

TOWN OF LONGBOAT KEY, FLORIDA  
IMPROVEMENTS TO WATER SUPPLY SYSTEM  
PLANS

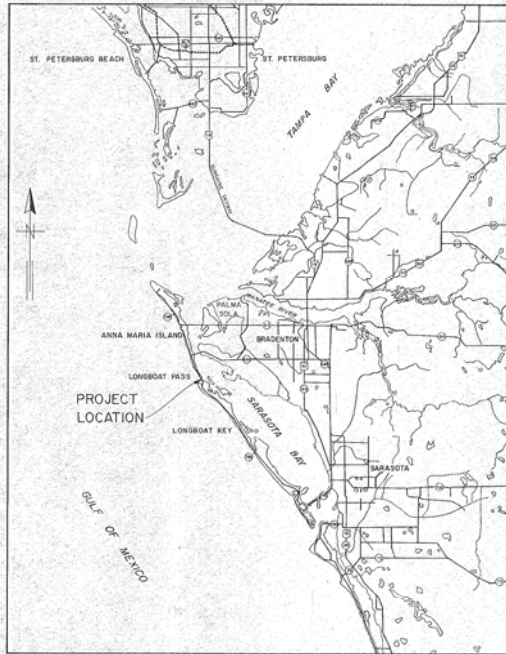
FOR THE CONSTRUCTION OF  
LONGBOAT PASS WATER MAIN CROSSING  
REPLACEMENT



GREELEY AND HANSEN  
ENGINEERS  
1211 NORTH WEST SHORE BLVD.  
TAMPA, FLORIDA 33607

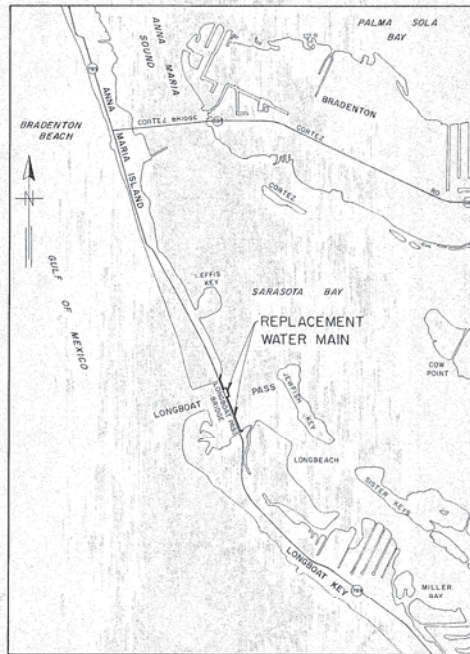
MARCH 1983

RECORD DRAWING  
THIS RECORD DRAWING IS NOT WARRANTED  
TO REPRESENT CONDITIONS UPON COMPLETION  
WITHIN REASONABLE TOLERANCES BASED  
FURNISHED TO THE ENGINEER PERTAINING  
DURING CONSTRUCTION



LOCATION MAP

SCALE: 1" = 4 MILES



SITE MAP

SCALE: 1" = 2000'

INDEX

SHEET	TITLE
1.	LOCATION MAP, SITE PLAN, INDEX AND LEGEND
2.	PLAN AND PROFILE - STA. 0+00.0 TO STA. 12+09.0
3.	PLAN AND PROFILE - STA. 12+09.0 TO STA. 23+98.9
4.	PIPE SUPPORT AND HANGER DETAILS
5.	SUBAQUEOUS NAVIGATION CHANNEL CROSSING DETAILS
6.	BRIDGE DEPARTURE DETAILS AT NAVIGATION CHANNEL
7.	BRIDGE DEPARTURE DETAILS ON SHORE AND PIPE HANGER SPACING DETAILS
8.	MISCELLANEOUS DETAILS
SD-1	SUPPLEMENTARY DRAWING NO. 1
SD-2	SUBAQUEOUS PIPE BEDDING CROSS SECTIONS AS CONSTRUCTED

GENERAL NOTES:

- All elevations are referenced to Mean Sea Level Datum of 1929. Bench marks are shown on the Plans.
- Locations, elevations and dimensions of existing utilities, structures and other features are shown according to the best information available at the time of the preparation of these plans but do not purport to be absolutely correct. The Contractor shall verify the locations, elevations and dimensions of all existing utilities, structures and other features affecting his work prior to construction.
- All work shall be scheduled and accomplished in accordance with the Specific Provisions subsection headed "Sequence of Construction"
- The Contractor shall provide at least 48 hours notice to the various utility companies in order to permit the location of existing underground utilities in advance of construction.



RECORD DRAWING

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LEGEND

EXISTING UTILITIES, STRUCTURES AND FEATURES	NEW CONSTRUCTION PLAN VIEW
WATER MAIN	WATER MAIN
VALVES: GATE (in line)	VALVES: BUTTERFLY
GATE (on branch)	AIR RELEASE
HYDRANT	BLOW-OFF ASSEMBLY
BLOW-OFF ASSEMBLY	TEE
ELECTRIC CABLE	WYE
POWER POLE (and guys)	
BUILDING	
TREES	
PAVEMENT	
GUARD RAIL	
UNPAVED ROAD	
SANITARY SEWER	
SANITARY FORCE MAIN	
SHORE LINE	
BENCH MARK	
SIGN	

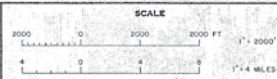
PROFILE VIEW
(POINT OF CURVE)
(POINT OF TANGENCY)
EXISTING GRADE
PROPOSED GRADE
HORIZONTAL DEFLECTION ANGLE
VERTICAL DEFLECTION ANGLE
4.65% (SLOPE OF PIPE)
STATION
PIPE INVERT ELEVATION
5'-100'-FT. STATION

GREELEY AND HANSEN ENGINEERS  
1211 N. WEST SHORE BLVD.  
TAMPA FLORIDA 33607

DESIGNED RSH  
DRAWN AA  
CHECKED TLW

APPROVED  
DATE  
TOWN OF LONGBOAT KEY  
DONALD NEWTON  
REGISTERED ENGINEER  
GREELEY AND HANSEN, ENGINEERS

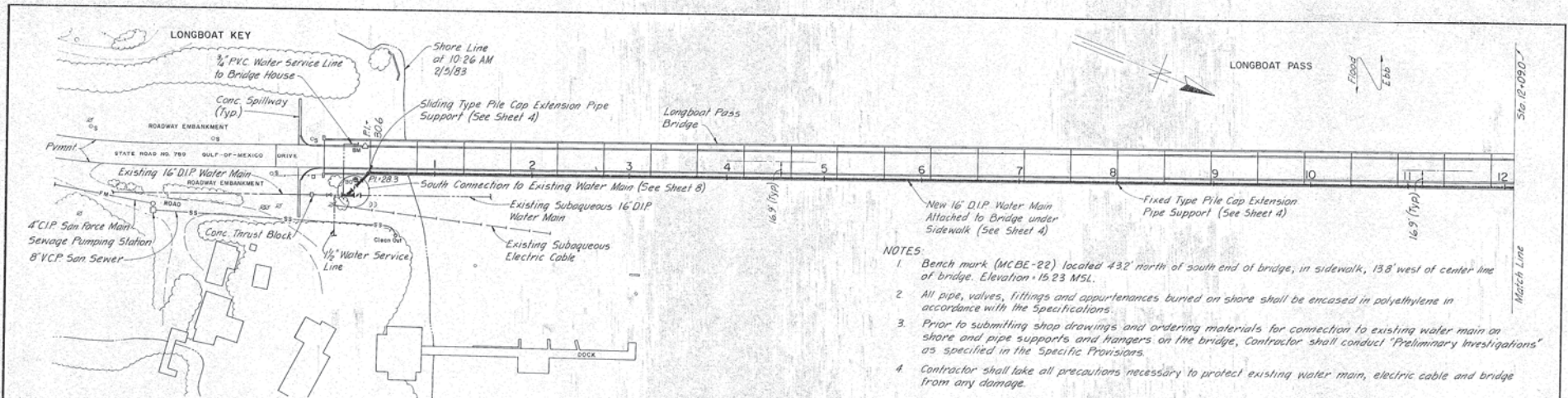
NO. DATE APP. REVISION  
3/18/83 TLW Record Dwg. Revisions



