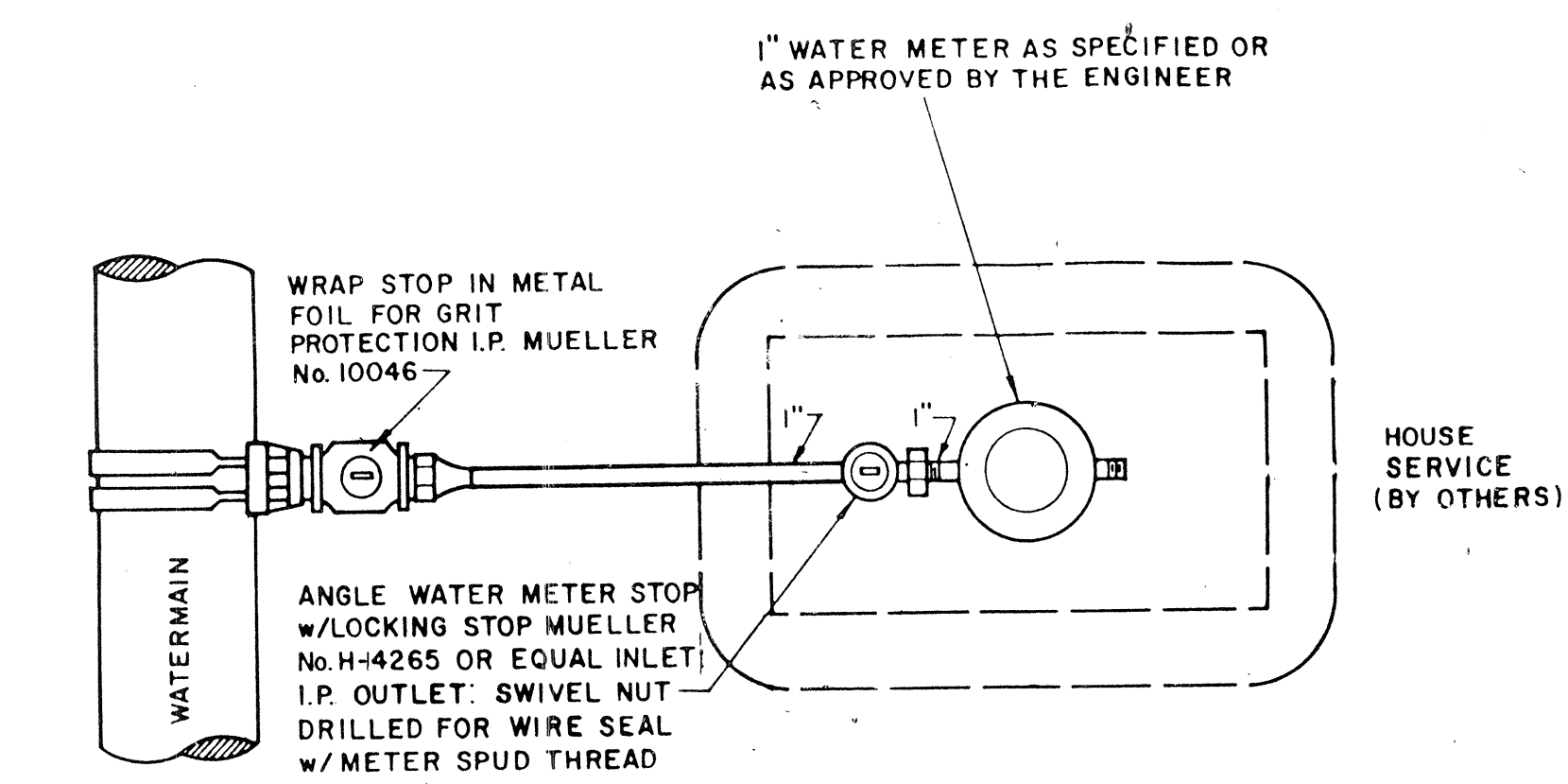


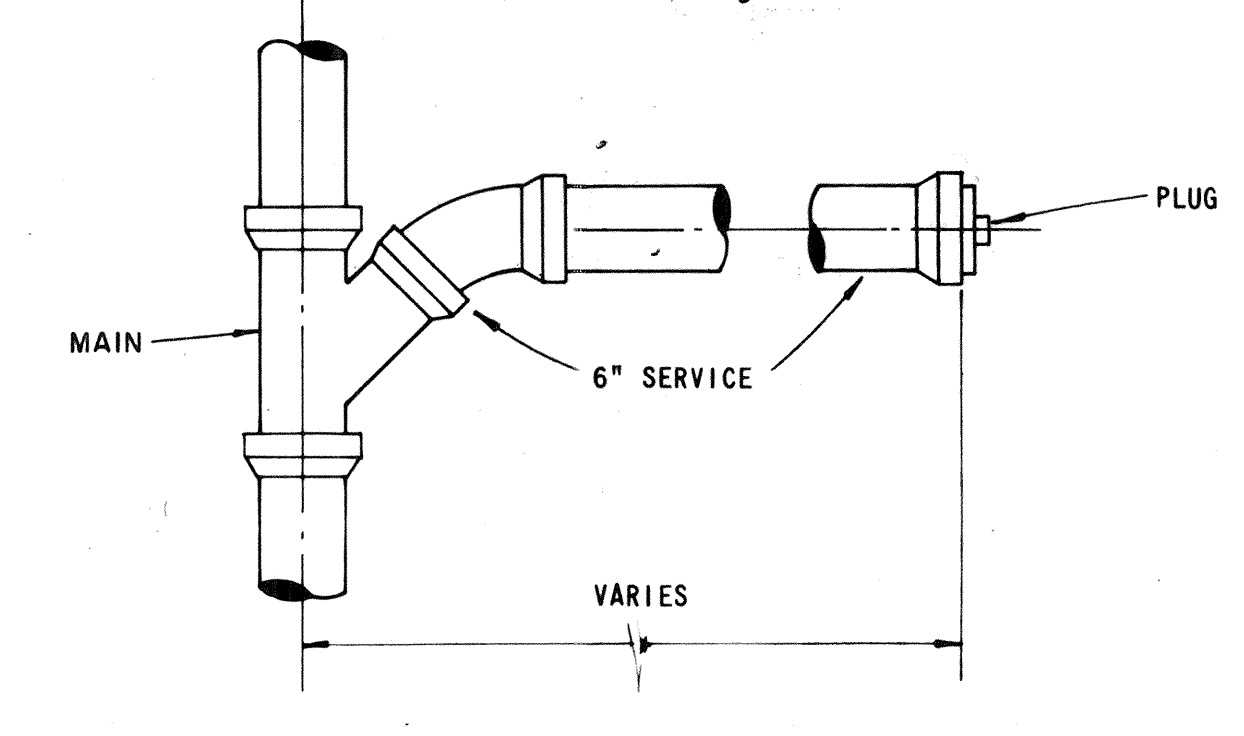
PROFILE



PLAN

TYPICAL METERED SERVICE

NO SCALE



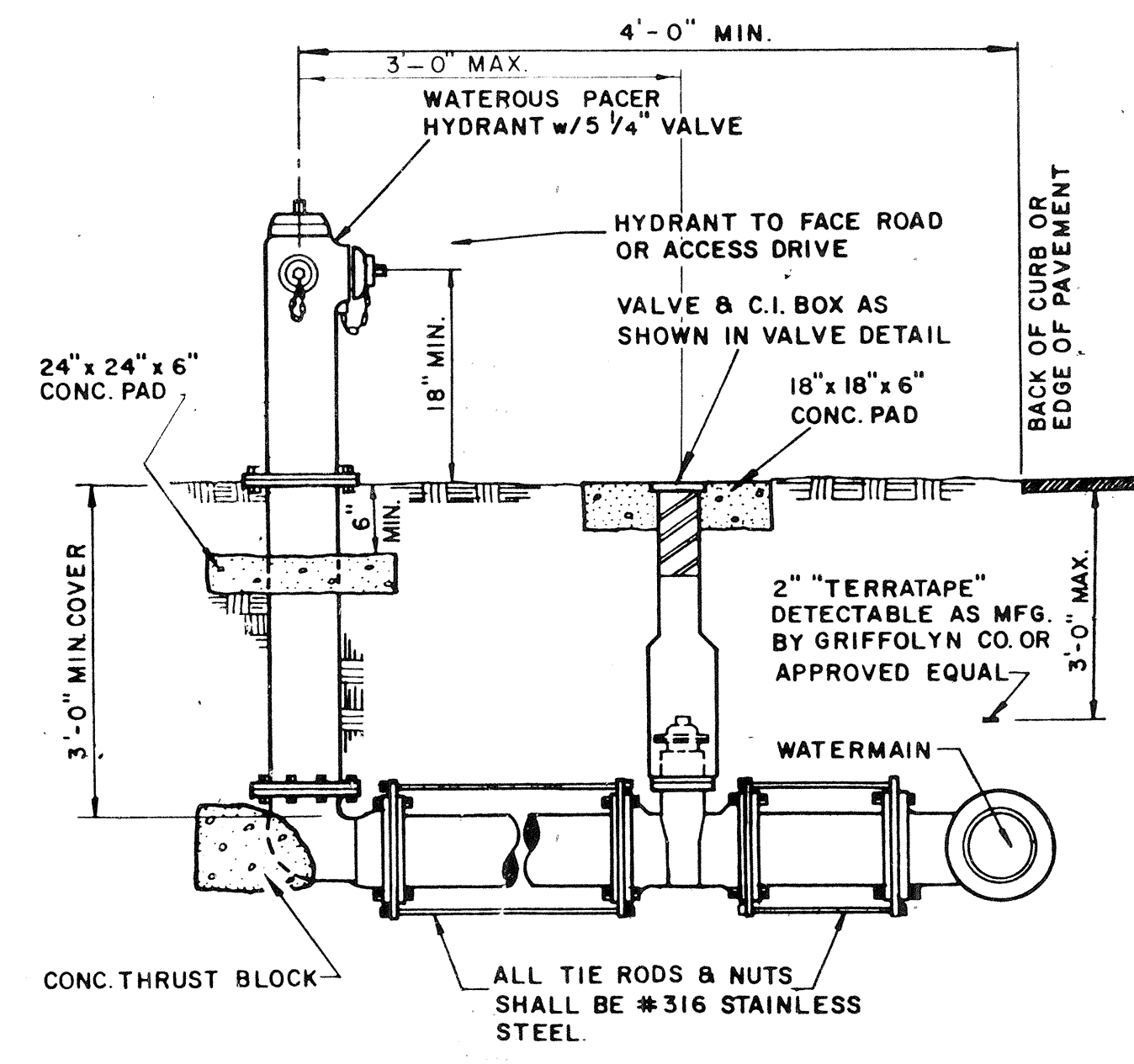
PLAN

TYPICAL SINGLE SERVICE CONNECTION

GENERAL CONSTRUCTION NOTES FOR WASTEWATER COLLECTION SYSTEM

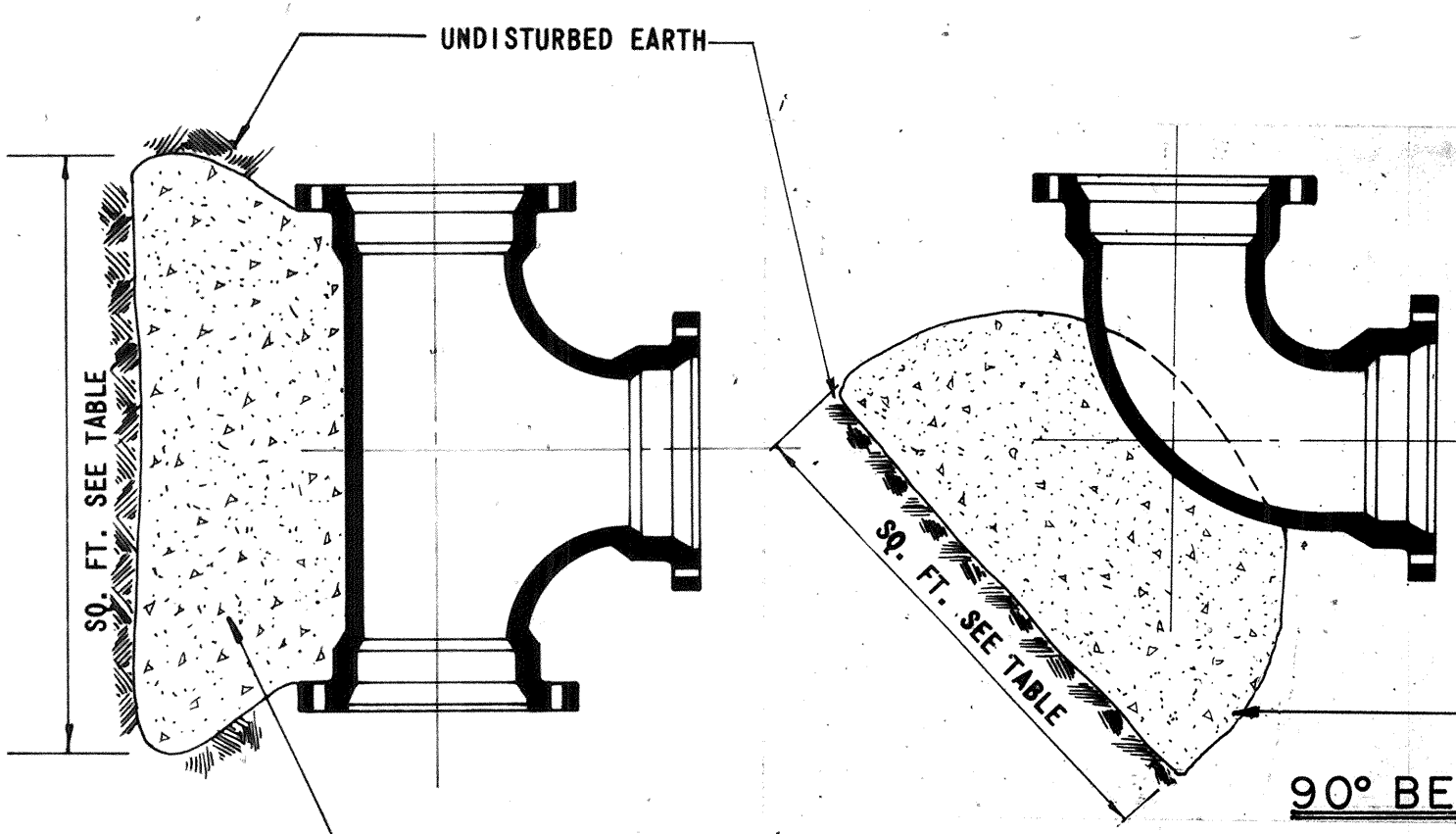
- WASTEWATER COLLECTION GENERAL**
