

C.O.V.B. UTILITY RELOCATION for I.R.C. ROAD WIDENING PROJECT on S.R. 60 (20TH ST.) FROM 44TH AVE. TO 38TH AVE. and on 43RD AVE. FROM 300' SOUTH OF 18TH ST. TO 26TH ST.

CITY OF VERO BEACH, FLORIDA

C.O.V.B. WATER AND SEWER DEPT.

PROJECT NO. WS16003

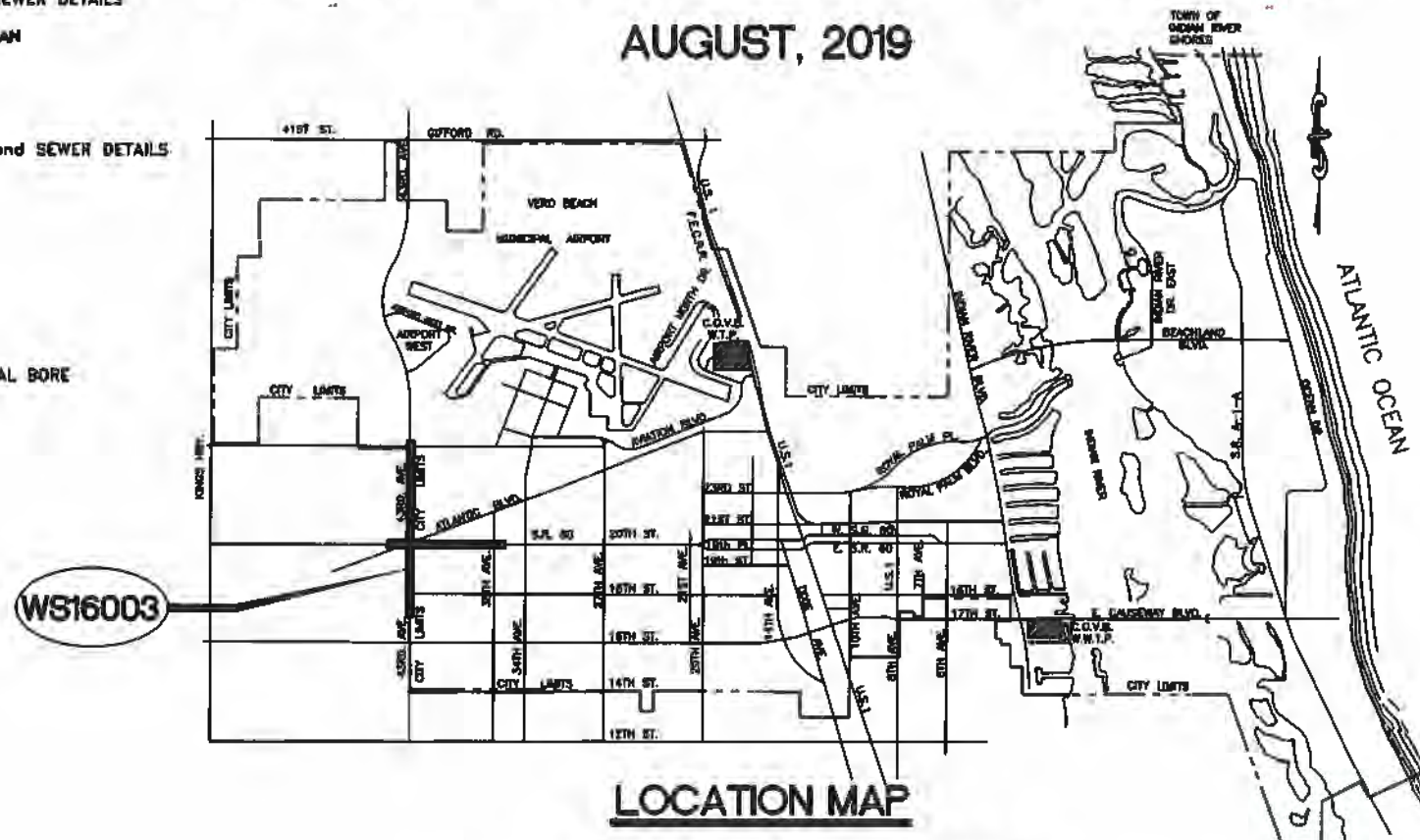
INDIAN RIVER COUNTY PROJECT NO. 0853

AUGUST, 2019



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CITY COUNCIL

- MAYOR - VAL ZUDANS
- VICE MAYOR - TONY YOUNG
- COUNCILMEMBER - LAURA MOSS
- COUNCILMEMBER - ROBERT BRACKET
- COUNCILMEMBER - HARRY HOWLE

CITY ADMINISTRATION

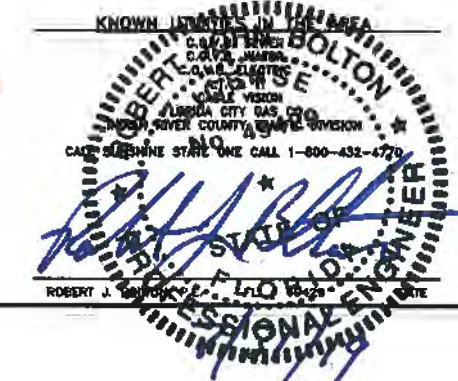
- CITY MANAGER - MONTY K. FALLS, P.E.
- DIRECTOR WATER & SEWER DEPT. - ROBERT J. BOLTON, P.E.

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS
THE FLORIDA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS FOR ROAD & BRIDGE
CONSTRUCTION, 2017 EDITION, SUPPLEMENTS
THERE TO, AND SPECIAL PROVISIONS THERETO IF
NOTED IN THE CONTRACT SPECIFICATIONS FOR
THIS PROJECT.

CITY OF VERO BEACH
WATER AND SEWER DEPARTMENT
ENGINEERING DIVISION

BID SET



ABBREVIATIONS LIST

AASHTO American Association of State Highway and Transportation Officials	GR Grade/Guardrail	RD Roof Drain
AC Acre	GSP Galvanized Steel Pipe	R Radius
ADP Asbestos Cement Pipe	GV Gate Valve	RR Railroad
ADJ Adjust	GW Guy Wire	RCP Reinforced Concrete Pipe
AH Ahead	H Hedge	RHWY Roadway
ALT Alternate	HDWL Headwall	REINF Reinforced
ALUM Aluminum	I External Angle (Delta)	RELOC Relocated
APPROX Approximate	ID Inside Diameter	RES Residence
ARV Air Release Valve	IN Inch	RS Road Sign
ASPH Asphalt	IPF Iron Pipe Found	RT Right
ASTM American Society for Testing Materials	IPS Iron Pipe Set	R/W Right-of-Way
AVE Avenue	JB Junction Box	RWL Raw Water Line
BDCMP Bituminous Coated Corrugated Metal Pipe Culvert	L Length of Curve	RWW Raw Water Well
BT Buried Telephone	LB Long Body Sleeve	SAN Sanitary Sewer
BD Bend	LC Long Chord	SF Square Foot
B/L Base Line	LF Lineal Feet	SLV Sleeve
BLDG Building	LMRK Limerock	SPEC Specification
BM Bench Mark	LP Light Post	SPH Sprinkler Head
BMS Bench Mark Set	LT Left	SR State Road
BV Butterfly Valve	LS Lump Sum	SS Stop Sign
C & G Curb & Gutter	M Middle Ordinate Distance	ST S. Storm Sewer
CAP Corrugated Aluminum Pipe	MATL Material	ST Steel or Street Sign
CATV Cable T V	MB Mail Box	STA Station
CB Catch Basin	MHATT Telephone Manhole (A.T. & T)	STD Standard
CI Cast Iron	MHEL Electric Manhole	STW Salinity Test Well
CP Cast Iron Pipe	MHS Sanitary Sewer Manhole	S/W Sidewalk
CL Center Line	MHSBT Telephone Manhole (S.B.T)	SY Square Yard
CLR Clear/Clearance	MHTEL Telephone Manhole	TAN Tangent Length of Curve
CMF Concrete Monument Found	MISC Miscellaneous	TB Trash Bin
CMS Concrete Monument Set	MON Monument	TBX Telephone Box
CMP Corrugated Metal Pipe	MWR Reuse Monitor Well	TCP Terra Cotta Pipe
CONC Concrete	MWRWL Raw Water Line Monitor Well	TEL Telephone
CONST Construct	MSE Mean Sea Level	THRBLK Thrust Block
CONT Continuation	NF Nail Found	TOB Top of Bank
CONTR Contractor	NS Nail Set	TRB Traffic Box
CULV Culvert	NPT National Pipe Thread	TRP Traffic Pole
CY Cubic Yard	Oak Oak Tree	TYP Typical
CV Check Valve	OHE Overhead Electric	TW Test Well
D Degree of Curvature	OD Outside Diameter	USC&GS US Coast and Geodetic Survey (New National Geodetic Survey)
DEPT Department	DC On Centers	USGS US Geodetic Survey
DIA Diameter	PAVT Pavement	UNIMP Unimproved
DIM Dimension	PC Point of Curvature	VC Vertical Curve
DOT Department of Transportation	PCC Point of Compound Curvature or Portland Cement Concrete	VCP Vitrified Clay Pipe
DR Driveway	PCF Property Corner Found	W/ With
DWG Drawing	PCS Property Corner Set	WC Water Closet
DIP Ductile Iron Pipe	PE Polyethylene Pipe	WL Water Line (River, Ditch, Ocean, ETC.)
EA Each	PERF Perforated	WM Water Meter or Water Main
EL/ELEV Elevation	PERC Percolation	WMR Reuse Water Meter
ELEC Electric	PH Phase	WVF Welded Wire Fabric
ENGR Engineer	PI Point of Intersection	X Coordinate Distance (East-West)
EQ Equation or Equal	PL Property Line	X-SEC Cross Section
EQUIP Equipment	PMT Palm Tree	Y Coordinate Distance (North-South)
ESMT Easement	PNT Pine Tree	
EXIST Existing	PP Power Pole	
EXP Expansion	PPG Power Pole With Guy Wire	
FN Fire Hydrant	PPL Power Pole With Light	
FIN FL Finish Floor	PPLTWO Power Pole With Two Lights	
FL Flow Line	PPW Wood Power Pole	
FW Flow Well	PRC Point of Reverse Curvature	
FT Feet	PRM Permanent Reference Monument	
FURN Furnish	PRMS Permanent Reference Monument Set	
FM Force Main	PT Point of Tangency	
GA Gauge/Gage	PSI Pounds per Square Inch	
GAL Gallon	PVC Polyvinyl Chloride Pipe	
GALV Galvanized	O Peak Discharge	
GP Galvanized Iron Pipe	RED Reducer	
	RD Roof Drain	

LEGEND

EXISTING	RELOCATED	PROPOSED

HATCH LEGEND

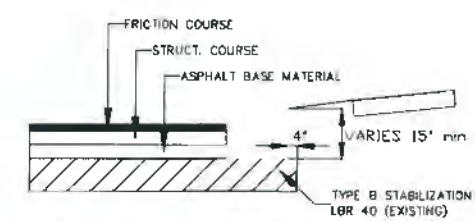
	DENOTES LIMITS OF ASPHALT AREA TO BE OPEN CUT
	EXISTING ASPHALT PAVEMENT
	EXISTING CONCRETE PAVEMENT
	EXISTING UNIMPROVED

GENERAL NOTES

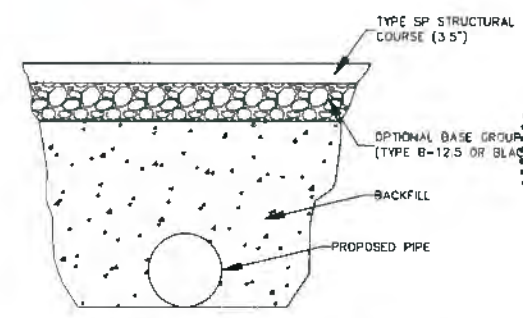
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND TYPE OF MATERIAL OF ALL UTILITIES AND SHALL BE RESPONSIBLE FOR REQUESTING LOCATION INFORMATION FROM THE UTILITY COMPANIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING AND/OR RELOCATED UTILITIES DURING CONSTRUCTION.
- RELOCATION OF POWER POLES, AUXILIARY POWER POLES, GUYS, AND UNDERGROUND ELECTRICAL LINES WILL BE THE RESPONSIBILITY OF THE CITY OF VERO BEACH. CONTRACTOR SHALL COORDINATE HIS OPERATIONS WITH THE CITY CREWS AND OTHER CONTRACTORS.
- EXTREME CARE SHALL BE TAKEN WHEN WORKING AROUND THE BASE OF TREES, WATER METERS, OR ANY OTHER EXISTING FACILITIES THAT ARE TO REMAIN IF NECESSARY. THIS WORK SHALL BE DONE BY HAND SO AS TO AVOID DAMAGE TO THE ITEM. THE CONTRACTOR SHALL TREAT ANY EXPOSED ROOTS OR OTHER PORTIONS OF THE TREES TO PROVIDE PROPER PROTECTION AS DIRECTED BY THE CITY.
- THERE SHALL BE 36" MIN COVER OVER ALL NEW WATER PIPES UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- F.O.D.T. REFERENCE INDEXES:
 INDEX 300 FOR CURB RESTORATION
 INDEX 304 FOR CURB RAMP
 INDEX 307 FOR TRENCH DETAILS
 INDEX 310 FOR SIDEWALK RESTORATION
 INDEX 612 FOR WORK ON SHOULDER OR OUTSIDE TRAVEL WAY
 INDEX 613 FOR MOT
 INDEX 616 FOR WORK NEAR INTERSECTIONS
 SPECIFICATION SECTION 102 FOR MOT FOR DRIVEWAYS AND SIDEWALKS

WATER SERVICE NOTES

- 1" TEMP SAMPLE POINT ASSEMBLY - SEE DETAIL SHEET 10
- 2" TEMP BLOW-OFF & SAMPLE POINT ASSEMBLY - SEE DETAIL SHEET 10
- BRANCH CONNECTION - SEE DETAIL SHEET 10
- CONST. 1" PE SINGLE POTABLE WATER SERVICE FOR A 5/8" WATER METER - SEE DETAIL SHEET 11
- CONST. 1" PE SINGLE POTABLE WATER SERVICE FOR A 3/4" WATER METER - SEE DETAIL SHEET 11
- CONST. 1" PE SINGLE POTABLE WATER SERVICE FOR A 1" WATER METER - SEE DETAIL SHEET 11
- CONST. 2" PE SINGLE POTABLE WATER SERVICE FOR A 1 1/2" WATER METER - SEE DETAIL SHEET 11
- CONST. 2" PE SINGLE POTABLE WATER SERVICE FOR A 2" WATER METER - SEE DETAIL SHEET 11



DETAIL OF TYPE F CURB AND GUTTER
 NOTE: CURB AND GUTTER AND SIDEWALK RECONSTRUCTION TO OCCUR PRIOR TO ANY MILLING ACTIVITIES



DETAIL OF FULL DEPTH RECONSTRUCTION
 (SEE ROADWAY PLANS FOR ACTUAL LIMITS)

NOTE: PIPE REPAIR/REPLACEMENT AND FULL DEPTH RECONSTRUCTION TO OCCUR PRIOR TO ANY MILLING ACTIVITIES

REV. NO.	DESCRIPTION	AUTHORZ. BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	INFORMATION SHEET and WATER & SEWER DETAILS	SCALE N.T.S.	DATE 1/02/19	DATE 1/02/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003				SHEET 2 OF 58



MATCH LINE

GROUTED 400 L.F. EXIST. 8" A.C.P. W.M. AND REMAIN IN PLACE OUT OF SERVICE

REMOVE 40 L.F. EXIST. 8" A.C.P. W.M.

GROUTED 105 L.F. EXIST. 8" A.C.P. W.M. AND REMAIN IN PLACE OUT OF SERVICE

REMOVE 440 L.F. EXIST. 12" D.I.P. W.M.

GROUT 380 L.F. EXIST. 8" C.I.P. W.M. PIPE IS TO REMAIN IN PLACE OUT OF SERVICE. CAP PIPE ENDS AFTER GROUTING

REMOVE 430 L.F. EXIST. 8" C.I.P. W.M.

REMOVE 205 L.F. EXIST. 2 1/2" W.M.

S.R. 60

GROUT EXIST. 50 L.F. 8" C.I.P. W.M. GROUT EXIST. 120 L.F. 8" C.I.P. W.M.

REMOVE 1380 L.F. EXIST. 8" C.I.P. W.M.

CUT EXIST. 8" C.I.P. W.M. AND REMOVE 10 L.F. EXIST. PIPE THEN CAP ENDS WITH 2-8" CAPS

EXIST. 8" GY TO REMAIN CLOSED REMOVE VALVE BOX AND CONC. PAD

EXIST. 8" C.I.P. W.M. I.R.C. WATER SYSTEM

REMOVE 1300 L.F. EXIST. 8" C.I.P. W.M.

19TH ST.

43RD AVE.

CONST. 475 L.F. TEMP. 21" D.I.P. W.M. (TO BE REMOVED WHEN NEW W.M. IS IN SERVICE.)

18TH ST.

REMOVE 250 L.F. EXIST. 8" C.I.P. W.M.



26TH ST.

43RD AVE.

REMOVE 2300' EXIST. 8" C.I.P. W.M.

GROUTED 120 L.F. EXIST. 8" A.C.P. W.M. AND REMAIN IN PLACE OUT OF SERVICE
REMOVE 40 L.F. EXIST. 8" A.C.P. W.M.

GROUTED 200 L.F. EXIST. 8" A.C.P. W.M. AND REMAIN IN PLACE OUT OF SERVICE

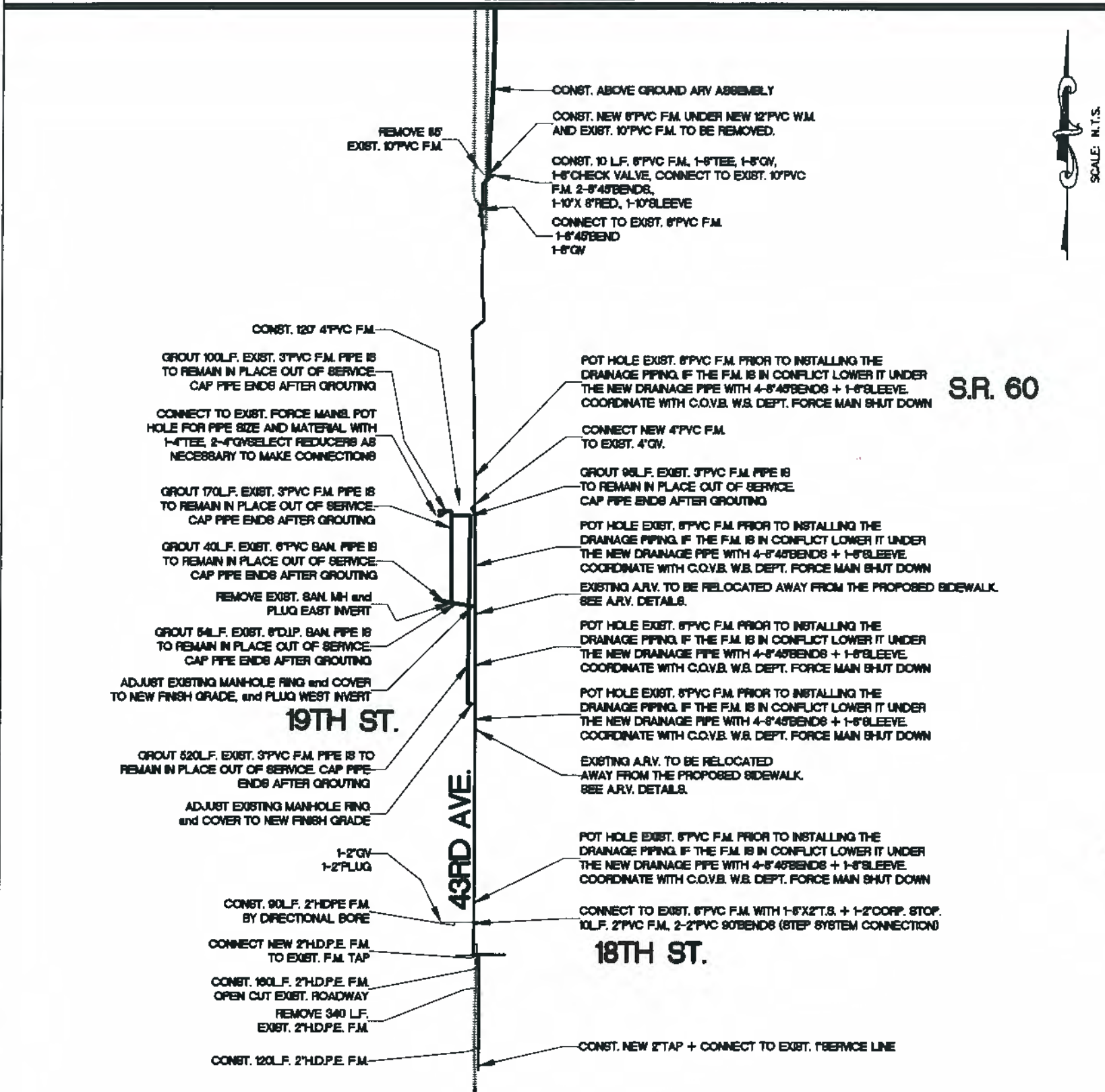
REMOVE 40 L.F. EXIST. 8" A.C.P. W.M.

MATCH LINE



REV. NO.	DESCRIPTION	AUTHRZD. BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	WATER MAIN DEMO PLAN	SCALE: N.T.S.	DRWN. BY: T.A.Y. CHECKED BY: R.J.B.	DATE: 7/09/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003			SHEET 4 OF 58	

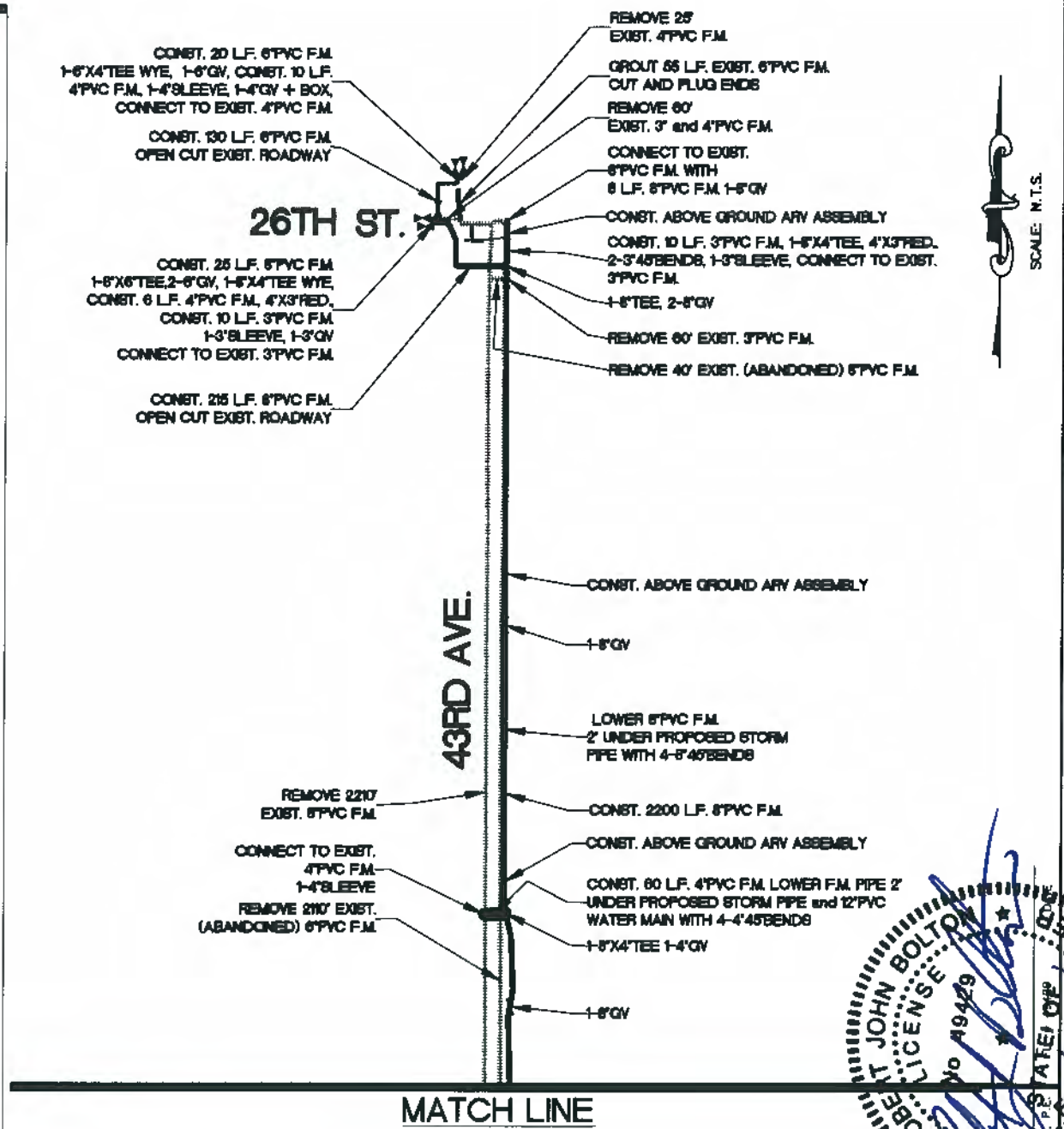
MATCH LINE



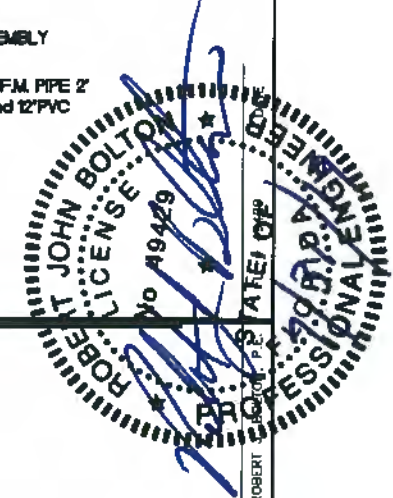
SCALE: N.T.S.

S.R. 60

26TH ST.



SCALE: N.T.S.



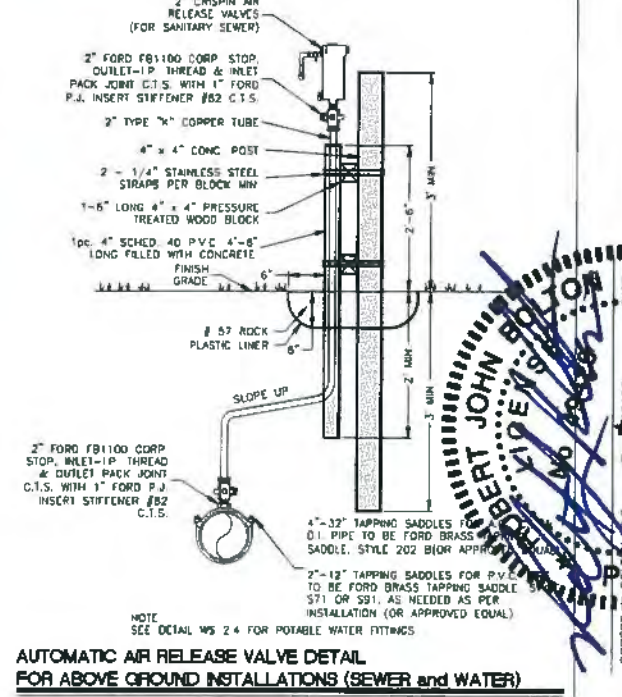
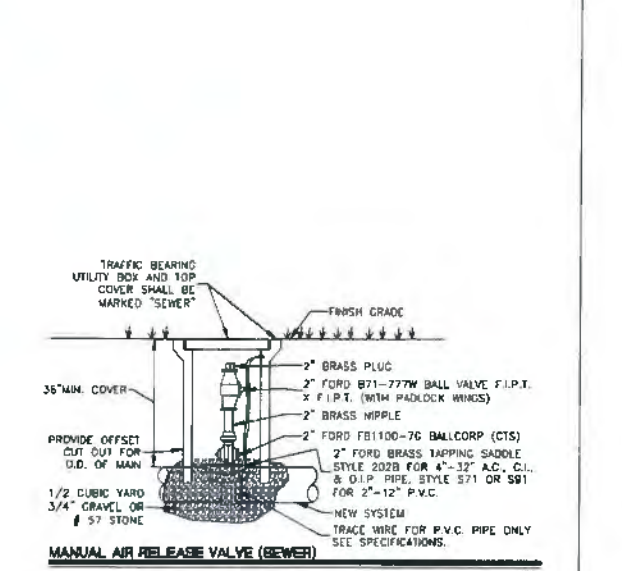
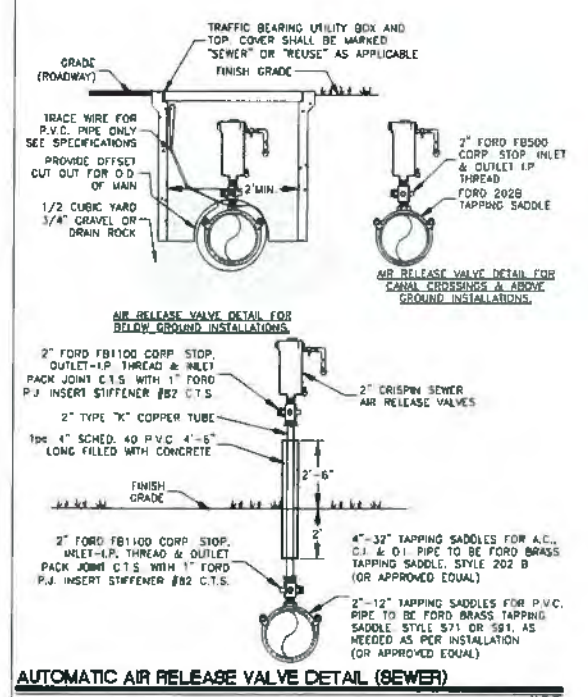
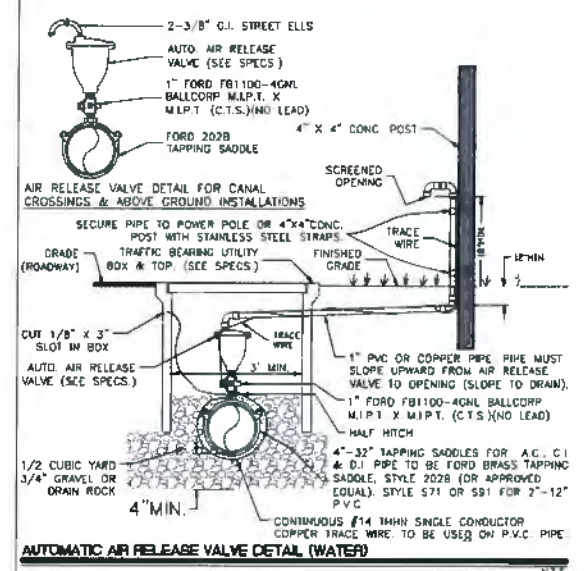
REV. NO.	DESCRIPTION	AUTHRD. BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	OVERALL F.M. PLAN & DEMO PLAN	SCALE: N.T.S.	DATE: 1/02/19	DATE: 1/02/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003				SHEET 5 OF 54

COST ESTIMATE SHEET - Utility Work by Highway Contractor (UW/H)
FDOT Financial Project ID: 331759-2-34-01, IRC-0853
C.O.V.B. Project No. WS16003 - WATER MAIN REPLACEMENT ON SR 60 & 43RD AVE.
City of Vero Beach Water & Sewer Department