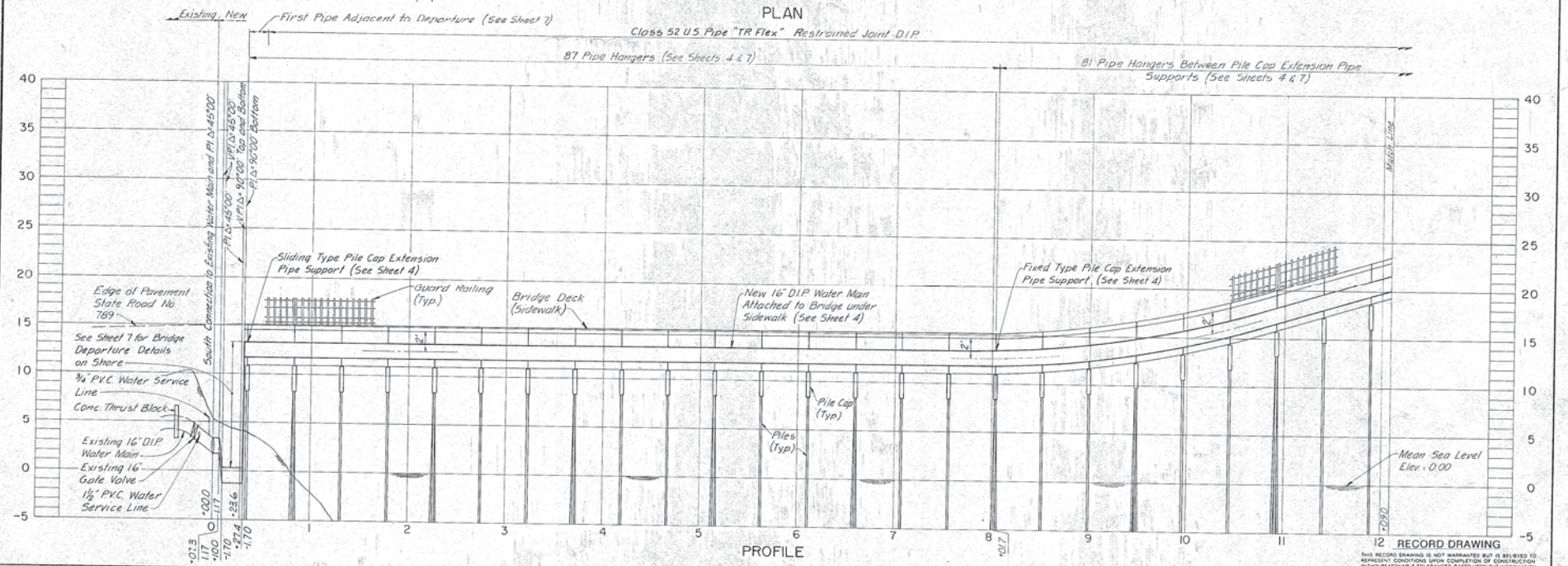
TOWN OF LONGBOAT KEY, FLORIDA  
IMPROVEMENTS TO WATER SUPPLY SYSTEM  
LONGBOAT PASS WATER MAIN  
CROSSING REPLACEMENT

LOCATION MAP, SITE MAP, INDEX  
AND LEGEND

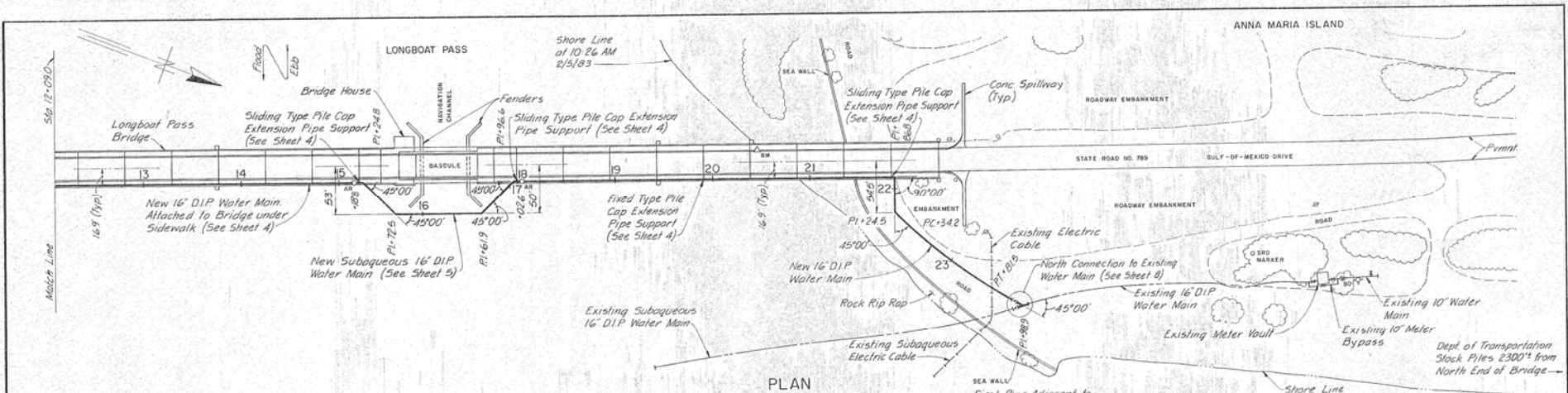
PROJ. NO. 5230-100-00-23  
SHEET 1 OF 8  
DATE MARCH 1983 REV. 1



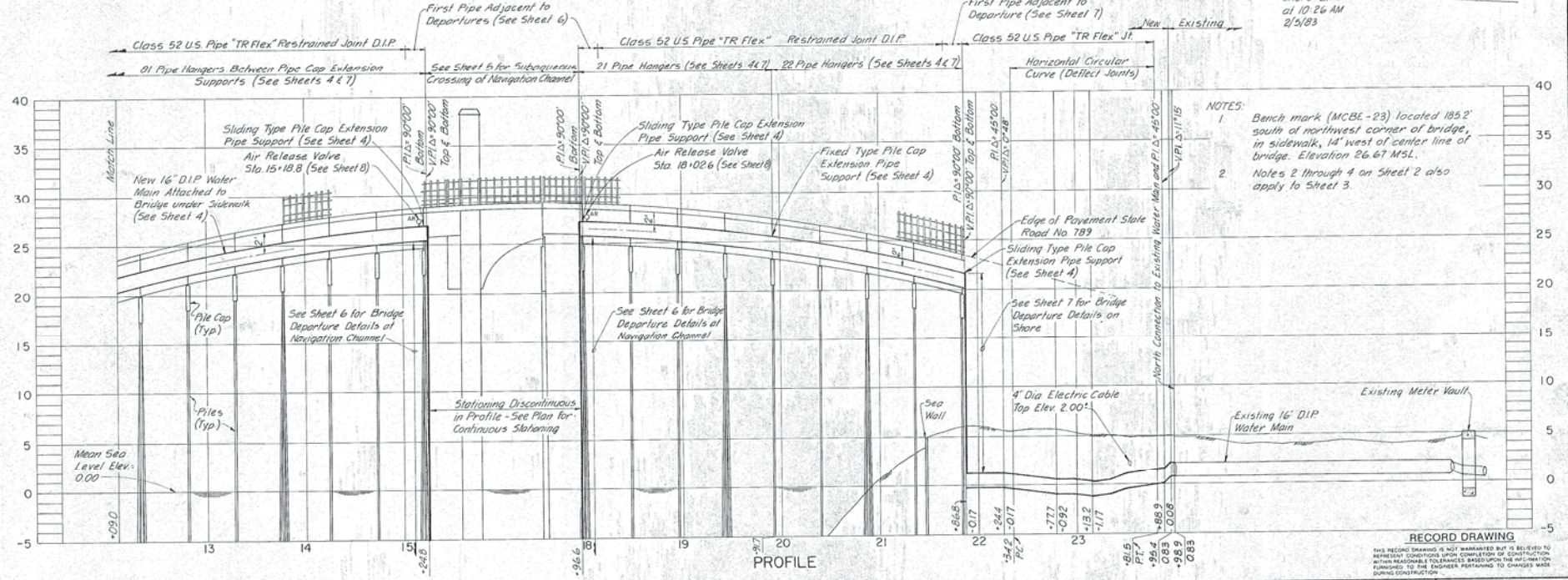
- NOTES:**
1. Bench mark (MCBE-22) located 432' north of south end of bridge, in sidewalk, 138' west of center line of bridge. Elevation +15.23 MSL.
  2. All pipe, valves, fittings and appurtenances buried on shore shall be encased in polyethylene in accordance with the Specifications.
  3. Prior to submitting shop drawings and ordering materials for connection to existing water main on shore and pipe supports and hangers on the bridge, Contractor shall conduct "Preliminary Investigations" as specified in the Specific Provisions.
  4. Contractor shall take all precautions necessary to protect existing water main, electric cable and bridge from any damage.



