

BONITA SPRINGS UTILITIES

PLAN SET

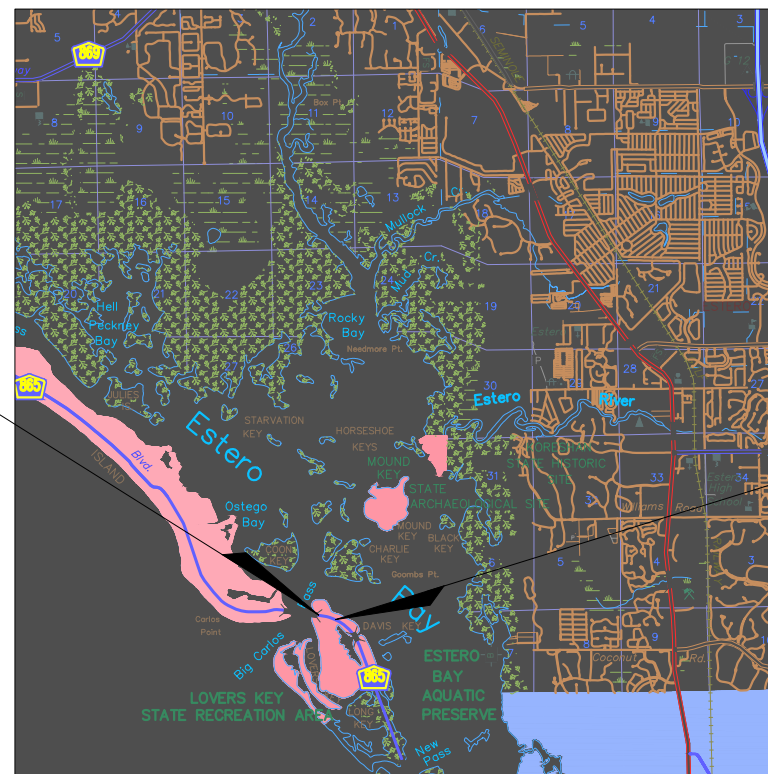
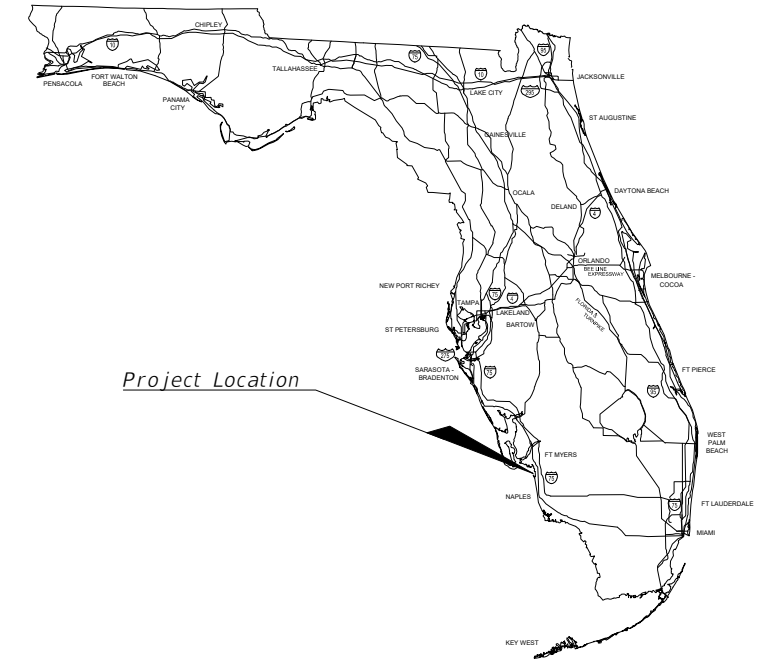
CW3 PROJECT NUMBER 20-0042

BIG CARLOS PASS BRIDGE REPLACEMENT
BONITA SPRINGS UTILITIES WATER MAIN
RELOCATION

UTILITY WORK BY HIGHWAY
CONTRACTOR AGREEMENT PLANS

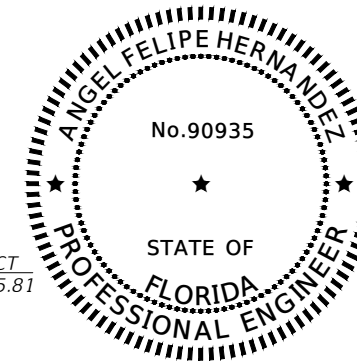
INDEX OF UWHCA PLANS

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BEGIN PROJECT
STA. 438+21.32

END PROJECT
STA. 449+75.81



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ON THE DATE ADJACENT TO THE SEAL

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SIGNATURE MUST BE VERIFIED ON THE
ELECTRONIC DOCUMENTS.

UWHCA PLANS
ENGINEER OF RECORD:

ANGEL F. HERNANDEZ, P.E.
P.E. NO.: 90935
CW3 ENGINEERING, INC.
5783 BAYSHORE RD. SUITE 113
NORTH FORT MYERS, FL 33917

BSU PROJECT MANAGER:
DOMINIC STROLLO

GOVERNING STANDARD PLANS:
Florida Department of Transportation, FY2022-23 Standard plans for
Road and Bridge Construction and applicable Interim Revisions (Irs).

Standard Plans for Road Construction and associated Irs are available
at the following website:
<http://www.fdot.gov/design/Standardplans>

APPLICABLE IRs: NONE

Standard Plans for Bridge Construction are included in the Structures
Plans Component.

GOVERNING STANDARD SPECIFICATIONS:
Bonita Spring Utilities, Inc. Standard Specifications, Revised April 2019
at the following website:

[HTTPS://BSU.US/WP-CONTENT/UPLOADS/2019/05/2019-BSU-STANDARD-SPECIFICATIONS.PDF](https://bsu.us/wp-content/uploads/2019/05/2019-BSU-STANDARD-SPECIFICATIONS.PDF)

SHEET
NO.

01

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE EXISTING CONDITIONS OF THE SITE TO VERIFY ALL CHARACTERISTICS THAT ARE PRESENT. HE/SHE SHALL UNDERSTAND THE DEMOLITION AREA(S) AND THE REQUIREMENTS FOR REMOVAL FOR ITEMS SUCH AS BUT NOT LIMITED TO: ALL PAVEMENT, SURFACE STRUCTURES, VEGETATION, TREES, UTILITIES (ABOVE & BELOW GROUND), ETC. VERIFICATION OF LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES (WATER, SEWER, POWER, TELEPHONE, CABLE, GAS, ETC.) AND DRAINAGE TO BE CONNECTED TO SHALL BE CONDUCTED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ALL POTENTIAL CONFLICTS BETWEEN EXISTING AND PROPOSED FEATURES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES IN THESE CONSTRUCTION PLANS ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION. PRIOR TO THE START OF ANY CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY PROTECTION OR RELOCATION TO THESE UTILITIES WITH THE OWNER OF THE UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLANS OR LOCATED BY THE UTILITY COMPANY. ANY DELAY OR INCONVENIENCE CAUSED TO THE CONTRACTOR BY THE PROTECTION OR RELOCATION OF VARIOUS UTILITIES SHALL BE INCIDENTAL WITH NO ADDITIONAL COMPENSATION ALLOWED. CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN AND MAKE HIS/HER BID BASED ON THOSE VERIFICATIONS. IF ANY DISCREPANCIES IN QUANTITIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SUCH.
2. ANY PRIVATE OR PUBLIC PROPERTY AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS. AT NO ADDITIONAL COST THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES TO A CONDITION EQUAL OR BETTER THAN EXISTING, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR. THE CONTRACTOR SHALL UTILIZE A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA TO LOCATE AND FLAG ALL PROPERTY CORNERS PRIOR TO CONSTRUCTION AND FINAL ENGINEERING INSPECTION AND CERTIFICATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE PROPERTY CORNERS, WHICH HAVE BEEN LOST DURING CONSTRUCTION, REESTABLISHED BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF FLORIDA. ALL (P.R.M'S) IRONS AND MONUMENTS SHOWN ON THE PLANS OR FOUND SHALL BE PRESERVED WITHIN LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF ANY CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER WITHOUT DELAY.
3. ALL DISTURBED AREAS ARE TO BE SODDED, UNLESS OTHERWISE NOTED ON THE LANDSCAPE PLANS, TO FDOT SPECIFICATIONS. ALL SOD IS TO BE MAINTAINED AND IRRIGATED BY CONTRACTOR UNTIL DEEMED ACCEPTED BY THE OWNER, REGULATORY AGENCIES AND ENGINEER OF RECORD. ANY WASHOUTS, REGRADING, RESODDING, AND GRASSING WORK, AND OTHER EROSION WORK REQUIRED, WILL BE PERFORMED AT NO ADDITIONAL COST BY THE CONTRACTOR, UNTIL THE SYSTEM IS ACCEPTED BY THESE PERSONNEL.
4. CONTRACTOR TO PROVIDE APPROPRIATE EROSION CONTROL MEASURES TO PROVIDE EROSION PROTECTION DURING CONSTRUCTION ACTIVITIES. PROTECTION IS TO BE MAINTAINED DURING THE CONSTRUCTION PERIOD UNTIL DISTURBED SOILS HAVE BEEN STABILIZED WITH GRASS OR SUITABLE EROSION PROTECTION TREATMENT. IF APPLICABLE, APPROVED STORMWATER POLLUTION PREVENTION AND/OR EROSION CONTROL PLAN MUST BE COMPLIED WITH.
5. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH LEE CO. AND BONITA SPRINGS UTILITIES (BSU) REQUIREMENTS. ALL CONSTRUCTION MATERIALS, METHODS AND EQUIPMENT MUST CONFORM TO THE REQUIREMENTS OF FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND FDOT DESIGN STANDARDS, CURRENT EDITION, AND SUCH OTHER EDITIONS, AMENDMENTS OR SUPPLEMENTS AS MAY BE ADOPTED BY FDOT.
6. THESE DRAWINGS DO NOT INCLUDE INSTRUCTIONS FOR THE CONTRACTOR REGARDING CONSTRUCTION SAFETY OF THE PUBLIC AND THE SAFETY OF HIS PERSONNEL DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT. ALL SAFETY REGULATIONS ARE TO BE ADHERED TO AND ENFORCED BY THE CONTRACTOR OR HIS REPRESENTATIVE. SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE PUBLIC AND THE SAFETY OF HIS PERSONNEL.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A MAINTENANCE OF TRAFFIC CONTROL PLAN (TCP) FOR ALL CONSTRUCTION WITHIN PRIVATE AND/OR LEE CO. RIGHT OF WAY. THE TCP SHALL BE CONSISTENT WITH FDOT STANDARD PLANS 102.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING, OR SHORING, AS NECESSARY. TRENCHES SHALL BE KEPT DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED. CONTRACTOR SHALL COMPLY WITH THE STATE OF FLORIDA "TRENCH SAFETY ACT".
9. FOR PROJECT ALIGNMENT, GEOMETRY, REFERENCE POINTS, ETC. REFER TO LEE COUNTY'S ROADWAY ENGINEER PLAN SET.
10. CONTRACTOR IS REQUIRED TO MAINTAIN WATER SERVICE TO ALL EXISTING CUSTOMERS. TO ACHIEVE THIS, THE CONTRACTOR MIGHT BE REQUIRED TO INSTALL TEMPORARY WATER SERVICES. ALL TEMPORARY WATER SERVICES SHALL BE APPROVED BY THE EOR AND BONITA SPRINGS UTILITIES.