7/29/2019

ITEM #	FOOT ITEM#	DESCRIPTION	Unit	Qty
1		Actual cost of Performance and Payment Bond	LB	1
2	0110 11 A	Clearing and Grubbing	LB	1
3	0104 10 3 A	Erosion Control - SEDIMENT BARRIER	LB	1
4	0160 4 A	Type B Stabilization (Driveways)	SY	1055
5	0334 11 3 A	Superpass asphaltic Concrete (SP-12.5) Traffic "C" (1-1/2")	SY	1055
6	0425 2 71 A	Manhole, J-T, Less Than 10'	LB	1
7	2999 2 C	As-built Surveying	LS	1
8	0670 1 2 A	Install Sod - Bahie	S Y	1890
9	0670 1 2 B	Install Sod - Floratam	S Y	200
10	0670 1 1	Install Seed & Mulch	S Y	9320
11	0522 2 A	R & R, 6" Concrete Sidewalk	SY	1255
12	1080 18	Remove Existing Sanitary Sewer Manhole and Appurtenances	EA	1
13	1060 15	Adjust Existing Sanitary Sewer Manhole Ring & Cover	EA	2
14	1080 18001	Remove & Dispose Existing 1" Water Main and Appurtenances (0-1.9')	LF	268
15	1080 18002	Remove & Dispose Existing 2" Water Main and Appurtenances (2-4.9')	LF	308
16	1080 18002A	Remove & Dispose Existing 3" Force Main and Appurtenances (2-4.9')	LF	860
17	1080 18003	Remove & Dispose Existing 6" Force Main and Appurtenances (5-7.9')	LF	2120
18	1080 18003A	Remove & Dispose Existing 8" Water Main and Appurtenances (5-7.9')	LF	780
19	1080 18004	Remove & Dispose Existing 8" Water Main and Appurtenances (8-19.9')	LF	5580
20	1080 18004A	Remove & Dispose Existing 8" Force Main and Appurtenances (8-19.9')	LF	2320
21	1080 18004B	Remove & Dispose Existing 8" Sanitary Sewer Service Pipe	LF	100
22	1080 18002	Grout Fill and Abandon Existing 2" Water Main (2-4.9')	LF	190
23	1080 18002A	Grout Fill and Abandon Existing 2" Force Main (2-4.9')	LF	790
24	1080 18003	Grout Fill and Abandon Existing 6" Water Main (5-7.9')	LF	400
25	1080 18003A	Grout Fill and Abandon Existing 8" Sanitary Main (5-7.9')	LF	170
26	1080 18004	Grout Fill and Abandon Existing 8" Water Main (8-19.9')	LF	990
27	1080 18004A	Grout Fill and Abandon Existing 8" Sanitary Main (8-19.9')	LF	85
28	1080 31202	F & I, 2" PVC SDR21 (BLUE) Water Main Pressure Pipe. Item to include all necessary PVC or Brass fittings per plans and specifications.	LF	20
29	1080 31202A	F & I, 2" PVC SDR21 (GREEN) Force Main Pressure Pipe. Item to include all necessary PVC or Brass fittings per plans and specifications.	LF	20
30	1080 31202B	F & I, 2" PVC SDR21 (BLUE) Water Main Pressure Pipe. Item to include all necessary PVC or Brass fittings per plans and specifications.	LF	40
31	1080 31203	F & I, 3" PVC C-900 DR-18 (GREEN) Force Main Pressure Pipe. Item to include all necessary M.J. fittings and pipe restraints per plans and specifications.	LF	20
32	1080 31204	F & I, 4" PVC C-800 DR-18 (GREEN) Force Main Pressure Pipe. Item to include all necessary M.J. fittings and pipe restraints per plans and specifications.	LF	200
33	1080 31206	F & I, 6" PVC C-800 DR-18 (GREEN) Force Main Pressure Pipe. Item to include all necessary M.J. fittings and pipe restraints per plans and specifications.	LF	180
34	1080 31206A	F & I, 6" PVC C-800 DR-18 (GREEN) Force Main Pressure Pipe. Item to include all necessary M.J. fittings and pipe restraints per plans and specifications.	LF	140
35	1080 31206B	F & I, 6" PVC C-900 DR-18 (GREEN) Pressure Pipe with sewer fittings (Sewer Services)	LF	100
36	1080 31208	F & I, 8" PVC C-900 DR-18 (BLUE) Water Main Pressure Pipe	LF	3380
37	1080 31208A	F & I, 8" PVC C-900 DR-18 (GREEN) Sanitary Sewer Pipe	LF	40
38	1080 31208B	F & I, 8" PVC C-900 DR-18 CL160 (GREEN) Force Main Pressure Pipe	LF	2480
39	1080 31210	F & I, 10" PVC C-800 DR-18 CL160 (GREEN) Force Main Pressure Pipe	LF	20
40	1080 31212	F & I, 12" PVC C-800 DR-18 (BLUE) Water Main Pressure Pipe	LF	2340
41	1080 41201	F & I, 1" PE3408 SDR-9 PE (BLUE) Water Main Pressure Pipe	LF	400
42	1080 41202	F & I, R 2" PE3408 SDR-9 PE (Blue) Water Main Pressure Pipe (Remove after new W.M. is in service (Item 12))	LF	1040
43	1080 42202A	F & I, 2" PE3408 SDR-9 PE (BLUE) Water Main Pressure Pipe	LF	630
44	1080 42202B	F & I, 2" PE3408 SDR-9 PE (GREEN) Force Main Pressure Pipe	LF	400
45	1080 42208	F & I, 8" PE3408 SDR-11 PE (BLUE) Water Main Pressure Pipe	LF	190
46	1080 42208A	F & I, 8" PE3408 SDR-11 PE (GREEN) Force Main Pressure Pipe	LF	120
47	1080 42212	F & I, 12" PE3408 SDR-11 PE (BLUE) Water Main Pressure Pipe	LF	760
48	1080 51108	F & I, 8" MJC-153 11 25' Bend (WATER) With Mega-Lug Restraints	EA	4
49	1080 51108A	F & I, 8" MJC-153 11 25' Bend (SEWER-LINED) With Mega-Lug Restraints	EA	4
50	1080 51108B	F & I, 8" MJC-153 22.5' Bend (WATER) With Mega-Lug Restraints	EA	7
51	1080 51108C	F & I, 8" MJC-153 45' Bend (WATER) With Mega-Lug Restraints	EA	34
52	1080 51108D	F & I, 8" MJC-153 90' Bend (SEWER-LINED) With Mega-Lug Restraints	EA	38
53	1080 51108E	F & I, 8" MJC-153 90' Bend (WATER) With Mega-Lug Restraints	EA	3
54	1080 51108F	F & I, 8" MJC-153 90' Bend (SEWER-LINED) With Mega-Lug Restraints	EA	1
55	1080 51112	F & I, 12" MJC-153 11 25' Bend (WATER) With Mega-Lug Restraints	EA	4
56	1080 51112A	F & I, 12" MJC-153 22.5' Bend (WATER) With Mega-Lug Restraints	EA	1
57	1080 51112B	F & I, 12" MJC-153 45' Bend (WATER) With Mega-Lug Restraints	EA	10
58	1080 51112C	F & I, 12" MJC-153 90' Bend (WATER) With Mega-Lug Restraints	EA	4
59	1080 51208A	F & I, 8x8 MJC-153 Tee (SEWER-LINED) With Mega-Lug Restraints	EA	2
60	1080 51208B	F & I, 8x8 MJC-153 Tee (WATER) With Mega-Lug Restraints	EA	7
61	1080 51208C	F & I, 8x8 MJC-153 Tee (SEWER-LINED) With Mega-Lug Restraints	EA	1
62	1080 51208D	F & I, 8x8 MJC-153 Tee (SEWER-LINED) With Mega-Lug Restraints	EA	2
63	1080 51212	F & I, 12x12 MJC-153 Tee (WATER) With Mega-Lug Restraints	EA	5
64	1080 51212A	F & I, 12x12 MJC-153 Tee (WATER) With Mega-Lug Restraints	EA	1
65	1080 51310	F & I, 10x10 MJC-153 Reducer (SEWER-LINED) With Mega-Lug Restraints	EA	1
66	1080 51312	F & I, 12x12 MJC-153 Reducer (WATER) With Mega-Lug Restraints	EA	2
67	1080 51408	F & I, 8" MJC-153 L B. Sleeve (WATER) With Mega-Lug Restraints	EA	3
68	1080 51408A	F & I, 8" MJC-153 L B. Sleeve (SEWER-LINED) With Mega-Lug Restraints	EA	6
69	1080 51410	F & I, 10" MJC-153 L B. Sleeve (SEWER-LINED) With Mega-Lug Restraints	EA	1
70	1080 51412	F & I, 12" MJC-153 L B. Sleeve (WATER) With Mega-Lug Restraints	EA	1
71	1080 51508	F & I, 8" MJC-153 Plug Tapped 2" (WATER) With Mega-Lug Restraints	EA	2
72	1080 51508A	F & I, 8" MJC-153 Plug Tapped 2" (WATER) With Mega-Lug Restraints	EA	2
73	1080 51508B	F & I, 8" MJC-153 Plug Tapped 2" (SEWER-LINED) With Mega-Lug Restraints	EA	1
74	1080 51808	F & I, 8x8 MJC-153 Tee (SEWER-LINED) With Mega-Lug Restraints	EA	1
75	1080 51808A	F & I, 8x8 MJC-153 Tee (WATER) With Mega-Lug Restraints	EA	1
76	1080 51808B	F & I, 8x8 MJC-153 Tee (WATER) With Mega-Lug Restraints	EA	1
77	1080 21101	F & I, 1" Single Short (<20R) Water Service	EA	28
78	1080 21101A	F & I, 1" Single Long (>20R) Water Service	EA	1
79	1080 21102	F & I, 2" Single Long (>20R) Water Service	EA	1
80	1080 21102A	F & I, 2" Double Short (<20R) Water Service	EA	2
81	1080 23102	F & I, 8" x 2" Main Tap with 2" Tapping Valve (CORP) Branch Connection Water Main	EA	8
82	1080 23102A	F & I, 8" x 2" Main Tap with 2" Tapping Valve (CORP) Branch Connection Force Main	EA	1
83	1080 23108	F & I, 6" x 8" Main Tap with 8" Tapping Valve, and Valve Box Water Main	EA	1
84	1080 23108A	F & I, 6" x 8" Tapping Sleeve, 8" Tapping Valve, 8" Main Tap and Valve Box Force Main	EA	1
85	1080 23118	F & I, 18" x 12" Tapping Sleeve, 12" Tapping Valve, 12" Main Tap, and Valve Box Water Main	EA	1
86	1080 24102	F & I, 2" Resilient Seated Gate Valve and Valve Box Water Main	EA	2
87	1080 24102A	F & I, 2" Resilient Seated Gate Valve and Valve Box Force Main	EA	1
88	1080 24102B	F & I, 2" Resilient Seated Gate Valve and Valve Box Water Main	EA	1

89	1080 24102B	F & I, 2 1/2" Resilient Seated Gate Valve and Valve Box Water Main	EA	1
90	1080 24103	F & I, 3" Resilient Seated Gate Valve With Mega-Lug Restraints and Valve Box Force Main	EA	2
91	1080 24104	F & I, 4" Resilient Seated Gate Valve With Mega-Lug Restraints and Valve Box Force Main	EA	3
92	1080 24108	F & I, 8" Resilient Seated Gate Valve With Mega-Lug Restraints and Valve Box Water Main	EA	4
93	1080 24108A	F & I, 8" Resilient Seated Gate Valve With Mega-Lug Restraints and Valve Box	EA	2
94	1080 24108B	F & I, 8" Resilient Seated Gate Valve With Mega-Lug Restraints and Valve Box Force Main	EA	14
95	1080 24108C	F & I, 8" Resilient Seated Gate Valve With Mega-Lug Restraints and Valve Box Force Main	EA	7
96	1080 24108D	F & I, 8" Check Valve With Mega-Lug Restraints Force Main	EA	1
97	1080 24112	F & I, 12" Resilient Seated Gate Valve With Mega-Lug Restraints and Valve Box Water Main	EA	5
98	1080 24200	Adjust Existing Valve Box Water Main	EA	3
99	1080 24500A	Adjust Existing Valve Box Force Main	EA	3
100	1080 28102	F & I, 2" Automatic Air Release Valve Assembly Force Main	EA	4
101	1080 28112	F & I, 2" Automatic Air Release Valve Assembly Water Main	EA	1
102	1080 28400	F & I, Releco 2" Manual Air Release Valve Assembly Force Main	EA	2
103	1080 29106	F & I, 6" Line Stop Water Main	EA	1
104	1080 29104	F & I, 4" Mega-Lug Ball Restraints Force Main	EA	1
105	1080 29106	F & I, 6" Mega-Lug Ball Restraints On east C.I.P. Water Main	EA	5
106	1080 29108	F & I, 8" Mega-Lug Ball Restraints On east C.I.P. Water Main	EA	5
107	1080 29106	F & I, 6" Mega-Lug Ball Restraints Water Main	EA	2
108	1080 29106A	F & I, 6" Mega-Lug Ball Restraints Force Main	EA	2
109	1080 29106	F & I, 6" Mega-Lug Ball Restraints Water Main	EA	28
110	1080 29108A	F & I, 8" Mega-Lug Ball Restraints Force Main	EA	7
111	1080 29112	F & I, 12" Mega-Lug Ball Restraints Water Main	EA	24
112	1080 32108	F & I, R, Temporary Sample Point and Blowoff Assembly (8") Water Main	EA	4
113	1080 32112	F & I, R, Temporary Sample Point and Blowoff Assembly (12") Water Main	EA	12
114	1080 23106	F & I, 6" Tapping Sleeve, 6" Tapping Valve, 6" Main Tap and Valve Box Water Main	EA	3
115	1080 23112	F & I, 12" Tapping Sleeve, 12" Tapping Valve, 12" Main Tap, and Valve Box Water Main	EA	1
116	1080 23118	F & I, 18" x 12" Tapping Sleeve, 12" Tapping Valve, 12" Main Tap, and Valve Box Water Main	EA	1
117	1644 11508	F & I, Fire Hydrant Assembly, 6" O.D., 2-8" Anchor Couplings, with main connection and 42" riser	EA	10



Professional Engineer
 JOHN R. BOLLING
 No. 1700
 State of Florida
 License No. 1700
 Robert J. Johnson
 7/29/2019

REV. NO.	DESCRIPTION	AUTHORZD BY	DRWN BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	SUMMARY OF PAY ITEMS and WATER & SEWER DETAILS	SCALE N.T.S.	DATE 7/29/19	DATE 7/29/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003			SHEET 6 OF 58	

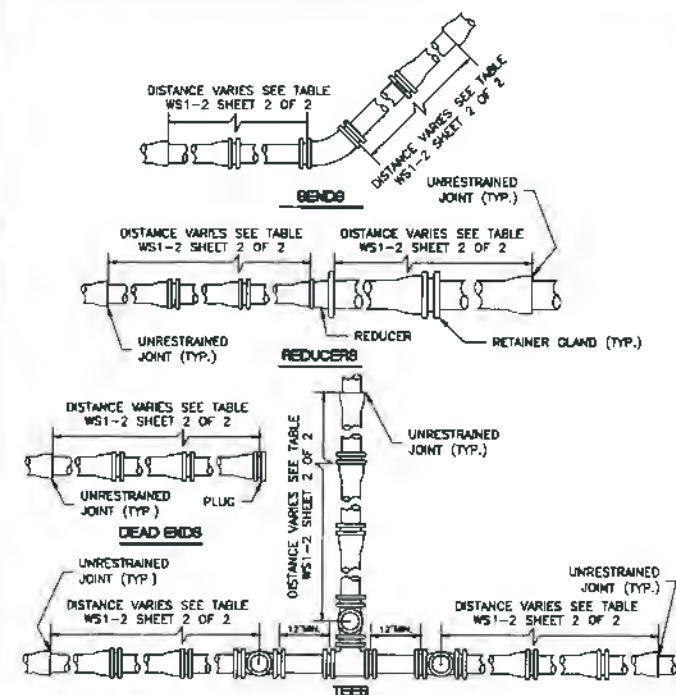
FITTINGS	PIPE SIZE						
	4"	6"	8"	10"	12"	16"	20"
11 1/4' BEND	2	3	4	4	5	6	8
22 1/2' BEND	4	6	7	9	10	13	15
45' BEND	8	12	15	18	21	27	32
90' BEND	20	29	37	44	51	65	77
PLUG/CAP (DEAD ENDS)	42	59	77	93	108	138	166
* BRANCH OF TEE (20' TO JOINT)	21	36	55	71	86	116	143

FITTINGS	PIPE SIZE						
	4"	6"	8"	10"	12"	16"	20"
11 1/4' BEND	2	3	4	5	6	7	9
22 1/2' BEND	5	7	9	10	12	15	18
45' BEND	10	14	18	21	25	31	37
90' BEND	24	33	43	51	60	78	90
PLUG/CAP (DEAD ENDS)	60	85	110	133	155	198	238
* BRANCH OF TEE (20' TO JOINT)	29	54	78	101	123	165	205

- NOTES:
- FITTINGS SHALL BE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
 - INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO GREATER THAN SHOWN IN THE TABLE.
 - WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS THE GREATEST LENGTH OF RESTRAINED PIPE.
 - IN LINE VALVES AND THROUGH RUN OF TEES OUTSIDE LIMITS OF RESTRAINED JOINTS FROM OTHER FITTINGS NEED NOT BE RESTRAINED UNLESS OTHERWISE INDICATED.
 - LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS:

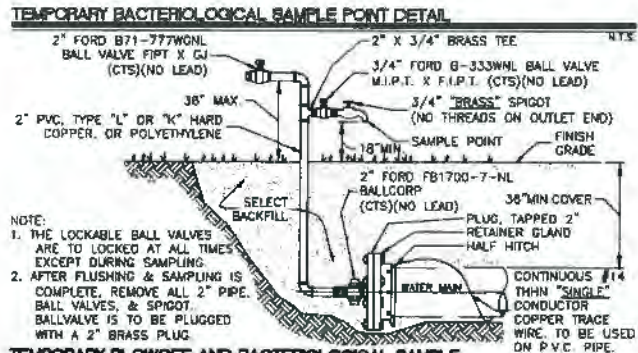
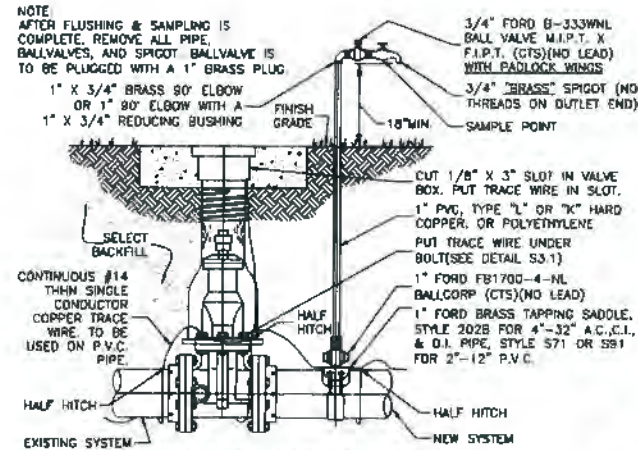
WORKING PRESSURE	150 P.S.I.
SOIL DESIGNATION	SAND/SILT
LAYING CONDITION	3'
- * BRANCH OF TEE VALUE IS BASED ON A FULL STICK OF PIPE ON EACH END OF THE THROUGH RUN OF THE TEE. INTERPOLATION BETWEEN THE PLUG VALVE AND TEE VALVE CAN BE MADE PENDING THE LOCATION OF THE FIRST JOINT ON EITHER SIDE OF THE TEE.

PIPE RESTRAINT TABLE FOR 4-INCH - 20-INCH PIPE



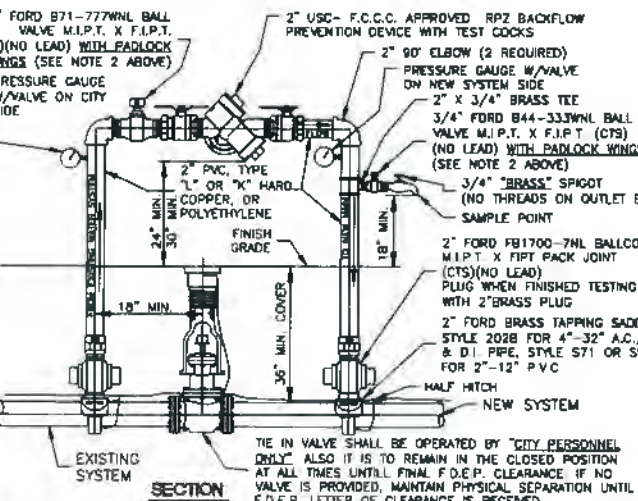
- PIPE RESTRAINT NOTES:
- ALL VALVES AND FITTINGS (INCLUDING SLEEVES) SHALL BE RESTRAINED IN ACCORDANCE WITH SPECIFICATIONS AND AS APPROVED BY ENGINEER.
 - NO THRUST BLOCKS SHALL BE PERMITTED UNLESS SPECIFICALLY APPROVED BY WATER AND SEWER DEPARTMENT.

PIPE RESTRAINT DETAIL

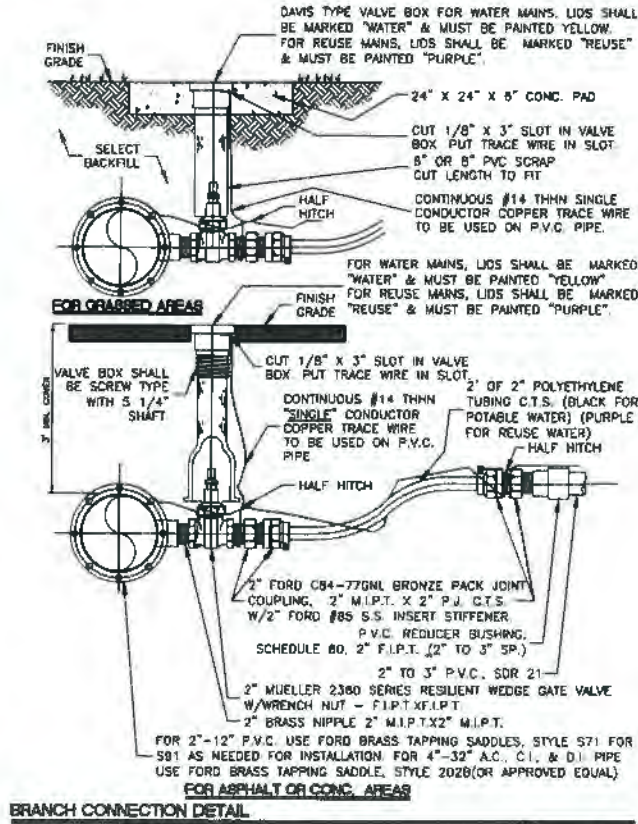


TEMPORARY BRANCH OFFSET AND BACTERIOLOGICAL SAMPLE POINT ASSEMBLY DETAIL

- NOTES:
- A TEMPORARY JUMPER CONNECTION IS TO BE USED FOR FILLING, FLUSHING, CHLORINATING, AND PULLING BACTERIOLOGICAL SAMPLES FOR ANY NEW WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS.
 - THE CONTRACTOR IS TO PROVIDE A CURRENT CERTIFICATION FOR THE BACKFLOW PREVENTER THAT IS USED ON THE JUMPER ASSEMBLY TO THE CITY WATER & SEWER DEPARTMENT "PRIOR TO USE".
 - THE TEMPORARY JUMPER CONNECTION AND ALL SAMPLE POINTS ARE TO BE "LOCKED AT ALL TIMES" EXCEPT FOR FILLING, FLUSHING, CHLORINATING, AND PULLING BACTERIOLOGICAL SAMPLES.
 - PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH A.W.W.A. C651, 1992 EDITION THE TAPPING SLEEVES AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION 11 OF A.W.W.A. C651-92.
 - ADEQUATE THRUST BLOCKING AND/OR RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED MAINTAIN MINIMUM VELOCITY OF 2.5 F.P.S. WHILE FLUSHING.
 - TEMPORARY JUMPER CONNECTION AND SAMPLE POINTS REMOVAL PROCEDURE:
 - COMPLETE ALL FLUSHING AND TESTS.
 - SEND RESULTS TO APPROPRIATE AGENCY FOR APPROVAL.
 - RECEIVE F.D.E.P. CLEARANCE.
 - GET PERMISSION FROM THE CITY WATER & SEWER DEPT.
 - REMOVE THE TEMPORARY JUMPER CONNECTION AND PLUG THE REMAINING TAPPING VALVES.



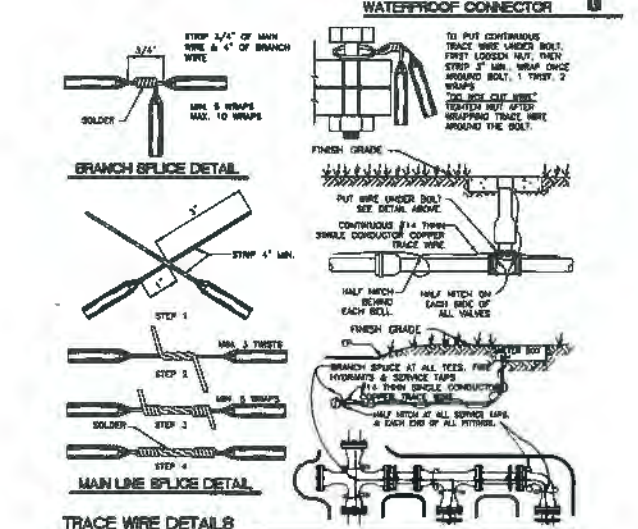
TEMPORARY JUMPER CONNECTION DETAIL



BRANCH CONNECTION DETAIL

PVC PIPE COLOR CODE AND TRACE WIRE TABLE		
UTILITY	PVC PIPE COLOR	TRACE WIRE COLOR
POTABLE WATER MAIN	BLUE OR WHITE	BLUE
RAW WATER MAIN	BLUE OR WHITE	LIGHT BLUE
SANITARY SEWER GRAVITY MAIN	GREEN	GREEN
SANITARY SEWER FORCE MAIN	BROWN OR WHITE	BROWN
REUSE WATER MAIN	PURPLE OR WHITE	PURPLE

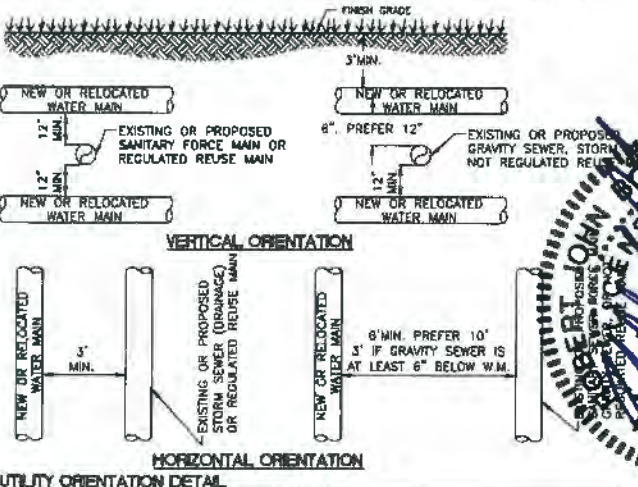
- NOTE:
- TRACE WIRE IS REQUIRED ON ALL PVC.
 - INCLUDE ALL COST OF MATERIAL & LABOR ON PRICE OF PIPE.
 - CONTRACTOR RESPONSIBLE FOR CONTINUITY OF ALL TRACE WIRE.
 - ALL BRANCH CONNECTIONS ARE TO BE WRAP SOLICITED (DOW/36 RESIN CORE), WRAP W/3 ALTERNATING LAYERS OF SCOTCH "33" TAPE & COVER WITH SCOTCH WATERPROOFING COMPOUND.
 - SHOULDER WRAP MAY BE USED INSTEAD OF SCOTCH WRAP.
 - THE DRYDOWN WATERPROOF CONNECTOR MAY ALSO BE USED INSTEAD OF SCOTCH WRAP OR SHOULDER WRAP (PART NO. 90220).



TRACE WIRE DETAILS

62-555.314 Location of Public Water System Mains. For the purpose of this section, the phrase "water mains" shall mean mains, including treatment plant process piping, conveying either raw, partially treated, or finished drinking water, fire hydrant leads, and service lines that are under the control of a public water system and that have an inside diameter of three inches or greater.

- Horizontal Separation Between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, Reclaimed Water Pipelines, and On-Site Sewage Treatment and Disposal Systems.
 - New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
 - New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. The minimum horizontal separation distance between water mains and gravity-type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.
 - New or relocated, underground water mains shall be laid to provide a horizontal distance of at least six feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. The minimum horizontal separation distance between water mains and gravity-type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.
 - New or relocated, underground water mains shall be laid to provide a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed "on-site sewage treatment and disposal system" as defined in Section 381.0065(2), F.S., and Rule 64E-6.002, F.A.C.
- Vertical Separation Between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, and Reclaimed Water Pipelines.
 - New or relocated, underground water mains crossing any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer shall be laid so the outside of the water main is at least 12 inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.
 - New or relocated, underground water mains crossing any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water shall be laid so the outside of the water main is at least 12 inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.
 - At the utility crossings described in paragraphs (a) and (b) above, one full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.
- Separation Between Water Mains and Sanitary or Storm Sewer Manholes.
 - No water main shall pass through, or come into contact with, any part of a sanitary sewer manhole.
- Separation Between Fire Hydrant Drains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, Reclaimed Water Pipelines, and On-Site Sewage Treatment and Disposal Systems. New or relocated fire hydrants with underground drains shall be located so that the drains are at least three feet from any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., at least three feet, and preferably ten feet, from any existing or proposed vacuum-type sanitary sewer; at least six feet, and preferably ten feet, from any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and at least ten feet from any existing or proposed "on-site sewage treatment and disposal system" as defined in Section 381.0065(2), F.S., and Rule 64E-6.002, F.A.C.



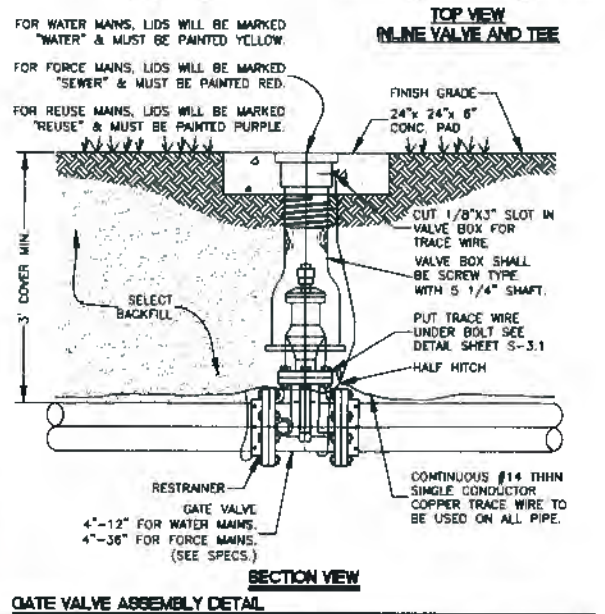
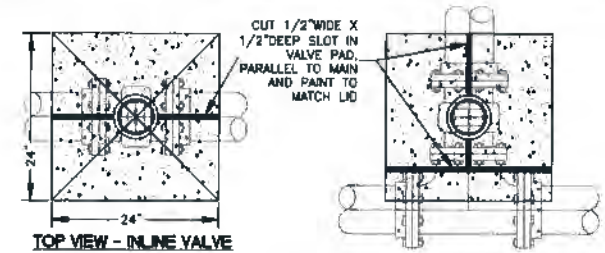
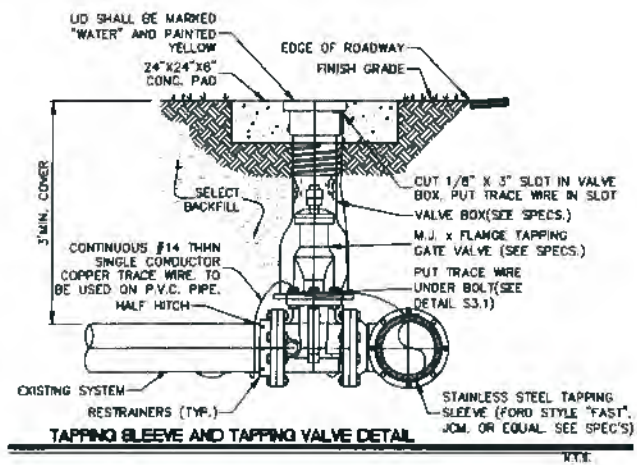
UTILITY ORIENTATION DETAIL

REV. NO.	DESCRIPTION	AUTHORIZED BY	DRWN BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	C.O.V.B. WATER & SEWER DETAILS	SCALE	DATE	
		DRAMA BY T.A.Y.	DATE 1/02/19	
		CHECKED BY R.J.B.	DATE 1/02/19	

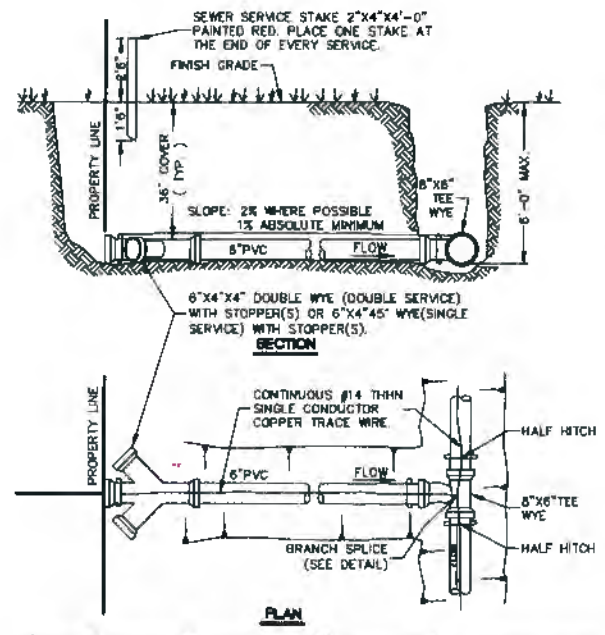
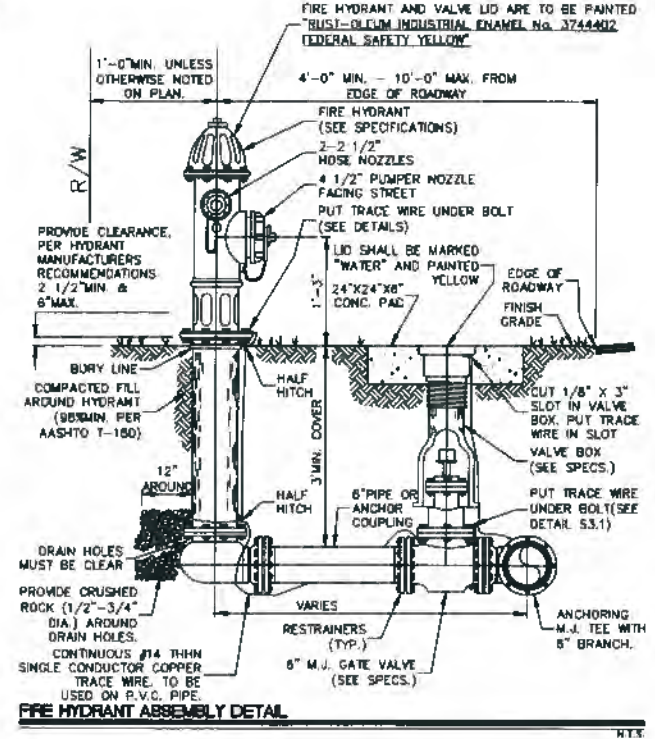
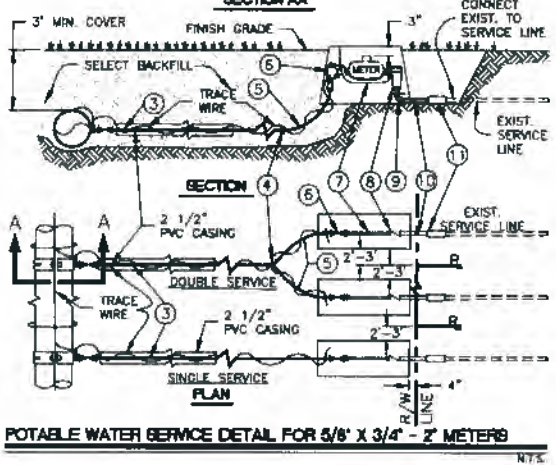
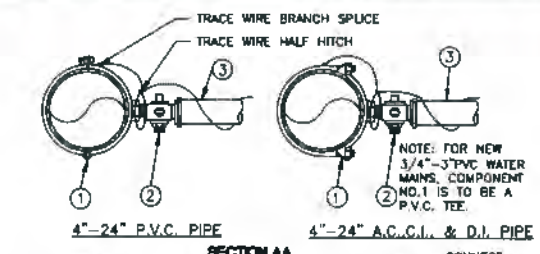
**CITY OF VERO BEACH
WATER AND SEWER DEPARTMENT**

