FOR EXAMPLES OF UTILITY ACCEPTANCE, SEE THE FOLLOWING PAGES:

1. 53 - 65
2. 229 - 230

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

August 24, 1992

VIA FAX 377-9852

TO: Jeff Streitmatter
Smally, Wellford & Nalven

FROM: Leonard A. Smally, P.E.
Director of Public Works

DRISCOPIPE 1000 Shop Drawings, materials and application is acceptable to the Town of Longboat Key.

/cmg

SPEED LETTER® 44-902

WilsonJones® Carbonless Snap-A-Way® Forms

SPEED LETTER®

TO Kevin Webb

FROM Len Smally

SUBJECT L'Ambiance

— FOLD NO. 9 or 10

MESSAGE

Shop drawings for your review.

DATE 8-4-92 SIGNED LAS/cry

REPLY

OK for Sewer slip linning.

Is it approved by Greely + Hanson?

OK Approved by SWN - Signed + Sold

— FOLD FOR NO. 9

— FOLD FOR NO. 10

G+H approved other slip-linning

DATE 08-05-92 SIGNED Kevin.

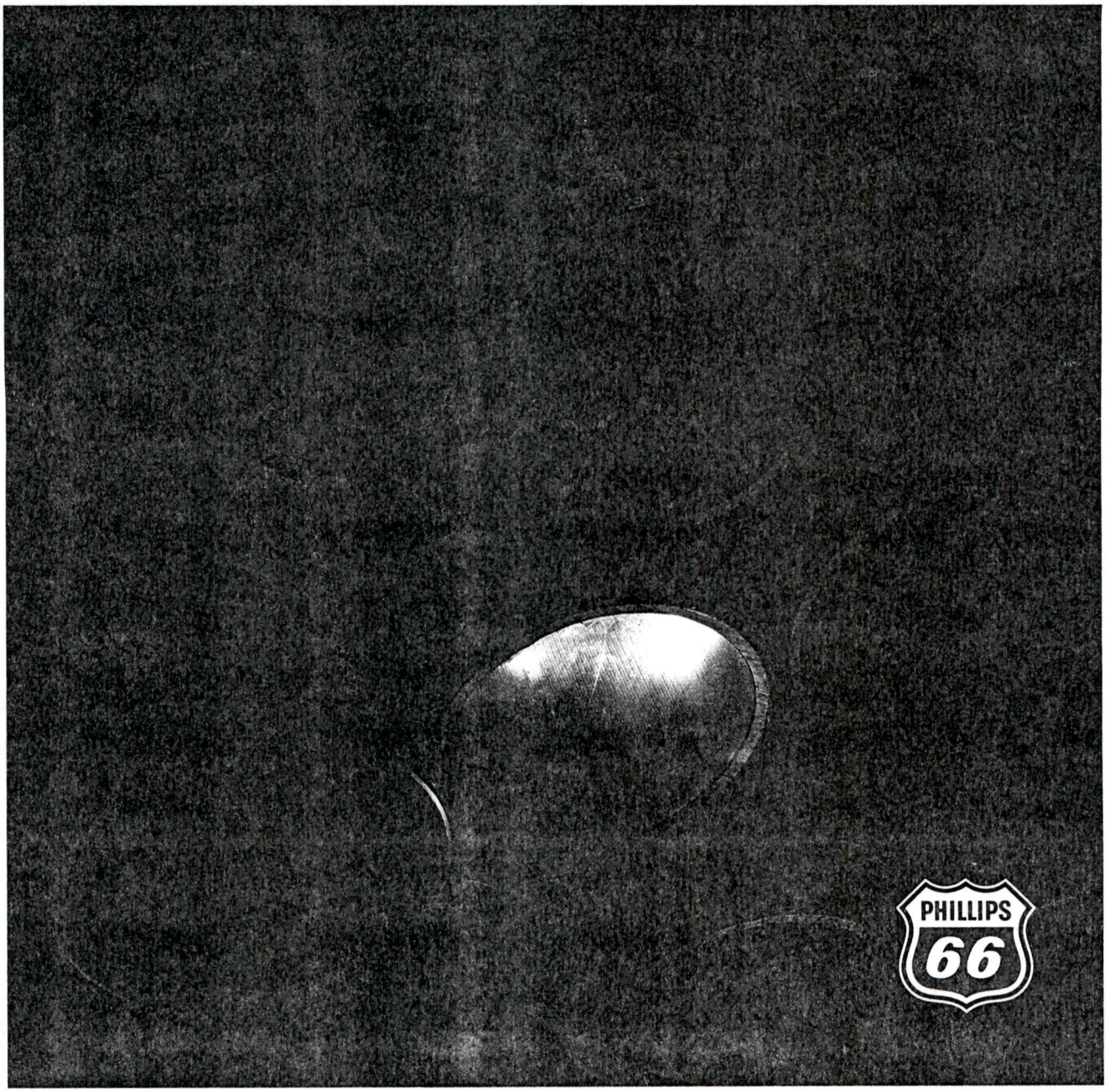
WilsonJones • Carbonless • MADE IN U.S.A.
44-902 Triplicate • © WilsonJones, 1989

RECIPIENT: RETAIN WHITE COPY, RETURN PINK COPY

DRISCOPIPE®

Driscopipe® 1000

High Density Polyethylene Pipe For Industrial And Municipal Applications



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DRISCOPIPE®

Driscopipe® 1000 Polyethylene Piping Systems

Introduction

The Driscopipe® 1000 polyethylene piping system is lightweight, flexible and chemical and abrasion resistant, allowing it to be used in a number of diverse applications. Driscopipe 1000 is also protected from ultra-violet degradation and thermal degradation, giving it a long service and storage life in above ground, exposed installations. Driscopipe 1000 can meet the National Sanitation Foundation requirements for potable water. See your Phillips Driscopipe, Inc. representative for details.

Specifications

Driscopipe 1000 is a PE 3408 high density, high extra molecular weight polyethylene piping system. It may be specified by ASTM D3350 as having a cell classification of PE 345434C. Dimensions and workmanship are specified by ASTM F714.



A copy of nominal physical properties for Driscopipe 1000 is available from your Phillips Driscopipe, Inc. representative. Sample specifications for water distribution, force - main and gravity flow sewers are also available.

Chemical Resistance

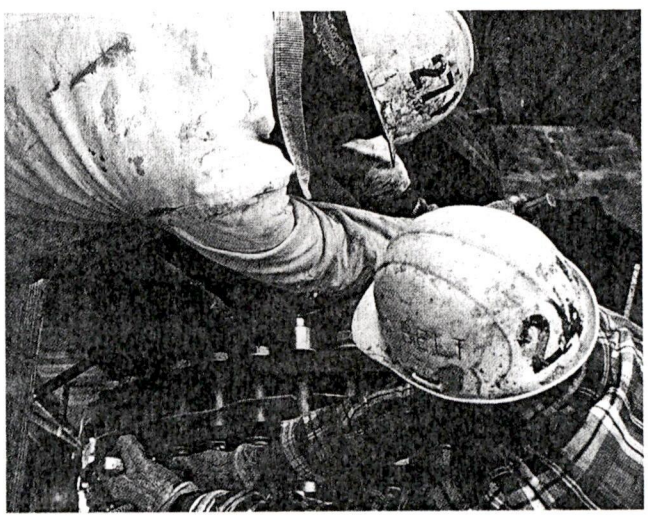
Driscopipe 1000 has outstanding chemical resistance. Most chemicals, acids, salts and hot soils will not attack Driscopipe or cause it to degrade. It does not rust, rot or corrode. It does not promote or support algae or bacterial growth.

Flow Factors

Driscopipe polyethylene pipe has an extremely smooth inside surface. It maintains its excellent flow properties throughout its service life due to its excellent chemical and abrasion resistance. Because of its smooth walls and non-wetting characteristics, a higher flow capacity and a reduced friction loss is possible with Driscopipe 1000, resulting in operating cost savings. A "C" factor of 155 is used with the Hazen-Williams equation for pressurized fluid flow and an "n" factor of .009 is used with the Manning Formula for gravity flow. Flow charts and additional system design information are available through your Phillips Driscopipe Inc. representative.

Direct Burial

Driscopipe 1000 is buried utilizing flexible pipe/soil system design practices. The pipe actually gains strength from the surrounding soil allowing it to



support additional loads. Through proper pipe and backfill selection, Driscopipe 1000 may be buried at depths in excess of 100 feet. At normal burial depths, a backfill of 85% of Standard Proctor density (AASHTO-99) can limit the ring deflection of Driscopipe to 2% of the original diameter.

Since Driscopipe pipe can be butt fused above ground in long lengths, narrow trench widths can be used to save on installation costs. Due to the ease of handling Driscopipe, it may be readily placed in the trench, thus necessitating a minimum amount of open trench. Trench and trench bottom, embedment materials, and bedding and installation practices are specified in ASTM D 2321.



Primary Properties - Cell Classification - ASTM D 3350-84 345434C*

Property	Test Method	0	1	2	3	4	5	6
1- Density, g/cm³	D 1505		0.910-0.925	0.926-0.940	**0.941-0.955**	> 0.955		
2- Melt index-condition E (gms/10min.)	D 1238		>1.0	1.0 to 0.4	< 0.4 to 0.15	< 0.15		
3- Flexural modulus, M Pa (psi)	D 790		< 138 (< 20 000)	138-< 276 (20 000 to < 40 000)	276-< 552 (40 000 to < 80 000)	552-< 758 (80 000 to < 110 000	**758-< 1103 (110 000 to 160 000)**	< 1103 (<160 000)
4- Tensile strength at yeild, M Pa (psi)	D 638		<15 (< 2200)	15-<18 (2200-< 2600)	18-< 21 (2600-< 3000)	**21-< 24 (3000-< 3500)**	24-< 28 (3500-< 4000)	< 28 (> 4000)
5- Environmental stress crack resistance: a. Test condition b. Test duration, h c. Failure, max, %	D 1693		A 48 50	B 24 50	**C 192 20**			
6- Hydrostatic design basis, M Pa (Psi), (23°C)	D 2837	NPR[a]	5.52 (800)	6.89 (1000)	8.62 (1250)	**11.03 (1600)**		
Color and UV Stabilizer		A Natural	B Colored	**C Black with 2% minimum carbon black**	D Natural with UV stabilizer	E Colored with UV		

[a]NPR = Not Pressure Rated

*NOTE: Refer to Driscopipe 1000 Data Sheet for complete nominal physical properties documentation, features/advantages/benefits, and listings of major industrial and municipal applications.

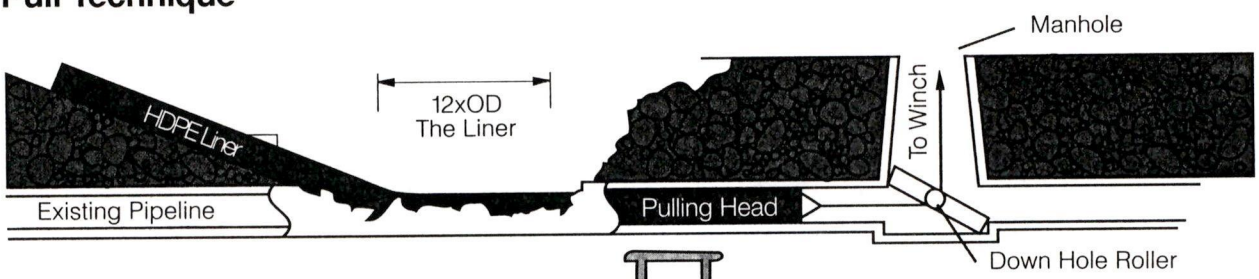
Joining System

Driscopipe is joined by the fusion technique. This simple, visual procedure utilizes controlled temperature and pressure to produce a fused, leak-free joint stronger than the pipe itself in both tension and hydrostatic loading. Pioneered and developed by Phillips, the heat fusion joint is recognized in the industry as a joining system of high integrity and reliability. Driscopipe may also be joined to itself and transitioned to other materials with flanges, compression couplings and other mechanical means.

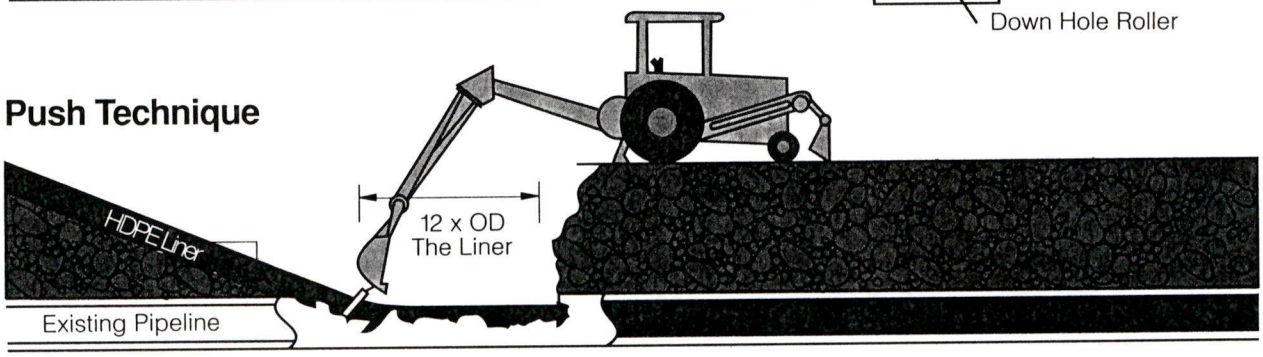
Insert Renewal (Sliplining)

1. **Inspect The Line**
   A TV survey will locate laterals, defects and provide the best insight on how to repair the line.
2. **Economically Select Excavations For Insertion**
   From the TV survey and engineering drawings, locate excavations at cave-ins or changes in line or grade.
3. **Specify The Correct O.D. Of The Liner**
   Normally, if the old line is in reasonable condition, a 10% clearance is adequate for sliplining.
4. **Prepare The Liner**
   Determine and measure lengths of pipe required. Fuse the single joints into prescribed lengths and attach pulling head* and tag line if required.
5. **Clean The Line**
   Clear and clean the old line sufficiently in order to insert the liner without undue stress.
6. **Insert The Liner**
   Establish pulling cable and rig. Attach cable to pulling head and slope excavation minimum of 2:1; then pull the liner into place. Alternately, the liner may be pushed into place using a choker strap.
7. **Close The Job**
   Properly seal or grout around liner at manholes and cut inverts. Close excavations.
   *See P.D.I. tech note #20 on pull head design.

Pull Technique



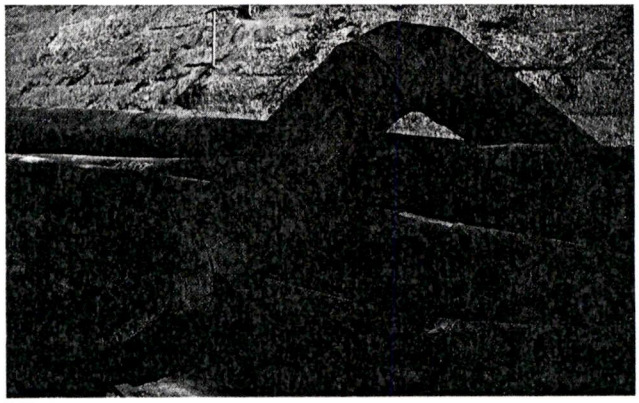
Push Technique



A Driscopipe representative can advise you on sizing your liner for external water head and other factors. Design brochures and reprints of ASTM F 585-78 "Insertion of Flexible Polyethylene Pipe into Existing Sewers" are available on request.

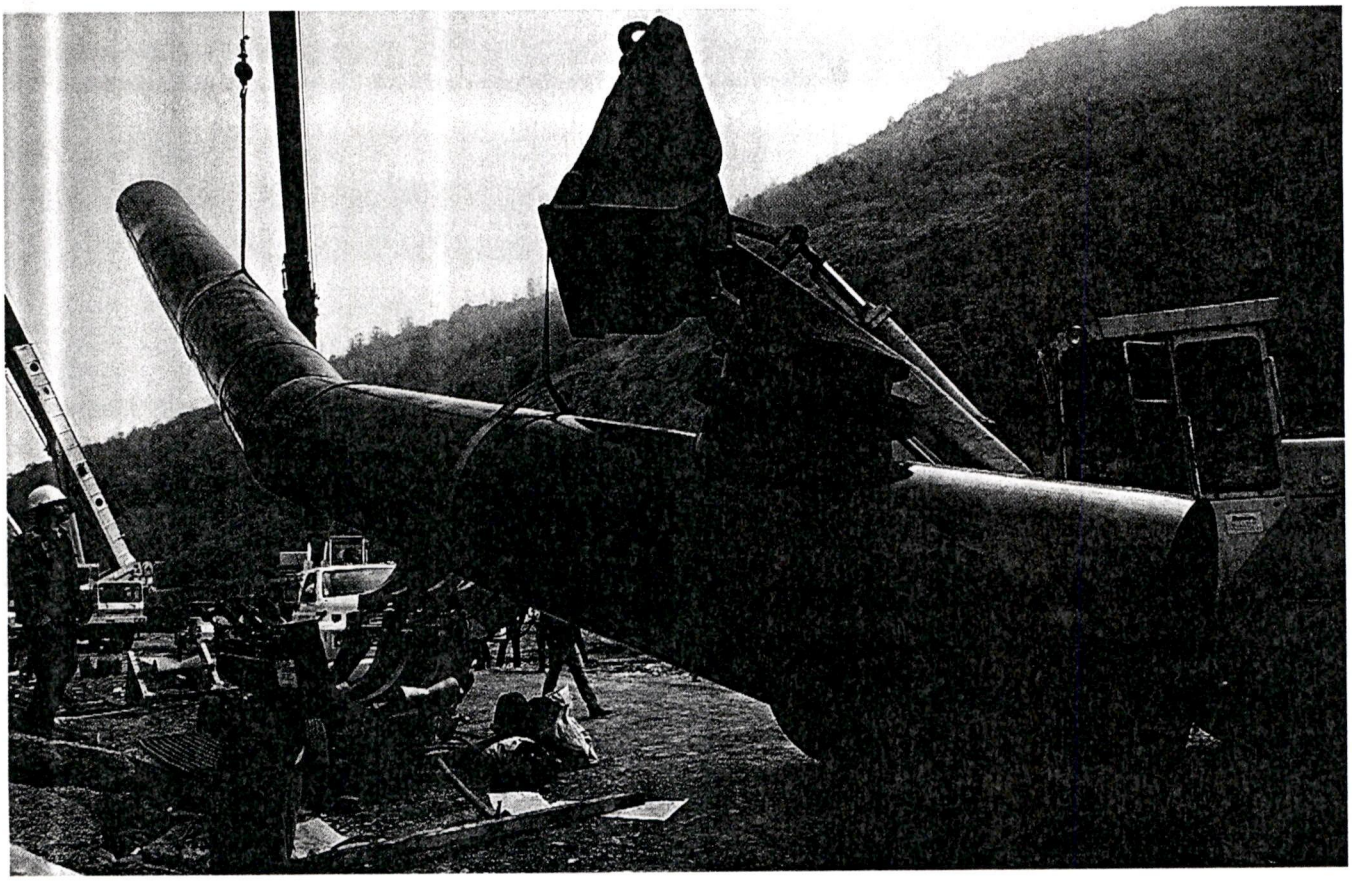
Insert renew sewers to save money while enhancing community relations

- Streets remain open to traffic
- Fewer excavations/fewer manholes
- No loss of services
- Quickest and most effective method of repair/renewal
- No infiltration with strong, fused joints
- Excellent flow properties of Driscopipe will restore the capacity of the system; no infiltration or exfiltration
- Low maintenance, almost immune to blockages & erosion
- Immune to sewer gases & most chemicals
- No algae or bacterial build-up
- No joint separation of butt-fusions due to earth or live loads



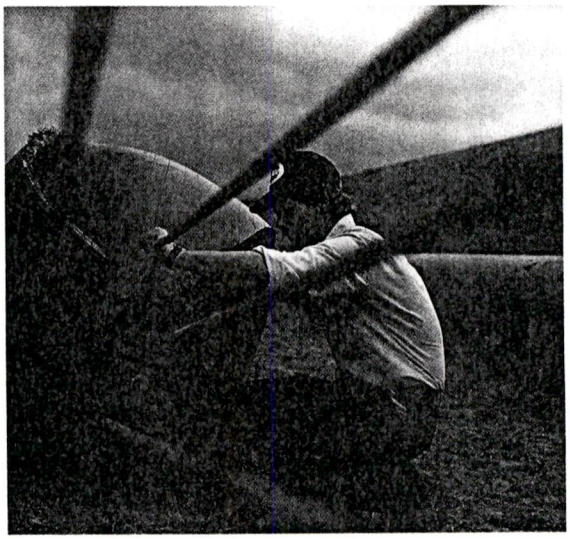
Additional Information

Technical design brochures and detailed installation brochures are available on request from a Phillips Driscopipe, Inc. representative.



DRISCOPIPE®

Phillips Driscopipe, Inc.
A Subsidiary of Phillips 66 Company

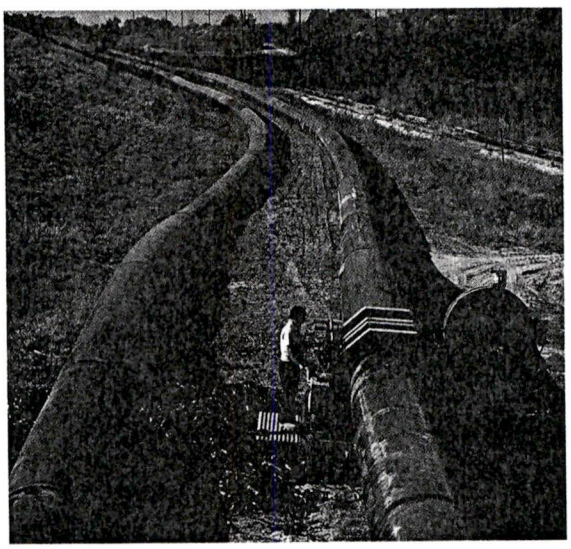


To Secure Production Information or Leave a Message for a Sales Engineer or Technical Service Representative:

Mail:
Attn: Customer Service Department

FIFEPIPE

P. O. BOX 751
BRANDON, FL 33509
(813) 681-3765 OR BARTOW 533-9068
FAX: (813) 684-1284



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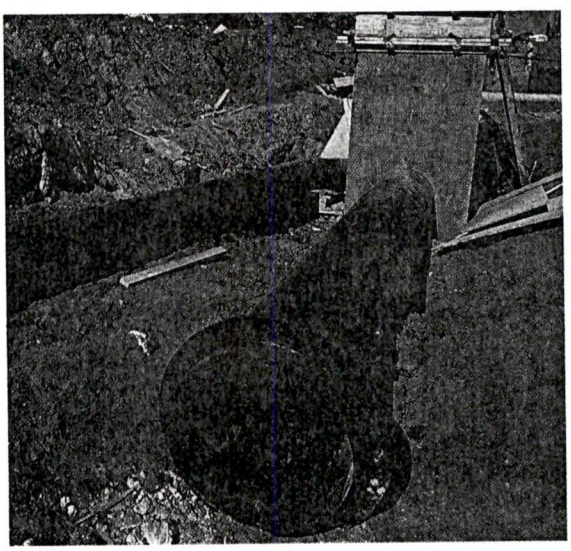

APPLICATION SPECIFIC PLASTICS PHILLIPS 66

820-91 A 01
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DRISCOPIPE

Dimensions & Pressure Ratings
1000 Series Pipe

Size	SDR	PSI @73.4	Weight lbs. per ft	Dimensions - inches Nominal O D	Approx. I D	Min. Wall	Packaging
1"	11	160	.19	1.315	1.075	.120	500 ft.coil
1-1/4	11	160	.30	1.660	1.358	.151	500 ft.coil
1-1/2	11	160	.40	1.900	1.554	.173	500 ft.coil
2"	7	267	.92	2.375	1.697	.339	88 jts.per bundle
	9	200	.74		1.847	.264	
	11	160	.62		1.943	.216	14 bundles per truck
	13.5	128	.52		2.023	.176	
	15.5	110	.46		2.069	.153	
	17	100	.42		2.095	.140	
3"	7	267	2.00	3.500	2.500	.500	46 jts.per bundle
	9	200	1.62		2.722	.389	
	11	160	1.35		2.864	.318	14 bundles per truck
	13.5	128	1.12		2.982	.259	
	15.5	110	.99		3.048	.226	
	17	100	.91		3.088	.206	
	19	89	.82		3.132	.184	
	21	80	.74		3.166	.167	
	26	64	.61		3.230	.135	
	32.5	51	.49		3.284	.108	
4"	7	267	3.31	4.500	3.214	.643	29 jts.per bundle
	9	200	2.67		3.500	.500	
	11	160	2.23		3.682	.409	14 bundles per truck
	13.5	128	1.85		3.834	.333	
	15.5	110	1.63		3.920	.290	
	17	100	1.50		3.970	.265	
	19	89	1.35		4.026	.237	
	21	80	1.23		4.072	.214	
	26	64	1.00		4.154	.173	
	32.5	51	.81		4.224	.138	
5-3/8"	21	80	1.75	5.375	4.863	.256	15 jts.per bundle
	26	64	1.43		4.961	.207	
	32.5	51	1.15		5.045	.165	14 bundles per truck
5"	7	267	5.05	5.563	3.973	.795	
	9	200	4.08		4.327	.618	
	11	160	3.42		4.551	.506	
	13.5	128	2.84		4.739	.412	
	15.5	110	2.50		4.845	.359	
	17	100	2.29		4.909	.327	
	19	89	2.07		4.977	.293	
	21	80	1.88		5.033	.265	
	26	64	1.53		5.135	.214	
	32.5	51	1.23		5.221	.171	
6"	7	267	7.16	6.625	4.733	.946	13 jts.per bundle
	9	200	5.78		5.153	.736	
	11	160	4.84		5.421	.602	14 bundles per truck
	13.5	128	4.03		5.643	.491	
	15.5	110	3.54		5.771	.427	
	17	100	3.25		5.845	.390	
	19	89	2.93		5.927	.349	
	21	80	2.66		5.995	.315	
	26	64	2.17		6.115	.255	
	32.5	51	1.75		6.217	.204	
7"	7	267	8.29	7.125	5.089	1.018	11 jts.per bundle
	9	200	6.69		5.541	.792	
	11	160	5.61		5.829	.648	12 bundles per truck
	13.5	128	4.66		6.069	.528	
	15.5	110	4.10		6.205	.460	
	17	100	3.76		6.287	.419	
	19	89	3.39		6.375	.375	
	21	80	3.08		6.445	.340	
	26	64	2.51		6.577	.274	
	32.5	51	2.02		6.685	.220	

Size	SDR	PSI @73.4	Weight lbs.	Dimensions - inches Nominal O D	Approx. I D	Min. Wall	Packaging
8"	7	267	12.14	8.625	6.161	1.232	9 jts.per bundle
	9	200	9.80		6.709	.958	
	11	160	8.21		7.057	.784	10 bundles per truck
	13.5	128	6.82		7.347	.639	
	15.5	110	6.00		7.513	.556	
	17	100	5.50		7.611	.507	3600 ft. per truck
	19	89	4.96		7.717	.454	
	21	80	4.52		7.803	.411	
	26	64	3.68		7.961	.332	
	32.5	51	2.97		8.095	.265	
10"	7	267	18.86	10.750	7.678	1.536	per truck
	9	200	15.23		8.362	1.194	
	11	160	12.75		8.796	.977	80 jts.per loose load
	13.5	128	10.59		9.158	.796	
	15.5	110	9.33		9.362	.694	
	17	100	8.55		9.486	.632	56 jts.per strip load
	19	89	7.71		9.618	.566	
	21	80	7.01		9.726	.512	
	26	64	5.71		9.924	.413	
	32.5	51	4.62		10.088	.331	
12"	7	267	26.53	12.750	9.108	1.821	per truck
	9	200	21.44		9.916	1.417	
	11	160	17.94		10.432	1.159	52 jts.per loose load
	13.5	128	14.89		10.862	.944	
	15.5	110	13.12		11.104	.823	
	17	100	12.03		11.250	.750	42 jts.per strip load
	19	89	10.84		11.408	.671	
	21	80	9.86		11.536	.607	
	26	64	8.04		11.770	.490	
	32.5	51	6.48		11.966	.392	
13"	7	267	29.24	13.386	9.562	1.912	per truck
	9	200	23.62		10.412	1.487	
	11	160	19.78		10.952	1.217	48 jts.per loose load
	13.5	128	16.43		11.402	.992	
	15.5	110	14.46		11.658	.864	
	17	100	13.26		11.812	.787	42 jts.per strip load
	19	89	11.96		11.976	.705	
	21	80	10.86		12.112	.637	
	26	64	8.87		12.356	.515	
	32.5	51	7.15		12.562	.412	
14"	7	267	31.99	14.000	10.000	2.000	per truck
	9	200	25.84		10.888	1.556	
	11	160	21.64		11.454	1.273	48 jts.per loose load
	13.5	128	17.97		11.926	1.037	
	15.5	110	15.81		12.194	.903	
	17	100	14.52		12.352	.824	30 jts.per strip load
	19	89	13.07		12.526	.737	
	21	80	11.90		12.666	.667	
	26	64	9.69		12.924	.538	
	32.5	51	7.83		13.138	.431	
16"	9	200	33.75	16.000	12.444	1.778	per truck
	11	160	28.27		13.090	1.455	
	13.5	128	23.46		13.630	1.185	35 jts.per loose load
	15.5	110	20.65		13.936	1.032	
	17	100	18.95		14.118	.941	
	19	89	17.07		14.316	.842	30 jts.per strip load
	21	80	15.53		14.476	.762	
	26	64	12.66		14.770	.615	
	32.5	51	10.21		15.016	.492	

DRISCOPIPE

Driscopipe® 1000 series

Data Sheet

PHILLIPS 66

Customer Benefits

High quality Driscopipe® 1000 is manufactured from extra high molecular weight, high density PE3408 polyethylene pipe grade resin.

This black, weather-resistant pipe exhibits . . . .

- Outstanding Chemical & Corrosion Resistance
- High Environmental Stress Cracking Resistance
- Improved Flow Characteristics
- Toughness & Ductility
- Flexibility with lightweight
- Non-Toxic
- Abrasion Endurance
- Fatigue Endurance
- Long-term Hydrostatic Strength / Physical strength
- Reliability

Suggested Industries & Applications

- Industrial Water Distribution
- Agriculture
- Landfills
- Marine
- Pollution Control
- Pulp / paper / wood
- Power Plants
- Petrochemical
- Mining / Mineral Processing
- Dredging / sand / gravel
- Organic Chemicals
- Inorganic Chemicals
- Aquaculture
- Hazardous Waste
- Local / State / Federal Gov'ts.
- Cement Plants
- Irrigation
- Municipal
- Gravity sewers
- Forced main sewers
- Water distribution
- Sewer treatment
- Sludge handling
- Leachate collection
- Dual Containment
- Brine
- Fertilizer
- Acid / Caustic lines
- Utility / Process piping
- Slurry
- SX acid mining
- Tailings disposal
- Marinas
- Snow melting / making
- Hard rock mining
- Coal Slurry / Processing
- Dredging
- Water intakes
- Water outfalls
- Fire-water
- De-Watering
- Fly-Ash disposal
- Temporary pipelines
- Cable Stayed Bridges
- Golf course irrigation
- Farmland irrigation
- Swimming pools
- Ice rinks
- . . . . and many others

Available in sizes
1" thru 54"

Specification Data

The resin, pipe & fittings comply with these accepted (and other) industry standards . . . .

ASTM F-714 - Pipe Standard

ASTM D3261 - Fittings Standard

Cell Classification -
ASTM D3350 - PE345434C

ASTM D1248 - Type III, Class C
Category 5, Grade P34

EPA 9090 ISO #161

PPI Designation - PE3408

NSF - Listed, Standard #14 (by size,per order) NSF

Factory Mutual (by size, per order) ◄ FM ►

CGSB41 - GP-25M-Pipe Standard

AWWA C901 - Potable Water Pipe & Tubing

American Water Works Association

Printed in Texas, USA 6-91

Driscopipe® 1000

Typical Physical Properties ⊕

Property	Specification	Units	Nominal Value
Material Designation	PPI / ASTM	-	PE 3408
Material Classification	ASTM D-1248	-	III C 5 P34
Cell Classification	ASTM D-3350	-	345434C
Density (3)	ASTM D-1505	gm / cm^3	0.955
Melt Index (4)	ASTM D-1238 (2.16 kg/190°C)	gm / 10 min.	0.11 ◆
Flex Modulus (5)	ASTM D-790	psi	135,000
Tensile Strength (4)	ASTM D-638	psi	3200
ESCR (3)	ASTM D-1693	F_o, Hours	> 5000**
HDB @ 73° F (4)	ASTM D-2837	psi	1600
U-V Stablizer (C)	ASTM D-1603	% C	2.5
Hardness	ASTM D-2240	Shore "D"	65
Compressive Strength (Yield)	ASTM D-695	psi	1600
Tensile Strength @ Yield (Type IV Spec.)	ASTM D-638 (2" / min)	psi	3200
Elongation @ Yield	ASTM D-638	%, minimum	8
Tensile Strength @ Break (Type IV Spec.)	ASTM D-638	psi	5000
Elongation @ Break	ASTM D-638	%, minimum	750
Modulus of Elasticity	ASTM D-638	psi	130,000
ESCR			
(Cond A,B, C: Mold. Slab)	ASTM D-1693	F_o, Hours	> 5000 **
(Compressed Ring - pipe)	ASTM F-1248	F_{50}, Hours	> 1000 **
Slow Crack Growth	Battelle Method	Days to Failure	> 64
Impact Strength (IZOD) (.125" Thick)	ASTM D-256 (Method A)	In-lb / in notch	42
Linear Thermal Expansion Coef.	ASTM D-696	in / in / ° F	1.2×10^{-4}
Thermal Conductivity	ASTM D-177	BTU - in/ ft^2 / hrs/ ° F	2.7
Brittleness Temp.	ASTM D-746	° F	< -180
Vicat Soft. Temp.	ASTM D-1525	° F	257
Heat Fusion Cond.		psi @ °F	75 @ 400

⊕ This list of Typical Physical Properties is intended for basic characterization of the pipe, and does not represent specific determinations or specifications.

** Tests were discontinued because no failures and no indication of stress crack initiation.

◆ Average Melt Index value with a standard deviation of 0.01.

Distributed by:

FE PIPE COMPANY
P.O. BOX 751
BRANDON, FL 33509
(813) 681-3765 OR BARTOW 533-9068
FAX (813) 684-1284

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Fax: 1-214-783-2689

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Printed in Texas, USA 6-91

PHILLIPS DRISCOPIPE, INC.
A SUBSIDIARY OF PHILLIPS 66 COMPANY

2929 NORTH CENTRAL EXPRESSWAY, SUITE 100
P. O. BOX 83-3866
RICHARDSON, TEXAS 75083 • 214/783-2666

July 14, 1992

WESTRA CONSTRUCTION
P.O. BOX 1149
PALMETTO, FL 34220-1149
ATTN: Mike Beukema

This letter will serve to certify that all Driscopipe 1000 pipe meets the requirements of ASTM F714 and is classified as a 345434C pipe based on ASTM D3350. Driscopipe 1000 is also classified as a Type III, Class C, Category 5, Grade P34 material based on ASTM D1248 and has a Plastic Pipe Institute recommended hydrostatic design basis of 1600 psi as derived from ASTM D2837. In addition, Driscopipe 1000 is listed by NSF as approved for use in potable water systems.

If you have any questions or desire additional information, please do not hesitate to give me a call.

Very truly yours,

Benny E. Nasser
Manager, Marketing Services

BEN:cz
cc: Hank Martin



DRISCOPIPE®

Hereby Confirms

JIM CARTER

has completed a basic study and training course on the principles and fundamentals of butt, side wall and/or socket fusion of Driscopipe® polyethylene pipe and fittings. This Certificate of Attendance is hereby awarded

on this 7th *day of* JANUARY, *19*92

Jim Bray

Vice President Marketing

PHILLIPS 66

PHILLIPS DRISCOPIPE, INC.

A SUBSIDIARY OF PHILLIPS 66 COMPANY

M E M O R A N D U M

DATE: 10/05/92

TO: ALBERT T. COX, TOWN MANAGER

FROM: LEN SMALLY, DIRECTOR OF PUBLIC WORKS

SUBJECT: PERMITTED STORAGE BELOW BFE AT L'AMBIANCE

Attached is a copy of the L'Ambiance (south) permit drawings showing storage areas. We have permitted several rooms (as shown) with break-a-way walls to house storage cages. Storage of certain items in cages is permitted in both our code and in the Federal code.

Our code does not prohibit partitions in V-Zones. FEMA has interpreted their code to not allow partitions (attached). Charles Speights, DCA, agrees that partitions are not allowed.

Because we have permitted these storage rooms and they are constructed, I believe we have a situation like the hospitality suite at the Pierre.

Can we ask for them to be removed? Can we prohibit them from being constructed in other buildings?

/cmg

Federal Emergency Management Agency
Region IV
1371 Peachtree Street, NE, Suite 700
Atlanta, GA 30309

R-4 1/92

THE INTENT OF STORAGE AREAS

The purpose of a building is to house (i.e., support, shelter, or enclosure of persons, animals, chattels, or property of any kind) individuals or property. Materials, items, chattel, inventory, stock, merchandize, wares, goods, and all personal property intended to be used for the primary purpose of the building's function must be protected from flooding while housed within the building and therefore may not be stored below the base flood elevation (BFE) i.e., lowest floor. The term "lowest floor" under the National Flood Insurance Program is defined as

> the lowest floor of the lowest enclosed areas (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; Provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of (Section) 60.3.

Therefore, storage areas are intended to be limited to incidental items which can withstand exposure to the elements and have low flood damage potential. These items would include lawn mowers, garden equipment, bicycles and other low damage items for which, under most circumstances, flood insurance coverage is not provided.

Furthermore, such storage area must be of flood resistant or breakaway materials, non-partitioned, void of utilities except for essential lighting (outdoor type switches and fixtures), with openings to preclude hydrostatic loading and allow ventilation. The area cannot be temperature controlled and therefore exists simply because of aesthetic or load bearing design of the building. As such, the enclosed area should be considered bonus space with minimum access to store items that otherwise would be stored outside the building or in a garage or shed.

V-ZONES

(2) Except as otherwise provided herein, all new construction and substantial improvements within a designated Zone V1-30 shall meet the following requirements:

(a) Be located landward of the mean high tide.

(b) Be elevated on adequately anchored piles or columns so that the structural members of the lowest floor are elevated at least to the regulatory flood elevation and securely anchored to the piles or columns; provided, however, construction on property fronting the Gulf of Mexico and west of Gulf of Mexico Drive within 250 feet of the mean high-water line of the Gulf of Mexico shall hereby be prohibited except for construction on piles in accordance with § 1303 of the Standard Building Code, adopted by reference in § 150.01, or the equivalent thereof approved by the Town Engineer at the expense of the applicant.

(c) Have the space below the lowest floor free of obstruction or constructed with breakaway walls intended to collapse under stress without jeopardizing the structural integrity of the building; all breakaway walls shall meet the requirements of § 154.12. If breakaway walls are utilized, the enclosed space shall not be used for human habitation.

(d) Be designated and constructed so as to minimize the impact and effect of abnormally high tides, wind-driven water, or waves on the building.

(3) The adequacy of provisions contained in division (B)(2)(b) and (d) above shall be certified to by a registered professional engineer or architect.

(4) Fill shall not be used for structural support within Zones V1-30.

(5) Alteration of sand dunes and mangroves which would increase potential flood damage is prohibited.

(C) Manufactured Home Requirements.

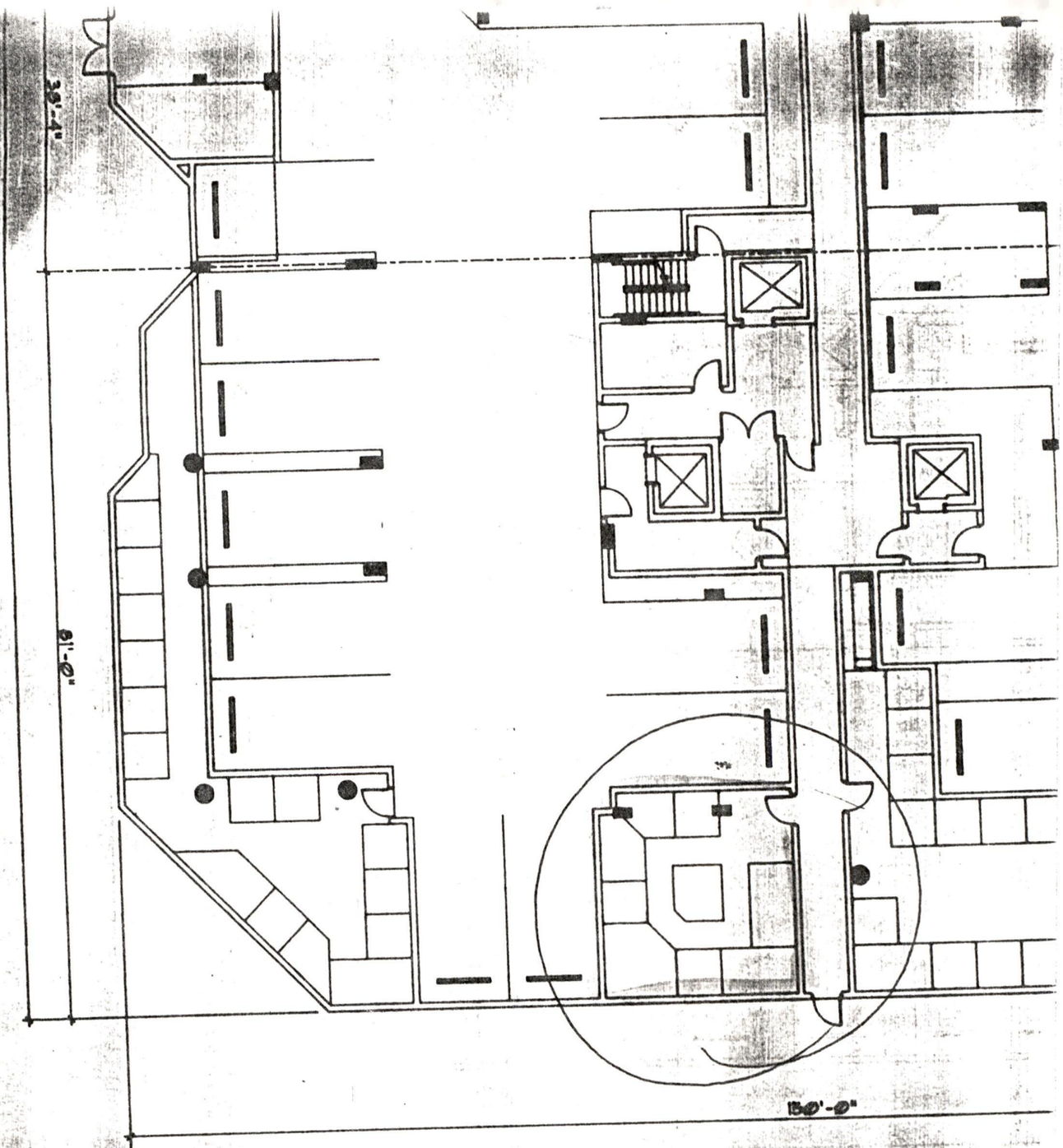
(1) No new manufactured home parks, expansion of existing manufactured home parks, or placement of any manufactured home not in a manufactured home park shall be allowed within a designated Zones V1-30.

(2) In the event that a manufactured home park location or relocation is not deemed to constitute the expansion of an existing manufactured home park as used in division (C)(1) above and as defined in § 154.03, the location or relocation shall be allowed provided that the following requirements are met.

(a) Any manufactured home moved into or relocated within an existing manufactured home park shall be anchored in accordance with the provisions in § 154.07(C)(1)(a), (b) and (d).

(b) Easy access for a manufactured home hauler is provided.

(3) New manufactured home parks and subdivisions, expansions to existing manufactured home parks and subdivisions, existing manufactured home parks and subdivisions where the repair, reconstruction or improvement of the streets, utilities and pads equal or exceed 50% of the value of the streets, utilities and pads before the repair, reconstruction or



mbiance AT LONGBOAT KEY CLUB

LONGBOAT KEY, FL.

THE L

ARC

YALE PROPERTIES
L'AMBIANCE

Mike will need to show all removal, not just pilings

August 14, 1992

Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 33548
Attn: Len Smalley

Dear Len:

Enclosed please find a copy of an estimate to remove piling at the L'Ambiance north site from our excavation contractor. The balance of the $150,000.00 would be used for grading, general cleanup and seeding, if required. Please let me know whether the figure of $150,000.00 is acceptable to you, so that we can proceed with our documentation and Letters of Credit. Thank you very much.

Sincerely yours,

YALE PROPERTIES - L'AMBIANCE

Michael Kempner

Enclosure

MK:ls

VIA FACSIMILE



mk605.etr

2900 North Military Trail • Suite 201 S.• Boca Raton, Florida 33431
Tel: (407) 994-2133 • Broward: (305) 462-6806 • Fax: (407) 994-1429

C.E. HUFFMAN
TRUCKING, INC.

Trucking
and Site Development

AUGUST 12, 1992

Mr. MIKE KEMPNER
YALE PROPERTIES
2900 MILITARY TRAIL
SUITE 200 SOUTH
BOCA RATON, FL 33431

RE: L'AMBIANCE - NORTH TOWER

EXTRACT - 40 ft. concrete pilings, load and transport from job site. Estimate includes one mobilization.	725 EA	175.00	$126,875.00

Proposal subject to revision after 30 days.

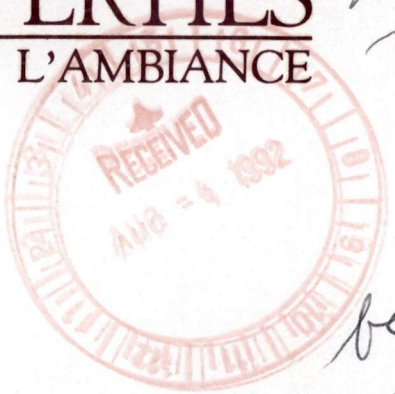
C.E. HUFFMAN TRUCKING, INC.

William O. Grady, ASCE
Vice President

File

1. How many piles
2. Need estimates to pull out & restore site

YALE PROPERTIES
L'AMBIANCE



RECEIVED AUG - 4 1992

should be clear we can SITE draft 30 DAYS after WORK completed

August 3, 1992

Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 33548
Attn: Len Smalley

Dear Len:

This letter will serve as our request for you to allow us to obtain a Foundation Permit for the L'Ambiance North Building. The permit would include the piling, pile caps, columns to the first elevated slab, and ground floor slab for this building. The total estimated cost of this work is $728,000.00. We understand that we would be required to continue work on this building, above and beyond the scope of work covered by the Foundation Permit, within 30 days after completion of the work covered by the Foundation Permit. We would be willing to sign an agreement to this effect and include a Letter of Credit, in the amount of $150,000.00, which is our estimate for demolition and removal of the portion of the structure covered by the Foundation Permit, along with general grading, seeding and site restoration.

Naturally, we would expect the permit fee to be based on the estimate of $728,000.00.

I would appreciate you reviewing this situation and letting me know as soon as possible whether or not you would be willing to issue a Foundation Permit based on these conditions. Thank you very much.

Sincerely yours,

YALE PROPERTIES - L'AMBIANCE

Michael Kempner

Michael Kempner

MK:ls

mk594.etr

2900 North Military Trail • Suite 201 S.• Boca Raton, Florida 33431
Tel: (407) 994-2133 • Broward: (305) 462-6806 • Fax: (407) 994-1429

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

August 25, 1992

Tri-D, Inc.
2332 17th Street, Suite 7
Sarasota, FL 34234

Subject: **L'AMBIANCE SHOP DRAWINGS**

SWN Ref: 2591-1/Work Order #2239

Gentlemen:

Enclosed are two (2) sets of the following shop drawings:

Description	Manufacturer	Comments
14" PE Pipe; Driscopipe 1000	Phillips 66	No exceptions taken

These drawings have been reviewed for general conformance to the plans. It is understood that all equipment and material will be field checked for conformance to these shop drawings.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Jeff Streitmatter

Jeff Streitmatter
Project Engineer

RECEIVED
AUG 27 1992

JS:tg

Enclosures

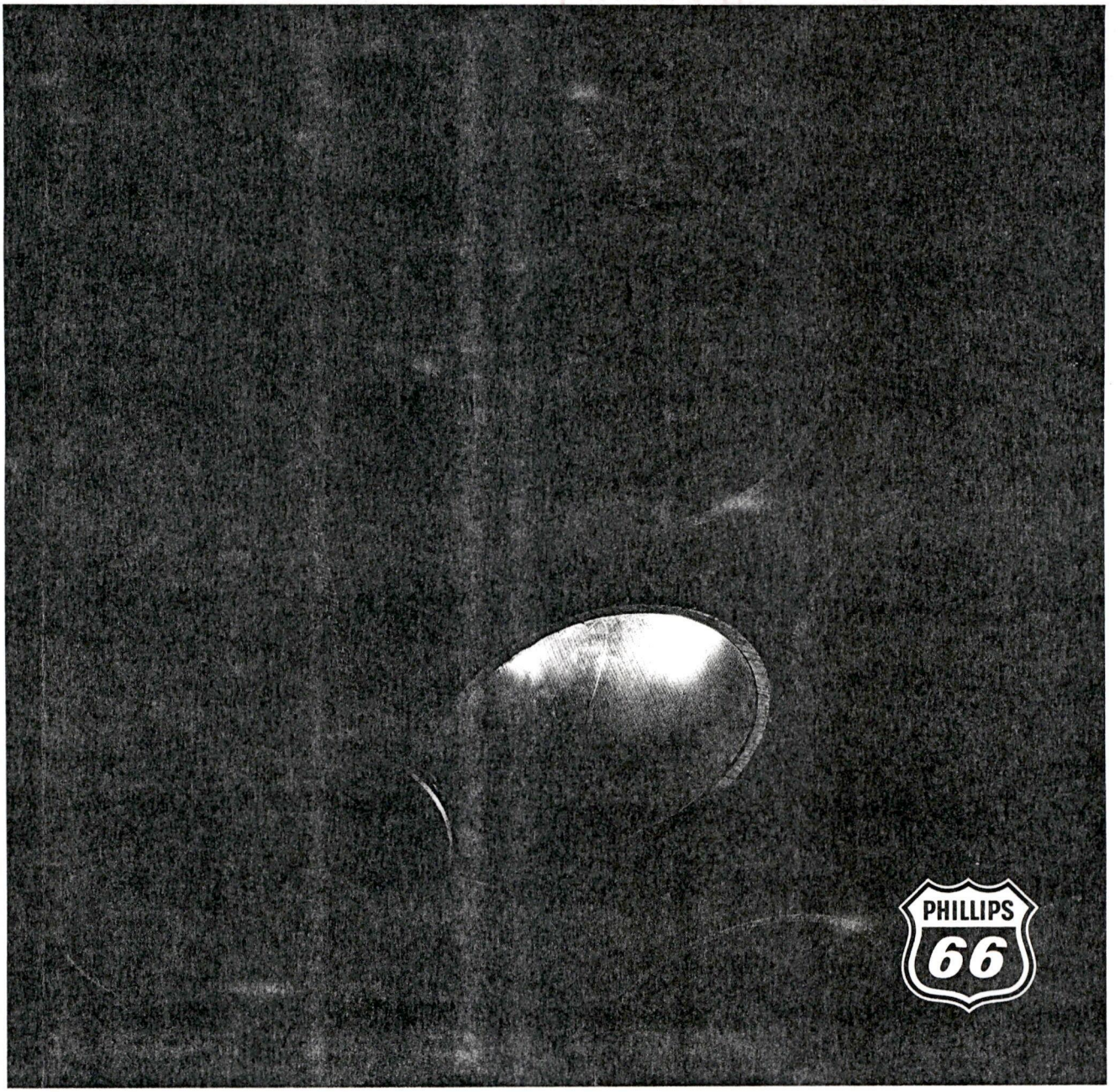
cc: Mr. Kyle Hauck, Yale Properties, w/enc.
Mr. Leonard Smally, Town of Longboat Key, w/enc.
SWN Field Representative, w/enc.

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

DRISCOPIPE®

Driscopipe® 1000

High Density Polyethylene Pipe For Industrial And Municipal Applications



SHOP DRAWING REVIEW

ENGINEER'S REVIEW				RESPONSE REQUIRED OF CONTRACTOR	
NO EXCEPTIONS TAKEN	[X]	REJECTED	[ ]	CONFIRM	[ ]
NOTE MARKINGS	[ ]	COMMENT ATTACHED	[ ]	RESUBMIT	[ ]

ENGINEER'S REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS.

Markings or comments shall not be construed as relieving the CONTRACTOR from compliance with the project plans and specifications, nor departures therefrom. The CONTRACTOR remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly and construction, and for performing his work in a safe manner.

SMALLY, WELLFORD & NALVEN, ".., CONSULTING ENGINEERS

By: JS Date: 8-25-92

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Chemical Resistance 1
Flow Factors 1
Direct Burial 1
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Trench Construction and Terminology 3
Temperature Range 3
Joining System 4
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DRISCOPIPE®

Driscopipe® 1000 Polyethylene Piping Systems

Introduction

The Driscopipe® 1000 polyethylene piping system is lightweight, flexible and chemical and abrasion resistant, allowing it to be used in a number of diverse applications. Driscopipe 1000 is also protected from ultra-violet degradation and thermal degradation, giving it a long service and storage life in above ground, exposed installations. Driscopipe 1000 can meet the National Sanitation Foundation requirements for potable water. See your Phillips Driscopipe, Inc. representative for details.

Specifications

Driscopipe 1000 is a PE 3408 high density, high extra molecular weight polyethylene piping system. It may be specified by ASTM D3350 as having a cell classification of PE 345434C. Dimensions and workmanship are specified by ASTM F714.

A copy of nominal physical properties for Driscopipe 1000 is available from your Phillips Driscopipe, Inc. representative. Sample specifications for water distribution, force - main and gravity flow sewers are also available.

Chemical Resistance

Driscopipe 1000 has outstanding chemical resistance. Most chemicals, acids, salts and hot soils will not attack Driscopipe or cause it to degrade. It does not rust, rot or corrode. It does not promote or support algae or bacterial growth.

Flow Factors

Driscopipe polyethylene pipe has an extremely smooth inside surface. It maintains its excellent flow properties throughout its service life due to its excellent chemical and abrasion resistance. Because of its smooth walls and non-wetting characteristics, a higher flow capacity and a reduced friction loss is possible with Driscopipe 1000, resulting in operating cost savings. A "C" factor of 155 is used with the Hazen-Williams equation for pressurized fluid flow and an "n" factor of .009 is used with the Manning Formula for gravity flow. Flow charts and additional system design information are available through your Phillips Driscopipe Inc. representative.

Direct Burial

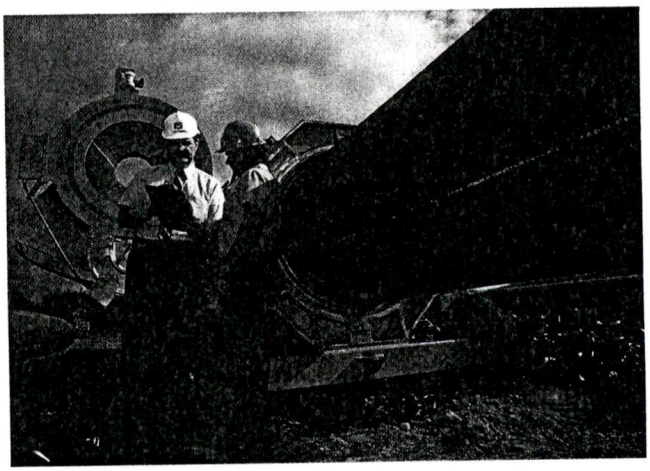
Driscopipe 1000 is buried utilizing flexible pipe/soil system design practices. The pipe actually gains strength from the surrounding soil allowing it to





support additional loads. Through proper pipe and backfill selection, Driscopipe 1000 may be buried at depths in excess of 100 feet. At normal burial depths, a backfill of 85% of Standard Proctor density (AASHTO-99) can limit the ring deflection of Driscopipe to 2% of the original diameter.

Since Driscopipe pipe can be butt fused above ground in long lengths, narrow trench widths can be used to save on installation costs. Due to the ease of handling Driscopipe, it may be readily placed in the trench, thus necessitating a minimum amount of open trench. Trench and trench bottom, embedment materials, and bedding and installation practices are specified in ASTM D 2321.



Primary Properties - Cell Classification - ASTM D 3350-84 345434C*

Property	Test Method	0	1	2	3	4	5	6
1- Density, g/cm³	D 1505		0.910-0.925	0.926-0.940	**0.941-0.955**	> 0.955		
2- Melt index-condition E (gms/10min.)	D 1238		>1.0	1.0 to 0.4	< 0.4 to 0.15	< 0.15		
3- Flexural modulus, M Pa (psi)	D 790		< 138 (< 20 000)	138-< 276 (20 000 to < 40 000)	276-< 552 (40 000 to < 80 000)	552-< 758 (80 000 to < 110 000	**758-< 1103 (110 000 to 160 000)**	< 1103 (<160 000)
4- Tensile strength at yeild, M Pa (psi)	D 638		<15 (< 2200)	15-<18 (2200-< 2600)	18-< 21 (2600-< 3000)	**21-< 24 (3000-< 3500)**	24-< 28 (3500-< 4000)	< 28 (> 4000)
5- Environmental stress crack resistance: a. Test condition b. Test duration, h c. Failure, max, %	D 1693		A 48 50	B 24 50	**C 192 20**			
6- Hydrostatic design basis, M Pa (Psi), (23° C)	D 2837	NPR[a]	5.52 (800)	6.89 (1000)	8.62 (1250)	**11.03 (1600)**		
Color and UV Stabilizer		A Natural	B Colored	**C Black with 2% minimum carbon black**	D Natural with UV stabilizer	E Colored with UV		

[a]NPR = Not Pressure Rated

*NOTE: Refer to Driscopipe 1000 Data Sheet for complete nominal physical properties documentation, features/advantages/benefits, and listings of major industrial and municipal applications.

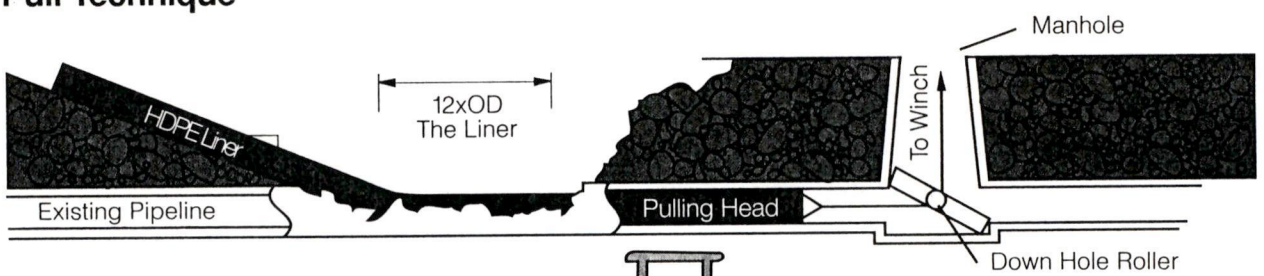
Joining System

Driscopipe is joined by the fusion technique. This simple, visual procedure utilizes controlled temperature and pressure to produce a fused, leak-free joint stronger than the pipe itself in both tension and hydrostatic loading. Pioneered and developed by Phillips, the heat fusion joint is recognized in the industry as a joining system of high integrity and reliability. Driscopipe may also be joined to itself and transitioned to other materials with flanges, compression couplings and other mechanical means.

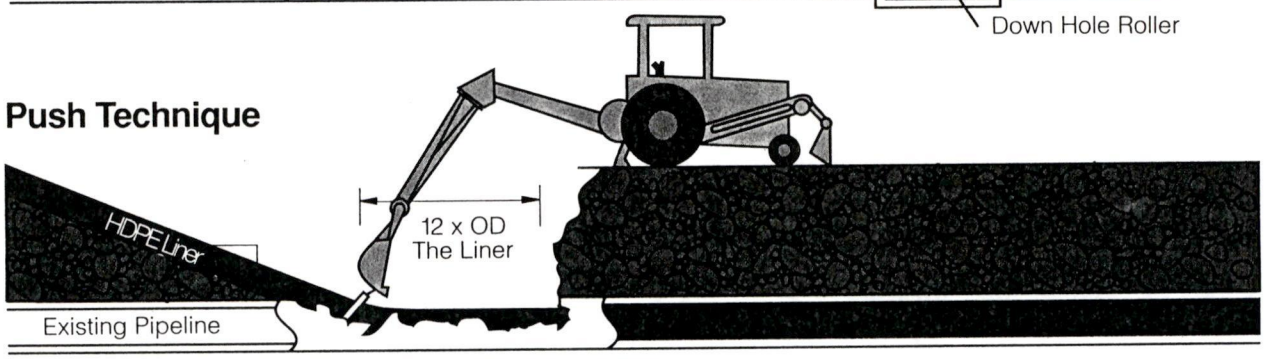
Insert Renewal (Sliplining)

1. **Inspect The Line**
   A TV survey will locate laterals, defects and provide the best insight on how to repair the line.
2. **Economically Select Excavations For Insertion**
   From the TV survey and engineering drawings, locate excavations at cave-ins or changes in line or grade.
3. **Specify The Correct O.D. Of The Liner**
   Normally, if the old line is in reasonable condition, a 10% clearance is adequate for sliplining.
4. **Prepare The Liner**
   Determine and measure lengths of pipe required. Fuse the single joints into prescribed lengths and attach pulling head* and tag line if required.
5. **Clean The Line**
   Clear and clean the old line sufficiently in order to insert the liner without undue stress.
6. **Insert The Liner**
   Establish pulling cable and rig. Attach cable to pulling head and slope excavation minimum of 2:1; then pull the liner into place. Alternately, the liner may be pushed into place using a choker strap.
7. **Close The Job**
   Properly seal or grout around liner at manholes and cut inverts. Close excavations.
   *See P.D.I. tech note #20 on pull head design.

Pull Technique



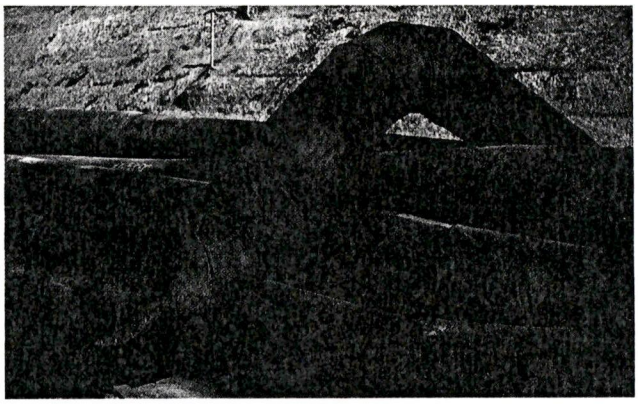
Push Technique



A Driscopipe representative can advise you on sizing your liner for external water head and other factors. Design brochures and reprints of ASTM F 585-78 "Insertion of Flexible Polyethylene Pipe into Existing Sewers" are available on request.

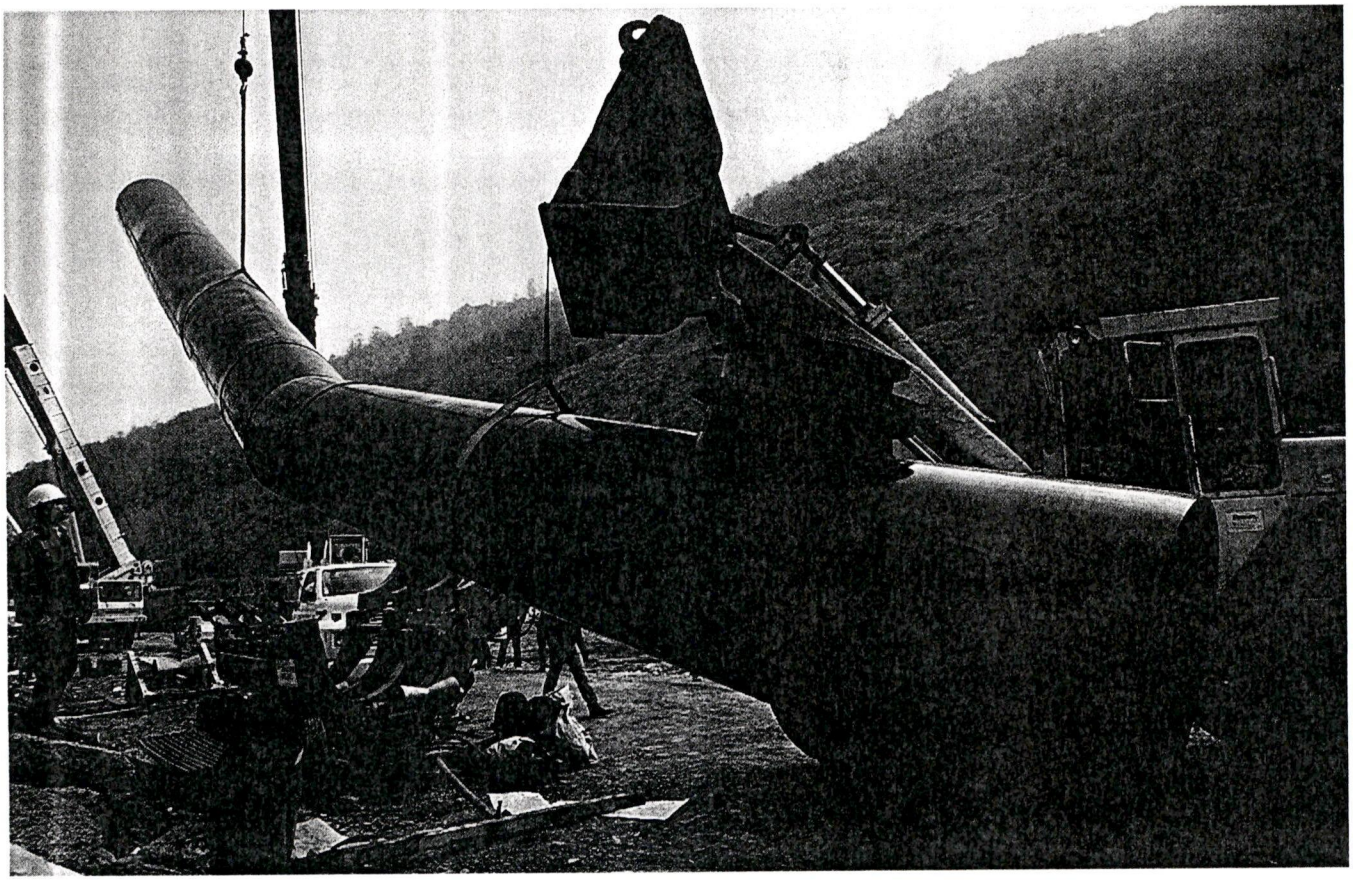
Insert renew sewers to save money while enhancing community relations

- Streets remain open to traffic
- Fewer excavations/fewer manholes
- No loss of services
- Quickest and most effective method of repair/renewal
- No infiltration with strong, fused joints
- Excellent flow properties of Driscopipe will restore the capacity of the system; no infiltration or exfiltration
- Low maintenance, almost immune to blockages & erosion
- Immune to sewer gases & most chemicals
- No algae or bacterial build-up
- No joint separation of butt-fusions due to earth or live loads



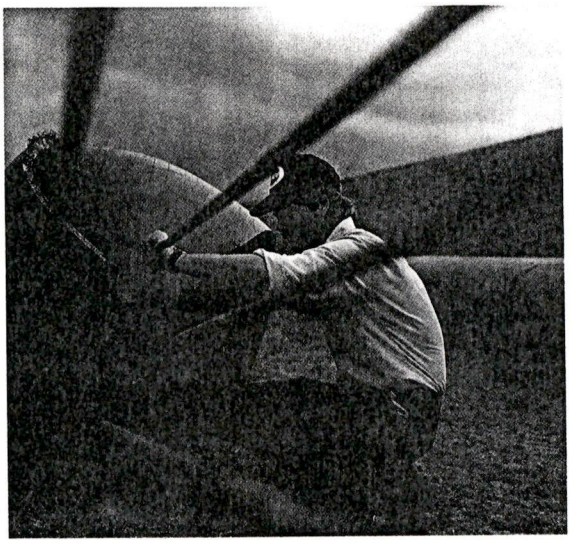
Additional Information

Technical design brochures and detailed installation brochures are available on request from a Phillips Driscopipe, Inc. representative.



DRISCOPIPE®

Phillips Driscopipe, Inc.
A Subsidiary of Phillips 66 Company

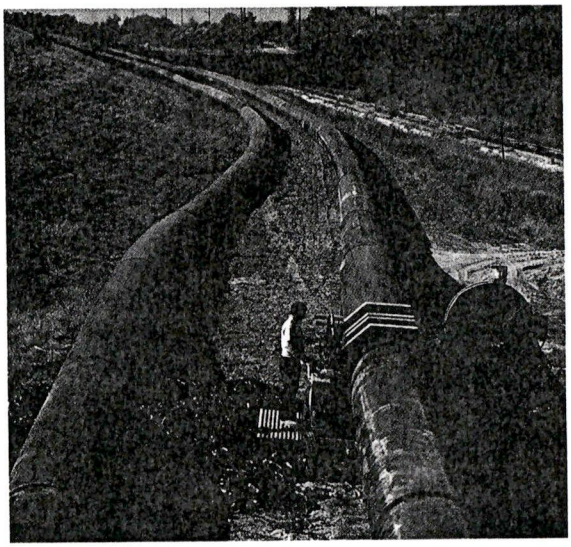


To Secure Production Information or Leave a Message for a Sales Engineer or Technical Service Representative:

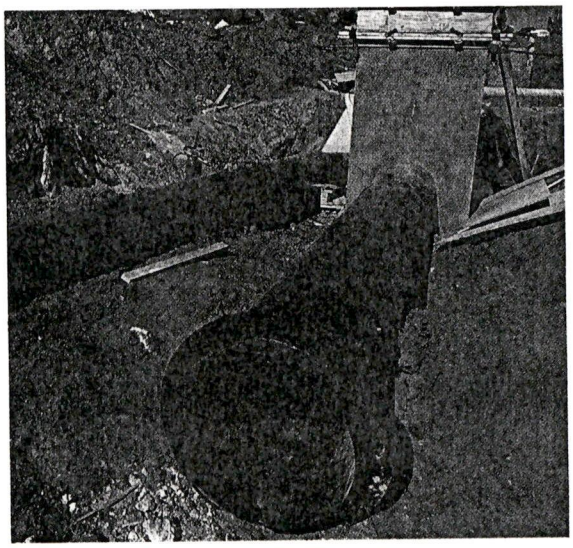
Mail:
Attn: Customer Service Department

FIFEPIPE

P. O. BOX 751
BRANDON, FL 33509
(813) 681-3765 OR BARTOW 533-9068
FAX: (813) 684-1284



This document reports accurate and reliable information to the best of our knowledge but our suggestions and recommendations cannot be guaranteed because the conditions of use are beyond our control. The user of such information assumes all risk connected with eh use thereof, Phillips 66 Company and its subsidiaries assume no responsibility for the use of information presented herein and hereby expressly disclaim all liability in regards to such use.



APPLICATION SPECIFIC PLASTICS PHILLIPS 66

820-91 A 01
©MCMXCI Phillips 66 Company

DRISCOPIPE

Dimensions & Pressure Ratings
1000 Series Pipe

Size	SDR	PSI @73.4	Weight lbs. per ft	Dimensions - inches Nominal O D	Approx. I D	Min. Wall	Packaging
1"	11	160	.19	1.315	1.075	.120	500 ft.coil
1-1/4	11	160	.30	1.660	1.358	.151	500 ft.coil
1-1/2	11	160	.40	1.900	1.554	.173	500 ft.coil
2"	7	267	.92	2.375	1.697	.339	88 jts.per bundle
	9	200	.74		1.847	.264	
	11	160	.62		1.943	.216	14 bundles per truck
	13.5	128	.52		2.023	.176	
	15.5	110	.46		2.069	.153	
	17	100	.42		2.095	.140	
3"	7	267	2.00	3.500	2.500	.500	46 jts.per bundle
	9	200	1.62		2.722	.389	
	11	160	1.35		2.864	.318	14 bundles per truck
	13.5	128	1.12		2.982	.259	
	15.5	110	.99		3.048	.226	
	17	100	.91		3.088	.206	
	19	89	.82		3.132	.184	
	21	80	.74		3.166	.167	
	26	64	.61		3.230	.135	
	32.5	51	.49		3.284	.108	
4"	7	267	3.31	4.500	3.214	.643	29 jts.per bundle
	9	200	2.67		3.500	.500	
	11	160	2.23		3.682	.409	14 bundles per truck
	13.5	128	1.85		3.834	.333	
	15.5	110	1.63		3.920	.290	
	17	100	1.50		3.970	.265	
	19	89	1.35		4.026	.237	
	21	80	1.23		4.072	.214	
	26	64	1.00		4.154	.173	
	32.5	51	.81		4.224	.138	
5-3/8"	21	80	1.75	5.375	4.863	.256	15 jts.per bundle
	26	64	1.43		4.961	.207	
	32.5	51	1.15		5.045	.165	14 bundles per truck
5"	7	267	5.05	5.563	3.973	.795	
	9	200	4.08		4.327	.618	
	11	160	3.42		4.551	.506	
	13.5	128	2.84		4.739	.412	
	15.5	110	2.50		4.845	.359	
	17	100	2.29		4.909	.327	
	19	89	2.07		4.977	.293	
	21	80	1.88		5.033	.265	
	26	64	1.53		5.135	.214	
	32.5	51	1.23		5.221	.171	
6"	7	267	7.16	6.625	4.733	.946	13 jts.per bundle
	9	200	5.78		5.153	.736	
	11	160	4.84		5.421	.602	14 bundles per truck
	13.5	128	4.03		5.643	.491	
	15.5	110	3.54		5.771	.427	
	17	100	3.25		5.845	.390	
	19	89	2.93		5.927	.349	
	21	80	2.66		5.995	.315	
	26	64	2.17		6.115	.255	
	32.5	51	1.75		6.217	.204	
7"	7	267	8.29	7.125	5.089	1.018	11 jts.per bundle
	9	200	6.69		5.541	.792	
	11	160	5.61		5.829	.648	12 bundles per truck
	13.5	128	4.66		6.069	.528	
	15.5	110	4.10		6.205	.460	
	17	100	3.76		6.287	.419	
	19	89	3.39		6.375	.375	
	21	80	3.08		6.445	.340	
	26	64	2.51		6.577	.274	
	32.5	51	2.02		6.685	.220	

Size	SDR	PSI @73.4	Weight lbs.	Dimensions - inches Nominal O D	Approx. I D	Min. Wall	Packaging
8"	7	267	12.14	8.625	6.161	1.232	9 jts.per bundle
	9	200	9.80		6.709	.958	
	11	160	8.21		7.057	.784	10 bundles per truck
	13.5	128	6.82		7.347	.639	
	15.5	110	6.00		7.513	.556	
	17	100	5.50		7.611	.507	3600 ft. per truck
	19	89	4.96		7.717	.454	
	21	80	4.52		7.803	.411	
	26	64	3.68		7.961	.332	
	32.5	51	2.97		8.095	.265	
10"	7	267	18.86	10.750	7.678	1.536	per truck
	9	200	15.23		8.362	1.194	
	11	160	12.75		8.796	.977	80 jts.per loose load
	13.5	128	10.59		9.158	.796	
	15.5	110	9.33		9.362	.694	
	17	100	8.55		9.486	.632	56 jts.per strip load
	19	89	7.71		9.618	.566	
	21	80	7.01		9.726	.512	
	26	64	5.71		9.924	.413	
	32.5	51	4.62		10.088	.331	
12"	7	267	26.53	12.750	9.108	1.821	per truck
	9	200	21.44		9.916	1.417	
	11	160	17.94		10.432	1.159	52 jts.per loose load
	13.5	128	14.89		10.862	.944	
	15.5	110	13.12		11.104	.823	
	17	100	12.03		11.250	.750	42 jts.per strip load
	19	89	10.84		11.408	.671	
	21	80	9.86		11.536	.607	
	26	64	8.04		11.770	.490	
	32.5	51	6.48		11.966	.392	
13"	7	267	29.24	13.386	9.562	1.912	per truck
	9	200	23.62		10.412	1.487	
	11	160	19.78		10.952	1.217	48 jts.per loose load
	13.5	128	16.43		11.402	.992	
	15.5	110	14.46		11.658	.864	
	17	100	13.26		11.812	.787	42 jts.per strip load
	19	89	11.96		11.976	.705	
	21	80	10.86		12.112	.637	
	26	64	8.87		12.356	.515	
	32.5	51	7.15		12.562	.412	
14"	7	267	31.99	14.000	10.000	2.000	per truck
	9	200	25.84		10.888	1.556	
	11	160	21.64		11.454	1.273	48 jts.per loose load
	13.5	128	17.97		11.926	1.037	
	15.5	110	15.81		12.194	.903	
	17	100	14.52		12.352	.824	30 jts.per strip load
	19	89	13.07		12.526	.737	
	21	80	11.90		12.666	.667	
	26	64	9.69		12.924	.538	
	32.5	51	7.83		13.138	.431	
16"	9	200	33.75	16.000	12.444	1.778	per truck
	11	160	28.27		13.090	1.455	
	13.5	128	23.46		13.630	1.185	35 jts.per loose load
	15.5	110	20.65		13.936	1.032	
	17	100	18.95		14.118	.941	
	19	89	17.07		14.316	.842	30 jts.per strip load
	21	80	15.53		14.476	.762	
	26	64	12.66		14.770	.615	
	32.5	51	10.21		15.016	.492	

DRISCOPIPE

Driscopipe® 1000 series

Data Sheet

PHILLIPS 66

Customer Benefits

High quality Driscopipe® 1000 is manufactured from extra high molecular weight, high density PE3408 polyethylene pipe grade resin.

This black, weather-resistant pipe exhibits . . . .

- Outstanding Chemical & Corrosion Resistance
- High Environmental Stress Cracking Resistance
- Improved Flow Characteristics
- Toughness & Ductility
- Flexibility with lightweight
- Non-Toxic
- Abrasion Endurance
- Fatigue Endurance
- Long-term Hydrostatic Strength / Physical strength
- Reliability

Suggested Industries & Applications

- Industrial Water Distribution
- Agriculture
- Landfills
- Marine
- Pollution Control
- Pulp / paper / wood
- Power Plants
- Petrochemical
- Mining / Mineral Processing
- Dredging / sand / gravel
- Organic Chemicals
- Inorganic Chemicals
- Aquaculture
- Hazardous Waste
- Local / State / Federal Gov'ts.
- Cement Plants
- Irrigation
- Municipal
- Gravity sewers
- Forced main sewers
- Water distribution
- Sewer treatment
- Sludge handling
- Leachate collection
- Dual Containment
- Brine
- Fertilizer
- Acid / Caustic lines
- Utility / Process piping
- Slurry
- SX acid mining
- Tailings disposal
- Marinas
- Snow melting / making
- Hard rock mining
- Coal Slurry / Processing
- Dredging
- Water intakes
- Water outfalls
- Fire-water
- De-Watering
- Fly-Ash disposal
- Temporary pipelines
- Cable Stayed Bridges
- Golf course irrigation
- Farmland irrigation
- Swimming pools
- Ice rinks
- . . . . and many others

Available in sizes
1" thru 54"

Specification Data

The resin, pipe & fittings comply with these accepted (and other) industry standards . . . .

ASTM F-714 - Pipe Standard

ASTM D3261 - Fittings Standard

Cell Classification -
ASTM D3350 - PE345434C

ASTM D1248 - Type III, Class C
Category 5, Grade P34

EPA 9090 ISO #161

PPI Designation - PE3408

NSF - Listed, Standard #14 (by size,per order) NSF

Factory Mutual (by size, per order) ◀ FM ▶

CGSB41 - GP-25M-Pipe Standard

AWWA C901 - Potable Water Pipe & Tubing

American Water Works Association

Printed in Texas, USA 0491

Driscopipe® 1000

Typical Physical Properties ⊕

Property	Specification	Units	Nominal Value
Material Designation	PPI / ASTM	-	PE 3408
Material Classification	ASTM D-1248	-	III C 5 P34
Cell Classification	ASTM D-3350	-	345434C
Density (3)	ASTM D-1505	gm / cm^3	0.955
Melt Index (4)	ASTM D-1238 (2.16 kg/190°C)	gm / 10 min.	0.11 ♦
Flex Modulus (5)	ASTM D-790	psi	135,000
Tensile Strength (4)	ASTM D-638	psi	3200
ESCR (3)	ASTM D-1693	F_o, Hours	> 5000**
HDB @ 73° F (4)	ASTM D-2837	psi	1600
U-V Stablizer (C)	ASTM D-1603	% C	2.5
Hardness	ASTM D-2240	Shore "D"	65
Compressive Strength (Yield)	ASTM D-695	psi	1600
Tensile Strength @ Yield (Type IV Spec.)	ASTM D-638 (2" / min)	psi	3200
Elongation @ Yield	ASTM D-638	%, minimum	8
Tensile Strength @ Break (Type IV Spec.)	ASTM D-638	psi	5000
Elongation @ Break	ASTM D-638	%, minimum	750
Modulus of Elasticity	ASTM D-638	psi	130,000
ESCR			
(Cond A,B, C: Mold. Slab)	ASTM D-1693	F_o, Hours	> 5000 **
(Compressed Ring - pipe)	ASTM F-1248	F_{50}, Hours	> 1000 **
Slow Crack Growth	Battelle Method	Days to Failure	> 64
Impact Strength (IZOD) (.125" Thick)	ASTM D-256 (Method A)	In-lb / in notch	42
Linear Thermal Expansion Coef.	ASTM D-696	in / in / ° F	1.2×10^{-4}
Thermal Conductivity	ASTM D-177	BTU - in/ ft^2 / hrs/ ° F	2.7
Brittleness Temp.	ASTM D-746	° F	< -180
Vicat Soft. Temp.	ASTM D-1525	° F	257
Heat Fusion Cond.		psi @ °F	75 @ 400

⊕ This list of Typical Physical Properties is intended for basic characterization of the pipe, and does not represent specific determinations or specifications.

** Tests were discontinued because no failures and no indication of stress crack initiation.

♦ Average Melt Index value with a standard deviation of 0.01.

Distributed by:

PIPE PIPE COMPANY
P.O. BOX 751
BRANDON, FL 33509
(813) 681-3765 OR BARTOW 533-9068
FAX (813) 684-1284

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To secure product information or leave a message for a sales engineer or technical service representative.
Phone: 1-800-527-0662 or 1-214-783-2666
Fax: 1-214-783-2689

PHILLIPS DRISCOPIPE, INC.
A SUBSIDIARY OF PHILLIPS 66 COMPANY

Printed in Texas, USA 6-91

PHILLIPS DRISCOPIPE, INC.
A SUBSIDIARY OF PHILLIPS 66 COMPANY

2929 NORTH CENTRAL EXPRESSWAY, SUITE 100
P. O. BOX 83-3866
RICHARDSON, TEXAS 75083 • 214/783-2666

July 14, 1992

WESTRA CONSTRUCTION
P.O. BOX 1149
PALMETTO, FL 34220-1149
ATTN: Mike Beukema

This letter will serve to certify that all Driscopipe 1000 pipe meets the requirements of ASTM F714 and is classified as a 345434C pipe based on ASTM D3350. Driscopipe 1000 is also classified as a Type III, Class C, Category 5, Grade P34 material based on ASTM D1248 and has a Plastic Pipe Institute recommended hydrostatic design basis of 1600 psi as derived from ASTM D2837. In addition, Driscopipe 1000 is listed by NSF as approved for use in potable water systems.

If you have any questions or desire additional information, please do not hesitate to give me a call.

Very truly yours,

Benny E. Nasser
Manager, Marketing Services

BEN:cz
cc: Hank Martin

RECEIVED
JUL 15 1992

DRISCOPIPE®

Hereby Confirms

JIM CARTER

has completed a basic study and training course on the principles and fundamentals of butt, side wall and/or socket fusion of Driscopipe® polyethylene pipe and fittings. This Certificate of Attendance is hereby awarded

on this 7th *day of* JANUARY, *19*92

Jim Bray

Vice President Marketing

PHILLIPS 66

PHILLIPS DRISCOPIPE, INC.

A SUBSIDIARY OF PHILLIPS 66 COMPANY

11/20 FAX TO 377-9852 THIS PAGE ONLY

SMALLY, WELLFORD & NALVEN

A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

RECEIVED NOV 20 1992

November 18, 1992

Mr. Leonard Smally, P.E.
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

OK NOV 20, 1992

Subject: **L'AMBIANCE**

SWN Ref: 2591-1/Work Order #2239

Dear Len:

Enclosed for your review please find cut sheets from Elastizell PS for the grouting of the annular space between the original 15" sewer and the new 10" sewer on Longboat Club Road. This product will be used in lieu of the standard sand/cement grout that is generally used to fill annular spaces.

A sand/cement grout will be used to fill the 15" pipe that will be abandoned, while the aforementioned product will be used where there is a gap in the old and new piping that exceeds 1".

Our initial concerns were that the interior 10" pipe would float to the top, while filling the annular space. The contractor will fill the 10" pipe with water and pump the Elastizell PS in the annular space. Since it is lighter than water, the 10" pipe should not float.

We trust this meets your needs at this time. You will be notified when this construction activity is scheduled.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Carl F. Reich
Project Manager/
Construction Services Coordinator

CFR:tg

Enclosure

cc: Mr. Mike Kempner, Yale Properties
Mr. Kyle Hauck, Yale Properties

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

Engineering Report

2591-1

CEPA-8805 CFR

ELASTIZELL PS (Pipeline Solutions)

11/16/92

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 4

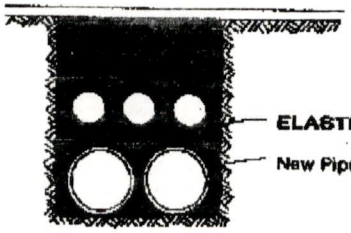
To CARL Reicht	From Jerry Westra
Co. S.W.I. N/RTH	Co. Westra Const
Dept.	Phone # 813 723 1611
Fax # 813 377-9852	Fax # 729 8365

RE: L'AMBIANCE GROUP

RESEARCH REPORT

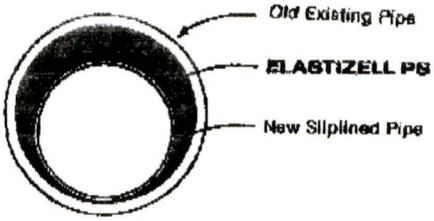
Cost Efficient Pipeline Applications

TRENCHED



Increases life performance and stability. Easily excavated. Reduced settlement with insulating qualities.

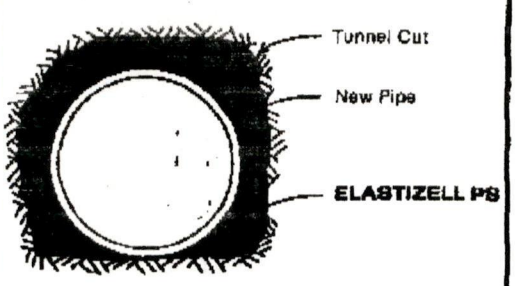
SLIPLINED



SLIPLINED

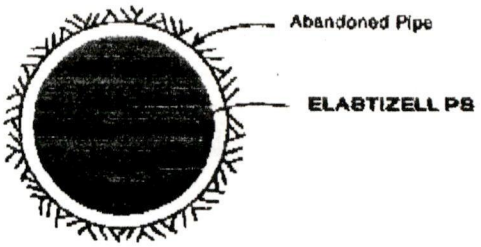
Completely fills annular spaces and stabilizes the liner. Reduced filling pressures.

TUNNELLED



Reduces lateral pressure and completely fills void. Faster installation.

ABANDONED



Eliminates surface trenching and disruption. Reduces dead load and settlement.

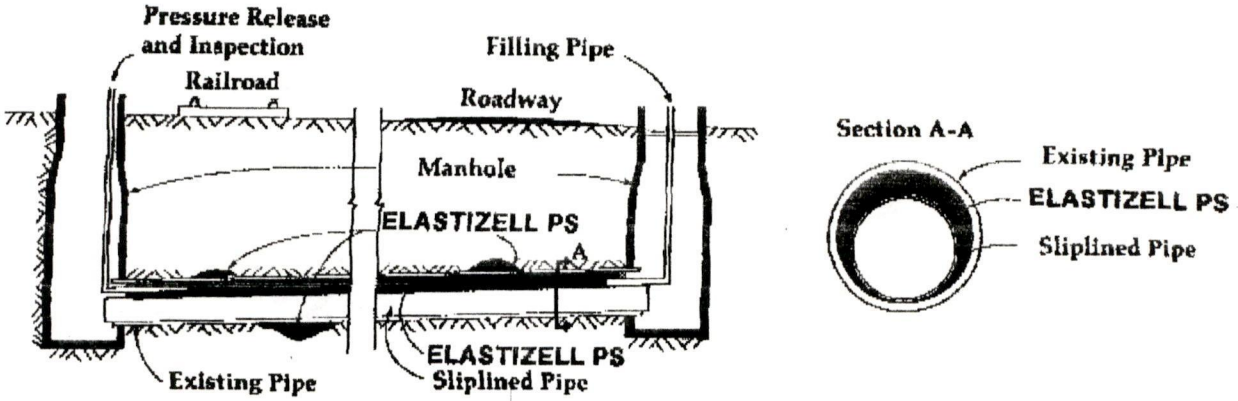
Elastizell Corporation of America

SLIPLINED

The stability, low density, and flowability of **ELASTIZELL PS** makes it the ideal material for grouting the annular space in sliplined sewer pipeline rehabilitation.

- The excellent stability of **ELASTIZELL PS** assures a consistent material to meet the design criteria.
- Its low density allows completion of the installation in one lift without fear of floating the sliplined pipe.
- The flowability of **ELASTIZELL PS** permits pumping at low pressures eliminating damage to the sliplined pipe which is common with denser and less flowable grouts.

ELASTIZELL PS - SLIPLINED PIPE



PROCEDURE:

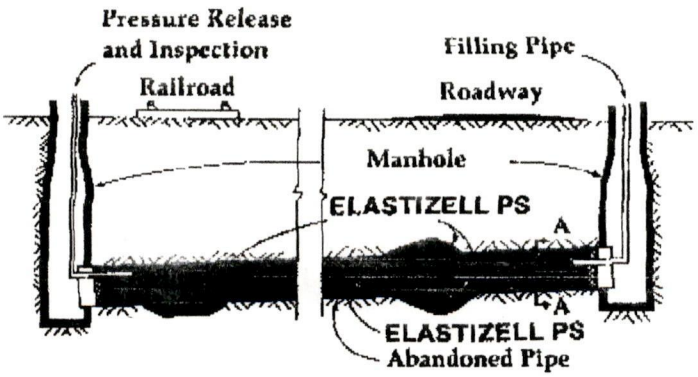
1. The tunnelled area is bulkheaded. The pipeline may be filled with water, blocked, or anchored in the trench to prevent floating.
2. Inlet and outlet pipes are installed at the bulkheads.
3. **ELASTIZELL PS** is then pumped into the cavity completely filling all voids.

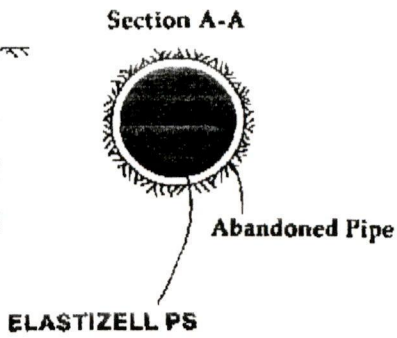
Problems with Other Grout Materials

- Floating of the sliplined pipe.
- Incomplete filling and plugging of the annular space.
- Pipe collapse due to high pumping pressures and the hydrostatic pressure differential of the heavier grout.

ELASTIZELL PS - ABANDONED PIPE

ABANDONED





It is often more economical to fill an abandoned pipeline with **ELASTIZELL PS** *than to excavate and remove it. This filling procedure is approved by environmental agencies.*

ELASTIZELL PS *completely fills the voids caused by erosion at pipe joints or under broken sections of pipe.*

Because no workers are in the excavation, it is a safe method for filling voids. No compaction is required.

Complete void filling is verified by the volumes and density of the **ELASTIZELL PS** placed.

ELASTIZELL PS can be easily removed when necessary.

The speed of installation results in this being an economical method for filling voids.

Flowability of over 800 feet is achieved along with positive void filling.

The density of **ELASTIZELL PS** is designed to meet specific application requirements.



Specialized batching, mixing and placing equipment is required for the proper installation of these **ELASTIZELL PS** pipeline applications.

ELASTIZELL PS - BASIC PHYSICAL PROPERTIES

ELASTIZELL Type	Bearing Capacity (ultimate)	Maximum Density (cast)
PS 060	4.3 Tons/sf	32 pcf
PS 120	8.6 Tons/sf	38 pcf
→ PS 240	21.6 Tons/sf	44 pcf
PS 500	36.0 Tons/sf	50 pcf

COMMON QUESTIONS ABOUT PIPELINE APPLICATIONS

Q: How far will **ELASTIZELL PS** flow before another inlet is needed?

A: **ELASTIZELL PS** is pumped and has flowed over 800 feet between manholes. Actual conditions and requirements must be evaluated for specific mix designs.

Q: Is this a safe application for the workers versus other pipeline filling methods?

A: Workers do not need to enter the cribbed pipe area since the **ELASTIZELL PS** is pumped into place. Dry pack methods require workers to be in this dangerous area.

Q: Is the low density of **ELASTIZELL PS** significant?

A: **ELASTIZELL PS** is one-fourth the weight of lean fill, yet it maintains excellent load bearing qualities. Furthermore, it may be customized for higher strength requirements.

Q: How effective is **ELASTIZELL PS** at filling voids in and around pipeline areas?

A: **ELASTIZELL PS** is highly flowable, and totally fills all cracks and voids around the critical area.

Q: What density is recommended for pipeline fills?

A: Although **PS 120** is preferred for standard pipeline fills, specific densities and strengths may be customized for a particular application.

Q: What if there is standing water in the void?

A: **ELASTIZELL PS 120** will displace small amounts of standing water.

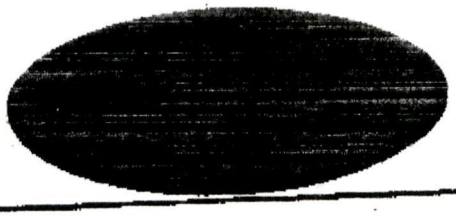
Q: Will a sliplined pipe float in an annular space?

A: If floating is a concern, the sliplined pipe can be filled with water, tied down, or anchored to prevent floating.

Q: Is compaction required?

A: No, **ELASTIZELL PS** does not require compaction because of its cementitious properties.

Please contact the ELASTIZELL CORPORATION OF AMERICA or your local applicator for additional specific design values and more detailed specifications.



Elastizell Corporation of America
P.O. Box 1462 — Ann Arbor, Michigan 48106 — AC 313/761-6900

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ROY - See Me Dec

YALE PROPERTIES
LONGBOAT

September 15, 1992

RECEIVED
SEP 18 1992



Mr. Len Smally
Town of Longboat Key
501 Bay Isle Road
Longboat Key, Florida 34228

Re: L'Ambiance - Building I - South
Off-Site Sewer Replacement

Dear Len:

While we were in the process of preparing the 15" sewer line for the slip lining process approved by the Town we came across a major problem that will result in not being able to slip line a large portion of the existing line.

As you will recall, back around June 25th or June 26th, a portion of the existing sewer broke and took on large amounts of water and sand. The utility department tried to repair this line but to no avail and you had Woodruff effect the repair.

Unbeknownst to us, this 15" line was repaired with a 12" section of PVC which will not allow us to properly slip line this section. Also, the line was never cleaned and is now packed with concrete like sand.

Due to this problem Yale will now incur more expense which is due to the type of repair and lack of cleaning that I feel should be the Town's responsibility.

Carl Reich from SWN will be contacting you regarding this and other problems that we have found that were not on the as-built plans we received so we can make the necessary modifications to replace this line.

Please let me know as soon as possible on how you want to handle this problem.

Sincerely,

Yale Properties,

Kyle Hauck

Kyle Hauck
Project Manager

KH/pfh

TOLD KYLE WE WOULD clean out & EXIST LINE WAS HIS TO MAKE RIGHT - WHATEVER THE CONDITIONS.

401 Longboat Club Road • Longboat Key, Florida 34228 • Tel: (813) 383-0747/8
2900 North Military Trail • Suite 201 S. • Boca Raton, Florida 33431 • Tel: (407) 994-2133

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

September 17, 1992



Mr. Leonard A. Smally, P.E.
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Subject: **L'Ambiance**

SWN Ref: 2591-1 / Work Order #2239

Dear Leonard:

Reference is made to the proposed sewer installation and slip lining of the existing 15" fiberglass pipe along Longboat Club Road which is part of the construction of the subject project. The contractor has recently videotaped the existing 15" fiberglass sewer and discovered a few variations in what was originally anticipated.

We have enclosed a sketch of the piping and copies of the video tape reports for your review. These are as follows:

1. There is an additional manhole approximately 65' north of the lift station in a flower bed. This manhole (referred to as M.H.#3) was discovered by the video taping of the sewer.

2. The pipe size from M.H.#3 to the lift station is 12" and not 15".

3. Between manholes 1 and 2 of the 15" sewer there is a section of 12" PVC that has been installed.

Due to the situation described above, we propose the following alternate construction for improvements to the sanitary sewer along Longboat Club Road.

The only developments that are served by the existing 15" sewer are the Sanctuary with 181 units, the Pierre with 69 units and L'Ambiance with 134 units. We have calculated the flows generated by these developments and have determined that a 10" gravity sewer in place of the existing 15" sewer would suffice. We have enclosed these calculations.

The section of existing sewer from the lift station north to the area just south of the 12" PVC that was used to repair the 15" line would receive a 10" inside diameter fiberglass insert. The insert would be installed from the point described above to the lift station through the two existing manholes. The top section of the new 10" pipe would be cut off in the manholes for future maintenance.

From the new manhole at the insertion point northward to the existing manhole that will receive L'Ambiance flows, a new 10" PVC gravity sewer would be constructed.

The reason for this modification in the original design is due to the condition of the 15" pipe. The section of the pipe for which we are proposing the 10" slip lining, although badly damaged and containing a 12" section, is adequate to receive the slip lining.

The remaining section of sewer is severely damaged and contains variations in grade that if slip lined may eventually impede the flow of the sewer. For this section, we are proposing to replace the 15" sewer with 10" PVC.

We therefore respectfully request that you review this modification at your earliest convenience in order that this can be resolved and the contractor proceed with construction.

If you have any questions, please contact our office.

Very truly yours,

SMALLY, WELLFORD & NALVEN

Carl F. Reich
Project Manager/
Construction Services Coordinator

CFR:lb

Enclosures

cc: Mr. Michael Kempner, Yale Properties, Inc., w/enclosures
Mr. Kyle Hauck, Yale Properties, Inc., w/enclosures
Tri-D, Inc., w/enclosures

SMALLY, WELLFORD & NALVEN, INC.
Consulting Engineers and Surveyors
P. O. Box 4069
SARASOTA, FL 33578
(813) 371-3690

JOB L'AMBIANCE 2591-1
SHEET NO. 2 OF
CALCULATED BY RJH DATE 9-16-92
CHECKED BY DATE
SCALE NONE

FLOWS INTO MH 1

6" FM 250 EDU's @ 250 GPD/EDU = 62,500 GPD ADF

10 STATE PEAK POPULATION = 2.5 × 250 = 625 PEOPLE

$PF = \frac{18+\sqrt{P}}{4+\sqrt{P}} = \frac{18+\sqrt{.625}}{4+\sqrt{.625}} = 3.92$

PEAK FLOW 62,500 GPD × 3.92 = 245,149 GPD
= 170 GPM

2.5 fps IN 6" FM = 220 GPM (USE HIGHER OF TWO)

L'AMBIANCE 134 EDU's @ 250 GPD/EDU = 33,500 GPD ADF

POPULATION = 2.5 × 134 = 335 $PF = \frac{18+\sqrt{.335}}{4+\sqrt{.335}} = 4.0$

PEAK FLOW = 33,500 GPD × 4 = 134,000 GPD
= 93 GPM

Σ 220 + 93 = 313 GPM

VELOCITIES IN PROPOSED 10"

MANNING'S FORMULA $V = \frac{0.590}{n} D^{2/3} S^{1/2}$

$n = 0.013$ $D = 10/12 = 0.83'$

$V = 40.2\ S^{1/2}$

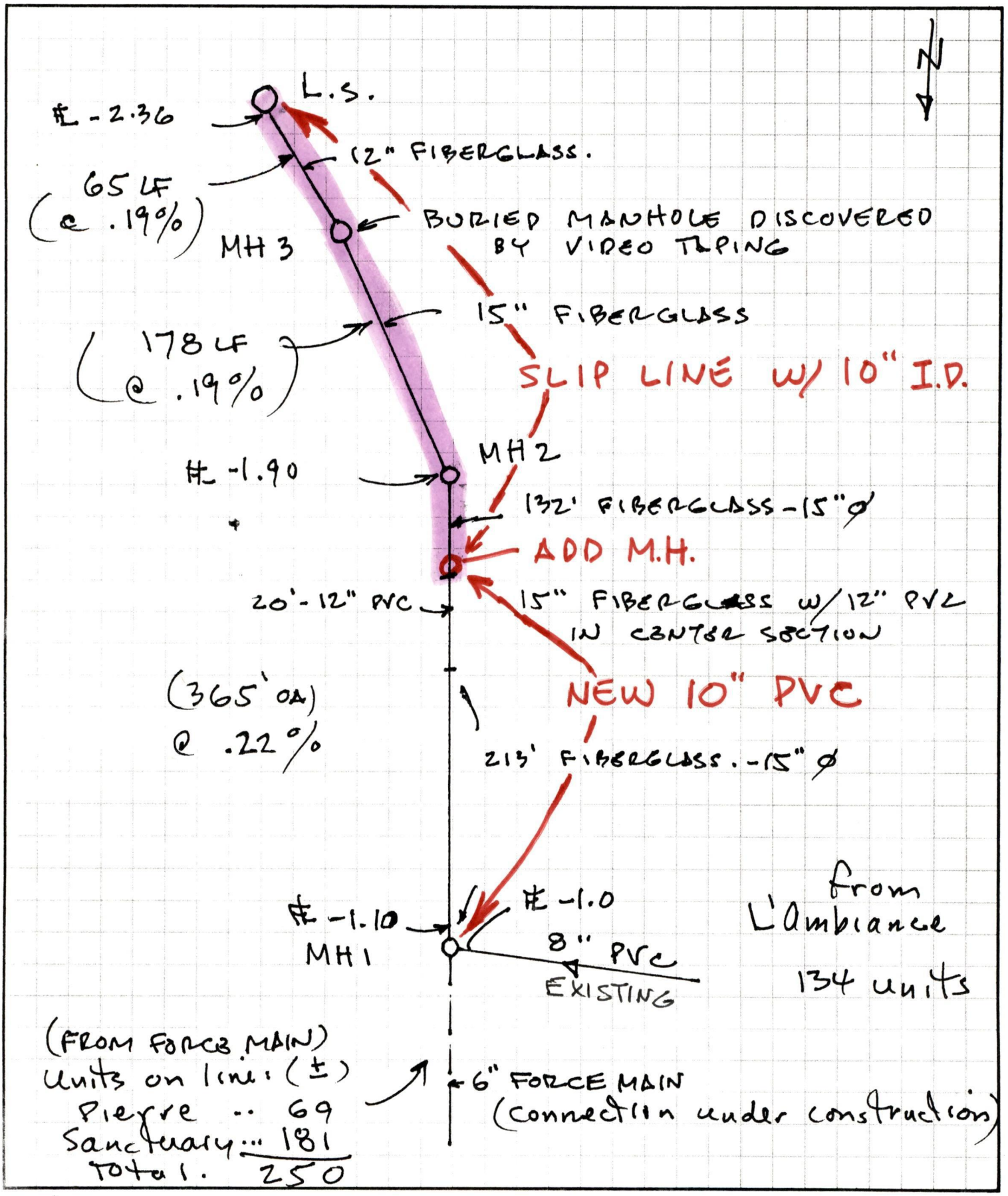
@ 0.19% $V = 40.2\ (0.0019)^{1/2} = 1.8$ fps
10" LINE CAPACITY IS Q = 441 GPM

@ 0.22% $V = 40.2\ (0.0022)^{1/2} = 1.9$ fps
10" LINE CAPACITY IS Q = 465 GPM

313 GPM IN 10" = 1.3 fps

SMALLY, WELLFORD & NALVEN, INC.
Consulting Engineers and Surveyors
P.O. Box 4069
SARASOTA, FL 34230
(813) 371-3690

JOB L'Ambiance 2591-1
SHEET NO. 1 OF
CALCULATED BY CR DATE 9-16-92
CHECKED BY DATE
SCALE NONE.



