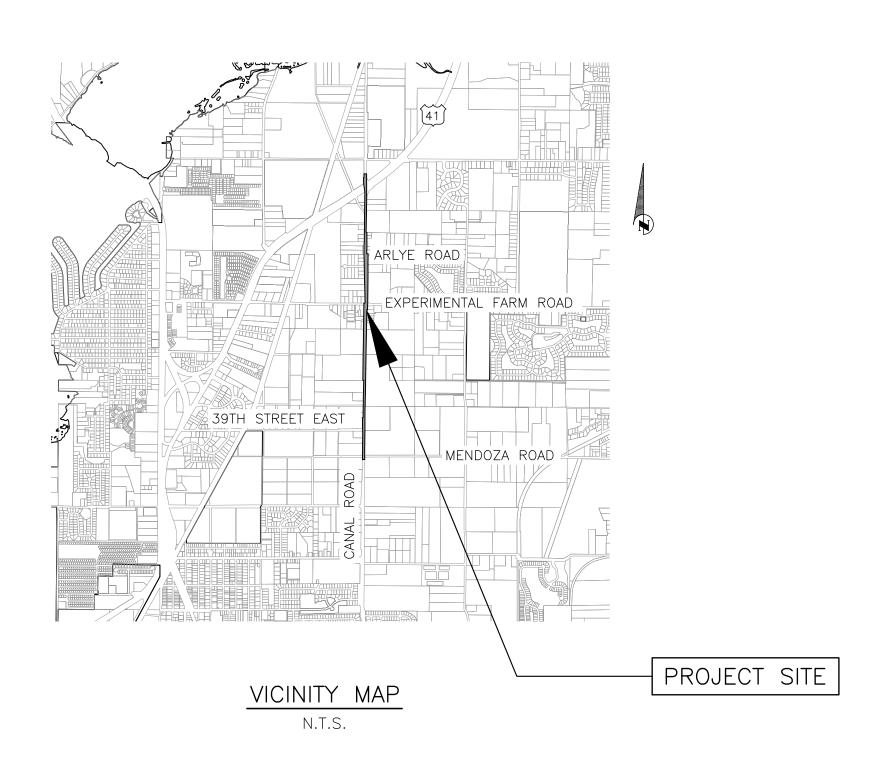


# MANATEE COUNTY, FLORIDA CANAL ROAD WATER MAIN REPLACEMENT 6067370

January 2016



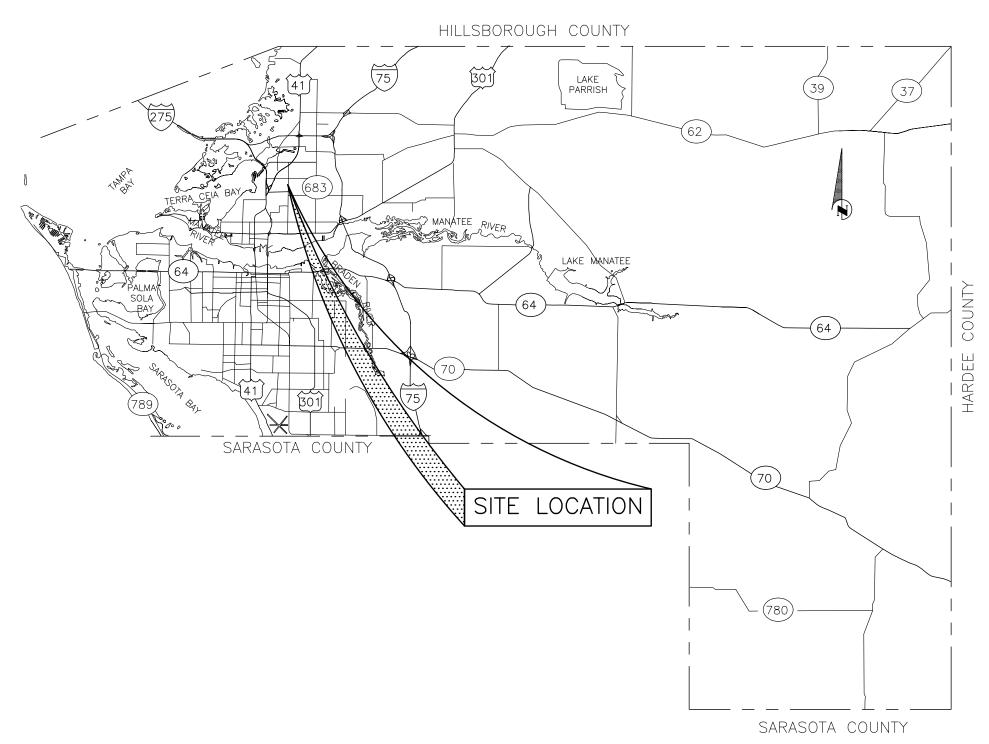
PROJECT DESCRIPTION

GROUTED AND ABANDONED IN PLACE.

THE PROJECT INVOLVES THE REPLACEMENT AND ABANDONMENT OF AN EXISTING 16-INCH PVC WATER MAIN WITH A NEW 16-INCH DIP

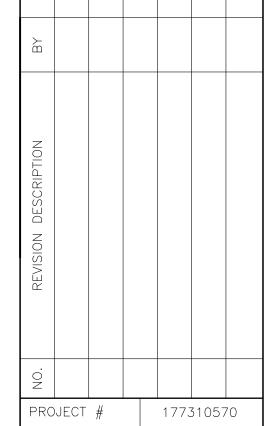
WATER MAIN ON CANAL ROAD BETWEEN MENDOZA ROAD AND U.S. 41. THE WORK WILL TAKE PLACE WITHIN MANATEE COUNTY AND

FDOT RIGHT-OF-WAY. THE EXISTING WATER MAIN SHALL BE



# **BID SET**

NO.	INDEX OF SHEETS
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	KEY SHEET
4-18	PLAN & PROFILE
19-21	DETAILS
22	EROSION CONTROL



000

36/33S/17E

1"=XX'

GFY 03/06/1

SCM 00/00/00

KG 00/00/00

RJH 00/00/0

Bradenton, FL 34208



Know what's below Call before you dig

STANTEC CONSULTING SERVICES INC. 5172 STATION WAY, SARASOTA, FLORIDA 34233

STEPHEN C. MACEACHERN FLORIDA P.E. # 76020

SURVEY #

SURVEYED

DESIGNED

CHECKED

DRAWN

SCALE

SEC./TWN./RGE



Signature & Date SHEET

#### <u>GENERAL</u>

- 1. ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH THE PROJECT MANAGEMENT DIVISION. THE PROJECT MANAGER IS: MICHAEL L. STRUM AND CAN BE REACHED AT (941) 708-7450 EXT. 7332
- 2. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MANATEE COUNTY UTILITY AND TRANSPORTATION STANDARDS AND/OR FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" UNLESS OTHERWISE INDICATED ON THE PLANS.
- 3. VERTICAL CONTROL FOR THIS PROJECT WAS ESTABLISHED BY A MINIMUM OF TWO REFERENCE BENCHMARKS DESCRIBED ON THE "THE NATIONAL GEODETIC VERTICAL DATUM OF 1988", (NAVD 88).
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE, AND LOCAL AGENCIES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS THAT ARE NOT PROVIDED IN THE BID DOCUMENTS, AT NO ADDITIONAL COST TO THE OWNER.
- 5. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF THE CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF WORK. ALL CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATION THEY MAY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS
- 6. THE CONTRACTOR SHALL REVIEW AND VERIFY ALL DIMENSIONS ON THE PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT CONSTRUCTION. SHOULD DISCREPANCIES OCCUR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO OBTAIN THE ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH CONSTRUCTION.
- 7. AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 1-800-432-4770 OR THE NATIONAL 811 ONE CALL NUMBER WHEN APPLICABLE FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL UTILITIES FOR THE POSSIBLE RELOCATION OR THE TEMPORARY MOVEMENT OF ANY EXISTING UTILITIES WITHIN THE RIGHTS-OF-WAY.
- 8. NO WORK, EXCEPT FOR EMERGENCY TYPE, SHALL BE PERFORMED AFTER 7:00 PM AND BEFORE 7:00 AM. FOR ADDITIONAL PROJECT RESTRAINTS, REFER TO SECTION 01310 OF THE SPECIFICATIONS.

- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT, 90-96, LAWS OF FLORIDA EFFECTIVE OCTOBER 1, 1990 AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY STANDARDS, 29 CFR 1926.650, SUBPART P, AS AMENDED. THE CONTRACTOR SHALL INCLUDE IN THE TOTAL BID PRICE ALL COSTS FOR COMPLIANCE WITH THESE REGULATIONS.
- 10. THE CONTRACTOR SHALL USE SHEET PILING, SHEETING, BRACING, ETC., AS REQUIRED IN ALL EXCAVATION AREAS AND CONFORM TO ALL OSHA REQUIREMENTS.
- 11. THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
- 12. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THIS EXCLUSION DOES NOT ALLEVIATE THE CONTRACTOR FOR PROVIDING A CONTINUOUS SAFE WORKSPACE.

#### <u>ENVIRONMENTAL</u>

- 13. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION ALL SEDIMENT AND EROSION CONTROL (SEC) DEVICES (E.G., BARRIERS, SEDIMENT TRAPS/BASINS, VEGETATIVE BUFFERS, ETC.) AS SPECIFIED IN THE FINAL APPROVED PLANS FOR THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEC DEVICES UTILIZED DURING THE PROJECT, AS WELL AS INSTALLATION & MAINTENANCE OF ANY ADDITIONAL MEASURES DEEMED NECESSARY DURING PROJECT IMPLEMENTATION, TO PREVENT EROSION AND OFF-SITE SEDIMENT MIGRATION. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL AND PROPER DISPOSAL OF ALL SEC DEVICES UPON CONCLUSION OF THE PROJECT, AND UPON ADEQUATE STABILIZATION OF DISTURBED SOILS.
- 14. WHEN A BENTONITE SPILL OR FRACK-OUT OCCURS OR THERE IS A LOSS OF RETURN INDICATING EXCESSIVE SEEPAGE OR LOSS OF DRILLING FLUID, DRILLING MUST BE STOPPED UNTIL THE LOCATION OF THE SPILL IS IDENTIFIED. UNDER NO CIRCUMSTANCES WILL DRILLING CONTINUE WHEN A SPILL IS APPARENT.
- 15. ONCE LOCATED, THE BENTONITE SPILL MUST BE ISOLATED AND SEEPAGE INTO ANY NEARBY WATER BODIES WILL BE BLOCKED DEPENDING ON THE DEGREE OF THE SPILL, THE ISOLATED BENTONITE MUST BE REMOVED MANUALLY OR MECHANICALLY AND DISPOSED OF BY APPROPRIATE MEANS OR REUSED.
- 16. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY STORM WATER. EROSION. AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE FDEP "FLORIDA STORM WATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL". IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT TO SURFACE DRAINS AND TO DITCHES DURING CONSTRUCTION.
- 17. STOCKPILES SHALL BE PROTECTED AT ALL TIMES BY ON-SITE DRAINAGE CONTROLS WHICH PREVENT EROSION OF THE STOCKPILED MATERIAL. CONTROL OF DUST FROM SUCH STOCKPILES IS REQUIRED, DEPENDING UPON THEIR LOCATION AND THE EXPECTED LENGTH OF TIME THE STOCKPILES WILL BE PRESENT. IN NO CASE SHALL ANY STOCKPILED MATERIAL REMAIN AFTER THIRTY (30) CALENDAR DAYS.
- 18. STORM WATER INLETS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED BY SEDIMENT TRAPS SUCH AS SECURED HAY BALES, SOD, STONE, ETC., WHICH SHALL BE MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS, AND WHICH MUST BE APPROVED BY THE ENGINEER BEFORE INSTALLATION. THIS WILL BE MAINTAINED TO PREVENT DEGRADATION OF THE WATERS OF THE COUNTY AND STATE.
- 19. SEDIMENT BASINS AND TRAPS. PERIMETER BERMS. SEDIMENT BARRIERS. VEGETATIVE BUFFERS. AND OTHER MEASURES INTENDED TO TRAP SEDIMENT AND/OR PREVENT THE TRANSPORT OF SEDIMENT ONTO ADJACENT PROPERTIES. OR INTO EXISTING BODIES OF WATER, MUST BE INSTALLED, CONSTRUCTED, OR IN THE CASE OF VEGETATIVE BUFFERS, PROTECTED FROM DISTURBANCE, AS A FIRST STEP IN THE LAND ALTERATION PROCESS. SUCH SYSTEMS SHALL BE FULLY OPERATIVE BEFORE ANY OTHER DISTURBANCE OF THE SITE BEGINS. EARTHEN STRUCTURES INCLUDING BUT NOT LIMITED TO BERMS, EARTH FILTERS, DAMS OR DIKES SHALL BE STABILIZED AND PROTECTED FROM DRAINAGE DAMAGE OR EROSION WITHIN ONE (1) WEEK OF INSTALLATION.
- 20. ALL SWALES, DITCHES, AND CHANNELS LEADING FROM THE SITE SHALL BE PROTECTED FROM SILTATION AND EROSION DURING CONSTRUCTION AND BE SODDED WITHIN THREE (3) DAYS OF EXCAVATION.
- 21. SOIL DISPLACED BY CONSTRUCTION WILL BE REMOVED. EROSION CONTROL SHALL BE IMPLEMENTED IN AREAS WHICH ARE CONSIDERED ENVIRONMENTALLY SENSITIVE. EROSION CONTROL SYSTEMS SHALL BE REQUIRED FOR ALL WORK WITHIN JURISDICTIONAL AREAS. THESE SYSTEMS MAY INCLUDE STAKED HAY BALES, SILT SCREENS, FILTER FABRIC, AND TURBIDITY SCREENS.
- 22. ALL EROSION AND POLLUTION CONTROL DEVICES SHALL BE CHECKED REGULARLY, ESPECIALLY AFTER EACH RAINFALL AND SHALL BE CLEANED OUT AND/OR REPAIRED AS REQUIRED.
- 23. THE CONTRACTOR SHALL NOT ENTER UPON OR IN ANY WAY ALTER WETLAND AREAS THAT MAY BE ON OR NEAR THE CONSTRUCTION SITE. ALL WORK IN THE VICINITY OF OPEN WATER AND/OR WETLANDS IS TO BE PERFORMED IN COMPLIANCE WITH THE ENVIRONMENTAL REGULATIONS AND/OR PERMITS FOR THE SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES RESULTING FROM HIS VIOLATION OF ANY REGULATIONS OR PERMIT CONDITIONS.
- 24. FOR MORE INFORMATION, SEE THE EROSION CONTROL DETAIL SHEET INCLUDED IN THE PLANS.

### <u>RIGHT-OF-WAY</u>

- 25. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY/FDOT RIGHT-OF-WAY AND/OR EASEMENTS SHOWN ON THE DRAWINGS.
- 26. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNER MONUMENTS, PINS, AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- 27. THE CONTRACTOR, PRIOR TO CONSTRUCTION AND RESTRICTING ANY TRAFFIC. MUST OBTAIN A RIGHTS-OF-WAY USE PERMIT AND A TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM OTHER GOVERNMENTAL AGENCIES HAVING RELEVANT JURISDICTION. ALL MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE CURRENT FLORIDA DEPARTMENT OF TRANSPORTATION "MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES". A TRAFFIC CONTROL PLAN SHALL BE SUPPLIED BY THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING.
- 28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED STORM WATER STRUCTURES. PIPING. ENTRANCE PIPE AND HEADWALLS WHETHER SHOWN ON THE PLANS OR NOT. THE HEADWALLS SHALL BE REPLACED IN ACCORDANCE WITH F.D.O.T. STANDARDS.