CITY PROJECT NO. WS16003 SHEET 7 OF 58

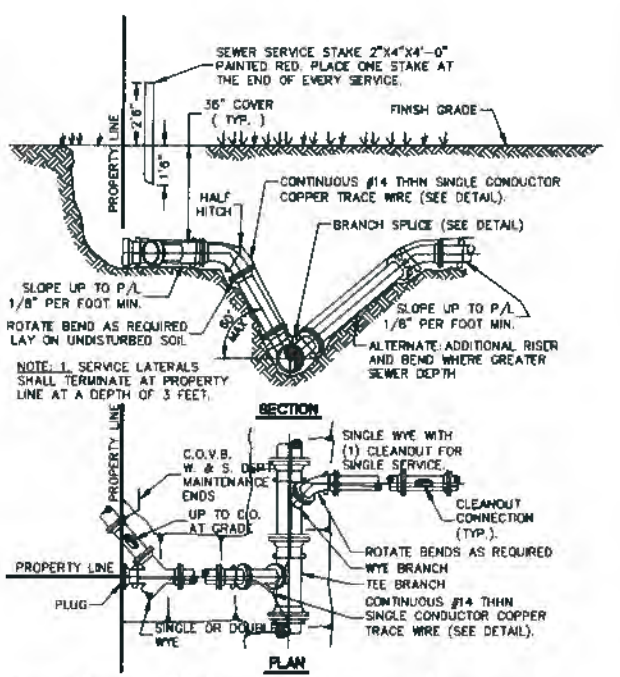




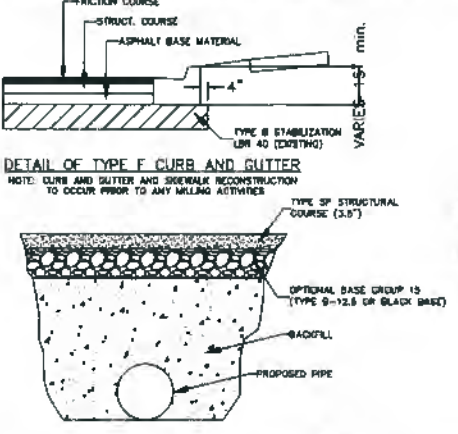
ITEM NO.	DESCRIPTION	QTY	UNIT	MANUFACTURER	NOTES
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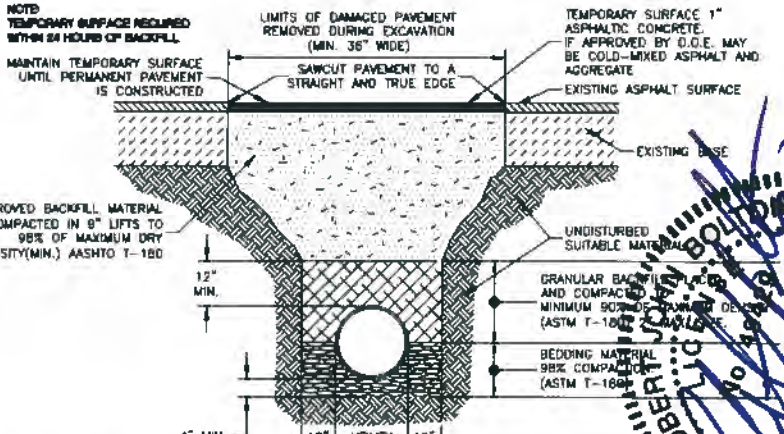
GRAVITY SEWER HOUSE SERVICE CONNECTION DETAIL (PLAN)



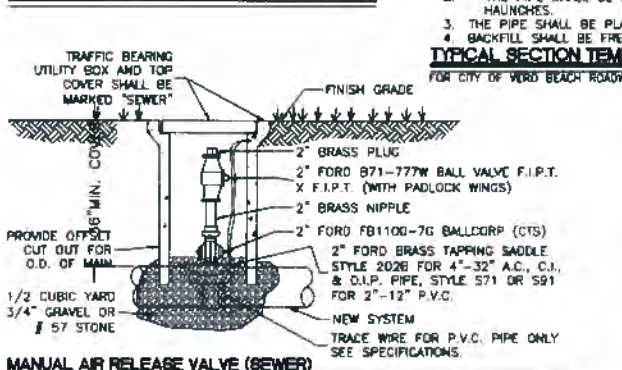
GRAVITY SEWER HOUSE SERVICE CONNECTION DETAIL (SECTION)



DETAIL OF FULL DEPTH RECONSTRUCTION



TYPICAL SECTION TEMPORARY PAVEMENT RESTORATION DETAIL



MANUAL AIR RELEASE VALVE (SEWER)



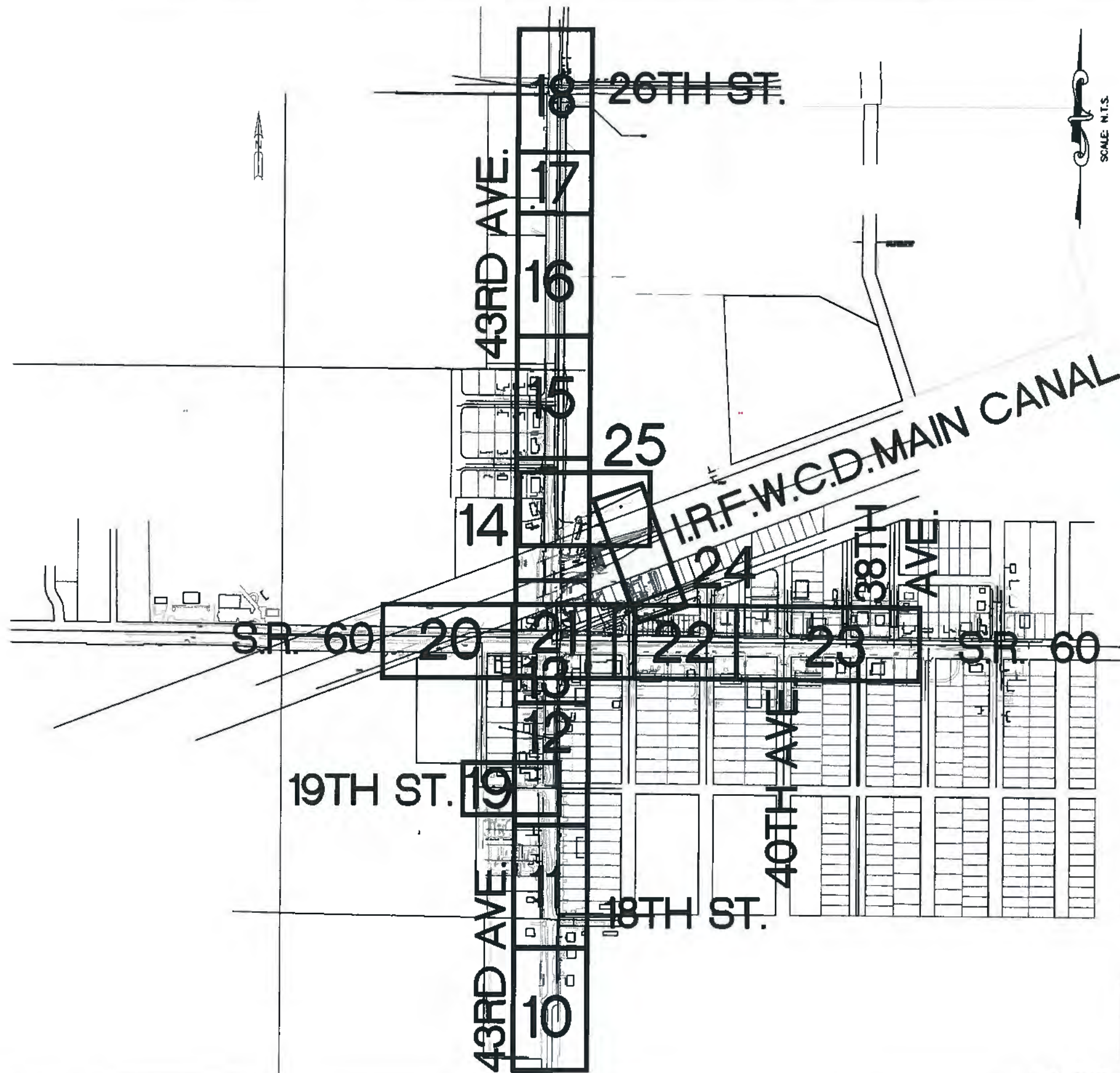
REV. NO.	DESCRIPTION	AUTHZD. BY	DRWN. BY	DATE

C.O.V.B. UTILITY RELOCATION FOR I.R.C.
S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853

C.O.V.B. WATER & SEWER DETAILS

CITY OF VERO BEACH
WATER AND SEWER DEPARTMENT

CITY PROJECT NO. WS16003 SHEET 8 OF 58



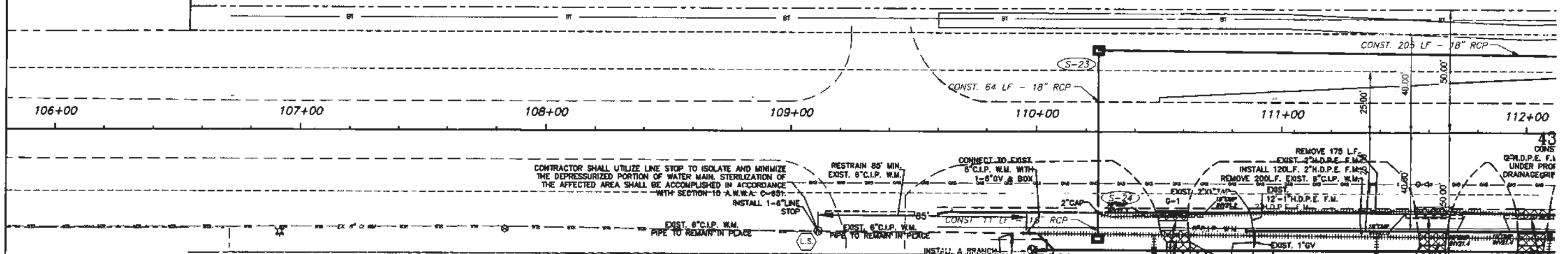
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	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS PLAN SHEET INDEX	SCALE N.T.S.	DRAWN BY T.A.Y. CHECKED BY R.J.B.	DATE 1/02/19 DATE 1/02/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003			SHEET 9 OF 58	

B. 711, PG. 331 & O.R.B. 711, PG. 813



TRACT 16
 INDIAN RIVER FARMS COMPANY SUBDIVISION
 (P.B. 2, PG. 25 - SLCR)

(S-23) STA. 110+25.21, 33.00' LT
 CONST DBI TYPE P-X
 FDOT INDEX 200, 201, OWNER:
 GR = 19.50 VERO BEACH ALLIANCE CHURCH
 FL = 15.50 N E
 BOT = 13.50



- | LEGEND | |
|--|---|
| ① 1" TEMP. SAMPLE POINT ASSEMBLY | ⑦ CONST. 2" P.E. SINGLE POTABLE WATER SERVICE FOR A 1 1/2" WATER METER |
| ② 2" TEMP. BLOW-OFF & SAMPLE POINT ASSEMBLY | ⑧ CONST. 2" P.E. SINGLE POTABLE WATER SERVICE FOR A 2" WATER METER |
| ③ 2" TEMP. JUMPER CONNECTION WITH A 3/4" HOSE BIB FOR TEMP. SAMPLE POINT | ⑨ EXISTING WATER METER WAS NOT FOUND. CONTACT CITY WATER DEPT. TO LOCATE. |
| ④ CONST. 2" P.E. SINGLE POTABLE WATER SERVICE FOR A 5/8" WATER METER | ⑩ CONST. A SINGLE POTABLE WATER SERVICE FOR FUTURE USE AS ④ |
| ⑤ CONST. 2" P.E. SINGLE POTABLE WATER SERVICE FOR A 3/4" WATER METER | ⑪ CONST. 2" P.E. DOUBLE POTABLE WATER SERVICE FOR 2 5/8" WATER METERS |
| ⑥ CONST. 2" P.E. SINGLE POTABLE WATER SERVICE FOR A 1" WATER METER | ⑫ CONST. 2" P.E. DOUBLE POTABLE WATER SERVICE FOR 2 3/4" WATER METERS |
| | ⑬ CONST. 2" P.E. DOUBLE POTABLE WATER SERVICE FOR 2 1" WATER METERS |

- GENERAL NOTES**
- PUNCH ALL WATER LINES 2 1/2" AND SMALLER UNDER ALL ASPHALT AND CONCRETE DRIVEWAYS & UNDER ALL ASPHALT ROADS UNLESS SHOWN OTHERWISE.
 - THERE SHALL BE 36" MIN. COVER OVER ALL NEW WATER PIPE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

(S-24A) STA. 110+25.21, 43.50' RT
 CONST DBI TYPE C
 FDOT INDEX 200, 201, 205, & 232
 GR = 22.80
 FL = 19.60 W
 BOT = 17.60

(S-24) STA. 110+25.21, 31.00' RT
 CONST INLET TYPE P-5
 FDOT INDEX 200, 201, 205, & 211
 EOP = 24.29
 FL = 19.40 E
 FL = 16.00 W
 BOT = 14.00

NOTE:
 ALL NEW PIPE IS TO BE INSTALLED WITH 36" MIN. COVER FROM PROPOSED FINISH GRADES. REF TO ROADWAY PLANS FOR FINISH GRADES. (TYP.)

1-STORY
 CBS BUILDING
 (1748)
 INSTALL 220LF. TEMP. 2" HOPE
 W.M. (TO BE REMOVED WHEN
 NEW W.M. IS IN SERVICE.)
 INSTALL NEW 2" TAP &
 CONNECT TO EXIST.
 1" SERVICE LINE



REV. NO.	DESCRIPTION	AUTHORIZED BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
CONSTRUCTION PLANS		SCALE	DRAWN BY	DATE
43rd AVE. STA. 106+00-STA.112+00		1" = 40'	T.A.Y.	1/30/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT		CHECKED BY	R.J.B.	DATE 1/30/19
CITY PROJECT NO. WS16003		SHEET 10 OF 58		



TRACT 9

S-26 STA. 112+30, 31.00' LT
 CONST DBI TYPE P-X
 FDOT INDEX 200, 201, 205, & 232
 GR = 22.00
 FL = 17.50 E
 FL = 15.15 N S
 BOT = 13.15

S-28 STA. 114+91, 40' LT
 CONST INLET TYPE P-X
 FDOT INDEX 200, 201, 205, & 232
 GR = 24.75
 FL = 19.80 E
 FL = 14.76 N S
 BOT = 12.76

S-28 STA. 116+20, 43.18' LT
 CONST INLET TYPE J-5
 FDOT INDEX 200, 201, 205, & 211
 GR = 25.13
 FL = 17.30 E
 FL = 14.50 N S
 BOT = 12.50

S-29A OWNER: JOANNA K. BLANTON
 FDOT INDEX 200, 201, 205, & 232
 GR = 22.10
 FL = 18.90 SW
 BOT = 17.90

OWNER: ANDREW W.

BEGIN PROJECT
 43RD AVENUE
 STA: 113+41.00

OWNER:
 SHARON B. SWEZEY



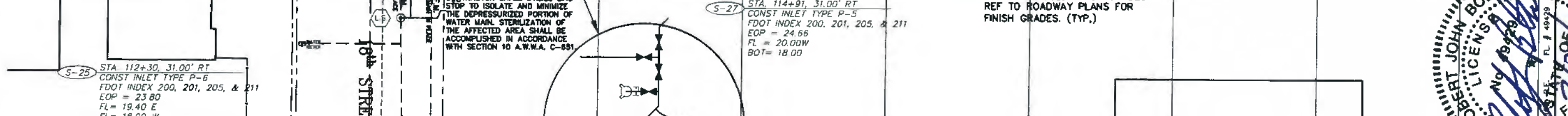
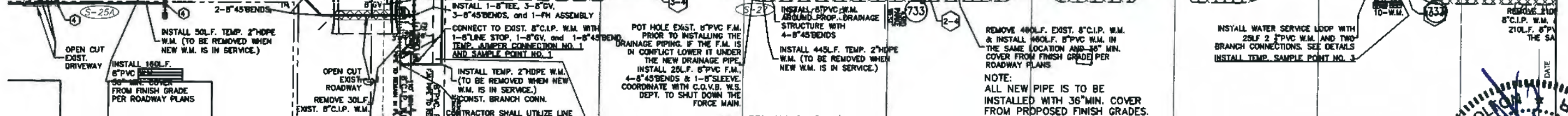
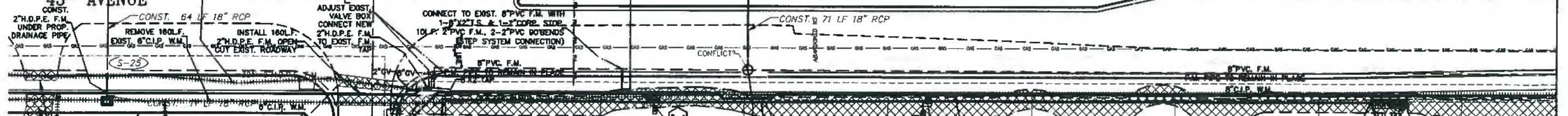
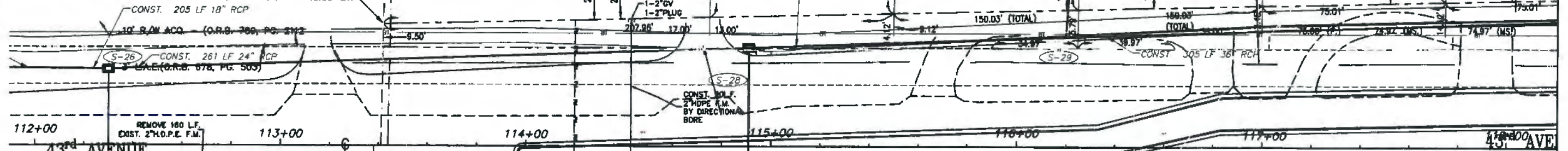
OWNER:
 BARBARA E.
 MATHIAS, HARBORA

OWNER:
 BARBARA E.
 MATHIAS, HARBORA

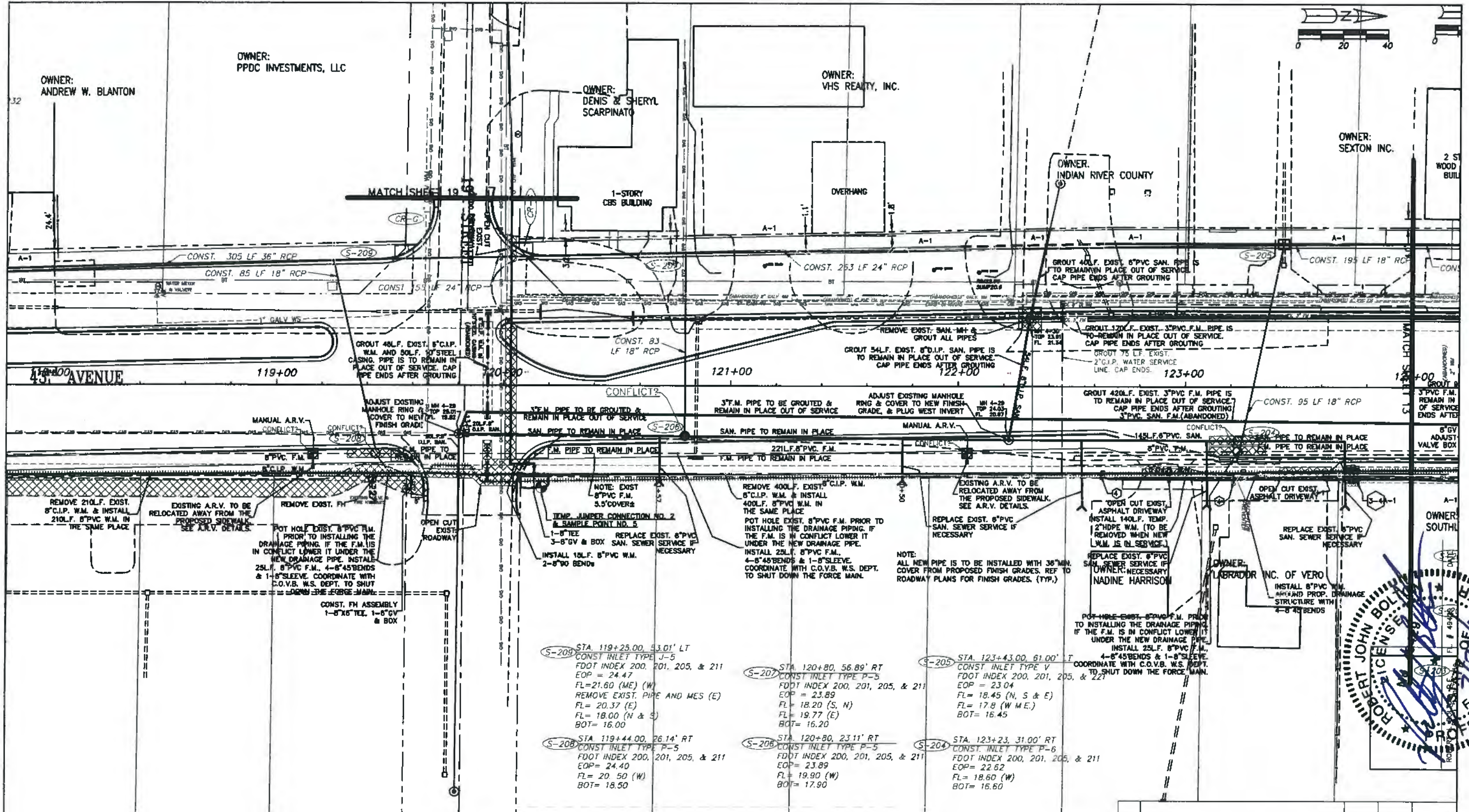
OWNER:
 BARBARA E.
 MATHIAS, HARBORA

OWNER:
 JOANNA K. BLANTON

OWNER:
 ANDREW W.



REV. NO.	DESCRIPTION	AUTHZD. BY	DRWN. BY	DATE
C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853				
CONSTRUCTION PLANS		SCALE	DATE	DATE
43rd AVE. STA. 112+00-STA.118+00		1" = 40'	T.A.Y.	1/30/19
CITY OF VERO BEACH		CHECKED BY	DATE	DATE
WATER AND SEWER DEPARTMENT		R.J.B.	1/30/19	
CITY PROJECT NO. WS16003		SHEET 11 OF 58		



S-209 STA. 119+25.00, 53.01' LT
 CONST. INLET TYPE J-5
 FOOT INDEX 200, 201, 205, & 211
 EOP = 24.47
 FL = 21.60 (ME) (W)
 REMOVE EXIST. PIPE AND MES (E)
 FL = 20.37 (E)
 FL = 18.00 (N & S)
 BOT = 16.00

S-208 STA. 119+44.00, 26.14' RT
 CONST. INLET TYPE P-5
 FOOT INDEX 200, 201, 205, & 211
 EOP = 24.40
 FL = 20.50 (W)
 BOT = 18.50

S-207 STA. 120+80, 56.89' RT
 CONST. INLET TYPE P-5
 FOOT INDEX 200, 201, 205, & 211
 EOP = 23.89
 FL = 18.20 (S, N)
 FL = 19.77 (E)
 BOT = 16.20

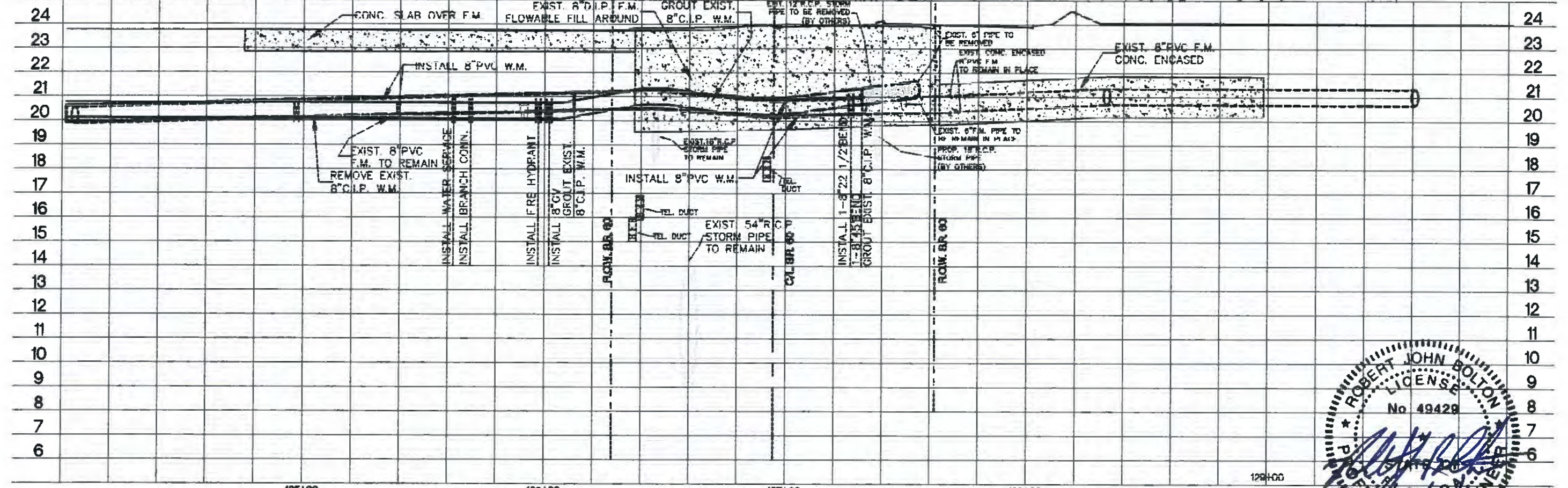
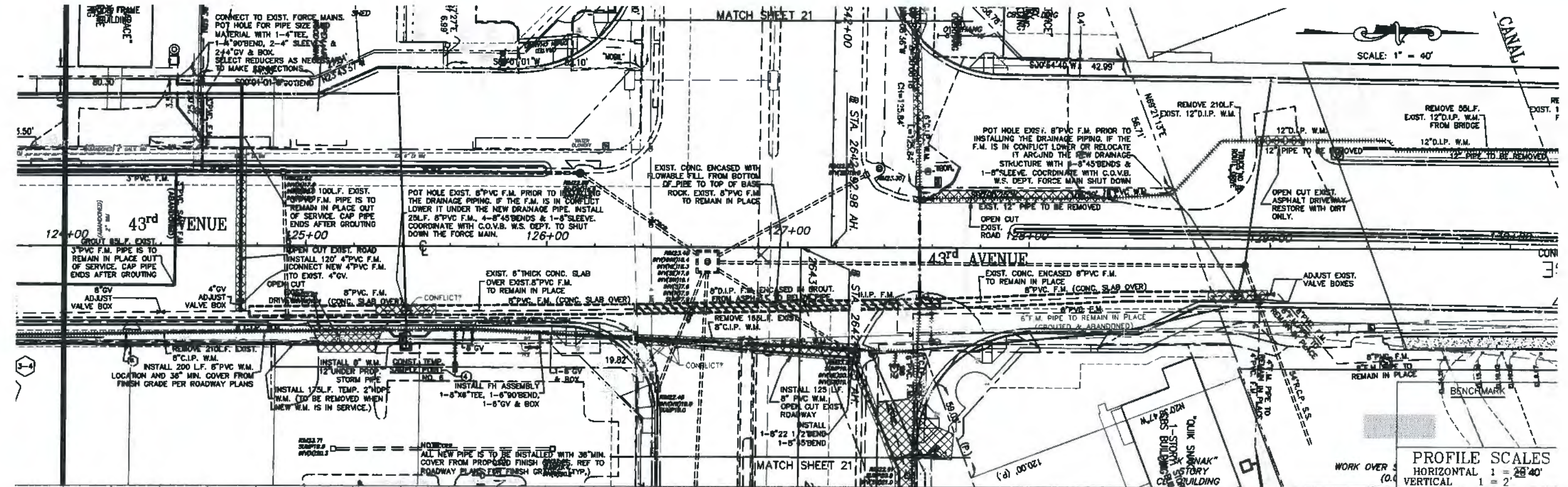
S-206 STA. 120+80, 23.11' RT
 CONST. INLET TYPE P-5
 FOOT INDEX 200, 201, 205, & 211
 EOP = 23.89
 FL = 19.90 (W)
 BOT = 17.90

S-205 STA. 123+43.00, 61.00' T
 CONST. INLET TYPE V
 FOOT INDEX 200, 201, 205, & 221
 EOP = 23.04
 FL = 18.45 (N, S & E)
 FL = 17.8 (W M.E.)
 BOT = 16.45

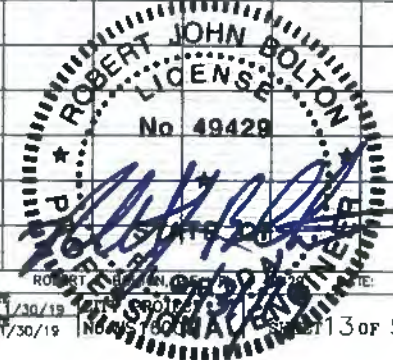
S-204 STA. 123+23, 31.00' RT
 CONST. INLET TYPE P-6
 FOOT INDEX 200, 201, 205, & 211
 EOP = 22.62
 FL = 18.60 (W)
 BOT = 16.60

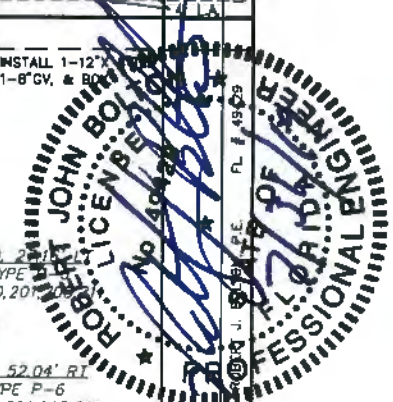
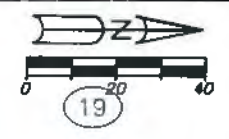
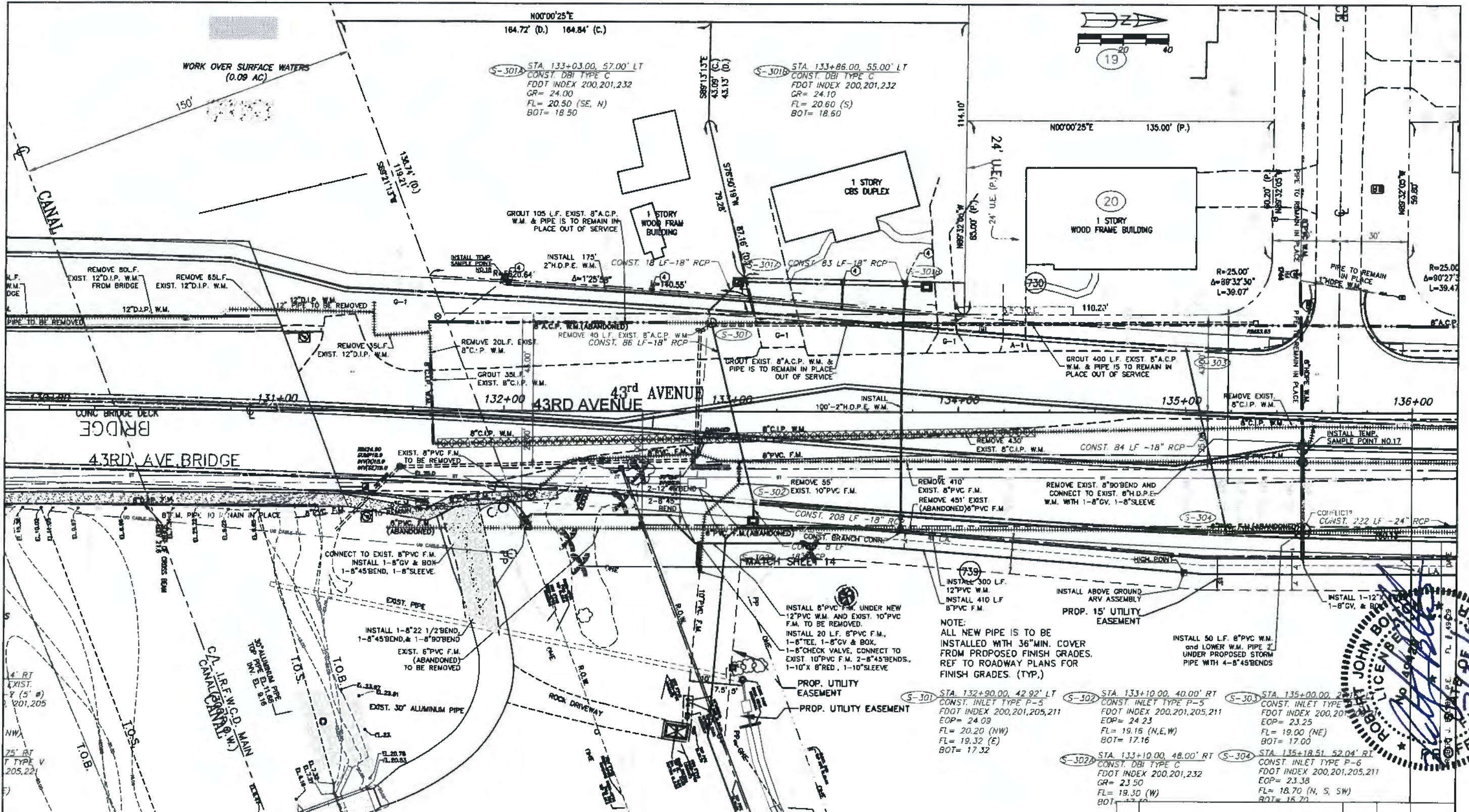


REV. NO.	DESCRIPTION	AUTHZD BY	DRWN BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS			
	43rd AVE. STA. 118+00-STA.124+00	SCALE 1" = 40'	DATE 1/02/19	DATE 1/02/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003				SHEET 12 OF 58



REV. NO.	DESCRIPTION	R.J.B.	T.A.Y.	AUTHZD. BY	DATE	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 AND 43RD AVE. ROAD WIDENING PROJECT NO. 0853	CITY OF VERO BEACH WATER AND SEWER DEPARTMENT	PLAN & PROFILE - F.D.O.T. PERMIT DWG. 43RD AVE. STA. 125+00-129+00	DRAWN BY: R.J.B. DATE: 7/30/19	CHECKED BY: T.A.Y. DATE: 7/30/19	SCALE: 1\"/>
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4' RT
EXIST.
7 (5' Ø)
201,205
NW
75' RT
TYP. V
205,221

INSTALL 8" PVC F.M. UNDER NEW
12" PVC W.M. AND EXIST. 10" PVC
F.M. TO BE REMOVED.
INSTALL 20 LF. 8" PVC F.M.,
1-8" TEE, 1-8" CV & BOX,
1-8" CHECK VALVE, CONNECT TO
EXIST. 10" PVC F.M. 2-8" 45° BENDS,
1-10" X 8" RED., 1-10" SLEEVE

NOTE:
ALL NEW PIPE IS TO BE
INSTALLED WITH 36" MIN. COVER
FROM PROPOSED FINISH GRADES.
REF TO ROADWAY PLANS FOR
FINISH GRADES. (TYP.)

