

SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

SITE 1

PLOT DATE: Sep 04, 2015 - 11:58am XREFS: K:\u_wu_2wm1dwg\cadd\2wm1cs01_BM01.dwg K:\u_wu_2wm1dwg\cadd\2wm1cs01_P1.dwg K:\u_wu_2wm1dwg\cadd\2wm1cs01_P1.dwg K:\u_wu_2wm1dwg\cadd\2wm1cs01_P1.dwg K:\u_wu_2wm1dwg\cadd\2wm1cs01_P1.dwg K:\u_wu_2wm1dwg\cadd\2wm1cs01_P1.dwg
 BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING
 ADJUST ALL SCALED DIMENSIONS ACCORDINGLY
 CADD FILE: 08/25/15 YM ADDED SAMPLING POINTS
 NO. DATE BY REVISION
 2WM1CS01 C1-1.dwg

**BID
DRAWING SET**

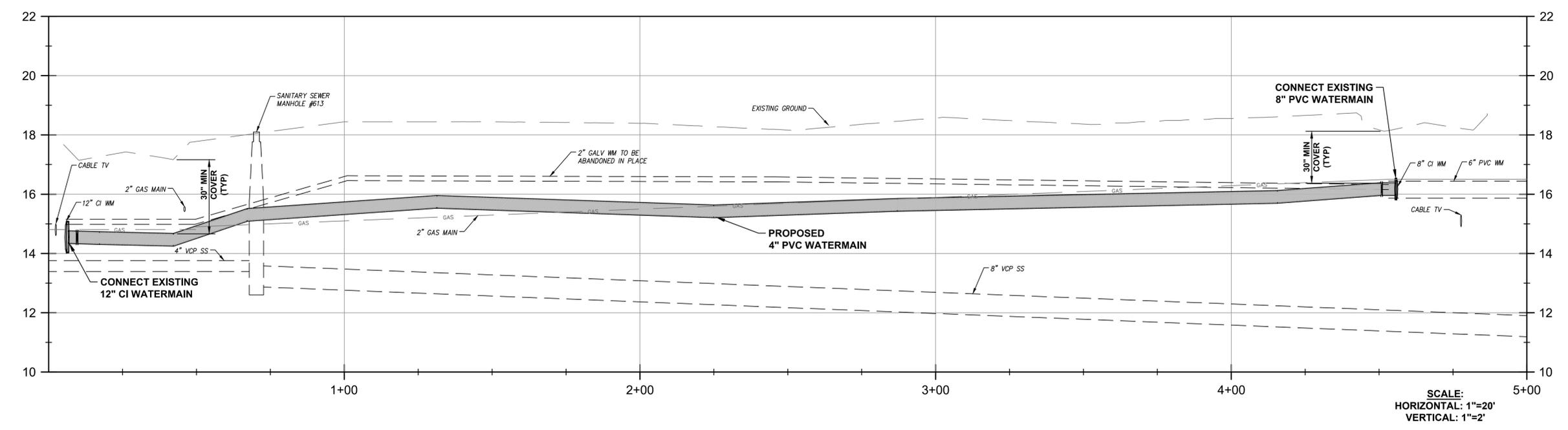
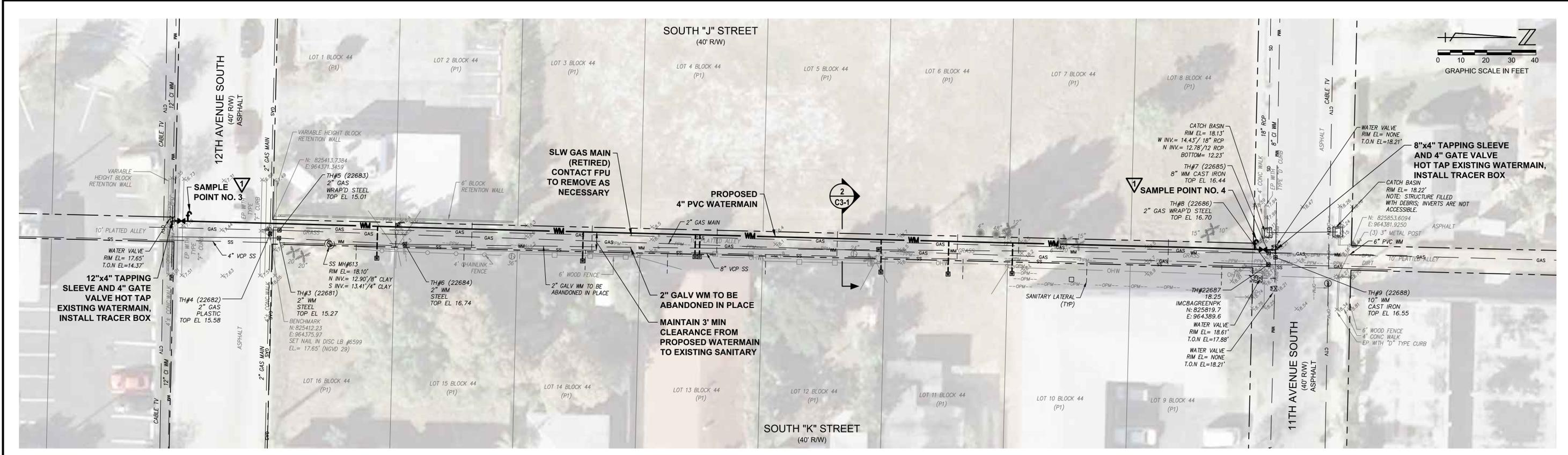
SEAL
 JOHN R. LEEMON
 FLORIDA P.E. NO. 41645
 DATE

FLORIDA E.B. NO. 48
MOCK • ROOS
 ENGINEERS • SURVEYORS • PLANNERS
 5720 Corporate Way, West Palm Beach, Florida 33407 (561) 683-3113, Fax 478-7248

FLORIDA L.B. NO. 48
 FIELD: D.J. LEAVY
 DRAWN: YM
 DESIGN: JRL
 APPR: GGG
 SCALE: AS SHOWN

**2" WATERMAIN REPLACEMENT
PHASE 1A
CITY OF LAKE WORTH
PALM BEACH COUNTY, FLORIDA**

DATE: AUGUST 2015
 P.A. NO. B4030.00
 DWG. NO. 44-43-15-155
 SHEET: C1-1



BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING
ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