Williams
TESTING

4646 ASHTON ROAD • SARASOTA, FLORIDA 34233
PHONE: (813) 921-7304 • (813) 923-5261 • FAX: (813) 925-1901

CLEANING
GROUTING
TELEVISING SEWER PIPE
DEFLECTION TESTING
REROUNDING
PVC PIPE
AIR TESTING
SMOKE TESTING

WESTRiii

SUNCOAST UTILITY
SUCA
CONTRACTORS ASSOCIATION

GULF COAST
gcbe
BUILDERS EXCHANGE

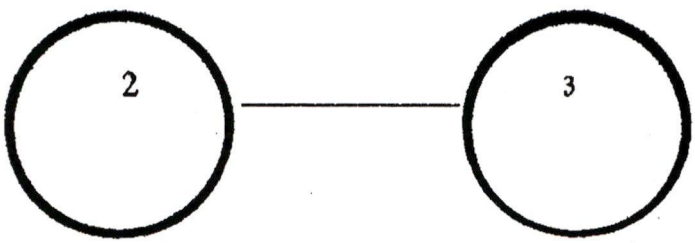
WORKSHEET

Date:	09/11/92	Client:	Westra Construction	Job:	L'Ambiance
Engineer:		Owner:		Inspector:	
Run #:	2 Tape 1	MH toMH	2-3	Street:	Longboat Key Dr
Pipe:	FIBER	Pipe Size:	15"	Manufacture:	
Line & Grade:		Cleanliness:		MH Condition	
Special Notes:					

Footage	Notes
93	Open Joint
162	Pipe Wall falling off
178	End of Line

Camera Travel → N → Direction Flow

Section Footage: _____



2591-1

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WESTRAII

SUNCOAST UTILITY
SUCA
CONTRACTORS ASSOCIATION

GULF COAST
gcbe
BUILDERS EXCHANGE

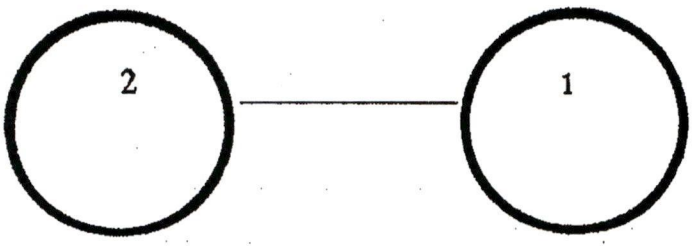
WORKSHEET

Date:	09/10/92	Client:	Westra Construction	Job:	L'Ambiance
Engineer:		Owner:		Inspector:	
Run #:	1a Tape 1	MH toMH	2-1	Street:	Longboat Key Dr
Pipe:	FIBER	Pipe Size:	15"	Manufacture:	
Line & Grade:		Cleanliness:		MH Condition	
Special Notes:					

Footage	Notes
43	Crack @ Top Stops @ 49'
89	Busted Pipe
132	Repair

Camera Travel → N ← Direction Flow

Section Footage: _____



TESTING

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CLEANING
GROUTING
TELEVISING SEWER PIPE
DEFLECTION TESTING
REROUNDING
PVC PIPE
AIR TESTING
SMOKE TESTING

215
15
60

WESTRA

SUNCOAST UTILITY CONTRACTORS ASSOCIATION

GULF COAST BUILDERS EXCHANGE

WORKSHEET

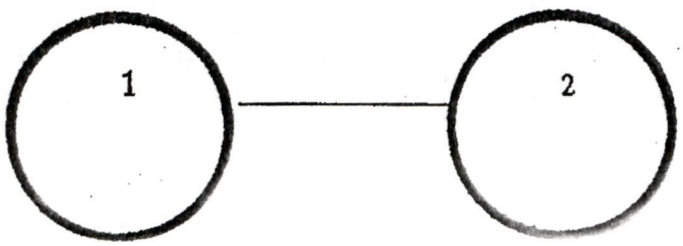
Date:	09/10/92	Client:	Westra Construction	Job:	L'Ambiance
Engineer:		Owner:		Inspector:	
Run #:	1 Tape 1	MH toMH	1-2	Street:	Longboat Key Dr
Pipe:	FIBER	Pipe Size:	15"	Manufacture:	
Line & Grade:		Cleanliness:		MH Condition	
Special Notes:					

Footage	Notes
84.5	Crack @ top Stops at 90'
94	Crack @ Top Stops at 102'
115	Crack @ Top Stops @ 116'
119	Dip out 130'
135	Crack @ Top Stops @ 136'
140	Crack @ Top Stops @ 149'
149	Dip out 166'
163	Crack @ Top Stops @ 166'
166	Heavy Sand
175	Crack Top @ 9 O'Clock & out to 3 O'Clock
179	Crack @ Top Stops @ 181' to 3 O'Clock
195	Crack @ 1 o'clock Stops @ 196'
213	Repair PVC 12" Cannot pipe

DRIVE
40

Camera Travel → N Direction Flow →

Section Footage:



213
35
132
380

Williams TESTING

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PHONE: (813) 921-7304 • (813) 923-5261 • FAX: (813) 925-1901

CLEANING
GROUTING
TELEVISING SEWER PIPE
DEFLECTION TESTING
REROUNDING
PVC PIPE
AIR TESTING
SMOKE TESTING

WESTRiv

SUNCOAST UTILITY CONTRACTORS ASSOCIATION

SUCA

GULF COAST BUILDERS EXCHANGE

gcbe

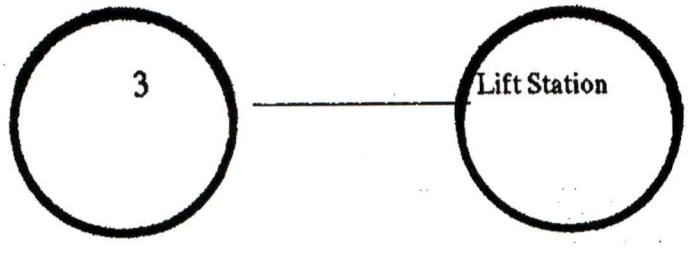
WORKSHEET

Date:	09/11/92	Client:	Westra Construction	Job:	L'Ambiance
Engineer:		Owner:		Inspector:	
Run #:	3 Tape 1	MH toMH	3 - Lift Station	Street:	Longboat Key Dr
Pipe:	~~FIBER~~ PVC.	Pipe Size:	12"	Manufacture:	
Line & Grade:		Cleanliness:		MH Condition	
Special Notes:					

Footage	Notes
13	No pipe @ Joint
26	Open Joint
39	Open Joint
52	Open Joint
65	End of Line

Camera Travel → N Direction Flow →

Section Footage: _____



NEED SKETCH OF MATCH-UP SAY-ON SIGNED & SEALED

ARE PIPES COMPATIBLE THEN WE MAKE DECISION

IE ARE THEY DESIGNED TO FIT TOGETHER ON 2

SMALLY, WELLFORD & NALVEN

A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

RECEIVED OCT 22 1992

October 22, 1992

Mr. Len Smally
Director of Public Works
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Subject: **L'AMBIANCE**

SWN Ref: 2591-1/Work Order #2239

Dear Len:

Reference is made to the new 10" sewer on Longboat Club Road recently installed as a part of the subject project. The contractor inadvertently installed two 20' sections of 10" DR 14 within the overall 243' run of 10" DR 18 pipe. The DR 14 pipe has a thicker pipe wall and a lesser inside diameter. The difference in inside diameters of the two pipe classes is approximately 0.35". The average offset between the two pipe walls is therefore 0.17". It is our opinion that the two lengths of 10" DR 14 will not adversely affect the operation or future maintenance of the gravity sewer and therefore recommend acceptance of this line.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder

Millard J. Yoder, P.E.
Vice President
Director of Engineering

Calcs - Justifying storm sewer pipe

MJY:CFR:tg

cc: Mr. Mike Kempner, Yale Properties, Inc.
Mr. Kyle Hauck, Yale Properties, Inc.
Tri-D, Inc.

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

NOVEMBER 13, 1992

BURNUP AND SIMS

Re: Work Permit - L'Ambiance

Dear Sirs:

This is your authorization to work for GTE at L'Ambiance, 415 Longboat Club Road on Saturday, November 14, 1992 from 8:00 A.M. to 5:00 P.M.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg
cc: Police Dept.

State of Florida
Department of Environmental Regulation

Request for Letter of Release to Place Water Supply System into Service

I. General Information

Name of Project: L'Ambiance

Permit No. WD 1098-90-002 Date of Issuance 10/26/90

☐ System completed to the full extent of the approved plans

☒ Partially completed to the extent noted herein

Potable water lines to serve the south building, and pool area; included is the connection to the Town of Longboat Key water main.

II. Engineer's Certification

This is to certify that the project has been substantially completed in accordance with approved plans and specifications, or that the deviations noted on the attached record drawings will not prevent the system from functioning in compliance with requirements of Chapter 17-555, Florida Administrative Code (F.A.C.), when properly operated and maintained. Further, the system has passed the pressure* and bacteriological tests that were conducted in accordance with AWWA Standards.

? WHO RAN TEST - ASK TONY

This certification is based upon on-site observation of construction, scheduled and conducted by me or by a project representative under my direct supervision.

The use of the word "certify" or "certification" constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification, and does not constitute a warranty or guarantee, either expressed or implied.

Seal

Signature Date

Millard J.Yoder, P.E. Reg. # 33765

Name and Address

Smally, Wellford & Nalven, A Division of Wilson, Miller, Barton & Peek, Inc.

P.O. Box 4069 Telephone No. 813 / 371-3690

Sarasota, FL 34230

III. Acceptance by Utility*

The subject system has been accepted for operation and maintenance.

TONY TO COME IN W/ PLANS TO LOOK FOR WHO MAINTAINS

Signature Date

Leonard A. Smally, P.E., Director of Public Works

Name and Title

Town of Longboat Key

*In case of water distribution system or water main extention

Instructions

The following supporting material must be submitted with this form:

1. One (1) set of record drawings; in case of water distribution system or water main, the sample points must be indicated.

2. Results of the bacteriological tests -

   Please note that satisfactory bacteriological results for clearance for all parts of a community or non-community water supply facility except wells shall be two (2) consecutive daily samples with results of less than one (1) coliform per 100 milliliters of sample. For a community or non-community water supply system well clearance, a minimum of twenty (20) consecutive samples are required with no more than two (2) samples taken daily. Well sample results shall not exceed four (4) coliform per 100 milliliters of sample in more than ten percent (10%) of the samples analyzed. Sample results from any community or non-community water supply facility shall not be accepted on any analysis with TNTC or heavy non-coliform counts.

3. In case of well construction, a "Well Completion Report" must be submitted by the well driller.

This request must be accompanied by certification of completion of the sewerage system (if applicable).

SMALLY, WELLFORD & NALVEN

A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

LETTER OF TRANSMITTAL

DATE October 5, 1992

RECEIVED
OCT 7 1992

TO Mr. Leonard A. Smally, P.E.
Director of Public Works
Town of Longboat Key

501 Bay Isles Road

Longboat Key, FL 34228

SUBJECT L'Ambiance

REFERENCE NO. 2591-1 / W.O. #2239

DRAWING NO.

TRANSMITTED Six (6) copies of DER Permit No. WD1098-90-002 Form #17-555.910(9).

ATTACHED:	
ADDENDA	
CHANGE ORDER	
DRAWINGS	
OTHER	X
FOR APPROVAL	X
FOR YOUR FILE	
AS REQUESTED	
FOR REVIEW	
PLEASE RETURN	X

REMARKS Please sign all six copies of the enclosed DER form and return to our office at your earliest convenience. Upon submittal to HRS, we will provide you with copies of back up data. If you have any questions, please contact our office.

cc: Mr. Kyle Hauck, Yale Properties, w/enc.
Mr. Mike Kempner, Yale Properties, w/enc.

SIGNED

CFR:lb Carl F. Reich
Project Manager/
Construction Services Coordinator

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

State of Florida
Department of Environmental Regulation

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P.O. Box 4069 Telephone No. 813 / 371-3690

Sarasota, FL 34230

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SEWER VIEWER, INC.

16880 Gator Road
Fort Myers, Florida 33912-2598
Phone (813) 267-3344

JOB # LAMBIANCE.

TV INSPECTION REPORT

START MH# 7 END MH# 6 DATE: 26-Oct-92

JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT
1	21	11	199	21		31		41		51		61		71		81	
2	41	12	215	22		32		42		52		62		72		82	
3	60	13	235	23		33		43		53		63		73		83	
4	80	14	245	24		34		44		54		64		74		84	
5	100	15	END	25		35		45		55		65		75		85	
6	119	16		26		36		46		56		66		76		86	
7	139	17		27		37		47		57		67		77		87	
8	159	18		28		38		48		58		68		78		88	
9	179	19		29		39		49		59		69		79		89	
10	197	20		30		40		50		60		70		80		90	

Items which require comment are circled and comments listed below by joint number. Services are indicated by total footage from beginning MH.

Comments: 10" P.V.C. pulled upstream.

Joint #	Condition	Leaks Repaired (Indicate Qty. of Chem.)
	A little debris laying in line.	

RECEIVED NOV - 6 1992

General Pipe Condition: Good.

Manhole Condition: Good

Grade Comment: Good

Operator Signature Brian Wright

SEWER VIEWER, INC.

16880 Gator Road
Fort Myers, Florida 33912-2598
Phone (813) 267-3344

JOB # LAMBIANCE
MONDAY

TV INSPECTION REPORT

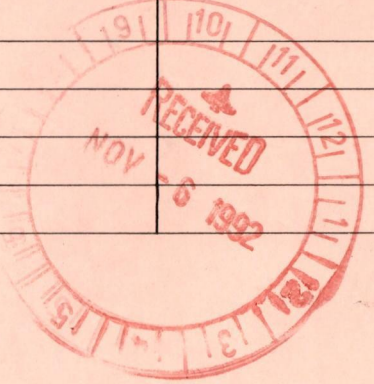
START MH# 6 END MH# 7 DATE: 26 Oct 92

JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT	JT#	FT
1	8	11	184	21		31		41		51		61		71		81	
2	28	12	203	22		32		42		52		62		72		82	
3	45	13	223	23		33		43		53		63		73		83	
4	48	14	245	24		34		44		54		64		74		84	
5	67	15	END.	25		35		45		55		65		75		85	
6	87	16		26		36		46		56		66		76		86	
7	106	17		27		37		47		57		67		77		87	
8	126	18		28		38		48		58		68		78		88	
9	145	19		29		39		49		59		69		79		89	
10	164	20		30		40		50		60		70		80		90	

Items which require comment are circled and comments listed below by joint number. Services are indicated by total footage from beginning MH.

Comments: 10" P.V.C.

Joint #	Condition	Leaks Repaired *(Indicate Qty. of Chem.)*
	SERVICE	



General Pipe Condition: Good

Manhole Condition: Good

Grade Comment:

Operator Signature Brian Wenzloff

cc Rick - Return to Me

Davis, Persson, Smith & Darnell

Attorneys and Counselors At Law
A Partnership of Professional Associations
2033 Main Street, Suite 406
Sarasota, Florida 34237
(813) 365-4950

David D. Davis*
David P. Persson°
Kevin P. Smith
Robert W. Darnell
Barbara B. Levin

* Also licensed to practice in Illinois
° Qualified in Administrative and Governmental Law under the Florida Designation Plan
Also licensed to practice in Louisiana and Massachusetts

Robert P. Rosin
Of Counsel
Telecopier
(813) 365-3259

October 14, 1992



Leonard A. Smally, P.E.
Director of Public Works
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Re: L'Ambiance

Dear Len:

This is in response to a letter to you from the Town Manager regarding L'Ambiance storage area breakaway walls and partitions within V-Zones below base flood elevation.

It is my understanding that our Town Code does not prohibit partitions within V-Zones, but FEMA has interpreted its regulations not to allow partitions. Thank you for forwarding to me a copy of FEMA's **Intent of Storage Areas.**

I have reviewed the Town of Longboat Key Code, Florida statutory law, the Florida Administrative Code, 42 U.S.C. 4001 et seq, and 44 C.F.R., §§ 59, 60. I offer the following:

The definition contained within the Code of Federal Regulations provides that the enclosed spaces below base flood elevation **"shall be used solely for parking of vehicles, building access, or storage."** FEMA has taken the position that the storage areas are to be limited to incidental items that can withstand exposure to the elements and, furthermore **"such storage areas must be flood-resistant or breakaway materials, non-partitioned . . ."**.

The issue is whether the partitions should be removed from L'Ambiance and whether the Town should prohibit the construction of partitions in other buildings.

While I appreciate Mr. Cox's memo to you concerning past practices, it appears that FEMA has adopted the above non-partition policy with respect to storage areas as of January 1, 1992.

It is my understanding from you that L'Ambiance has been permitted prior to the above date and therefore is required to meet

the earlier requirements concerning breakaway walls and partitions under both our Code and FEMA.

My further understanding from you is that the pre-January 1, 1992 Intent of Storage Areas did not prohibit partitions. If this is the case, and L'Ambiance was permitted prior to that date, L'Ambiance has appropriately constructed permitted partitions. I believe that answers your first question.

As to prohibiting partitions in other buildings, I suggest you follow the FEMA Intent of Storage Areas's guidelines, as well as all other policies issued and published by FEMA to assure compliance with the Federal Regulations. The Town should apply our code or FEMA Regulations, whichever is more strict.

The question has been raised as to the legal validity of the policy decisions determined by FEMA. A review of the law indicates that Congress has delegated to the Director of FEMA the ability to promulgate regulations in the field. These regulations are published in the C.F.R.'s.

It has become more prevalent both at the state and federal level to publish "policies" to further interpret the regulations. These policies, if published, are often granted legal status. I have not researched the origin of the policies as promulgated by FEMA, but believe based upon my review of the federal and state statutory language together with the Code of Federal Regulations, it is in the Town's best interest to follow the intent policies as published by FEMA. If you would like a specific citation as to legal authority of the FEMA intent policies, I would be pleased to do so.

I hope this has been of some assistance in this difficult area. Should you have any questions, please do not hesitate to contact me.

Sincerely,

David P. Persson

DPP:awg42
Enclosure
cc: Mr. Albert T. Cox, Jr.
Mr. Dan Gaffney

M E M O R A N D U M

DATE: 10/07/92

TO: Leonard A. Smally, Public Works Director

FROM: Albert T. Cox, Town Manager

SUBJECT: L'Ambiance

In response to your memorandum of October 5, 1992 concerning the storage area below base flood elevation (V-Zone) at L'Ambiance, I have talked with Herb Lovett with reference to past practices. He advises, and I concur, the Town has always permitted storage areas with breakaway walls below the base flood elevation, and the Town Code and FEMA regulations do not restrict storage areas and breakaway walls below the base flood elevation.

See 154.03 Breakaway Walls

See 154.08 (2)(C) (As you indicated)
If breakaway walls are utilized, the enclosed space shall not be used for human habitation.

See 154.12 Breakaway Walls

I do not believe the Town can require L'Ambiance to remove their permitted breakaway walls (storage rooms).

You should seek from Charles Speights of DCA the section of the law he relies on that prohibits the breakaway walls and seek Town Attorney legal opinion. Until such time do not issue permits for same.

cc: David Persson

hej



TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

October 9, 1992

TRI-D, INC.

Re: L'Ambiance - Work Permit

Dear Sirs:

This is your authorization to run a well point pump at L'Ambiance from 5:00 P.M. on Friday, October 7, 1992 through 8:00 A.M. Friday, October 16, 1992, subject to the following:

1. The noise reduction techniques outlined in my letter of October 5th must stay in place.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg
cc: Police Dept. FAXED

TOWN OF LONGBOAT KEY
PUBLIC WORKS/PLANNING
610 GENERAL HARRIS STREET
LONGBOAT KEY, FL 34228

Phone #: (813) 383-3726 Fax #: (813) 383-9353

DATE: ~~10/5~~ 10/9 FAX NO. _____

DELIVER TO: Lou Demarco
TRI-D

NUMBER OF PAGES (Incl. this Cover Page): 2

INITIATING DEPARTMENT: _____ DEPT.# _____

REFERENCE: Carmen

COMMENTS: _____

****

INVOICE

FACSIMILE FEE: $_____

Fee Calculation: Number of pages (including cover sheet) times $1.00)

Please remit to:

Finance Department
Town Hall
501 Bay Isles Road
Longboat Key, FL 34228

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

October 5, 1992

TRI-D, INC.

RE: L'Ambiance - Work Permit

Dear Sirs:

This is your authorization to run a well point pump at L'Ambiance from 5:00 P. M. on Monday, October 5, 1992 through 8:00 A. M. on Friday, October 9, 1992, subject to the following:

1. A dirt berm with haybales and plywood shall be used to keep noise at an absolute minimum. Pump must be baffled.

2. This permit does not take effect until the Town's inspector has accepted the above noise reduction techniques.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg
cc: Police Dept.

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

July 15, 1992

Tri-D, Inc.

Re: L'AMBIANCE - WORK PERMIT

Dear Sirs:

This is your authorization to run a well point pump at L'AMBIANCE from 5:00 P. M. on Friday, July 17, 1992 through 8:00 A. M. on Monday, August 3, 1992, subject to the following:

1. A dirt berm with haybales and plywood shall be used to keep noise at an absolute minimum. Pump must be baffled.

2. This permit does not take effect until the Town's inspector has accepted the above noise reduction techniques.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg
cc: Police Dept.

TOWN OF LONGBOAT KEY
PUBLIC WORKS/PLANNING
610 GENERAL HARRIS STREET
LONGBOAT KEY, FL 34228

Phone #: (813) 383-3726 Fax #: (813) 383-9353

DATE: 7-16 FAX NO. _____

DELIVER TO: Police Dept

NUMBER OF PAGES (Incl. this Cover Page): 2

INITIATING DEPARTMENT: _____ DEPT.# _____

REFERENCE: Carmen

COMMENTS: _____

****

INVOICE

FACSIMILE FEE: $_____

Fee Calculation: Number of pages (including cover sheet) times $1.00)

Please remit to: Finance Department
Town Hall
501 Bay Isles Road
Longboat Key, FL 34228

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

OCTOBER 13, 1992

TRI-D

Re: Work Permit - L'Ambiance

Dear Sirs:

This is your authorization to work on Longboat Club Road until 6:00 P.M. on Tuesday, October 13, 1992, working on sewer lines.

Sincerely,

Roy L. Wamsley

Roy L. Wamsley
Utilities Superintendent

/cmg
cc: Police Dept.

YALE PROPERTIES
L'AMBIANCE

October 5, 1992

Mr. Leonard A. Smalley
Director of Public Works
Town of Longboat Key
501 Bay Isles Road
Longboat Key, Florida 33548

RE: L'Ambiance at Longboat Key Club

Dear Len:

Kyle Hauck has communicated to me your feeling that although storage is permitted in the basement FEMA regulations would deny us the right to build walls enclosing said storage areas.

We wish to refer you to Section 4.3.5 of the Coastal Construction Manual that I have just received from FEMA (copy enclosed). As you can see in the underlined area, it is clear that FEMA allows for this type of enclosure provided that the walls are constructed in accordance with this Section.

Please call me at 407-994-2133 as I wish to resolve this issue for both buildings as soon as possible.

Yours truly,

YALE PROPERTIES-L'AMBIANCE

Gordon Deckelbaum
GD:mm
Enclosure
cc: Kyle Hauck

2900 North Military Trail • Suite 201 S • Boca Raton, Florida 33431
Tel: (407) 994-2133 • Broward: (305) 462-6806 • Fax: (407) 994-1429

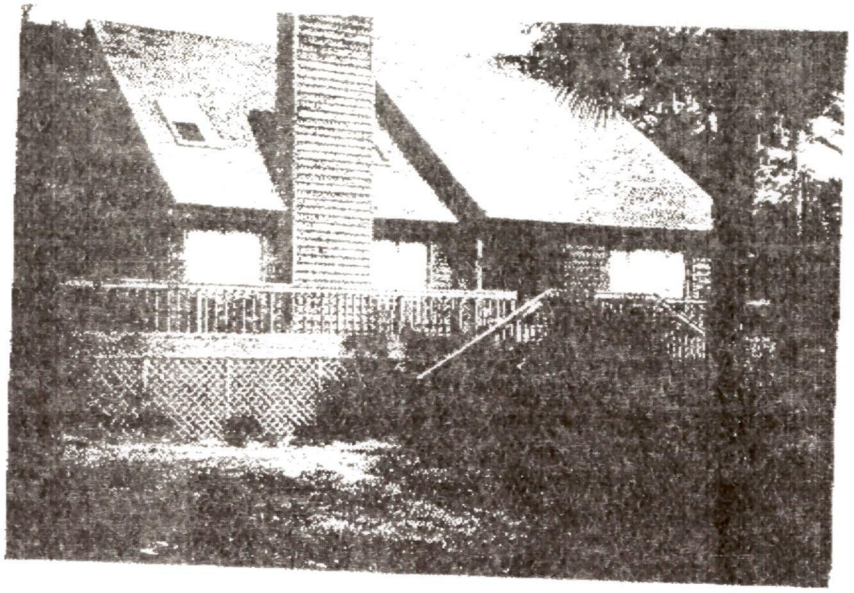


Figure 4-60. Lattice enclosure under elevated structure.

owner. Strong walls would allow excessive scour and damaging wave runup during severe storms, while weaker walls will break away before these effects become significant.

In accordance with the current NFIP regulations, which provide the specific guidance stated above, this manual recommends that only screening, lattice work, or light breakaway walls be constructed below residential structures, unless specifically designed by a registered professional engineer or architect. As Figure 4-61 (of storm damage during Hurricane Alicia) shows, structures can survive major storms relatively intact when ground-level enclosure walls break away.

4.3.5.1 Breakaway Wall Designs

Screening. One means for partially or fully enclosing the area below the BFE is installation of metal or synthetic screening to provide insect protection and minimal security. Screening is fastened to pilings by nails, staples, or nailed moldings, and will fail under small loads imposed by wind, velocity water, or moving debris. Replacement costs are very low.

Lattice. Lattice work can be used for minimal enclosures beneath an elevated structure. If fabricated using light materials and properly connected to the foundation, lattice will break away under small water loads. No portion of the lattice wall should overlap the piles supporting the elevated structure. The wall should be butt-connected to the piles.

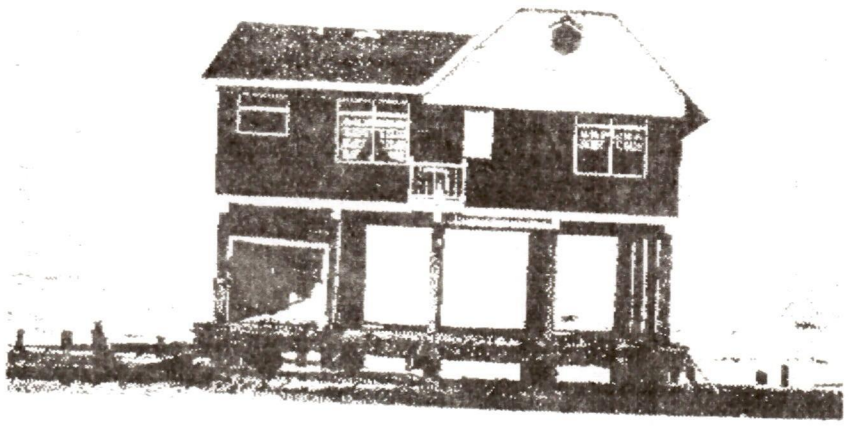


Figure 4-61. Storm damage during Hurricane Alicia.

05-1992 11:52 FROM TOWN OF LONGBOAT KEY TO PUBLIC WORKS P.02

4.3.5 Breakaway Walls

Elevation of a structure on a properly designed foundation reduces the potential for water damage from flooding. When the space below the lowest elevated floor is maintained free of solid obstructions as well, the potential for damage from waves or debris is further reduced. In recognition of the desirability of using the sheltered space beneath elevated structures, NFIP regulations permit certain limited uses of enclosed space below the BFE. Uses such as parking of vehicles, building access, or storage are permitted, as long as the walls of any enclosures are designed as "breakaway." A breakaway wall is a wall that is not part of the structural support of the building, intended through its design and construction to collapse under specific lateral (wind and water) loading conditions without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

To ensure that breakaway walls withstand forces from wind and everyday use, yet collapse under storm conditions, current NFIP regulations require that a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. The regulations allow walls with a greater loading resistance under certain conditions, and when the design is certified by a registered professional engineer or architect. The need for greater loading resistance could be a result of design requirements or required by local or State codes. In either case, the designer must certify both of the following:

- Breakaway wall collapse shall result from a water load less than that which would occur during the base flood.
- The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a 1 percent chance of being equaled or exceeded in any given year (100 year mean recurrence interval).

The uses that owners make of the sheltered space beneath elevated homes has historically led to a wide range of enclosure designs, from insect screening to heavy conventional walls.

Screening and lattice work are the lowest strength enclosures and when properly constructed can serve their intended function with little effect on the structural loadings on the house. These walls provide partial protection and security for items stored under an elevated structure. Lattice work is often used for architectural purposes, as shown by Figure 4-60, to visually tie the house to its surroundings.

While screening and lattice provide some protection for vehicles and stored items from salt spray and other environmental conditions, full protection from the elements can only be provided by a solid wall. Walls providing this protection from the elements can be designed to withstand certain wind and water loads and to break away or fail when design loads are exceeded.

Construction of walls stronger than the structural frame of the building was designed to withstand will jeopardize the integrity of the structure under storm conditions. This strengthening of the walls (i.e., by using extra fasteners) so that they do not break away before damaging the structure may occur during initial construction or as a result of later modifications by the

6-1992 11:53 FROM TOWN OF LONGBOAT KEY TO PUBLIC WORKS P.03
TOTAL P.03

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

September 23, 1992

Robert J. Halbach, P.E.
Manager of Engineering
Smally, Wellford & Nalven
P.O. Box 4069
Sarasota, Fl. 34230

Re: L'Ambiance - Manhole Replacement Shop Drawings

Dear Bob:

The Atlantic Concrete Manhole with Dura Plate 100 Liner shop drawings submitted on September 2, 1992 are approved.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg

Roy— for your approval. OK RJH

SMALLY, WELLFORD & NALVEN

A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

LETTER OF TRANSMITTAL

DATE September 2, 1992

copy to Bud

RECEIVED SEP - 4 1992

TO Mr. Leonard A. Smally, P.E.
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

SUBJECT L'Ambiance - Manhole Replacement
Shop Drawiwngs

REFERENCE NO. 2591 / W.O. $2238

DRAWING NO.

TRANSMITTED Two (2) copies of Atlantic Concrete Manhole with Dura Plate 100 Liner shop drawings.

ATTACHED:

ADDENDA	
CHANGE ORDER (Shop) DRAWINGS	X
OTHER	
FOR APPROVAL	
FOR YOUR FILE	
AS REQUESTED	
FOR REVIEW	X
PLEASE RETURN	

REMARKS Please review and then direct any comments you may have to our office and we will forward them to the contractor. We appreciate your expeditious review.

SIGNED Robert J. Halbach

RJH:lb Robert J. Halbach, P.E.
Manager of Engineering

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

9-22

2591
CR

Tri-D. Inc. Construction

7535 PONCE de LEON
SUITE 200
SARASOTA, FLORIDA 34243

Please process this through the TLK. It is in place of the liner

CR

LETTER OF TRANSMITTAL

RECEIVED
AUG 28 1992
SMALLY, WELLFORD & NALVEN
A DIVISION OF
WILSON MILLER, BARTON & PEEK, INC

DATE Aug 26, 1992

TO Carl Riech

Job: L'Ambiance

SUBJECT Dura Plate "100" Sar Manhole replacement

REFERENCE NO.

DRAWING NO.

TRANSMITTED

ATTACHED

ADDENDA

CHANGE ORDER #

DRAWINGS

OTHER

FOR APPROVAL ✓

FOR YOUR FILE ✓

AS REQUESTED ✓

FOR REVIEW ✓

PLEASE RETURN ✓

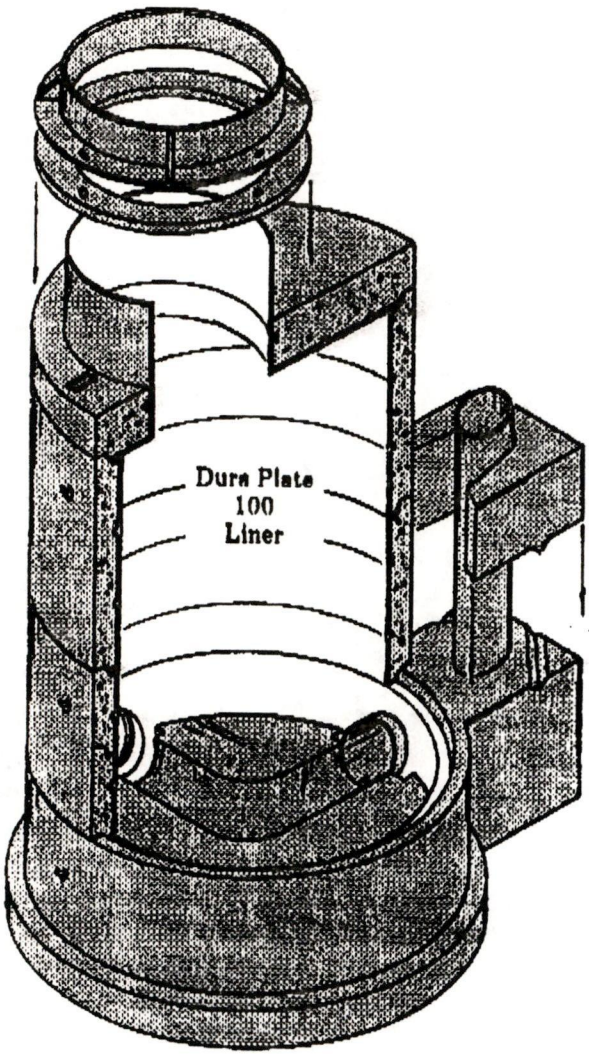
REMARKS: Please let us know as soon as possible, as we have not heard from Pete G. with his revised submittal.

SIGNATURE Nancy Ann Burton
Tri-D, Inc.

President
Position

"DURA PLATE 100"

MANHOLE LINER



Patent No. 4,751,799
Canadian Patent Pending

A-LOK® PRODUCTS INC.

P.O. BOX 1647
TULLYTOWN, PA 19007
1-800-822-ALOK

697 MAIN STREET
TULLYTOWN, PA 19007
(215) 946-5600

"DURA PLATE 100"

By A-LOK

DESCRIPTION:

Dura Plate 100 is an interior lining concept for precast concrete wastewater structures which combines the immense structural strength and integrity of reinforced concrete with the chemical resistance advantages of polyvinyl chloride. The Dura Plate liner is thermoformed from a semi-rigid thermo plastic sheet to the required contour of the manhole structure. A ribbed design is used to integrally cast the liner to the concrete wall during manufacturing of the precast component. This assures a permanent mechanical bond to the concrete and once the concrete components are assembled on the job site, a continuous impermable lining is completed to shield the concrete against deterioration caused by corrosive materials. Dura Plate 100 also allows the pipe entry openings to be sealed to further safeguard against corrosion.

ADVANTAGES:

Dura Plate 100 offers many advantages over traditional coatings, and other protective measures presently marketed to protect against concrete corrosion in sanitary sewer structures. The basic properties of PVC in regard to being chemically inert and having a high strength to weight ratio, creates a tough, corrosion resistant surface giving the concrete structure compatible service life with PVC and PVC lined pipe. A structure lined with Dura Plate 100 will assure a long service life under severe conditions being resistant to H_2S, acids, alkalis, and salts which attack sewer systems.

In addition, the smooth white Dura Plate 100 is light reflective and environmentally pleasing and will prevent fungus or bacteria from permanently clinging to the liner which allows the walls to be easily cleaned and maintained.

"DURA PLATE 100"™

By A-LOK®

INTERIOR PLASTIC LINER FOR PRECAST CONCRETE SANITARY STRUCTURES

SAMPLE DURA-PLATE 100™ SPECIFICATION

GENERAL:

The Dura-Plate 100™ liner, when installed, shall provide a continuous, impermeable lining which will shield the precast concrete structure against deterioration caused by corrosive materials.

DESIGN:

The design of the liner shall insure that it will conform to the contour of the structure and form a permanent mechanical bond to the concrete through use of preformed horizontal ribs. The liner will be formed in such a manner that the joints between the structure sections will be afforded protection through the use of a continuous PVC return into the joint for a minimum 3/4 of an inch. Provisions will be made to allow the pipe openings to be sealed.

MATERIAL: (Properties and Dimensions)

The liner shall be manufactured from Polyvinyl Chloride resin and shall be white in color. The compound will result in a semi-rigid material suitable for thermoforming to the contour of the structure. The liner may be fabricated in panels with the panels joined together by a slotted strip of EPDM rubber according to the manufacturers specifications as illustrated in Figure 1A. All plastic liner sections shall be free of cracks, pinholes or other defects adversely effecting the protective characteristics of the material and shall have a minimum thickness of 65 mils.

PLANT FABRICATION METHOD:

The Dura-Plate 100™ liner will be installed during the precasting process in accordance with the specific instructions of the manufacturer.

FIELD INSTALLATION INSTRUCTIONS:

The structure manufacturer shall provide installation instructions to each contractor prior to initial use of the Dura-Plate 100™ liner. The structure will be installed using a butyl rubber joint material.

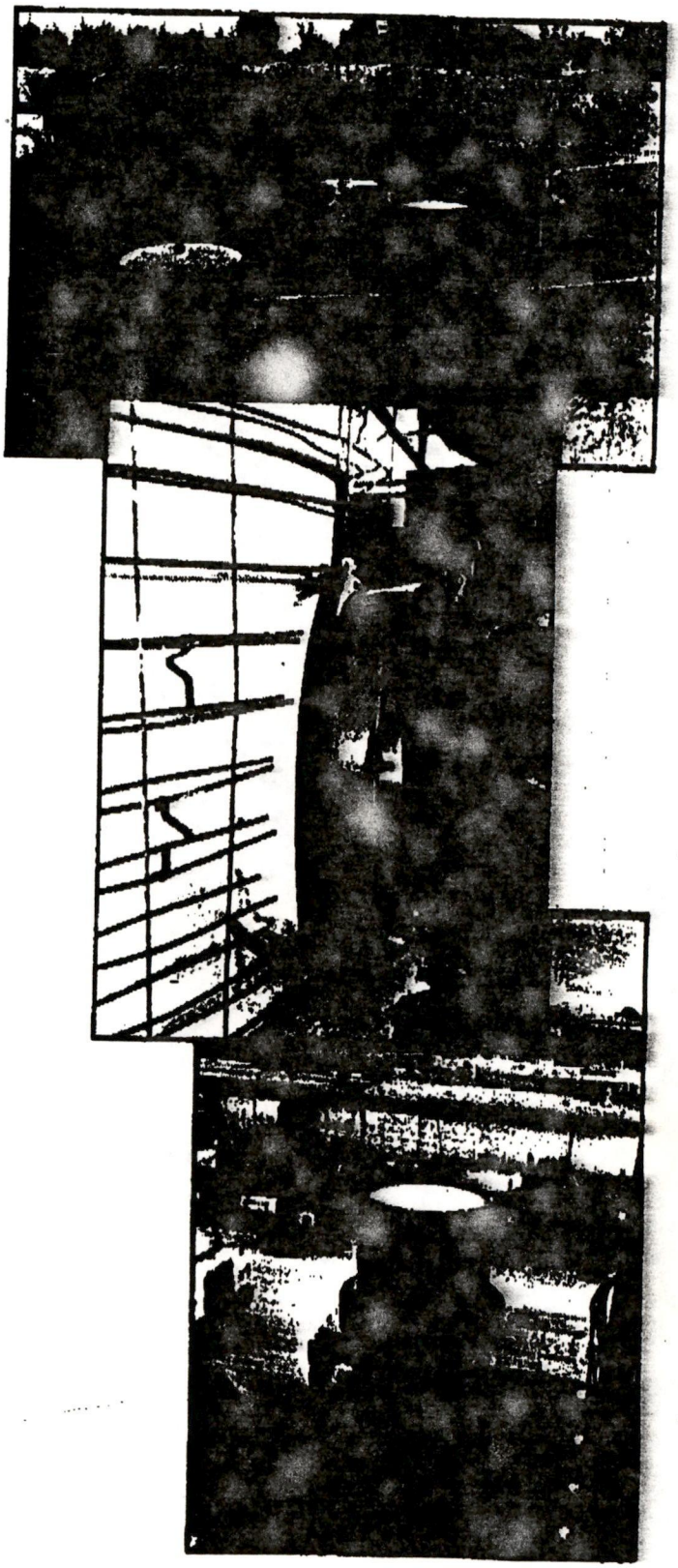
The joint material shall be placed on the joint surfaces as illustrated in Figure 2A, to provide a watertight seal by filling the annular cavity, while providing sufficient squeeze-out between the PVC returns to protect against corrosion. The dimension of the butyl rubber will be as recommended by the liner manufacturer.

©1990 COPYRIGHT A-LOK PRODUCTS, INC.

Design your concrete manhole structures using this corrosive resistant liner that will ensure service life compatability with any type of sewer pipe.

"DURA PLATE 100"

By A-LOK



Testing for Chemical Resistance of Liner

After conditioning to constant weight at 110°F, tensile specimens and weight change specimens shall be exposed to the following solutions for a period of 112 days at 77°F±5°.

At 30-day intervals, tensile specimens and weight change specimens shall be removed from each of the chemical solutions and tested. If any specimen fails to meet the 112-day requirements before completion of the 112-day exposure, the material will be subject to rejection.

Chemical Solution Concentration

Sulfuric acid	20%
Sodium hydroxide	5%
Ammonium hydroxide	5%
Nitric acid	1%
Ferric chloride	1%
Soap	0.1%
Detergent (linear alkyl benzyl sulfonate)	0.1%

QUOTATION

ATLANTIC
PRECAST
CONCRETE
MANHOLES

ATLANTIC CONCRETE PRODUCTS, INC.

1701 Myrtle St. - P.O. Box 1042
Sarasota, Florida 34243
355-2988 Sarasota
447-0901 Clearwater
634-3558 Tampa
351-3765 Fax

JOB NAME: L'Ambiance DATE: 8-26-92

COUNTY: ~~Manatee~~ Sarasota BID: ASAP

SPECS: Longboat Key ENGR: S.W.N.

THANK YOU FOR THE OPPORTUNITY TO QUOTE AS FOLLOWS:

TERMS	F.O.B.	DATE	
Pick up	Atlantic		TRI-D, INC.

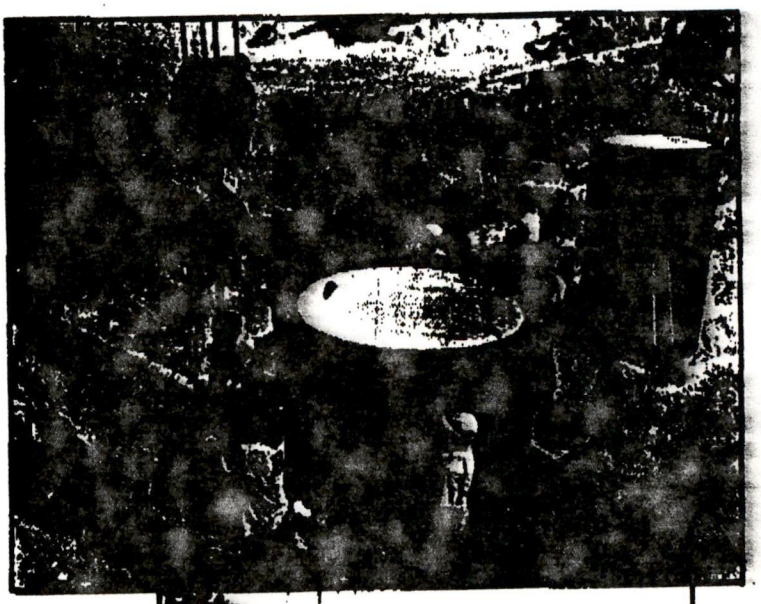
DESCRIPTION	QUANTITY	UNIT COST	AMOUNT
SANITARY MANHOLE 48"ϕ			
8" WALL W/ PVC LINER			
O-6 W/ DURA PLATE 100 LINER	1	720	720
A-10K / 2-10K GASKETS FOR:			
6" PIPE	1	24	24
8" PIPE	1	~~32~~	32
15" PIPE	1	60	60

ABOVE PRICES ARE GOOD FOR 60 DAYS. SIGNATURE Bill Smith.

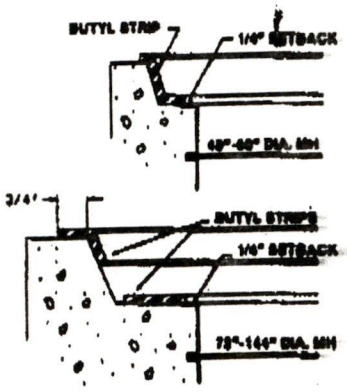
2% discount if paid by 10th following month. Net 30 days. 10% for pick ups.
NO HARDWARE UNLESS STATED--NO DISCOUNT ON HARDWARE--PAYMENT DUE ON RECEIPT.

"DURA PLATE 100"

By A-LOK



IMPORTANT
DURA PLATE 100
INSTALLATION INSTRUCTIONS



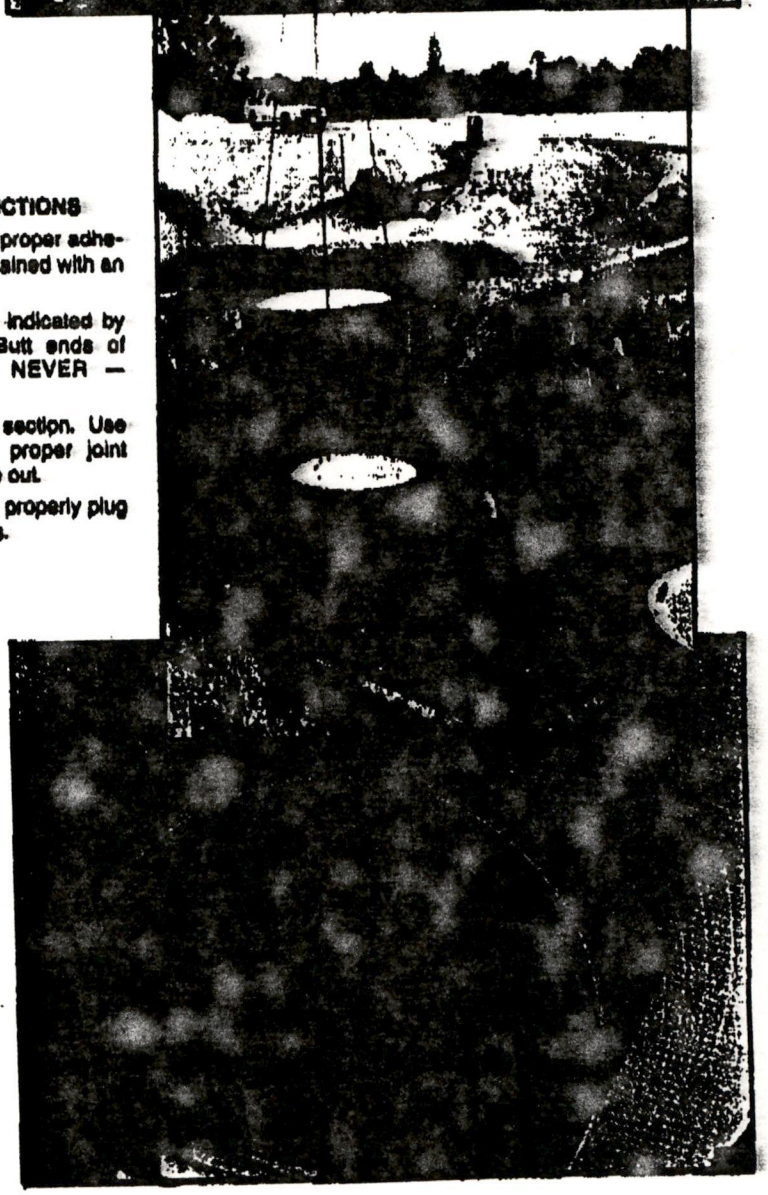
MANHOLE WITH 'BELL UP' JOINT

✓	MANHOLE DIAMETER	STRIPS REQ'D	MATR'L	ANNULAR SPACE
	48" RG	1	329	3/8"
	48" MJ	1	329A	3/8"
	60" RG	2	329	3/8"
	60" MJ	2	329A	3/8"
	72" MJ	4	329A	3/8"
	84" MJ	4	329A	3/8"
	96" MJ	4	329A	3/8"
	120" MJ	6	329A	3/8"
	144" MJ	6	329A	3/8"

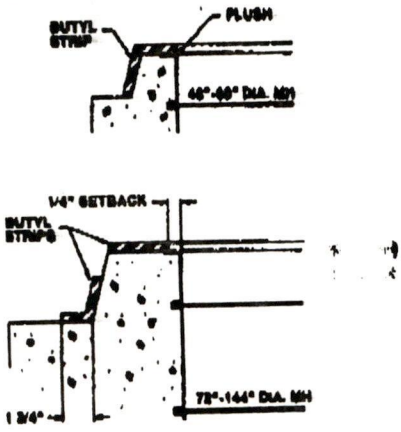
RG — RUBBER GASKET
MJ — MORTAR JOINT

INSTALLATION INSTRUCTIONS

1. Clean surface to ensure proper adhesion. Best results are obtained with an application of primer.
2. Place Butyl material as indicated by appropriate diagram. Butt ends of material together — NEVER — overlap.
3. Center and lower top section. Use sufficient pressure for proper joint completion and squeeze out.
4. Care should be taken to properly plug all lift pin inserts or holes.



MANHOLE WITH 'SPIGOT UP' JOINT



CHEMICAL RESISTANCE:

On the request of the engineer, the manufacturer shall provide a certification that the PVC liner meets the following test.

After conditioning to constant weight at 110 degrees Fahrenheit, tensile specimens and weight change specimens shall be exposed to the following solutions for a period of 112 days at 77 degrees F +/- five degrees. At 30 day intervals tensile specimens and weight change specimens shall be removed from each of the chemical solutions and tested. If any specimen fails the 112 day requirement before completion of the 112 day exposure, the material shall be subject to rejection.

CHEMICAL SOLUTION CONCENTRATIONS

Sulfuric Acid	20%
Sodium Hydroxide	5%
Ammonium Hydroxide	5%
Nitric Acid	1%
Ferric Chloride	1%
Soap	0.1%
Detergent (linear alkyl besyl sulfonate)	0.1%

FIGURE 1A

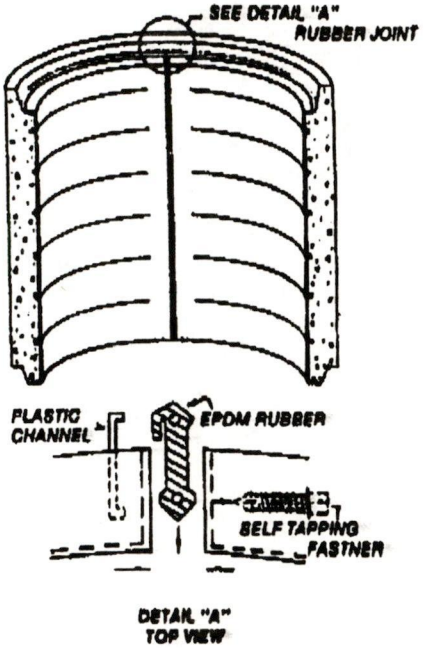
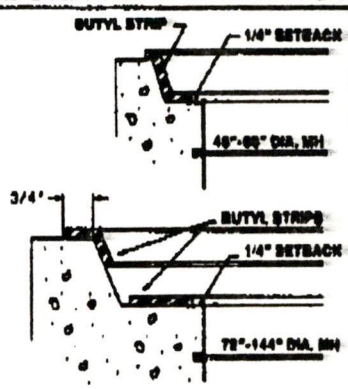


FIGURE 2A

IMPORTANT
DURA PLATE 100 INSTALLATION INSTRUCTIONS

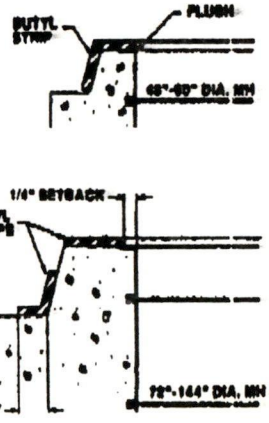


✓	MANHOLE DIAMETER	STRIPS REQ'D	MATRL	ANNULAR SPACE
	48" RG	1	3229	3/32"
	48" MJ	1	3229A	3/8"
	60" RG	2	3229	3/32"
	60" MJ	2	3229A	3/8"
	72" MJ	4	3229A	3/8"
	84" MJ	4	3229A	3/8"
	96" MJ	4	3229A	3/8"
	120" MJ	5	3229A	3/8"
	144" MJ	6	3229A	3/8"

RG — RUBBER GASKET
MJ — MORTAR JOINT

MANHOLE WITH 'BELL UP' JOINT

MANHOLE WITH 'SPIGOT UP' JOINT



INSTALLATION INSTRUCTIONS

1. Clean surface to ensure proper adhesion. Best results are obtained with an application of primer.
2. Place Butyl material as indicated by appropriate diagram. Butt ends of material together — NEVER — overlap.
3. Center and lower top section. Use sufficient pressure for proper joint completion and squeeze out.
4. Care should be taken to properly plug all lift pin inserts or holes.

A-LOK® PRODUCTS INC.

P.O. BOX 1647
TULLYTOWN, PA 19007
1-800-222-ALOK

697 MAIN STREET
TULLYTOWN, PA 19007
(215) 547-3368

SAMPLE DURA-PLATE 100™ SPECIFICATIONS

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SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

February 8, 1994

Mr. Leonard Smally, P.E.
Town of Longboat Key
610 General Harris
Longboat Key, FL 34228

Subject: **L'AMBIANCE**

Dear Lenny:

Enclosed is a copy of our letter to Tracy Burger of the Florida Department of Environmental Protection regarding a proposal to use 2% cement stabilized base material. The cement would be mixed at the plant and would serve to hydrate the moisture which is a problem on a tight construction site such as L'Ambiance. Ms. Burger had no objection to this proposal. If you have any objections, please advise immediately, since the contractor plans to begin with the base soon.

We trust this meets your needs.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder, P.E.
Vice President

MJY:tg

Enclosure

cc: Mr. Mark McCabe, C & M Road Builders, Inc.
Mr. Kyle Hauck, Yale Properties

RECEIVED
FEB - 9 1994
PUBLIC WORKS DEPT.

SWN Ref: 2591-1/Work Order No. 2239

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

February 1, 1994

Ms. Tracy Burger
Bureau of Beaches and Shores
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Sta. 310
Tallahassee, FL 32399-3000

Subject: **L'AMBIANCE - ST-779**

Dear Ms. Burger:

This is to confirm our telephone conversation of this date. The contractor, C & M Road Builders, Inc., has expressed a desire to mix cement into the shell base material to be placed under the driveways and parking areas of the north building at L'Ambiance. He proposes to use 2% cement by weight for the purpose of drying the base material. This should yield a relatively low strength cement stabilized base.

We understand you have no objection to this proposal. Thank you for your cooperation in this matter.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder, P.E.
Vice President

MJY:tg

cc: Mr. Mark McCabe, C & M Road Builders, Inc.
Mr. Kyle Hauck, Yale Properties

SWN Ref: 2591-1/Work Order No. 2239

Speed Letter® 44-902

WilsonJones® Carbonless SNAP-A-WAY® FORMS

Speed Letter®

To ~~Kevin Webb~~ Roy Wamsley From Len Smalley

Subject L'ambiance - specs. (Roy Kept specs)

—No. 9 & 10 FOLD

MESSAGE

Please review the attached & return your comments ASAP

Date 10/4/91 Signed LBS/ang

REPLY

Meets or exceeds specs the Town would require.

—No. 9 FOLD

—No. 10 FOLD

Date 11-07-91 Signed Roy

Speed Letter® 44-902 WilsonJones

Speed Letter®

From ~~Kevin Wehr~~ Roy Wamsley To Len Smalley

Subject L'Ambiance specs. (Roy Kept specs)

—No. 9 & 10 FOLD

MESSAGE

Please review the attached & return your comments ASAP

Date 11/4/91 Signed RWamsley

REPLY

meets or exceeds specs the Town would require.

—No. 9 FOLD

—No. 10 FOLD

Date 11-07-91 Signed Roy

WilsonJones
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Carbonless

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TURN OVER FOR USE WITH WINDOW ENVELOPE.

FILL IN NAME AND ADDRESS HERE
FOR RETURN IN WINDOW ENVELOPE

—FOLD

—FOLD

THE TOWN OF
LONGBOAT KEY

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

November 1, 1991

Millard J. Yoder, P.E.
Smally, Wellford & Nalven
P.O. Box 4069
Sarasota, Fl. 34230

Dear Millard:

This is in reponse to your letter of October 10, 1991, attached.

The developer of L'Ambiance is responsible for the utilities in the right-of-way adjacent to the project. The Town has not made any evaluations of those facilities. Bishop, in the past, has certified that the force main was adequate and the Sanctuary and Pierre are using it. It is your responsibility to certify that the existing force main and manholes are acceptable and have a sufficient life expectancy for your client as well as the upstream customers. L'Ambiance will not be responsible for the force main north of their site.

The language "plug existing sewers that are to be abandoned" is unsatisfactory. All abandoned sewers are to be grouted full.

If there are any questions, please let me know.

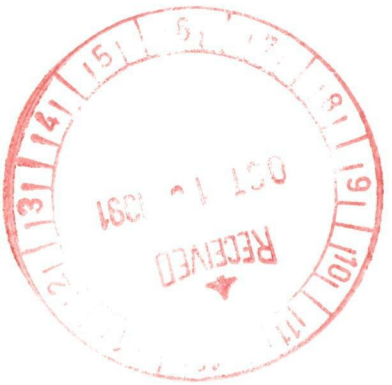
Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmm
cc: Gordon Deckelbaum, Yale Properties

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers



October 10, 1991

Mr. Leonard A. Smally, P.E.
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Subject: L'Ambiance

SWN Ref: 2591

Dear Leonard:

This is to confirm your recent conversation with Carl Reich of this office pertaining to your requirement of off-site sewer improvements for the subject project. We understand the following are your requirements:

- Remove and replace the existing 15" fiberglass sewer or slip-line said sewer in front of the subject property and to the receiving lift station.
- Inspect the existing manholes and make necessary repairs as required.
- Plug existing sewers that are to be abandoned.
- The existing 6" force main will not require replacement. SWN CONFIRM
- Submit three sets of plans and specifications for review.

Based on the above understanding, the following improvements are proposed.

The existing 6" force main will be extended from its current entrance point to the gravity sewer at station 59+08 to the existing manhole at station 63+65. The gravity sewer between these stations will be plugged and abandoned.

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

The existing 15" fiberglass sewer from the lift station to the manhole at station 63+65 will be slip lined in accordance with Division 18 of the enclosed specifications. The existing manhole at station 63+65 will be fiberglass lined in accordance with Division 17 of the enclosed specifications. The liner is proposed to protect the manhole from accelerated deterioration caused by sewer gases. The manhole at the slip liner entrance point will be replaced with a new manhole at station 67+30.

Should you have any questions, please contact this office.

Very truly yours,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder, P.E.
Vice President
Director of Engineering

MJY/CFR/lb

Enclosure

cc: Mr. Kyle Hauck, Yale Properties, Inc.
Mr. Mike Kempner, Yale Properties, Inc.

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

SARASOTA COUNTY
PUBLIC HEALTH UNIT

MARK J. MAGENHEIM, M.D., M.P.H.
DIRECTOR AND HEALTH OFFICER

(813) 954-2900
SUNCOM 552-7950

RECEIVED
DEC 10 1992

December 8, 1992

Mr. Millard J. Yoder, P.E.
Wilson, Miller, Barton & Peek, Inc.
P.O. Box 4069
Sarasota, Florida 34230

RE: L'Ambiance
WD# 1098-90-002
Partial Certification (South Building)
Longboat Key Utilities

Dear Mr. Yoder:

This acknowledges receipt of your letter of certification on November 12, 1992. The subject water distribution system extension has been completed in accordance with your plans and related materials.

Based on this certification and satisfactory bacteriological results, we are approving these facilities for service. Your continued cooperation in our water supply program is appreciated.

Sincerely,

OFFICE OF ENVIRONMENTAL ENGINEERING

Robert F. Bolesta

Robert F. Bolesta, Engineer II
Public Water Systems Section

RFB/er

xc: Len Smalley

To Town of Longboat Key

Re: L'Ambiance

To Len Smally

These are the specifications which were to be included with the 12/7/90 package of plans given to Tony at L'Ambiance job site

Miller

Speed Letter®

To Roy Wamsley

From Len Smalby

Subject L'Ambiance - specs.

—No. 9 & 10 FOLD

MESSAGE

Please have the attached reviewed & return comments asap.

Date 12/11/90 Signed LHS/amy

REPLY

—No. 9 FOLD

—No. 10 FOLD

Date Signed

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Speed Letter®

To Tony Mione

From Len S[illegible]

Subject L'ambiance - specs.

—No. 9 & 10 FOLD

MESSAGE

Please review the attached & return comments asap.

Date 12/11/90 Signed LAS/cmg

REPLY

—No. 9 FOLD

—No. 10 FOLD

Date Signed

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BID SCHEDULE

AND

TECHNICAL SPECIFICATIONS

FOR

L'AMBIANCE SITE DEVELOPMENT

Owner: YALE PROPERTIES, INC.
2900 N. MILITARY TRAIL, SUITE 201S
BOCA RATON, FL 33432

Engineer: SMALLY, WELLFORD & NALVEN, INC.
CONSULTING ENGINEERS AND SURVEYORS
133 SOUTH McINTOSH ROAD
SARASOTA, FL 34232

RECEIVED
DEC 10 1990
Town of
Longboat Key

Project No.: 2591

Date: OCTOBER, 1990

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BID SCHEDULE FOR

L'AMBIANCE SITE DEVELOPMENT

Item	Description	Estimated Quantity	Unit Price	Amount
I.	SITE WORK:			
1.	Fill material obtained from an offsite source. Shall include all costs involved in the purchase, transport, placement, compaction and grading of approximately 74,000 cubic yards (measured as embankment) of clean fill meeting the FDNR requirements for grain size and coloration and compacted per the specifications.	LUMP SUM	LUMP SUM	_____
2.	2-1/2" thick paving block	5,111 SY	_____	_____
3.	1-1/2" sand setting bed	5,111 SY	_____	_____
4.	6" thick soil-cement or pit shell base	5,111 SY	_____	_____
5.	6" thick compacted subbase	5,111 SY	_____	_____
6.	6" top soil or medium crushed shell	1,840 SY	_____	_____
7.	6" shell base	1,840 SY	_____	_____
8.	1" x 4" pressure-treated edging material	2,450 LF	_____	_____
9.	4" concrete bike path	713 SY	_____	_____
10.	4" concrete sidewalk	311 SY	_____	_____
11.	Curb "A"	4,250 LF	_____	_____
12.	Valley crossing, including transitions	380 LF	_____	_____
13.	Wheel stop	50 EA	_____	_____
14.	4" concrete par cours	126 SY	_____	_____
15.	4" shell base	900 SY	_____	_____
16.	2" crushed shell	900 SY	_____	_____
17.	Fine grading	LUMP SUM	LUMP SUM	_____
	SUBTOTAL - SITE WORK ----------			$_____

Item	Description	Estimated Quantity	Unit Price	Amount
II.	DRAINAGE:			
1.	Curb inlet	8 EA	_____	_____
2.	Type "B" inlet	9 EA	_____	_____
3.	Storm manhole	2 EA	_____	_____
4.	Trench inlet	2 EA	_____	_____
5.	Endwall	1 EA	_____	_____
6.	24" x 38" RCP	135 LF	_____	_____
7.	30" RCP	145 LF	_____	_____
8.	24" RCP	477 LF	_____	_____
9.	18" RCP	52 LF	_____	_____
10.	15" RCP	294 LF	_____	_____
11.	16" PVC	388 LF	_____	_____
12.	12" PVC	859 LF	_____	_____
13.	10" PVC	220 LF	_____	_____
14.	14" x 23" RCP	70 LF	_____	_____
15.	Type "D" inlet	1 EA	_____	_____
	SUBTOTAL - DRAINAGE ----------			$_____
III.	SANITARY SEWER:			
1.	Manhole	4 EA	_____	_____
2.	Cleanout	4 EA	_____	_____
3.	8" plug	4 EA	_____	_____
4.	6" plug	2 EA	_____	_____
5.	8" PVC	1,180 LF	_____	_____
6.	6" PVC	240 LF	_____	_____

Item	Description	Estimated Quantity	Unit Price	Amount
7.	8" x 8" x 8" Wye	1 EA	_____	_____
8.	8" x 8" x 6" Wye	2 EA	_____	_____
9.	8" 22½° bend	1 EA	_____	_____
10.	8" 45° bend	1 EA	_____	_____
	SUBTOTAL - SANITARY SEWER ----------			$_____
IV.	WATER DISTRIBUTION:			
1.	8" PVC	295 LF	_____	_____
2.	6" PVC	440 LF	_____	_____
3.	6" PVC or DIP with restrained joints	330 LF	_____	_____
4.	1" PVC	40 LF	_____	_____
5.	6" 90° bend	4 EA	_____	_____
6.	Fire hydrant assembly	2 EA	_____	_____
7.	1" water meter assembly with box	2 EA	_____	_____
8.	8" x 6" cross	1 EA	_____	_____
9.	6" gate valve with box	2 EA	_____	_____
10.	3" meter assembly with box	2 EA	_____	_____
11.	Backflow preventers including all restrained joint pipe, fittings, valves, backflow prevention devices, painting, concrete slabs and supports, and backfilling within the pay limits shown on the plan detail. All work shall be in accordance with the Town of Longboat Key requirements.	LUMP SUM	LUMP SUM	_____
	SUBTOTAL - WATER DISTRIBUTION ----------			$_____

Item	Description	Estimated Quantity	Unit Price	Amount
V.	FIRE PROTECTION PIPING:			
1.	8" PVC or 14" DIP with restrained joints	340 LF	_____	_____
2.	8" 90° bend with restrained joints	4 EA	_____	_____
	SUBTOTAL - FIRE PROTECTION PIPING ----------			$_____
VI.	SANITARY SEWER (OFFSITE):			
1.	6" PVC	456 LF	_____	_____
2.	6" 45° bend	2 EA	_____	_____
3.	Concrete encasement	40 LF	_____	_____
4.	Existing pipe relocation	LUMP SUM	LUMP SUM	_____
5.	Slipline existing 15" fiberglass pipe	607 LF	_____	_____
	SUBTOTAL - FORCE MAIN (OFFSITE) ----------			$_____
VII.	WATER DISTRIBUTION (OFFSITE):			
1.	10" PVC	970 LF	_____	_____
2.	8" PVC	50 LF	_____	_____
3.	10" x 10" x 8" Tee	1 EA	_____	_____
4.	10" x 10" x 10" Tee	1 EA	_____	_____
5.	10" gate valve with box	5 EA	_____	_____
6.	8" gate valve with box	1 EA	_____	_____
7.	10" plug	1 EA	_____	_____
8.	Concrete encasement	40 LF	_____	_____
	SUBTOTAL - WATER DISTRIBUTION (OFFSITE) ----------			$_____

BID SCHEDULE FOR

L'AMBIANCE SITE DEVELOPMENT

SUMMARY:

SITE WORK	$_____
DRAINAGE	_____
SANITARY SEWER	_____
WATER DISTRIBUTION	_____
FIRE PROTECTION PIPING	_____
SANITARY SEWER (OFFSITE)	_____
WATER DISTRIBUTION (OFFSITE)	_____
TOTAL BID ----------	**$**_____

_____ DOLLARS
(Total Bid written in words)

AND _____ CENTS ($_____)

Name of Bidding Firm _____

Initials of Individual Signing Proposal (page P-3) _____

TECHNICAL SPECIFICATIONS

DIVISION 1

CLEARING AND GRUBBING, EXCAVATION, FILLING (BACKFILLING) GRADING AND ROAD SUBBASE

1. DESCRIPTION

1.1 The work covered by this section consists of furnishing and paying for all materials, labor, tools, equipment and other appurtenances required for the clearing and grubbing, excavating, filling, grading and backfilling for structures, footings, foundations, paving and other items as herein specified and as indicated on the drawings.

1.2 The work shall include removing and satisfactorily disposing of all excavated materials of whatever character, within the limits of the work. It shall include all excavation or fill necessary for the construction, preparation and completion of all embankments, subbases, shoulders, ditches, slopes, gutters, intersections, approaches or other work, in accordance with the required alignment, grade and cross-sections shown on the plans or as directed by the Engineer. This work shall include removal and disposal of vegetation, brush, trash, etc. from both cut and fill areas. Care should be taken not to disturb or mutilate any trees or shrubs which the plans or Owner indicate should be left in place. Finished grades shall be to within a tolerance of 0.10 foot of the grades and lines as shown on the plans. All excavations under this section shall be unclassified.

1.3 Excavation and backfill for pipework and electrical wiring are included in the corresponding divisions of these specifications.

1.4 Also read carefully the GENERAL CONDITIONS and SPECIAL CONDITIONS, all of which shall be considered as and made a part of this division of the specifications.

2. CLEARING AND GRUBBING

2.1 Clearing and grubbing shall consist of the complete removal and disposal of all trees indicated for removal, timber, brush, stumps, roots, rubbish, debris, buildings, septic tanks, pavement, boulders and all other obstructions, resting on or protruding through the surface of the existing ground or surface of excavated areas.

2.2 Unless otherwise indicated on the plans, clearing and grubbing shall include all areas designated for construction of site improvement, borrow pits, ditches, swales, roadways, or other structures scheduled as a part of the project construction, such as pipe lines, culverts, lakes, etc.

2. CLEARING AND GRUBBING, CONTD.

2.3 Roots and debris shall be plowed to a depth of one (1) foot minimum by mechanical means and completely removed from the site.

2.4 All cleared and grubbed material shall be completely removed from the site and disposed of by the Contractor at an off-site location of his choice unless an on-site location is shown on the plans or directed by the Owner. For private off-site disposal areas, it is advised that the Contractor obtain permission in writing.

2.5 It is the intent of the Owner that certain trees be designated to be saved and protected by the Contractor. It is assumed these trees are healthy and are expected to be a part of the landscape development. Therefore, any tree(s) damaged by construction operation or by any other means - excluding lightning, wind storms and other acts of God - perishes within the construction period, it will be the responsibility of the Contractor to remove and dispose of those trees. No additional compensation will be made by the Owner for the labor, material or machinery required to remove said tree(s).

3. EXCAVATION FOR STRUCTURES, PIPE TRENCHES, SWALES AND LAKES

3.1 The work specified shall consist of excavations for bridge foundations, box culverts, pipe culverts, storm sewers, sanitary sewers, water mains, services, inlets, manholes, catch basins, headwalls, endwalls, etc.

3.2 Where wet conditions are such that dewatering by normal pumping methods, well pointing shall be used and included in the prices bid for the various items contained in the Proposal. The Engineer, in his opinion, may order well pointing or additional dewatering apparatus such as pumps if he feels dewatering methods being used are insufficient.

3.3 Do all excavating in an orderly and workmanlike manner according to the schedule to be approved by the Engineer. Construct to grades and layouts shown on the drawings for excavation based upon bench marks and control points given by the Engineer.

3.4 Control the grading around all excavations to prevent surface water from running into the excavated area. Do not open any excavation and allow it to remain open without the construction work commencing immediately, to prevent deterioration and supporting power of the soil through action of the weather and ground water.

3.5 Provide suitable dewatering pumps, well points, and other dewatering equipment, and keep excavations free of water during excavation, concrete pouring and for six (6) hours following concrete pouring.

3. EXCAVATION FOR STRUCTURES, PIPE TRENCHES, SWALES AND LAKES, CONTD.

3.6 Shore or sheet and brace excavations as required and as directed to prevent slides and cave-ins, and to protect the work and the personnel.

3.7 Do not pour concrete on mud or other unsuitable material. The Engineer will determine the suitability of all material for foundations, and the Contractor shall protect all subbase before constructing foundations.

3.8 Do not place footings, floor slabs, pipe or paving on top soil or vegetation. Remove all top soil and vegetation and replace same with well-compacted selected material.

3.9 Remove from the site all excavated material which is not suitable nor required for backfill or filling and waste same in the areas directed by the Engineer.

3.10 If excavation is carried below elevations shown on the drawings, or if the subbase should be spoiled in any way, fill the over-excavated or spoiled areas with 2,500 lb. concrete to the proper elevation, without cost to the Owner, unless specific written instructions of the Engineer authorize the lowering of the footing levels to secure a firm footing at the bearing pressure required.

3.11 Lakes, swales, ditches, etc. shall be excavated to the lines, grades and slopes as indicated on the drawings. A tolerance of 0.10 foot will be permitted from the plans. Slopes shall be raked and fine graded, ready for sod or grassing and mulching. All slopes must be approved by the Engineer for acceptance as completed. Approved material excavated shall be distributed as fill where indicated on the plans. All unapproved or unsatisfactory material will be disposed of by the Contractor.

4. FILLING OR EMBANKMENT

4.1 All suitable materials resulting from the excavations of roadway, lakes, swales and other appurtenances shall be used as far as practicable in the construction of the fills or embankment required on the project site at locations indicated by the elevations shown on the drawings. Approved off-site material to be used for fills on embankments shall be hauled to the site and placed as directed in the following criteria.

4.2 Fills or embankments shall be constructed true to line and grades, cross-sections or other details to within 0.10 foot of the elevations on the plans or ordered by the Engineer, within the tolerances specified. All fill material shall be relatively clean sand, with a fineness modulus of 0.7 or more, free of excessive quantities of silt, clay or marl which will adversely affect compaction of material below water level. Fill material shall be obtained from sources approved by the Engineer, and samples of the proposed fill material shall be submitted to the Engineer before hauling the material to the project site.

4. FILLING OR EMBANKMENT, CONTD.

4.3 Unsuitable soils shall be removed to depths indicated or directed by the Engineer prior to beginning filling operations. Unsuitable material may be used on-site other than load bearing areas, not under structures, house pads, streets, etc., unless directed to remove material from site by the Engineer.

4.4 Natural or excavated ground shall be cleared and grubbed as directed by these documents, compacted to density required, density tests taken where roadway or structures are to be located prior to the placing of any fill material. Consecutive lifts shall not exceed 12" thick loose measure, spread uniformly, compacted and tested for density on each lift.

4.5 No fill material shall be placed where area is wet. Dewatering may be required prior to filling oeprations, either by pumping or well pointing. Water shall not be allowed to stand on or adjacent to fill areas that could saturate the material.

4.6 Water may be added to dry material to achieve a moisture content such that the specified density can be attained.

4.7 Density on natural ground, excavated areas, fills or embankments in all cases where house pads, roadway, structures, etc. are to be constructed, shall be compacted to a maximum density of 95% as determined by AASHTO T-180 (modified) except for the last 3 feet of embankment which will be 98%, using equipment which will achieve the required density.

4.8 Compaction of subbase in both cuts and fills shall be compacted to the density required above.

4.9 Trenches excavated for pipelines, structures, manholes, inlets, etc., shall be backfilled in layers of 9" loose measure and spread uniformly in the trench which will allow mechanical compaction equipment to achieve the required densities outlined above. Additional densities may be ordered by the Engineer on any given layer compacted in the trench if, in his opinion, the Contractor is not obtaining proper density to alleviate trench or structure settlement.

4.10 Filling operations shall be performed under the supervision of an approved independent Registered Engineer, qualified in this type of work, employed by the Contractor at his own expense. Field density tests shall be made by an approved independent testing laboratory at the Contractor's expense, as required to assure the Contractor's engineer and the Owner's engineer that all fill has been compacted to the specified density. All fill that is found to have a density less than that specified shall be re-excavated, re-filled, re-compacted and re-tested as required to produce the specified density. Excavated material from the lakes and/or cut areas shall be used for fill. The work placing, grading, fine grading and compacting to elevations shown on the plans shall be performed as a part of the excavation and no additional compensation will be made in the unit price bid.

4. FILLING OR EMBANKMENT, CONTD.

4.11 The Contractor shall include in his costs and included in the price bid for the various items contained in the Proposal all densities required for this project. For reference as to the minimum amount of tests required, the following will prevail:

A. House Pads

A minimum of two per building structure for each 12" loose measure applied to the site and natural ground. Proof rolling will be required prior to testing original ground.

B. Roadways and Streets

A minimum of one each 500 square yards for each 12" loose measure of fill, including natural ground or for cut area. One each 500 square yards of excavated subgrade after excavation to grade.

C. Road Subbase and Base Material

A minimum of one each 500 square yards.

5. FINISH GRADING

5.1 Do all rough and fine grading as required to obtain shape slopes, line and grade as indicated by the plans or other details which results in workmanlike conditions.

6. SUBBASE

6.1 When the work under this contract includes the construction of a base or pavement course, the subbase shall be constructed as hereinafter provided.

6.2 The work shall consist of bringing the bottom of excavations and top of embankments of the roadway between the outer limits of the paving or base course to a surface conforming to the grades, lines and cross-sections shown on the plans, and to a uniform density.

6.3 All soft and yielding material and other portions of the subbase which will not compact readily shall be removed and replaced with suitable material and the whole subbase brought to line and grade, allowing for subsequent compaction.

6.4 All submerged stumps, roots or other perishable matter encountered in the preparation of the subbase shall be removed to a depth of not less than two (2) feet below the subbase.

6. SUBBASE, CONTD.

6.5 The subbase shall have a minimum limerock bearing ratio of 50. If stabilizing is necessary to meet this requirement, sufficient approved borrow material shall be uniformly blended into the subbase. The entire depth of fills and the top 12 inches for cuts of subbase shall be compacted to a density of not less than 98 percent of the maximum density as determined by AASHTO Method T-180 (Modified). The subbase shall be shaped prior to making the density tests. These tests shall be performed by a qualified independent laboratory approved by the Engineer at the Contractor's expense.

6.6 After the subbase has been prepared, as specified above, the Contractor shall maintain it free from ruts and depressions and all damage resulting from the hauling or handling of any materials, equipment, tools, etc. Ditches and drains shall be constructed and maintained along the compacted subbase section.

6.7 After the subbase has been prepared, and immediately before any base or paving course is laid, the subbase shall be checked as to crown and elevation by the Engineer. If the subbase is found not to be at the proper elevation at all points, material shall be removed or added, as the condition necessitates, and compacted to bring all portions of the subbase to the correct elevation and to the specified density.

7. SHOULDERS, DITCHES AND SLOPES

7.1 When the work under this contract includes surfacing or paving, the earthwork, including the slopes, and all drainage structures, shall have been substantially completed before the construction of the surface course or pavements is started.

7.2 During the construction of the pavement, a shoulder at least three (3) feet wide shall be maintained in place to properly support the edges of the pavement. Upon completion of the pavement, the earth shoulders, slopes and side ditches shall be completed and shaped to a surface which is within 0.1 foot above or below the true surface shown on the plans, except that adjacent to pavement, curb or sidewalk, the shoulder shall be shaped to match the edge of the pavement, curb or sidewalk.

8. METHODS OF MEASUREMENT

8.1 Excavation for lakes or site areas shall be measurements obtained by the Engineer from topographic surveys and the final volume removed calculated by the end area method (includes excavation of material, transportation to areas on-site requiring fill, grading, compaction, etc., complete in place to grades shown on drawings).

8. METHODS OF MEASUREMENT, CONTD.

8.2 Excavation for swales and ditches shall be by the lineal foot constructed to the cross-sections shown on the plans (includes excavation of material, transportation to areas on-site requiring fill, grading, compaction, etc., complete in place to grades shown on drawings).

8.3 Excavation for pipe trenches, structures, inlets, catch basins, manholes, headwalls, etc., shall be included as a part of the bid price as set forth by the various units for same.

8.4 Filling or embankment using on-site material shall be included as a part of the excavation costs (see Paragraphs 8.1 and 8.2) and no additional compensation will be made.

8.5 Off-site fill material shall be measured as compacted yards in place. Volume in loose truck measure, compaction, shrinkage factors, etc., shall be determined by the Contractor based on material he so determines to use. No additional compensation will be made (includes excavation of material, transportation to areas on-site requiring fill, grading, compaction, etc., complete in place to grades shown on drawings).

9. BASIS OF PAYMENT

9.1 Excavation of lakes shall be by the cubic yard.

9.2 Excavation of site, including roadway and streets, shall be by the cubic yard.

9.3 Excavation of ditches or swales shall be by the lineal foot.

9.4 Off-site fill shall be by the cubic yard.

TECHNICAL SPECIFICATIONS

DIVISION 2

SOIL-CEMENT BASE

1. DESCRIPTION

1.1 The work specified in this section consists of the construction of a soil-cement base course composed of soil and Portland cement uniformly mixed, moistened, compacted, finished and cured in accordance with these specifications, and shall conform to the lines, grades, thicknesses and typical cross-sections shown on the plans. The base shall be designed to have an in-situ strength of 300 PSI. Seven-day laboratory design compressive strength shall be a minimum of 450 PSI for mixed in-place and 400 PSI for plant mixed unless statistical data for the materials used justifies a lesser laboratory strength.

2. MATERIALS

2.1 Portland cement shall comply with the latest specifications for Portland cement, AASHTO M-85, or AASHTO M-134 or ASTM C-150, for the type specified. A one (1) cubic foot sack of Portland cement shall be considered to weigh 94 pounds.

2.2 Water for use with cement shall be clean and free of substances deleterious to the hardening of the soil-cement.

2.3 The soil to be used for the base course shall consist of on-site material in the area to be paved, approved borrow material or a combination of these materials proportioned as approved by the laboratory. The soil shall not contain gravel or stone retained on a two-inch sieve or more than 45 percent retained on a No. 4 sieve. The soil shall be free of organic debris, trash, roots or any other substance considered deletrious to the hardening of the soil-cement.

3. EQUIPMENT

3.1 For performing the work specified in this section, the Contractor may use any machine, combination of machines or equipment that will produce the completed soil-cement base course meeting the requirements for soil pulverization, cement application, mixing, water application, incorporation of materials, compaction, finishing and curing as controlled by these specifications. Special attention is directed to the necessity for utilizing compaction equipment which will produce the required density in a particular soil-cement blend.

4. CONSTRUCTION METHODS

4.1 Preparation

A. Before other construction operations are begun, the area to be paved shall be graded and shaped as required to construct the soil-cement base in conformance with the grades, lines, thicknesses and typical cross-sections shown on the plans. Any additional soil needed shall be placed as directed by the Engineer. The subgrade shall be firm and able to support without displacement the construction equipment and compaction hereinafter specified. Any unsuitable soil or materials, including material retained on a 3-inch sieve, shall be removed and replaced with acceptable material. Soft or yielding subgrade shall be corrected and made stable before construction proceeds.

B. The subgrade in both cuts and fills shall be compacted to a density of 98% of the maximum density as determined by AASHTO T-180 (modified). The subgrade shall be shaped prior to making the density tests.

4.2 Pulverization

A. The soil shall be so pulverized that, at the completion of moist-mixing, one hundred (100%) percent by dry weight passes a one (1") inch sieve, and a minimum of eighty (80%) percent passes a No. 4 sieve. Any variation of these minimum requirements shall be approved by the Laboratory.

4.3 Application of Cement

A. The specified quantity of Portland cement, as outlined by the Laboratory, shall be applied uniformly on the soil. When bulk cement is used, equipment suitable for handling, weighing and uniformly spreading the cement shall be used. The percentage of moisture in the soil, at the time of cement application, shall not exceed that quantity which will permit a uniform and intimate mixture of soil and cement during mixing operations. The construction operations shall be continuous. Spread cement that has been displaced shall be replaced before mixing is started. The amount of cement used shall be sufficient to obtain the required compressive strength. However, under no circumstances shall the amount be less than six (6%) percent by weight. No cement shall be applied when the soil or subgrade is frozen. The air temperature shall be at least forty (40°F.) degrees Fahrenheit in the shade and rising, or over fifty (50° F.) degrees Fahrenheit.

4.4 Mixing

A. After the cement has been applied, it shall be mixed with the soil. Mixing shall continue until the cement has been sufficiently blended with the soil to prevent formation of cement balls when water is applied. Any soil-cement mixture that has not been compacted and finished shall not remain undisturbed for more than 30 minutes.

4. CONSTRUCTION METHODS, CONTD.

4.5 Application of Water and Moist-Mixing

A. Immediately after the soil and cement have been mixed, water shall be applied uniformly and incorporated into the mixture. Excessive concentrations of water on or near the surface shall be avoided. Water supply and pressure-distribution equipment shall be provided that will assure that all required water will be applied within 3 hours. After all water has been applied, mixing shall continue until a homogenous mixture of soil, cement, and water has been obtained. When the water application and mixing have been completed, the percentage of moisture in the mixture and in the unpulverized soil lumps (based on dry weights) shall be within 2%± of the specified optimum moisture content and shall be less than that quantity which will cause the soil-cement mixture to become unstable during compaction and finishing. The specified optimum moisture content and density shall be determined in the field by a moisture-density test (AASHTO T-99, standard) on representative samples of soil-cement mixture obtained from the area being processed. Average density required of all tests will be ninety-eight (98%) percent. In no case will a density of less than ninety-five (95%) percent be accepted. Densities above one hundred (100%) percent will be calculated as one hundred (100%) percent.

4.6 Plant Mix Contractor Option

A. At the option of the Contractor, a plant mixture of soil-cement material may be utilized. The plant should demonstrate the ability to properly proportion the cement to obtain a uniform mix, meeting all specifications.

4.7 Compaction

A. Prior to the beginning of compaction, the mixture shall be in a loose condition for its full depth and shall be within 2%± of optimum moisture. As a continuation of mixing operations, the loose mixture shall be uniformly compacted to the specified density within 3 hours. During compaction operations, shaping may be required to obtain uniform compaction and required grade and cross-section.

4.8 Finishing

A. After the mixture has been compacted, the surface of the soil-cement shall be shaped, if necessary, to the required lines, grades, and cross-section. During shaping operations, the surface shall be

4. CONSTRUCTION METHODS, CONTD.

lightly scarified to loosen any imprints left by the compacting or shaping equipment. The resulting surface shall then be compacted to the specified density with steel-wheel or pneumatic-tire rollers, or both. Rolling shall be supplemented by broom-dragging as required. Surface compaction and finishing shall be done in such a manner as to produce, in not longer than 3 hours, a smooth, dense surface, free of surface compaction planes, cracks, ridges or loose materials.

4.9 Uniformity

A. Any portion of the soil-cement that has a density less than ninety-five (95%) percent of the maximum density, determined as specified, shall be corrected by additional rolling. If the time limits set forth herein have been exceeded, the base shall be left undisturbed and shall be tested (after 7 days of curing) by the Engineer to determine its suitability. If it is found unsuitable, it shall be removed and replaced by the Contractor without additional compensation. The Contractor may, at his option, remove and replace the deficient base rather than wait the results of the 7-day test.

5. CONSTRUCTION JOINTS

5.1 At the end of each day's construction, a straight transverse construction joint shall be formed by cutting back into the completed work to form a true vertical face. The Construction joint thus formed shall be located so as to exclude all of that part of the base at the end of the run from being considered a part of the finished base if it does not have full depth, is not thoroughly compacted, is not properly proportioned or is not properly mixed.

6. CURING

6.1 After the soil-cement base has been finished as specified herein, it shall be protected against drying for 7-days, as specified herein. The finished soil-cement base shall be maintained in a moist condition by application of water until the curing material is applied. The curing material shall not be applied until the finished soil-cement base has been inspected by the Engineer and such inspection has determined that the base material is hardening in a uniform and satisfactory manner. The bituminous material and construction shall be in accordance with the specification for Prime and Tack Coat for Base Courses. The actual rate of application shall be sufficient to provide complete coverage without excessive run-off. At the time the bituminous material is applied, the soil-cement surface shall be dense, free of all loose and extraneous material, and shall contain sufficient moisture to permit penetration of the bituminous material. Water shall be applied in sufficient quantity to fill the surface voids of the soil-cement immediately before the bituminous curing material is applied.

7. OPENING TO TRAFFIC

7.1 After 7-day curing period, the completed portion may be open to all traffic, provided the soil-cement is either protected or has hardened sufficiently to prevent marring or distorting of the surface by the equipment or traffic, and provided the curing as specified is not impaired.

A. The curing material shall be adequately maintained during the 7-day protection period so that all of the soil-cement will be covered effectively during this period.

B. Finished portions of soil-cement that are used by equipment during the construction of an adjoining section shall be protected in such a manner as to prevent the equipment from marring or damaging the completed work.

C. When the air temperature may be expected to reach the freezing point, sufficient protection from freezing shall be given the soil-cement for 7 days after its construction and until it has hardened. Other curing materials such as moist earth, straw, or hay may be used upon approval.

8. MAINTENANCE

8.1 The Contractor shall maintain the base to a true and satisfactory surface until the wearing surface is constructed. Should any repairs or patching be necessary, they shall extend to the full depth of the base and shall be made in a manner that will assure restoration of a uniform base course conforming to the requirements of these specifications. In no case shall repairs be made by adding a thin layer of soil-cement to the completed work. The Contractor may, at his option, make full-depth repairs with concrete to small or minor areas such as manholes, inlets, or the like.

9. TESTING

9.1 Tests are a necessary part of soil-cement base construction. The following tests will be made by the Laboratory.

9. TESTING, CONTD.

A. Determination of Cement Applied

B. Field Density

(1) Tests shall be taken per each 500 SY maximum area.

C. Moisture-Density Test

D. Bag Samples

(1) Bag samples shall be taken at least once daily at intervals not to exceed 5,000 SY and molded in the laboratory at field moisture content based on standard proctor density test (AASHTO T-99). Each specimen shall be 4 inches in diameter and 6 inches in height. The specimens shall be cured for 7 days and tested for compressive strength. The bag samples shall have a minimum strength of 300 PSI.

E. 6" Diameter Cores

(1) Field cores of 6" diameter shall be taken after 7 days curing time, for each day's placement of base material, at intervals of one every 500 SY or at intervals closer, if necessary to isolate areas showing below minimum requirements. The cores shall be used to determine thickness of base and compression tested to determine strength of base material. The cores shall have an average compressive strength of 300 PSI. The minimum compressive strength core break shall be 250 PSI. Cores with less than 250 PSI shall require the Contractor to isolate the area of base with additional cores and compressive tests for determining limits of the unacceptable base. Remove that portion determined unacceptable and replace with new material, re-testing after 7 days as outlined above.

F. Test Results

(1) After receipt of the test reports from the laboratory stating that there is a satisfactory soil-cement base, the Engineer may allow the wearing surface to be placed.

9.2 All tests shall be performed by a testing laboratory, approved by the Engineer. The testing laboratory shall be under the direction of a Professional Engineer with at least five (5) years of materials testing experience. All tests shall be performed at the Contractor's expense.

10. THICKNESS

10.1 After the base is completed, test cores shall be taken at intervals of one every 500 SY, or at closer intervals if necessary. Where the base is more than 1/2 inch deficient in thickness, the area covered by this deficient base shall be replaced. The 1/2" deficiency in thickness will be accepted only if found in minor isolated areas. Additional cores will be required to determine size of deficient area.

11. GRADE STAKES

11.1 The Contractor shall make every effort to preserve the grade stakes until the job is completed. Destroyed or moved stakes shall be replaced at the Contractor's expense.

12. METHOD OF MEASUREMENT

12.1 The quantity to be paid for under this section shall be the number of square yards of soil-cement base course actually completed and accepted.

In determining the quantity of soil-cement base course, the length to be used in the calculation shall be the actual length measured along the surface of the base and the width shall be the width of the base actually constructed,both within the neat lines shown on the plans.

13. BASIS OF PAYMENT

13.1 This work shall be paid for at the contract unit price per square yard of completed and accepted soil-cement base course. The contract unit price shall be full payment for furnishing all materials, equipment, tools, labor, testing and incidentals necessary to complete the work and for carrying out the maintenance provisions in this specification.

13.2 Any additional earth required for the base course in accordance with Paragraph 4.1.A, herein, will be paid for at the contract unit price per cubic yard for excavation.

13.3 No allowance shall be made for any materials used or work done outside the lines established by the Engineer.

TECHNICAL SPECIFICATIONS

DIVISION 3

SHELL BASE

1. DESCRIPTION

1.1 The work specified in this section consists of the construction of a base course composed of shell. It shall be constructed on the prepared subgrade, in accordance with these specifications and in conformity with the lines, grades notes and typical cross-sections shown in the plans. When the base is to be constructed to a compacted thickness greater than 6-1/2 inches, it shall be constructed in two courses.

2. MATERIALS

2.1 All shell shall be washed and shall be free from trash, foreign matter, other deleterious material, salt, alkali, vegetable matter and adherent coatings. The weight of extraneous substances shall not exceed 1.00 percent.

2.2 It shall not contain lumps or aggregate of such nature or in sufficient quantity to prevent the obtaining of a relatively smooth surface, free from pits and pockets.

2.3 Shell used shall be mollusk shell (i.e., oyster, mussel, clam, etc.). Steamed shell will not be permitted.

2.4 At least 20 percent (by weight) of the total material shall be retained on a No. 4 sieve. Not more than 20 percent (by weight) of the total material shall pass the No. 200 mesh sieve when determined by elutriations (washing).

2.5 The material shall have an average limerock bearing ration (LBR) of not less than 100.

3. EQUIPMENT

3.1 Mechanical spreaders capable of producing an even distribution of the shell will be required. Spreading by other means will not be permitted except that, on small isolated sections, ramps, etc., when such is justified in the Engineer's opinion, the spreading of the base material may be done by bulldozers or blade graders.

4. WATER REQUIREMENTS

4.1 Adequate provisions shall be made by the Contractor for furnishing water at the site, in sufficient quantity that no delay will be incurred by a scarcity of such.

5. TRANSPORTING SHELL

5.1 The shell shall be transported to the point where it is to be used, over shell previously placed (except where impractical to do so) and dumped on the end of the preceding spread. Hauling over the subgrade or dumping on the subgrade will be permitted only when, in the Engineer's opinion, these operations will not be detrimental to the base.

6. SPREADING SHELL

6.1 Method of Spreading

The shell shall be spread uniformly, with equipment as specified in 3.1 above. During the dumping and spreading operations the shell shall be thoroughly saturated with water, as required by the Engineer. All segregated areas of fine or coarse shell shall be removed and replaced with well graded shell as directed by the Engineer.

6.2 Double-Course Construction

For double-course base the shell shall be spread in two courses, with the thickness of the first course approximately one-half the total thickness of the base, or of a thickness sufficient to bear the weight of the construction equipment without disturbing the subgrade. At no time shall more than one day's work of the first course be spread ahead of the spreading of the second course, unless specifically authorized by the Engineer.

7. COMPACTING AND FINISHING BASE

7.1 General

A. Single-Course Base: For single-course, after the spreading is completed, the entire surface shall be scarified and then shaped so as to produce the required grade and cross section after compaction.

B. Double-Course Base: For double-course base, the first course shall be cleaned of foreign material and bladed and brought to a surface cross section approximately parallel to that of the finished base. Prior to the spreading of any material for the lower course, tests shall be made and the Engineer shall have determined that the required compaction has been obtained. After the spreading of the material for the second course is completed, its surface shall be finished and shaped so as to produce the required grade and cross section after compaction, and free of scabs and laminations.

7.2 Moisture Content

When the material does not have the proper moisture content to insure the required density, wetting or drying will be required. When water is added it shall be uniformly mixed in by disking to the full depth of the course which is being compacted. Wetting or drying operations shall involve manipulation, as a unit, of the entire width and depth of the course which is being compacted.

7. COMPACTING AND FINISHING BASE, CONT'D.

7.3 Density Requirements

As soon as proper conditions of moisture are attained the material shall be compacted to a density of not less than 98 percent of maximum density as determined by AASHTO T-180, except that the method of making density determinations shall be modified in that the density determinations, both laboratory and field, shall be made on the base material, sampled after the initial compacting, with no elimination of any screened material. The minimum density which will be acceptable at any location outside the traveled roadway (such as intersections, crossovers, turnouts, etc.) shall be 95 percent of such maximum.

7.4 Density Tests

7.4.1 All density tests shall be made by an independent testing laboratory at the expense of the Contractor. The Contractor shall include the cost of the testing in his unit price bid for the various items contained in the specifications. All density tests shall be taken at the weakest spot or area requiring tests and have a minimum of one each 500 SY of roadway. (Test shall include measurement and recording of base material thickness).

7.4.2 Tests performed that indicate results below requirements shall be redone at the Contractor's expense. No additional compensation will be made by the Owner.

7.4.3 It will be the Contractor's responsibility to coordinate construction and testing with an independent testing laboratory and to furnish the Owner and Engineer with written results of all testing. The cost of testing is to be borne by the Contractor. It will be the Contractor's responsibility upon completion of controlled filling, including street filling, subbase and base, to furnish the Owner and Engineer a certification that all fill and natural ground below controlled fills have been compacted to the specified density from their dependent testing laboratory.

7.5 Finishing

Initial compaction shall be to the extent directed by the Engineer. Upon completion of the initial compaction the entire surface shall be scarified and then shaped to exact crown and cross section. The base shall be rewatered before final compaction. Final compaction shall be done with any type compacting equipment, in conjunction with traffic rollers, which will obtain the required density. Compaction shall continue until the required density has been obtained, and until free water disappears and a stipple-type laitance begins to appear on the surface.

7.6 Rate of Finishing

The finishing described above shall be done at approximately the same rate as the laying and generally shall follow not more than four days behind the laying, unless otherwise directed.

7. COMPACTING AND FINISHING BASE, CONT'D.

7.7 Correction of Defects

If at any time the subgrade material should become mixed with the base course material the Contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean shell, which shall be watered and rolled until the required density is obtained.

8. SURFACE REQUIREMENTS

8.1 The finished surface of the base course shall be checked with a templet cut to required crown and cross section, and with a 15-foot straight edge laid parallel to the center line of the road. All irregularities greater than 1/4 inch shall be corrected by scarifying and removing and adding shell as required after which the entire area shall be watered, rolled and brought to a satisfactory state of compaction.

9. PRIMING AND MAINTAINING

9.1 Priming

The prime coat, when shown on the plans, shall be applied only when the base meets the specified density requirements and the moisture content in the top half of the base does not exceed 90 percent of the optimum moisture for the base material. At the time of priming, the base shall be firm and unyielding.

9.2 Additional Testing

If considered necessary by the Engineer, the base shall again be tested for section and grade immediately before the prime coat is applied.

9.3 Maintaining

The Contractor will be responsible for assuring that the true crown and templet are maintained, with no rutting or other distortion, and that the base meets all the requirements at the time the surface course is applied.

10. THICKNESS DETERMINATIONS

10.1 General

Thickness of the base shall be measured at various points on the cross section, through holes not less than three inches in diameter, with each hole representing a section not exceeding 200 feet in length.

10. THICKNESS DETERMINATIONS, CONT'D.

10.2 Correction of Deficient Areas

Wherever the compacted base is deficient from the thickness called for in the plans, the Contractor shall correct such areas by scarifying and adding shell. The base shall be scarified and shell added for a distance of 100 feet from each edge of the deficient area. The affected area shall then be watered, rolled and brought to the specified density and to the required thickness and cross section.

10.3 Deficient Areas Left in Place

As an exception to the requirement for correcting areas of base which show a thickness deficiency, if so approved in writing by the Engineer, any of such areas in which the extent of the excess deficiency might be considered as not sufficient to seriously impair the required strength of the base, may be left in place. No payment, however, will be made for areas left in place and not corrected.

11. BASIS OF PAYMENT

11.1 The quantity of shell base, determined as provided above, shall be paid for at the contract unit price per square yard for Shell Base, completed and accepted, which price and payment shall be full compensation for furnishing, hauling and placing all materials, except the prime coat, and for correcting all defective surface and deficient thickness when shown on the plans.

11.2 Payment shall be made per square yard.

TECHNICAL SPECIFICATIONS

DIVISION 4

CONCRETE CURB, CONCRETE CURB AND GUTTER AND CONCRETE VALLEY GUTTER

1. DESCRIPTION

1.1 The work specified in this section consists of the construction of Portland Cement Concrete Curb as called for and shown in detail in the construction drawings or specified in the schedule of items contained in the contract documents. The various types of curbs shall be constructed in accordance with those details in conformity with the lines, grades, dimensions, notes shown on the plans and these specifications.

A. A curb machine will be used throughout the limits of the work except those particular areas deemed inaccessable and must be hand formed and poured such as, but not limited to, radii shorter than 25 feet, junctions of curb with a curb, flares, transitions, etc. The "slip-form" mold shall contain the proper dimensions and cross-section of the curb specified and will produce a consistent and uniform curb and an acceptable finished product.

B. Utility Stamps For Concrete Curbs

(1) The project requires that during the construction of various concrete curbing and/or concrete pavement,that it be stamped to identify all water valves, blowoffs, water meter boxes, sanitary and storm maholes, sanitary cleanouts and termination of sanitary sewer services as described and instructed in the construction plans. The construction of curbing will not be allowed to commence if the Contractor is not prepared to properly perform this operation. This must be cleared to commence curb or pavement construction by the Engineer, who must be assured that the Contractor is in fact ready and the branding device is meeting the requirements.

2. MATERIALS

2.1 Unless otherwise specified on the plans, all work under this section shall have a concrete mix designed to obtain a minimium strength of 3,000 pounds per square inch @ 28 days. Concrete will be rejected and replacement of curb will be mandatory if the test cylinders do not produce the required results as specified.

2.2 Where the plan calls for steel reinforcement (i.e. inlet throats) the work shall consist of the furnishing and placement in the concrete masonry, the type size, quantity, and lengths or limits designated.

A. Steel bars shall be deformed billet steel conforming to the requirements of ASTM-A-615. Twisted bars will not be acceptable.

B. Welded steel wire fabric shall meet the requirements of AASHTO M-55 (ASTM-A-185). Welded deformed welded fabric shall meet the requiremets of AASHTO M-221 (ASTM-A-497).

2.3 Reinforcing bars shall be fabricated as prescribed on the plans and bending shall be cold bent to the shapes indicated in the plans, unless otherwise noted on the plans or directed by the Engineer.

A. Bar spacing shall be as prescribed on the plans and be within one inch of the plan position.

B. Wire used for tying reinforcing steel shall be soft pliable wire of 16 gauge mimimium diameter which can be readily bent and twisted without breaking and yet provide a tie of sufficient strength to hold the position of the reinforcing bars.

C. Dowel bars shall be placed in ends or junctions of curb where one "set" pour would continue on by machine or hand form pour. This shall also be the condition for end of day pour for which a later pour would continue beyond a four- hour period. Dowel rods shall consist of two No.5 bars of at least 24 inches in length having 12 inches of the bar embedded in the completed curb ends, spaced at approximately 1/3 of the cross-sectional end of the curb width (approximately 8 inches center to center) and centered vertically to the curb height.

2. MATERIALS, CONTD.

D. Reinforcing steel shall be clean and free of foreign material to insure a bond of the cement to the steel.

E. Dowel rods as described in item C above, shall be installed in both ends of the curb for any section of curb rejected and removed. These bars shall be drilled into the salvaged ends of the curb remaining in place and secured by mortaring into place or tamping sufficiently, the new concrete pour for the replacement to insure a bond and filling of the void caused by the drilling.

3. HAND FORMED POUR

3.1 Form materials shall be made of either wood or metal. They shall be straight, free of warp or bends and of sufficient strength, when staked, to resist the pressures of the concrete without deviation from line and grade. Forms constructed on a radius shall be flexible forms of such a strength to provide a smooth continuous arc when the concrete is installed.