INSTALL 50 LF. 8" PVC W.M.
AND LOWER W.M. PIPE 2'
UNDER PROPOSED STORM
PIPE WITH 4-8" 45° BENDS

S-301 STA. 132+90.00, 42.92' LT
CONST. INLET TYPE P-5
FDDT INDEX 200,201,205,211
EOP= 24.09
FL= 20.20 (NW)
FL= 19.32 (E)
BOT= 17.32

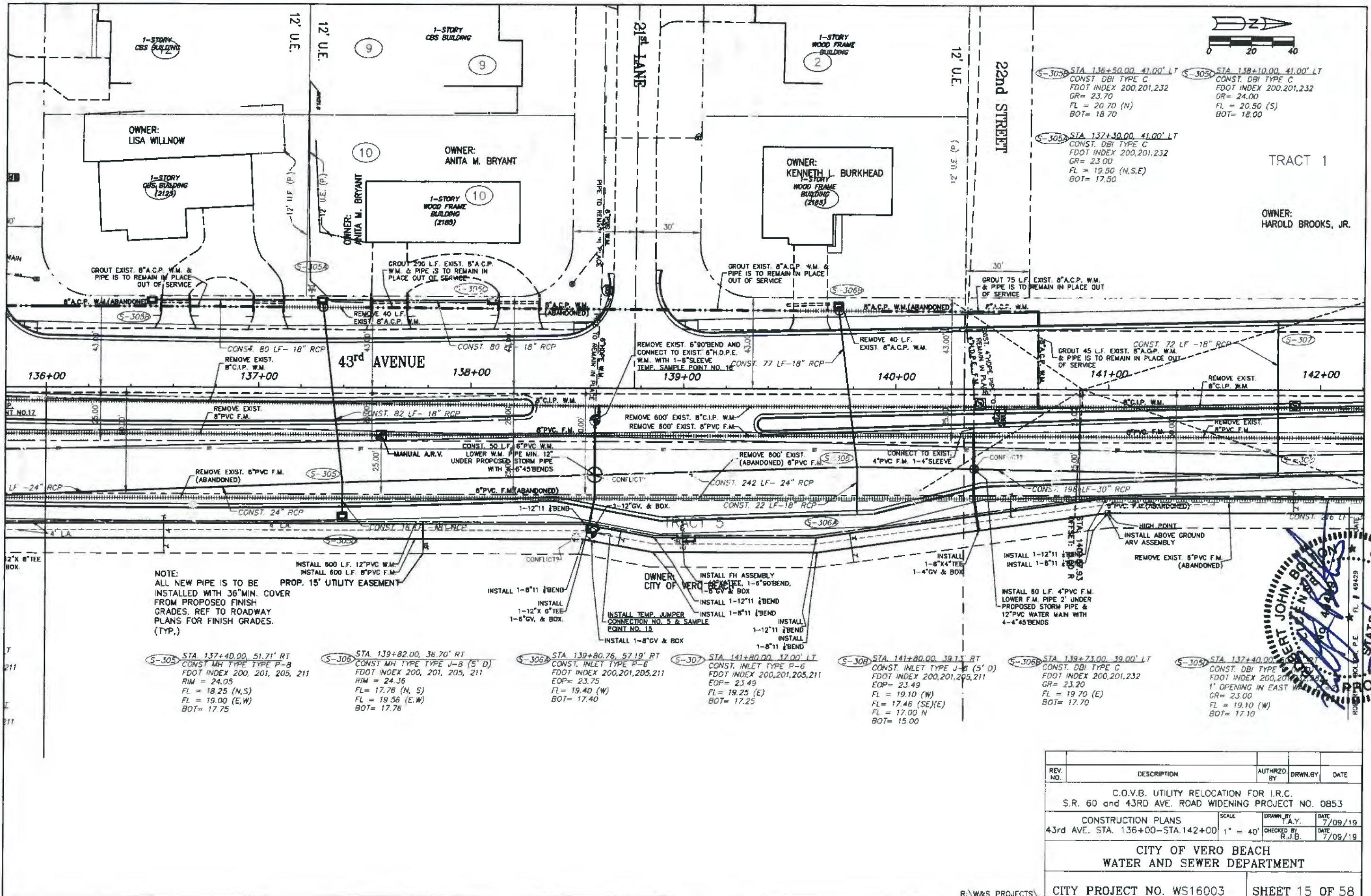
S-302 STA. 133+10.00, 40.00' RT
CONST. INLET TYPE P-5
FDDT INDEX 200,201,205,211
EOP= 24.23
FL= 19.16 (N.E.W)
BOT= 17.16

S-303 STA. 135+00.00, 20.00' RT
CONST. INLET TYPE P-6
FDDT INDEX 200,201,205,211
EOP= 23.25
FL= 19.00 (NE)
BOT= 17.00

S-302A STA. 133+10.00, 48.00' RT
CONST. DBI TYPE C
FDDT INDEX 200,201,232
GR= 23.50
FL= 19.30 (W)
BOT= 17.30

S-304 STA. 135+18.51, 52.04' RT
CONST. INLET TYPE P-6
FDDT INDEX 200,201,205,211
EOP= 23.38
FL= 18.70 (N, S, SW)
BOT= 16.70

REV. NO.	DESCRIPTION	AUTHZD BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS			
	43rd AVE. STA. 130+00-STA.136+00	SCALE 1" = 40'	DATE 7/09/19	DATE 7/09/19
	CITY OF VERO BEACH WATER AND SEWER DEPARTMENT			
	CITY PROJECT NO. WS16003	SHEET 14 OF 58		



TRACT 1
OWNER:
HAROLD BROOKS, JR.

NOTE:
ALL NEW PIPE IS TO BE
INSTALLED WITH 36" MIN. COVER
FROM PROPOSED FINISH
GRADES. REF TO ROADWAY
PLANS FOR FINISH GRADES.
(TYP.)

S-305 STA. 137+40.00, 51.71' RT
CONST. MH TYPE TYPE P-8
FDOT INDEX 200, 201, 205, 211
RIM = 24.05
FL = 18.25 (N,S)
FL = 19.00 (E,W)
BOT = 17.75

S-306 STA. 139+82.00, 36.70' RT
CONST. MH TYPE TYPE J-B (5' D)
FDOT INDEX 200, 201, 205, 211
RIM = 24.36
FL = 17.76 (N, S)
FL = 19.56 (E,W)
BOT = 17.76

S-306A STA. 139+80.76, 57.19' RT
CONST. INLET TYPE P-6
FDOT INDEX 200,201,205,211
EOP = 23.75
FL = 19.40 (W)
BOT = 17.40

S-307 STA. 141+80.00, 37.00' LT
CONST. INLET TYPE P-6
FDOT INDEX 200,201,205,211
EOP = 23.49
FL = 19.25 (E)
BOT = 17.25

S-308 STA. 141+80.00, 39.13' RT
CONST. INLET TYPE J-B (5' D)
FDOT INDEX 200,201,205,211
EOP = 23.49
FL = 19.10 (W)
FL = 17.46 (SE)(E)
FL = 17.00 (N)
BOT = 15.00

S-306B STA. 139+73.00, 39.00' LT
CONST. DBI TYPE C
FDOT INDEX 200,201,232
GR = 23.20
FL = 19.70 (E)
BOT = 17.70

S-305 STA. 137+40.00, 51.71' RT
CONST. DBI TYPE C
FDOT INDEX 200,201,232
GR = 23.00
1' OPENING IN EAST WALL
FL = 19.10 (W)
BOT = 17.10



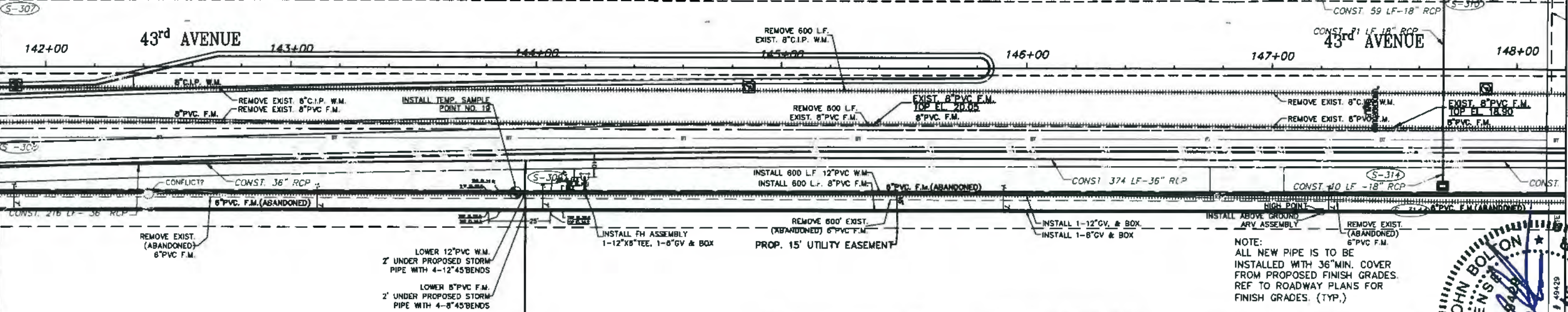
REV. NO.	DESCRIPTION	AUTHRD. BY	DRWN. BY	DATE
C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853				
CONSTRUCTION PLANS 43rd AVE. STA. 136+00-STA.142+00		SCALE 1" = 40'	DATE 7/09/19	DATE 7/09/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003			SHEET 15 OF 58	

41.00' LT
C
201.232



S-310A STA 147+11.00 32.00' LT
CONST. DBI TYPE C (MODIFIED)
FDOT INDEX 282, 870
EOP= 23.70
FL = 19.20 (N)
BOT= 17.20

10' D.E. (O.R.B. 1537, PG. 2520)



60.46' RT
C (MOD)
201.232, 282
ST WALL EL=21.42

S-309 STA. 143+96.00 38.00' RT
CONST. MH TYPE TYPE J-8 (5' D)
FDOT INDEX 200, 201, 205, 211
RIM = 24.59
FL = 16.70 (S)
FL = 16.20 (N.E)
BOT = 15.70

S-310 STA 147+70.00 32.00' LT
CONST. INLET TYPE P-6
FDOT INDEX 200, 201, 205, 211
EOP= 23.52
FL = 19.00 (S)
FL = 16.60 (E)
BOT= 14.60

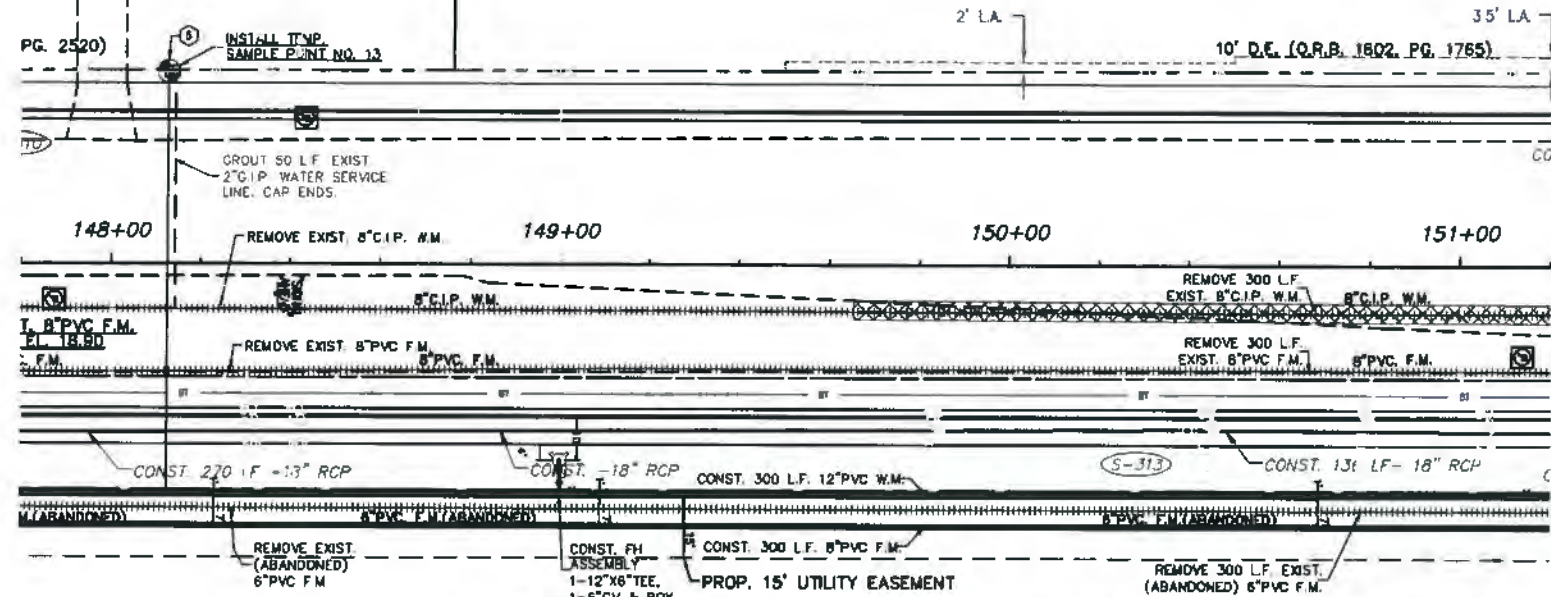
S-314 STA 147+70.00 32.00' RT
CONST. INLET TYPE J-2 (7' 0)
FDOT INDEX 200, 201, 205, 211
EOP= 23.52
FL = 18.20 (N.E)
FL = 16.50 (W)
FL = 16.40 (S)
BOT= 14.40



NOTE:
ALL NEW PIPE IS TO BE
INSTALLED WITH 36\"/>

REV. NO.	DESCRIPTION	AUTHRD. BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS 43rd AVE. STA. 142+00-STA.148+00		SCALE 1" = 40'	DATE 1/30/19
	CITY OF VERO BEACH WATER AND SEWER DEPARTMENT			
	CITY PROJECT NO. WS16003		SHEET 16 OF 58	

SCALE: 1" = 40'



LEGEND

① 1" TEMP. SAMPLE POINT ASSEMBLY
 ② 2" TEMP. BLOW-OFF & SAMPLE POINT ASSEMBLY
 ③ 2" TEMP. JUMPER CONNECTION WITH A 3/4" HOSE BIB FOR TEMP. SAMPLE POINT
 ④ CONST. 2" PE. SINGLE POTABLE WATER SERVICE FOR A 5/8" WATER METER
 ⑤ CONST. 2" PE. SINGLE POTABLE WATER SERVICE FOR A 3/4" WATER METER
 ⑥ CONST. 2" PE. SINGLE POTABLE WATER SERVICE FOR A 1" WATER METER
 ⑦ CONST. 2" PE. SINGLE POTABLE WATER SERVICE FOR A 1 1/2" WATER METER
 ⑧ CONST. 2" PE. SINGLE POTABLE WATER SERVICE FOR A 2" WATER METER
 ⑨ EXISTING WATER METER WAS NOT FOUND. CONTACT CITY WATER DEPT. TO LOCATE.
 ⑩ CONST. A SINGLE POTABLE WATER SERVICE FOR FUTURE USE AS ④
 ⑪ CONST. 2" PE. DOUBLE POTABLE WATER SERVICE FOR 2 5/8" WATER METERS
 ⑫ CONST. 2" PE. DOUBLE POTABLE WATER SERVICE FOR 2 3/4" WATER METERS
 ⑬ CONST. 2" PE. DOUBLE POTABLE WATER SERVICE FOR 2 1" WATER METERS

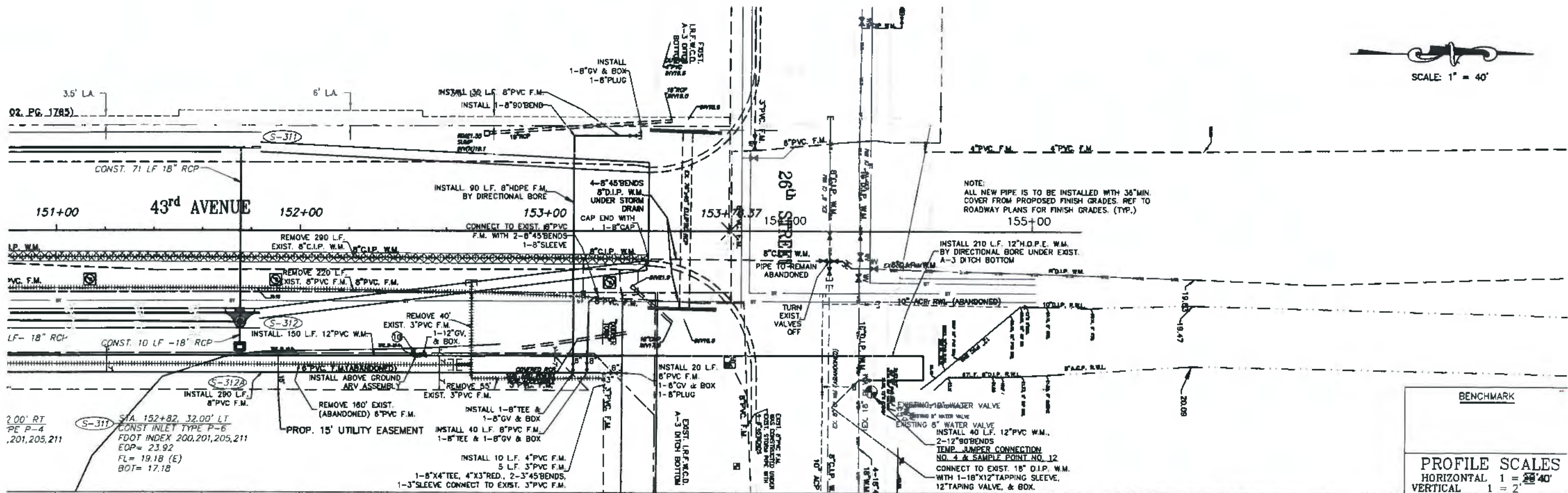
NOTE:
 ALL NEW PIPE IS TO BE INSTALLED WITH 36" MIN. COVER FROM PROPOSED FINISH GRADES. REF TO ROADWAY PLANS FOR FINISH GRADES. (TYP.)

GENERAL NOTES

- PUNCH ALL WATER LINES 2 1/2" AND SMALLER UNDER ALL ASPHALT AND CONCRETE DRIVEWAYS & UNDER ALL ASPHALT ROADS UNLESS SHOWN OTHERWISE.
- THERE SHALL BE 36" MIN. COVER OVER ALL NEW WATER PIPE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

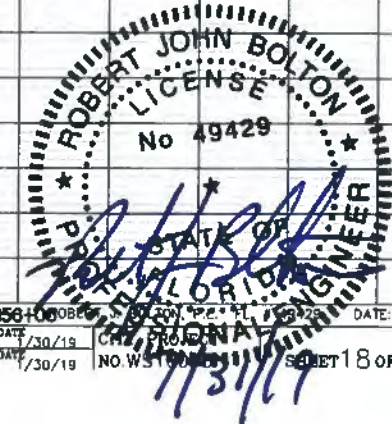
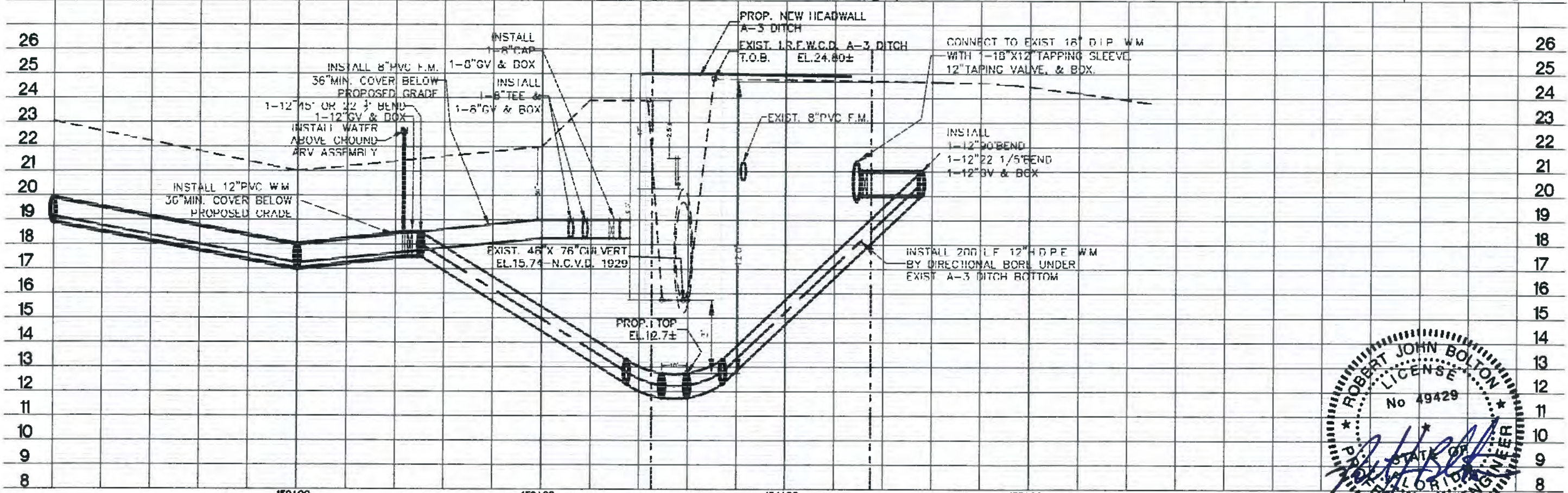


REV. NO.	DESCRIPTION	AUTHZD. BY	DRWN BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS 43rd AVE. STA.148+00-STA.151+00	SCALE 1" = 40'	DRAWN BY T.A.Y. CHECKED BY R.J.B.	DATE 1/30/19 1/30/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003			SHEET 17 OF 58	



BENCHMARK

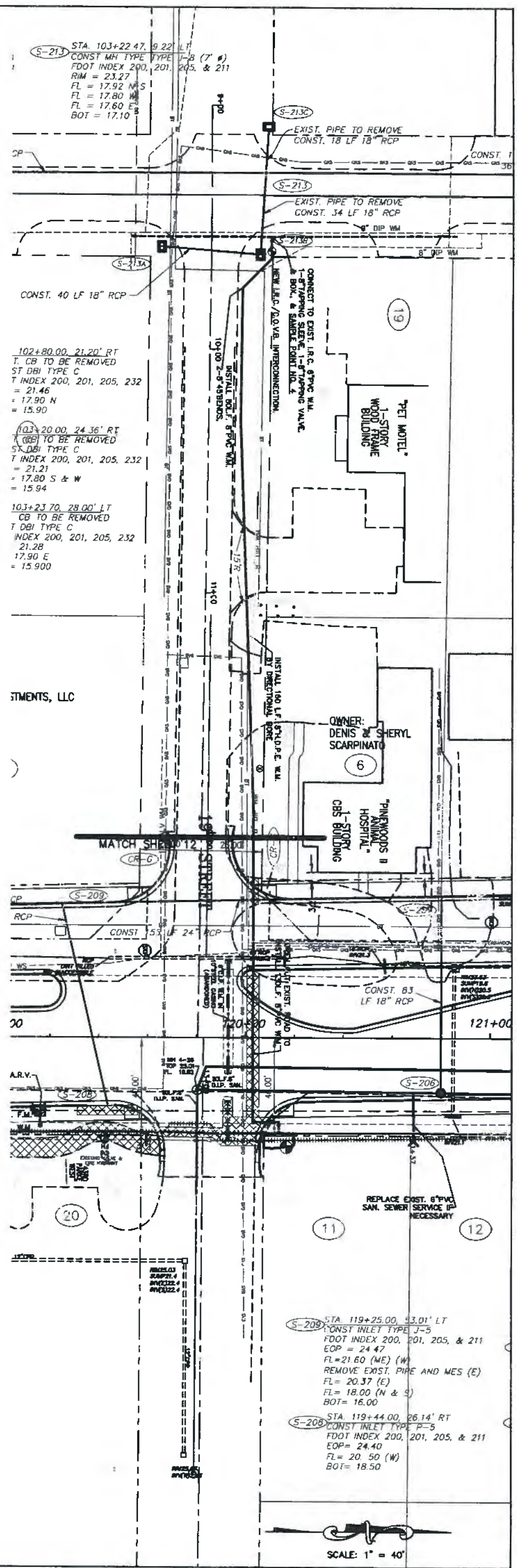
PROFILE SCALES
 HORIZONTAL 1 = 40'
 VERTICAL 1 = 2'



REV. NO.	DESCRIPTION	AUTHZD. BY	R.J.B.	T.A.Y.	DATE	NO. W/5100	DATE

C.O.V.B. UTILITY RELOCATION FOR I.R.C. CITY OF VERO BEACH
 S.R. 60 AND 43RD AVE. ROAD WIDENING PROJECT NO. 0853 WATER AND SEWER DEPARTMENT
 PLAN & PROFILE - I.R.F.W.C.D. PERMIT DWG. 43RD AVE. STA. 151+00-STA.157+00

DATE: 10/30/19
 NO. W/5100: 18 OF 58



R. WAS PROJECTS

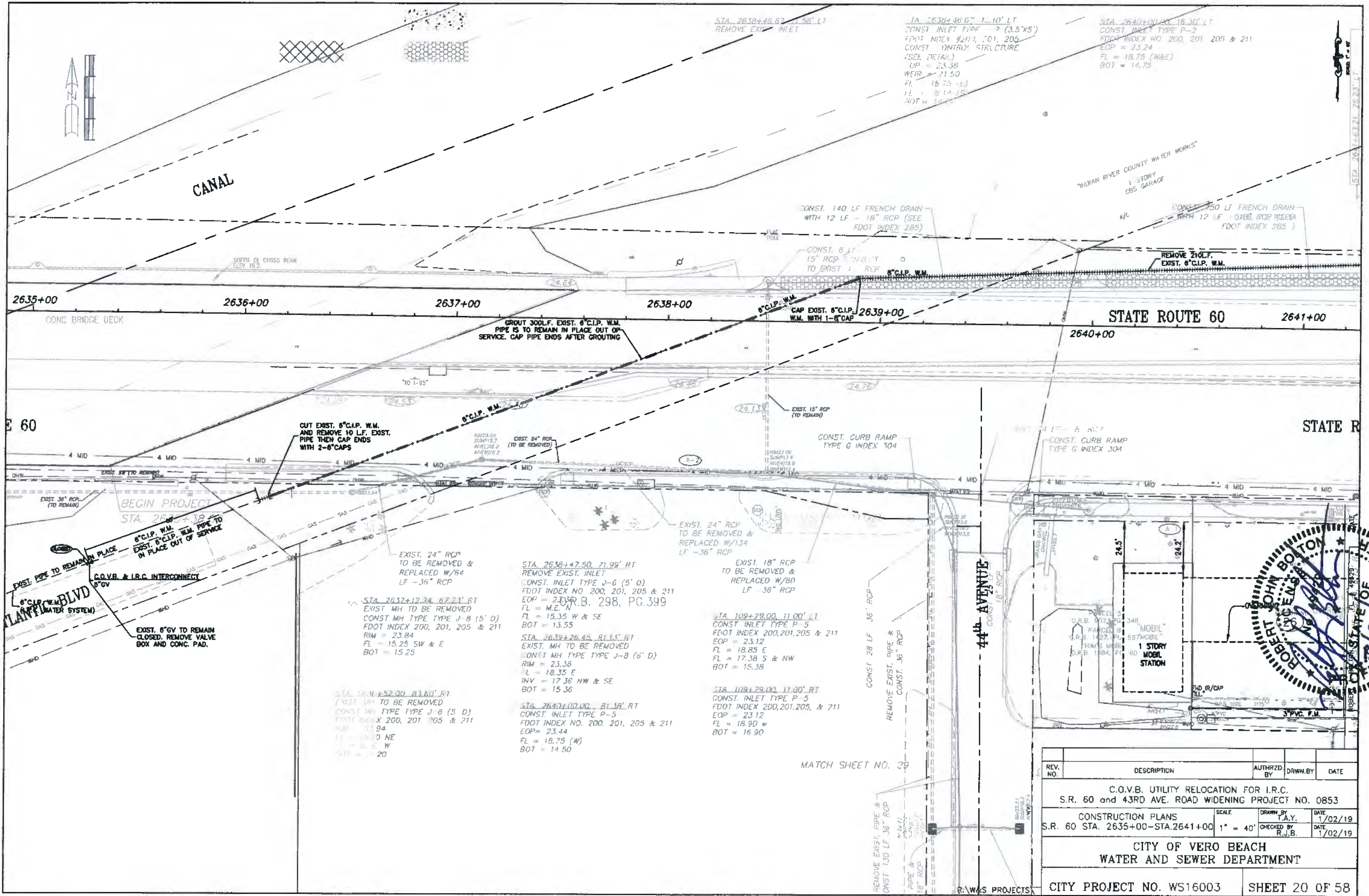
REV. NO.	DESCRIPTION	AUTHORIZED BY	DATE

COV.B. UTILITY RELOCATION FOR I.R.C.
 S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853
 CONSTRUCTION PLANS
 19th STREET STA.

CITY OF VERO BEACH
 WATER AND SEWER DEPARTMENT

CITY PROJECT NO. WS16003 SHEET 19 OF 58

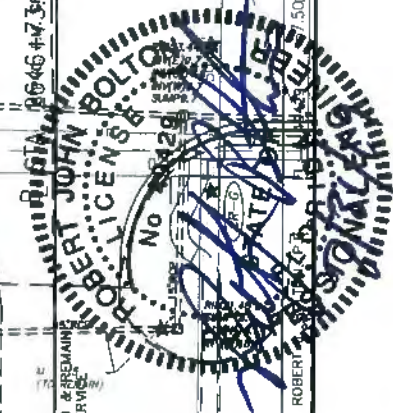
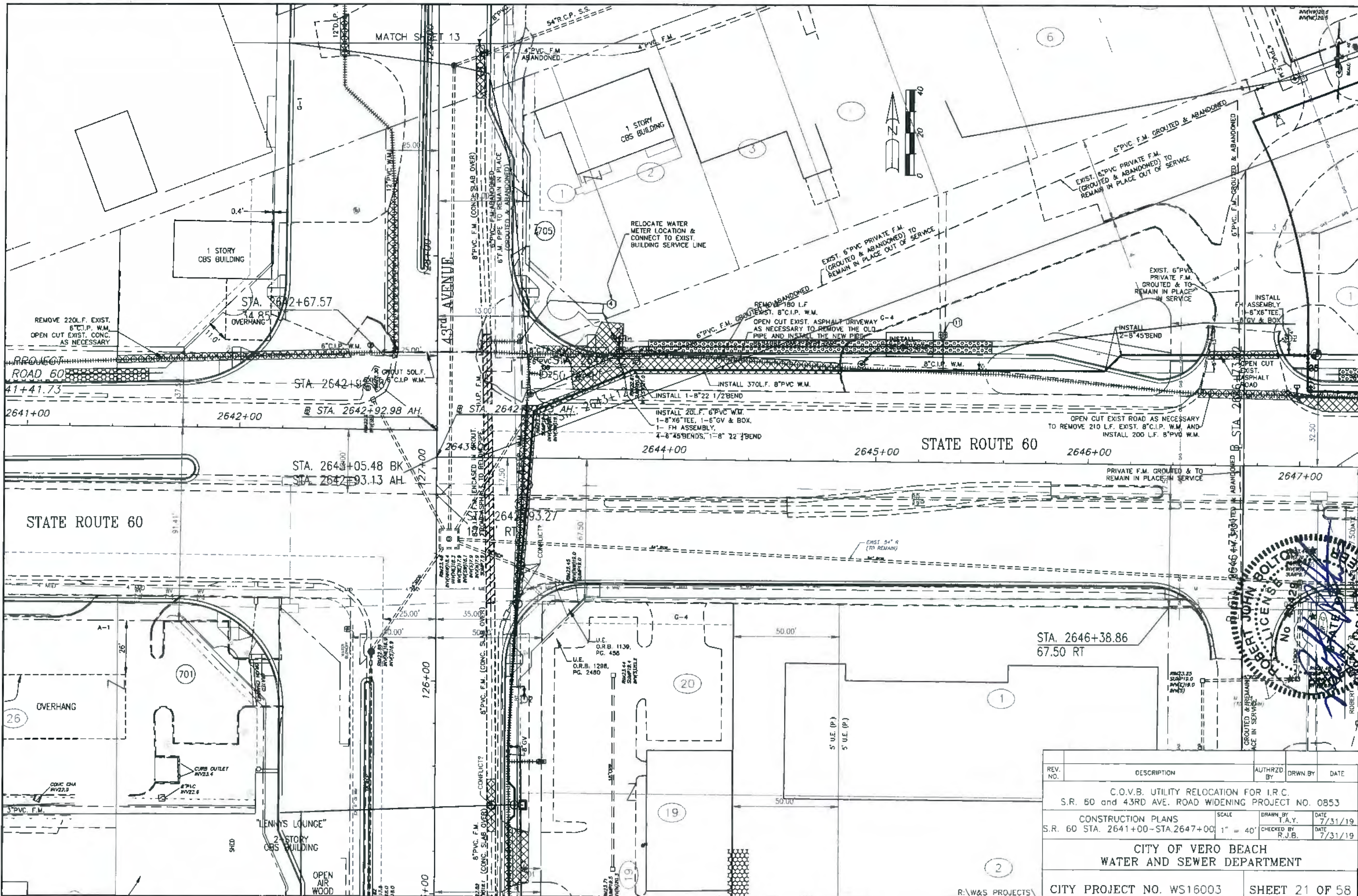




REV. NO.	DESCRIPTION	AUTHZD. BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS			
	S.R. 60 STA. 2635+00-STA.2641+00	SCALE 1" = 40'	DATE 1/02/19	DATE 1/02/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003				SHEET 20 OF 58