<b>GREELEY AND HANSEN ENGINEERS</b> 1211 N. WEST SHORE BLVD TAMPA, FLORIDA 33607	DESIGNED RSH	APPROVED _____ TOWN OF LONGBOAT KEY DATE _____ GREELEY AND HANSEN, ENGINEERS	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:5%;">NO.</th> <th style="width:5%;">DATE</th> <th style="width:5%;">APP.</th> <th style="width:5%;">REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	APP.	REVISION					SCALE 1" = 10' HORIZ. 1" = 10' VERT.	<b>TOWN OF LONGBOAT KEY, FLORIDA</b> <b>IMPROVEMENTS TO WATER SUPPLY SYSTEM</b> <b>LONGBOAT PASS WATER MAIN</b> <b>CROSSING REPLACEMENT</b>	<b>PLAN AND PROFILE</b> <b>STA. 0+00 TO STA. 12+090</b>	PROJ. NO. 5230-100-00-23 SHEET <b>2</b> OF 8 DATE MARCH 1983 REV. 1
	NO.			DATE	APP.	REVISION									
DRAWN AA CHECKED TLW	THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITHIN REASONABLE TOLERANCES, BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.														



PLAN



PROFILE

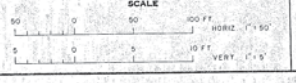
- NOTES:
- Bench mark (MCBE-23) located 185.2' south of northwest corner of bridge, in sidewalk, 14' west of center line of bridge. Elevation 26.67 MSL.
  - Notes 2 through 4 on Sheet 2 also apply to Sheet 3.

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1211 N. WEST SHORE BLVD.  
TAMPA, FLORIDA 33607

DESIGNED RSH  
DRAWN AA  
CHECKED TLW

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
TOWN OF LONGBOAT KEY  
DATE \_\_\_\_\_  
GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1	3/19/83	TLW	Record Dwg. Revisions

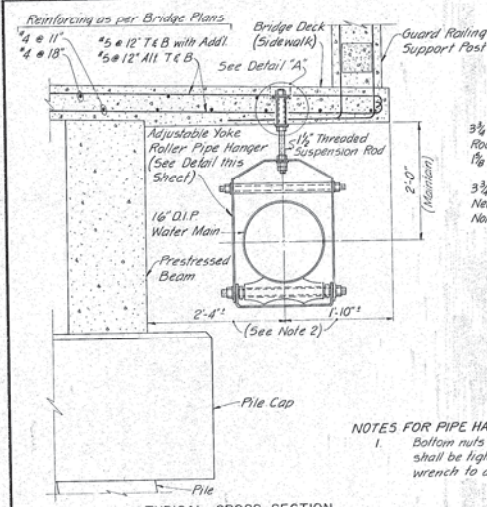


TOWN OF LONGBOAT KEY, FLORIDA  
IMPROVEMENTS TO WATER SUPPLY SYSTEM  
LONGBOAT PASS WATER MAIN  
CROSSING REPLACEMENT

PLAN AND PROFILE  
STA. 12+090 TO STA. 23+989

PROJ. NO. 5230-100-00-23  
SHEET 3 OF 8  
DATE MARCH 1983 REV. 1

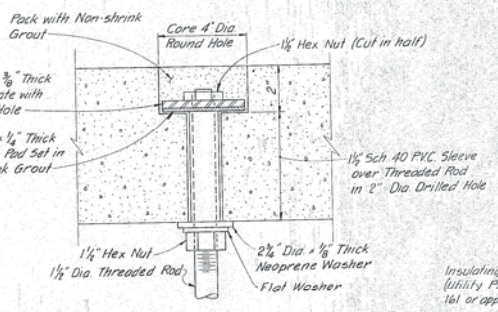
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THIS RECORD DRAWING IS NOT WARRANTED BUT IS BELIEVED TO REPRESENT CONDITIONS UPON COMPLETION OF CONSTRUCTION WITH REASONABLE TOLERANCES BASED UPON THE INFORMATION FURNISHED TO THE ENGINEER PERTAINING TO CHANGES MADE DURING CONSTRUCTION.



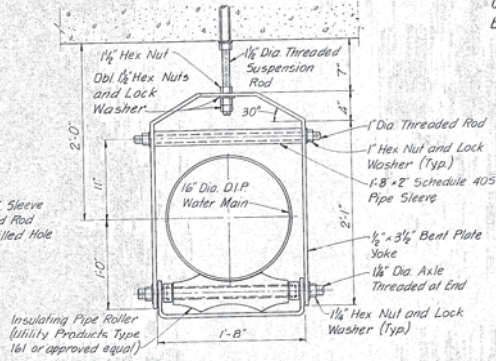
TYPICAL CROSS SECTION  
SCALE: 1"=1'-0"

NOTES FOR PIPE HANGERS:

1. Bottom nuts on all threaded suspension rods shall be tightened to equal torque with torque wrench to achieve uniform loading on all hangers.
2. Dimensions shown from face of beam and edge of sidewalk shall be adjusted in field as directed by the Engineer to avoid reinforcing steel in bridge deck.



DETAIL "A"  
NOT TO SCALE

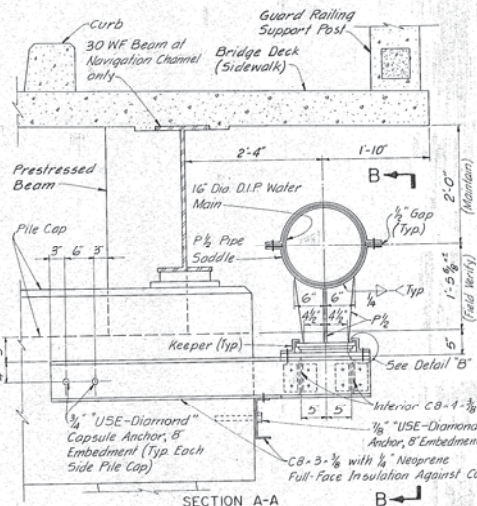


ADJUSTABLE YOKE ROLLER PIPE HANGER  
SCALE: 1/2"=1'-0"

PIPE HANGER DETAILS

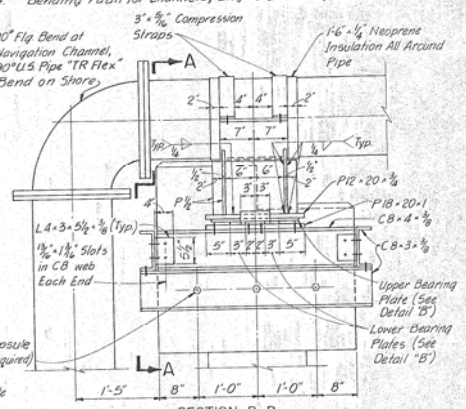
NOTES FOR PILE CAP EXTENSION PIPE SUPPORTS:

1. Contractor shall verify pile cap dimensions in field prior to submitting shop drawings.
2. All welding shall be done in the shop by certified welders.
3. All channels and bearing plates shall be installed level.
4. Bending radii for channels, angles and keepers shall be 1/2".
5. See Supplementary Drawing No. 1 for revisions to Pile Cap Extension Pipe Supports at Navigation Channel Departures.



