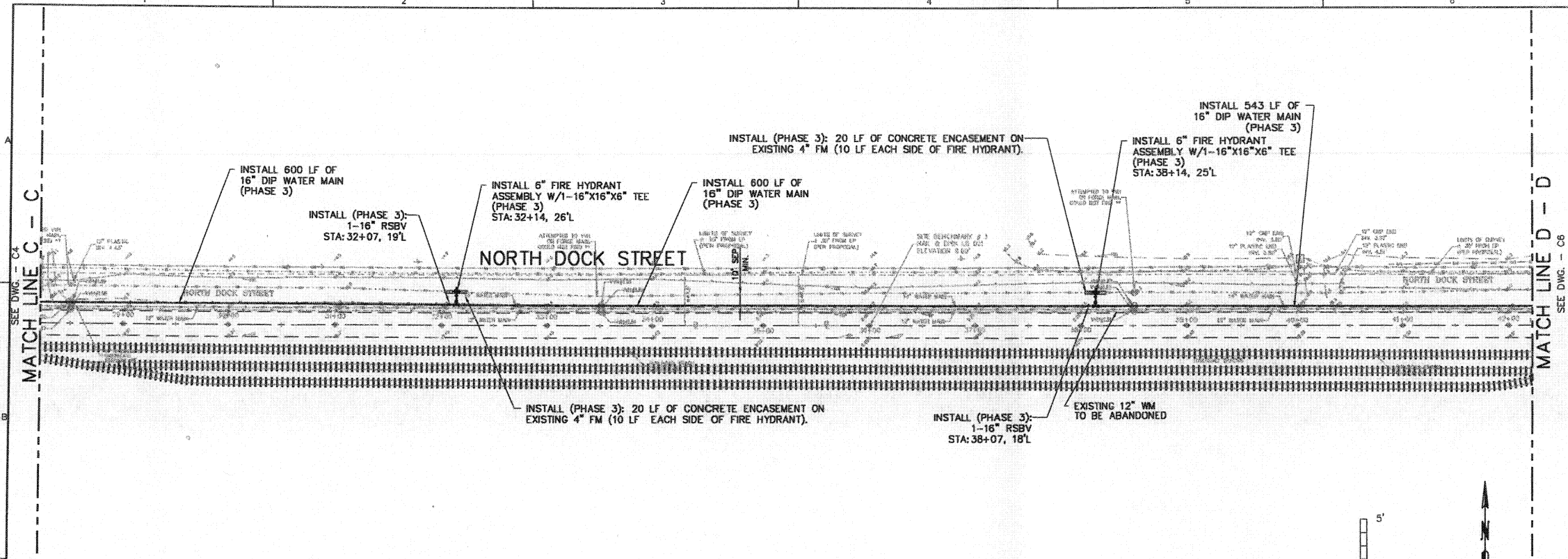
**WATERMAIN PLAN**



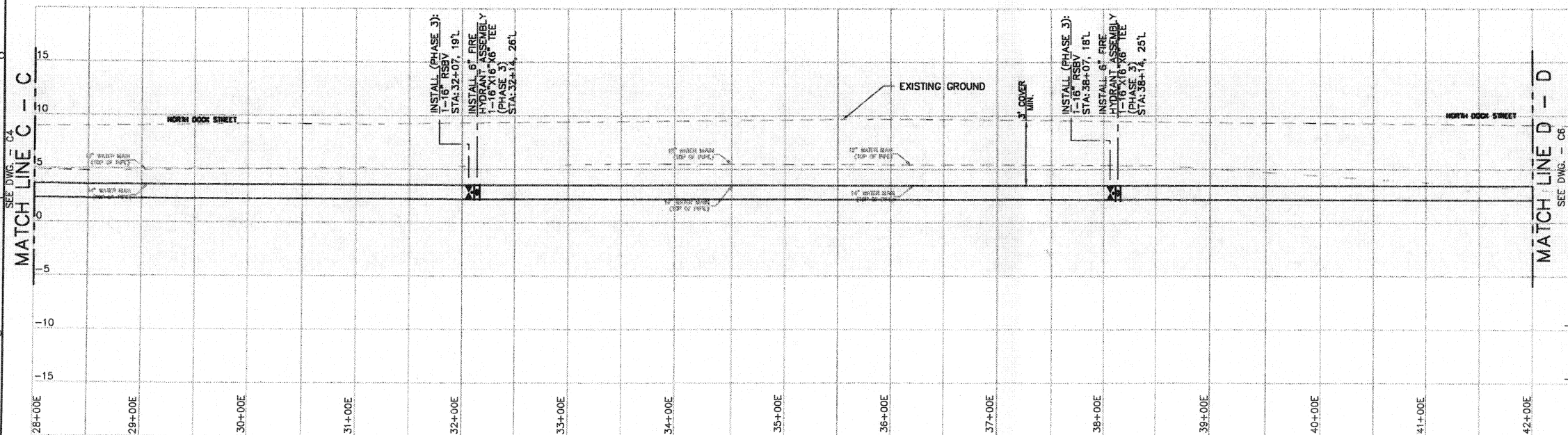
**WATERMAIN PROFILES**

1905 INTERMODAL CIRCLE SUITE 330 PALMETTO, FLORIDA 34221-6608 1800N284 AAC000656 WILLIAM G. LORENZO P.E. 4481		MANATEE COUNTY NORTH DOCK ST 18" WATER MAIN REPLACEMENT		MANATEE COUNTY, FLORIDA PROJECT No. 6912570	
WGL		WGL		WGL	
BWK		BWK		BWK	
BY		BY		BY	
APVD		APVD		APVD	
NO.		NO.		NO.	
DATE		DATE		DATE	
DESIGN		DESIGN		DESIGN	
CHECK		CHECK		CHECK	
REVISION		REVISION		REVISION	
COMMENTS		COMMENTS		COMMENTS	
3/5/09 MC 100% PLANS		3/5/09 MC 100% PLANS		3/5/09 MC 100% PLANS	
2/3/08 MC 90% PLANS		2/3/08 MC 90% PLANS		2/3/08 MC 90% PLANS	
T. KLEIN		T. KLEIN		T. KLEIN	
W.G. LORENZO		W.G. LORENZO		W.G. LORENZO	
WILLIAM G. LORENZO, P.E.		WILLIAM G. LORENZO, P.E.		WILLIAM G. LORENZO, P.E.	
FLA. P.E. NO. 54491		FLA. P.E. NO. 54491		FLA. P.E. NO. 54491	
100% DESIGN REVIEW		100% DESIGN REVIEW		100% DESIGN REVIEW	
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VERIFY SCALE		VERIFY SCALE		VERIFY SCALE	
DATE		DATE		DATE	
PROJ		PROJ		PROJ	
DWG		DWG		DWG	
C3		C3		C3	