1. ALL CONSTRUCTION SHALL MEET THE MINIMUM REQUIREMENTS OF THE LONGBOAT KEY BUILDING DEPARTMENT.
 2. THE FOLLOWING NOTES ARE INTENDED AS A SUPPLEMENT TO THE PROJECT SPECIFICATIONS AND ARE NOT INTENDED TO SUPERSIDE THESE SPECIFICATIONS.
 3. ELEVATIONS SHOWN ON THE PLANS FOR PROPOSED SEWER MAINS SHALL BE REFERRED TO IN MOST CASES THE DESIGN GRADIES ARE CRITICAL. ADJUSTMENTS CAUSED BY MIS-CONMENT OR IMPROPER GRADIES ARE IMPROPER. COST TO RELAY MAIN, IF NECESSARY, WILL BE BORNE BY THE CONTRACTOR.
 4. FOR PAINTING AND SURFACE FINISHING REQUIREMENTS REFER TO DIVISION OF THE PROJECT SPECIFICATIONS.
- SERVICE DETAILS:**
1. AN "S" OR "M" SHALL BE STAMPED IN CURB WHERE SEWER SERVICE OR MANHOLE IS LOCATED. STAMP SHALL BE PRESSED INTO CONCRETE A MINIMUM OF 1/16 INCH. A MEASUREMENT FROM THE EDGE OF CURB, TAKEN BY THE CONTRACTOR, SHALL BE SHOWN ON THE "AS-BUILT" PLANS FOR REFERENCE IN LOCATING SERVICE OR MANHOLE. BRANDING IRONS OR STAMPS WILL BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.
 2. DUCTILE IRON PIPE SHALL BE WRAPPED IN 8 MIL POLYETHYLENE.