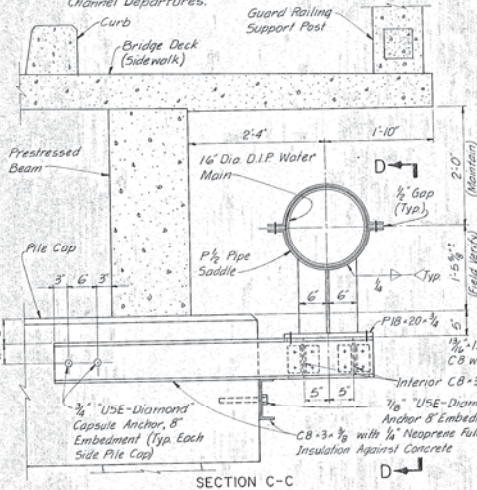
SECTION A-A

SLIDING TYPE SUPPORTS (AT BRIDGE DEPARTURES)  
SCALE: 1"=1'-0"



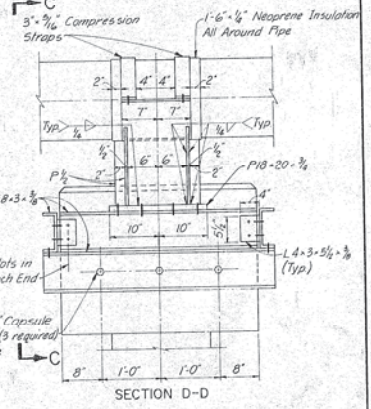
SECTION B-B

PILE CAP EXTENSION PIPE SUPPORT DETAILS



SECTION C-C

FIXED TYPE SUPPORTS (AT STATIONS 8+0.17 AND 9+1.7)  
SCALE: 1"=1'-0"



SECTION D-D

GENERAL NOTES FOR PIPE HANGERS AND PILE CAP EXTENSION PIPE SUPPORTS:

1. Contractor shall locate reinforcing steel in bridge deck and pile caps in accordance with the Specifications prior to fabrication or construction. Adjustments in location of hangers and capsule anchors to avoid reinforcing steel shall be as directed by the Engineer.
2. The Contractor shall submit complete, detailed shop drawings for approval prior to fabrication.
3. All plates, channels, anchors, angles, straps, rods, bolts, washers, nuts, pipe sleeves and other metal shall be Type 316 stainless steel conforming to the Specifications.
4. All holes drilled in bridge deck shall be plumb. All holes drilled in pile caps shall be true and level. Prior to inserting "USE-Diamond" capsule anchors, all holes shall be thoroughly cleaned of all dust and loose particles with compressed air.

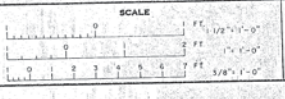
DETAIL "B"  
SCALE: 1/4"=1"

RECORD DRAWING

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1211 N. WEST SHORE BLVD.  
TAMPA, FLORIDA 33607

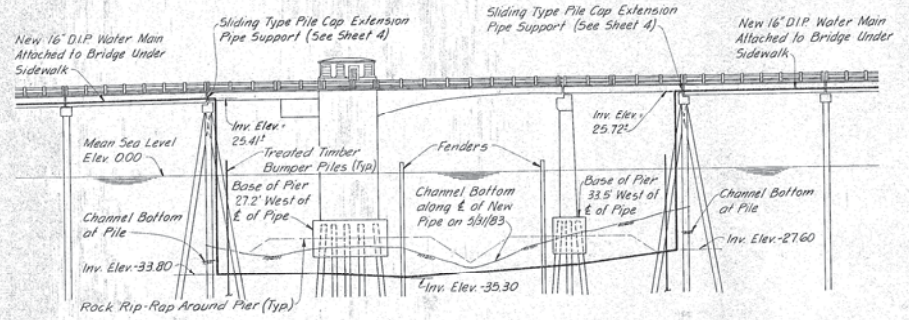
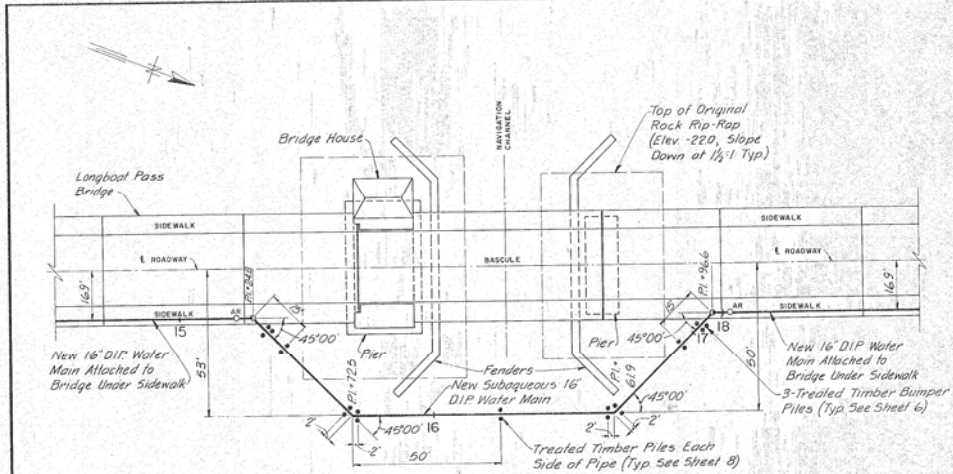
DESIGNED RSH, JFS	APPROVED _____ DATE _____
DRAWN AA	TOWN OF LONGBOAT KEY
CHECKED TLW	9/19/84 TLM Record Dwg Revisions
	NO. DATE APP. REVISION



TOWN OF LONGBOAT KEY, FLORIDA  
IMPROVEMENTS TO WATER SUPPLY SYSTEM  
LONGBOAT PASS WATER MAIN  
CROSSING REPLACEMENT

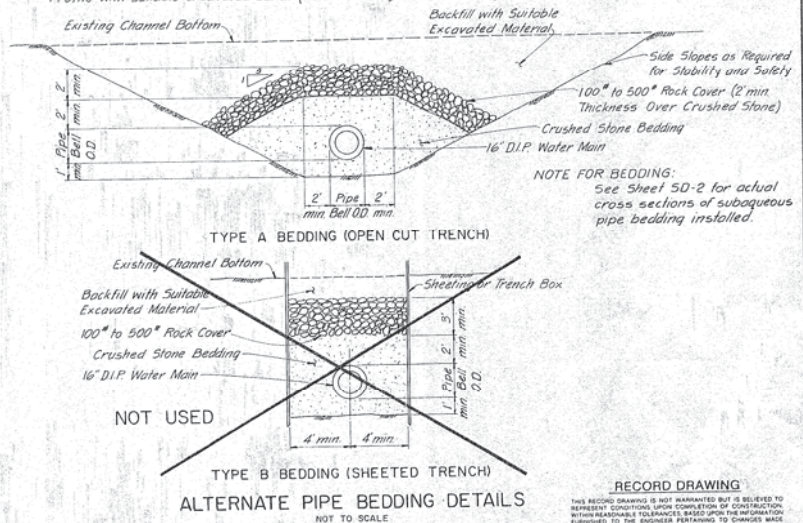
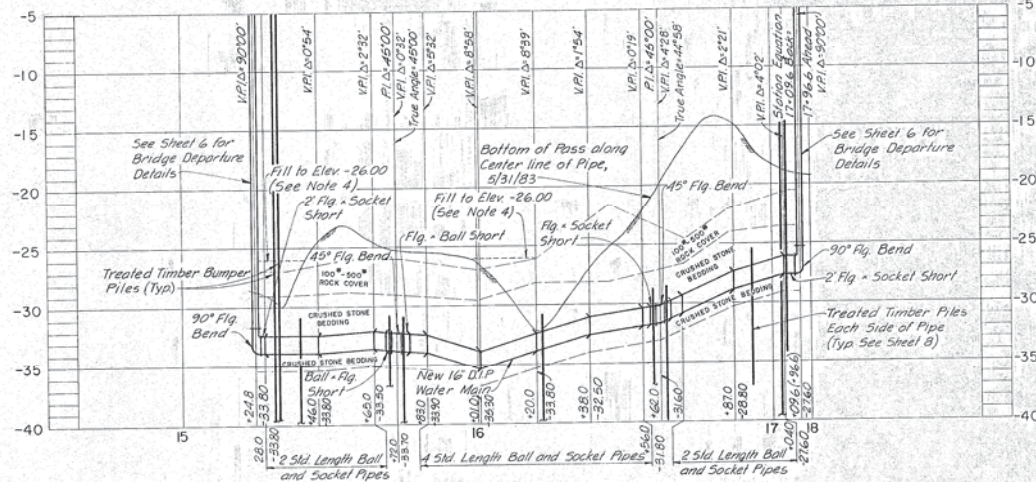
PIPE SUPPORT AND HANGER DETAILS

PROJ. NO. 6230-100-00-23
SHEET 4 OF 8
DATE MARCH 1983 REV. 1



GENERAL NOTES:

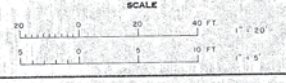
- All subaqueous ball and socket pipe shall be Class 61 ductile iron.
- Contractor shall install bridge departures prior to laying subaqueous pipe. Subaqueous pipe shall be laid away from both bridge departures. Pipe shall be thoroughly cleaned and flushed immediately prior to closure. Closure shall be made at or near a horizontal 45° bend.
- All subaqueous pipe, joints and fittings shall be triple wrapped in polyethylene encasement. Contractor shall take extreme care to protect polyethylene from damage.
- Contractor shall fill all subaqueous depressions within 15 feet of each side of pipe, to elevations shown on the Profile with suitable excavated sand (Refer to Bathymetric Chart by Subatomic Consultants Inc.).