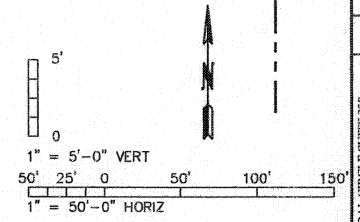




**WATERMAIN PLAN**

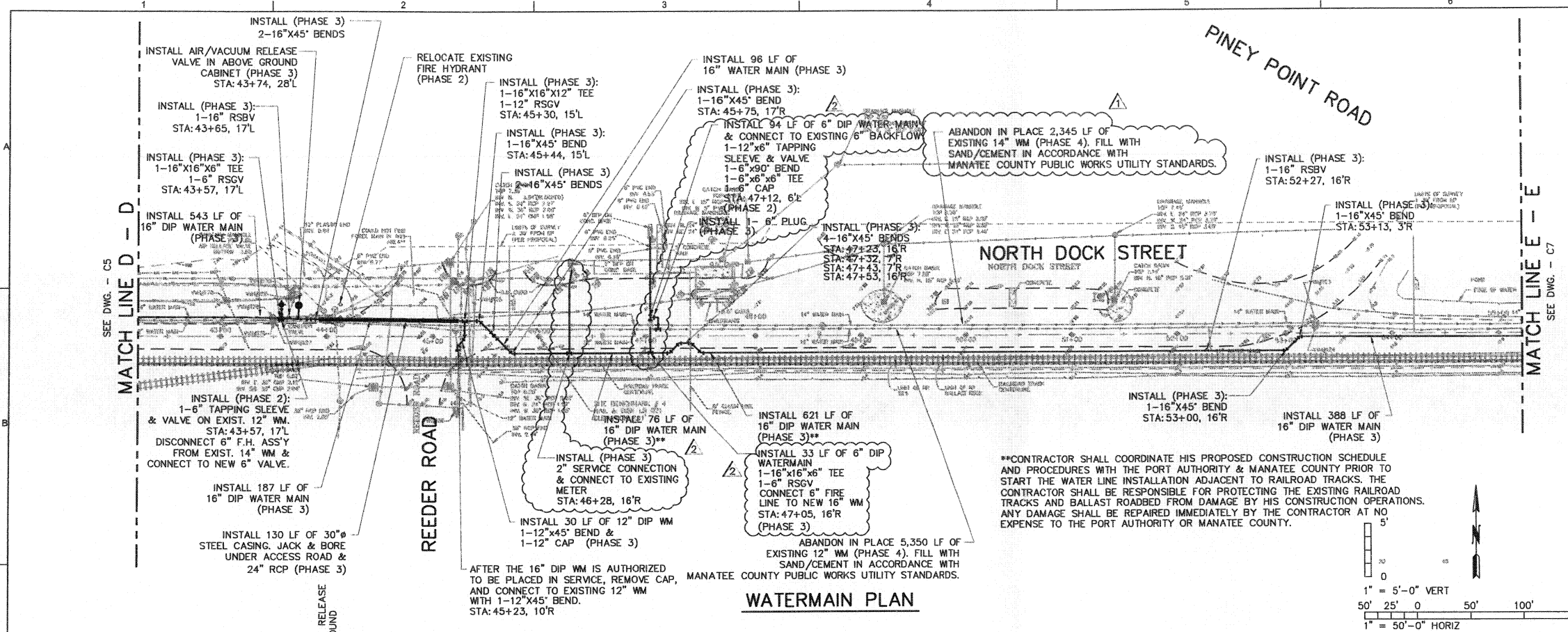


**WATERMAIN PROFILE**

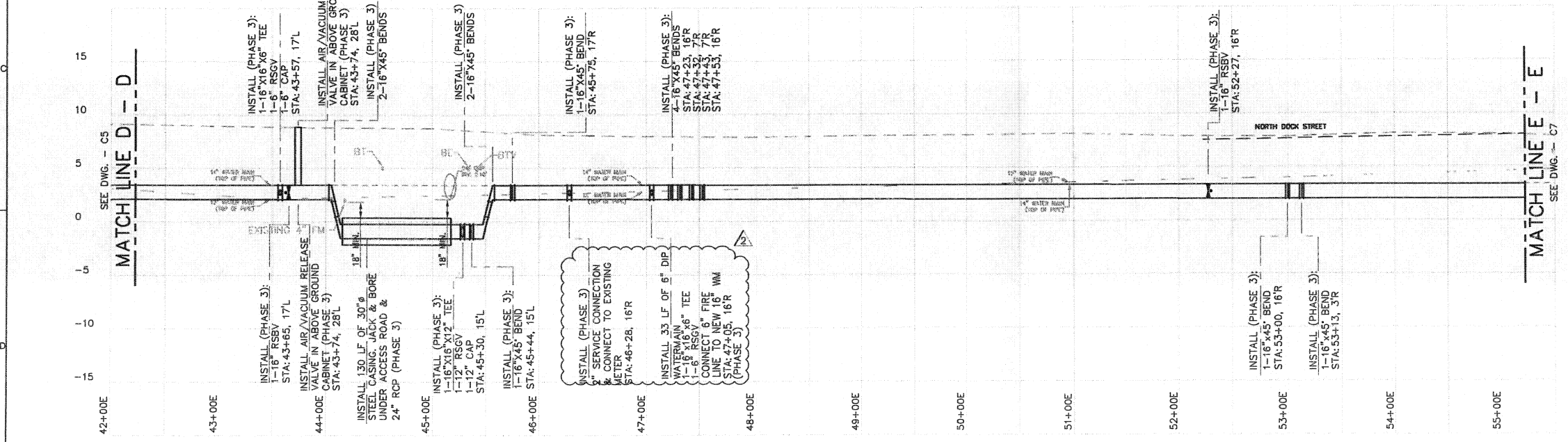


<p><b>CH2MHILL</b></p> <p>CIVIL</p> <p>PLAN AND PROFILE</p>		<p>NO. DATE</p> <p>1 3/20/09</p>	<p>DR</p> <p>T. KLEIN</p>	<p>REVISION</p> <p>1 3/20/09</p>	<p>BY</p> <p>WG LORENZO</p>
		<p>DESIGN</p> <p>T. KLEIN</p>	<p>CHK</p> <p>T. KLEIN</p>	<p>APPROVED</p> <p>WG LORENZO</p>	<p>APPROVED</p> <p>WG LORENZO</p>
<p>1905 INTERMODAL CIRCLE SUITE 330 PALMETTO FLORIDA 34221-6608 L80002934 AA0000636 WILLIAM G. LORENZO PE64481</p>		<p>MANATEE COUNTY REPLACEMENT NORTH DOCK ST 16\"/&gt; </p>			