3.2 Forms hand set shall have a dimension equal to the detailed section for the type called for on the plans.

4. EXCAVATION AND FOUNDATION

4.1 Excavation shall be to the required depth or grades shown on the plans and the foundation material, upon which the curb shall be placed, will conform to the lime rock bearing ratio requirements as shown in the typical section contained in the plans (LBR 40 min.) and having the minimium density (98% modified) as shown on the typical section and as required by TS-1 contained in the contract documents. No curb shall be placed if the above tests have not been performed by an independent testing laboratory and approved by the Engineer.

5. JOINTS

5.1 Machine placed concrete, using a slip form mold, shall have contraction joints sawed into the concrete within a 6 to 8 hour time maximium after placement of the material or as soon as the material has hardened sufficiently to prevent spaulding, raveling or tearing the surface. Concrete placed and not having contraction joints cut as indicated and eventually indicates contraction cracking, shall be removed and replaced at the Contractor's expense.

5.2 Hand poured concrete shall be formed by the use of dummy joints (either formed or sawed) or by the use of sheet metal templates cut to the cross-section of the type of curb indicated. The templates shall be held firmly during the placing of concrete and shall be left in place until the concrete has set sufficiently to hold its shape, but must be removed prior to removing the forms.

A. The Engineer may require the Contractor's use of templates if he finds the cross-section does not comply or the Contractor cannot comply with the cross-section dimensions.

5.3 Joints shall be set to not exceed 10 feet maximium length nor 5 feet minimium length between joints. Joints shall be measured and precluded so as not to end a curb section with less than a 10 foot section nor shall joints at junction points or curb throats be less than 8 feet. Joints will be required at curb type changes or concrete mass differences (i.e. valley curb to type "A" curb).

A. Expansion joints shall be located at inlet throats (hand poured) and at end of run. The Engineer may require at his discretion an expansion joint at 500 foot intervals on long continuous curb runs that are not interrupted by an inlet. Expansion joints shall be preformed bituminous material cut to the cross-section of the curb and shall be 1/2 inch thick.

6. FINISHING

6.1 Hand formed pours shall have the forms removed within 24 hours after concrete has been placed and minor defects repaired by filling voids with one part portland cement and two parts fine aggregate.

6. FINISHING, CONTD.

6.2 Plastering will not be permitted on the finished surface face of the curb and any rejected curb shall be removed and replaced without additional compensation on either hand placed or machine placed material.

6.3 The final surface finish shall be a brushed finish and must be performed while the concrete is green or plastic and be consistent in texture. Surfaces which are considered too rough may be required by the Engineer to be rubbed to a smooth finish surface with a soft brick or wood block with water used liberally to provide a suitable surface.

7. CURING

7.1 Depending on conditions, the Engineer may require continuous curing period of at least 72 hours. If so ordered the Contractor shall commence curing immediately after final finishing has been completed and as soon as the concrete has hardened sufficiently to permit application of the curing material without marring the surface. The accepted methods are wet burlap, membrane curing compound or polyethylene sheeting method. No additional compensation will be made for this work.

8. SURFACE TESTING

8.1 The Contractor will provide suitable equipment to test the gutter section of the curb by supplying sufficient water to flow along the length of the curb from peaks to low points to test for "ponding". Grades have been designed to provide for draining of the curb and therefore, no ponding will be permitted.

A. If ponding is found and the depth of standing water is 1/4 inch or less the Contractor may attempt grinding the gutter section in a smooth surface plane. No troughing or rutting is permitted.

B. If grinding will not relieve the ponding condition but only tranfers the pond to the next section those sections of curb will be removed and replaced at the Contractor's expense, for the length required to eliminate the condition as determined by the Engineer.

8. SURFACE TESTING, CONTD.

C. Those curb areas ponding in excess of 1/4 inch in depth shall be removed and replaced for the length required to eliminate the problem condition as determined by the Engineer. No additional compensation will be made for the removal and replacement of the rejected curb sections.

9. CLEANUP AND BACKFILL

9.1 Backfill shall be performed behind the curb within three days after the placement of the concrete and shall be carefully performed using only select material compacted in 9 inch layers to within 2 inches of the top of the curb in accordance with the requirments of TS-1 contained in the contract documents. Base materials shall not be placed against the curb in less than three days nor before filling behind the curb has been performed.

9.2 The Contractor shall remove and dispose of all form materials, debris, unsuitable earth, rejected curb that has been removed and in general leave the work site in a clean and acceptable workmanlike manner acceptable to the Owner and Engineer.

10. MEASUREMENTS

10.1 The length of the curb will be determined by measuring along the gutterline for each type of curb required except for valley crossings, inlet throats and inlet flares which is covered for payment under separate items.

11. PAYMENT

11.1 Payment will be made for the placed curb on a per linear foot basis as field measured and accepted by the Engineer.

TECHNICAL SPECIFICATIONS

DIVISION 5

DRAINAGE PIPE AND STRUCTURES

1. SCOPE OF WORK

1.1 The work shall include furnishing all material, equipment and labor for installing drainage pipe and inlets, as shown on the plans.

2. MATERIALS

2.1 Reinforced concrete pipe shall conform to ASTM Specification C-76, latest revision, Class III, Wall "B", for use with rubber "O" ring gaskets.

2.2 Joints and rubber gaskets for reinforced concrete pipe shall conform to ASTM Specification C-443, latest revision.

2.3 Inlets, catch basins, and manholes shall be of the materials shown on the plans.

a. Foundations shall be of 3,000 PSI concrete. Walls shall be of the materials specified on the plans and bonded to the foundation slabs.

b. Brick shall conform to ASTM Specification C-32, Grade MA. Mortar for brickwork shall be composed of one part portland cement and two parts clean sand with approximately 20 percent hydrated lime.

c. Brick shall be clean and thoroughly wetted before laying. All joints shall be completely filled and struck smooth. The outside of brick and precast concrete block structures shall be plastered and troweled smooth with 5/8 inch of mortar composed of one part portland cement and two parts clean sand.

d. Precast concrete block shall conform to ASTM Specification C-129. Mortar for laying shall consist of one part portland cement and two parts clean sand. All joints shall have a smooth and uniform appearance.

e. Frames, covers, and gradings shall be of the type and duty shown on the plans. Iron castings shall conform to ASTM A-48, Class 20. All castings shall be true to pattern in form and dimension, free from faults or other defects. Bearing surfaces between cast frames, cover, and grates shall be machined fitted together and match-marked to prevent rocking.

f. No steps shall be installed.

3. INSTALLATION

3.1 The excavation and backfilling for pipe and structures shall be in accordance with that portion of Division 1 of these specifications.

a. Pipe shall be laid true to line and grade as shown on the plans. Pipe shall be laid upstream.

b. Bedding surface for pipe shall be even, firm, and carefully shaped to the bottom of the pipe.

3.2 Inlets and manholes shall be in accordance with the drawings. Inverts shall be carefully shaped to effect a smooth channel. All reinforcing bars for concrete shall be carefully placed and properly secured prior to pouring concrete. All concrete shall be thoroughly spaded or vibrated to insure a smooth exterior surface.

3.3 Bearing surface under manholes, inlets, headwalls, etc. shall be compacted to 95 percent maximum standard density as determined by AASHTO Specification T-180, latest revision to a minimum depth of one (1) foot.

4. BASIS AND METHOD OF PAYMENT

4.1 The quantities of pipe to be paid for under this section shall be the net length of pipe measured in place, complete and accepted, and paid for at the unit price for each type and size.

4.2 The quantities of structures to be paid for under this section shall be the number of structures completed and accepted, and paid for at the unit price for each type of structure.

4.3 All payments shall constitute full compensation for all materials, labor, and equipment necessary to complete the work, including excavation and backfill.

TECHNICAL SPECIFICATIONS

DIVISION 6

CONCRETE CONSTRUCTION

1. SCOPE

1.1 This section includes the furnishing of all materials, labor, tools, forms, equipment and other items required for concrete construction.

2. CRITERIA

2.1 The following are minimum requirements for concrete to be used on this project: (see the construction plans for specific design data)

A. Pipe Encasement, Overcut Fill & Fill Concrete
2,500 psi at 28 days

B. All Other Structural Uses 3,000 psi at 28 days

C. Water/cement ratio, including free surface moisture on aggregate and liquid admixture:

	Non-Air-Entrained		Air-Entrained	
	Gal./Bag	Ratio	Gal./Bag	Ratio
2,500 psi	7.25	0.642	6.25	0.554
3,000 psi	6.5	0.576	5.25	0.465
4,000 psi	5.0	0.443	4.0	0.354

D. Slump (for vibrated concrete):

	Inches	
	Max.	Min.
Footings and foundation slabs	3	1
All other structural uses	4	1

2.2 The portland cement shall be of some well-established brand, conforming to ASTM Standard C-150, latest revision, Type II. Air-entrained concrete may be used where approved by the ENGINEER.

2.3 High-early strength, Type III, may be used where approved by the ENGINEER. The 7-day compression strength of the resultant concrete shall be at least equal to the specified minimum 28-day compressive strength.

3. READY-MIXED CONCRETE

3.1 At the CONTRACTOR'S election, and subject to the ENGINEER'S

3. READY-MIXED CONCRETE, CONTD.

approval, ready-mixed concrete may be used, in which case the following requirements shall apply:

A. Proposed plant and its equipment must be acceptable to the ENGINEER.

B. Ready-mixed concrete shall conform to ASTM Specification C-94, latest revision, except as modified herein.

C. A standard design mix of the specified strength regularly furnished by the ready-mix plant will be acceptable, provided that the proposed mix has been tested previously by an acceptable testing laboratory, and the laboratory test reports shall be submitted to the ENGINEER for approval. Otherwise, all requirements as specified herein shall apply to the ready-mixed concrete.

4. SITE-MIXED CONCRETE

4.1 If the CONTRACTOR elects to use site-mixed concrete, he shall submit to the ENGINEER for approval a concrete design and cylinder test results prepared by a testing laboratory acceptable to the ENGINEER.

5. FIELD TESTING

5.1 Concrete test cylinders shall be cast, transported, laboratory cured and tested by a qualified testing laboratory. Not less than four (4) cylinders shall be made from each separate pouring of 50 cubic yards or major fraction thereof. In no case shall there be less than one (1) test for each day's concreting.

5.2 From each test, one (1) cylinder shall be tested by the laboratory at seven (7) days, and two (2) at twenty-eight (28) days, or as directed by the ENGINEER. One (1) cylinder shall be kept as a reserve.

5.3 To conform to the requirements of these specifications, the average strength of the laboratory-cured specimens representing each class of concrete as well as the average of any five (5) consecutive strength tests representing each class of concrete shall be equal to or greater than the specified strength, and not more than one (1) strength test in ten (10) shall have an average value less than 90 percent of the specified strength.

5.4 The sampling, curing and testing of the cylinders shall be in accordance with ASTM Standard C-31, latest revision, "Method of Making and Curing Concrete Compressive and Flexural Test Specimens in the Field", and ASTM Standard C-39, latest revision, "Method of Test for Compressive Strengths of Molded Concrete Cylinders".

5. FIELD TESTING, CONTD.

5.5 Test reports shall be promptly furnished by the laboratory to the CONTRACTOR and the ENGINEER. Expense of all testing shall be borne by the CONTRACTOR.

6. FORMS

6.1 Forms shall be of wood, steel or other approved material.

6.2 Wood forms may be unlined for unexposed surfaces. For exposed concrete surfaces, wood forms shall be:

A. Dressed and matched lumber, not exceeding 12 inches wide.

B. Commercial standard Douglas fir concrete form plywood, at least 5 ply, 9/16" thick, or

C. No. 2 common or better lumber lined with one of the following, or approved equal:

(1) Commercial standard Douglas fir plywood concrete form exterior, 3 ply, 1/4" minimum thickness.

(2) Treated hard-press fiberboard, 3/16" minimum thickness, smooth one side, low absorbtivity.

(3) Material having absorption co-efficient to eliminate voids and pitting and produce a dense and uniform surface, not liable to discolor or interfer with normal chemical reaction of the cement, and readily removable after curing.

6.3 Metal forms that will produce surfaces equal to those specified for forms of wood may be used.

6.4 Forms shall be built true to line and grade, and shall be mortar-tight and sufficiently rigid to prevent displacement or sagging between supports. Responsibility for their adequacy shall rest with the CONTRACTOR. Their surfaces shall be smooth and free from irregularities, dents, sags or holes when used for permanently exposed faces.

6.5 Bolts and rods used for internal ties shall be so arranged that when the forms are removed, all metal will not be less than two inches from any concrete surface. Wire ties will not be permitted where the concrete surface will be exposed to weathering and discoloration will be objectionable.

6.6 All forms shall be so constructed that they can be removed without hammering or prying against the concrete.

6.7 Unless otherwise indicated, suitable moldings shall be

6. FORMS, CONTD.

placed to bevel or round exposed edges, expansion joints and/or any other points that may be required.

6.8 Forms for exposed surfaces shall be coated with a non-staining mineral oil which shall be applied shortly before the reinforcement is placed. Forms for unexposed surfaces will be oiled before reinforcement is placed with any suitable form oil sufficient to facilitate their prompt and speedy removal.

6.9 All form materials furnished for this project shall be new, except that metal forms previously used elsewhere will be permitted provided that they are free of objectionable dents, distortions or other defects. On this project, after initial use, form materials may be reused, subject to the ENGINEER'S approval.

7. REINFORCING BARS AND ACCESSORIES

7.1 Reinforcing bars shall be deformed bars conforming to ASTM Standard A-615, latest revision, "Specifications for Deformed Billet Steel Bars for Concrete Reinforcement", ASTM Standard A-616, latest revision, "Specifications for Rail-Steel Deformed Bars for Concrete Reinforcement", or ASTM Standard A-617, latest revision, "Specifications for Axle-Steel Deformed Bars for Concrete Reinforcement". Stirrups and column bars shall be either intermediate or hard grade billet-steel or rail-steel.

7.2 Before being placed, reinforcement shall be thoroughly cleaned of rust, mill scale, ice or other coating that will reduce or destroy the bond.

7.3 Reinforcement, fabricated to shapes and dimensions shown, shall be placed as shown on the drawings and as required to carry out the intent of the drawings and specifications.

7.4 Outside bars of slab reinforcement, both main and temperature, parallel to beams, girders or walls shall be placed not over one-half bar spacing from the adjacent face of each member.

7.5 All reinforcement shall be secured in place true to lines and grades indicated by the use of high density, polyethylene supports or spacers and metal ties. Such supports shall be sufficient in strength to maintain the reinforcement in place throughout the concreting operation, and shall be used in such a manner that no metal will be exposed on the face nor in any way discolor, nor be noticeable in the surface of the finished concrete. Bar reinforcement shall be tied at all intersections.

7.6 Accessories for supporting, spacing and tying concrete reinforcement shall be standard as recommended by the American Concrete Institute. Accessories installed where the underside of the slab will be exposed or painted shall have galvanized feet.

7. REINFORCING BARS AND ACCESSORIES, CONTD.

7.7 Reinforcement reduced in section shall not be used. Following any substantial delay in the work, previously placed reinforcement left for future bonding shall be inspected and cleaned.

7.8 Reinforcement shall not be bent or straightened in a manner injurious to the metal. Bars with kinks or bends not shown on the drawings shall not be placed. The heating of reinforcement for bending or straightening will be permitted only if the entire operation is approved by the ENGINEER.

7.9 Water stops (may also be referred to as "water seals") shall be installed in all construction joints in each basin proposed to contain water or designed to prevent intrusion of ground or other water, as indicated on the drawings or as required. All water stops shall be so installed to provide a continuous seal of all joints between the various concrete pours required to construct each tank or basin, from the floor up to a level of at least 2 inches above the overflow level. All corners and junctions in water stops shall be carefully fitted to form 90 degree turns, tees, crosses or other arrangements as required to provide a complete water seal at all locations.

7.10 Water stops to be used in joints shall be similar and equal to "Durajoint" PVC water stop, as manufactured by Grace Construction Materials, Cambridge, Massachusetts, 02140. The PVC must be virgin PVC with no reclaimed material and shall conform to Corps of Engineers Specification CRD-C572-65. Water seals shall be continuous through the joint.

7.11 The above requirement applies not only to joints indicated on the drawings, but also to all additional construction joints which may be installed for the CONTRACTOR'S convenience or for any other reason.

7.12 Make all joints and splices in plastic water stops with the heat sealing process of welding. Install all plastic water stops in accordance with the manufacturer's installation instructions.

8. CONCRETE PLACEMENT

8.1 Prior to placing any concrete, the CONTRACTOR shall give the ENGINEER sufficient advance notice of same. No concrete shall be placed on any subgrade or in any formwork until the subgrade, formwork, reinforcing steel, anchor bolts and other imbedded items have been inspected and approved by the ENGINEER.

8.2 The CONTRACTOR shall so plan his concrete work in such a manner that once started it can be carried on as a continuous operation until a section, panel or unit is completed. Construction joints other than the ones shown on the drawings must be approved by the ENGINEER prior to pouring concrete.

8.3 Concrete shall be placed in daylight except where required

for continuous pours of such quantity to necessitate night placing. In such cases, the CONTRACTOR shall provide adequate lighting so as to carry on his operation to the satisfaction of the ENGINEER.

8.4 Unless otherwise approved by the ENGINEER, concrete shall be placed only when the temperature is at least 40 degrees F., and if the temperature is less than 45 degrees F. it shall be rising. For placing at lower temperatures, when permission to pour is obtained, materials shall be heated and otherwise prepared so that batching and mixing can proceed as specified and all concrete when placed shall have a temperature between 60 degrees F. and 90 degrees F. Means shall be provided for maintaining the concrete at a temperature of at least 50 degrees F. for 72 hours after placing. Methods proposed for heating materials and protecting concrete shall be approved by the ENGINEER. Salt, chemicals or other materials shall not be mixed with concrete to prevent freezing. Accelerating agents shall not be used except when necessary to pour concrete in existing or probably ambient temperature of 25 to 40 degrees F., then calcium chloride comforming to ASTM Standard D-98, latest revision, "Specifications for Calcium Chloride", or other substance approved by the ENGINEER may be introduced into the concrete as an accelerating agent, in a proportion not exceeding 2 pounds per bag of cement.

8.5 Footing concrete shall be cast in forms or cuts of the sizes and elevations indicated. If dry, all earth or rock surfaces that contact concrete shall be sprayed to avoid absorption of moisture from the concrete. No footing concrete shall be poured until soil and compaction are approved by the ENGINEER.

8.6 All slabs shall rest on an evenly graded bed of compacted earth or solid rock. Subgrade shall be covered with one layer of "Sisalcraft Paper", "Visqueen" plastic, or other approved material, lapped to prevent loss of fines and water through the subgrade.

8.7 Footing and slab subgrade materials encountered that are judged unsuitable by the ENGINEER shall be removed and replaced with suitable granular material.

8.8 All footing and slab bearing soil surfaces shall be compacted to a density of at least 95 percent of standard maximum density as determined in accordance with AASHO Specification T-180, latest revision, a test being made in each lift of compacted fill and/or one foot into the original soil.

8.9 Before depositing new concrete on or against concrete that has set, existing surface shall be thoroughly roughened and cleaned of laitance, foreign matter and loose particles. Forms shall be re-tightened and existing surfaces slushed with a grout coat of neat cement. New concrete shall be placed before the grout has attained initial set. Horizontal construction joints shall be given a brush coat of grout consisting of cement and fine aggregate in same proportion as concrete of regular mix except that the proportion of coarse aggregate shall be reduced 50 percent.

8. CONCRETE PLACEMENT, CONTD.

Grout for setting column bases, well plates and other metal items shall be composed of two parts of sand and one part of portland cement, with water sufficient to produce the required consistency.

8.10 Concrete shall be conveyed to forms as rapidly as practicable without segregation or loss of ingredients. Concrete shall be conveyed to the point of placing continuously and at such a rate that no unfinished area will be left exposed or unworked before the concrete takes its initial set.

8.11 When concrete is conveyed by chute, there shall be a continuous flow of concrete. The chute shall be of metal or metal-lined wood, with sections set at approximately the same slope; namely, not less than 1 vertical to 3 horizontal, not more than 1 vertical to 2 horizontal. The discharge end of the chute shall be provided with a drop chute to prevent segregation. If the height of the discharge end of the chute is more than 3 times the thickness of the layer being deposited, but not more than 5 feet above surface of concrete in forms, a spout shall be used, and the lower end maintained as near the surface of deposit as practicable. When pouring is intermittent, the chute shall discharge into a hopper. The chute shall be thoroughly cleaned before and after each run. Waste material and flushing water shall be discharged outside the forms. Raised runways for wheeling concrete to its place shall be provided when necessary.

8.12 In pouring concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs. On flat surfaces where the congestion of steel near the forms makes placing difficult, a mortar of the same cement-sand ratio as is used in the concrete shall be first deposited to cover the forms.

8.13 All top surfaces not covered by forms and which are to be covered by additional concrete or backfill shall be carried slightly above grade and struck off by board finish, except that top surfaces of walls not covered by forms and which are not to be covered by additional concrete or backfill when poured in excess of 10 feet in height in one pour shall be carried not less than 2 inches above the specified finished elevation and struck off by board finish.

8.14 Concrete shall be placed in layers not over 18 inches deep and each layer shall be compacted by mechanical internal-vibrating equipment supplemented by hand-spading, rodding and tamping, as directed by the ENGINEER. Vibrators shall be in no case used to transport concrete inside forms.

8.15 Use of form vibrators will not be permitted. Internal vibrators shall maintain a speed of not less than 5,000 impulses per minute when submerged in the concrete. At least one spare vibrator shall be maintained as a relief. The duration of vibration shall be limited to time necessary to produce satisfactory consolidation without causing objectionable segregation. The vibrator shall not be inserted into lower courses that have begun to set. When absorptive form lining is used, the vibrator shall

8. CONCRETE PLACEMENT, CONTD.

not be placed between the forms and the outer row of reinforcement, and in no case shall the vibrator be allowed to touch the absorptive form lining. Vibrators shall be applied at uniformly spaced points not farther than the visible effectiveness of the machine.

9. REMOVAL OF FORMS

9.1 Forms shall not be removed before the expiration of the minimum number of days indicated below, except when specifically authorized. When conditions of the work are such as to justify it, forms may be required to remain in place for longer periods.

Beams and Slabs	-	14 Days
Piers, Pilesters and Columns	-	7 Days
Walls and Vertical Faces	-	5 Days

10. FILLING AND PATCHING

10.1 Immediately upon the removal of forms, all tie and bolt holes, honeycombs and voids shall be filled and patched as follows:

A. Remove all loose material.

B. Wet concrete for 8 hours before patching.

C. Mop surface to receive patch with slurry of cement and water.

D. Fill with "dry" grout of sand and cement of the same proportions as in the basic mix, except that only enough water shall be added to provide a mix that will "ball" in the hand. Press grout into cavities with the greatest practicable pressure.

E. Finish surface to match adjacent area.

F. Cure fill as specified in Division 12, "Curing and Protection".

11. CONCRETE FINISHES

11.1 Finishes for Formed Surfaces:

A. Rough Finish - Surfaces to receive a stucco or plaster coating and surfaces against which backfill will be placed may remain essentially as poured. Small fins, offsets, holes to 1/2 inch, and minor honeycomb will be acceptable providing that they will increase the bond between the concrete surface

and the cement coating and will not be structurally unsound or visible after the coating application.

B. Smooth Finish - Surfaces to receive a textured coating, and surfaces shown or specified to have a smooth finish shall, as the forms are removed, have fins, rough edges and offsets ground smooth. Holes to 3/4 inch, slight honeycomb, and minor defects shall be wet and filled with a 1:2 mix of cement mortar, matching color of surrounding concrete, and trowelled to a uniform plane.

C. Rubbed Finish - Exposed surfaces, interior tank surfaces and surfaces to be painted shall be rubbed. As the forms are removed, fins, rough edges, and offsets shall be ground smooth. Holes to 3/4 inch, slight honeycomb, and minor defects shall be wet and filled with a 1:2 mix of cement mortar, matching color of surrounding concrete, and then trowelled to a uniform plane. As soon as they have been trowelled, the patched areas shall be sprayed with a curing compound which will not destroy future bonding properties. Three (3) days after application of curing compound, the entire surface shall be finished by wetting and applying a 1:2 mix of cement mortar with a cement brick. Using the brick, rub mortar into the pits or indentations and rub off excess mortar to provide a uniformly textured surface. When the surface has dried, all loose sand and dust shall be removed and the surface then holed down with water.

11.2 Finishes for Floors and Slabs:

A. General - The dusting of wearing surfaces with dry materials will not be permitted. In preparation for finishing, floor slabs shall be struck off true to the required level at or below the elevation or grade of the finished floors, as shown on the drawings. Floors shall be level with a tolerance of 1/8 inch in 10 feet, except where drains occur, in which case the floors shall be pitched to the drains as indicated on the drawings or as directed by the ENGINEER.

B. Rough Slab Finish - Unexposed slabs under earth shall be finished by tamping and floating to produce a reasonably true and uniform surface.

C. Wood-Float Finish - Steps, wet-well and dry-well slabs, and exterior platforms and ramps shall be finished by tamping with special tools to force aggregate away from the surface, then screeding with straight edges to bring surface to required line as shown on the drawings. While the concrete is still green, but hardened sufficiently to bear the cement finisher's weight, the surface shall be floated with a wood

11. CONCRETE FINISHES, CONTD.

float to a true and uniform plane with no coarse aggregate visible.

D. Monolithic Finish - Exposed interior concrete floor surfaces shall be finished by tamping the concrete with special tools to force the coarse aggregate away from the surface, then screeding and floating with straight edges to bring the surface to the required finish level shown on the drawings. While the concrete is still green but sufficiently hardened to bear a man's weight without deep imprint, it shall be wood floated to a true even plane with no coarse aggregate visible. Sufficient pressure shall be used on the wood floats to bring moisture to the surface. The concrete shall then be hand steel trowelled to produce a smooth impervious surface free from trowel marks. An additional steel trowelling shall be given the surface for the purpose of burnishing. The final trowelling shall produce a ringing sound from the trowel.

12. CURING AND PROTECTION

12.1 Immediately after placing or finishing, concrete surfaces not covered by forms shall be protected from loss of surface moisture for not less than seven (7) days by covering with Kraft paper, mats or burlap, lapped 4 inches at edges and ends. Kraft paper shall be sealed. Burlap may be used only for unexposed concrete surfaces and shall be not less than two (2) layers. Surfaces from which forms are removed before the curing period has elapsed shall be protected as specified for surfaces not covered by forms.

12.2 Forms and covering materials shall be kept sufficiently wet with clean water to reduce cracks and to prevent form joints from opening, and to prevent hair cracks in concrete surfaces. During damp periods, only sufficient water shall be used to keep forms and covering moist.

13. METHOD OF PAYMENT

13.1 Payments for all items included in this section are included in all respects in the Lump Sum bid price for the respective structure.

TECHNICAL SPECIFICATIONS

DIVISION 7

UNSUITABLE MATERIAL

1. UNSUITABLE MATERIAL

1.1 Unsuitable material shall be determined by the Engineer and shall only be that material removed at his direction. Basically, unsuitable material shall only be removed under this item where it may be unstable for the construction of roads or structures and is below cut and fill areas. Unsuitable fill material found in the excavation areas will not be deemed a pay item. This material, although not suitable for fill, may be used for the construction of berms, mounds, etc. where indicated on the plans. Fill shall be placed in the excavated area to lines and grades shown on the plans. Unsuitable material ordered out shall be measured for the actual amount removed.

1.2 Payment shall include labor, machinery, material for removal, transportation, disposing, grading, refilling, etc. and paid by the unit price bid per cubic yard.

TECHNICAL SPECIFICATIONS

DIVISION 8

RESTORATION OF SURFACE IMPROVEMENTS

1. SCOPE

1.1 Roadways, alleys and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavating, shall be restored to conditions equal to or better than conditions existing prior to beginning work. The cost of doing this work shall be included in the cost of the various applicable items. Snapshots will be used as an aid in determining conditions prior to construction.

1.2 Materials for roadways, alleys or driveways shall be compacted to a minimum of 98% of the maximum density as determined by AASHO Method T-180. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made, unless a separate bid item is provided.

2. FINE GRADING

2.1 Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3. DISPOSAL OF MATERIALS

3.1 Such portions of the excavated materials as needed shall be used for backfilling and grading about the completed work to the elevations as shown on the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the Contractor in those areas designated by the Owner and as shown on the drawings. The Contractor shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to the Owner.

4. PAVEMENT REPLACEMENT

4.1 Asphalt pavement shall be removed by cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible. Materials to replace state highway paving shall conform to the specifications required by the Florida Department of Transportation. Other asphalt pavement replacement shall conform to the requirements of the applicable Department of Transportation specifications for Type I asphaltic concrete surface course.

4. PAVEMENT REPLACEMENT, CONT'D.

4.2 Prior to replacing concrete or asphalt pavement, a limerock base shall be laid. The base for concrete pavement shall be 6 inches of compacted thickness, and that for asphalt pavement shall be 8 inches of compacted thickness. The base course for each shall be compacted to a minimum of 98% of the maximum density as determined by AASHO Method T-180. The Contractor shall forward copies of tests by an independent testing laboratory verifying compaction results. One test shall be made for each block of continuous trench cut and shall be made at no cost to the Owner.

4.3 Non-asphalt pavement replacement shall be replaced of like material and thickness. Asphalt or built-up asphalt pavement replacement shall be replaced with like material or concrete as directed by the Engineer. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6 inches in thickness and be reinforced with 6 by 6 No. 6 gauge welded wire fabric. Concrete for paving shall be 3,000 psi design strength. Where the pavement replacement is of like material, it shall be replaced in a manner equal to or better than that existing at the time of removal.

4.4 Unless the base is sealed or other temporary paving applied over areas to be repaved, pavement shall be replaced not later than 3 weeks after completion of backfill.

TECHNICAL SPECIFICATIONS

DIVISION 9

FINE GRADING

1. DESCRIPTION

The work covered by this section consists of excavation of cut areas, the placing of the excavated material and other borrow materials at specified areas, and the leveling and finishing at grades and lines as shown on the plans. No building or other construction shall be undertaken until the work under this section is complete and accepted.

2. EXCAVATION

This shall include the removal of structures, trees, shrubs, etc. over the area indicated on the plans. Care should be taken not to disturb or mutilate any trees or shrubs which the plans indicate should be left in place. This item will include the excavation, shaping, grading and dressing of all slopes, embankments, ditches and other appurtenances, and the transfer, relocation or removal of the excavated material in conformance with and to the location shown on the plans.

Finished grades shall be to within a tolerance of 0.05 foot of the grades and lines as shown on the plans.

Fill material shall be compacted as shown in Paragraph 3, below.

3. BORROW

Whenever it becomes necessary to resort to borrow material for fill, the selection of the material shall be approved by the Engineer. The borrow material shall be placed in layers not exceeding eight (8) inches and each layer shall be thoroughly compacted before adding subsequent layers.

Compaction of material under proposed buildings, whether placed by the Contractor or found in place, shall be such that it shall result in no less than ninety-five (95) percent of maximum density obtainable by the AASHO Test T-99, latest revision. These tests shall be performed by a qualified testing laboratory, who shall be approved by the Engineer.

4. STAKING

The Engineer will furnish stakes indicating the lines and grades of the finished work. The Contractor will be responsible for the preservation of these stakes and the replacement of any moved or destroyed stakes shall be at the expense of the Contractor.

5. UNSUITABLE MATERIAL

Whenever, in the opinion of the Engineer, any excavated material is not suitable for re-use as fill, it shall be removed from the site and disposed of by the Contractor.

6. METHOD OF MEASUREMENT

The quantity shown on the plans for this section is the quantity measured in its original position, or if borrow or fill, in its compacted position, calculated by the average end area method, of all materials acceptably excavated or filled.

7. BASIS OF PAYMENT

The total quantity of excavation and fill as provided above shall be paid for at the contract unit price per cubic yard for this type of excavation and fill. Payment shall be full compensation for accepted work, including all tools, labor, materials and equipment necessary to successful completion of the work.

TECHNICAL SPECIFICATIONS

DIVISION 10

ROUGH GRADING

1. DESCRIPTION

The work covered by this section consists of excavation of cut areas, the placing of the excavated material, and other borrow materials at specified areas, and the leveling and finishing at grades and lines as shown on the plans.

2. EXCAVATION

This shall include the removal of structures, trees, shrubs, etc. over the area indicated on the plans. It shall include the excavation, shaping, sloping, grading and dressing of all slopes, embankments, ditches, and other appurtenances, and the transfer, relocation or removal of the excavated material in conformance with and to the locations shown on the plans.

Finished grades shall be to within a tolerance of 0.2 foot of the grades and lines as shown on the plans.

Fill material shall be compacted as shown in Paragraph 3, below.

3. BORROW

Whenever it becomes necessary to resort to borrow material for fill, the selection of the material shall be approved by the Engineer. The borrow material shall be placed in layers not exceeding eight (8) inches and each layer shall be thoroughly compacted before adding subsequent layers.

The borrow material shall be placed as specified by the Engineer and in conformity with lines and grades as shown on the plans. The finished grades shall be to within a tolerance of 0.2 foot.

4. STAKING

The Engineer will furnish stakes indicating the lines and grades of the finished work. The Contractor will be responsible for the preservation of these stakes and the replacement of any moved or destroyed stakes shall be at the expense of the Contractor.

5. UNSUITABLE MATERIAL

Whenever, in the opinion of the Engineer, any excavated material is not suitable for re-use as fill, it shall be removed from the site and disposed of by the Contractor.

6. METHOD OF MEASUREMENT

The quantity to be paid for under this section shall be the quantity measured in its original position, or if borrow or fill, in its compacted position, calculated by the average end area method, of all materials acceptably excavated or filled.

7. BASIS OF PAYMENT

The total quantity of excavation or fill as provided above shall be paid for at the contract unit price per cubic yard for this type of excavation or fill. The price and payment shall be full compensation for the acceptable completion of the work under this section, and shall include the furnishing of all tools, materials, labor and equipment necessary to successfully complete the work.

TECHNICAL SPECIFICATIONS

DIVISION 11

SODDING

1. SODDING

1.1 The work specified in this section shall consist of furnishing and placing grass sod in conformity with the lines and grades shown on the plans and in conformity with these specifications. The areas to be sodded or grassed and mulched shall be determined by the Owner.

2. MATERIALS

2.1 The sod shall be Argentine Bahia and shall be well matted with grass roots. It shall be sufficiently thick to secure a dense stand of live grass with a minimum thickness of two inches. The sod shall be live, fresh, and uninjured at the time of planting. It shall be shaded and kept moist from the time of digging until planting.

2.2 Fertilizer to be used shall be a standard balanced fertilizer, such as 6-6-6, 8-8-8, 10-10-10, with 25 percent organic.

3. CONSTRUCTION METHODS

3.1 Immediately before the sod is placed, fertilizer shall be applied evenly at the equivalent rate of approximately 20 pounds of 6-6-6 per 1,000 square feet and shall be cut into the soil with suitable equipment.

3.2 The sod shall be taken up in 12 inch by 12 inch squares, except where the plans may call for narrower strips. The sod shall be firmly embedded by light tamping.

3.3 After the sod has been placed, it shall be thoroughly watered. Water shall not be applied between the hours of 8:00 AM and 4:00 PM.

3.4 Sodding includes maintaining sod until growth is established. All erosion, siltation, and maintaining grades is the responsibility of the Contractor until the Engineer determines root system has adequately "survived" and taken "hold".

4. METHOD OF MEASUREMENT

4.1 The quantity to be paid for shall be the area in square yards of sodding, completed and accepted. The quantity shall be determined by the actual measurement of the sod in place within the lines which were authorized.

5. METHOD OF PAYMENT

5.1 The quantity of sodding, as determined above, shall be paid for at the contract unit price per square yard for this item, which price and payment shall be full compensation for all labor and material, transportation and any other items necessary for satisfactorily performing the work described on the plans and in conformity with these specifications.

TECHNICAL SPECIFICATIONS

DIVISION 12

WATER DISTRIBUTION SYSTEM

1. GENERAL

1.1 This specification covers the material and installation requirements for piping, valves, hydrants, fittings, specials, crossings, connections, and sterilization and testing of the water distribution system. Excavation, trenching and backfill for piping installation shall be as specified in Division 1 of the Technical Specifications.

1.2 Three copies of all required test reports shall be submitted to the Engineer. These shall include:

A. Certified record of tests on pipe made by manufacturer or a commercial testing laboratory for each shipment of pipe. Tests shall be in accord with the procedure outlined in ANSI Standard A21.51 and ANSI A21.6 or A21.8.

B. Reports on hydrostatic and leakage tests on butterfly valves in accordance with AWWA C504-70, Section 13.

C. Reports on pressure and leakage tests.

D. Reports of Bacteriological tests.

1.3 Shop drawings shall be submitted for all valves, boxes, hydrants, and harnessing.

2. MATERIALS

2.1 Ductile Iron Pipe 4" through 16" Pipe

2.1.1 Ductile iron pipe for water mains installed underground and shall be manufactured in accord with American National Standard Institute, Standard A21.51-1971. Pipe shall be designed for thickness in accord with ANSI Standard A21.50-1971, subject to the following design criteria: 150 psi water pressure, ANSI laying condition B, trench with d+2 feet, and depth of cover as shown on the profile drawings. The depth of cover for water mains not shown in profile shall be a minimum of 3 feet. Where ductile iron pipe is threaded for flanges, the thickness shall be increased accordingly. In any case, the flanged pipe thickness shall not be less than Class 53. Push-on ductile iron pipe thickness shall be not less than .28" for 6" diameter, .30" for 8", .32" for 10", .34" for 12", and .37" for 16" diameter pipe.

2.1.2 The depth of cover for the pipe listed in the preceding paragraph 2.1.1 is specified as a minimum required depth. The pipe manufacturer shall determine additional wall thickness required where amount of cover exceeds the minimum requirement.

2. MATERIALS, CONT'D.

2.1.3 Pipe shall have cement lining and bituminous seal coat in accordance with ANSI Standard A21.4-1971. Pipe shall also have 1 mil thickness of coal tar enamel inside and outside. Lining shall be standard thickness.

2.1.4 Joints for ductile iron pipe shall be push-on type designed in accordance with ANSI Standard A21.11-1972. Gasket lubricant for push-on joints shall be labeled with the trade name and the pipe manufacturer's name.

2.1.5 Ductile iron pipe shall be tested in accord with the procedure outlined in ANSI Standard A21.51 and certified records of the tests shall be submitted with each shipment of pipe.

2.1.6 Fittings for ductile iron pipe shall be manufactured of ductile iron pipe shall be manufactured of ductile iron or gray cast iron and shall conform to the requirements of ANSI Standard A21.10-1971. Fittings shall be designed so as to be compatible with the pipe and so as to provide at least equal resistance to internal and external loads on the pipe. The lining and coating of the fittings shall be as specified for the pipe. Joints for fittings shall be mechanical or push-on type except where otherwise shown on the drawings. The joint and bolts and nuts shall conform to ANSI A21.11. Shop drawings shall be furnished for harnessing. All harnessing rods, clamps, bolts and nuts shall be coated after assembly. The coating shall be a coal tar or asphalt base bituminous coating approved by the Engineer and applied to at least a 4 mil dry thickness.

2.2 Corrosion Protection

2.2.1 For protection against corrosive soils, in the locations as listed in the following paragraph and as directed by the Engineer, ductile iron pipe and fittings shall be enclosed in a polyethylene sheet or tube and each length joined with 2-inch wide polyethylene adhesive tape. The sheet or tube shall be made from polyethylene resin meeting the requirements of ASTM DI248-78 and shall be Type I, class C, Category 5, Grade J-3 with minimum carbon black content of 2.5% and 8 mils thickness. The sheet or tube shall be as manufactured by Polytube Corp., Birmingham, Ala., or approved equal. The sheet or tube shall be in accordance with the provisions of ANSI A21.5 - AWWA C105.72. Methods shall be such as to minimize damage to the sheet or tube but where required the adhesive tape shall also be used to repair tears or punctures.

2.2.2 In the event any cathodically protected utilities are crossed, the new main shall be encased with loose polyethylene encasement for 20 feet minimum, both sides of crossing, and where cathodically protected main runs parallel to proposed main less than 10 feet distance laterally, the new main shall be encased the full length of the main.

2.2.3 Piping, valves or fittings which are made of dissimilar metals shall not be installed in-line together unless provisions to alleviate corrosion, pre-approved by the Owner and Utility, are authorized.

2. MATERIALS, CONT'D.

2.3 Cast Iron Pipe 4" through 12" Pipe

2.3.1 Cast iron pipe for water mains shall be designed in accord with ANSI Standard A21.1, subject to the following design criteria: 150 psi water pressure, 3 feet depth of cover, trench condition B and trench width d+2 feet. Pipe shall be manufactured in accord with AWWA Specification C106-70 (metal molds) or C108-70 (sand-lined molds), except pipe shall have a minimum bursting tensile of 21,000 psi and minimum modules or rupture of 45,000 psi. Thickness class shall be at least Class 22.

2.3.2 Pipe shall have cement lining and bituminous seal coat in accord with ANSI Standard A21.4-1971. Pipe shall also be bituminous coated on the outside. Lining shall be standard thickness.

2.3.3 Pipe joints shall be push-on type conforming to ANSI Standard A21.11-1971. Gasket lubricant shall be as furnished by the pipe manufacturer and labeled with trade name.

2.3.4 Cast iron pipe shall be tested in accord with procedures of AWWA C106 of C108 and certified records of the tests made by the manufacturer or by a reliable commercial laboratory shall be submitted with each shipment of pipe.

2.3.5 Fittings and corrosion protection shall be as specified for ductile iron pipe in Paragraphs 2.1.6 and 2.2 respectively.

2.4 PVC Pipe 4" through 12" Pipe

2.4.1 PVC pipe for water mains shall be Type I, Class 150 and meet the requirements of AWWA C900-75 for PVC pipe in cast iron pipe equivalent O.D., Class 150 having elastomeric gasket bell ends and elastomeric seals. Fire mains shall be Class 200 meeting the requirements of AWWA C900-75 for PVC pipe.

2.4.2 The joints for PVC water pipe shall be rubber ring type consisting of integral, thickened, solid wall bells which maintain the same D.R. as the pipe barrel. Joint lubrication shall be furnished by the manufacturer of the pipe and joints made in accordance with the manufacturer's instructions and recommendations.

2.4.3 Where necessary, adaptor fittings shall be furnished and installed where plastic pipe is connected to pipes or fittings of other materials. Polyethylene sleeve will not be required with PVC pipe.

2.4.4 In storing pipe, units shall be protected by damage in the same way they were protected while loaded on the truck. If pipe is to be stored outside longer than 30 days, the pipe shall be covered with canvas or other opaque material to protect it from prolonged exposure to the sun.

2.4.5 An affidavit of compliance from the manufacturer shall be submitted with each shipment of pipe, to the effect that the pipe complies with all applicable requirements of AWWA C90-75. Each length of pipe shall bear the U.L. label.

2.5 All service pipe shall be Schedule 40 PVC.

2. MATERIALS, CONT'D.

2.6 Steel Pipe Sleeves

Pipe for sleeves to be jacked and bored under highways shall be steel conforming to ASTM A139-74, Grade A. Sleeve pipe shall be of the length and size shown on the drawings. The wall thickness shall be standard mil thickness for the required pipe diameter and as shown on the DOT permit.

2.7 Flexible Couplings

Flexible couplings shall be of cast iron for couplings installed underground and steel for above ground installation. Couplings shall be suitable for 150 psi working pressure. Flexible couplings shall be Style 53 and Style No. 38 as manufactured by Dresser Manufacturing Company, or Smith-Blair, or approved equal.

3. VALVES AND VALVE BOXES

3.1 Gate Valves

3.1.1 Gate valves for buried service shall be designed for a working pressure of not less than 150 psi. Gate valves, when fully open, shall have a clean waterway equal to the nominal diameter of the pipe. the valve shall open by turning to the left or counterclockwise when viewed from the stem. The operating nut shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's distinctive marking, pressure rating and year of manufacture cast on the body. Prior to shipment from the factory, each valve shall be tested by applying to it a hydraulic pressure equal to twice the specified working pressure.

3.1.2 Gate valves shall be iron body, fully bronze mounted, double disc with parallel seats. Valves shall conform to the specifications for Gate Valves or Ordinary Water Works Service, AWWA C500-61, and shall be fitted with an O-ring seal of standard manufacture. Valves to be located underground shall be the non-rising stem type designed for buried service with a 2-inch square operating nut. The valves shall have end connections to match the pipe.

3.2 Valves Boxes

Valve boxes shall be provided for all valves which are below finished grade elevations. Valve boxes shall consist of cast iron base and adjustable top section with cover which shall be marked "Water". Extensions shall be provided as required to grade.

3.3 Air Release Valves - Automatic

Air release valves shall be 1" through 16" diameter pipe and shall be the automatic type installed in a concrete box as shown on the drawing. Box and lid shall be of the necessary size to enclosed the valve. Pipe, fittings and valves for the assembly shall be as specified in the preceding paragraphs. A corporation stop shall be tapped into the main using the procedures as recommended by the iron pipe manufacturer. The corporation stop shall be Mueller H-10045, or Hays 5284, or approved equal. The valve shall be Type N, Crispin, as manufactured by Multiplex Manufacturing Co., Berwick, PA, or Model 200 APCO, as manufactured by Textron, Inc., Whittier, CA, or approved equal.

4. FIRE HYDRANT ASSEMBLIES

4.1 Fire hydrant assemblies shall consist of the fire hydrant, the pipe connecting the hydrant to the water main, the gate valve between the hydrant and the water main, thrust blocking and gravel as shown on the drawing.

4.2 Fire hydrants shall be of the break-away traffic type construction, with a 6" pipe connection, 5-1/4" valve opening, waterous, pacer model. Hydrants shall be designed for 150 lb. working pressure and shall conform to AWWA Specification C502-73. All working parts shall be bronze. All hose threads shall be National Standard threads. Design, material and workmanship shall be of the latest stock pattern ordinarily produced by the manufacturer. Hydrants shall be painted one coat of red lead paint and two finish coats of an approved paint of the color as selected by the Owner and approved by the Town of Longboat Key.

4.3 Fire hydrants shall be provided with a special lubricant sealed bonnet assembly to assure lubrication of operating parts and to seal operating thread from water when the hydrant is opened. Extension sections shall be provided as required to position break flange at finished grade.

5. CONNECTIONS TO EXISTING MAINS

5.1 Where connections are required between new work and existing water mains, the connection shall be made in a thorough and first class manner, using proper specials and fittings to suit the actual conditions. In case a connection is made to an existing fitting in the line, the Contractor shall schedule his work so that digging and locating the existing fittings can be completed prior to starting trench work on the line. Cut-ins into lines shall be done at a time approved by the Owner's representative. The Contractor shall verify the dimensions of all pipe before ordering special fittings and couplings. The Contractor shall not make connections or service taps into existing transmission mains until they have been tested and accepted by the County. Verify through the Owner's representative.

6. WATER MAIN INSTALLATION

6.1 Pipe and fittings shall be strung out along the route of construction with the spigots pointing in the direction of flow. Pipe shall be placed where it will cause least interference with traffic. Pipe shall be handled by mechanical equipment. Before the pipe is lowered into the trench, it shall be swabbed or brushed out to insure that no dirt or foreign material gets into the finished line. Trench waters shall be kept out of the pipe and the pipe kept closed by means of a test plug whenever work is not in progress. The Contractor shall provide the means for dewatering the trench and the cost thereof shall be included in the price for installing the pipe.

6.1.1 Where piping installations are in the State DOT right-of-way, the State will only allow pipe to be stored on site that can be installed in 30 days. The Department of Transportation requires that their right-of-way be cleaned and restored within three weeks of pipe installation.

6. WATER MAIN INSTALLATION, CONT'D.

6.2 Deflections from a straight line or grade made necessary by vertical curves or horizontal curves of offsets shall not exceed the pipe manufacturer's recommendations. If the specified or required alignment requires deflections in excess of those recommended, the Contractor shall either provide special bends as approved by the Engineer or for iron pipe a sufficient number of shorter lengths of pipe to provide angular deflections within the required limit. Deflection of PVC pipe by bending shall not exceed the manufacturer's specifications. Bending shall be accomplished after assembly and prior to installation of the pipe in the trench.

6.3 Excavation and backfill shall conform to the requirements of TS-1. Pipe shall be laid in a level trench. Irregularities shall be smoothed out or filled in with sand and tamped. Holes shall be scooped out where the joints occur leaving the entire barrel of the pipe bearing on the pipe bed.

6.4 Laying of the pipe shall be commenced immediately after the excavation is started, and every means must be used to keep pipe laying closely behind the trenching. The Engineer may stop the trenching when, in his opinion, the trench is open too far in advance of the pipe laying operation. Pipe may be laid in the best manner adapted to securing speed and good results. It shall, however, be in accordance with the manufacturer's instructions and recommendations. Damaged or unsound pipe or fittings will be rejected. Before jointing the pipe, all lumps, blisters, excess coating material and oil shall be removed from the bell and spigot ends of pipe.

6.5 Thrust blocks shall be installed at all bends, tees, crosses, plugs, wyes and reducers as shown in details or typical thrust block placements on the drawings. Where thrust-blocking is not practical or where the Contractor elects to provide harnessing in lieu of thrust blocks, harnessing detail shall be submitted for approval of the Engineer. Unsuitable backing materials shall be stabilized or replaced with gravel or limerock.

6.6 where there is no adequate natural foundation upon which to construct a pipe bed, the pipe shall be constructed on a prepared stabilized subgrade or rock bedding. Unsuitable subgrade materials shall be replaced or stabilized as described in the Specification TS-1.

6.7 Installation of water mains shall be in strict conformance with the latest AWWA Specifications.

6.8 The Contractor shall furnish and install a plug and blocking at the end of the water main in the event an additive item or items does not become a part of the Contract.

6.9 Where water mains are stubbed out with a reducer and valve, in lieu of thrust blocks, the stubouts shall be harnessed form the valve back to the tee.

6.10 For the protection of exposed reinforcing in anchor blocks, the Contractor shall furnish and apply two coats of Koppers Bitumastic No. 505 protective coating.

6. WATER MAIN INSTALLATION, CONT'D.

6.11 All joints shall be watertight and any leaks or defects discovered shall be immediately repaired to the satisfaction of the Engineer. Any pipe which has been disturbed after being laid shall be taken up, the joints cleaned and the pipe properly relaid. Any superfluous material inside the pipe shall be flushed or removed by means of an approved follower or scraper after joins are made. Installation of fittings and pipe joints shall be in strict accordance with the manufacturer's recommendations.

7. VALVE AND HYDRANT INSTALLATION

7.1 Before installing any valve, care shall be taken to see that all foreign material is removed from the interior of the body and the valve opened and closed to see that all parts are in proper working condition. Valves shall be set plumb with valve boxes and placed directly over the operators. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of four feet on all sides of the box. In unpaved areas, a concrete pad shall be poured around the top of the box as shown in the standard details. Box shall be adjusted flush with the adjoining grade.

7.2 Fire hydrants shall be set so the break ring is flush with the surface of the existing ground and shall be connected to the mains with iron or PVC pipe as appropriate, and a gate valve, all part of the assembly. After connections are made, the hydrants shall be set at such elevations that the connecting pipe and the distributing mains shall have the same depth of cover. Each hydrant shall be thrust-blocked with concrete as shown on the detail drawing. A sheet of polyethylene or neoprene shall be placed between the bolted joints of the hydrant and the concrete. If the character of the soil is such that the hydrant cannot be securely thrust-blocked, then bridle rods and rod collars shall be used and shall be of at least 3/4" stock and shall be thoroughly protected by painting with acid-resisting paint. Around the base of each hydrant shall be placed not less than 2 cubic feet of crushed gravel to insure the complete drainage of the hydrant when closed. All backfill around hydrants shall be thoroughly compacted to the surface of the ground. Before installing any hydrant or valve, care shall be taken to see that all foreign material is removed form the interior of the barrel. Stuffing boxes shall be tightened and the hydrants or valve opened an closed to see that all parts are in proper working conditions.

8. HIGHWAY CROSSINGS

8.1 All pipe crossing under highways shall be installed in accordance with the Department of Transportation requirements governing the method and materials of construction. The Contractor will be held responsible for any and all expense the Department of Transportation incurs ;in protecting its highway while pipes are being placed under same and for any damage to the highway. The Contractor shall arrange with the Department of Transportation for the proper bracing, shoring and other necessary protection of the highway before excavation beneath any of said highway. On State right-of-ways only such pipe can be stored as can be installed in 30 days. The Department of Transportation requires that in their right-of-ways, all restoration and cleanup be completed within 3 weeks of pipe installation.

8. HIGHWAY CROSSINGS, CONT'D.

8.2 The carrier pipe shall be installed in the sleeve on longitudinal, treated lumber supports. Each support shall be 2 to 3 feet long and of sufficient thickness to raise the bell off the sleeve. The wood supports shall be positioned 3 feet from the bell and at each end of the pipe. Similar spacers shall be positioned at the top and sides of the pipe and all secured by metal straps or bands.

9. METER BOXES

9.1 Meter boxes shall be cast iron meter boxes as manufactured by Russell Pipe & Foundry Company. Cost iron boxes for 5/8" and 3/4" meters shall be Rome model and for 1", 1-1/2" and 2" meters shall be Dekalb model.

9.2 Precast reinforced concrete meter boxes with cast iron reading lid may be furnished as an alternate. Boxes for 5/8" and 3/4" meters shall be Type 33H and for 1", 1-1/2" and 2" meters shall be Type 66S AS MANUFACTURED BY Brooks Concrete Products Company.

9.3 Meter boxes for 3" meters shall be Type 67TR as manufactured by Brooks Concrete Products Company.

9.4 The meter and meter couplings will be furnished and installed by the Owner.

9.5 Plastic meter boxes and covers with a magnetic detecting disc embedded in an inspection lid built into the cover, as manufactured by Intercontinental Plastics Company, or an approved equal, may be furnished for non-traffic areas.

10. SERVICE CONNECTIONS

10.1 1-1/2" and 2" service connections shall be connected by use of a saddle. The Contractor shall provide corporation stops and curb stops installed in accordance with the detailed drawings and specifications.

10.1.1 The corporation stops shall be Mueller Type H-10046 or approved equal, M.I.D. threat inlet and F.I.P. outlet.

10.1.2 The curb stop shall be Mueller Type H-14265 or approved equal.

10.1.3 Where terrain and coverage require Mueller angle meter valve 14265 or approved equal shall be used.

11. BLOW-OFF ASSEMBLIES

11.1 The Contractor shall furnish and install blow-off assemblies in the locations shown on the drawings. Each assembly shall consist of a blow-off branch, gate valve, valve box, brass hose nipple, cap, chain, galvanized pipe and fittings, tapped plug and thrust blocking. Sizes shall be as shown in the detail drawings. Pipe, fittings and valves shall be as specified in the preceding paragraphs.

11. BLOW-OFF ASSEMBLIES, CONT'D.

11.2 The brass hose nipple shall be Crane Company No. 91-A, and the brass hose cap shall be Crane Company No. 120-A, or Mueller Corp., or Kennedy Valve Mfg. Co., or approved equal. Both nipple and cap shall be 2-1/2" I.D. with hose pipe threads. A chain one foot long shall be furnished, locking the cap to the hose nipple.

12. FIELD TESTING OF WATER SYSTEM

12.1 All official testing of mains will be held after densities are obtained in trenches and subbase is installed and has passed density requirements.

12.2 The Contractor shall furnish and install suitable temporary testing plugs or caps for the pipe, all necessary pressure pumps, hose, pipe connections, meters, gauges and other similar equipment, and all labor required, all without additional compensation for conducting pressure and leakage tests of the new water lines. The Owner may, at his own choice, furnish a water meter and a pressure gauge for use in conducting these tests. The Contractor shall procure and pay for all water required for tests.

12.3 Tests shall be made between valves and as far as practicable in sections of approximately one thousand (1,000) feet long or as approved by the Engineer. Potable water from an existing water distribution system shall be used. The test pressure for the water lines shall be 150 psi and this pressure shall be maintained for a period of not less than two (2) hours for pipes which have been backfilled before tests are made. The amount of water forced into the line during this time shall be determined and this amount shall be taken as a basis to compute the leakage for twenty-four (24) hours. Pressure shall not vary more than two pounds from the above during the two-hour test period. Allowable leakage shall be computed on the basis of Table 3, Section 13.7, AWWA Standard C600-64, or the applicable formula for other than 18-foot lengths.

12.4 All leaks evident at the surface shall be uncovered and repaired regardless of the total leakage as indicated by the test, and all pipes, valves and fittings and other materials found defective under the test shall be removed and replaced at the Contractor's expense. Tests shall be repeated until leakage has been reduced below the allowable amount.

13. STERILIZATION AND TESTS

13.1 General

Sterilization of all equipment, pipelines, tanks and other parts of the project with which water comes in contact and which have been contaminated by the Contractor's operations shall be accomplished after completion of construction and immediately before the system or unit is placed in operation. The Contractor shall procure and pay for all water required for sterilization and tests.

13. STERILIZATION AND TESTS, CONT'D.

13.2 Sterilizing Agent

The sterilizing agent shall be liquid chlorine or sodium hypochlorite solution conforming to Federal Specification O-S-602b Sodium Hypochlorite, Grade D. Dry hypochlorite, similar or approved qual to "HTH" may also be used as the sterilizing agent.

13.3 Sterilization Methods

13.3.1 All new piping shall be thoroughly flushed and washed prior to the time of sterilization. Clean water shall be flushed through the system for at least one-half hour or until not traces of cuttings, lead, oil, dirt, or other foreign matter is visible. This water shall be wasted at the closest points available.

13.3.2 The piping shall be sterilized by introducing the sterilizing agent into the water, which is being pumped into the system, in such manner that the entire system will be filled with water containing a minimum chlorine concentration of 50 ppm at any point. This water shall be allowed to remain in the system for a minimum contact period of eight (8) hours before the system is flushed out.

13.4 Residual Chlorine Tests

After the sterilizing agents have been permitted to remain for the specified contact periods, the pipelines and values shall be thoroughly flushed with water until the residual chlorine tests are less than .02 ppm in each instance. The determination of the amount of residual chlorine in the system shall be made at such points and in accord with standard tests by means of a standard orthotolodine test set.

13.5 Bacterial Tests

After the water system or any other units or portions of the project have been sterilized and thoroughly flushed, samples of water shall be taken from several points in suitable sterilized containers and the samples forwarded to the Florida Department of Environmental Regulation for bacterial examination. If repeated tests of such samples show the presence of coliform organisms, the sterilization shall be repeated or continued until tests indicate absence of pollution. Two consecutive daily samples shall be satisfactorily completed before the system is placed in operation.

13.6 Approval of Sterilization

The complete sterilization program and methods followed, especially if materially different from those specified, shall be in accord with directives of the State of Florida Department of Environmental Regulation, and all methods employed shall meet with their approval. Definite instructions as to the collection and shipment of the samples shall be requested from the Department of Environmental Regulation and shall be followed in all respects. Final approval of the bacterial samples shall be received from this department prior to placing the system into operation.

14. SILTATION AND BANK EROSION

The Contractor shall take adequate precautions to minimize siltation and bank erosion in crossing canals or ditches, in discharging well point systems or during other construction activities.

15. WATER SERVICE INTERRUPTIONS

Interruptions to water service shall be minimized. The Contractor shall submit plans and schedules to the Engineer for approval by the proper authority before any shutdown or any interruption in service takes place.

16. WARRANTY

The Contractor shall be responsible for all materials and workmanship for a period of One Year from the date of acceptance by the Owner. Neither the Owner nor the Engineer shall enter into the relationship as to manufacturer's warranty to the Contractor. The Engineer shall be the sole judge of performance under the warranty.

17. METHOD OF MEASUREMENT

The quantity to paid for under this section shall be linear feet of pipe measured in place and the number of gate valves, service connections and other items called for on the plans, satisfactorily completed and accepted.

18. BASIS OF PAYMENT

The quantities as provided above shall be paid for at the contract unit prices for each item called for on the plans or in the proposal. Payment shall be full compensation for all labor, equipment and materials necessary for the completion of the work and shall include excavation, backfilling, replacement of pavement, vegetation and testing as shown on the plans and in conformance with the specifications.

TECHNICAL SPECIFICATIONS

DIVISION 13

SANITARY SEWER LINES

1. SCOPE OF WORK

1.1 The work under this heading shall consist of furnishing and installing sewer pipes as indicated on the plans and in accordance with these specifications and the Town on Longboat Key Public Works Department.

2. GRAVITY LINES

2.1 Excavation shall conform to that portion of the Technical Specifications entitled "Clearing, Excavating and Backfilling". All pipe shall conform to the sizes and materials as shown on the plans. Pipe shall be in accordance with the following:

A. Vitrified clay pipe and fittings, extra-strength, conforming to ASTM Specification C-700, latest revision, with factory-made compression type plastic joints, conforming to ASTM Specification C-425, latest revision.

B. Ductile iron pipe shall be Class 52 conforming to AWWA Specification C-110, latest revision (ASA A-21.10), with push-on rubber gasket joints conforming to AWWA Specification C-111, latest revision (ASA A-21.11). Pipe shall be coated as specified in the division of the Technical Specifications entitled "Painting and Surface Finishing of Sanitary Sewer Pipes and Manholes".

C. All PVC pipe within the public or private right-of-way, or within easement provided to The Town, sizes 6-inch through 12-inch, shall be AWWA C900, DR18. PVC pipe shall be joined by a rubber ring bell joint which shall be an integral part of the pipe barrel and the rubber gasket push type joint. Gaskets shall meet the requirements of ASTM F477. Joints shall conform to astm D3212. Pipe shall be color code green either with four side continuous marking or by being solid color. In lieu of green pipe the CONTRACTOR may utilize white pipe. If white pipe is used after the pipe is installed the pipe shall be painted on top with heavy green paint. In addition, a piece of green marker tape must be placed on top of the pipe and again at a vertical clearance of 18 to 24 inches above the pipe.

D. All fittings for C-900 pipe shall be manufactured in one piece of injection molded PVC compound meeting ASTM D1784. Fittings shall be Class 150 and conform to requirements of DR 18. Fittings shall be designed to withstand a minimum of 755 psi quick burst pressure at 73°F tested in accordance with ASTM D1599. Bells shall be gasketed joint conforming to ASTM D3139 with gaskets conforming to ASTM F477. Ductile Iron or Cast Iron Push-on Joint or M.J. will be allowed as alternative when PVC sizes are not available.

3. FORCE MAINS

3.1 PVC force main pipe shall be pressure Class 150 and meet the requirements of AWWA C-900 for PVC in cast iron pipe equivalent O.D. and shall be SDR-18 (minimum) and shall meet the UNIBELL Standards UNI-B-2-7.

A. The joints for PVC pressure pipe shall be rubber ring type consisting of integral, thickened, solid wall bells which maintain the same D.R. as the pipe barrel. Joint lubrication shall be as furnished by the Manufacturer of the pipe and joints made in accordance with the Manufacturer's instructions and recommendations.

B. Fittings shall be cast iron/ductile iron mechanical joints and conform to ANSI Specification A-21.11, latest revision, and shall be furnished complete with cast iron glands, high strength cast iron alloy tie-head bolts and hexagonal nuts and rubber gaskets. All bolts for joints shall be "Acipalloy", "Usalloy", or "Corten", as manufactured by Clow, U.S. Pipe or approved equal in all respects.

3.2 Ductile iron pipe force main shall be the same as that in Paragraph 2.1 above entitled Gravity Lines, sub-paragraph B., with the exception that the force main will be restrained joint.

A. Restrained joint pipe for force mains installed underground shall be ductile iron and meet all applicable specifications. Restrained joint pipe shall be American Ductile Iron Lok-Fast Joint Pipe or approved equal. Restrained joints shall be designed for a maximum working pressure of 250 PSI in all sizes. Stainless steel bolts and nuts shall be used for each joint, fittings used for 4-inches through 12-inches shall be standard mechanical joint fittings with special adapters.

4. PVC COLOR CODE

4.1 The following color code shall be used for all PVC pipe:

A. Pressure sewer - green

B. Gravity sewer - green

4.2 The use of color tape is acceptable to be placed securely on the pipe and installed in the ground with the tape on top for quick identification. Cost of tape and installation of tape to be included in the unit price bid for that item.

5. PIPE LAYING - GENERAL

5.1 Pipe and fittings shall be strung out along the route of construction with the bells facing in the direction in which the work is to proceed. Pipe shall be placed where it will cause least interference with traffic. Pipe strung out should be limited to a three-day advance supply. Excavation, trenching and backfilling for all piping systems shall conform to the applicable requirements of the division of the Technical Specifications entitled "Clearing and Grubbing, Excavation, Filling (Backfilling), Grading and Road Base".

5. PIPE LAYING - GENERAL, CONT'D.

5.2 Laying of the pipe shall be commenced immediately after the excavation is started, and every means must be used to keep pipe laying closely behind the trenching. The Engineer may stop the trenching when, in his opinion, the trench is open too far in advance of the pipe laying and backfilling operation.

5.3 Each pipe shall be inspected for defects prior to being lowered into the trench and swabbed or brushed out to insure that no dirt or foreign material is in the finished line. Water shall be kept out of the pipe and the pipe kept closed by means of a test plug whenever work is not in progress. Pipe shall be handled carefully to avoid breakage. Damaged or unsound pipe will be rejected.

5.4 Trenches shall be kept dry while pipe is being laid.

5.5 The sections of the pipe shall be so laid and fitted together that when complete, the sewer shall have a smooth and uniform invert.

5.6 Any pipe which has been disturbed after being laid, shall be taken up, the joints cleaned, and the pipe properly relaid.

5.7 Tamping should proceed on each side of the pipe simultaneously taking care not to displace the pipe either horizontally or vertically. Bedding shall be compacted to a 90% Standard Proctor Density, AASHTO-T-99.

5.8 If the maximum trench width specified in the division of the Technical Specifications entitled "Clearing and Grubbing, Excavation, Filling (Backfilling), Grading and Road Base", is exceeded for any reason other than by order of the Engineer, the Contractor shall install, at his own expense, graded rock, pipe encasement or other bedding as may be required by the Engineer to support the load of the backfill. Backfill shall be tamped as specified in the division of the Technical Specifications entitled "Clearing and Grubbing, Excavation, Filling (Backfilling), Grading and Road Base".

5.9 Depth of cover over pipe shall be as shown on the profiles. If depth is not shown, cover shall not be less than 3 feet.

5.10 All other pipe installations shall be in accordance with the applicable method shown on the "Construction Details" drawing.

5.11 Pipes shall be thoroughly flushed at the completion of laying and joining.

5.12 Pipeline identification shall include the burying of a continuous colored plastic Allen System foil detectatape ribbon marker (3-inches wide) over each underground pipeline, locate ribbon directly over conduits and 18 inches below finish grade. Coloring shall be in accordance with the PVC Color Code.

6. PIPE LAYING - GRAVITY

6.1 After the gravity line joints have been inspected an approved, completion of bedding may be done until backfilled to one foot over the pipes. Backfilling shall be in accordance with the division of the Technical Specifications entitled "Clearing and Grubbing, Excavation, Filling (Backfilling), Grading and Road Base".

6. PIPE LAYING - GRAVITY, CONT'D.

6.2 Gravity lines constructed under state roads shall be installed according to Method 1 as described in Specification ANSI A-21.50, Section 50.6.1.1 (AWWA H-3), with a minimum of 3-inches of suitable granular material on all sides of the pipe. Backfill shall be in accordance with the division of the Technical Specifications entitled "Clearing and Grubbing, Excavation, Filling (Backfilling), Grading and Road Base".

6.3 All straight line pipe shall be aligned by the laser beam method. The laying shall be in accordance with Manufacturer's instructions and recommendations. Bell and spigot pipe laying shall proceed upgrade with spigot ends pointing in direction of flow.

6.4 The bottom of the sewer trench shall be a flat bottom, true to line and grade. Holes shall be scooped out where the bells occur, leaving the entire barrel of the pipe bearing on the pipe bed. Bedding and haunching shall be Class II material, conforming to UN-B-5-77-A and ASTM D2487. Bedding shall be 4" to 6" below pipe. All bedding shall be included in the unit price of pipe laying.

7. PIPE LAYING - GRAVITY - DUCTILE IRON PIPE

7.1 Ductile iron pipe shall be laid as described in ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51 with Type 4 laying conditions.

8. PIPE LAYING - GRAVITY - POLYVINYL CHLORIDE PIPE (PVC)

8.1 The gray to brown fine, clean sands, designated as SP and generally located near the existing natural ground surface, may be used for bedding and haunching material. Clayey sands or sandy clays shall not be used. Where conditions require selected bedding material, use clean, well-graded soils and gravel, 100% passing a 1/2" sieve and not more than 10% retained on a #10 sieve. (Approximately equal to FDOT coarse aggregate grade 16). Bedding and haunching material shall be hand placed in layers not to exceed 6-inches and each layer properly tamped under the haunches and around the pipe, and the full width of the trench.

9. PIPE LAYING - GRAVITY - VITRIFIED CLAY PIPE (VCP)

9.1 Vitrified clay pipe shall be carefully installed in accordance with ASTM Specification C-12 "Recommended Practice for Installing Vitrified Clay Sewer Pipe", and instructions of the National Clay Pipe Institute. The bedding of the pipe shall be according to ASTM Recommendation Class "B", or equivalent Class II material conforming to UN-B-5-77-A and ASTM D-2487. Any deviation shall be only at the approval of the Engineer.

10. PIPE LAYING - FORCE MAIN - POLYVINYL CHLORIDE PIPE (PVC)

10.1 Where necessary to deflect the force main from a straight line at joints, the deflection shall not exceed that recommended by the Manufacturer. If the specified or required alignment requires deflections in excess of those recommended, the Contractor shall either provide special bends as approved by the Engineer or a sufficient number of shorter lengths of pipe to provide angular deflections within the limits set forth by the Manufacturer.

10. PIPE LAYING - FORCE MAIN - POLYVINYL CHLORIDE PIPE (PVC), CONT'D.

10.2 Force mains shall be laid strictly to grade and line as shown on the plans, and shall be thrust-blocked at bends to prevent movement of lines under pressure. The concrete blocking shall be placed between solid ground and the fitting anchored in such a manner that the pipe and fitting joints will be accessible for repairs. Concrete shall be 2,500 PSI/28-day minimum.

10.3 Force mains shall be laid in accordance with UNI-B-3-77, complying with AWWA Standard C-900.

11. SERVICE LATERALS

11.1 Service laterals shall be connected to the sewer lines by means of a wye fitting with a branch as shown on the "Construction Details" drawing. The branch of the wye fitting will be elevated as directed, depending on the depth of the sewer and the elevation of the property to be served. Eighth bends will be used to connect the service line at the wye branch. Service lines shall be installed at such grades as will adequately serve the properties, 1/4-inch per foot minimum preferred, but not less than 1/8-inch per foot.

11.2 Service lines shall extend from the sewer to the property line, and be plugged, unless otherwise directed by the Engineer. Service lines shall be 6-inch PVC pipe unless otherwise shown on the plans. Markers shall be installed at the end of each service or opposite wyes and locations recorded by the Contractor. (Marker shall be 2" x 4" minimum. It will be 4-feet long of which 2 feet will be buried and 2 feet exposed). The service pipe shall have pipe line identification per paragraph 5.12 above.

11.3 The location of plugged wyes shall be made as directed by the Engineer. Plugs shall be of the type and size required to match the pipe and shall be watertight and removable without breaking the pipe.

11.4 Pipe shall not be cut for connection unless approved by the Engineer.

11.5 A detectable metal plate (1-foot square, minimum) buried flat and parallel to the ground surface or a 2-foot long piece of rebar shall be buried at the end of the lateral to facilitate electronic location, in accordance with Sarasota County Uniform Sewer System Code.

12. SEWER/WATER MAIN CROSSINGS

12.1 Where the sewer line crosses a water main with a vertical clearance less than 18-inches, the sewer line shall be either cast iron pipe or concrete encased, as shown on the plans or as directed by the Engineer. The cast iron pipe or concrete encasement shall be 20-feet long, centered on the point of crossing. The encasement shall be 2,500 lbs. per 28-day concrete.

13. CONNECTIONS

13.1 All connections which are for future use shall be properly plugged. No pipe shall be cut for connections unless approved by the Engineer. Wyes for service connections shall be installed as shown on the plans. The ends of pipes which enter masonry shall be cut so as to fit the inner surface of the masonry.

13. CONNECTIONS, CONT'D.

13.2 The Engineer is to verify the alignment and grade of the end of each future stub. The Contractor will obtain the as-built location and elevation of each future stub.

14. TESTS - GENERAL

14.1 The expense of all required tests shall be borne by the Contractor and shall be included in the unit cost bids.

14.2 The Contractor shall perform testing of all new sanitary sewers in the presence of representatives of the Utility, the Town of Longboat Key, the Owner, and the Engineer of Record. The Contractor shall be required to give a minimum of three working days notice to all parties involved prior to performing any testing. All piping shall be thoroughly cleaned prior to testing.

14.3 All official testing of mains will be held after densities are obtained in trenches and subbase is installed and has passed densities required. Preliminary testing including, but not limited to, lamping, pressure test, video, grade verification, infiltration and exfiltration may be done at any time.

14.4 All leaks evident at the surface shall be uncovered and repaired regardless of the total leakage as indicated by the test, and all pipes and fittings and other materials found defective under the test shall be removed and replaced at the Contractor's expense. Tests shall be repeated until leakage has been reduced below the allowable amount, and approved by the Engineer.

14.5 All tests required by the Town of Longboat Key shall be performed in addition to or in accordance with the tests specified herein.

15. TESTS - GENERAL - GRAVITY SEWER

15.1 After completing backfilling, and at a time to be selected by the Engineer, the lines shall be inspected by lamping and/or with the TV inspection camera. Any misalignment shall be corrected at the Contractor's expense. No lines shall be accepted until approved by the Engineer. Televising of sanitary sewers by the CONTRACTOR is not required since the Town of Longboat Key will televise the lines at the OWNER'S expense when all official tests are passed. The Town reserves the right to have the OWNER televise the lines at by an outside contractor at the OWNER'S expense.

15.2 A final air test shall be performed as outlined herein.

15.3 The procedure for air testing shall be in accordance with ASTM C828 and as follows:

15.4 All house leads shall be properly plugged and blocked to withstand air pressure. The sewer line shall be tested in increments between manholes. The line shall be cleaned and plugged at each manhole. Such plugs shall be designed to hold against the test pressure and shall provide an airtight seal. One of the plugs shall have an orifice through which air can be introduced into the sewer. An air supply line shall be fitted with suitable control valves and a pressure in the sewer. The pressure gauge shall have a minimum diameter of 3-1/2 inches and range of 0-10 PSIG. The gauge shall have minimum divisions of 0.10 PSIG and an accuracy of ±0.04 PSIG.

15. TESTS - GENERAL - GRAVITY SEWER, CONT'D.

15.5 The sewer shall be pressurized to 4.0 PSIG greater than the greatest back pressure caused by ground water over the top of the sewer pipe. At least 2 minutes shall be allowed for the air pressure to stabilize between 3.5 and 4.0 PSIG. If necessary, air shall be added to the sewer to maintain a pressure of 3.5 PSIG or greater.

15.6 After the stabilization period, the air supply control valve shall be closed so that no more air will enter the sewer. The sewer air pressure shall be noted and timing for the test begun. The test shall not begin if the air pressure is less than 3.5 PSIG, or such other pressure as is necessary to compensate for ground water level.

15.7 The time required for the air pressure to decrease 1.0 PSIG during the test shall not be less than the time shown in Table 1 for PVC and DIP. The total length of line being tested including any service laterals shall be used in calculating the test time required.

15.8 The following table is to be used for PVC and Ductile Iron Pipe:

TABLE I
FROM UNI-BELL HANDBOOK OF PVC PIPE
SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP
FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

1 Pipe Diam. (in.)	2 Minimum Time (min: sec)	3 Length for Minimum (ft)	4 Time for Longer (sec)	Specification Time for Length (L) Shown (min:sec)*							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38.27	44:52	51:16	57:41
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
[illegible]	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53
	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46

Note: Interpolate between valves on table as shown in Example for Table II

a) For pipe lengths greater than 450 feet but less than length in Column 3, use minimum time in Column 2.

b) For pipe lengths greater than 450 feet and greater than length in Column 3, subtract length in Column 3 from actual pipe length, then multiply difference by time in Column 4 and add to time in Column 2.

16. TESTS - GRAVITY - POLYVINYL CHLORIDE PIPE (PVC)

16.1 Allowable deflection (reduction in the vertical inside diameter) in PVC gravity sewer pipe shall be 5 percent. The Contractor shall test the lines laid for deflection with a suitable gauge, mandrel or meter as approved by the Engineer. Contractor shall deflection test the entire sewer system. All locations with excessive deflection shall be excavated and be repaired by rebedding or replacement of the pipe.

17. TESTS - GRAVITY - VITRIFIED CLAY PIPE (VCP)

17.1 All applicable tests will be performed in accordance with the General Test Sections herein.

18. TESTS - GRAVITY - DUCTILE IRON PIPE

18.1 All applicable tests will be performed in accordance with the General Test Sections herein.

19. TESTS - FORCE MAIN - POLYVINYL CHLORIDE PIPE (PVC)

19.1 Force mains shall be tested at 80 PSIG and this pressure shall be maintained for a period of not less than two (2) hours. The amount of water forced in to the line during this time shall be determined and this amount shall be taken as a basis to compute the leakage for twenty-four (24) hours. Pressure shall not vary more than two pounds from the above during the 2-hour test period. Allowable leakage shall be computed on the basis of Table 3, Section 13.7, AWWA Standard C-600, or the applicable formula for other than 18-foot lengths. The gauge used to make pressure tests shall be a minimum of 4-inch dial, with maximum reading of 200 PSIG, with one percent accuracy. All gauges, equipment, water and labor necessary to make tests shall be furnished by the Contractor at this expense. The Engineer reserves the right to check the accuracy of the gauge used by the Contractor, who will assist as much as possible and furnish coupling fittings to do so.

19.2 All applicable tests will be performed in accordance with Paragraph 14 herein entitled "Tests - General".

20. PIPE MANUFACTURER'S FIELD INSTRUCTION

20.1 For the first two or three laying days for each class of pipe, the Contractor shall arrange to have a qualified representative of the pipe manufacturer present to assist and instruct the proper method of handling and installing their product.

21. METHOD OF PAYMENT

21.1 The quantity to be paid for under this section shall be linear feet of pipe measured in place from center of manhole to center of manhole, service connections and other items as called for on the plans, in place, satisfactorily completed and accepted.

22. BASIS OF PAYMENT

22.1 The quantities as provided above shall be paid for at the contract unit prices. Payment shall be full compensation for all labor, equipment and materials necessary for the completion of the work and shall include excavation, testing connections, testing, backfilling replacement of paving and vegetation, in accordance with the plans and specifications.

TECHNICAL SPECIFICATIONS

DIVISION 14

MANHOLES

1. DESCRIPTION

1.1 The work covered by this section consists of furnishing and installing manholes. Shop drawings are required prior to fabrication and shipment. See appropriate Technical Specification entitled "Painting and Surface Finishing of Sanitary Sewer Pipes and Manholes" for coatings required on manhole structures.

2. MANHOLES

2.1 Manholes shall be precast reinforced concrete with minimum 8 inch walls and bottom slab with eccentric cone. Manholes shall have a minimum 48" inside diameter with no outside lifting holes allowed and comply with ASTM Specification C-478, "Precast Reinforced Concrete Manhole Section", latest revision, and sheet entitled "Construction Details".

2.2 Concrete shall be 4,000 PSI per 28 day, Type II cement. The maximum allowable absorption of the concrete shall not exceed 9 percent of the dry weight. Tests, when required, shall be in accordance with ASTM C-497, "Determining Physical Properties of Concrete Pipe or Tile", latest revision.

Certification by the precast concrete manhole manufacturer accompanied by a bill of lading and mill certificate indicating that type II cement is used in the manufacture of manhole and lift station sections shall be provided to the Engineer.

At the option of the Engineer, concrete test cylinders shall be taken at the time of casting, cured, transported, and tested by a qualified independent testing laboratory. Not less than four (4) cylinders shall be made from each separate pouring of ten (10) cubic yards or major fraction thereof, and shall specify the manhole Identification Number(s) included. Additionally, the slump shall be tested at the time of sampling. There shall be no addition of water to the batch after the slump test. In no case shall there be no less than one (1) test set for each days concreting. From each test one cylinder shall be tested by the laboratory at seven (7) days and two at twenty eight (28) days, or as directed by the Engineer. One cylinder shall be kept as a reserve. Any test which indicates strength less than specified shall be cause for rejection of any and all manhole sections included in that test.

The sampling, curing, and testing of the cylinders shall be in accordance with ASTM Standard C-31, latest revision, "Method of Making and Curing Concrete Compressive and Flexural Test Specimens in the Field", and ASTM Standard C-39, latest revision, "Method of Test for Compressive Strengths of Molded Concrete Cylinders".

Five copies of test reports shall be promptly furnished by the laboratory to the Engineer. Expense of all testing shall be borne by the Owner.

2. **MANHOLES, CONT'D.**

2.3 The bases shall consist of a manhole bottom and a wall which shall extend a minimum of six inches above the top of the highest inflowing sewer. The top of the base section shall be carefully formed to receive the tongue of the barrel section. There shall be a minimum distance of four inches between the invert of the lowest outflowing sewer and floor of the precast base to provide for the construction of a formed invert and bench wall within the man hole. All sections of precast manholes shall be cast with at least three (3) lifting devices. These lift devices shall be approved by the Engineer prior to casting.

2.4 The top of base walls, the ends of reinforced concrete risers and the bottom ends of precast tops shall be so formed that when risers and tops are assembled with the base, they will make a continuous manhole. Joints shall be of such design as will permit effective joining and placement without irregularities in the interior wall surface of the manhole.

2.5 Manholes shall have flexible inserts or sleeves for pipe connections and shall meet the requirement of ASTM C-923, "Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes". Flexible pipe to manhole seals shall also meet "Rubber Gasket Specifications ASTM C-443" and "Test Performance Requirements ASTM C-425" for Compression Joints. Installation of pipe to manhole flexible seal shall be made in accordance with the manufacturer's specifications. These connectors shall be approved by the Engineer prior to casting.

Manhole sections with exposed reinforcing steel, excessive honeycombs or having the pipe to manhole rubber gasket seal integrally poured into manhole sections at a non-plan position will be cause for those sections to be rejected.

2.6 In constructing "Drop Manholes", the Contractor shall encase and support the riser and incoming pipe with concrete down to the monolithic base slab extension as shown on the Detail Sheet. Encasing the riser with brick will not be acceptable. Care shall be taken to have all pipes laid to correct lines and grade before concreting is undertaken. Drop manhole riser sections shall maintain the same inside diameter as the manhole base section to at least 6 inches above the top of the incoming upper drop pipe elevation to facilitate the form work for concrete placement. Drop assembly for manholes shall be constructed in accordance with construction drawings and shall be paid under the unit cost for drop assembly.

2.7 Invert channels of uniform cross-section and slope, either straight or with a continuous curve, shall be constructed between inlets and outlets of all manholes. Invert channels shall be smooth and accurately shaped in accordance with the plans.

2.8 Joints between manhole sections shall be sealed with pre-formed plastic joint sealer as shown in the "Construction Detail" drawings.

2.9 Manhole frame shall be 7 inches high and the cover shall have 2 blind pickholes and have the words "sanitary sewer" cast in, as manufactured by U.S. Foundry Corporation, Miami, Florida, U.S.F. No. 420-B, or approved equal. Castings shall be gray iron, free from cracks, holes, swells, and cold shuts. All manhole castings shall be made accurately to the pattern and to the dimensions shown on the "Construction Details". Covers shall have a continuous and even bearing on the frame. Covers shall fit in the frame without binding along the perimeter. All lids which "rock" and do not lie solid after construction is

2. MANHOLES, CONT'D.

finished will be and must be replaced. The top of all precast manholes shall be brought to proper grade for receiving manhole frame by using brick or precast concrete grade rings. Masonry construction shall be laid plum, straight, level, square and true. Brick shall be laid in full beds of mortar and shoved into place. All joints shall be full and not more than one-half inch in thickness. The leveling bricks shall be clean hard burned Grade NB or better. See "Construction Detail" drawing for maximum dimensional limits of brick or grade ring adjustment. Masonry mortar shall be Type "N" with average 28-day compressive strength of 750 PSI, conforming to ASTM Specification C-270, latest revision. Water used in mixing shall be potable quality unless approved by Engineer.

3. INSTALLATION

3.1 The excavating and backfilling for placing the manholes shall comply with the division of the Technical Specifications entitled "Clearing, Excavating and Backfilling".

3.2 The manholes shall be carefully placed to line and grade.

3.3 Were required, top of manhole elevations may be revised by the Engineer as necessary to meet existing conditions or to comply with the latest road design.

4. METHOD OF PAYMENT

4.1 Payment for manholes shall be at the unit bid price for the size and depth of manholes in place, including excavating and backfilling.

TECHNICAL SPECIFICATIONS

DIVISION 15

PAINTING AND SURFACE FINISHING OF SANITARY SEWER PIPES AND MANHOLES

1. GENERAL

1.1 The Painting Contractor shall understand that there will be a "pre-construction" type meeting. The pre-construction meeting will involve the Engineer, the representative of the supplier and the painting contractor. This meeting shall cover all aspects of the paint specifications to preclude any misunderstandings of the quality and interpretations of the specifications.

2. ENGINEERING INSPECTION REQUIREMENTS

2.1 The Contractor is hereby notified that on-the-job inspection will be made to insure quality of applications, including surface preparation and mil thickness requirements. It shall be the intent of this surface preparation to insure the minimum standards of these specifications are met. The Contractor shall at all times cooperate and provide access for the inspection of all coating applications.

3. SCOPE

3.1 This section includes the furnishing of all materials, labor, tools, and equipment and other items required for painting and other surface finishing.

4. MATERIALS

4.1 The products herein specified are those known to be suitable for this type work and are based on those manufactured by Porter Coatings, division of the Porter Paint Company, or an approved equal.

4.2 All materials shall be delivered to the painting area in the Manufacturer's original containers that bear identifying labels. All materials shall be used in strict accordance with the Manufacturer's printed directions. If thinning is necessary to obtain proper results, it shall be done only with the kinds and amounts of thinning materials in accordance with the Manufacturer's printed directions.

5. PAINT APPLICATION

5.1 Painting shall be done at such time in order that dust-free and neat work be obtained.

5.2 Before painting, all surfaces, steel, concrete or other, shall be cleaned free of rust, oil, grease, scale, dirt, curing agents, concrete hardeners, laitance, chalk, waxes, previously applied coatings or other forms of surface contamination that will interfere with the adhesion or bonding of the specified coating with the surface to be painted. All surface preparation methods shall meet the joint approved standards of NACE, SSPC, ASTM, and AWWA and be in accordance with the manufacturer's recommendations and these project specifications.

5.3 The concrete surfaces containing air and water pits, splatter, protrusions, or other surface irregularities should be resurfaced by the contractor while the concrete is "still green". Prior to application of protective coatings to concrete surfaces, the concrete shall have been sandblasted as described below after air-cured for a minimum period of 5 dry days. If curing is done outside, provisions for protection from rain should be made or time extended if the manhole is subjected to remoisting by rain. Any deviation from this procedure shall be only with the written approval of the Engineer. At such time as the concrete is judged to be sufficiently dry, then all surfaces shall be sandblasted to remove all loose concrete laitance, or other surface contamination as described in Paragraph 5.2 above to provide a tooth for bonding to the surface. Sandblasting of the surfaces will be with a technique that will minimize scarring or gouging the surface. A minimum distance of nozzle to surface should be three feet. Grit shall be 20/40 mesh silica sand or equal.

5.4 Workmanship for applying paint shall be of professional quality.

5.5 The painter shall apply each coat at the rate recommended by the Manufacturer smoothly without runs, sags or holidays. If the material has thickened or must be diluted for use with a spray gun, the coating shall be built up to the same thickness as achieved with undiluted materials. One gallon of paint as originally furnished by the Manufacturer must not cover a greater square foot area when applied by spray gun than when applied unthinned by brush. Deficiencies in film thickness shall be corrected by the application of additional coat or coats of paint. On masonry, application rates will vary according to surface texture. However, in no case shall the Manufacturer's stated coverage rate be exceeded. On porous surfaces, it shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate or by applying additional coats of paint.

5.6 Where thinning is necessary, only the products for the particular purpose shall be allowed. All such thinning shall be done strictly in accordance with the Manufacturer's instructions and with the full knowledge and approval of the Engineer.

5.7 The Contractor shall submit to the Engineer, immediately upon completion of the job, certification from the Manufacturer indicating that the quantity of each coating purchased was sufficient to properly coat all surfaces. Such certification shall make reference to square footage figures provided to the Manufacturer by the Contractor.

5. PAINT APPLICATION, CONT'D.

5.8 Drying time shall be construed to mean "under normal conditions". Surface preparation and application of coatings shall be done under weather conditions suitable for proper adhesion and successful application in every respect. No application shall be made when dew point and temperature are within 5 degrees of each other or otherwise when surfaces are wet or contaminated in any way. Where conditions are other than normal because painting must be done in confined spaces, longer drying times may be necessary. Additional coats of paint shall not be applied, nor shall units be placed in service until paints are thoroughly dry, or cured.

6. FACTORY FINISHED ITEMS

6.1 All piping and manholes will be prepared and coated in the shop and governed by the specifications as written herein, including all surface preparation, prime and finish coat standards. The work shall be subject to inspection as indicated herein for field coated items. It shall be the responsibility of the manufacturer of the piping manholes to notify the Porter coating supplier and/or the Engineer when items will be ready for coatings application. Advance notice of three to four days shall be given.

6.2 All damaged areas in the shop applied finishes shall be touched up with matching paint to the Engineer's satisfaction. If surface is extensively damaged, notification in writing to the Engineer should be made immediately. The Contractor shall be responsible for rectifying the condition by cleaning and priming in accordance with the specification standards.

7. INSPECTION AND QUALITY CONTROL

7.1 The Contractor shall prepare surfaces in accordance with these specified standards on a sample for the Engineer's inspection and review. If satisfactory, this sample shall serve as the visual standard for the balance of the work. Also, each primer or finish coat material shall be applied in a "stepdown" fashion so as to reveal coat and shall also serve as the standard for the balance of the applications. These are small samples only and are intended to eliminate any misunderstanding as to the quality of work. Intermediate and finish colors shall vary slightly to distinguish between coats.

7.2 It shall be the Contractor's responsibility to own and use a wet film thickness gauge to check his application thicknesses as he proceeds. Dry film thicknesses will be checked with a properly calibrated Nordson Microtest dry film thickness gauge.

8. SAFETY

8.1 It shall be the responsibility of the Contractor to insure that all workmen are experienced and qualified to use the equipment and rigging necessary to accomplish this specified work. The Contractor shall also be responsible for the safe and workmanlike conduct of all his employees. When working in confined areas, the Contractor shall insure that all hazardous paint fumes are ventilated using OSHAA and MSHA (Mine Safety and Health Act) approved standards. It is understood that for ventilation of hazardous fumes in confined areas, vacuum type instead of blower type equipment shall be used for removal of fumes. Workmen shall also use air hoods in order to breathe a fresh supply of clean air and also shall use safety harnesses and all other recognized professional safety measures in climbing and rigging activities.

9. PAINTING SCHEDULE FOR PIPES AND MANHOLES - INTERIOR AND EXTERIOR

9.1 Sewage Contact Surfaces on Interior of Ductile Iron Piping

All interior surfaces of ductile iron pipe will be coated with a minimum 40 mil polyethylene coating in accordance with ASTM D1248.

9.2 Exterior Ductile Iron Pipe Surfaces Not Immersed in Direct Sewage

Exterior ductile iron surfaces shall receive a 1 mil thickness (min.) of coal tar enamel outside.

9.3 Exterior Manhole, Concrete Surfaces, Below Grade

All exterior surfaces below grade shall be clean and dry and free of excess mortar, dust, etc. Surfaces shall be sandblasted to remove surface latents and concavity of all honeycombed edges to provide tooth for adhesion and prepared in accordance with paragraphs 5.2 and 5.3 above. Two coats shall be applied with roller or brush once (5 mil DFT each) to Tarset Maxi-Build at a coverage rate not to exceed 100 square feet per gallon to yield a minimum dry mil thickness of 10 mils DFT. The maximum recoating of primer and finish coat shall be accomplished as per Manufacturer's recoating times. An additional coat of paint shall be added if surface testing reveals areas of paint coating less than 8 mils DFT.

9.4 Interior of Manholes, Lift Station, Wet Well and Valve Vault and Concrete Surfaces in Contact with Sewage

Prior to painting the interior of the manholes, the surfaces shall be clean and dry and free of excess mortar, dust, etc. Surface shall be sandblasted to remove surface latents and concavity of all honeycombed edges to provide tooth for adhesion and prepared in accordance with paragraphs 5.2 and 5.3 above. Prime with one coat of Porter Tarset Maxi-Build, applied with roller, with a minimum thickness of 4 mils DFT per coat. Tarset Maxi-Build shall be thinned with T-5 thinner in a ratio of 1 quart per gallon for this primer coat. Apply two finish coats of Porter Tarset Maxi-Build #7080 at a minimum film thickness of 12 mils DFT. Total thickness for this shall then be 28 mils DFT. An additional coat of paint shall be added if surface testing reveals areas of paint coating less than 20 mils DFT.

9. PAINTING SCHEDULE FOR PIPES AND MANHOLES - INTERIOR AND EXTERIOR, CONT'D.

Note: The maximum recoating time limits are very important for proper adhesion. Recoating of primer and finish coats shall be accomplished as per Manufacturer's recoating times.

10. BASIS OF PAYMENT

10.1 Materials and services provided shall be included in the unit price of each individual bid item.

TECHNICAL SPECIFICATIONS

DIVISION 16

TRAFFIC STRIPING

1. DESCRIPTION

1.1 The work under this division consists of painting reflectorized traffic stripes, including edge stripes and traffic guide, and shall conform with the requirements of the Florida Department of Transportation, "Standard Specifications for Road and Bridge Construction", Section 710, "Painting Traffic Stripes".

2. MATERIALS

2.1 Traffic Paint

The paint used for this work shall conform with the requirement of the Florida Department of Transportation, "Standard Specifica- tions for Road and Bridge Construction", Section 971-12, Code T-1 (White), Code T-2 (Yellow), and Section 971-13, Glass Spheres (for Reflective Traffic Paint).

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

January 14, 1992
File No. 90-8284

TO: Yale Properties
2900 North Military Trail, Suite 201S
Boca Raton, Florida 33432
Attention: Mr. Mike Kempner

SUBJECT: Compaction Testing of Backfill and Fill Materials @ L'Ambiance, Longboat Key, Florida

Progress Report No. 5

Gentlemen:

As requested, our firm has continued engineering testing and evaluation of the backfill and fill materials at the above referenced site. It is our firm's understanding that the following project specifications are to be utilized:

Specifications Review

The fill and backfill materials shall be compacted to a minimum of 98% Modified Proctor maximum density (AASHTO T-180).

An additional sample of the backfill and fill material was obtained at the site and returned to our laboratory for analysis and testing purposes. Laboratory test results are summarized on the attached Figure 2.

The field testing program consisted of conducting fifty-one (51) in-place density tests on the backfill and fill materials to determine if compaction was completed in accordance with project specifications.

Included in this report are test numbers 62 through 112 conducted between November 25 and December 30, 1991. Test locations are shown on the attached Figure 2.

A complete summary of test results including density, moisture, percent compaction, thickness of lift tested or depth of test above or below grade is tabulated on Plates 1 to 2. Tests failing to meet project specifications are marked with an asterisk.

Based on our field and laboratory test results, we are able to verify that the fill and backfill materials tested on the dates indicated were compacted in accordance with project specifications.

It has been a continuing pleasure being of assistance to you with this project. Please contact us if we may be of further service, or if you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Executive Vice-President
Engineering Registration No. 12305

GHS/ma

cc: Smally, Wellford & Nalven, Inc.
Yale Properties (Longboat Key)
Jenkins & Charland

PROJECT L'Ambiance - LBK FILE NO. 90-8284

CLIENT Yale Properties DATE 1-14-92

SPECIFICATIONS See Attached Letter

PROCTOR DATA See Figure 2

REMARKS B/F = Backfill material

F = fill material

* = failing density test ⊛ = density retest meets project specs.

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
B/F	62	11-25-91	9.3	106.7	106.3	12.00"	99.6	pile cap #31
"	63	"	8.2	"	106.2	"	99.5	" #113
"	64	"	10.1	"	107.1	"	100.3	" #118
F	65	12-1-91	8.1	"	105.6	"	98.9	1st lift NE corner
"	66	"	8.7	"	107.7	"	100.9	"
"	67	"	9.3	"	105.9	"	99.3	"
"	68	12-3-91	6.2	105.0	107.0	"	101.9	2nd lift - pile caps
B/F	69	"	6.9	"	106.8	"	101.7	" "
"	70	"	10.1	"	105.6	"	100.5	" "
"	71	12-9-91	7.3	"	106.2	"	101.1	Grade
"	72	"	8.1	"	106.9	"	101.8	"
"	73	"	5.6	"	106.1	"	101.0	"
F	74	12-11-91	11.2	106.7	106.6	"	99.7	"
"	75	"	9.3	"	106.5	"	99.8	"
"	76	"	12.5	"	104.8	"	98.2	"
B/F	77	12-12-91	5.8	"	102.9	-2.00'	96.4	⊛ SW1
"	78	"	4.9	"	99.8	"	93.5	⊛ SW3
"	79	12-13-91	10.0	"	106.1	-2.00'	99.4	retest #77 SW1
"	80	"	10.9	"	106.9	-2.00'	100.2	retest #78 SW2
"	81	"	9.8	"	107.0	-2.00'	100.3	SW3
F	82	"	11.4	"	107.7	+1.00'	101.0	NW Phase I
"	83	"	11.1	"	104.6	"	98.0	"
"	84	"	11.9	"	105.9	"	99.3	"
B/F	85	"	10.6	"	106.6	-1.00'	99.9	SW1
"	86	"	9.9	"	105.4	"	98.7	SW2
"	87	"	9.8	"	106.2	"	99.5	SW3
F	88	12-16-91	12.1	"	106.1	12.00"	99.4	final lift
"	89	"	11.1	"	105.4	"	98.7	"
"	90	"	12.6	"	106.6	"	99.9	"
"	91	12-18-91	4.7	"	10	+1.00'	97.4	*
"	92	"	3.7	"	103.6	"	97.1	*
"	93	"	10.8	"	106.0	"	99.4	retest #91

PLATE 1

PROJECT L'Ambiance - LBK FILE NO. 90-8284

CLIENT Yale Properties DATE 1-14-92

SPECIFICATIONS See Plate 1

PROCTOR DATA See Plate 1

REMARKS See Plate 1

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
F	94	12-18-91	10.4	106.7	108.1	+1.00'	101.3	retest #92
"	95	"	9.9	"	107.5	"	100.7	
"	96	12-20-91	12.5	"	106.6	+2.00'	99.9	2nd lift
"	97	"	12.0	"	106.0	"	99.3	"
"	98	"	12.9	"	106.8	"	100.1	"
"	99	12-23-91	9.9	"	107.5	+1.00'	100.7	1st lift S. end
"	100	"	9.5	"	106.5	"	99.8	"
"	101	"	10.5	"	107.8	"	101.0	"
"	102	"	8.5	"	106.3	+2.00'	99.5	2nd lift S. end
"	103	"	7.5	"	106.2	"	99.5	"
"	104	"	9.3	"	107.3	"	100.5	"
"	105	12-27-91	8.2	"	105.9	+1.00'	99.2	1st lift N. end phase 3
"	106	"	9.1	"	106.5	"	99.8	"
"	107	"	7.5	"	106.0	"	99.3	"
"	108	"	9.6	"	105.7	"	99.0	"
"	109	12-30-91	9.5	"	106.5	"	99.8	"
"	110	"	10.0	"	107.5	"	100.8	"
"	111	"	9.3	"	105.6	"	98.9	"
"	112	"	10.1	"	106.7	"	100.0	"

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

December 6, 1991
File No. 90-8284

TO: Yale Properties
2900 North Military Trail, Suite 201S
Boca Raton, Florida 33432
Attention: Mr. Mike Kempner

SUBJECT: Compaction Testing of Backfill Material @ L'Ambiance, Longboat Key, Florida

Progress Report No. 4

Gentlemen:

As requested, our firm has continued engineering testing and evaluation of the backfill material at the above referenced site. It is our firm's understanding that the following project specifications are to be utilized:

Specifications Review

The backfill material shall be compacted to a minimum of 98% Modified Proctor maximum density (AASHTO T-180).

A sample of the backfill material was previously obtained at the site and returned to our laboratory for analysis and testing purposes. Laboratory test results are summarized on the attached Figure 2.

The field testing program consisted of conducting eleven (11) in-place density tests on the backfill material to determine if compaction was completed in accordance with project specifications.

Included in this report are test numbers 51 through 61 conducted between November 13 and November 20, 1991. Test locations are shown on the attached Figure 2.

A complete summary of test results including density, moisture, percent compaction and depth of test below grade is tabulated on Plate 1.

Based on our field and laboratory test results, we are able to verify that the backfill material tested on the dates indicated was compacted in accordance with project specifications.

It has been a continuing pleasure being of assistance to you with this project. Please contact us if we may be of further service, or if you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Executive Vice-President
Engineering Registration No. 12305

GHS/ma

cc: Smally, Wellford & Nalven, Inc.
Yale Properties (Longboat Key)
Jenkins & Charland

PROJECT L'Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 12-4-91

SPECIFICATIONS See attached letter

PROCTOR DATA See Figure 2

REMARKS B/F = backfill material

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
B/F	51	11-13-91	9.3	102.9	102.7	-6.0'	99.8	Shear Wall 3
"	52	"	10.1	"	105.7	-2.0'	102.8	Cap 8-14
"	53	"	8.5	"	105.2	"	102.2	Cap 7 & 15
"	54	"	12.5	"	104.4	"	101.5	Cap 16
"	55	11-14-91	11.4	"	104.7	-4.0'	101.7	Shear Wall 3
"	56	"	10.5	"	104.4	"	101.5	" " 1 & 2
"	57	"	9.3	"	102.5	-2.0'	99.6	Cap 2
"	58	"	11.2	"	105.3	"	102.3	Cap 1
"	59	"	10.5	"	103.7	"	100.7	Cap 107
"	60	11-20-91	9.3	"	105.8	-1.0'	102.8	Shear Wall 3
"	61	"	8.7	"	104.6	-2.0'	101.7	Cap 114

PLATE 1

State of Florida
Department of Environmental Regulation

Request for Letter of Release to Place Water Supply System into Service

I. General Information

Name of Project: L'Ambiance

Permit No. WD 1098-90-002 Date of Issuance 10/26/90

☐ System completed to the full extent of the approved plans

☒ Partially completed to the extent noted herein

Potable water lines to serve the south building, and pool area; included is the connection to the Town of Longboat Key water main.

II. Engineer's Certification

This is to certify that the project has been substantially completed in accordance with approved plans and specifications, or that the deviations noted on the attached record drawings will not prevent the system from functioning in compliance with requirements of Chapter 17-555, Florida Administrative Code (F.A.C.), when properly operated and maintained. Further, the system has passed the pressure* and bacteriological tests that were conducted in accordance with AWWA Standards.

This certification is based upon on-site observation of construction, scheduled and conducted by me or by a project representative under my direct supervision.

The use of the word "certify" or "certification" constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification, and does not constitute a warranty or guarantee, either expressed or implied.

Seal

Millard J. Yoder 10/30/92

Signature Date

Millard J.Yoder, P.E. Reg. # 33765

Name and Address

Smally, Wellford & Nalven, A Division of Wilson Miller, Barton & Peek, Inc.

P.O. Box 4069 Telephone No. 813 / 371-3690

Sarasota, FL 34230

III. Acceptance by Utility*

The subject system has been accepted for operation and maintenance.

10/29/92

Signature Date

Gordon Deckelbaum, President

Name and Title

L'Ambiance At Longboat Key Club
Condominium Association, Inc.
415 L'Ambiance Drive
Longboat Key, Florida 34228

*In case of water distribution system or water main extention

Instructions

The following supporting material must be submitted with this form:

1. One (1) set of record drawings; in case of water distribution system or water main, the sample points must be indicated.