UTILITY NOTES:

1. UNLESS OTHERWISE NOTED, ALL UTILITY RELATED CONSTRUCTION, MATERIALS, TESTING AND RECORD KEEPING SHALL CONFORM TO ALL APPLICABLE DEP, DOH AND BSU STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR IS TO CONTACT THE UTILITY COMPANY AND ENGINEER TO SET UP A PRECONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION.
3. ALL FITTINGS ARE NOT SHOWN FOR CLARITY, THE UTILITY LINE CONFIGURATIONS ARE SHOWN FOR LOCATION AND SIZE. PROPOSED WATER MAIN AND FORCE MAIN FITTINGS ARE SHOWN AT BENDS IN MAINS. ADDITIONAL FITTINGS MAY BE REQUIRED TO BEND MAINS AS SHOWN. ADDITIONAL FITTINGS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE MAINS AND NO ADDITIONAL PAYMENT WILL BE MADE FOR THE FITTINGS. CONTRACTOR MAY DEFLECT PROPOSED MAINS TO ROUTE PIPES AS SHOWN, HOWEVER NO DEFLECTIONS SHALL EXCEED ALLOWABLE DEFLECTION LIMITS SET FORTH BY PIPE MANUFACTURER.
4. UTILITY PIPE LENGTHS ARE APPROXIMATE AND ARE MEASURED CENTER TO CENTER.
5. ALL CLEAN-OUTS AND VALVES WILL HAVE A CONCRETE PAD AND COVER FLUSH WITH PROPOSED GRADE. (SEE DETAILS)
6. UNLESS SPECIFICALLY SHOWN, GRAVITY SEWERS OR FORCE MAINS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER AND JOINTS AND WATER JOINTS WILL BE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10" BETWEEN ANY 2 JOINTS WHERE THE MINIMUM 18" SEPARATION CANT BE MAINTAINED, THE SEWER SHALL BE PLACED IN A SLEEVE OR INCASED IN CONCRETE FOR 20' CENTERED ON THE POINT OF CROSSING.
7. SHOP DRAWINGS FOR ALL WATER AND SEWER SYSTEM MATERIALS AND STRUCTURES ARE REQUIRED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
8. IF THE CONTRACTOR CHOOSES TO IMPLEMENT APPURTENANCES OR TECHNIQUES SUCH AS TRENCH BOXES, SHEET PILING, DEWATERING, FLATTEN TRENCH SLOPES, ETC. TO FACILITATE CONSTRUCTION, THESE ITEMS SHALL IN INCORPORATED INTO THE COST OF THE RELATED AVAILABLE PAY ITEM AND NO ADDITIONAL COMPENSATION WILL BE MADE BY THE OWNER.
9. THE CONTRACTOR IS REQUIRED TO ADJUST ALL EXISTING/PROPOSED VALVE BOXES, MANHOLE RIMS, ETC. AS NECESSARY TO MATCH PROPOSED GRADES. ALL ADJUSTMENTS SHALL BE MADE IN ACCORDANCE WITH BSU AND FDOT STANDARDS AND SPECIFICATIONS.

PERMITTING NOTES:

1. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE APPROVED PLANS AND PERMITS AT THE CONSTRUCTION SITE AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE TO READ AND UNDERSTAND ALL PERMITS INCLUDING ALL GENERAL AND SPECIAL CONDITIONS. AT OWNERS OR ENGINEER'S REQUEST, THE CONTRACTOR SHALL PROVIDE APPROPRIATE DOCUMENTATION THAT ALL CONSTRUCTION RELATED CONDITIONS ARE ADHERED TO.
2. THE CONTRACTOR SHALL FILE A NOTICE OF INTENT WITH FDEP AND BONITA SPRING UTILITIES A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
3. NO DEWATERING IS ANTICIPATED FOR THE PROPOSED CONSTRUCTION. IN THE EVENT DEWATERING IS REQUIRED THE CONTRACTOR SHALL APPLY FOR ALL APPLICABLE WATER USE PERMITS AT THAT TIME.
4. THE ENGINEER HAS ANALYZED THAT NO NEGATIVE IMPACTS TO GROUNDWATER OR SURFACE WATER ARE ANTICIPATED.

PROJECT SPECIFIC NOTES:

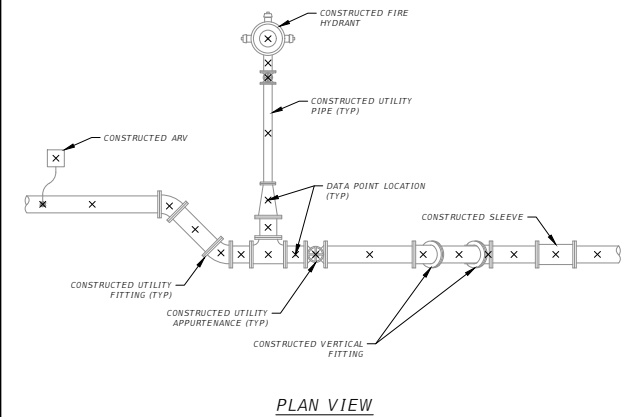
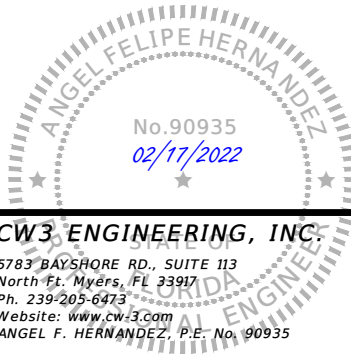
1. ALL ELEVATIONS REFER TO VERTICAL DATUM AS INDICATED ON THE SURVEY PROVIDED HEREIN; N.A.V.D. 88.
2. ALL PROPOSED UTILITIES INCLUDING WATER MAINS AND GRAVITY MAINS ON THE PROPERTY WILL BE OWNED, OPERATED AND MAINTAINED BY BONITA SPRINGS UTILITIES.

KNOWN UTILITIES:

WATER & SEWER: LEE CO. UTILITIES 1500 MONROE STREET FORT MYERS, FL 33901 (239) 533-8165	PHONE: CENTURY LINK 2820 CARGO ST. FORT MYERS, FL 33916 (239) 263-6216	CABLE: COMCAST 4750 WINKLER AVE. FORT MYERS, FL 33901 (239) 707-3998	FIRE: BONITA SPRINGS FIRE DISTRICT 27701 BONITA GRANDE DRIVE BONITA SPRINGS, FL 34135 (239) 949-6200
WATER: BONITA SPRINGS UTILITIES 11900 E. TERRY STREET BONITA SPRINGS, FL 34135 (239) 992-0711	UTILITY LOCATION SERVICE: SUNSHINE STATE ONE CALL CENTER (239) 432-4770 (MINIMUM 48 HOURS NOTICE REQUIRED)	POWER: FLORIDA POWER & LIGHT 15834 WINKLER RD. FT. MYERS, FL 33908 (239) 353-6047	GAS: TECO GAS 5901 ENTERPRISE PKWY FT MYERS, FL 33905 (239) 690-5513

UTILITY COORDINATION NOTES:

1. UTILITY COORDINATION AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTORS RESPONSIBILITY FOR CONSTRUCTION, TESTING, INSPECTION AND CERTIFICATION.
2. THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS OF ANY EXCAVATION OR DEMOLITION ACTIVITY THROUGH SUNSHINE ONE-CALL OF FLORIDA, INC. (1-800-432-4770) AND SHALL ALSO NOTIFY THOSE UTILITY OWNERS/AGENCIES LISTED WITHIN OR IMPACTED BY THESE PLANS, NOT LESS THAN (2) FULL BUSINESS DAYS IN ADVANCE OF THE BEGINNING OF CONSTRUCTION ON THE JOB SITE.



AS-BUILT COLLECTION NOTES:

1. CONTRACTOR SHALL COLLECT POINT DATA AT:
 - ALL CONSTRUCTED UTILITY PIPE FITTINGS, APPURTENANCES, CHANGE IN DIRECTION, ETC.
 - ALL CONSTRUCTED UTILITY PIPE BETWEEN FITTINGS, APPURTENANCES, ETC.
 - ALONG CONSTRUCTED UTILITY PIPE AT NO MORE THAN 100' INTERVALS ALONG CONTINUOUS CONSTRUCTED UTILITY PIPE TO REPRESENT HORIZONTAL AND VERTICAL LOCATION.
2. ALL COLLECTED POINT DATA SHALL INCLUDE UTILITY PIPE SIZE, TYPE, WALL THICKNESS (I.E. DR14, DR18, DR9, CL200, ETC.) & VERTICAL ELEVATION AS WELL AS MANUFACTURER AND DATE INSTALLED.

* ABOVE SAMPLE EXHIBIT IS FOR REFERENCE ONLY. AS-BUILT POINT DATA COLLECTION SHALL COMPLY WITH TECHNICAL SPECS PROVIDED IN THE CONTRACT DOCUMENTS AND UTILITY COMPANY'S REQUIRED SPECIFICATIONS, WHICHEVER IS MORE INCLUSIVE.

DATE: 1/2018	AS-BUILT POINT COLLECTION LOCATION EXHIBIT	SCALE: N.T.S.
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AS-BUILT REQUIREMENTS:

1. AT THE SITE KEEP AND MAINTAIN ONE RECORD COPY OF ALL CONTRACT DOCUMENTS, REFERENCE DOCUMENTS AND ALL TECHNICAL DOCUMENTS SUBMITTED IN GOOD ORDER. AS THE WORK PROGRESSES THE CONTRACTOR IS TO RECORD ON ONE SET OF REPRODUCIBLE DRAWINGS ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL PLANS.