<p>VERIFY SCALE</p> <p>BAR IS ONE INCH ON ORIGINAL DRAWING</p>		<p>DATE MARCH 2009</p> <p>PROJ 381714</p> <p>DWG C5</p>			

100% DESIGN REVIEW  
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**WATERMAIN PLAN**



**WATERMAIN PROFILE**

**CH2MHILL**

CIVIL  
PLAN AND PROFILE

1945 INTERMODAL CIRCLE SUITE 330  
PALMETTO, FLORIDA 34221-6608  
138002934 A.A. 0000656  
WILLIAM G. LORENZO PE54491

MANATEE COUNTY  
NORTH DOCK ST 16" WATER MAIN  
REPLACEMENT  
MANATEE COUNTY, FLORIDA  
PROJECT NO. 0112570

DATE: MARCH 2009  
PROJ: 381714  
DWG: C6

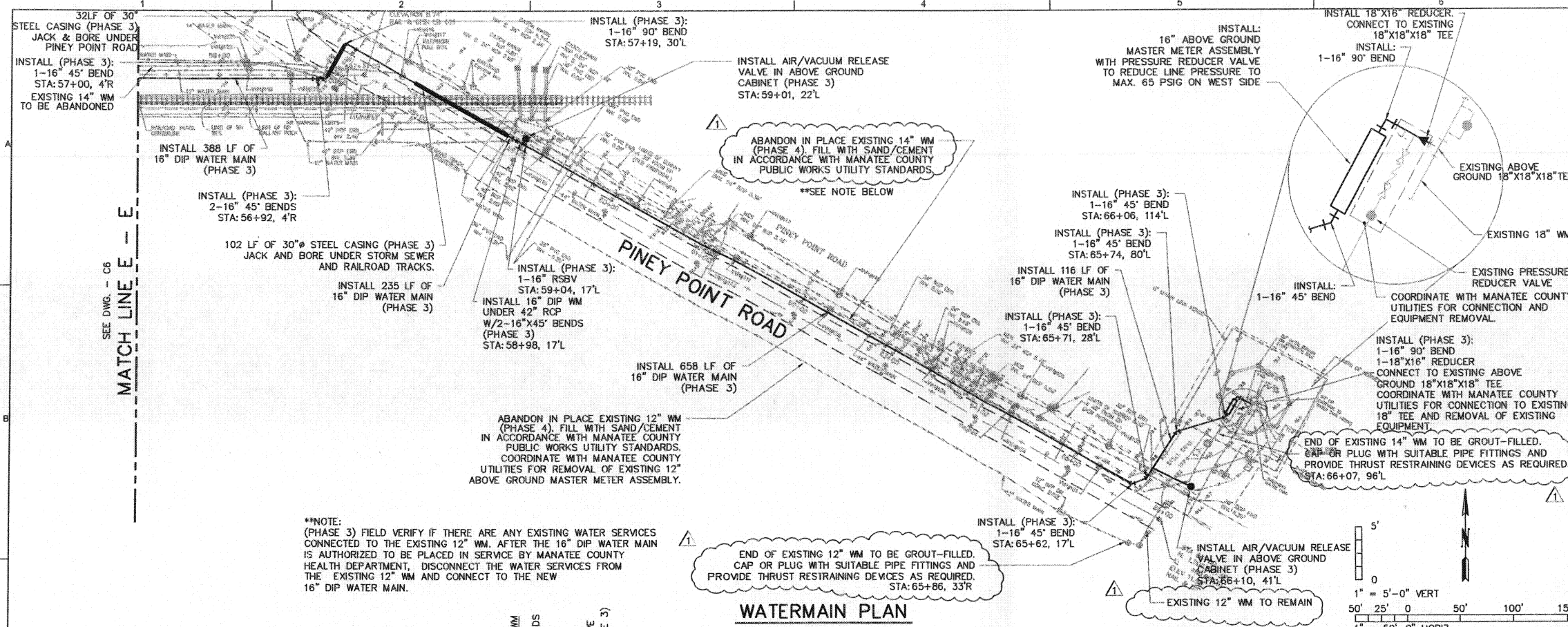
100% DESIGN REVIEW

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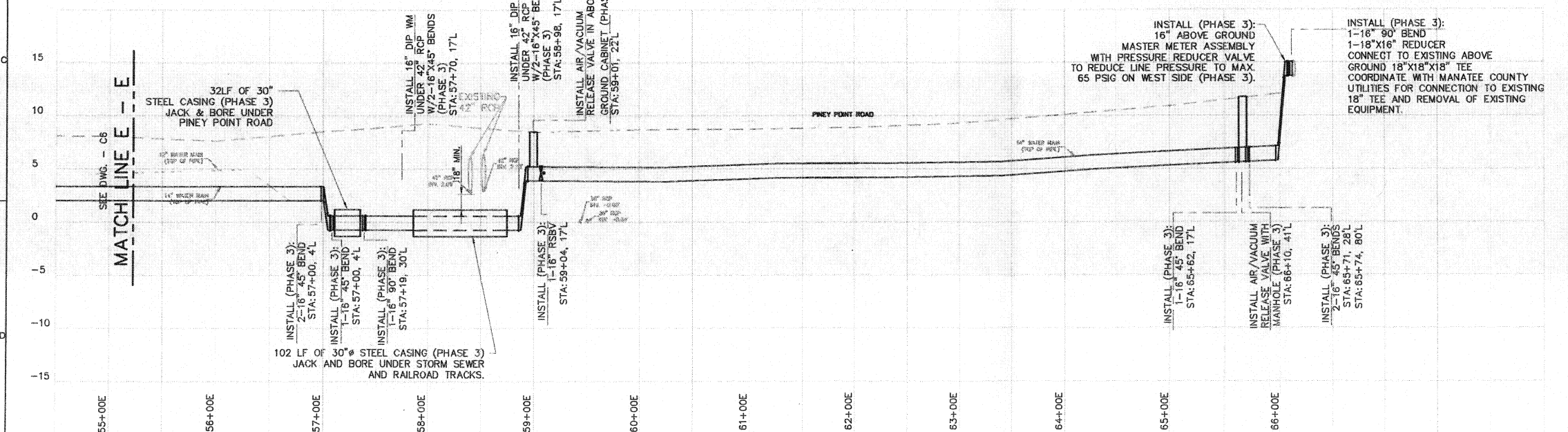
William G. Lorenzo, P.E.  
Fla. P.E. No. 54491