2. Results of the bacteriological tests -

   Please note that satisfactory bacteriological results for clearance for all parts of a community or non-community water supply facility except wells shall be two (2) consecutive daily samples with results of less than one (1) coliform per 100 milliliters of sample. For a community or non-community water supply system well clearance, a minimum of twenty (20) consecutive samples are required with no more than two (2) samples taken daily. Well sample results shall not exceed four (4) coliform per 100 milliliters of sample in more than ten percent (10%) of the samples analyzed. Sample results from any community or non-community water supply facility shall not be accepted on any analysis with TNTC or heavy non-coliform counts.

3. In case of well construction, a "Well Completion Report" must be submitted by the well driller.

This request must be accompanied by certification of completion of the sewerage system (if applicable).

Speed Letter®

To Roy Wamsley From Len Smally

Subject L'ambiance - Master Utility Plan

—No. 9 & 10 FOLD

MESSAGE

Please have the attached checked; treat as as-built. They should get with Tony Mione also; he'll be inspecting the north section.
Return to Len - Only Copy

Date 11/13/92 Signed LAS/eng

REPLY

Everything Looks Good

—No. 9 FOLD

—No. 10 FOLD

Date 12-02-92 Signed K.W.

WilsonJones
44-902 3 PART PRINTED IN U.S.A.
Carbonless

Speed Letter®

From Roy Wamsley To Len Smalley

Subject L'ambiance - Master Utility Plan

—No. 9 & 10 FOLD

MESSAGE

Please have the attached checked; treat as as-built. They should get with Tony Mione also; he'll be inspecting the north section.
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REPLY

Everything Looks Good

—No. 9 FOLD

—No. 10 FOLD

Date 12-02-92 Signed K.W.

WilsonJones
44-902 3 PART PRINTED IN U.S.A.
Carbonless

RECIPIENT—RETAIN WHITE COPY, RETURN PINK COPY
TURN OVER FOR USE WITH WINDOW ENVELOPE.

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

November 10, 1992

Mr. Robert Bolesta
Sarasota County Public Health Unit
Environmental Engineering Services
1301 Cattlemen Road
Sarasota, FL 34232

Subject: **L'AMBIANCE AT LONGBOAT KEY**
FDER PERMIT WD 1098-20-002
PARTIAL CERTIFICATION FOR SOUTH BUILDING

RECEIVED
NOV 12 1992

SWN Ref: 2591-1/W.O. 2239

Dear Mr. Bolesta:

Please be advised that to the best of our knowledge and belief, construction of the connection to the Town of Longboat Key water distribution system and potable water lines to serve the south building have been substantially completed in accordance with the approved construction plans and specifications.

We have enclosed the following for processing and for your records:

1. Copy of hydrostatic test
2. Copy of Bacteriological clearance from Sarasota County Public Health Unit
3. Two (2) copies of record drawings, color coded for your convenience
4. Four (4) copies of FDER form 17.555.910(9)

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

Should you have any questions regarding this matter, please contact our office.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder, P.E.
Vice President
Director of Engineering

MJY:CFR:tg

Enclosures

cc: Mr. Mike Kempner, Yale Properties, w/encls.
Mr. Kyle Hauck, Yale Properties, w/encls.
Ms. Nancy Blackwood, NationsBank, w/encls.
Merrill, Stewart & Wilson, w/encls.
Mr. Leonard Smally, Town of Longboat Key, w/encls.

Files

HYDROSTATIC TEST RESULTS

Project Name L'Ambiance — Date Sept 14, 92

Client Yale Property — Project No. 2591-1 (2239)

Test By C. Reich — Witnessed By —

Contractor Tri-D — Foreman Kip Sherwood

Road or Street on site (south bldg) — Station _____ to Station _____

Water main — South Building —

Length of Pipe Tested (Ft), S	Nominal Pipe Diameter (In), D	Square Root of Test Pressure, $\sqrt{P}$	*Allowable Leakage, L in Gallons/Hour $L = \frac{S \times D \times \sqrt{P}}{133,200}$
295, 155 →	8"	150 (12.25)	900 x 8 x 12.25 =
205, 245			.66 gal.
270, 235	6"	150 (12.25)	505 x 8 x 12.25 / 133,200 = .37
220, 15, 10'	1"	150 (12.25)	245 x 1" x 12.25 / 133,200 = 0.02
		Total →	1,05 Gal.

* As per AWWA C600-82

Test Began at 1:15 PM — Pressure on Gauge 156

First Hour Gallon Used — — Pressure on Gauge 155

Second Hour Gallon Used — — Pressure on Gauge 155

24 Hour Total Gallon Used _____ — Pressure on Gauge _____

Results: Passed ✓ Failed _____

Remarks Proposed fire line tested into building

Inspector's Signature Carl Reich

area certified attached

2591
MJ

RUN

FOR LAB USE ONLY
ID # 24025

REC'D 11:45

REPORTED BY
JUDY P. DRAKE

DRINKING WATER
BACTERIOLOGICAL ANALYSIS
FROM SARASOTA COUNTY PUBLIC HEALTH UNIT

SYSTEM NAME: Longboat Key SYSTEM I.D. NO: 6581098 SYSTEM PHONE: 383-3721

ADDRESS: 501 Bay Isles Rd. LBK, Fl. COUNTY: Sarasota DER DISTRICT: VC

COLLECTOR: Bill King COLLECTOR PHONE: 378-6133

SAMPLE SITE (LOCALLY OR SUBDIVISION): L'Ambiance

DATE AND TIME COLLECTED: 9-28-92 9:45

TYPE OF SUPPLY (CIRCLE ONE): COMMUNITY WATER SYSTEM NONCOMMUNITY WATER SYSTEM NONTRANSIENT - NONCOMMUNITY WATER SYSTEM
PRIVATE WELL SWIMMING POOL BOTTLED WATER OTHER PUBLIC WATER SYSTEM

TYPE OF SAMPLE (CIRCLE ONE): COMPLIANCE (CHECK BOX) ( ) DISTRIBUTION ( ) RAW REPEAT REPLACEMENT (CHECK BOX) ( ) TNTC OR C ( ) TURBID ( ) MAIN CLEAR WELL SURVEY 10 of 2 Complete OTHER (SPECIFY)

WD 1098-90-002

TO BE COMPLETED BY COLLECTION OF SAMPLE			
COLL. NO.	SAMPLE POINT (SPECIFIC ADDRESS)	CL RES'D	PH
1	tie in	1.5	
2	Tennis Court	1.5	
3	Pool Sw.	1.5	
4	Tie in to Bldg	1.5	
5	Fire line	1.0	

TO BE COMPLETED BY LAB				
ANALYSIS METHOD:	MF	MTF	MMO-MUG	PA
SAMPLE NUMBER	NON COLIFORM	*TOTAL	CONFIRM TOTAL	CONFIRM FECAL
25-1		A		
25-2		A		
25-3		A		
25-4		A		
25-5		A		

*RESULTS IN THIS COLUMN ARE PRELIMINARY. FECAL COLIFORM CONFIRMATION ON COMMUNITY AND NONCOMMUNITY WATER SYSTEMS AND TOTAL COLIFORM CONFIRMATION ON ALL TYPES OF WATER SYSTEMS WILL FOLLOW IN 24-48 HOURS.

P - COLIFORMS ARE PRESENT C - CONFLUENT GROWTH TA - TURBID, ABSENCE OF GAS OR ACID
A - COLIFORMS ARE ABSENT TNTC - TOO NUMBEROUS TO COUNT

( ) UNSATISFACTORY
(✓) SATISFACTORY
( ) INCOMPLETE COLLECTION INFORMATION
( ) REPEAT SAMPLES
( ) REPLACEMENT SAMPLES

INTERPRETATIONS - REMARKS BY PROGRAM REVIEWER

RECEIVED
OCT 0 5 1992

NAME AND MAILING ADDRESS OF PERSON/FIRM TO RECEIVE REPORT
Millard J. Yoder, P.E.
Smally Wellford & Nalven, Inc.
P.O. Box 4069
Sarasota, Fla. 34230

SMALLY, WELLFORD & NALVEN, A DIVISION OF WILSON, MILLER, BARTON & PEEK, INC

REVIEWING OFFICIAL: Bill King

TITLE:

25-11
MJ4

run

for lab use only
ID # 24025

REC'D

reported by
Judy P. Drake

Drinking Water
Bacteriological Analysis
HRS Sarasota County Public Health Unit

system name: Longboat Key system i.d. no: 6581098 system phone 383-3721

address: 501 Bay Isles Rd. LBK, Fl county: Sarasota der district VI

collector Bill King collector phone 378-6133

sample site (locally or subdivision): Ambiance

date and time collected: 9-29-92 9:00

type of supply (circle one): community water system noncommunity water system nontransient - noncommunity water system
~~private well~~ swimming pool bottled water other public water system

type of sample (circle one): compliance repeat Replacement main clearance well survey other _____
(check box) (check box) (specify)
( ) distribution ( ) TNTC or C
( ) raw ( ) turbid
( )

2 of 2 complete

WD1098-90-002

to be completed by collector of sample			
coll. no.	sample point (specific address)	CL RES'D	PH
1	Tie in.	.6	
2	Tennis Ct.	.7	
3	Pool Serv.	1.0	
4	Tie in Bldg	3.5	
5	Fire Line	.7	

to be completed by lab				
analysis method:	~~mf~~	mtf	mmo-mug	pa
sample number	NON COLIFORM	*total	confirm total	confirm fecal
~ 0 01		A		
0 03		A		
0 03		A		
0		A		
0 01		A		

*Results in this column are preliminary. Fecal coliform confirmation on community and noncommunity water systems and total coliform confirmation on all types of water systems will follow in 24-48 hours.

P - Coliforms are present C - Confluent growth TA - Turbid, Absence of gas or acid
A - Coliforms are absent TNTC - Too numberous to count

( ) Unsatisfactory
(✓) Satisfactory
( ) Incomplete Collection Information
( ) Repeat Samples
( ) Replacement Samples

interpretations - Remarks by program reviewer

Name and Mailing Address of person/firm to receive report

Millard J. Todd, P.E.
c/o Smally, Williford & Calven, Inc
P.O. Box 1069
Sarasota Fla. 34230

Reviewing Official Bill King

Title _____

YALE PROPERTIES - L'AMBIANCE
401 Longboat Club Road
LONGBOAT KEY, FLORIDA 34228

(813) 383-0747 or 0748
FAX (813) 383-2812

LETTER OF TRANSMITTAL

DATE	JOB NO.
12-16-92	

ATTENTION

RE: L'ambiance

TO Mr. Len Smally
TOWN of Longboat key
501 Bay Isles Rd
Longboat, key FL 34228

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via KH the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Set of reproducible mylars.

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit_____copies for approval
☐ For your use ☐ Approved as noted ☐ Submit_____copies for distribution
☒ As requested ☐ Returned for corrections ☐ Return_____corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

RECEIVED DEC 16 1992

COPY TO file w/o encl

SIGNED: Linda F. Hoffmann

PRODUCT 240 NEBS Inc., Groton, Mass. 01471.

If enclosures are not as noted, kindly notify us at once.

Speed Letter®

To Roy Wamsley From Len Smalley

Subject L'ambiance - Master Utility Plan

—No. 9 & 10 FOLD

MESSAGE

Please have the attached checked; treat as as-built. They should get with Tony Mione also; he'll be inspecting the north section.

Return to Len - Only Copy

Date 11/13/92 Signed LAS/cmg

REPLY

—No. 9 FOLD

—No. 10 FOLD

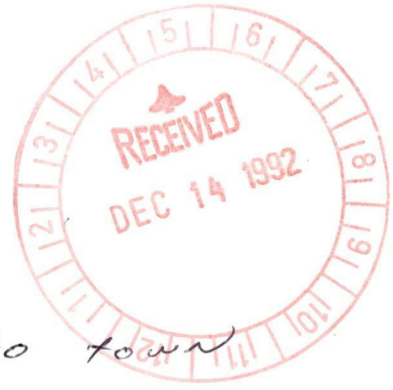
Date Signed

WilsonJones
44-902 3 PART PRINTED IN U.S.A.
Carbonless

SENDER—DETACH AND RETAIN YELLOW COPY. SEND WHITE AND PINK COPIES.

TRi D 12-11-92 Tay Mue

LA AMBiance



RECEIVED
DEC 14 1992

1. Need to clean up s-boxes

2. Repaint Back Flow provide key to town For lock

3. Fix grade on m.h. 5. so there is no standing water on sidewalk

4. Repaint Hydrant in Front of Building

5. Resod around m.h. 6. note J. Clement's will do when he Finishes landscaping

6. Repair mitered end's

Note spike From Sun and I spoke to Kyle he assured me that he would take care of these few Item's I am satisfied with utility work

Tay Mue
Spike Cook

L'ambiance file

TOWN OF LONGBOAT KEY
SEWER AND WATER

EASEMENT

THIS INDENTURE, made this 7th day of December, 1992, by and between YALE PROPERTIES-L'AMBIANCE, a Florida general partnership of the County of Sarasota and State of Florida herein referred to as Grantor, whether one or more, and TOWN OF LONGBOAT KEY, a municipal corporation of the State of Florida, herein referred to as Grantee,

WITNESSES, that the said Grantor, for and in consideration of the sum of ONE ($1.00) DOLLAR and other good and valuable consideration by Grantee to Grantor duly paid, the receipt hereof is hereby acknowledged, has granted, bargained, sold and conveyed, and by those presents does grant, bargain, sell and convey to grantee and its successors and assigns forever, a non-exclusive perpetual easement over and across the following described land, situate in Sarasota County, Florida, to wit:

> All of the streets, roads, driveways and common elements contained within the legal description attached hereto as Exhibit "A", for the purpose of inspecting/testing of sewer and water lines and accessory equipment pertaining thereto.

IN WITNESS WHEREOF, each person named as Grantor herein has hereunto set his or her hand and seal the day and year first above written.

Executed in Our Presence as Witnesses

Bonnie S Walters
* BONNIE S. WALTERS
* Print Name of Witness

Juliana S Brandon
* JULIANA S BRANDON
* Print Name of Witness

YALE PROPERTIES-L'AMBIANCE, a Florida general partnership

By: Yale Properties Two, Inc., a Florida corporation, as general partner

Per: _____
Gordon Deckelbaum, Vice President

(Corporate Seal)

"Grantor"

STATE OF FLORIDA
COUNTY OF PALM BEACH

I HEREBY CERTIFY, that on this 7th day of December, 1992, the foregoing instrument was executed by Gordon Deckelbaum, as Vice President of Yale Properties Two, Inc., a Florida corporation, as general partner of YALE PROPERTIES-L'AMBIANCE, a Florida general partnership, and who is personally known to me and did not take an oath.

(NOTARIAL SEAL)

Marilyn Malin
* MARILYN MALIN
*(Print Name of Notary Public)
Notary Public - State of Florida
My Commission Expires _____
Commission Number CC 161323

Easement.LAM

L'AMBIANCE
AT LONGBOAT KEY CLUB
(PHASE 1)

DESCRIPTION OF PHASE 1:

A tract of land lying in Fractional Sections 21, 22, 27 and 28, Township 36 South, Range 17 East and being a part of Parcel B, Unit No. 6, Longboat Key Club Subdivision, as recorded in Plat Book 32 on Pages 30 and 30A of the Public Records of Sarasota County, Florida; said tract being more specifically described as follows:

Commence at the Easterlymost corner of said Parcel B; said Easterlymost corner being located on the Southwesterly right-of-way line of Longboat Club Road as shown on the plat of Unit No. 1, Longboat Key Club Subdivision as recorded in Plat Book 18 on Pages 11 through 11B of said Public Records; thence N.41°39'29"W. (N.41°41'40"W. measured) along the said Southwesterly right-of-way line; a distance of 155.00 feet (155.04 feet measured) to the POINT OF BEGINNING;

(the following four calls are along said Southwesterly right-of-way line of Longboat Club Road also being the Northeasterly boundary of aforementioned Parcel B);

thence N.48°20'31"E. (N.48°45'45"E. measured) a distance of 3.00 feet (2.99 feet measured); thence N.41°39'29"W. (N.41°39'59"W. measured) a distance of 100.00 feet (100.00 feet measured) to the Point of Curvature (PC) of a curve to the left having a central angle of 05°05'31" (05°05'01" measured) and a radius of 1970.00 feet (1973.24 feet measured); thence Northwesterly along the arc of said curve a distance of 175.08 feet (175.08 feet measured) to the Point of Tangency (PT) of said curve; thence N.46°45'00"W. (N.46°45'00"W. measured) a distance of 102.50 feet;

thence, leaving the aforesaid right-of-way line, run S.45°00'00"W. a distance of 194.42 feet; thence S.45°00'00"E. a distance of 147.99 feet; thence S.45°00'00"W. a distance of 647 feet, more or less to the intersection thereof with the mean high water line of the Gulf of Mexico; thence Southeasterly along the said mean high water line, a distance of 420 feet more or less to the intersection thereof with the Southeasterly right-of-way line of aforesaid Parcel B; thence, N.42°30'00"E. (N.42°29'14"E. measured) along the Southeasterly line of said Parcel B, a distance of 574 feet more or less to a point which lies 231.89 feet S.42°30'00"W. (S.42°29'14"W. measured) from the Commencement Point along the said Southeasterly line of Parcel B; thence leaving the said Southeasterly line of Parcel B, run N.15°05'36"W. a distance of 262.95 feet; thence N.74°54'24"E. a distance of 126.33 feet to the POINT OF BEGINNING.

L'AMBIANCE
AT LONGBOAT KEY CLUB
(TENNIS FACILITIES PHASE)

DESCRIPTION
TENNIS FACILITIES PHASE

A tract of land lying in Sections 22 and 27, Township 36 South, Range 17 East and being part of Parcel B, Unit No. 6, Longboat Key Club Subdivision, recorded in Plat Book 32, Pages 30 through 30A of the Public Records of Sarasota County, Florida described as follows:

BEGIN at the Easterlymost corner of said Parcel B, being located on the Southwesterly right-of-way line of Longboat Club Road; thence N-41°-39'-29"-W along said Southwesterly right-of-way line a distance of 155.00 feet; thence S-74°-54'-24"-W a distance of 126.33 feet; thence S-15°-05'-36"-E a distance of 262.83 feet to the Southeasterly line of aforementioned Parcel B; thence N-42°-30'-00"-E along said Southeasterly line a distance of 231.74 feet to the POINT OF BEGINNING. Containing 0.7913 acres.

L'AMBIANCE
AT LONGBOAT KEY CLUB
(POOL FACILITIES PHASE)

DESCRIPTION
POOL FACILITIES PHASE

A tract of land lying in Sections 21 and 28, Township 36 South, Range 17 East and being part of Parcel B, Unit No. 6, Longboat Key Club Subdivision, recorded in Plat Book 32, Pages 30 through 30A of the Public Records of Sarasota County, Florida described as follows:

Commence at the Easterlymost corner of said Parcel B being located on the Southwesterly right-of-way line of Longboat Club Road; (the following five calls are along said Southwesterly right-of-way line of Longboat Club Road); thence N-41°-39'-29"-W a distance of 155.00 feet; thence N-48°-20'-31"-E a distance of 3.00 feet; thence N-41°-39'-29"-W a distance of 99.96 feet to the PC of a curve to the left having a central angle of 05°-05'-31" and a radius of 1970.00 feet; thence Northwesterly along the arc of said curve a distance of 175.08 feet; thence N-46°-45'-00"-W a distance of 102.50 feet; thence S-45°-00'-00"-W a distance of 194.42 feet to the POINT OF BEGINNING; thence S-45°-00'-00"-W a distance of 590.00 feet to the mean high water line of the Gulf of Mexico (elevation 1.15 feet) established on a survey by William F. Bishop and Associates, Inc. dated July 28, 1988; (the following two courses are along said mean high water line); thence S-40°-20'-42"-E a distance of 47.87 feet; thence S-43°-43'-01"-E a distance of 100.30 feet; thence N-45°-00'-00"-E a distance of 596.13 feet; thence N-45°-00'-00"-W a distance of 147.99 feet to the POINT OF BEGINNING. Containing 2.0181 acres.

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

March 18, 1993

Michael Kempner
Yale Properties - L'Ambiance
2900 N. Military Trail
Suite 201 South
Boca Raton, Fl. 33431

Dear Mike:

This is to confirm that Town sewer and water facilities currently exist and are available to the 137 units and common area ammenities at L'Ambiance.

The Town receives water from Manatee County and sends its sewage for treatment there. To the best of my knowledge, water and sewer capacity is available from Manatee County.

Sincerely,

Leonard A. Smally /cmg

Leonard A. Smally, P.E.
Director of Public Works

/cmg

KIRK · PINKERTON

A PROFESSIONAL ASSOCIATION

ATTORNEYS AT LAW

ROBERT J. CARR
WILLIAM C. STRODE
RHODERICK B. MacLEOD*
PHILLIP A. WOLFF
L. NORMAN VAUGHAN-BIRCH**
STEPHEN T. CARY
TIMOTHY S. SHAW
JOHN J. SHEA, JR.
WILLIAM E. ROBERTSON, JR.

W. LEE McGINNESS
CHRISTINE A. BUTLER
ANITA J. HANNA

720 SOUTH ORANGE AVENUE
SARASOTA, FLORIDA 34236

MAILING ADDRESS
P.O. BOX 3798
SARASOTA, FLORIDA 34230
TELEPHONE 813 • 364 • 2400
TELECOPIER 813 • 364 • 2490

JAMES E. KIRK, 1902-1983
JOHN C. PINKERTON, OF COUNSEL
DONALD C. McCLELLAND, JR., RETIRED

*BOARD CERTIFIED IN ESTATE PLANNING AND PROBATE
**BOARD CERTIFIED CIVIL TRIAL ATTORNEY

Direct Dial
(813)364-2435

December 11, 1992

Mr. Kyle Hauk
L'Ambiance Construction
401 Longboat Club Road
Longboat Key, FL 34228

Re: Yale Propertie-L'Ambiance/Town of Longboat Key

Dear Kyle:

Per Gordon Deckelbaum's instructions, enclosed herewith is the Sewer and Water Easement between Yale Properties-L'Ambiance and Town of Longboat Key.

Sincerely,

KIRK PINKERTON

Timothy S. Shaw
For the Firm

tss:rls
g:\.\tss\lambtown.ltr

M E M O R A N D U M

DATE: 04/13/93

TO: GRIFF H. ROBERTS, TOWN MANAGER

FROM: LEN SMALLY, DIRECTOR OF PUBLIC WORKS

SUBJECT: STORAGE BELOW BASE FLOOD ELEVATION

Attached is a packet which includes FEMA's January 1992 "Intent of Storage Areas" and the Town Attorney's opinion letter.

I am prepared to draft the memo to the Town Attorney at any time.

/cmg

cc Rick - Return to Me

Davis, Persson, Smith & Darnell

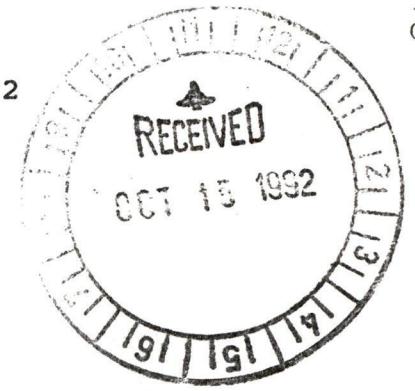
Attorneys and Counselors At Law
A Partnership of Professional Associations
2033 Main Street, Suite 406
Sarasota, Florida 34237
(813) 365-4950

David D. Davis*
David P. Persson°
Kevin P. Smith
Robert W. Darnell
Barbara B. Levin

* Also licensed to practice in Illinois
° Qualified in Administrative and Governmental Law under the Florida Designation Plan
Also licensed to practice in Louisiana and Massachusetts

Robert P. Rosin
Of Counsel
Telecopier
(813) 365-3259

October 14, 1992



Leonard A. Smally, P.E.
Director of Public Works
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Re: L'Ambiance

Dear Len:

This is in response to a letter to you from the Town Manager regarding L'Ambiance storage area breakaway walls and partitions within V-Zones below base flood elevation.

It is my understanding that our Town Code does not prohibit partitions within V-Zones, but FEMA has interpreted its regulations not to allow partitions. Thank you for forwarding to me a copy of FEMA's **Intent of Storage Areas.**

I have reviewed the Town of Longboat Key Code, Florida statutory law, the Florida Administrative Code, 42 U.S.C. 4001 et seq, and 44 C.F.R., §§ 59, 60. I offer the following:

The definition contained within the Code of Federal Regulations provides that the enclosed spaces below base flood elevation **"shall be used solely for parking of vehicles, building access, or storage."** FEMA has taken the position that the storage areas are to be limited to incidental items that can withstand exposure to the elements and, furthermore **"such storage areas must be flood-resistant or breakaway materials, non-partitioned . . .".**

The issue is whether the partitions should be removed from L'Ambiance and whether the Town should prohibit the construction of partitions in other buildings.

While I appreciate Mr. Cox's memo to you concerning past practices, it appears that FEMA has adopted the above non-partition policy with respect to storage areas as of January 1, 1992.

It is my understanding from you that L'Ambiance has been permitted prior to the above date and therefore is required to meet

the earlier requirements concerning breakaway walls and partitions under both our Code and FEMA.

My further understanding from you is that the pre-January 1, 1992 Intent of Storage Areas did not prohibit partitions. If this is the case, and L'Ambiance was permitted prior to that date, L'Ambiance has appropriately constructed permitted partitions. I believe that answers your first question.

As to prohibiting partitions in other buildings, I suggest you follow the FEMA Intent of Storage Areas's guidelines, as well as all other policies issued and published by FEMA to assure compliance with the Federal Regulations. The Town should apply our code or FEMA Regulations, whichever is more strict.

The question has been raised as to the legal validity of the policy decisions determined by FEMA. A review of the law indicates that Congress has delegated to the Director of FEMA the ability to promulgate regulations in the field. These regulations are published in the C.F.R.'s.

It has become more prevalent both at the state and federal level to publish "policies" to further interpret the regulations. These policies, if published, are often granted legal status. I have not researched the origin of the policies as promulgated by FEMA, but believe based upon my review of the federal and state statutory language together with the Code of Federal Regulations, it is in the Town's best interest to follow the intent policies as published by FEMA. If you would like a specific citation as to legal authority of the FEMA intent policies, I would be pleased to do so.

I hope this has been of some assistance in this difficult area. Should you have any questions, please do not hesitate to contact me.

Sincerely,

David P. Persson

DPP:awg42
Enclosure
cc: Mr. Albert T. Cox, Jr.
Mr. Dan Gaffney

M E M O R A N D U M

DATE: 10/07/92

TO: Leonard A. Smally, Public Works Director

FROM: Albert T. Cox, Town Manager

SUBJECT: L'Ambiance

In response to your memorandum of October 5, 1992 concerning the storage area below base flood elevation (V-Zone) at L'Ambiance, I have talked with Herb Lovett with reference to past practices. He advises, and I concur, the Town has always permitted storage areas with breakaway walls below the base flood elevation, and the Town Code and FEMA regulations do not restrict storage areas and breakaway walls below the base flood elevation.

See 154.03 Breakaway Walls

See 154.08 (2)(C) (As you indicated)
If breakaway walls are utilized, the enclosed space shall not be used for human habitation.

See 154.12 Breakaway Walls

I do not believe the Town can require L'Ambiance to remove their permitted breakaway walls (storage rooms).

You should seek from Charles Speights of DCA the section of the law he relies on that prohibits the breakaway walls and seek Town Attorney legal opinion. Until such time do not issue permits for same.

cc: David Persson

hej



M E M O R A N D U M

DATE: 10/05/92

TO: ALBERT T. COX, TOWN MANAGER

FROM: LEN SMALLY, DIRECTOR OF PUBLIC WORKS

SUBJECT: PERMITTED STORAGE BELOW BFE AT L'AMBIANCE

Attached is a copy of the L'Ambiance (south) permit drawings showing storage areas. We have permitted several rooms (as shown) with break-a-way walls to house storage cages. Storage of certain items in cages is permitted in both our code and in the Federal code.

Our code does not prohibit partitions in V-Zones. FEMA has interpreted their code to not allow partitions (attached). Charles Speights, DCA, agrees that partitions are not allowed.

Because we have permitted these storage rooms and they are constructed, I believe we have a situation like the hospitality suite at the Pierre.

Can we ask for them to be removed? Can we prohibit them from being constructed in other buildings?

/cmg

V-ZONES

(2) Except as otherwise provided herein, all new construction and substantial improvements within a designated Zone V1-30 shall meet the following requirements:

(a) Be located landward of the mean high tide.

(b) Be elevated on adequately anchored piles or columns so that the structural members of the lowest floor are elevated at least to the regulatory flood elevation and securely anchored to the piles or columns; provided, however, construction on property fronting the Gulf of Mexico and west of Gulf of Mexico Drive within 250 feet of the mean high-water line of the Gulf of Mexico shall hereby be prohibited except for construction on piles in accordance with § 1303 of the Standard Building Code, adopted by reference in § 150.01, or the equivalent thereof approved by the Town Engineer at the expense of the applicant.

(c) Have the space below the lowest floor free of obstruction or constructed with breakaway walls intended to collapse under stress without jeopardizing the structural integrity of the building; all breakaway walls shall meet the requirements of § 154.12. If breakaway walls are utilized, the enclosed space shall not be used for human habitation.

(d) Be designated and constructed so as to minimize the impact and effect of abnormally high tides, wind-driven water, or waves on the building.

(3) The adequacy of provisions contained in division (B)(2)(b) and (d) above shall be certified to by a registered professional engineer or architect.

(4) Fill shall not be used for structural support within Zones V1-30.

(5) Alteration of sand dunes and mangroves which would increase potential flood damage is prohibited.

(C) Manufactured Home Requirements.

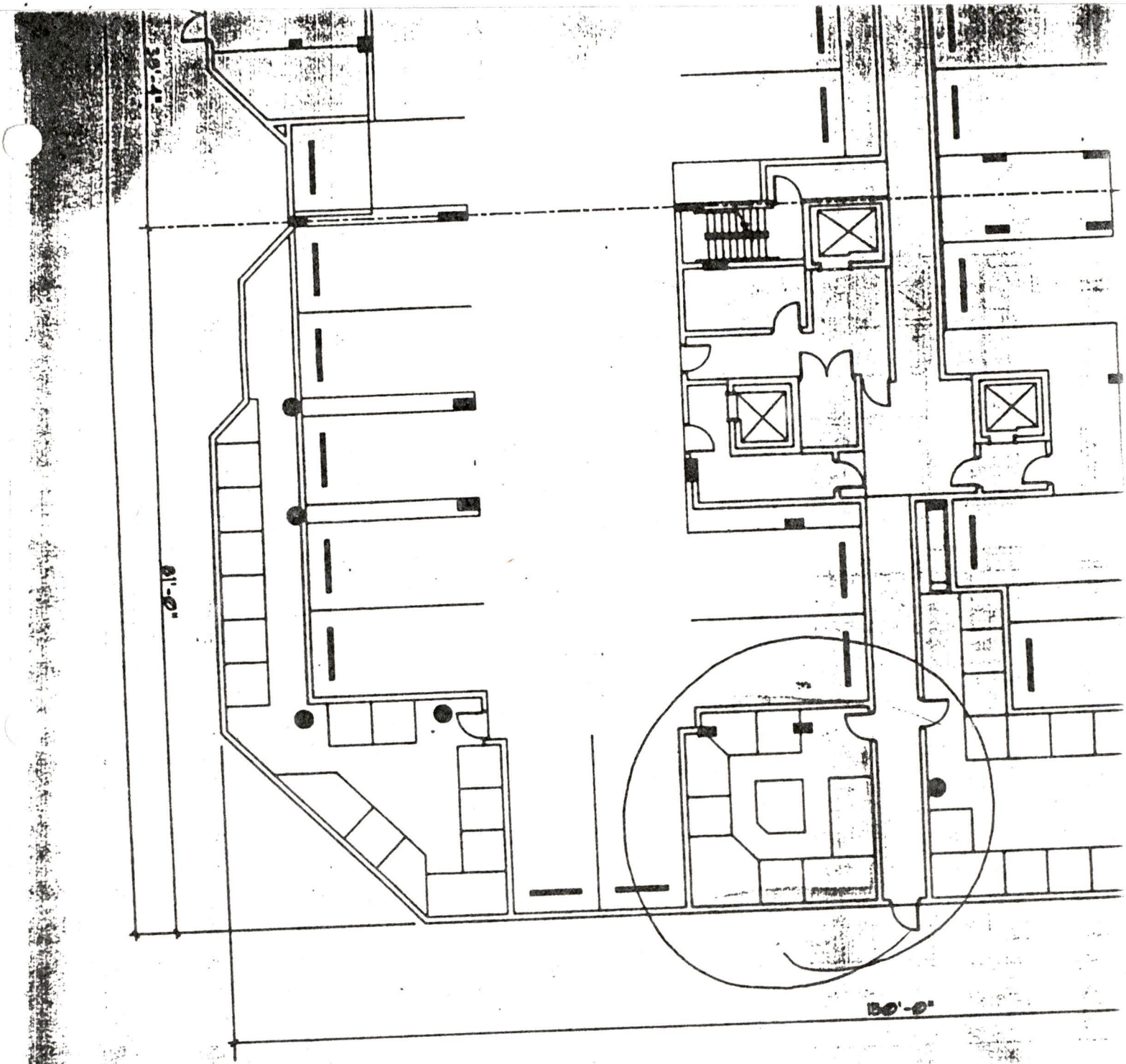
(1) No new manufactured home parks, expansion of existing manufactured home parks, or placement of any manufactured home not in a manufactured home park shall be allowed within a designated Zones V1-30.

(2) In the event that a manufactured home park location or relocation is not deemed to constitute the expansion of an existing manufactured home park as used in division (C)(1) above and as defined in § 154.03, the location or relocation shall be allowed provided that the following requirements are met.

(a) Any manufactured home moved into or relocated within an existing manufactured home park shall be anchored in accordance with the provisions in § 154.07(C)(1)(a), (b) and (d).

(b) Easy access for a manufactured home hauler is provided.

(3) New manufactured home parks and subdivisions, expansions to existing manufactured home parks and subdivisions, existing manufactured home parks and subdivisions where the repair, reconstruction or improvement of the streets, utilities and pads equal or exceed 50% of the value of the streets, utilities and pads before the repair, reconstruction or



L'AMBIANCE

Federal Emergency Management Agency
Region IV
1371 Peachtree Street, NE, Suite 700
Atlanta, GA 30309

R-4 1/92

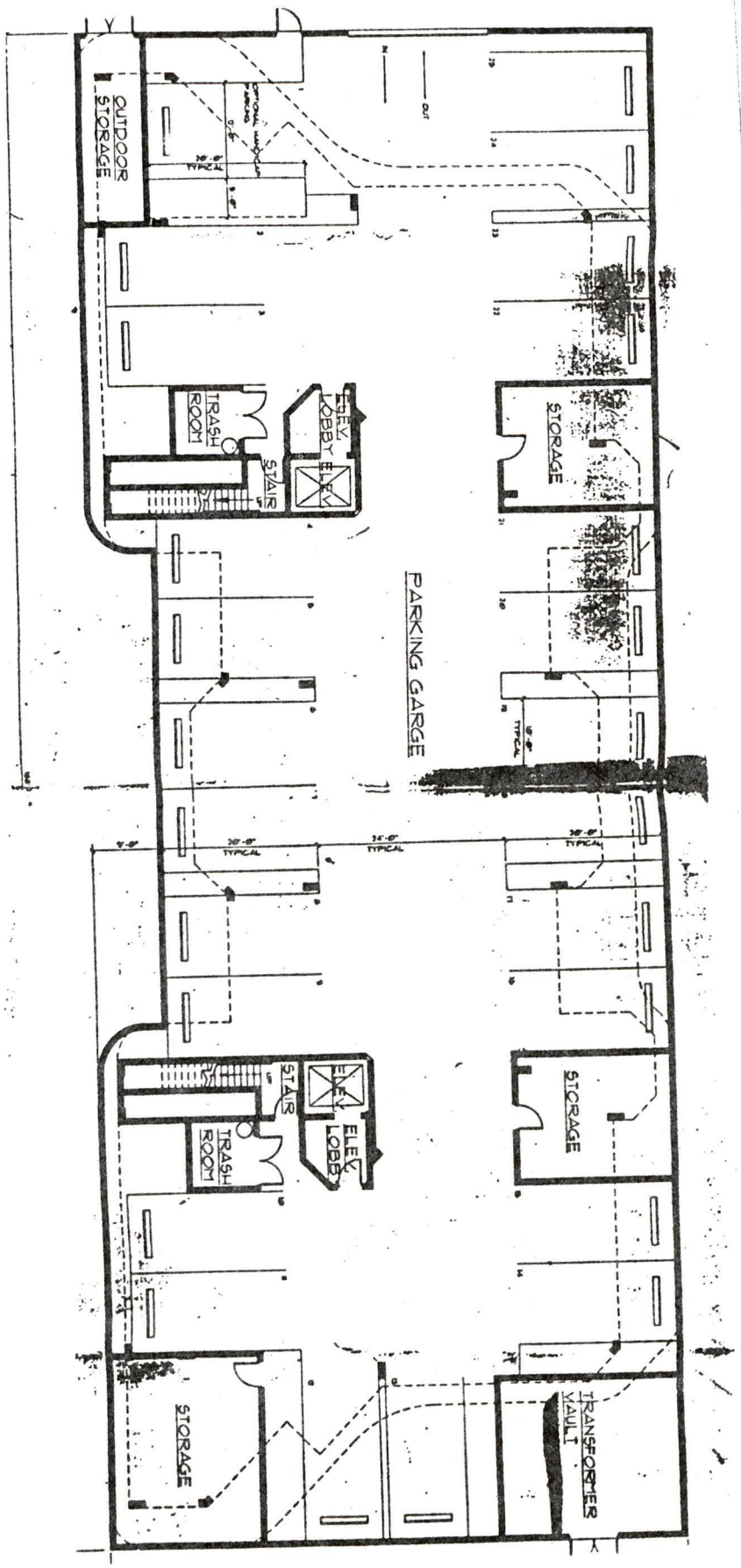
THE INTENT OF STORAGE AREAS

The purpose of a building is to house (i.e., support, shelter, or enclosure of persons, animals, chattels, or property of any kind) individuals or property. Materials, items, chattel, inventory, stock, merchandize, wares, goods, and all personal property intended to be used for the primary purpose of the building's function must be protected from flooding while housed within the building and therefore may not be stored below the base flood elevation (BFE) i.e., lowest floor. The term "lowest floor" under the National Flood Insurance Program is defined as

> the lowest floor of the lowest enclosed areas (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; Provided, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of (Section) 60.3.

Therefore, storage areas are intended to be limited to incidental items which can withstand exposure to the elements and have low flood damage potential. These items would include lawn mowers, garden equipment, bicycles and other low damage items for which, under most circumstances, flood insurance coverage is not provided.

Furthermore, such storage area must be of flood resistant or breakaway materials, non-partitioned, void of utilities except for essential lighting (outdoor type switches and fixtures), with openings to preclude hydrostatic loading and allow ventilation. The area cannot be temperature controlled and therefore exists simply because of aesthetic or load bearing design of the building. As such, the enclosed area should be considered bonus space with minimum access to store items that otherwise would be stored outside the building or in a garage or shed.



HARBOUR POINTE

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

SARASOTA COUNTY
PUBLIC HEALTH UNIT

MARK J. MAGENHEIM, M.D., M.P.H.
DIRECTOR AND HEALTH OFFICER

(813) 954-2900
SUNCOM 554-2900
FAX NUMBERS:
RINGLING - 364-2837
CATTLEMEN - 378-6152
VENICE - 492-3104
LAUREL - 364-2834

June 10, 1993



Mr. Carl F. Reich, P.E.
Smally, Wellford & Nalven
A Division of Wilson, Miller, Barton & Peek, Inc.
P.O. Box 4069
Sarasota, Florida 34230

RE: L'Ambiance, Longboat Key
WD#: 1098-90-002
Longboat Key Utilities

Dear Mr. Reich:

Based on your request to extend the above referenced waterline extension permit, our office hereby grants this extension to October 26, 1994.

If you have any questions, please contact me at 378-6133.

Sincerely,

OFFICE OF ENVIRONMENTAL ENGINEERING

Robert F. Bolesta

Robert F. Bolesta, Engineer II
Public Stystems Section

BK/rb

cc: Len Smalley, Longboat Key Utilities

cameron Kyle –

who is doing utility work
for town?

Please call

383-0747

yesterday existing
water lines L'Anse
Monday
doing N. Bldg!
using same plans
as first phase –

Want to
start on
monday

Tony has
our set of
plans – getting
another from SWN

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

November 12, 1993

Mr. Len Smally
Town of Longboat Key
610 General Harris
Longboat Key, FL 34228

Subject: **L'AMBIANCE, NORTH BUILDING**

Dear Mr. Smally:

In accordance with your request, please be advised that the attached construction plans contain the latest revisions to the plans, which include record information for the south building.

Revisions to the construction plans for the north building include the following:

- Grading changes to the area north of the par cours.
- Addition of a swale to the north side on the project.
- Minor grade changes to the driveway and parking areas.
- Added reinforcing steel to curbing over garage deck.
- Added drawing to set reflecting removal of sales center and site work pertaining to sales center.
- Added underdrain detail and piping plan.

Should you have any questions regarding this matter, please contact our office.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Carl F. Reich
Project Manager/
Construction Services Coordinator

CFR:tg

cc: Mr. Kyle Hauck, Yale Properties
Mr. Mike Kempner, Yale Properties

RECEIVED
NOV 12
100
PUBLIC WORKS DEPT.

SWN Ref: 2591-1/Work Order No. 2239

SPEED LETTER®

TO Tony Moore

FROM Len Smalley

SUBJECT L'Ambiance - Revised Plans

— FOLD NO. 9 or 10

MESSAGE

attached are for your review.

DATE 11/12/93 SIGNED LBS

REPLY

— FOLD FOR NO. 9

— FOLD FOR NO. 10

DATE _____ SIGNED _____

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SPEED LETTER®

TO Roy WAmsley

FROM Len Smalley

SUBJECT L'AmBIANCE — REVISED PLANS

— FOLD NO. 9 or 10

MESSAGE

Please review the attached
& advise of recommendation

DATE 11-12-93 SIGNED Len Smalley

REPLY

— FOLD FOR NO. 9

— FOLD FOR NO. 10

DATE _____ SIGNED _____

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SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

November 15, 1993

Mr. John Huffer
Woodruff & Sons, Inc.
P.O. Box 10127
Bradenton, FL 34282-0127

Subject: **L'AMBIANCE**

Dear John:

Enclosed are two (2) sets of the following shop drawings:

Manufacturer	Description	Comments
Uni-Flange	#1350 Pipe Restraint	No exceptions taken
Uni-Flange	#1300 Pipe Restraint	No exceptions taken
Ebba Iron	#2000 Pipe Retainer Glands	No exceptions taken
Tyler	Ductile Iron Fittings	No exceptions taken
Kennedy	Gate Valve	No exceptions taken
North American	PVC Pipe	Note markings
Brooks	Meter Box	No exceptions taken

These drawings have been reviewed for general conformance to the plans. Please note markings and comments on same.

It is understood that all equipment and/or material will be field checked for conformance to these shop drawings.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Carl F. Reich

Carl F. Reich
Project Manager/
Construction Services Coordinator

CFR:tg

RECEIVED
NOV 16
PUBLIC WORKS DEPT.

cc: Mr. Kyle Hauck, Yale Properties, w/encs.
Town of Longboat Key (shop drawings previously submitted)

SWN Ref: 2591-1/Work Order No. 2239

SPEED LETTER®

TO Kevin Webb

FROM Len Smalley

SUBJECT L'Ambiance

FOLD NO. 9 or 10

MESSAGE

Please check the attached
record drawings and return
your comments asap.

DATE 1/3/94 SIGNED LHS/cmy

REPLY

FOLD FOR NO. 9

FOLD FOR NO. 10

DATE SIGNED

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SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

December 21, 1993

Mr. Robert Bolesta
Sarasota County Public Health Unit
Environmental Engineering Services
1301 Cattlemen Road
Sarasota, FL 34232

Subject: **L'AMBIANCE AT LONGBOAT KEY**
FDER PERMIT WD 1098-20-002
PARTIAL CERTIFICATION FOR NORTH BUILDING

Dear Mr. Bolesta:

Please be advised that to the best of our knowledge and belief, construction of the potable water lines to serve the north building have been substantially completed in accordance with the approved construction plans and specifications.

We have enclosed the following for processing and for your records:

1. Copy of hydrostatic test

2. Copy of Bacteriological clearance from Sarasota County Public Health Unit

3. Two (2) copies of record drawings, sheets 12 and 19, color coded for your convenience

4. Four (4) copies of FDER form 17.555.910(9)

Should you have any questions regarding this matter, please contact our office.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder, P.E.
Vice President
Director of Engineering

MJY:CFR:tg

Enclosures

cc: Mr. Mike Kempner, Yale Properties, w/encls.
Mr. Kyle Hauck, Yale Properties, w/encls.
Ms. Nancy Blackwood, NationsBank, w/encls.
Merrill, Stewart & Wilson, w/encls.
Mr. Leonard Smally, Town of Longboat Key, w/encls.

RECEIVED
DEC 22 [illegible]
PUBLIC WORKS DEPT.

SWN Ref: 2591-1/Work Order No. 2239

CR -

2591-1

HYDROSTATIC TEST RESULTS

Project Name L'AMBIANCE

Date 11/18/93

Client YALE PROP.

~~Project~~ Job No. 2239

SWN Rep. SPIKE COOK

County Inspector TONY

Contractor WOODRUFF

Foreman BUDDY

Road/Street

Station to Station

ACTUAL PIPE BEING TESTED (LF)	PIPE BEING USED TO FIGURE ALLOWABLE (LF)	PIPE SIZE (INCHES)	SQUARE ROOT OF TEST PRESSURE	DIVIDED BY 133,200	ALLOWABLE LOSS IN GAL.- OZ. TEST / 2 HR
7	7	3"	12.25	.00R	.004
126	126	6"	12.25	.07	.14
					.14 gal. or 18 oz.

Test Began at 1:00

Pressure on Gauge 153

First Hour Gallon Used -0-

Pressure on Gauge 153

Second Hour Gallon Used -0-

Pressure on Gauge 153

Allowable Used -0-

Pressure on Gauge

Results Passed ✓ Failed

Remarks Zeroed gauge, blew off pressure.

Inspector's Signature Spike Cook

Rev: 3/90

run

for lab use only
ID # 24025

REC'D

reported by
Judy P. Drake

Drinking Water
Bacteriological Analysis
HRS Sarasota County Public Health Unit

system name: LBK system i.d. no: 6581098 system phone 383-[illegible]721

address: [illegible] Bay Isles Rd. county: Sarasota der district VI

collector [illegible] collector phone 378-6133

sample site (locally or subdivision): L'Ambiance 2nd Bldg

date and time collected: 11-22-93 11:00

type of supply (circle one): community water system noncommunity water system nontransient - noncommunity water system bathing place private well swimming pool bottled water limited use commercial limited use community

type of sample (circle one): compliance (check box) ( ) distribution ( ) raw repeat Replacement (check box) ( ) TNTC or C ( ) turbid ( ) main clearance well survey other _____ (specify)

to be completed by collector of sample			
coll. no.	sample point (specific address)	CL RES'D	PH
	End of line 8"	3.5	

to be completed by lab				
analysis method:	mf	mtf	mmo-mug	pa
sample number	NON COLIFORM	*total	confirm total	confirm fecal
3 [illegible]		17		

*Results in this column are preliminary. Fecal coliform confirmation on community and noncommunity water systems and total coliform confirmation on all types of water systems will follow in 24-48 hours.

P - Coliforms are present C - Confluent growth TA - Turbid, Absence of gas or acid
A - Coliforms are absent TNTC - Too numberous to count

RECEIVED
DEC 0 9 1993
SMALLY, WELLFORD & WALVEN,
A DIVISION OF
WILSON MILLER, BARTON & PEEK, INC

Interpretations - Remarks by program reviewer

( ) Unsatisfactory
(✓) Satisfactory
( ) Incomplete Collection Information
( ) Repeat Samples
( ) Replacement Samples

Name and Mailing Address of person / firm to receive report

[illegible]
[illegible]
[illegible]
[illegible] Fla. 34230

Reviewing Official _____

Title _____

run

for lab use only
ID # 24025

REC'D

reported by
Judy P. Drake

Drinking Water
Bacteriological Analysis
HRS Sarasota County Public Health Unit

system name: LBK system i.d. no: 6581098 system phone 383-3721

address: 501 Bayfiles Rd county: Sarasota der district VI

collector Bill King collector phone 378-6133

sample site (locally or subdivision): L'Ambiance 2nd Bldg

date and time collected: 11-23-93 1:35

type of supply (circle one): ~~community water system~~ noncommunity water system nontransient - noncommunity water system bathing place private well swimming pool bottled water limited use commercial limited use community

type of sample (circle one): compliance (check box) ( ) distribution ( ) raw repeat Replacement (check box) ( ) TNTC or C ( ) turbid ( ) main clearance well survey other _____ (specify)

WD1098-90-002

to be completed by collector of sample			
coll. no.	sample point (specific address)	CL RES'D	PH
	Blow off	.3	

to be completed by lab				
analysis method:	mf	mtf	mmo-mug	pa
sample number	NON COLIFORM	*total	confirm total	confirm fecal
3 [illegible]		A		

*Results in this column are preliminary. Fecal coliform confirmation on community and noncommunity water systems and total coliform confirmation on all types of water systems will follow in 24-48 hours.

P - Coliforms are present C - Confluent growth TA - Turbid, Absence of gas or acid
A - Coliforms are absent TNTC - Too numberous to count

Interpretations - Remarks by program reviewer

( ) Unsatisfactory
(✓) Satisfactory
( ) Incomplete Collection Information
( ) Repeat Samples
( ) Replacement Samples

Name and Mailing Address of person / firm to receive report

[illegible] F. Reich, P.E.
[illegible] Wellfield [illegible]
[illegible] Box 4069
Sarasota Fla. 34230

Reviewing Official Bill King

Title _____

State of Florida
Department of Environmental Regulation

Request for Letter of Release to Place Water Supply System into Service

SWN Ref: 2591-1

I. General Information

Name of Project: L'Ambiance

Permit No. WD 1098-90-002 Date of Issuance 10/26/90

☐ System completed to the full extent of the approved plans

☒ Partially completed to the extent noted herein

Potable water lines to serve the north building. This completes potable water main construction for this project.

II. Engineer's Certification

This is to certify that the project has been substantially completed in accordance with approved plans and specifications, or that the deviations noted on the attached record drawings will not prevent the system from functioning in compliance with requirements of Chapter 17-555, Florida Administrative Code (F.A.C.), when properly operated and maintained. Further, the system has passed the pressure* and bacteriological tests that were conducted in accordance with AWWA Standards.

This certification is based upon on-site observation of construction, scheduled and conducted by me or by a project representative under my direct supervision.

The use of the word "certify" or "certification" constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification, and does not constitute a warranty or guarantee, either expressed or implied.

Seal

Signature Date

Millard J. Yoder, P.E. Reg. #33765

Name and Address

Smally, Wellford & Nalven, A Division of Wilson, Miller, Barton & Peek, Inc.

P.O. Box 4069 Telephone No. 813 / 371-3690
Sarasota, FL 34230

III. Acceptance by Utility*

The subject system has been accepted for operation and maintenance.

Signature Date

Gordon Deckelbaum, President

Name and Title

L'Ambiance At Longboat Key Club
Condominium Association, Inc.
415 L'Ambiance Drive
Longboat Key, FL 34228

*In case of water distribution system or water main extention

Instructions

The following supporting material must be submitted with this form:

1. One (1) set of record drawings; in case of water distribution system or water main, the sample points must be indicated.

2. Results of the bacteriological tests -

   Please note that satisfactory bacteriological results for clearance for all parts of a community or non-community water supply facility except wells shall be two (2) consecutive daily samples with results of less than one (1) coliform per 100 milliliters of sample. For a community or non-community water supply system well clearance, a minimum of twenty (20) consecutive samples are required with no more than two (2) samples taken daily. Well sample results shall not exceed four (4) coliform per 100 milliliters of sample in more than ten percent (10%) of the samples analyzed. Sample results from any community or non-community water supply facility shall not be accepted on any analysis with TNTC or heavy non-coliform counts.

3. In case of well construction, a "Well Completion Report" must be submitted by the well driller.

This request must be accompanied by certification of completion of the sewerage system (if applicable).

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

SARASOTA COUNTY
PUBLIC HEALTH UNIT

MARK J. MAGENHEIM, M.D., M.P.H.
DIRECTOR AND HEALTH OFFICER

(813) 954-2900
SUNCOM 554-2900
FAX NUMBERS:
RINGLING - 364-2837
CATTLEMEN - 378-6152
VENICE - 492-3104
LAUREL - 364-2834

January 19, 1994

Mr. Millard J. Yoder, P.E.
Smalley, Wellford & Nalven
P.O. Box 4069
Sarasota, Florida 34230

RE: L'Ambiance
WD#: 1098-90-002
Longboat Key Utilities

Dear Mr. Yoder:

This acknowledges receipt of your letter of certification on December 21, 1993. The subject water distribution system extension has been completed in accordance with your plans and related materials.

Based on this certification and satisfactory bacteriological results, we are approving these facilities for service. Your continued cooperation in our water supply program is appreciated.

Sincerely,

OFFICE OF ENVIRONMENTAL ENGINEERING

Robert F. Bolesta

Robert F. Bolesta, Engineer III
Public Water Systems & Super Act Section

RFB:rb

cc: Gordon Deckelbaum
Len Smalley

RECEIVED
JAN 24 1994
PUBLIC WORKS DEPT.

SMALLY, WELLFORD & NALVEN, INC.
CONSULTING ENGINEERS AND SURVEYORS

133 South McIntosh Road
Mail: P. O. Box 4069
Sarasota, Florida 34230
Telephone (813) 371-3690
Fax No. (813) 377-9852



November 26, 1990

Mr. Matt Williams
Yale Properties
500 Longboat Club Road
Longboat Key, FL 34228

Subject: L'Ambiance Addendum

Our Ref: 2591

Dear Matt:

The following revisions are to be made to the L'Ambiance project specifications.

1. On Page TS-12-4 revise Sections 3.1.4 and 3.2 in accordance with the revised Page TS-12-4 enclosed.

2. On Page TS-12-8 revise Sections 10.1.1, 10.1.2 and 11.1 in accordance with the revised Page TS-12-8 enclosed.

3. On Page TS-14-2 revise Section 2.9 in accordance with the revised Page TS-14-2 enclosed.

These revisions are in accordance with the facsimile received from the Town of Longboat Key on November 16, 1990 and condition #24 of the letter from Leonard Smally, P.E. approving utility construction.

Very truly yours,

Millard J. Yoder, P.E.

For: SMALLY, WELLFORD & NALVEN, INC.
Consulting Engineers and Surveyors

MJY/bh

cc: Mr. Leonard Smally w/enclosures
Mr. Mike Kempner w/enclosures

Enclosures

2. MATERIALS, CONT'D.

2.6 Steel Pipe Sleeves

Pipe for sleeves to be jacked and bored under highways shall be steel conforming to ASTM A139-74, Grade A. Sleeve pipe shall be of the length and size shown on the drawings. The wall thickness shall be standard mil thickness for the required pipe diameter and as shown on the DOT permit.

2.7 Flexible Couplings

Flexible couplings shall be of cast iron for couplings installed underground and steel for above ground installation. Couplings shall be suitable for 150 psi working pressure. Flexible couplings shall be Style 53 and Style No. 38 as manufactured by Dresser Manufacturing Company, or Smith-Blair, or approved equal.

3. VALVES AND VALVE BOXES

3.1 Gate Valves

3.1.1 Gate valves for buried service shall be designed for a working pressure of not less than 150 psi. Gate valves, when fully open, shall have a clean waterway equal to the nominal diameter of the pipe. the valve shall open by turning to the left or counterclockwise when viewed from the stem. The operating nut shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's distinctive marking, pressure rating and year of manufacture cast on the body. Prior to shipment from the factory, each valve shall be tested by applying to it a hydraulic pressure equal to twice the specified working pressure.

3.1.2 Gate valves shall be iron body, epoxy coated inside and outside, resilient seat waterous Series 500 or approved equal. Valves shall conform to the specifications for Gate Valves or Ordinary Water Works Service, AWWA C509, and shall be fitted with an O-ring seal of standard manufacture. Valves to be located underground shall be the non-rising stem type designed for buried service with a 2-inch square operating nut. The valves shall have end connec-tions to match the pipe.

3.2 Valves Boxes

Valve boxes shall be provided for all valves which are below finished grade elevations. Valve boxes shall consist of cast iron base and screw type adjustable top section with cover which shall be marked "Water". Extensions shall be provided as required to grade.

3.3 Air Release Valves - Automatic

Air release valves shall be 1" through 16" diameter pipe and shall be the automatic type installed in a concrete box as shown on the drawing. Box and lid shall be of the necessary size to enclosed the valve. Pipe, fittings and valves for the assembly shall be as specified in the preceding paragraphs. A corporation stop shall be tapped into the main using the procedures as recommended by the iron pipe manufacturer. The corporation stop shall be Mueller H-10045, or Hays 5284, or approved equal. The valve shall be Type N, Crispin, as manufactured by Multiplex Manufacturing Co., Berwick, PA, or Model 200 APCO, as manufactured by Textron, Inc., Whittier, CA, or approved equal.

8. HIGHWAY CROSSINGS, CONT'D.

8.2 The carrier pipe shall be installed in the sleeve on longitudinal, treated lumber supports. Each support shall be 2 to 3 feet long and of sufficient thickness to raise the bell off the sleeve. The wood supports shall be positioned 3 feet from the bell and at each end of the pipe. Similar spacers shall be positioned at the top and sides of the pipe and all secured by metal straps or bands.

9. METER BOXES

9.1 Meter boxes shall be cast iron meter boxes as manufactured by Russell Pipe & Foundry Company. Cost iron boxes for 5/8" and 3/4" meters shall be Rome model and for 1", 1-1/2" and 2" meters shall be Dekalb model.

9.2 Precast reinforced concrete meter boxes with cast iron reading lid may be furnished as an alternate. Boxes for 5/8" and 3/4" meters shall be Type 33H and for 1", 1-1/2" and 2" meters shall be Type 66S AS MANUFACTURED BY Brooks Concrete Products Company.

9.3 Meter boxes for 3" meters shall be Type 67TR as manufactured by Brooks Concrete Products Company.

9.4 The meter and meter couplings will be furnished and installed by the Owner.

9.5 Plastic meter boxes and covers with a magnetic detecting disc embedded in an inspection lid built into the cover, as manufactured by Intercontinental Plastics Company, or an approved equal, may be furnished for non-traffic areas.

10. SERVICE CONNECTIONS

10.1 1-1/2" and 2" service connections shall be connected by use of a saddle. The Contractor shall provide corporation stops and curb stops installed in accordance with the detailed drawings and specifications.

10.1.1 The corporation stops shall be Mueller Type H-10046 or approved equal, M.I.P. thread inlet and F.I.P. outlet.

10.1.2 The angle curb stop shall be Mueller Type H-14265 or approved equal.

10.1.3 Where terrain and coverage require Mueller angle meter valve 14265 or approved equal shall be used.

11. BLOW-OFF ASSEMBLIES

11.1 The Contractor shall furnish and install blow-off assemblies in the locations shown on the drawings. Each assembly shall consist of a blow-off branch, gate valve, valve box, brass hose nipple, cap, chain, PVC pipe and fittings, tapped plug and thrust blocking. Sizes shall be as shown in the detail drawings. Pipe, fittings and valves shall be as specified in the preceding paragraphs.

2. **MANHOLES, CONT'D.**

2.3 The bases shall consist of a manhole bottom and a wall which shall extend a minimum of six inches above the top of the highest inflowing sewer. The top of the base section shall be carefully formed to receive the tongue of the barrel section. There shall be a minimum distance of four inches between the invert of the lowest outflowing sewer and floor of the precast base to provide for the construction of a formed invert and bench wall within the man hole. All sections of precast manholes shall be cast with at least three (3) lifting devices. These lift devices shall be approved by the Engineer prior to casting.

2.4 The top of base walls, the ends of reinforced concrete risers and the bottom ends of precast tops shall be so formed that when risers and tops are assembled with the base, they will make a continuous manhole. Joints shall be of such design as will permit effective joining and placement without irregularities in the interior wall surface of the manhole.

2.5 Manholes shall have flexible inserts or sleeves for pipe connections and shall meet the requirement of ASTM C-923, "Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes". Flexible pipe to manhole seals shall also meet "Rubber Gasket Specifications ASTM C-443" and "Test Performance Requirements ASTM C-425" for Compression Joints. Installation of pipe to manhole flexible seal shall be made in accordance with the manufacturer's specifications. These connectors shall be approved by the Engineer prior to casting.

Manhole sections with exposed reinforcing steel, excessive honeycombs or having the pipe to manhole rubber gasket seal integrally poured into manhole sections at a non-plan position will be cause for those sections to be rejected.

2.6 In constructing "Drop Manholes", the Contractor shall encase and support the riser and incoming pipe with concrete down to the monolithic base slab extension as shown on the Detail Sheet. Encasing the riser with brick will not be acceptable. Care shall be taken to have all pipes laid to correct lines and grade before concreting is undertaken. Drop manhole riser sections shall maintain the same inside diameter as the manhole base section to at least 6 inches above the top of the incoming upper drop pipe elevation to facilitate the form work for concrete placement. Drop assembly for manholes shall be constructed in accordance with construction drawings and shall be paid under the unit cost for drop assembly.

2.7 Invert channels of uniform cross-section and slope, either straight or with a continuous curve, shall be constructed between inlets and outlets of all manholes. Invert channels shall be smooth and accurately shaped in accordance with the plans.

2.8 Joints between manhole sections shall be sealed with pre-formed plastic joint sealer as shown in the "Construction Detail" drawings.

2.9 Manhole frame shall be 7 inches high and the cover shall have 2 blind pickholes and have the words "sanitary sewer" cast in, as manufactured by U.S. Foundry Corporation, Miami, Florida, U.S.F. No. 240-B ORS, or approved equal. Castings shall be gray iron, free from cracks, holes, swells, and cold shuts. All manhole castings shall be made accurately to the pattern and to the dimensions shown on the "Construction Details". Covers shall have a continuous and even bearing on the frame. Covers shall fit in the frame without binding along the perimeter. All lids which "rock" and do not lie solid after construction

2. MANHOLES, CONT'D.

is finished will be and must be replaced. The top of all precast manholes shall be brought to proper grade for receiving manhole frame by using brick or precast concrete grade rings. Masonry construction shall be laid plum, straight, level, square and true. Brick shall be laid in full beds of mortar and shoved into place. All joints shall be full and not more than one-half inch in thickness. The leveling bricks shall be clean hard burned Grade NB or better. See "Construction Detail" drawing for maximum dimensional limits of brick or grade ring adjustment. Masonry mortar shall be Type "N" with average 28-day compressive strength of 750 PSI, conforming to ASTM Specification C-270, latest revision. Water used in mixing shall be potable quality unless approved by Engineer.

3. INSTALLATION

3.1 The excavating and backfilling for placing the manholes shall comply with the division of the Technical Specifications entitled "Clearing, Excavating and Backfilling".

3.2 The manholes shall be carefully placed to line and grade.

3.3 Were required, top of manhole elevations may be revised by the Engineer as necessary to meet existing conditions or to comply with the latest road design.

4. METHOD OF PAYMENT

4.1 Payment for manholes shall be at the unit bid price for the size and depth of manholes in place, including excavating and backfilling.

TOWN OF LONGBOAT KEY FLORIDA

INCORPORATED NOVEMBER 14, 1955

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

November 19, 1990

Yale Properties Inc.
2900 N. Military Trail
Suite 201S
Boca Raton, Fl. 33431

Re: L'AMBIANCE

Gentlemen:

The utility work on the above referenced project is approved in accordance with the plans and specifications received October 26, 1990, with the following conditions:

1. No parking shall be allowed within the Longboat Club Road right-of-way.

2. Portable toilets shall be set back a minimum of 50' from the Longboat Club Road right-of-way and shall be screened from view.

3. Longboat Club Road adjacent to the project shall be swept regularly. A "mud trap" shall be maintained consisting of washed shell or gravel adjoining the pavement. The road shall be overlayed if damaged by construction.

4. A temporary, above ground, hose connection with 3/4" male thread and vacuum breaker shall be installed and maintained on the consumer side of any meter until the permanent connection is made.

5. No main line shall be laid within 5' of any building.

6. No curb shall be poured above new utilities until densities (98% Modified Proctor) have been taken on subbase below.

7. No galvanized pipe shall be installed underground.

8. Each building requires a minimum of one water meter, including pool buildings.

9. Water valves should be located so that new water mains can be properly isolated for testing.

10. Blow-offs are required at end of water mains.

11. The maximum cover for watermains shall be 48" unless crossing under other utilities, as approved by the Town of Longboat Key.

12. All service lines shall be Schedule 40 PVC as shown on the contract drawings.

13. In addition to the requirements specified concerning concrete pipe culverts and storm sewers, each joint on the line shall be wrapped in filter cloth approved by the Town of Longboat Key and the Engineer.

14. For protection against corrosive soils, ductile iron pipe and fittings shall be enclosed in a polyethylene sheet or tube and each length joined with 2" wide polyethylene adhesive tape. The sheet or tube shall be made from polyethylene resin meeting the requirements of ASTM D1248-72, and shall be Type I, Class C, Category 5, Grade J-3 with minimum carbon black content of 2.5% and 8 mils thickness. The sheet or tube shall be as manufactured by Polytube Corporation, Birmingham, Alabama, or approved equal. The sheet or tube shall be in accordance with the provisions of ANSI A21.5 - AWWA C105-72. Methods shall be such as to minimize damage to the sheet or tube but where required the adhesive tape shall also be used to repair tears or punctures.

15. Air testing shall be required by the Town in accordance with ASTM specifications for PVC pipe. No infiltration and exfiltration test will be acceptable as the official final test.

16. All official testing of mains will be held after densities are obtained in trenches and subbase is installed and has passed densities. Preliminary testing including, but not limited to, lamping, pressure tests, video, grade verifications, infiltration and exfiltration may be done at any time. Densities shall be at 98% Modified Proctor.

17. Televising of sanitary sewers by the contractor is not required since the Town will televise the lines at the Owner's expense when all official tests are passed.

18. Three sets of approved plans and specifications shall be submitted to the Utilities Department.

19. An indemnification agreement shall be filed waiving the requirement for restoration of pavements in the event of future onsite utility repairs.

20. A Completion Payment and Guarantee Bond shall be submitted prior to issuance of any building permit.

21. Sewer as-builts should include two directional locations from some permanent structure, as well as stations of all manholes and services (both ends), and finished grades.

22. Water as-builts should include two directional locations of all valves (from some permanent structure), stationing of all fittings and services (both ends) from those valves, and enough spot elevations to locate any main.

23. The approved specifications include the changes in your Addendum dated 11/19/90.

24. All work must be in accordance with Town of Longboat Key standards whether shown or noted in the plans and specifications.

Sincerely,

Leonard A. Smally, P.E.
Director or Public Works

/cmg
cc: Longboat Key Association, Inc.
Millard Yoder, S.W.N.

SMALLY, WELLFORD & NALVEN, INC.
CONSULTING ENGINEERS AND SURVEYORS

133 South McIntosh Road
Mail: P. O. Box 4069
Sarasota, Florida 34230
Telephone (813) 371-3690
Fax No. (813) 377-9852

October 26, 1990

Mr. Leonard Smally
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Subject: L'Ambiance

Our Ref: 2591

Dear Leonard:

Enclosed are three sets of signed and sealed drawings revised in accordance with our telephone conversation of October 24, 1990. We have also included three sets of technical specifications for your approval.

We are submitting one set of plans to the Fire Marshall on this date.

Please contact me if you have any questions.

Very truly yours,

Millard J. Yoder

Millard J. Yoder, P.E.

For: SMALLY, WELLFORD & NALVEN, INC.
Consulting Engineers and Surveyors

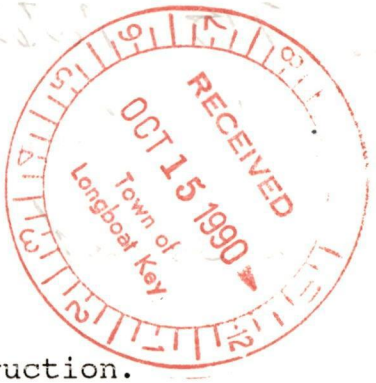
MJY/bh

cc: Yale Properties

Enclosures

LONGBOAT KEY ASSOCIATION, INC.

October 10, 1990



Len Smally, P.E.
Town Engineer
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

re: L'Ambiance

Dear Len:

I hear that this project is about to start construction.

I have scrupulously kept away from your approval process, but I would like some confirmation from you on several matters affecting Longboat Club Road and our Association.

The first deals with work within our road. What provisions has the Town required with respect to patching, overlayment, and sidewalks? As you may know, we are forced to face-up to the present condition of our roadway and with gathering funds to repair it.

The second deals with our own "ambience". A year or so ago we worked out a set of Rules and Regulations regarding parking within our right-of-way; setting back Johnny-on-the-spots, etc; constructing a trap for mud on all access drives into the construction site; etc. You promised to work them into the various Outline Development Plan approvals. If you need a refresher on these things, Tim Boudreau can provide you with a copy.

Have these, and any other things you or Al Cox thought of, gotten into the construction documents? I hope they have!

I know that it is usually difficult to get mail from the Town Offices --- but would you please confirm these items in a letter to me at my Braintree office.

I hope that you have had a restful summer and are prepared for the forth-coming snowbird season.

Very truly yours,

Brad

Bradford Saivetz, President

cc: Tim Boudreau

1. No one shall park in the LB club R/W w/o permission from the LB ~~club~~ key assoc.

2. ~~No~~ Portable toilets shall be set back 50' from the R/W of LB Club Rd or be screened from view.

3. TRAP FOR MUD? on all access drives?

4. Overlay NOTE

Speed Letter®

To Roy Wamsley From Len Smalley

Subject L'Ambiance "Record Drawings"

—No. 9 & 10 FOLD

MESSAGE

Please have Kevin check these with Tony Moine. Developer is asking for Bond Reduction.

Date 12/4/92 Signed LAS/cmg

REPLY

—No. 9 FOLD

—No. 10 FOLD

Date Signed

WilsonJones
44-902 3 PART PRINTED IN U.S.A.
Carbonless

SENDER—DETACH AND RETAIN YELLOW COPY. SEND WHITE AN

TOWN OF LONGBOAT KEY FLORIDA

INCORPORATED NOVEMBER 14, 1955

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

December 19, 1989

Yale Properties Longboat
2900 N. Military Trail
Suite 201 South
Boca Raton, Fl. 33431

Dear Sirs:

This is to confirm that Town sewer and water facilities currently exist and are available to the 150 units at L'AMBIANCE.

The Town receives water from Manatee County and sends its sewage for treatment there. To the best of my knowledge, water and sewer capacity is available from Manatee County.

Very truly yours,

Leonard A. Smally
Director of Public Works

/cmm

SMALLY, WELLFORD & NALVEN, INC.
CONSULTING ENGINEERS AND SURVEYORS

133 South McIntosh Road
Mail: P. O. Box 4069
Sarasota, Florida 34230
Telephone (813) 371-3690
Fax No. (813) 377-9852

RECEIVED
JAN 07 1991

January 4, 1991

Mr. Michael Kempner
Yale Properties
2900 N. Military Trail, Suite 201 S.
Boca Raton, FL 33431

Subject: L'Ambiance

Our Ref: 2591-1

Dear Mike:

In accordance with your request we have contacted Leonard Smally, Public Works Director of Longboat Key, regarding the acceptability of replacing the 607 lineal feet of sanitary sewer downstream of the receiving manhole at the subject project. Mr. Smally stated this would be an acceptable alternative to the slip lining called for in the plans.

If you wish for us to pursue this further we recommend contacting Candy for locations of the existing utilities in the proposed area of work as protection of these utilities may be a significant portion of the work. The utilities would need to be surveyed to determine their location relative to the sewer line.

Please advise the undersigned of your intentions.

Very truly yours,

Millard J. Yoder, P.E.

For: SMALLY, WELLFORD & NALVEN, INC.
Consulting Engineers and Surveyors

MJY/bh

cc: Leonard Smally, P.E.

TOWN OF LONGBOAT KEY FLORIDA

INCORPORATED NOVEMBER 14, 1955

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

January 10, 1991

AMERICAN PLUMBING

RE: WORK PERMIT - L'Ambiance

Dear Sirs:

This letter is your authorization from the Town of Longboat Key to work at L'AMBIANCE until 6:00 P. M. on Thursday, January 10, 1991, doing concrete work.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmg
cc: Police Dept.

CC — PAIL BELL TO KYLE

YALE PROPERTIES
LONGBOAT

He will Recy

RECEIVED
APR 19 1991

April 18, 1991

Town of Longboat Key
501 Bay Isles Rd.
Longboat Key, FL 33428
Attn: Len Smalley

RE: L'Ambiance

Dear Len:

Dear Kyle
Because in almost every case my inspector has

Attached is an invoice I received for the referenced project that I feel is unjustified.

We are proceeding with construction of the Bath House and are calling for inspection on a regular basis, therefore I don't see why we should have to pay for someone else checking the job schedule now or in the future as long as we are proceeding with substantial work on a building permit.

I know Mike has spoken to you on this and it was my understanding that these site visit charges would stop.

Please give me a call at your convenience to discuss this further if you feel it is necessary.

Sincerely,

Kyle Hauck

Kyle Hauck
Project Manager

cc: Mike Kempner

RKH/trw

4/24/91
re-sent to
Kyle Hauck

555 Longboat Club Road • Longboat Key, Florida 34228 • Tel: (813) 383-0747/8
2900 North Military Trail • Suite 201 S. • Boca Raton, Florida 33431 • Tel: (407) 994-2133

5. Approval of Ansel Subdivision Final Plat, 5400 Block Gulf of Mexico Drive, a Two Parcel Subdivision.
This preliminary and final plat request for approval was requested by Mr. Cox. He noted the back 14-acre portion of the property represented the Town's acquisition; Ansel retained the front commercial portion.

It was moved by Green, seconded by Metz, to grant preliminary and final plat approval of Ansel Subdivision plats, 5400 Block of Gulf of Mexico Drive. Motion carried unanimously on roll call vote: Green, aye; Metz, aye; Wolverton, aye; Savidge, aye; Pollock, aye; Twyman, aye; Brown, aye.

XIII. Town Attorney Comments.
Florida League of Cities - Senate Bill 2000.
Mr. Persson related a communique was received from the FLC regarding a possible attempt to be launched by legislators to override the Governor's veto of SB 2000. He said this bill had been passed to implement the amendment to the Constitution requiring the State to provide funding for programs mandated on local governments. He said Gov. Chiles had vetoed the bill because it provided any amounts under $1.4 million would not be considered significant, and any protest litigation by local governments would involve a cumbersome and costly process. The FLC urged communities to notify their local legislative delegations they did not wish them to override the veto.

It was moved by Twyman, seconded by Pollock, this item be placed on the 6-3-91 Agenda for action. Motion carried unanimously.

Mr. Cox was directed to communicate with the local legislative delegations requesting no appeal be made on the Governor's veto on this issue.

XIV. Town Manager Comments.

XV. Town Commission Comments.
U.S. Army Corps of Engineers Public Notice.
Commissioner Pollock brought this Notice to the attention of the Commission; this notice concerned the permitting application from the Town for the Turtle Hatchery Project.

Federal Emergency Management Agency Letter to Town.
Vice-Mayor Green commended Mr. Cox for work done enabling FEMA to reduce flood insurance rates for the Town of Longboat Key. Mr. Cox stated there was one more step to be completed before a final reduction level was completed involving a State Examination of Town records.

Sign Ordinance/L'Ambiance Sign.
Mayor Brown suggested the Town Attorney draft a sign ordinance recognizing unique, artistic, or floral outdoor displays as acceptable. Following discussion of the broad definition of sign and interpretation of the ordinance by Town staff, it was agreed

action would be withheld regarding the possible violation by L'Ambiance of the current sign ordinance until modification of the ordinance was adopted.

XVI. Public to be Heard.

XVII. Press to be Heard.

Longboat Key Beach Erosion Control District.
No one indicated any reason to hold a meeting of the Special District following this meeting.

XVIII. Adjournment
The Meeting was adjourned at 8:10 P.M.

James P. (Jim) Brown, Mayor

Donna H. Spencer
Patrizia Arends, Town Clerk
Donna Spencer, Deputy Town Clerk

THE TOWN OF
LONGBOAT KEY

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

October 25, 1991

Yale Properties
Att: Kyle Hauck
555 Longboat Club Road
Longboat Key, Fl. 34228

Re: WORK PERMIT - L'AMBIANCE

Gentlemen:

This letter is your authorization from the Town of Longboat Key to run a well point pump in conjunction with setting pile caps at L'AMBIANCE, 24-hours a day through December 31, 1991, contingent upon the following:

1. A dirt berm with haybales and plywood shall be used to keep noise at an absolute minimum. Pump must be baffled.

2. This permit does not take effect until the Town's inspector has accepted the above noise reduction techniques.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmm

cc: Police Dept.

THE TOWN OF
LONGBOAT KEY

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

November 19, 1991

Yale Properties - L'Ambiance
2900 N. Military Trail
Suite 201 South
Boca Raton, Fl. 33431

Dear Sirs:

This is to confirm that Town sewer and water facilities currently exist and are available to the 137 units and common area ammenities at L'AMBIANCE.

The Town receives water from Manatee County and sends its sewage for treatment there. To the best of my knowledge, water and sewer capacity is available from Manatee County.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmm

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

RECEIVED
DEC 4 1991

November 27, 1991

Mr. Michael Kempner
Yale Properties
2900 North Military Trail, Suite 201 S.
Boca Raton, FL 33431

Subject: **L'Ambiance**

SWN Ref: 2591-1

I ADVISED KYLE - "NOT TRUE"

Dear Mr. Kempner:

Please be advised that Mr. Leonard Smally, Public Works Director of the Town of Longboat Key, has advised us that a Florida Department of Environmental Regulation permit for wastewater collection is not required for the L'Ambiance project. The basis for this direction is three-fold.

1. The Town of Longboat Key has an agreement with Manatee County that Manatee County will accept all sewage from the town.

2. The proposed on-site work is considered a sewer service connection.

3. Proposed work in the Town of Longboat Key right-of-way is considered maintenance and repair of existing facilities.

Yale Properties has an existing permit from the Town of Longboat Key to construct these facilities in the form of a letter dated November 19, 1990. This permit will remain in effect until the project as planned is completed.

Should you have any questions, please contact the undersigned.

Very truly yours,

SMALLY, WELLFORD & NALVEN

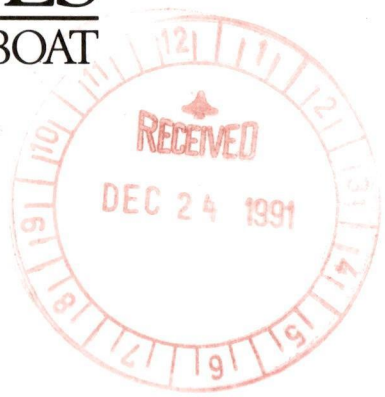
Carl F. Reich
Project Manager

CFR:lb

cc: Mr. Kyle Hauck, Yale Properties
Mr. Leonard Smally, Town of Longboat Key

I wrote him already

YALE PROPERTIES
LONGBOAT



December 19, 1991

Mr. Len Smally
Town of Longboat Key
501 Bay Isle Road
Longboat Key, Florida 34228

Re: L'Ambiance - Building I - South
Permit No: 9130

Dear Len:

Pursuant to our discussion on the codes that the Town has adopted since our permits were issued, I am requesting that we be allowed to install the electrical, mechanical and plumbing systems under the codes that are currently being enforced.

This would alleviate any confusion with the subcontractors and inspectors in relation to codes and permit dates and we would be in conformance with current standards.

The codes under which our permits were issued and the current codes are listed as follows:

PERMIT #	PERMIT DATE	CODE IN EFFECT	CURRENT CODE
9130	Sept. 4, 1990	1985 Standard Bldg Code	1985
3146(Mech)	Aug. 31, 1990	1985 Standard Mech Code	1988
3375	Aug. 31, 1990	1985 NEC	1990
4646	Aug. 27, 1990	1985 Standard Plbg Code	1988

I would appreciate a response if the Town has no objection to this request.

Sincerely,

Yale Properties,

Kyle Hauck

Kyle Hauck
Project Manager

KH/pfh

cc: Mike Kempner - Yale Properties

401 Longboat Club Road • Longboat Key, Florida 34228 • Tel: (813) 383-0747/8
2900 North Military Trail • Suite 201 S. • Boca Raton, Florida 33431 • Tel: (407) 994-2133

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

December 20, 1991

Kyle Hauck
Project Manager
Yale Properties
401 Longboat Club Road
Longboat Key, Fl. 34228

Re: L'Ambiance

Dear Kyle:

The Town agrees that the electrical, mechanical and plumbing permits were issued for the above referenced project prior to the Town adopting new codes on December 3, 1990. You may construct the building and rely on the codes in effect at the time you pulled the permits.

We would prefer, however, that the building is constructed under the codes adopted by the Town.

If there are any questions, please let me know.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmm
cc: Russ Nowlen
Bill Dobra
Dick Wells

YALE PROPERTIES
LONGBOAT

December 19, 1991

Mr. Len Smally
Town of Longboat Key
501 Bay Isle Road
Longboat Key, Florida 34228

Re: L'Ambiance - Building I - South
Permit No: 9130

Dear Len:

Pursuant to our discussion on the codes that the Town has adopted since our permits were issued, I am requesting that we be allowed to install the electrical, mechanical and plumbing systems under the codes that are currently being enforced.

This would alleviate any confusion with the subcontractors and inspectors in relation to codes and permit dates and we would be in conformance with current standards.

The codes under which our permits were issued and the current codes are listed as follows:

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3375	Aug. 31, 1990	1985 NEC	1990
4646	Aug. 27, 1990	1985 Standard Plbg Code	1988

I would appreciate a response if the Town has no objection to this request.

Sincerely,

Yale Properties,

Kyle Hauck

Kyle Hauck
Project Manager

KH/plh

cc: Mike Kempner - Yale Properties

YALE PROPERTIES
LONGBOAT

FACSIMILE HEADER

TO: Town of Longboat Key

ATTENTION: Carmen/Len Smolly

FROM: Kyle Hauck

DATE: 12-19-91

TRANSMITTED BY: KH

NO. OF PAGES (INCLUDING HEADER): 2

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE TELEPHONE IMMEDIATELY

PHONE: (813) 383-0747 FAX: (813) 383-2812

MEMO: Carmen - Please Give Len Copy of Letter. Have him Call if any questions. Original to be sent via Mail.

401 Longboat Club Rd. Longboat Key, FL 34228 (813)383-0747
2900 S. Military Tr., Suite 201 S. Boca Raton, FL 33431 (407)994-2133

YALE PROPERTIES
LONGBOAT

FACSIMILE HEADER

TO: Town of Longboat Key

ATTENTION: Len Smally

FROM: Kyle Hauck

DATE: 12-16-91

TRANSMITTED BY: KH

NO. OF PAGES (INCLUDING HEADER): 2

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE TELEPHONE IMMEDIATELY

PHONE: (813) 383-0747 FAX: (813) 383-2812

MEMO: Copy of letter you requested Please Return letter in your verbage that you have no problem if we construct the Building under 1990 N.E.C.

Thanks

401 Longboat Club Rd. Longboat Key, FL 34228 (813)383-0747
2900 S. Military Tr., Suite 201 S. Boca Raton, FL 33431 (407)994-2133

YALE PROPERTIES
L'AMBIANCE

October 30, 1991

Town of Longboat Key
Building Department
501 Bay Isles Rd.
Longboat Key, FL 34228
Attn: Bill Dobra

RE: L'ambiance Building I South
Building Permit # 9130
Electrical Permit # 3375

Dear Bill:

Pursuant to our conversation today the referenced project was permitted under the 1987 edition of N.E.C., however you indicated that if it was possible you would like us to construct the building under the 1990 edition of N.E.C.

I have reviewed this request with the principals of Yale Properties and we will comply with your wishes and construct the electrical portion of the building to meet the 1990 N.E.C.

In order for me to keep my records in order please sign below and return a copy of this letter with your approval.

Thank you for your cooperation.

Sincerely,

Kyle Hauck

Kyle Hauck
Project Manager

APPROVED BY: _____
Bill Dobra, Elec. Inspector

cc: Mike Kempner

Speed Letter®

To Jen From Bill

Subject L' Ambiance

—No. 9 & 10 FOLD

MESSAGE

Electrical permit # 3375 was ~~Hatter~~ applied for and issued on August 20, 1990 to Hatter Electric for $1696.42

Date 12-18-91 Signed

REPLY

—No. 9 FOLD

—No. 10 FOLD

Date Signed

WilsonJones
44-902 3-PART PRINTED IN U.S.A.
Carbonless

RECIPIENT—RETAIN WHITE COPY, RETURN PINK COPY

Speed Letter®

From Jen To Bill

Subject L' Ambiance

—No. 9 & 10 FOLD

MESSAGE

Electrical permit # 3375 was ~~[illegible]~~ applied for and issued on August 20, 1990 to Hatter Electric for $16 96.42

Date 12-18-91 Signed

REPLY

—No. 9 FOLD

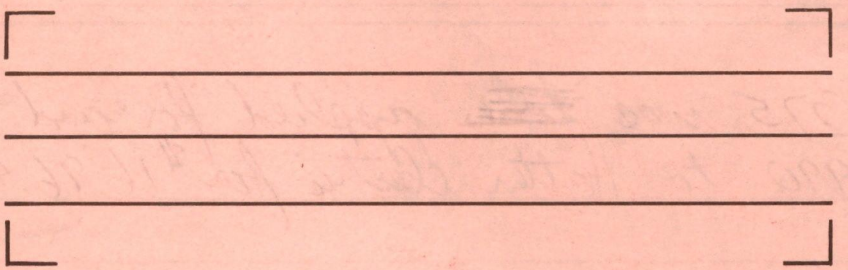
—No. 10 FOLD

Date Signed

WilsonJones
44-902 3-PART PRINTED IN U.S.A.
Carbonless

RECIPIENT—RETAIN WHITE COPY, RETURN PINK COPY.
TURN OVER FOR USE WITH WINDOW ENVELOPE.

FILL IN NAME AND ADDRESS HERE
FOR RETURN IN WINDOW ENVELOPE



—FOLD

—FOLD

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

SARASOTA COUNTY
PUBLIC HEALTH UNIT

MARK J. MAGENHEIM, M.D., M.P.H.
DIRECTOR AND HEALTH OFFICER

(813) 954-2900
SUNCOM 552-7950

December 17, 1991

Mr. Millard J. Yoder, P.E.
Smalley, Wellford & Nalvin, Inc.
P.O. Box 4069
Sarasota, Florida 34230

RE: L'Ambiance - WD# 1098-90-002
Time Extension

Dear Mr. Yoder:

Please be advised that a time extension of one year has been granted for the above referenced water line extension project.

If you have any additional questions, please call me at 378-6133.

Sincerely,

OFFICE OF ENVIRONMENTAL ENGINEERING

Robert F. Bolesta

Robert F. Bolesta, Engineer II
Public Water Systems Section

RFB/lah

xc: Len Smalley, Longboat Key Utilities



TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

February 19, 1992

Kyle Hauck
Project Manager
Yale Properties
401 Longboat Club Road
Longboat Key, Fl. 34228

Re: L'Ambiance - Work Permit

Dear Kyle:

This is your authorization to work at L'Ambiance at 7:30 A. M. on Friday, February 21, 1992, setting up the concrete pump for a pour on the fourth floor.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmm
cc: Police Dept.

YALE PROPERTIES
LONGBOAT



February 18, 1992

Mr. Len Smalley
Town of Longboat Key
Building Dept.
501 Bay Isles Road
Longboat Key, Florida 34228

RE: L'Ambiance - Work Hours

Dear Len:

On Friday, February 21, 1992 we will be pouring one half of the fourth floor. In order to complete the pour in a timely manner, I am requesting permission to set up the concrete pump between 7:30am and 8:00am.

Concrete trucks will start arriving on site at approximately 8am.

We will not be performing any other work or starting any other equipment unitl 8am.

Your cooperation would be appreciated and please let me know if this is approved by Thurdsay, February 20, 1992 so I can notify my subcontractor for scheduling purposes.

If you have any questions, please contact this office.

Sincerely,

Yale Properties

Kyle Hauck

Kyle Hauck
Project Manager

KH/pfh

401 Longboat Club Road • Longboat Key, Florida 34228 • Tel: (813) 383-0747/8
2900 North Military Trail • Suite 201 S. • Boca Raton, Florida 33431 • Tel: (407) 994-2133

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

APRIL 8, 1992

Kyle Hauck
Project Manager
Yale Properties
401 Longboat Club Road
Longboat Key, Fl. 34228

Re: L'Ambiance - Work Permit

Dear Kyle:

This is your authorization to work until 7:00 P.M. on Thursday, April 9, 1992, moving a placing boom by crane as outlined in your letter of April 8, 1992.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg
cc: Police

FAXED

YALE PROPERTIES
LONGBOAT

April 8, 1992

Mr. Len Smalley
Town of Longboat Key
Building Dept.
501 Bay Isles Road
Longboat Key, Florida 34228

RE: L'Ambiance - Work Hours

Dear Len:

I am requesting permission to work until 7pm on Thursday, April 9, 1992.

We will be pouring the 8th floor A slab on this date using a concrete placing boom. The pour typically lasts until 2:30 to 3:30pm.

On Friday we are scheduled to pour the 8th floor B slab. In order to make this pour I need to move the placing boom Thursday.

If all goes well we will start moving the boom at 4 to 4:30pm and it takes 1½ hours using a crane.

Due to the fact we lost a half day yesturday to the rain, our "A" pour was moved back one day and I'm trying not to lose a day from the "B" pour.

Please notify me if this will be permitted.

Your cooperation would be appreciated.

Sincerely,

Yale Properties

Kyle Hauck

Kyle Hauck
Project Manager

KH/pth

Post-It™ brand fax transmittal memo 7671 # of pages ▸ 1

To Len S.	From Kyle
Co. LBK	Co. Yale
Dept. Bldg Dept	Phone #
Fax # 388-7231	Fax # 383-2612

TOWN OF LONGBOAT KEY FLORIDA

INCORPORATED NOVEMBER 14, 1955

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

November 30, 1990

American Plumbing

Re: L'AMBIANCE - WORK PERMIT

Dear Sirs:

This letter is your authorization from the Town of Longboat Key to run a well point pump at L'AMBIANCE from 5:00 P. M. on Friday, November 30, 1990 through 8:00 A. M. on Friday, December 7, 1990, contingent upon the following:

1. A dirt berm with haybales and plywood shall be used to keep noise at an absolute minimum. Pump must be baffled.

2. This permit does not take effect until the Town's inspector has accepted the above noise reduction techniques.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmm
cc: Police Dept.

Speed Letter®

To Roy Wamsley

From Len Smalley

Subject L'Ambiance - Revised plans

—No. 9 & 10 FOLD

MESSAGE

Please have the attached reviewed asap & return comments.

Date 12/7/90 Signed LAS/cmg

REPLY

—No. 9 FOLD

—No. 10 FOLD

Date Signed

WilsonJones
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Speed Letter®

To Tony Mio[illegible]e

From Le[illegible] Smelly

Subject R'ambiance - Revised plans

—No. 9 & 10 FOLD

MESSAGE

Please review the attached & return your comments
ASAP.

Date 12/1/90 Signed LNS/cvg

REPLY

—No. 9 FOLD

—No. 10 FOLD

Date Signed

WilsonJones
44-902 3 PART PRINTED IN U.S.A.
Carbonless

SENDER—DETACH AND RETAIN YELLOW COPY. SEND WHITE AND PINK COPIES.

SMALLY, WELLFORD & NALVEN, INC.
CONSULTING ENGINEERS AND SURVEYORS

133 South McIntosh Road
Mail: P. O. Box 4069
Sarasota, Florida 34230
Telephone (813) 371-3690
Fax No. (813) 377-9852

December 7, 1990

Mr. Leonard A. Smally, P.E.
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Subject: L'Ambiance

SWN Ref: 2591-1

Dear Lenny:

In accordance with condition 18 of your November 19, 1990 approval letter on the subject project, we are enclosing three sets of the revised technical specifications and three sets of the following revised construction plans.

SWN Index No.	G-2591-006	G-2591-016
	G-2591-007, Rev. "C"	G-2591-017, Rev. "C"
	G-2591-008, Rev. "A"	G-2591-018, Rev. "B"
	G-2591-009	G-2591-019, Rev. "A"
	G-2591-010	G-2591-020
	G-2591-011, Rev. "A"	G-2591-021, Rev. "A"
	G-2591-012, Rev. "A"	G-2591-022
	G-2591-013, Rev. "A"	G-2591-023, Rev. "C:
	G-2591-014, Rev. "A"	G-2591-031
	G-2591-015, Rev. "B"	G-2591-1001

Please note that we have added a plan for a sales center.

The plans also have been revised as described in the revision blocks. These revisions include measures to accommodate the client's construction sequence. The 24 by 38-inch RCP installation will precede the offsite water and sewer improvements. Therefore, a temporary adjustment of the existing water main and a sewer conflict junction box will be required.

We have also shallowed the 10-inch PVC to be constructed along Longboat Club Road in accordance with condition 11 of your approval letter. The specifications have been revised in accordance with your markups and condition 23 of your approval letter.

Please advise if you have any questions regarding these plans.

Yours very truly,

Millard J. Yoder, P.E.
Vice President

For: SMALLY, WELLFORD & NALVEN, INC.
Consulting Engineers and Surveyors

MJY:ba
Enclosures
cc: Yale Properties

TOWN OF LONGBOAT KEY FLORIDA

INCORPORATED NOVEMBER 14, 1955

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

December 11, 1990

Millard J. Yoder, P. E.
Smally, Wellford & Nalven, Inc.
P.O. Box 4069
Sarasota, Fl. 34230

Re: L'Ambiance
Your Ref: 2591-1

Dear Millard:

Enclosed please find a marked-up set of submittals for the subject project.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmm
enc.

SMALLY, WELLFORD & NALVEN, INC.
CONSULTING ENGINEERS AND SURVEYORS

133 South McIntosh Road
Mail: P. O. Box 4069
Sarasota, Florida 34230
Telephone (813) 371-3690
Fax No. (813) 377-9852

BACK TO MILLARD

November 28, 1990

Roy
Lee
Noreen (1)

TONY (1)

File (1)

Mr. Leonard Smally
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Subject: L'Ambiance

Our Ref: 2591-1

Dear Lenny:

Enclosed are two sets of submittals for the subject project.

Please provide this office with any comments you may have.

Very truly yours,

Millard J. Yoder

Millard J. Yoder, P.E.

For: SMALLY, WELLFORD & NALVEN, INC.
Consulting Engineers and Surveyors

MJY/bh

cc: Mr. Matt Williams, Yale Properties

Enclosures

Attached is Marked up Set of submittals

RECEIVED
NOV 29 1990
Town of Longboat Key

12-4-90

AMERICAN PLUMBING OF SARASOTA, INC.

DECEMBER 18, 1990

TOWN OF LONGBOAT KEY
501 BAY ISLES ROAD
LONGBOAT KEY, FL. 34228
(813)383-3726

ATTN: LEN SMALLY

PROJECT: L'AMBIANCE

DO TO DESIGNS & CONFLICTS WITH STORM DRAINAGE AND WATER MAIN, A REQUEST OF LOWERING THE WATER MAIN UNDER THE STORM DRAINAGE WAS DECIDED.

WITH ALL THE RESIDENCES HERE FOR THEIR VACATIONS, WE WOULD LIKE TO MAKE A REQUEST TO LOWER THE WATER MAIN AT 12:00 P.M., 12/19/90, RATHER THAN HAVING A SHUT DOWN PERIOD DURING THE DAY. AMERICAN PLUMBING OF SARASOTA, INC. HAS NO PROBLEM WITH THIS TIME PERIOD AS LONG AS THE CITY OF LONGBOAT KEY ALSO AGREES. IF YOU WOULD PLEASE CALL ME OR HAVE YOUR INSPECTOR CALL TO VERIFY, IT WOULD BE GREATLY APPRECTIATED. THANK YOU.

SINCERELY,

SCOTT DAULT
PROJECT COORDINATOR/ESTIMATOR

SD/bam

DISK:WS/L'AMBIANCE

6029 DEACON PLACE, SARASOTA, FLORIDA 34238 — TELEPHONE (813) 923-4578
FAX # (813) 923-2586

TOWN OF LONGBOAT KEY FLORIDA

INCORPORATED NOVEMBER 14, 1955

501 Bay Isles Road
Longboat Key, Florida 33548
(813) 383-3721

December 20, 1990

American Plumbing of Sarasota

Re: WORK PERMIT - LONGBOAT CLUB ROAD AT L'AMBIANCE

Gentlemen:

This is your authorization from the Town of Longboat Key to work on LONGBOAT CLUB ROAD AT L'AMBIANCE until 7:00 P. M. on Thursday, December 20, 1990, working on the water main.

Very truly yours,

Leonard A. Smally, P. E.
Director of Public Works

/cmg
cc: Police Dept.

SMALLY, WELLFORD & NALVEN

A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

LETTER OF TRANSMITTAL

DATE July 10, 1992



TO Mr. Kyle Hauck
Yale Properties
401 Longboat Club Road
Longboat Key, FL 34228

SUBJECT L'Ambiance

REFERENCE NO. 2591-1/W.O. #2239

DRAWING NO. _____

TRANSMITTED Preconstruction Meeting Agenda

ATTACHED:	
ADDENDA	
CHANGE ORDER	
DRAWINGS	
OTHER	X
FOR APPROVAL	
FOR YOUR FILE	X
AS REQUESTED	
FOR REVIEW	
PLEASE RETURN	

REMARKS _____

cc: Mr. Mike Kempner, Yale Prop.,w/encl.
Tri-D, w/encl.
Huffman Trucking, w/encl.
Town of Longboat Key, w/encl.

SIGNED Carl F. Reich

CFR:tg Carl F. Reich
Project Manager

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

PRE-CONSTRUCTION

MINUTES OF MEETING

PROJECT NAME: L'Ambiance (South) **PAGE:** 1 of

DATE OF MEETING: 7/13/92 ATTENDEES **PROJECT NO:** 2591-1

ITEM	DESCRIPTION			ACTION BY
	CARL REICH	SWN	377-1929	
	BOB WALDREF	SWN	371-3690	
	Kyle Hauck	Vale	383-0747	
	Allen Long	Tri-D	365-8022	
	Bill Grady	Huffman Trdg	748 0969	
	Mark Boswell	Tri D	365-8022	
	JOHN CLEMENTS	Vale	383 0747	
	Kevin Webb	Town of LBK	383-3721	
	SPIKE COOK	SWN	377-1929	

SWN Ref: 2591-1

L'AMBIANCE AT LONGBOAT KEY
SITE AND UTILITY WORK

PRECONSTRUCTION MEETING
AGENDA

Date: July 13, 1992 Time: 10:00 a.m. Place: L'Ambiance at Longboat Key

1. INTRODUCTIONS AND SIGN-IN

Yale Properties (Yale)
Smally, Wellford & Nalven (SWN)
Tri-D, Inc.
Huffman
Town of Longboat Key
Others

2. GENERAL PROJECT DESCRIPTION

Site work, off and on site utilities and drainage associated with the construction of the south building for L'Ambiance

3. PERSONNEL INVOLVED

Yale
- Kyle Hauck

SWN
- Millard Yoder, Principal-in-Charge
- Carl Reich, Construction Services Coordinator
- *Robert Waldref - survey*
- *Spike Cook - on-site observations*

Contractor
- Tri-D - *Mark Boswell, Alan Long*
- Huffman - *Bill Grady*

Town of Longboat Key
- *Kevin Webb*

4. UTILITIES

GTE - *not present*
FPL - *not present*
Town of Longboat Key water and sewer
Candy (1-800-282-8881)
Others

5. PERMITS

Florida Department of Environmental Regulation (Water/Sewer) - current
Department of Natural Resources ST779 (exp. *9/26/93*)
Town of Longboat Key (11-19-90)

6. CONTRACT ADMINISTRATION

Communication through SWN:
- Town of Longboat Key representative to observe construction
- SWN to respond to technical questions

Shop drawings: Five (5) copies submitted by contractor; two (2) to be returned
- *need off-site sewer submittals*

Schedule - Starting date
- *earthwork to start this week*

Pay requests: submitted through SWN to Yale/due by 25th of month
- *Kyle Hauck to handle*

Town of Longboat Key to inspect water and sewer

7. CONTRACTOR AND CONSTRUCTION ITEMS

~~Submission of schedule~~ - *N/A*
~~Subcontractors~~ - *N/A*
Testing lab - *Ardaman*
~~Material suppliers~~ - *N/A*
Preconstruction photographs and/or video tapes (for off-site work) *not required; Yale Properties has contributed to the Town of Longboat Key for use of roadways.*
Local ordinances, as specified in permits
Detours/public safety
Emergency traffic
~~Sanitary facilities on site~~ - *N/A*
Contractor's office/yard site - *on site*
Emergency phone numbers - *refer to sign-in sheet*

8. SPECIAL CONSIDERATIONS

Survey layout - *to contact Robert Waldref when required*
Compaction of lifts - *each contractor responsible for their own work*
Coordination of Contractors' schedules - *must coordinate carefully*
Progress meetings; biweekly - *will determine as job progresses*
Contractors must have latest plans, new sets to be issued; discard old ones
Off-site utility work; clarification
Grading/fill for utility construction - *fill sources approved*
Cover storm and sanitary manholes during construction to protect from debris in lines.

8. SPECIAL CONSIDERATIONS - continued

Tri-D responsible for compaction of trench areas.
Review work to be completed by each Contractor.
~~Does Contractor anticipate any unforeseen problems with project as bid?~~ - *N/A*
Ardaman should verify densities of natural ground prior to start of lifts.
Utilities will have to be located prior to construction.
Site to be filled to elev. 7.0 prior to Tri-D start-up.
Storm and sewer to be certified as soon as possible after completion.
Yale (John Clements) to set grades to elev. 7.0.
Work hours 8 to 5 Monday thru Friday
Pumps will require mufflers
Town of Longboat Key will check if end manhole of Phase 1 can be stubbed for future.
If Contractor uses Town of Longboat Key water for well points, it must be metered.
Current contracts to be for utility piping and fill/grading; future contracts to be for base, curbing, roadwork, final sod, seed, etc.

SPEED LETTER®

TO Bud Cottom

FROM Len Snally

L'Ambiance

SUBJECT

FOLD NO. 9 or 10

MESSAGE

Shop drawings for your review.

DATE 8-4-92 SIGNED LHS/cvg

REPLY

FOLD FOR NO. 9

FOLD FOR NO. 10

DATE SIGNED

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SENDER: DETACH AND RETAIN YELLOW COPY, SEND WHITE AND PINK COPIES

SPEED LETTER®

TO Keren Webb

FROM Len Smally

SUBJECT L'Ambiance

FOLD NO. 9 or 10

MESSAGE

Shop drawings for your review.

DATE 8-4-92 SIGNED LMS/cmy

REPLY

FOLD FOR NO. 9

FOLD FOR NO. 10

DATE SIGNED

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SMALLY, WELLFORD & NALVEN

A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

RECEIVED
AUG -3 1992

LETTER OF TRANSMITTAL

DATE July 31, 1992

TO Mr. Leonard Smally
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

SUBJECT L'Ambiance

REFERENCE NO. 2591/W.O. #2238

DRAWING NO.

TRANSMITTED Two (2) copies of shop drawings submitte by Tri-D Inc. for "Driscopipe 1000" to be used for slip-lining gravity sewer.