- 29. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD THE RIGHT—OF—WAY LINES, BASE LINES, BENCH MARKS (ELEV.), CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
- 30. THE CONTRACTOR SHALL COORDINATE THE CUTTING OF DRIVEWAYS WITH THE PROPERTY OWNER PRIOR TO CUT. ALL DRIVEWAYS WILL BE IN PASSABLE CONDITION AT THE END OF THE WORK DAY AND FULLY RESTORED PER SECTION
- 31. A RIGHT OF ENTRY AGREEMENT SHALL BE OBTAINED BY THE PROJECT MANAGER FROM THE PROPERTY OWNER BEFORE ANY DRIVEWAY CONSTRUCTION WORK IS DONE OUTSIDE OF THE RIGHT-OF-WAY OR EASEMENT.

- 32. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THERE MAY BE OTHER IMPROVEMENTS, UTILITIES, ETC. WHICH ARE WITHIN THE PROJECT AREA AND WHICH HAVE NOT BEEN LOCATED OR IDENTIFIED, MAY NOT BE IN THE EXACT LOCATION SHOWN OR RELOCATED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES STRUCTURES AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THE PLANS) THAT MAY EFFECT HIS WORK. ALL EXISTING UTILITIES TO BE EXTENDED, CROSSED OR CONNECTION POINTS SHALL BE EXPOSED PRIOR TO CONSTRUCTION TO VERIFY LOCATION AND ELEVATION. ANY DISCREPANCIES OR CONFLICTS FOUND SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR RESOLUTION.
- 33. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, WATER AND SEWER LINES, STORM DRAINS, UTILITIES, DRIVEWAYS, SIDEWALKS, SIGNS, MAIL BOXES, FENCES, TREES, LANDSCAPING, AND ANY OTHER IMPROVEMENT OR FACILITY IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED ITEM DUE TO HIS CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER THAN PRE—CONSTRUCTION CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
- 34. THE CONTRACTOR SHALL USE APPROPRIATE TECHNIQUES, AS APPROVED, RECOMMENDED OR OFFERED BY FLORIDA POWER AND LIGHT TO PREVENT UNDERMINING OF POWER POLES DURING CONSTRUCTION. IF HOLDING OF POWER POLES IS RECOMMENDED OR REQUIRED BY THE UTILITY, THE CONTRACTOR SHALL COORDINATE THIS ACTIVITY WITH THE UTILITY AND BEAR ALL RELATED COSTS.
- 35. ANY TEMPORARY SHUTDOWNS FOR MODIFICATIONS OF EXISTING UTILITY SYSTEMS THAT MUST REMAIN IN SERVICE DURING CONSTRUCTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE COORDINATED WITH AND APPROVED BY THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. IT IS NOTED THAT TEMPORARY SHUTDOWNS MAY BE RESTRICTED TO CERTAIN HOURS AT ANY TIME OF THE DAY OR NIGHT AND WILL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.
- 36. DIMENSIONS SHOWN TO THE PROPOSED WATER MAIN ARE MEASURED TO THE CENTER OF THE PIPE. IN AREAS WHERE THE PROPOSED WATER MAIN IS ADJACENT TO EXISTING STORM OR SANITARY SEWER PIPING, THE SEPARATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH F.A.C. RULE 62-555.314.
- 37. UNLESS CALLED OUT TO REMAIN ON THE PLANS, EXISTING HYDRANTS ATTACHED TO ABANDONED WATER MAIN ARE TO BE REMOVED.

- 38. ALL RESTORATION WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS SHOWN OTHERWISE.
- 39. ALL DISTURBED GRASSED AREAS SHALL BE SODDED OR SEEDED UNLESS OTHERWISE INDICATED. THE TYPE OF SOD
- 40. ALL CONCRETE THRUST BLOCKS INSTALLED FOR TESTING PURPOSES AND NOT REQUIRED FOR THE OPERATION OF THE PIPELINE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, PRIOR TO FINAL ACCEPTANCE, AT NO ADDITIONAL COST TO THE OWNER.

USED TO REPLACE OWNER MAINTAINED AREAS IN RIGHT-OF-WAY SHALL BE COORDINATED WITH THE PROPERTY OWNER.

- 41. ASPHALT DRIVES THAT ARE CUT SHALL BE RESTORED PER SECTION 02513.
- 42. CONCRETE DRIVEWAYS OR SIDEWALKS THAT ARE CUT SHALL BE RESTORED TO MATCH EXISTING ACCORDING TO THE CURRENT EDITIONS OF THE F.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE DESIGN, SECTION 522, AND SECTION 310 OF THE F.D.O.T. DESIGN STANDARDS.
- 43. WHENEVER A PERMANENT ROADWAY SURFACE IS NOT PLACED IMMEDIATELY AFTER BACKFILLING AND COMPACTION OF THE NEWLY INSTALLED PIPE LINE IN AREAS WHERE TRAFFIC MUST PASS, THE CONTRACTOR SHALL INSTALL A TEMPORARY SURFACE CONSISTING OF NINE INCHES OF COMPACTED LIME ROCK BASE AND A COAT OF ASPHALT EMULSION. PERMANENT ROADWAY REPAIR SHALL BE PERFORMED A MAXIMUM OF TWENTY-ONE CALENDAR DAYS AFTER THE INITIAL OPEN CUTTING.
- 44. RESTORATION OF CURBS, DRIVEWAYS, SIDEWALKS, AND PLACEMENT OF SOD SHALL BE COMPLETED WITHIN FORTY-FIVE CALENDAR DAYS OF INITIAL DISTURBANCE, OR TWENTY—ONE CALENDAR DAYS OF SUBSTANTIAL COMPLETION, WHICHEVER

### <u>CONSTRUCTION</u>

- 45. THE EXHAUST SYSTEM OF ALL GASOLINE AND DIESEL ENGINES SHALL BE EQUIPPED WITH MUFFLERS THAT MEET THE EQUIPMENT MANUFACTURER'S REQUIREMENTS FOR NOISE SUPPRESSION. THE CONTRACTOR SHALL INSTALL NOISE ABATEMENT BAFFLES POSITIONED TO BREAK LINE-OF-SITE FROM THE NOISE SOURCE TO AFFECTED RESIDENCES, AS APPROVED BY THE ENGINEER.
- 46. NO MATERIAL SHALL BE STOCKPILED IN ROADWAYS. ALL DIRT AND DEBRIS SHALL BE REMOVED FROM THE JOB SITE DAILY. ROADS SHALL BE SWEPT DAILY AS PART OF DAILY CLEAN UP.
- 47. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
- 48. INGRESS AND EGRESS TO ALL THE PROPERTIES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED AT ALL TIMES.
- 49. PRIOR APPROVAL WILL BE REQUIRED FOR REMOVAL OF ANY TREE WITHIN THE CONSTRUCTION AREA.
- 50. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY. DEWATERING IS REQUIRED TO 18" BELOW TRENCH BOTTOM.
- 51. ALL PIPING AND FITTINGS USED ON THIS PROJECT SHALL BE AS NOTED ON THE PLANS AND IN THE CONTRACT DOCUMENT AND SHALL BE INSTALLED TO THE LINES AND GRADES SHOWN ON THE PLANS AND PROFILES.
- 52. ALL PIPE SHALL BE COLOR CODED TO CONFORM TO MANATEE COUNTY STANDARDS.
- 53. ALL PIPE AND FITTINGS SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER AND ALL PIPE JOINTS SHALL BE RESTRAINED WHERE REQUIRED.
- 54. ALL FITTINGS FOR PRESSURE CLASS-RATED PIPE SHALL BE RESTRAINED DUCTILE IRON. RESTRAINED LENGTHS OF PIPE SHALL ADHERE TO THE REQUIREMENTS AS SHOWN ON THE DETAIL SHEETS.
- 55. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE RECOMMENDED DEFLECTION.
- 56. ALL PIPE LENGTHS ARE PLUS OR MINUS AND MAY BE ADJUSTED IN THE FIELD AS REQUIRED. PIPE MEASUREMENTS ARE TO CENTER OF STRUCTURES OR FITTINGS.
- 57. ALL ROCKS OR STONES LARGER THAN SIX INCH DIAMETER SHALL BE REMOVED FROM THE BACKFILL MATERIAL. BACKFILL MATERIAL PLACED WITHIN ONE FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN TWO INCH DIAMETER. EXCAVATED MATERIALS MAY NOT BE SUITABLE AND FOR PLACEMENT AROUND
- 58. ONLY MANATEE COUNTY UTILITY OPERATIONS STAFF ARE AUTHORIZED TO OPERATE VALVES ON COUNTY OWNED AND MAINTAINED UTILITY SYSTEMS.
- 59. ALL PENETRATION OF EXISTING STRUCTURES SHALL BE BY THE MECHANICAL ROTARY CORE BORING METHOD.
- 60. ALL CONCRETE PENETRATED OR DISTURBED SHALL BE COATED WITH TWO COATS OF EPOXY.
- 61. THE CONTRACTOR, PRIOR TO ANY TEMPORARY WATER SHUT-OFFS DURING WATER MAIN TIE-IN, ETC., SHALL NOTIFY THE AFFECTED RESIDENTS BY POSTING INFORMATIONAL SIGNS IN THE NEIGHBORHOOD AT LEAST TWO DAYS (48 HRS) PRIOR TO THE WATER SHUT-OFF, REFERENCE SECTION 01580, PARAGRAPH 1.03 OF THE SPECIFICATIONS, WHEN FEASIBLE. "DOOR HANGERS" SHALL BE DELIVERED TO AFFECTED RESIDENCES AT LEAST TWO DAYS (48 HRS) PRIOR TO WATER SHUT-OFF. FOR LARGE PROJECTS WITH HUNDREDS OF HOMES AFFECTED, THE CONTRACTOR SHALL ALSO MAKE

- EXTENSIVE USE OF THE MEDIA AND SHALL HAVE PRIOR CONTACT WITH HOMEOWNER'S ASSOCIATIONS. WRITTEN NOTIFICATIONS SHALL ALSO BE FAXED TO THE TAMPA TRIBUNE, BRADENTON HERALD, SARASOTA HERALD TRIBUNE, WBRD RADIO, EMERGENCY COMMUNITY CENTERS, INSPECTIONS, WATER TREATMENT PLANT, WATER MANAGER, HELPLINE, CUSTOMER SERVICE, AND THE MANATEE COUNTY UTILITY OPERATIONS DEPARTMENT.
- 62. ALL NEW PIPE LINES SHALL BE PIG CLEANED (4" AND LARGER), FLUSHED, PRESSURE TESTED, DISINFECTED AND CERTIFIED PRIOR TO TIE—INS TO EXISTING FACILITIES. THE CONTRACTOR WILL BE ALLOWED TO USE TEMPORARY PLUGS FOR PIG CLEANING AND PRESSURE TESTING.
- 63. ALL TEST POINT PIPING SHALL BE CUT LOOSE FROM THE CORPORATION STOP AND COMPLETELY REMOVED AND DISPOSED OF BY THE CONTRACTOR PRIOR TO FINAL ACCEPTANCE. A CORPORATION STOP PLUG SHALL BE INSTALLED AND THE CORPORATION STOP SHALL REMAIN IN PLACE.
- 64. ALL EXISTING MAINS THAT ARE BEING REPLACED SHALL BE ABANDONED IN PLACE UPON ACCEPTANCE AND ACTIVATION OF THE NEW MAINS. ABANDONED MAINS SHALL BE CUT, FILLED WITH GROUT, AND CAPPED. REFER TO SECTION 02064 OF THE SPECIFICATIONS FOR GROUTING OF ABANDONED PIPE.
- 65. WATER MAINS CROSSING OVER OR UNDER SANITARY SEWERS, FORCE MAINS, AND RECLAIMED WATER LINES SHALL BE LAID PER CURRENT EDITION OF "10 STATE STANDARDS" AND MANATEE COUNTY UTILITY STANDARDS UNLESS NOTED OTHERWISE ON THE PLANS.
- 66. FIELD CONDITIONS MAY NECESSITATE MINOR ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS ORDERED BY THE ENGINEER.
- 67. CONTRACTOR SHALL PROVIDE RECORD DRAWINGS IN ACCORDANCE WITH SECTION 14 IN THE CURRENT MANATEE COUNTY UTILITY STANDARDS AT NO COST TO THE OWNER. RECORD DRAWINGS SHALL BE SIGNED & SEALED BY A SURVEYOR CURRENTLY LICENSED BY THE STATE OF FLORIDA. ALL RECORD DRAWING INFORMATION REQUIREMENTS IN SECTION 14 SHALL BE STRICTLY ENFORCED. A COPY OF SECTION 14 WILL BE PROVIDED UPON REQUEST.

#### CONTACTS

DISTRIBUTION

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(941) 723-4430

Greg.Coker@fpl.com

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SUNSHINE STATE ONE CALL OF FLORIDA

FLORIDA POWER & LIGHT SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT SARASOTA SERVICE OFFICE 1253 12TH AVENUE EAST JAN BURKE, SUPERVISOR PALMETTO, FL 34221 6750 FRUITVILLE ROAD SARASOTA, FL. 34240 (941) 377-3722 FAX: (941) 723-4444 EMERGENCY: 1-800-4-OUTAGE FAX: (941) 373-7660

FLORIDA POWER & LIGHT TOM WRIGHT, ENGINEERING TRANSMISSION PETER H. WASHIO, E.I. 700 UNIVERSE BLVD. TS4/JW JUNO BEACH, FL. 33408 (561) 904-3693 Peter.H.Washio@fpl.com

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MANATEE COUNTY PUBLIC WORK DEPT. TRAFFIC ENGINEERING PAUL VILLALUZ, P.E. 2101 47th TERRACE EAST BRADENTON, FL 34203 (941) 749-3500 EXT. 7859 FAX: (941) 749-3571 paul.villaluz@mymanatee.org

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BRIGHTHOUSE NETWORKS

MANATEE COUNTY, FLORIDA PUBLIC WORKS DEPARTMENT



1022 26th Avenue East Bradenton, FL 34208

# TER LE ME M TE RE

## LEGEND

### EXISTING

	BENCH MARK	$\bigcap$	BUSH	A	BBREVIATIONS
	CONCRETE MONUMENT		TREE	R/W	RIGHT OF WAY
0	IRON PIPE		OAK TREE	CONC	CONCRETE
•	IRON ROD		PALM TREE	ASPH	ASPHALT
Δ	HUB		PINE TREE	DRWY	DRIVEWAY
•	NAIL & DISK	7 1	EDGE OF VEGETATION	SWK	SIDEWALK
×5.23	ELEVATION		- CHAIN LINK FENCE	EP	EDGE OF PAVEMENT
1234	PARCEL ID NO.		- WOOD FENCE	ВОС	BACK OF CURB
1234 5678	PARCEL ID NO.	X	- BARBED WIRE FENCE	TBA	TO BE ABANDONED
(77)	LOT NO.	FM	- FORCE MAIN	TBR	TO BE REMOVED
$\leftarrow$	GUY WIRE		– POTABLE WATER	HDD	HORIZONTAL DIRECTIONAL DRILL
$\Diamond$	POWER POLE	RW	- RECLAIMED WATER	HDPE	HIGH-DENSITY POLYETHYLENE
❖	LIGHT POLE	SS	– SANITARY SEWER	DIP	DUCTILE IRON PIPE
	MAIL BOX	SD	- STORM DRAIN		
d	SIGN	——— GAS ———	- GAS LINE		PROPOSED
9	REFLECTOR	OCATV	- OVERHEAD_CABLE_TV		
0	SPRINKLER	BCATV	- BURIED_CABLE_TV		WATER MAIN (HDD)
<u>©</u>	GAS MARKER	——— OE ———	OVERHEAD ELECTRIC		WATER MAIN (OPEN CUT)
-0-	BACKFLOW PREVENTER	——— ВЕ ———	- BURIED_ELECTRIC		- SERVICE LINE
$\bowtie$ 0	BLOW OFF VALVE	OHVER	OVERHEAD VERIZON	•	FIRE HYDRANT
	FIRE HYDRANT	BVER	- BURIED VERIZON	<b>—</b>	VALVE
$\bigotimes \overline{\bowtie}$	WATER VALVE	VER	- VERIZON	◀	REDUCER
	AIR RELEASE VALVE	———— BU ————	- BURIED_UTILITY	H	TEE
	UNCONFIRMED WATER SERVICE	OHU	- OVERHEAD UTILITY	$\checkmark$	HORIZONTAL BEND
_	CONFIRMED WATER SERVICE	++++++++++++++++++++++++++++++++++++	RAIL ROAD TRACKS	]	CAP
S	SANITARY SEWER MANHOLE		- EDGE OF CONCRETE	—	WATER SERVICE LINE TO CONFIRMED**
0	SANITARY SEWER CLEAN OUT		- EDGE OF ROAD		NEW WATER SERVICE LIN
CR# 💠	SOIL BORING LOCATION		- TOE OF SLOPE	$\bigcirc$	AIR RELEASE VALVE
TSB	TELEPHONE SERVICE BOX		- TOP OF BANK		BLOW OFF
	FLOW DIRECTION		- PROPERTY LINE		
	GRATE INLET		RIGHT OF WAY		

APPROXIMATE R/W

(UNDETERMINED)\*

\*THE APPROXIMATE R/W LINE SHOWN ON THE PLANS HAS NOT BEEN DETERMINED BY SURVEY. THE APPROXIMATE R/W LINE LOCATION SHOWN IS BASED ON THE 2001 RECORD DRAWINGS FOR THE CANAL ROAD 20" AND 16" WATER MAIN.