NO.	DATE	REVISION	BY	APPROVED
2	3/5/09	MC 100% PLANS COMMENTS	T. KLEIN	WG LORENZO
1	2/3/09	MC 90% PLANS COMMENTS	B.J.K.	WG LORENZO





**WATERMAIN PLAN**

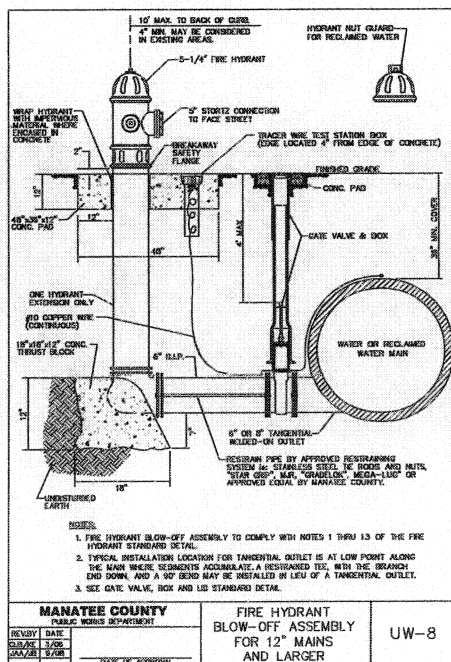
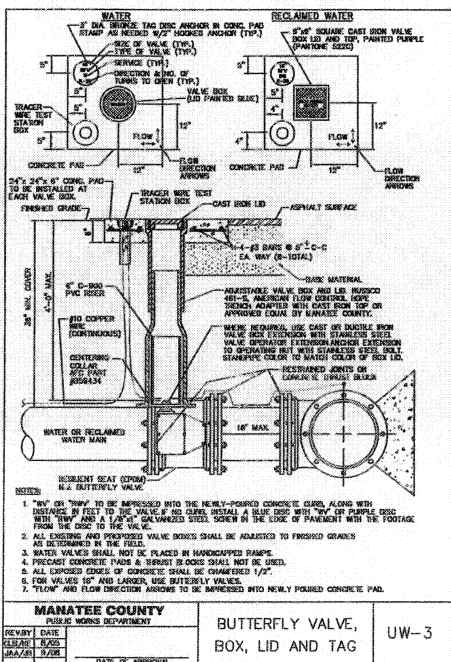
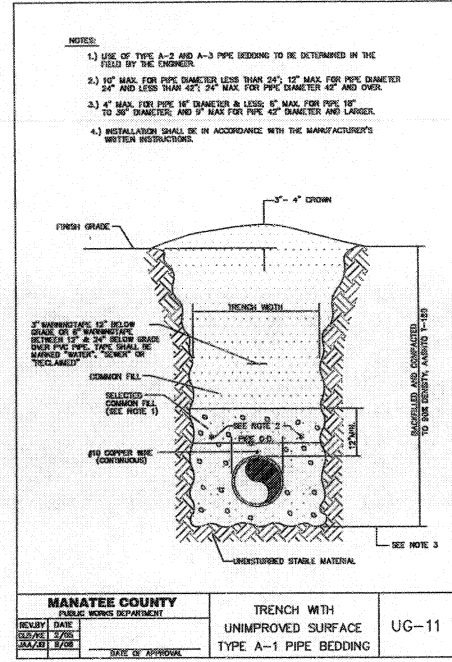
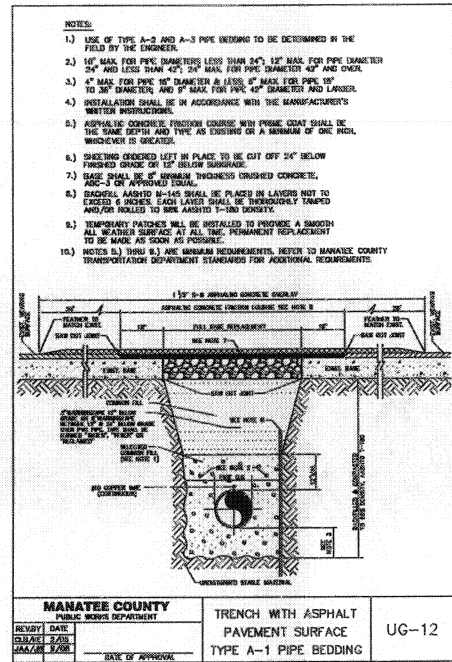
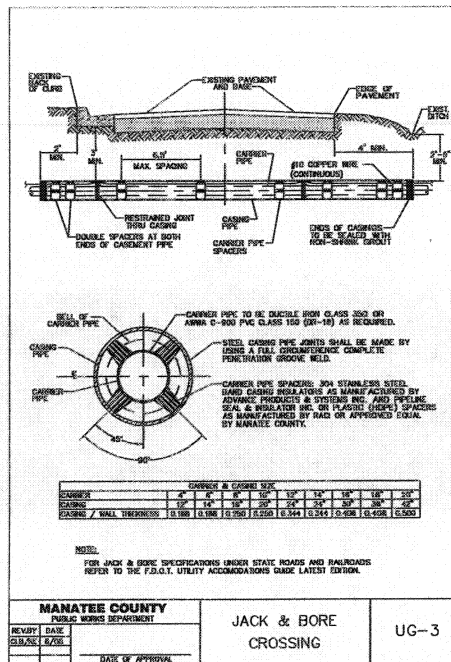
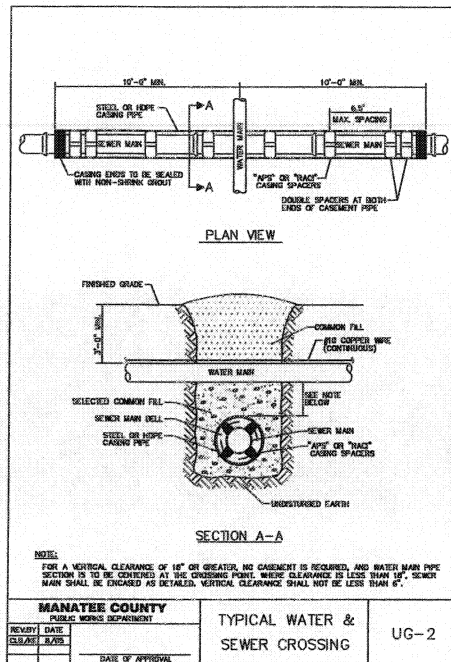