ATTACHED:

ADDENDA	
CHANGE ORDER	
DRAWINGS	
OTHER	X
FOR APPROVAL	X
FOR YOUR FILE	
AS REQUESTED	
FOR REVIEW	
PLEASE RETURN	X

REMARKS

SIGNED Jeff Streitmatter
JS:tg Jeff Streitmatter
Project Engineer

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

SEMINOLE FORM 406

Pam

PARTIAL RELEASE

mailed 8/13/92

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, for and in consideration of the payment of the sum of

Four hundred eighty-nine and 45 /100 Dollars ($ 489.45)

paid by YALE PROPERTIES-L'AMBIANCE, receipt of which is hereby acknowledged,

hereby releases YALE PROPERTIES-L'AMBIANCE ($ 489.45)

from the amount due ---------- against the following described premises:

L'AMBIANCE-Parcel "B" of Land Lying in Sections 21,22,27,28, Township 36 South, Unit No.6 of Longboat Key Club Subdivision Recorded in Platbook 32, Pages 30-30A of the Public Records of Sarasota County,Fl.

On account of utility inspections performed at the above-described premises, up through and including 7/23/92. The undersigned hereby further attests that it has paid for all labor ----------up to and includintg the date as shown below or that the amount herein received will be sufficient to pay same and will be used solely for that purpose. This partial release does not release the lien or the lien rights which undersigned may acquire because of labor performed or materials furnished for the improvement of the above described premises after 7/23/92, and any such lien or lien rights shall relate to and take effect from the date of recording the NOTICE OF COMMENCEMENT provided in Sec 713.13 Fla. Statute. This partial release is furnished in accordance with 713.20, Fla. Statutes.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this

day of , 19 .

WITNESSES:

Town of Longboat Key (SEAL)

By: Leonard A. Smally, P.E.

STATE OF FLORIDA
COUNTY OF } ss

I hereby acknowledge that the statements contained in the foregoing Partial Release are true and correct.

Sworn to and subscribed before me this day of , 19

My commission expires:

Notary Public

Plumbing

1. Dwg. P-13, the back flow preventor valve will be deleted.

2. A drinking fountain will be added at the entrance alcove of the public toilets on the Plaza level.

HVAC

All toilet rooms have been provided with mechanical exhaust ventilation, except the Cabanas toilet rooms, which will be incorporated on the drawings. (Vents through the roof.)

General Comments

1. The interior portions of the garage level will not be partitioned or finished beyond that indicated on the drawings.

2. Gate valves will be provided at the water meter and all hose bibbs will will have vacuum breakers.

3. No electric in garage area is below the base flood elevation, except for the following:

   a - Switch for the employee entrance
   b - Fountain equipment
   c - Trash compactor
   d - Elevator sump pump and pit lights
   e - Switches for the overhead doors and grilles at the following locations:
      1) Main Vehicle Entrance
      2) Trash Room
      3) Bicycle Storage Rooms

4. Smoke detectors have been provided inside each sleeping unit and in the area of the return air to the air handling unit to shut down the air handler in case of smoke at each apartment.

5. Electrical outlet has been provided at each balcony in apartment units.

We believe this reponds to all of the comments, should there be any question

Very truly yours,

John W. Jappen, AIA
Project Manager

cc: Bishop w/encl.
Johnston w/encl.
LV&A "
J. Barie "
J. Spina "
N. Barr "

run

94 FEB 28 PM 2:16

for lab use only
ID # 24025

REC'D

94 FEB 28 PM 11:17

reported by
Judy P. Drake

Drinking Water
Bacteriological Analysis
HRS Sarasota County Public Health Unit

system name: L. B. King system i.d. no: 6581098 system phone 383-3721

address: 501 Bay Indies Rd. LBK county: Sarasota der district VI

collector Bill King collector phone 378-6133

sample site (locally or subdivision): L'Ambiance

date and time collected: 2-23-94 9:45

type of supply (circle one): community water system noncommunity water system nontransient - noncommunity water system bathing place private well swimming pool bottled water limited use commercial limited use community

type of sample (circle one): compliance (check box) repeat Replacement (check box) main clearance well survey other _____ (specify)

( ) distribution
( ) raw

( ) TNTC or C 1 of 2 complete
( ) turbid
( )

WD 1098-90-002

to be completed by collector of sample				to be completed by lab				
coll. no.	sample point (specific address)	CL RES'D	PH	analysis method: sample number	mf NON COLIFORM	mtf *total	mmo-mug confirm total	pa confirm fecal
	Hydrant	.1		4 [illegible]		A		

*Results in this column are preliminary. Fecal coliform confirmation on community and noncommunity water systems and total coliform confirmation on all types of water systems will follow in 24-48 hours.

P - Coliforms are present C - Confluent growth TA - Turbid, Absence of gas or acid
A - Coliforms are absent TNTC - Too numberous to count

RECEIVED
MAR - 4 1994
PUBLIC WORKS DEPT.

( ) Unsatisfactory
(✓) Satisfactory
( ) Incomplete Collection Information
( ) Repeat Samples
( ) Replacement Samples

Interpretations - Remarks by program reviewer

Name and Mailing Address of person / firm to receive report

Millard J. Yoder, P.E.
Smalley, Wilford & Nalven
P.O. Box 4069
Sarasota Fla. 34230

Reviewing Official Bill King

Title _____

run

for lab use only
ID # 24025

REC'D

reported by
Judy P. Drake

Drinking Water
Bacteriological Analysis
HRS Sarasota County Public Health Unit

system name: L. B. K system i.d. no: 6581098 system phone 383-3721

address: 501 Bay Isle Rd. L.B.K. Fla. county: Sarasota der district VI

collector Bill King collector phone 371-6133

sample site (locally or subdivision): L'Ambiance - Fire line

date and time collected: 2-22-94 9:25

type of supply (circle one): community water system noncommunity water system nontransient - noncommunity water system bathing place private well swimming pool bottled water limited use commercial limited use community

type of sample (circle one): compliance (check box) ( ) distribution ( ) raw repeat Replacement (check box) ( ) TNTC or C ( ) turbid ( ) main clearance 2 of 2 complete well survey other _____ (specify)

WD1098-90-002

to be completed by collector of sample			
coll. no.	sample point (specific address)	CL RES'D	PH
	Hydrant	.1	

to be completed by lab				
analysis method:	mf	mtf	mmo-mug	pa
sample number	NON COLIFORM	*total	confirm total	confirm fecal
5		A		

*Results in this column are preliminary. Fecal coliform confirmation on community and noncommunity water systems and total coliform confirmation on all types of water systems will follow in 24-48 hours.

P - Coliforms are present C - Confluent growth TA - Turbid, Absence of gas or acid
A - Coliforms are absent TNTC - Too numberous to count

( ) Unsatisfactory
(✓) Satisfactory
( ) Incomplete Collection Information
( ) Repeat Samples
( ) Replacement Samples

Interpretations - Remarks by program reviewer

Name and Mailing Address of person / firm to receive report

Millard J. Yoder P.E.
Smalley Wetherford Eaves
P.O. Box 4669
[illegible] 70770

Reviewing Official [illegible]

Title _____

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

October 9, 1991

Mr. Steve Parker
Arvida
201 Gulf of Mexico Drive, Suite 1
Longboat Key, FL 34228

Dear Mr. Parker:

As per your request, please be advised that the Site Development Plan for L'Ambiance as approved by Town Resolution #89-43 includes the construction of an 8 ft. wide concrete sidewalk/bikepath along Gulf of Mexico Drive.

If I can be of any further assistance, please do not hesitate to contact me.

Sincerely,

Dan Gaffney

Daniel Gaffney
Town Planner

/dmh

cc: Len Smally, Director of Public Works

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers



July 2, 1992

Tri-D, Inc.
7535 Ponce De Leon, Suite 200
Sarasota, FL 34243

Subject: **L'Ambiance Shop Drawings**

SWN Ref: 2591-1 / Work Order #2239

Dear Sir:

Enclosed are three (3) sets of the following shop drawings:

Description	Manufacturer	Comments
4,6,8,10, & 12 in. C-900 PVC Pipe	H & W Ind. Inc.	Note Markings
4,6,8,10, & 12 in. C-900 PVC Pipe	CPS	Note Markings
4,6,8,10, & 12 in. C-900 PVC Pipe	Diamond	Note Markings
4,6, & 8 in. C-900 Pipe Fittings	Harco	No Exceptions Taken
3/4" ASTM D 1785 SCH 40 PVC Pressure Pipe	Colonial Plastics, Inc.	No Exceptions Taken
USF 7621 Reversible Hole Ring & Cover	U.S. Foundry	Rejected

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

Description	Manufacturer	Comments
DR 14 C-900 PVC Pressure Pipe	CPS	Note Markings
DR 18 C-900 PVC Pressure Pipe	CPS	No Exceptions Taken
DR 14 C-900 PVC Pressure Pipe	Diamond	No Exceptions Taken
DR 18 C-900 PVC Pressure Pipe	Diamond	No Exceptions Taken
4,6,8,10, & 12 in. C-900 PVC Pipe DR 18, Class 150	H & W Ind. Inc.	No Exceptions Taken
6" Class 200 DR 14 C-900 PVC	H & W Ind. Inc.	No Exceptions Taken
ITT Kennedy Ken-Seal Gate Valve AWWA C509	ITT Kennedy	No Exceptions Taken
CRS-85 Gate Valve No. 85-MF ends	American Darling	No Exceptions Taken
USF 7500 ADJ. Screw Valve Box & Cover	U.S. Foundry	No Exceptions Taken
MJSSB CL 350 Cement Lined D.I. Fittings	Tyler	No Exceptions Taken
1" KV13-444W Angle Inv'd Key Meter Valve	Ford	No Exceptions Taken
1" FB 1700 Ballcorp Stops Type FB 1700	Ford	No Exceptions Taken

Description	Manufacturer	Comments
Thrust Restraints Series 1500 &1600	EBBA Iron	Note Markings
Thrust Restraints 6" Series 1100 PV	EBBA Iron	Note Markings
6" & 8" 806 DDC Double Detector Check Valve Assembly	Febco	Note Markings
3" Turbine Meter	Neptune	Rejected/Note Markings
SCH 40 ASTM D1785 Dual marked DWV ASTM D 2665	Colonial Plastics, Inc.	No Exceptions Taken
Brass Saddles Style 202B Double Strap	Ford	No Exceptions Taken
Pacer Traffic Flange Hydrant	Waterous	Note Markings
ANSI/AWWA C115/A21.15-83 DI FL. MIN. CL 53, Cement lined	Custom Fab	No Exceptions TAKen
Sanitary Manhole	Atlantic	Note Markings
Curb Inlet	Atlantic	Note Markings
Storm Manhole	Atlantic	Note Markings

These drawings have been reviewed for general conformance to the plans. Please note markings and comments on same. Also note that the Town of Longboat Key has included a submittal for USF 230 Ring and Cover Series.

It is understood that all equipment and material will be field checked for conformance to these shop drawings.

Yours very truly,

SMALLY, WELLFORD & NALVEN

Robert J. Halbach, P.E.
Manager of Engineering

RJH:RG:lb

Enclosures

cc: Mr. Kyle Hauck, Yale Properties, w/enclosures
Mr. Leonard Smally, Town of Longboat Key, w/enclosures
SWN Field Representative, w/enclosures

SEMSCO

Southeastern Municipal Supply
2001 University Parkway
Sarasota, Florida 34243
(813) 355-5288
(813) 351-9347 (FAX)

May 7, 1992

PROJECT: L'AMBIANCE

CONTRACTOR: TRI-D, INC.

SUPPLIER: SEMSCO/BUD WANDALL

ENGINEER: SWN

SUBMITTAL DATA



Southeastern Municipal Supply
2001 University Parkway
Sarasota, Florida 34243
(813) 355-5288
(813) 351-9347 (FAX)

FORCE MAIN DRAINAGE SEWER

A complete line of piping and accessory products for Water, Sewage, and Drainage Systems
Tampa • Pasco • Orlando • West Palm Beach • Fort Lauderdale • Ft. Myers • Sarasota • Miami

A Division of Clayton Distribution

H & W Industries, Inc.

C — 900

AWWA C-900 PVC WATER PIPE

SEWER - GREEN / DRAINAGE - GREEN / WHITE / FORCE MAIN - BLUE

DIMENSIONS AND PRESSURE CLASSES FOR DIMENSION RATIO (DR)
PVC 1120 PIPE WITH CAST-IRON-PIPE-EQUIVALENT ODs

Size Class**	DR	Laying Length (Feet)	Outside Diameter (inches)	Tolerance (inches)	Minimum Wall Thickness (inches)	Tolerance (inches)	Weight (Pounds/ Foot)	Pieces Bundle	Bundle Truckload	Truckload Pieces	Truckload Footage
4"-100	25	20	4.800	±0.009	0.192	+0.023	1.92	38	24	912	18,240
6"-100	25	20	6.900	±0.011	0.276	+0.033	3.96	28	12	392	7,840
								14	4		
8"-100	25	20	9.050	±0.015	0.362	+0.043	6.81	20	8	220	4,400
								15	4		
10"-100	25	20	11.100	±0.015	0.444	+0.053	10.25	12	12	144	2,880
12"-100	25	20	13.200	±0.015	0.528	+0.063	14.50	8	6@8	98	1,960
								4	2@4		
								6	6@6		
								3	2@3		
4"-150	18	20	4.800	±0.009	0.267	+0.032	2.61	38	24	912	18,240
6"-150	18	20	6.900	±0.011	0.383	+0.046	5.41	28	12	392	7,840
								14	4		
8"-150	18	20	9.050	±0.015	0.503	+0.060	9.32	20	8	220	4,400
								15	4		
10"-150	18	20	11.100	±0.015	0.617	+0.074	14.00	12	12	144	2,880
12"-150	18	20	13.200	±0.015	0.733	+0.088	19.80	8	6@8	98	1,960
								4	2@4		
								6	6@6		
								3	2@3		
*4"-200	14	20	4.800	±0.009	0.343	+0.041	3.30	38	20	760	15,200
*6"-200	14	20	6.900	±0.011	0.493	+0.059	6.84	28	12	364	7,280
								14	2		
*8"-200	14	20	9.050	±0.015	0.646	+0.078	11.76	20	4	200	4,000
								15	8		
10"-200	14	20	11.100	±0.015	0.793	+0.095	17.71	12	12	144	2,880
12"-200	14	20	13.200	±0.015	0.943	+0.113	25.04	8	6@8	98	1,960
								4	2@4		
								6	6@6		
								3	2@3		

**Pressure classes are working-pressure ratings (AWWA C-900 Sec. 2.8)
*Truckload quantities are lower due to weight limits.

MEETS OR EXCEEDS ALL INDUSTRY STANDARDS AND SPECIFICATIONS*

Materials

H & W pipe is made from a virgin PVC compound with a cell classification of 12454-B; the established hydrostatic-design-basis (HDB) rating is 4,000 psi at 73.4°F. (23°C.) The Standard Thermoplastic Pipe Material Designation Code is PVC 1120. White is the standard with blue optional.

Nontoxic

PVC compounds used in the manufacture of H & W pipe contain no ingredients that will migrate into the water in amounts considered to be toxic.

Compatible Gaskets and Lubricants

H & W Gaskets and Lubricants are compatible with the plastic material in H & W pipe and in combination with them will not adversely affect the potable qualities of the water. One gasket is furnished with each bell-end pipe. Gaskets and joints meet all requirements for performances as specified in ASTM F-477. All gaskets are factory installed and have a steel reinforcing ring (Locked-in).

High-Quality Workmanship

Pipe is homogeneous and free from defects. Color, density and other physical properties are as uniform as commercially possible. Mating surfaces are free from imperfections that might cause leakage at the joints.

Dimensions

The dimensions and tolerances for the pipe barrel conform with the AWWA requirements listed in Table. The bell ends conform with the DR requirements for PVC pipe.

Pressure Requirements

Pipe meets or exceeds all established criteria for either sustained or burst pressure loss.

Standard Length

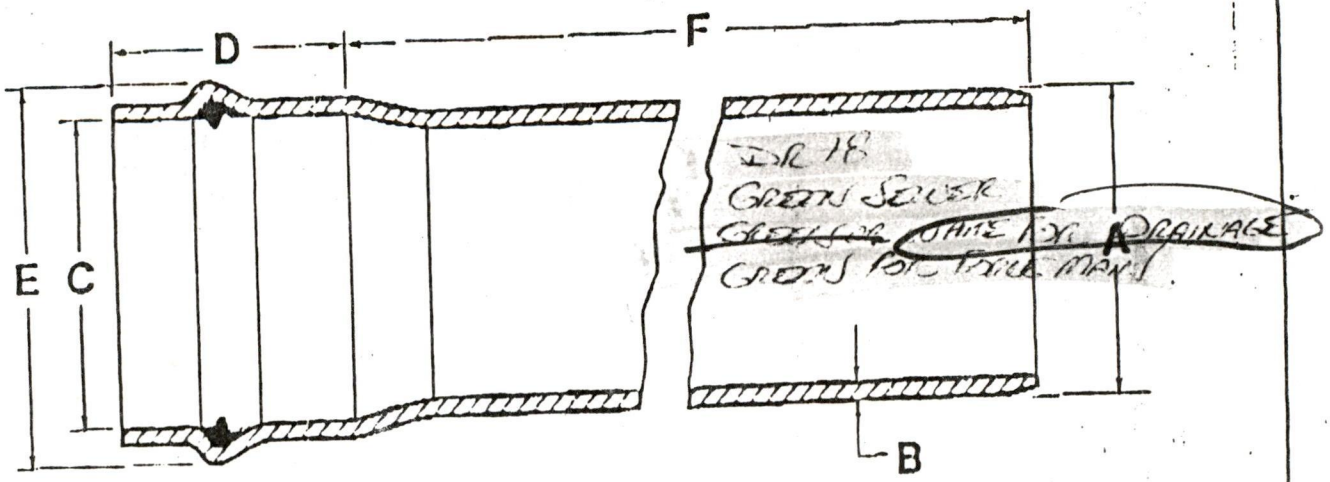
Pipe is supplied in standard nominal laying lengths of 20 feet.

CPS
Condux Pipe Systems, Inc.

AWWA STANDARD C-900

C-900 PVC Pressure Pipe
4" - 12"

Dimensions



Nominal Pipe Size (Inches)		Pressure Rating (psi)	A Average Outside Diameter/ Tolerance (Inches)	B Minimum Wall Thickness (Inches)	C Average Bell Inside Diameter (Inches)	D Minimum Joint Depth Thickness (Inches)	E Maximum Ring Groove Outside Diameter (Inches)	F Laying Length (Feet)	Maximum Weight Per Bundle (Lbs)
4	DR14	200	4.800 ±0.009	0.343	4.84	5.8	6.1	20	2762
	DR18	160		0.267			6.3		2199
	DR25	100		0.192			6.4		1605
6	DR14	200	6.900 ±0.011	0.493	6.96	6.8	8.5	20	3822
	DR18	150		0.383			8.8		3709
	DR25	100		0.276			9.0		1627
8	DR14	200	9.050 ±0.015	0.646	9.08	7.0	11.0	20	2787
	DR18	150		0.503			11.3		2201
	DR25	100		0.362			11.7		1607
10	DR14	200	11.100 ±0.015	0.793	11.15	8.0	13.4	20	3525
	DR18	150		0.617			13.8		2781
	DR25	100		0.444			14.2		2028
12	DR14	200	13.200 ±0.015	0.943	13.25	9.3	15.8	20	4019
	DR18	150		0.733			16.3		3166
	DR25	100		0.528			16.8		2310

Product Specifications

Scope CPS C-900 PVC pressure pipe is manufactured to American Water Works Association (AWWA) Specification C-900. The pipe is intended for use in pressure main applications in potable water and waste water systems.

Material The pipe is manufactured from Class 12454B PVC compounds as defined in ASTM D1784. The PVC compound shall have an established hydrostatic design basis (HDB) of 4000 psi as described in ASTM D2837.

Florida Customer Service Center CPS, Inc. • P.O. Box 749 • U.S. Hwy 41 • Newberry, FL 32669 • 904-472-2101 • 1-800-351-7473 • FAX 904-472-2544
Minnesota Customer Service Center CPS, Inc. • P.O. Box 789 • 145 Ringswood Rd • Mankato, MN 56002-0789 • 507-387-2284 • 1-800-247-5038 • FAX 507-387-5368

C900 PVC Pipe

AWWA C900

SPECIFICATIONS DATA

PRODUCT DESCRIPTION

Diamond (C900) PVC Pipe (4" through 12") is made of 12454B compound per ASTM D-1784, in accordance with the dimensional, chemical, and physical requirements of AWWA C900.

Diamond (C900) PVC Pipe carries the National Sanitation Foundation (NSF) seal of approval, and the listing of Factory Mutual System (DR14 & DR18) and Underwriters Laboratories, Inc. (U.L.)

Diamond (C900) PVC Pipe utilizes a gasket, per ASTM F-477, to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D-3139.) Each male end is beveled to facilitate joint assembly, and the spigot is reference marked to insure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

DR18
GREEN - Sewer
GREEN or WHITE Drainage
GREEN for Force Main

SHORT FORM
Specification for Diamond C900 PVC Water Pipe

Diamond C900 PVC Water Pipe shall be made of compounds conforming to ASTM D-1784 with a cell classification of 12454B. Diamond C900 shall meet all the dimensional, chemical, and physical requirements as outlined in AWWA C900 and will be supplied in 20 foot laying lengths. Pipe shall be manufactured from National Sanitation Foundation (NSF) approved compounds.

PROPERTIES OF PVC 12454-B (1120)

PHYSICAL PROPERTIES

Property	ASTM Test	Minimum
Specific Gravity	D 792	1.40
Tensile Strength, psi	D 638	7,000
Tensile Modulus, psi	D 638	400,000
IZOD Impact Strength, ft., lb./in.	D 256	.65

CHEMICAL RESISTANCE

	ASTM Test	
93.0% Sulfuric Acid, 14 Days Flotation at 55 + or —2° C	D 543	
Change in Weight, %		—0.1 + 5.0
Change in Flex Strength, %		—25.0 to + 5.0
ASTM Oil No. 3, 30 Day Immersion at 23° C		
Change in Weight, %		—1.0 to 1.0

NSF

Uni-Bell

NSF-pw

UL UNDERWRITERS LABORATORIES INC. LISTED

Factory Mutual System Approved

HARCO Class 150 PVC Fittings

HIGH STRENGTH

HARCO PVC fittings are injection molded from virgin PVC compound for the same high strength and corrosion resistance you are now receiving from the C-900 pipe. These HARCO PVC fittings make possible an all PVC system. Fittings are designed for 150 psi working pressure and meet DR 18 requirements of AWWA C-900.

LIGHTWEIGHT

Use of high strength PVC results in much lower fitting weights, which means easier handling, faster installation, less freight and lower costs. Installers prefer the HARCO fittings because of the productivity increases and cost reductions.

GASKETED JOINT

HARCO's push-on joint, with the gasket seated in a deep square groove, provides a tight seal and protects the pipeline from shock, vibration and earth movement, allowing for pipeline expansion and contraction.

TESTED

HARCO PVC fittings routinely exceed 1000 psi quick burst pressure tests. Quality control is strictly maintained through all steps of manufacturing.

SIZES

HARCO PVC fittings are available in sizes 4", 6" and 8". They fit all brands of AWWA C-900 pipe manufactured to cast iron O.D.'s.

HARCO

THE HARRINGTON CORPORATION
P.O. Box 10335
Lynchburg, Virginia 24506
(804) 845-7094

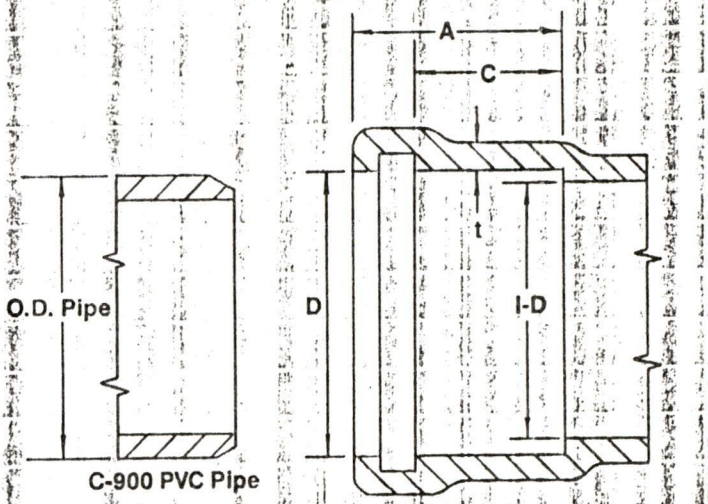
CLASS 150 PVC FITTINGS

ALL DIMENSIONS IN INCHES, WEIGHTS IN POUNDS

SHORT FORM SPECIFICATIONS

All fittings for C-900 pipe shall be manufactured in one piece of injection molded PVC compound meeting ASTM D1784. Fittings shall be Class 150 and conform to requirements of DR 18. Fittings shall be designed to withstand a minimum of 755 psi quick burst pressure @ 73°F, tested in accordance with ASTM D1599. Bells shall be gasketed joint conforming to ASTM D3139 with gaskets conforming to ASTM F477. Ductile Iron or Cast Iron Push-on Joint or M.J. will be allowed as alternative when PVC sizes are not available.

SEWER FITTINGS



STANDARD JOINT DIMENSIONS

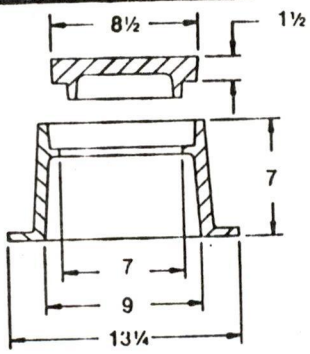
IN INCHES

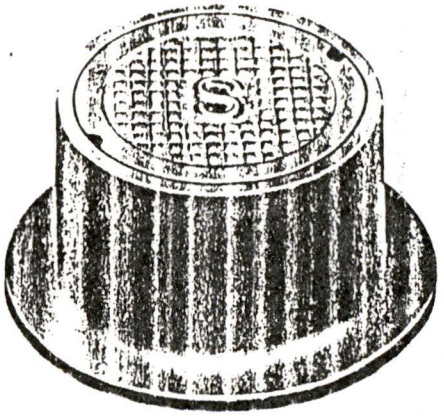
Nominal Diameter	A	C	D	I-D	t	O.D. pipe
4	4.3	3.1	4.86	4.45	.32	4.80
6	4.8	3.5	6.96	6.38	.45	6.90
8	5.4	4.0	9.13	8.38	.58	9.05

SF 7610 HANDHOLE RING AND COVER

NDARDS AND SPECIFICATIONS:
overs are marked with either
n "S" or a "W".
RDER:
pecify USF number and cover type.
pecify lettering.

ER E	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
	HEAVY DUTY	25	65



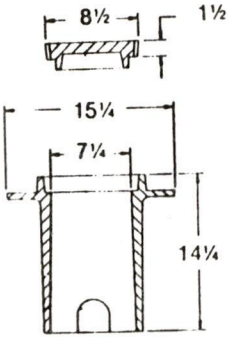


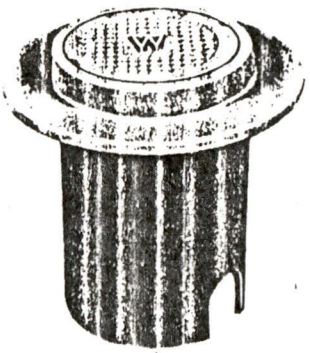
USF 7615 VALVE BOX AND COVER

NDARDS AND SPECIFICATIONS:
over is marked "W".

RDER:
pecify USF number and
over type.

ER PE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
	HEAVY DUTY	25	115





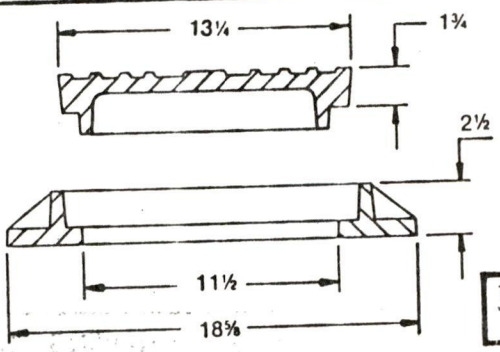
NO. 2 STANDARD

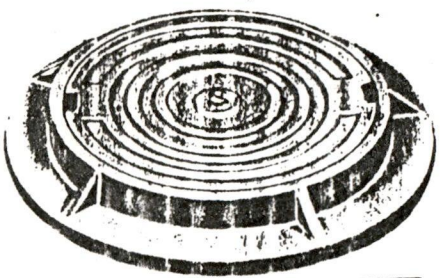
USF 7620 CLEAN OUT RING AND COVER

NDARDS AND SPECIFICATIONS:
Covers are marked with either
n "S" or a "W".

RDER:
Specify USF number and cover type.
Specify lettering.

	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
	HEAVY DUTY	45	95





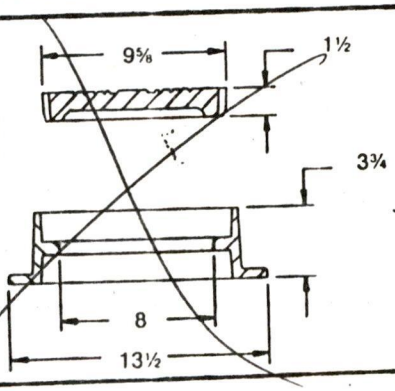
THIS RING ALSO AVAILABLE WITH GRATE. USF NO. 3100 PG. 62

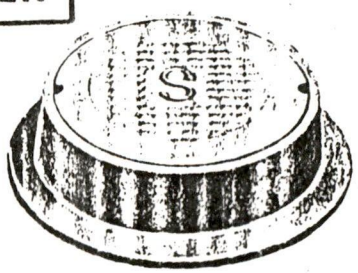
USF 7621 REVERSIBLE HANDHOLE RING AND COVER

NDARDS AND SPECIFICATIONS:
Covers are marked with either
n "S" or a "W".

RDER:
pecify USF number and cover type.
pecify lettering.

	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
	HEAVY DUTY	20	45





THIS CASTING MAY BE USED
FOR BUILT UP OR SLAB CONSTRUCTION

PIPE SPECIFICATIONS

COLONIAL PLASTICS INC.
TAMPA, FLORIDA

	NOMINAL PIPE SIZE	WORKING PRESSURE at 73.4° F.	MASTER PACK QUANTITY FT.	APPROX. SHIPPING WT/100'	O.D.	WALL THICKNESS
PVC PRESSURE PIPE						
SCHEDULE 40 ASTM D 1785	1/2"	600 PSI	10300	16.1	.840	.109
	3/4"	480 PSI	9960	21.4	1.050	.113
	1"	450 PSI	9380	31.8	1.315	.133
DUAL MARKED DWV* ASTM D 2665	1¼"*	370 PSI	5000	43.0	1.660	.140
	1½"*	330 PSI	4500	51.6	1.900	.145
	2"*	280 PSI	3500	69.1	2.375	.154
	2½"	300 PSI	2320	109.8	2.875	.203
	3"*	260 PSI	1440	143.8	3.500	.216
	4"*	220 PSI	1140	204.8	4.500	.237
	5"	190 PSI	760	277.3	5.563	.258
	6"*	180 PSI	600	360.9	6.625	.280
	8"	160 PSI	360	542.5	8.625	.322
SCHEDULE 80 ASTM D 1785	1/2"	850 PSI	10300	20.6	.840	.147
	3/4"	690 PSI	9960	25.4	1.050	.154
	1"	630 PSI	4700	41.0	1.315	.179
	1¼"	520 PSI	5000	56.6	1.660	.191
	1½"	470 PSI	4500	68.7	1.900	.200
	2"	400 PSI	3500	95.1	2.375	.218
	2½"	420 PSI	2320	144.8	2.875	.276
	3"	370 PSI	1440	194.3	3.500	.300
	4"	320 PSI	1140	284.2	4.500	.337
	6"	280 PSI	600	542.3	6.625	.432
SEWER & DRAIN PIPE ASTM D 2729	3" Solid Bell End		2080	47.7	3.250	.070
	4" Solid Bell End		1200	63.5	4.215	.075
	4" Perf Bell End		1200	63.5	4.215	.075
	6" Solid Bell End		460	118.6	6.275	.100
	6" Perf Bell End		460	118.6	6.275	.100
ASTM D 3033 and ASTM D 3034	4" Bell End		1140	104.3	4.215	.125
ASTM D 3033	6" Bell End		460	190.7	6.275	.153
ASTM D 3034	6" Bell End		460	223.2	6.275	.180

SCH 40 PIPE & FITTINGS FOR SEWER, SOLVENT

OK



Southeastern Municipal Supply
2001 University Parkway
Sarasota, Florida 34243
(813) 355-5288
(813) 351-9347 (FAX)

WATER

A complete line of piping and accessory products for Water, Sewage, and Drainage Systems
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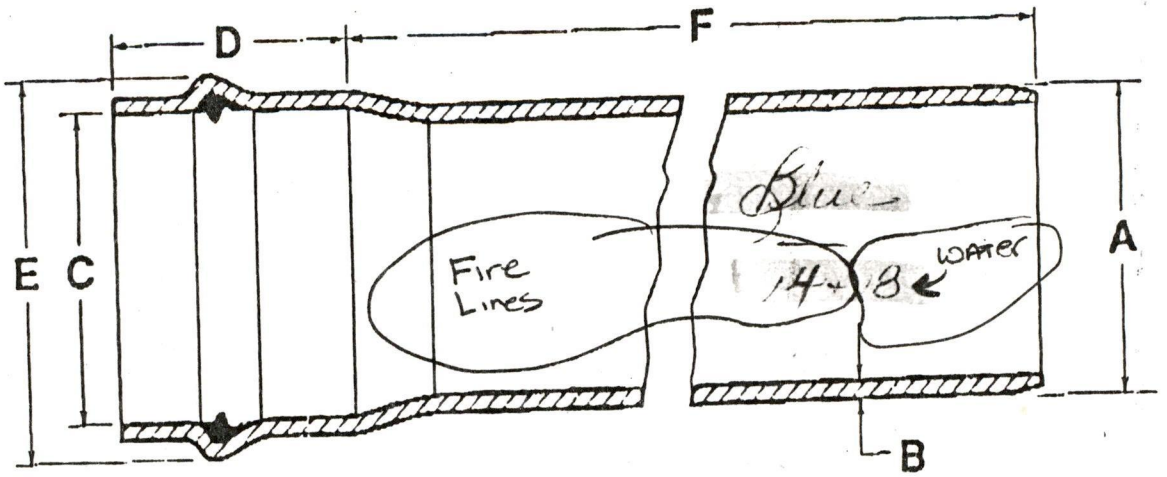
A Division of Clayton Distribution

CPS
Condux Pipe Systems, Inc.

AWWA STANDARD C-900

C-900 PVC Pressure Pipe 4" - 12"

Dimensions



Nominal Pipe Size (Inches)		Pressure Rating (psi)	A Average Outside Diameter/ Tolerance (Inches)	B Minimum Wall Thickness (Inches)	C Average Bell Inside Diameter (Inches)	D Minimum Joint Depth Thickness (Inches)	E Maximum Ring Groove Outside Diameter (Inches)	F Laying Length (Feet)	Maximum Weight Per Bundle (Lbs)
4	DR14	200	4.800 ±0.009	0.343	4.84	5.8	6.1	20	2782
	DR18	150		0.267			6.3		2199
	DR25	100		0.192			6.4		1605
6	DR14	200	6.900 ±0.011	0.493	6.96	6.8	8.5	20	2822
	DR18	150		0.383			8.8		3709
	DR25	100		0.276			9.0		1627
8	DR14	200	9.050 ±0.015	0.646	9.08	7.0	11.0	20	2787
	DR18	150		0.503			11.3		2201
	DR25	100		0.362			11.7		1607
10	DR14	200	11.100 ±0.015	0.793	11.15	8.0	13.4	20	3525
	DR18	150		0.617			13.8		2781
	DR25	100		0.444			14.2		2028
12	DR14	200	13.200 ±0.015	0.943	13.25	9.3	15.8	20	4019
	DR18	150		0.733			16.3		3166
	DR25	100		0.528			16.8		2310

Product Specifications

Scope CPS C-900 PVC pressure pipe is manufactured to American Water Works Association (AWWA) Specification C-900. The pipe is intended for use in pressure main applications in potable water and waste water systems.

Material The pipe is manufactured from Class 12454B PVC compounds as defined in ASTM D1784. The PVC compound shall have an established hydrostatic design basis (HDB) of 4000 psi as described in ASTM D2837.

Florida Customer Service Center CPS, Inc • P.O. Box 749 • U.S. Hwy 41 • Newberry, FL 32669 • 904-472-2101 • 1-800-351-7473 • FAX 904-472-2544
Minnesota Customer Service Center CPS, Inc • P.O Box 789 • 145 Kingswood Rd • Mankato, MN 56002-0789 • 507-387-2284 • 1-800-247-5638 • FAX 507-387-6368

C900 PVC Pipe

AWWA C900

SPECIFICATIONS DATA

PRODUCT DESCRIPTION

Diamond (C900) PVC Pipe (4" through 12") is made of 12454B compound per ASTM D-1784, in accordance with the dimensional, chemical, and physical requirements of AWWA C900.

Diamond (C900) PVC Pipe carries the National Sanitation Foundation (NSF) seal of approval and the listing of Factory Mutual System (DR14 & DR18) and Underwriters Laboratories, Inc. (U.L.)

Diamond (C900) PVC Pipe utilizes a gasket, per ASTM F-477, to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D-3139.) Each male end is beveled to facilitate joint assembly, and the spigot is reference marked to insure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

SHORT FORM Specification for Diamond C900 PVC Water Pipe

Diamond C900 PVC Water Pipe shall be made of compounds conforming to ASTM D-1784 with a cell classification of 12454B. Diamond C900 shall meet all the dimensional, chemical, and physical requirements as outlined in AWWA C900 and will be supplied in 20 foot laying lengths. Pipe shall be manufactured from National Sanitation Foundation (NSF) approved compounds.

PROPERTIES OF PVC 12454-B (1120)

PHYSICAL PROPERTIES

Property	ASTM Test	Minimum
Specific Gravity	D 792	1.40
Tensile Strength, psi	D 638	7,000
Tensile Modulus, psi	D 638	400,000
IZOD Impact Strength, ft., lb./in.	D 256	.65

CHEMICAL RESISTANCE

	ASTM Test	
93.0% Sulfuric Acid, 14 Days Flotation at 55 + or —2° C	D 543	
Change in Weight, %		—0.1 + 5.0
Change in Flex Strength, %		—25.0 to + 5.0
ASTM Oil No. 3, 30 Day Immersion at 23° C		
Change in Weight, %		—1.0 to 1.0

NSF

NSF-pw

UL UNDERWRITERS LABORATORIES INC.

Factory Mutual System Approved

H & W Industries, Inc.

C — 900

AWWA C-900 PVC WATER PIPE

DIMENSIONS AND PRESSURE CLASSES FOR DIMENSION RATIO (DR)
PVC 1120 PIPE WITH CAST-IRON-PIPE-EQUIVALENT ODs

Size Class**	DR	Laying Length (Feet)	Outside Diameter (inches)	Tolerance (inches)	Minimum Wall Thickness (inches)	Tolerance (inches)	Weight (Pounds/ Foot)	Pieces Bundle	Bundle Truckload	Truckload Pieces	Truckload Footage
4"-100	25	20	4.800	±0.009	0.192	+0.023	1.92	38	24	912	18,240
6"-100	25	20	6.900	±0.011	0.276	+0.033	3.96	28 14	12 4	392	7,840
8"-100	25	20	9.050	±0.015	0.362	+0.043	6.81	20 15	8 4	220	4,400
10"-100	25	20	11.100	±0.015	0.444	+0.053	10.25	12	12	144	2,880
12"-100	25	20	13.200	±0.015	0.528	+0.063	14.50	8 4 6 3	6@8 2@4 6@6 2@3	98	1,960
4"-150	18	20	4.800	±0.009	0.267	+0.032	2.61	38	24	912	18,240
6"-150	18	20	6.900	±0.011	0.383	+0.046	5.41	28 14	12 4	392	7,840
8"-150	18	20	9.050	±0.015	0.503	+0.060	9.32	20 15	8 4	220	4,400
10"-150	18	20	11.100	±0.015	0.617	+0.074	14.00	12	12	144	2,880
12"-150	18	20	13.200	±0.015	0.733	+0.088	19.80	8 4 6 3	6@8 2@4 6@6 2@3	98	1,960
*4"-200	14	20	4.800	±0.009	0.343	+0.041	3.30	38	20	760	15,200
*6"-200	14	20	6.900	±0.011	0.493	+0.059	6.84	28 14	12 2	364	7,280
*8"-200	14	20	9.050	±0.015	0.646	+0.078	11.76	20 15	4 8	200	4,000
10"-200	14	20	11.100	±0.015	0.793	+0.095	17.71	12	12	144	2,880
12"-200	14	20	13.200	±0.015	0.943	+0.113	25.04	8 4 6 3	6@8 2@4 6@6 2@3	98	1,960

**Pressure classes are working-pressure ratings (AWWA C-900 Sec. 2.8)
*Truckload quantities are lower due to weight limits.

MEETS OR EXCEEDS ALL INDUSTRY STANDARDS AND SPECIFICATIONS*

Materials

H & W pipe is made from a virgin PVC compound with a cell classification of 12454-B; the established hydrostatic-design-basis (HDB) rating is 4,000 psi at 73.4°F. (23°C.) The Standard Thermoplastic Pipe Material Designation Code is PVC 1120. White is the standard with blue optional.

Nontoxic

PVC compounds used in the manufacture of H & W pipe contain no ingredients that will migrate into the water in amounts considered to be toxic.

Compatible Gaskets and Lubricants

H & W Gaskets and Lubricants are compatible with the plastic material in H & W pipe and in combination with them will not adversely affect the potable qualities of the water. One gasket is furnished with each bell-end pipe. Gaskets and joints meet all requirements for performances as specified in ASTM F-477. All gaskets are factory installed and have a steel reinforcing ring (Locked-in).

High-Quality Workmanship

Pipe is homogeneous and free from defects. Color, density and other physical properties are as uniform as commercially possible. Mating surfaces are free from imperfections that might cause leakage at the joints.

Dimensions

The dimensions and tolerances for the pipe barrel conform with the AWWA requirements listed in Table. The bell ends conform with the DR requirements for PVC pipe.

Pressure Requirements

Pipe meets or exceeds all established criteria for either sustained or burst pressure loss.

Standard Length

Pipe is supplied in standard nominal laying lengths of 20 feet.

Contents

Features 2, 3
Technical/Dimensional Data 4, 5
Suggested Specifications 6
Ordering Information 6
Product/Capability Listing 8

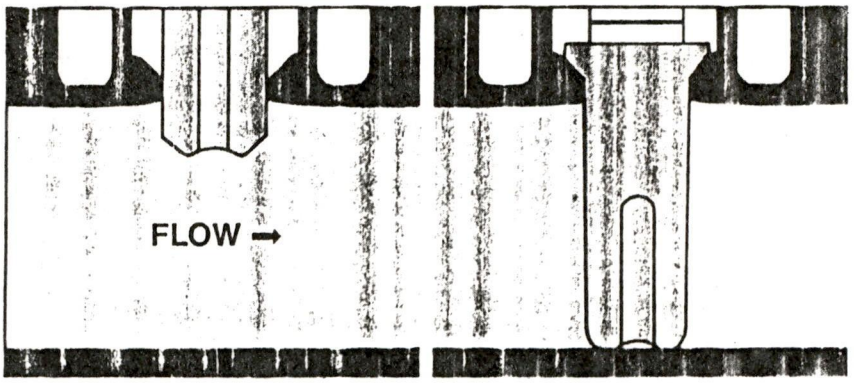
The ITT Kennedy Ken-Seal

Iron Body Resilient-Seated Gate Valves are the first major innovation in A.W.W.A. gate valves in over 65 years, with A.W.W.A. C509 having been developed in 1976. The valves have a single disc with resilient facing, ideal for potable water, sludge or sewage treatment systems.

ITT Kennedy has developed the Ken-Seal with a double sealing disc. Coated with a special permanently encapsulated abrasion-resistant synthetic elastomer, the disc provides a bubble-tight seal with a low torque requirement and meets or exceeds the stringent ASTM D-429 test requirements for rubber adhesion. Strong and mechanically stable, the Ken-Seal can be used in open-close or modulating service without clatter, and may be used as a tapping valve. The Ken-Seal conforms to A.W.W.A. C509 latest revision.

Double Seal True Compression

This cross section illustrates how the Ken-Seal disc operates. The double sealing, straight down stem/disc assembly design provides true compression for a bubble tight, zero leakage seal. It eliminates angular stress, allowing the use of a longer-lasting elastomer and superior bonding techniques. The Ken-Seal is truly a bi-directional valve.

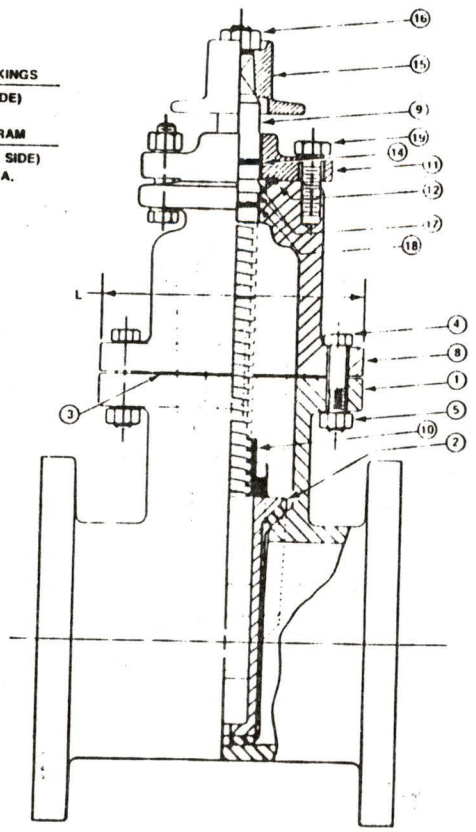


Technical/Dimensional Data

Non-Rising Stem

Pre-1986 Cap

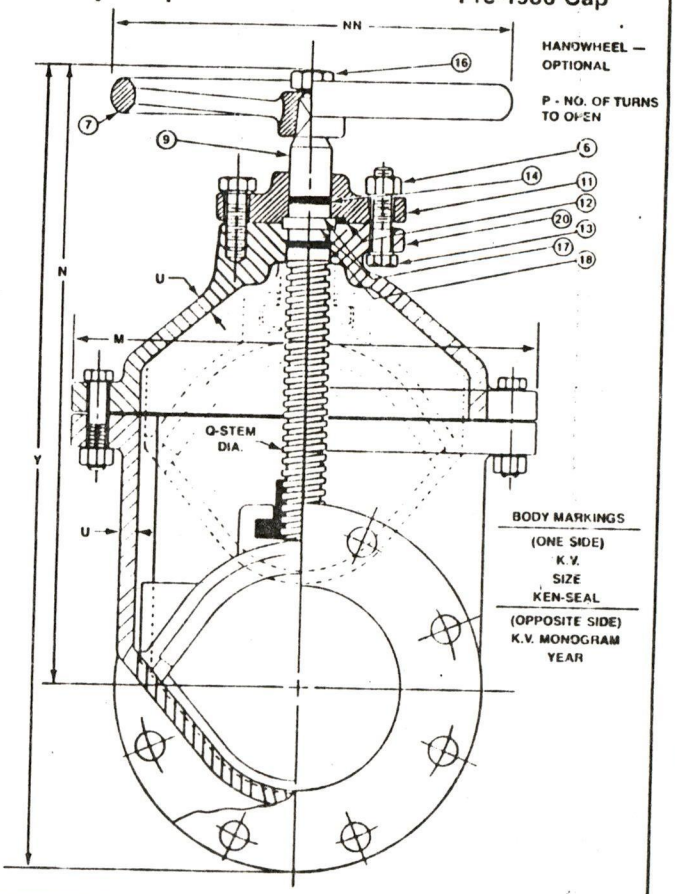
New Style Cap



Non-Rising Stem

New Style Cap

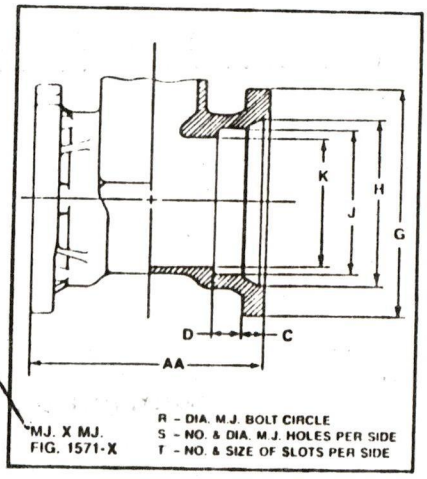
Pre-1986 Cap



Part No.		Qty	Description	Material & A.S.T.M. Spec.
1	Common Parts	1	Body	C.I. A-126 Cl.B
2	Common Parts	1	Disc	Syn. Rubber Coated C.I.
3	Common Parts	1	Seal (Cap to Body)	
4	Common Parts	TT	Hex Head Bolt	Rustproof Steel A-307 Gr.B
5	Common Parts	TT	Hex Nut	Rustproof Steel A-307 Gr.B
6	NRS	**	Hex Nut (Pre-1986)	Rustproof Steel A-307 Gr.B
7	NRS	1	Handwheel	C.I. A-126 Cl.B
8	NRS	1	Cap (New Style)	C.I. A-126 Cl.B
9	NRS	1	Stem	Bronze
10	NRS	1	Stem Nut	Bronze
* 11	NRS	1	Stuffing Box	C.I. A-126 Cl.B
12	NRS	1	Seal (Stuffing Box to Cap)	Syn. Rubber
13	NRS	**	Hex Head Bolt (Pre-1986)	Rustproof Steel A-307 Gr.B
14	NRS	1	Upper O-Ring	Syn. Rubber
15	NRS	1	Hub Nut	C.I. A-126 Cl.B
16	NRS	1	Hex Nut	Rustproof Steel A-307 Gr.B
17	NRS	2	Thrust Washer	Low Friction Polymer
18	NRS	1	Lower O-Ring	Syn. Rubber
19	NRS	***	Hex Head Bolt	SS A-276 (304)
20	NRS	1	Cap (Pre-1986)	C.I. A-126 Cl.B
21	OS&Y	1	Cap (Pre-1987) w/Bronze Bushing	C.I. A-126 Cl.B
22	OS&Y	1	Stem	Bronze
23	OS&Y	1	Stem Head	Bronze
24	OS&Y	1	Gland Follower	C.I. A-126 Cl.B
25	OS&Y	1	Gland	Bronze
26	OS&Y	1	Yoke Nut	Bronze
27	OS&Y	2	Hex Head Bolt (Pre-1987)	Rustproof Steel A-307 GR. B
28	OS&Y	1*	Yoke	C.I. A-126 Cl.B
29	OS&Y	1	Washer	Bronze
30	OS&Y	1	Handwheel Lock Nut	Bronze
31	OS&Y	1	Thrust Washer	Low Friction Polymer
32	OS&Y	4	Packing	Non-Asbestos
33	OS&Y	4	Hex Head Bolt (6"-12" only) (Pre-1987)	Rustproof Steel A-307 Gr. B
34	OS&Y	4	Hex Nut (6"-12" only) (Pre-1987)	Rustproof Steel A-307 Gr. B
35	OS&Y	1	Lock Pin	Brass
36	OS&Y	1	Handwheel	C.I. A-126 Cl.B
37	OS&Y	1	Cap (New Style) w/Bronze Bushing	C.I. A-126 Cl.B
38	OS&Y	2	Threaded Stud	Rustproof Steel A-307 Gr.B
39	OS&Y	4	Hex Head Bolt (6"-12" only)	Rustproof Steel A-307 Gr.B
40	OS&Y	2	Hex Nut	Brass

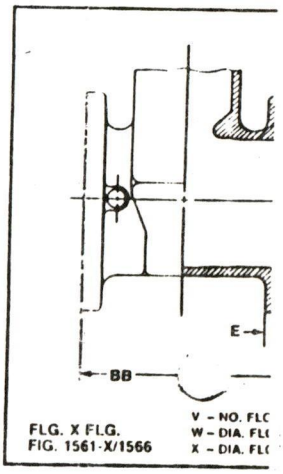
* On 3" & 4" O.S.&Y. Valves – Cap & Yoke are cast integral.
** Qty. of 2 on 3". Qty. of 3 on 4", 6", 8". Qty. of 4 on 10", 12".
*** Qty. of 2 on 3". Qty. of 3 on 4", 6", 8". Qty. of 4 on 10", 12".

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	
3"	4.38	4.44	.94	1.56	.81	7.50	7.62	4.94	4.06	3.12	7.44	10.00	14
4"	4.72	4.50	1.06	1.44	.94	9.00	9.12	6.02	4.90	4.12	7.88	11.00	15
6"	6.62	5.50	1.06	1.44	1.00	11.00	11.12	8.12	7.00	6.12	8.31	13.81	18
8"	5.44	6.00	1.06	1.44	1.12	13.50	13.38	10.27	9.15	8.12	9.56	16.31	22
10"	6.50	6.88	1.06	1.44	1.19	16.00	15.62	12.34	11.20	10.12	11.77	20.75	26
12"	7.00	7.38	1.06	1.44	1.31	19.00	17.94	14.44	13.30	12.12	12.00	23.76	30



M.J. X M.J.
FIG. 1571-X

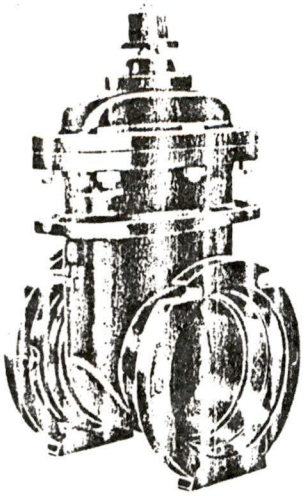
R - DIA. M.J. BOLT CIRCLE
S - NO. & DIA. M.J. HOLES PER SIDE
T - NO. & SIZE OF SLOTS PER SIDE



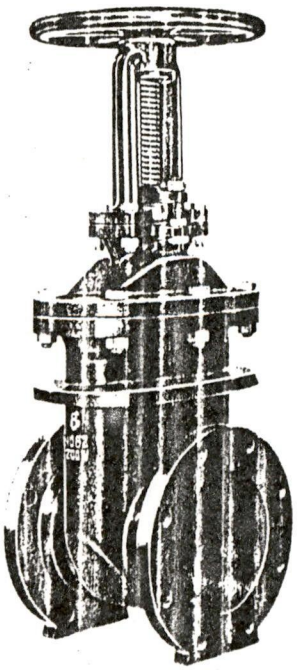
FLG. X FLG.
FIG. 1561-X/1566

V - NO. FLC
W - DIA. FLC
X - DIA. FLC

CRS-80 GATE VALVE
General Information



No. 85 — Mechanical Joint Ends



No. 82 — Flanged Ends

AMERICAN-DARLING VALVE initially began to investigate resilient seated gate valves in the late 1970's. We found that this type of valve was used almost exclusively in several European countries, and our extensive testing of major European manufacturers' valves led to the product we now market as the "CRS-80" or compression resilient seated gate valve. All of American-Darling's CRS-80 valves are manufactured at our Beaumont, Texas plant.

The CRS-80 valve is a superior valve for the water and sewage market, firewater systems, and treatment plant service, as well as mild chemical services where the resilient seat will not be subject to attack. The rated working pressure of the CRS-80 valve is 200 psi with shell testing of the internal cavity at 400 psi. The valves are manufactured to meet or exceed all requirements of AWWA C509, latest edition.

Maintenance benefits of this design are obvious when compared to metal seated gate valves: Three moving parts vs. five; plain "no pocket" interior surface; zero leakage shutoff; elimination of flat gaskets for body/bonnet/cover joints; fusion-bonded epoxy coating 8 mils thick for interior and exterior surfaces; and excellent flow characteristics. A few of the quality features are explained in detail by the following paragraphs.

SEATING

The unique drop-tight sealing ability of the gate is accomplished by compression of the resilient material against the contour of the valve body. There is virtually no wedging of the rubber-covered gate. The generous amount of resilient material on the gate is forgiving when seating on objects like gravel, grit, small clam shells, etc. The CRS-80 valve will seal equally well with flow in either direction, and in any orientation.

COATING

All ferrous surfaces of the CRS-80 valve, both inside and outside, are protected by a fusion-bonded epoxy coating. This coating is applied prior to assembly to insure that all exposed surfaces such as bolt-holes and body-to-bonnet flanges receive the epoxy coating. The cavity *inside* the gate is also epoxy coated. Corrosion and tuberculation of interior surfaces are prevented by the epoxy coating, which allows the moving parts to function properly.

SEALS

Non-rising stem valves have two O-Ring stem seals—one above and one below the stem collar. A separate external dirt and weather seal is provided underneath the nut or handwheel. American- Darling designed the CRS-80 valve for pressure energized O-Ring seals between the body-to-bonnet and bonnet-to-bonnet cover flanges. This feature is particularly beneficial for buried valves. If the valve ever has to be disassembled, the O-Ring joint seals can generally be reused. No more scraping off stuck gaskets.

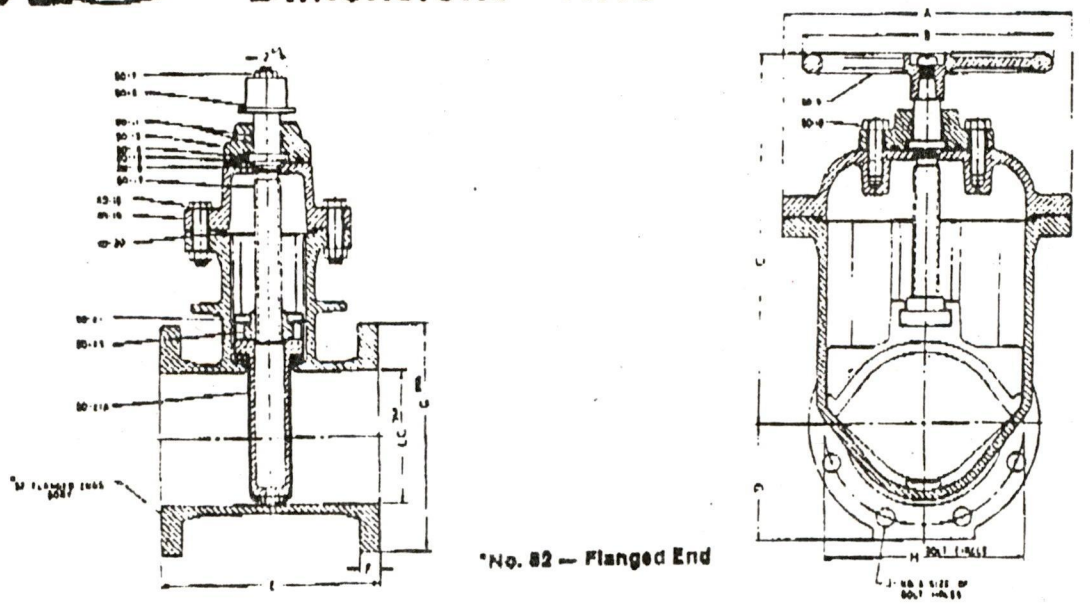
OPERATION

Permanent lubrication of the stem collar is accomplished by filling the area between the upper and lower O-Rings with lubricant. Anti-friction washers reduce friction in opening and closing cycles. The stem nut is independent of the stem and is self-aligning on the bottom bearing surface due to its spherical shape. This reduces stem binding when valve is in the closed position.

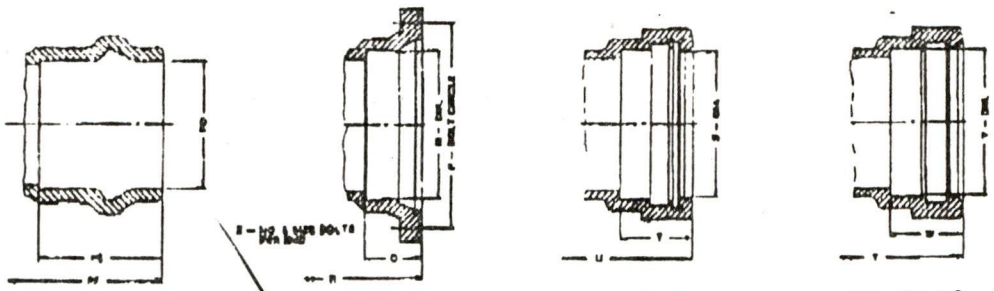
FLOW

Excellent flow through the CRS-80 valve is facilitated by a larger than nominal diameter opening and a smooth interior body surface without a bottom "pocket". This allows minimum pressure drop and can result in a substantial savings in pumping costs for a large distribution system. The inside diamter of the CRS-80 valve body is the approximate diameter of a Class 50 cement-lined ductile iron pipe.

CRS-80 GATE VALVE
Dimensions—NRS



*No. 82 — Flanged End



*No. 80-PF PVC End

*No. 85 MJ End

*No. 80-T Push-On End

*No. 80-AC AC End

Dimensions

Valve Size In.	All Valves				Turns To Open	Flanged Ends						MJ Ends					Push-On Ends			AC Ends			PVC Ends		
	A	B	C	QC		D	E	F	Q	H	J	N	P	Q	R	Z	S	T	U	V	W	Y	PD	PS	PF
4	10⅜	12	16⅝	4¼	14	4¼	9	15/16	9	7½	8-⅞	4.80	7½	2¼	11½	4-⅞	4.81	3.33	13⅛	4.91	3½	13⅜	4.80	4½	16
6	13¹³/₁₆	12	18¾	6¼	20	5½	10½	1	11	9½	8-⅞	7.00	9½	2⅝	12¼	6-⅞	7.01	3.58	13⅛	7.01	3½	13½	6.72	8½	17⅛
8	16½	14	22¼	8¼	26	6¾	11½	1⅛	13½	11¾	8-⅞	9.15	11¾	2⅝	13¹/₁₆	6-⅞	9.17	3.87	14⅛	9.21	3½	14¼	8.72	6½	19⅛
10	20⁹/₁₆	18	26⁹/₁₆	10½	32	8	13	1⅜	16	14¼	12-1	11.20	14	2⅝	13½	8-⅞	11.22	3.83	16	11.76	3½	16	—	—	—
12	23½	18	30⅛	12½	39	9½	14	1½	19	17	12-1	13.30	16½	2⅝	14⅛	8-⅞	13.32	3.93	16	14.02	4	18	—	—	—

Dimensions are in inches.

Part No.	Part Name	Material
80-7	Clamp Nut	Plated Steel
80-8	Wrench Nut	Cast Iron ASTM A126 Class B
80-9	Handwheel	Cast Iron ASTM A126 Class B
80-10	Cover Bolt	Plated Steel
80-11	Upper Stem O-Rings	Buna-N
80-13	Bonnet Cover	Cast Iron ASTM A126 Class B

Part No.	Part Name	Material
80-14	Anti-Friction Washer	Acetal Polymer
80-15	Cover O-Ring	Buna-N
80-16	Lower Stem O-Ring	Buna-N
80-17	Stem	Manganese Bronze B763 Alloy 865
80-18	Bonnet Bolt and Nut	Plated Steel
80-19	Bonnet	Cast Iron ASTM A126 Class B

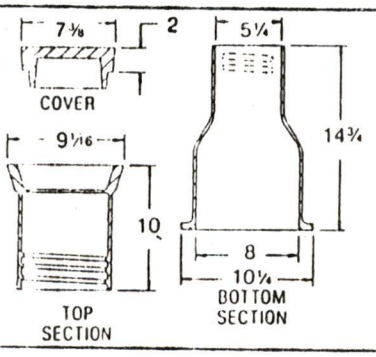
Part No.	Part Name	Material
80-20	Bonnet O-Ring	Buna-N
80-21	Gate	Cast Iron ASTM A126 Class B
80-21A	Resilient Seat	SBR
80-23	Stem Nut	Bronze B283 Alloy 377
•	Body	Cast Iron ASTM A126 Class B

USF 7500 ADJUSTABLE SCREW TYPE VALVE BOX AND COVER

STANDARDS AND SPECIFICATIONS:
1. 5¼ inch shaft.
2. 18 in. to 24 in. Extension.
3. Cover is marked "Water".

TO ORDER:
1. Specify USF number and cover type.

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
FA	HEAVY DUTY	12	62





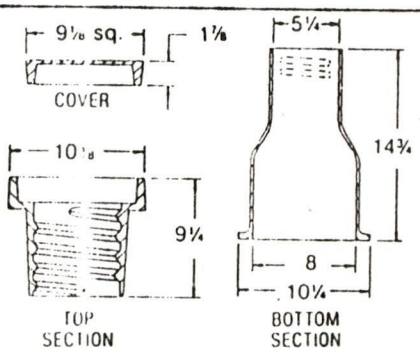
TO ORDER ONLY	SPECIFY USF NO.
Top Section	7501
Bottom Section	7502

USF 7503 ADJUSTABLE SCREW TYPE VALVE BOX AND COVER

STANDARDS AND SPECIFICATIONS:
1. Cover is marked "Treated Waste Water".

TO ORDER:
1. Specify USF number and cover type.

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
FL	LIGHT DUTY	15	85





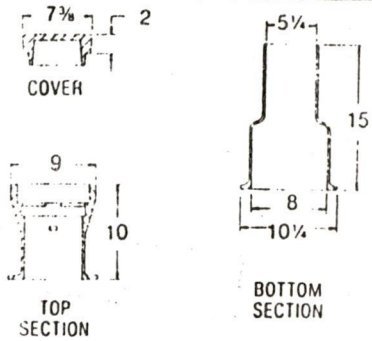
TO ORDER ONLY	SPECIFY USF NO.
Top Section	7504
Bottom Section	7502

USF 7510 ADJUSTABLE SLIP TYPE VALVE BOX AND COVER

STANDARDS AND SPECIFICATIONS:
1. 5¼ inch shaft.
2. 18 in. to 24 in. Extension.
3. Cover is marked "Water".

TO ORDER:
1. Specify USF number and cover type.

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
FA	HEAVY DUTY	12	62





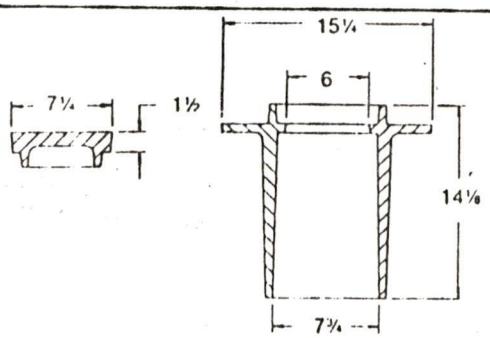
TO ORDER ONLY	SPECIFY USF NO.
Top Section	7511
Bottom Section	7512

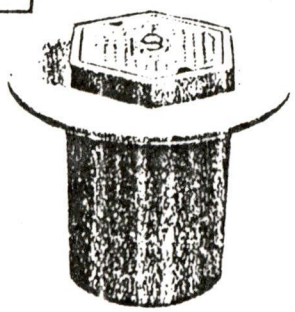
USF 7605 SEWER VALVE BOX AND HEXAGON COVER

STANDARDS AND SPECIFICATIONS:
1. Cover is marked "S"

TO ORDER:
1. Specify USF number and cover type.

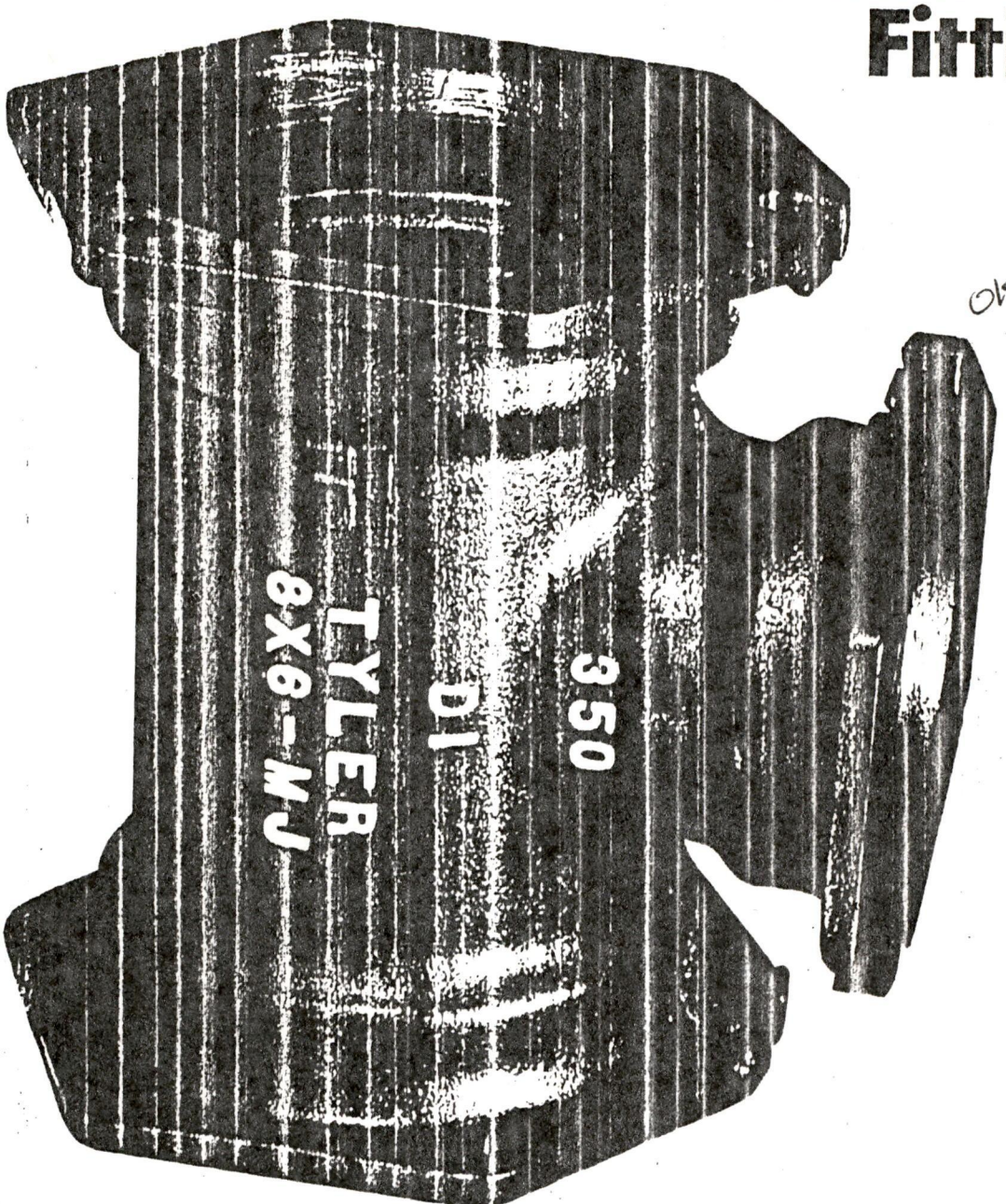
COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
TB	HEAVY DUTY	20	120





Tyler

3" Through 16" Mechanical Joint SSB Class 350 Ductile Iron Fittings

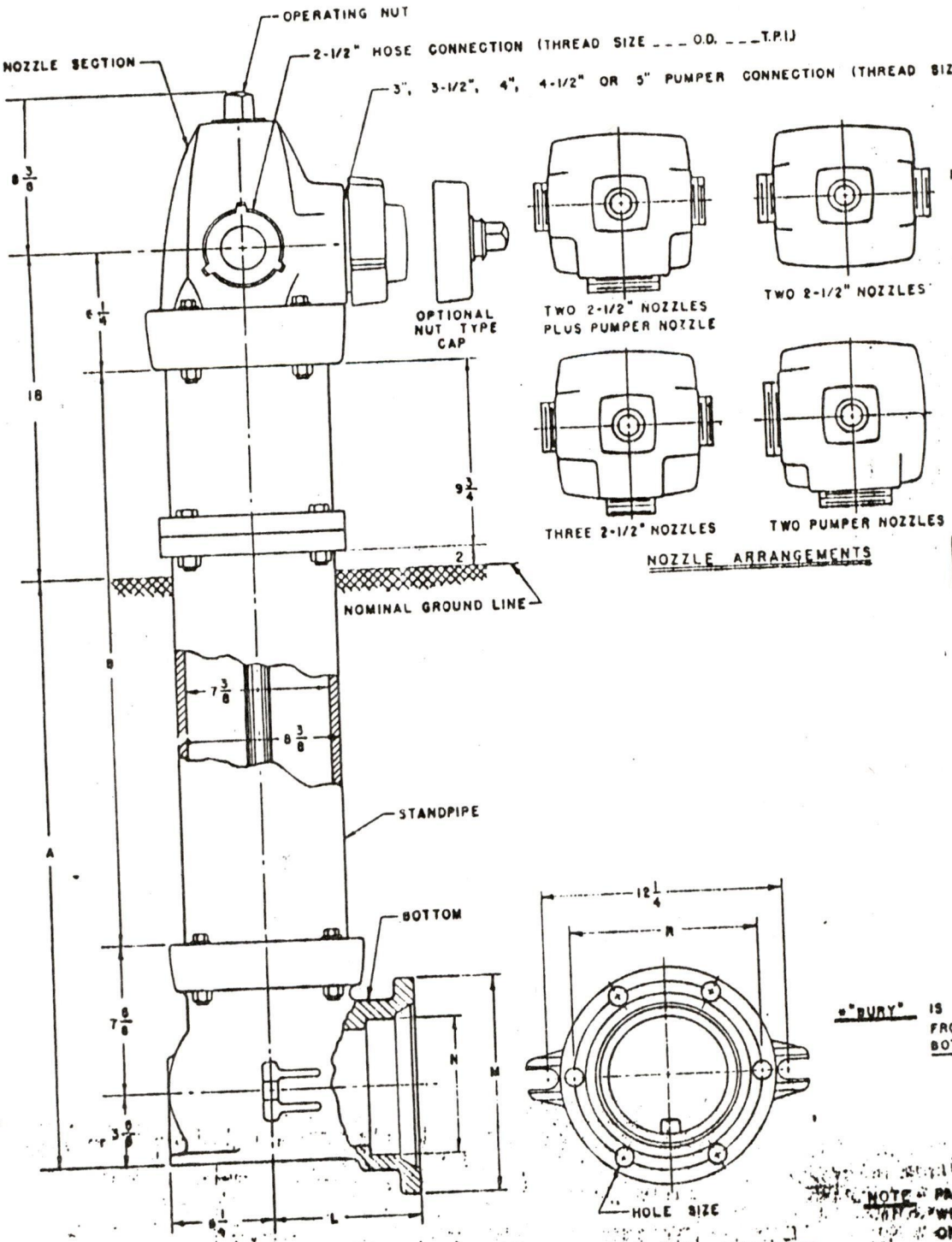


U.L. Listed
3"-12" Diameter

Three-inch through twelve-inch mechanical joint Ductile Iron Fittings shall be produced in strict accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11. Fourteen-inch and sixteen-inch diameters shall be manufacturer's standards, with metal thickness equal to Class 56 ductile iron pipe. The working pressure ratings shall be 350 psi.

Cement Lined AWWA C104

Tyler Pipe
Subsidiary of
Tyler Corporation



NOTE: NOZZLE SECTION M
BE ROTATED TO AN
POSITION FROM TH
ONE SHOWN

BURY *	A	B
1'-6"	1'-6 3/4"	1'-7
2'-0"	2'-0 3/4"	2'-1
2'-6"	2'-6 3/4"	2'-7
3'-0"	3'-0 3/4"	3'-1
3'-6"	3'-6 3/4"	3'-7
4'-0"	4'-0 3/4"	4'-1
4'-6"	4'-6 3/4"	4'-7
5'-0"	5'-0 3/4"	5'-1
5'-6"	5'-6 3/4"	5'-7
6'-0"	6'-0 3/4"	6'-1
6'-6"	6'-6 3/4"	6'-7
7'-0"	7'-0 3/4"	7'-1
7'-6"	7'-6 3/4"	7'-7
8'-0"	8'-0 3/4"	8'-1
8'-6"	8'-6 3/4"	8'-7
9'-0"	9'-0 3/4"	9'-1
9'-6"	9'-6 3/4"	9'-7

* "BURY" IS THE NOMINAL DISTANCE
FROM GROUND LINE TO
BOTTOM OF CONNECTING PIP

CONNECTING PIPE	L	M	N	R	NO. HOLES	HOLE SIZE
6" PIPE	9-5/8	13-5/8	9-3/16	11-3/4	6	7/8
4" PIPE	8-13/16	8-7/8	4-15/16	7-1/2	4	7/8

NOTE - OPERATING NUT FURNISHED L.H. (COUNTER CLOCKWISE OPENING)
OR R.H. (CLOCKWISE OPENING) IN FOLLOWING COMMON SIZES:

15/16	PENTAGON	7/8 SQUARE
1 1/8	"	1 "
1 7/32	"	
1 5/16	"	
1 1/2	"	

NOTE - PACER HYDRANT AVAILAB
WITH [illegible] VALVE
OPENING ONLY

1 5/16

DIMENSION AND SPECIFICATION SHE
PACER TRAFFIC FLANGE HYDRAN
WITH MECHANICAL JOINT CONNECT

PLATE 68-2-6-12

WATEROUS COMPANY
SOUTH ST. PAUL MINNESOTA 55075

WATEROUS — Pacer
LONGBOAT KEY SPEC

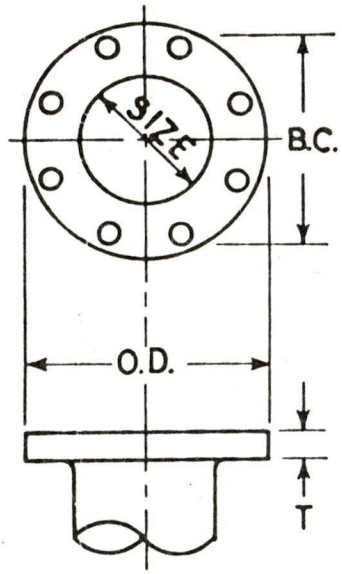
Tyler Pipe
Subsidiary of
Tyler Corporation

Cement Lined AWWA C-104

FLANGED FITTINGS

SAMPLE SPECIFICATION

CAST IRON OR DUCTILE IRON FLANGED FITTINGS shall be made in strict accordance with ANSI/AWWA C110. They shall conform to details and dimensions published therein and shall be adequate for water pressure of 250 lbs. P.S.I.



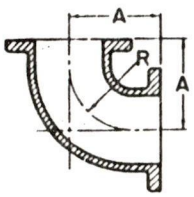
NOTE: No flange joint material furnished.

Dimensions

Nominal Pipe Size Inch	Dimensions-Inches					
	Flange O.D.	Dia. of Bolt Circle	Flange Thickness T	Bolt Hole Diameter	Number of Bolts	Bolt Diam. and Length
* 2	6	4.75	.62	.75	4	⅝ x 2¼
3	7.5	6	.75	.75	4	⅝ x 2½
4	9	7.5	.94	.75	8	⅝ x 3
6	11	9.5	1.00	.875	8	¾ x 3½
8	13.5	11.75	1.12	.875	8	¾ x 3½
10	16	14.25	1.19	1.00	12	⅞ x 4
12	19	17	1.25	1.00	12	⅞ x 4
14	21	18.75	1.38	1.125	12	1 x 4½
16	23.5	21.25	1.44	1.125	16	1 x 4½
18	25	22.75	1.56	1.25	16	1⅛ x 5
20	27.5	25	1.69	1.25	20	1⅛ x 5
24	32	29.5	1.88	1.375	20	1¼ x 5½
30	38.75	36	2.12	1.375	28	1¼ x 6½
36	46	42.75	2.38	1.625	32	1½ x 7

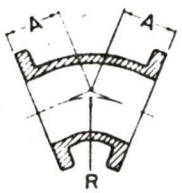
Note: Drilling templates are in multiples of four, so that fittings may be made to face in any quarter. Bolt holes shall straddle the center line.

BENDS



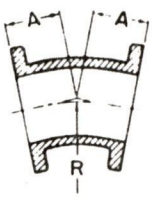
1/4 Bend (90°)
5-700

Size	Dimensions		Wt.
	R	A	
*2	3	4.5	14
3	4	5.5	25
4	4.5	6.5	45
6	6	8	65
8	7	9	105
10	9	11	165
12	10	12	235
14	11.5	14	330
16	12.5	15	430
18	14	16.5	530
20	15.5	18	685
24	18.5	22	1085
30	21.5	25	1755
36	24.5	28	2690



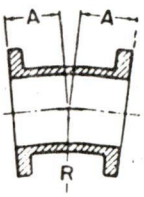
1/8 Bend (45°)
5-705

Size	Dimensions		Wt.
	R	A	
*2	2.44	2.5	12
3	3.62	3	20
4	4.81	4	40
6	7.25	5	55
8	8.44	5.5	90
10	10.88	6.5	130
12	13.25	7.5	195
14	12.06	7.5	245
16	13.25	8	315
18	14.5	8.5	375
20	16.88	9.5	485
24	18.12	11	730
30	27.75	15	1335
36	35	18	2155



1/16 Bend (22½°)
5-709

Size	Dimensions		Wt.
	R	A	
*2	5.03	2.5	11
3	7.56	3	20
4	10.06	4	40
6	15.06	5	55
8	17.62	5.5	90
10	22.62	6.5	135
12	27.67	7.5	205
14	25.12	7.5	250
16	27.62	8	325
18	30.19	8.5	385
20	35.19	9.5	505
24	37.69	11	755
30	57.81	15	1385
36	72.88	18	2235



1/32 Bend (11¼°)
5-711

Size	Dimensions		Wt.
	R	A	
*2	10.15	2.5	11
3	15.25	3	20
4	20.31	4	40
6	30.5	5	55
8	35.5	5.5	90
10	45.69	6.5	135
12	55.81	7.5	205
14	50.75	7.5	255
16	55.81	8	325
18	60.94	8.5	385
20	71.06	9.5	505
24	76.12	11	760
30	116.75	15	1395
36	147.25	18	2250

*Not Included in AWWA C110.

Custom Fab, Inc.
121 Thorpe Road
Orlando, FL 32824
(407) 859-3954
FAX (407) 851-6370

May 8, 1989

Southeastern Municipal Supply Co.
2001 University Parkway
Sarasota, FL 33404

Attention: Brian MacPherson

Re: Flanged Pipe

Dear Brian,

This letter will serve as certification that the fabricated pipe supplied by CUSTOM FAB, INC. is manufactured in accordance with ANSI/AWWA C115/A21.15-83.

All ductile iron pipe flanged at our location is Class-53 or greater.

The cement lining is in accordance with ANSI/AWWA C104/A21.4-85.

If any further information is required, please do not hesitate to contact our office.

Sincerely,

CUSTOM FAB, INC.

Christopher M Comins

Christopher M. Comins
President

STATE OF FLORIDA
COUNTY OF ORANGE

Sworn to and subscribed before me this 8th day of May, 1989.

My commission expires:

Susan K. Weber
Notary Public

Notary Public State of Florida
My Commission Expires April 16, 1990
Bonded By SAFECO Insurance Company of Florida

Ford Angle Meter Valves

Features of the Inverted Key Angle Meter Valve

A bronze pin securely locks the tee head to the inverted key.

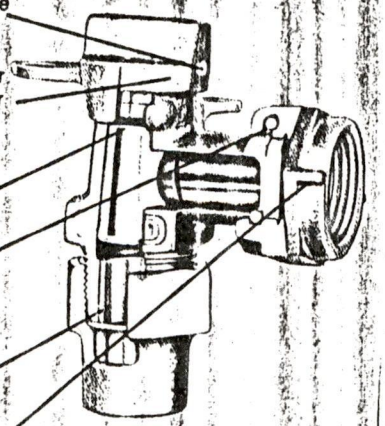
Two phosphor bronze springs under the tee head reseat the key after tapping and turning.

An O-ring in the key provides extra protection against leakage.

A snap ring in the coupling nut groove rides against a flange on the valve nose.

A pressed-in bushing provides a radius for copper tube flare.

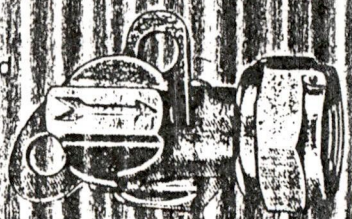
The meter coupling nut is drilled for a seal wire.



Options Available

Padlock Wings on Inverted Key Valves

Inverted Key Meter Valves and Ball Valves can include padlock wings for locking the valve in a closed position.



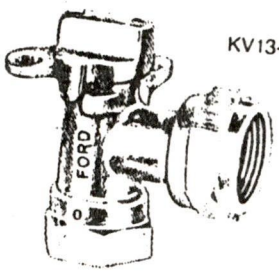
Top view of the valve in the open position. Padlock holes are normally 7/16".

Angle Inverted Key Meter Valve Lock Caps

Lock Caps are available for 1/2"x3/4" and 3/4" Angle Meter Valves. One size fits all three sizes of valves. Order by Catalog Number AVLC-1.



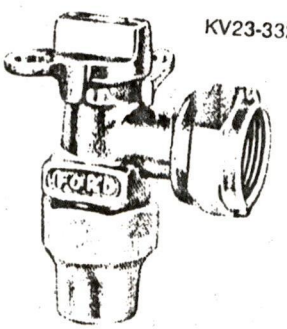
Angle Inverted Key Meter Valves



KV13-332W

OK

One End Female Iron Pipe — Other End Meter Coupling Nut for Connection to 5/8" thru 1" Meters				
Catalog Number	Valve Size	Pipe Size	Meter Size	Approx. Wt. Lbs.
KV13-331W	3/4"	3/4"	5/8"	1.6
KV13-332	3/4"	3/4"	5/8"x3/4" & 3/4"	1.7
KV13-332W	3/4"	3/4"	5/8"x3/4" & 3/4"	1.7
KV13-342W	3/4"	1"	5/8"x3/4" & 3/4"	1.8
KV13-444W	1"	1"	1"	1.9
KV13-454W	1"	1 1/4"	1"	2.0



KV23-332W

One End Copper — Other End Meter Coupling Nut for Connection to 5/8" thru 1" Meters				
Catalog Number	Valve Size	Tubing Size	Meter Size	Approx. Wt. Lbs.
KV23-331W	3/4"	3/4"	5/8"	1.7
KV23-341W	3/4"	1"	5/8"	1.9
KV23-332	3/4"	3/4"	5/8"x3/4" & 3/4"	1.8
KV23-332W	3/4"	3/4"	5/8"x3/4" & 3/4"	1.8
KV23-342W	3/4"	1"	5/8"x3/4" & 3/4"	1.9
KV23-444W	1"	1"	1"	2.6
★KV23-454W	1"	1 1/4"	1"	2.9

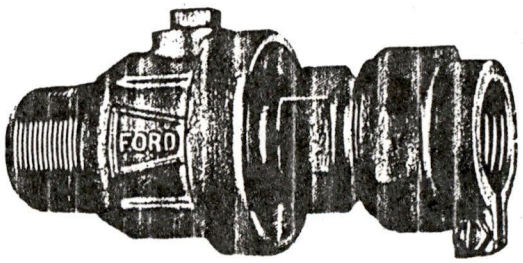
"W" Indicates valve is standard with padlock wings.

★ NOTE: These are Non-Stock items. Please call or write for prices and minimum order quantities.

Ford Corporation Stops

Sizes and Catalog Nos.	Body Outlet Threads	Pack Joint Size	Approx. Wt. Lbs.	Std. Pkg.
Type FB1001 — Pack Joint for PE or PB Pipe				
¾" FB1001	1" flare cop.	¾"	1.5	6
1" FB1001	1¼" flare cop.	1"	2.1	6
1½" FB1001	1½" flare cop.	1½"	7.2	1
2" FB1001	2" flare cop.	2"	11.3	1
Type FB1002 — Pack Joint for PVC Pipe				
¾" FB1002	1" flare cop.	¾"	1.4	6
1" FB1002	1¼" flare cop.	1"	2.0	6
1½" FB1002	1½" flare cop.	1½"	7.1	1
2" FB1002	2" flare cop.	2"	11.9	1

Ballcorp™
Types FB1001, FB1002
Inlet — AWWA taper
(CC or CS) thread.



Sizes and Catalog Nos.	Body Outlet Threads	Pack Joint Size	Approx. Wt. Lbs.	Std. Pkg.
Type FB1101 — Pack Joint for PE or PB Pipe				
¾" FB1101	1" flare cop.	¾"	1.3	6
1" FB1101	1¼" flare cop.	1"	1.9	6
1½" FB1101	1½" flare cop.	1½"	7.0	1
2" FB1101	2" flare cop.	2"	11.0	1
Type FB1102 — Pack Joint for PVC Pipe				
¾" FB1102	1" flare cop.	¾"	1.3	6
1" FB1102	1¼" flare cop.	1"	1.9	6
1½" FB1102	1½" flare cop.	1½"	7.0	1
2" FB1102	2" flare cop.	2"	11.5	1

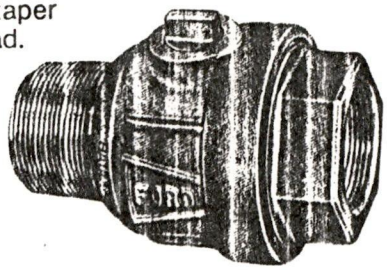
**Ford Pack Joints for PVC Pipe are recommended for use only with Schedule 40 and Schedule 80 PVC.*

Type FB1101, FB1102
Inlet — Iron pipe thread.

Outlets For FB1001, FB1002, FB1101 and FB1102
— Pack Joint for PE, PB or PVC pipe.

Sizes and Catalog Number	Approx. Wt. Lbs.	No. In Std. Pkg.
¾" FB1600	1.5	10★
1" FB1600	2.3	6
1½" FB1600	5.6	1
1½x2" FB1600	6.9	1
2" FB1600	8.5	1
2x2½" FB1600	8.8	1★

Ballcorp™
Type FB1600
Inlet — AWWA taper
(CC or CS) thread.



Sizes and Catalog Number	Approx. Wt. Lbs.	No. In Std. Pkg.
¾" FB1700	1.5	10★
1" FB1700	2.1	6
1½" FB1700	5.4	1
1½x2" FB1700	6.7	1★
2" FB1700	8.3	1
2x2½" FB1700	8.5	1★

Type FB1700
Inlet — Iron pipe thread.

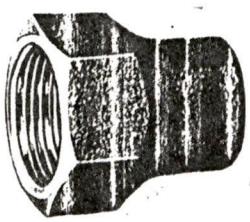
Outlets For Types FB1600 & FB1700
Female iron pipe thread.

Tee Head Adapters for 1½" and 2" Ballcorp are available as an option.

★ NOTE: These are Non-Stock Items. Please call or write for prices and minimum order quantities.

Copper Tube Nuts

Copper Tube Nuts Size	Cat. No.
½"	CTN-1
⅝"	CTN-2
¾"	CTN-3
1"	CTN-4
1¼"	CTN-5
1½"	CTN-6
2"	CTN-7



Solid Copper Gaskets for Eighth and Quarter Bends



Sizes: ¾", 1", 1½", 2"

THE MOST COMPREHENSIVE LINE OF THRUST RESTRAINING DEVICES FOR THE WATER WORKS INDUSTRY

(UL Listed — FM Approved on applicable sizes)

Ductile Iron Pipe Joint Restraint



Series 100 & 1200
Restrains mechanical joints in new systems.
Series 100 - Sizes 2" - 42"
Series 1200 - Sizes 4" - 12"



Series 800
Restrains push-on pipe bells.
Sizes 3" - 42"



Series 1000 E-Z Flange
For field fabricating flanged joints.
Sizes 3" - 24"

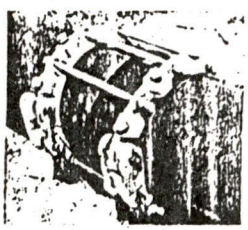


***Series 1100**
Restrains mechanical joints in new systems.
Sizes 3" - 48"

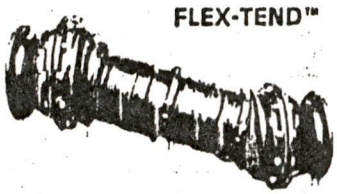
***Series 1100SD**
Restrains mechanical joints in existing systems. Sizes 3" - 36"



***Series 1100HD Harness**
Restrains push-on pipe bells.
Sizes 6" - 36"

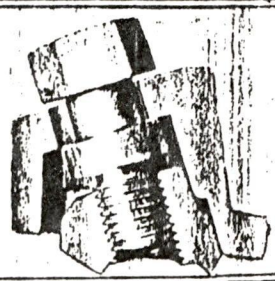


FLEX-TEND™



Flexible Expansion Joints protect connections to buildings, tanks, bridges. Capable of 30° deflection any direction, simultaneous expansion/contraction. Ductile iron, fusion-bonded epoxy lining.
Sizes: 4" - 30"

Featuring MEGALUG®



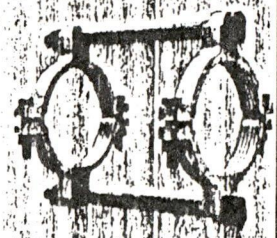
Wedge action Megalug tightens its grip as pressure and forces increase. It converts pull-out force to holding force. BE SURE. COMPARE BEFORE YOU BUY!

PVC Pipe Joint Restraint

Series 500 & 5500
2-part system restrains C-900 or IPS pipe sizes into mechanical joint bells.
Series 500 - Sizes 4" - 10"
Series 5500 - Sizes 4" - 12"



Series 1500 & 6500
For push-on joint C-900 or IPS O.D. pipe. Both series - Sizes 4" - 12"



Series 3500 & 8500 Flange Adaptor
For field fabricating flanged joints for C-900 or IPS O.D. PVC pipe. Both series - Sizes 4" - 12"



***Series 1100SV**
Restrains mechanical joints in existing C-900 PVC systems. Sizes 6" - 24"



***Series 1100PV**
For C-900 Iron O.D. PVC pipe when used with mechanical joint bells.
Sizes 6" - 30"



***Series 1100HV Harness**
Restrains push-on C-900 PVC pipe bells.
Sizes 14" - 30"



Call or write for information. **1-800-433-1716**

EBAA IRON SALES, INC.
P. O. Box 857 • Eastland, Texas 76448
Phone: (817) 629-1731 • Telefax: (817) 629-8931

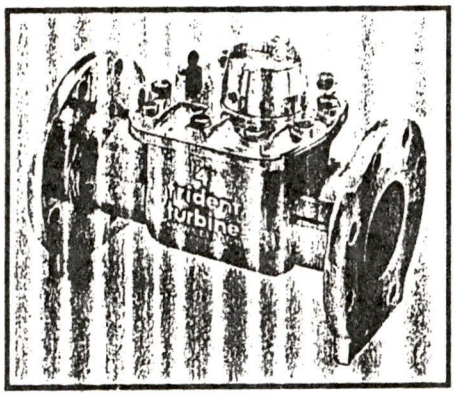
FEBCO®

...Specialists in the Production of Backflow Prevention Devices

PRODUCT ILLUSTRATION	PAGE NO.	PRODUCT TYPE	SIZE	TYPE OF SERVICE	TYPE OF APPLICATION	APPROVALS	MAXIMUM WORKING PRESSURE
	7	825Y Reduced Pressure Backflow Preventer	¾", 1", 1¼" 1½", 2"	High Hazard Possible Back Press. Continuous Pressure	Industrial Plants, Hospitals, Irrigation, Morgues, Boiler Feeds, Mortuaries, Water Lines needing maximum protection, Chemical Plants	ASSE, USC, SBCC, IAPMO	175 PSI
	9	825 Reduced Pressure Backflow Preventer	2½", 3", 4", 6", 8", 10"	High Hazard Possible Back Press. Continuous Pressure	Industrial Plants, Hospitals, Irrigation Systems, Morgues, Mortuaries, Boiler Feeds, Chemical Plants	ASSE, USC, IAPMO, SBCC, CSA, UL ②, FM③	175 PSI
	11	805Y Double Check Backflow Preventer	¾", 1", 1½", 2"	Low Hazard Possible Back Press. Continuous Pressure	Irrigation Systems, Sprinkler Systems, Fire Protection without chemical additives, Industrial In-plant Plumbing, Protection of Industrial Plants	ASSE, USC ③ SBCC, IAPMO	175 PSI
	12	805Y Double Check Backflow Preventer	2½", 3", 4" 6", 8", 10"	Low Hazzard Possible Back Press. Continuous Pressure	Sprinkler Irrigation Systems, Fire Protection without chemical additives, Protection of Industrial Plants, In-plant Plumbing Systems	ASSE, CSA ③ UL ②, USC ③, IAPMO, SBCC, FM③	175 PSI
	13	805 Double Check Backflow Preventer	¾", 1", 1½", 2", 3", 4"	Low Hazard Possible Back Press. Continuous Pressure	Irrigation systems, Fire Protection without chemical additives, Protection of Industrial Plants, Industrial In-plant Plumbing Systems	ASSE, USC IAPMO, SBCC, CSA, UL② (3" & 4")	150 PSI
	14	806 DDC Double Detector Check Valve Assembly Ok Fire	¾" Bypass 3" 4" 6" 8" 10"	Low Hazard Possible Back Press. Continuous Pressure	Fire Service Pipelines	UL②, USC③ FM③	175 PSI
	15	775 Pressure Vacuum Breaker	3", 4", 6", 8", 10"	High Hazard Continuous Pressure No Possible Back Press.	In-plant Industrial Applications for toxic or non-toxic protection, Cooling Towers, Laboratories, Swimming Pools, Lawn Sprinkler Systems	IAPMO, USC,	150 PSI
	16	765 Pressure Vacuum Breaker	½", ¾", 1" 1¼", 1½", 2"	High Hazard Continuous Pressure No Possible Back Press.	In-plant Industrial Applications for toxic or non-toxic protection, Cooling Towers, Laboratories, Swimming Pools, Laundries, Lawn Sprinkler Systems	SBCC, IAPMO, USC, ASSE	150 PSI
	17	710/715 Atmospheric Vacuum Breaker	½", ¾", 1", 1¼", 1½", 2"	Medium Hazard	Commercial Dishwasher and Laundry Machines, Hose Bibbs, Lawn Sprinkler Systems, Chemical Vats, X-Ray Tanks, Laboratory Sinks	IAPMO, SBCC, CSA, USC, ASSE	150 PSI
		730 Hose Bibb Vacuum Breaker	¾"				
	18	810 Dual Check Backflow Preventer	¾"	Low Hazard	Domestic Water Service	ASSE Standard 1024, SBCC	175 PSI

NOTES: (1) Consult the factory for special high temperature devices. (2) UL approved installations must include O S & Y gate valves.

NEPTUNE TURBINE METERS



Neptune Turbine meters are designed for applications where the flow is consistently moderate to high. The Neptune Turbine is designed for a range of flow rates from a low of 4 gallons per minute to a high of 5500 gallons per minute (at an accuracy of ± 1.5%).

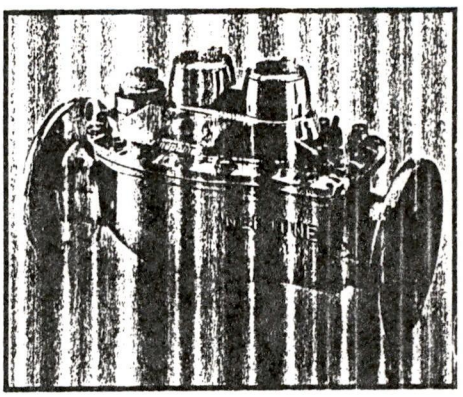
The Neptune Turbine is composed of a Unitized Measuring Element (U.M.E.) and a sturdy bronze maincase. The U.M.E. contains the turbine measuring element, register and cover. A stainless steel calibration vane assures accurate field registration.

The innovative design of the turbine measuring element, with direct coupling of the rotor to the gear train eliminates revenue loss from slippage during line surges. The dual outboard bearings equalize the load on the rotor shaft. The thrust compensated rotor configuration reduces wear on the bearings, thus extending operating life.

The Neptune Turbine register is roll-sealed to prevent lens fogging. Neptune Turbines are also available in all remote reading options.

Sizes	Normal Operating Range
1½"	4 to 160 GPM
2"	4 to 200 GPM
3"	5 to 450 GPM
4"	10 to 1000 GPM
6"	20 to 2000 GPM
8"	35 to 3500 GPM
10"	50 to 5500 GPM

NEPTUNE TRU/FLO COMPOUND METERS



With the Neptune Tru/Flo Compound you get the best of both worlds: the low flow accuracy of Neptune's positive displacement measuring chamber and the sustained high flow capacity of the Neptune Turbine.

The Neptune patented Tru/Flo Compound meters are designed for application where there is a widely varying rate of flow.

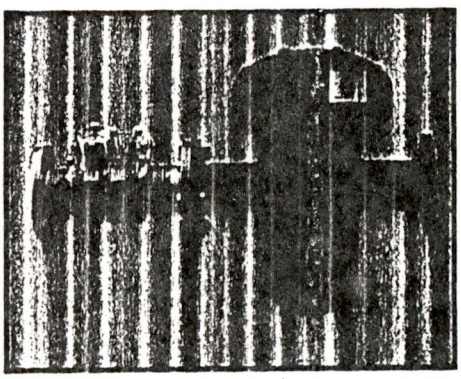
The Tru/Flo features two measuring elements: a nutating disc element for low flow measurement and a turbine element for higher flow rates. Magnetic drive registers totalize the flow through each of the measuring elements. Stainless steel calibration vane assures accurate field registration.

Transfer of low and high flow rates is accomplished through a unique hydraulic valve. This patented hydraulic valve design virtually eliminates the loss in accuracy usually found in the crossover range.

As with the Neptune Turbine, maintenance is quick and easy with the Tru/Flo's Unitized Measuring Element, allowing for in-line serviceability.

Sizes	Flow Range
2"	⅛ to 200 GPM
3"	⅛ to 450 GPM
4"	½ to 1000 GPM
6"	¾ to 2000 GPM

NEPTUNE FIRE SERVICE TURBINE



The Neptune Fire Service Turbine is designed for application on a designated fire line or where one line serves both potable and fire service use—and where the flow rate is constantly moderate to high. With Neptune's UL Listed and FM Approved Fire Service Turbine you can meet all fire safety standards and at the same time measure accurately all water usage through the meter for maximizing billing revenues.

The Fire Service Turbine is composed of the Neptune Turbine with a reinforced maincase and cover to handle increased pressure requirements and a UL Listed/FM Approved strainer to maintain an open flow path even during adverse conditions.

Maintenance is simplified with the Neptune Turbine's Unitized Measuring Element (U.M.E.), stainless steel calibration vane, and the basket-type strainer's flushing port. These features ensure in-line serviceability.

Sizes	Flow Range
3"	5 to 450 GPM
4"	10 to 1000 GPM
6"	20 to 2000 GPM
8"	35 to 3500 GPM
10"	50 to 5500 GPM

TOWN OF LONGBOAT Key to Supply Meters

COLONIAL PLASTICS INC.
TAMPA, FLORIDA

PIPE SPECIFICATIONS

PVC PRESSURE PIPE

SCHEDULE 40
ASTM D 1785

DUAL MARKED
DWV*
ASTM D 2665

NOMINAL PIPE SIZE	WORKING PRESSURE at 73.4° F.	MASTER PACK QUANTITY FT.	APPROX. SHIPPING WT/100'	O.D.	WALL THICKNESS
1/2"	600 PSI	10300	16.1	.840	.109
3/4"	480 PSI	9960	21.4	1.050	.113
1"	450 PSI	9380	31.8	1.315	.133
1¼"*	370 PSI	5000	43.0	1.660	.140
1½"*	330 PSI	4500	51.6	1.900	.145
2"*	280 PSI	3500	69.1	2.375	.154
2½"	300 PSI	2320	109.8	2.875	.203
3"*	260 PSI	1440	143.8	3.500	.216
4"*	220 PSI	1140	204.8	4.500	.237
5"	190 PSI	760	277.3	5.563	.258
6"*	180 PSI	600	360.9	6.625	.280
8"	160 PSI	360	542.5	8.625	.322

SCHEDULE 80
ASTM D 1785

1/2"	850 PSI	10300	20.6	.840	.147
3/4"	690 PSI	9960	25.4	1.050	.154
1"	630 PSI	4700	41.0	1.315	.179
1¼"	520 PSI	5000	56.6	1.660	.191
1½"	470 PSI	4500	68.7	1.900	.200
2"	400 PSI	3500	95.1	2.375	.218
2½"	420 PSI	2320	144.8	2.875	.276
3"	370 PSI	1440	194.3	3.500	.300
4"	320 PSI	1140	284.2	4.500	.337
6"	280 PSI	600	542.3	6.625	.432

SEWER & DRAIN PIPE
ASTM D 2729

3" Solid Bell End	2080	47.7	3.250	.070
4" Solid Bell End	1200	63.5	4.215	.075
4" Perf Bell End	1200	63.5	4.215	.075
6" Solid Bell End	460	118.6	6.275	.100
6" Perf Bell End	460	118.6	6.275	.100

ASTM D 3033 and
ASTM D 3034
ASTM D 3033
ASTM D 3034

4" Bell End	1140	104.3	4.215	.125
6" Bell End	460	190.7	6.275	.153
6" Bell End	460	223.2	6.275	.180

SCH 40 - PIPE + FITINGS - FOR WATER SERVICE

OK

Ford Brass Saddles
Styles 101B and 202B

For 3/4" through 2"

Ford's single strap 101B and double strap 202B brass saddles are designed with built-in flexibility to cover asbestos-cement and/or cast iron size pipe. The body of the saddle is sized to fit class 200 asbestos-cement but will bend during installation to conform to the smaller size cast iron or ductile iron material. This eliminates double inventory and guess work when going to the job site.