DATE: 08/26/15	BY: YM	ADDED SAMPLING POINTS
NO.	DATE	REVISION

BID DRAWING SET

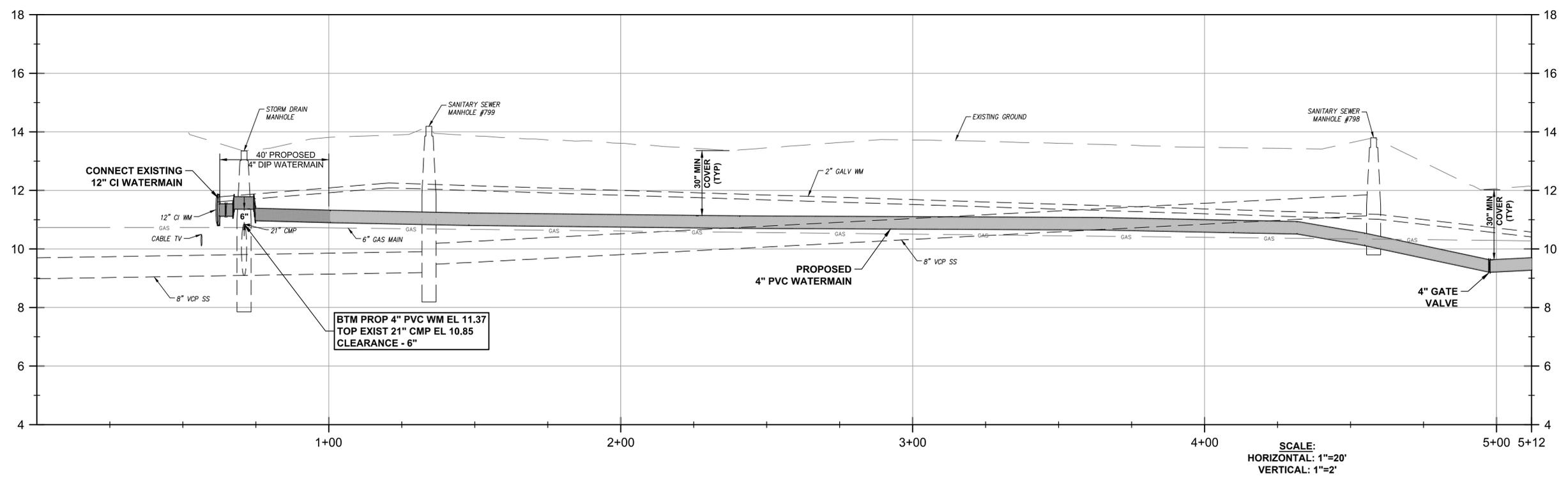
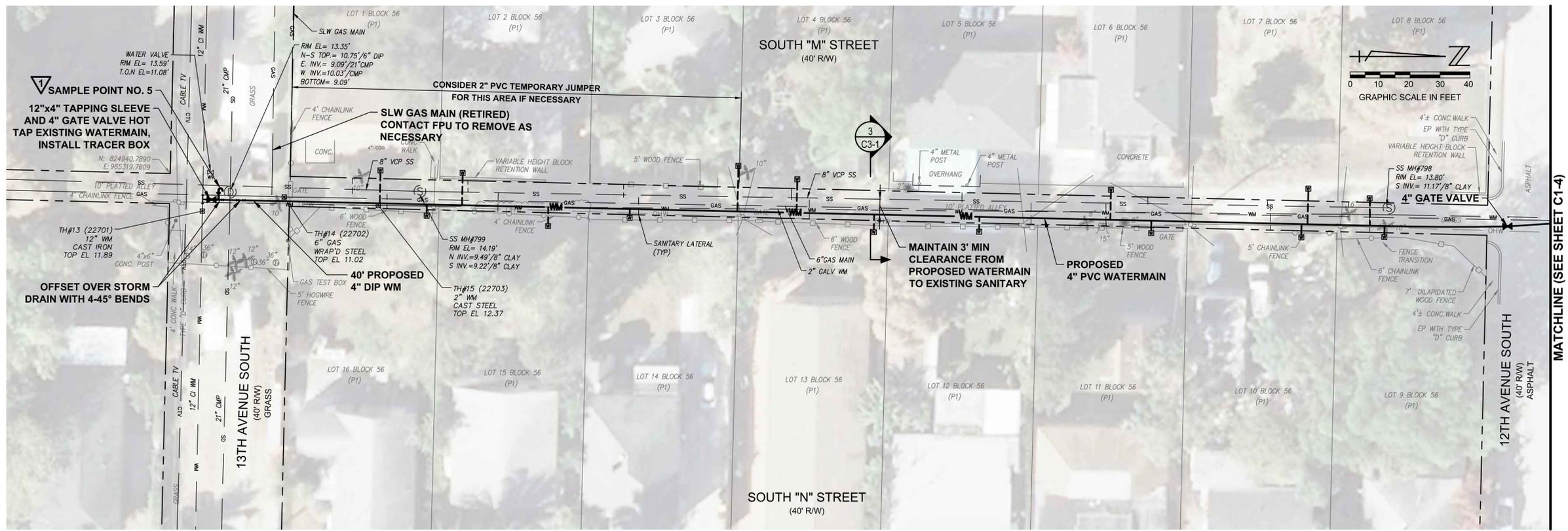
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SITE 2
2" WATERMAIN REPLACEMENT
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CITY OF LAKE WORTH
PALM BEACH COUNTY, FLORIDA

DATE: AUGUST 2015
P.A. NO. B4030.00
DWG. NO. 44-43-15-155
SHEET: C1-2

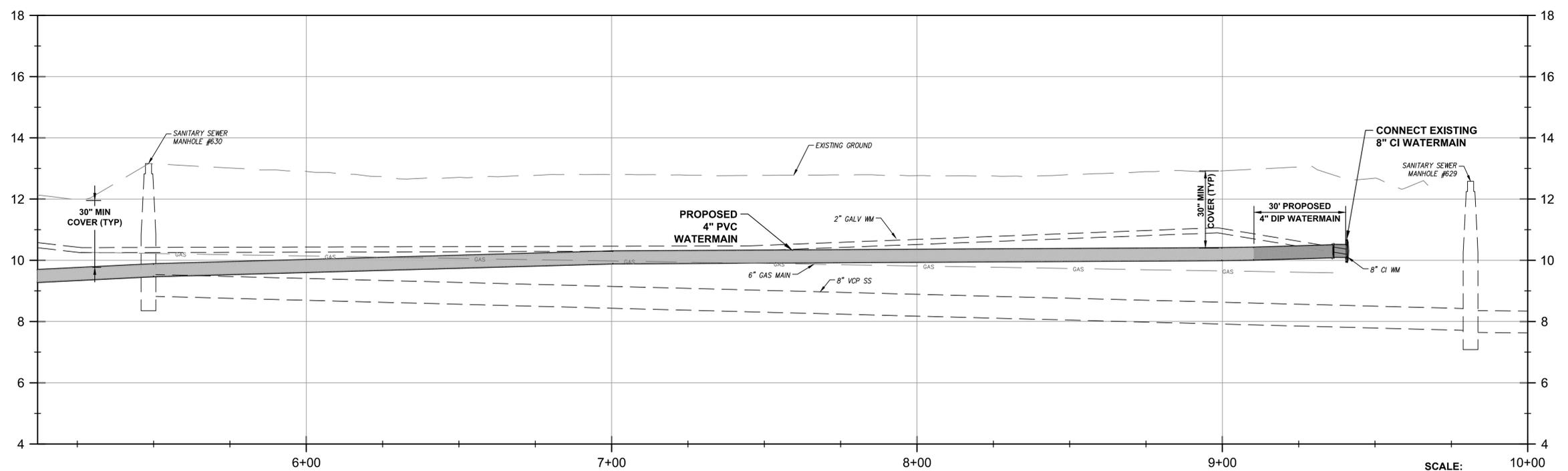
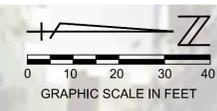
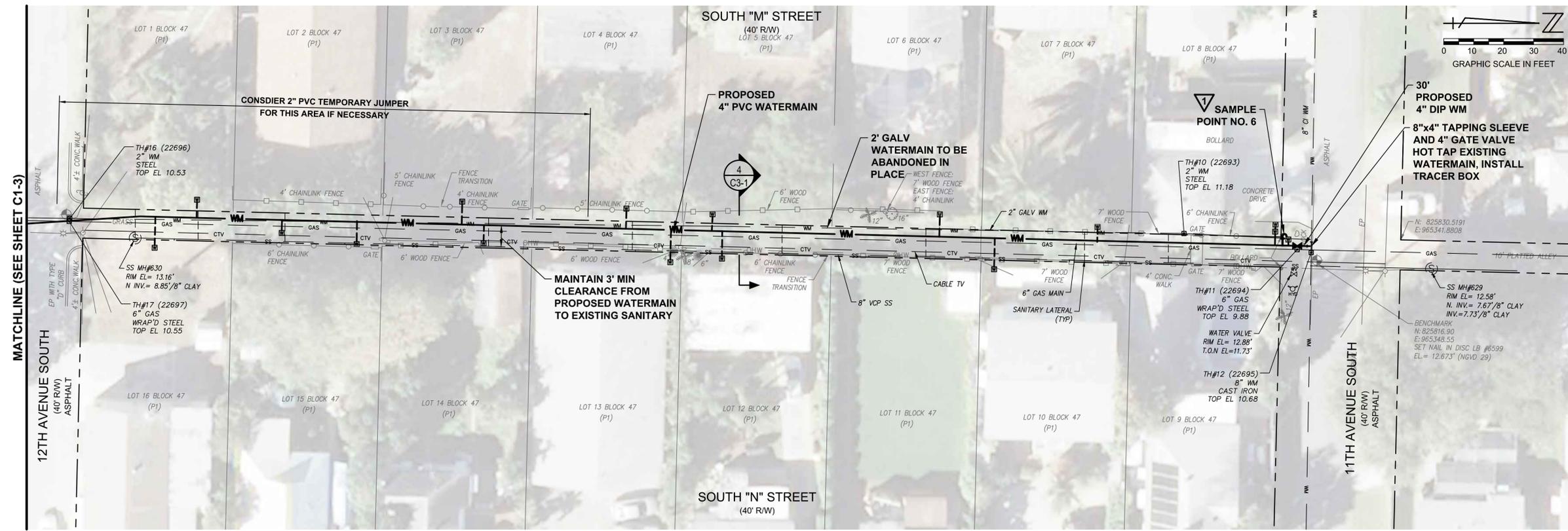


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SITE 3

BID DRAWING SET	SEAL JOHN R. LEEMON FLORIDA P.E. NO. 41645	FLORIDA E.B. NO. 48	MOCK • ROOS ENGINEERS • SURVEYORS • PLANNERS	FLORIDA L.B. NO. 48	FIELD: D.J. LEAVY DRAWN: YM DESIGN: JRL APPR: GGG SCALE: AS SHOWN	2" WATERMAIN REPLACEMENT PHASE 1A CITY OF LAKE WORTH PALM BEACH COUNTY, FLORIDA	DATE: AUGUST 2015 P.A. NO. B4030.00 DWG. NO. 44-43-15-155 SHEET: C1-3
CADD FILE: K:\Wu_Wu_2wm1\dwg\2WM1CS01_C1-3.dwg	NO. DATE BY REVISION	08/26/15 YM ADDED SAMPLING POINTS					



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SITE 3

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ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

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1	08/26/15	YM	ADDED SAMPLING POINTS