**WATERMAIN PROFILE**

1945 INTERNATIONAL CIRCLE, SUITE 330 PALMETTO, FLORIDA 34221-6608 1-800-293-4444 WILLIAM G. LORENZO, P.E. WILLIAM G. LORENZO, P.E.		William G. Lorenzo, P.E. Fla. P.E. No. 54491
MANATEE COUNTY NORTH DOCK ST 16" WATER MAIN REPLACEMENT MANATEE COUNTY, FLORIDA PROJECT NO. 6012370		William G. Lorenzo, P.E. Fla. P.E. No. 54491
100% DESIGN REVIEW		
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	DATE: MARCH 2009 PROJ: 381714 DWG:	C7

REVISIONS: 1 2/3/08 MC 90% PLANS COMMENTS  
 NO. DATE DR DATE CHK BY APVD  
 1 2/3/08 T. KLEIN T. KLEIN WGL WGL  
 2 3/1/09 WGL WGL

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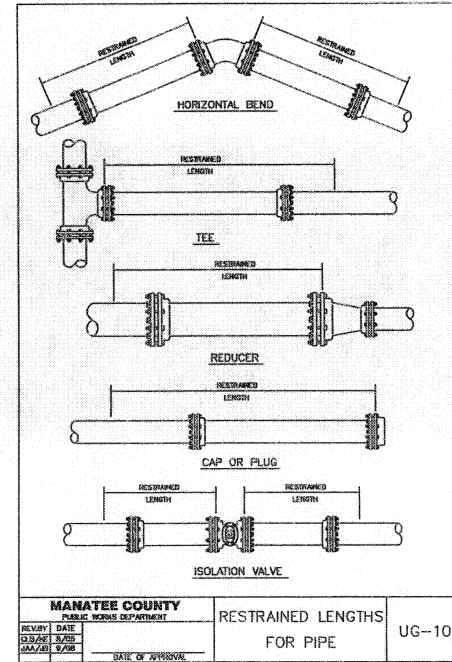


**MANATEE COUNTY**  
PUBLIC WORKS DEPARTMENT

REVISION DATE: [ ]  
DESIGNER: [ ]  
DATE OF APPROVAL: [ ]

RESTRAINED LENGTHS FOR DIP UG-9

MAIN PIPE SIZE	HORIZ. BENDS	TEES	REDUCERS		PLUGS	VALVES
			90°	45°		
36	140	40	25	25	452	227
30	124	35	20	20	361	198
24	106	30	15	15	327	164
20	92	26	10	10	280	140
18	77	20	10	10	231	116
12	61	15	10	10	181	91
10	50	12	10	10	153	77
8	41	8	8	8	126	64
6	31	7	7	7	98	49
4	24	5	5	5	69	35



**CH2MHILL**

1905 INTERMEDICAL CIRCLE SUITE 330  
PALMETTO, FLORIDA 34221-6608  
1.888.626.54  
WILLIAM G. LORENZO, P.E. 00000656

MANATEE COUNTY  
NORTH DOCK ST 16" WATER MAIN REPLACEMENT  
MANATEE COUNTY, FLORIDA  
PROJECT No. 6012570

REVISION BY: [ ]  
DATE: [ ]

VERIFY SCALE: [ ]  
DATE: MARCH 2009  
PROJ: 381714  
DWG: C8

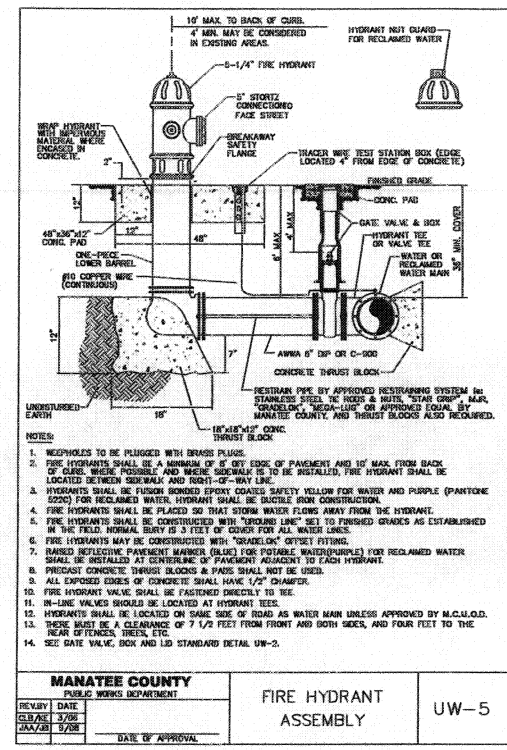
100% DESIGN REVIEW

PIPE DIA. (IN.)	THRUST BLOCK DIMENSIONS (IN.)						DEAD END	45° WYE
	45° END	90° END	11.25° END	11.25° END	90° END	45° END		
4	1.5	3/4	1.1	3/4	0.8	3/4	0.8	1.1
6	2.2	5/4	1.6	3/4	1.2	3/4	0.8	1.6
8	3.0	7	2.1	9	1.5	3/4	1.1	2.4
10	3.5	8 1/2	2.5	10 1/4	1.9	4/8	1.3	2.8
12	4.2	10	3.1	12 1/2	2.3	5/8	1.6	3.4
14	4.9	11 1/4	3.6	14 1/4	2.6	5/8	1.8	4.1
16	5.5	13 1/4	4.1	16 1/4	2.9	7	2.1	4.7
18	6.2	15	4.6	18 1/4	3.2	7 1/2	2.3	5.3
20	6.9	16 1/4	5.0	20 1/4	3.5	8	2.5	6.0
24	8.2	19 1/4	6.0	24 1/4	4.3	10 1/4	3.1	7.2
30	10.1	24 1/4	7.5	30 1/4	5.3	12 1/4	3.8	8.9
36	12.1	29 1/4	9.0	36 1/4	6.4	15 1/4	4.5	10.7