The body and the nuts of Ford brass saddles are cast from certified 85-5-5-5 water works brass conforming to AWWA C800 specification. The straps are high quality silicon bronze flattened to provide a wide bearing surface against the pipe. The large Buna-N rubber gasket is grooved to conform to the pipe surface and bonded in place for easy installation.

Ford's convenient marking system quickly and easily identifies the type of thread in the boss. For AWWA tapered thread the top edge of the boss has a groove around the outside edge while the boss for iron pipe thread is smooth.

Style 101B Single Strap Brass Saddle

For 3/4" and 1" Taps

To Order: Add Tap Code Number from the table at the bottom of the page to the catalog number. For example, a saddle for 6" cast iron pipe with a 3/4" CC tap would be 101B-750-CC3. A saddle for 8" cast iron pipe with 1" iron pipe tap would be a 101B-962-IP4.

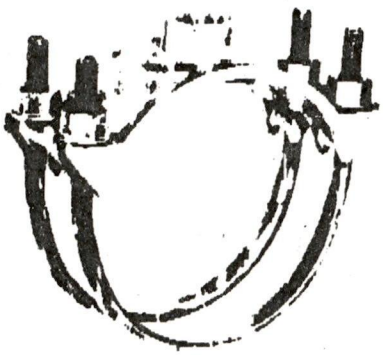


Nom. Pipe Size	O.D. Range	Catalog Number	A	B
4"	4.80-5.40	101B-540-Tap	3.0	10
6"	6.90-7.50	101B-750-Tap	3.8	10
8"	9.05-9.62	101B-962-Tap	4.4	10
10"	11.10-12.12	101B-1212-Tap	5.4	1
12"	13.20-14.38	101B-1438-Tap	5.9	1

Style 202B Double Strap Brass Saddle OK

For 3/4" through 2" Taps

To Order: Add Tap Code Number from the table at the bottom of the page to the catalog number. For example, a saddle for 12" cast iron pipe with 1" CC tap would be 202B-1438-CC4.



Nom. Pipe Size	O.D. Range	Catalog Number	A	B	C	D
4"	4.80-5.40	202B-540-Tap	6.6	5	7.6	6
6"	6.90-7.50	202B-750-Tap	7.7	4	8.8	4
8"	9.05-9.62	202B-962-Tap	8.8	5	9.8	4
10"	11.10-12.12	202B-1212-Tap	10.7	4	12.2	4
12"	13.20-14.38	202B-1438-Tap	11.8	3	13.3	3
14"	15.30-16.25	202B-1625-Tap	18.0	1	17.5	1
	16.30-17.25	202B-1725-Tap	19.1	1	18.6	1
16"	17.40-18.40	202B-1840-Tap	23.0	1	22.5	1
	18.50-19.25	202B-1925-Tap	24.0	1	23.5	1

Note: 202B Style Saddles are available up to 30". Call for price and availability.

OUTLET THREAD TAP CODE

CC (AWWA) Thread	CC Tap No.	IP Thread	IP Tap No.	BSP Thread	BSP Tap No.
3/4" CC	CC3	3/4" IP	IP3	3/4" BSP	BSP3
1" CC	CC4	1" IP	IP4	1" BSP	BSP4
1-1/4" CC	CC5	1-1/4" IP	IP5	1-1/4" BSP	BSP5
1-1/2" CC	CC6	1-1/2" IP	IP6	1-1/2" BSP	BSP6
2" CC	CC7	2" IP	IP7	2" BSP	BSP7

ATLANTIC CONCRETE PRODUCTS, INC.

Contractor: Tri-D

Job Name: L'Ambiance

City of Longboat Key Specs.

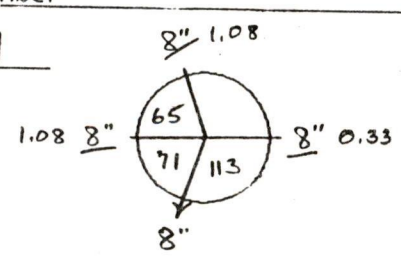
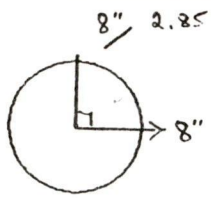
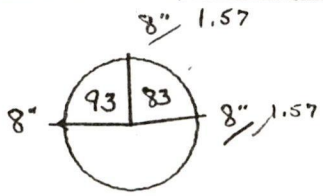
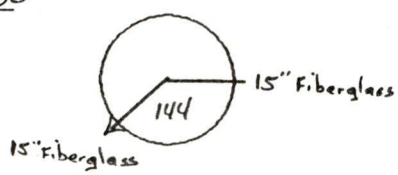
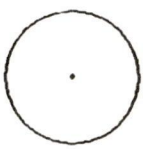
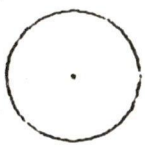
County: Sarasota

Wall: 8" Inverts: Yes / No

Gasket: Z-lok

Pipe: PVC / Fiberglass

Coating: IN & out

Manhole Number	Plan View	Notes	Rim / Invert	Shipping Height	Increments	Date Made	Date Shipped
1			11.00 0.23				
2			8.00 2.75				
3			7.50 0.88				
67+30	new MH. 		6.30 RIM £ -1.90	?	NO Dred MH need Fiberglass liner		
							
							

Takeoffs are per plans. Please advise of any changes prior to manufacture.

ATLANTIC CONCRETE PRODUCTS, INC.

Job Name:

Top Slab 4" Nosing Yes

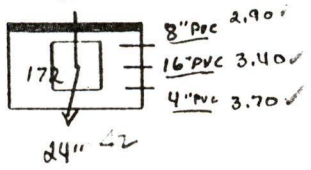
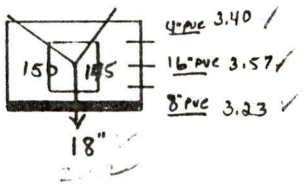
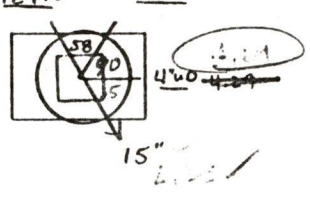
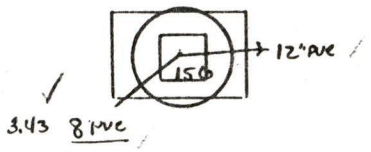
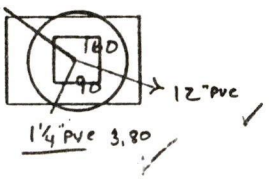
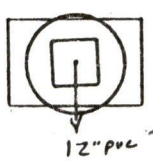
Wall: 8" Steps —

U.Drain 4" Inverts —

Pipe: RCP/PVC Gasket: —

Contractor:

County:

Structure Number	Plan View	Notes	Rim / Invert	Notes	Increments	Date Made	Date Shipped
S-5		Type: Curb Inlet Size: 4½x4½	13.80 1.42		U.S.F.# 1110-M		
S-6		Type: Curb Inlet Size: 4½x4½	13.80 2.02		U.S.F.# 1110-M 16" Inv. 3.57 ~~or 3.75~~		
S-6A		Type: St. MH Size: 4'ø	7.40 2.63		U.S.F.# 260-B		
S-6B		Type: B Size: 4'ø	5.25 3.10		U.S.F.# 260-3130 Heavy Duty		
S-11		Type: B Size: 4'ø	5.30 2.64		U.S.F.# 260-3107		
S-10		Type: B Size: 4'ø	5.50 2.05		U.S.F.#		

Takeoffs are per plans. Please advise of any changes prior to manufacture.

ATLANTIC CONCRETE PRODUCTS, INC.

Job Name:

Top Slab Nosing

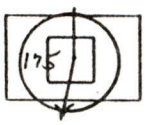
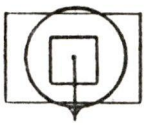
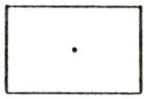
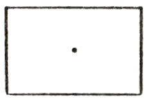
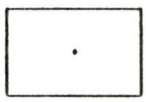
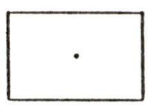
Wall: Steps

U.Drain Inverts

Contractor:

Pipe: Gasket:

County:

Structure Number	Plan View	Notes	Rim / Invert	Notes	Increments	Date Made	Date Shipped
S-14	10" PVC 2.84  12" PVC	Type: B Size: 4'Ø	7.00 2.67		U.S.F.# 260-707		
S-15	 10" PVC	Type: B Size: 4'Ø	6.50 3.28		U.S.F.# 260-707		
		Type: Size:			U.S.F.#		
		Type: Size:			U.S.F.#		
		Type: Size:			U.S.F.#		
		Type: Size:			U.S.F.#		

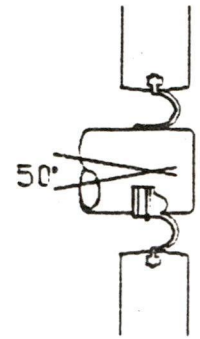
Takeoffs are per plans. Please advise of any changes prior to manufacture.

ATLANTIC CONCRETE PRODUCTS, INC.

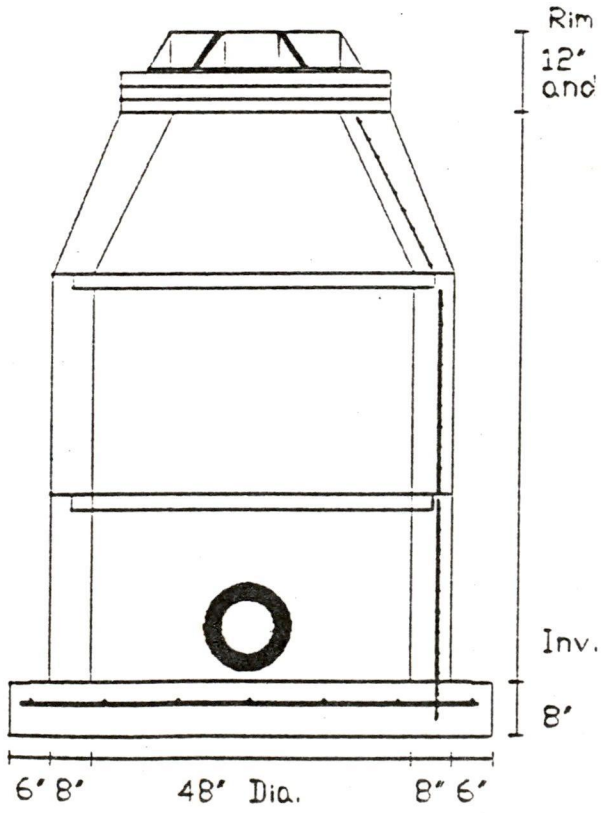
SANITARY MANHOLE

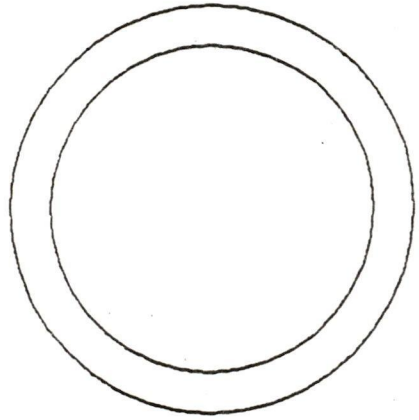
Contractor:
Job Name:

Manhole design specification conforms to: Precast Reinforced Concrete Manhole Sections A.S.T.M. Designation C-478 Latest Revision.
Reinforcing per A.S.T.M. A-185 Area 0.12sq.in./vertical foot.
Concrete compessive strength 4000 psi @ 28 days.
Type II cement used.
Manhole joint sealed with butyl rubber.
Z-Lok gasket per A.S.T.M. Rubber Gasket Specs. ~~C-923~~, cast integrally in manhole wall and located as required.
Joint allows 50° omnidirectional deflection.
Designed to meet Resilient Connectors Requirement of A.S.T.M. C-923.
Cone may be ~~concentric or~~ eccentric.
Manhole coated interior and exterior with coal tar epoxy.



PIPE TO MANHOLE SEAL



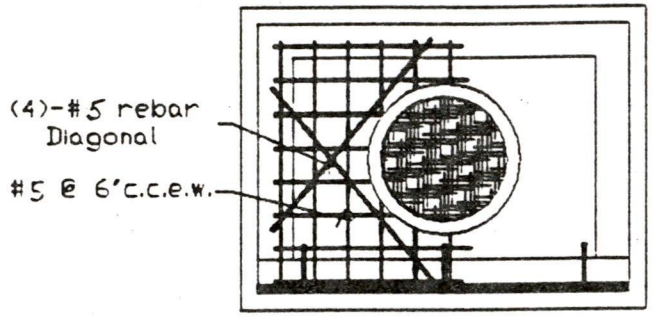


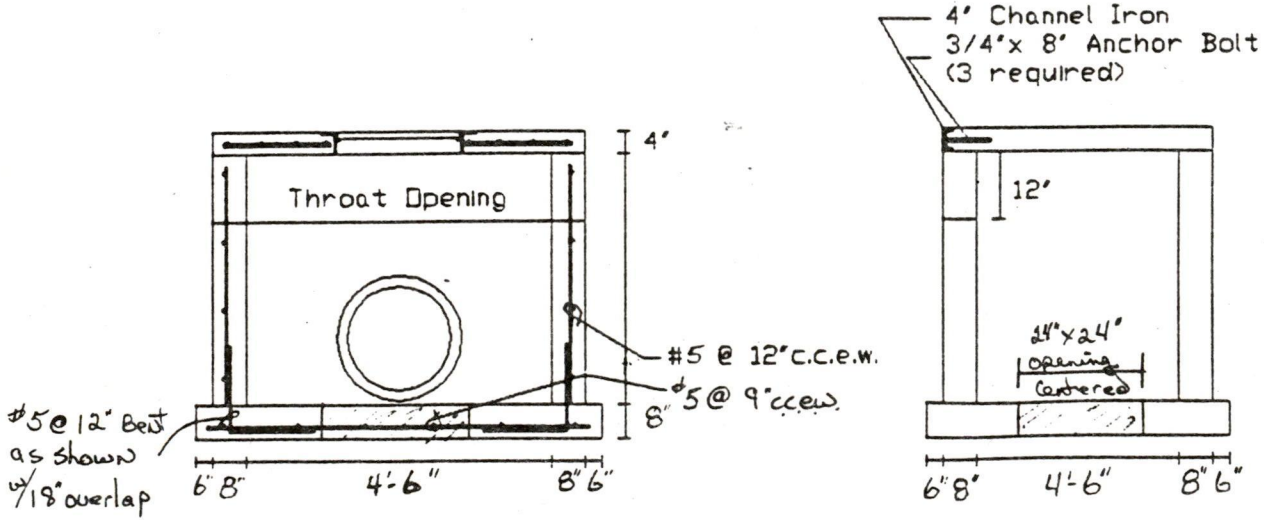
ATLANTIC CONCRETE PRODUCTS INC

SMALLY , WELLFORD & NALVEN, Inc.

Curb INLET

Concrete compressive strength 4000 psi @ 28 days.
Type II cement used.
Ring & Cover supplied by contractor. (U.S.Foundry #1110-M)
All exposed edges shall be chamfered. (¾")
All reinforcing has a minimum 2" clearance from inside face.
4" channel iron has one shop coat of rust inhibitor.





ATLANTIC CONCRETE PRODUCTS INC

SMALLY , WELLFORD & NALVEN, Inc.

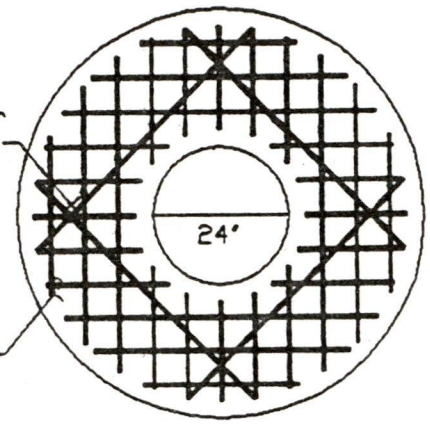
STORM MANHOLES

&

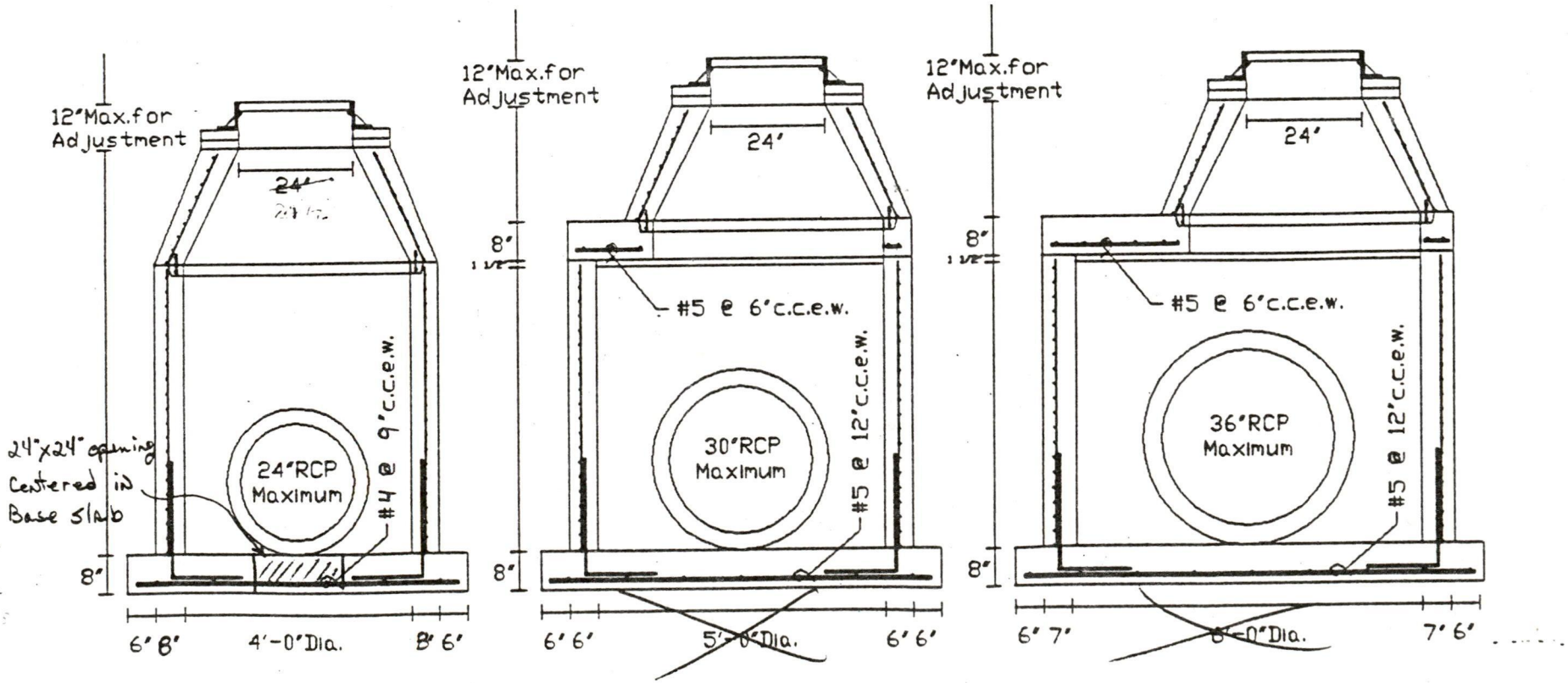
Type "B" Inlet

Manufactured in accordance with A.S.T.M. C-478 Latest Revision.
Concrete compressive strength 4000 psi @ 28 days.
Location of construction joints determined by manufacturer.
Ring & Cover supplied by contractor. (USF #260-B) Cover marked "STORM SEWER"

Type "B" Inlets require USF #260 Frame. Inlet #S-6B requires USF #3130 grate remainder of inlets require USF #3107 Grate.



Top slab for use with any diameter manhole 5'-0" or less in depth. Tops shall be 8" thickness.



THIS SUBMITTAL INCLUDED
FROM THE TOWN OF
LONGBOAT KEY

SENSUS
TECHNOLOGIES, INC.



The Most Complete Line of
Water Measurement Equipment

C-900 Pipe 6-1-92

Water - blue
W Water - Green
Drainage - White - only ←

Sewer Manhole Ring + Cover
240 B ORS US Foundry See Attached
Waste Water

805 Y Double ✓ valve assembly
for Domestic water service.

805 DDC for Fire service.

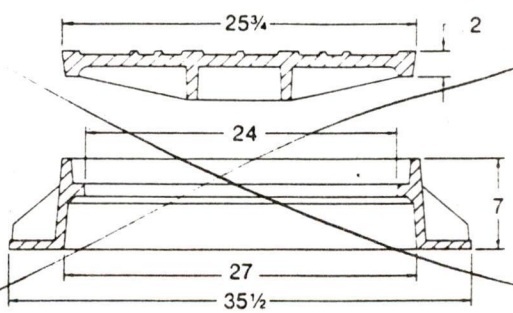
K.W.

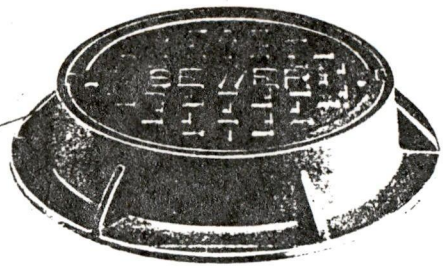
A BTR Company

USF 227 RING AND COVER SERIES

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing sufaces.
2. Non-penetrating pickholes.

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required.





USF 227-"AS" COVER TYPE SHOWN

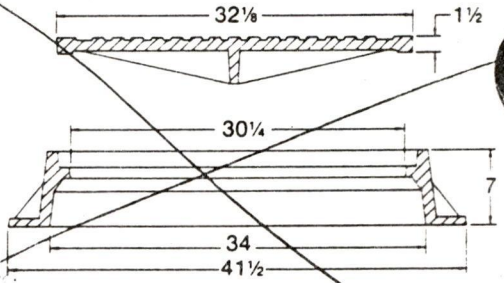
COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
AS	HEAVY DUTY	170	390
BR	HEAVY DUTY	190	410

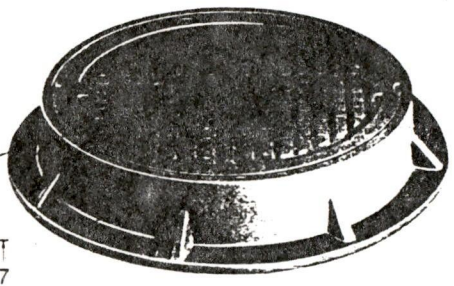
THIS RING ALSO AVAILABLE WITH:					
	GRATE	WATER TIGHT	"O" RING	DOUBLE COVER	
USF NO.	—	AS COVER	AS COVER	—	
PG NO.	—	47	50	—	

USF 230 RING AND COVER

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing surfaces.
2. Non-penetrating pickholes.

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required.





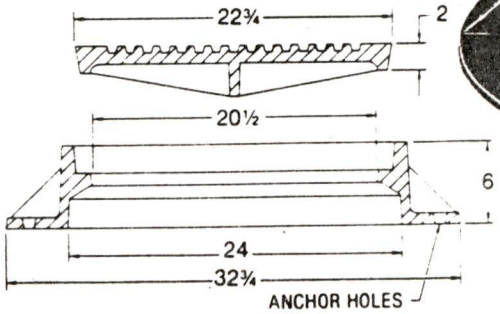
COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
AA	HEAVY DUTY	285	595

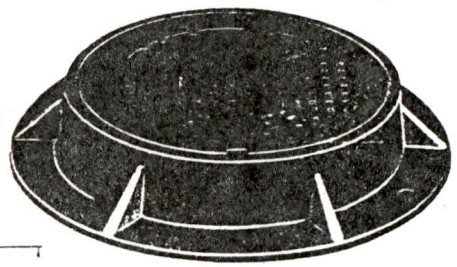
THIS RING ALSO AVAILABLE WITH:					
	GRATE	WATER TIGHT	"O" RING	DOUBLE COVER	
USF NO.	3220	AA COVER	AA COVER	AB-M COVER	
PG NO.	68	47	50	32	

USF 240 RING AND COVER SERIES

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing surfaces.
2. Non-penetrating pickholes.
3. Anchor Holes

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required. Waste Water





USF 240-B SHOWN
STANDARD TYPE "B" MANHOLE RING AND COVER

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
A	HEAVY DUTY	165	360
B	HEAVY DUTY	130	325
C	HEAVY DUTY	160	355
D	HEAVY DUTY	125	320
G	HEAVY DUTY	130	325
S	HEAVY DUTY	125	320

THIS RING ALSO AVAILABLE WITH:					
	GRATE	WATER TIGHT	"O" RING	DOUBLE COVER	
USF NO.	3125	B COVER	A/B/C/G COVER	—	
PG NO.	63	47	50	—	

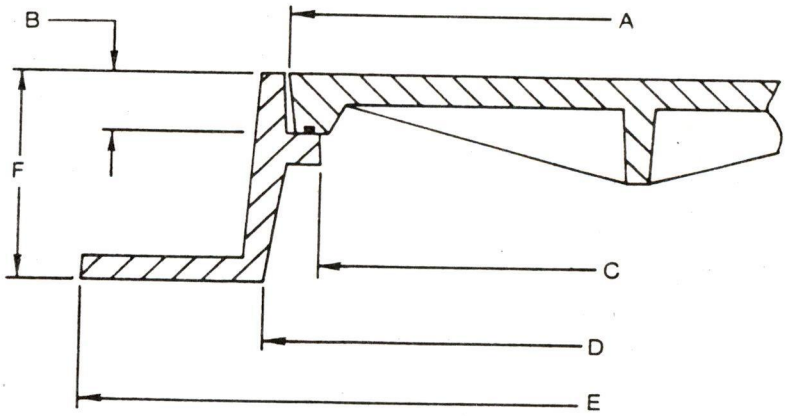
—ALWAYS SPECIFY USF NUMBER—

USF 'O' RING SEAL MANHOLE RING AND COVER SERIES

ROUND BUILT UP TYPE

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing surfaces.
2. Non-penetrating pickholes.
3. 'O' ring gasket.

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required.



LISTED IN ORDER OF SMALLEST CLEAR OPENING (COLUMN "C"), HEIGHT (COLUMN "F") AND TOTAL WEIGHT.

CATALOG NUMBER	A	B	C	D	E	F	TOTAL WEIGHT	LOAD RATING	OTHER COVERS AVAILABLE
465-B-ORS	22¾	2	20¼	20¼	32¾	4	330	HEAVY DUTY	A/C/G
125-M-ORS	22¼	1½	20⅜	24	32	6	250	HEAVY DUTY	N
105-M-ORS	22¼	1½	20½	22½	26½	4	195	HEAVY DUTY	N
240-B-ORS	22¾	2	20½	24	32¾	6	325	HEAVY DUTY	A/C/G
525-C-ORS	22¾	2	20½	24	36	9	495	HEAVY DUTY	A/B/G
150-C-ORS	22¾	2	20⅝	24½	36	7	355	HEAVY DUTY	A/B/G
420-C-ORS	22¾	2	20⅝	24½	36	7	400	HEAVY DUTY	A/B/G
440-B-ORS	22¾	2	20¾	20¾	30	3	240	HEAVY DUTY	A/C/G
485-G-ORS	22¾	2	20¾	25	36	9	370	HEAVY DUTY	A/B/C
578-AU-ORS	23¾	1 3/16	21½	25⅜	34	6½	375	HEAVY DUTY	
604-AU-ORS	23¾	1 3/16	21½	24¾	34	8	430	HEAVY DUTY	
580-E-ORS	23¾	1¼	21⅝	21⅝	30¼	2½	225	HEAVY DUTY	F/H/J/W/X/BJ
602-AU-ORS	23¾	1 3/16	21 1/16	24⅛	34	8	455	HEAVY DUTY	
170-E-ORS	23¾	1¼	21¾	24½	30¼	6	290	HEAVY DUTY	F/H/J/W/X/BJ
195-E-ORS	23¾	1¼	21⅞	24⅝	36	6	330	HEAVY DUTY	F/H/J/W/X/BJ
630-J-ORS	23¾	1¼	22	22	30	6	360	HEAVY DUTY	E/F/H/W/X/BJ
220-AR-ORS	24	1½	22	26	35⅜	7½	400	HEAVY DUTY	
227-AS-ORS	25¾	2	23½	27	35½	7	395	HEAVY DUTY	
653-AY-ORS	26¾	2½	24	24	36	7	620	HEAVY DUTY	
663-AA-ORS	32⅛	1½	30¼	36¼	46	7	585	HEAVY DUTY	
230-AA-ORS	32⅛	1½	30¼	34	41½	7	595	HEAVY DUTY	
120-T-ORS	34⅛	1½	31¾	34⅜	40½	4	435	HEAVY DUTY	U/V
655-U-ORS	34⅛	1½	32	32	40½	4	490	HEAVY DUTY	T/V
679-AZ-ORS	38	1½	36	40	49	10	875	HEAVY DUTY	

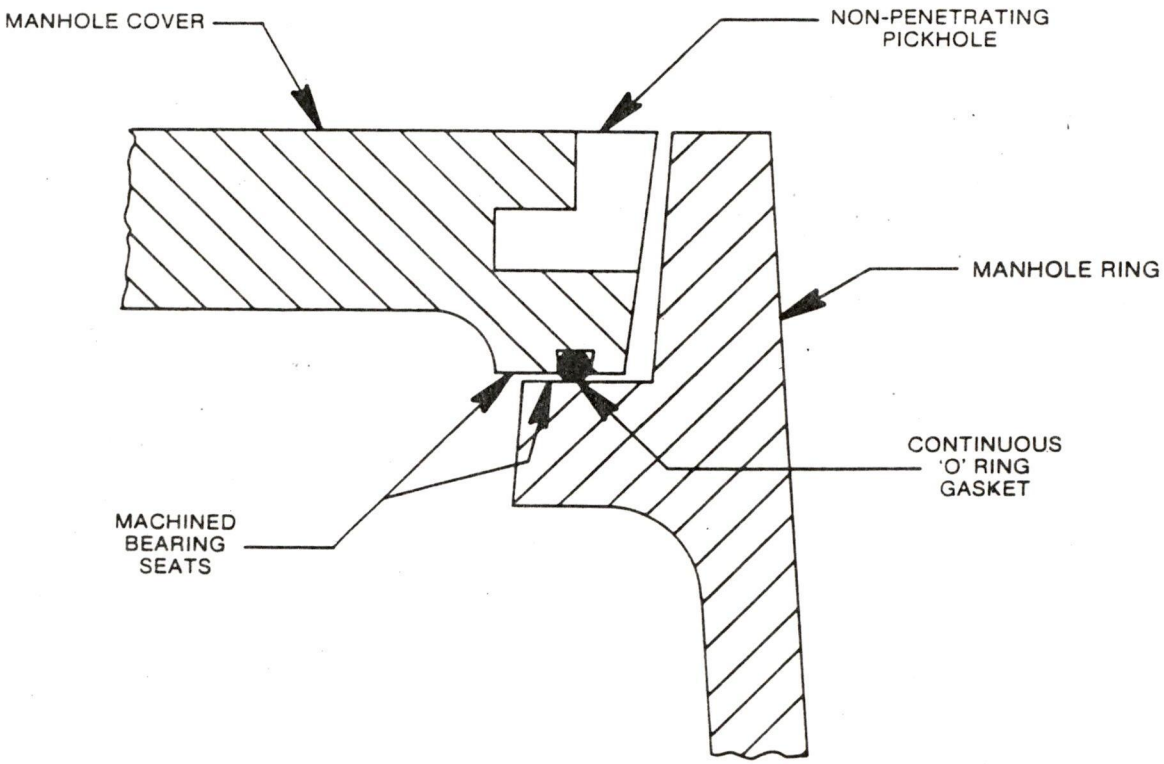
USF 'O' RING SEAL MANHOLE RINGS AND COVERS

Surface water infiltration is a serious problem in many areas and the cost of treating this water continues to increase every year.

Tests performed by U.S. Foundry and an independent laboratory show that a conventional ring and cover with machined seats can leak well over 200 gallons per hour.

The U.S. Foundry "O" Ring Seal Rings & Covers can reduce water infiltration to near zero. These castings allow access into manholes without having to remove bolts or gaskets.

These "O" ring sealed castings consist of a precise machined dovetail groove on the manhole cover seat, which is fitted with an "O" ring gasket. This design offers a securely fitted gasket that will compress seal with minimal abrasion to the gasket.



U.S. Foundry can also supply you with replacement covers for your existing manholes. Actual seepage depends on the condition of the ring and cover seat. Just give U.S. Foundry Catalog Number or the ring seat dimensions and we will let you know if your existing ring can receive a U.S. Foundry "O" Ring Seal lid.

For extra security and water tightness, many of these rings and covers can be bolted with our standard watertight bolting process.

The following pages lists the manhole rings and covers most frequently supplied with the U.S. Foundry "O" ring seal application.

M E M O R A N D U M

DATE: 06/01/92

TO: ALBERT T. COX, TOWN MANAGER

FROM: LEN SMALLY, DIRECTOR OF PUBLIC WORKS

SUBJECT: L'AMBIANCE SALES CENTER - OFFER OF TRAILERS

Mike Kempner of L'Ambiance has offered the 8 trailers (approx. 3500-4000 sq.ft.), including 2 baths, small kitchen and offices, which make up the L'Ambiance Sales Center to the Town. The offer does not include moving the trailers.

/cmg

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

RECEIVED
JUL 16 1992

July 14, 1992

Mr. Mike Kempner
Yale Properties, Inc.
2900 North Military Trail, Suite 201 S.
Boca Raton, FL 33431

Subject: **L'Ambiance**

SWN Ref: 2591-1 / Work Order #2239

Dear Mr. Kempner:

As a result of the numerous revisions and modifications to the contract documents, we are providing you with one set of construction drawings reflecting the most recent revisions. By copy of this letter we are transmitting revised plans to those parties indicated below.

Should you have any questions, please contact our office.

Very truly yours,

SMALLY, WELLFORD & NALVEN

Carl F. Reich
Project Manager

CFR:lb

Enclosures

cc: Mr. Kyle Hauck, Yale Properties, Inc., w/enclosures
Tri-D, Inc., w/enclosures
Huffman Trucking, w/enclosures
Town of Longboat Key, w/enclosures

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

SARASOTA COUNTY
PUBLIC HEALTH UNIT

MARK J. MAGENHEIM, M.D., M.P.H.
DIRECTOR AND HEALTH OFFICER

(813) 954-2900
SUNCOM 552-7950



July 21, 1992

Mr. Carl Reich, Project Manager
Smally, Wellford & Nalven
P.O. Box 4069
Sarasota, Florida 34230

RE: L'Ambiance, Longboat Key - WD# 1098-90-002
Water Line Permit Time Extension

Dear Mr. Reich:

Per your request by letter dated July 13, 1992, we are hereby granting a one year extension of the water line permit for the above reference project from October 26, 1992 to October 26, 1993.

Sincerely,

OFFICE OF ENVIRONMENTAL ENGINEERING

Robert F. Bolesta

Robert F. Bolesta, Engineer II
Public Systems Section

RB/er

xc: Len Smally

TO: File

SPEED LETTER®

TO Kevin Webb

FROM Len Smalley

SUBJECT L'Ambiance

- FOLD NO. 9 or 10

MESSAGE

Please check the attached record drawings and return your comments asap.

DATE 1/3/94 SIGNED LHS/cmy

REPLY

Everything Looks Good.

- FOLD FOR NO. 9

- FOLD FOR NO. 10

DATE 01-28-94 SIGNED K.W.

WilsonJones • Carbonless • MADE IN U.S.A.
44-902 Triplicate • © WilsonJones, 1989

RECIPIENT: RETAIN WHITE COPY, RETURN PINK COPY

TO: File

SPEED LETTER®

FROM Kevin Webb

TO Len Smalley

SUBJECT L'Ambiance

- FOLD NO. 9 or 10

MESSAGE

Please check the attached
word drawings and return
your comments asap

DATE 1/3/94 SIGNED Len Smalley

REPLY

Everything Looks Good.

- FOLD FOR NO. 9

- FOLD FOR NO. 10

DATE 01-28-94 SIGNED K.W.

WilsonJones • Carbonless • MADE IN U.S.A.
44-902 Triplicate • © WilsonJones, 1989

RECIPIENT: RETAIN WHITE COPY, RETURN PINK COPY. PLEASE TURN OVER FOR USE WITH WINDOW ENVELOPE.

TO RETURN IN A WINDOW ENVELOPE,
PLEASE FILL IN NAME AND ADDRESS HERE AND
FOLD AS SHOWN WITH THIS SIDE FACING WINDOW.

FOLD

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

FAXED

May 5, 1992

Kyle Hauck
Project Manager
Yale Properties
401 Longboat Club Road
Longboat Key, Fl. 34228

Re: L'Ambiance - Building I - South
415 L'Ambiance Drive
WORK PERMIT

Dear Kyle:

This is your authorization to work at the above site on Wednesday, May 6, 1992, starting your concrete pour at 7:00 A. M. and having the finishing work completed by 7:00 P.M.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

cmg
cc: Police Dept.

YALE PROPERTIES
LONGBOAT

FAX 383-2812

May 4, 1992

Mr. Len Smalley
Town of Longboat Key
Building Dept.
610 General Harris
Longboat Key, Florida 34228

RE: L'Ambiance - Building I - South
415 L'Ambiance Drive - Permit #9130

Dear Len:

I am requesting a variance on the Noise Ordinance for Wednesday, May 6, 1992.

We are pouring the first half of the 10th floor. This slab is a transfer slab and is 12" thick compared to other slabs at 8". Because of this change, the concrete yardage increases from 396 to 600 yards, therefore we will need more time for concrete placement.

We would like to start the pour at 7am and should be completed with the pour by 4:30 to 5:00pm and the finishing completed by 7pm.

Please let me know as soon as possible if this is acceptable so I can schedule all involved.

Your cooperation would be greatly appreciated.

Sincerely,

Yale Properties

Kyle Hauck

Kyle Hauck
Project Manager

KH/pfh

401 Longboat Club Road • Longboat Key, Florida 34228 • Tel: (813) 383-0747/8
2900 North Military Trail • Suite 201 S. • Boca Raton, Florida 33431 • Tel: (407) 994-2133

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

May 11, 1992

FAXED

Kyle Hauck, Project Manager
Yale Properties Longboat
401 Longboat Club Road
Longboat Key, Fl. 34228

Re: Work Permit - L'Ambiance - Building I - South
415 L'Ambiance Drive

Dear Kyle:

This is your authorization to work at the above site on Wednesday, May 13, 1992, starting your concrete pour at 7:00 A. M., and having the finishing work completed by 7:00 P. M.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg
cc: Police Dept.

YALE PROPERTIES
LONGBOAT

May 8, 1992

Mr. Len Smalley
Town of Longboat Key
Building Dept.
610 General Harris
Longboat Key, Florida 34228

RE: L'Ambiance - Building I - South
415 L'Ambiance Drive - Permit #9130

Dear Len:

I am requesting a variance on the Noise Ordinance for Wednesday, May 13, 1992.

We are pouring the second half of the 10th floor. This slab is a transfer slab and is 12" thick compared to other slabs at 8". Because of this change, the concrete yardage increases from 396 to 600 yards, therefore we will need more time for concrete placement.

We would like to start the pour at 7am and should be completed with the pour by 4:30 to 5:00pm and the finishing completed by 7pm.

Please let me know as soon as possible if this is acceptable so I can schedule all involved.

Your cooperation would be greatly appreciated.

Sincerely,

Yale Properties

Kyle Hauck

Kyle Hauck
Project Manager

KH/pfh

401 Longboat Club Road • Longboat Key, Florida 34228 • Tel: (813) 383-0747/8
2900 North Military Trail • Suite 201 S. • Boca Raton, Florida 33431 • Tel: (407) 994-2133

TOWN OF LONGBOAT KEY
PUBLIC WORKS/PLANNING
610 GENERAL HARRIS STREET
LONGBOAT KEY, FL 34228

Phone #: (813) 383-3726 Fax #: (813) 383-9353

DATE: 5/11 FAX NO. _____

DELIVER TO: Kyle Hauck

NUMBER OF PAGES (Incl. this Cover Page): 2

INITIATING DEPARTMENT: _____ DEPT.# _____

REFERENCE: Carmen

COMMENTS: _____

****

INVOICE

FACSIMILE FEE: $_____

Fee Calculation: Number of pages (including cover sheet) times $1.00)

Please remit to:

Finance Department
Town Hall
501 Bay Isles Road
Longboat Key, FL 34228

TOWN OF
LONGBOAT KEY
Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

June 19, 1992

Tri-D Inc.
Attention: Nancy
7535 Ponce De Leon
Sarasota, Florida

Re: L'Ambiance

Dear Nancy:

Enclosed please find the shop drawings for L'Ambiance. Comments are indicated.

Sincerely,

Leonard A. Smally, P.E.
Director of Public Works

/cmg
enc.

Roy/Henry

SMALLY, WELLFORD & NALVEN

A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

LETTER OF TRANSMITTAL

DATE June 2, 1992

RECEIVED JUN 2

TO Mr. Leonard Smally
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

SUBJECT L'Ambiance

REFERENCE NO. 2591/W.O. #2238

DRAWING NO.

TRANSMITTED One copy of shop drawings submitted by Tri-D, Inc.

ATTACHED:	
ADDENDA	
CHANGE ORDER	
DRAWINGS	
OTHER	X
FOR APPROVAL	X
FOR YOUR FILE	
AS REQUESTED	
FOR REVIEW	
PLEASE RETURN	X

REMARKS Please return one copy of each item with any comments you have indicated on the shop drawings at your earliest convenience. We will then process and return to the contractor combined with our comments.

SIGNED Roxanne Gause

RG:tg Roxanne Gause
Project Engineer

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

ATLANTIC CONCRETE PRODUCTS INC.

Job Name: L'Ambiance

Wall: 8" Inverts: Yes / No

Gasket: Z-lok

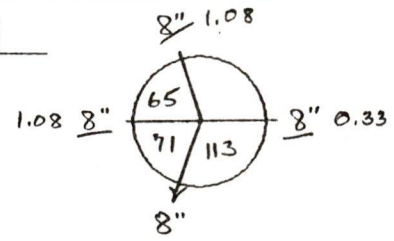
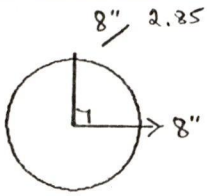
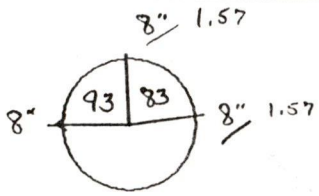
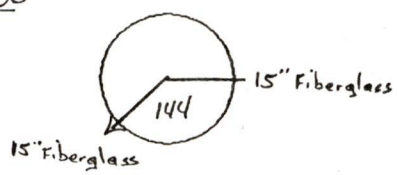
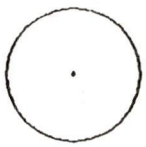
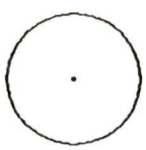
Pipe: PVC / Fiberglass

Coating: IN & out

Contractor: Tri-D

City of Longboat Key Specs.

County: Sarasota

Manhole Number	Plan View	Notes	Rim / Invert	Shipping Height	Increments	Date Made	Date Shipped
1			11.00 0.23				
2			8.00 2.75				
3			7.50 0.88				
67+30			6.30 RIM ℄ -1.90	?	NO Does MH need Fiberglass liner		
							
							

Takeoffs are per plans. Please advise of any changes prior to manufacture.

ATLANTIC CONCRETE PRODUCTS, INC.

Job Name:

Top Slab 4" Nosing Yes

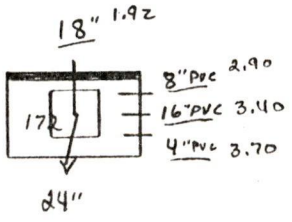
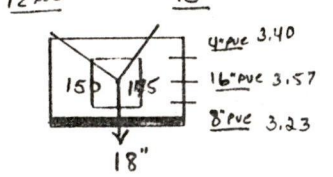
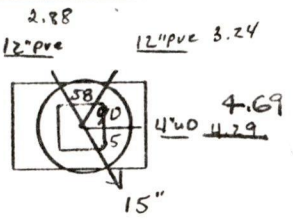
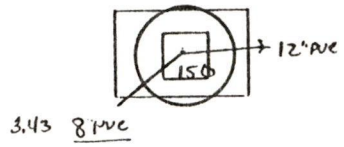
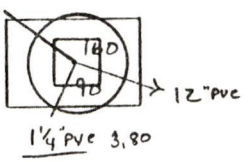
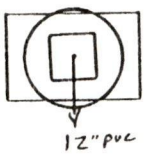
Wall: 8" Steps —

U.Drain 4" Inverts —

Pipe: RCP/PVC Gasket: —

Contractor:

County:

Structure Number	Plan View	Notes	Rim / Invert	Notes	Increments	Date Made	Date Shipped
S-5		Type: Curb Inlet Size: 4½x4½	13.80 1.42		U.S.F.# 1110-M		
S-6		Type: Curb Inlet Size: 4½x4½	13.80 2.02		U.S.F.# 1110-M 16" Inv. 3.57 or ~~3.75~~ ?		
S-6A		Type: St. Inlet Size: 4'Ø	7.40 2.63		U.S.F.# 260-B cover marked "STORM SEWER"		
S-6B		Type: B Size: 4'Ø	5.25 3.10		U.S.F.# 260-3130 Heavy Duty		
S-11		Type: B Size: 4'Ø	5.30 2.64		U.S.F.# 260-3107		
S-10		Type: B Size: 4'Ø	5.50 2.05		U.S.F.# ~~260-3107~~		

Takeoffs are per plans. Please advise of any changes prior to manufacture.

ATLANTIC CONCRETE PRODUCTS, INC.

Job Name:

Top Slab Nosing

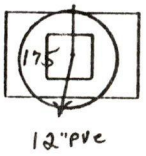
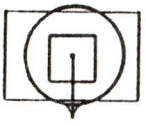
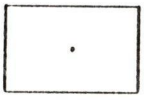
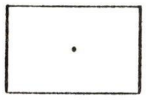
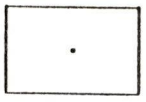
Wall: Steps

U.Drain Inverts

Pipe: Gasket:

Contractor:

County:

Structure Number	Plan View	Notes	Rim / Invert	Notes	Increments	Date Made	Date Shipped
S-14	10"PVC 2.84  12"PVC	Type: B Size: 4'ø	7.00 2.67		U.S.F.# 260-3107		
S-15	 10"PVC	Type: B Size: 4'ø	6.50 3.28		U.S.F.# 260-3107		
		Type: Size:			U.S.F.#		
		Type: Size:			U.S.F.#		
		Type: Size:			U.S.F.#		
		Type: Size:			U.S.F.#		

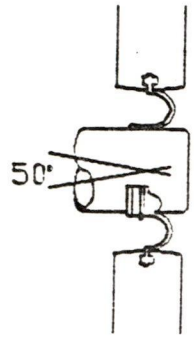
Takeoffs are per plans. Please advise of any changes prior to manufacture.

ATLANTIC CONCRETE PRODUCTS, INC.

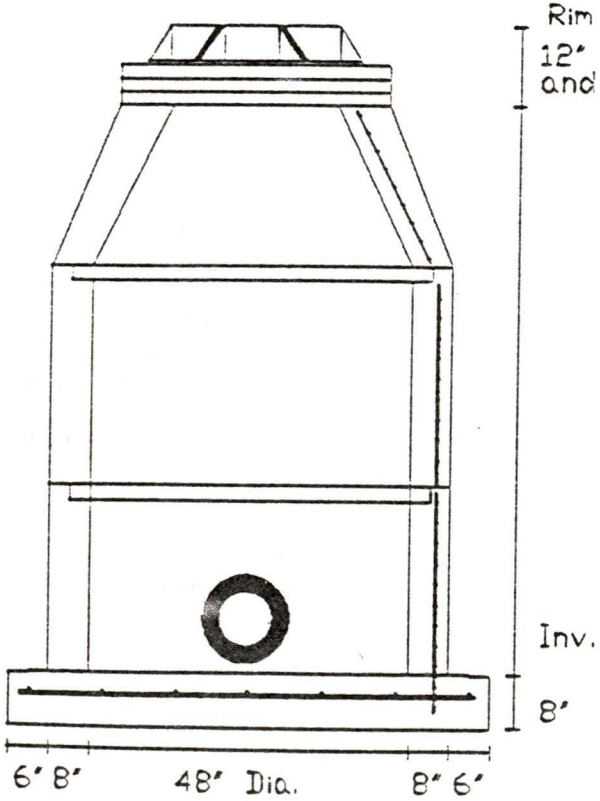
SANITARY MANHOLE

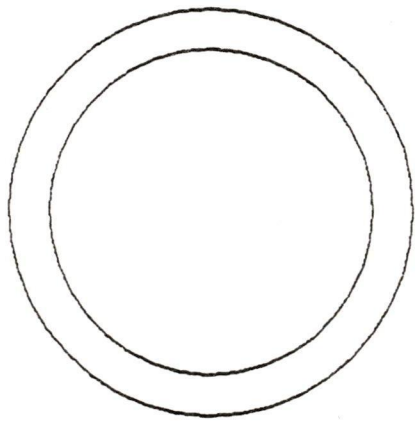
Contractor:
Job Name:

Manhole design specification conforms to: Precast Reinforced Concrete Manhole Sections A.S.T.M. Designation C-478 Latest Revision.
Reinforcing per A.S.T.M. A-185 Area 0.12sq.in./vertical foot.
Concrete compessive strength 4000 psi @ 28 days.
Type II cement used.
Manhole joint sealed with butyl rubber.
Z-Lok gasket per A.S.T.M. Rubber Gasket Specs. ~~C-923~~ C-443, cast integrally in manhole wall and located as required.
Joint allows 50° omnidirectional deflection.
Designed to meet Resilient Connectors Requirement of A.S.T.M. C-923.
Cone may be ~~concentric or~~ eccentric.
Manhole coated interior and exterior with coal tar epoxy.



PIPE TO MANHOLE SEAL





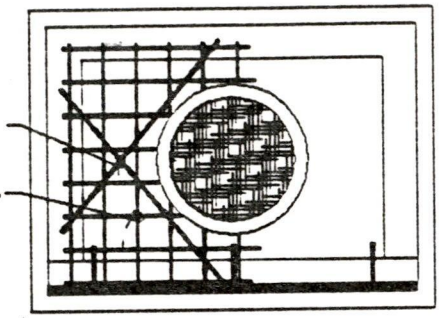
ATLANTIC CONCRETE PRODUCTS, INC.

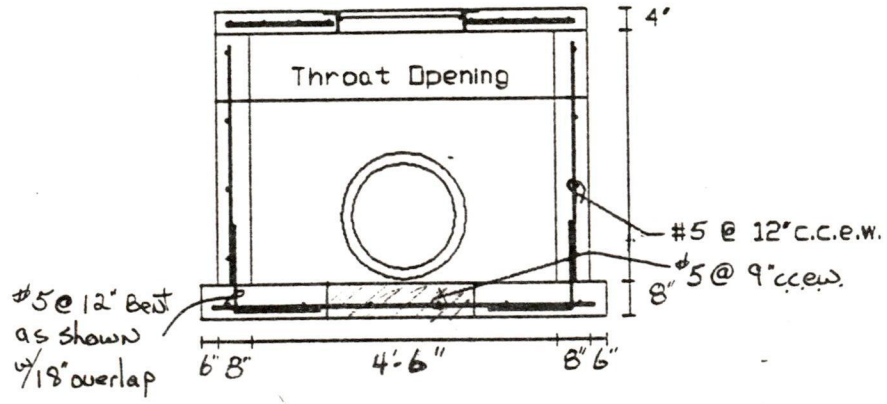
SMALLY , WELLFORD & NALVEN, Inc.

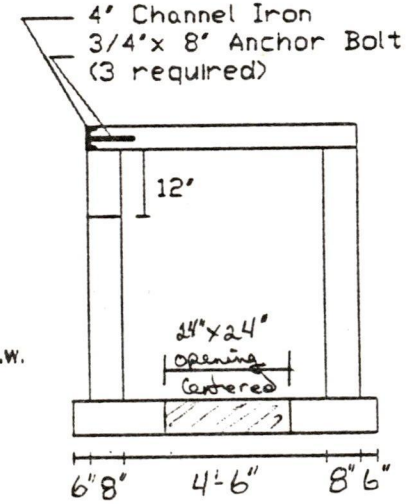
Curb INLET

Concrete compressive strength 4000 psi @ 28 days.
Type II cement used.
Ring & Cover supplied by contractor. (U.S.Foundry #1110-M)
All exposed edges shall be chamfered. 3/4"
All reinforcing has a minimum 2" clearance from inside face.
4" channel iron has one shop coat of rust inhibitor.

→ LETTERING REQUIRED "STORM"







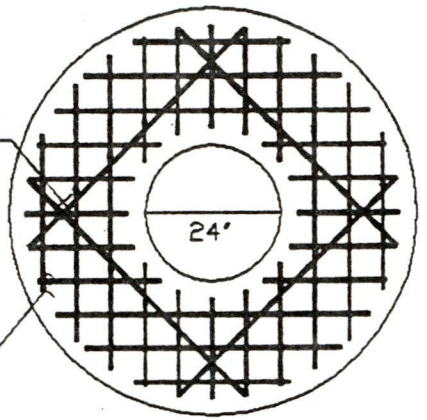
ATLANTIC CONCRETE PRODUCTS, INC.

SMALLY , WELLFORD & NALVEN, Inc.

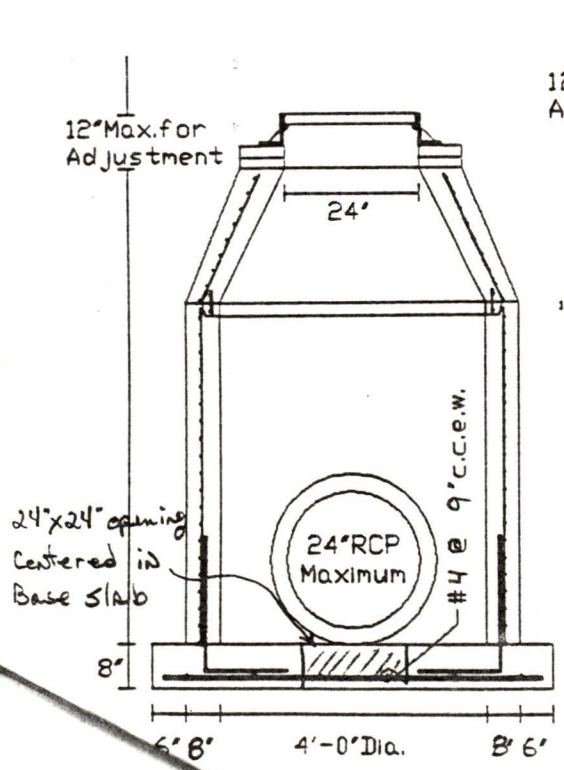
STORM MANHOLES & Type "B" Inlet

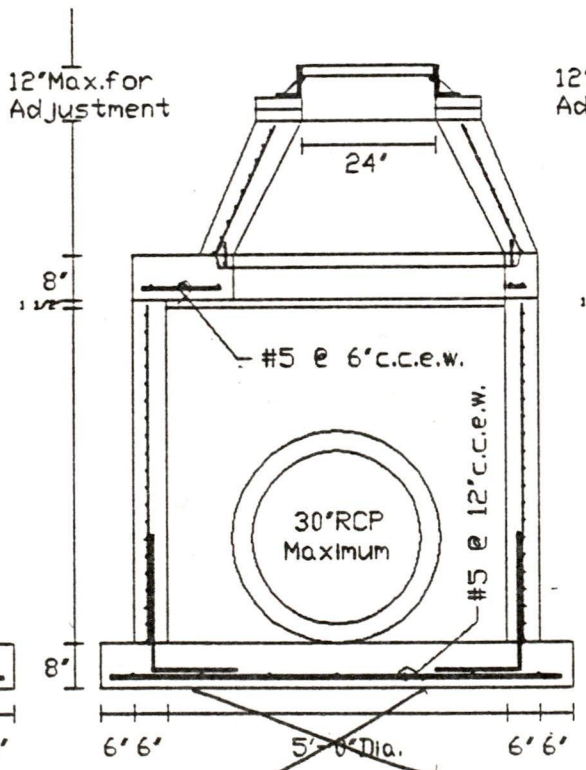
Manufactured in accordance with A.S.T.M. C-478 Latest Revision.
Concrete compressive strength 4000 psi @ 28 days.
Location of construction joints determined by manufacturer.
Ring & Cover supplied by contractor. (USF #260-B) Cover marked "STORM SEWER"

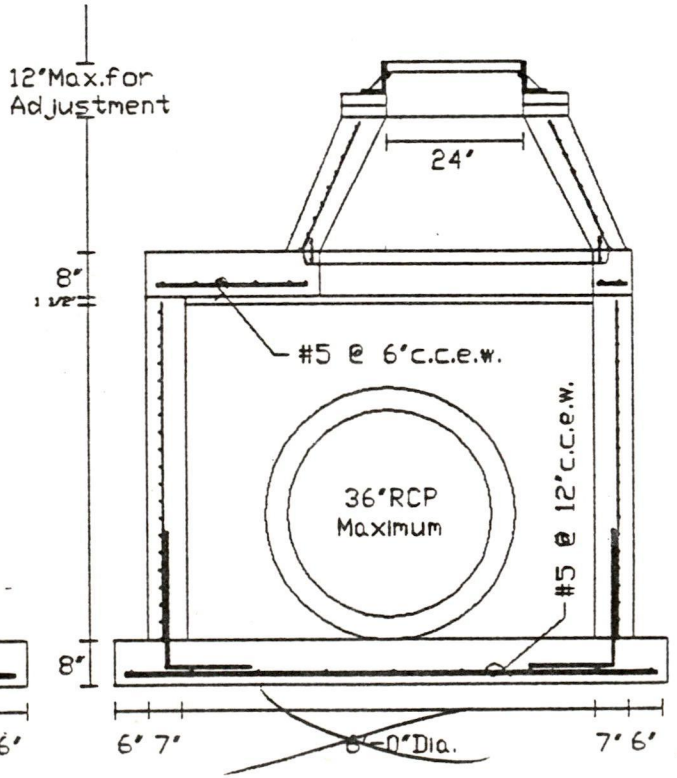
Type "B" Inlets require USF # 260 Frame. Inlet #S-6B requires USF #3130 grate remainder of inlets require USF #3107 Grate.



Top slab for use with any diameter manhole 5'-0" or less in depth. Tops shall be 8" thickness.







Roy/Kevin Reviewed

SMALLY, WELLFORD & NALVEN

r, Barton & Peek, Inc.

SENSUS TECHNOLOGIES, INC.

The Most Complete Line of Water Measurement Equipment

F TRANSMITTAL

20, 1992

6-1-92

C-900 Pipe

Water - Blue

W Water - Green

Drainage - White - only ←

Sewer Manhole Ring + Cover

240B ORS US Foundry See Attached

Waste Water

805 Y Double ✓ valve assembly for Domestic water service.

805 DDC for Fire service.

K.W.

RECEIVED MAY 22 1992

ATTACHED:

ADDENDA	
CHANGE ORDER	
DRAWINGS	
OTHER	X

FOR APPROVAL	X
FOR YOUR FILE	
AS REQUESTED	
FOR REVIEW	
PLEASE RETURN	X

A BTR Company

REMARKS Please return one copy of each item with any comments you have indicated on the shop drawings at your earliest convenience. We will then process and return to the contractor combined with our comments.

SIGNED

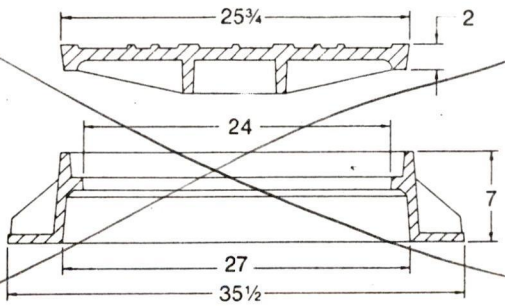
RG:lb Roxanne Gause
Project Engineer

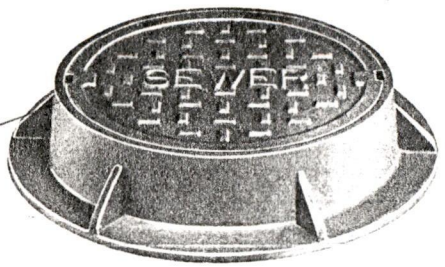
133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

USF 227 RING AND COVER SERIES

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing sufaces.
2. Non-penetrating pickholes.

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required.





USF 227-"AS" COVER TYPE SHOWN

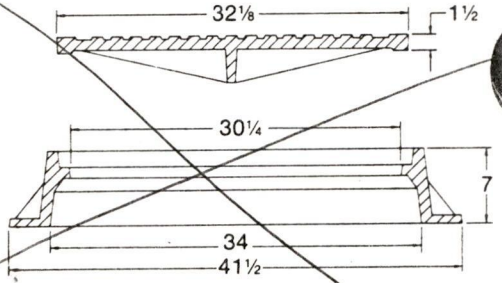
COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
AS	HEAVY DUTY	170	390
BR	HEAVY DUTY	190	410

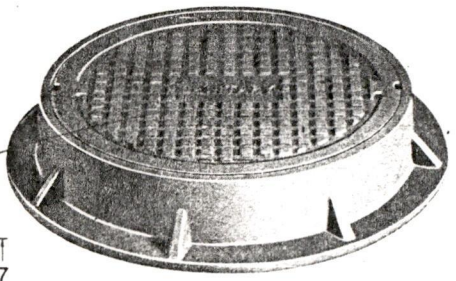
THIS RING ALSO AVAILABLE WITH:					
	GRATE	WATER TIGHT	"O" RING	DOUBLE COVER	
USF NO.	—	AS COVER	AS COVER	—	
PG NO.	—	47	50	—	

USF 230 RING AND COVER

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing surfaces.
2. Non-penetrating pickholes.

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required.





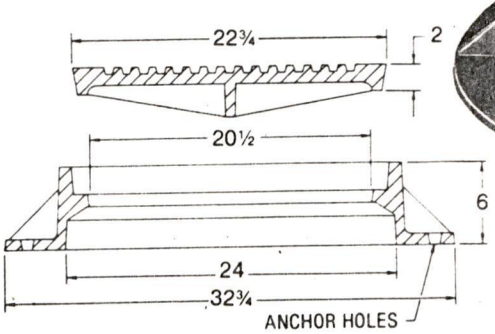
COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
AA	HEAVY DUTY	285	595

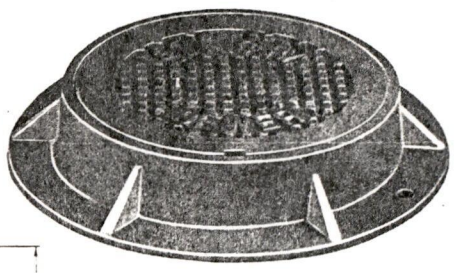
THIS RING ALSO AVAILABLE WITH:					
	GRATE	WATER TIGHT	"O" RING	DOUBLE COVER	
USF NO.	3220	AA COVER	AA COVER	AB-M COVER	
PG NO.	68	47	50	32	

USF 240 RING AND COVER SERIES

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing surfaces.
2. Non-penetrating pickholes.
3. Anchor Holes

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required. Waste Water





USF 240-B SHOWN
STANDARD TYPE "B" MANHOLE RING AND COVER

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
A	HEAVY DUTY	165	360
B	HEAVY DUTY	130	325
C	HEAVY DUTY	160	355
D	HEAVY DUTY	125	320
G	HEAVY DUTY	130	325
S	HEAVY DUTY	125	320

THIS RING ALSO AVAILABLE WITH:					
	GRATE	WATER TIGHT	"O" RING	DOUBLE COVER	
USF NO	3125	B COVER	A/B/C/G COVER	—	
PG NO	63	47	50	—	

—ALWAYS SPECIFY USF NUMBER—

Ford Brass Saddles
Styles 101B and 202B

For 3/4" through 2"

Ford's single strap 101B and double strap 202B brass saddles are designed with built-in flexibility to cover asbestos-cement and/or cast iron size pipe. The body of the saddle is sized to fit class 200 asbestos-cement but will bend during installation to conform to the smaller size cast iron or ductile iron material. This eliminates double inventory and guess work when going to the job site.

The body and the nuts of Ford brass saddles are cast from certified 85-5-5-5 water works brass conforming to AWWA C800 specification. The straps are high quality silicon bronze flattened to provide a wide bearing surface against the pipe. The large Buna-N rubber gasket is grooved to conform to the pipe surface and bonded in place for easy installation.

Ford's convenient marking system quickly and easily identifies the type of thread in the boss. For AWWA tapered thread the top edge of the boss has a groove around the outside edge while the boss for iron pipe thread is smooth.

Style 101B Single Strap Brass Saddle

For 3/4" and 1" Taps

To Order: Add Tap Code Number from the table at the bottom of the page to the catalog number. For example, a saddle for 6" cast iron pipe with a 3/4" CC tap would be 101B-750-CC3. A saddle for 8" cast iron pipe with 1" iron pipe tap would be a 101B-962-IP4.



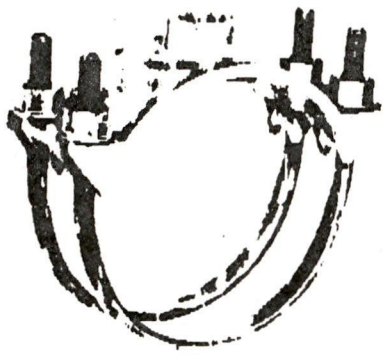
Nom. Pipe Size	O.D. Range			
4"	4.80-5.40	101B-540-Tap	3.0	10
6"	6.90-7.50	101B-750-Tap	3.8	10
8"	9.05-9.62	101B-962-Tap	4.4	10
10"	11.10-12.12	101B-1212-Tap	5.4	1
12"	13.20-14.38	101B-1438-Tap	5.9	1

Style 202B Double Strap Brass Saddle

OK

For 3/4" through 2" Taps

To Order: Add Tap Code Number from the table at the bottom of the page to the catalog number. For example, a saddle for 12" cast iron pipe with 1" CC tap would be 202B-1438-CC4.



Nom. Pipe Size	O.D. Range					
4"	4.80-5.40	202B-540-Tap	6.6	5	7.6	6
6"	6.90-7.50	202B-750-Tap	7.7	4	8.8	4
8"	9.05-9.62	202B-962-Tap	8.8	5	9.8	4
10"	11.10-12.12	202B-1212-Tap	10.7	4	12.2	4
12"	13.20-14.38	202B-1438-Tap	11.8	3	13.3	3
14"	15.30-16.25	202B-1625-Tap	18.0	1	17.5	1
	16.30-17.25	202B-1725-Tap	19.1	1	18.6	1
16"	17.40-18.40	202B-1840-Tap	23.0	1	22.5	1
	18.50-19.25	202B-1925-Tap	24.0	1	23.5	1

Note: 202B Style Saddles are available up to 30". Call for price and availability.

OUTLET THREAD TAP CODE

CC (AWWA) Thread	CC Tap No.	IP Thread	IP Tap No.	BSP Thread	BSP Tap No.
3/4" CC	CC3	3/4" IP	IP3	3/4" BSP	BSP3
1" CC	CC4	1" IP	IP4	1" BSP	BSP4
1-1/4" CC	CC5	1-1/4" IP	IP5	1-1/4" BSP	BSP5
1-1/2" CC	CC6	1-1/2" IP	IP6	1-1/2" BSP	BSP6
2" CC	CC7	2" IP	IP7	2" BSP	BSP7

PIPE SPECIFICATIONS

COLONIAL PLASTICS INC.
TAMPA, FLORIDA

	NOMINAL PIPE SIZE	WORKING PRESSURE at 73.4° F.	MASTER PACK QUANTITY FT.	APPROX. SHIPPING WT/100'	O.D.	WALL THICKNESS
PVC PRESSURE PIPE						
SCHEDULE 40 ASTM D 1785	1/2"	600 PSI	10300	16.1	.840	.109
	3/4"	480 PSI	9960	21.4	1.050	.113
	1"	450 PSI	9380	31.8	1.315	.133
DUAL MARKED DWV* ASTM D 2665	1¼"*	370 PSI	5000	43.0	1.660	.140
	1½"*	330 PSI	4500	51.6	1.900	.145
	2"*	280 PSI	3500	69.1	2.375	.154
	2½"	300 PSI	2320	109.8	2.875	.203
	3"*	260 PSI	1440	143.8	3.500	.216
	4"*	220 PSI	1140	204.8	4.500	.237
	5"	190 PSI	760	277.3	5.563	.258
	6"*	180 PSI	600	360.9	6.625	.280
	8"	160 PSI	360	542.5	8.625	.322
SCHEDULE 80 ASTM D 1785	1/2"	850 PSI	10300	20.6	.840	.147
	3/4"	690 PSI	9960	25.4	1.050	.154
	1"	630 PSI	4700	41.0	1.315	.179
	1¼"	520 PSI	5000	56.6	1.660	.191
	1½"	470 PSI	4500	68.7	1.900	.200
	2"	400 PSI	3500	95.1	2.375	.218
	2½"	420 PSI	2320	144.8	2.875	.276
	3"	370 PSI	1440	194.3	3.500	.300
	4"	320 PSI	1140	284.2	4.500	.337
	6"	280 PSI	600	542.3	6.625	.432
SEWER & DRAIN PIPE ASTM D 2729	3" Solid Bell End		2080	47.7	3.250	.070
	4" Solid Bell End		1200	63.5	4.215	.075
	4" Perf Bell End		1200	63.5	4.215	.075
	6" Solid Bell End		460	118.6	6.275	.100
	6" Perf Bell End		460	118.6	6.275	.100
ASTM D 3033 and ASTM D 3034 ASTM D 3033 ASTM D 3034	4" Bell End		1140	104.3	4.215	.125
	6" Bell End		460	190.7	6.275	.153
	6" Bell End		460	223.2	6.275	.180

SCH 40 - PIPE - FITINGS - FOR WATER SERVICE

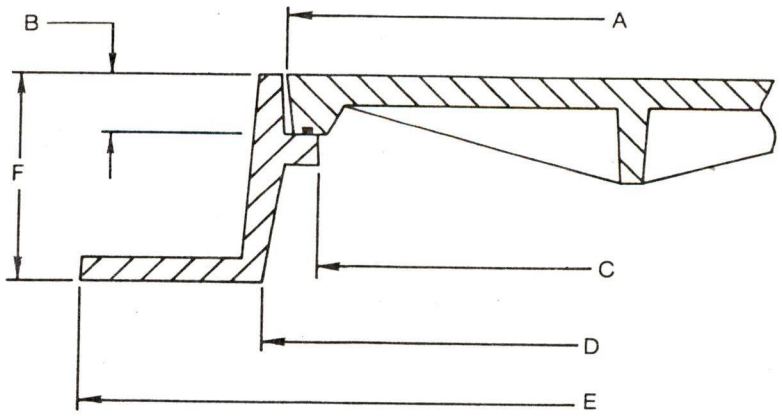
OK

USF '0' RING SEAL MANHOLE RING AND COVER SERIES

ROUND BUILT UP TYPE

STANDARDS AND SPECIFICATIONS:
1. Machined horizontal bearing surfaces.
2. Non-penetrating pickholes.
3. '0' ring gasket.

TO ORDER:
1. Specify USF ring number and cover type.
2. Specify lettering, if required.



LISTED IN ORDER OF SMALLEST CLEAR OPENING (COLUMN "C"), HEIGHT (COLUMN "F") AND TOTAL WEIGHT.

CATALOG NUMBER	A	B	C	D	E	F	TOTAL WEIGHT	LOAD RATING	OTHER COVERS AVAILABLE
465-B-ORS	22 3/4	2	20 1/4	20 1/4	32 3/4	4	330	HEAVY DUTY	A/C/G
125-M-ORS	22 1/4	1 1/2	20 3/8	24	32	6	250	HEAVY DUTY	N
105-M-ORS	22 1/4	1 1/2	20 1/2	22 1/2	26 1/2	4	195	HEAVY DUTY	N
240-B-ORS	22 3/4	2	20 1/2	24	32 3/4	6	325	HEAVY DUTY	A/C/G
525-C-ORS	22 3/4	2	20 1/2	24	36	9	495	HEAVY DUTY	A/B/G
150-C-ORS	22 3/4	2	20 5/8	24 1/2	36	7	355	HEAVY DUTY	A/B/G
420-C-ORS	22 3/4	2	20 5/8	24 1/2	36	7	400	HEAVY DUTY	A/B/G
440-B-ORS	22 3/4	2	20 3/4	20 3/4	30	3	240	HEAVY DUTY	A/C/G
485-G-ORS	22 3/4	2	20 3/4	25	36	9	370	HEAVY DUTY	A/B/C
578-AU-ORS	23 3/4	1 3/16	21 1/2	25 3/8	34	6 1/2	375	HEAVY DUTY	
604-AU-ORS	23 3/4	1 3/16	21 1/2	24 3/4	34	8	430	HEAVY DUTY	
580-E-ORS	23 3/4	1 1/4	21 5/8	21 5/8	30 1/4	2 1/2	225	HEAVY DUTY	F/H/J/W/X/BJ
602-AU-ORS	23 3/4	1 3/16	21 11/16	24 1/8	34	8	455	HEAVY DUTY	
170-E-ORS	23 3/4	1 1/4	21 3/4	24 1/2	30 1/4	6	290	HEAVY DUTY	F/H/J/W/X/BJ
195-E-ORS	23 3/4	1 1/4	21 7/8	24 5/8	36	6	330	HEAVY DUTY	F/H/J/W/X/BJ
630-J-ORS	23 3/4	1 1/4	22	22	30	6	360	HEAVY DUTY	E/F/H/W/X/BJ
220-AR-ORS	24	1 1/2	22	26	35 3/8	7 1/2	400	HEAVY DUTY	
227-AS-ORS	25 3/4	2	23 1/2	27	35 1/2	7	395	HEAVY DUTY	
653-AY-ORS	26 3/4	2 1/2	24	24	36	7	620	HEAVY DUTY	
663-AA-ORS	32 1/8	1 1/2	30 1/4	36 1/4	46	7	585	HEAVY DUTY	
230-AA-ORS	32 1/8	1 1/2	30 1/4	34	41 1/2	7	595	HEAVY DUTY	
120-T-ORS	34 1/8	1 1/2	31 3/4	34 3/8	40 1/2	4	435	HEAVY DUTY	U/V
655-U-ORS	34 1/8	1 1/2	32	32	40 1/2	4	490	HEAVY DUTY	T/V
679-AZ-ORS	38	1 1/2	36	40	49	10	875	HEAVY DUTY	

—ALWAYS SPECIFY USF NUMBER—

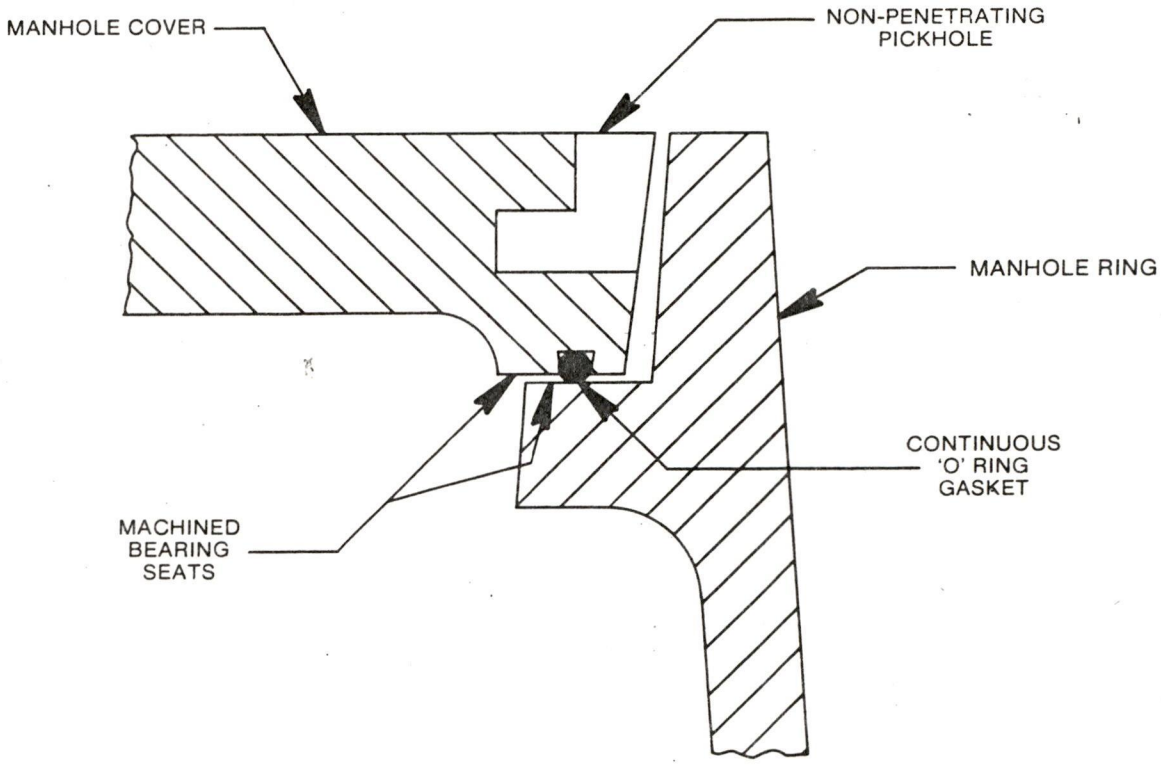
USF 'O' RING SEAL MANHOLE RINGS AND COVERS

Surface water infiltration is a serious problem in many areas and the cost of treating this water continues to increase every year.

Tests performed by U.S. Foundry and an independent laboratory show that a conventional ring and cover with machined seats can leak well over 200 gallons per hour.

The U.S. Foundry "O" Ring Seal Rings & Covers can reduce water infiltration to near zero. These castings allow access into manholes without having to remove bolts or gaskets.

These "O" ring sealed castings consist of a precise machined dovetail groove on the manhole cover seat, which is fitted with an "O" ring gasket. This design offers a securely fitted gasket that will compress seal with minimal abrasion to the gasket.



U.S. Foundry can also supply you with replacement covers for your existing manholes. Actual seepage depends on the condition of the ring and cover seat. Just give U.S. Foundry Catalog Number or the ring seat dimensions and we will let you know if your existing ring can receive a U.S. Foundry "O" Ring Seal lid.

For extra security and water tightness, many of these rings and covers can be bolted with our standard watertight bolting process.

The following pages lists the manhole rings and covers most frequently supplied with the U.S. Foundry "O" ring seal application.

SEMSCO

Southeastern Municipal Supply
2001 University Parkway
Sarasota, Florida 34243
(813) 355-5288
(813) 351-9347 (FAX)

May 7, 1992

PROJECT: L'AMBIANCE

CONTRACTOR: TRI-D, INC.

SUPPLIER: SEMSCO/BUD WANDALL

ENGINEER: SWN

SUBMITTAL DATA

Southeastern Municipal Supply
2001 University Parkway
Sarasota, Florida 34243
(813) 355-5288
(813) 351-9347 (FAX)

FORCE MAIN, DRAINAGE SEWER

H & W Industries, Inc.

C — 900

AWWA C-900 PVC WATER PIPE

SEWER - GREEN
DRAINAGE - GREEN
WHITE
FORCEMAN - GREEN

DIMENSIONS AND PRESSURE CLASSES FOR DIMENSION RATIO (DR)
PVC 1120 PIPE WITH CAST-IRON-PIPE-EQUIVALENT ODs

Size Class**	DR	Laying Length (Feet)	Outside Diameter (inches)	Tolerance (inches)	Minimum Wall Thickness (inches)	Tolerance (inches)	Weight (Pounds/ Foot)	Pieces Bundle	Bundle Truckload	Truckload Pieces	Truckload Footage
4"-100	25	20	4.800	±0.009	0.192	+0.023	1.92	38	24	912	18,240
6"-100	25	20	6.900	±0.011	0.276	+0.033	3.96	28	12	392	7,840
								14	4		
8"-100	25	20	9.050	±0.015	0.362	+0.043	6.81	20	8	220	4,400
								15	4		
10"-100	25	20	11.100	±0.015	0.444	+0.053	10.25	12	12	144	2,880
12"-100	25	20	13.200	±0.015	0.528	+0.063	14.50	8	6@8	98	1,960
								4	2@4		
								6	6@6		
								3	2@3		
4"-150	18	20	4.800	±0.009	0.267	+0.032	2.61	38	24	912	18,240
6"-150	18	20	6.900	±0.011	0.383	+0.046	5.41	28	12	392	7,840
								14	4		
8"-150	18	20	9.050	±0.015	0.503	+0.060	9.32	20	8	220	4,400
								15	4		
10"-150	18	20	11.100	±0.015	0.617	+0.074	14.00	12	12	144	2,880
12"-150	18	20	13.200	±0.015	0.733	+0.088	19.80	8	6@8	98	1,960
								4	2@4		
								6	6@6		
								3	2@3		
* 4"-200	14	20	4.800	±0.009	0.343	+0.041	3.30	38	20	760	15,200
* 6"-200	14	20	6.900	±0.011	0.493	+0.059	6.84	28	12	364	7,280
								14	2		
* 8"-200	14	20	9.050	±0.015	0.646	+0.078	11.76	20	4	200	4,000
								15	8		
10"-200	14	20	11.100	±0.015	0.793	+0.095	17.71	12	12	144	2,880
12"-200	14	20	13.200	±0.015	0.943	+0.113	25.04	8	6@8	98	1,960
								4	2@4		
								6	6@6		
								3	2@3		

**Pressure classes are working-pressure ratings (AWWA C-900 Sec. 2.8)
*Truckload quantities are lower due to weight limits.

MEETS OR EXCEEDS ALL INDUSTRY STANDARDS AND SPECIFICATIONS*

Materials

H & W pipe is made from a virgin PVC compound with a cell classification of 12454-B; the established hydrostatic-design-basis (HDB) rating is 4,000 psi at 73.4°F. (23°C.) The Standard Thermoplastic Pipe Material Designation Code is PVC 1120. White is the standard with blue optional.

Nontoxic

PVC compounds used in the manufacture of H & W pipe contain no ingredients that will migrate into the water in amounts considered to be toxic.

Compatible Gaskets and Lubricants

H & W Gaskets and Lubricants are compatible with the plastic material in H & W pipe and in combination with them will not adversely affect the potable qualities of the water. One gasket is furnished with each bell-end pipe. Gaskets and joints meet all requirements for performances as specified in ASTM F-477. All gaskets are factory installed and have a steel reinforcing ring (Locked-in).

High-Quality Workmanship

Pipe is homogeneous and free from defects. Color, density and other physical properties are as uniform as commercially possible. Mating surfaces are free from imperfections that might cause leakage at the joints.

Dimensions

The dimensions and tolerances for the pipe barrel conform with the AWWA requirements listed in Table. The bell ends conform with the DR requirements for PVC pipe.

Pressure Requirements

Pipe meets or exceeds all established criteria for either sustained or burst pressure loss.

Standard Length

Pipe is supplied in standard nominal laying lengths of 20 feet.

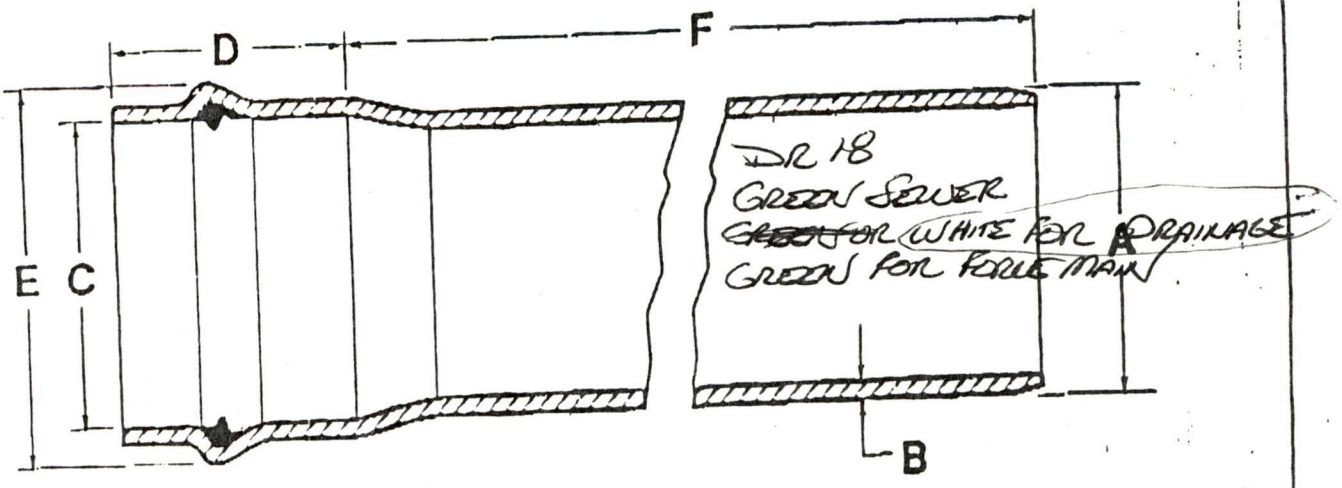
CPS

Conduit Pipe Systems, Inc.

AWWA STANDARD C-900

C-900 PVC Pressure Pipe 4" - 12"

Dimensions



Nominal Pipe Size (Inches)		Pressure Rating (psi)	A Average Outside Diameter/ Tolerance (inches)	B Minimum Wall Thickness (inches)	C Average Bell Inside Diameter (inches)	D Minimum Joint Depth Thickness (inches)	E Maximum Ring Groove Outside Diameter (inches)	F Laying Length (Feet)	Maximum Weight Per Bundle (Lbs)
4	DR14	200	4.800 ±0.009	0.343	4.84	5.8	6.1	20	2782
	DR18	150		0.267			6.3		2199
	DR25	100		0.192			6.4		1605
6	DR14	200	6.900 ±0.011	0.493	6.96	6.8	8.5	20	2822
	DR18	150		0.383			8.8		3709
	DR25	100		0.276			9.0		1627
8	DR14	200	9.050 ±0.015	0.646	9.08	7.0	11.0	20	2787
	DR18	150		0.503			11.3		2201
	DR25	100		0.362			11.7		1607
10	DR14	200	11.100 ±0.015	0.793	11.15	8.0	13.4	20	3525
	DR18	150		0.617			13.8		2781
	DR25	100		0.444			14.2		2028
12	DR14	200	13.200 ±0.015	0.943	13.25	9.3	15.8	20	4019
	DR18	150		0.733			16.3		3166
	DR25	100		0.528			16.8		2310

Product Specifications

Scope CPS C-900 PVC pressure pipe is manufactured to American Water Works Association (AWWA) Specification C-900. The pipe is intended for use in pressure main applications in potable water and waste water systems.

Material The pipe is manufactured from Class 12454B PVC compounds as defined in ASTM D1784. The PVC compound shall have an established hydrostatic design basis (HDB) of 4000 psi as described in ASTM D2837.

Florida Customer Service Center CPS, Inc. • P.O. Box 749 • U.S. Hwy 41 • Newberry, FL 32669 • 904-472-2101 • 1-800-351-7473 • FAX 904-472-2544

Minnesota Customer Service Center CPS, Inc. • P.O. Box 789 • 145 Kingswood Rd • Mankato, MN 56002-0789 • 507-387-2284 • 1-800-247-5636 • FAX 507-387-6368

C900 PVC Pipe

AWWA C900

SPECIFICATIONS DATA

PRODUCT DESCRIPTION

Diamond (C900) PVC Pipe (4" through 12") is made of 12454B compound per ASTM D-1784, in accordance with the dimensional, chemical, and physical requirements of AWWA C900.

Diamond (C900) PVC Pipe carries the National Sanitation Foundation (NSF) seal of approval, and the listing of Factory Mutual System (DR14 & DR18) and Underwriters Laboratories, Inc. (U.L.)

Diamond (C900) PVC Pipe utilizes a gasket, per ASTM F-477, to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D-3139.) Each male end is beveled to facilitate joint assembly, and the spigot is reference marked to insure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

DR18
GREEN - SEWER
~~GREEN~~ OR WHITE DRAINAGE
GREEN FOR FORCE MAIN

SHORT FORM
Specification for Diamond C900 PVC Water Pipe

Diamond C900 PVC Water Pipe shall be made of compounds conforming to ASTM D-1784 with a cell classification of 12454B. Diamond C900 shall meet all the dimensional, chemical, and physical requirements as outlined in AWWA C900 and will be supplied in 20 foot laying lengths. Pipe shall be manufactured from National Sanitation Foundation (NSF) approved compounds.

PROPERTIES OF PVC 12454-B (1120)

PHYSICAL PROPERTIES

Property	ASTM Test	Minimum
Specific Gravity	D 792	1.40
Tensile Strength, psi	D 638	7,000
Tensile Modulus, psi	D 638	400,000
IZOD Impact Strength, ft., lb./in.	D 256	.65

CHEMICAL RESISTANCE

	ASTM Test	
93.0% Sulfuric Acid, 14 Days Flotation at 55 + or —2° C	D 543	
Change in Weight, %		—0.1 + 5.0
Change in Flex Strength, %		—25.0 to + 5.0
ASTM Oil No. 3, 30 Day Immersion at 23° C		
Change in Weight, %		—1.0 to 1.0

NSF

NSF-pw

UNDERWRITERS LABORATORIES INC. LISTED

Factory Mutual System Approved

HARCO Class 150 PVC Fittings

HIGH STRENGTH

HARCO PVC fittings are injection molded from virgin PVC compound for the same high strength and corrosion resistance you are now receiving from the C-900 pipe. These HARCO PVC fittings make possible an all PVC system. Fittings are designed for 150 psi working pressure and meet DR 18 requirements of AWWA C-900.

LIGHTWEIGHT

Use of high strength PVC results in much lower fitting weights, which means easier handling, faster installation, less freight and lower costs. Installers prefer the HARCO fittings because of the productivity increases and cost reductions.

GASKETED JOINT

HARCO's push-on joint, with the gasket seated in a deep square groove, provides a tight seal and protects the pipeline from shock, vibration and earth movement, allowing for pipeline expansion and contraction.

TESTED

HARCO PVC fittings routinely exceed 1000 psi quick burst pressure tests. Quality control is strictly maintained through all steps of manufacturing.

SIZES

HARCO PVC fittings are available in sizes 4", 6" and 8". They fit all brands of AWWA C-900 pipe manufactured to cast iron O.D.'s.

HARCO

THE HARRINGTON CORPORATION
P.O. Box 10335
Lynchburg, Virginia 24506
(804) 845-7094

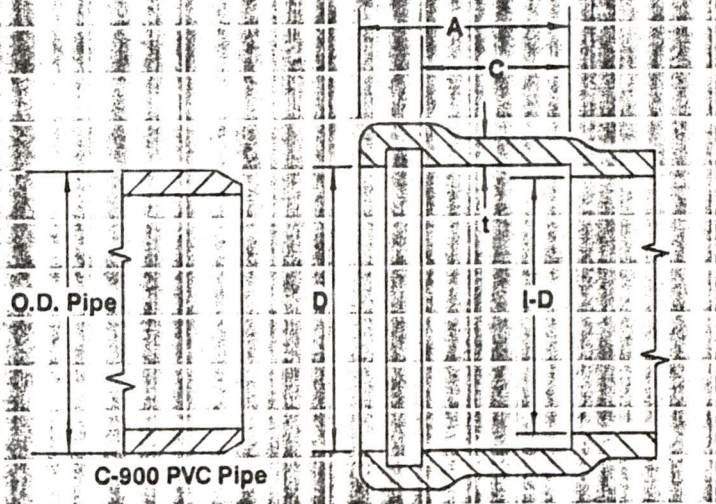
CLASS 150 PVC FITTINGS

ALL DIMENSIONS IN INCHES, WEIGHTS IN POUNDS

SHORT FORM SPECIFICATIONS

All fittings for C-900 pipe shall be manufactured in one piece of injection molded PVC compound meeting ASTM D1784. Fittings shall be Class 150 and conform to requirements of DR 18. Fittings shall be designed to withstand a minimum of 755 psi quick burst pressure @ 73°F tested in accordance with ASTM D1599. Bells shall be gasketed joint conforming to ASTM D3139 with gaskets conforming to ASTM F477. Ductile Iron or Cast Iron Push-on Joint or M.J. will be allowed as alternative when PVC sizes are not available.

SEWER FITTINGS



STANDARD JOINT DIMENSIONS

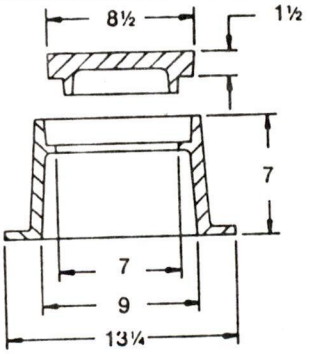
IN INCHES

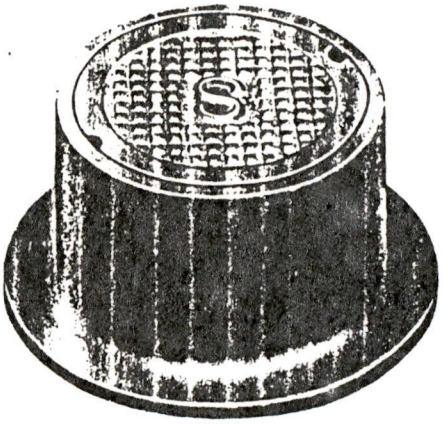
Nominal Diameter	A	C	D	I-D	t	O.D. pipe
4	4.3	3.1	4.86	4.45	.32	4.80
6	4.8	3.5	6.96	6.38	.45	6.90
8	5.4	4.0	9.13	8.38	.58	9.05

SF 7610 HANDHOLE RING AND COVER

NDARDS AND SPECIFICATIONS:
overs are marked with either
n "S" or a "W".
RDER:
pecify USF number and cover type.
pecify lettering.

ER E	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
	HEAVY DUTY	25	65



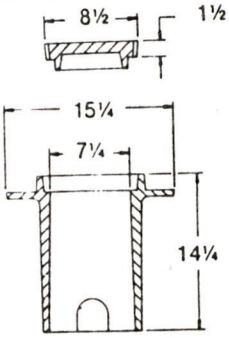


USF 7615 VALVE BOX AND COVER

NDARDS AND SPECIFICATIONS:
over is marked "W".

RDER:
pecify USF number and
over type.

ER PE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
	HEAVY DUTY	25	115





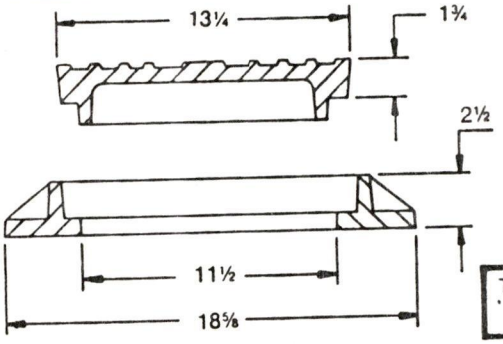
NO. 2 STANDARD

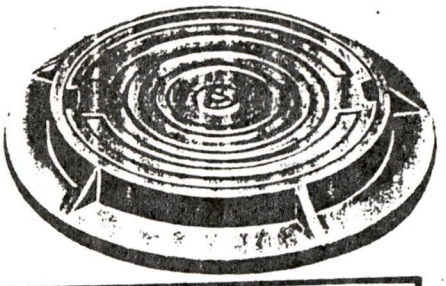
USF 7620 CLEAN OUT RING AND COVER

NDARDS AND SPECIFICATIONS:
Covers are marked with either
n "S" or a "W".

RDER:
Specify USF number and cover type.
Specify lettering.

LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
HEAVY DUTY	45	95





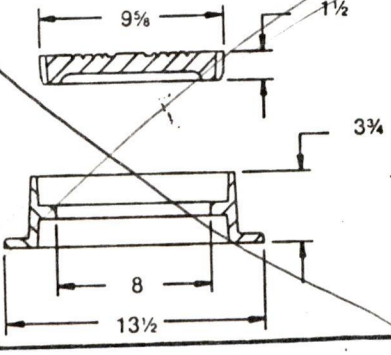
THIS RING ALSO AVAILABLE WITH GRATE. USF NO. 3100 PG. 62

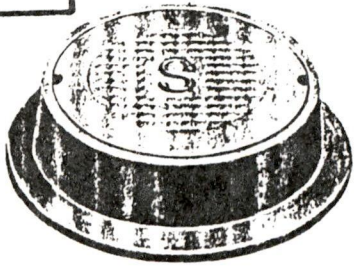
USF 7621 REVERSIBLE HANDHOLE RING AND COVER

NDARDS AND SPECIFICATIONS:
overs are marked with either
n "S" or a "W".

RDER:
pecify USF number and cover type.
pecify lettering.

LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
HEAVY DUTY	20	45





THIS CASTING MAY BE USED
FOR BUILT UP OR SLAB CONSTRUCTION

PIPE SPECIFICATIONS

COLONIAL PLASTICS INC.
TAMPA, FLORIDA

PVC PRESSURE PIPE

SCHEDULE 40
ASTM D 1785

DUAL MARKED
DWV*
ASTM D 2665

NOMINAL PIPE SIZE	WORKING PRESSURE at 73.4° F.	MASTER PACK QUANTITY FT.	APPROX. SHIPPING WT/100'	O.D.	WALL THICKNESS
1/2"	600 PSI	10300	16.1	.840	.109
3/4"	480 PSI	9960	21.4	1.050	.113
1"	450 PSI	9380	31.8	1.315	.133
1¼"*	370 PSI	5000	43.0	1.660	.140
1½"*	330 PSI	4500	51.6	1.900	.145
2"*	280 PSI	3500	69.1	2.375	.154
2½"	300 PSI	2320	109.8	2.875	.203
3"*	260 PSI	1440	143.8	3.500	.216
4"*	220 PSI	1140	204.8	4.500	.237
5"	190 PSI	760	277.3	5.563	.258
6"*	180 PSI	600	360.9	6.625	.280
8"	160 PSI	360	542.5	8.625	.322

SCHEDULE 80
ASTM D 1785

1/2"	850 PSI	10300	20.6	.840	.147
3/4"	690 PSI	9960	25.4	1.050	.154
1"	630 PSI	4700	41.0	1.315	.179
1¼"	520 PSI	5000	56.6	1.660	.191
1½"	470 PSI	4500	68.7	1.900	.200
2"	400 PSI	3500	95.1	2.375	.218
2½"	420 PSI	2320	144.8	2.875	.276
3"	370 PSI	1440	194.3	3.500	.300
4"	320 PSI	1140	284.2	4.500	.337
6"	280 PSI	600	542.3	6.625	.432

EWER & DRAIN PIPE
STM D 2729

3" Solid Bell End		2080	47.7	3.250	.070
4" Solid Bell End		1200	63.5	4.215	.075
4" Perf Bell End		1200	63.5	4.215	.075
6" Solid Bell End		460	118.6	6.275	.100
6" Perf Bell End		460	118.6	6.275	.100

STM D 3033 and
STM D 3034
STM D 3033
STM D 3034

4" Bell End		1140	104.3	4.215	.125
6" Bell End		460	190.7	6.275	.153
6" Bell End		460	223.2	6.275	.180

SCH 40 PIPE + FITTINGS FOR SEWER SERVICE

OK



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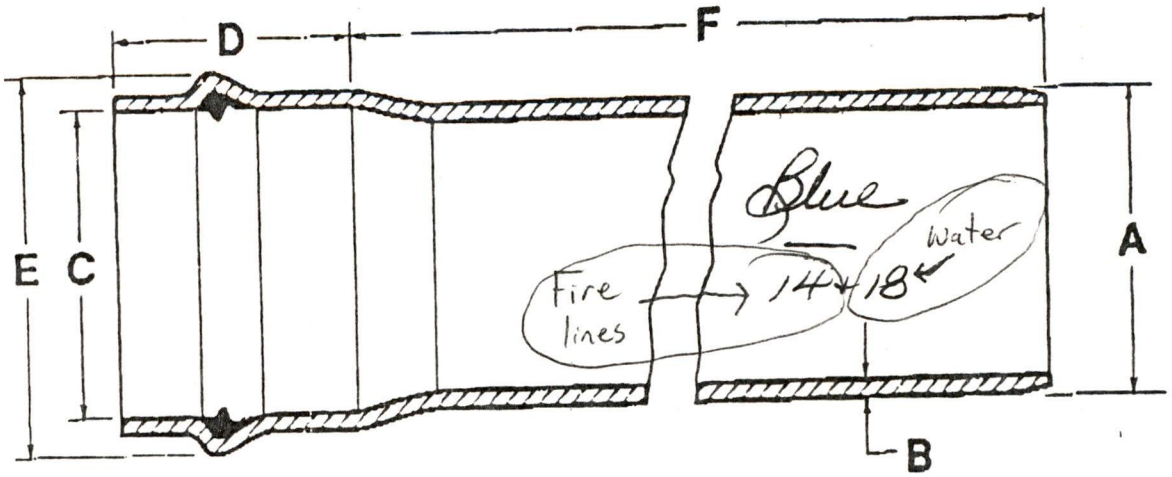
CPS
Conduit Pipe Systems, Inc.

AWWA STANDARD C-900

C-900 PVC Pressure Pipe 4" - 12"

Dimensions



Nominal Pipe Size (Inches)		Pressure Rating (psi)	A Average Outside Diameter/ Tolerance (Inches)	B Minimum Wall Thickness (Inches)	C Average Bell Inside Diameter (Inches)	D Minimum Joint Depth Thickness (Inches)	E Maximum Ring Groove Outside Diameter (Inches)	F Laying Length (Feet)	Maximum Weight Per Bundle (Lbs)
4	DR14	200	4.800 ±0.009	0.343	4.84	5.8	6.1	20	2782
	DR18	150		0.267			6.3		2199
	DR25	100		0.192			6.4		1605
6	DR14	200	6.900 ±0.011	0.493	6.96	6.8	8.5	20	2822
	DR18	150		0.383			8.8		3709
	DR25	100		0.276			9.0		1627
8	DR14	200	9.050 ±0.015	0.646	9.08	7.0	11.0	20	2787
	DR18	150		0.503			11.3		2201
	DR25	100		0.362			11.7		1607
10	DR14	200	11.100 ±0.015	0.793	11.15	8.0	13.4	20	3525
	DR18	150		0.617			13.8		2781
	DR25	100		0.444			14.2		2028
12	DR14	200	13.200 ±0.015	0.943	13.25	9.3	15.8	20	4019
	DR18	150		0.733			16.3		3166
	DR25	100		0.528			16.8		2310

Product Specifications

Scope CPS C-900 PVC pressure pipe is manufactured to American Water Works Association (AWWA) Specification C-900. The pipe is intended for use in pressure main applications in potable water and waste water systems.

Material The pipe is manufactured from Class 12454B PVC compounds as defined in ASTM D1784. The PVC compound shall have an established hydrostatic design basis (HDB) of 4000 psi as described in ASTM D2837.

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C900 PVC Pipe

AWWA C900

SPECIFICATIONS DATA

PRODUCT DESCRIPTION

Diamond (C900) PVC Pipe (4" through 12") is made of 12454B compound per ASTM D-1784, in accordance with the dimensional, chemical, and physical requirements of AWWA C900.

Diamond (C900) PVC Pipe carries the National Sanitation Foundation (NSF) seal of approval and the listing of Factory Mutual System (DR14 & DR18) and Underwriters Laboratories, Inc. (U.L.)