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1211 N. WEST SHORE BLVD.  
TAMPA, FLORIDA 33607

DESIGNED RSH  
DRAWN AA  
CHECKED TLW

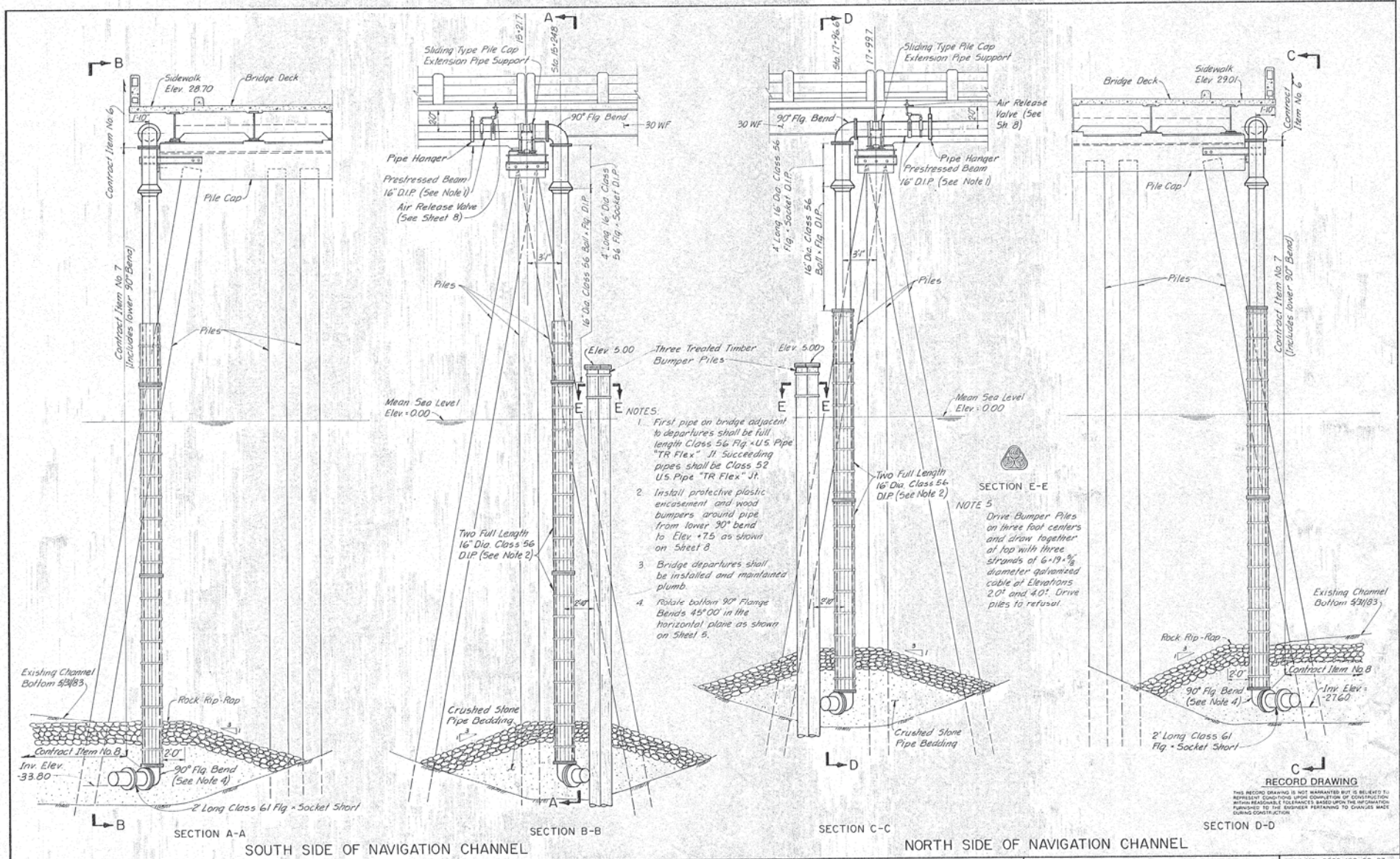
APPROVED  
TOWN OF LONGBOAT KEY  
DATE  
GREGLEY AND HANSEN, ENGINEERS  
NO. DATE APP. REVISION



TOWN OF LONGBOAT KEY, FLORIDA  
IMPROVEMENTS TO WATER SUPPLY SYSTEM  
LONGBOAT PASS WATER MAIN  
CROSSING REPLACEMENT

SUBAQUEOUS NAVIGATION CHANNEL  
CROSSING DETAILS

PROJ. NO. 5230-100-00-23  
SHEET 5 OF 8  
DATE MARCH 1983 REV. 1



**NOTES:**

1. First pipe on bridge adjacent to departure shall be full length Class 56 Fig. 1 U.S. Pipe "TR Flex". If succeeding pipes shall be Class 52 U.S. Pipe "TR Flex".
2. Install protective plastic encasement and wood bumpers around pipe from lower 30° bend to Elev. +7.5 as shown on Sheet 8.
3. Bridge departures shall be installed and maintained plumb.
4. Rotate bottom 90° Flange Bends 45° 00' in the horizontal plane as shown on Sheet 5.

**SECTION E-E**

**NOTE 5**

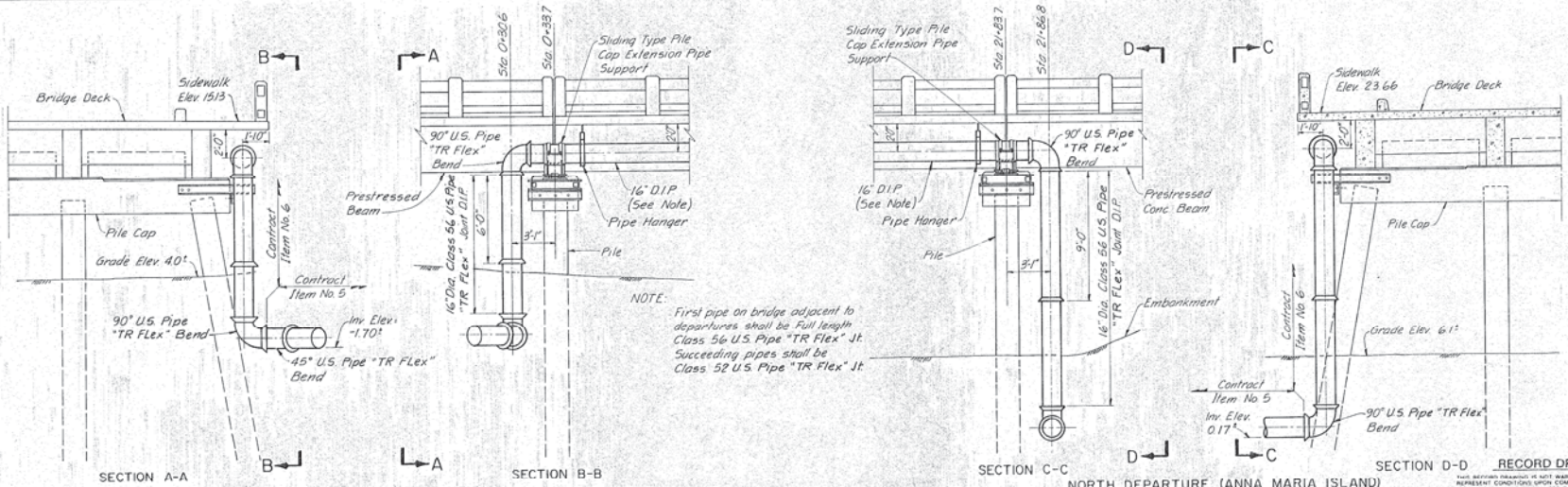
Drive Bumper Piles on three foot centers and draw together at top with three strands of 6.19" diameter galvanized cable at elevations 2.0' and 4.0'. Drive piles to refusal.