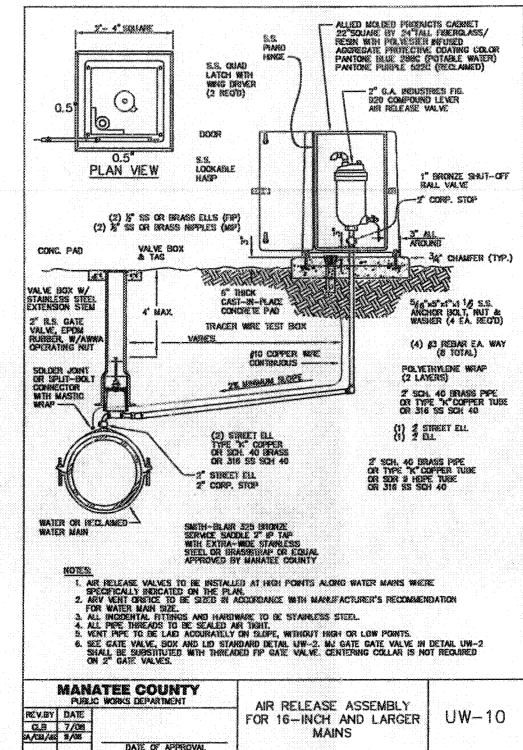
REINFORCEMENT MAT SCHEDULE  
 FOR DIA. 12" THROUGH 24" USE #4 @ 8" EACH WAY  
 FOR DIA. 30" THROUGH 36" USE #5 @ 8" EACH WAY

NOTES:  
 1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE.  
 2. THIS TABLE IS BASED ON WATER PRESSURE-150 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE-2000 PSF. CONCRETE STRENGTH IS 3000 PSI. REINFORCEMENT IS 60,000 PSI.  
 3. FOR LARGER DIA. DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 12" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.

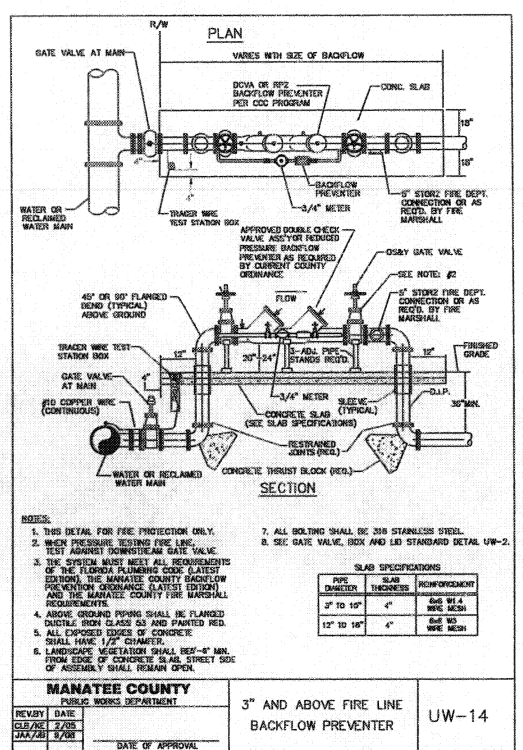
MANATEE COUNTY PUBLIC WORKS DEPARTMENT	CONCRETE THRUST BLOCKS	UG-7
REVISION DATE 3/18/09	DATE OF APPROVAL	



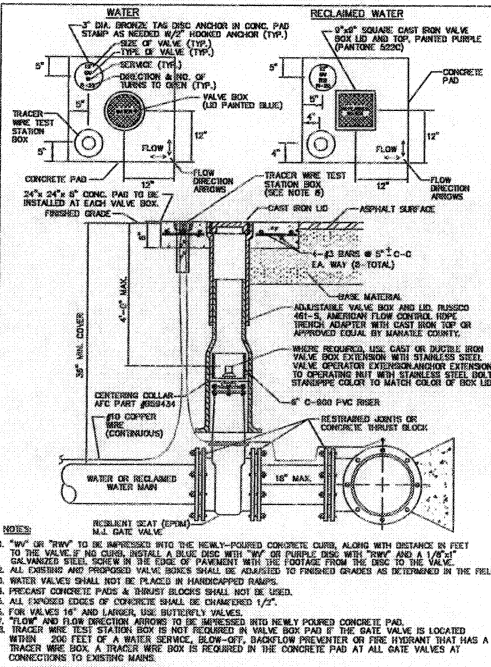
MANATEE COUNTY PUBLIC WORKS DEPARTMENT	FIRE HYDRANT ASSEMBLY	UW-5
REVISION DATE 3/18/09	DATE OF APPROVAL	



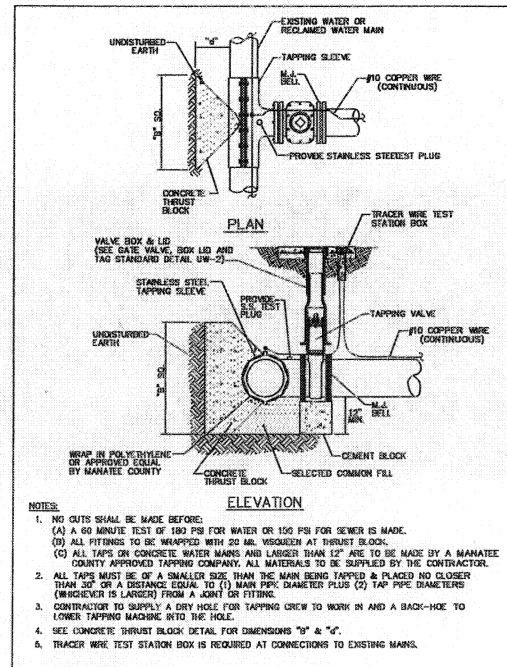
MANATEE COUNTY PUBLIC WORKS DEPARTMENT	AIR RELEASE ASSEMBLY FOR 16-INCH AND LARGER MAINS	UW-10
REVISION DATE 3/18/09	DATE OF APPROVAL	