BID DRAWING SET

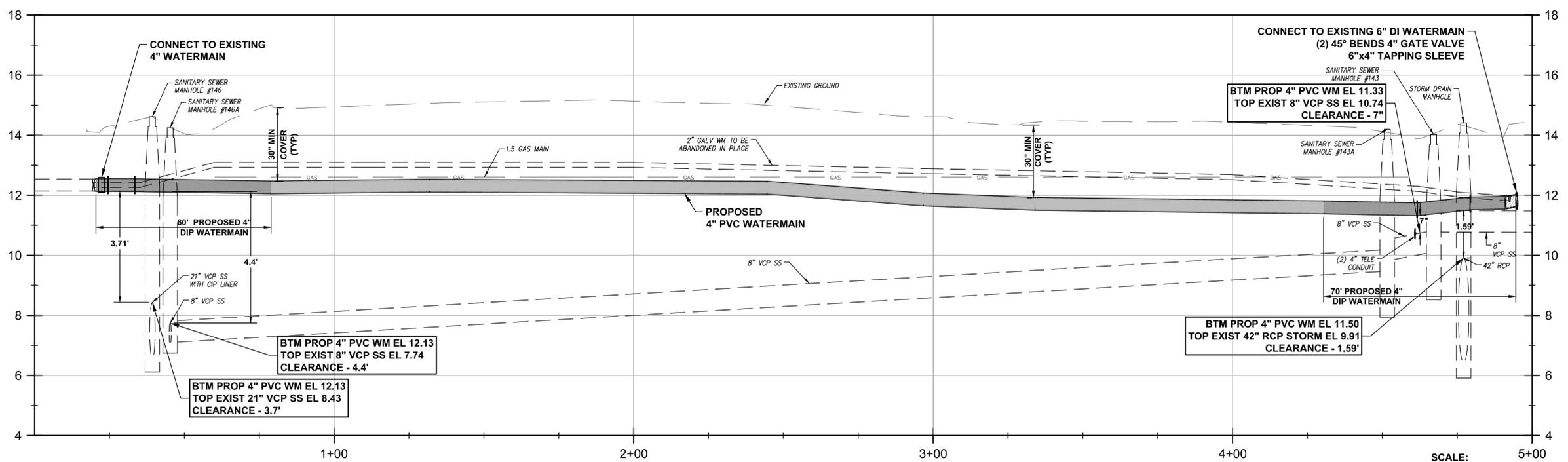
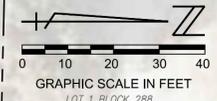
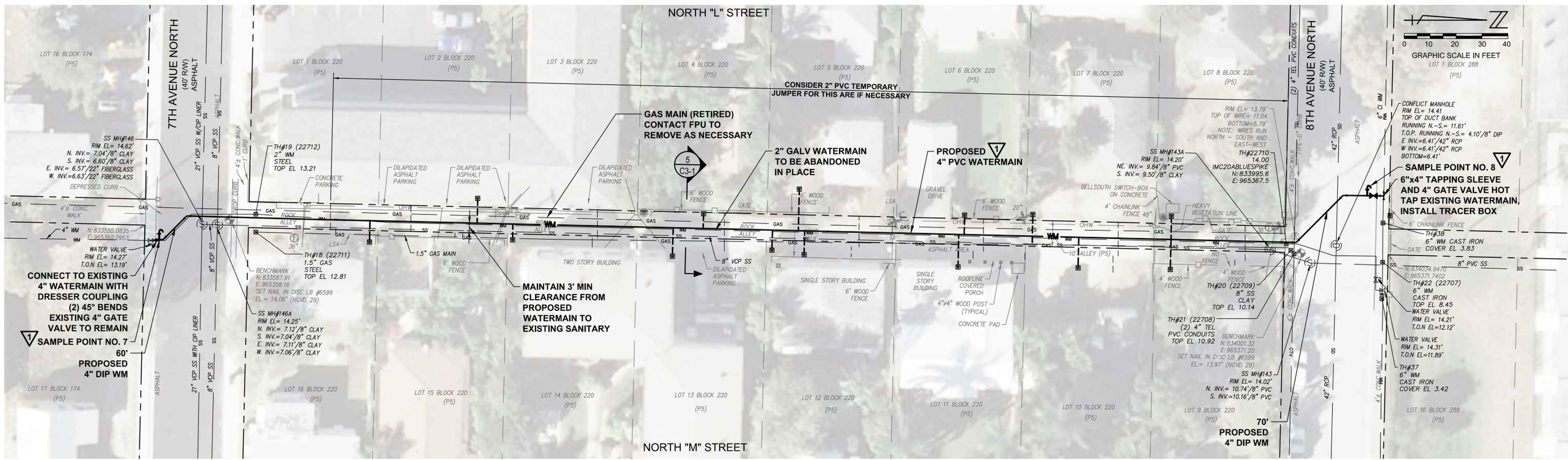
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PHASE 1A
CITY OF LAKE WORTH
PALM BEACH COUNTY, FLORIDA

DATE: AUGUST 2015
P.A. NO. B4030.00
DWG. NO. 44-43-15-155
SHEET: C1-4



PLOT DATE: Sep 04, 2015 - 12:00pm XREFS: K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_BM01.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P1.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P2.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P3.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P4.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P5.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P6.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P7.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P8.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P9.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P10.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P11.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P12.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P13.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P14.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P15.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P16.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P17.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P18.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P19.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P20.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P21.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P22.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P23.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P24.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P25.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P26.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P27.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P28.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P29.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P30.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P31.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P32.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P33.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P34.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P35.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P36.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P37.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P38.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P39.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P40.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P41.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P42.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P43.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P44.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P45.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P46.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P47.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P48.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P49.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P50.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P51.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P52.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P53.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P54.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P55.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P56.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P57.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P58.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P59.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P60.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P61.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P62.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P63.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P64.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P65.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P66.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P67.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P68.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P69.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P70.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P71.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P72.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P73.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P74.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P75.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P76.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P77.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P78.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P79.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P80.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P81.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P82.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P83.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P84.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P85.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P86.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P87.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P88.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P89.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P90.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P91.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P92.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P93.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P94.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P95.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P96.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P97.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P98.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P99.dwg K:\w_u_w_u_2\m\lwg\c\2\2\1\CS01_P100.dwg

SCALE:
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'

SITE 4

BAR IS EQUAL TO ONE INCH
ON ORIGINAL DRAWING
ADJUST ALL SCALED
DIMENSIONS ACCORDINGLY

NO.	DATE	BY	REVISION
1	08/26/15	YM	ADDED SAMPLING POINTS, REVISED WATERMAIN ALIGNMENT

**BID
DRAWING SET**

SEAL
JOHN R. LEEMON
FLORIDA P.E. NO. 41645
DATE

FLORIDA E.B. NO. 48

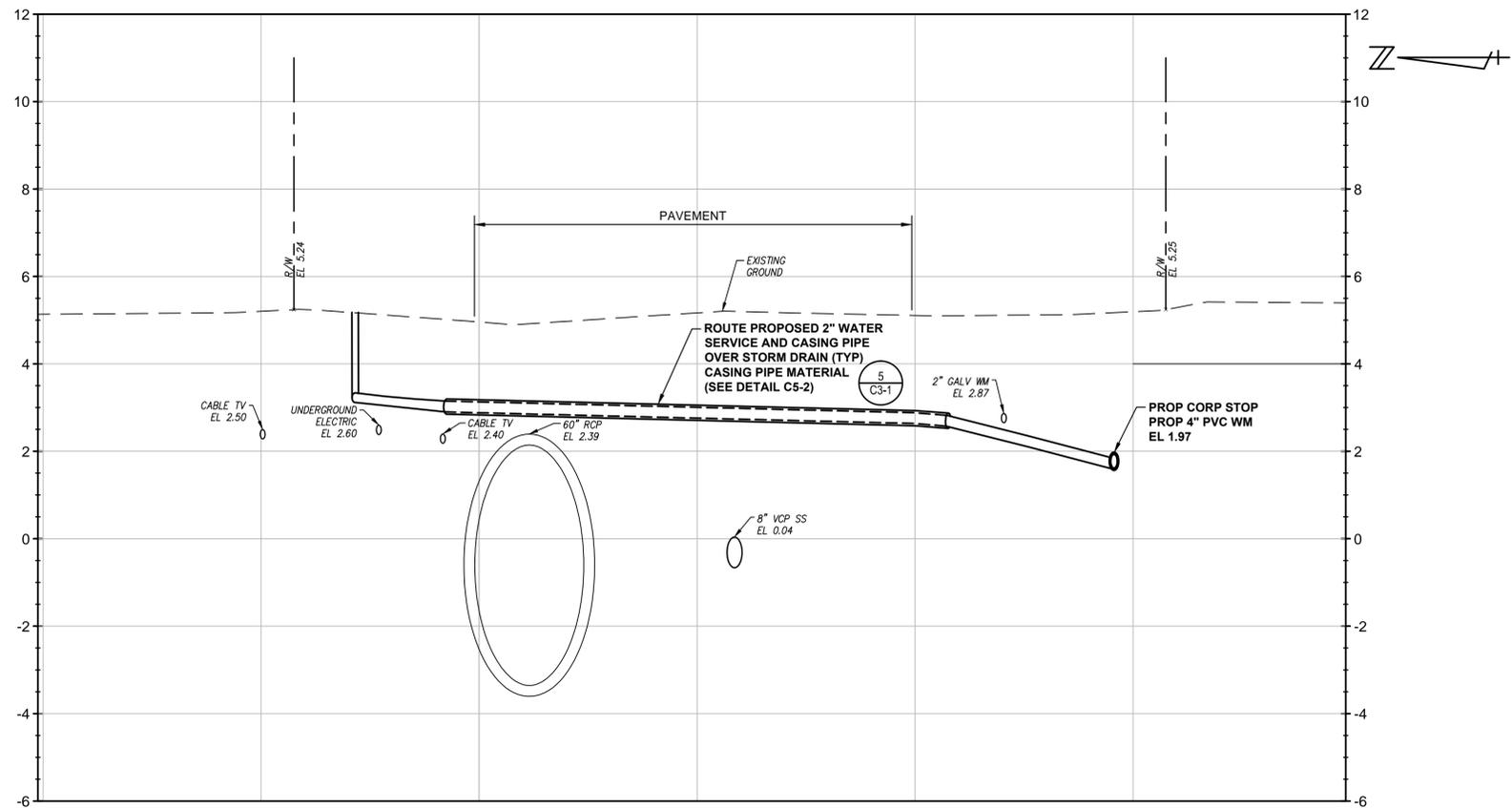
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FLORIDA L.B. NO. 48