- TRENCH DETAILS:**
1. WHERE WATER AND SEWER MAINS CROSS WITH LESS THAN EIGHTEEN INCHES (18") VERTICAL CLEARANCE, THE SEWER WILL BE TWENTY FEET (20') OF EITHER DUCTILE IRON PIPE OR CONCRETE ENCASED VITRIFIED CLAY PIPE (VCP), WHEN A WATER MAIN PARALLELS A SEWER MAIN, A SEPARATION OF AT LEAST TEN FEET (10') SHOULD BE MAINTAINED HORIZONTALLY.
 2. TRENCH SHALL BE BRACED OR SHORED AS REQUIRED.
 3. WIDTH OF TRENCH SHALL BE OUTSIDE DIAMETER OF PIPE SOCKET PLUS TWELVE INCHES (12") MAXIMUM.
 4. CONTRACTOR SHALL PLACE METALLIC BURIAL IDENTIFICATION TAPE WITHIN 18" DIRECTLY ABOVE SEWER LINES.
 5. ALL WELL POINT HOLES WILL BE FILLED WITH COARSE SAND OR OTHER SATISFACTORY GRANULATED MATERIAL AT TIME WELL POINTS ARE PULLED.



TYPICAL FIRE HYDRANT DETAIL

NO SCALE



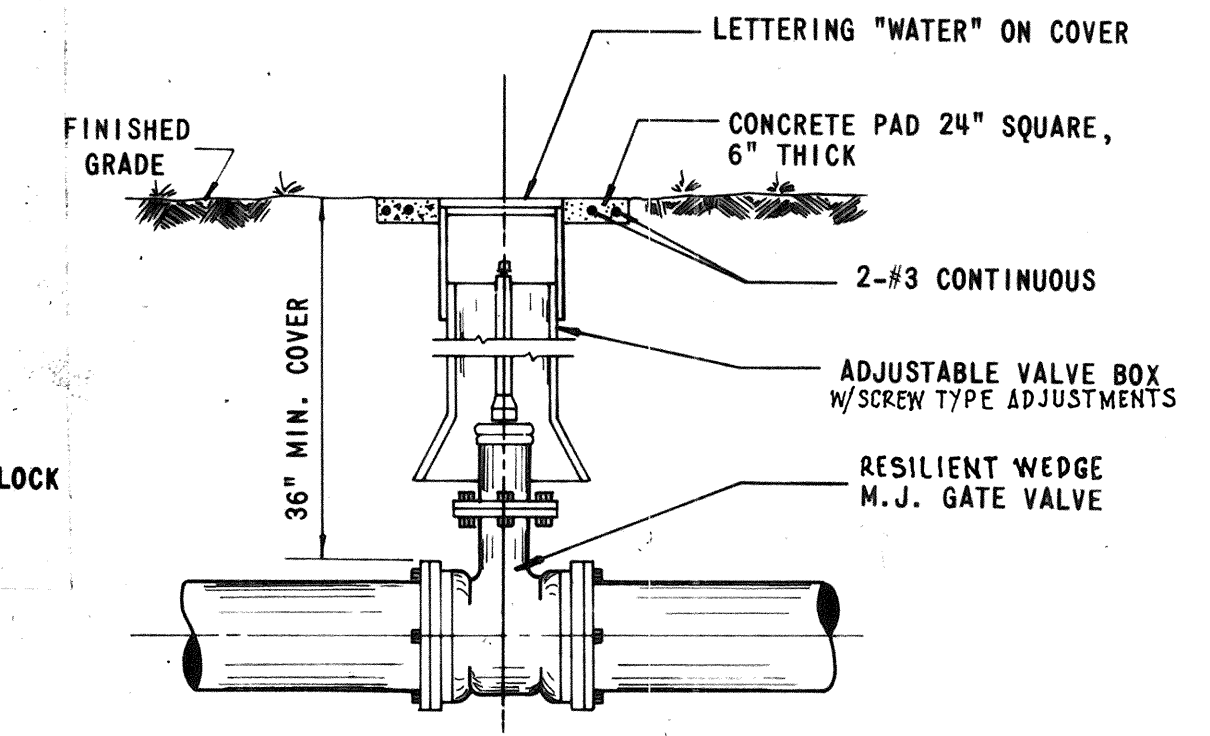
TEE

NOTE: SEE THRUST BLOCK GENERAL NOTES THIS SHEET.

PIPE SIZE	TEE	90° BEND
2"	0.8	1.1
3"	1.8	2.5
4"	3.1	4.4
6"	7.1	10.0
8"	12.6	17.8
10"	19.6	27.8
12"	28.3	40.0
14"	38.5	54.4

THRUST BLOCKS

N.T.S.



TYPICAL GATE VALVE & VALVE BOX DETAIL

N.T.S.

CONSTRUCTION NOTES

WATER DISTRIBUTION GENERAL

1. THE CONTRACTOR SHALL INVESTIGATE AND VERIFY OR HAVE VERIFIED THE LOCATION OF UTILITIES BEFORE STARTING WORK. HE SHALL BE LIABLE FOR ANY EXPENSE RESULTING FROM DAMAGE TO SAME. ANY CONFLICT WITH EXISTING UTILITIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER WITH A REQUEST FOR AN ORDER THAT HE MAY VERIFY THE ELEVATION AND LOCATION OF EXISTING UTILITIES IN TOWN AND TAKE APPROPRIATE ACTION AS REQUIRED.
2. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE CITY UTILITY COMPANIES AND THE ENGINEER 48 HOURS PRIOR TO ANY WORK AT SITE. WATER MAIN TIE-INS REQUIRING WATER SERVICE TO BE SHUT OFF WILL BE MADE DURING DAY OR NIGHT HOURS AS REQUIRED BY LONGBOAT KEY WATER DEPARTMENT.
3. THE WATER MAIN SHALL BE CONSTRUCTED TO THE ELEVATIONS AND DEPTHS AS INDICATED ON THE DRAWINGS WITHIN 0.25' AND 1.0' GENERAL. SWALE SLOPES AND BOTTOM COST TO RELAY MAIN, IF NECESSARY, WILL BE BORNE BY THE CONTRACTOR.
4. ALL DISTURBED AREAS IN EXISTING LAWNS SHALL BE REPLACED WITH SOD EQUAL TO OR BETTER THAN EXISTING AND OF THE SAME TYPE. SWALE SLOPES AND BOTTOM AND OTHER SLOPES SHALL BE SODDED TO ELIMINATE EROSION. RESTORATION DUE TO EROSION OCCURRING PRIOR TO GRASS ROOTING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL WATER AS NECESSARY ALL SODDED AND GRASSED REPAIR LINES. SEE THE CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
5. ALL PVC WATER MAINS WILL BE WATER BLUE IN COLOR. MYLAR DETECTABLE COLOR TAPE (BLUE) WITH WORDS "CAUTION-BURIED WATER LINE BELOW" WILL BE PLACED 12 INCHES TO 18 INCHES BELOW FINISHED GRADE AND IN WATER MAINS. THE COST FOR COLOR TAPE WILL BE INCLUDED IN THE WATER MAIN PRICES CONTAINED IN THE BID SCHEDULE. NO ADDITIONAL COMPENSATION WILL BE MADE BY THE OWNER.
6. FIELD DEFLECTION OF WATER MAINS FROM A STRAIGHT LINE OR GRADE SHALL NOT EXCEED 75 PERCENT OF THE MANUFACTURER'S RECOMMENDED JOINT DEFLECTION.