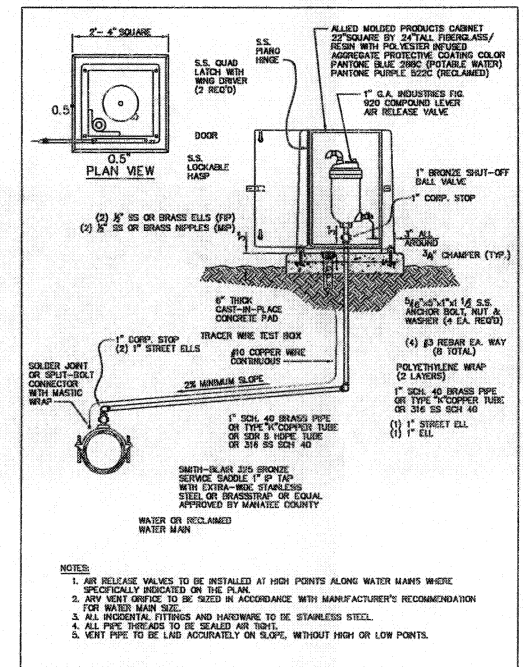
MANATEE COUNTY PUBLIC WORKS DEPARTMENT	3" AND ABOVE FIRE LINE BACKFLOW PREVENTER	UW-14
REVISION DATE 3/18/09	DATE OF APPROVAL	



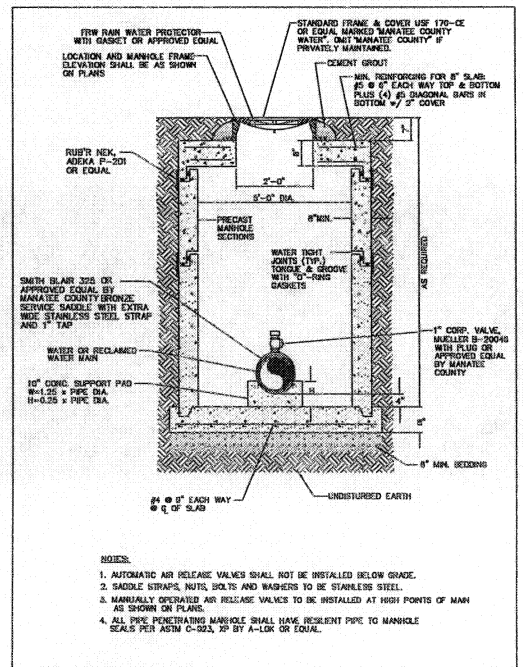
MANATEE COUNTY PUBLIC WORKS DEPARTMENT	GATE VALVE, BOX, LID AND TAG	UW-2
REVISION DATE 3/18/09	DATE OF APPROVAL	



MANATEE COUNTY PUBLIC WORKS DEPARTMENT	TAPPING SLEEVE AND VALVE	UW-4
REVISION DATE 3/18/09	DATE OF APPROVAL	



MANATEE COUNTY PUBLIC WORKS DEPARTMENT	ABOVE-GROUND AIR RELEASE VALVE ASSY. FOR 12-INCH AND SMALLER WATER MAINS	UW-9
REVISION DATE 3/18/09	DATE OF APPROVAL	



MANATEE COUNTY PUBLIC WORKS DEPARTMENT	BELOW GRADE MANUALLY OPERATED AIR RELEASE VALVE	UW-11
REVISION DATE 3/18/09	DATE OF APPROVAL	

1905 INTERMEDIAL CIRCLE SUITE 330  
 PALMETTO, FLORIDA 34221-6608  
 LBR0002934 AAC000656  
 WILLIAM G. LORENZO PER4491  
 MANATEE COUNTY  
 NORTH DOCK ST 16" WATER MAIN  
 REPLACEMENT  
 MANATEE COUNTY, FLORIDA  
 PROJECT NO. 0612570  
 100% DESIGN REVIEW

VERIFICATION SCALE  
 BAR IS ONE INCH ON  
 ORIGINAL DRAWING.  
 DATE MARCH 2009  
 PROJ 381714  
 DWG C9

100% DESIGN REVIEW

**CH2MHILL**

NO. DATE DSGN DR REVISION BY /APVD  
 1. T. KLEIN /WG LORENZO  
 2. T. KLEIN /WG LORENZO  
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 89. T. KLEIN /WG LORENZO  
 90. T. KLEIN /WG LORENZO  
 91. T. KLEIN /WG LORENZO  
 92. T. KLEIN /WG LORENZO  
 93. T. KLEIN /WG LORENZO  
 94. T. KLEIN /WG LORENZO  
 95. T. KLEIN /WG LORENZO  
 96. T. KLEIN /WG LORENZO  
 97. T. KLEIN /WG LORENZO  
 98. T. KLEIN /WG LORENZO  
 99. T. KLEIN /WG LORENZO  
 100. T. KLEIN /WG LORENZO

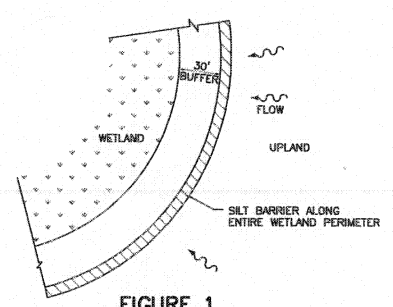
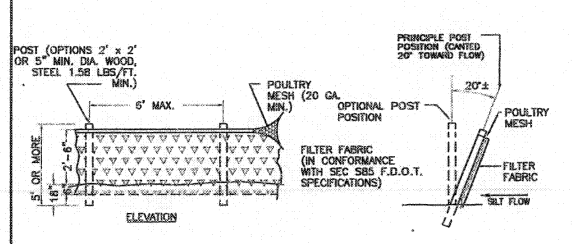
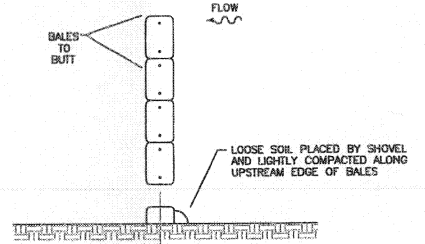