**RECORD DRAWING**

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PROJ. NO. 5230-100-00-23
SHEET 6 OF 8
DATE MARCH 1983 REV. 1

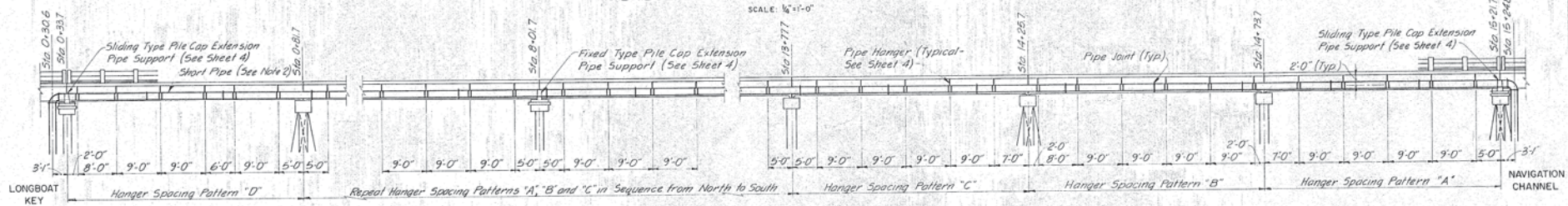
<b>GREELEY AND HANSEN ENGINEERS</b> 1211 N. WEST SHORE BLVD. TAMPA, FLORIDA 33607	DESIGNED RSH	APPROVED _____	SCALE 0 4 8 FT 1/4" = 1'-0"	TOWN OF LONGBOAT KEY, FLORIDA IMPROVEMENTS TO WATER SUPPLY SYSTEM LONGBOAT PASS WATER MAIN CROSSING REPLACEMENT	BRIDGE DEPARTURE DETAILS AT NAVIGATION CHANNEL
	DRAWN AA	TOWN OF LONGBOAT KEY _____			
CHECKED TLW	DATE _____	DATE _____	NO. DATE APP	REVISION	
			3/98ATLW	Record Dwg Revisions	



BRIDGE DEPARTURE DETAILS ON SHORE

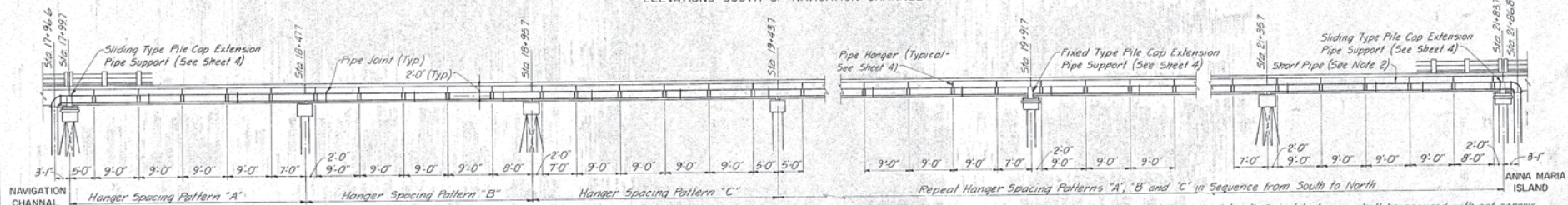
NOTE: First pipe on bridge adjacent to departures shall be full length Class 56 U.S. Pipe "TR Flex" Jt. Succeeding pipes shall be Class 52 U.S. Pipe "TR Flex" Jt.

RECORD DRAWING  
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ELEVATIONS SOUTH OF NAVIGATION CHANNEL

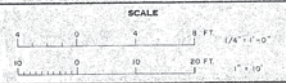
NOTE 4. Hanger spacing revised in field.



ELEVATIONS NORTH OF NAVIGATION CHANNEL

PIPE HANGER SPACING DETAILS

- NOTES:
- Contractor shall locate reinforcing steel in bridge deck by approved electronic means. Pipe hanger locations shall be adjusted in field as directed by the Engineer to avoid reinforcing steel in bridge deck. Hangers locations shall not vary more than 1'-0" along centerline of pipe from locations shown. Maximum hanger spacing shall not exceed 10'-0". Two hangers shall be installed to support every pipe length in excess of 10'-0" long.
  - Short pipe shall be cut in field to required length. Spigot lock ring shall be secured with set screws. Contractor shall add one pipe hanger at Sta 21+60 if the installed short pipe length north of the Navigation Channel exceeds 10'-0".
  - No hanger shall be closer than 2'-0" to a bridge deck span joint, nor closer than 1'-0" from any part of a pipe joint.

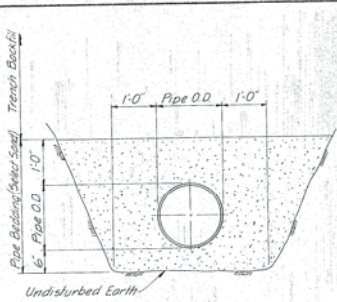


<b>GREELEY AND HANSEN ENGINEERS</b> 1211 N. WEST SHORE BLVD. TAMPA, FLORIDA 33607	DESIGNED FSH	APPROVED	DATE
	DRAWN AA	TOWN OF LONGBOAT KEY	DATE
	CHECKED TLW	9/19/84 TLW Record Dmg Revisions	DATE
		GREELEY AND HANSEN, ENGINEERS	NO. DATE APP. REVISION

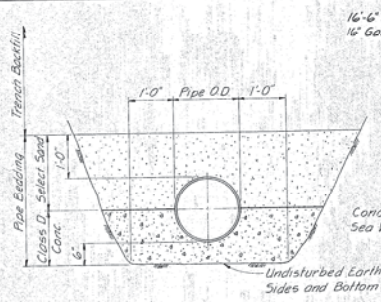
TOWN OF LONGBOAT KEY, FLORIDA  
 IMPROVEMENTS TO WATER SUPPLY SYSTEM  
 LONGBOAT PASS WATER MAIN  
 CROSSING REPLACEMENT

BRIDGE DEPARTURE DETAILS ON SHORE AND PIPE HANGER SPACING DETAILS

PROJ. NO. 5230-100-00-23
SHEET 7 OF 8
DATE MARCH 1983 REV. 1



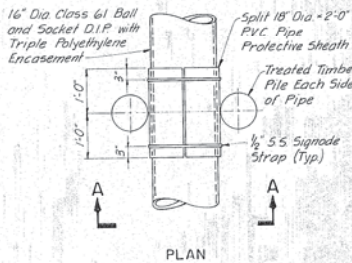
STANDARD PIPE BEDDING  
DETAIL ON SHORE  
NOT TO SCALE



CONCRETE CRADLE DETAIL ON SHORE  
WHEN ORDERED OR SPECIFIED  
NOT TO SCALE

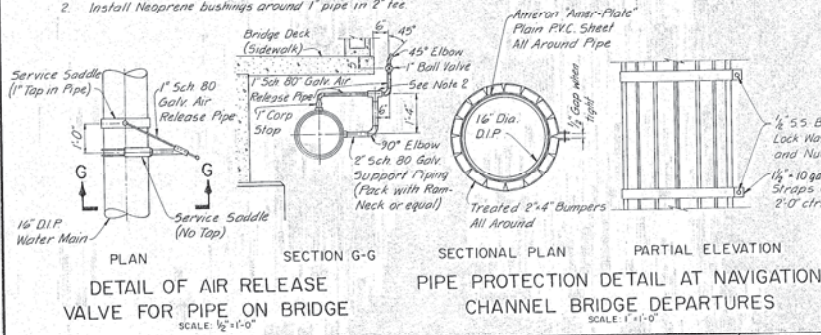
NOTE:

Timber piles shall be driven to refusal or 10 feet below bottom of pipe, whichever is less.



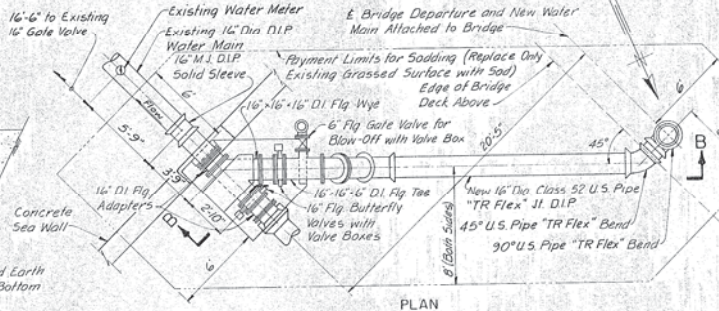
TREATED TIMBER PILE SUBAQUEOUS PIPE RESTRAINT DETAILS  
SCALE: 3/8" = 1'-0"

- NOTES:
- Service saddles shall be Rockwell 323 or approved equal
  - Install Neoprene bushings around 1" pipe in 2" tee

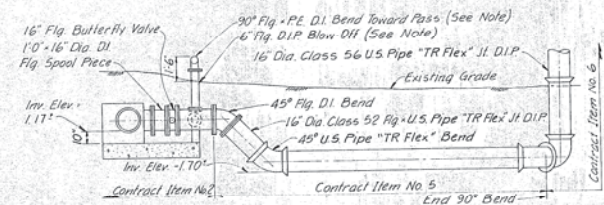


DETAIL OF AIR RELEASE  
VALVE FOR PIPE ON BRIDGE  
SCALE: 1/2" = 1'-0"