\*\*CONFIRMED EXISTING WATER METERS ARE TO RECEIVE NEW WATER SERVICE CONNECTIONS.

MITERED END SECTION

ALL OTHER EXISTING WATER SERVICES/WATER METERS SHALL BE INVESTIGATED BY THE CONTRACTOR TO VERIFY WHETHER SERVICE IS IN USE AND NOTIFY THE COUNTY FOR COORDINATION. IF IN USE, THERE SHALL BE A NEW WATER SERVICE CONNECTION. IF THE SERVICE IS NOT IN USE, THE COUNTY MAY REQUIRE THE CONTRACTOR TO PROVIDE A SERVICE STUB-OUT FROM UNDER THE PAVEMENT.

PROJECT # 177310570 Survey # 000 SEC./TWN./RGE N.T.S. SCALE DATE BY GFY 03/06/1 SURVEYED SCM 00/00/00 DESIGNED

> STEPHEN C. MACEACHERN FLORIDA P.E. # 76020

KG |00/00/00

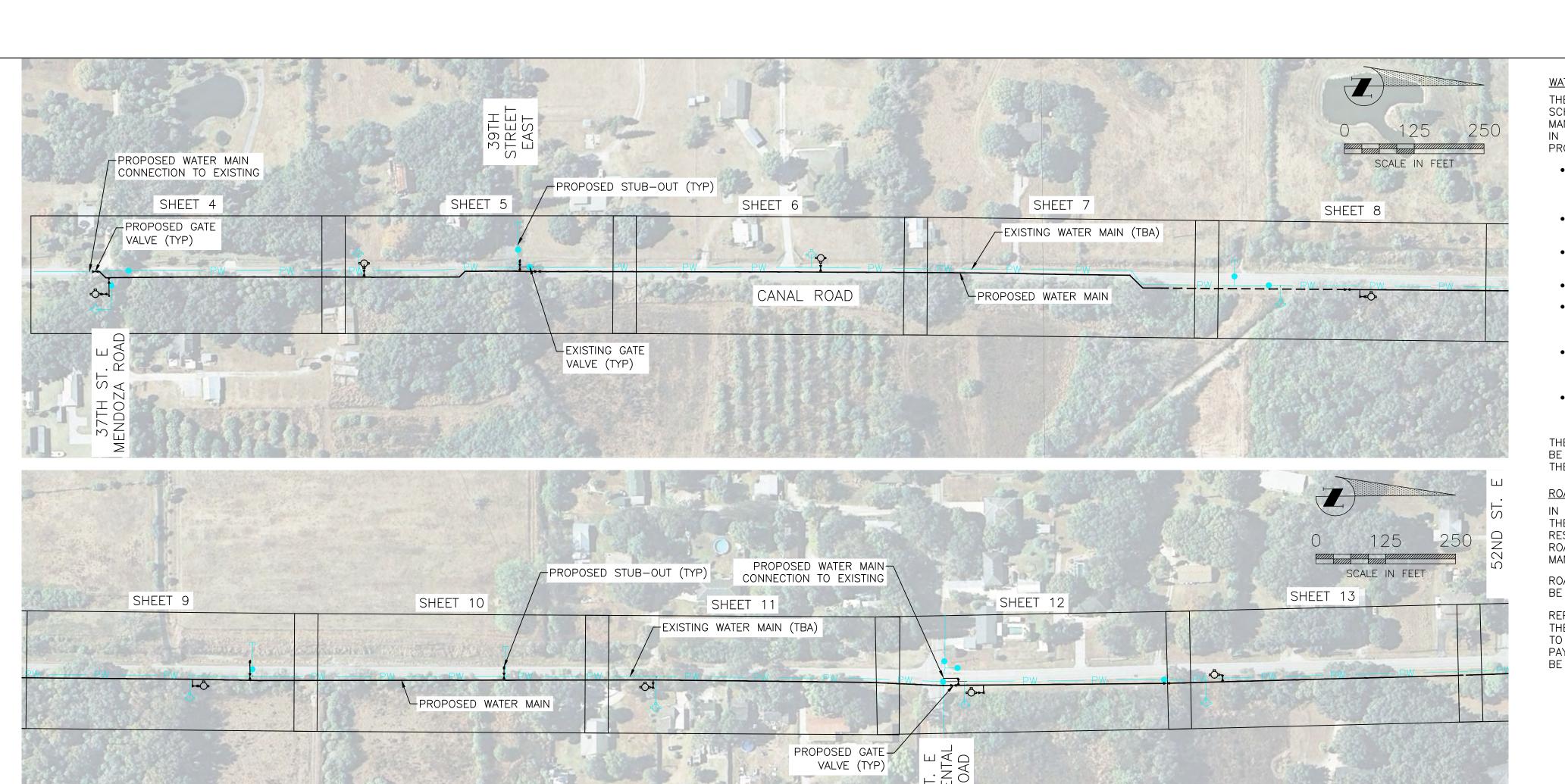
RJH |00/00/00

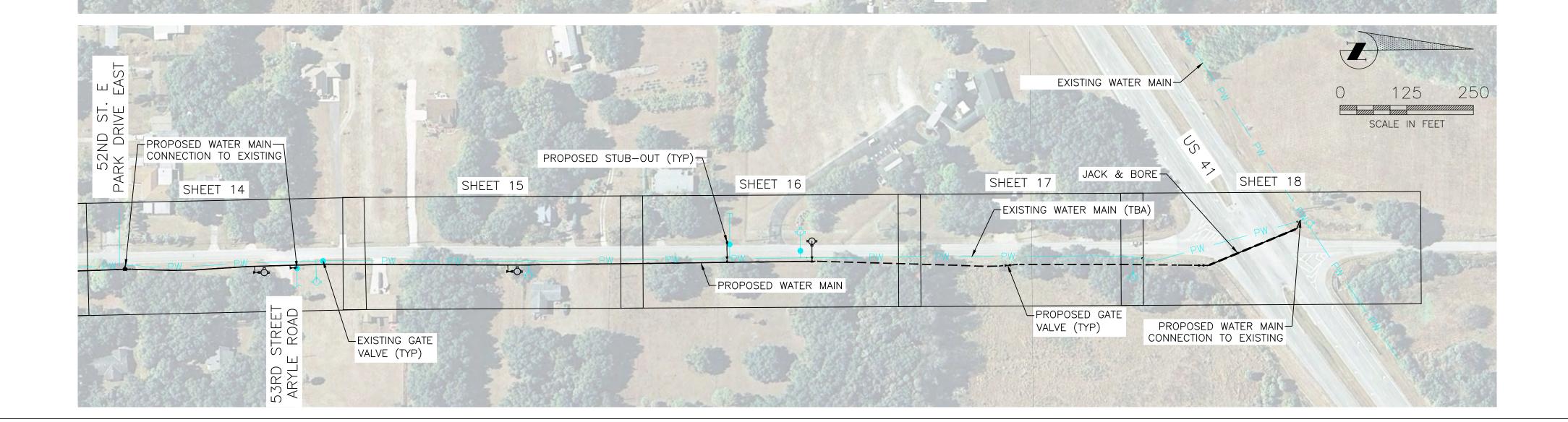
DRAWN

CHECKED

Signature & Date

SHEET 2





**Subsurface Utility Locations** 

1+54.08

1+52.87

1+05.90

7 + 32.98

8+70.40

53+07.53

54+12.88

70+01.44

70+37.45

1+45.36

0+98.31

VVH101

VVH102

EDO104

VVH105

VVH106

VVH107

VVH113

VVH114

VVH116

VVH117

VVH118

VVH108 | 68+35.59

EDO109 | 72+34.60

VVH110 38+13.89

VVH111 | 40+95.37

VVH112 | 54+11.27

VVH115 | 70+26.26

1168435.45

1168434.25

1168387.27

1169014.35

1169151.75

1173588.33

1175116.12

1175515.21

1172094.48

1172376.54

1173692.13

1173693.72

1175281.93

1175306.74

1175317.93

1168426.69

1168379.63

478489.79

478488.24

478489.28

478491.95

478494.05

478556.78

478558.38

478539.64

478569.35

478590.04

478560.12

478558.77

478566.93

478569.32

478569.69

478493.04

478493.72

16.87'

17.00

14.91'

14.19'

13.22'

11.72'

5.9'

16.73'

16.26'

13.95'

13.99'

11.77'

7.76'

3.27' 11.87'

3.85' 15.35'

13.7'

2.61'

5.3'

4.40'

4.66'

3.66'

3.40'

7.8'

1.15'

2.95'

2.35'

2.45'

3.57'

7.83'

19.61'

19.02'

19.31'

18.85'

16.88'

15.12'

13.65'

17.88'

19.21'

16.30'

16.44'

15.14'

15.34'

15.59'

19.20'

18.97'

SOIL

ASPHALT

ASPHALT

4" PVC TELEPHONE

16" PVC WATER MAIN

16" PVC WATER MAIN

16" PVC WATER MAIN

16" PVC WATER MAIN

4" PVC TELEPHONE

6" STEEL TELEPHONE

ASPHALT WATER MAIN (SIZE/MATERIAL NFV)

ASPHALT | 8" PVC WATER MAIN

3.93' | 14.04' | ASPHALT | WATER MAIN (SIZE/MATERIAL NFV)

1" + 2" DIRECT BURIED + 4" PVC TELEPHONE

ELECTRONIC DEPTH ONLY - WATER MAIN

ELECTRONIC DEPTH ONLY - UNKNOWN

0.5" DIRECT BURIED TELEPHONE -

1" DIRECT BURIED TELEPHONE

1" DIRECT BURIED TELEPHONE

FIBER OPTIC (SIZE/MATERIAL NFV)

9.79' LT

11.33' LT

9.85' LT

13.13' LT

12.28' LT

13.53' RT

11.31' RT

9.05' LT

11.80' RT

28.55' RT

18.44' RT

17.10' RT

19.19' RT

21.48' RT

21.80' RT

6.46' LT

5.34' LT

CONTROL

GPS3

GPS4

GPS5

GPS6

B3

B4

STATIONOFFSETNORTHINGEASTINGELEVDESCRIPTIONN/AN/A1167928.38478477.7918.13'SET IRC 1/2" GFY

1+48.10 | 14.78' RT | 1168429.24 | 478514.31 | 18.96' | SET IRC 1/2" GFY

36+22.66 | 14.95' LT | 1171903.68 | 478539.69 | 17.16' | SET IRC 1/2" GFY

| 40+32.19 | 13.35' RT | 1172312.73 | 478574.23 | 19.21' | SET IRC 1/2" GFY

72+65.99 | 31.00' RT | 1175546.43 | 478579.81 | 13.48' | SET IRC 1/2" GFY

N/A N/A 1175862.22 | 478532.57 | 12.85' | SET IRC 1/2" GFY

5+21.28 | 14.17' LT | 1168802.67 | 478488.90 | 19.38' | SET IRC 1/2" GFY

| 11+41.57 | 12.68' RT | 1169422.69 | 478521.40 | 19.54' | SET IRC 1/2" GFY

| 14+97.22 | 13.18' RT | 1169778.12 | 478527.81 | 18.70' | SET IRC 1/2" GFY

| 18+81.94 | 16.62' LT | 1170163.38 | 478506.00 | 14.87' | SET IRC 1/2" GFY

22+96.07 | 14.86' RT | 1170576.77 | 478546.06 | 14.67' | SET IRC 1/2" GFY

| 27+75.00 | 22.77' LT | 1171056.37 | 478518.37 | 17.85' | SET IRC 1/2" GFY

| 44+70.58 | 19.12' RT | 1172751.56 | 478574.97 | 16.35' | SET IRC 1/2" GFY

50+34.90 | 18.71' LT | 1173315.24 | 478528.65 | 18.42' | SET IRC 1/2" GFY

55+16.82 | 14.67' LT | 1173797.47 | 478527.03 | 16.87' | SET IRC 1/2" GFY

59+39.36 | 18.26' RT | 1174219.86 | 478561.68 | 16.75' | SET IRC 1/2" GFY

64+19.14 | 17.93' LT | 1174699.79 | 478527.44 | 16.97' | SET IRC 1/2" GFY

| 69+30.89 | 22.50' LT | 1175211.56 | 478524.95 | 14.38' | SET IRC 1/2" GFY

1+52.84 | 29.91' RT | 1168433.83 | 478529.48 | 18.77' | FOUND CONCRETE MONUMENT w/ DISK

| 40+48.97 | 39.72' RT | 1172329.10 | 478600.85 | 18.99' | FOUND CONCRETE MONUMENT w/ DISK

#### WATER MAIN CONSTRUCTION SEQUENCE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND SUBMITTING A SCHEDULE OF CONSTRUCTION OF THE NEW WATER MAIN FOR REVIEW BY MANATEE COUNTY. THE GENERAL SEQUENCING LISTED BELOW SHOULD BE TAKEN IN TO CONSIDERATION BY THE CONTRACTOR IN THE PREPARATION OF THE PROPOSED SEQUENCING OF THE WATER MAIN.

- INSTALL SEGMENT OF NEW WATER MAIN BETWEEN TWO OR MORE CONNECTION POINTS TO THE EXISTING WATER MAIN (EITHER PERMANENT OR TEMPORARY CONNECTIONS).
- SELECT SEGMENTS WHICH WILL MINIMIZE DISRUPTIONS TO THE PUBLIC AND KEEP THE WATER SYSTEM LOOPED IF POSSIBLE.
- WITH THE USE OF A JUMPER; CLEAN, PIG, AND FLUSH THE NEW WATER MAIN
- PRESSURE TEST, BAC-T, AND PARTIALLY CERTIFY THE MAIN.
- MAKE CONNECTION TO EXISTING MAIN AND CHANGE OVER WATER SERVICES.
   THE EXISTING MAIN TO REMAIN IN SERVICE UNTIL THE NEW WATER SERVICE
   CONNECTIONS ARE MADE TO THE NEW MAIN.
- EXISTING MAIN TO BE ABANDONED IN PLACE, GROUTED WITH FLOWABLE FILL, AND CAPPED AT ENDS. EXISTING VALVES THAT ARE ABANDONED IN PLACE SHALL BE CLOSED AND THE OPERATING ASSEMBLY REMOVED.
- EXISTING MAINS PLACED OUT OF SERVICE WHICH ARE IN CONFLICT WITH THE NEW SYSTEM IMPROVEMENTS OR MAINS EASILY ACCESSIBLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

THE CONTRACTOR SHALL REVIEW WITH THE LOCAL FIRE DEPARTMENT IF IT MAY BE NECESSARY TO TAKE AN EXISTING FIRE HYDRANT OUT OF SERVICE BEFORE THE NEW ADJACENT FIRE HYDRANT CAN BE PLACED IN OPERATION.