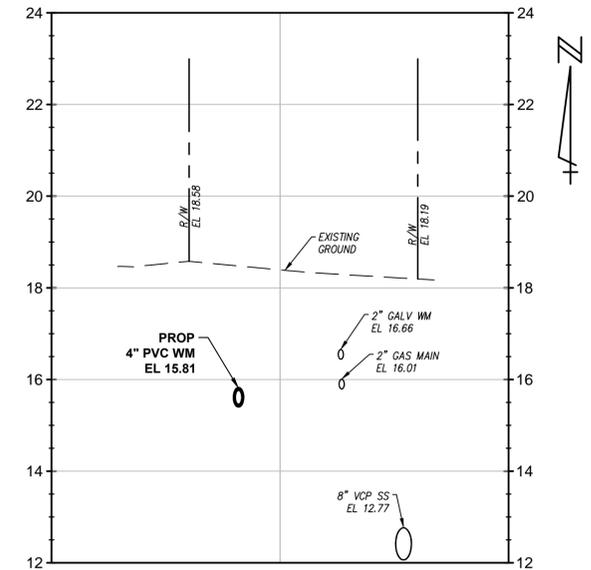
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2" WATERMAIN REPLACEMENT
PHASE 1A
CITY OF LAKE WORTH
PALM BEACH COUNTY, FLORIDA

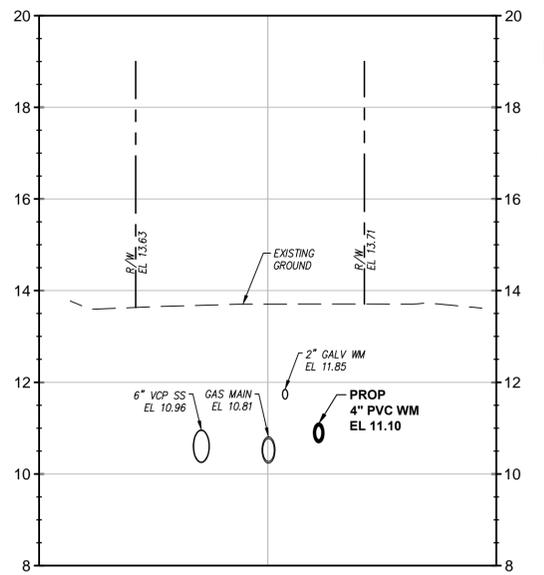
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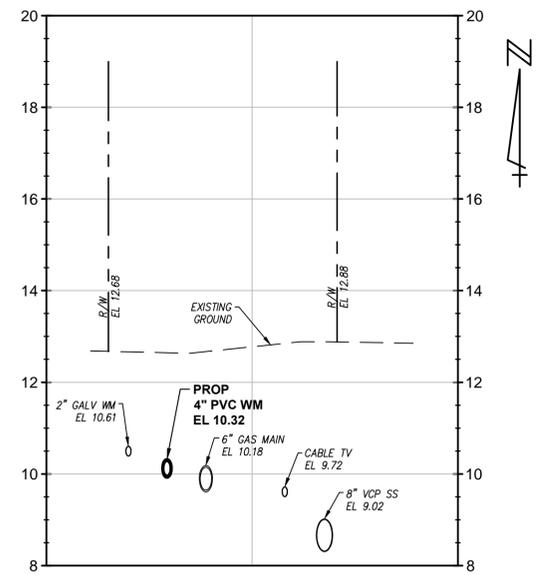
SECTION VIEW
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 17TH AVE S AND S LAKESIDE DR
 C3-1 H - 1" = 4, V - 1" = 2'



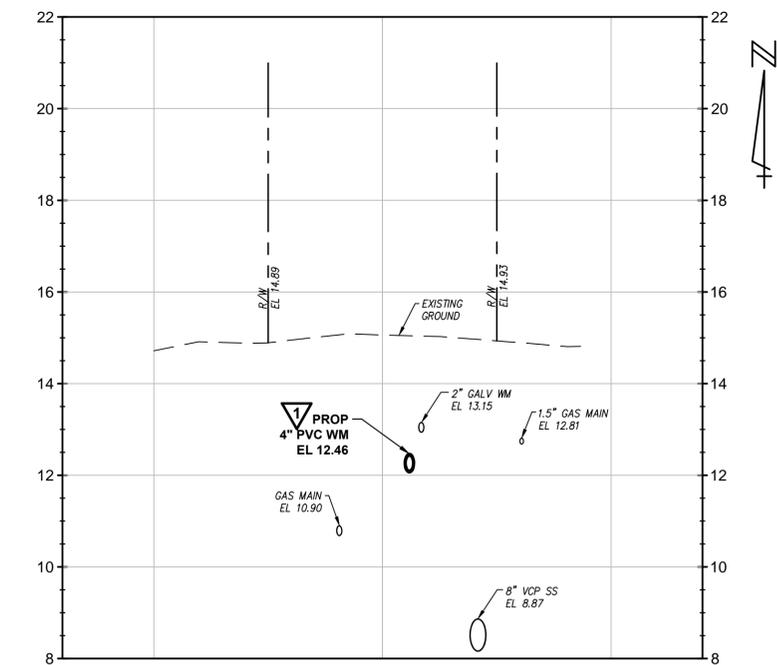
SECTION VIEW
 2
 12TH AVE S AND 11TH AVE S
 BTWN S "J" ST AND S "K" ST
 C3-1 H - 1" = 4, V - 1" = 2'



SECTION VIEW
 3
 13TH AVE S AND 12TH AVE S
 BTWN S "M" ST AND S "N" ST
 C3-1 H - 1" = 4, V - 1" = 2'



SECTION VIEW
 4
 12TH AVE S AND 11TH AVE S
 BTWN S "M" ST AND S "N" ST
 C3-1 H - 1" = 4, V - 1" = 2'



SECTION VIEW
 5
 7TH AVE N AND 8TH AVE N
 BTWN N "L" ST AND N "M" ST
 C3-1 H - 1" = 4, V - 1" = 2'

PLOT DATE: Sep 04, 2015 - 12:00pm XREFS: K:\w_u_wu_2wm1dwg\c3d2\WMCSD1_3SD1.dwg K:\w_u_wu_2wm1dwg\c3d2\WMCSD1_MDI1.dwg IMAGES: BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

SECTIONS

CADD FILE:	08/26/15	YM	REVISED WATERMAIN ALIGNMENT
NO.	DATE	BY	REVISION

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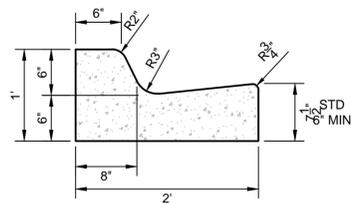
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FLORIDA L.B. NO. 48

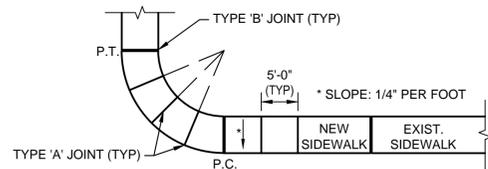
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 PALM BEACH COUNTY, FLORIDA

DATE: AUGUST 2015
 P.A. NO. B4030.00
 DWG. NO. 44-43-15-155
 SHEET: C3-1



NOTE:
WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT AND THE THICKNESS OF THE LIP SHALL BE 6" UNLESS OTHERWISE SHOWN ON THE DRAWINGS.



NOTE:
1. MAXIMUM SPACING OF TYPE 'B' JOINT SHALL BE 100'.