PIPE PROTECTION DETAIL AT NAVIGATION  
CHANNEL BRIDGE DEPARTURES  
SCALE: 1" = 1'-0"



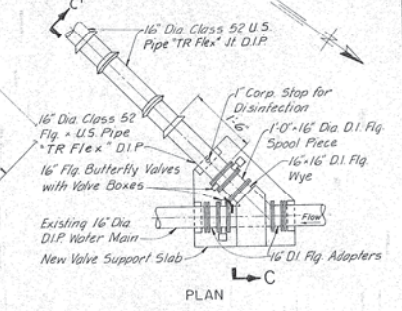
PLAN



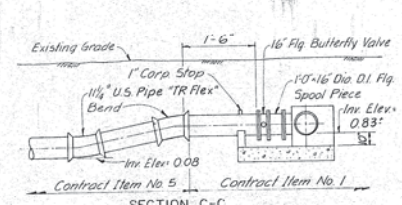
SOUTH CONNECTION TO EXISTING WATER MAIN  
NOT TO SCALE

NOTES:

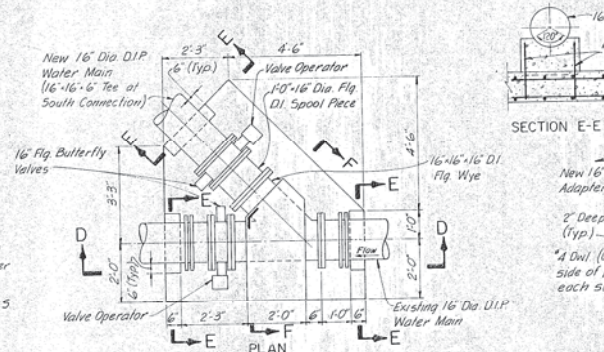
- 6" D.I.P. blow-off piping shall be removed by the Contractor, as directed by the Engineer, and delivered to the Town after new water main is in service. Blind flange shall be installed as directed by the Engineer.
- All pipe, joints and fillings buried on shore shall be wrapped in polyethylene encasement.



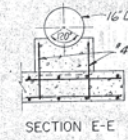
PLAN



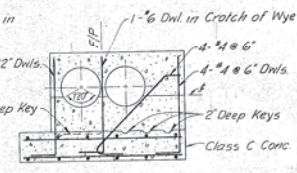
NORTH CONNECTION TO EXISTING WATER MAIN  
NOT TO SCALE



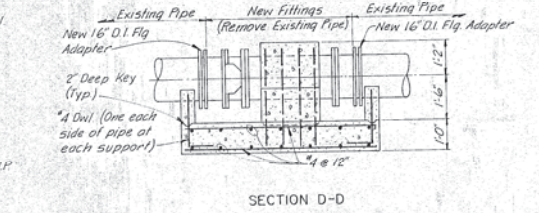
DETAILS OF NORTH AND SOUTH CONNECTIONS TO EXISTING WATER MAIN  
SCALE: 1/2" = 1'-0"



SECTION E-E



SECTION F-F



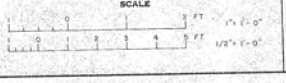
SECTION D-D

RECORD DRAWING

THIS RECORD DRAWING IS NOT GUARANTEED BUT IS BELIEVED TO REPRESENT CONDITIONS AT THE TIME OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE ENGINEER RETAINING TO CORRECT ANY ERRORS DURING CONSTRUCTION.

GREELEY AND HANSEN  
ENGINEERS  
1211 N. WEST SHORE BLVD.  
TAMPA, FLORIDA 33607

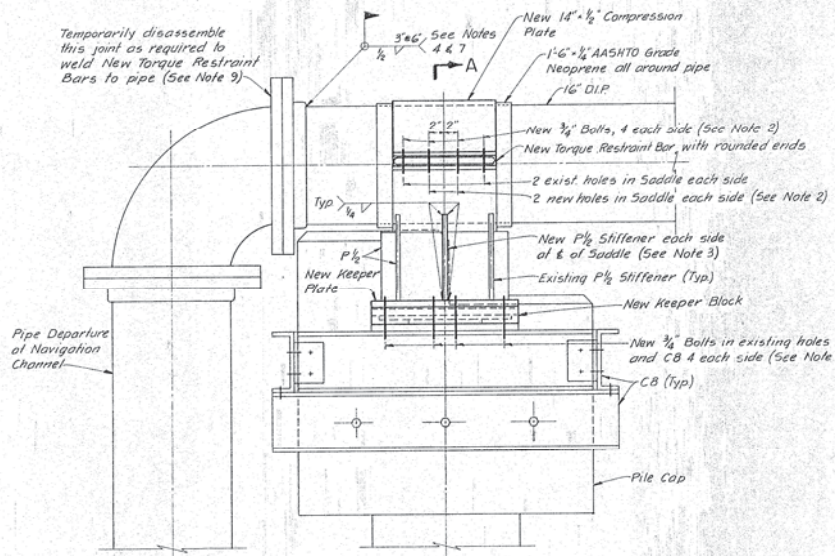
DESIGNED	RSH	APPROVED	
DRAWN	AA	TOWN OF LONGBOAT KEY	DATE
CHECKED	TLW	3/19/84	TLW
		RECORD Dwg. Revisions	
		NO. DATE APP. REVISION	



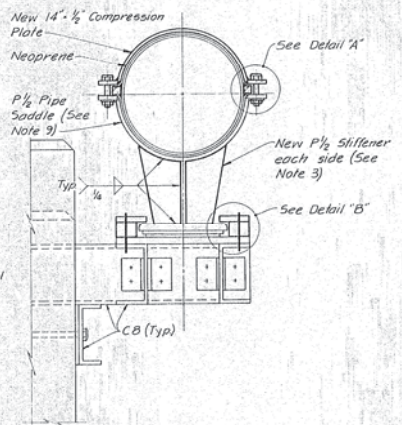
TOWN OF LONGBOAT KEY, FLORIDA  
IMPROVEMENTS TO WATER SUPPLY SYSTEM  
LONGBOAT PASS WATER MAIN  
CROSSING REPLACEMENT

MISCELLANEOUS DETAILS

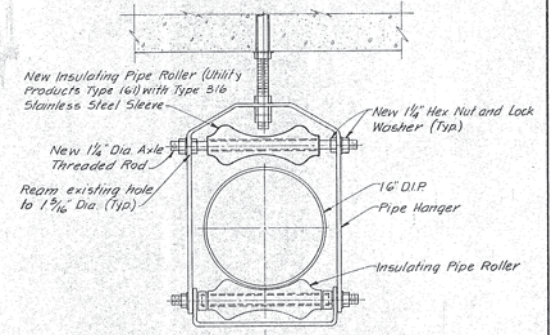
PROJ. NO.	5230-100-00-23
SHEET	8 OF 8
DATE	MARCH 1983
REV.	1



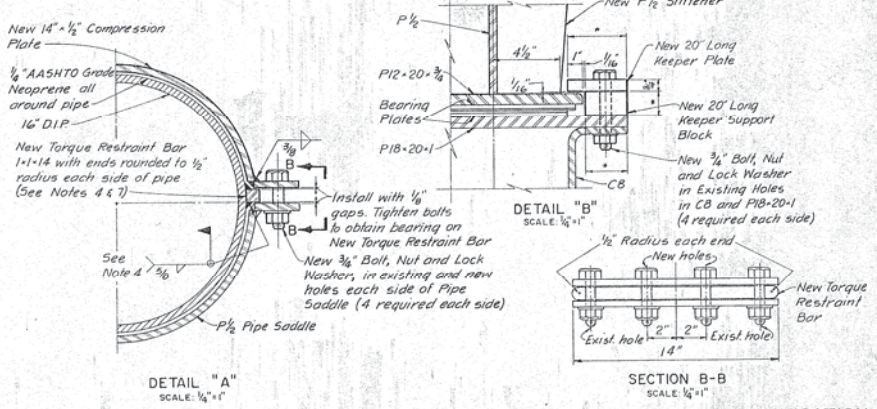
EAST ELEVATION AT NORTH DEPARTURE (MIRROR IMAGE AT SOUTH DEPARTURE)  
SCALE: 1/2"=1'-0"



SECTION A-A  
SCALE: 1/2"=1'-0"



MODIFICATIONS TO PIPE HANGERS AT STATIONS 18+12.5 AND 15+09.0  
SCALE: 1/2"=1'-0"