INSTALLATION/REMOVAL/PLUGGING OF THE UTILITY PIPELINES IS TO INCLUDE AS-BUILT PLAN INFORMATION FURNISHED TO THE ENGINEER. THE AS-BUILT PLANS MUST IDENTIFY AND SATISFY THE BSU AS-BUILT/RECORD DRAWING REQUIREMENTS WHICH INCLUDE VERTICAL AND HORIZONTAL ALIGNMENT, TYPE OF MATERIAL, LOCATIONS OF MATERIAL CHANGES FOR ALL WATER, RECLAIMED AND SEWER LINES, CASINGS, VALVES, TEES, BENDS, REDUCERS, HYDRANTS, CASINGS, SERVICE SIZE CONNECTIONS, GROUTING LIMITS, METER BOXES AND/OR PAD, AND OTHER PERTINENT STRUCTURES. PIPELINE RUNS IN EXCESS OF 100 FEET, WITHOUT FITTINGS ARE TO INCLUDE VERTICAL ALIGNMENT INFORMATION AT 100 FEET INTERVALS. SAID ALIGNMENT IS TO BE TIED TO STATE PLANE COORDINATES, AND IS TO BE CERTIFIED BY A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF FLORIDA. ALL POINTS (X,Y,Z) PROVIDED ARE TO INDICATE THE SIZE, ELEVATION AND TYPE AND MATERIAL (INCLUDING CLASS OR DR) OF ITEM BEING IDENTIFIED. THE CONTRACTOR IS TO CONNECT THE AS-BUILT POINTS AND ENSURE THE ACCURACY OF THE DATA PRIOR TO PROVIDING THE DATA/DRAWINGS TO THE ENGINEER. CONTRACTOR SHALL PERFORM A QUALITY CONTROL REVIEW OF ALL INFORMATION PROVIDED TO THE ENGINEER. ENGINEER WILL RETURN ALL DRAWINGS AND DATA TO THE CONTRACTOR IF ANY INACCURACIES ARE FOUND AND/OR CORRECTIONS ARE NEEDED.

AS-BUILTS WILL NOT BE DETERMINED ACCEPTABLE UNTIL BSU ACCEPTS THE RECORD DRAWINGS. PAYMENT FOR AS-BUILTS WILL NOT BE MADE UNTIL BSU ACCEPTANCE OCCURS. PAYMENT FOR THE AS-BUILTS WILL BE REDUCED IN ACCORDANCE WITH TIME SPENT BY THE ENGINEER TO PROVIDED A QA/QC ON THE CONTRACTORS INFORMATION BEYOND THE INITIAL RECEIPT & REVIEW OF INFORMATION/DATA.

PROVIDE GEO-REFERENCED OR STATION/OFFSET REFERENCED DIGITAL PICTURES (NO MORE THAN TWO (2) PER LOCATION) FOR ALL THE-INS AND FITTINGS PRIOR TO BACKFILL. SUBMIT TO THE ENGINEER ALL AS-BUILT INFORMATION OF CONSTRUCTED WORK ON NO MORE THAN A BI-WEEKLY BASIS. IF DATA IS MISSING AND/OR INACCURATE, RE-EXCAVATE SUBJECT AREA TO OBTAIN REQUIRED INFORMATION AND RESTORE AREA AT NO ADDITIONAL EXPENSE TO BSU. LIMITS OF RESTORATION WILL BE SUBJECT TO BSU APPROVAL.

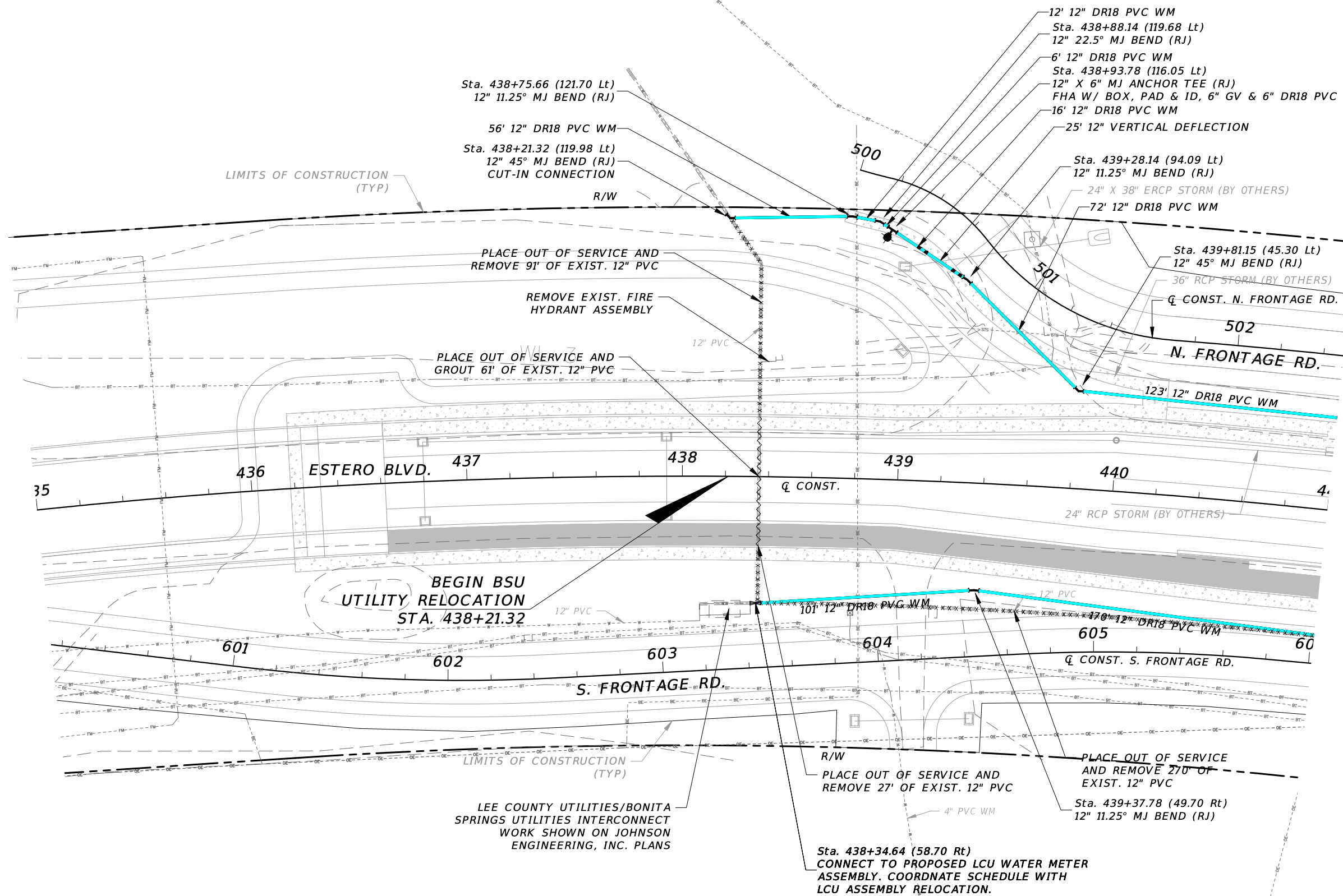
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DATE	DESCRIPTION	DATE	DESCRIPTION

CW3 ENGINEERING, INC.
 5783 BAYSHORE RD., SUITE 113
 North Ft. Myers, FL 33917
 Ph. 239-205-6473
 Website: www.cw3.com
 ANGEL F. HERNANDEZ, P.E. No. 90935

BIG CARLOS BRIDGE REPLACEMENT WATER MAIN RELOCATION	
CLIENT	PROJECT #
BONITA SPRINGS UTILITIES	20-0042

GENERAL NOTES
SHEET NO. 04

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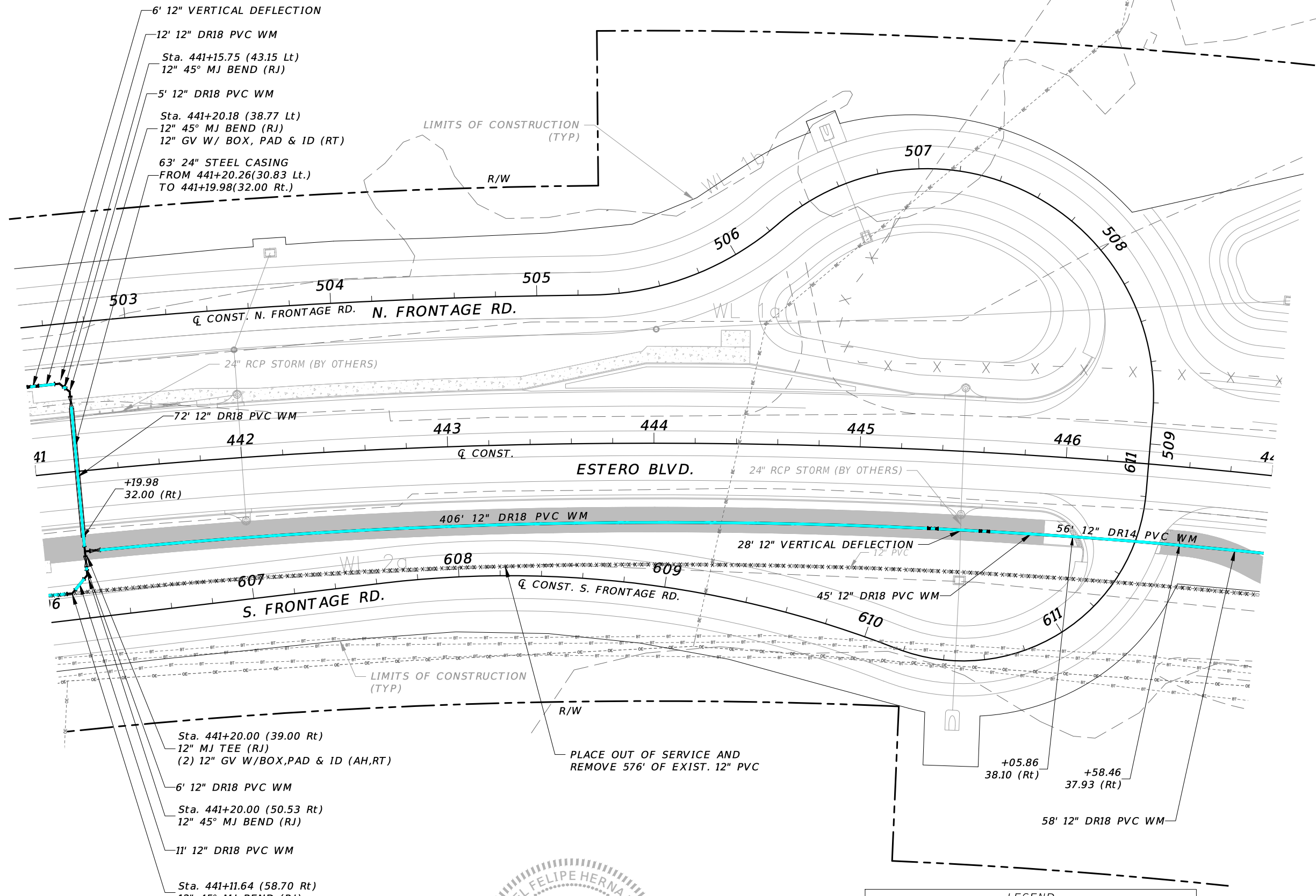
**BIG CARLOS BRIDGE REPLACEMENT
 WATER MAIN RELOCATION**