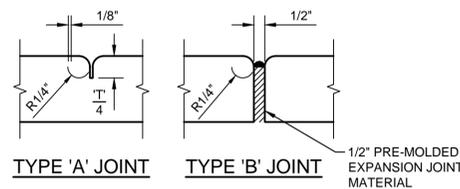
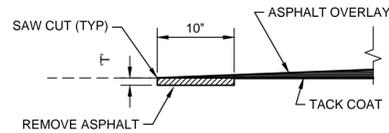
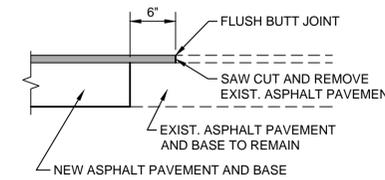


TABLE OF SIDEWALK THICKNESS - 'T'	
LOCATION	'T'
RESIDENTIAL AREAS	4"
AT DRIVEWAYS AND OTHER AREAS	6"

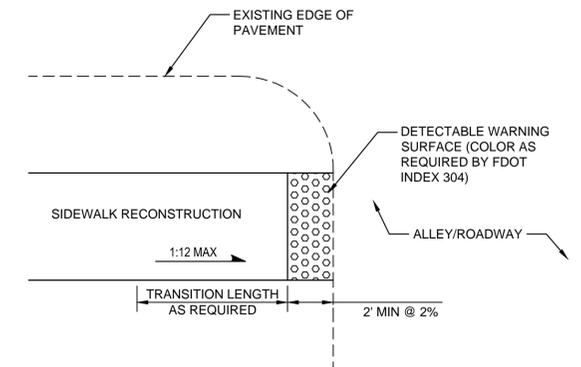


NOTE:
1. COST OF SAW CUTTING AND ASPHALT REMOVAL TO BE INCLUDED IN THE UNIT PRICE FOR THE ASPHALT OVERLAY.

TERMINATION OF PAVEMENT OVERLAY	
ASPHALT TYPE	MINIMUM THICKNESS 'T'
TYPE S-I	1 1/4"
TYPE S-III	3/4"



NOTE:
COST OF SAW CUTTING AND ASPHALT REMOVAL TO BE INCLUDED IN THE UNIT PRICE FOR THE ASPHALT.



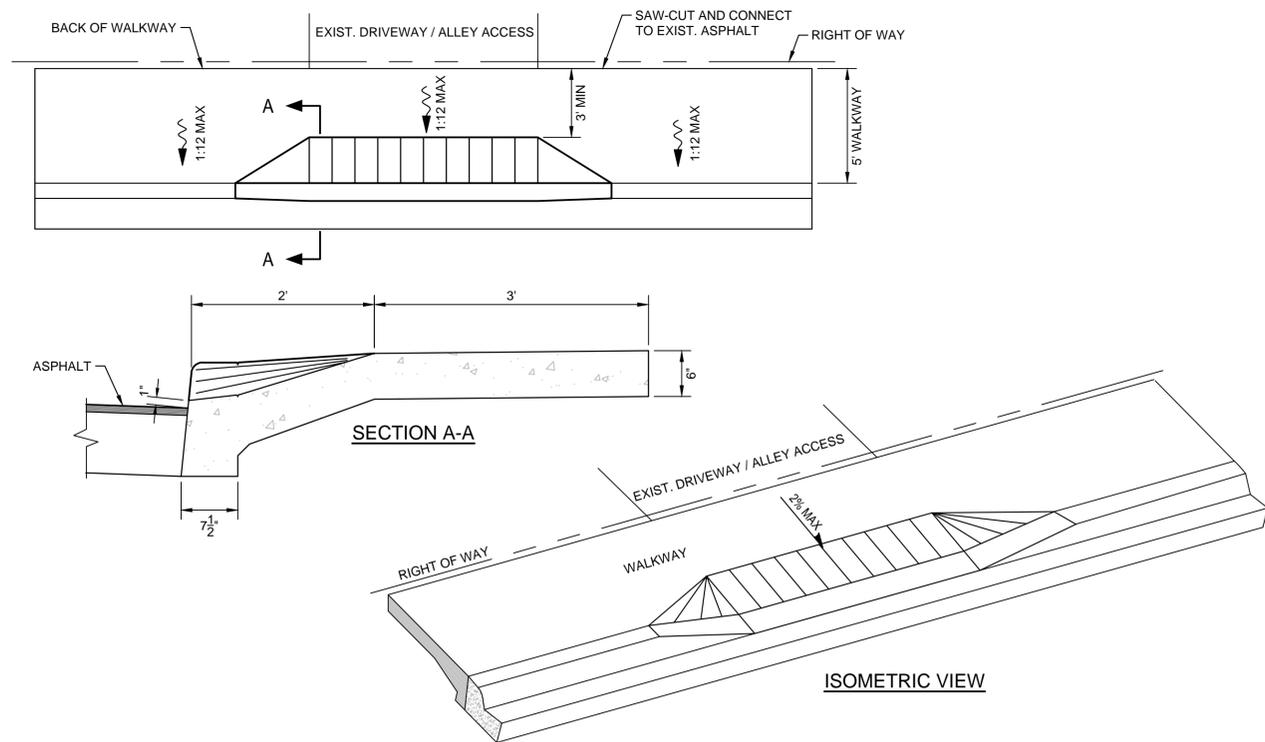
1 TYPE 'F' CURB
C5-1 N.T.S.

2 CONCRETE SIDEWALK
C5-1 N.T.S.

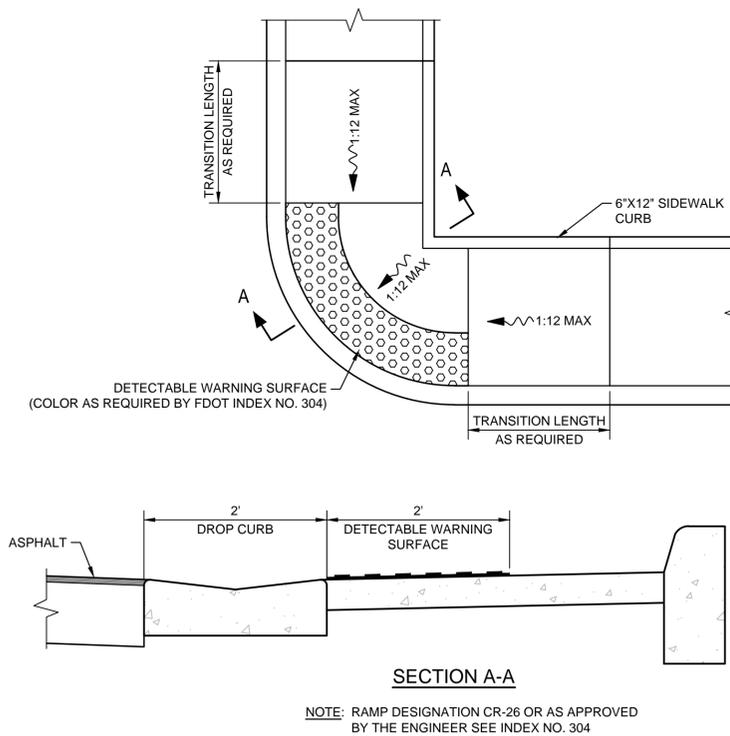
3 TERMINATION OF PAVEMENT OVERLAY
C5-1 N.T.S.

4 ASPHALT PAVEMENT JOINT
C5-1 N.T.S.

5 DETECTABLE WARNING SURFACE
C5-1 N.T.S.

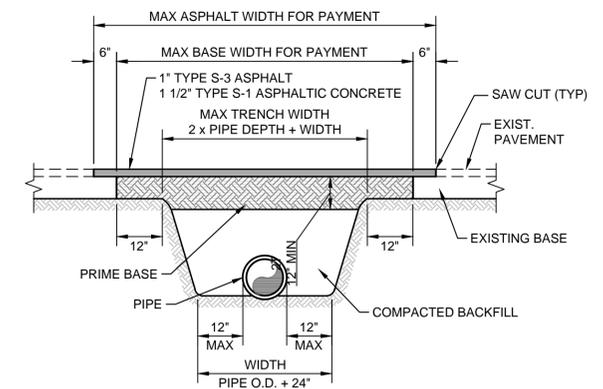


6 DRIVEWAY / RAMP CONNECTION
C5-1 N.T.S.



NOTE: RAMP DESIGNATION CR-26 OR AS APPROVED BY THE ENGINEER SEE INDEX NO. 304

7 RAMP DESIGNATION CR-26 (FDOT INDEX NO. 304)
C5-1 N.T.S.



8 ASPHALT REPLACEMENT
C5-1 N.T.S.

PLOT DATE: Sep 04, 2015 - 12:00pm XREFS: IMAGES:

BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING
ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