MODIFICATIONS TO SLIDING TYPE PILE CAP EXTENSION PIPE SUPPORTS AT NAVIGATION CHANNEL BRIDGE DEPARTURES

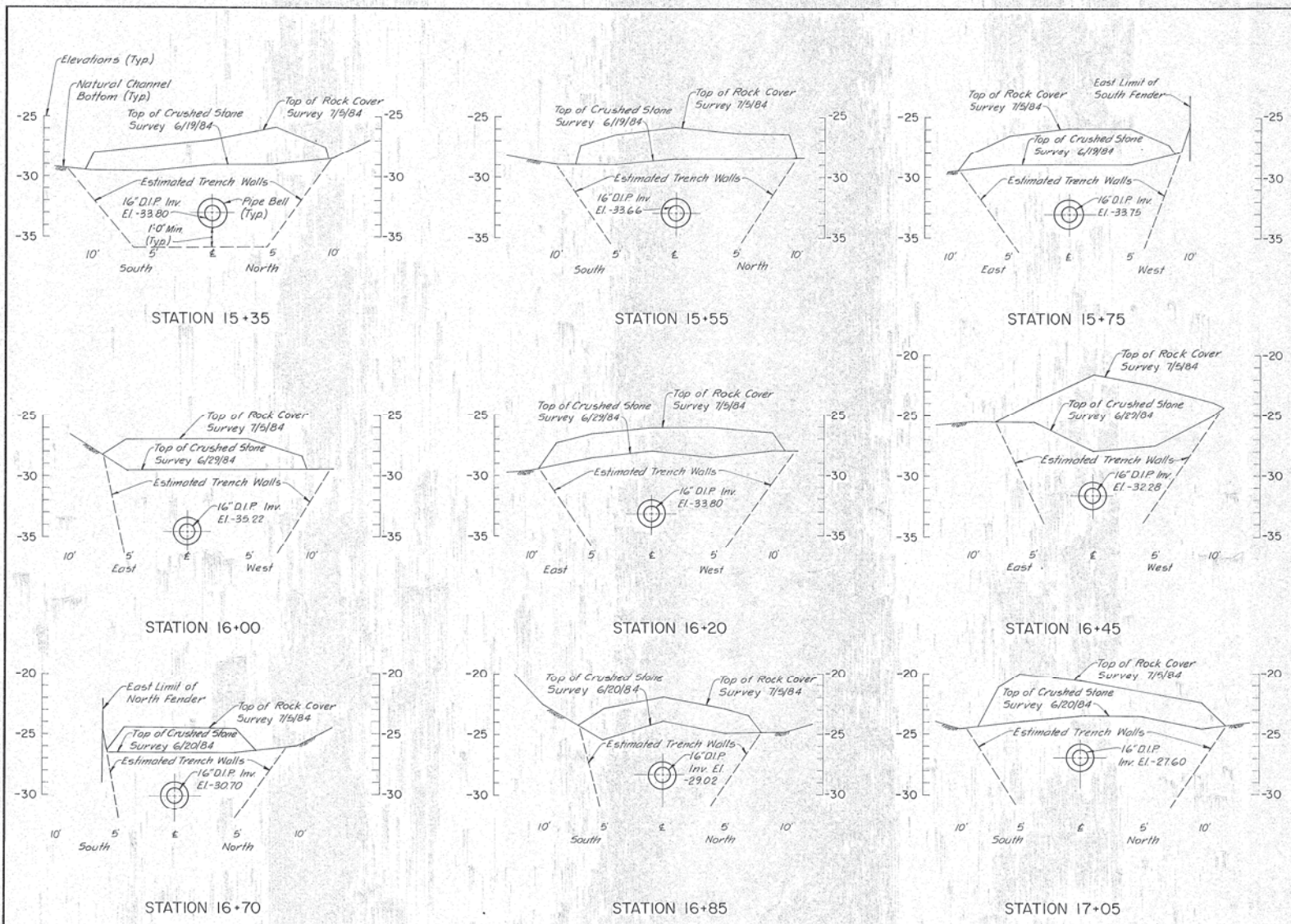
NOTES:

- Dimensions marked thus \* shall be determined in the field, in the presence of and as directed by the Engineer, prior to fabrication.
- The locations of all new bolt holes shall be matched to corresponding existing or new bolt holes in adjacent pieces in the presence of the Engineer prior to drilling. All bolt holes shall be drilled in the shop.
- New P<sub>1/2</sub> Stiffener configuration and dimensions shall match existing stiffeners (See Sheet 4 of Plans)
- Specifications for field welding on ductile iron pipe:
  - Surface Preparation: Carefully burn off coating on pipe surface with oxyacetylene torch (Do not grind, sand or wire brush coating off). Then grind (not wire brush) to bare metal. Engineer's approval required prior to welding.
  - Roots: 1/8" dia (no larger), Castalloy 60
  - Welding Machine: Reverse polarity, 80 to 120 amps.
  - Welder: Certified and experienced in welding on ductile iron pipe (Current certificate shall be furnished prior to welding).
  - Continuous weld on New Torque Restraint Bars shall be accomplished by skip welding (weld 3", skip 3") in successive passes until continuous 3/16" fillet weld is completed.
  - All welding shall be done only in the presence of the Engineer or his duly authorized representative.
  - Chip and wire brush welds between successive passes to remove all flux and slag. The welding area on the pipe shall be maintained thoroughly dry and clean.
  - Build-up of welds at pipe flange hubs shall be as directed by the Engineer.
- New Torque Restraint Bars shall be ASTM A36 steel
- New Keeper Plates and Blocks and bolts, washers and nuts shall be Type 316 stainless steel conforming to the Specifications.
- New Torque Restraint Bars and new welds on ductile iron pipe shall be given the same protective primer, intermediate and top coatings specified for pipe departures to the bridge. Surface preparation shall conform to the coating manufacturer's written instructions.
- Original keepers, compression straps, bolts, nuts and washers shall become the property of the Town of Longboat Key.
- The Contractor shall remove existing pipe saddles for shop modifications as shown with extreme care and shall provide adequate temporary supports for pipe departures and pipe attached to bridge at navigation channel.

RECORD DRAWING  
 THIS DRAWING IS NOT GUARANTEED BY THE ENGINEER UNLESS IT IS REVISED TO REFLECT CONDITIONS UPON COMPLETION OF CONSTRUCTION.  
 THE ENGINEER'S LIABILITY IS LIMITED TO THE WORK SHOWN ON THIS DRAWING.  
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GREELEY AND HANSEN ENGINEERS 1211 N. WEST SHORE BLVD. TAMPA, FLORIDA 33607	DESIGNED JFS	APPROVED _____ DATE _____	SCALE 1 FT. = 1/2" = 1'-0" 2 IN. = 1/4" = 1"	TOWN OF LONGBOAT KEY, FLORIDA IMPROVEMENTS TO WATER SUPPLY SYSTEM LONGBOAT PASS WATER MAIN CROSSING REPLACEMENT	PROJ. NO. 5230-100-00-23
	DRAWN AA	DATE _____			
CHECKED TLW	GREELEY AND HANSEN, ENGINEERS	9/18/84 TLW Record Dwg. Revisions NO. DATE APP. REVISION	SUPPLEMENTARY DRAWING NO. 1		

NOTE:  
 Subaqueous pipe and bedding were inspected and surveyed by Suboceanic Consultants, Inc. Naples, FL, on the dates shown. Detailed inspection reports by Suboceanic Consultants, Inc. are on file at the Town of Longboat Key, Department of Public Works.

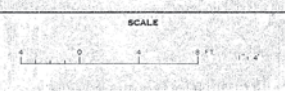


GREELEY AND HANSEN  
 ENGINEERS  
 1211 N. WEST SHORE BLVD  
 TAMPA, FLORIDA 33607

DESIGNED RSH  
 DRAWN AA  
 CHECKED TLW

APPROVED  
 TOWN OF LONGBOAT KEY  
 DATE  
 GREELEY AND HANSEN, ENGINEERS

NO.	DATE	APP.	REVISION
1			Record Chg. Revisions



TOWN OF LONGBOAT KEY, FLORIDA  
 IMPROVEMENTS TO WATER SUPPLY SYSTEM  
 LONGBOAT PASS WATER MAIN  
 CROSSING REPLACEMENT

SUBAQUEOUS PIPE BEDDING  
 CROSS SECTIONS AS CONSTRUCTED

PROJ. NO. 5230-100-00-23  
 SHEET SD-2 OF  
 DATE OCTOBER 1984 REV. 1