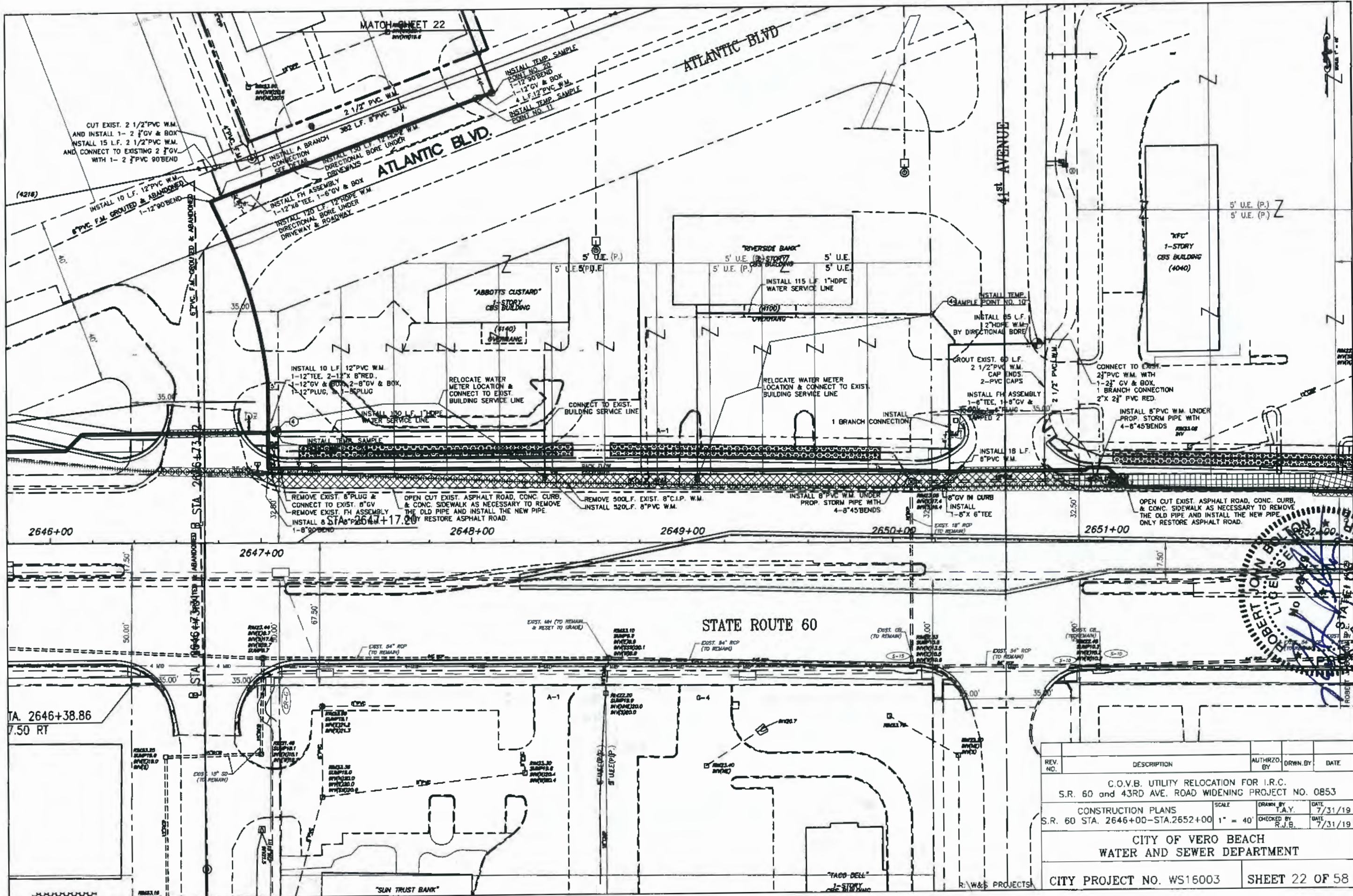
MATCH SHEET NO. 29

R. W. & S. PROJECTS



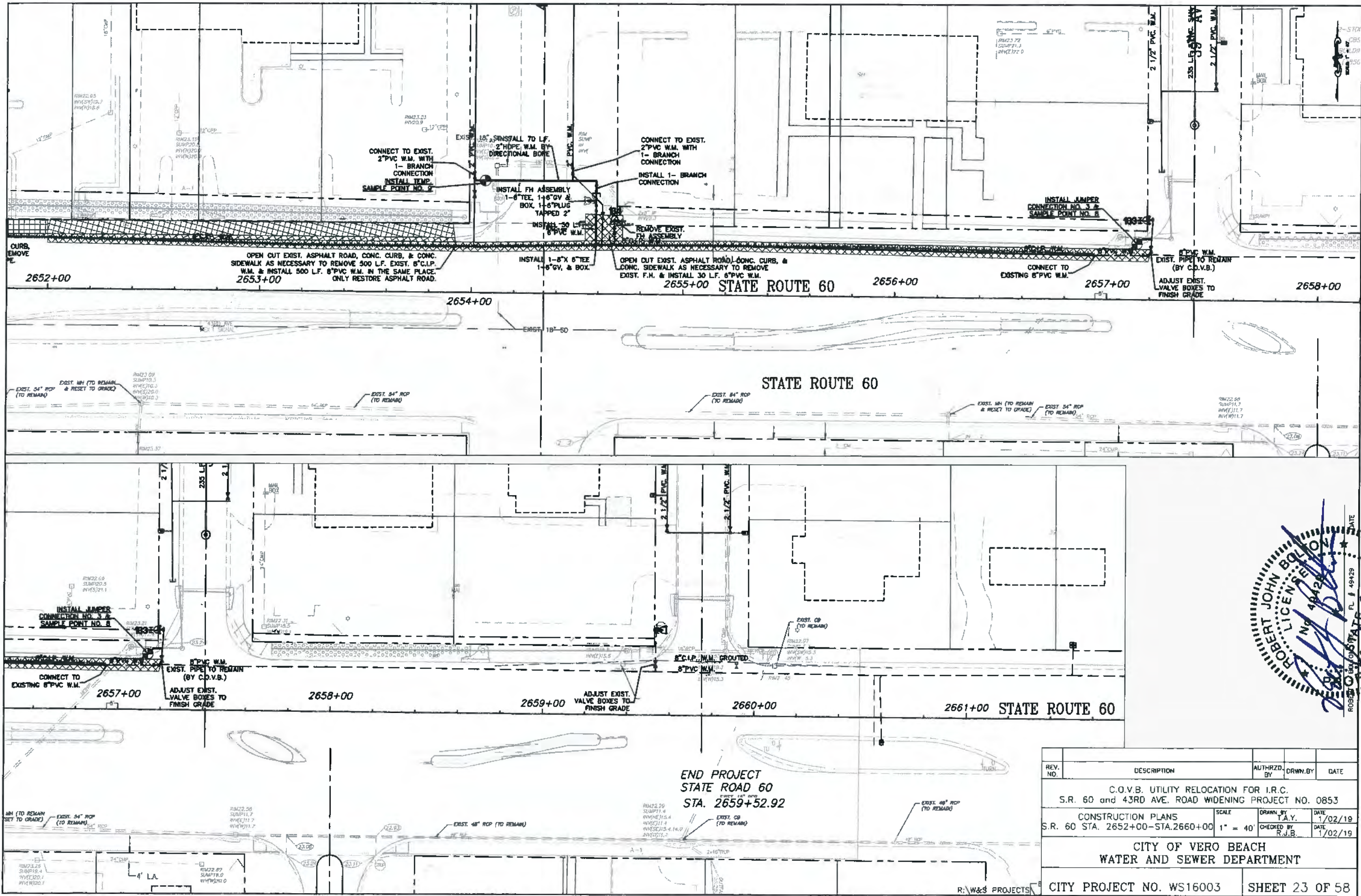
REV. NO.	DESCRIPTION	AUTHRD BY	DRWN BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS			
	S.R. 60 STA. 2641+00-STA.2647+00	SCALE 1" = 40'	DATE 7/31/19	DATE 7/31/19
	CITY OF VERO BEACH WATER AND SEWER DEPARTMENT			
	CITY PROJECT NO. WS16003	SHEET 21 OF 58		

R:\W&S PROJECTS\



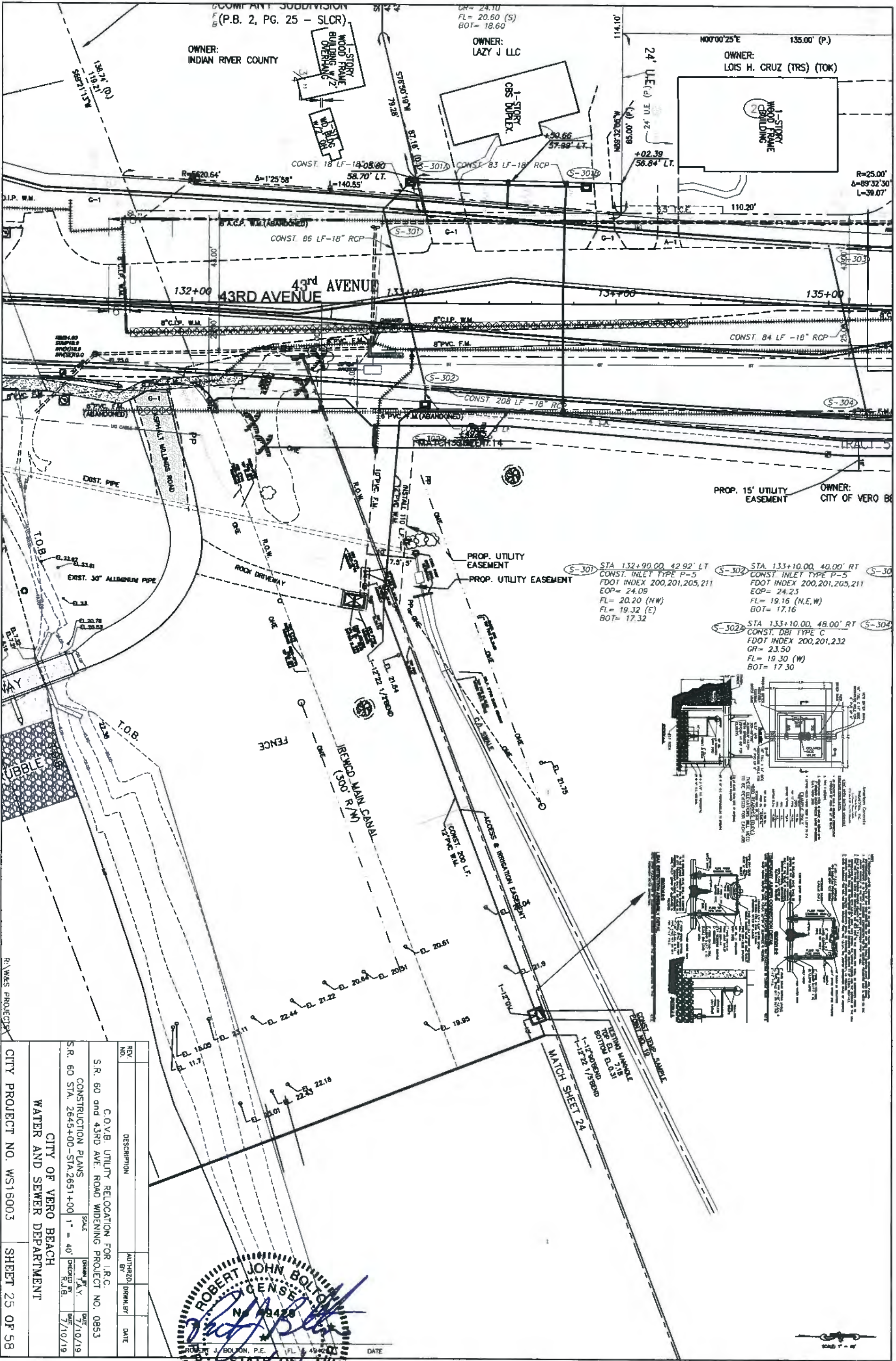
REV. NO.	DESCRIPTION	AUTHORIZED BY	DRAWN BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS	SCALE	DRAWN BY	DATE
	S.R. 60 STA. 2646+00-STA.2652+00	1" = 40'	T.A.Y.	7/31/19
			CHECKED BY	DATE
			R.J.B.	7/31/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003			SHEET 22 OF 58	

R. W. & S. PROJECTS



END PROJECT
STATE ROAD 60
STA. 2659+52.92

REV. NO.	DESCRIPTION	AUTHZD. BY	DRWN. BY	DATE
	C.O.V.B. UTILITY RELOCATION FOR I.R.C. S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
	CONSTRUCTION PLANS S.R. 60 STA. 2652+00-STA.2660+00		T.A.Y.	1/02/19
			R.J.B.	1/02/19
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. WS16003				SHEET 23 OF 58



COMPANY SUBDIVISION
 (P.B. 2, PG. 25 - SLCR)

OWNER:
 INDIAN RIVER COUNTY

OWNER:
 LAZY J LLC

OWNER:
 LOIS H. CRUZ (TRS) (TOK)

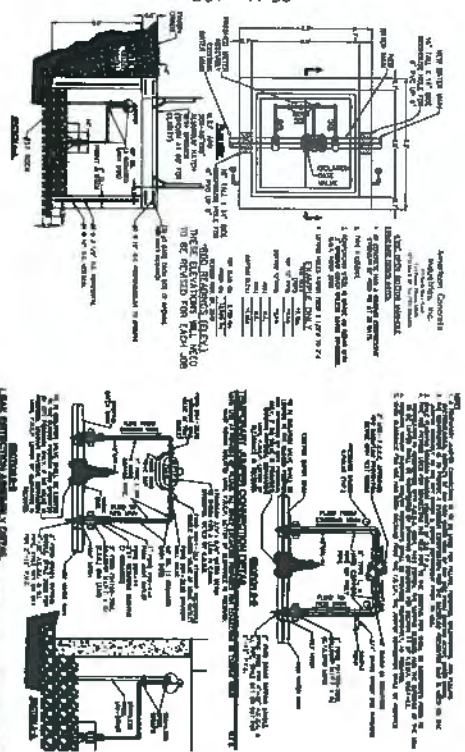
43RD AVENUE

PROP. 15' UTILITY EASEMENT
 OWNER: CITY OF VERO BEACH

S-301 STA 132+90.00, 42.92' LT
 CONST. INLET TYPE P-5
 FDOT INDEX 200,201,205,211
 EOP= 24.09
 FL= 20.20 (NW)
 FL= 19.32 (E)
 BOT= 17.32

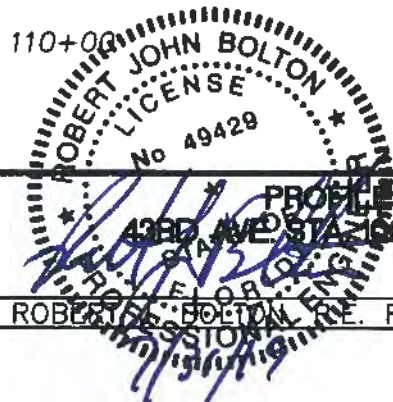
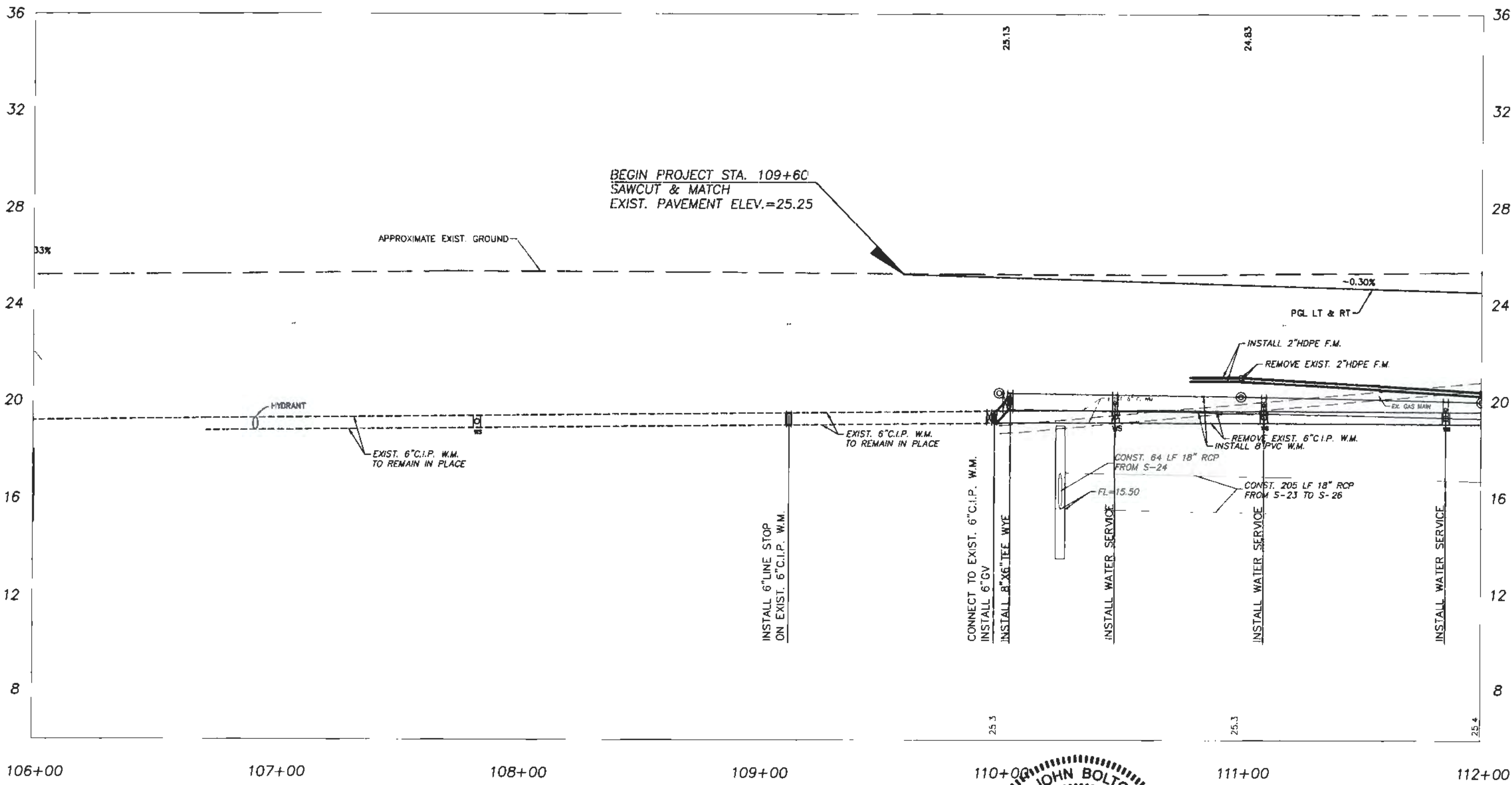
S-302 STA 133+10.00, 40.00' RT
 CONST. INLET TYPE P-5
 FDOT INDEX 200,201,205,211
 EOP= 24.23
 FL= 19.16 (N,E,W)
 BOT= 17.16

S-302A STA 133+10.00, 49.00' RT
 CONST. DBI TYPE C
 FDOT INDEX 200,201,232
 GR= 23.50
 FL= 19.30 (W)
 BOT= 17.30



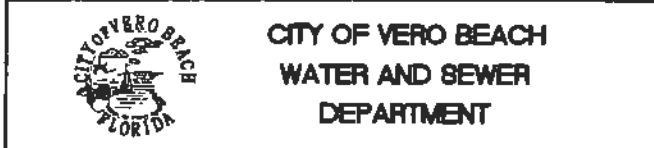
REV. NO.	DESCRIPTION	AUTHORIZED BY	DRAWN BY	DATE
1	C.O.V.B. UTILITY RELOCATION FOR I.R.C.			
2	S.R. 60 and 43RD AVE. ROAD WIDENING PROJECT NO. 0853			
3	CONSTRUCTION PLANS			
4	S.R. 60 STA. 2645+00 - STA. 2651+00			
5	CITY OF VERO BEACH			
6	WATER AND SEWER DEPARTMENT			
7	CITY PROJECT NO. WS16003			
8	SHEET 25 OF 58			

ROBERT JOHN BOLTON
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA
 No. 43428
 DATE



106+00 107+00 108+00 109+00 110+00 111+00 112+00

43RD AVENUE



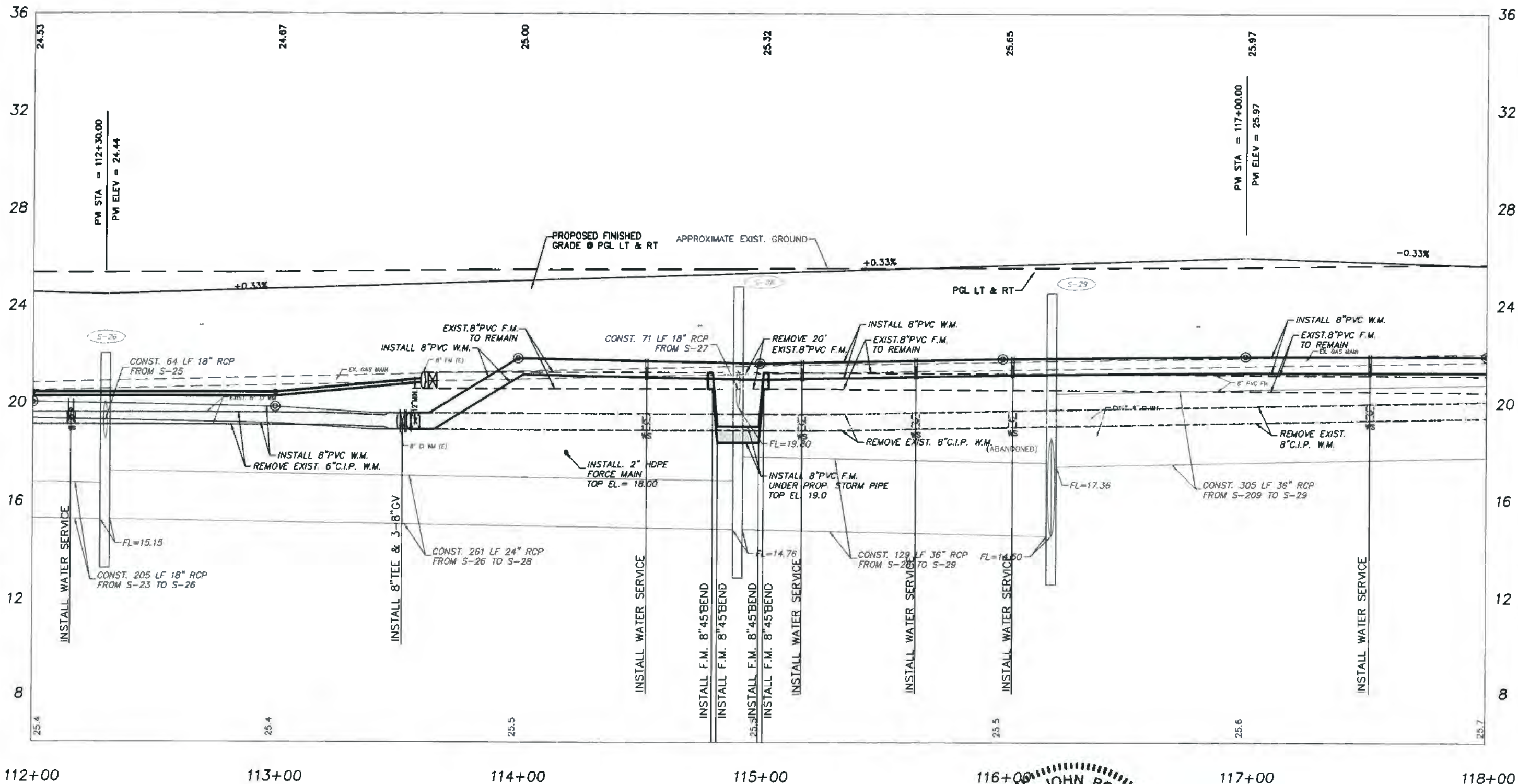
**CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT**

APPROVED R.J.B.	REVISION
DRAWN BY T.A.Y.	
DATE 1/02/19	

**C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853**

PROJECT SHEETS
43RD AVE STA. 106+00 - STA. 112+00
ROBERT JOHN BOLTON, P.E., FL. # 49429 DATE

DWG. NO.
SHEET 26 OF 58



112+00 113+00 114+00 115+00 116+00 117+00 118+00

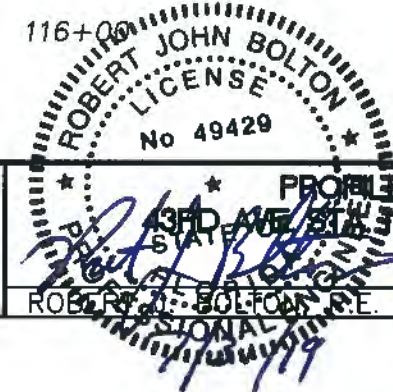
43RD AVENUE



**CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT**

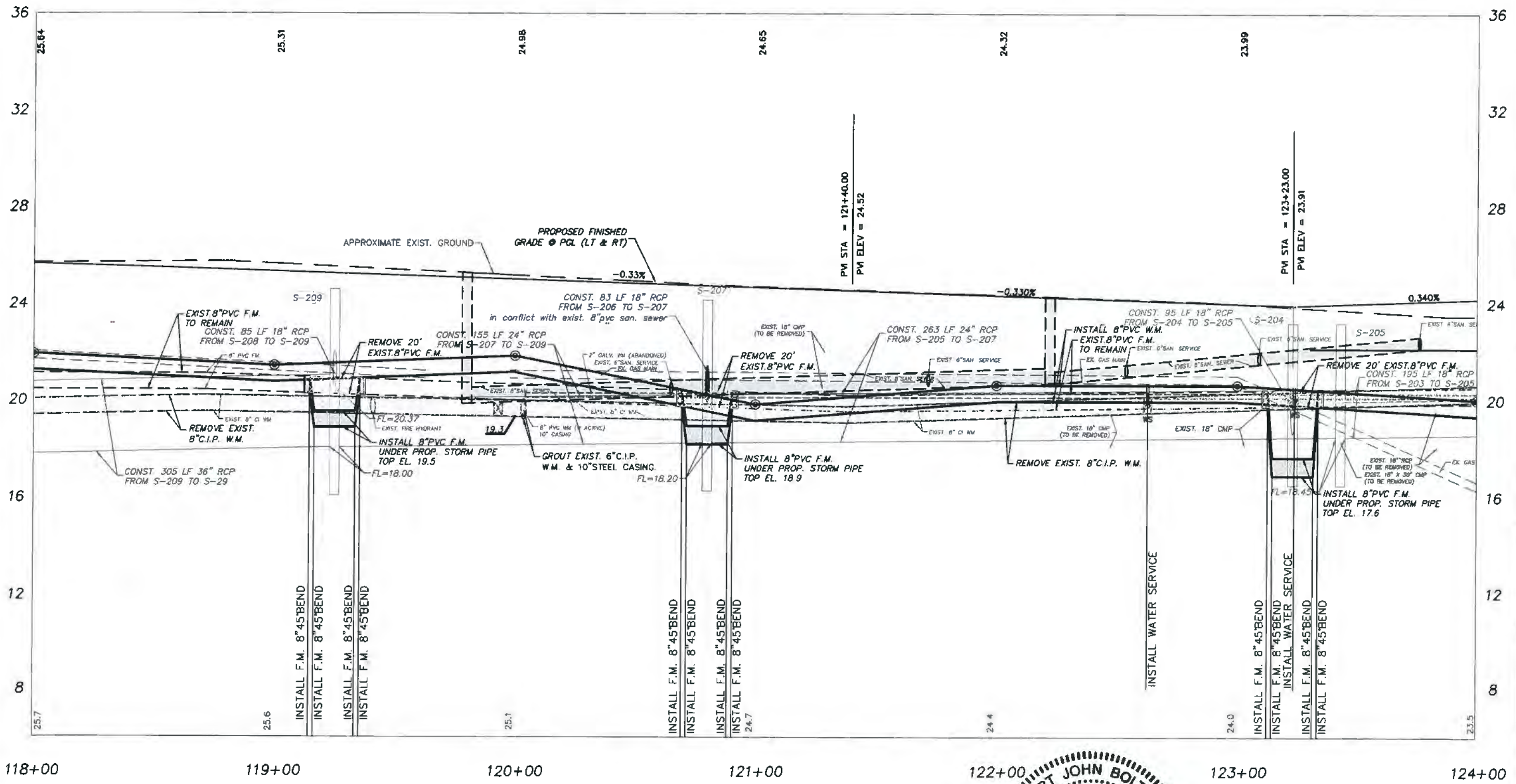
APPROVED R.J.B.	REVISION
DRAWN BY T.A.Y.	
DATE 1/02/19	

**C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853**



**PROFILE SHEETS
43RD AVE STA 112+00 - STA. 118+00**
ROBERT J. BOLTON P.E. FL. # 49429

DWG. NO.
DATE
SHEET 27 OF 58



118+00 119+00 120+00 121+00 122+00 123+00 124+00

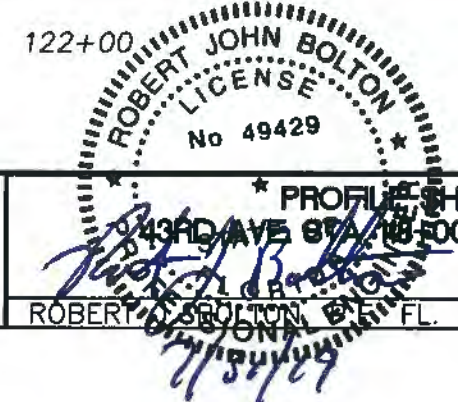
43RD AVENUE



CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

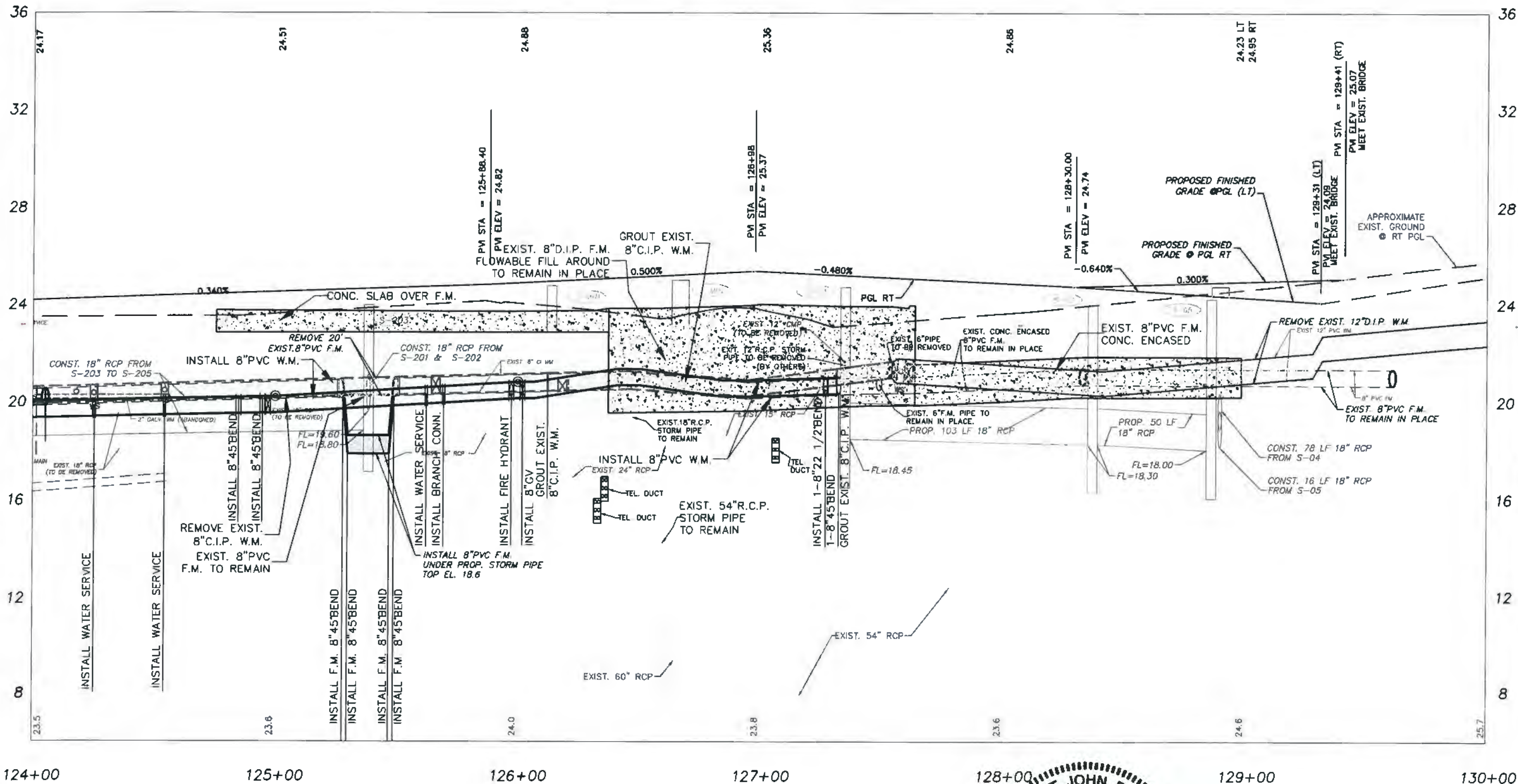
APPROVED R.J.B.	REVISION
DRAWN BY T.A.Y.	
DATE 1/02/19	

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853




PROFILES SHEETS
43RD AVE STA. 118+00 - STA. 124+00
ROBERT J. BOLTON, P.E. FL. # 49429

DWG. NO.
DATE
SHEET 28 OF 58



124+00 125+00 126+00 127+00 128+00 129+00 130+00

43RD AVENUE

 CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

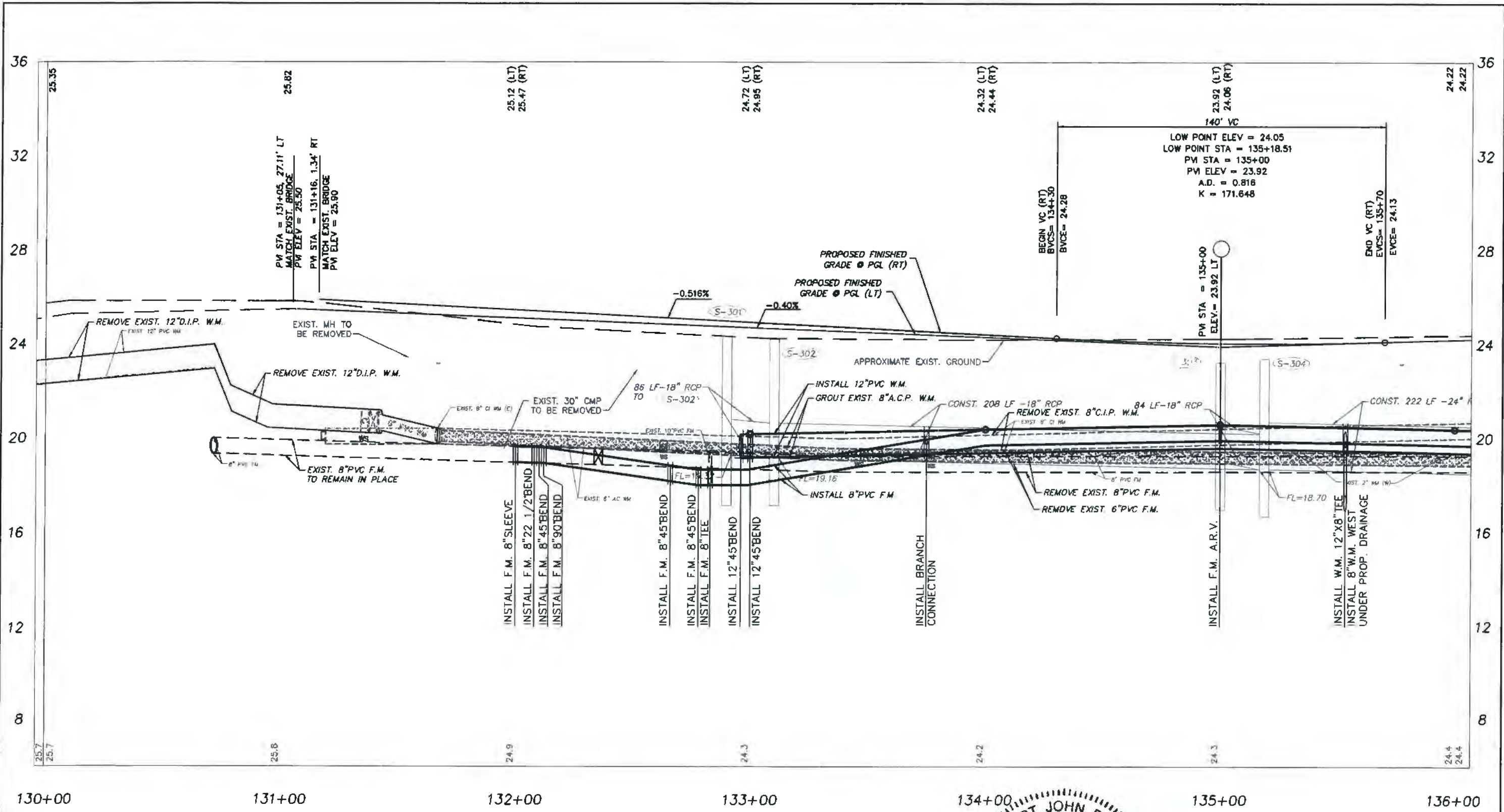
APPROVED R.J.B.	REVISION
DRAWN BY T.A.Y.	
DATE 1/02/19	