CLIENT	PROJECT #
BONITA SPRINGS UTILITIES	20-0042

UTILITY PLAN

SHEET NO.
05

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6' 12" VERTICAL DEFLECTION
 12' 12" DR18 PVC WM
 Sta. 441+15.75 (43.15 Lt)
 12" 45° MJ BEND (RJ)
 5' 12" DR18 PVC WM
 Sta. 441+20.18 (38.77 Lt)
 12" 45° MJ BEND (RJ)
 12" GV W/ BOX, PAD & ID (RT)
 63' 24" STEEL CASING
 FROM 441+20.26(30.83 Lt.)
 TO 441+19.98(32.00 Rt.)

Sta. 441+20.00 (39.00 Rt)
 12" MJ TEE (RJ)
 (2) 12" GV W/BOX,PAD & ID (AH,RT)
 6' 12" DR18 PVC WM
 Sta. 441+20.00 (50.53 Rt)
 12" 45° MJ BEND (RJ)
 11' 12" DR18 PVC WM
 Sta. 441+11.64 (58.70 Rt)
 12" 45° MJ BEND (RJ)

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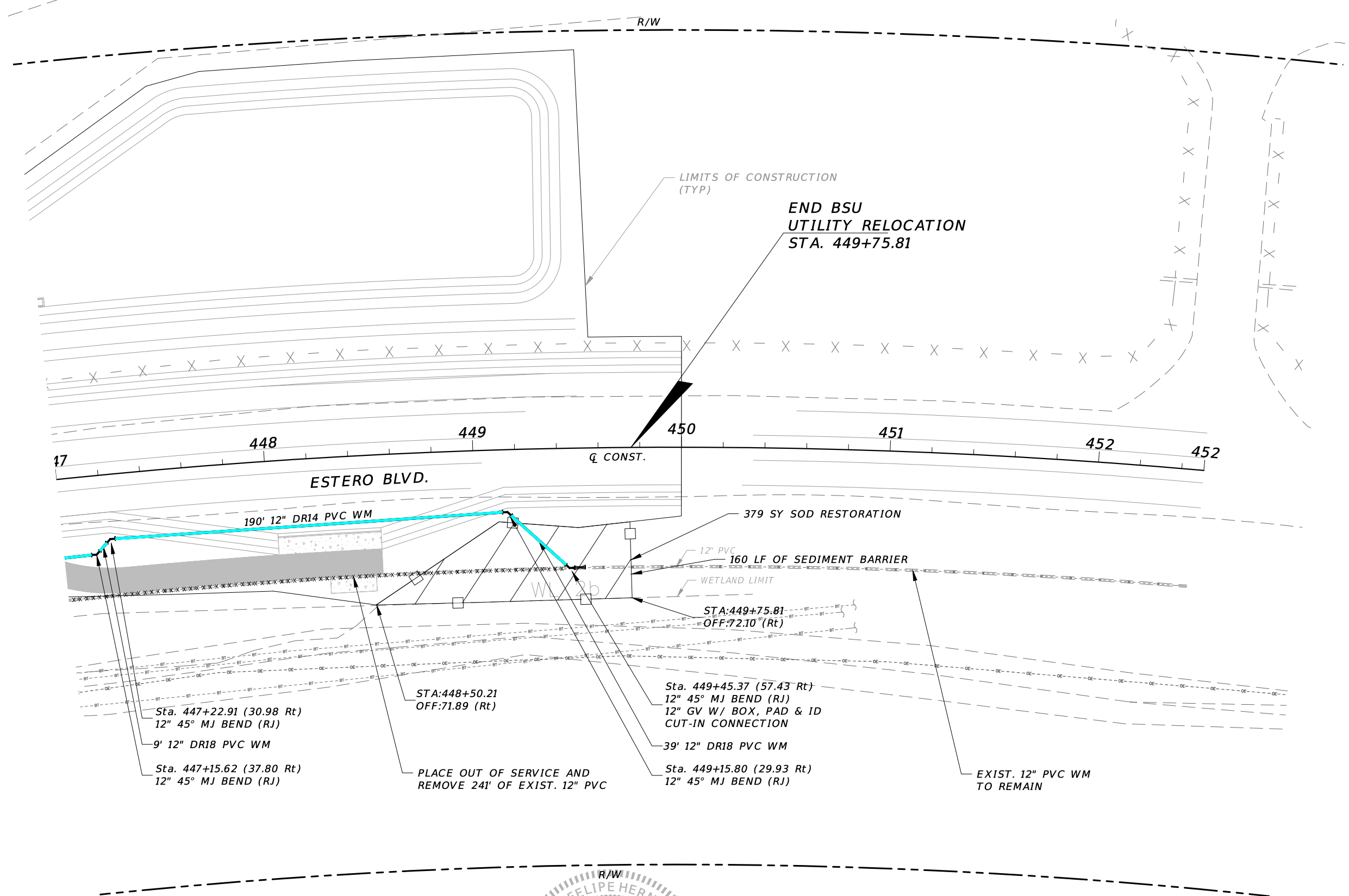
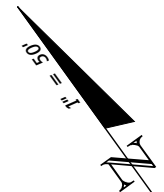
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DATE	DESCRIPTION	DATE	DESCRIPTION			
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**BIG CARLOS BRIDGE REPLACEMENT
 WATER MAIN RELOCATION**
 CLIENT: BONITA SPRINGS UTILITIES
 PROJECT #: 20-0042

UTILITY PLAN

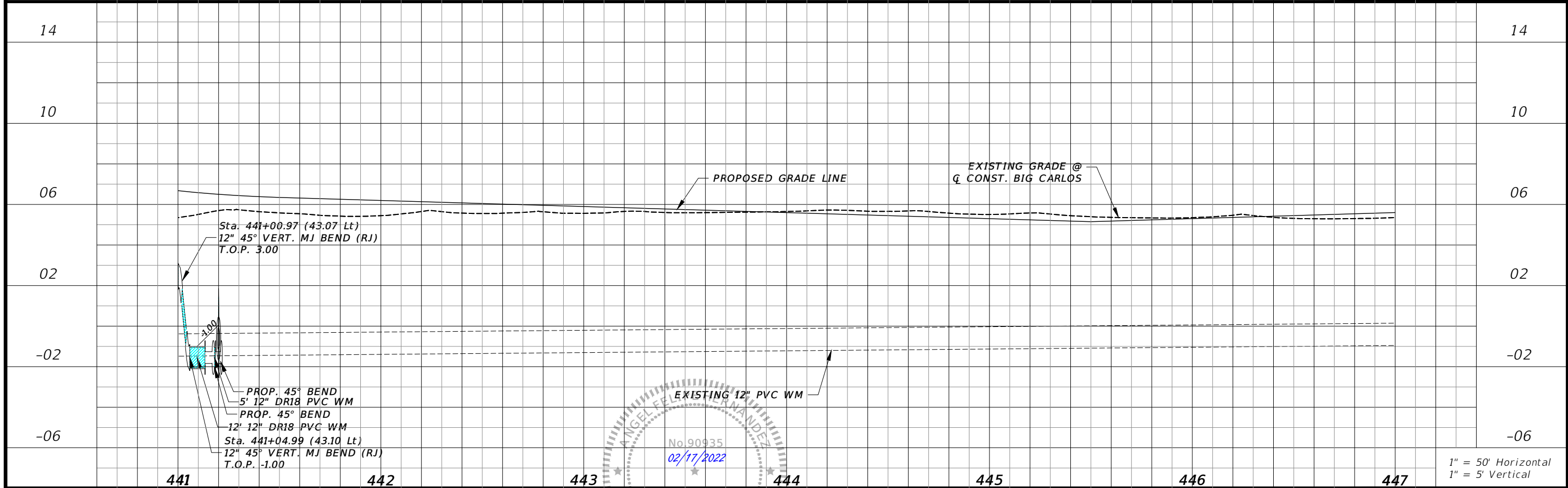
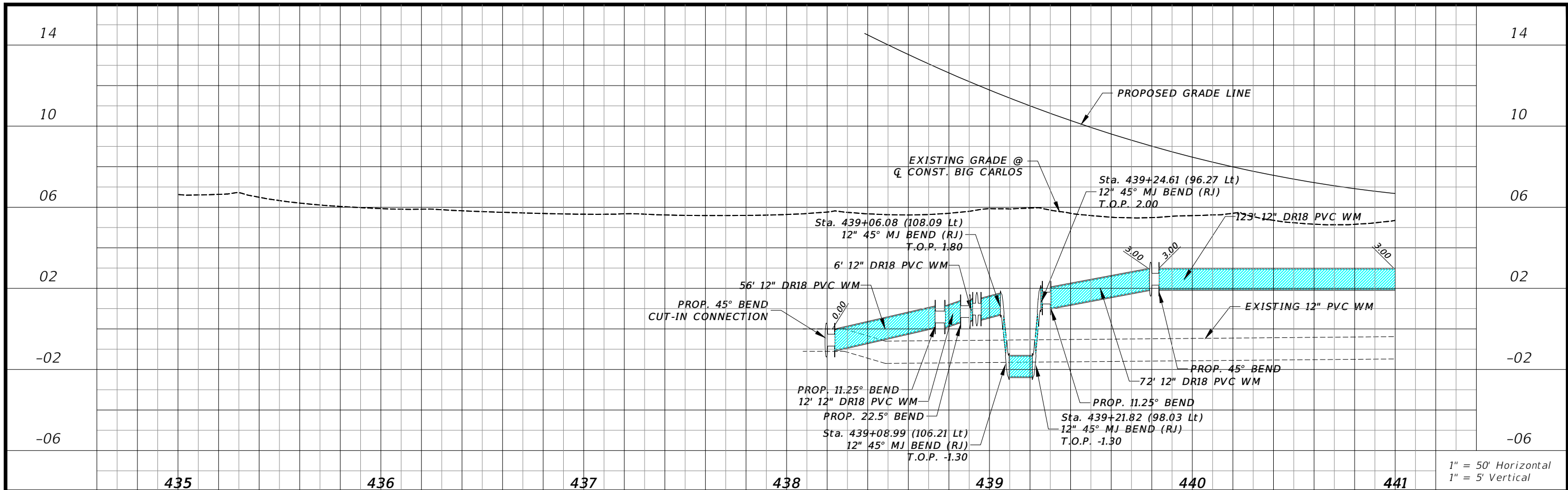
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DATE	DESCRIPTION	DATE	DESCRIPTION		CLIENT	PROJECT #		
				BONITA SPRINGS UTILITIES	20-0042			