#### ROAD AND DRIVEWAY RESTORATION

VERIZON

VERIZON

MANATEE CO.

MANATEE CO.

MANATEE CO.

MANATEE CO.

MANATEE CO.

MANATEE CO.

UNKNOWN

VERIZON

VERIZON

VERIZON

VERIZON

VERIZON

VERIZON

MANATEE CO.

MANATEE CO.

IN AREAS WHERE THE NEW WATER MAIN IS INSTALLED PARALLEL TO AND UNDER THE ROADWAY, THE FULL WIDTH OF THE ROAD SHALL BE MILLED AND RESURFACED PER MANATEE COUNTY REQUIREMENTS. ANY CROSS CUTS OF ROADWAYS SHALL BE MILLED AND RESURFACED TO THE WIDTH REQUIRED BY MANATEE COUNTY.

ROADWAYS DAMAGED BY WATER MAIN INSTALLATION OUTSIDE OF THE ROAD SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.

REPAIR/REPLACEMENT OF PRIVATE DRIVEWAYS IMPACTED BY THE INSTALLATION OF THE WATER MAIN OR OTHER CONSTRUCTION RELATED ACTIVITIES IS CONSIDERED TO BE INCLUDED IN THE UNIT COST PRICE OF THE WATER MAIN. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR. THE PRIVATE DRIVEWAYS SHALL BE RESTORED BACK TO THEIR ORIGINAL CONDITION OF BETTER.

MANATEE COUNTY, FLORIDA PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES



1022 26th Avenue East

Bradenton, FL 34208

# ANAL ROAD WATER MAIN REPLACEMENT KEY SHEET

DATE								
ВУ								
REVISION DESCRIPTION								
NO.								
PRO	JECT	#		1773	31057	70		
		11						

C./TWN./	RGE	36/33S/17E				
CALE		1"=125'				
		BY	DATE			
JRVEYED		GFY .	03/06/15			
SIGNED	S	CM	00/00/00			
RAWN		KG	00/00/00			
HECKED	F	RJH	00/00/00			

SURVEY #

STEPHEN C. MACEACHERN FLORIDA P.E. # 76020

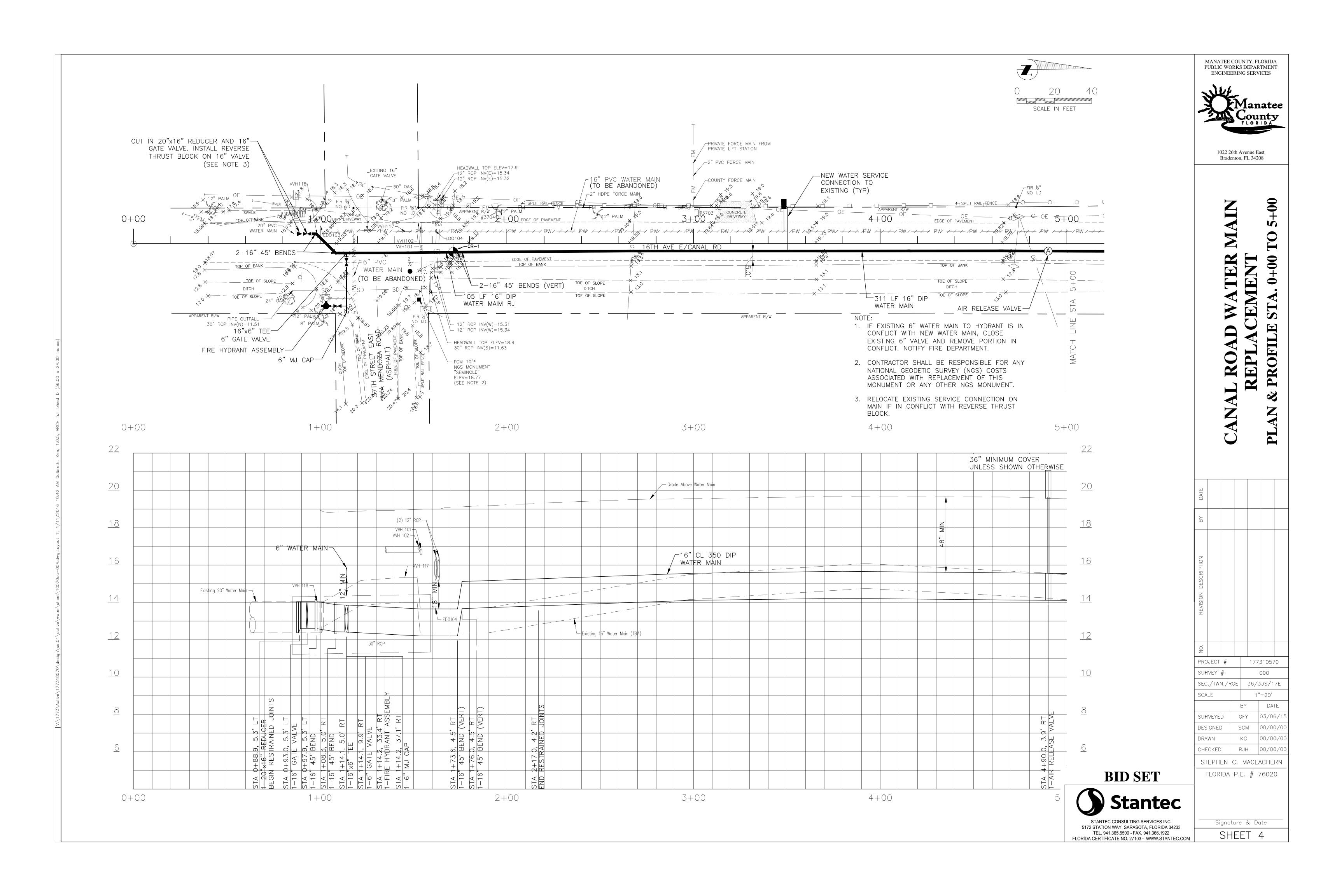
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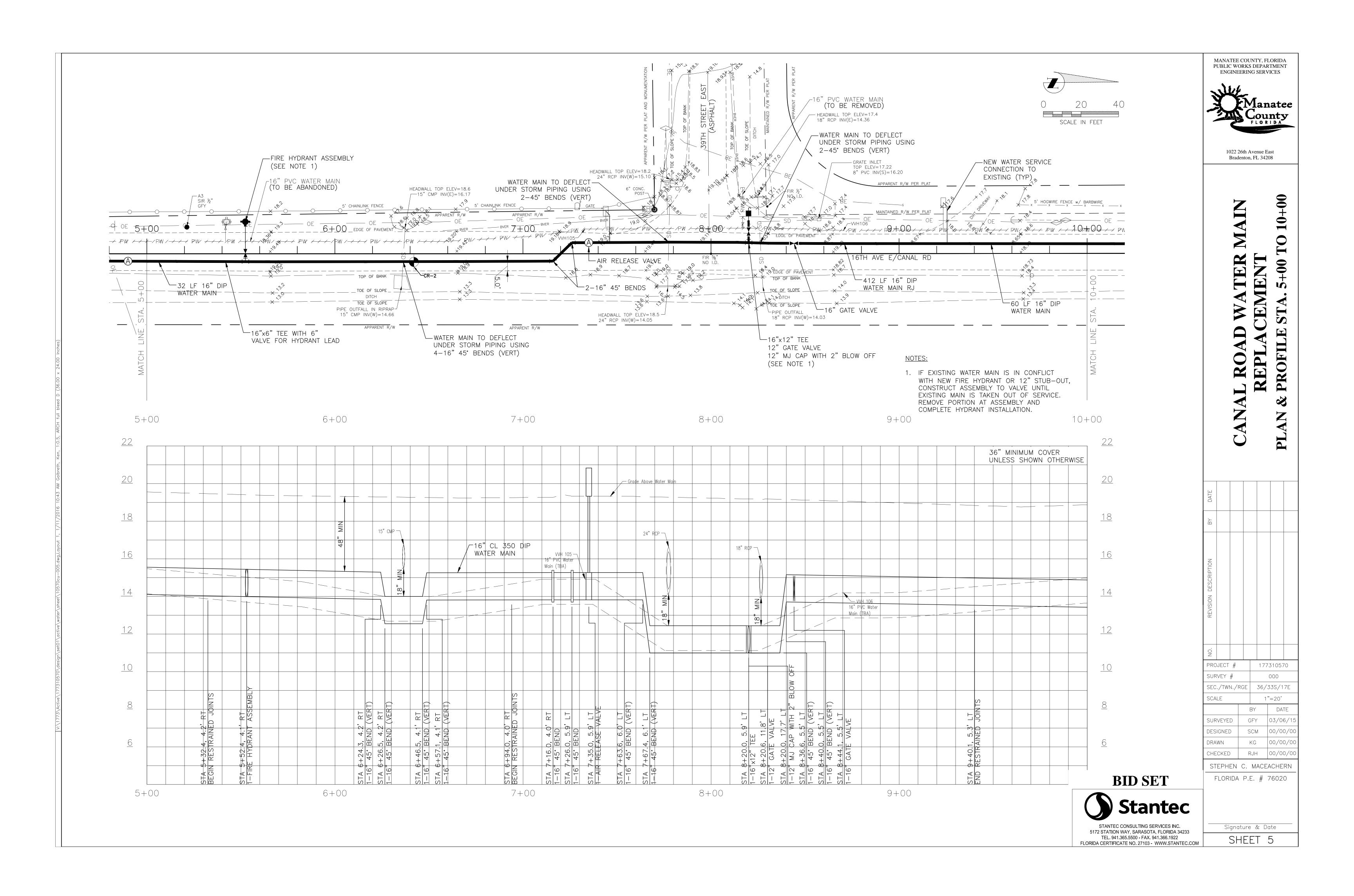
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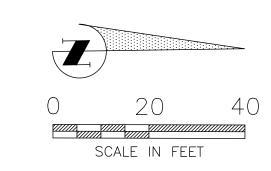
Stantec

STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
TEL. 941.365.5500 - FAX. 941.366.1922
FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

BID SET



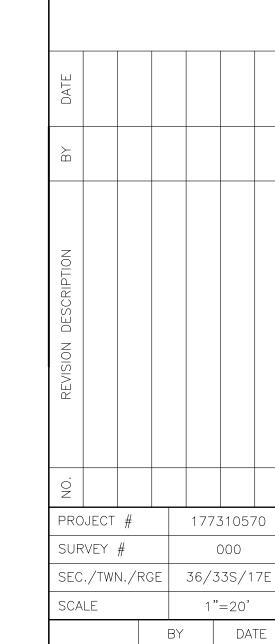






1022 26th Avenue East Bradenton, FL 34208

ATER CEMENT REPL.



CHECKED RJH 00/00/00 STEPHEN C. MACEACHERN FLORIDA P.E. # 76020

SURVEYED

DESIGNED

DRAWN

GFY 03/06/1

SCM 00/00/00

KG 00/00/00

Signature & Date SHEET 6

FIRE HYDRANT ASSEMBLY 7310 LF 16" DIP WATER MAIN -NEW WATER SERVICE (SEE NOTE 1) CONNECTION TO \_\_\_150 LF 16" DIP WATER MAIN -16" PVC WATER MAIN EXISTING (TYP) (TO BE ABANDONED) MAINTAINED R/W PER PLAT 16TH AVE E/CANAL RD TOP OF BANK 40 LF 16" DIP TOP OF BANK HEADWALL TOP ELEV=18.3 / 2 15" CMP INV(N)=12.99 NOTES: 1. IF EXISTING WATER MAIN IS IN CONFLICT WITH NEW FIRE HYDRANT, CONSTRUCT ASSEMBLY TO VALVE UNTIL EXISTING MAIN IS TAKEN OUT OF SERVICE. REMOVE PORTION AT ASSEMBLY AND COMPLETE HYDRANT INSTALLATION. 10+0011+0012+0013+0014+00 15+00 36" MINIMUM COVER UNLESS SHOWN OTHERWISE <u>20</u> - Grade Above Water Main <u>18</u>

-16" CL 350 DIP WATER MAIN <u>16</u> <u>16</u> <u>14</u> Existing 16" Water Main (TBA) STA 13+10.1, 4.9' LT BEGIN RESTRAINED JO 10