**C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853**

PROFILE SHEETS
43RD AVE STA. 124+00 - STA. 130+00


DWG. NO.
SHEET 29 OF 58

ROBERT JOHN BOLTON, P.E. FL. # 49429 DATE



ROBERT JOHN BOLTON
 LICENSE
 No 49429
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA

43RD AVENUE

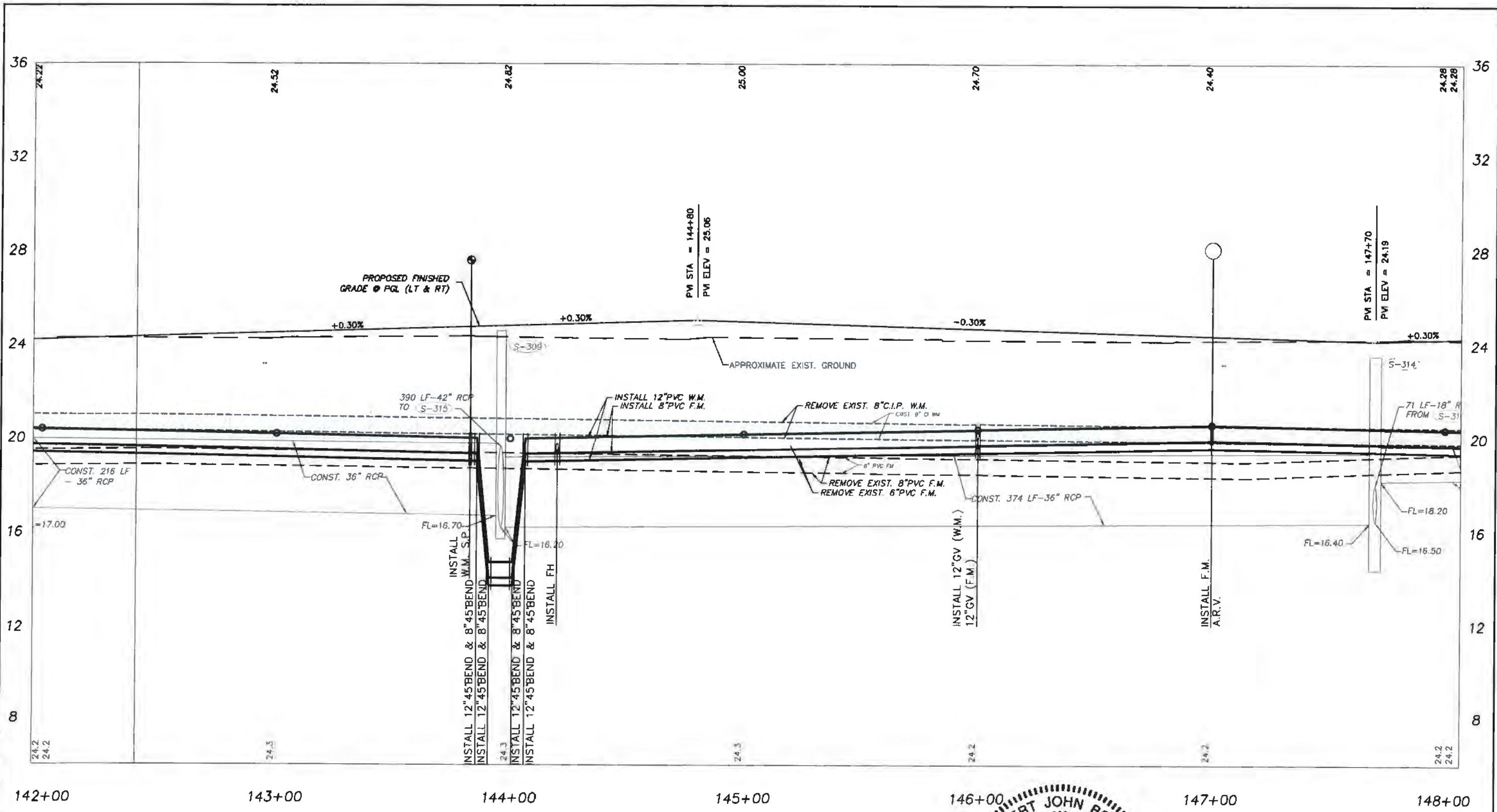

CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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DATE 1/02/19	

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853

PROFILE SHEETS
43RD AVE STA. 130+00 - STA. 136+00
 STATE OF FLORIDA

DWG. NO.
SHEET 30 OF 58



142+00 143+00 144+00 145+00 146+00 147+00 148+00

43RD AVENUE



CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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DATE 1/02/19	

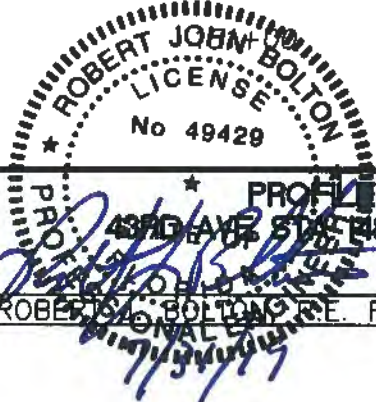
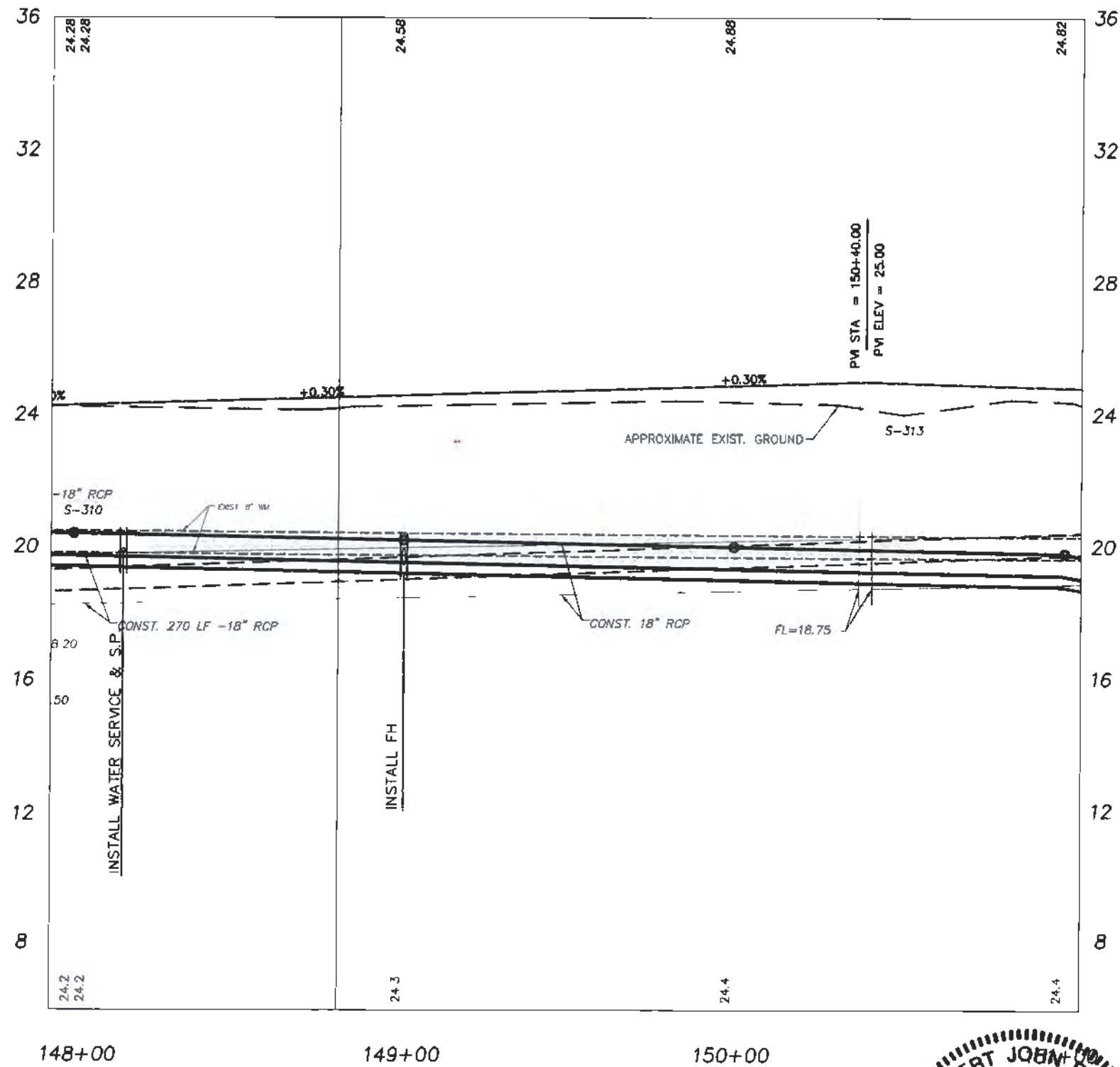
C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853



PROFILE SHEETS
43RD AVE STA. 142+00 - STA. 148+00

ROBERT JOHN BOLTON, P.E., FL. # 49429

DWG. No.	
DATE	
SHEET 32 OF 58	



43RD AVENUE



CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

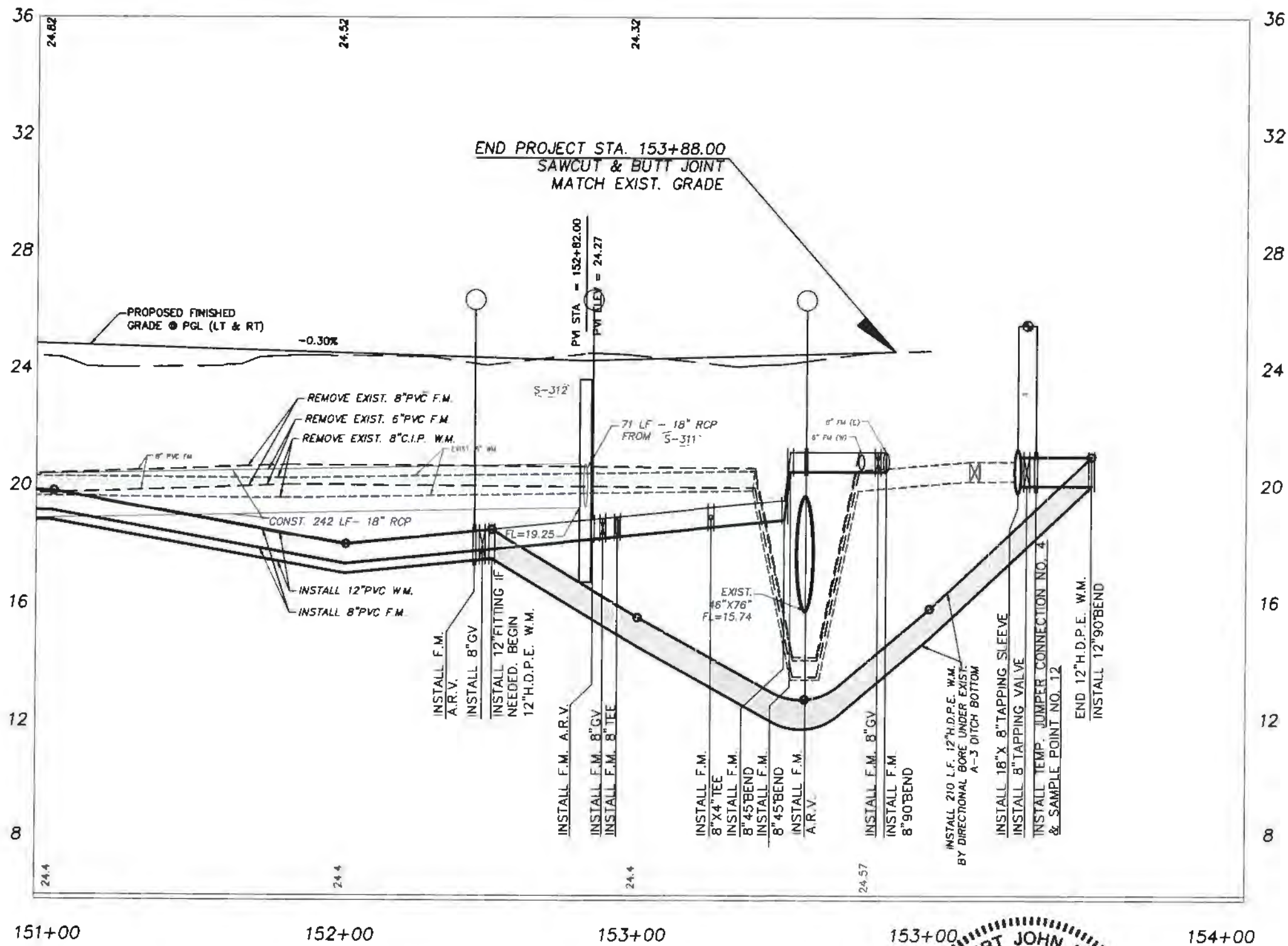
APPROVED
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T.A.Y.
DATE
1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853

PROF. SHEETS
43RD AVE STA. 148+00 - STA. 151+00
ROBERT JOHN BOLTON P.E. FL. # 49429

DWG. NO.
SHEET 33 OF 58



43RD AVENUE



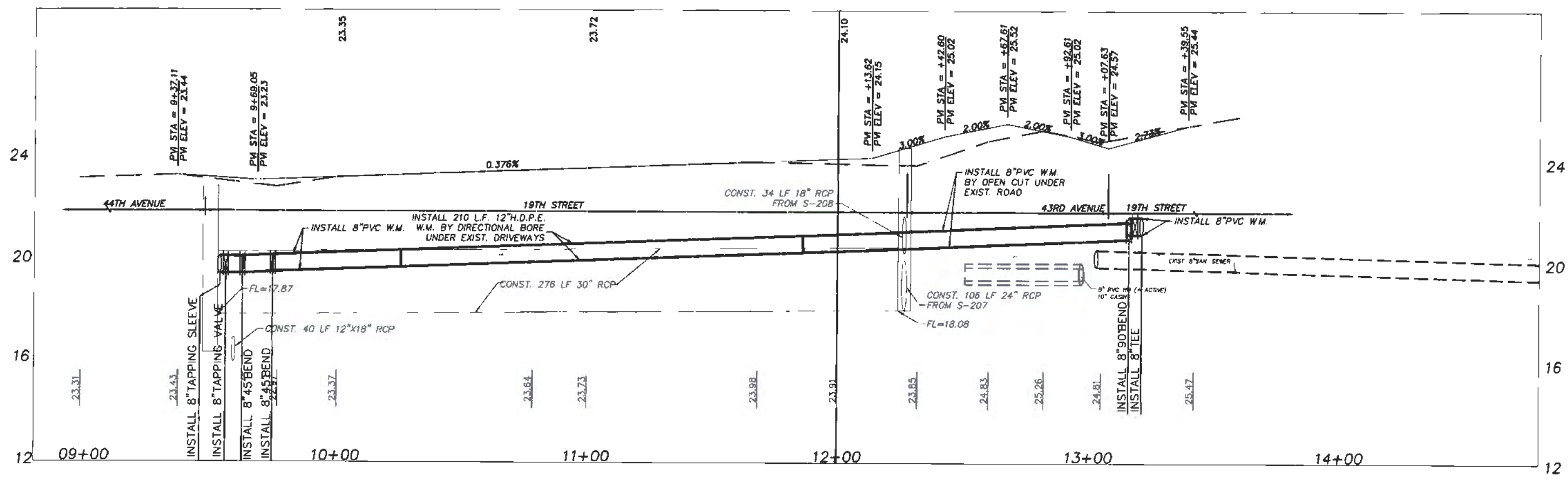
CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

APPROVED R.J.B.	REVISION
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DATE 1/02/19	

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853

PROFILE SHEETS
43RD AVE. STA. 151+00 - STA. 154+00
ROBERT JOHN BOLTON, P.E. FL. # 49429

DWG. NO.
DATE
SHEET 34 OF 58



19TH STREET PROFILE

CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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REVISION

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I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853

ROBERT JOHN BOLTON
 LICENSE
 No 49429

PROFESSIONAL ENGINEER

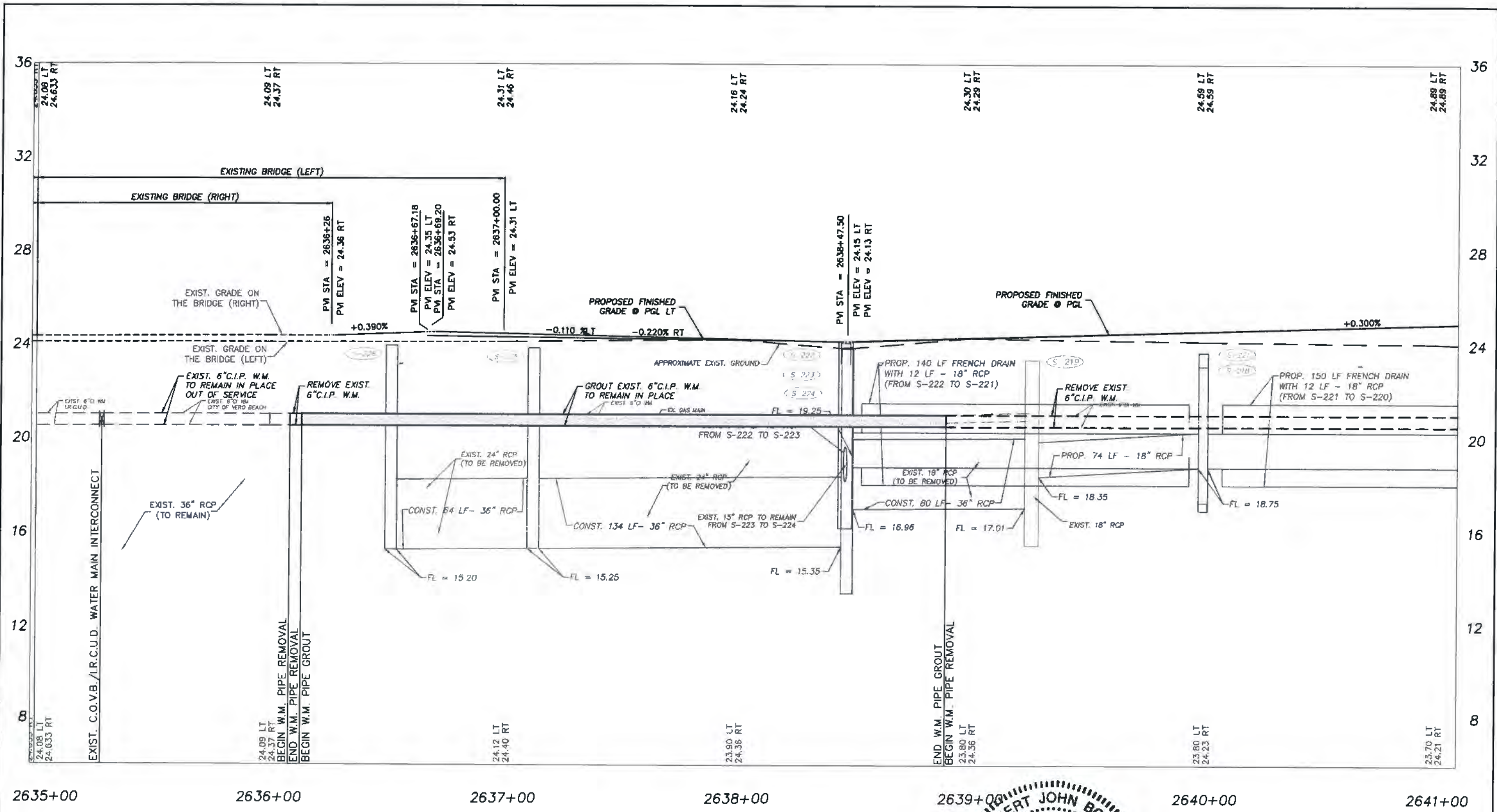
PROFILE SHEETS
 19TH ST. STA. 09+00 - STA. 14+00

ROBERT J. BOLTON, P.E. FL. # 49429

DWG. NO.

DATE

SHEET 35 OF 58



2635+00 2636+00 2637+00 2638+00 2639+00 2640+00 2641+00

SR 60



**CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT**

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DATE 1/02/19	

**C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853**



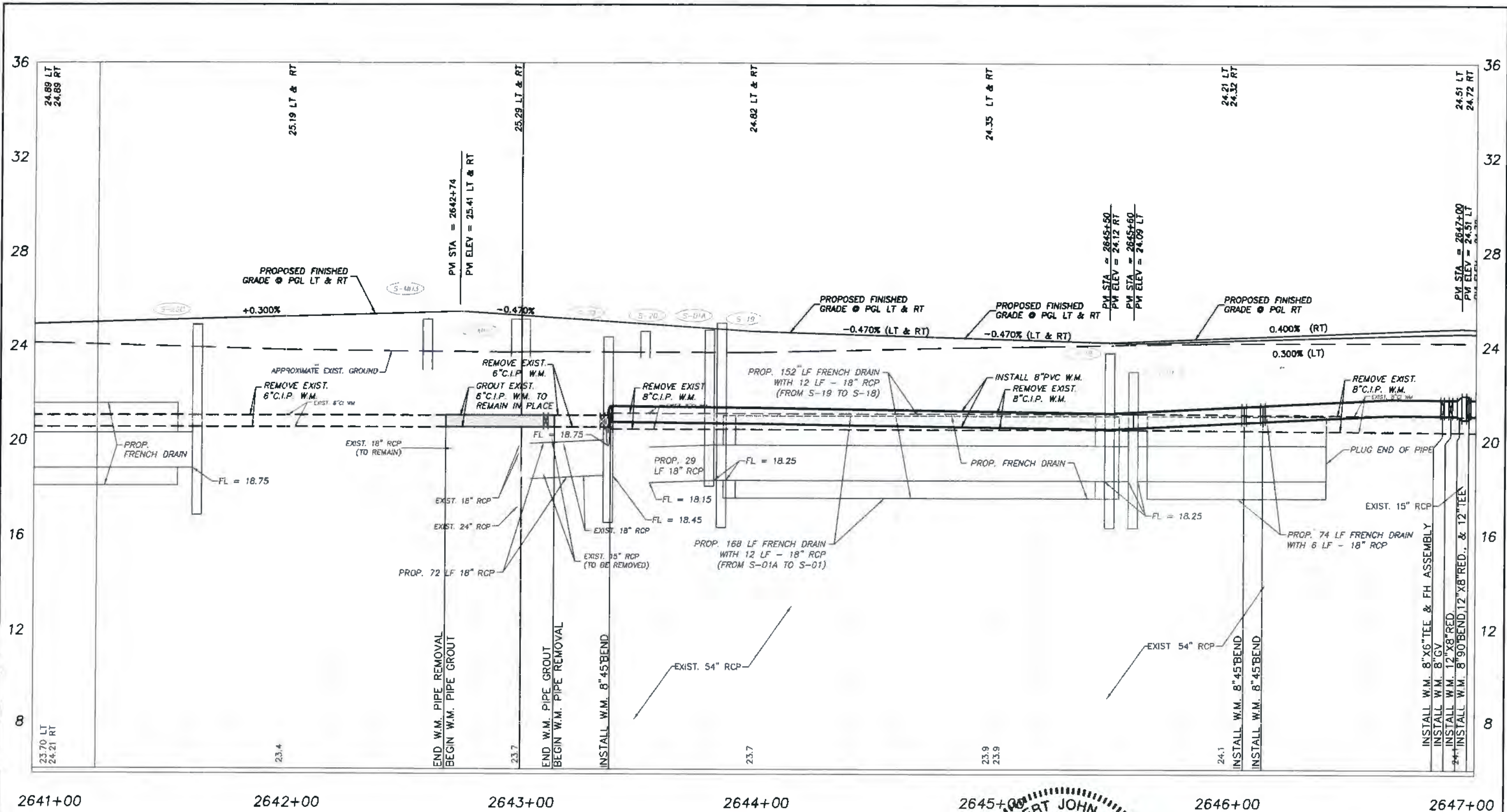
**PROFILE SHEETS
STA 2635+00 - STA. 2641+00**

ROBERT JOHN BOLTON, P.E. FL. # 49429

DATE

DWG. NO.

SHEET 36 OF 58



ROBERT JOHN BOLTON
 LICENSE
 No 49429

SR 60



CITY OF VERO BEACH
 WATER AND SEWER
 DEPARTMENT

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DRAWN BY T.A.Y.	
DATE 1/02/19	

C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. - S.R. 60 and 43RD AVE.
 ROAD WIDENING PROJECT NO. 0853

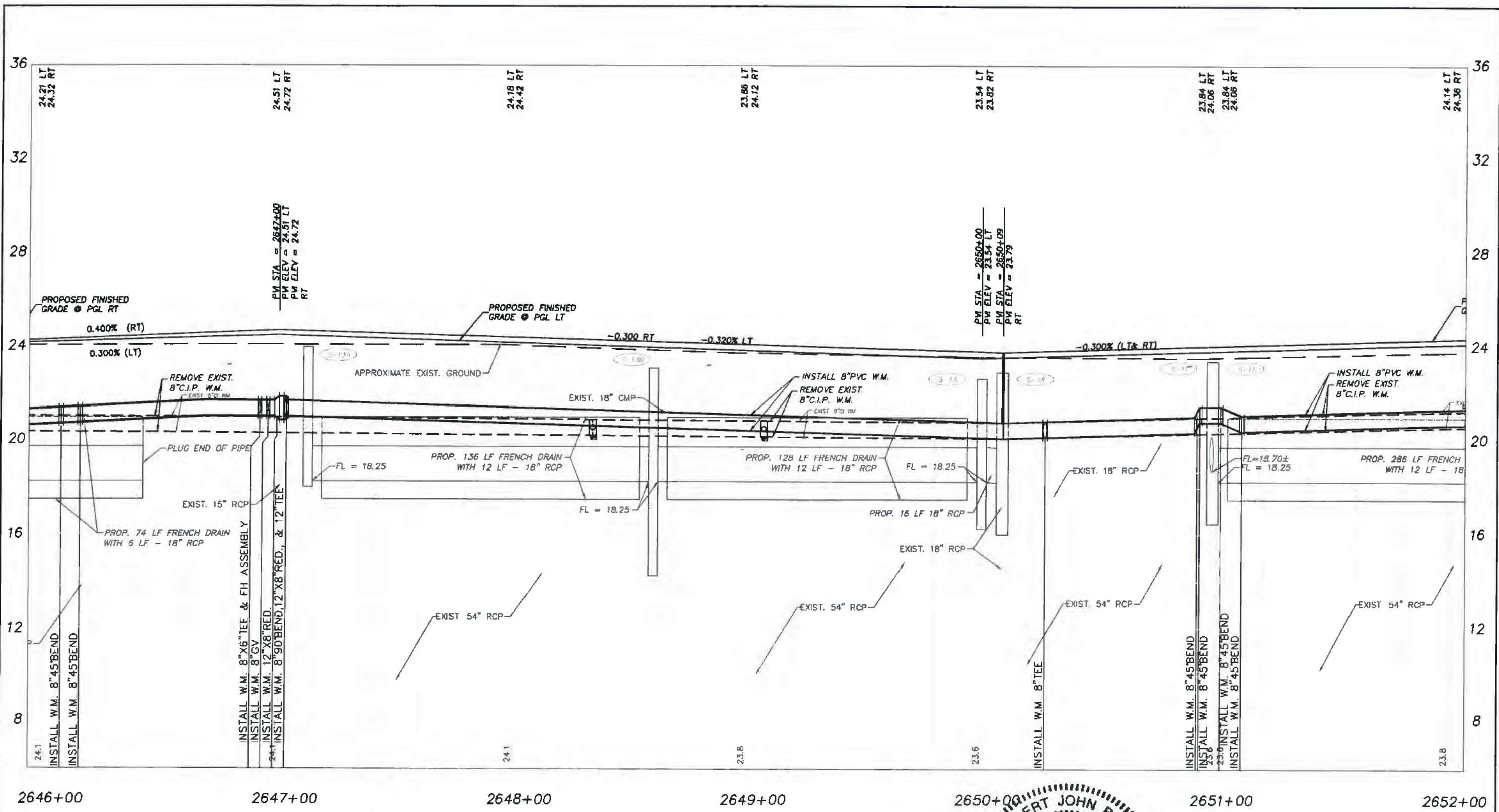
PROFILE SHEETS
 SR 60 STA 2641+00 - STA. 2647+00

DWG. NO.

ROBERT JOHN BOLTON, P.E., FL. # 49429

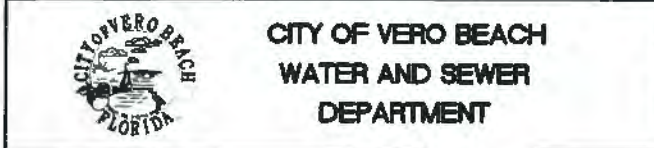
DATE

SHEET 37 OF 58



ROBERT JOHN BOLTON
 LICENSE
 No 49429
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA
 1/15/19

SR 60



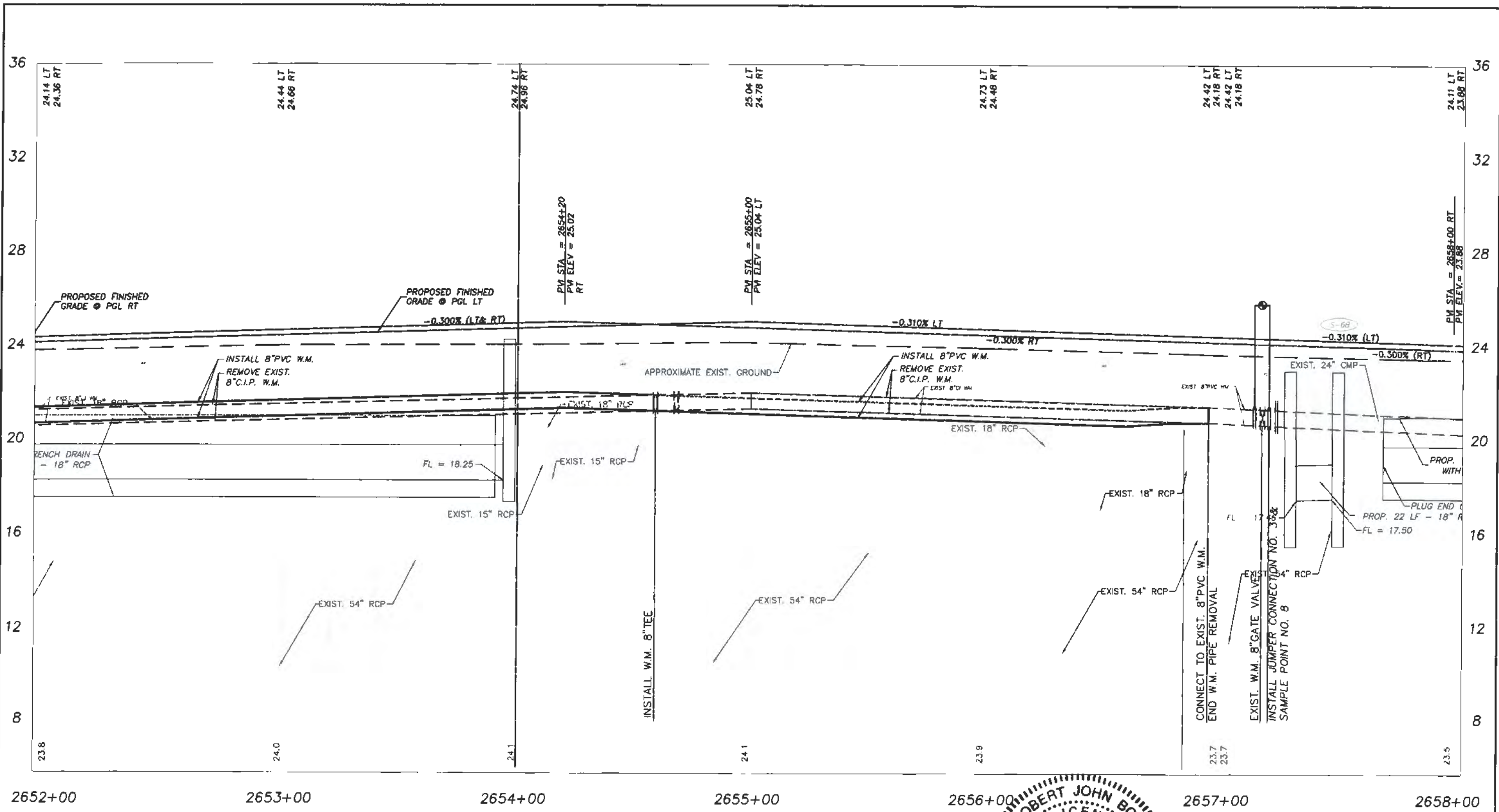
APPROVED
 R.J.B.
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 T.A.Y.
 DATE
 1/02/19

**C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. - S.R. 60 and 43RD AVE.
 ROAD WIDENING PROJECT NO. 0853**

PROFILES SHEETS
 S.R. 60 STA. 2646+00 - STA. 2652+00
 ROBERT J. BOLTON, P.E., FL. # 49429


DWG. NO.