VALVE AND BOX DETAILS

1. ALL PROPOSED VALVE BOXES AND METER BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. CONCRETE VALVE BOX PADS SHALL BE CONSTRUCTED AS SHOWN WITHIN AS SPECIFIED IN THE CONTRACT DOCUMENTS. ALL COSTS INVOLVED WILL BE INCLUDED IN THE APPROPRIATE LINE ITEMS CONTAINED IN THE BID SCHEDULE. NO ADDITIONAL COMPENSATION WILL BE MADE BY THE OWNER.

SERVICE DETAILS

1. FOR SERVICE INSTALLATION ON WATER MAINS, A DOUBLE STRAP BRONZE SERVICE SADDLE SHALL BE USED.
2. SERVICE CONNECTION TAPS SHALL NOT BE CLOSER THAN 2 FEET APART OR CLOSER THAN 2 FEET TO ANY WATER FINISHED GRADE AND IN MULTIPLE GROUPS, TAPS SHALL NOT BE MADE IN THE SAME LONGITUDINAL LINE OF THE WATER MAIN, BUT SHALL BE STAGGERED.
3. PRESSURE TESTING OF MAINS SHALL INCLUDE ALL SERVICES. NO PLUGS WILL BE USED IN CURB STOPS DURING PRESSURE TESTING.
4. 2 INCH OR SMALLER DIAMETER SERVICES SHALL INCLUDE THE SERVICE SADDLE, THE CONNECTION STOP, VARIABLE LENGTH TAP, AND THE CURB STOP. TAP AND METER BOX OF THE PROPER SIZE FOR THE METER INTENDED.

FIRE HYDRANT DETAILS

1. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH THE "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF EACH HYDRANT SETTING AND ORDER THE BARREL SECTION ACCORDINGLY. EXTENSIONS REQUIRED SHALL BE INCLUDED AS PART OF THE UNIT PRICE. FIRE HYDRANT ASSEMBLY ALL AT NO ADDITIONAL COST TO THE OWNER. FIRE HYDRANTS SHALL BE PLACED AS SHOWN ON THE DRAWINGS. ALL HYDRANTS SHALL BE WATEROUS PACER (NO EXCEPTIONS).

MAIN FLUSHING

1. BLOW-OFFS SHALL BE PROVIDED AND SHALL BE SIZED TO MAINTAIN A CLEANSING VELOCITY DURING FLUSHING OPERATIONS.

METER VAULT DETAILS

1. MASTER METERED SERVICES SHALL INCLUDE THE PIPE FROM TEE AT MAIN TO END OF SERVICE. THE CONTRACTOR SHALL PROVIDE ALL THRUST BLOCKING AND JOINT RESTRAINING AS REQUIRED. SEE THRUST BLOCK DETAILS IN THE CONTRACT DOCUMENTS.

TRENCH DETAILS

1. WHERE WATER MAINS CROSS SEWERS, THEY SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES OF THE OVERSIDE OF THE WATER MAIN AND GASE WHERE THE WATER MAIN IS EITHER ABOVE OR BELOW THE SEWER. AT CROSSING, ONE PIPE AND BOTH OF WATER MAINS SHALL BE LOCATED 50' BOTH SIDES. PLANTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. WHERE WATER MAINS ARE PARALLEL TO EXISTING OR PROPOSED SEWERS, THE WATER MAIN SHALL BE LAID AT LEAST TO FEET HORIZONTALLY FROM THE SEWER. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE.
2. USE OF SHEETING, TRENCH BOX OR OTHER APPROVED METHOD OF SHORING SHALL BE USED IN SITUATIONS WHERE SOIL IS ADJACENT UTILITIES, DRAINAGE, ROAD OR OTHER OBSTACLES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING UNSAFE CONDITIONS. COMPENSATION FOR SOILING NOT BE INCLUDED IN THE BID SCHEDULE. THE RESPONSIBILITY FOR SOILING SHALL BE INCLUDED IN THE BID SCHEDULE.
3. MAXIMUM TRENCH WIDTHS SHALL BE OUTSIDE DIAMETER OF PIPE PLUS TWENTY-FOUR INCHES (24").