13+00

14+00

12+00

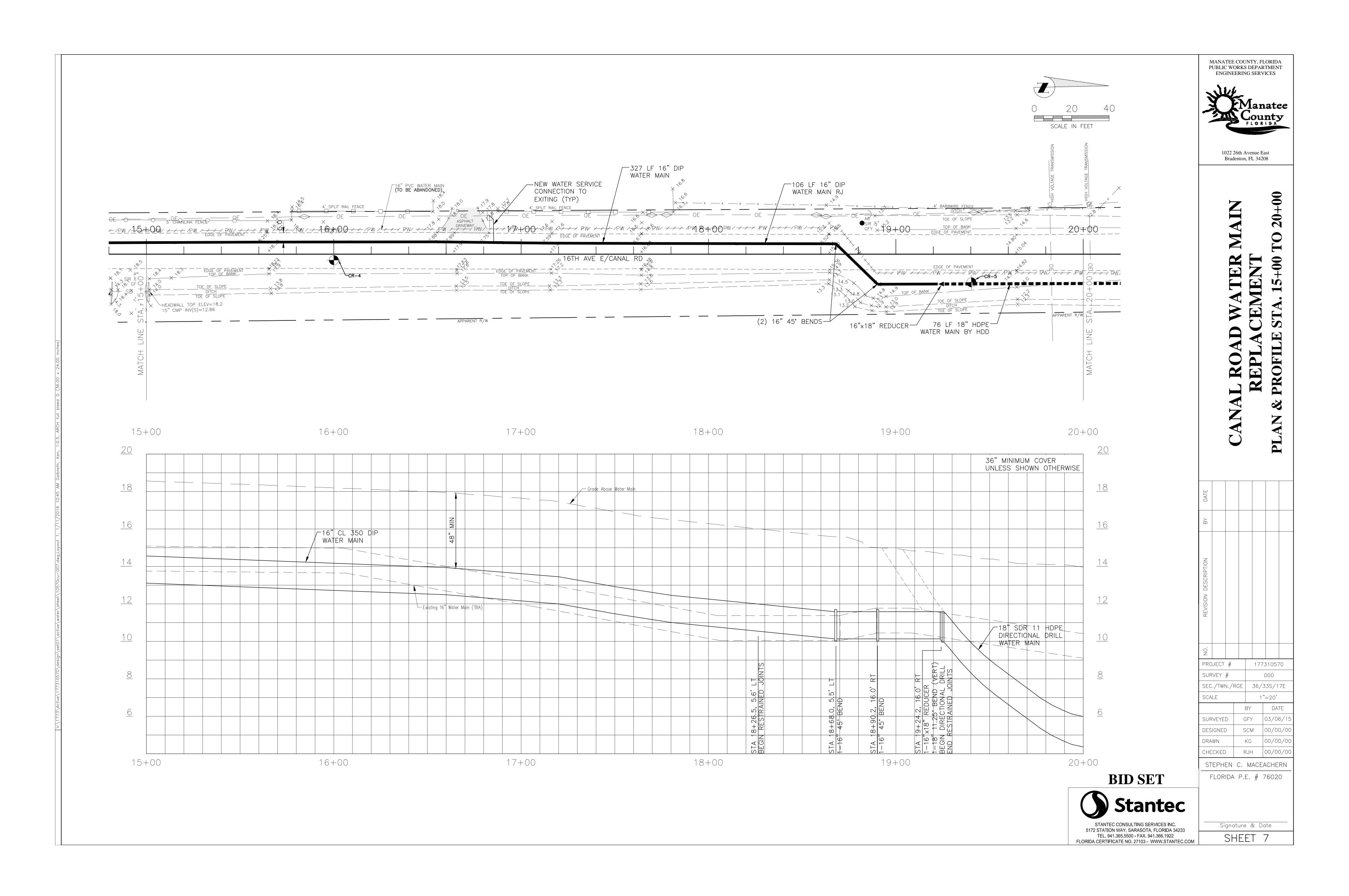
10+00

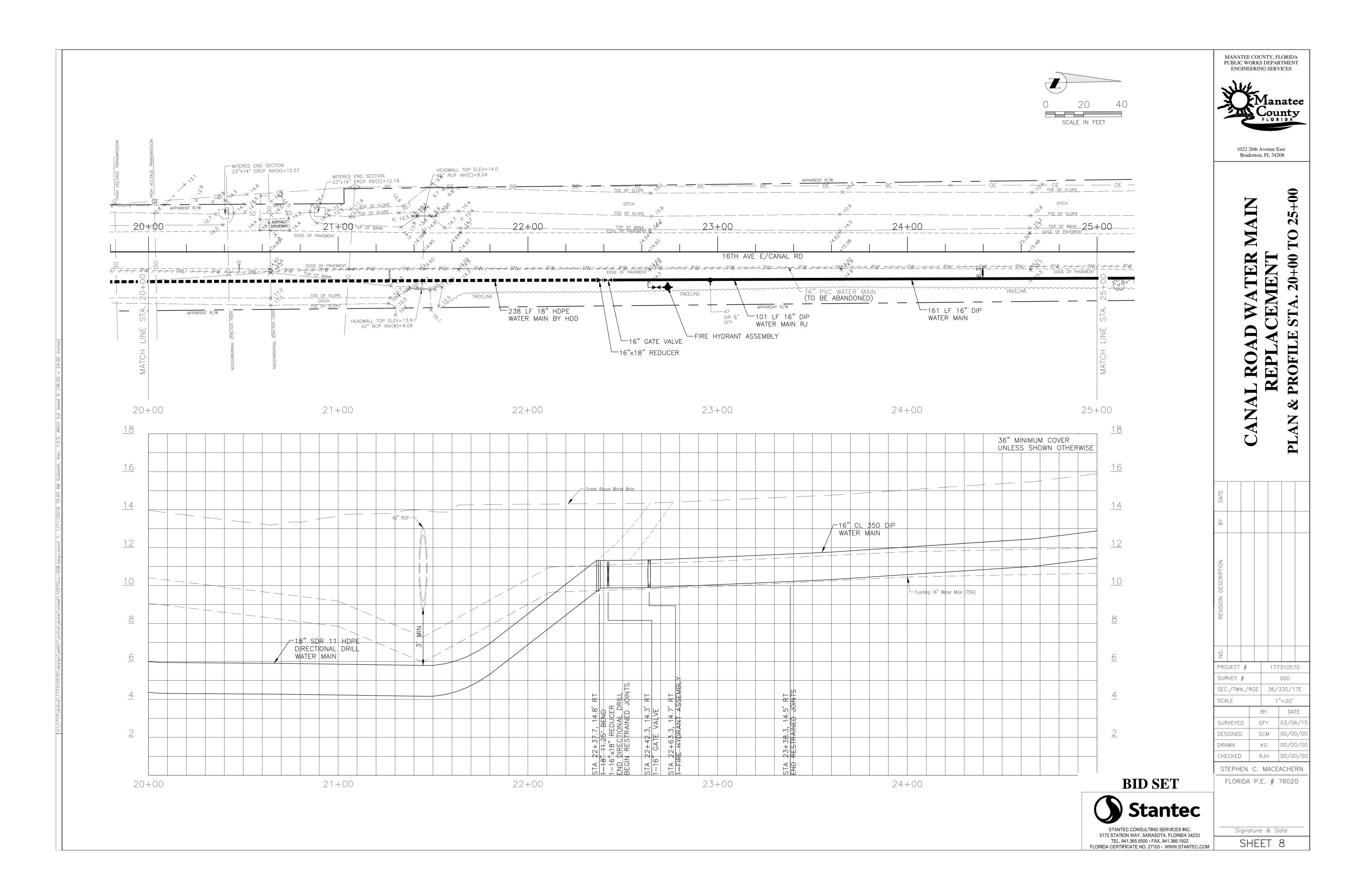
11+00

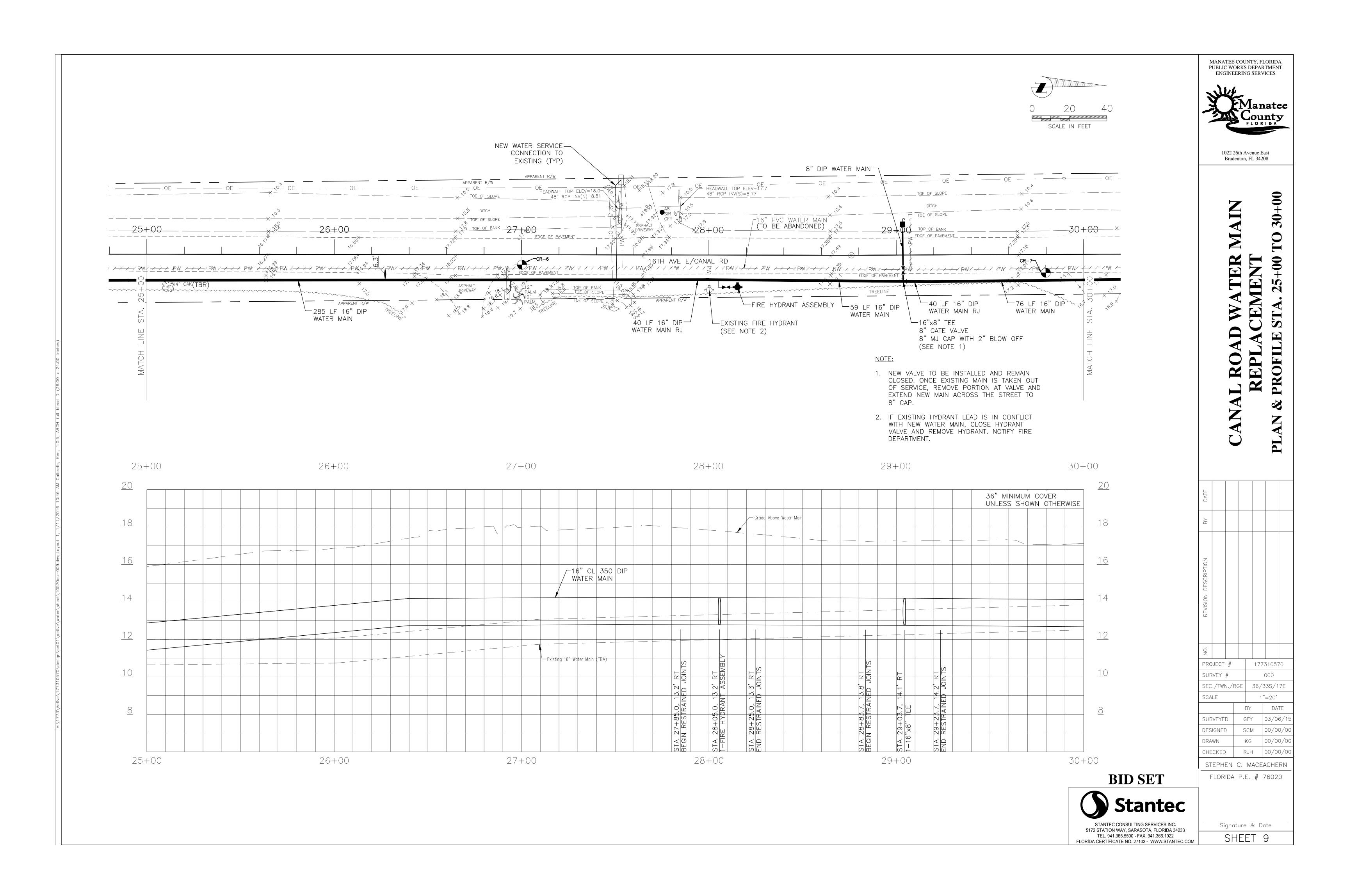
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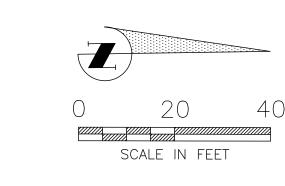
STANTEC CONSULTING SERVICES INC. 5172 STATION WAY, SARASOTA, FLORIDA 34233 TEL. 941.365.5500 - FAX. 941.366.1922 FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

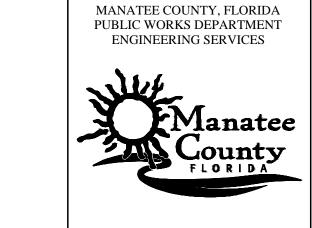
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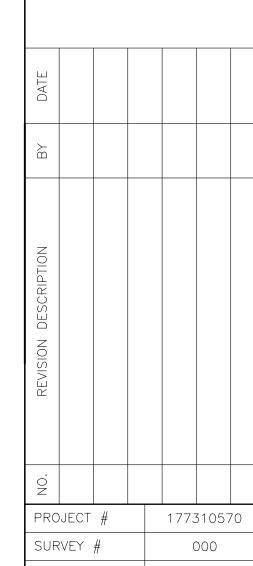






1022 26th Avenue East Bradenton, FL 34208

AL ROAD WATER MAIN REPLACEMENT



 PROJECT #
 177310570

 SURVEY #
 000

 SEC./TWN./RGE
 36/33S/17E

 SCALE
 1"=20'

 BY
 DATE

 SURVEYED
 GFY
 03/06/15

 DESIGNED
 SCM
 00/00/00

 DRAWN
 KG
 00/00/00

 CHECKED
 RJH
 00/00/00

STEPHEN C. MACEACHERN
FLORIDA P.E. # 76020

Stantec

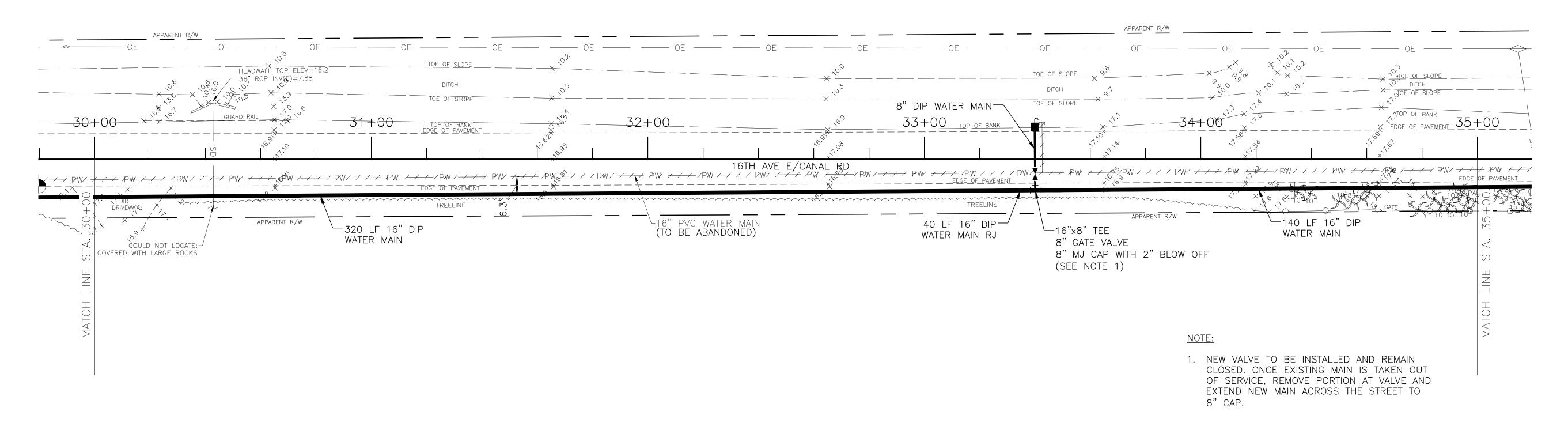
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233

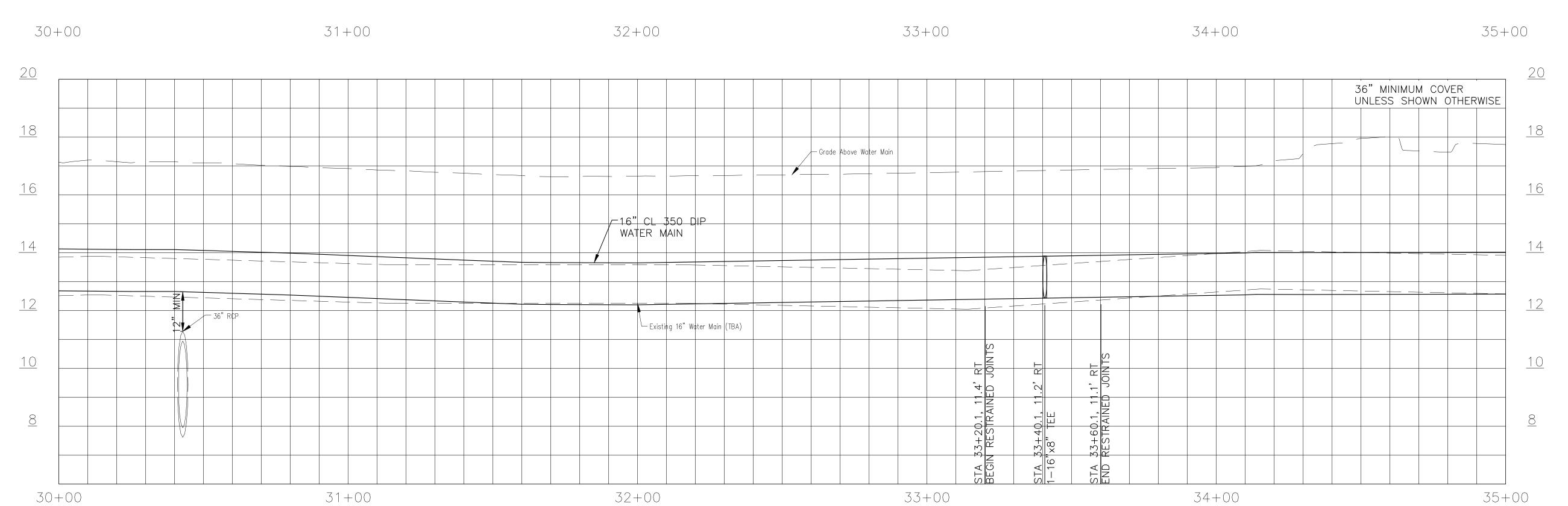
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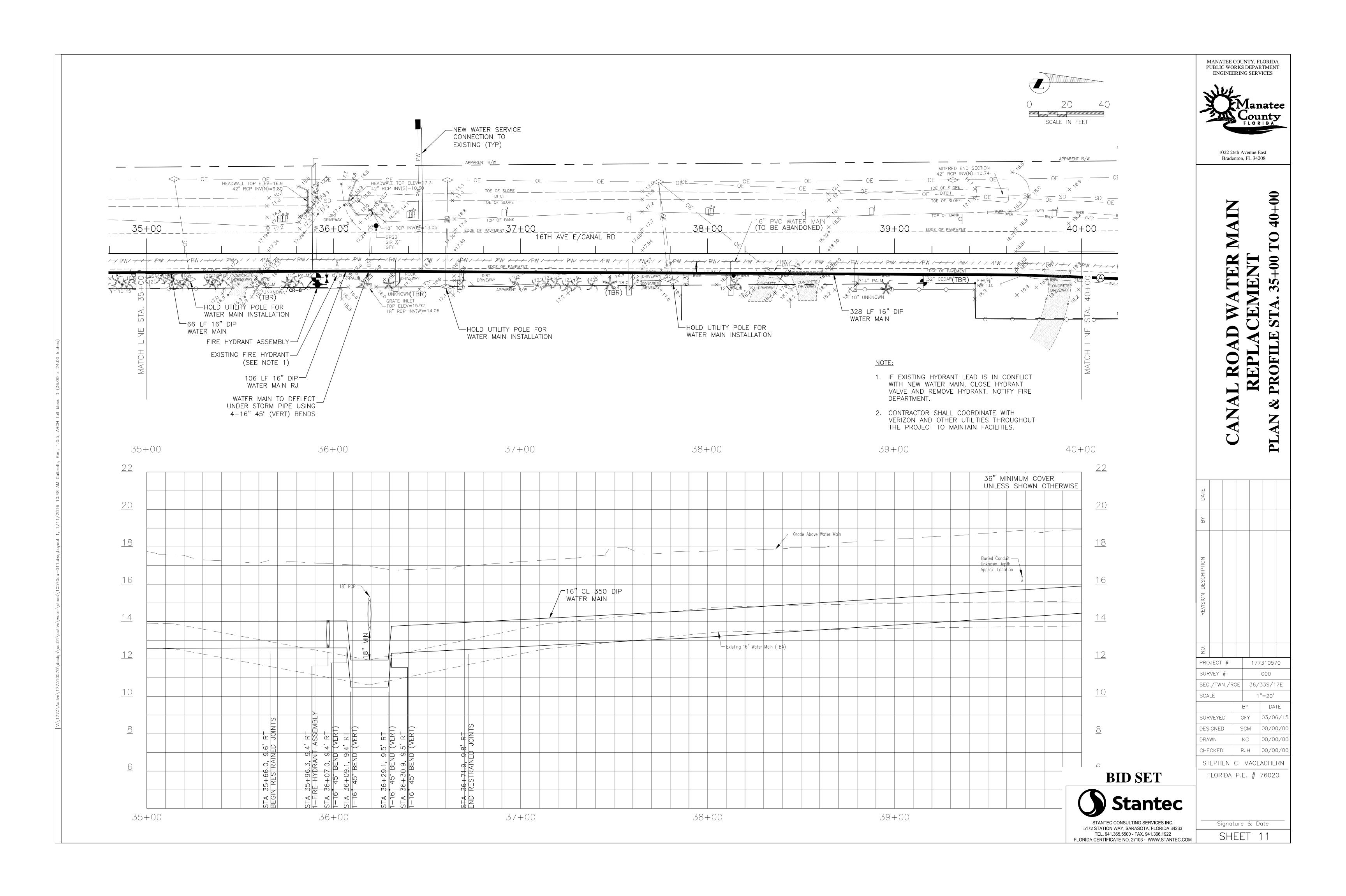
STANTEC CONSULTING SERVICES INC.
5172 STATION WAY, SARASOTA, FLORIDA 34233
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FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM

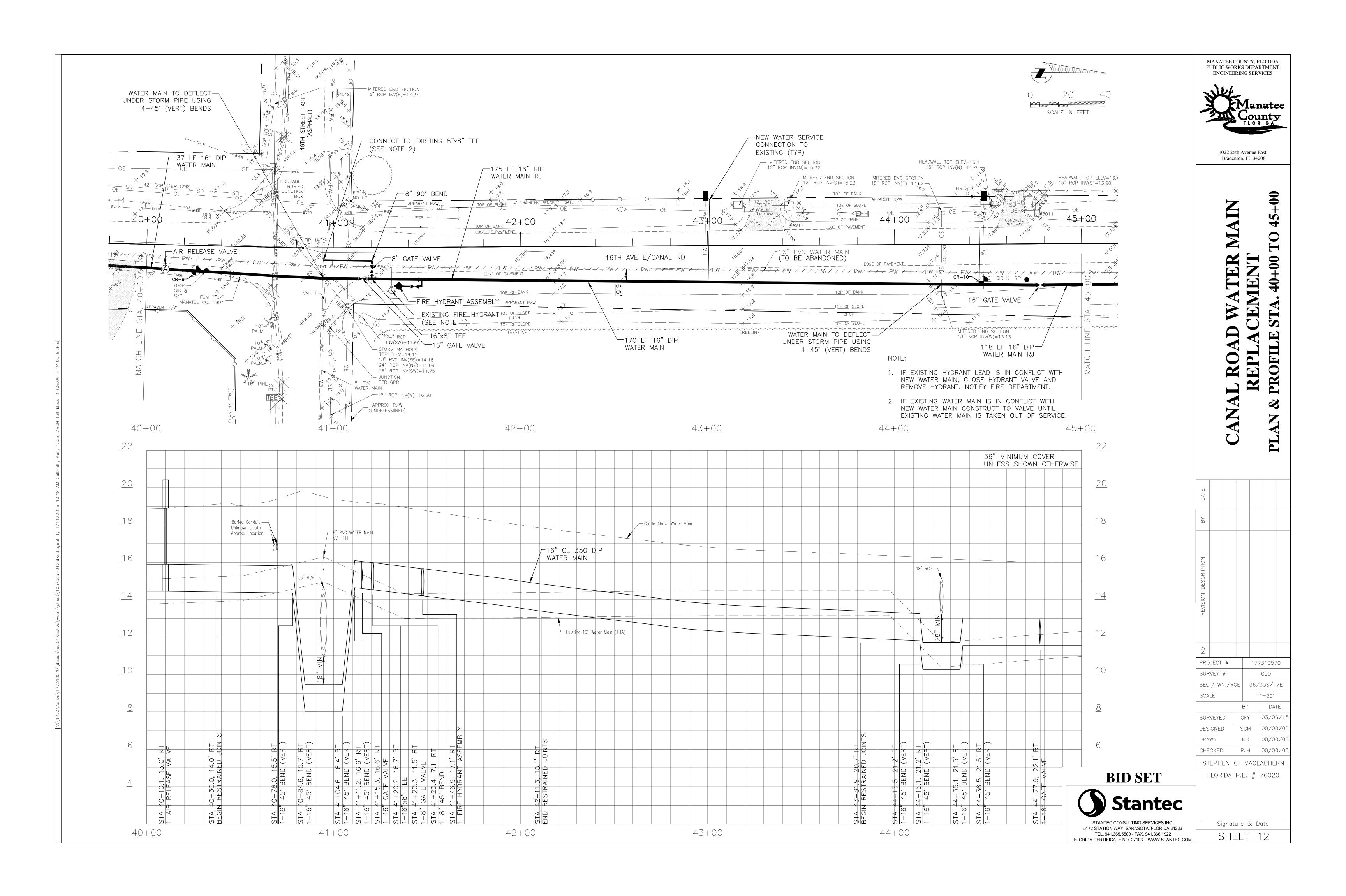
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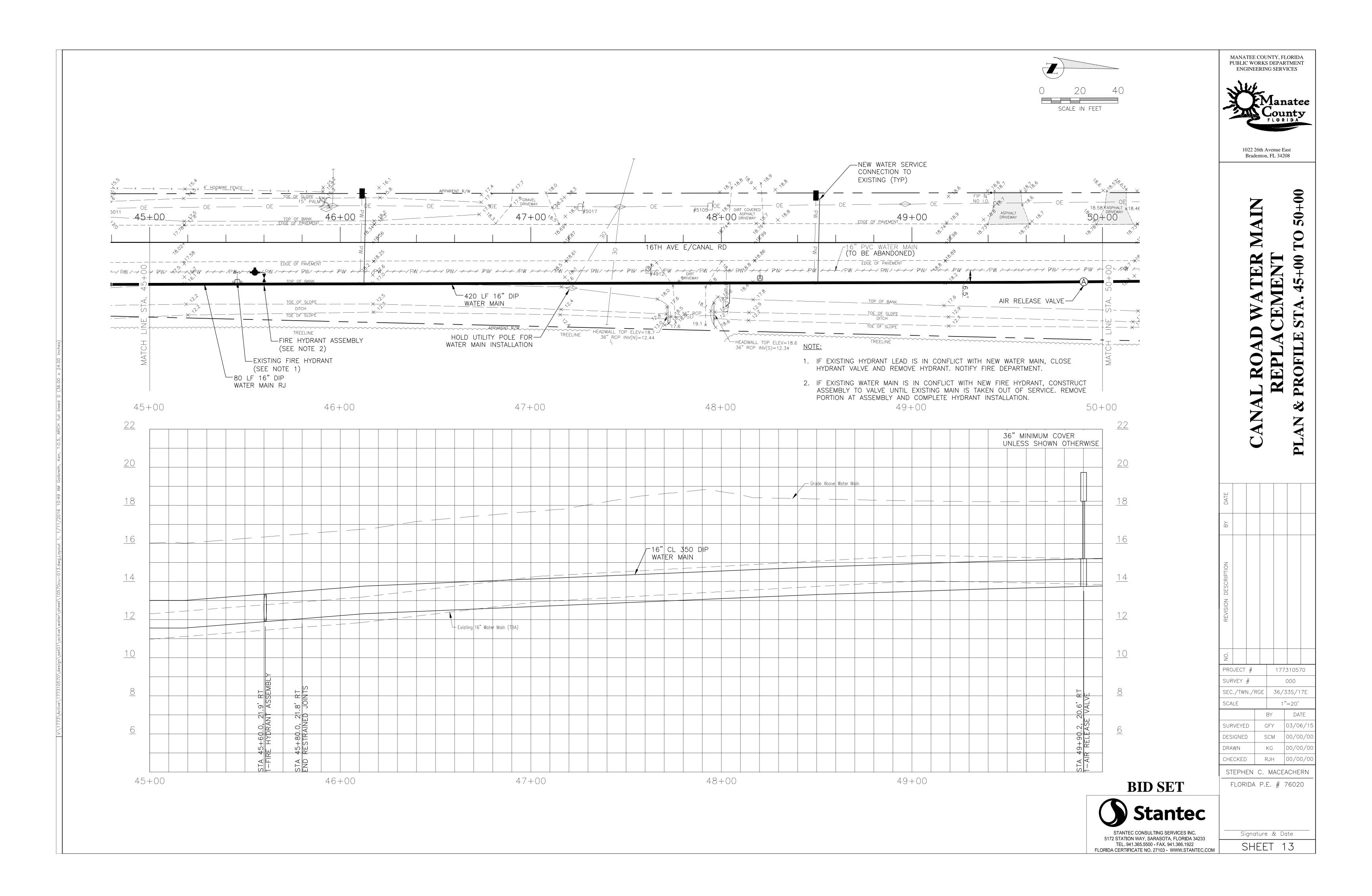
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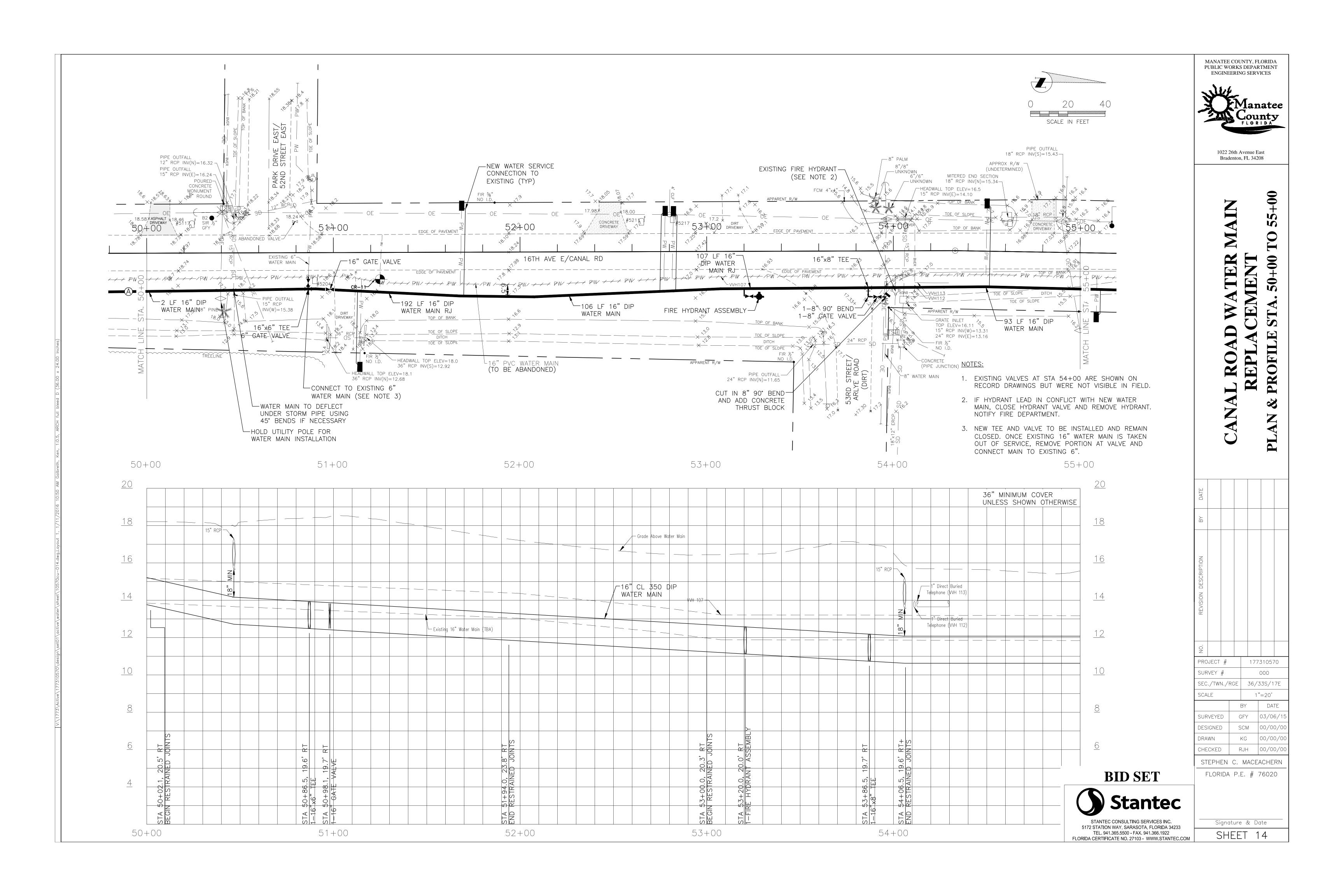