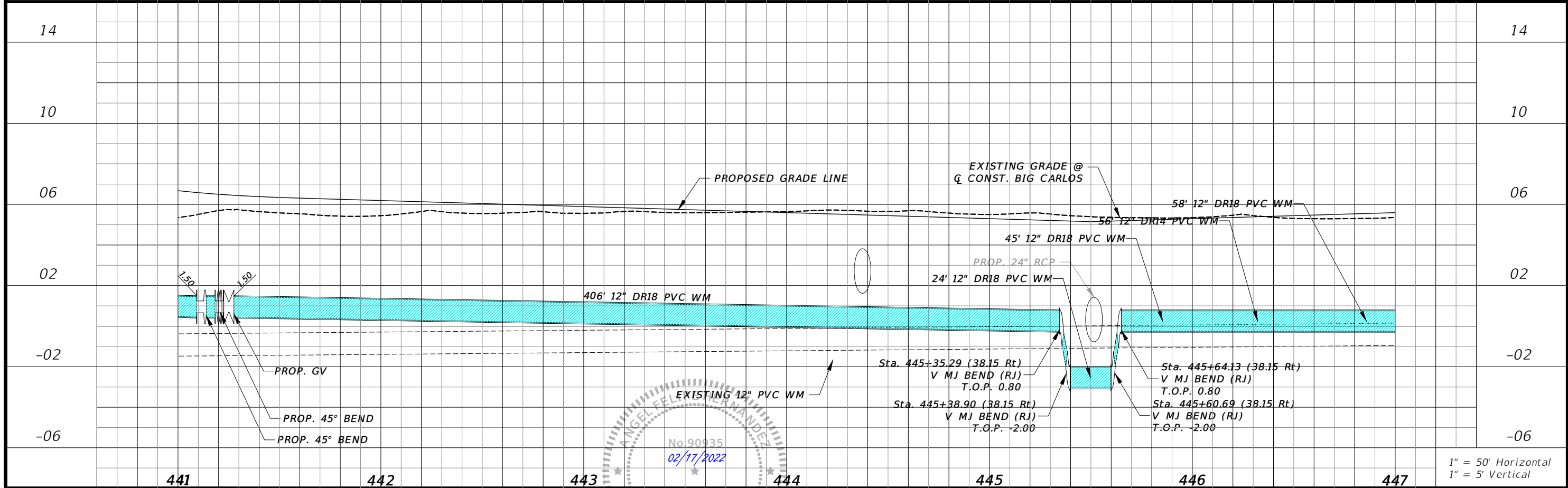
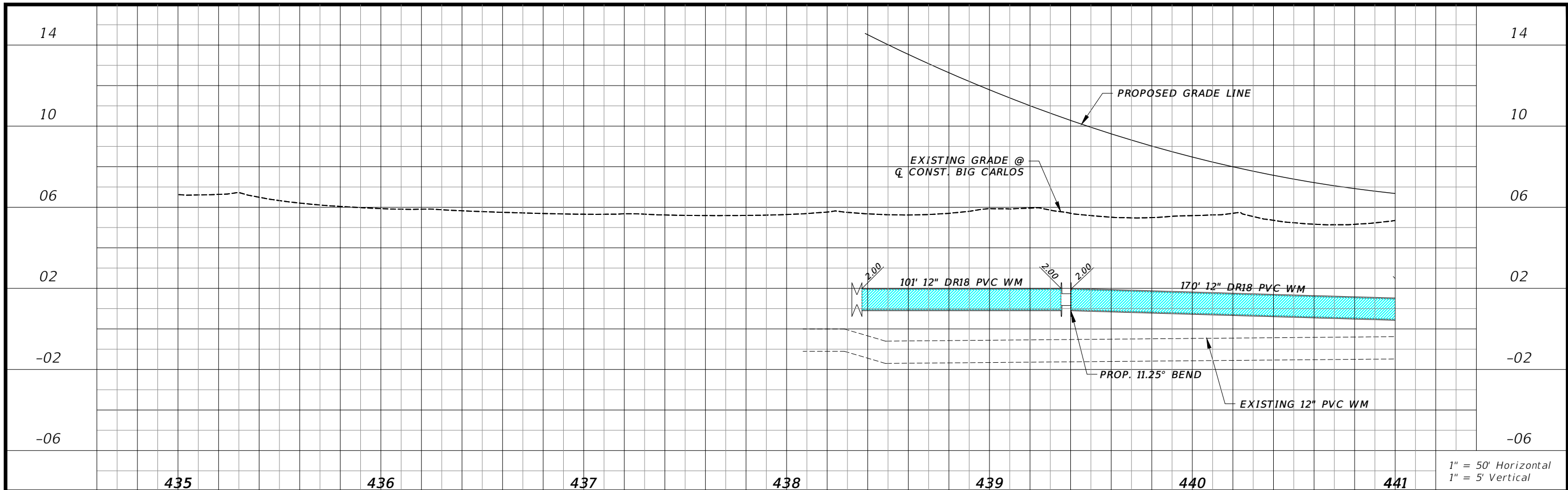
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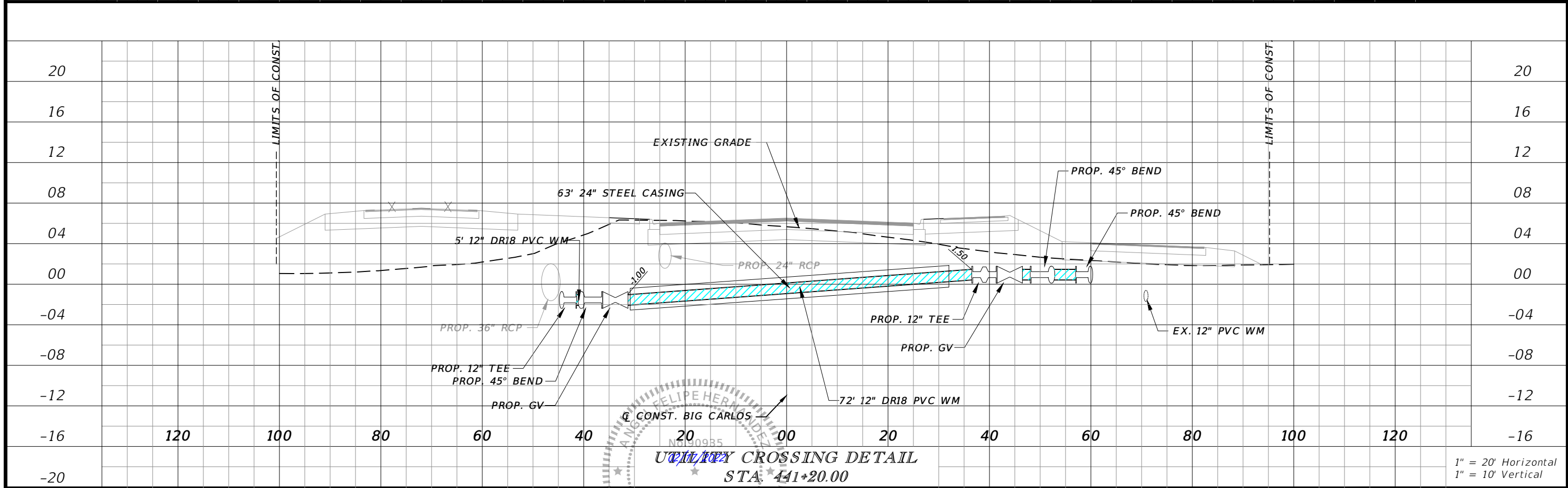
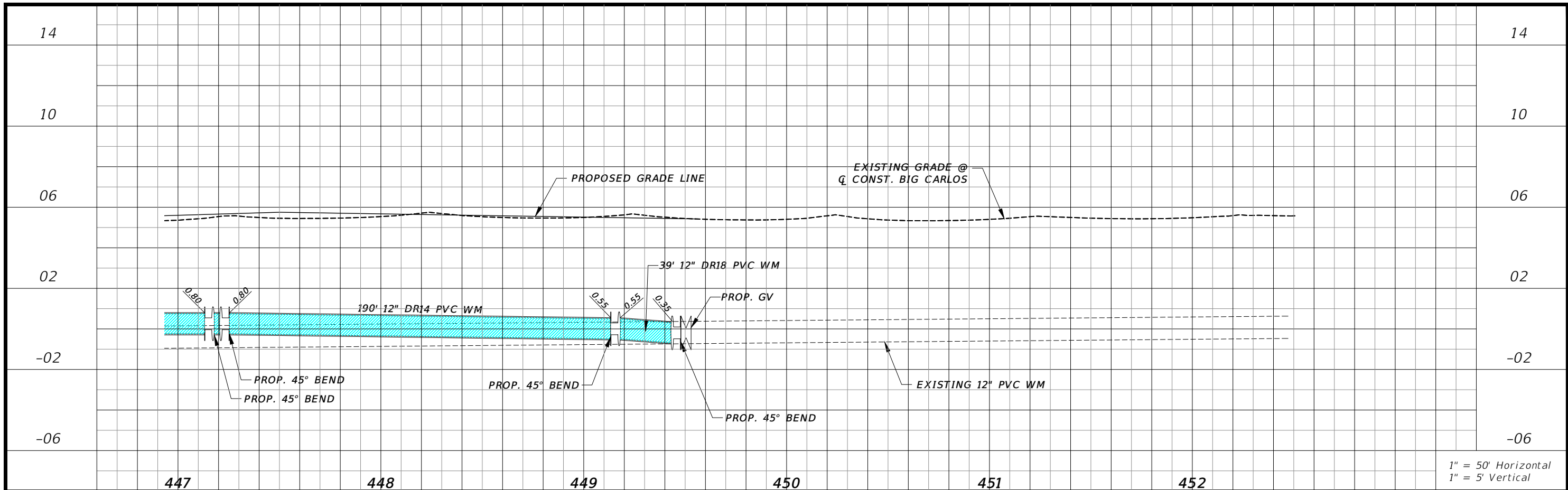
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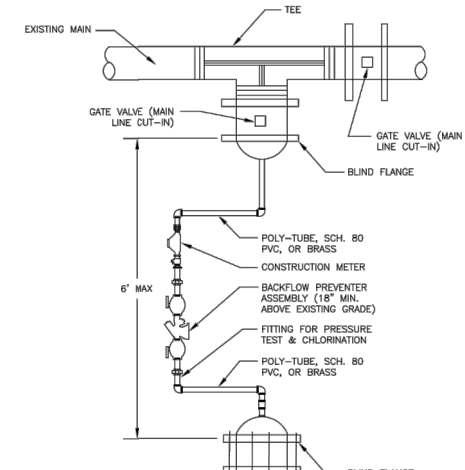
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REVISIONS		DESCRIPTION	
DATE	DESCRIPTION	DATE	DESCRIPTION