THRUST BLOCKS, ANCHOR BLOCKS AND JOINT RESTRAINING

1. THE CONTRACTOR SHALL PROVIDE ALL THRUST BLOCKING AND JOINT RESTRAINING AS REQUIRED. SEE THRUST BLOCK DETAILS IN THE CONTRACT DOCUMENTS.
2. AREAS AND DIMENSIONS OF THRUST BLOCKS WILL BE AS SHOWN IN THE DETAILS UNLESS DIRECTED BY THE ENGINEER ACCORDING TO ACTUAL FIELD CONDITIONS. LENGTHS OF RESTRAINING JOINTS WILL BE AS SHOWN ON THE DRAWINGS UNLESS DIRECTED BY THE ENGINEER ACCORDING TO ACTUAL FIELD CONDITIONS.
3. DESIGN CRITERIA: 150 P.S.I. TEST PRESSURE TIMES 1.67 SAFETY FACTOR (250 P.S.I.) FOR WATER HAMMER WITH ASSUMED SOIL BEARING CAPACITY OF 1000 LBS. PER SQUARE FOOT.
4. COMPLETELY COAT TIE-RODS OR OTHER UNCOATED STEEL AFTER INSTALLATION. THE COATING SHALL BE A COAL TAR OR ASPHALT BASE BITUMINOUS COATING APPLIED BY HAND OR MECHANICAL MEANS TO A MINIMUM OF 1/16" THICK IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. WRAP ALL PIPE AND FITTINGS IN 8 MIL POLYETHYLENE PRIOR TO PLACING CONCRETE.
6. ALL CONCRETE BLOCKING SHALL BE 2500 P.S.I. AT 28 DAYS MINIMUM.
7. BLOCKING REQUIREMENTS FOR PLUG OR DEAD END SHALL BE THE SAME AS "TEE" BLOCKING REQUIREMENTS.
8. BLOCK FOR TEE SHALL BE CONSTRUCTED IN SIZE FOR THE BRANCH DIAMETER.

AS-BUILTS

1. THE CONTRACTOR SHALL LOCATE ALL CROSSES, TEES, WYES, BENDS, VALVES, CURB STOPS, HYDRANTS, STUB-OUTS, BLOW-OFFS, AIR RELEASE VALVES, ETC. BY USING "AS-BUILT" PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES AND RECORDING THEM AS SHOWN ON THE DRAWING AND IN THE FIELD. THESE MEASUREMENTS SHALL BE SHOWN ON THE "AS-BUILT" PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE ENGINEER AT THE TIME OF EACH PAY REQUEST FOR PERMANENT RECORDING. SEWER SERVICE SHALL BE LOCATED IN LIKE MANNER.
2. THE CONTRACTOR SHALL FURNISH "AS-BUILT" TOP OF PIPE ELEVATIONS OF ALL WATER MAINS AND SEWER LINES. OTHER WATER MAINS AND SEWER LINES SHALL BE LOCATED BY THE ENGINEER AND ALL CHANGES IN GRADE IN ACCORDANCE WITH ANY UTILITY DEPT. REQUIREMENTS.

RECORD DRAWING

5/1/2019

6/12/19

DESIGNED BY: M.J.J. MILLARD J. YODER, P.E.
 DATE: MARCH, 1988
 CHECKED BY: M.J.J. MILLARD J. YODER, P.E.
 PROJECT NO: 2499
 DRAWN BY: E.P.
 SCALE: AS SHOWN
 REVISION: 1

FOR: RIVERA CORPORATION
 BEACH WALK CONDOMINIUMS
 WATER MAIN AND SANITARY SEWER CONSTRUCTION DETAILS

SMALLY, WELLFORD & NALVEN, INC.
 CONSULTING ENGINEERS & SURVEYORS
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 SARASOTA, FLA. 33582

INDEX NO: 6-24-99-01