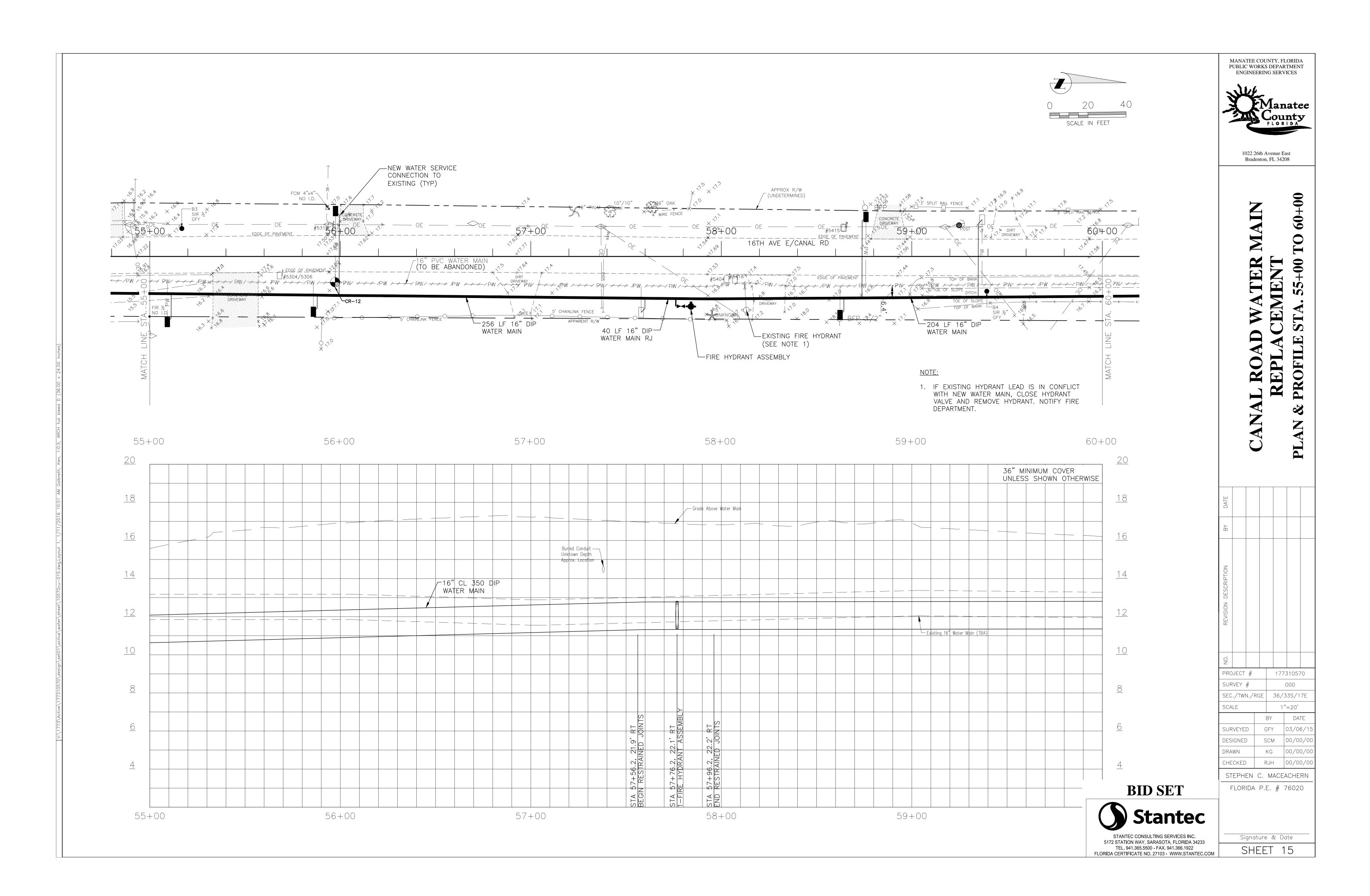


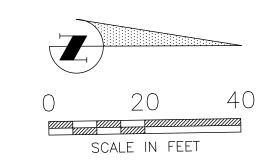












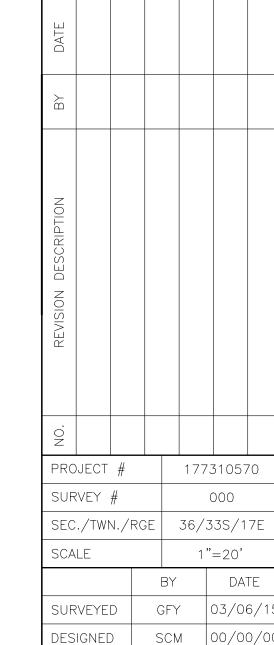


1022 26th Avenue East Bradenton, FL 34208

00+

WATER CEMENT

00+09 PROFILE REPL, RO



RJH 00/00/00 CHECKED STEPHEN C. MACEACHERN FLORIDA P.E. # 76020

KG 00/00/00

DESIGNED

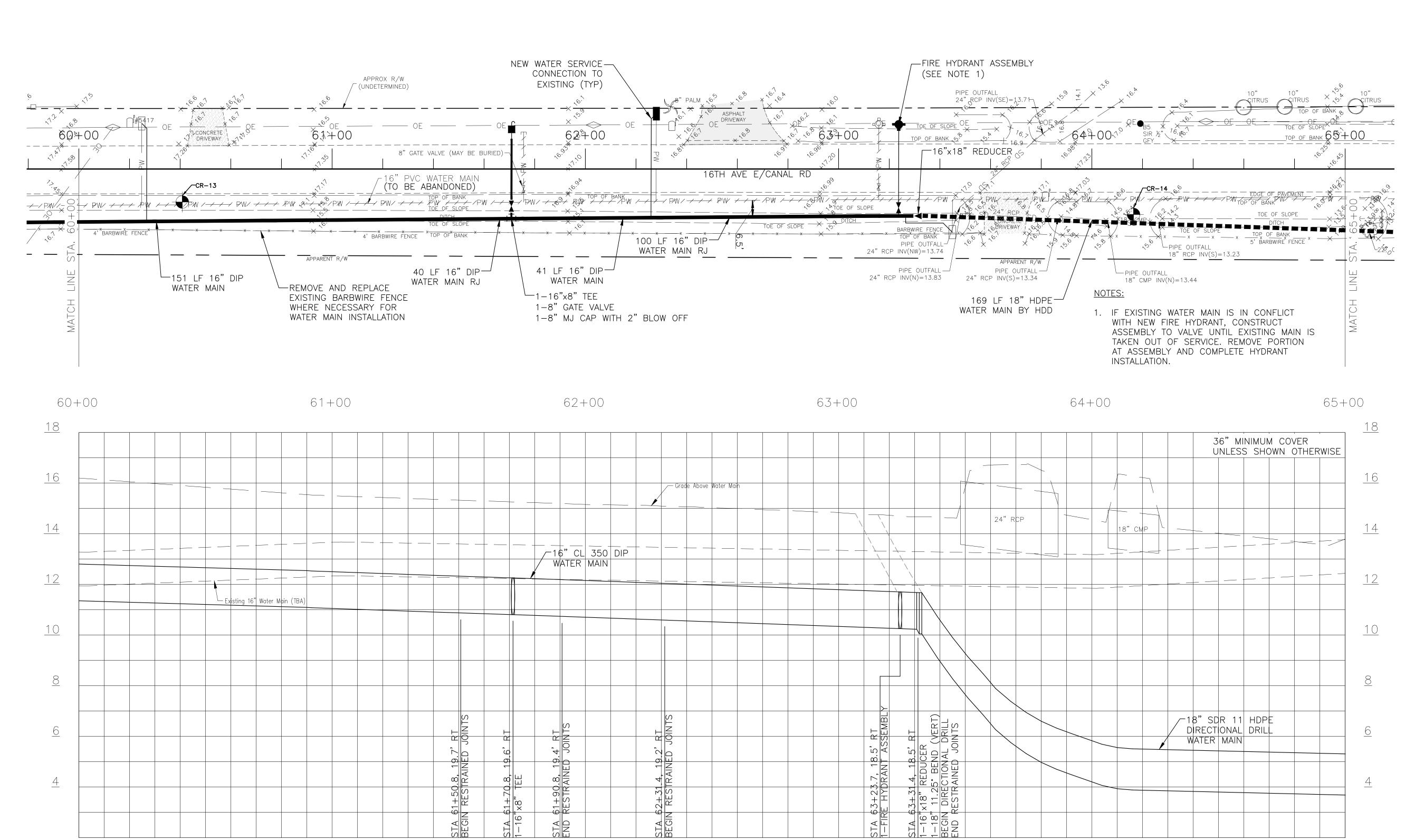
DRAWN

STANTEC CONSULTING SERVICES INC. 5172 STATION WAY, SARASOTA, FLORIDA 34233

**BID SET** 

65+00

Signature & Date TEL. 941.365.5500 - FAX. 941.366.1922 SHEET 16 FLORIDA CERTIFICATE NO. 27103 - WWW.STANTEC.COM



63+00

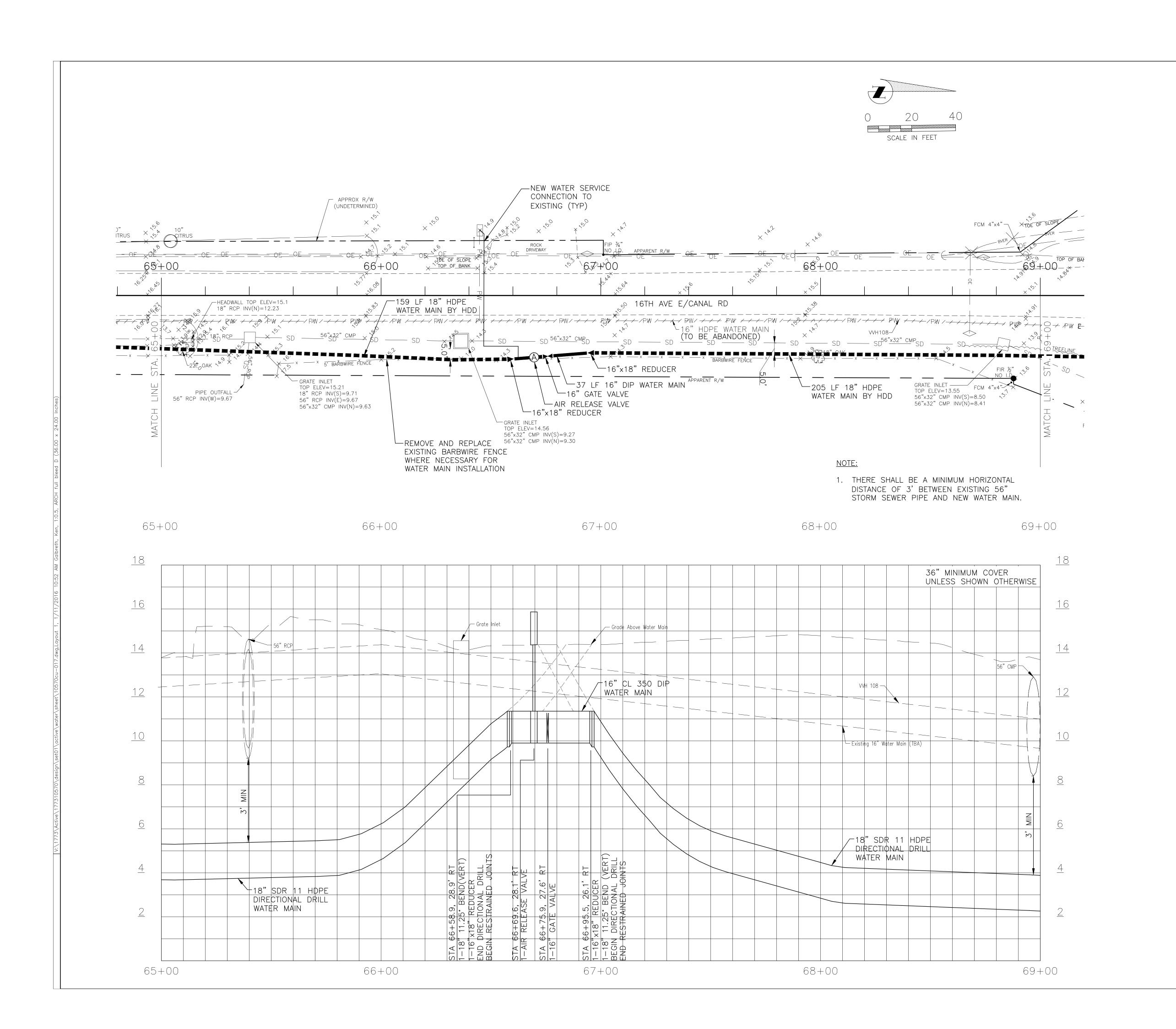
64+00

61+ RES

61 + 00

60+00

62+00



MANATEE COUNTY, FLORIDA PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES

MANATEE COUNTY, FLORIDA PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES

MANATEE COUNTY, FLORIDA PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES

1022 26th Avenue East Bradenton, FL 34208

# L ROAD WATER MAIN REPLACEMENT

DATE								
ВУ								
REVISION DESCRIPTION								
ON.								
PRO	JECT	#		177310570				
SUR	RVEY	#	000					
SEC	./TWI	N./RG	36/33S/17E					

SCALE

SURVEYED

DESIGNED

CHECKED

DRAWN

SET -



STEPHEN C. MACEACHERN
FLORIDA P.E. # 76020

1"=20'