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NO.	DATE	BY	REVISION

BID DRAWING SET

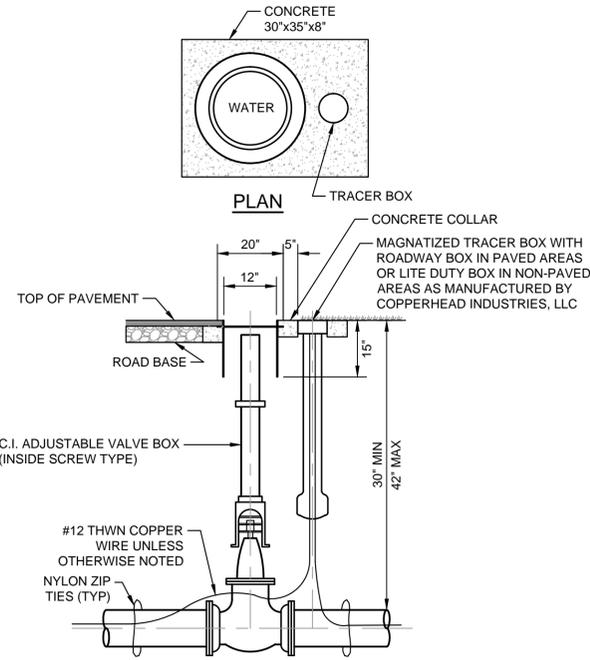
SEAL
JOHN R. LEEMON
FLORIDA P.E. NO. 41645
DATE

FLORIDA E.B. NO. 48
MOCK • ROOS
ENGINEERS • SURVEYORS • PLANNERS
5720 Corporate Way, West Palm Beach, Florida 33407 (561) 683-3113, Fax 478-7248

FLORIDA L.B. NO. 48
FIELD: D.J. LEAVY
DRAWN: YM
DESIGN: JRL
APPR: GGG
SCALE: AS SHOWN

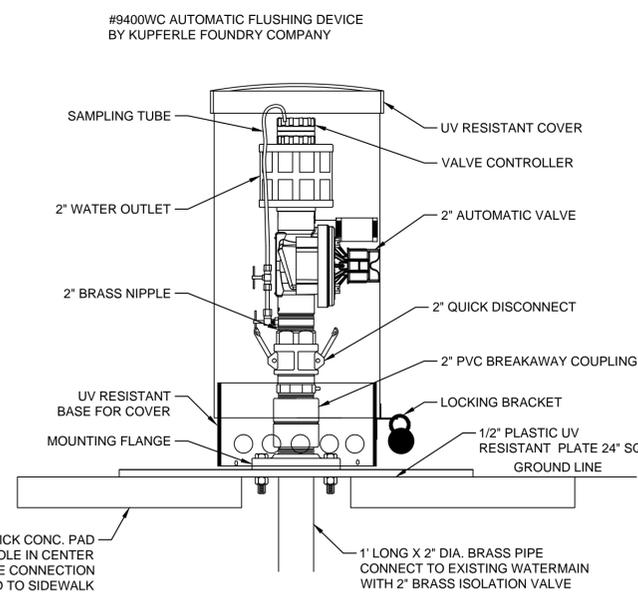
DETAILS
2" WATERMAIN REPLACEMENT
PHASE 1A
CITY OF LAKE WORTH
PALM BEACH COUNTY, FLORIDA

DATE: AUGUST 2015
P.A. NO. B4030.00
DWG. NO. 44-43-15-155
SHEET: C5-1

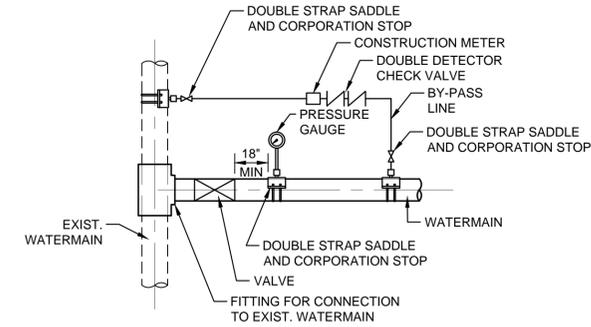


- NOTES**
- TOP OF LID MUST BE FLUSH WITH PAVEMENT OR CONCRETE COLLAR.
 - WHEN VALVE IS DEEPER THAN 36" AN EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT TO 24" OF FINISHED GRADE. EXTENSION MUST BE SET SCREW TYPE AND ATTACHED TO OPERATING NUT.
 - OUTSIDE BOX SHALL BE UNITED STATES FOUNDRY NO. 7630 WITH TYPE FD LID. LID SHALL BE CAST WITH THE WORDS: "WATER".

1 VALVE SETTING
C5-2

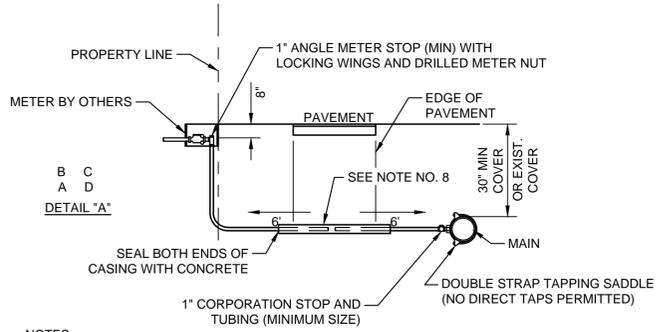


4 AUTOMATIC FLUSHING DEVICE
C5-2 N.T.S.



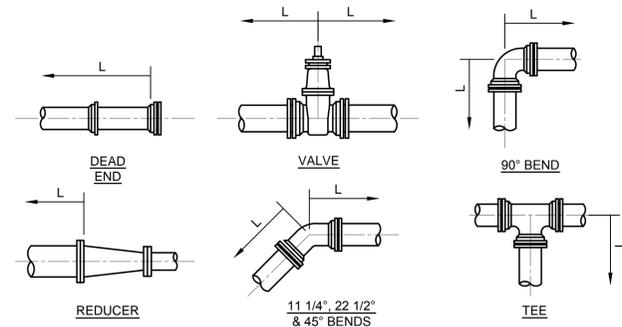
- NOTES**
- PERFORM PRESSURE AND LEAKAGE TEST ON TAPPING SLEEVE AND TAPPING VALVE (WHEN USED) PRIOR TO MAKING TAP.
 - ALL WATER FOR FLUSHING, PRESSURE AND LEAKAGE TESTS, AND BACTERIOLOGICAL CLEARANCE MUST BE FROM THE "BY-PASS" LINE WITH CHECK VALVE IN PLACE.
 - DURING ALL PRESSURE AND LEAKAGE TESTS, BOTH CORPORATION STOPS ON THE "BY-PASS" LINE MUST BE CLOSED.
 - THE UTILITY COMPANY SUPPLYING THE WATER SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING.
 - DOUBLE STRAP SADDLES ARE NOT REQUIRED WHEN CONNECTING TO DUCTILE IRON PIPE.
 - CONNECT PRESSURE TEST PUMP TO SERVICE LINE OR BLOW-OFF. NO EXTRA TAPS ARE PERMITTED UNLESS NEITHER A SERVICE LINE OR BLOW-OFF ARE PRESENT IN THE TEST SECTION.
 - WATERMAIN VALVES CANNOT BE OPENED UNTIL THE ENTIRE SYSTEM HAS BEEN CLEARED BY THE GOVERNING PERMITTING AGENCY.
 - REMOVE THE PRESSURE GAUGE AND "BY-PASS" LINE AFTER THE MAIN HAS BEEN CLEARED.

2 SINGLE VALVE CONNECTION
C5-2 N.T.S.



- NOTES**
- SUCCESSIVE TAPS INTO THE WATERMAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET AND AT 45° FROM THE CENTERLINE (ON MAINS WITH GREATER THAN 30" OF COVER. SEE DETAIL 'A')
 - WHERE NO SIDEWALK EXISTS, METER BOXES SHALL BE SET TO CONFORM TO FINISH GRADE.
 - POLYETHYLENE TUBING SHALL BE SDR 9, COPPER TUBE SIZE.
 - ROTATE THE CORPORATION STOP SO THAT THE OPERATING NUT IS ACTUATED FROM THE VERTICAL POSITION RATHER THAN THE HORIZONTAL.
 - TUBING SERVICE LINES SHALL BE CONTINUOUS FROM CORPORATION STOP TO ANGLE METER STOP WITH NO FITTINGS IN BETWEEN.
 - TAPPING SADDLES AND CORPORATION STOPS SHALL HAVE AWWA INLET THREADS.
 - SERVICE CASING SHALL NOT BE INSTALLED BY WATER JETTING UNDER ROADWAY.
 - GALVANIZED CASING REQUIRED FOR JACK AND BORE IN MOST CASES. SCHEDULE 40 PVC MAY BE USED WITH THE APPROVAL OF THE ENGINEER. CASING SHOULD EXTEND SIX (6) FEET BEYOND EDGE OF PAVEMENT AND SIZED AS FOLLOWS:
A. 1" SERVICE USE 2" CASING
B. 1 1/2" SERVICE USE 3" CASING
C. 2" SERVICE USE 4" CASING
 - WATER SERVICE PIPE AND VALVE SIZES TO MATCH EXISTING SIZE, WITH 1" MINIMUM.
 - IF EXISTING METER BOX IS SET BACK A DISTANCE OR IN PRIVATE PROPERTY INSTALL NEW METER BOX AT THE PROPERTY LINE AS SHOWN, REMOVE OLD METER BOX, AND RECONNECT WATER SERVICE ON BOTH SIDE OF METER. SALVAGE ALL METERS TO THE CITY.