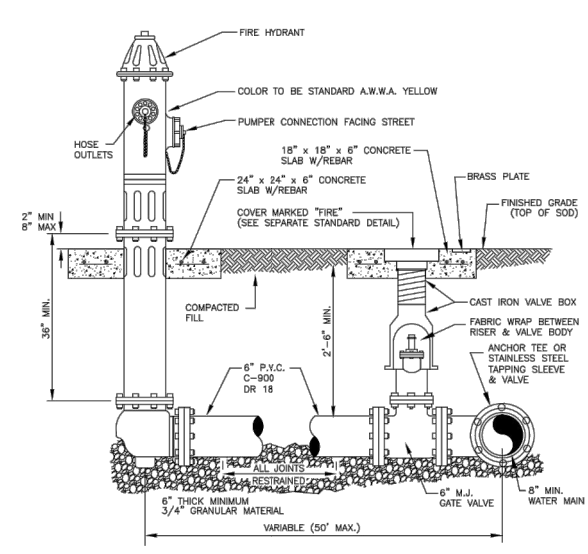
CW3 ENGINEERING, INC. 5783 BAYSHORE RD., SUITE 113 North Ft. Myers, FL 33917 Ph. 239-205-6473 Website: www.cw3.com ANGEL F. HERNANDEZ, P.E. No. 90935		BIG CARLOS BRIDGE REPLACEMENT WATER MAIN RELOCATION CLIENT: BONITA SPRINGS UTILITIES PROJECT #: 20-0042	UTILITY PROFILE (RT) SHEET NO. 10
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

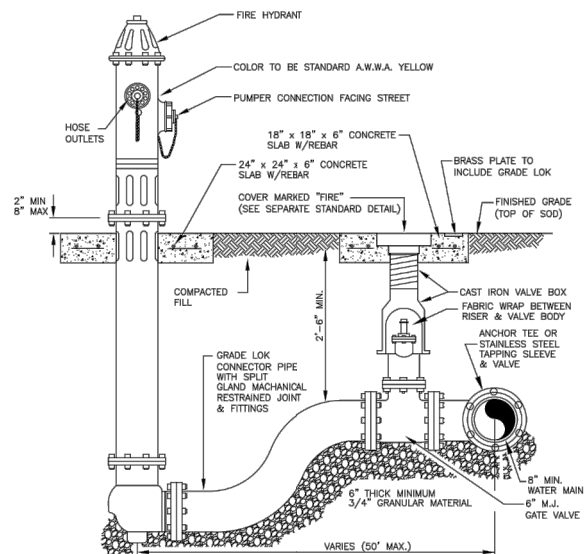


- NOTES:**
1. CONNECTION TO BE WITNESSED BY BONITA SPRINGS UTILITIES
 2. SYSTEM JUMPER ASSEMBLY MUST BE INSTALLED WITHIN 48 HOURS AFTER FULL BORE FLUSH

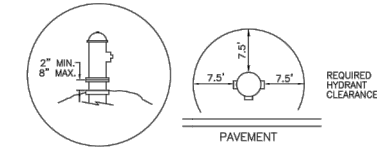
CONSTRUCTION JUMPER ASSEMBLY
W-1



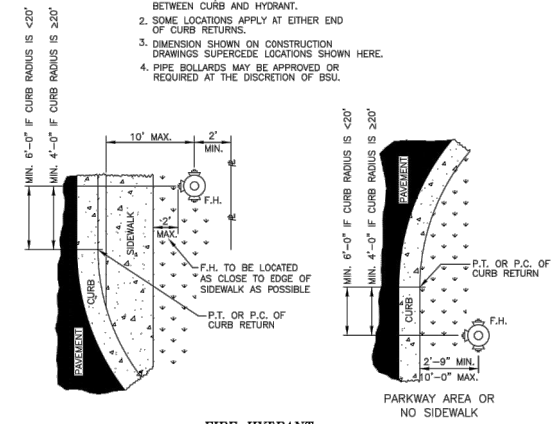
FIRE HYDRANT ASSEMBLY
W-2



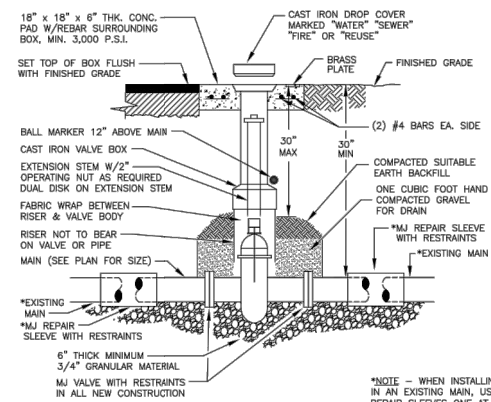
FIRE HYDRANT ASSEMBLY WITH GRADE-LOK ADAPTOR
W-3



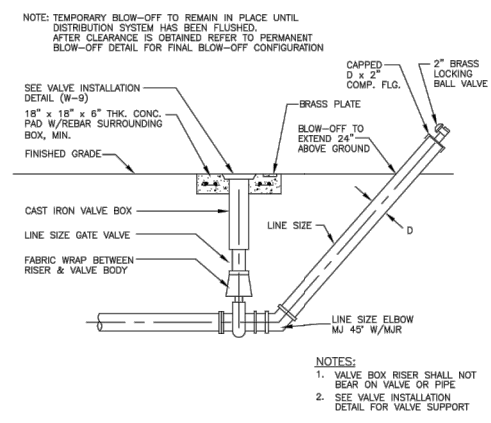
- NOTES:**
1. OBSTRUCTIONS SUCH AS UTILITY POLES, STREET SIGNS, IRRIGATION BOXES, FENCES, LANDSCAPING, ETC. MUST NOT BE PLACED BETWEEN CURB AND HYDRANT.
 2. SOME LOCATIONS APPLY AT EITHER END OF CURB RETURNS
 3. DIMENSION SHOWN ON CONSTRUCTION DRAWINGS SUPERCEDE LOCATIONS SHOWN HERE.
 4. PIPE BOLLARDS MAY BE APPROVED OR REQUIRED AT THE DISCRETION OF BSU.