Diamond (C900) PVC Pipe utilizes a gasket, per ASTM F-477, to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D-3139.) Each male end is beveled to facilitate joint assembly, and the spigot is reference marked to insure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

SHORT FORM Specification for Diamond C900 PVC Water Pipe

Diamond C900 PVC Water Pipe shall be made of compounds conforming to ASTM D-1784 with a cell classification of 12454B. Diamond C900 shall meet all the dimensional, chemical, and physical requirements as outlined in AWWA C900 and will be supplied in 20 foot laying lengths. Pipe shall be manufactured from National Sanitation Foundation (NSF) approved compounds.

PROPERTIES OF PVC 12454-B (1120)

PHYSICAL PROPERTIES

Property	ASTM Test	Minimum
Specific Gravity	D 792	1.40
Tensile Strength, psi	D 638	7,000
Tensile Modulus, psi	D 638	400,000
IZOD Impact Strength, ft., lb./in.	D 256	.65

CHEMICAL RESISTANCE

	ASTM Test	
93.0% Sulfuric Acid, 14 Days Flotation at 55 + or —2° C	D 543	
Change in Weight, %		—0.1 + 5.0
Change in Flex Strength, %		—25.0 to + 5.0
ASTM Oil No. 3, 30 Day Immersion at 23° C		
Change in Weight, %		—1.0 to 1.0

NSF-pw

UNDERWRITERS LABORATORIES INC. LISTED

Factory Mutual System Approved

H & W Industries, Inc.

C — 900

AWWA C-900 PVC WATER PIPE

DIMENSIONS AND PRESSURE CLASSES FOR DIMENSION RATIO (DR)
PVC 1120 PIPE WITH CAST-IRON-PIPE-EQUIVALENT ODs

Size Class**	DR	Laying Length (Feet)	Outside Diameter (inches)	Tolerance (inches)	Minimum Wall Thickness (inches)	Tolerance (inches)	Weight (Pounds/ Foot)	Pieces Bundle	Bundle Truckload	Truckload Pieces	Truckload Footage
4"-100	25	20	4.800	±0.009	0.192	+0.023	1.92	38	24	912	18,240
6"-100	25	20	6.900	±0.011	0.276	+0.033	3.96	28 14	12 4	392	7,840
8"-100	25	20	9.050	±0.015	0.362	+0.043	6.81	20 15	8 4	220	4,400
10"-100	25	20	11.100	±0.015	0.444	+0.053	10.25	12	12	144	2,880
12"-100	25	20	13.200	±0.015	0.528	+0.063	14.50	8 4 6 3	6@8 2@4 6@6 2@3	98	1,960
4"-150	18	20	4.800	±0.009	0.267	+0.032	2.61	38	24	912	18,240
6"-150	18	20	6.900	±0.011	0.383	+0.046	5.41	28 14	12 4	392	7,840
8"-150	18	20	9.050	±0.015	0.503	+0.060	9.32	20 15	8 4	220	4,400
10"-150	18	20	11.100	±0.015	0.617	+0.074	14.00	12	12	144	2,880
12"-150	18	20	13.200	±0.015	0.733	+0.088	19.80	8 4 6 3	6@8 2@4 6@6 2@3	98	1,960
* 4"-200	14	20	4.800	±0.009	0.343	+0.041	3.30	38	20	760	15,200
* 6"-200	14	20	6.900	±0.011	0.493	+0.059	6.84	28 14	12 2	364	7,280
* 8"-200	14	20	9.050	±0.015	0.646	+0.078	11.76	20 15	4 8	200	4,000
10"-200	14	20	11.100	±0.015	0.793	+0.095	17.71	12	12	144	2,880
12"-200	14	20	13.200	±0.015	0.943	+0.113	25.04	8 4 6 3	6@8 2@4 6@6 2@3	98	1,960

**Pressure classes are working-pressure ratings (AWWA C-900 Sec. 2.8)
*Truckload quantities are lower due to weight limits.

MEETS OR EXCEEDS ALL INDUSTRY STANDARDS AND SPECIFICATIONS*

Materials

H & W pipe is made from a virgin PVC compound with a cell classification of 12454-B; the established hydrostatic-design-basis (HDB) rating is 4,000 psi at 73.4°F. (23°C.) The Standard Thermoplastic Pipe Material Designation Code is PVC 1120. White is the standard with blue optional.

Nontoxic

PVC compounds used in the manufacture of H & W pipe contain no ingredients that will migrate into the water in amounts considered to be toxic.

Compatible Gaskets and Lubricants

H & W Gaskets and Lubricants are compatible with the plastic material in H & W pipe and in combination with them will not adversely affect the potable qualities of the water. One gasket is furnished with each bell-end pipe. Gaskets and joints meet all requirements for performances as specified in ASTM F-477. All gaskets are factory installed and have a steel reinforcing ring (Locked-in).

High-Quality Workmanship

Pipe is homogeneous and free from defects. Color, density and other physical properties are as uniform as commercially possible. Mating surfaces are free from imperfections that might cause leakage at the joints.

Dimensions

The dimensions and tolerances for the pipe barrel conform with the AWWA requirements listed in Table. The bell ends conform with the DR requirements for PVC pipe.

Pressure Requirements

Pipe meets or exceeds all established criteria for either sustained or burst pressure loss.

Standard Length

Pipe is supplied in standard nominal laying lengths of 20 feet.

Contents

Features 2, 3
Technical/Dimensional Data 4, 5
Suggested Specifications 6
Ordering Information 6
Product/Capability Listing 8

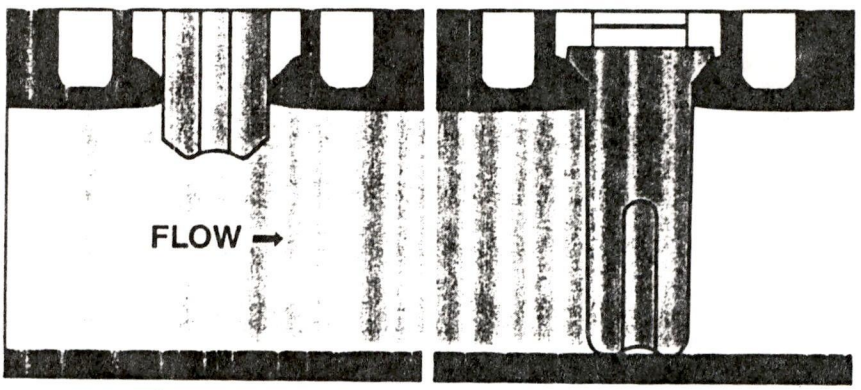
The ITT Kennedy Ken-Seal

Iron Body Resilient-Seated Gate Valves are the first major innovation in A.W.W.A. gate valves in over 65 years, with A.W.W.A. C509 having been developed in 1976. The valves have a single disc with resilient facing, ideal for potable water, sludge or sewage treatment systems.

ITT Kennedy has developed the Ken-Seal with a double sealing disc. Coated with a special permanently encapsulated abrasion-resistant synthetic elastomer, the disc provides a bubble-tight seal with a low torque requirement and meets or exceeds the stringent ASTM D-429 test requirements for rubber adhesion. Strong and mechanically stable, the Ken-Seal can be used in open-close or modulating service without clatter, and may be used as a tapping valve. The Ken-Seal conforms to A.W.W.A. C509 latest revision.

Double Seal True Compression

This cross section illustrates how the Ken-Seal disc operates. The double sealing, straight down stem/disc assembly design provides true compression for a bubble tight, zero leakage seal. It eliminates angular stress, allowing the use of a longer-lasting elastomer and superior bonding techniques. The Ken-Seal is truly a bi-directional valve.

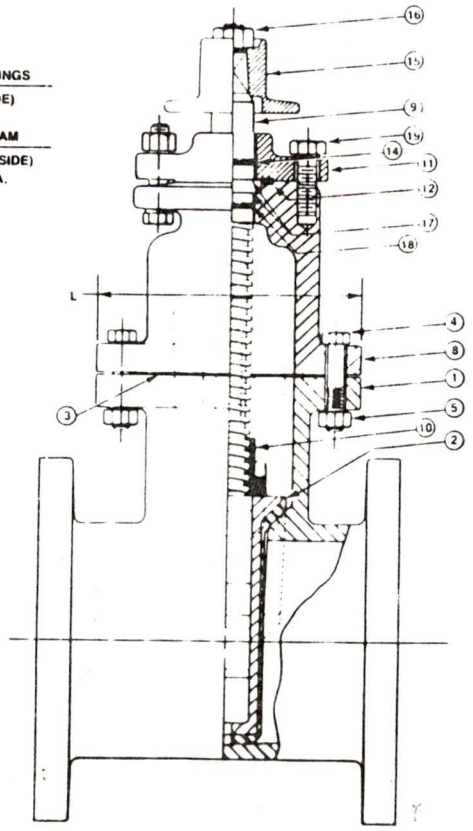


Technical/Dimensional Data

Non-Rising Stem

Pre-1986 Cap

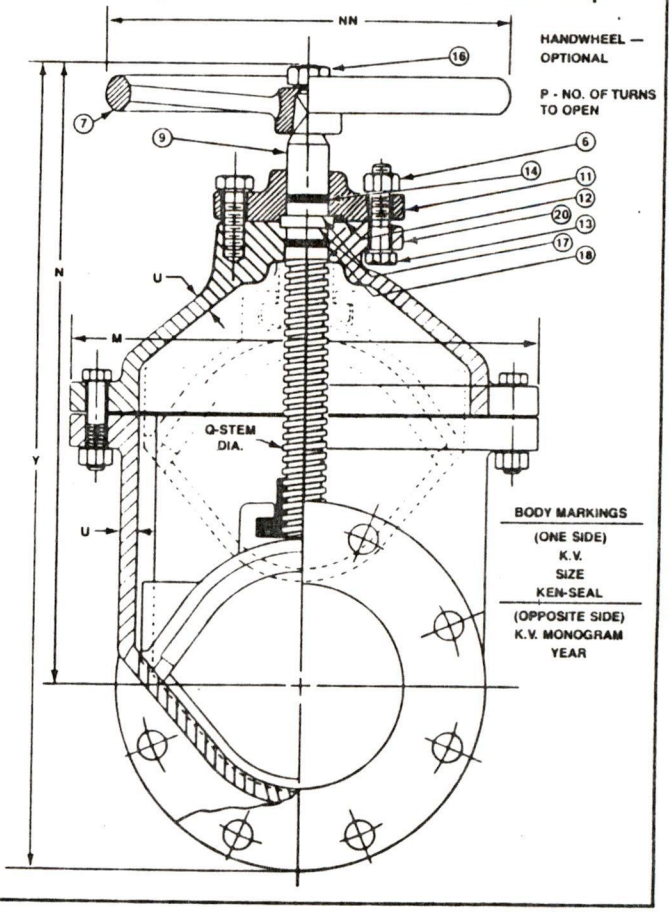
New Style Cap



Non-Rising Stem

New Style Cap

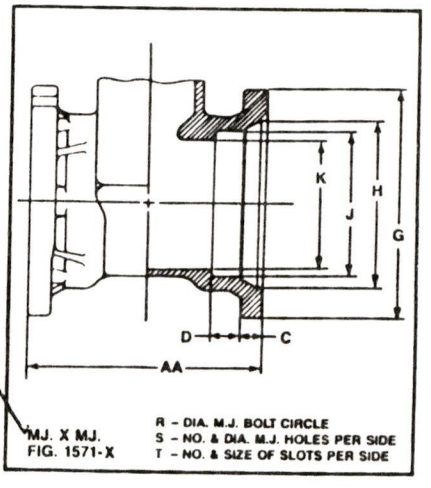
Pre-1986 Cap



Part No.		Qty.	Description	Material & A.S.T.M. Spec.
1	Common Parts	1	Body	C.I. A-126 Cl.B
2	Common Parts	1	Disc	Syn. Rubber Coated C.I.
3	Common Parts	1	Seal (Cap to Body)	
4	Common Parts	TT	Hex Head Bolt	Rustproof Steel A-307 Gr. B
5	Common Parts	TT	Hex Nut	Rustproof Steel A-307 Gr. B
6	NRS	**	Hex Nut (Pre-1986)	Rustproof Steel A-307 Gr. B
7	NRS	1	Handwheel	C.I. A-126 Cl.B
8	NRS	1	Cap (New Style)	C.I. A-126 Cl.B
9	NRS	1	Stem	Bronze
10	NRS	1	Stem Nut	Bronze
11	NRS	1	Stuffing Box	C.I. A-126 Cl.B
12	NRS	1	Seal (Stuffing Box to Cap)	Syn. Rubber
13	NRS	**	Hex Head Bolt (Pre-1986)	Rustproof Steel A-307 Gr. B
14	NRS	1	Upper O-Ring	Syn. Rubber
15	NRS	1	Hub Nut	C.I. A-126 Cl.B
16	NRS	1	Hex Nut	Rustproof Steel A-307 Gr. B
17	NRS	2	Thrust Washer	Low Friction Polymer
18	NRS	1	Lower O-Ring	Syn. Rubber
19	NRS	***	Hex Head Bolt	SS A-276 (304)
20	NRS	1	Cap (Pre-1986)	C.I. A-126 Cl.B
21	OS&Y	1	Cap (Pre-1987) w/Bronze Bushing	C.I. A-126 Cl.B
22	OS&Y	1	Stem	Bronze
23	OS&Y	1	Stem Head	Bronze
24	OS&Y	1	Gland Follower	C.I. A-126 Cl.B
25	OS&Y	1	Gland	Bronze
26	OS&Y	1	Yoke Nut	Bronze
27	OS&Y	2	Hex Head Bolt (Pre-1987)	Rustproof Steel A-307 GR. B
28	OS&Y	1*	Yoke	C.I. A-126 Cl.B
29	OS&Y	1	Washer	Bronze
30	OS&Y	1	Handwheel Lock Nut	Bronze
31	OS&Y	1	Thrust Washer	Low Friction Polymer
32	OS&Y	4	Packing	Non-Asbestos
33	OS&Y	4	Hex Head Bolt (6"-12" only) (Pre-1987)	Rustproof Steel A-307 Gr. B
34	OS&Y	4	Hex Nut (6"-12" only) (Pre-1987)	Rustproof Steel A-307 Gr. B
35	OS&Y	1	Lock Pin	Brass
36	OS&Y	1	Handwheel	C.I. A-126 Cl.B
37	OS&Y	1	Cap (New Style) w/Bronze Bushing	C.I. A-126 Cl.B
38	OS&Y	2	Threaded Stud	Rustproof Steel A-307 Gr. B
39	OS&Y	4	Hex Head Bolt (6"-12" only)	Rustproof Steel A-307 Gr. B
40	OS&Y	2	Hex Nut	Brass

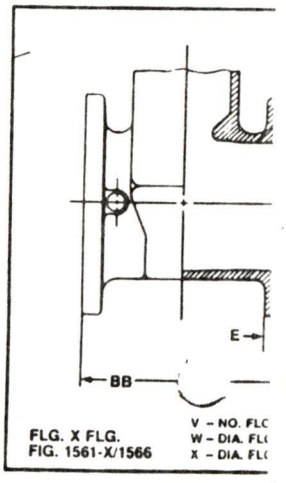
* On 3" & 4" O.S.&Y. Valves – Cap & Yoke are cast integral.
** Qty. of 2 on 3". Qty. of 3 on 4", 6", 8". Qty. of 4 on 10", 12".
*** Qty. of 2 on 3". Qty. of 3 on 4", 6", 8". Qty. of 4 on 10", 12".

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	
3"	4.38	4.44	.94	1.56	.81	7.50	7.62	4.94	4.06	3.12	7.44	10.00	14
4"	4.72	4.50	1.06	1.44	.94	9.00	9.12	6.02	4.90	4.12	7.88	11.00	15
6"	6.62	5.50	1.06	1.44	1.00	11.00	11.12	8.12	7.00	6.12	8.31	13.81	18
8"	5.44	6.00	1.06	1.44	1.12	13.50	13.38	10.27	9.15	8.12	9.56	16.31	22
10"	6.50	6.88	1.06	1.44	1.19	16.00	15.62	12.34	11.20	10.12	11.77	20.75	26
12"	7.00	7.38	1.06	1.44	1.31	19.00	17.94	14.44	13.30	12.12	12.00	23.76	30



MJ. X MJ.
FIG. 1571-X

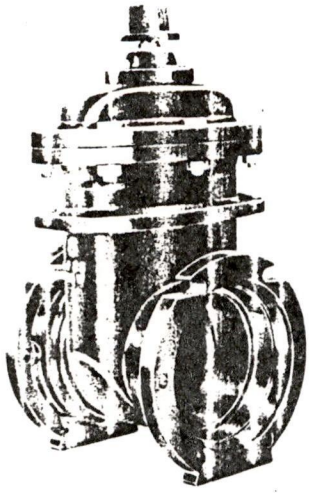
R – DIA. M.J. BOLT CIRCLE
S – NO. & DIA. M.J. HOLES PER SIDE
T – NO. & SIZE OF SLOTS PER SIDE



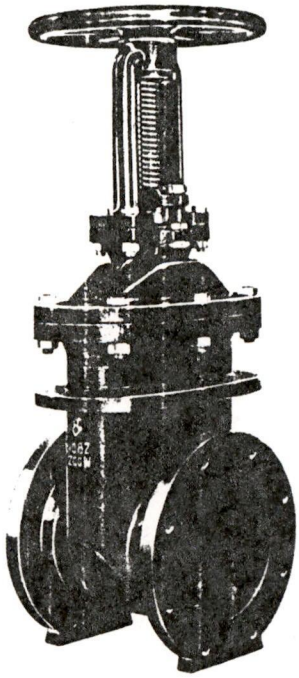
FLG. X FLG.
FIG. 1561-X/1566

V – NO. FLG
W – DIA. FLG
X – DIA. FLG

CRS-80 GATE VALVE
General Information



No. 85 — Mechanical Joint Ends



No. 82 — Flanged Ends

AMERICAN-DARLING VALVE initially began to investigate resilient seated gate valves in the late 1970's. We found that this type of valve was used almost exclusively in several European countries, and our extensive testing of major European manufacturers' valves led to the product we now market as the "CRS-80" or compression resilient seated gate valve. All of American-Darling's CRS-80 valves are manufactured at our Beaumont, Texas plant.

The CRS-80 valve is a superior valve for the water and sewage market, firewater systems, and treatment plant service, as well as mild chemical services where the resilient seat will not be subject to attack. The rated working pressure of the CRS-80 valve is 200 psi with shell testing of the internal cavity at 400 psi. The valves are manufactured to meet or exceed all requirements of AWWA C509, latest edition.

Maintenance benefits of this design are obvious when compared to metal seated gate valves: Three moving parts vs. five; plain "no pocket" interior surface; zero leakage shutoff; elimination of flat gaskets for body/bonnet/cover joints; fusion-bonded epoxy coating 8 mils thick for interior and exterior surfaces; and excellent flow characteristics. A few of the quality features are explained in detail by the following paragraphs.

SEATING

The unique drop-tight sealing ability of the gate is accomplished by compression of the resilient material against the contour of the valve body. There is virtually no wedging of the rubber-covered gate. The generous amount of resilient material on the gate is forgiving when seating on objects like gravel, grit, small clam shells, etc. The CRS-80 valve will seal equally well with flow in either direction, and in any orientation.

COATING

All ferrous surfaces of the CRS-80 valve, both inside and outside, are protected by a fusion-bonded epoxy coating. This coating is applied prior to assembly to insure that all exposed surfaces such as bolt-holes and body-to-bonnet flanges receive the epoxy coating. The cavity *inside* the gate is also epoxy coated. Corrosion and tuberculation of interior surfaces are prevented by the epoxy coating, which allows the moving parts to function properly.

SEALS

Non-rising stem valves have two O-Ring stem seals—one above and one below the stem collar. A separate external dirt and weather seal is provided underneath the nut or handwheel. American- Darling designed the CRS-80 valve for pressure energized O-Ring seals between the body-to-bonnet and bonnet-to-bonnet cover flanges. This feature is particularly beneficial for buried valves. If the valve ever has to be disassembled, the O-Ring joint seals can generally be reused. No more scraping off stuck gaskets.

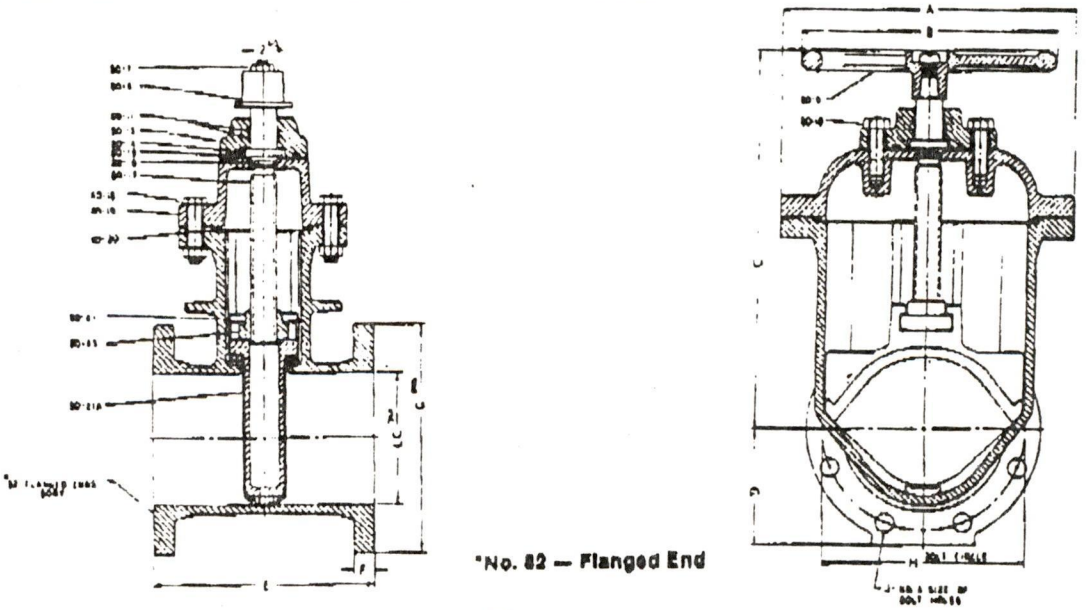
OPERATION

Permanent lubrication of the stem collar is accomplished by filling the area between the upper and lower O-Rings with lubricant. Anti-friction washers reduce friction in opening and closing cycles. The stem nut is independent of the stem and is self-aligning on the bottom bearing surface due to its spherical shape. This reduces stem binding when valve is in the closed position.

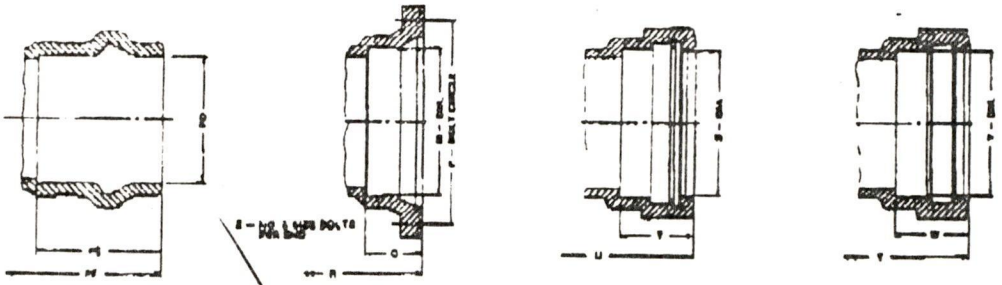
FLOW

Excellent flow through the CRS-80 valve is facilitated by a larger than nominal diameter opening and a smooth interior body surface without a bottom "pocket". This allows minimum pressure drop and can result in a substantial savings in pumping costs for a large distribution system. The inside diamter of the CRS-80 valve body is the approximate diameter of a Class 50 cement-lined ductile iron pipe.

CRS-80 GATE VALVE
Dimensions—NRS



*No. 82 — Flanged End



*No. 80-PF PVC End

*No. 85 MJ End

*No. 80-T Push-On End

*No. 80-AC AC End

Dimensions

Valve Size in.	All Valves				Turns To Open	Flanged Ends						MJ Ends					Push-On Ends			AC Ends			PVC Ends		
	A	B	C	OC		D	E	F	G	H	J	N	P	Q	R	Z	S	T	U	V	W	Y	PD	PE	PF
4	10½	12	15 4/16	4¼	14	4½	9	15/16	9	7½	8-¾	4.80	7½	2½	11½	4-⅝	4.81	3.33	13¾	4.91	3½	13¾	4.80	4½	16
6	13 13/16	12	18¾	6¼	20	5½	10½	1	11	9½	8-⅞	7.00	9½	2¾	12¼	6-¾	7.01	3.58	13¾	7.01	3¼	13¾	6.72	6½	17¾
8	16½	14	22¼	8¼	26	6¾	11½	1⅛	13½	11¾	8-⅞	9.15	11¾	2¾	13 1/16	6-¾	9.17	3.87	14¾	9.21	3½	14¾	8.72	6½	19¾
10	20 6/16	16	26 5/16	10¼	32	8	13	1 3/16	16	14¼	12-1	11.20	14	2¾	13½	8-¾	11.22	3.93	16	11.76	3½	16	—	—	—
12	23½	16	30 1/16	12½	39	9½	14	1¼	19	17	12-1	13.30	16¼	2¾	14¼	8-¾	13.32	3.93	16	14.02	4	16	—	—	—

Dimensions are in inches.

Part No.	Part Name	Material
80-7	Clamp Nut	Plated Steel
80-8	Wrench Nut	Cast Iron ASTM A126 Class B
80-9	Handwheel	Cast Iron ASTM A126 Class B
80-10	Cover Bolt	Plated Steel
80-11	Upper Stem O-Rings	Buna-N
80-13	Bonnet Cover	Cast Iron ASTM A126 Class B

Part No.	Part Name	Material
80-14	Anti-Friction Washer	Acetal Polymer
80-15	Cover O-Ring	Buna-N
80-16	Lower Stem O-Ring	Buna-N
80-17	Stem	Manganese Bronze B763 Alloy 865
80-18	Bonnet Bolt and Nut	Plated Steel
80-19	Bonnet	Cast Iron ASTM A126 Class B

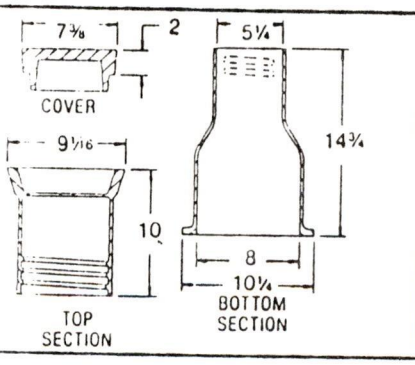
Part No.	Part Name	Material
80-20	Bonnet O-Ring	Buna-N
80-21	Gate	Cast Iron ASTM A126 Class B
80-21A	Resilient Seat	SBR
80-23	Stem Nut	Bronze B283 Alloy 377
*	Body	Cast Iron ASTM A126 Class B

USF 7500 ADJUSTABLE SCREW TYPE VALVE BOX AND COVER

STANDARDS AND SPECIFICATIONS:
1. 5¼ inch shaft.
2. 18 in. to 24 in. Extension.
3. Cover is marked "Water"

TO ORDER:
1. Specify USF number and cover type.

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
FA	HEAVY DUTY	12	62



OK



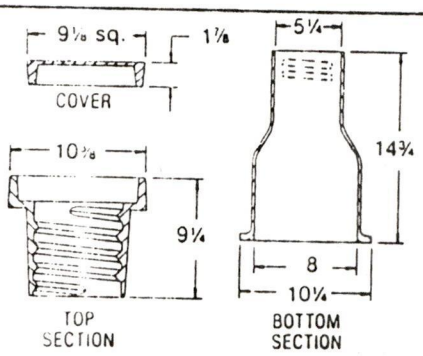
TO ORDER ONLY	SPECIFY USF NO.
Top Section	7501
Bottom Section	7502

USF 7503 ADJUSTABLE SCREW TYPE VALVE BOX AND COVER

STANDARDS AND SPECIFICATIONS:
1. Cover is marked "Treated Waste Water".

TO ORDER:
1. Specify USF number and cover type.

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
FL	LIGHT DUTY	15	85





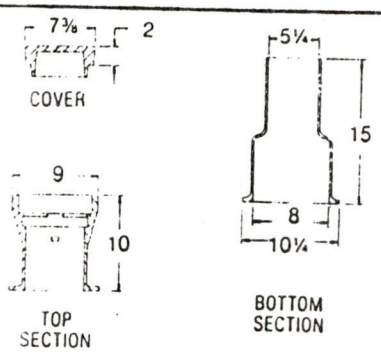
TO ORDER ONLY	SPECIFY USF NO.
Top Section	7504
Bottom Section	7502

USF 7510 ADJUSTABLE SLIP TYPE VALVE BOX AND COVER

STANDARDS AND SPECIFICATIONS:
1. 5¼ inch shaft.
2. 18 in. to 24 in. Extension.
3. Cover is marked "Water".

TO ORDER:
1. Specify USF number and cover type.

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
FA	HEAVY DUTY	12	62





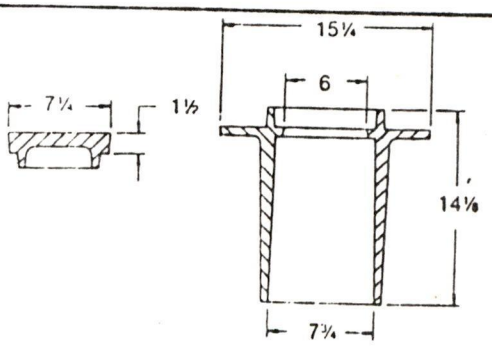
TO ORDER ONLY	SPECIFY USF NO.
Top Section	7511
Bottom Section	7512

USF 7605 SEWER VALVE BOX AND HEXAGON COVER

STANDARDS AND SPECIFICATIONS:
1. Cover is marked "S"

TO ORDER:
1. Specify USF number and cover type.

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
FB	HEAVY DUTY	20	120

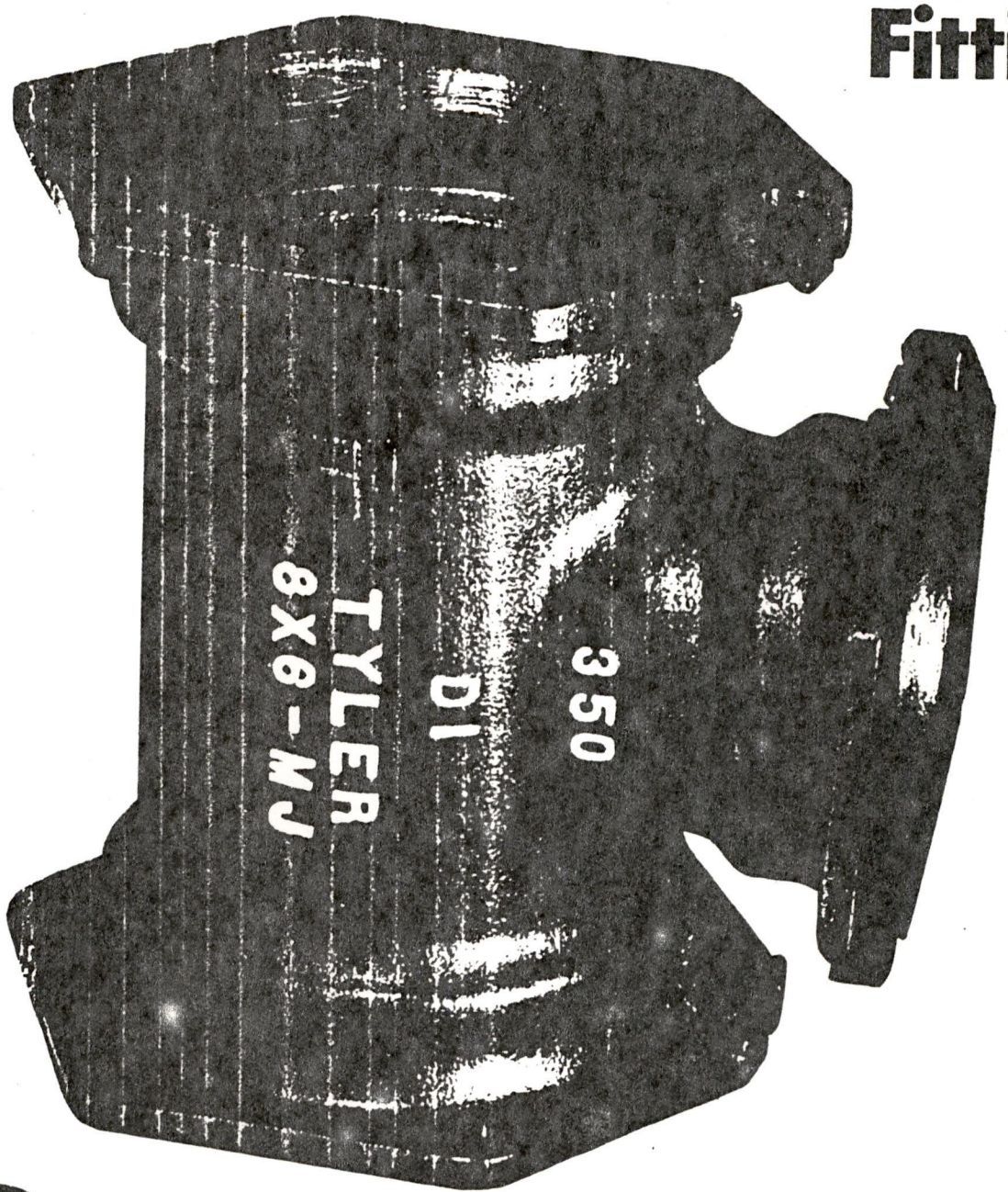




Tyler

3" Through 16" Mechanical Joint SSB Class 350 Ductile Iron Fittings

OK

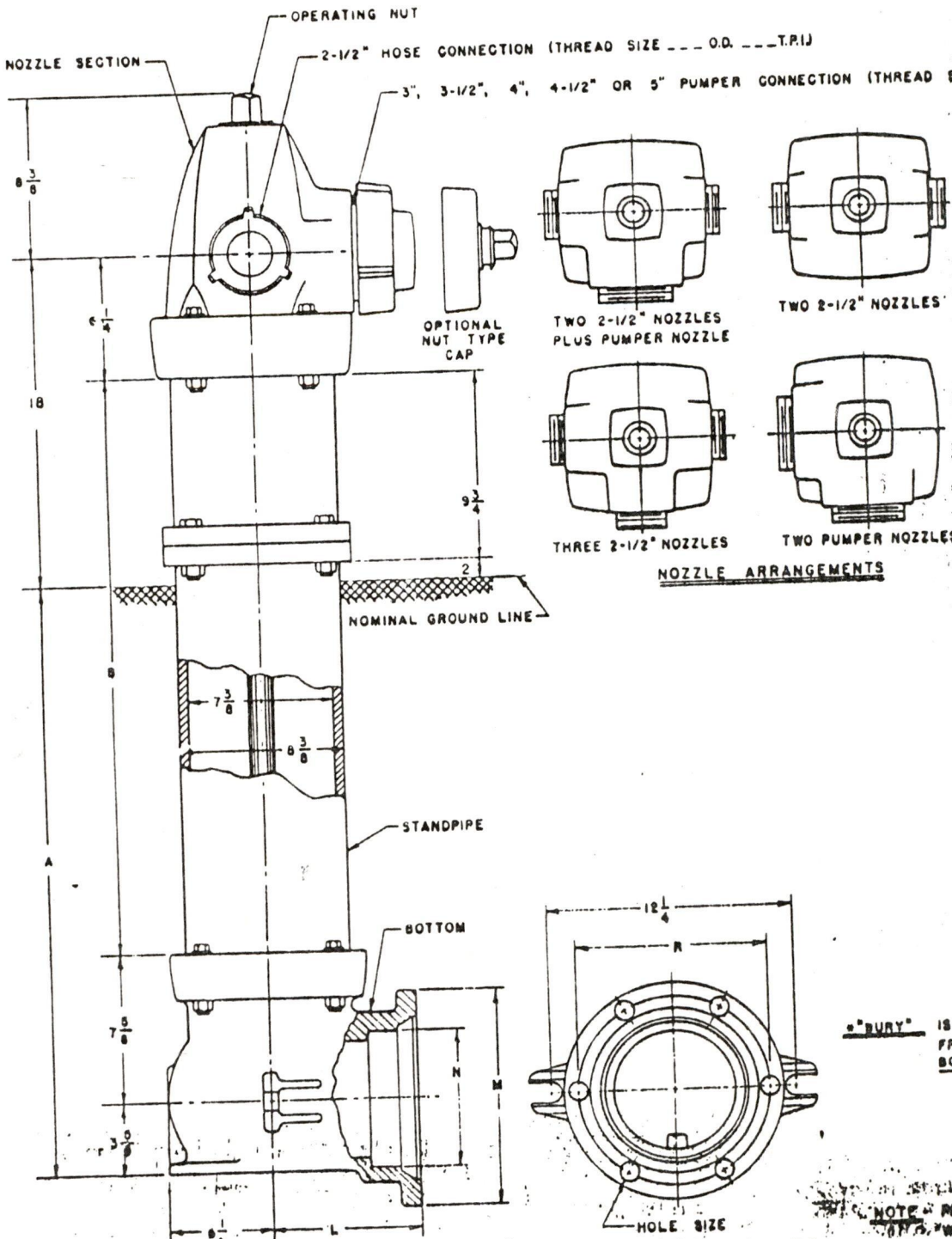


U.L. Listed
3"-12" Diameter

Three-inch through twelve-inch mechanical joint Ductile Iron Fittings shall be produced in strict accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11. Fourteen-inch and sixteen-inch diameters shall be manufacturer's standards, with metal thickness equal to Class 56 ductile iron pipe. The working pressure ratings shall be 350 psi.

Cement Lined AWWA C104

Tyler Pipe
Subsidiary of
Tyler Corporation



NOTE: NOZZLE SECTION MA BE ROTATED TO ANY POSITION FROM TH ONE SHOWN

BURY *	A	B
1'-6"	1'-6 3/4"	1'-7 1/
2'-0"	2'-0 3/4"	2'-1 1/
2'-6"	2'-6 3/4"	2'-7 1/
3'-0"	3'-0 3/4"	3'-1 1/
3'-6"	3'-6 3/4"	3'-7 1/
4'-0"	4'-0 3/4"	4'-1 1/
4'-6"	4'-6 3/4"	4'-7 1/
5'-0"	5'-0 3/4"	5'-1 1/
5'-6"	5'-6 3/4"	5'-7 1/
6'-0"	6'-0 3/4"	6'-1 1/
6'-6"	6'-6 3/4"	6'-7 1/
7'-0"	7'-0 3/4"	7'-1 1/
7'-6"	7'-6 3/4"	7'-7 1/
8'-0"	8'-0 3/4"	8'-1 1/
8'-6"	8'-6 3/4"	8'-7 1/
9'-0"	9'-0 3/4"	9'-1 1/
9'-6"	9'-6 3/4"	9'-7 1/

*"BURY" IS THE NOMINAL DISTANCE FROM GROUND LINE TO BOTTOM OF CONNECTING PIPE

NOTE - PACER HYDRANT AVAILABL WITH 5 1/4" VALVE OPENING ONLY

CONNECTING PIPE	L	M	N	R	NO. HOLES	HOLE SIZE
8" PIPE	9-5/8	13-5/8	9-3/16	11-3/4	6	7/8
4" PIPE	8-13/16	8-7/8	4-15/16	7-1/2	4	7/8

NOTE - OPERATING NUT FURNISHED L.H. (COUNTER CLOCKWISE OPENING) OR R.H. (CLOCKWISE OPENING) IN FOLLOWING COMMON SIZES:

15/16	PENTAGON	7/8	SQUARE
1 1/8	"	1	"
1 7/32	"		
1 5/16	"		
1 1/2	"		



DIMENSION AND SPECIFICATION SH
PACER TRAFFIC FLANGE HYDRAN
WITH MECHANICAL JOINT CONNECT

PLATE 68-2-6-12

WATEROUS COMPANY
SOUTH ST. PAUL, MINNESOTA 55075

— WATEROUS — " Pacer
LONGBOAT KEY SPEC. OK

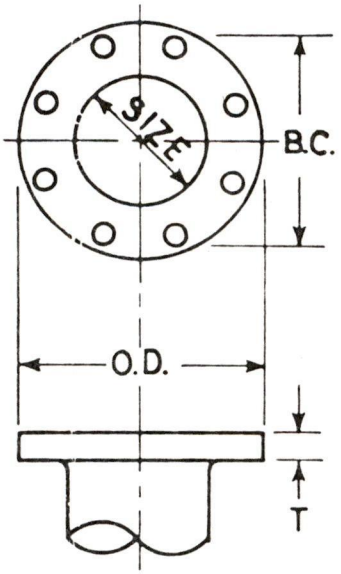
Tyler Pipe
Subsidiary of
Tyler Corporation

Cement Lined AWWA C-104 OK

FLANGED FITTINGS

SAMPLE SPECIFICATION

CAST IRON OR DUCTILE IRON FLANGED FITTINGS shall be made in strict accordance with ANSI/AWWA C110. They shall conform to details and dimensions published therein and shall be adequate for water pressure of 250 lbs. P.S.I.



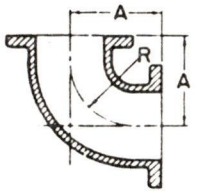
NOTE: No flange joint material furnished.

Dimensions

Nominal Pipe Size Inch	Dimensions-Inches Flange O.D.	Dia. of Bolt Circle	Flange Thickness T	Bolt Hole Diameter	Number of Bolts	Bolt Diam. and Length
* 2	6	4.75	.62	.75	4	⅝ x 2¼
3	7.5	6	.75	.75	4	⅝ x 2½
4	9	7.5	.94	.75	8	⅝ x 3
6	11	9.5	1.00	.875	8	¾ x 3½
8	13.5	11.75	1.12	.875	8	¾ x 3½
10	16	14.25	1.19	1.00	12	⅞ x 4
12	19	17	1.25	1.00	12	⅞ x 4
14	21	18.75	1.38	1.125	12	1 x 4½
16	23.5	21.25	1.44	1.125	16	1 x 4½
18	25	22.75	1.56	1.25	16	1⅛ x 5
20	27.5	25	1.69	1.25	20	1⅛ x 5
24	32	29.5	1.88	1.375	20	1¼ x 5½
30	38.75	36	2.12	1.375	28	1¼ x 6½
36	46	42.75	2.38	1.625	32	1½ x 7

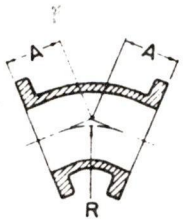
Note: Drilling templates are in multiples of four, so that fittings may be made to face in any quarter. Bolt holes shall straddle the center line.

BENDS



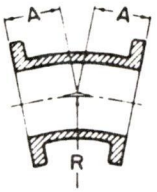
1/4 Bend (90°)
5-700

Size	Dimensions R	A	Wt.
*2	3	4.5	14
3	**4**	**5.5**	**25**
4	4.5	6.5	45
6	**6**	**8**	**65**
8	7	9	105
10	**9**	**11**	**165**
12	10	12	235
14	**11.5**	**14**	**330**
16	12.5	15	430
18	**14**	**16.5**	**530**
20	15.5	18	685
24	**18.5**	**22**	**1085**
30	21.5	25	1755
36	**24.5**	**28**	**2690**



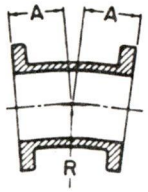
1/8 Bend (45°)
5-705

Size	Dimensions R	A	Wt.
*2	2.44	2.5	12
3	**3.62**	**3**	**20**
4	4.81	4	40
6	**7.25**	**5**	**55**
8	8.44	5.5	90
10	**10.88**	**6.5**	**130**
12	13.25	7.5	195
14	**12.06**	**7.5**	**245**
16	13.25	8	315
18	**14.5**	**8.5**	**375**
20	16.88	9.5	485
24	**18.12**	**11**	**730**
30	27.75	15	1335
36	**35**	**18**	**2155**



1/16 Bend (22½°)
5-709

Size	Dimensions R	A	Wt.
*2	5.03	2.5	11
3	**7.56**	**3**	**20**
4	10.06	4	40
6	**15.06**	**5**	**55**
8	17.62	5.5	90
10	**22.62**	**6.5**	**135**
12	27.67	7.5	205
14	**25.12**	**7.5**	**250**
16	27.62	8	325
18	**30.19**	**8.5**	**385**
20	35.19	9.5	505
24	**37.69**	**11**	**755**
30	57.81	15	1385
36	**72.88**	**18**	**2235**



1/32 Bend (11¼°)
5-711

Size	Dimensions R	A	Wt.
*2	10.15	2.5	11
3	**15.25**	**3**	**20**
4	20.31	4	40
6	**30.5**	**5**	**55**
8	35.5	5.5	90
10	**45.69**	**6.5**	**135**
12	55.81	7.5	205
14	**50.75**	**7.5**	**255**
16	55.81	8	325
18	**60.94**	**8.5**	**385**
20	71.06	9.5	505
24	**76.12**	**11**	**760**
30	116.75	15	1395
36	**147.25**	**18**	**2250**

***Not Included in AWWA C110.**

Custom Fab, Inc.
121 Thorpe Road
Orlando, FL 32824
(407) 859-3954
FAX (407) 851-6370

May 8, 1989

Southeastern Municipal Supply Co.
2001 University Parkway
Sarasota, FL 33404

Attention: Brian MacPherson

Re: Flanged Pipe

Dear Brian,

This letter will serve as certification that the fabricated pipe supplied by CUSTOM FAB, INC. is manufactured in accordance with ANSI/AWWA C115/A21.15-83.

All ductile iron pipe flanged at our location is Class-53 or greater.

The cement lining is in accordance with ANSI/AWWA C104/A21.4-85.

If any further information is required, please do not hesitate to contact our office.

Sincerely,

CUSTOM FAB, INC.

Christopher M Comins

Christopher M. Comins
President

STATE OF FLORIDA
COUNTY OF ORANGE

Sworn to and subscribed before me this 8th day of May, 1989.

My commission expires:

Susan K. Weber
Notary Public

Notary Public, State of Florida
My Commission Expires April 16, 1990
Bonded by SAFECO Insurance Company of Florida

Ford Angle Meter Valves

Features of the Inverted Key Angle Meter Valve

A bronze pin securely locks the tee head to the inverted key.

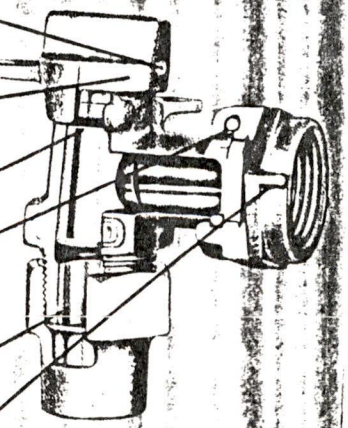
Two phosphor bronze springs under the tee head reseat the key after tapping and turning.

An O-ring in the key provides extra protection against leakage.

A snap ring in the coupling nut groove rides against a flange on the valve nose.

A pressed-in bushing provides a radius for copper tube flare.

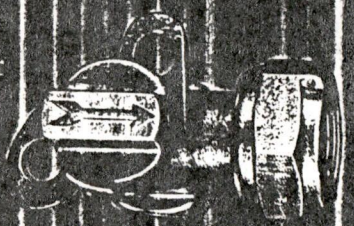
The meter coupling nut is drilled for a seal wire.



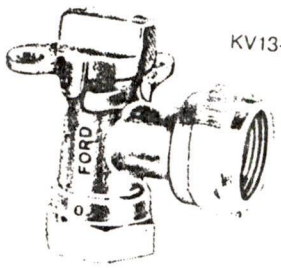
Options Available

Padlock Wings on Inverted Key Valves

Inverted Key Meter Valves and Ball Valves can include padlock wings for locking the valve in closed position.

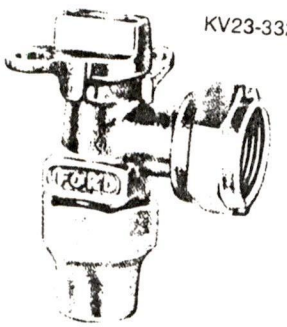


Angle Inverted Key Meter Valves



KV13-332W

One End Female Iron Pipe — Other End Meter Coupling Nut for Connection to 5/8" thru 1" Meters				
Catalog Number	Valve Size	Pipe Size	Meter Size	Approx. Wt. Lbs.
KV13-331W	3/4"	3/4"	5/8"	1.6
KV13-332	3/4"	3/4"	5/8" x 3/4" & 3/4"	1.7
KV13-332W	3/4"	3/4"	5/8" x 3/4" & 3/4"	1.7
KV13-342W	3/4"	1"	5/8" x 3/4" & 3/4"	1.8
KV13-444W	1"	1"	1"	1.9
KV13-454W	1"	1 1/4"	1"	2.0



KV23-332W

One End Copper — Other End Meter Coupling Nut for Connection to 5/8" thru 1" Meters				
Catalog Number	Valve Size	Tubing Size	Meter Size	Approx. Wt. Lbs.
KV23-331W	3/4"	3/4"	5/8"	1.7
KV23-341W	3/4"	1"	5/8"	1.9
KV23-332	3/4"	3/4"	5/8" x 3/4" & 3/4"	1.8
KV23-332W	3/4"	3/4"	5/8" x 3/4" & 3/4"	1.8
KV23-342W	3/4"	1"	5/8" x 3/4" & 3/4"	1.9
KV23-444W	1"	1"	1"	2.6
★KV23-454W	1"	1 1/4"	1"	2.9

"W" Indicates valve is standard with padlock wings.

★ **NOTE:** These are Non-Stock items. Please call or write for prices and minimum order quantities.

Ford Corporation Stops

Sizes and Catalog Nos.	Body Outlet Threads	Pack Joint Size	Approx. Wt. Lbs.	St. Pk.
Type FB1001 — Pack Joint for PE or PB Pipe				
¾" FB1001	1" flare cop.	¾"	1.5	6
1" FB1001	1¼" flare cop.	1"	2.1	6
1½" FB1001	1½" flare cop.	1½"	7.2	1
2" FB1001	2" flare cop.	2"	11.3	1
Type FB1002 — Pack Joint for PVC Pipe				
¾" FB1002	1" flare cop.	¾"	1.4	6
1" FB1002	1¼" flare cop.	1"	2.0	6
1½" FB1002	1½" flare cop.	1½"	7.1	1
2" FB1002	2" flare cop.	2"	11.9	1

Sizes and Catalog Nos.	Body Outlet Threads	Pack Joint Size	Approx. Wt. Lbs.	St. Pk.
Type FB1101 — Pack Joint for PE or PB Pipe				
¾" FB1101	1" flare cop.	¾"	1.3	6
1" FB1101	1¼" flare cop.	1"	1.9	6
1½" FB1101	1½" flare cop.	1½"	7.0	1
2" FB1101	2" flare cop.	2"	11.0	1
Type FB1102 — Pack Joint for PVC Pipe				
¾" FB1102	1" flare cop.	¾"	1.3	6
1" FB1102	1¼" flare cop.	1"	1.9	6
1½" FB1102	1½" flare cop.	1½"	7.0	1
2" FB1102	2" flare cop.	2"	11.5	1

**Ford Pack Joints for PVC Pipe are recommended for use only with Schedule 40 and Schedule 80 PVC.*

Ballcorp™ Types FB1001, FB1002

Inlet — AWWA taper (CC or CS) thread.



Type FB1101, FB1102

Inlet — Iron pipe thread.

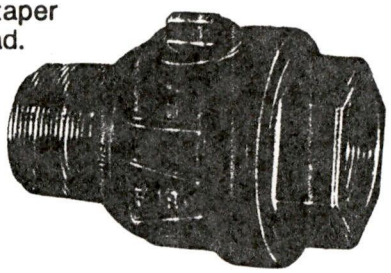
Outlets For FB1001, FB1002, FB1101 and FB1102

— Pack Joint for PE, PB or PVC pipe.

Sizes and Catalog Number	Approx. Wt. Lbs.	No. In Std. Pkg.
¾" FB1600	1.5	10★
1" FB1600	2.3	6
1½" FB1600	5.6	1
1½x2" FB1600	6.9	1
2" FB1600	8.5	1
2x2½" FB1600	8.8	1★

Ballcorp™ Type FB1600

Inlet — AWWA taper (CC or CS) thread.



Sizes and Catalog Number	Approx. Wt. Lbs.	No. In Std. Pkg.
¾" FB1700	1.5	10★
1" FB1700	2.1	6
1½" FB1700	5.4	1
1½x2" FB1700	6.7	1★
2" FB1700	8.3	1
2x2½" FB1700	8.5	1★

Type FB1700

Inlet — Iron pipe thread.

Outlets For Types FB1600 & FB1700

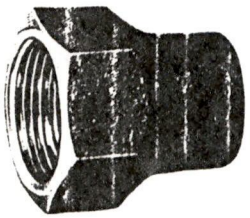
Female iron pipe thread.

Tee Head Adapters for 1½" and 2" Ballcorp are available as an option.

★ NOTE: These are Non-Stock Items. Please call or write for prices and minimum order quantities.

Copper Tube Nuts

Copper Tube Nuts Size	Cat. No.
½"	CTN-1
5/8"	CTN-2
¾"	CTN-3
1"	CTN-4
1¼"	CTN-5
1½"	CTN-6
2"	CTN-7



Solid Copper Gaskets for Eighth and Quarter Bends



Sizes: ¾", 1",1½", 2"

THE MOST COMPREHENSIVE LINE OF THRUST RESTRAINING DEVICES FOR THE WATER WORKS INDUSTRY

(UL Listed — FM Approved on applicable sizes)

Ductile Iron Pipe Joint Restraint



Series 100 & 1200
Restrains mechanical joints in new systems.
Series 100 - Sizes 2" - 42"
Series 1200 - Sizes 4" - 12"



Series 800
Restrains push-on pipe bells.
Sizes 3" - 42"



Series 1000 E-Z Flange
For field fabricating flanged joints.
Sizes 3" - 24"

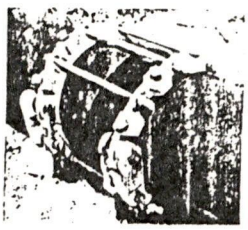


***Series 1100**
Restrains mechanical joints in new systems.
Sizes 3" - 48"

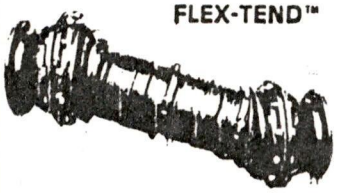
***Series 1100SD**
Restrains mechanical joints in existing systems. Sizes 3" - 36"



***Series 1100HD Harness**
Restrains push-on pipe bells.
Sizes 6" - 36"

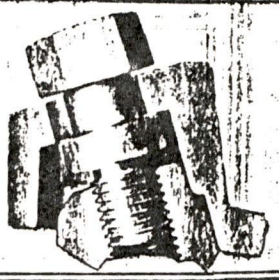


FLEX-TEND™



Flexible Expansion Joints protect connections to buildings, tanks, bridges. Capable of 30° deflection any direction, simultaneous expansion/contraction. Ductile iron, fusion-bonded epoxy lining.
Sizes: 4" - 30"

Featuring MEGALUG®



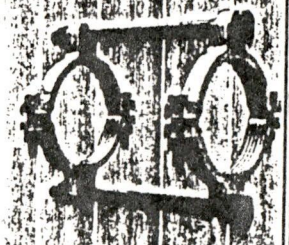
Wedge action Megalug tightens its grip as pressure and forces increase. It converts pull-out force to holding force. BE SURE. COMPARE BEFORE YOU BUY!

PVC Pipe Joint Restraint

Series 500 & 5500
2-part system restrains C-900 or IPS pipe sizes into mechanical joint bells.
Series 500 - Sizes 4" - 10"
Series 5500 - Sizes 4" - 12"



Series 1500 & 6500
For push-on joint C-900 or IPS O.D. pipe.
Both series - Sizes 4" - 12"



Series 3500 & 8500 Flange Adaptor
For field fabricating flanged joints for C-900 or IPS O.D. PVC pipe.
Both series - Sizes 4" - 12"



***Series 1100SV**
Restrains mechanical joints in existing C-900 PVC systems. Sizes 6" - 24"



***Series 1100PV**
For C-900 iron O.D. PVC pipe when used with mechanical joint bells.
Sizes 6" - 30"



***Series 1100HV Harness**
Restrains push-on C-900 PVC pipe bells.
Sizes 14" - 30"



Call or write for information. **1-800-433-1716**

EBAA IRON SALES, INC.
P. O. Box 857 • Eastland, Texas 76448
Phone: (817) 629-1731 • Telefax: (817) 629-8931

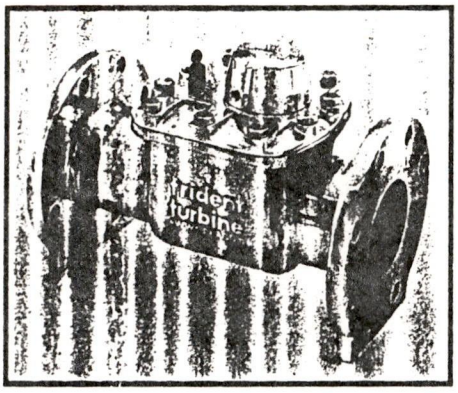
FEBCO®

...Specialists in the Production of Backflow Prevention Devices

PRODUCT ILLUSTRATION	PAGE NO.	PRODUCT TYPE	SIZE	TYPE OF SERVICE	TYPE OF APPLICATION	APPROVALS	MAXIMUM WORKING PRESSURE
	7	825Y Reduced Pressure Backflow Preventer	¾", 1", 1¼" 1½", 2"	High Hazard Possible Back Press. Continuous Pressure	Industrial Plants, Hospitals, Irrigation, Morgues, Boiler Feeds, Mortuaries, Water Lines needing maximum protection, Chemical Plants	ASSE, USC, SBCC, IAPMO	175 PSI
	9	825 Reduced Pressure Backflow Preventer	2½", 3", 4", 6", 8", 10"	High Hazard Possible Back Press. Continuous Pressure	Industrial Plants, Hospitals, Irrigation Systems, Morgues, Mortuaries, Boiler Feeds, Chemical Plants	ASSE, USC, IAPMO, SBCC, CSA, UL ②, FM③	175 PSI
	11	805Y Double Check Backflow Preventer	¾", 1", 1½", 2"	Low Hazard Possible Back Press. Continuous Pressure	Irrigation Systems, Sprinkler Systems, Fire Protection without chemical additives, Industrial In-plant Plumbing, Protection of Industrial Plants	ASSE, USC ③ SBCC, IAPMO	175 PSI
	12	805Y Double Check Backflow Preventer	2½", 3", 4" 6", 8", 10"	Low Hazzard Possible Back Press. Continuous Pressure	Sprinkler Irrigation Systems, Fire Protection without chemical additives, Protection of Industrial Plants, In-plant Plumbing Systems	ASSE, CSA ③ UL ②, USC ③, IAPMO, SBCC, FM③	175 PSI
	13	805 Double Check Backflow Preventer	¾", 1", 1½", 2", 3", 4"	Low Hazard Possible Back Press. Continuous Pressure	Irrigation systems, Fire Protection without chemical additives, Protection of Industrial Plants, Industrial In-plant Plumbing Systems	ASSE, USC IAPMO, SBCC, CSA, UL ② (3" & 4")	150 PSI
	14	806 DDC Double Detector Check Valve Assembly	¾" Bypass 3", 4", 6", 8", 10"	Low Hazard Possible Back Press. Continuous Pressure	Fire Service Pipelines	UL ②, USC ③ FM③	175 PSI
	15	775 Pressure Vacuum Breaker	3", 4", 6", 8", 10"	High Hazard Continuous Pressure No Possible Back Press.	In-plant Industrial Applications for toxic or non-toxic protection, Cooling Towers, Laboratories, Swimming Pools, Lawn Sprinkler Systems	IAPMO, USC,	150 PSI
	16	765 Pressure Vacuum Breaker	½", ¾", 1" 1¼", 1½", 2"	High Hazard Continuous Pressure No Possible Back Press.	In-plant Industrial Applications for toxic or non-toxic protection, Cooling Towers, Laboratories, Swimming Pools, Laundries, Lawn Sprinkler Systems	SBCC, IAPMO, USC, ASSE	150 PSI
	17	710/715 Atmospheric Vacuum Breaker 730 Hose Bibb Vacuum Breaker	½", ¾", 1", 1¼", 1½", 2" ¾"	Medium Hazard	Commercial Dishwasher and Laundry Machines, Hose Bibbs, Lawn Sprinkler Systems, Chemical Vats, X-Ray Tanks, Laboratory Sinks	IAPMO, SBCC, CSA, USC, ASSE.	150 PSI
	18	810 Dual Check Backflow Preventer	¾"	Low Hazard	Domestic Water Service	ASSE Standard 1024, SBCC	175 PSI

NOTES: ① Consult the factory for special high temperature devices. ② UL approved installations must include O S & Y gate valves.

NEPTUNE TURBINE METERS



Neptune Turbine meters are designed for applications where the flow is consistently moderate to high. The Neptune Turbine is designed for a range of flow rates from a low of 4 gallons per minute to a high of 5500 gallons per minute (at an accuracy of ± 1.5%).

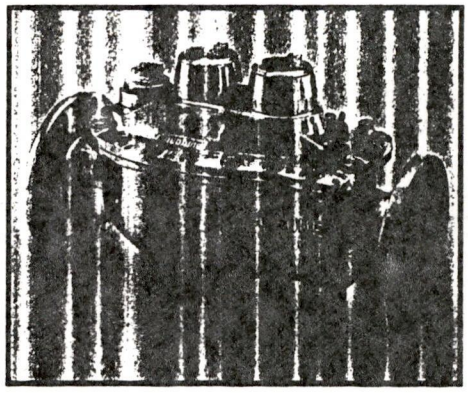
The Neptune Turbine is composed of a Unitized Measuring Element (U.M.E.) and a sturdy bronze maincase. The U.M.E. contains the turbine measuring element, register and cover. A stainless steel calibration vane assures accurate field registration.

The innovative design of the turbine measuring element, with direct coupling of the rotor to the gear train eliminates revenue loss from slippage during line surges. The dual outboard bearings equalize the load on the rotor shaft. The thrust compensated rotor configuration reduces wear on the bearings, thus extending operating life.

The Neptune Turbine register is roll-sealed to prevent lens fogging. Neptune Turbines are also available in all remote reading options.

Sizes	Normal Operating Range
1½"	4 to 160 GPM
2"	4 to 200 GPM
3"	5 to 450 GPM
4"	10 to 1000 GPM
6"	20 to 2000 GPM
8"	35 to 3500 GPM
10"	50 to 5500 GPM

NEPTUNE TRU/FLO COMPOUND METERS



With the Neptune Tru/Flo Compound you get the best of both worlds: the low flow accuracy of Neptune's positive displacement measuring chamber and the sustained high flow capacity of the Neptune Turbine.

The Neptune patented Tru/Flo Compound meters are designed for application where there is a widely varying rate of flow.

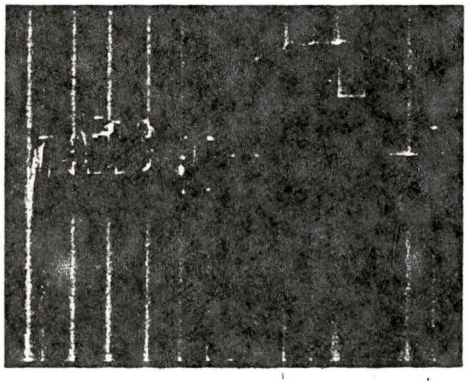
The Tru/Flo features two measuring elements: a nutating disc element for low flow measurement and a turbine element for higher flow rates. Magnetic drive registers totalize the flow through each of the measuring elements. Stainless steel calibration vane assures accurate field registration.

Transfer of low and high flow rates is accomplished through a unique hydraulic valve. This patented hydraulic valve design virtually eliminates the loss in accuracy usually found in the crossover range.

As with the Neptune Turbine, maintenance is quick and easy with the Tru/Flo's Unitized Measuring Element, allowing for in-line serviceability.

Sizes	Flow Range
2"	⅛ to 200 GPM
3"	⅛ to 450 GPM
4"	½ to 1000 GPM
6"	¾ to 2000 GPM

NEPTUNE FIRE SERVICE TURBINE



The Neptune Fire Service Turbine is designed for application on a designated fire line or where one line serves both potable and fire service use—and where the flow rate is constantly moderate to high. With Neptune's UL Listed and FM Approved Fire Service Turbine you can meet all fire safety standards and at the same time measure accurately all water usage through the meter for maximizing billing revenues.

The Fire Service Turbine is composed of the Neptune Turbine with a reinforced maincase and cover to handle increased pressure requirements and a UL Listed/FM Approved strainer to maintain an open flow path even during adverse conditions.

Maintenance is simplified with the Neptune Turbine's Unitized Measuring Element (U.M.E.), stainless steel calibration vane, and the basket-type strainer's flushing port. These features ensure in-line serviceability.

Sizes	Flow Range
3"	5 to 450 GPM
4"	10 to 1000 GPM
6"	20 to 2000 GPM
8"	35 to 3500 GPM
10"	50 to 5500 GPM

Town of Longboat Key to Supply Meters.

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

September 24, 1992
File No. 90-8284

TO: Yale Properties
2900 North Military Trail, Suite 201S
Boca Raton, Florida 33432
Attention: Mr. Mike Kempner

SUBJECT: Compaction Testing of Natural Soils, Fill, Pipe Backfill and Shell Base Materials @ L'Ambiance, Longboat Key, Florida

Progress Report No. 9

Gentlemen:

As requested, our firm has continued engineering testing and evaluation of the natural soils, fill, pipe backfill and shell base materials at the above referenced site. It is our firm's understanding that the following project specifications are to be utilized:

Specifications Review

The fill and backfill materials from grade to 3.0 feet below grade and the shell base material shall be compacted to a minimum of 98% Modified Proctor maximum density (AASHTO T-180). The fill and backfill materials below 3.0 feet below grade and the natural soils shall be compacted to a minimum of 95% Modified Proctor maximum density (AASHTO T-180).

Samples of the natural soils, fill, backfill and shell base materials were previously obtained at the site and returned to our laboratory for analysis and testing purposes. Laboratory test results are shown on the attached Figure 1.

The field testing program consisted of conducting twenty-eight (28) in-place density tests on the natural soils, fill, backfill and shell base materials to determine if compaction was completed in accordance with project specifications.

Included in this report are test numbers 202 through 229 conducted between August 25 and September 18, 1992. Test locations are shown on the attached Figure 1.

A complete summary of test results including density, moisture, percent compaction, thickness of lift and base tested or depth of test below grade is summarized in tabular form on Plate 1.

Based on our field and laboratory test results, we are able to verify that the natural soils, fill, backfill and shell base materials tested on the dates indicated were compacted in accordance with project specifications.

It is a continuing pleasure being of assistance to you. Please contact us when we may be of further service or if you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Vice-President
Engineering Registration No. 12305

GHS/ma

cc: Smally, Wellford & Nalven, Inc.
Yale Properties, Longboat Key
Jenkins & Charland
Merrill, Stewart & Wilson
NCNB National Bank of Florida

PROJECT L' Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 9-23-92

SPECIFICATIONS See attached letter

PROCTOR DATA See Figure 1

REMARKS N = natural soils F = fill material
B/F = backfill material B = shell base material

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
F	202	8-25-92	8.9	112.6	111.5	12.00"	99.0	4th lift - Phase 1
"	203	"	9.7	"	115.3	"	102.3	" " "
"	204	"	13.0	"	114.5	"	101.6	" " "
B/F	205	8-31-92	7.4	102.9	105.1	-1.0'	102.1	Water main "
"	206	"	6.7	"	105.0	-2.0'	102.0	" " "
"	207	"	6.9	"	103.2	-3.0'	100.3	" " "
B	208	"	11.0	125.1	126.5	12.50"	101.1	" " "
F	209	9-1-92	7.7	106.7	104.0	12.00"	97.5	5th lift "
"	210	"	7.3	"	103.2	"	96.8	" " "
N	211	9-2-92	6.5	"	106.0	Nat. grade	99.3	Phase 2
"	212	"	5.7	"	104.8	"	98.2	" "
"	213	"	9.3	"	105.4	"	98.7	" "
F	214	9-8-92	8.7	112.6	110.8	12.00"	98.4	1st lift - Phase 2
"	215	"	8.9	"	107.7	"	95.6	" " " "
"	216	"	9.8	"	111.2	"	98.7	" " " "
"	217	9-11-92	9.9	"	107.6	"	95.6	2nd lift " "
"	218	"	9.5	"	110.5	"	98.2	" " " "
"	219	9-15-92	10.3	"	109.2	"	97.0	" " " "
"	220	"	10.7	"	111.2	"	98.8	-3.0' from top of retaining wall
"	221	"	9.8	"	111.9	"	99.4	-2.0' " " " "
"	222	"	8.7	119.5	118.0	"	98.7	3rd lift - retaining wall
B/F	223	9-17-92	11.8	112.6	111.0	"	98.5	-3.0' from top - ret. wall - E. side
"	224	"	11.6	"	111.3	"	98.8	" " " "
F	225	"	9.8	"	109.3	"	97.0	Final lift - Phase 2
"	226	"	11.5	"	109.5	"	97.2	" " " "
"	227	9-18-92	9.3	"	110.5	"	98.2	4th lift - Phase 1
"	228	"	8.7	"	108.8	"	96.7	Final lift - Phase 2
"	229	"	10.5	"	109.9	"	97.6	" " " "

PLATE 1

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

October 23, 1992
File No. 90-8284

TO: Yale Properties
2900 North Military Trail, Suite 201S
Boca Raton, Florida 33432
Attention: Mr. Mike Kempner

SUBJECT: Compaction Testing of Fill and Subbase Materials @ L'Ambiance, Longboat Key, Florida

Progress Report No. 10

Gentlemen:

As requested, our firm has continued engineering testing and evaluation of the fill and subbase materials at the above referenced site. It is our firm's understanding that the following project specifications are to be utilized:

Specifications Review

The fill material from grade to 3.0 feet below grade and the subbase material shall be compacted to a minimum of 98% Modified Proctor maximum density (AASHTO T-180). The fill material below 3.0 feet below grade shall be compacted to a minimum of 95% Modified Proctor maximum density (AASHTO T-180).

Samples of the fill and subbase materials were previously obtained at the site and returned to our laboratory for analysis and testing purposes. Laboratory test results are shown on the attached Figure 1.

The field testing program consisted of conducting thirty-three (33) in-place density tests on the fill and subbase materials to determine if compaction was completed in accordance with project specifications.

Included in this report are test numbers 230 through 262 conducted between September 22 and October 22, 1992. Test locations are shown on the attached Figure 1.

A complete summary of test results including density, moisture, percent compaction and thickness of lift and subbase tested is summarized in tabular form on Plates 1 to 2. Tests failing to meet project specifications are marked with an asterisk.

Based on our field and laboratory test results, we are able to verify that the fill and subbase materials tested on the dates indicated were compacted in accordance with project specifications.

It is a continuing pleasure being of assistance to you. Please contact us when we may be of further service or if you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Vice-President
Engineering Registration No. 12305

GHS/ma

cc: Smally, Wellford & Nalven, Inc.
Yale Properties, Longboat Key
Jenkins & Charland
Merrill, Stewart & Wilson
NCNB National Bank of Florida

PROJECT L'Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 10-23-92

SPECIFICATIONS See Attached Letter

PROCTOR DATA See Figure 1

REMARKS F = fill material

SlB = subbase material

* = failing density test ⊛ = density retested meets project specs.

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
F	230	9-22-92	8.7	112.6	109.6	12.00"	97.3	1st lift
"	231	"	9.3	"	111.2	"	98.7	"
"	232	9-23-92	15.7	"	105.3	"	93.5⊛	"
"	233	"	16.2	"	105.6	"	93.8⊛	"
"	234	9-28-92	9.8	"	112.3	"	99.7	
"	235	"	8.2	"	111.7	"	99.2	
"	236	"	10.1	"	111.1	"	98.6	retest # 232 & 233
SlB	237	10-6-92	7.3	119.5	120.2	6.00"	100.6	subbase - curb
"	238	"	7.8	"	117.9	"	98.6	"
"	239	"	10.2	"	118.2	"	98.9	"
"	240	"	10.0	112.6	107.5	12.00"	95.4⊛	"
"	241	"	10.8	"	106.0	"	94.1⊛	"
"	242	"	10.5	"	110.5	"	98.1	"
"	243	"	5.5	"	111.0	"	98.5	"
"	244	"	10.4	"	107.0	"	95.0⊛	"
"	245	"	9.2	"	113.0	"	100.3	"
"	246	"	9.8	"	101.0	"	89.6⊛	"
"	247	"	11.2	"	105.3	"	93.4⊛	"
"	248	"	9.6	"	104.5	"	92.8⊛	"
"	249	10-9-92	13.1	"	111.2	"	98.8	retest #241
"	250	"	12.4	"	110.5	"	98.2	retest #240
"	251	"	13.8	"	108.6	"	96.5⊛	retest #248
"	252	"	11.9	"	111.3	"	98.9	retest #244
"	253	"	13.4	"	111.9	"	99.4	retest #246
"	254	"	14.0	"	107.0	"	95.1⊛	subbase curb
"	255	10-13-92	10.5	"	111.2	"	98.8	retest #254
"	256	10-14-92	11.2	"	111.7	"	99.2	retest #251
"	257	"	12.5	"	111.8	"	99.3	retest #247
"	258	10-21-92	8.0	119.0	117.3	6.00"	98.5	roadway
"	259	"	9.8	"	119.0	"	100.0	"
"	260	10-22-92	11.5	112.6	114.8	12.00"	101.9	"
"	261	"	11.3	"	111.0	"	98.6	"

PLATE 1

PROJECT L'Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 10-23-92

SPECIFICATIONS See Plate 1

PROCTOR DATA See Plate 1

REMARKS See Plate 1

LIFT	TEST NO.	DATE	% MOIS-TURE	DRY DENSITY (PCF)		DEPTH(-)/ THICKNESS	% COM-PACTION	REMARKS
				PROCTOR	FIELD			
S/B	262	10-22-92	9.8	119.5	120.3	12.00"	100.6	roadway

PLATE 2

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

August 25, 1992
File No. 90-8284

TO: Yale Properties
2900 North Military Trail, Suite 201S
Boca Raton, Florida 33432
Attention: Mr. Mike Kempner

SUBJECT: Compaction Testing of Fill and Pipe Backfill Materials @ L'Ambiance, Longboat Key, Florida

Progress Report No. 8

Gentlemen:

As requested, our firm has continued engineering testing and evaluation of the fill and pipe backfill materials at the above referenced site. It is our firm's understanding that the following project specifications are to be utilized:

Specifications Review

The fill and pipe backfill materials from grade to 3.0 feet below grade shall be compacted to a minimum of 98% Modified Proctor maximum density (AASHTO T-180). The fill and backfill materials below 3.0 feet below grade shall be compacted to a minimum of 95% Modified Proctor maximum density (AASHTO T-180).

An additional sample of the fill material was obtained at the site and returned to our laboratory for analysis and testing purposes. Laboratory test results are shown on the attached Figure 1.

The field testing program consisted of conducting fifty-eight (58) in-place density tests on the fill and pipe backfill materials to determine if compaction was completed in accordance with project specifications.

Included in this report are test numbers 144 through 201 conducted between July 31 and August 21, 1992. Test locations are shown on the attached Figure 1.

A complete summary of test results including density, moisture, percent compaction and depth of test below grade is summarized in tabular form on Plates 1 to 2. Tests failing to meet project specifications are marked with an asterisk.

Based on our field and laboratory test results, we are able to verify that the fill and pipe backfill materials tested on the dates indicated were compacted in accordance with project specifications.

It is a continuing pleasure being of assistance to you. Please contact us when we may be of further service or if you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Vice-President
Engineering Registration No. 12305

GHS/ma

cc: Smally, Wellford & Nalven, Inc.
Yale Properties, Longboat Key
Jenkins & Charland
Merrill, Stewart & Wilson
NCNB National Bank of Florida

PROJECT L'Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 8-25-92

SPECIFICATIONS See attached letter

PROCTOR DATA See Figure 1

REMARKS F = fill material B/F = pipe backfill material

* = failing density test ⊛ = density retested & meets project specs

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
F	144	7-31-92	9.7	106.7	102.3	12.00"	95.9	Pool - 1st lift
"	145	"	10.4	"	103.7	"	97.2	" "
"	146	"	10.5	"	102.9	"	96.5	" "
"	147	8-3-92	6.9	"	107.5	"	100.8	" - 2nd lift
"	148	"	7.3	"	106.0	"	99.3	" "
"	149	"	6.4	"	106.0	"	99.3	" "
B/F	150	"	7.3	102.9	103.2	-1.0'	100.3	S-4
"	151	"	7.8	"	101.8	-2.0'	98.9	"
"	152	"	6.4	"	102.1	-1.0'	99.3	S-4 to S-5
"	153	"	8.8	"	103.7	-2.0'	100.8	" "
"	154	"	7.5	"	104.0	-1.0'	101.1	S-5
"	155	"	9.5	"	103.6	-2.0'	100.7	"
"	156	"	6.7	"	104.2	-1.0'	101.3	S-6 to S-6A
"	157	"	7.4	"	104.7	-2.0'	101.8	S-6A to S-6B
"	158	"	6.9	"	107.3	-1.0'	104.3	S-6B
"	159	"	8.5	"	104.2	-2.0'	101.3	"
"	160	"	6.4	"	104.1	-1.0'	101.2	S-15
"	161	"	9.1	"	105.6	-2.0'	102.3	"
"	162	8-4-92	7.4	"	103.1	-1.0'	100.2	S-5 to S-6
"	163	"	6.6	"	102.2	-2.0'	99.3	" "
"	164	"	8.0	"	104.5	-1.0'	101.6	S-6
"	165	"	8.2	"	105.3	-2.0'	102.3	"
"	166	8-5-92	7.5	"	103.4	-1.0'	100.5	S-15 to S-16
"	167	"	7.9	"	104.2	-2.0'	101.3	" "
F	168	8-6-92	8.7	112.6	109.2	12.00"	97.0	4th lift
"	169	"	9.6	"	109.1	"	96.9	" "
"	170	"	8.2	"	108.8	"	96.6	" "
"	171	"	9.3	"	111.7	"	99.2	5th "
"	172	"	9.8	"	114.6	"	101.6	4th "
"	173	"	8.7	"	114.0	"	101.3	" "
"	174	"	9.9	"	115.3	"	102.4	" "
"	175	8-7-92	9.6	"	113.7	"	100.9	5th "

PLATE 1

PROJECT L'Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 8-25-92

SPECIFICATIONS See Plate 1

PROCTOR DATA See Plate 1

REMARKS See Plate 1

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
F	176	8-7-92	9.1	112.6	112.1	12.00"	99.5	5th lift
"	177	"	9.9	"	114.3	"	101.5	" "
"	178	8-10-92	9.5	"	110.3	"	98.0	6th "
"	179	"	10.4	"	110.6	"	98.2	" "
"	180	"	8.7	"	109.6	"	97.3	" "
"	181	"	9.9	106.7	100.3	"	93.9 ⊛	1st " (east of S-5 + S-6)
"	182	"	10.4	"	107.7	"	100.9	Retest #181
"	183	"	11.8	"	107.7	"	100.9	2nd lift
"	184	"	11.5	"	106.3	"	99.5	" "
"	185	8-13-92	8.5	112.6	115.6	"	102.1	7th "
"	186	"	8.7	"	111.1	"	98.7	" "
B/F	187	"	7.5	"	110.4	-4.0'	98.0	S-5
"	188	"	9.1	"	109.4	"	97.1	S-6
F	189	8-14-92	8.7	"	108.8	12.00"	96.7	7th lift
"	190	"	9.1	"	109.6	"	97.3	" "
"	191	"	7.9	"	108.5	"	96.3	" "
"	192	8-18-92	10.6	"	111.6	"	99.1	8th "
"	193	"	10.4	"	110.9	"	98.5	" "
"	194	"	9.9	"	110.5	"	98.1	" "
"	195	8-19-92	9.3	"	113.0	"	100.4	North slope - 1st lift
"	196	"	9.9	"	111.1	"	98.6	" " " "
"	197	"	9.6	"	112.1	"	99.6	" " " "
"	198	8-20-92	12.2	119.5	116.3	"	97.3	2nd lift
"	199	8-21-92	8.9	112.6	110.7	"	98.4	Final lift
"	200	"	10.7	"	111.6	"	99.2	" "
"	201	"	9.5	"	110.3	"	98.0	" "

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

April 13, 1992
File No. 90-8284

TO: Yale Properties
2900 North Military Trail, Suite 201S
Boca Raton, Florida 33432
Attention: Mr. Mike Kempner

SUBJECT: Compaction Testing of Backfill Material @ L'Ambiance, Longboat Key, Florida
Progress Report No. 6

Gentlemen:

As requested, our firm has continued engineering testing and evaluation of the backfill material at the above referenced site. It is our firm's understanding that the following project specifications are to be utilized:

Specifications Review

The backfill material shall be compacted to a minimum of 98% Modified Proctor maximum density (AASHTO T-180).

A sample of the backfill material was previously obtained at the site and returned to our laboratory for analysis and testing purposes. Laboratory test results are shown on the attached Figure 2.

The field testing program consisted of conducting eleven (11) in-place density tests on the backfill material to determine if compaction was completed in accordance with project specifications.

Included in this report are test numbers 113 through 123 conducted on March 12 and March 20, 1992. Test locations are shown on the attached Figure 2.

A complete summary of test results including density, moisture, percent compaction depth of test below grade is summarized in tabular form on Plate 1. Tests failing to meet project specifications are marked with an asterisk.

Based on our field and laboratory test results, we are able to verify that the backfill material tested on the dates indicated was compacted in accordance with project specifications.

It is a continuing pleasure being of assistance to you. Please contact us when we may be of further service or if you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Executive Vice-President
Engineering Registration No. 12305

GHS/ma

cc: Smally, Wellford & Nalven, Inc.
Yale Properties, Longboat Key
Jenkins & Charland
Merrill, Stewart & Wilson

PROJECT L'Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 4-6-92

SPECIFICATIONS See attached letter

PROCTOR DATA See Figure 2

REMARKS

B/F = backfill material

* = failing density test ⊛ = density retested & meets project specs

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-)/ THICKNESS	% COMPACTION	REMARKS
B/F	113	3-12-92	4.5	106.7	104.0	-1.0'	97.5 ⊛	
"	114	"	4.8	"	101.1	"	94.8 ⊛	
"	115	3-13-92	9.3	"	106.3	"	99.6	Retest #113
"	116	"	9.8	"	107.6	"	100.8	Retest #114
"	117	"	8.2	"	107.0	"	100.3	
"	118	"	8.7	"	107.9	"	101.1	
"	119	"	8.5	"	105.2	"	98.6	
"	120	3-20-92	7.9	"	105.8	"	99.1	
"	121	"	9.6	"	105.3	"	98.7	
"	122	"	7.4	"	104.3	"	98.0	
"	123	"	10.1	"	106.3	"	99.6	

PLATE 1

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

June 4, 1992
File No. 90-8284
(Revised 7-10-92)

TO: Yale Properties
2900 N. Military Trail, Suite 201S
Boca Raton, FL 33432

Attention: Mr. Mike Kempner

SUBJECT: Engineering Analysis of Existing Soils and Stockpiled Fill @ "L'Ambiance, Longboat Key, Florida"

Gentlemen:

As requested by Mr. Kyle Hauck of Yale Properties, our firm has completed sampling and analysis of existing soils and stockpiled fill material at the above-referenced site. The purpose of our investigation was to determine the color and texture of existing soils and fill materials utilized during onsite earthwork.

On May 28, 1992, a representative of our firm conducted sampling at five (5) random locations throughout the site. Approximate locations of the samples taken are shown on the attached Figure 1. The samples were returned to our lab for testing purposes. Sample locations, sample descriptions and sieve analysis are reported in tabular form in the attached Appendix of this report.

It is a pleasure being of assistance to you. Please contact our office when we may be of further service, or should you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Executive Vice President
Eng. Reg. No. 12305

GHS:emn

cc: Smally, Wellford & Nalven, Inc.
Yale Properties/Longboat Key
Jenkins & Charland
Merrill, Stewart & Wilson
NCNB National Bank of Florida

2500 Bee Ridge Road (34239), Post Office Box 15008, Sarasota, Florida 34277-1008 Phone (813) 922-3526 FAX (813) 922-6743
Offices in: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port Charlotte, Port St. Lucie, Sarasota, Tallahassee, Tampa, W. Palm Beach

APPENDIX

SIEVE ANALYSIS

SIEVE SIZE	SAMPLE #1 % PASSING	SAMPLE #2 % PASSING	SAMPLE #3 % PASSING	SAMPLE #4 % PASSING	SAMPLE #5 % PASSING
1/2	99.0	100.0	96.4	100.0	100.0
3/8	99.0	100.0	95.7	99.3	98.9
4	98.4	100.0	92.6	97.6	98.1
10	96.8	99.9	88.3	95.9	96.3
40	87.5	99.3	75.7	87.3	87.5
60	72.0	97.4	59.4	73.3	74.0
100	35.6	34.9	24.7	37.6	39.3
200	4.4	0.6	2.7	5.5	9.3

SAMPLE NO.	SAMPLE LOCATION	SAMPLE DESCRIPTION
1	Existing fill around building	Brown fine sand w/trace silt & shell
2	Existing natural in-place fill	Light gray fine sand
3	Center stockpile	Light tan fine sand w/shell & trace silt
4	North stockpile (east end)	Brown fine sand w/trace silt & shell
5	North stockpile (northwest end)	Brown fine sand w/trace rock, silt, clay & shell

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

July 24, 1992
File No. 90-8284

TO: Yale Properties
2900 North Military Trail, Suite 201S
Boca Raton, Florida 33432
Attention: Mr. Mike Kempner

SUBJECT: Compaction Testing of Fill and Backfill Materials @ L'Ambiance, Longboat Key, Florida

Progress Report No. 7

Gentlemen:

As requested, our firm has continued engineering testing and evaluation of the fill and backfill materials at the above referenced site. It is our firm's understanding that the following project specifications are to be utilized:

Specifications Review

The fill and backfill materials from grade to 3.0 feet below grade shall be compacted to a minimum of 98% Modified Proctor maximum density (AASHTO T-180). The fill and backfill materials below 3.0 feet below grade shall be compacted to a minimum of 95% Modified Proctor maximum density (AASHTO T-180).

Additional samples of the fill material were obtained at the site and returned to our laboratory for analysis and testing purposes. Laboratory test results are shown on the attached Figures 1 and 2.

The field testing program consisted of conducting twenty (20) in-place density tests on the fill and backfill materials to determine if compaction was completed in accordance with project specifications.

Included in this report are test numbers 124 through 143 conducted between June 18 and July 23, 1992. Test locations are shown on the attached Figures 1 and 2.

A complete summary of test results including density, moisture, percent compaction and depth of test below grade or above pipe is summarized in tabular form on Plate 1. Tests failing to meet project specifications are marked with an asterisk.

Based on our field and laboratory test results, we are able to verify that the fill and backfill materials tested on the dates indicated were compacted in accordance with project specifications.

It is a continuing pleasure being of assistance to you. Please contact us when we may be of further service or if you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

Gary H. Schmidt, P.E.
Executive Vice-President
Engineering Registration No. 12305

GHS/ma

cc: Smally, Wellford & Nalven, Inc.
Yale Properties, Longboat Key
Jenkins & Charland
Merrill, Stewart & Wilson
NCNB Nat'l. Bank of Florida

PROJECT L'Ambiance FILE NO. 90-8284

CLIENT Yale Properties DATE 7-24-92

SPECIFICATIONS See Attached Letter

PROCTOR DATA See Figures 1&2

REMARKS B/F = backfill material

F = fill material

* - failing density test ⊛ = density retested meets project specs.

LIFT	TEST NO.	DATE	% MOISTURE	DRY DENSITY (PCF) PROCTOR	DRY DENSITY (PCF) FIELD	DEPTH(-) / THICKNESS	% COMPACTION	REMARKS
B/F	124	6-18-92	8.7	106.7	108.5	-1.00'	101.6	
"	125	"	6.6	"	104.3	"	97.7	⊛
"	126	"	8.2	"	107.8	"	101.0	retest # 125
F	127	7-16-92	11.8	"	107.3	+12.00"	100.6	1st lift
"	128	"	12.2	"	108.0	"	101.2	"
"	129	"	10.8	"	107.0	"	100.3	"
"	130	7-17-92	8.5	112.6	111.8	"	99.3	2nd lift
"	131	"	6.6	"	113.0	"	100.4	"
"	132	"	9.5	"	110.8	"	98.4	"
"	133	7-20-92	12.6	119.5	115.5	"	96.7	3rd lift
"	134	"	10.9	"	116.7	"	97.7	"
"	135	"	11.5	112.6	110.3	"	98.0	"
"	136	"	10.2	106.7	102.3	"	95.9	"
B/F	137	7-21-92	12.5	"	107.3	-4.5'/1.5' cover pipe	100.5	sanitary sewer
"	138	"	12.4	"	104.5	-1'/5' "	98.0	" " "
"	139	"	6.1	102.9	103.3	-3'/3' "	100.3	" "
"	140	7-22-92	6.4	"	101.1	+1' above pipe	98.3	" " MH1 - MH3
"	141	"	8.0	"	101.4	+2' "	98.5	" " "
"	142	7-23-92	12.4	106.7	108.1	+1.5' "	101.3	" " 100's of MH
"	143	"	12.6	102.9	103.4	+3' "	100.4	" " " "

PLATE 1

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
Landscape Architects
Environmental Consultants
Construction Managers

December 7, 1992

Mr. Joseph A. Amato, P.E.
Permitting Engineer
Florida Department of Environmental Regulation
Southwest District
3804 Coconut Palm Drive
Tampa, FL 33619

Subject: **L'Ambiance at Longboat Key**
Partial Certifications of Wastewater Collection System
FDER Permit #CS41-206911

SWN Ref: 2591-1 / Work Order #2239

Dear Mr. Amato:

Please be advised that to the best of our knowledge and belief construction of the connection to the Town of Longboat Key wastewater collection system and the collection system to serve the south building have been substantially completed in accordance with the approved construction plans and specifications. The improvements listed below are available for service:

- Repairs and/or replacement to the sewer lines on Longboat Club Road including slip lining of the damaged 15" fiberglass sewer.

- Internal collection system to serve the south building, pool and guard house.

RECEIVED
DEC 08 1992

133 South McIntosh Road, P.O. Box 4069, Sarasota, Florida 34230 • (813) 371-3690 Fax (813) 377-9852

Enclosed are two executed copies of the FDER Certificate of Completion of Construction Form 17-1.205(8) and one print of the signed and sealed record construction drawings, Index Numbers G-2591-017, 018, 019, 020, color coded for your convenience.

Very truly yours,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder, P.E.
Vice President
Director of Engineering

MJY:CFR:lb

Enclosure

cc: Mr. Jim Reinhardt, Manatee County, w/enclosures
Mr. Leonard Smally, Town of Longboat Key, w/enclosures
Mr. Michael Kempner, Yale Properties, Inc., w/enclosures
Mr. Kyle Hauck, Yale Properties, Inc., w/enclosures
Ms. Nancy Blackwood, NCNB National Bank, w/enclosures
Merrill, Stewart & Wilson, w/enclosures

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

SOUTHWEST DISTRICT
7601 HIGHWAY 301 NORTH
TAMPA, FLORIDA 33610-9544

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

RICHARD D. GARRITY, PH.D.
DISTRICT MANAGER

DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEMS CERTIFICATION OF COMPLETION OF CONSTRUCTION

SWN Ref: 2591-1
Work Order: 2239

Construction Permit No.: CS41-206911 **Dated:** 2/6/92

Name of Project: L'Ambiance at Longboat Key

Name of Owner: Yale Properties - L'Ambiance

Name of design engineer and Florida registration number (if different from engineer signing certification): N/A

Name of treatment plant to receive wastewater: Manatee County SW Subregional WWTP

Date(s) of connection to existing system or treatment plant:

Upon receipt of approval from FDER

Substantial deviations from the approved plans and specifications (attach additional sheets if required):

The partial certification is for connection to existing system and for service to south building only. Due to field conditions the 15" fiberglass pipe was slip-lined with a 10" pipe and/or replaced with a 10" gravity sewer.

A. Applicant or Operation and Maintenance Authority (if different from Applicant)

I agree to operate and maintain the facilities in accordance with the provisions of Chapter 403, Florida Statutes, and applicable rules of the department. I attest that an appropriate operation and maintenance manual and record drawings for the system are available and located at:

415 L'Ambiance Drive, Longboat Key, FL 34228

Signed: _____ Date: 11/20/92

Name and Title (Please Type): Gordon Deckelbaum, President

Company Name: L'Ambiance at Longboat Key CLub; Condominium Association, Inc.

Address: 415 L'Ambiance Drive

Longboat Key, FL 34228

Telephone No.: 813-383-0747

B. Professional Engineer Registered In Florida (where required by Chapter 471, F.S.) as to Wastewater Facility

I certify that the project has been completed substantially in accordance with the approved plans and specifications, or that deviations will not prevent the system from functioning in compliance with the requirements of F.A.C. Rule 17-6, when properly operated and maintained. These determinations have been based upon on-site observation of construction, scheduled and conducted by me or by a project representative under my direct supervision, for the purpose of determining if the work proceeded in compliance with plans and specifications. I further certify that record drawings for the facilities have been reviewed by me or by individual(s) under my direct supervision, for completeness and adequacy, and have been provided to the permittee. I further certify that the record drawings identify those substantial deviations noted above.

_____
Signature of Engineer

Millard J. Yoder, P.E. 33765
Name (Please type) Florida Registration No.

Smally, Wellford & Nalven, A Division of Wilson, Miller, Barton & Peek, Inc.
Company Name

P.O. Box 4069
Company Address

(Affix Seal)

Sarasota, FL 34230

Date: ~~10/2/92~~ 11/20/92 Telephone No. 813 / 371-3690

The use of the word "certify" or "certification" constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification, and does not constitute a warranty or guarantee, either expressed or implied.

N/A

C. Professional Engineer Registered in Florida (where required by Chapter 471, F.S.) as to Operation and Maintenance Manual

This is to certify that the operation and maintenance manual for these wastewater facilities has been prepared or examined by me, or by individual(s) under my direct supervision, and that there is reasonable assurance, in my professional judgement, that the facilities, when properly maintained and operated in accordance with this manual, will function as intended.

Signature of Engineer

Name (Please type) Florida Registration No.

Company Name

Company Address

(Affix Seal)

Date: _____ Telephone No. _____

D. Operation and Maintenance Authority Approving Connections

I certify that connection(s) to the wastewater facility which we operate and maintain have been completed to our satisfaction.

Signed: _____ Date: _____

Name and Title (please type): _____

Company Name: _____

Address: _____

Files

HYDROSTATIC TEST RESULTS

Project Name L'Ambiance — Date Sept 14, 92

Client Yale Properties — Project No. 2591-1 (W.O. 2239)

Test By C.Reich — Witnessed By —

Contractor Tri-D — Foreman Kip Sherwood

Road or Street Longbout Club Rd — Station 63+65 to Station 59+10

FORCE MAIN

Length of Pipe Tested (Ft), S	Nominal Pipe Diameter (In), D	Square Root of Test Pressure, $\sqrt{P}$	*Allowable Leakage, L in Gallons/Hour $L = \frac{S \times D \times \sqrt{P}}{133,200}$
455	6"	100 PSI (10)	$\frac{455 \times 6 \times 10}{133,200} = .2$

over

* As per AWWA C600-82

Test Began at 1:15 — Pressure on Gauge 104

First Hour Gallon Used — — Pressure on Gauge 104

Second Hour Gallon Used — — Pressure on Gauge 104

24 Hour Total Gallon Used _____ — Pressure on Gauge _____

Results: Passed ✓ Failed _____

Remarks Force main test through existing piping at main entrance - from existing manhole to connection to existing force main

Inspector's Signature Carl Reich

SEWER LINE TESTING

PAGE _____ OF _____

PROJECT NO.: 2238

PROJECT NAME: L'AMBIANCE DATE: 8/3/92

PHASE: _____ UNIT: _____ INSPECTOR: BOB COTTOM (TOWN LONGBOAT)

CONTRACTOR: TRI-D TESTED BY: Spike Cook

MANDREL: SIZE _____ % _____ O.D.

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

MH_____ TO MH_____ TOTAL FOOTAGE: _____ NOTES: _____

AIR TESTING:

MH 1 TO ~~MH~~ BLDG. SERVICE @ 4 PSI 7 min. 34 sec. -0- LOSS X (PASS)/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

MH_____ TO MH_____ @ _____PSI _____min. _____sec. _____LOSS _____PASS/FAIL

SEWER LINE TESTING

PAGE 1 OF 1

PROJECT NO.: 2591

PROJECT NAME: L'Ambiance DATE: 7/30/92

PHASE: One UNIT: [illegible] INSPECTOR: Debbie Bouchard/ Bud Cotton

CONTRACTOR: Tri-D, Inc. TESTED BY: Don

MANDREL: SIZE 5 % 7.5 O.D.

MH Exist. TO MH #1 TOTAL FOOTAGE: 307.5 NOTES:

MH #1 TO MH #3 TOTAL FOOTAGE: 138 NOTES:

MH #1 TO MH #2 TOTAL FOOTAGE: 279 NOTES:

MH____ TO MH____ TOTAL FOOTAGE:____ NOTES:

MH____ TO MH____ TOTAL FOOTAGE:____ NOTES:

MH____ TO MH____ TOTAL FOOTAGE:____ NOTES:

MH____ TO MH____ TOTAL FOOTAGE:____ NOTES:

MH____ TO MH____ TOTAL FOOTAGE:____ NOTES:

MH____ TO MH____ TOTAL FOOTAGE:____ NOTES:

MH____ TO MH____ TOTAL FOOTAGE:____ NOTES:

AIR TESTING:

MH Exist. TO MH #1	@ 4.5 PSI	7 min.	36 sec.	0 LOSS	(PASS)/FAIL
MH #1 TO MH #3	@ 4.0 PSI	7 min.	34 sec.	0 LOSS	(PASS)/FAIL
MH #1 TO MH #2	@ 4.0 PSI	7 min.	34 sec.	0 LOSS	(PASS)/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL
MH____ TO MH____	@ ____ PSI	____ min.	____ sec.	____ LOSS	PASS/FAIL

SMALLY, WELLFORD & NALVEN
A Division of Wilson, Miller, Barton & Peek, Inc.

Engineers
Planners
Surveyors
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Environmental Consultants
Construction Managers

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DEC 03 1992

December 2, 1992

Mr. Leonard A. Smally, P.E.
Town of Longboat Key
501 Bay Isles Road
Longboat Key, FL 34228

Subject: **L'Ambiance at Longboat Key**

SWN Ref: 2591-1 / Work Order #2239

Dear Leonard:

This letter is our representation that in our professional judgement and to the best of our knowledge and belief, construction of the improvements listed below, with the exception of minor punch list items, have been completed in substantial accordance with the approved construction plans and specifications. The improvements discussed herein are for the south building only.

- Storm drainage system
- Site grading
- Paving and curbing

We have enclosed one set of record drawings and one set of density tests for your files. Upon your acceptance of the record drawings, we will provide you with reproducible mylars. If you have any questions, please contact our office.

Very truly yours,

SMALLY, WELLFORD & NALVEN

Millard J. Yoder, P.E.
Vice President
Director of Engineering

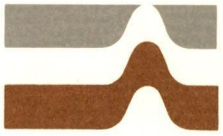
MJY:CFR:lb

Enclosures
cc: Mr. Michael Kempner, Yale Properties, Inc.
Mr. Kyle Hauck, Yale Properties, Inc.
Ms. Nancy Blackwood, NCNB National Bank
Merrill, Stewart & Wilson

SUBSURFACE SOIL EXPLORATION,

"L'AMBIANCE, LONGBOAT CLUB

ROAD, LONGBOAT KEY, FLORIDA"



Ardaman & Associates, Inc.

OFFICES

Orlando, 8008 S. Orange Avenue, P.O. Box 32859-13003, Orlando, Florida 32809, Phone (305) 855-3860
Bartow, 1987 S. Holland Parkway, Bartow, Florida 33830, Phone (813) 533-0858
Bradenton, 209 A 6th Avenue East, P.O. Box 34206-1335, Bradenton, Florida 34208, Phone (813) 748-3971
Cocoa, 1300 N. Cocoa Blvd., P.O. Box 32924-3557, Cocoa, Florida 32922, Phone (305) 632-2503
Fort Myers, 2508 Rockfill Road, Fort Myers, Florida 33916, Phone (813) 337-1288
Miami, 7476-7478 N.W. 8th Street, Miami, Florida 33126, Phone (305) 261-1682
Sarasota, 2500 Bee Ridge Road, P.O. Box 34277-15008, Sarasota, Florida 34239, Phone (813) 922-3526
Tallahassee, 3175 West Tharpe Street, Tallahassee, Florida 32303, Phone (904) 576-6131

MEMBERS:

American Concrete Institute
American Society for Testing and Materials
American Consulting Engineers Council
Association of Soil and Foundation Engineers
Florida Institute of Consulting Engineers
Professional Engineers in Private Practice

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

November 28, 1989
File No. 89-8137

TO: Yale Properties
2900 N. Military Trail, Suite 201-S
Boca Raton, FL 33431

Attention: Mr. Mike Kempner

SUBJECT: Subsurface Soil Exploration, Analysis and Recommendations for Proposed "L'Ambiance, Longboat Club Road, Longboat Key, Florida"

Gentlemen:

As per our proposal dated November 3, 1989, our firm has completed an exploration of foundation soil conditions at the above referenced site. This report will present the results of our exploration and foundation recommendations.

This report was prepared for the exclusive use of Yale Properties and their consultants for use in the design of foundation systems for the proposed structure, in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made.

SCOPE

The scope of our services has included the following items:

1. Conducting eight (8) Standard Penetration Test (SPT) borings to determine the nature and condition of the subsurface soils.

2. Reviewing each soil sample obtained in our field testing program by a geotechnical engineer in the laboratory for further investigation, classification and assignment of laboratory tests, if required.

3. Analyzing the existing soil conditions with respect to the proposed construction.

4. Preparing this report to document the results of our field testing program, engineering analysis and foundation recommendations.

FIELD EXPLORATION

Our field exploration program consisted of conducting eight (8) Standard Penetration Test borings at the locations shown on the attached Figure 1. Test boring depths, location and number were determined by Ardaman & Associates, Inc. Test borings were located in the field utilizing available landmarks and a 100.0 foot tape. Test boring locations should only be considered accurate to the degree implied by the method used. Should more accurate locations be required, a registered land surveyor should be retained. These borings were performed to determine the nature and condition of the subsurface soils to a maximum depth of 60.0 feet below the existing ground surface. The equipment and procedures utilized in the Standard Penetration Test are described in greater detail in the Appendix.

LABORATORY INVESTIGATION

Samples obtained during our field sampling program were thoroughly examined in our laboratory to obtain an accurate definition of the soil profile. No additional testing was deemed necessary.

SOIL CONDITIONS

Profiles of the soils encountered at the subject site are shown in graphical form on the attached Figure 2. As indicated, the soils consisted primarily of fine sands and fine sands with silt and shell to a depth of approximately 40.0 feet below grade. These fine sands were in a dense to very dense state of compactness from the ground surface to approximately 25.0 feet, and in a loose to medium dense state of compactness from 20.0 feet to approximately 40.0 feet below grade. Alternating layers of silt, clayey silt, cemented silt, and rock were encountered from 40.0 feet to the termination of the borings 60.0 feet below grade.

On the date of our field exploration, the groundwater table was encountered 2.5 to 3.5 feet below existing grade. The ground water table may be anticipated to fluctuate with seasonal variations in the amount of rainfall and tidal fluctuations in the Gulf of Mexico.

ANALYSIS AND RECOMMENDATIONS

It is our understanding that the proposed towers are to be eleven stories in height and are anticipated to be constructed of concrete with post-tension floor slabs. We have assumed that anticipated loads for the structures will not exceed 950 kips. We have also assumed that appurtenant structures located in the V-Zone will be pile-supported, and that those located in the A-Zone will be constructed on conventionally designed shallow foundations.