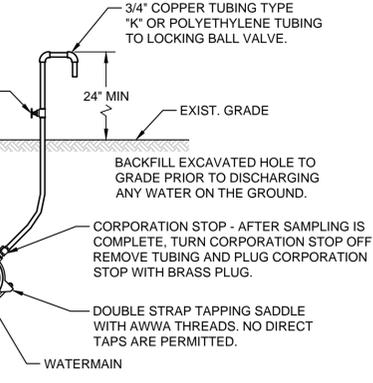
5 WATER SERVICE
C5-2 N.T.S.



- NOTES**
- LENGTH 'L' IS IN FEET
 - RESTRAINED LENGTHS ARE BASED ON THE FOLLOWING:
A. A LENGTH ALONG RUN OF 5' WAS USED FOR CALCULATING TEES.
B. A LOWSIDE DEPTH OF 5' WAS USED FOR CALCULATING VERTICAL OFFSETS.
C. PVC - PIPE SIZES 4" - 12"
DI - PIPE SIZES 4" - 48"
D. SANDY SOIL
E. SAFETY FACTOR OF 1.5
F. TRENCH TYPE 3
 - LENGTH 'L' SHOWN IN THE TABLE TO BE RESTRAINED IN THE DIRECTION OF THE ARROWS.
 - RESTRAINT LENGTHS CALCULATED USING EBBA IRON SALES INC., RESTRAINT DESIGN PROGRAM VERSION 5.0.
 - THRUST BLOCKS SHALL ALSO BE REQUIRED AT ALL TIE-INS TO EXISTING LINES, ALL TAPPING TEES ON EXISTING LINES, ALL NEW HYDRANTS, ALL ABOVE GROUND ASSEMBLIES 3" AND LARGER, AND MAINS GREATER THAN 12".
 - IF LENGTH BETWEEN MECHANICAL JOINTS FITTINGS AND OR VALVES IS LESS THAN THE MINIMUM LENGTHS SHOWN IN THIS TABLE THE CONTRACTOR SHALL RESTRAIN THE ENTIRE LENGTH.

3 RESTRAINED PIPE JOINTS
C5-2 N.T.S.

FITTING TYPE	PIPE SIZE															
	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"	48"		
90° HORIZ BEND	17	14	12	10	8	6	5	4	3	2	1	1	1	1	1	
45° HORIZ BEND	7	6	5	4	3	2	1	1	1	1	1	1	1	1	1	
22.5° HORIZ BEND	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	
11.25° HORIZ BEND	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
45° VERT. OFFSET	UPPER BEND	19	12	10	8	6	5	4	3	2	1	1	1	1	1	
	LOWER BEND	5	4	3	2	1	1	1	1	1	1	1	1	1	1	
22.5° VERT. OFFSET	UPPER BEND	9	6	5	4	3	2	1	1	1	1	1	1	1	1	
	LOWER BEND	2	2	1	1	1	1	1	1	1	1	1	1	1	1	
11.25° VERT. OFFSET	UPPER BEND	5	3	2	2	1	1	1	1	1	1	1	1	1	1	
	LOWER BEND	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
DEAD END AND INLINE VALVE	4"	46	30	25	20	16	12	10	8	6	5	4	3	2	1	
	6"	21	13	11	9	7	5	4	3	2	1	1	1	1	1	
TEE (BRANCH RESTRAINT)	8"x	-	-	59	26	20	16	13	10	7	1	1	1	1	1	
	10"x	-	-	-	59	26	20	16	13	10	7	1	1	1	1	
	12"x	-	-	-	-	59	26	20	16	13	10	7	1	1	1	
	14"x	-	-	-	-	-	69	34	26	20	16	13	10	7	1	
	16"x	-	-	-	-	-	-	79	34	26	20	16	13	10	7	
	18"x	-	-	-	-	-	-	-	89	34	26	20	16	13	10	
	20"x	-	-	-	-	-	-	-	-	99	34	26	20	16	13	
	24"x	-	-	-	-	-	-	-	-	-	117	34	26	20	16	
	30"x	-	-	-	-	-	-	-	-	-	-	143	34	26	20	
	36"x	-	-	-	-	-	-	-	-	-	-	-	167	34	26	
REDUCER (LARGER PIPE RESTRAINT)	42"x	-	-	-	-	-	-	-	-	-	-	-	-	188	184	
	48"x	-	-	-	-	-	-	-	-	-	-	-	-	-	209	
	6"x	34	21	17	14	11	9	7	5	4	3	2	1	1	1	
	8"x	51	39	34	23	18	14	11	8	6	5	4	3	2	1	
	10"x	63	53	49	34	26	20	16	13	10	7	1	1	1	1	
	12"x	104	66	67	55	44	40	37	31	24	19	15	11	8	6	
	14"x	-	69	56	54	44	37	31	24	19	15	11	8	6	5	
	16"x	-	82	71	69	41	37	31	24	19	15	11	8	6	5	

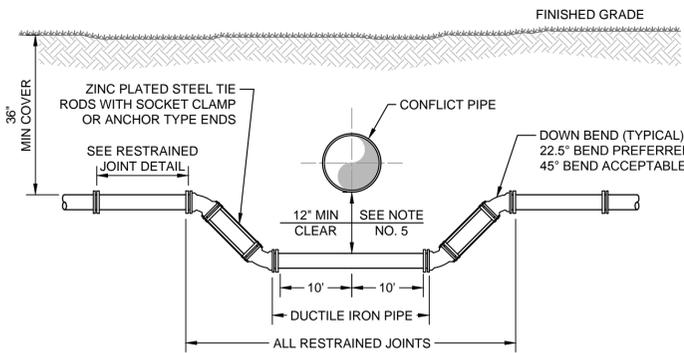


6 SAMPLE POINT
C5-2 N.T.S.

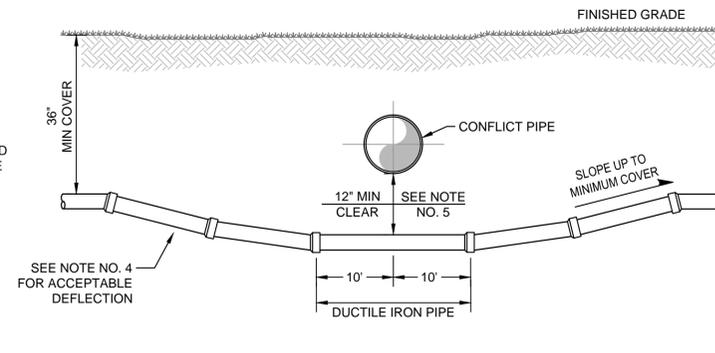
DETAILS

CADD FILE: K:\w_u_2wm1dwg 2WM1CS01_C5-1.dwg	NO. DATE BY REVISION	BID DRAWING SET	SEAL JOHN R. LEEMON FLORIDA P.E. NO. 41645	FLORIDA E.B. NO. 48 MOCK • ROOS ENGINEERS • SURVEYORS • PLANNERS 5720 Corporate Way, West Palm Beach, Florida 33407 (561) 683-3113, Fax 478-7248	FLORIDA L.B. NO. 48 FIELD: D.J. LEAVY DRAWN: YM DESIGN: JRL APPR: GGG SCALE: AS SHOWN	DATE: AUGUST 2015 P.A. NO. B4030.00 DWG. NO. 44-43-15-155 SHEET: C5-2
			2" WATERMAIN REPLACEMENT PHASE 1A CITY OF LAKE WORTH PALM BEACH COUNTY, FLORIDA			

PLOT DATE: Sep 04, 2015 - 12:03pm XREFS: IMAGES: BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING ADJUST ALL SCALED DIMENSIONS ACCORDINGLY



FITTING TYPE JOINTS

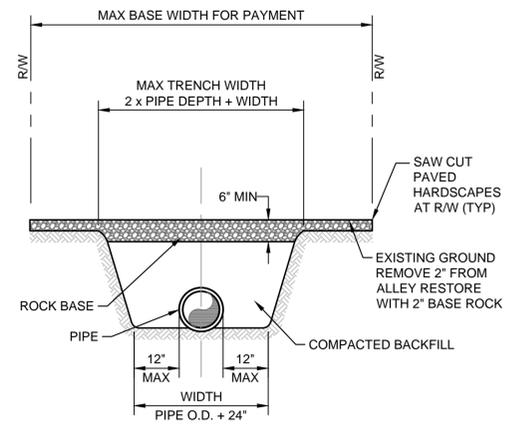


**DEFLECTION TYPE JOINTS
PREFERRED METHOD**

NOTES

1. THERE SHALL BE, IN ALL CASES, A MINIMUM OF 12" VERTICAL SEPARATION BETWEEN WATERMANS AND FORCE MAINS.
2. WHEREVER POSSIBLE WATERMANS SHALL PASS OVER FORCE MAINS OR STORM SEWERS.
3. FITTINGS SHALL BE RESTRAINED WITH MEGALUGS AND TIE RODS BETWEEN OFFSET FITTINGS. THRUST BLOCKS SHALL ONLY BE USED WITH THE APPROVAL OF THE ENGINEER.
4. THE DEFLECTION TYPE CROSSING IS PREFERRED. SEE SPECIFICATIONS AND MANUFACTURER'S SUBMITTAL FOR MAXIMUM DEFLECTION ALLOWED.
5. A MINIMUM OF 12" VERTICAL SEPARATION BETWEEN WATERMANS AND STORM SEWERS SHALL BE MAINTAINED. WHERE THIS IS NOT POSSIBLE WATERMAIN SHALL BE D.I.P. WITH NO LESS THAN 6" SEPARATION.