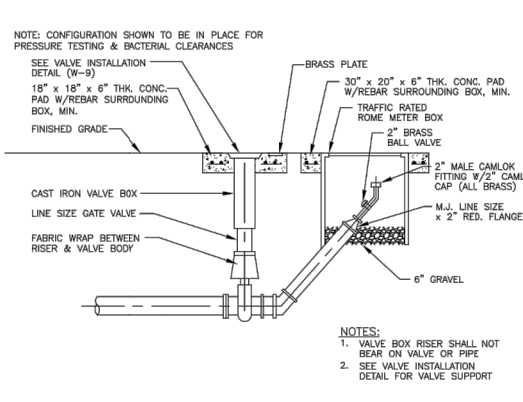
FIRE HYDRANT LOCATIONS/CLEARANCE
W-4



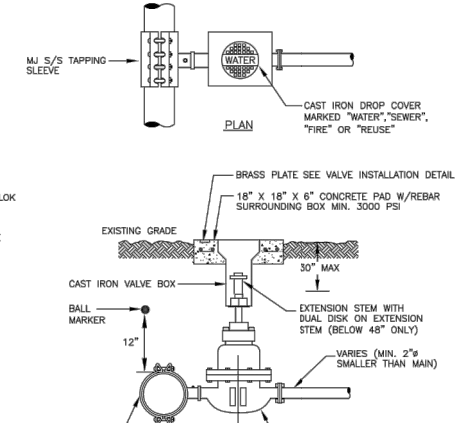
VALVE INSTALLATION
W-9



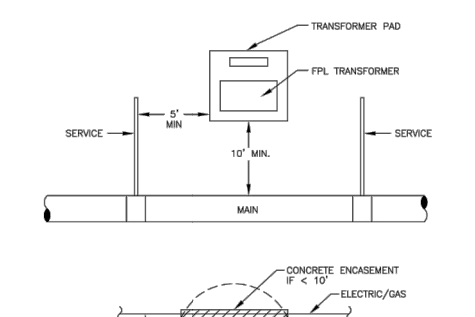
TEMPORARY BLOW-OFF ASSEMBLY DETAIL
W-6



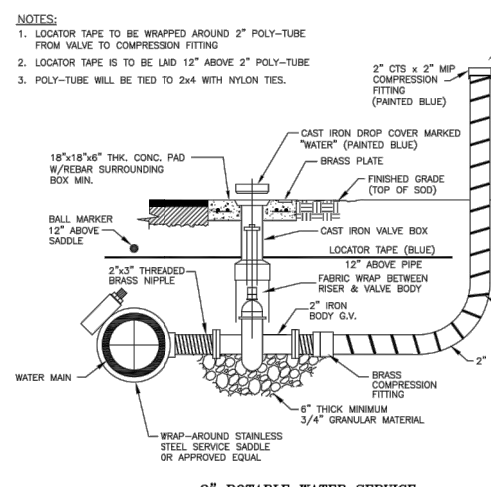
PERMANENT BLOW-OFF ASSEMBLY DETAIL
W-5



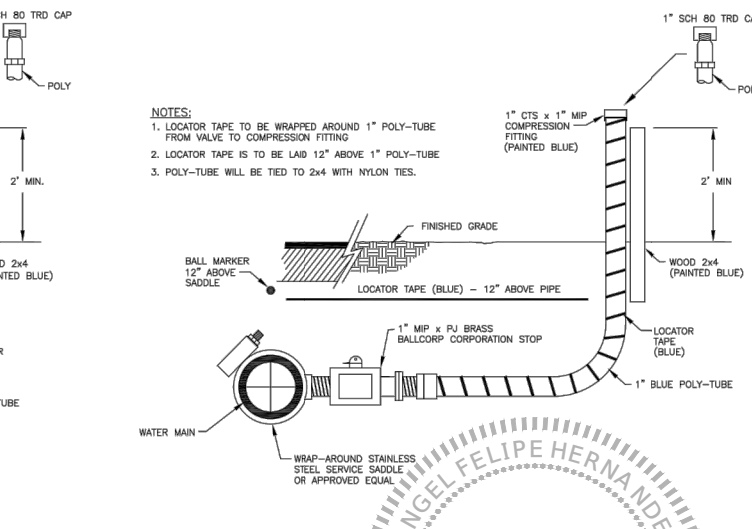
TAPPING SLEEVE AND VALVE
W-11



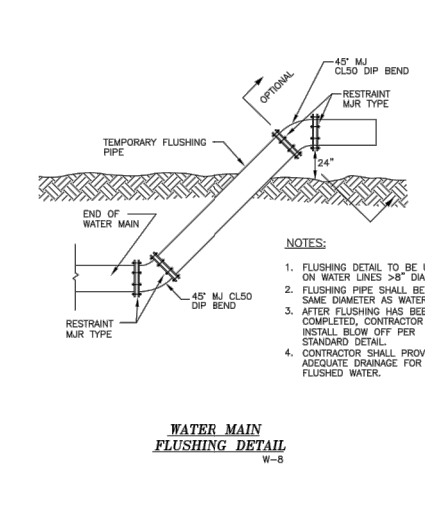
ELECTRICAL / GAS CLEARANCE
W-15



2" POTABLE WATER SERVICE
W-12



1" POTABLE WATER SERVICE
W-13



WATER MAIN FLUSHING DETAIL
W-8

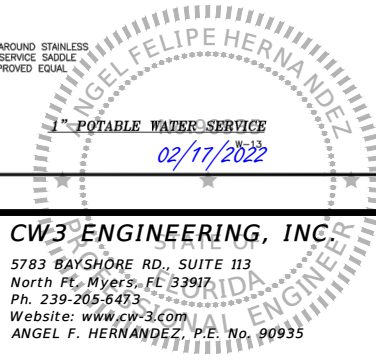
- NOTES:**
1. VALVE BOX RISER SHALL NOT BEAR ON VALVE OR PIPE
 2. SEE VALVE INSTALLATION DETAIL FOR VALVE SUPPORT

- NOTES:**
1. SEE VALVE INSTALLATION DETAIL FOR VALVE SUPPORT
 2. REQUIRES WRITTEN BSU APPROVAL

- NOTES:**
1. FLUSHING DETAIL TO BE USED ON WATER LINES 3/8" DIAMETER.
 2. FLUSHING PIPE SHALL BE THE SAME DIAMETER AS WATER MAIN.
 3. AFTER FLUSHING HAS BEEN COMPLETED, CONTRACTOR SHALL INSTALL BLOW OFF PER STANDARD DETAIL.
 4. CONTRACTOR SHALL PROVIDE ADEQUATE DRAINAGE FOR FLUSHED WATER.

B.S.U. DETAIL SHEETS MUST REMAIN AS IS (NO ALTERATIONS)
IF ADDITIONAL DETAILS ARE REQUIRED SUBMIT ON SEPARATE SHEET

CLIENT:	PROJECT:
Bonita Springs Utilities, Inc.	
TITLE:	SCALE: NOT TO SCALE
11900 E. TERRY STREET BONITA SPRINGS, FLORIDA 34135 PHONE: (239) 992-0711 FAX: (239) 992-9223	DATE: APRIL 2019
	DWG #: WDET.DWG
	SHEET OF



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

CW3 ENGINEERING, INC.
5783 BAYSHORE RD., SUITE 113
North Ft. Myers, FL 33917
Ph. 239-205-6473
Website: www.cw-3.com
ANGEL F. HERNANDEZ, P.E. No. 90935

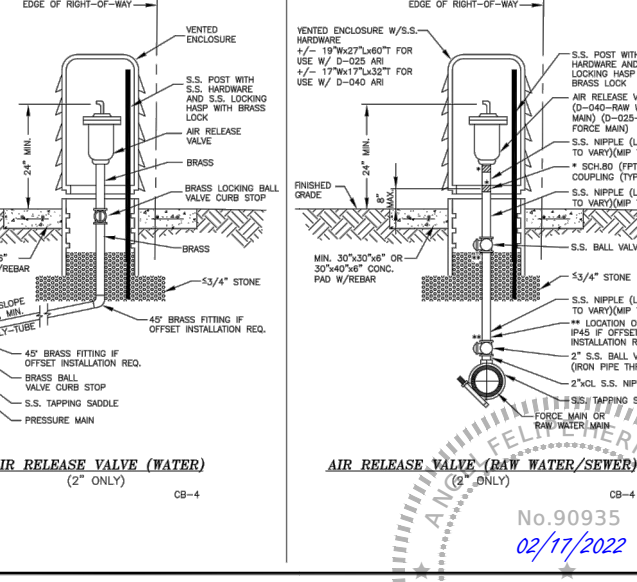
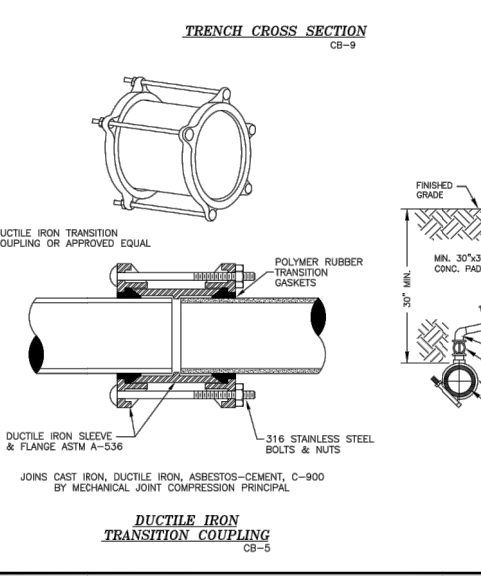
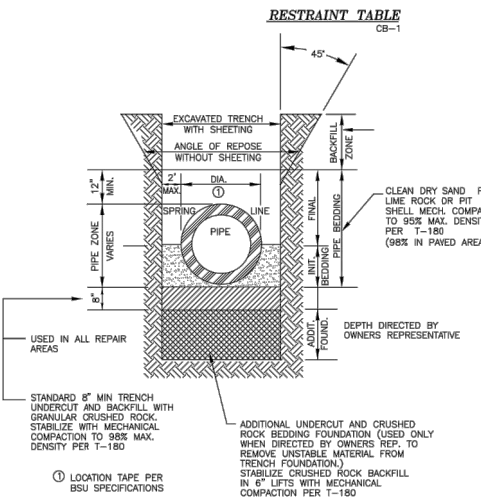
BIG CARLOS BRIDGE REPLACEMENT
WATER MAIN RELOCATION
CLIENT: **BONITA SPRINGS UTILITIES**
PROJECT #: **20-0042**