 SHEET 38 OF 58



ROBERT JOHN BOLTON
 LICENSE
 No 49429
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER
 7/31/19

SR 60

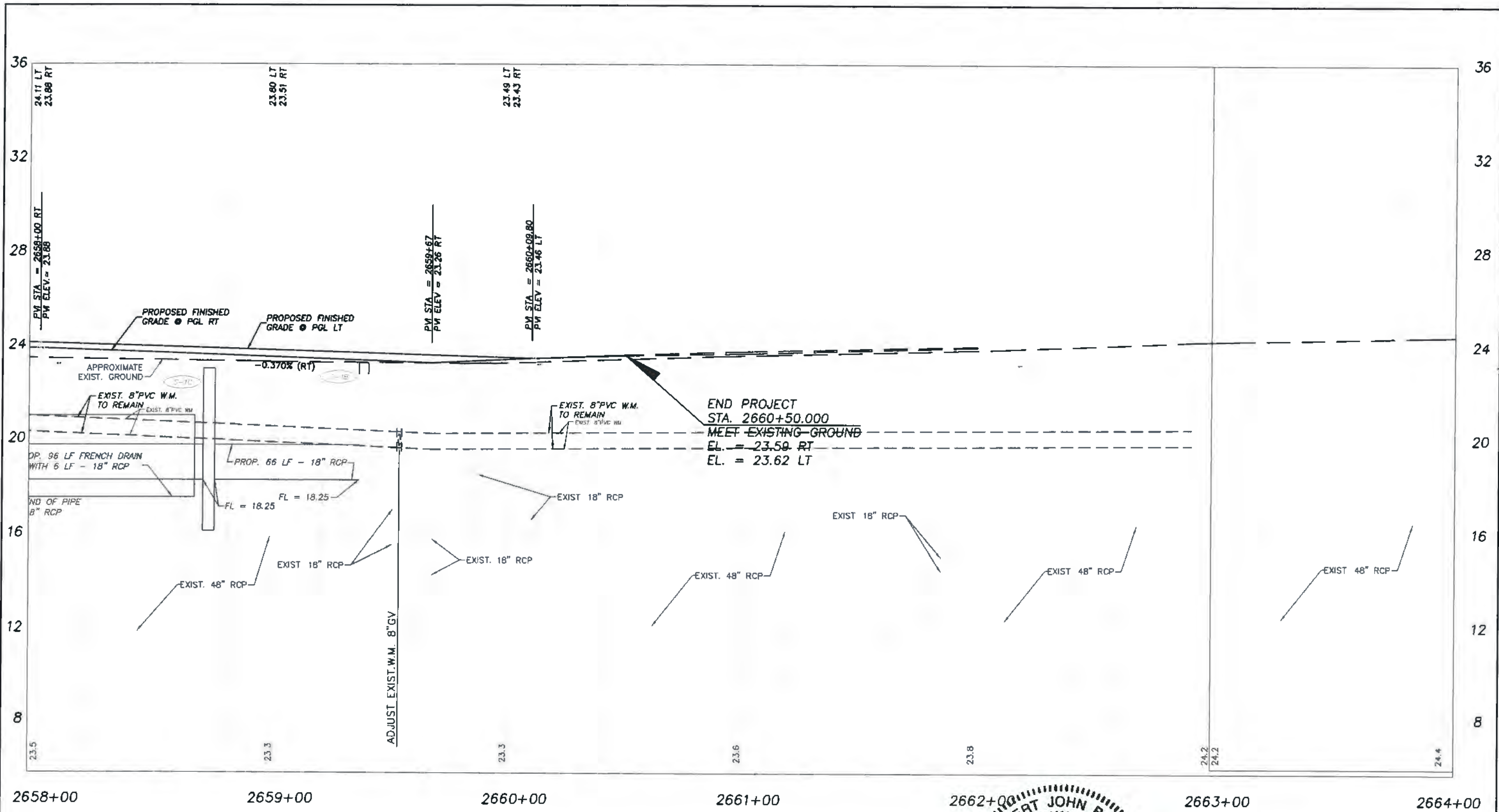
 CITY OF VERO BEACH
 WATER AND SEWER
 DEPARTMENT

APPROVED R.J.B.	REVISION
DRAWN BY T.A.Y.	
DATE 1/02/19	

C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. - S.R. 60 and 43RD AVE.
 ROAD WIDENING PROJECT NO. 0853


PROFILE SHEETS
 S.R. 60 STA. 2652+00 - STA. 2658+00
 ROBERT J. BOLTON, P.E., FL. # 49429

DWG. NO. 56
SHEET 39 OF 58



ROBERT JOHN BOLTON
 LICENSE
 No 49429
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA

SR 60


CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

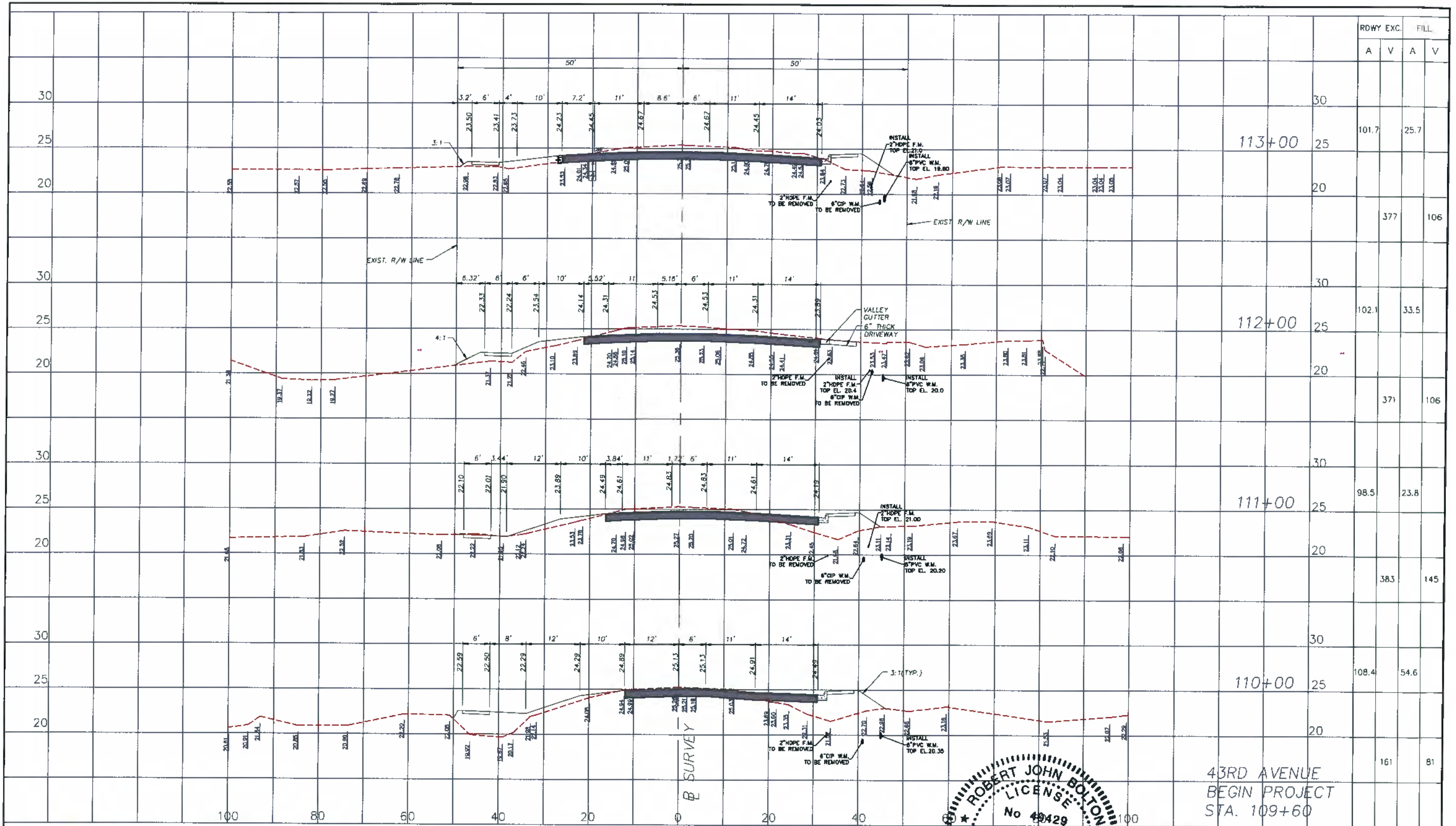
APPROVED R.J.B.	REVISION
DRAWN BY T.A.Y.	
DATE 1/02/19	

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. - S.R. 60 and 43RD AVE.
ROAD WIDENING PROJECT NO. 0853

PROFILE SHEETS
 STATION 2658+00 - STA. 2664+00
 ROBERT J. BOLTON, P.E. FL. # 49429

DWG. NO.

 SHEET 40 OF 58



RDWY EXC.		FILL	
A	V	A	V

113+00

112+00

111+00

110+00

43RD AVENUE
BEGIN PROJECT
STA. 109+60

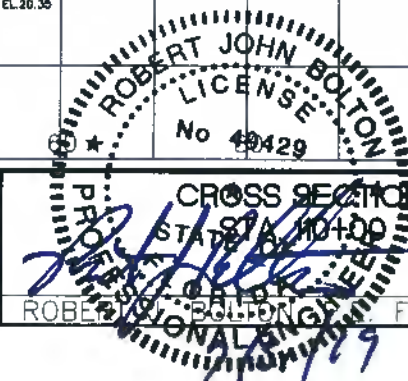


CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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R.J.B.
DRAWN BY
1/02/19
DATE
1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853

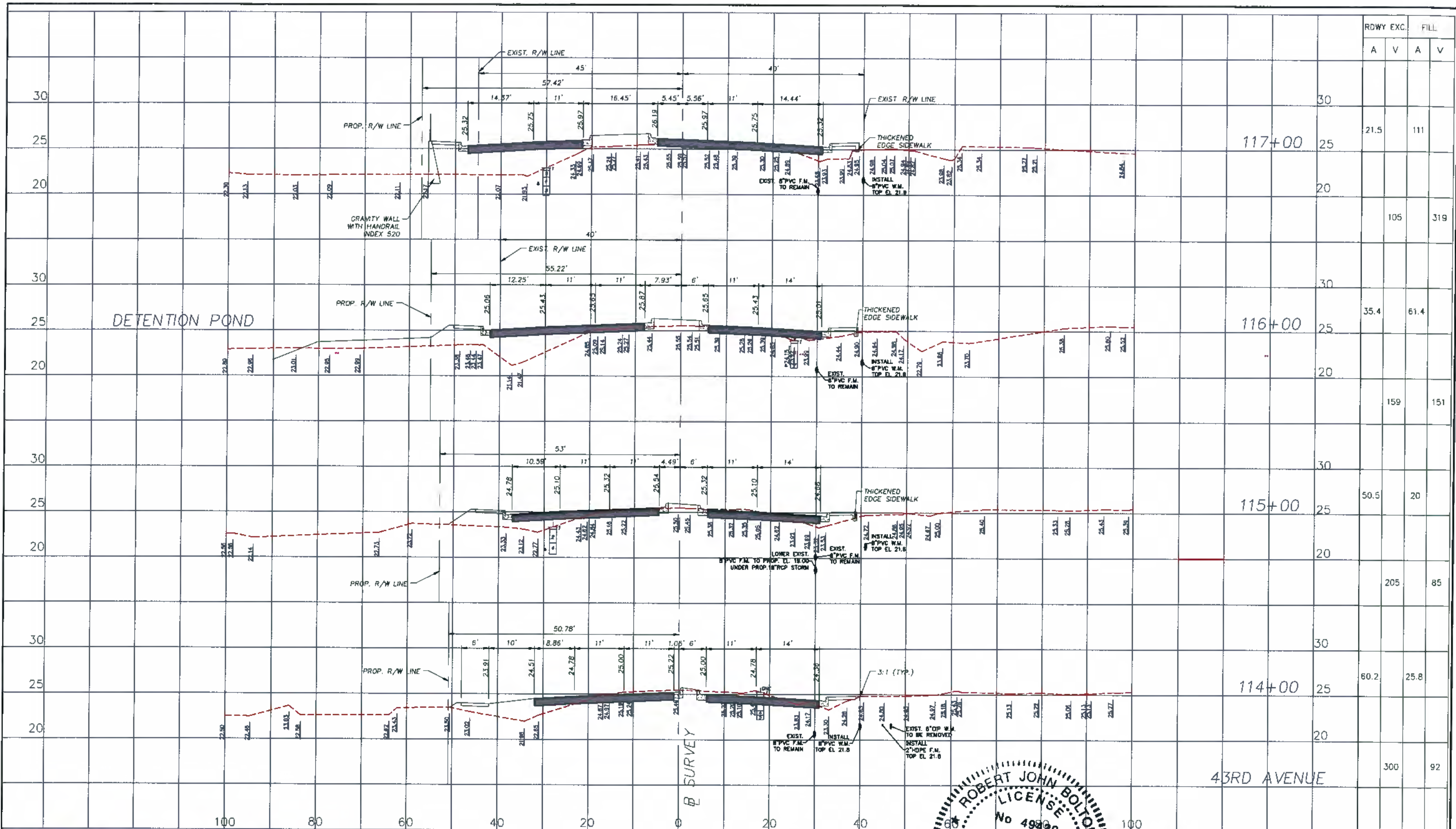


CROSS SECTIONS - 43RD AVE.
STA. 109+00 STA. 113+00

ROBERT JOHN BOLTON FL. # 49429

DATE

DWG. NO.
SHEET 41 OF 58



RDWY EXC.		FILL	
A	V	A	V

DETENTION POND

117+00

116+00

115+00

114+00

43RD AVENUE



CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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DRAWN BY
1/02/19
DATE
1/02/19

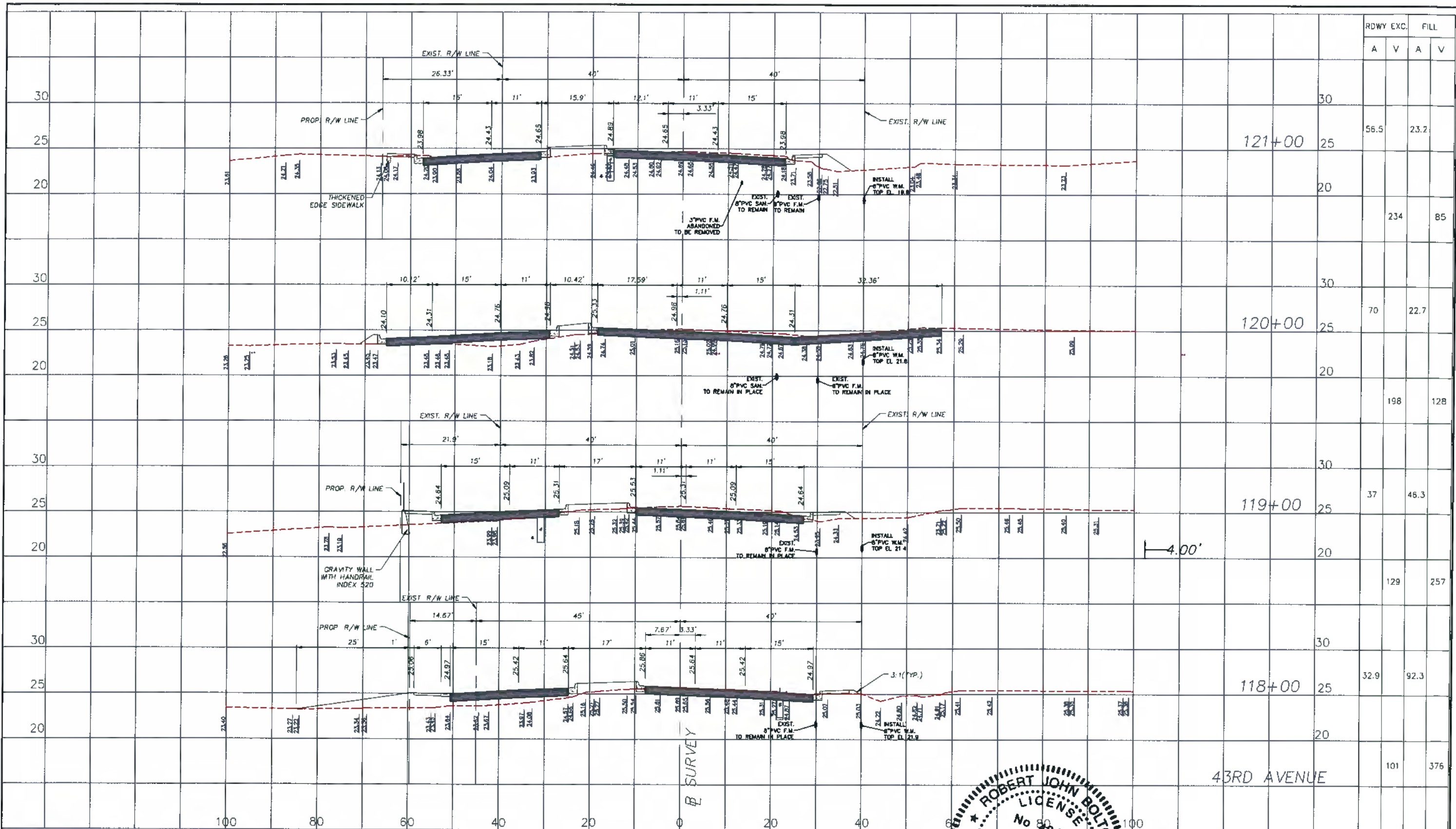
REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853

CROSS SECTIONS - 43RD AVE.
STATE STA 114+00 - STA. 117+00

ROBERT JOHN BOLTON
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 49829

DWG. NO. _____
DATE _____
SHEET 42 OF 58



RDWY EXC.		FILL	
A	V	A	V

121+00

120+00

119+00

118+00

43RD AVENUE

56.5 23.2

234 85

70 22.7

198 128

37 46.3

129 257

32.9 92.3

101 376

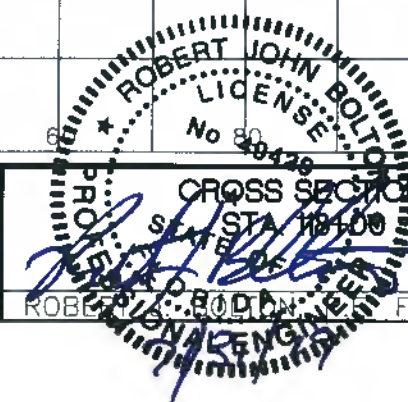


CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

APPROVED
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DRAWN BY
1/02/19
DATE
1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853

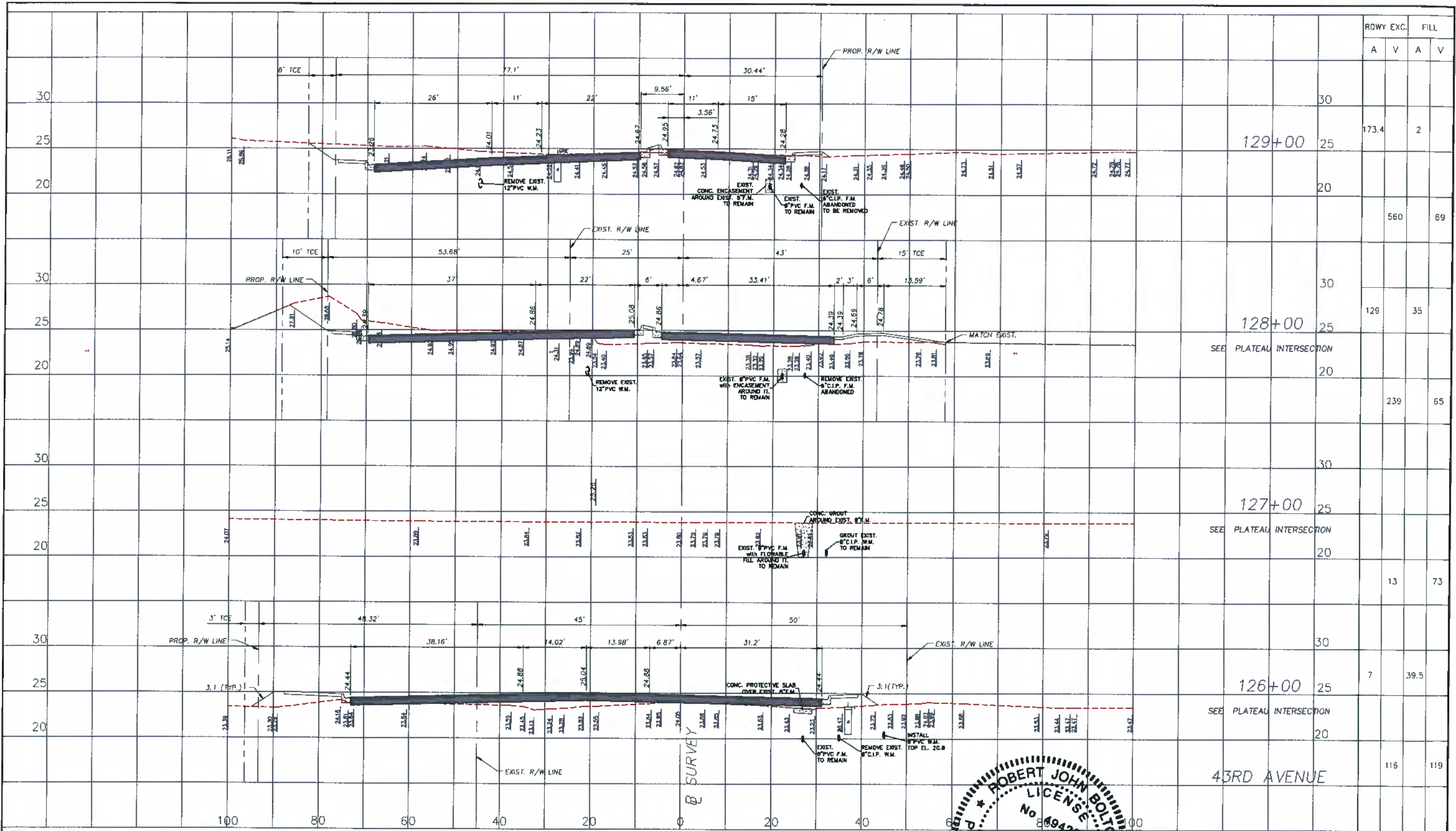


CROSS SECTIONS - 43RD AVE.
STA. 118+00 STA. 121+00

ROBERT JOHN BOLTZ, P.E. # 49429

DATE

DWG NO
SHEET 43 OF 58



ROWY EXC.		FILL	
A	V	A	V

173.4	2		
560	69		
129	35		
239	65		
13	73		
7	39.5		
116	119		

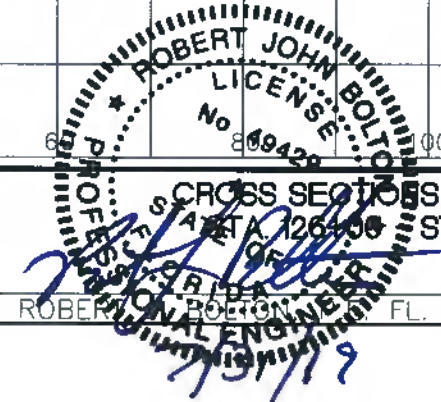


CITY OF VERO BEACH
 WATER AND SEWER
 DEPARTMENT

APPROVED
 R.J.B.
 DRAWN BY
 1/02/19
 DATE
 1/02/19

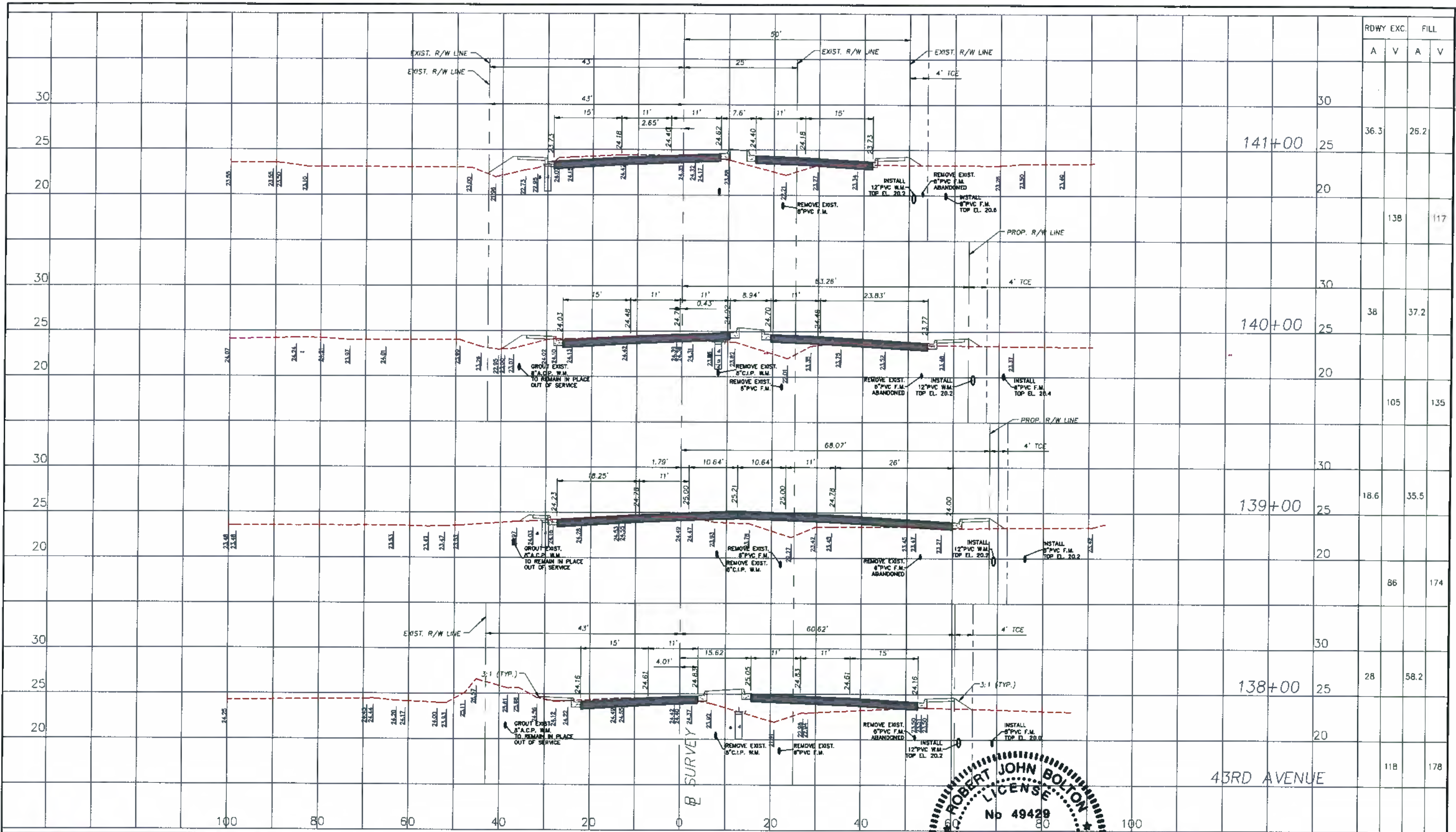
REVISION

C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. S.R. 60 and 43RD AV. ROAD
 WIDENING PROJECT NO. 0853



CROSS SECTIONS - 43RD AVE.
 STA. 126+00 TO STA. 129+00
 ROBERT JOHN BOLTON, P.E.
 FL. # 49429

DWG. NO.
 SHEET 45 OF 58



ROWY EXC.		FILL	
A	V	A	V

141+00

140+00

139+00

138+00

43RD AVENUE

30
25
20

30
25
20

30
25
20

30
25
20

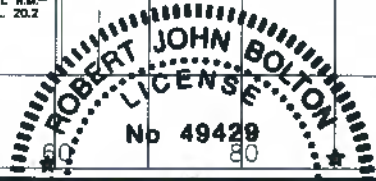
11B 178

138 117

105 135

86 174

DWG. NO.



CROSS SECTIONS - 43RD AV.
STATES 138+00 - STA. 141+00
ROBERT JOHN BOLTON, P.E. FL. # 49429
DATE 5/1/19



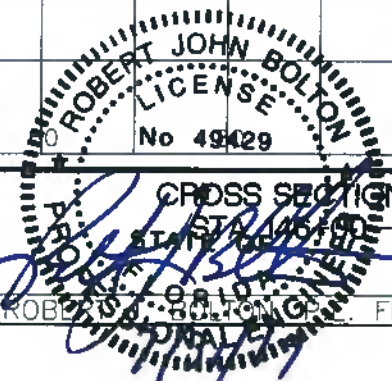
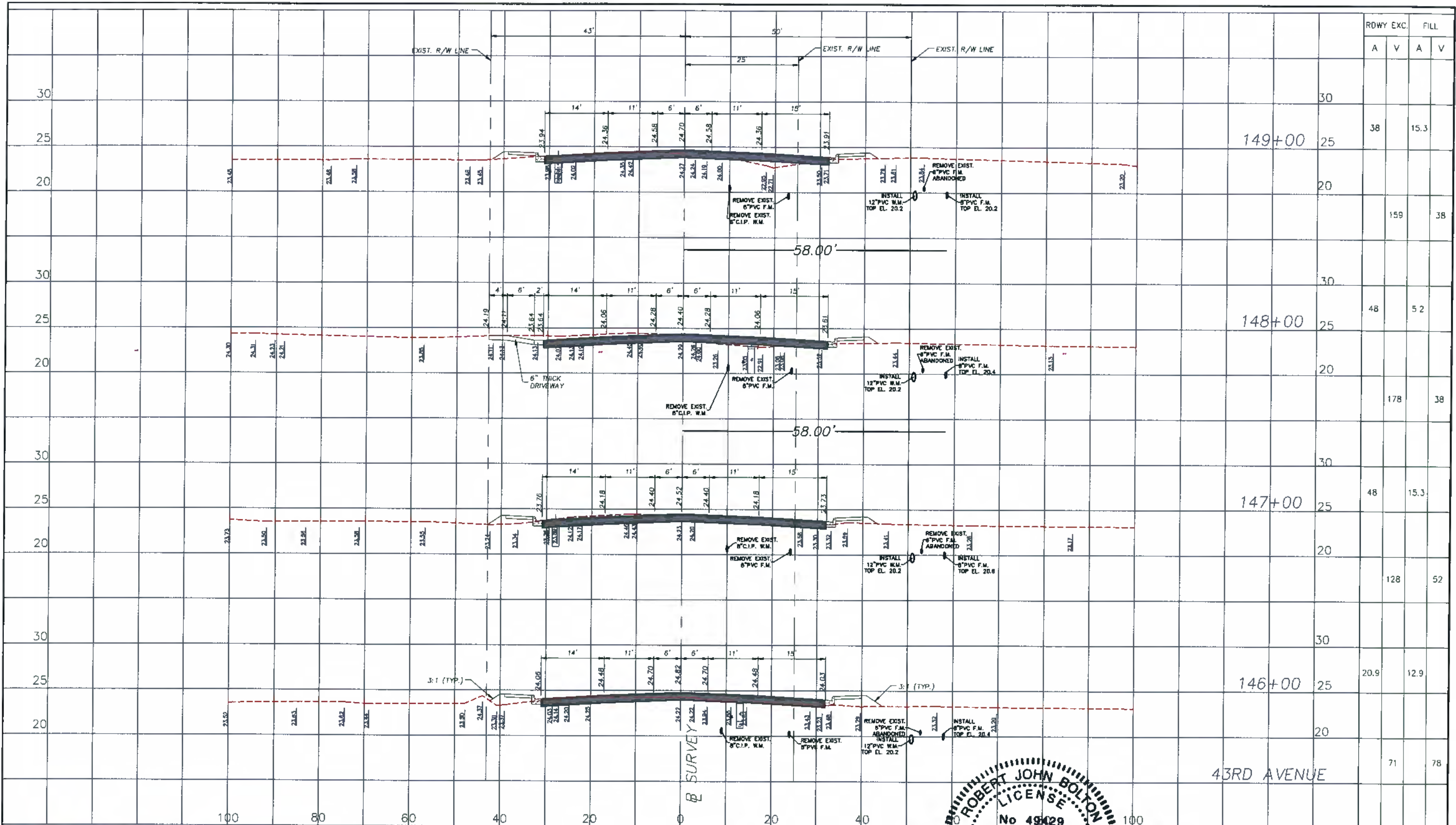
CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

APPROVED R.J.B.
DRAWN BY 1/02/19
DATE 1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853

SHEET 48 OF 58



CITY OF VERO BEACH
 WATER AND SEWER
 DEPARTMENT

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 DATE
 1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. S.R. 60 and 43RD AV. ROAD
 WIDENING PROJECT NO. 0853

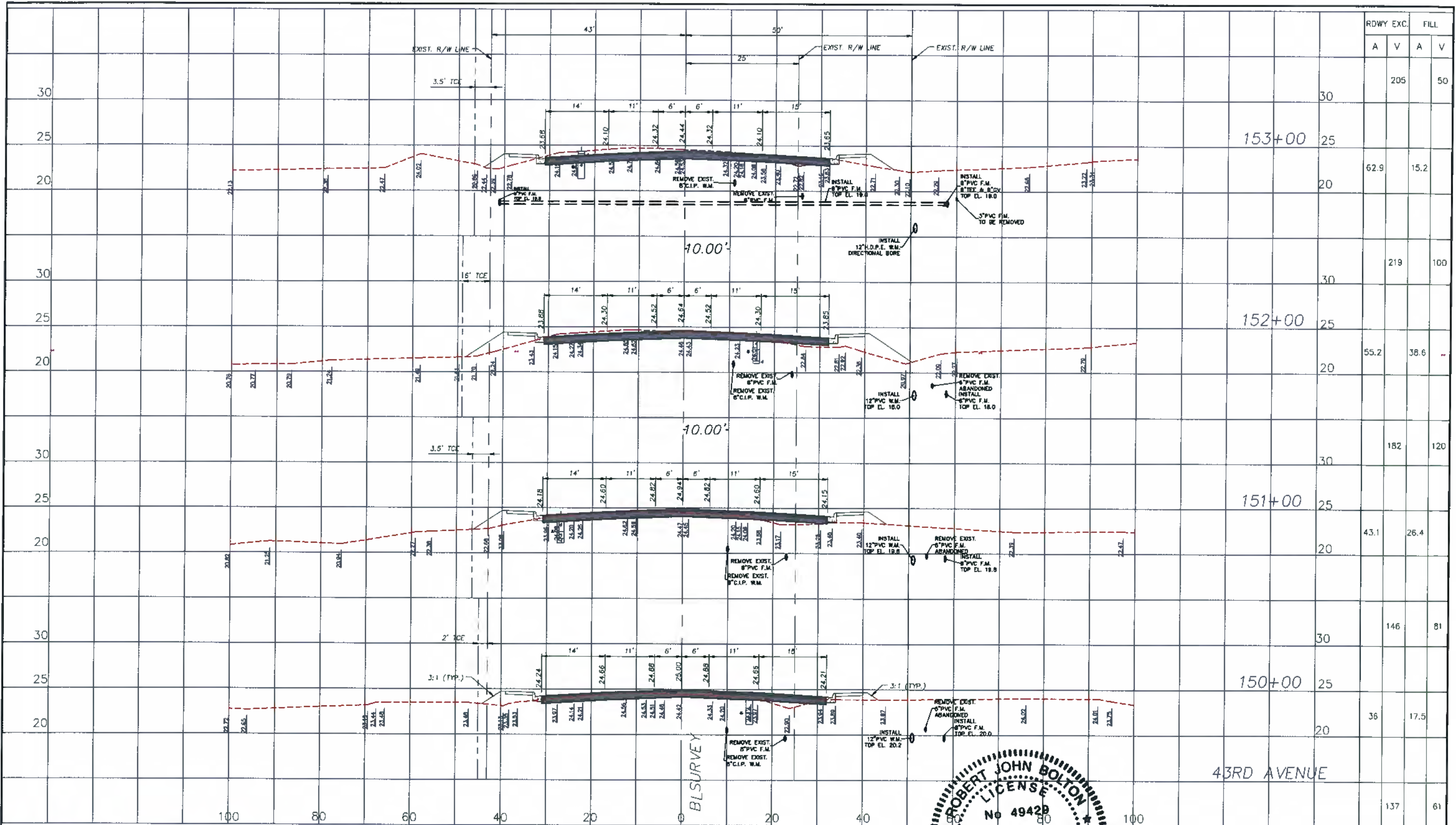
CROSS SECTIONS - 43RD AVE.
 STA. 146+00 - STA. 149+00

ROBERT J. BOLTON, P.E., FL. # 49429

DATE

DWG. NO.