1 CONFLICT PIPE CROSSING
C5-3 N.T.S.

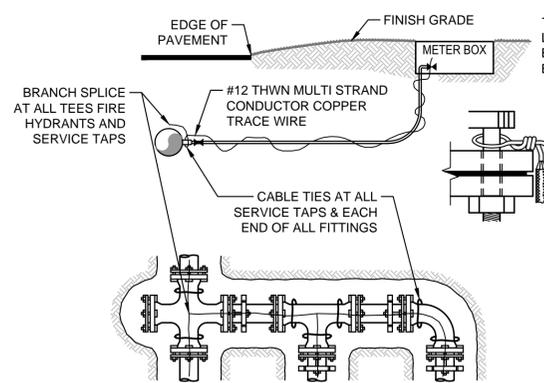


2 ALLEY RESTORATION
C5-3 N.T.S.

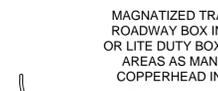
3 STANDARD WATER AND SEWER SEPARATION CRITERIA
C5-3

THE FOLLOWING IS A SYNOPSIS OF FDEP RULE 62-555.314 F.A.C. IF THERE ARE ANY NOTED CONFLICTS, THE RULE SHALL BE APPLIED.

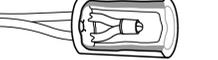
1. STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A VERTICAL DISTANCE OF AT LEAST SIX (6) INCHES AND PREFERABLY TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE AND PREFERABLY WITH THE WATER MAIN RUNNING OVER THE TOP. WHERE THE MINIMUM VERTICAL SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM / WASTEWATER / RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE SEPARATED FROM THE POINT OF CROSSING WITH NO LESS THAN SIX (6) FEET BETWEEN THE CROSSING AND ANY TWO JOINTS. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PRESSURE PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM TWELVE (12) INCH VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED.
2. MAINTAIN MINIMUM SIX (6) FEET HORIZONTAL DISTANCE BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN. A MINIMUM OF THREE (3) FEET HORIZONTAL DISTANCE BETWEEN POTABLE WATER MAIN AND WASTEWATER GRAVITY MAIN IS ALLOWABLE WHERE WATER MAIN IS TWELVE (12) INCHES ABOVE THE GRAVITY SEWER.
3. FORCE MAIN CROSSING POTABLE WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE OUTSIDE OF THE POTABLE WATER MAIN WITH THE POTABLE WATER MAIN CROSSING OVER THE FORCE MAIN.
4. SEWER SERVICE LATERALS SHALL CROSS UNDER WATER MAINS WITH A MINIMUM VERTICAL SEPARATION OF TWELVE (12) INCHES. IF TWELVE (12) INCHES VERTICAL SEPARATION CANNOT BE MAINTAINED, THEN THE WATER MAIN SHALL BE D.I.P. AND THE SANITARY LATERAL C-900 SDR 18 AND THE MINIMUM SEPARATION SHALL BE SIX (6) INCHES. WHEN IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER THE SEWER SERVICE LATERAL A MINIMUM VERTICAL SEPARATION OF AT LEAST TWELVE (12) INCHES MUST BE MAINTAINED. THE WATER MAIN SHALL BE D.I.P. AND THE SEWER LATERAL SHALL BE C-900 SDR 18 OR BETTER.
5. EXCEPTIONS MUST FOLLOW THE FDEP'S FAC 62-555.314 (5).



TO PUT CONTINUOUS TRACE WIRE UNDER BOLT, FIRST LOOSEN BOLT, THEN STRIP 3" MIN. WRAP ONCE AROUND BOLT, 1 TWIST, 2 WRAPS. "DO NOT CUT WIRE" TIGHTEN BOLT AFTER WRAPPING TRACE WIRE AROUND THE BOLT.



DETAIL OF A THREE WIRE SPICE

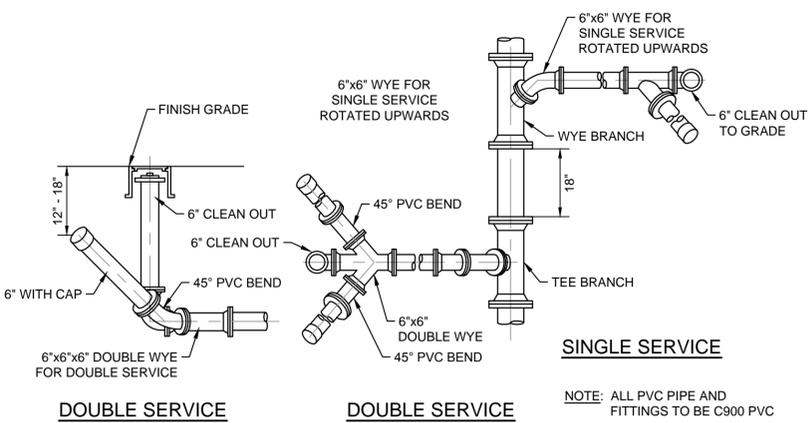


CUTAWAY DETAIL OF A TWO WIRE SPICE

NOTES:

1. TRACE WIRE IS REQUIRED ON ALL NON METALLIC PIPE.
2. INCLUDE ALL COST OF MATERIAL & LABOR IN PRICE OF PIPE.
3. CONTRACTOR IS RESPONSIBLE FOR CONTINUITY OF ALL TRACE WIRE.
4. WIRE SPICE CONNECTORS SHALL BE DRY-CON DIRECT BURY LUG BY KING INNOVATIONS, DS-500 DRI-SPLICE BY SPEARS OR DIRECT BURY PRODUCTS BY 3M

4 TRACE WIRE
C5-3



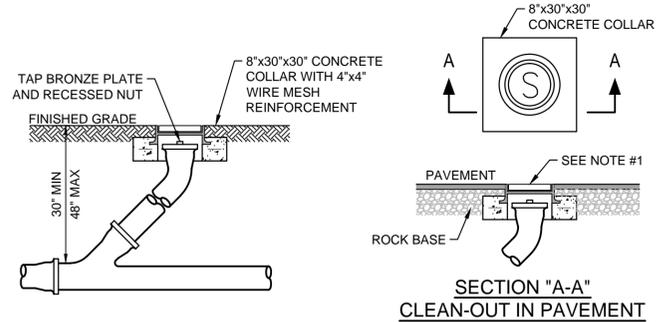
DOUBLE SERVICE

DOUBLE SERVICE

SINGLE SERVICE

NOTE: ALL PVC PIPE AND FITTINGS TO BE C900 PVC

5 SEWER LATERAL
C5-3 N.T.S.



**SECTION "A-A"
CLEAN-OUT IN PAVEMENT**

NOTES:

1. U.S. FOUNDRY NO. 7621 REVERSIBLE HANDHOLE RING AND COVER OR APPROVED EQUAL SHALL BE USED, COVER TO BE CAST WITH "S" IN THE CENTER.
2. CLEAN OUT REQUIRED ON ALL SERVICES AT PROPERTY LINE.
3. STANDARD WYE SHALL BE USED AT CLEAN OUT.
4. ALL PIPE AND CLEANOUT SHALL BE 6" MIN.

6 CLEANOUT
C5-3 N.T.S.

PLOT DATE: Sep 04, 2015 - 12:00pm XREFS: IMAGES: BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING ADJUST ALL SCALED DIMENSIONS ACCORDINGLY

CADD FILE: K:\w_u_2wm1.dwg 2WM1C501_C5-1.dwg		NO. DATE BY REVISION		BID DRAWING SET		SEAL JOHN R. LEEMON FLORIDA P.E. NO. 41645	FLORIDA E.B. NO. 48	MOCK • ROOS ENGINEERS • SURVEYORS • PLANNERS		FLORIDA L.B. NO. 48	FIELD: D.J. LEAVY DRAWN: YM DESIGN: JRL APPR: GGG SCALE: AS SHOWN	2" WATERMAIN REPLACEMENT PHASE 1A CITY OF LAKE WORTH PALM BEACH COUNTY, FLORIDA		DATE: AUGUST 2015 P.A. NO. B4030.00 DWG. NO. 44-43-15-155 SHEET: C5-3
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