BSU STANDARD DETAILS
SHEET NO. **11**

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

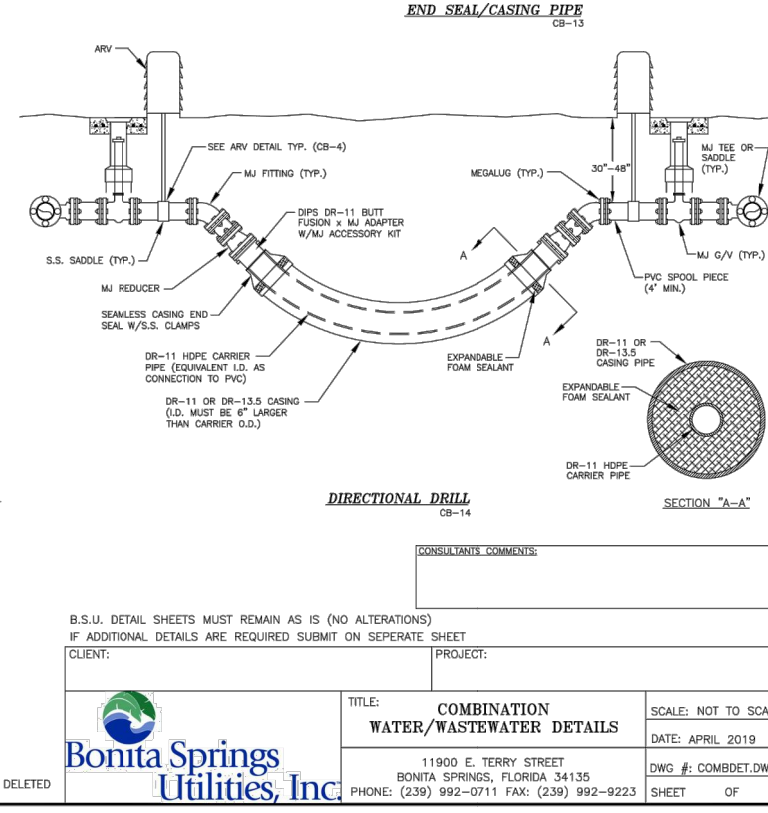
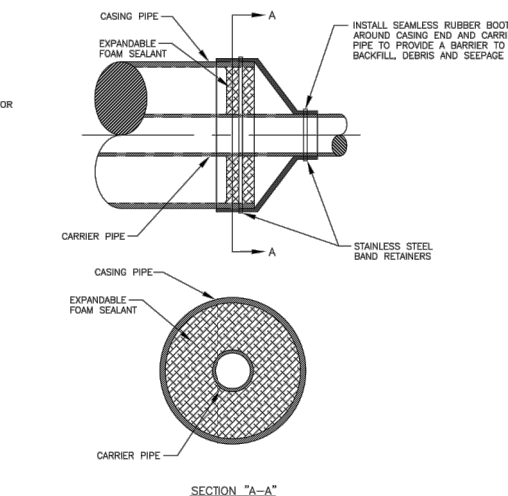
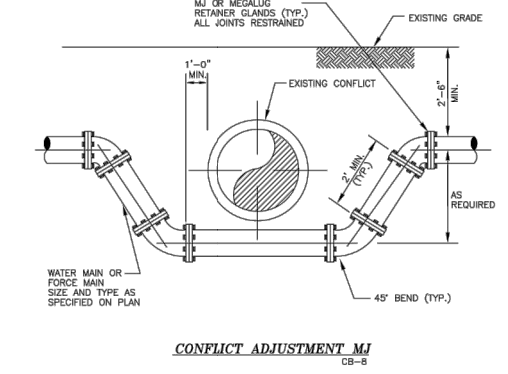
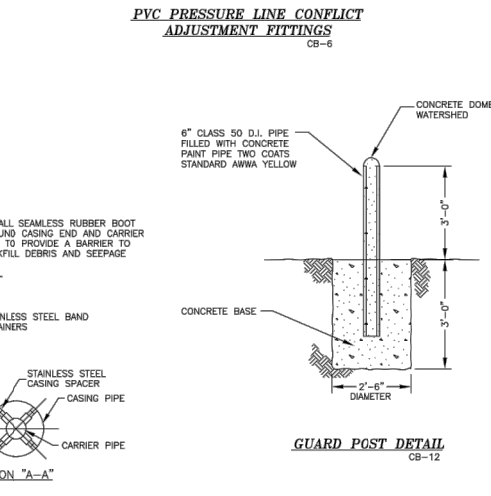
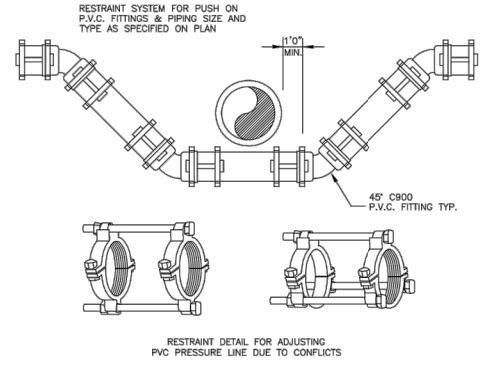
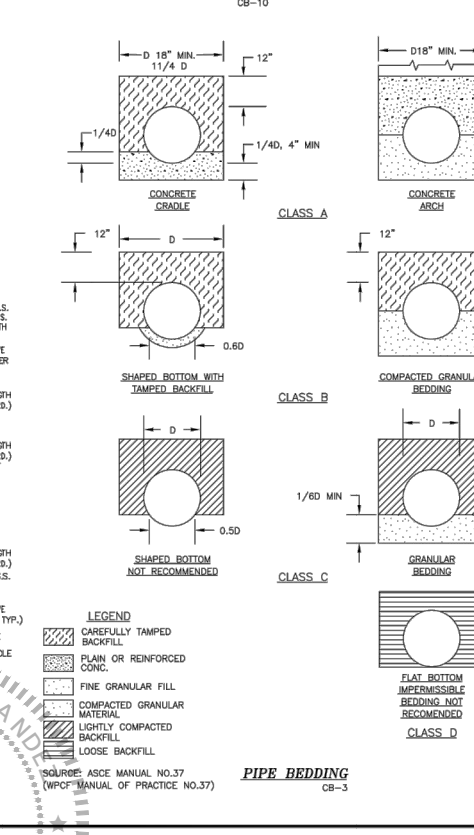
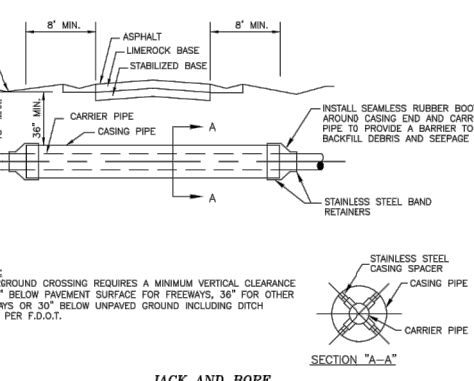
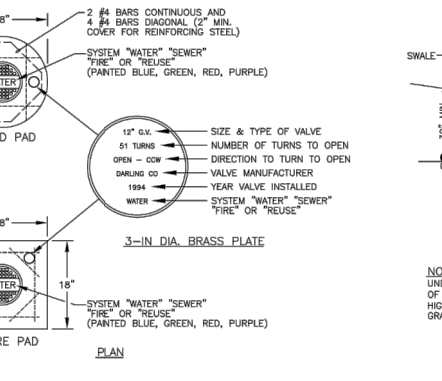
PIPE SIZE	HORIZONTAL BENDS			VERTICAL OFFSETS			DEAD ENDS Lr (FT.)	TEES		REDUCERS (SEE NOTES)					
	90° BENDS Lr (FT.)	45° BENDS Lr (FT.)	22.5° BENDS Lr (FT.)	11.25° BENDS Lr (FT.)	45° BENDS Lr (FT.)	11.25° BENDS Lr (FT.)		Lr (FT.)	Lr (FT.)	SIZE	L(A) (FT.)	L(B) (FT.)			
4"	27	11	5	3	31	8	60	4"	4"	10	11	6 x 4	64	43	
6"	37	15	7	4	43	11	84	6"	6"	10	34	8 x 6	80	46	
8"	48	20	10	5	57	15	110	8"	8"	10	59	10 x 8	95	44	
10"	57	24	11	6	68	17	131	10"	10"	10	17	10 x 6	133	81	
12"	57	24	11	6	68	19	131	10"	10"	10	80	12 x 10	46	38	
16"	58	24	12	6	55	19	106	10"	10"	10	45	12 x 8	104	89	
20"	70	29	14	7	67	23	129	10"	10"	10	16	16 x 12	61	45	
24"	81	33	16	8	78	27	150	10"	10"	10	73	16 x 10	103	63	
								12"	12"	10	48	20 x 16	58	45	
								16"	16"	10	15	20 x 12	139	81	
								18"	18"	10	38	24 x 20	55	45	
								20"	20"	10	95	16"	16"	10	63
								24"	24"	10	24	10"	10"	10	53
								10"	10"	10	87	16"	16"	10	16
								10"	10"	10	10	10"	10"	10	10
								10"	10"	10	10	10"	10"	10	10

- NOTES:
- LENGTHS SHOWN ON THIS TABLE ARE TO BE INTERPRETED AS FOLLOWS:
 - Lr = RESTRAINED LENGTH FROM HIGH SIDE FITTING OF A VERT. BEND
 - Lr = RESTRAINED LENGTH FROM LOW SIDE FITTING OF VERT. BEND
 - Lr = RESTRAINED LENGTH ON BOTH SIDES FROM FITTING
 - Lr = MINIMUM LENGTH TO FIRST JOINT OF RUN ON BOTH SIDES
 - Lr = RESTRAINED LENGTH REQUIRED ON BRANCH FROM FITTING
 - L(A) = LENGTH OF PIPE ON SMALL SIDE FREE OF FITTING
 - L(B) = RESTRAINED LENGTH ON LARGE SIDE OF REDUCER
 - A SAFETY FACTOR = 2.5 IS USED FOR VERTICAL OFFSETS TO COMPENSATE FOR SATURATED SOIL CONDITIONS. A SAFETY FACTOR = 2.0 IS USED FOR ALL OTHER CASES.
 - L(A) AND L(B) ABOVE ARE TWO OPTIONS FOR PROVIDING THE REQUIRED THRUST RESTRAINT FOR THE FITTING. EITHER L(A) LENGTH OF PIPE FREE OF FITTINGS (BENDS, TEES, REDUCERS OR VALVES) ON THE SMALL SIDE OF THE REDUCER WILL PROVIDE THE REQUIRED RESTRAINT OR L(B) LENGTH CAN BE RESTRAINED ON THE LARGE SIDE OF THE FITTING.
 - THE FOLLOWING ARE ASSUMED:
 - 4" - 10" PIPE HAS 30° MIN. COVER
 - 12" - 24" PIPE HAS 38° MIN. COVER
 - 4" - 24" PIPE IS PVC
 - VALVES SHALL BE RESTRAINED ON EITHER SIDE OF THE FITTING AS A MINIMUM. IN LINE VALVES SHALL HAVE NO FITTINGS WITHIN THE LENGTHS SHOWN ON THIS TABLE FOR THE SAME DEAD END. IN CASES WHERE THIS LENGTH CAN NOT BE PROVIDED FREE OF FITTINGS, ADDITIONAL RESTRAINT SHALL BE REQUIRED AS APPROVED BY ENGINEER.
 - ALL DEAD END LINES, PERMANENT OR TEMPORARY, SHALL BE RESTRAINED PER THE ABOVE RESTRAINT TABLE.
 - ALL VALVES SHALL BE RESTRAINED AS DEAD ENDS, IN BOTH FLOW DIRECTIONS, PER THIS TABLE.



Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	Water Main 3 ft. minimum	Water Main 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is the preferred	Alternate 3 ft. minimum
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Alternate 3 ft. minimum
Gravity or Pressure Sanitary Sewer Force Main, Reclaimed Water (4)	Water Main 10 ft. preferred 6 ft. minimum (3)	Water Main 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is the preferred	Alternate 6 ft. minimum
Sanitary Sewer Force Main, Reclaimed Water (4)	10 ft. minimum	---	---

- (1) Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.
 (2) Reclaimed water regulated under Part III of Chapter 62-410, F.A.C.
 (3) 3 ft. for gravity sanitary sewer where the bottom of the water main is held at least 6 inches above the top of the gravity sanitary sewer.
 (4) Reclaimed water not regulated under Part III of Chapter 62-410, F.A.C.



CONSULTANTS COMMENTS:

B.S.U. DETAIL SHEETS MUST REMAIN AS IS (NO ALTERATIONS) IF ADDITIONAL DETAILS ARE REQUIRED SUBMIT ON SEPARATE SHEET

CLIENT:	PROJECT:
TITLE: COMBINATION WATER/WASTEWATER DETAILS	SCALE: NOT TO SCALE
11900 E. TERRY STREET BONITA SPRINGS, FLORIDA 34136 PHONE: (239) 992-0711 FAX: (239) 992-9223	DATE: APRIL 2019
DWG #: COMBDET.DWG	SHEET OF

DETAIL CB-2 DELETED

DATE	DESCRIPTION	DATE	DESCRIPTION

CW3 ENGINEERING, INC
 5783 BAYSHORE RD., SUITE 113
 North Ft. Myers, FL 33917
 Ph. 239-205-6473
 Website: www.cw3.com
 ANGEL F. HERNANDEZ, P.E. No. 90935

BIG CARLOS BRIDGE REPLACEMENT
 WATER MAIN RELOCATION

CLIENT	PROJECT #
BONITA SPRINGS UTILITIES	20-0042

BSU STANDARD DETAILS

SHEET NO.
12

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