 SHEET 50 OF 58



ROWY EXC.	FILL	
	A	V
205		50
62.9		15.2
219		100
55.2		38.6
182		120
43.1		26.4
146		81
36		17.5
137		61

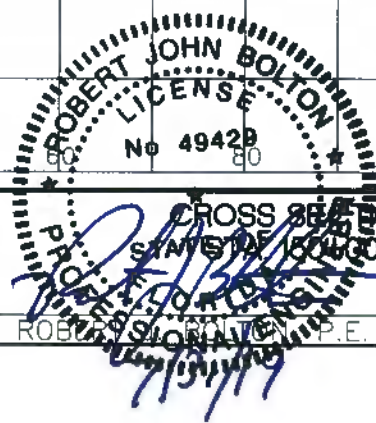


CITY OF VERO BEACH
 WATER AND SEWER
 DEPARTMENT

APPROVED
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 DRAWN BY
 1/02/19
 DATE
 1/02/19

REVISION

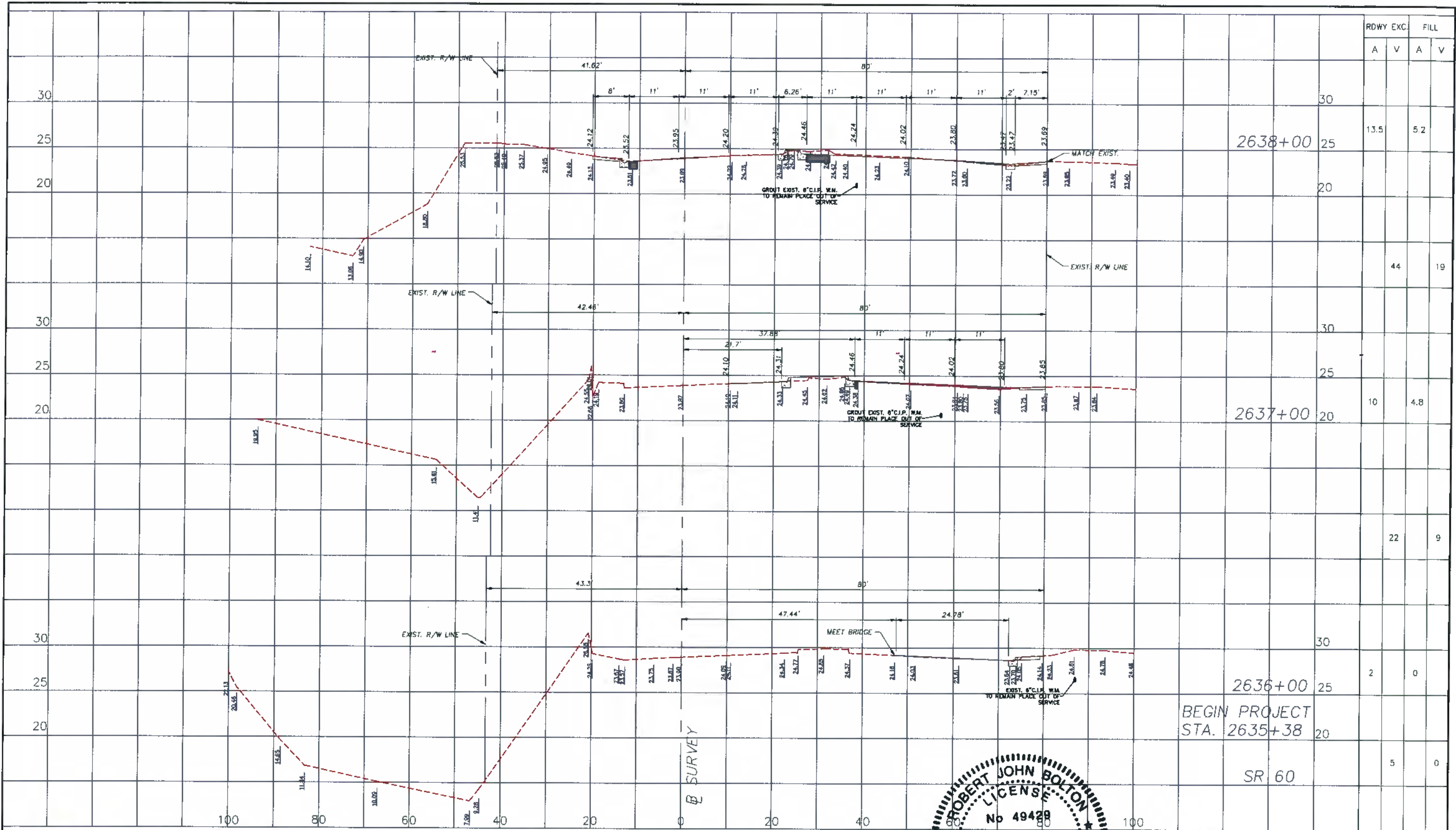
C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. S.R. 60 and 43RD AV. ROAD
 WIDENING PROJECT NO. 0853



CROSS SECTIONS - 43RD AVE.
 STA. 150+00 - STA. 153+00

ROBERT JOHN BOLTON P.E. FL. # 49429

BWG. NO.
 DATE
 SHEET 51 OF 58



RDWY EXC.		FILL	
A	V	A	V

2638+00

2637+00

2636+00

BEGIN PROJECT
STA. 2635+38

SR 60

		13.5		5.2	
			44		19
		10		4.8	
			22		9
		2		0	
			5		0

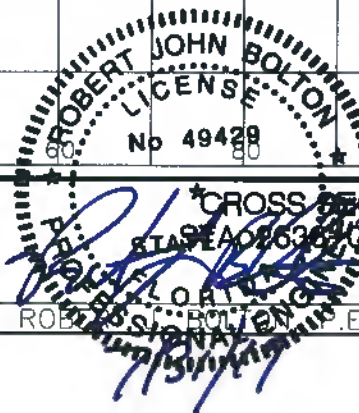


CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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1/02/19
DATE
1/02/19

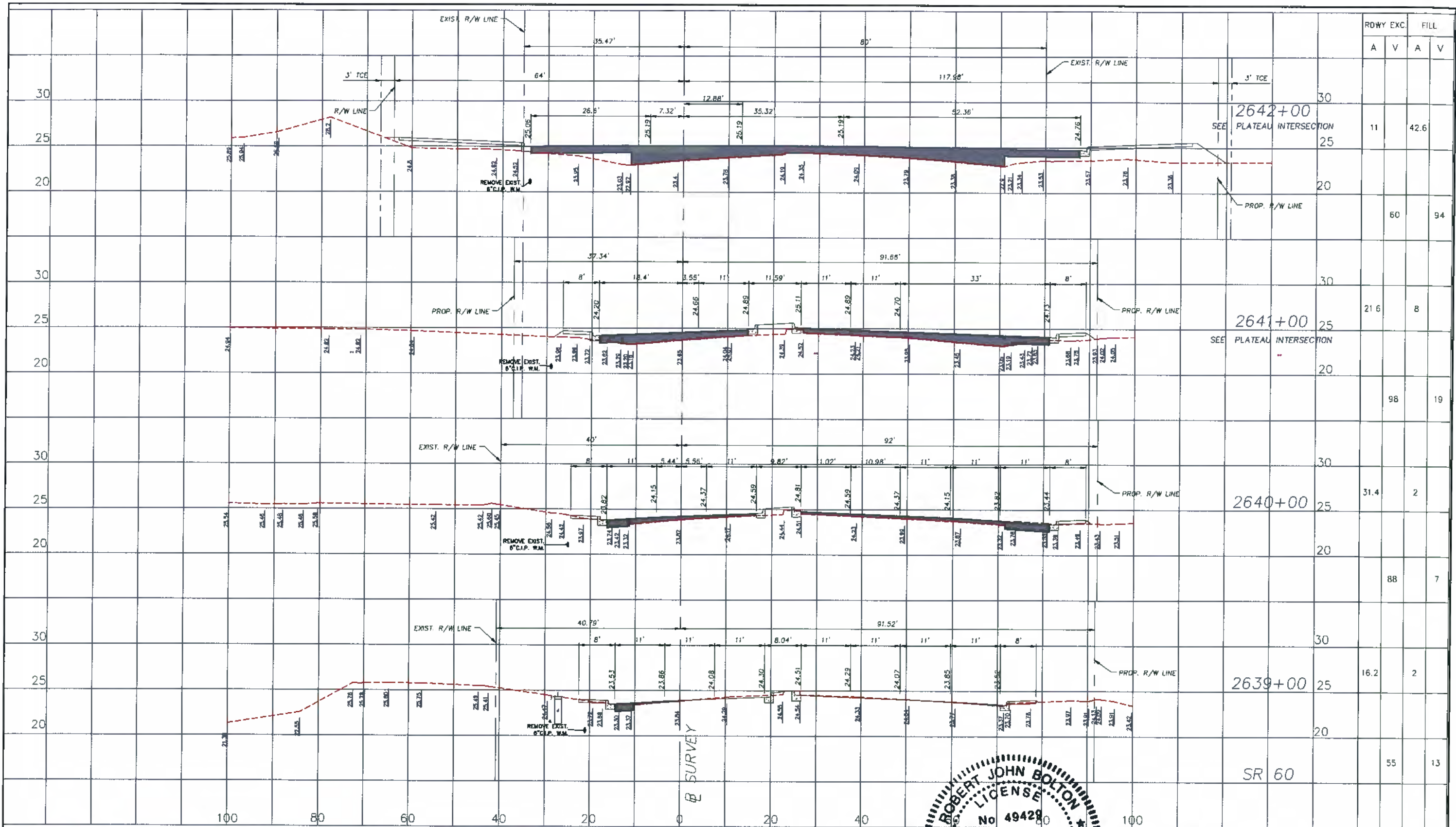
REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853



CROSS SECTIONS - SR. 60
STATION 2635+38 TO STA. 2638+00
ROBERT JOHN BOLTON, P.E. # 49429

DWG. NO. _____
DATE _____
SHEET 52 OF 58



ROWY EXC.	FILL	
	A	V
11		42.6
60		94
21.6		8
96		19
31.4		2
88		7
16.2		2
55		13

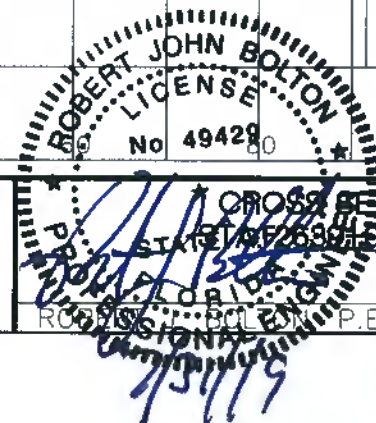


CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853

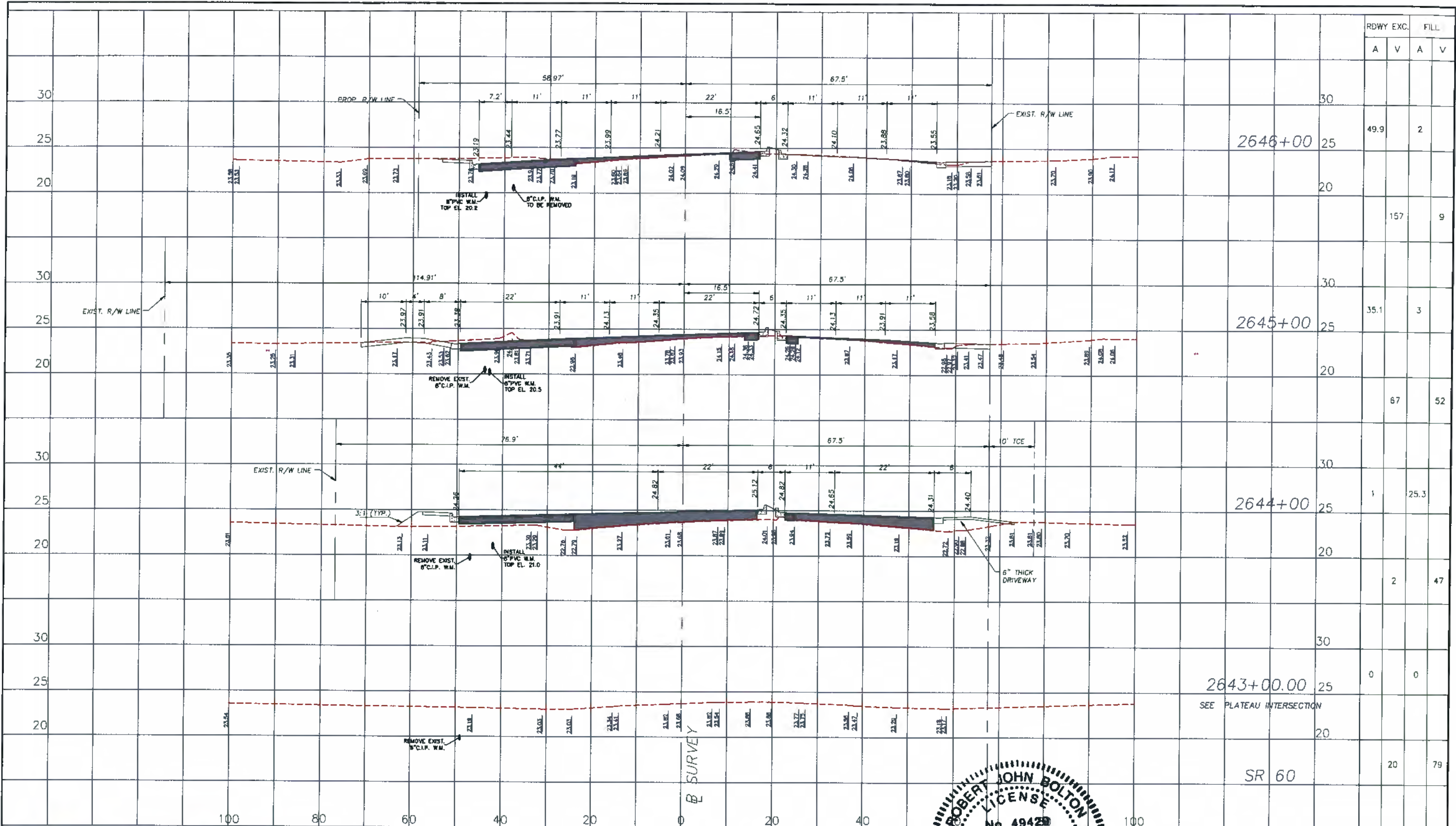


CROSS SECTIONS - S.R. 60
STA. 2639+00 - STA. 2642+00

ROBERT JOHN BOLTON P.E. FL. # 49429

DATE

DWG. NO.
SHEET 53 OF 58



RDWY EXC.		FILL	
A	V	A	V

2646+00

2645+00

2644+00

2643+00.00
SEE PLATEAU INTERSECTION

SR 60

30					
25	49.9		2		
20		157		9	
30					
25	35.1			3	
20		67			52
30					
25	1			25.3	
20			2		47
30					
25	0			0	
20					
			20		79



CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

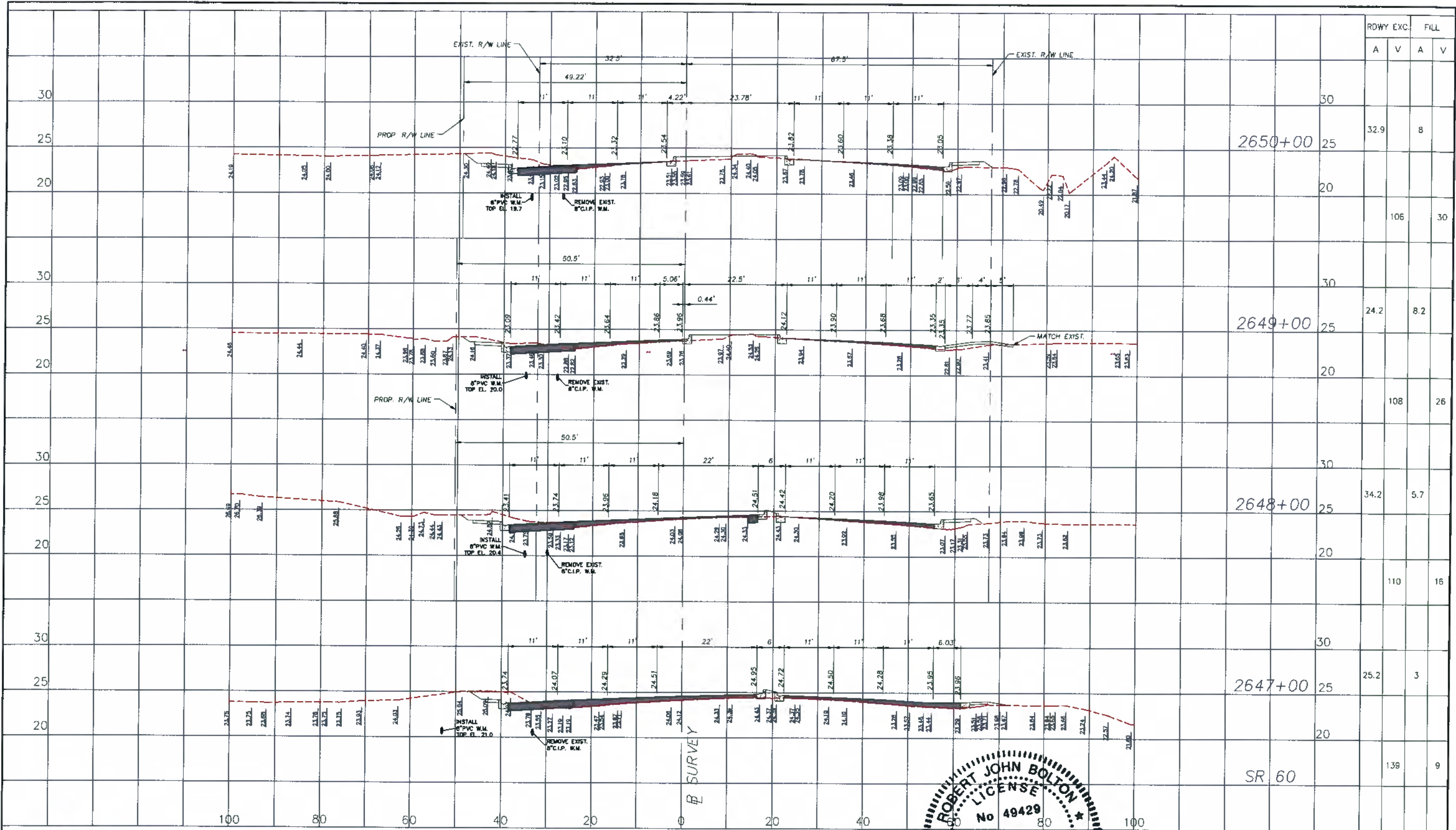
APPROVED
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1/02/19
DATE
1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. SR. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853

CROSS SECTIONS - SR. 60
STA. 2643+00 - STA. 2646+00
ROBERT J. BOLTON, P.E. # 49429

OWG. NO. _____
DATE _____
SHEET 54 OF 58



ROWY EXC.		FILL	
A	V	A	V

2650+00

2649+00

2648+00

2647+00

SR 60

30	30		
25	25	32.9	8
20	20		
30	30		
25	25	24.2	8.2
20	20		
30	30		
25	25	34.2	5.7
20	20		
30	30		
25	25	25.2	3
20	20		
30	30		
25	25		
20	20		
30	30		
25	25		
20	20		
30	30		
25	25	139	9

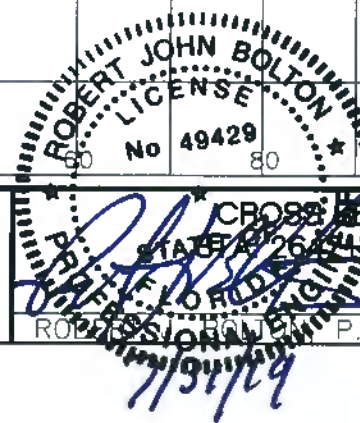


CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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R.J.B.
DRAWN BY
1/02/19
DATE
1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853



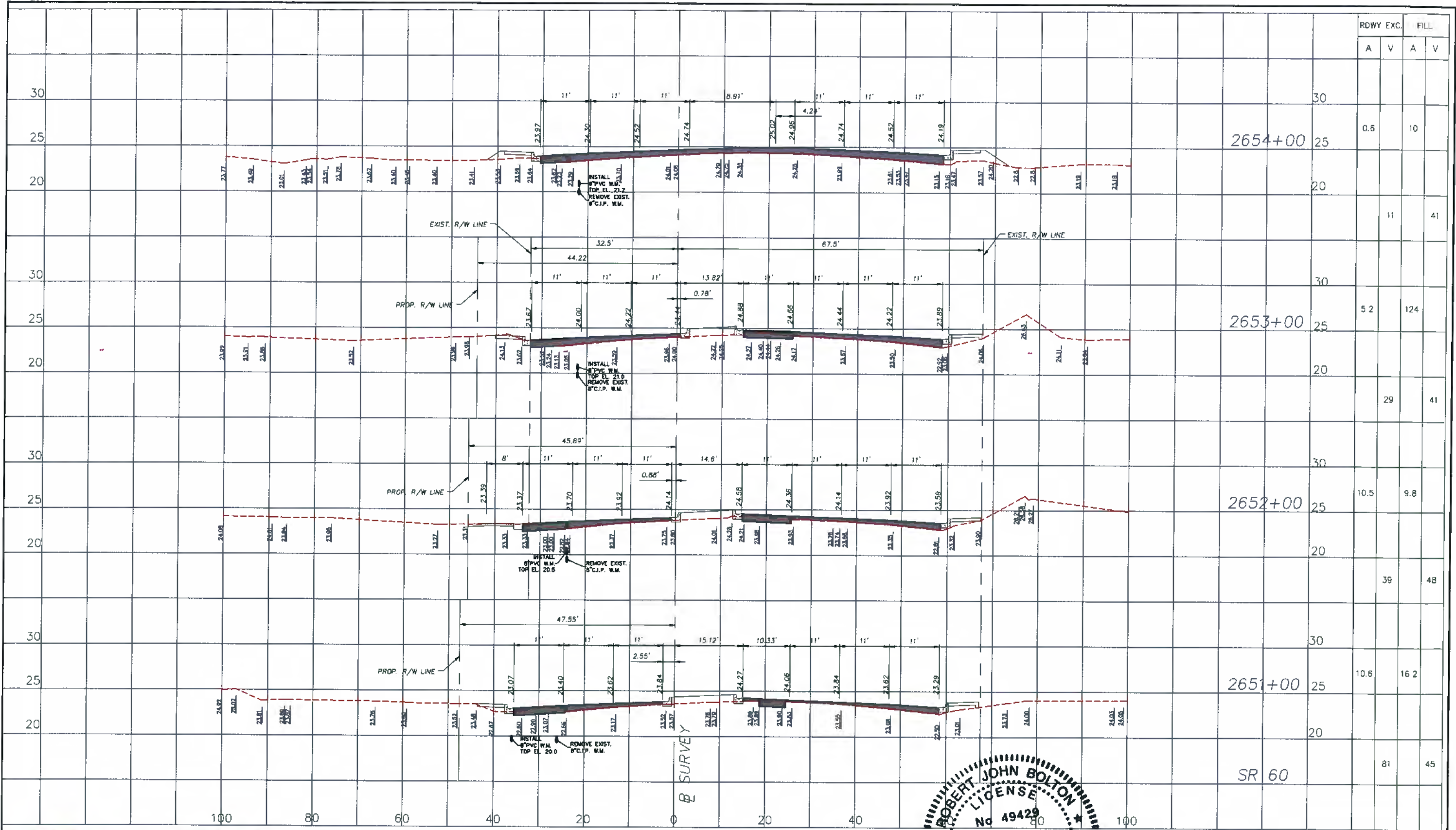
CROSS SECTIONS - S.R. 60
STA 2647+00 - STA. 2650+00

ROBERT JOHN BOLTON, P.E. FL. # 49429

DATE

DWG. NO.

SHEET 55 OF 58

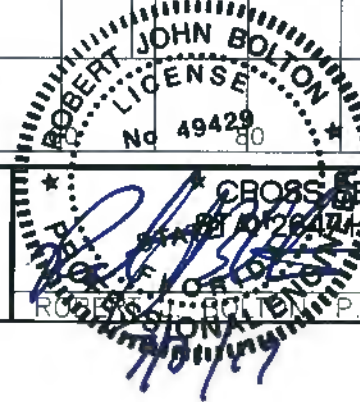


CITY OF VERO BEACH
 WATER AND SEWER
 DEPARTMENT

APPROVED
 R.J.B.
 DRAWN BY
 1/02/19
 DATE
 1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. SR. 60 and 43RD AV. ROAD
 WIDENING PROJECT NO. 0853

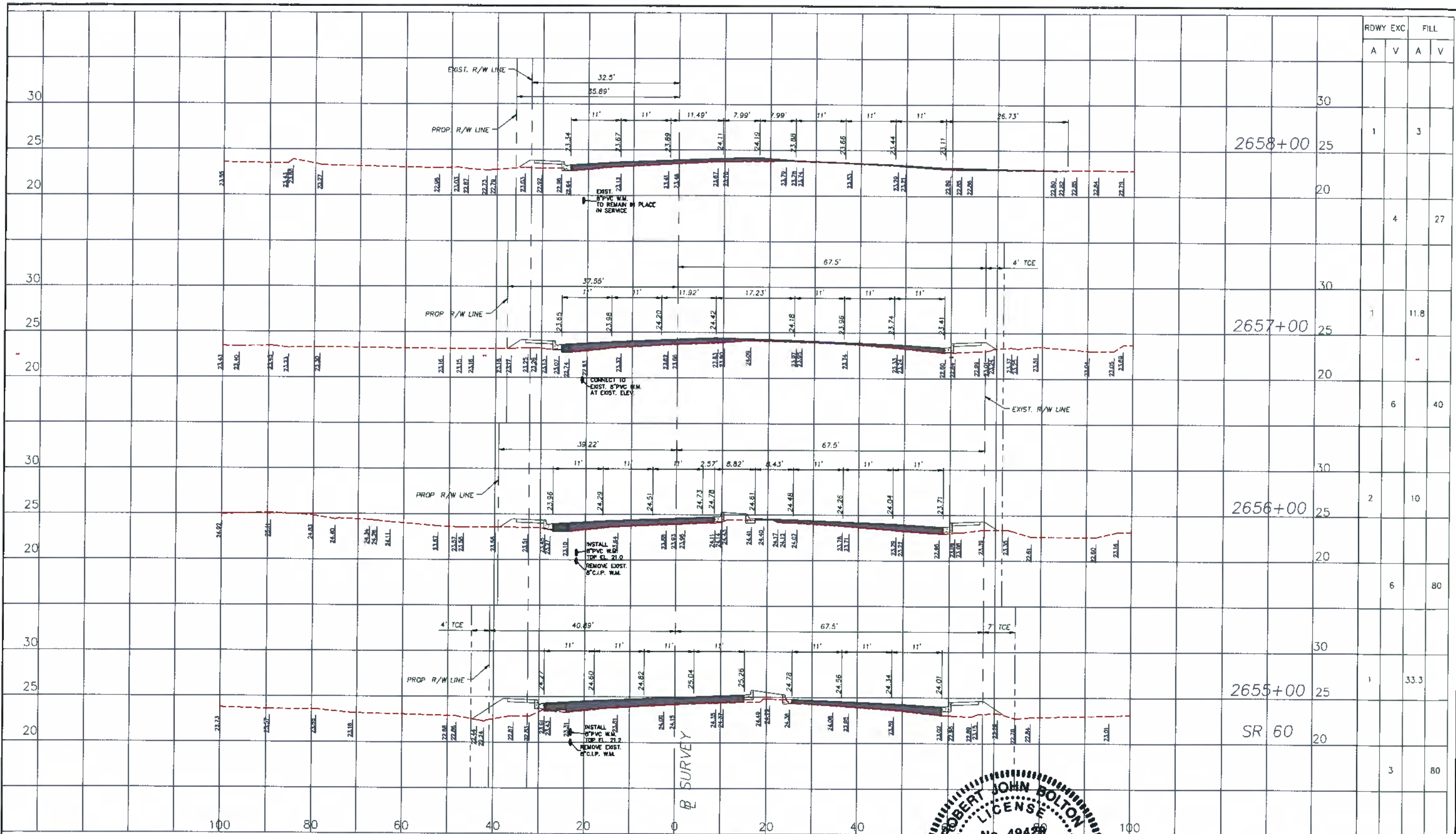


CROSS SECTIONS - SR. 60
 STA. 2647+00 - STA. 2650+00

ROBERT JOHN BOLTON, P.E., FL. # 49429

DATE

DWG. NO.
 SHEET 56 OF 58



RDWY EXC		FILL	
A	V	A	V

2658+00

2657+00

2656+00

2655+00

SR 60

		1		3	
			4		27
		1		11.8	
			6		40
		2		10	
			6		80
		1		33.3	
			3		80



CITY OF VERO BEACH
WATER AND SEWER
DEPARTMENT

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C.O.V.B. UTILITY RELOCATION FOR
I.R.C. S.R. 60 and 43RD AV. ROAD
WIDENING PROJECT NO. 0853

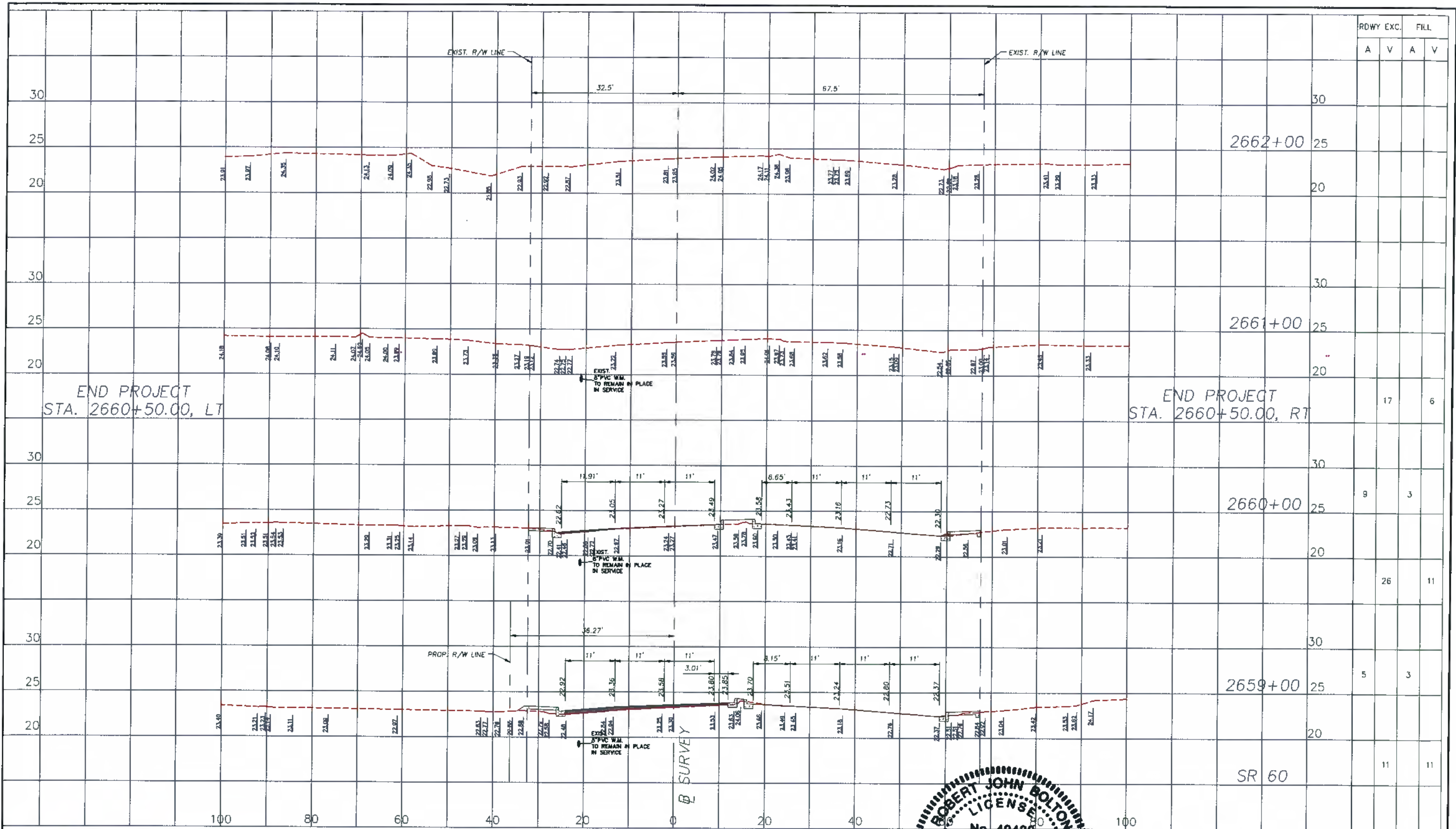


CROSS SECTIONS - SR 60
STA. 2642+00 - STA. 2650+00

STATE OF FLORIDA # 49429

DATE

DWG. NO.
SHEET 57 OF 58

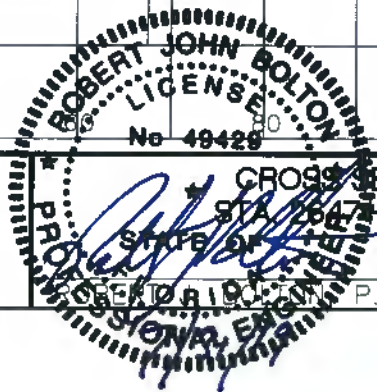


CITY OF VERO BEACH
 WATER AND SEWER
 DEPARTMENT

APPROVED
 R.J.B.
 DRAWN BY
 1/02/19
 DATE
 1/02/19

REVISION

C.O.V.B. UTILITY RELOCATION FOR
 I.R.C. S.R. 60 and 43RD AV. ROAD
 WIDENING PROJECT NO. 0853



CROSS SECTIONS - S.R. 60
 STA. 2650+00 - STA. 2662+00

P.E. FL. # 49429

DATE

DWG. NO.
 SHEET 58 OF 58