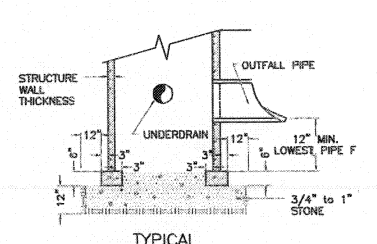
FIGURE 1



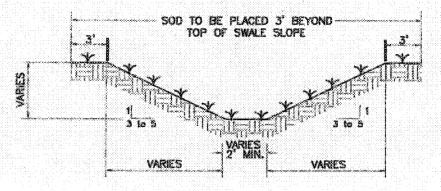
TYPICAL SILT FENCE  
N.T.S.



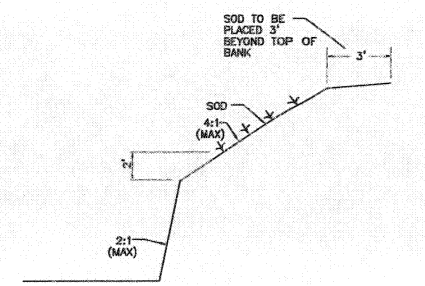
TYPICAL BALE SILT BARRIER  
N.T.S.



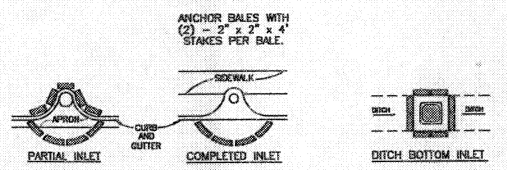
TYPICAL OPEN BOTTOM INLET DETAIL  
N.T.S.



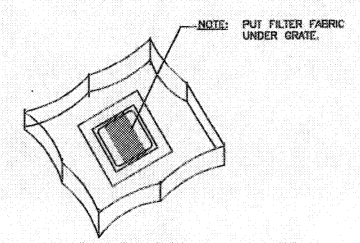
TYPICAL SWALE SECTION  
N.T.S.



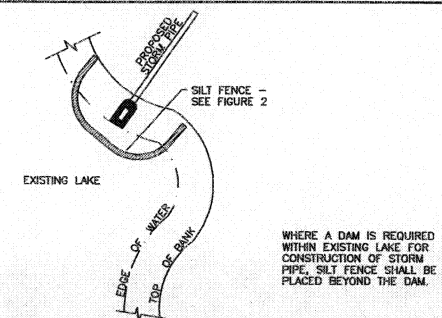
TYPICAL RETENTION/DETENTION POND SECTION  
N.T.S.



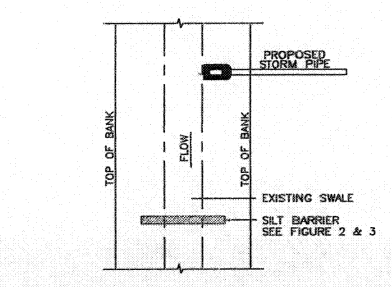
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES  
N.T.S.



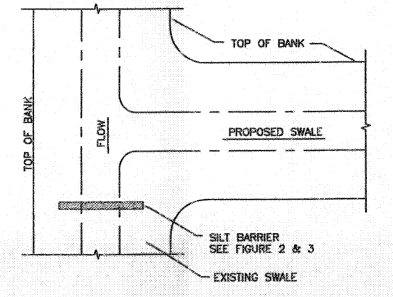
STAKED SILT BARRIER OR SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS  
N.T.S.



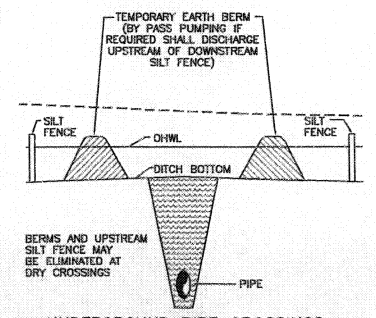
SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING LAKE  
N.T.S.



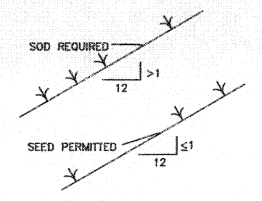
SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE  
N.T.S.



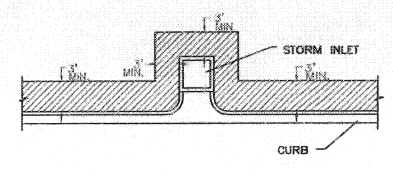
SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE  
N.T.S.



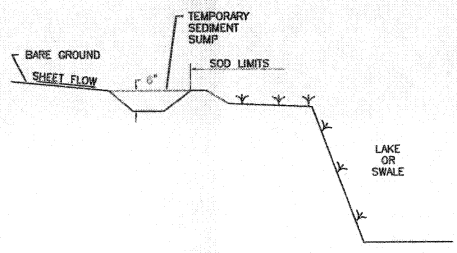
UNDERGROUND PIPE CROSSINGS  
N.T.S.



GRASS SLOPES  
N.T.S.



SOD ALONG CURB AND AROUND INLET  
N.T.S.



TEMPORARY SEDIMENT SUMP  
N.T.S.

1985 INTERMODAL CIRCLE SUITE 330 PALMETTO, FLORIDA 34221-6408 LIBR00254 AAC000656 WILLIAM G. LORENZO, P.E. P54481		MANATEE COUNTY NORTH DOCK ST 16" WATER MAIN REPLACEMENT MANATEE COUNTY, FLORIDA PROJECT No. 012570		100% DESIGN REVIEW	
CH2MHILL		BEST MANAGEMENT PRACTICES		CIVIL	
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.		DATE: MARCH 2009		PROJ: 381714	
		DWG: C10		100% DESIGN REVIEW	
NO. DATE		DR T. KLEIN		BY APVD	
DSGN		CHK T. KLEIN		WG LORENZO	
REVISION		T. KLEIN		WG LORENZO	
				William G. Lorenzo, P.E. Lic. P.E. No. 54491	

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