BY DATE

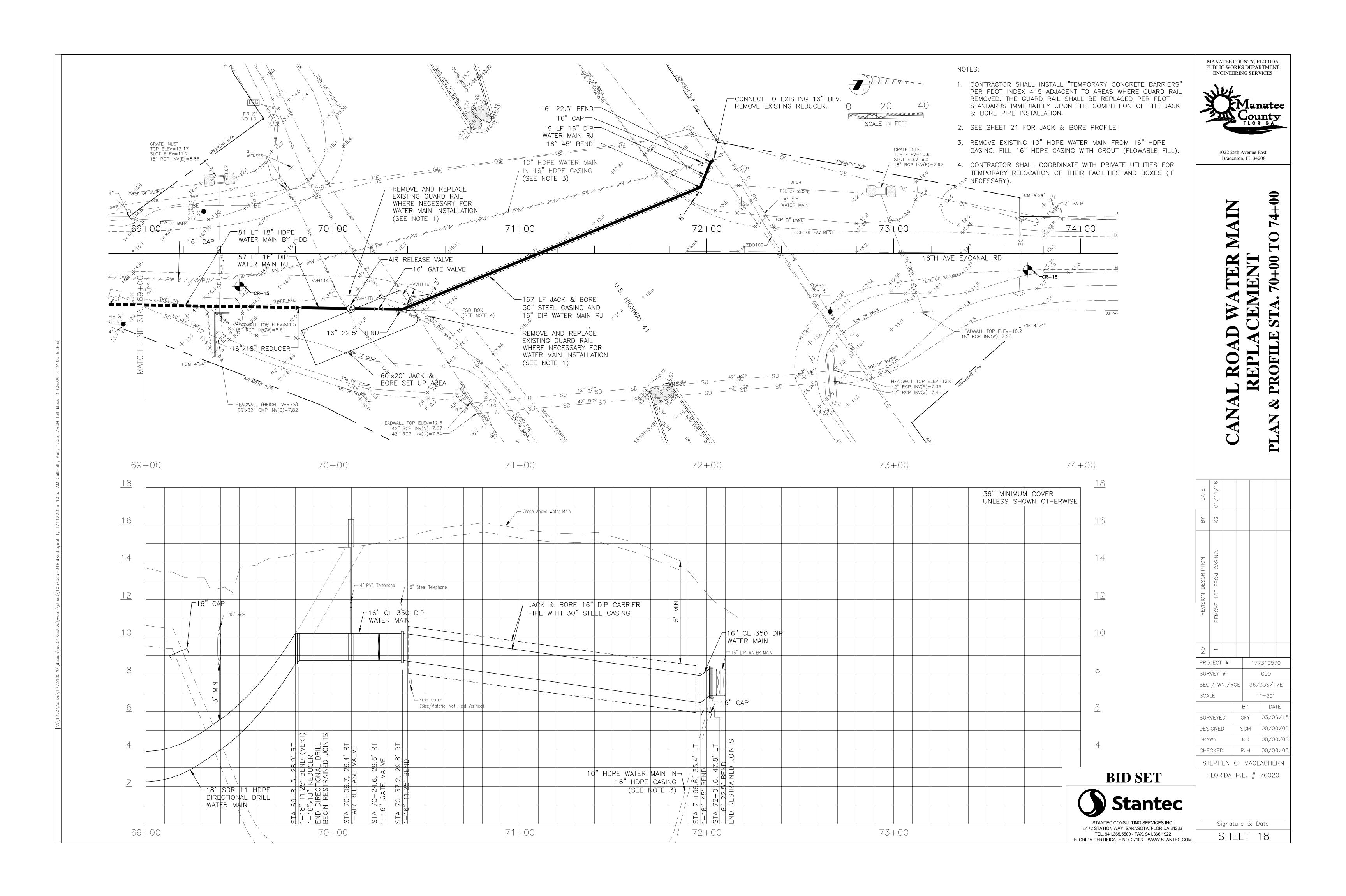
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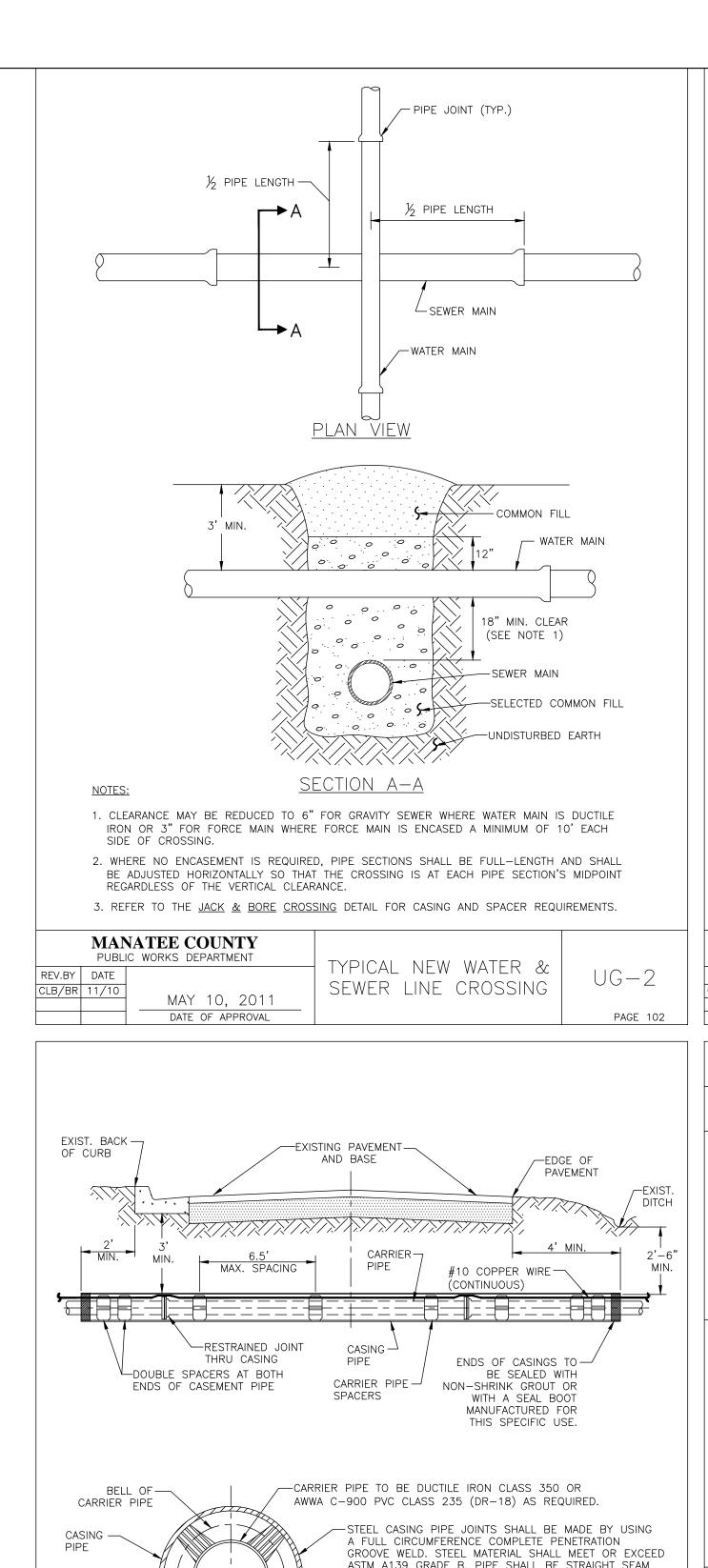
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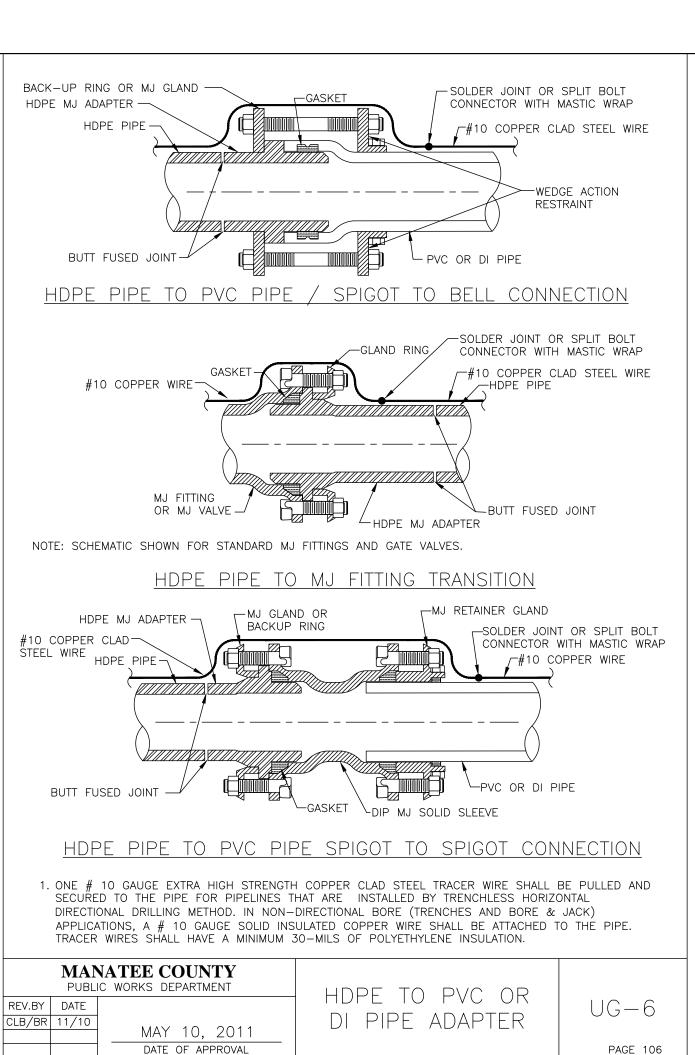
KG 00/00/00

RJH 00/00/00

Signature & Date
SHEET 17

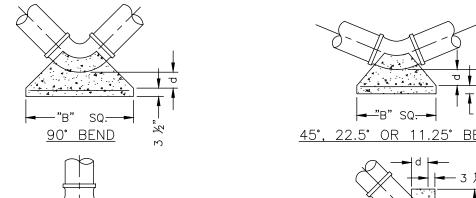






PIPE SIZE	90°BEND 45°E		45°B	END	22.5°BEND 1		11.25°BEND		DEAD END & TEE		45° WYE	
(IN.)	В	d	В	d	В	d	В	d	В	d	В	d
4	1.5	3 ½	1.1	3 ½	0.8	3 ½	0.6	3 ½	1.3	3 ½	1.1	3 1/2
6	2.2	5 1/4	1.6	3 3/4	1.2	3 ½	0.8	3 ½	1.9	4 ½	1.6	3 3/4
8	2.9	7	2.1	5	1.5	3 ½	1.1	3 ½	2.4	5 3/4	2.0	4 3/4
10	3.5	8 ½	2.6	6 1/4	1.9	4 ½	1.3	3 ½	3.0	7 1/4	2.5	6
12	4.2	10	3.1	7 ½	2.2	5 1/4	1.6	3 3/4	3.5	8 1/4	3.0	7 1/4
14	4.9	11 ¾	3.6	8 3/4	2.6	6 1/4	1.8	4 1/4	4.1	9 3/4	3.4	8 1/4
16	5.5	13 1/4	4.1	9 3/4	2.9	7	2.1	5	4.7	11 1/4	3.9	9 1/4
18	6.2	15	4.6	11	3.3	8	2.3	5 ½	5.2	12 ½	4.4	10 1
20	6.9	16 ½	5.0	12	3.6	8 3/4	2.6	6 1/4	5.8	14	4.9	11 3
24	8.2	19 ¾	6.0	14 ½	4.3	10 1/4	3.1	7 ½	6.9	16 ½	5.8	14
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9	8.5	20 ½	7.2	17 1
36	12.1	29	8.9	21 1/4	6.4	15 1/4	4.5	10 ¾	10.2	24 ½	8.6	20 3
REINFORCEMENT MAT SCHEDULE  FOR DIM. "B" BETWEEN 5.75' & 12.5' USE #4 @ 8" EACH WAY  "B" SQ. 13 ½"  FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY												

- THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF, CONCRETE STRENGTH  $f_c$  =3000 PSI, REINFORCEMENT  $f_y$  =60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
- 3. FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15" MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK. 4. RESTRAINED JOINTS MAY BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.



90° BEND %	45°, 22.5° OR 11.25
"B" SQ.— T3 ½"  TEE OR DEAD END	3 ½" B" SQ.— 45° WYE
MANATEE COUNTY PUBLIC WORKS DEPARTMENT	CONCRETE THRUST

MAY 10, 2011

DATE OF APPROVAL

REV.BY DATE

ALIGNMENT SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS.

9. FDOT CRITERIA SHALL BE MET FOR PIPES UNDER STATE ROADS.

CLB/BR 11/10

CUNCREIE THRUST BLOCKS

#### REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

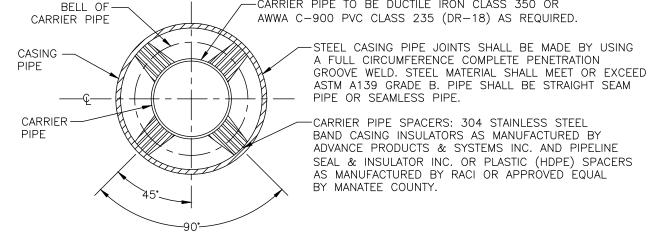
MAIN	HORIZ. BENDS			TEES						REDUCERS				PLUGS	& VALVES
PIPE SIZE	90°	45°	22.5°			SIZE	LENGTI	Н			SIZE	LENGTH	+		
36	142	59	28	x36 393	x30 318	x24 232	x20 165	x16 84	x12 1	X30 137	X24 247		X16 359		453
30	124	51	25	X30 333	X24 252	X20 189	X16 115	X12 23	x10 1	X24 137	X20 213	X16 276			391
24	106	44	21	X24 270	X20 211	X16 143	X12 61	X10 10	x8 1	X20 98	X16 178	X12 241			327
20	92	38	18	X20 225	X16 161	X12 85	X10 39	x8 1		X16 98	X12 176	X10 227			280
16	77	32	15	X16 177	X12 107	X10 65	X8 19	x6 1		X12 98	X10 163	X8 169			231
12	61	25	12	X12 127	X10 89	X8 50	x6 1			X10 88	X8 96	X6 131			181
10	52	22	10	X10 101	X8 64	×6 11				X8 51	X6 94	X4 125			153
8	44	18	9	X8 78	X6 30	×4_1				X6 54	X4 92				128
6	34	14	7	X6 46	×4_1					X4 50					98
4	24	10	5	x4 19											69

#### REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN	HORIZ. BENDS			TEES						REDUCERS			PLUGS & VALVE
PIPE SIZE	90° 45° 22.5°			SIZE LENGTH						SIZE LENGTH			
36	100	42	20	x36 163	x30 132	×24 96	x20 68	x16 35	x12	X30 57	X24 103	X20 X16 128 149	188
30	88	37	18	X30 138	X24 104	X20 78	X16 48	X12 10	x10_1	X24 57	X20 88	X16 114	162
24	75	31	15	X24 112	X20 87	X16 59	X12 25	x104	x8_1	X20 40	X16 74	X12 100	135
20	65	27	13	X20 93	X16 67	X12 35	X10 16	x8 <sub>1</sub>		X16 41	X12 73	X10 94	116
16	54	22	11	X16 73	X12 44	X10 27	x8 8	x6 <sub>1</sub>		X12 41	X10 68	X8 70	96
12	43	18	8	X12 53	X10 37	X8 21	x6_1			X10 37	X8 40	X6 54	75
10	37	15	7	X10 42	X8 26	x6 <sub>5</sub>				X8 21	X6 39	X4 52	63
8	30	13	6	X8 32	X6 12	x4_1				X6 22	X4 38		53
6	24	10	5	X6 19	×4_1					X4 21			41
4	17	7	3	×4 <sub>8</sub>									29

SEE <u>RESTRAINED LENGTHS FOR PVC PIPE</u> DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

		NATEE COUNTY IC WORKS DEPARTMENT	RESTRAINED	
REV.BY	DATE			UG-9
LB/BR	11/10	NAN/ 10 0011	LENGTHS FOR DIP	
		MAY 10, 2011		
		DATE OF APPROVAL		PAGE 109



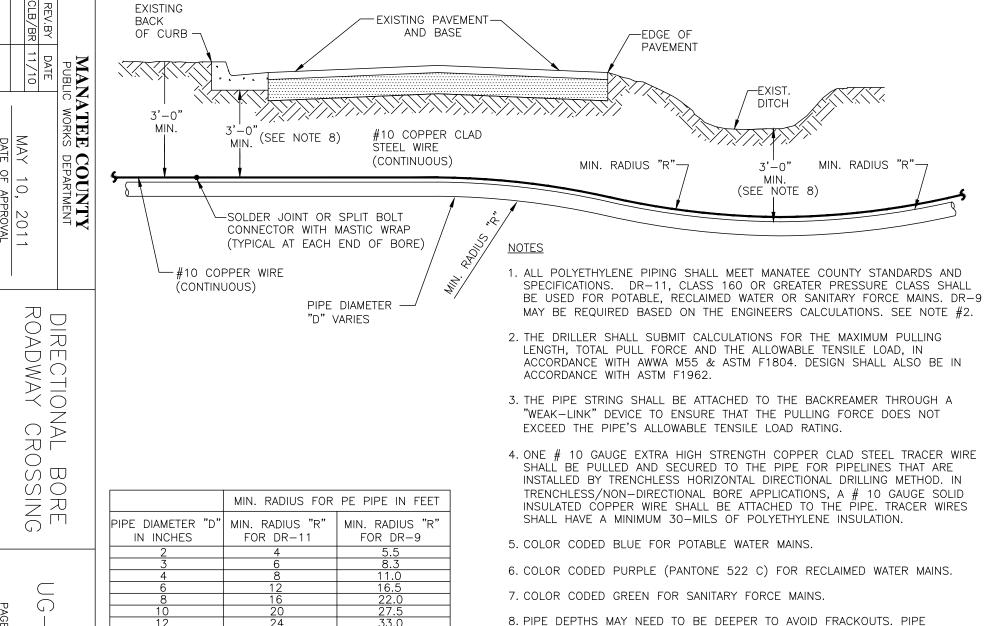
NOTES:

1. THE ENGINEER OF RECORD MAY SELECT LARGER CASING DIAMETERS. 2. FOR JACK & BORE SPECIFICATIONS UNDER STATE ROADS AND RAILROADS REFER TO THE F.D.O.T. UTILITY ACCOMMODATION MANUAL, LATEST EDITION.

	MANATEE COUNTY PUBLIC WORKS DEPARTMENT									
REV.BY	DATE									
CLB/BR	11/10	MAY 10 2011								
		MAY 10, 2011								
1	l	I DATE OF APPROVAL								

JACK & BORE CROSSING

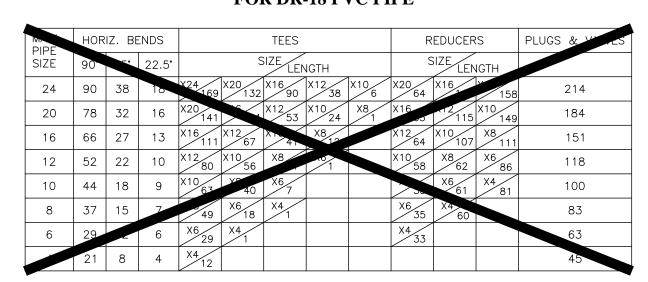
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#### REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

UG-7

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- 1. RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
- 2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTINGSECTIONS
- 3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
- 4. PIPE SIZES ARE GIVEN IN INCHES.
- 5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
- 6. LENGTHS SHOWN ARE FOR A TEST PRESURE OF 180 PSI.
- 7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFTEY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
- 8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL RESTRAINED LENGTHS FOR PIPE.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT REV.BY DATE CLB/BR 11/10

MAY 10, 2011 DATE OF APPROVAL

RESTRAINED LENGTHS FOR PVC

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## PROJECT # 177310570 SURVEY # 000 36/33S/17E SEC./TWN./RGE SCALE 1"=20' DATE BY GFY 03/06/1 SURVEYED SCM |00/00/0 DESIGNED DRAWN KG 00/00/0 RJH |00/00/0 CHECKED

MANATEE COUNTY, FLORIDA PUBLIC WORKS DEPARTMENT

ENGINEERING SERVICES

1022 26th Avenue East

Bradenton, FL 34208

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EME

M

**BID SET** 



STEPHEN C. MACEACHERN

FLORIDA P.E. # 76020

Signature & Date SHEET 19