Soils Analysis

The soils encountered at the site of the proposed towers and the appurtenant structures located within the velocity zone are well-suited to support the proposed structures on driven pile foundation systems. The pile foundation systems will be required in order to provide erosion resistant foundations for those structures within the velocity zone, as well as to provide foundation systems capable of limiting settlements for the high column loads anticipated in the towers. Pile foundations for appurtenant structures located within the velocity zone may achieve bearing in the dense sands encountered at a depth of approximately 20.0 feet below grade. Foundations for the proposed towers should extend to the rock and cemented silt strata encountered at a depth of 40.0 to 50.0 feet

below grade. Note that installation of the piles to the required depth may be extremely difficult due to the dense sands encountered in the surficial 20.0 feet. We anticipate that it will therefore be necessary to pre-auger each pile location prior to installation. Provided that foundation loads are no greater than those indicated previously, we anticipate that settlements of the proposed pile foundation systems will not exceed 0.5 inch.

The soils encountered in the vicinity of the proposed tennis courts and guardhouse are well-suited to support appurtenant structures on conventionally designed shallow foundation systems. Assuming that soils are prepared in accordance with the soil preparation recommendations of this report, that foundation loads do not exceed 30 kips for isolated column loads, nor 3 kips per lineal foot for wall footing loads, and that foundations are designed in accordance with the foundation design recommendations of this report, we anticipate that settlement of the proposed shallow foundation systems will not exceed 0.5 inch. Due to the granular nature of the surficial materials at the site, this settlement will occur primarily during construction.

Foundation Design - Pile Foundation Systems

Foundations for the proposed structures may be designed utilizing prestressed concrete piles. Twelve inch by twelve inch or fourteen inch by fourteen inch prestressed concrete piles, driven in accordance with the recommendations of this report, will provide the following capacities:

Pile Size	Depth Below Grade	Compressive Capacity (Tons)	Tensile Capacity (Tons)	Lateral Capacity (Tons)
12" x 12"	20'	20	4	2.0
12" x 12"	40'-50'	50	15	2.0
14" x 14"	20'	28	5	3.0
14" x 14"	40'-50'	75	16	3.0

Lateral support in excess of that indicated above should be developed using batter piles. The piles should be spaced a minimum of 3.0 foot on center. Jetting or washing the piles in place will not be allowed as this may reduce pile capacity. In order to facilitate installation to the bearing strata, it will be necessary to pre-auger the pile locations to a minimum depth of 20.0 feet below existing grade.

The design loads approximate length of 40.0 to 50.0 feet and should be confirmed by a test pile program prior to initiating the driving of production piles in the towers. We recommend that at least ten (10) piles be driven at random locations in each building site.

One (1) compressive load test should be conducted on the pile having the least driving resistance in each building area. One (1) tensile test should be conducted on the pile with least penetration in each of the buildings. These load tests should be conducted in accordance with ASTM standards. The hammer used to install the test and production piles should have a minimum rated energy of 30,000 foot-pounds. Prior to driving the piles, a wave equation analysis should be conducted to verify the compatibility of the pile, soil, hammer system, and to provide preliminary driving criteria.

As indicated previously in this report, the bearing strata at the subject site is somewhat inconsistent with respect to stiffness and depth at which encountered. We anticipate somewhat difficult driving conditions, with the possible necessity of spliced piles and re-design of pile caps, should piles fail to develop the required driving resistance. The pile driving contractor should anticipate the existence of rebounding materials in the vicinity of the bearing layer.

Foundation Design - Shallow Foundation Systems

Foundations for the proposed structure may be designed for an allowable soil contact pressure of 2,500 psf. We recommend that all wall foundations be no less than eighteen inches wide and column foundations be no less than twenty-four inches wide. All foundations should be designed for an equal dead load distribution in accordance with standard building code requirements. A soil cover of eighteen inches, as measured from the bottom of the foundation system to outside adjacent finished grade, should be provided.

Soil Preparation Recommendations

The following soil preparation recommendations are made as a guide to the design professionals, parts of which should be incorporated into the project's general specifications:

1. The building area (plus a margin of 5.0 feet outside building perimeter lines) should be cleared and grubbed of all surface vegetation and organic debris.

2. The cleared and grubbed elevation should be compacted with a heavy vibratory roller having a static weight of at least 8,000 pounds. Each pass should overlap the preceding pass by at least 30%. Sufficient passes should be made over the building area (plus the 5.0 foot margin) to produce a density of at least 98% of Standard Proctor maximum density to a depth of 1.5 feet below the compacted surface. Extreme care should be used when vibration compaction is used next to existing structures. A representative of Ardaman & Associates should be present during initial compaction efforts.

3. After compaction and testing to verify that the desired compaction has been achieved at this elevation, fill can be placed in level lifts not exceeding 12 inches loose and compacted with the above-described equipment. Each layer should be compacted to a minimum of 98% of Standard Proctor maximum density. The fill materials shall be clean fine sands, free of organic matter, waste, garbage or other deleterious material. The material shall also be free of rock or gravel larger than two inches in any dimension and shall not contain more than 5% passing the No. 200 sieve. A sample of the proposed fill shall be submitted to the testing laboratory prior to fill being brought on the job site.

4. Fill necessary to raise the grade from the top of the foundation elevation to finished floor slab subgrade elevation should also consist of clean fine sands compacted to 98% of Standard Proctor maximum density. If fill is placed inside partially completed walls, extreme care should be exercised to avoid damage to these walls.

5. A soils engineer or his representative from Ardaman & Associates, Inc., Sarasota Office, should inspect and test the compacted excavated elevation and each layer of fill to verify compliance with the above-suggested recommendations. In addition, a representative should inspect and test the foundation contact soils immediately prior to concrete placement.

GENERAL COMMENTS

The analysis and recommendations submitted in this report are based upon the data obtained from eight (8) soil borings performed at the locations indicated on the attached Figure 1. This report does not reflect any variations which may occur between the borings. While the borings are representative of the subsurface conditions at

their respective locations and for their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered. The boring logs and related information are based upon the driller's logs and visual examination of selected samples in the laboratory. The delineation between soil types shown on the logs is approximate, and the description represents our interpretation of the subsurface conditions at the designated boring location on the particular date drilled.

The groundwater elevations shown on the boring logs represent groundwater surfaces encountered on the dates shown. Fluctuations in water table levels should be anticipated throughout the year.

When the final design and specifications are completed, we must be given the opportunity to review them in order to determine whether changes in the original concept may have affected the validity of these recommendations and whether these recommendations have been implemented in the design specifications.

It has been a pleasure to be of assistance to you with this phase of your project. Please contact us when we may be of further service to you, or should you have questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.

William F. Ryan, P.E.
Project Engineer
Engineering Reg. No. 39619

Gary H. Schmidt, P.E.
Executive Vice President
Engineering Reg. No. 12305

WFR/GHS:sks

cc: Yale Properties (Job Site)

APPENDIX

STANDARD PENETRATION TEST

The standard penetration test is a widely accepted method of in situ testing of foundation soils (ASTM D-1586). A 2.0 foot long, two-inch O.D. split-spoon barrel attached to the end of the drilling rods is driven eighteen inches into the ground by successive blows of a 140 pound hammer freely dropping thirty inches. The number of blows needed for each six inches of penetration is recorded. The sum of the blows required for penetration of the second and third six-inch increment constitutes the test results or N-value. After the test, the sample is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties, allowing a conservative estimate of the behavior of soils under loads.

The tests are usually performed at 5.0 foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary

drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid is a Bentonite drilling mud, also used to keep the hole open when the test is made and sample recovered from below the water table. In this manner, a positive hydrostatic pressure balance is maintained at the testing depths for accurate representative sampling and testing. In some soil deposits, particularly pervious ones, NX-sized flush coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative samples from soils at every 5.0 feet of drilled depth, and from every different stratum, are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. After thorough examination and testing of the obtained samples in the laboratory, the samples are discarded unless prior arrangements have been made. After the completion of a test boring, the groundwater is allowed to reach a stable level before it is measured and the hole is filled.

File LAMB

TOWN OF LONGBOAT KEY

Incorporated November 14, 1955

501 Bay Isles Road
Longboat Key, Florida 34228
(813) 383-3721
FAX 383-7231

DATE: 11/16/90 FAX NO. 377-9852

DELIVER TO: Millard Yoder

NUMBER OF PAGES (incl. this Cover Page): 4

INITIATING DEPARTMENT: _____ DEPT. # _____

REFERENCE: _____

COMMENTS: from: Len Smilly

****

INVOICE

FACSIMILE FEE: $_____

Fee Calculation: Number of pages (including cover sheet) times $1.00)

Please remit to:

Finance Department
Town Hall
501 Bay Isles Road
Longboat Key, FL 34228

Please call Donna Hall if all pages were not received.

2. MATERIALS, CONT'D.

2.6 Steel Pipe Sleeves

Pipe for sleeves to be jacked and bored under highways shall be steel conforming to ASTM A139-74, Grade A. Sleeve pipe shall be of the length and size shown on the drawings. The wall thickness shall be standard mil thickness for the required pipe diameter and as shown on the DOT permit.

2.7 Flexible Couplings

Flexible couplings shall be of cast iron for couplings installed underground and steel for above ground installation. Couplings shall be suitable for 150 psi working pressure. Flexible couplings shall be Style 53 and Style No. 38 as manufactured by Dresser Manufacturing Company, or Smith-Blair, or approved equal.

3. VALVES AND VALVE BOXES

3.1 Gate Valves

3.1.1 Gate valves for buried service shall be designed for a working pressure of not less than 150 psi. Gate valves, when fully open, shall have a clean waterway equal to the nominal diameter of the pipe. the valve shall open by turning to the left or counterclockwise when viewed from the stem. The operating nut shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's distinctive marking, pressure rating and year of manufacture cast on the body. Prior to shipment from the factory, each valve shall be tested by applying to it a hydraulic pressure equal to twice the specified working pressure.

3.1.2 Gate valves shall be iron body, Epoxy Coated inside and outside. Resilient We[illegible] ~~fully bronze mounted, double disc with parallel seats~~. Valves shall conform to the specifications for Gate Valves or Ordinary Water Works Service, AWWA C509-[illegible], and shall be fitted with an O-ring seal of standard manufacture. Valves to be located underground shall be the non-rising stem type designed for buried service with a 2-inch square operating nut. The valves shall have end connections to match the pipe. waterous Ser[illegible] 500 or appro[illegible] equal.

3.2 Valves Boxes

Valve boxes shall be provided for all valves which are below finished grade elevations. Valve boxes shall consist of cast iron base and adjustable top section with cover which shall be marked "Water". Extensions shall be provided as required to grade. screw type

3.3 Air Release Valves - Automatic

Air release valves shall be 1" through 16" diameter pipe and shall be the automatic type installed in a concrete box as shown on the drawing. Box and lid shall be of the necessary size to enclosed the valve. Pipe, fittings and valves for the assembly shall be as specified in the preceding paragraphs. A corporation stop shall be tapped into the main using the procedures as recommended by the iron pipe manufacturer. The corporation stop shall be Mueller H-10045, or Hays 5284, or approved equal. The valve shall be Type N, Crispin, as manufactured by Multiplex Manufacturing Co., Berwick, PA, or Model 200 APCO, as manufactured by Textron, Inc., Whittier, CA, or approved equal.

8. HIGHWAY CROSSINGS, CONT'D.

8.2 The carrier pipe shall be installed in the sleeve on longitudinal, treated lumber supports. Each support shall be 2 to 3 feet long and of sufficient thickness to raise the bell off the sleeve. The wood supports shall be positioned 3 feet from the bell and at each end of the pipe. Similar spacers shall be positioned at the top and sides of the pipe and all secured by metal straps or bands.

9. METER BOXES

9.1 Meter boxes shall be cast iron meter boxes as manufactured by Russell Pipe & Foundry Company. Cost iron boxes for 5/8" and 3/4" meters shall be Rome model and for 1", 1-1/2" and 2" meters shall be Dekalb model.

9.2 Precast reinforced concrete meter boxes with cast iron reading lid may be furnished as an alternate. Boxes for 5/8" and 3/4" meters shall be Type 33H and for 1", 1-1/2" and 2" meters shall be Type 66S AS MANUFACTURED BY Brooks Concrete Products Company.

9.3 Meter boxes for 3" meters shall be Type 67TR as manufactured by Brooks Concrete Products Company.

9.4 The meter and meter couplings will be furnished and installed by the Owner.

9.5 Plastic meter boxes and covers with a magnetic detecting disc embedded in an inspection lid built into the cover, as manufactured by Intercontinental Plastics Company, or an approved equal, may be furnished for non-traffic areas.

10. SERVICE CONNECTIONS

10.1 1-1/2" and 2" service connections shall be connected by use of a saddle. The Contractor shall provide corporation stops and curb stops installed in accordance with the detailed drawings and specifications.

10.1.1 The corporation stops shall be Mueller Type H-10046 or approved equal, M.I.P. thread inlet and F.I.P. outlet.

10.1.2 The Angle curb stop shall be Mueller Type H-14265 or approved equal.

10.1.3 Where terrain and coverage require Mueller angle meter valve 14265 or approved equal shall be used.

11. BLOW-OFF ASSEMBLIES

11.1 The Contractor shall furnish and install blow-off assemblies in the locations shown on the drawings. Each assembly shall consist of a blow-off PVC branch, gate valve, valve box, brass hose nipple, cap, chain, ~~galvanized~~ pipe and fittings, tapped plug and thrust blocking. Sizes shall be as shown in the detail drawings. Pipe, fittings and valves shall be as specified in the preceding paragraphs.

2. MANHOLES, CONT'D.

2.3 The bases shall consist of a manhole bottom and a wall which shall extend a minimum of six inches above the top of the highest inflowing sewer. The top of the base section shall be carefully formed to receive the tongue of the barrel section. There shall be a minimum distance of four inches between the invert of the lowest outflowing sewer and floor of the precast base to provide for the construction of a formed invert and bench wall within the man hole. All sections of precast manholes shall be cast with at least three (3) lifting devices. These lift devices shall be approved by the Engineer prior to casting.

2.4 The top of base walls, the ends of reinforced concrete risers and the bottom ends of precast tops shall be so formed that when risers and tops are assembled with the base, they will make a continuous manhole. Joints shall be of such design as will permit effective joining and placement without irregularities in the interior wall surface of the manhole.

2.5 Manholes shall have flexible inserts or sleeves for pipe connections and shall meet the requirement of ASTM C-923, "Resilient Connectors Between Reinforced Concrete Manhole Structures and Pipes". Flexible pipe to manhole seals shall also meet "Rubber Gasket Specifications ASTM C-443" and "Test Performance Requirements ASTM C-425" for Compression Joints. Installation of pipe to manhole flexible seal shall be made in accordance with the manufacturer's specifications. These connectors shall be approved by the Engineer prior to casting.

Manhole sections with exposed reinforcing steel, excessive honeycombs or having the pipe to manhole rubber gasket seal integrally poured into manhole sections at a non-plan position will be cause for those sections to be rejected.

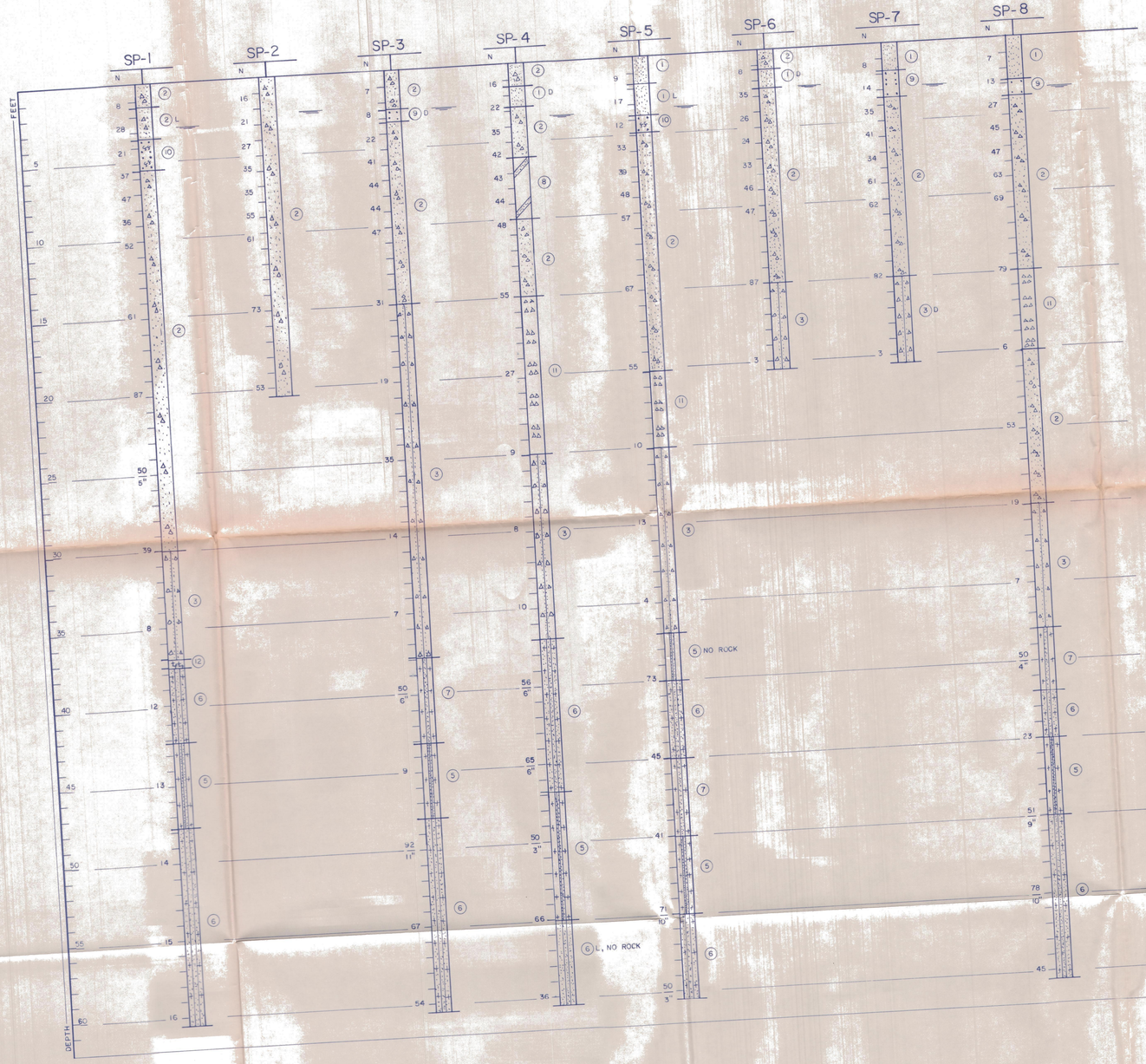
2.6 In constructing "Drop Manholes", the Contractor shall encase and support the riser and incoming pipe with concrete down to the monolithic base slab extension as shown on the Detail Sheet. Encasing the riser with brick will not be acceptable. Care shall be taken to have all pipes laid to correct lines and grade before concreting is undertaken. Drop manhole riser sections shall maintain the same inside diameter as the manhole base section to at least 6 inches above the top of the incoming upper drop pipe elevation to facilitate the form work for concrete placement. Drop assembly for manholes shall be constructed in accordance with construction drawings and shall be paid under the unit cost for drop assembly.

2.7 Invert channels of uniform cross-section and slope, either straight or with a continuous curve, shall be constructed between inlets and outlets of all manholes. Invert channels shall be smooth and accurately shaped in accordance with the plans.

2.8 Joints between manhole sections shall be sealed with pre-formed plastic joint sealer as shown in the "Construction Detail" drawings.

2.9 Manhole frame shall be 7 inches high and the cover shall have 2 blind pickholes and have the words "sanitary sewer" cast in, as manufactured by U.S. Foundry Corporation, Miami, Florida, U.S.F. No. ~~420-B~~, or approved equal. Castings shall be gray iron, free from cracks, holes, swells, and cold shuts. All manhole castings shall be made accurately to the pattern and to the dimensions shown on the "Construction Details". Covers shall have a continuous and even bearing on the frame. Covers shall fit in the frame without binding along the perimeter. All lids which "rock" and do not lie solid after construction is

240.6 ORS



SOIL LEGEND

1. GRAY FINE SAND
2. GRAY FINE SAND WITH TRACE TO SOME SHELL
3. GRAY SILTY FINE SAND WITH SHELL
4. GRAY SILTY FINE SAND WITH ROCK FRAGMENTS
5. GRAY ELASTIC SILT WITH ROCK FRAGMENTS
6. GRAY SILT WITH ROCK
7. GRAY SANDY SILT WITH ROCK
8. GRAY FINE SAND WITH TRACE OF CLAY
9. BROWN FINE SAND
10. BROWN FINE SAND WITH ROOTS
11. SHELL WITH MINIMUM FINE SAND
12. ROCK LAYER

N STANDARD PENETRATION RESISTANCE BLOWS PER FOOT

D DARK IN COLOR

L LIGHT IN COLOR

ROTARY WASHED

GROUNDWATER LEVEL ON NOVEMBER 3, 6-10, 1989

ENGINEERING CLASSIFICATION

COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	0 to 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	ABOVE 50

COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, TSF	BLOW COUNT "N"
VERY SOFT	BELOW .25	0 to 2
SOFT	.25 to .50	2 to 4
MEDIUM STIFF	.50 to 1.0	4 to 8
STIFF	1 to 2	8 to 15
VERY STIFF	2 to 4	15 to 30
HARD	ABOVE 4	ABOVE 30

NOTE: THE BORING LOGS AND RELATED INFORMATION REPRESENT OUR INTERPRETATION OF THE SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATION ONLY AND ON THE PARTICULAR DATE DRILLED.

Ardaman & Associates

Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

BORING LOCATIONS AND SOIL PROFILES FOR

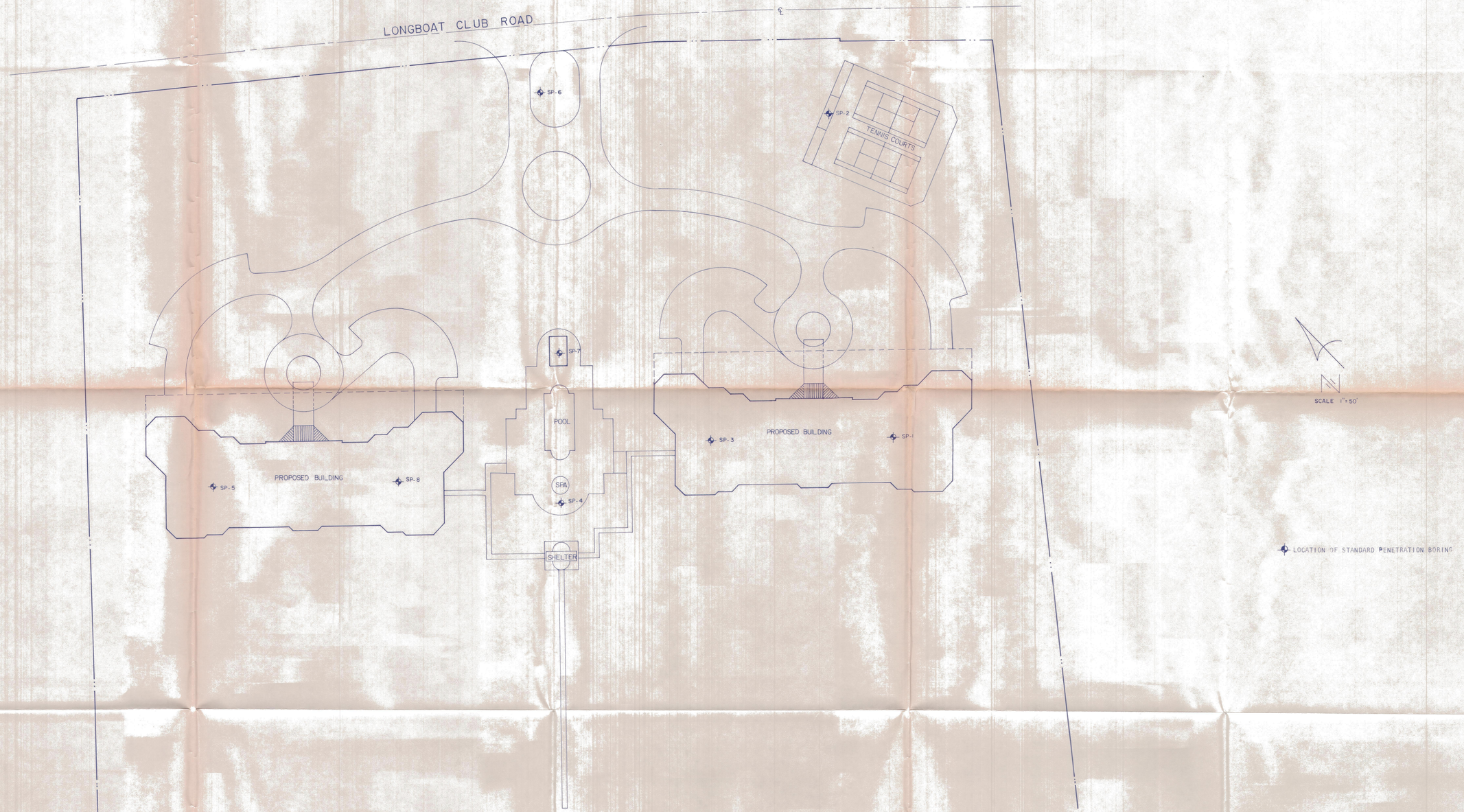
L'AMBIANCE

LONGBOAT CLUB ROAD

SARASOTA COUNTY, FLORIDA

DRAWN BY: RAC	CHECKED BY:	DATE: 11-[illegible]
FILE NO. 89-8137	APPROVED BY:	

FIGURE 2



SCALE 1"=50'

LOCATION OF STANDARD PENETRATION BORING

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

BORING LOCATIONS AND SOIL PROFILES FOR

L'AMBIANCE

LONGBOAT CLUB ROAD

SARASOTA COUNTY, FLORIDA

DRAWN BY: RAC	CHECKED BY:	DATE: 11-15-89
FILE NO. 89-8137	APPROVED BY:	

FIGURE 1

FOUNDATION

L'Ambiance II
Foundation

REVIEWED BY Ron Vaud
DATE 1-4-93
This Building permit is issued on the condition that the proposed construction complies with all Local, State, and Federal Codes applicable to the Town of Longboat Key regardless of what is shown or noted on the plans and specifications. fil
BP.10600 FOUNDATION-PILINGS

CERTIFICATION BY ARCHITECT AND STRUCTURAL ENGINEER ON COMPLETED CONSTRUCTION OF ALL BUILDINGS REQUIRED BEFORE ISSUANCE OF C.O.

● = INDICATES PILE CAP FOR EXTER. CONC. STAIRS. FOR DIMENSIONS COORD. W/ ARCH. DWG'S.

TYP SECT. FOR EXTER. STAIR

12"x12" CONC. COL. W/ 4-#6 VERT. & #3@12" TIES (TYP.)

COLUMN SYMBOLS
□ = COLUMN BELOW
○ = COLUMN THRU
Ω = COLUMN ABOVE

MATCH LINE

FOUNDATION PLAN SCALE: 1/8"=1'-0"

NORTH BLDG.

8/10/92

AUG 11 1992

Recorded Town of Longboat

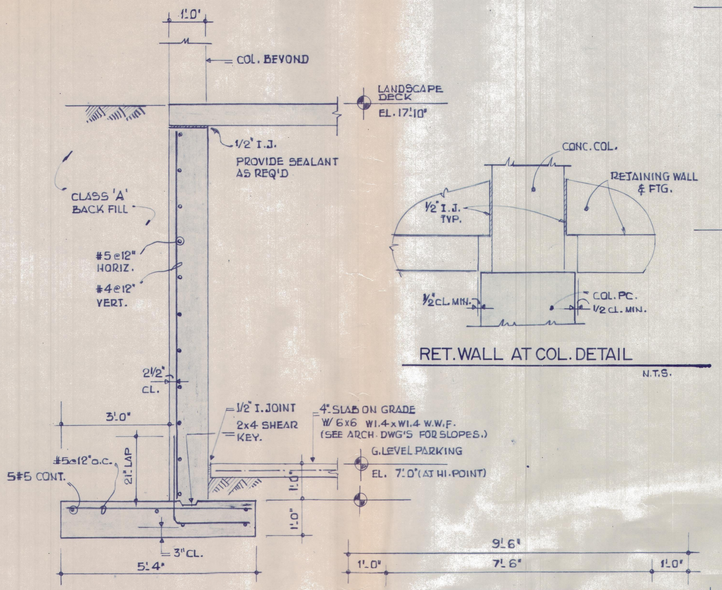
JENKINS & CHARLAND INCORPORATED Consulting Engineers
12381 Cleveland Avenue, Suite 204
FORT MYERS, FLORIDA 33907
(813) 939-1414

TO THE BEST OF MY KNOWLEDGE AND BELIEF THE DESIGN OF THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE FLORIDA BUILDING CODES.

THE ARCHITECTS

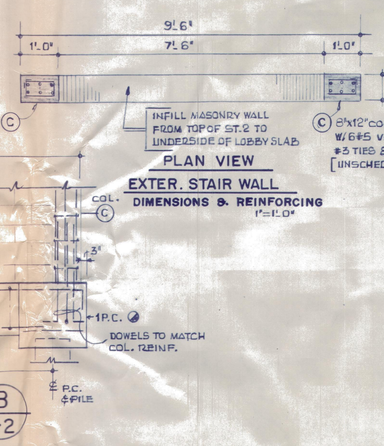
L'Ambiance AT LONGBOAT KEY CLUB

LAWRENCE GROUP
PALM BEACH, FLORIDA

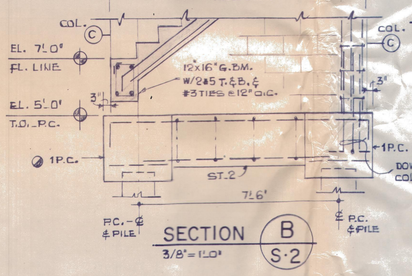


SECTION A / S-2
TYPICAL RETAINING WALL
1/2" = 1'-0"

RET. WALL AT COL. DETAIL
N.T.S.



PLAN VIEW
EXTER. STAIR WALL
DIMENSIONS & REINFORCING
1" = 1'-0"

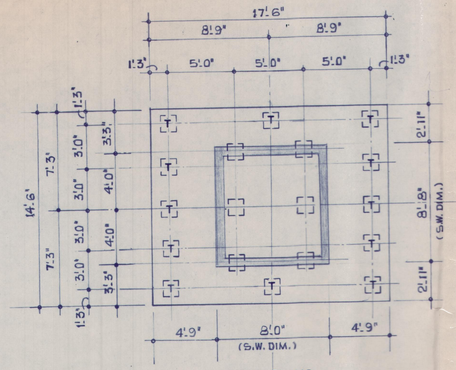


SECTION B / S-2
3/8" = 1'-0"

PART. FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

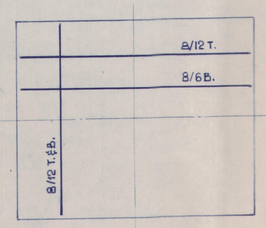

A S-2
122 123 127 128 131 132
121 124 126 129 130 133
120 120A 125 134
48 58 67 78 135
49 50 57 60 66 68A 77 136
47 55 59 69 76
46 54 61 70 75 137
45 53 62 65 71 74
44 51 52 63 64 72 73
2 P.C.
3 P.C.
4 P.C.
5 P.C.
6 P.C.
7 P.C.
9 P.C.
ST-1
ST-2
2P.C.
7P.C.
NOTE: 1½" MIN. CLEAR WALL FTG. FROM ST-1
SW NO. 1
SW NO. 2
SW NO. 3
SW NO. 4
SW DIM.
MATCH LINE
SEE S.1 FOR ADD. INFO.
EL.+2'-0"
1" OFFSET
16'-4"
13'-8"
24'-8"
5'-4"
30'-0"
23'-0"
5'-0"
17'-2"
4'-5"
4'-1"
17'-9"
26'-4¼"
22'-0¼"
10'-3 1/2"
3'-7"
3'-3"
17'-5"
8'-0"
13'-6"
10'-0"
12'-10"
4'-7"
7'-10"
3'-7"
4'-2½"
13'-0"
24'-9"
7'-1"
13'-2"
8'-6"
6'-8"
1'-5"
23'-5"
20'-1"
5'-0"
18'-5"
12'-0"
19'-11"
11'-8"
21'-10"
5'-3⅝"
7'-9"
20'-4"
21'-6"
12'-4"
23'-4"
38'-4"
81'-0"
315'-4"
30'-2"
29'-2"
28'-4"
26'-0"
25'-8"
21'-8"
19'-0"
16'-10"
15'-0"
12'-8"
11'-5"
13'-2"
17'-6"
16'-6"
1'-0"
6"
ST-1 2 P.C.
ST-1 2 P.C.
ST-1 2 P.C.

REV	DATE	DESCRIPTION



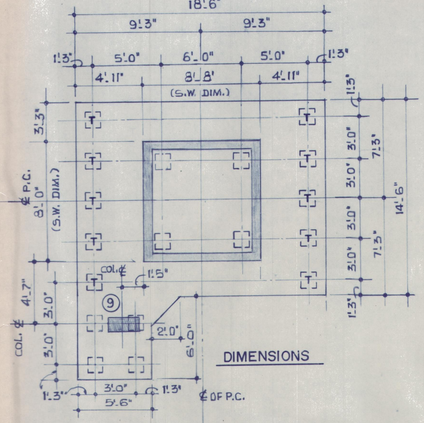
DIMENSIONS

℄ OF P.C.

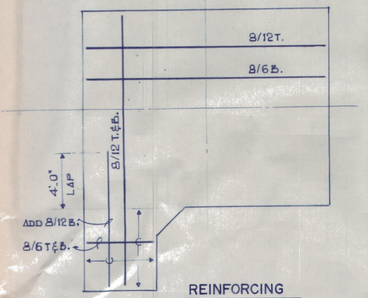


REINFORCING

SHEARWALL #1 CAP D = 4'-0"

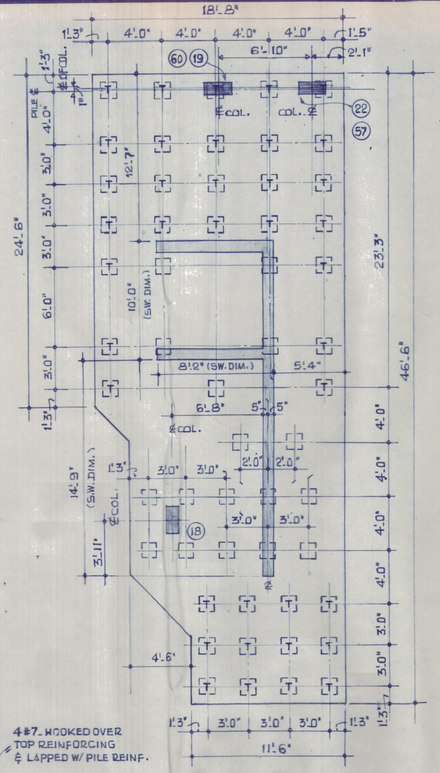


DIMENSIONS

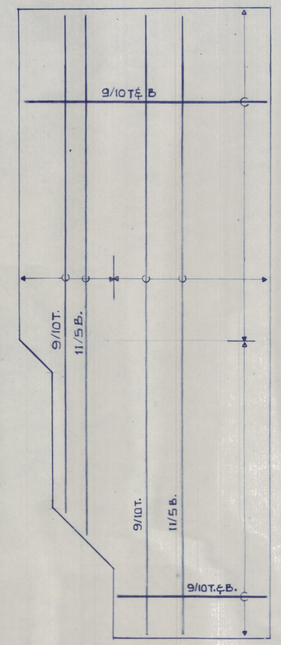


REINFORCING

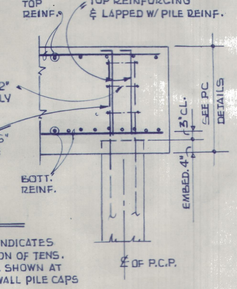
SHEARWALL #2 CAP D=4'-0"



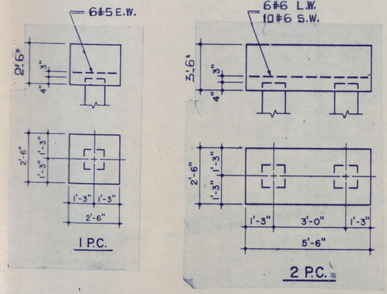
DIMENSION

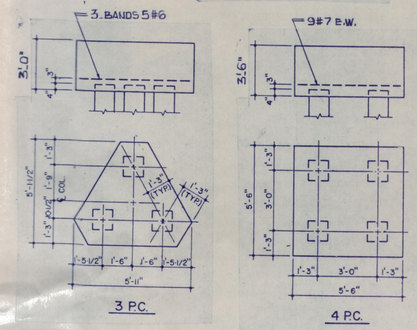


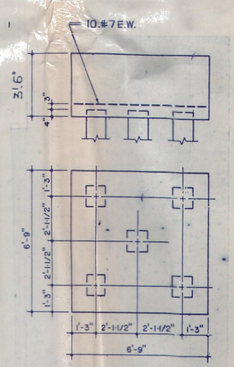
REINFORCING

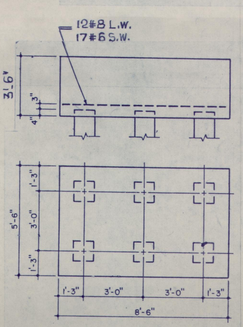


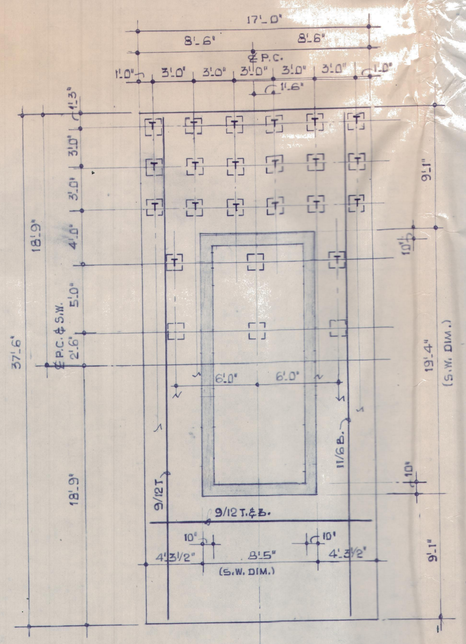
TENS. PILE DETAIL N.T.S.







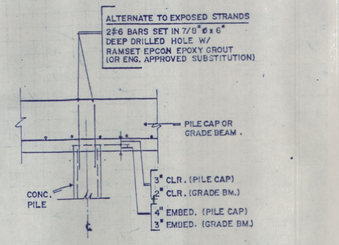




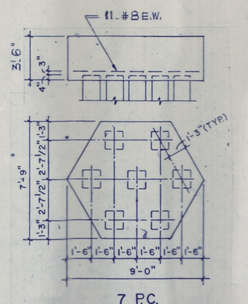
DIMENSIONS AND REINFORCING

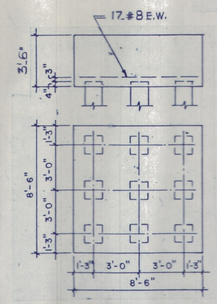
SHEARWALL #4 CAP D=6'-0"

SHEARWALL #3 CAP D=6'-0"



COMPRESSION PILE EMBEDMENT DETAIL N.T.S.





JENKINS & CHARLAND INCORPORATED
Consulting Engineers
1800 Second Street, Suite 795A
SARASOTA, FLORIDA 34236
(813) 952-1717

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.

FOUNDATION DETAILS (SW'S)

NORTH BLDG.

8/10/92

AUG 1 1 1992

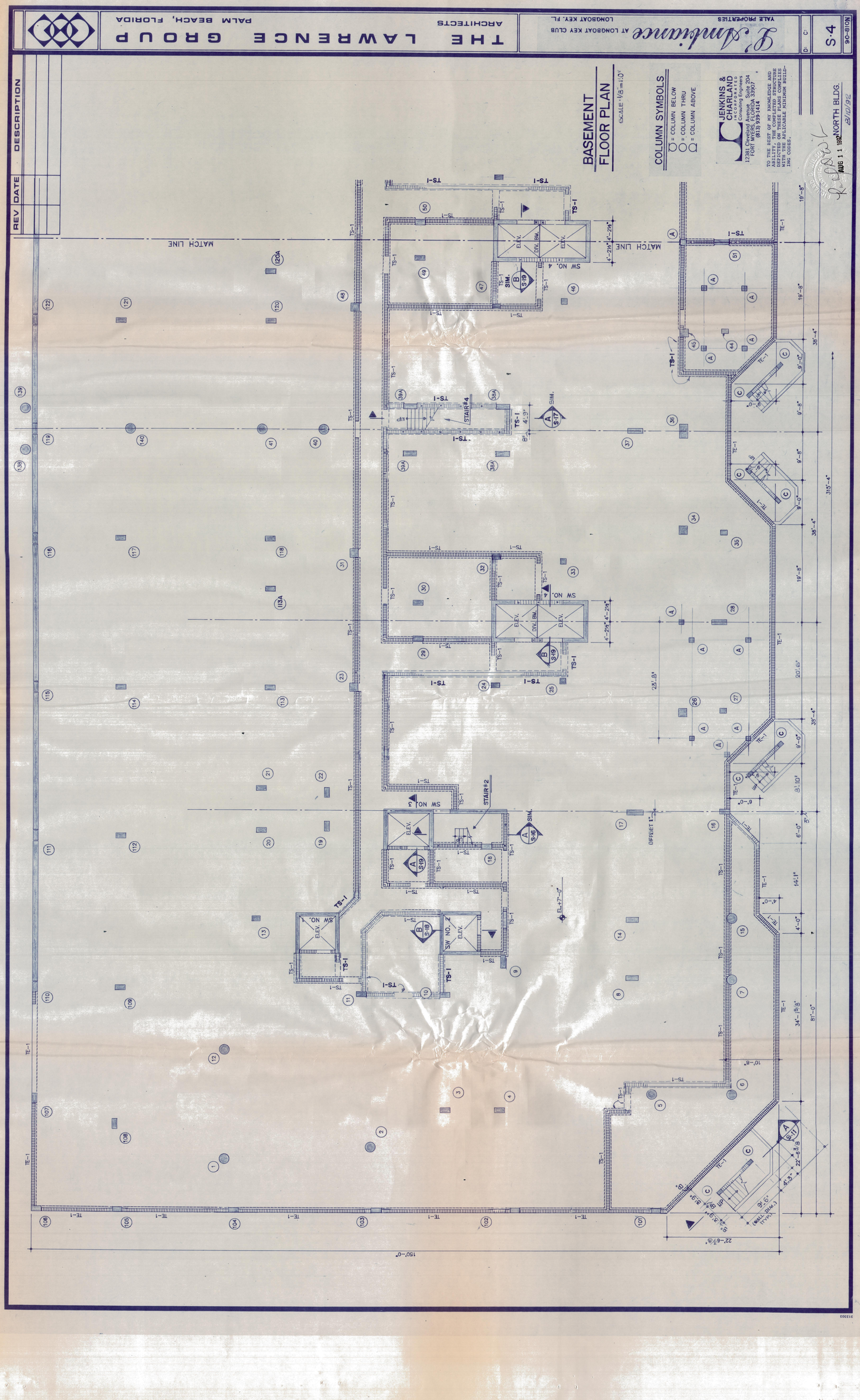
THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

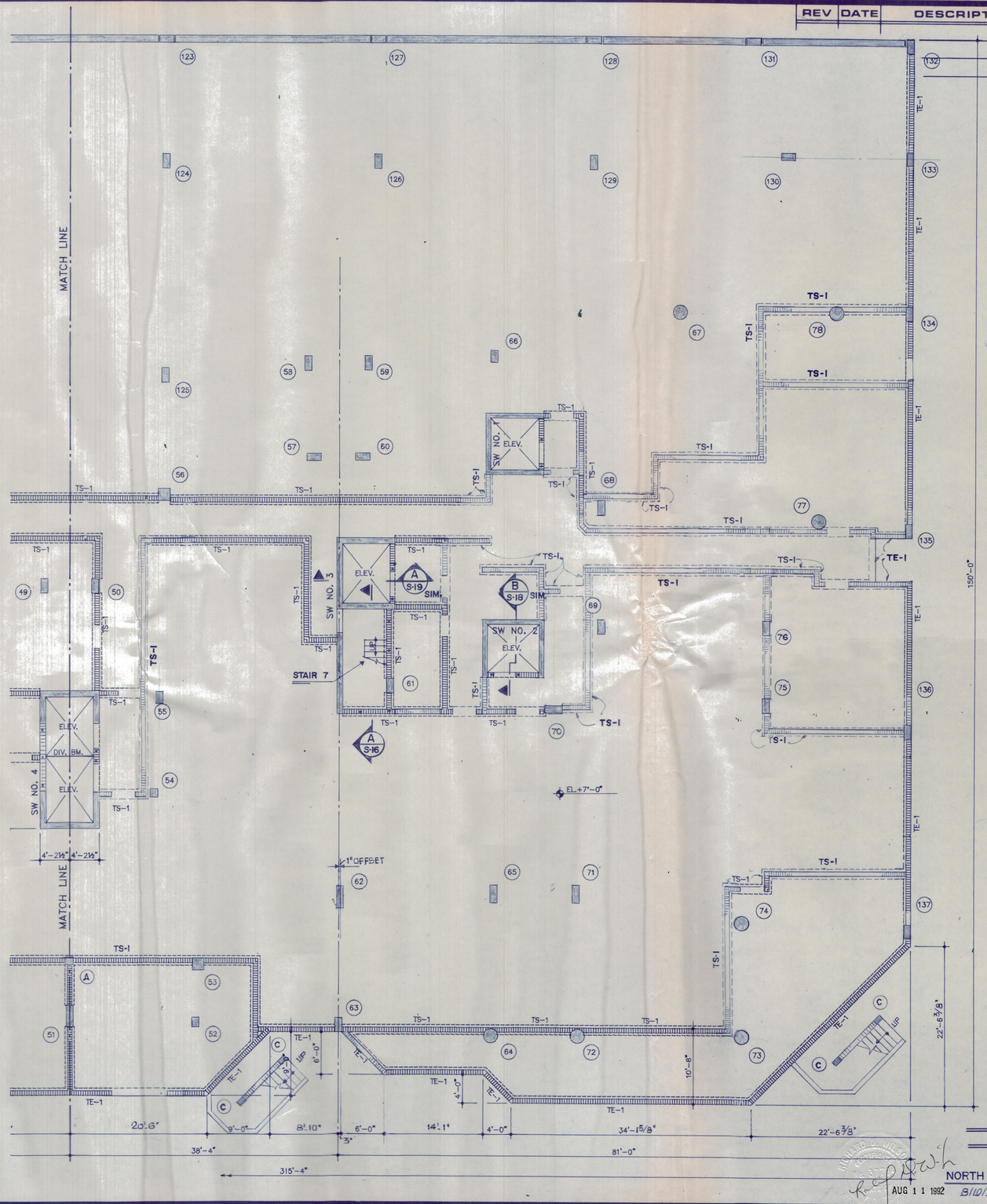
S-3

90-810N


THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA
Sandtime AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES
S-4
90-810N
REV DATE DESCRIPTION
BASEMENT FLOOR PLAN
SCALE: 1/8"=1'0"
COLUMN SYMBOLS
= COLUMN BELOW
= COLUMN THRU
= COLUMN ABOVE
JENKINS & CHARLAND INCORPORATED
Consulting Engineers
12261 Cleveland Avenue, Suite 204
FORT MYERS, FLORIDA 33907
(813) 939-1414
TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE AS DESIGNED HEREIN WILL COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES.
AUG 11 1992
NORTH BLDG.
8/10/92
MATCH LINE
MATCH LINE
SW NO. 1
SW NO. 2
SW NO. 3
SW NO. 4
STAIR #2
STAIR #4
TS-1
TE-1
OFFSET 1'-0"
EL 47'-0"
150'-0"

REV	DATE	DESCRIPTION

PART. BASEMENT FLOOR PLAN SCALE: 1/8"=1'-0"



PLAN NOTES

1. Floor shall be a minimum 4" concrete slab on grade with one layer of 6x6 W1.4 x W1.4 WWF @ 1/3 depth unless otherwise shown in plan.
2. Verify all dimensions with architectural drawings before commencing construction. For additional dimensional information, see architectural drawings and drawings S-1 and S-2.
3. See drawing S-20 for column schedule.
4. See drawing S-21 for shearwall schedule.
5. See drawing S-22 for beam schedule and structural notes.
6. See architectural drawings for slopes and drain locations in floor slabs.
7. Slab on grade control joints shall be tooled or sawcut. See detail. The joint pattern shall be approximately square and limited to an area not to exceed 400 SF.
8. All masonry walls are breakaway at this level except at stairs and elevators.
9. TE-1 is a thickened edge 12"w x 16"d with 2#5 cont. bottom.
10. TS-1 is a thickened slab 16"w x 8"d with 2#5 cont. bottom.

= INDICATES INFILL - NON LOAD BEARING WALLS WITH 1.#5 IN GROUT FILLED CELL. AT STAIRS AND ELEVATORS ONLY - AS SHOWN.

COLUMN SYMBOLS

= COLUMN BELOW
= COLUMN THRU
= COLUMN ABOVE

JENKINS & CHARLAND INCORPORATED
Consulting Engineers
12381 Cleveland Avenue Suite 204
FORT MYERS, FLORIDA 33907
(813) 939-1414

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

L'Ambiance
AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

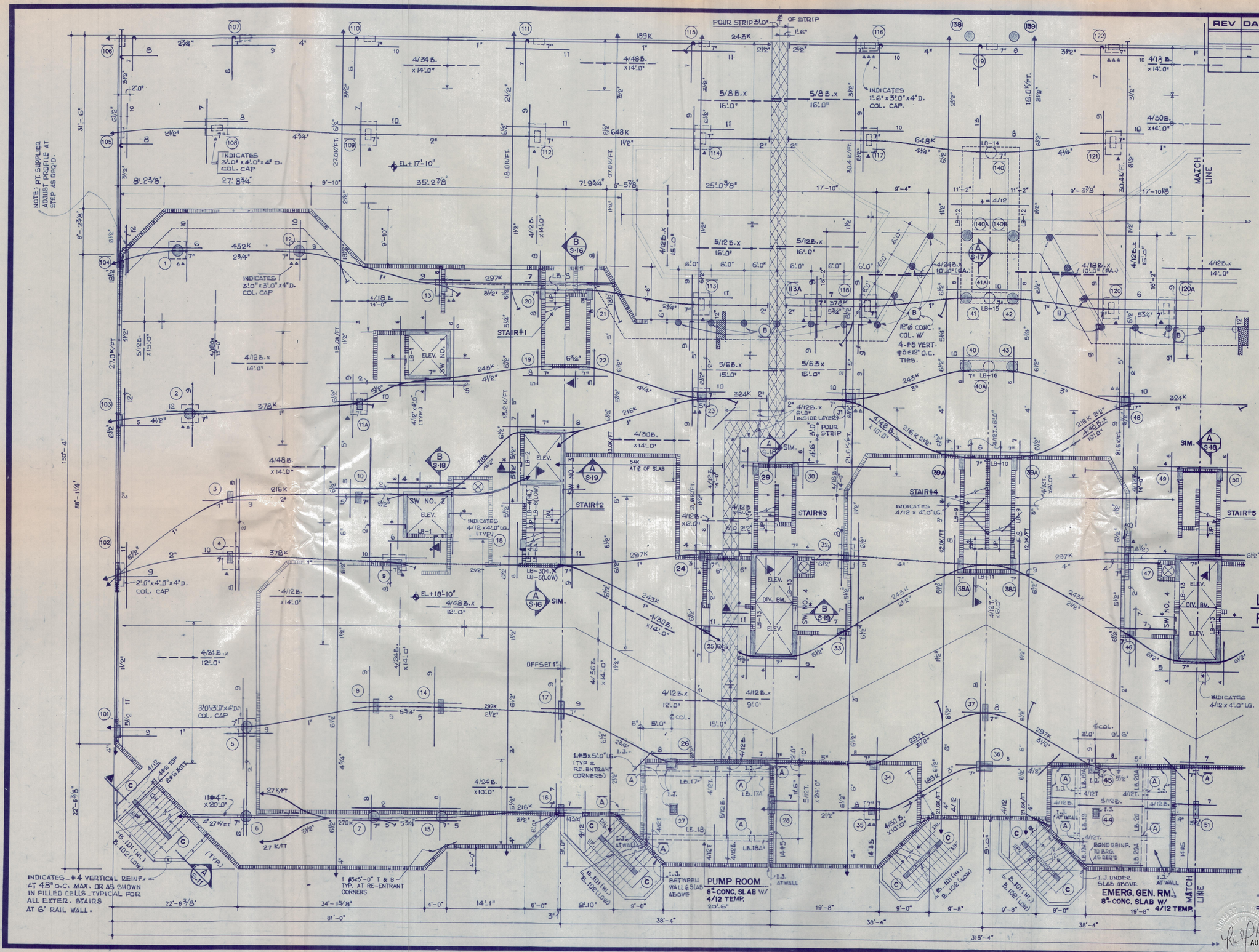
S-5

90-BION

NORTH BLDG.

AUG 1 1 1992 B110192

313203



REV	DATE	DESCRIPTION

LOBBY FRAMING PLAN

SCALE: 1/8" = 1'-0"

COLUMN SYMBOLS

- ○ = COLUMN BELOW
- ○ = COLUMN THRU
- ○ = COLUMN ABOVE

JENKINS & CHARLAND INCORPORATED
Consulting Engineers
12381 Cleveland Avenue Suite 204
FORT MYERS, FLORIDA 33907
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TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.

NORTH BLDG.

AUG 1 1 1992 8/10/92

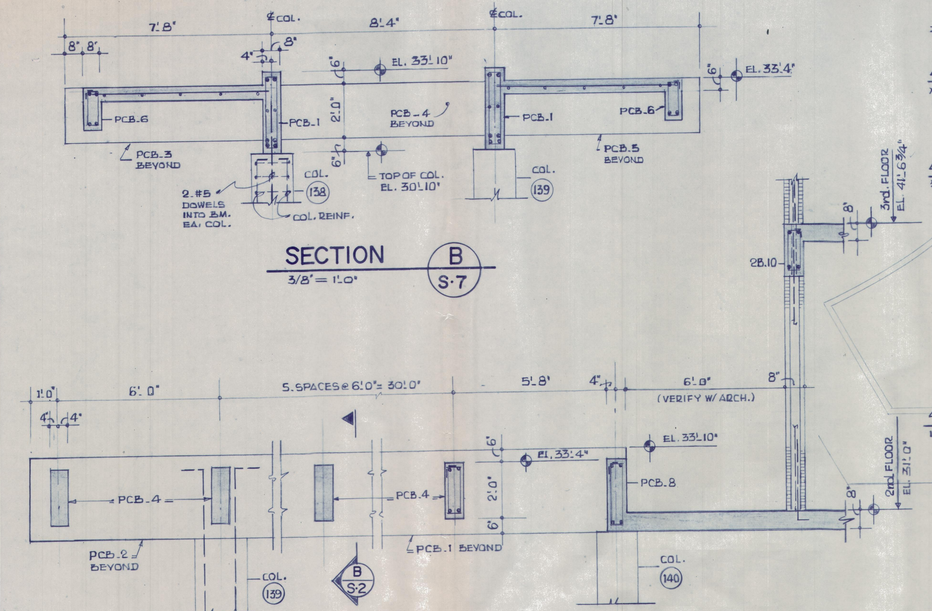
THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-6

90-810N



PART. LOBBY FRAMING PLAN SCALE: 1/8"=1'-0"

PLAN NOTES

1. Verify all dimensions and elevations with architectural drawings before commencing construction. For additional dimensional information, see architectural drawings and drawings S-1, S-2.
2. Floor slab shall be an 8" partially post tensioned flat plate. See S-22 for additional information.
3. **Post-tension supplier to provide signed and sealed shop drawings and calculations for approval prior to installation.**
4. Provide 1#5 top and bottom continuous at edges of slab all around.
5. Bars shown on plans are #4 bars unless otherwise noted.
6. Bars shown as solid lines are top bars and bars shown as dashed lines are bottom bars unless otherwise noted.
7. All post tensioned profiles are measured from the bottom of the slab to the center of the post tensioned cable.
8. Anchorage at slab edge shall be at t/2, where t = slab edge thickness.
9. Forces shown are final effective prestress forces.
10. ▥▥▥ indicates infill, non-load bearing walls with 1#7 in grout filled cell. See plan for location.
11. See drawing S-20 for column schedule.
12. See drawing S-21 for shearwall schedule.
13. See drawing S-22 for beam schedule and structural notes.
14. For size and location of openings, see mechanical and architectural drawings.

COLUMN SYMBOLS

◯ = COLUMN BELOW
◯ = COLUMN THRU
◯ = COLUMN ABOVE

JENKINS & CHARLAND INCORPORATED
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TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.

REV	DATE	DESCRIPTION

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-7

90-810N

NORTH BLDG.
8/10/92

AUG 11 1992

REV	DATE	DESCRIPTION

2nd FLOOR FRAMING PLAN

SCALE: 1/8"=1'-0"

NOTE: RT. SUPPLIER TO VERIFY CABLE FORCES & DEFLECTIONS AT POUR STRIP. SUBMIT SIGNED & SEALED CALCS AS REQUIRED BY STRUCT. NOTES.

COLUMN BELOW TO BE POURED AFTER LOBBY LEVEL POUR STRIP IS POURED AND STRIPPED

NOTE: POUR 1B_13 W/S.W.#4

LOCATION OF 3/4" DROP FOR SLIDING DOORS TO BALCONY AND BALCONY DIMENSIONS REVISED

COLUMN SYMBOLS

= COLUMN BELOW
= COLUMN THRU
= COLUMN ABOVE

JENKINS & CHARLAND INCORPORATED
Consulting Engineers
12381 Cleveland Avenue Suite 204
FORT MYERS, FLORIDA 33907
(813) 939-1414

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APLICABLE MINIMUM BUILDING CODES.

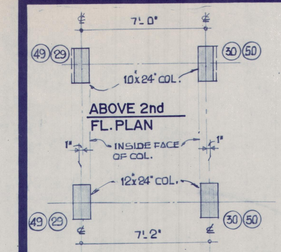
RICHARD D. WILSON STRUCTURAL ENGINEER
8/10/92
AUG 11 1992

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

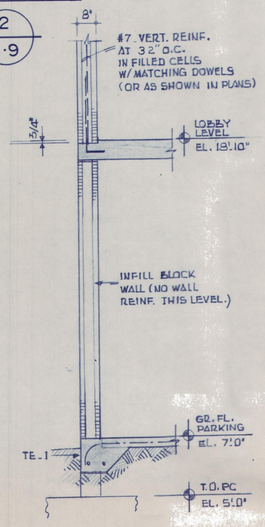
S-8
90-810N

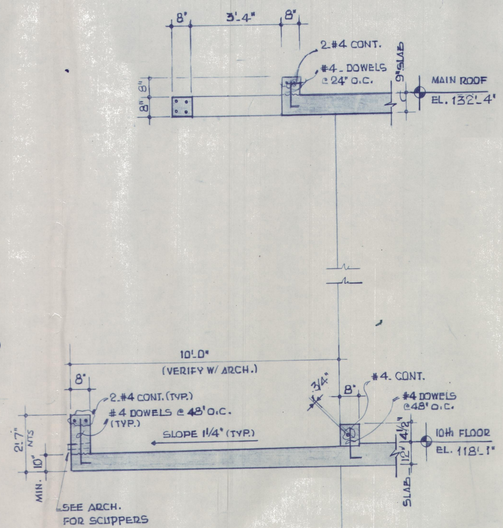
REV	DATE	DESCRIPTION



GR. LEVEL & LOBBY PLAN

DETAIL 2 / S-9 N.T.S.

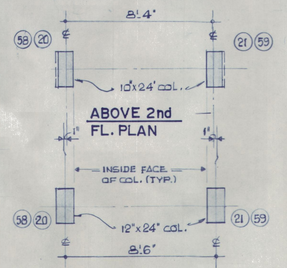




TYPICAL WALL SECTION 3/8"=1'-0"

PLAN NOTES

1. Verify all dimensions and elevations with architectural drawings before commencing construction. For additional dimensional information, see architectural drawings and drawings S-1, S-2.
2. Floor slab shall be an 8" partially post tensioned flat plate. See S-22 for additional information.
3. Post-tension supplier to provide signed and sealed shop drawings and calculations for approval prior to installation.
4. Provide 1#5 top and bottom continuous at edges of slab all around.
5. Bars shown on plans are #4 bars unless otherwise noted.
6. Bars shown as solid lines are top bars and bars shown as dashed lines are bottom bars unless otherwise noted.
7. All post tensioned profiles are measured from the bottom of the slab to the center of the post tensioned cable.
8. Anchorage at slab edge shall be at t/2, where t = slab edge thickness.
9. Forces shown are final effective prestress forces.
10. ▨ indicates infill, non-load bearing walls with 1#5 in grout filled cell. See plan for location.
11. See drawing S-20 for column schedule.
12. See drawing S-21 for shearwall schedule.
13. See drawing S-22 for beam schedule and structural notes.
14. For size and location of openings, see mechanical and architectural drawings.

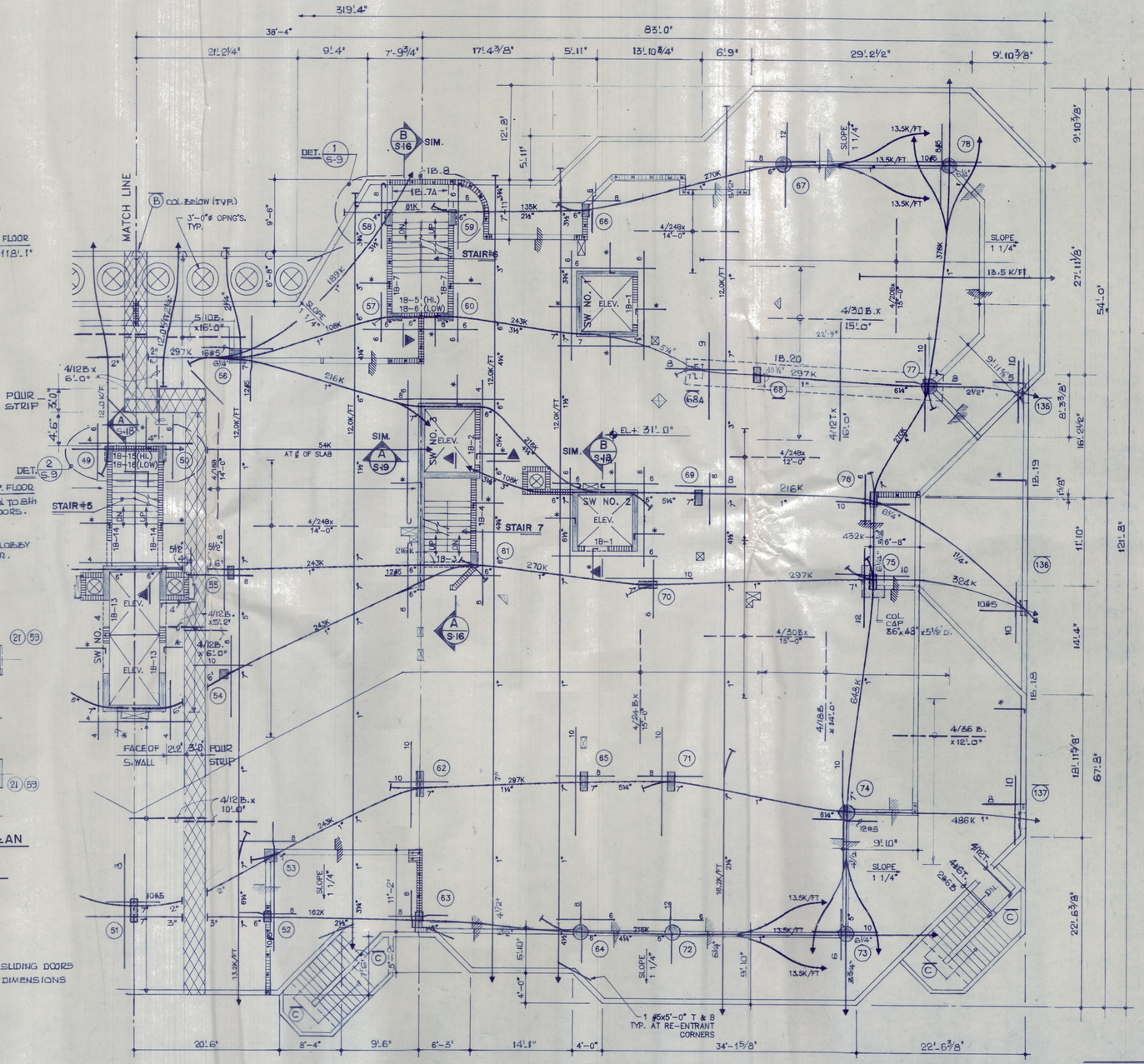


GR. LEVEL & LOBBY PLAN

DETAIL 1 / S-9 N.T.S.

NOTE:

LOCATION OF 3/4" DROP FOR SLIDING DOORS TO BALCONY AND BALCONY DIMENSIONS REVISED.



PART. 2nd FLOOR FRAMING PLAN SCALE: 1/8"=1'-0"

COLUMN SYMBOLS

○ = COLUMN BELOW
◎ = COLUMN THRU
◯ = COLUMN ABOVE

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.

JENKINS & CHARLAND INCORPORATED
Consulting Engineers
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(813) 939-1414

8/10/92

AUG 11 1992

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

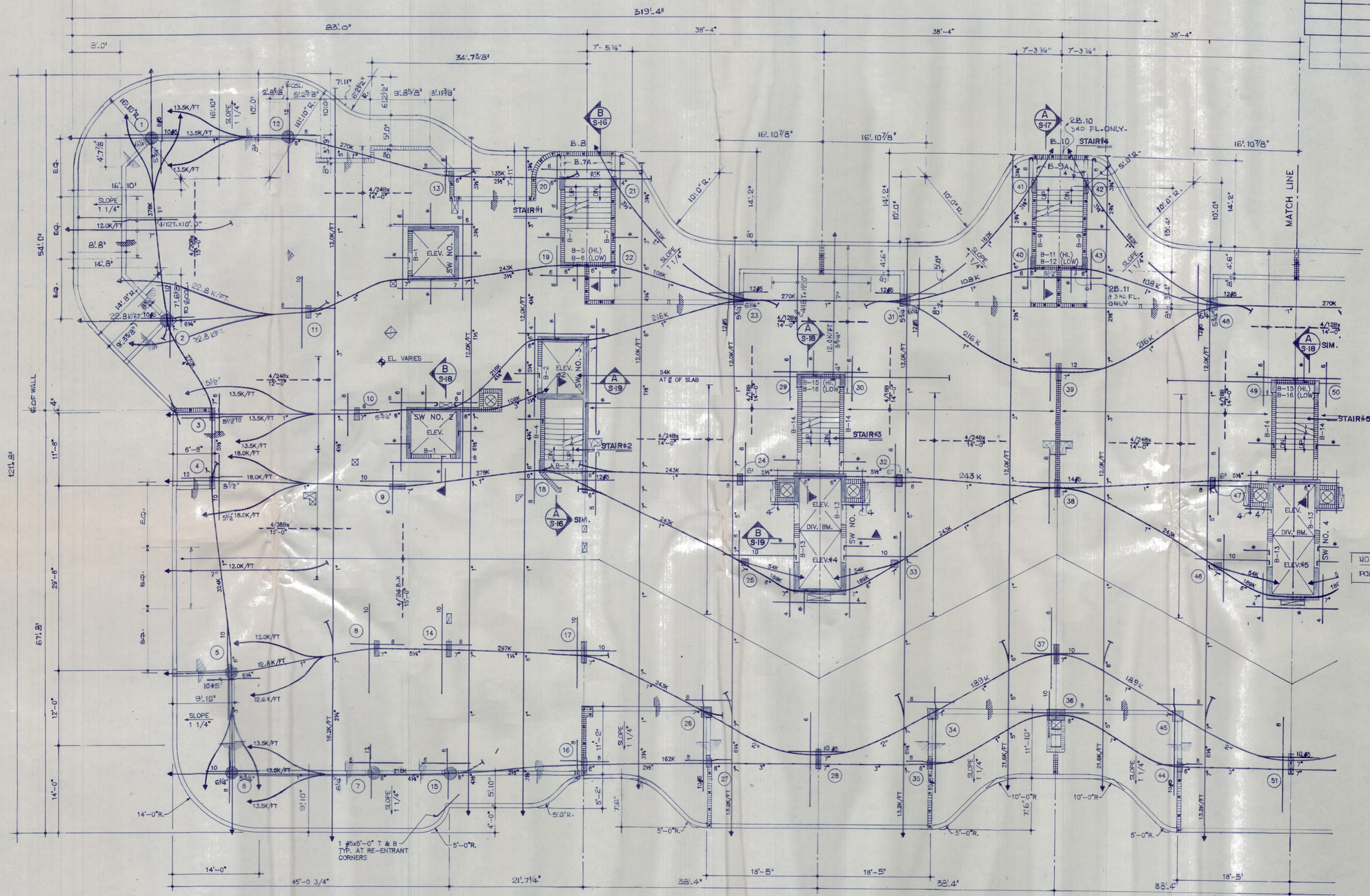
L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-9

90-810N

REV	DATE	DESCRIPTION



NOTE:
POUR B.13 W/S.W. #4

NOTE:

- FILLED CELL REINF. ADDED
- PORTIONS OF MASONRY WALL REMOVED NEAR ROUND COLUMNS
- VERIFY ALL RADIUS OF SLAB EDGE WITH ARCHIT. DWG'S
- LOCATION OF 3/4" DROP FOR SLIDING DOORS TO BALCONY AND BALCONY DIMENSIONS REVISED

TYPICAL FLOOR FRAMING PLAN

SCALE: 1/8"=1'-0"

COLUMN SYMBOLS

- INDICATES COLUMN BELOW
- INDICATES COLUMN THRU
- INDICATES COLUMN ABOVE

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES

JENKINS & CHARLAND INCORPORATED
Consulting Engineers
1800 Second Street
Suite 795A
Sarasota, FL 34236
(813) 952-1717
FILE No. 90-810

AUG 11 1992 8/10/92

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

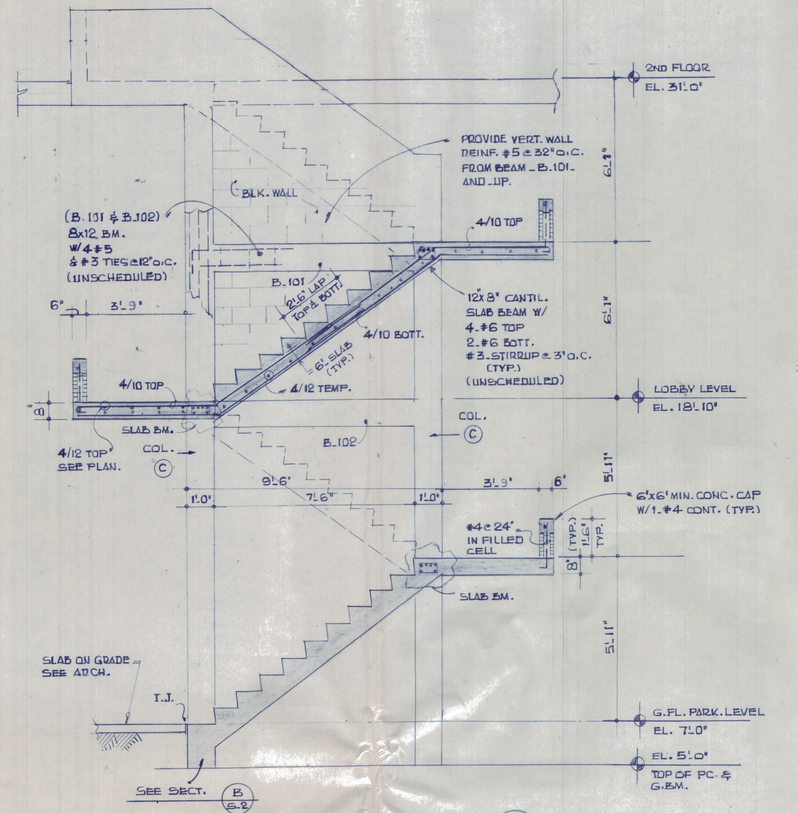
L'Ambiance AT LONGBOAT KEY CLUB
YALE PROPERTIES
LONGBOAT KEY, FL.

D: C:

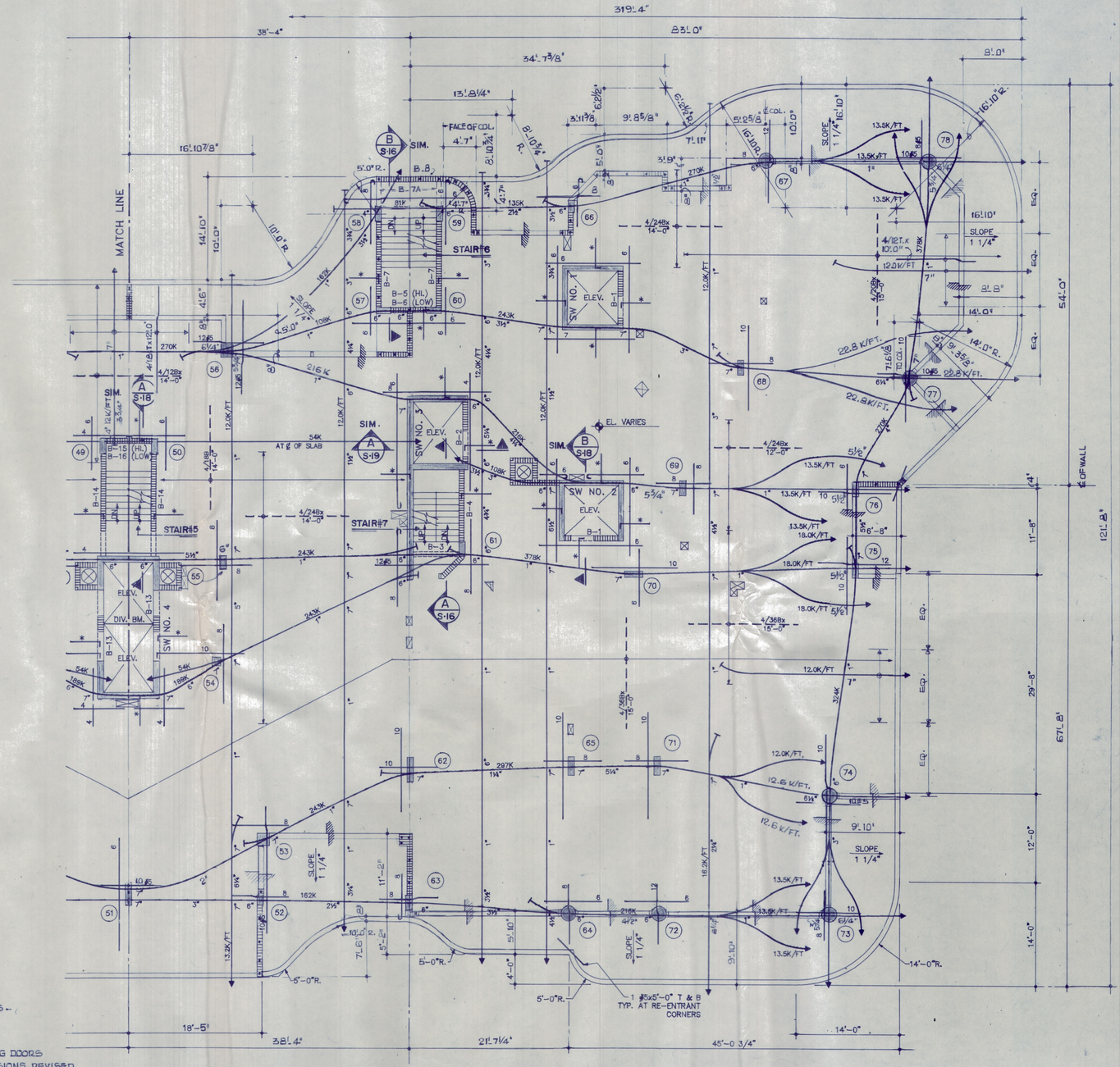
S-10

90-810N

REV	DATE	DESCRIPTION



SECTION (TYP. FOR EXTER. STAIRS) A S-11 3/8" = 1'-0"



NOTE:
- FILLED CELL REINF. ADDED.
- PORTIONS OF MASONRY WALL REMOVED NEAR ROUND COLUMNS.
- VERIFY ALL RADIUS OF SLAB EDGE WITH ARCHIT. DWG'S.
- LOCATION OF 3/4" DROP FOR SLIDING DOORS TO BALCONY AND BALCONY DIMENSIONS REVISED.

PLAN NOTES

1. Verify all dimensions and elevations with architectural drawings before commencing construction. For additional dimensional information, see architectural drawings and drawings S-1, S-2.
2. Floor slab shall be an 8" partially post tensioned flat plate. See S-22 for additional information.
3. Post-tension supplier to provide signed and sealed shop drawings and calculations for approval prior to installation.
4. Provide 1#5 top and bottom continuous at edges of slab all around.
5. Bars shown on plans are #4 bars unless otherwise noted.
6. Bars shown as solid lines are top bars and bars shown as dashed lines are bottom bars unless otherwise noted.
7. All post tensioned profiles are measured from the bottom of the slab to the center of the post tensioned cable.
8. Anchorage at slab edge shall be at t/2, where t = slab edge thickness.
9. Forces shown are final effective prestress forces.
10. ▥ indicates infill, non-load bearing walls with 1#5 in grout filled cell. See plan for location.
11. See drawing S-20 for column schedule.
12. See drawing S-21 for shearwall schedule.
13. See drawing S-22 for beam schedule and structural notes.
14. For size and location of openings, see mechanical and architectural drawings.
15. ▥ INDICATES INFILL. NON LOAD BEARING WALLS WITH 1#6 IN GROUT FILLED CELL. AT 8TH FLOOR ONLY. SEE PLANS FOR LOCATION. $f'm = 2500$ psi.

PART. TYP. FLOOR FRAMING PLAN SCALE: 1/8" = 1'-0"

COLUMN SYMBOLS
- ◯ — INDICATES COLUMN BELOW
- ◯ — INDICATES COLUMN THRU
- ◯ — INDICATES COLUMN ABOVE

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JENKINS & CHARLAND INCORPORATED
Consulting Engineers
1800 Second Street
Suite 795A
Sarasota, FL 34236
(813) 952-1717
FILE No. 90-810

STATE OF FLORIDA — REGISTERED — RICHARD A. JENKINS — No. 0017383 — STATE OF FLORIDA

AUG 11 1992 8/10/92

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

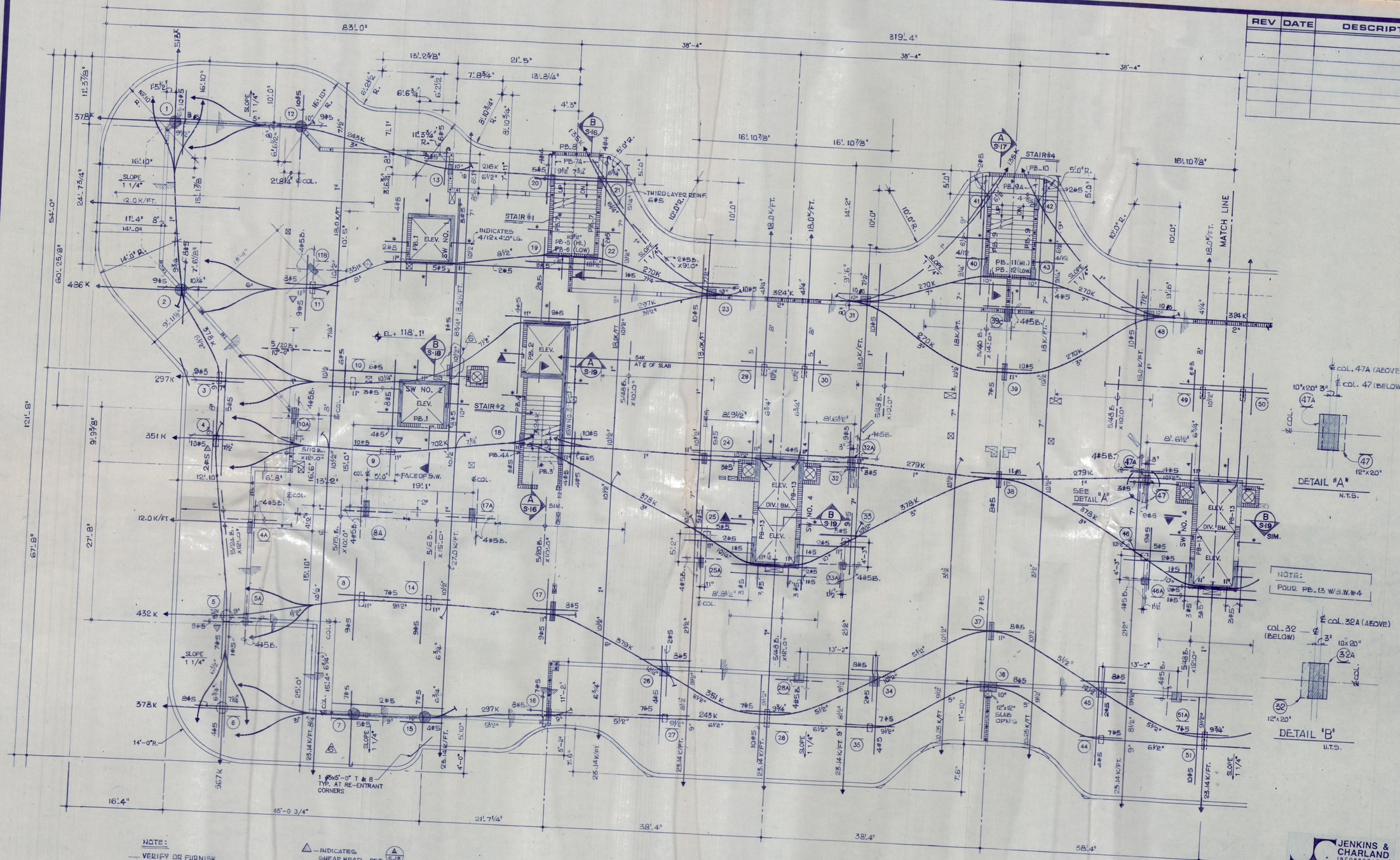
L'Ambiance AT LONGBOAT KEY CLUB
YALE PROPERTIES
LONGBOAT KEY, FLA.

D: C:

S-11

90-810N

313303



NOTE:

— VERIFY OR FURNISH ALL DIMENSIONS SHOWN THUS TO LOCATE COLUMNS THIS FLOOR.

— VERIFY ALL RADIUS OF SLAB EDGE WITH ARCHIT. DWG'S.

— LOCATION OF 3/4" DROP FOR SLIDING DOORS TO BALCONY AND BALCONY DIMENSIONS REVISED.

△ – INDICATES SHEAR HEAD – DET. A/S-13

▽ – INDICATES SHEAR HEAD – DET. B/S-13

PENTHOUSE FRAMING PLAN

SCALE: 1/8" = 1'-0"

COLUMN SYMBOLS

○ = COLUMN BELOW

○ = COLUMN THRU

○ = COLUMN ABOVE

REV	DATE	DESCRIPTION

JENKINS & CHARLAND INCORPORATED
Consulting Engineers
12381 Cleveland Avenue Suite 204
FORT MYERS, FLORIDA 33907
(813) 939-1414

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.

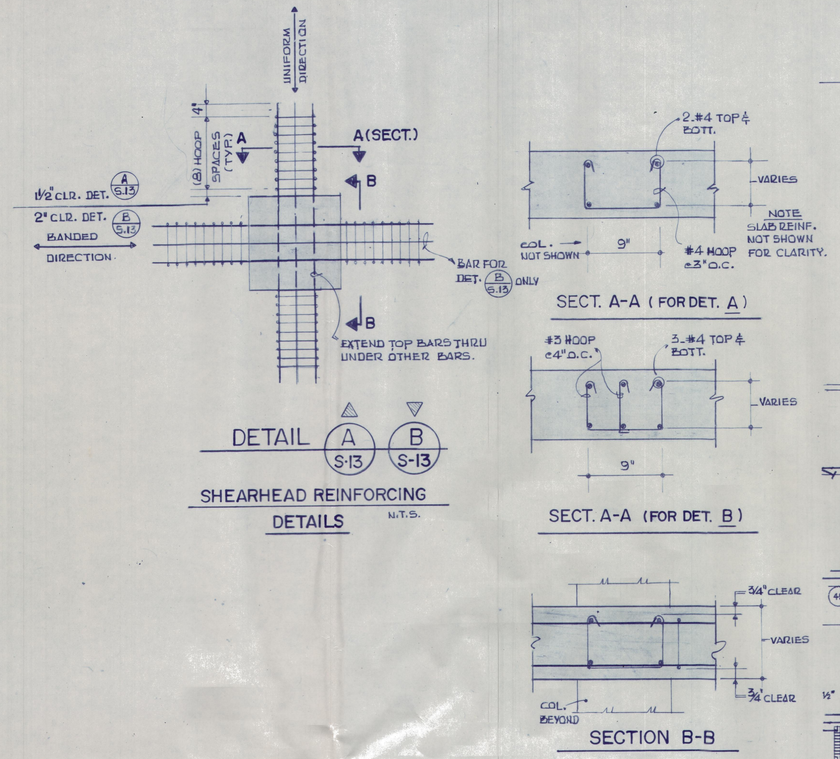
THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

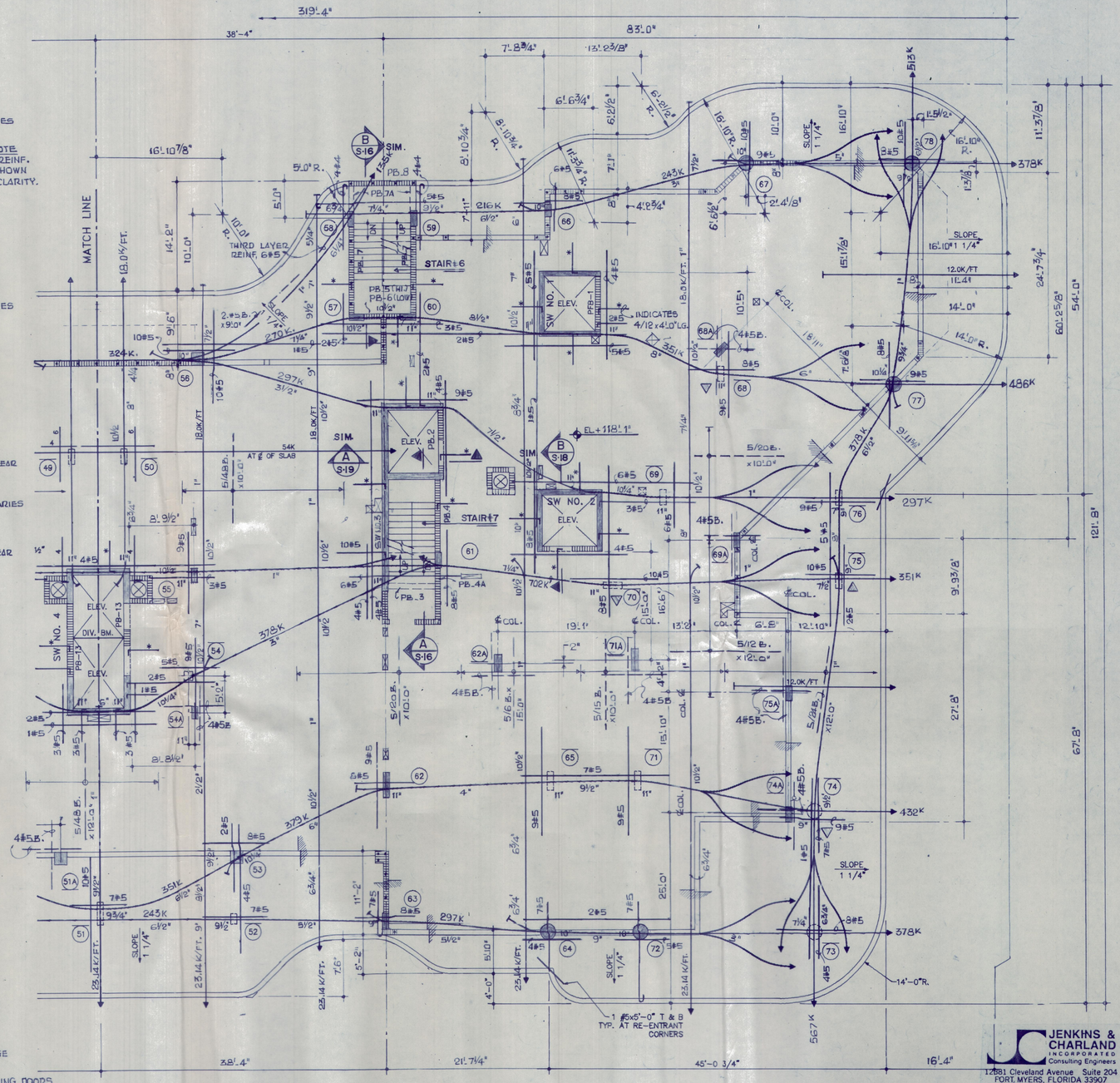
L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-12

REV	DATE	DESCRIPTION





PLAN NOTES

1. Verify all dimensions and elevations with architectural drawings before commencing construction. For additional dimensional information, see architectural drawings and drawings S-1, S-2.
2. Floor slab shall be an 12" partially post tensioned flat plate. See S-22 for additional information.
3. Post-tension supplier to provide signed and sealed shop drawings and calculations for approval prior to installation.
4. Provide 1#5 top and bottom continuous at edges of slab all around.
5. Bars shown on plans are #4 bars unless otherwise noted.
6. Bars shown as solid lines are top bars and bars shown as dashed lines are bottom bars unless otherwise noted.
7. All post tensioned profiles are measured from the bottom of the slab to the center of the post tensioned cable.
8. Anchorage at slab edge shall be at t/2, where t = slab edge thickness.
9. Forces shown are final effective prestress forces.
10. ▥▥▥ indicates infill, non-load bearing walls with 1#7 in grout filled cell. See plan for location. $f'_m = 2500$ psi.
11. See drawing S-20 for column schedule.
12. See drawing S-21 for shearwall schedule.
13. See drawing S-22 for beam schedule and structural notes.
14. For size and location of openings, see mechanical and architectural drawings.

NOTE:
— VERIFY OF FURNISH ALL DIMENSIONS SHOWN THUS TO LOCATE COLUMNS THIS FLOOR.
— VERIFY ALL RADIUS OF SLAB EDGE WITH ARCHIT. DWG'S.
— LOCATION OF 3/4" DROP FOR SLIDING DOORS TO BALCONY AND BALCONY DIMENSIONS REVISED.

△ = INDICATES SHEARHEAD DET. A S-13

▽ = INDICATES SHEARHEAD DET. B S-13

PART. PENTHOUSE FRAMING PLAN

SCALE: 1/8"=1'-0"

COLUMN SYMBOLS
- ⬡ = COLUMN BELOW
- ○ = COLUMN THRU
- ⬡ = COLUMN ABOVE

JENKINS & CHARLAND
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Consulting Engineers
12881 Cleveland Avenue Suite 204
FORT MYERS, FLORIDA 33907
(813) 939-1414

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AUG 11 1992 8/10/92

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

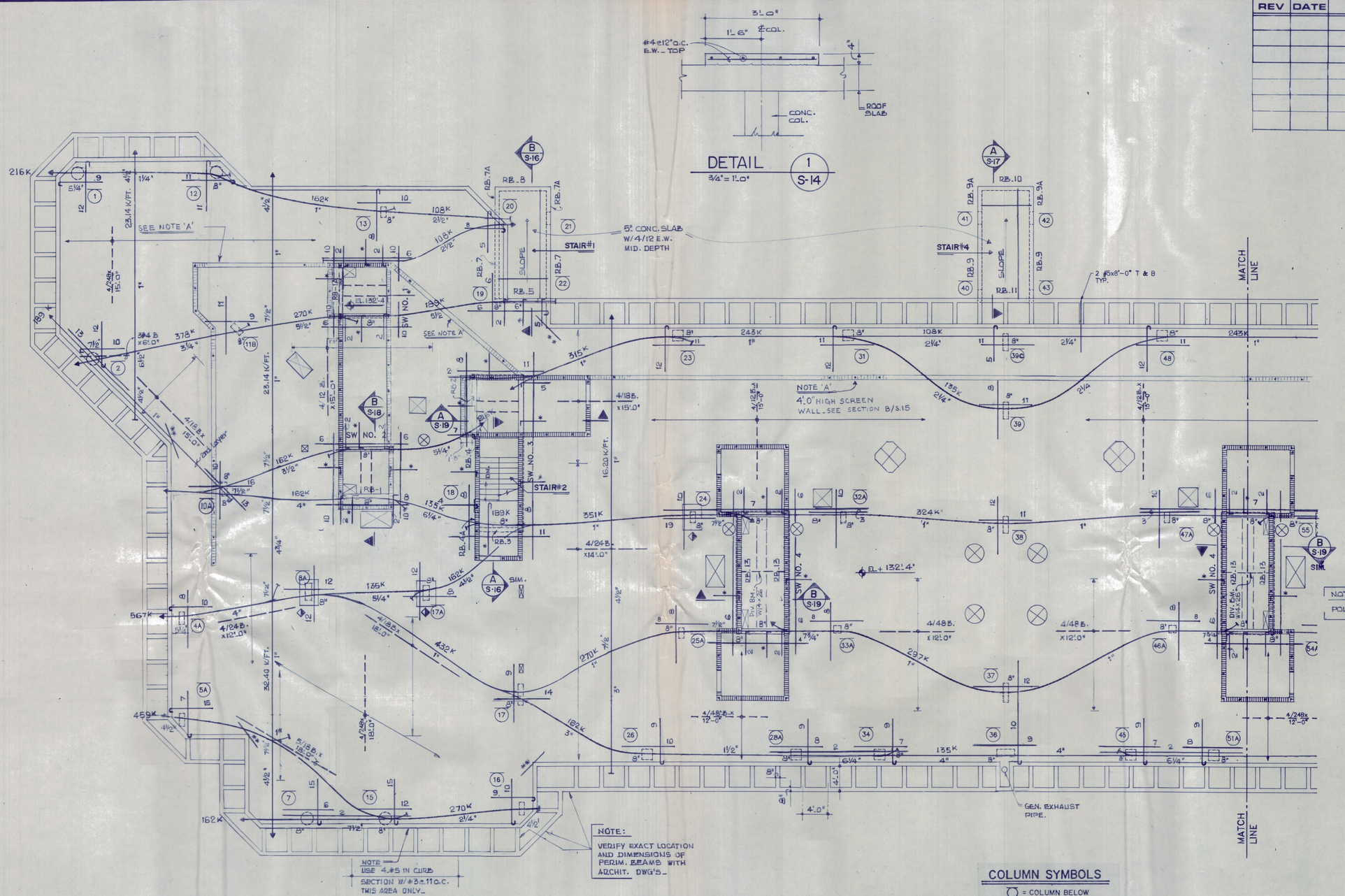
L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-13

90-810N

REV	DATE	DESCRIPTION



ROOF FRAMING PLAN SCALE: 1/8" = 1'-0"

- * — INDICATES 4/12 T.
- ** — INDICATES 1-#5 T.&B. x 4'-6" LG.
- ◇ — INDICATES 36"x48"x 4" D. COL. CAPITAL SEE DET. 1/S-14 FOR COL'S (8A), (17A) & (24)

COLUMN SYMBOLS

- ○ = COLUMN BELOW
- ○ = COLUMN THRU
- ○ = COLUMN ABOVE

JENKINS & CHARLAND INCORPORATED Consulting Engineers
12381 Cleveland Avenue Suite 204
FORT MYERS, FLORIDA 33907
(813) 939-1414

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8/10/92
AUG 1 1 1992

LAWRENCE GROUP
PALM BEACH, FLORIDA

THE ARCHITECTS

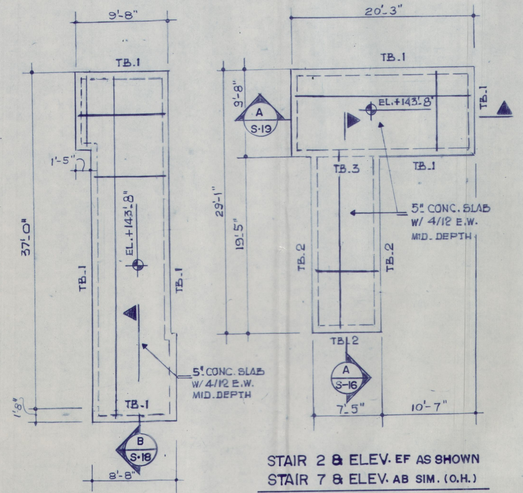
L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-14

90-810N

REV	DATE	DESCRIPTION

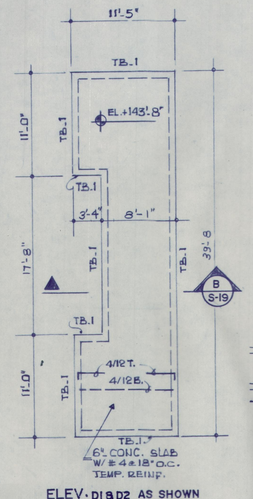


ELEV. E & F AS SHOWN
ELEV. A & B SIM. (O.H.)

SCALE: 1/8" = 1'-0"

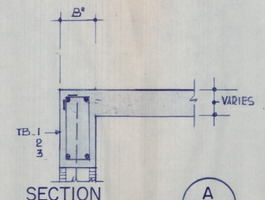
STAIR 2 & ELEV. EF AS SHOWN
STAIR 7 & ELEV. AB SIM. (O.H.)

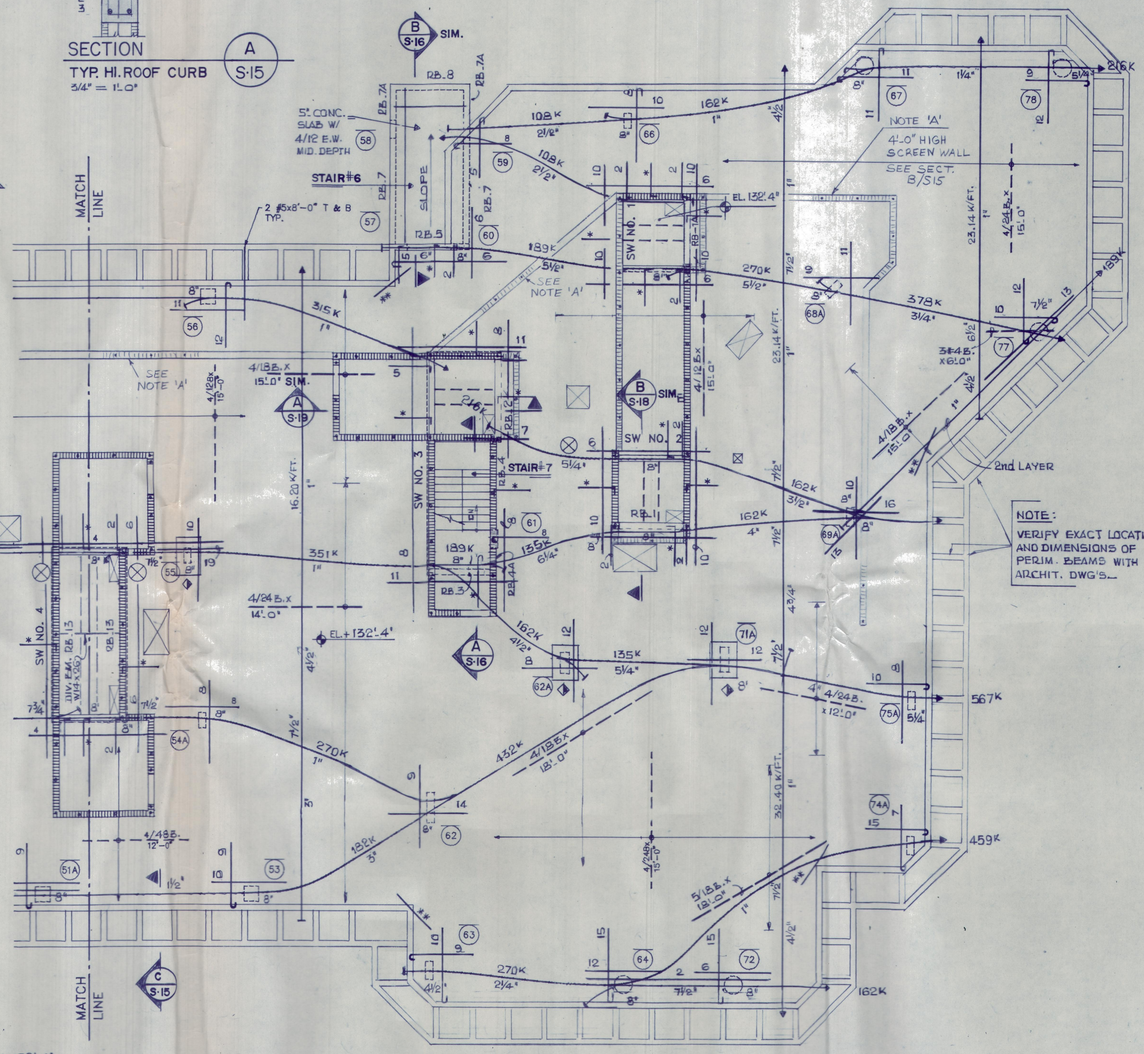
SCALE: 1/8" = 1'-0"



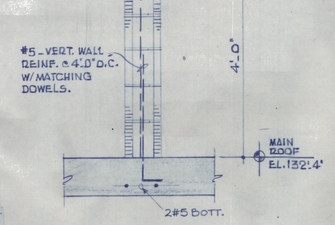
ELEV. C1 & C2 AS SHOWN
ELEV. C1 & C2 SIM. (O.H.)

SCALE: 1/8" = 1'-0"

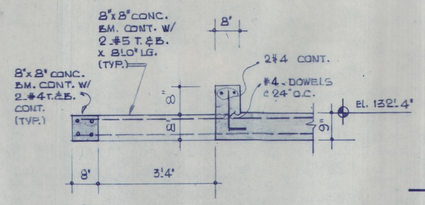




NOTE:
VERIFY EXACT LOCATION AND DIMENSIONS OF PERIM. BEAMS WITH ARCHIT. DWG'S.



SECTION B S-15
TYP SCREEN WALL
3/4" = 1'-0"



SECTION C S-15
1/2" = 1'-0"

PART. ROOF FRAMING PLAN SCALE: 1/8" = 1'-0"

* — INDICATES 4/12 T.
** - INDICATES 1-#5 T.&B. x 4'.6" LG.
◆ - INDICATES - 36"x48"x 4"D. COL. CAPITAL. SEE DET. 1/S14 FOR COL'S (55), (62A) & (71A)

COLUMN SYMBOLS
◯ = COLUMN BELOW
◯ = COLUMN THRU
◯ = COLUMN ABOVE

PLAN NOTES

1. Verify all dimensions and elevations with architectural drawings before commencing construction. For additional dimensional information, see architectural drawings and drawings S-1, S-2.
2. Floor slab shall be an 9" partially post tensioned flat plate. See S-22 for additional information.
3. **Post-tension supplier to provide signed and sealed shop drawings and calculations for approval prior to installation.**
4. Provide 1#5 top and bottom continuous at edges of slab all around.
5. Bars shown on plans are #4 bars unless otherwise noted.
6. Bars shown as solid lines are top bars and bars shown as dashed lines are bottom bars unless otherwise noted.
7. All post tensioned profiles are measured from the bottom of the slab to the center of the post-tensioned cable.
8. Anchorage at slab edge shall be at t/2, where t = slab edge thickness.
9. Forces shown are final effective prestress forces.
10. ▥▥▥ indicates infill, non-load bearing walls with 1#5 in grout filled cell. See plan for location.
11. See drawing S-20 for column schedule.
12. See drawing S-21 for shearwall schedule.
13. See drawing S-22 for beam schedule and structural notes.
14. For size and location of openings, see mechanical and architectural drawings.

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SARASOTA, FLORIDA 34236
(813) 952-1717

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.

AUG 1 1 1992 8/10/92

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

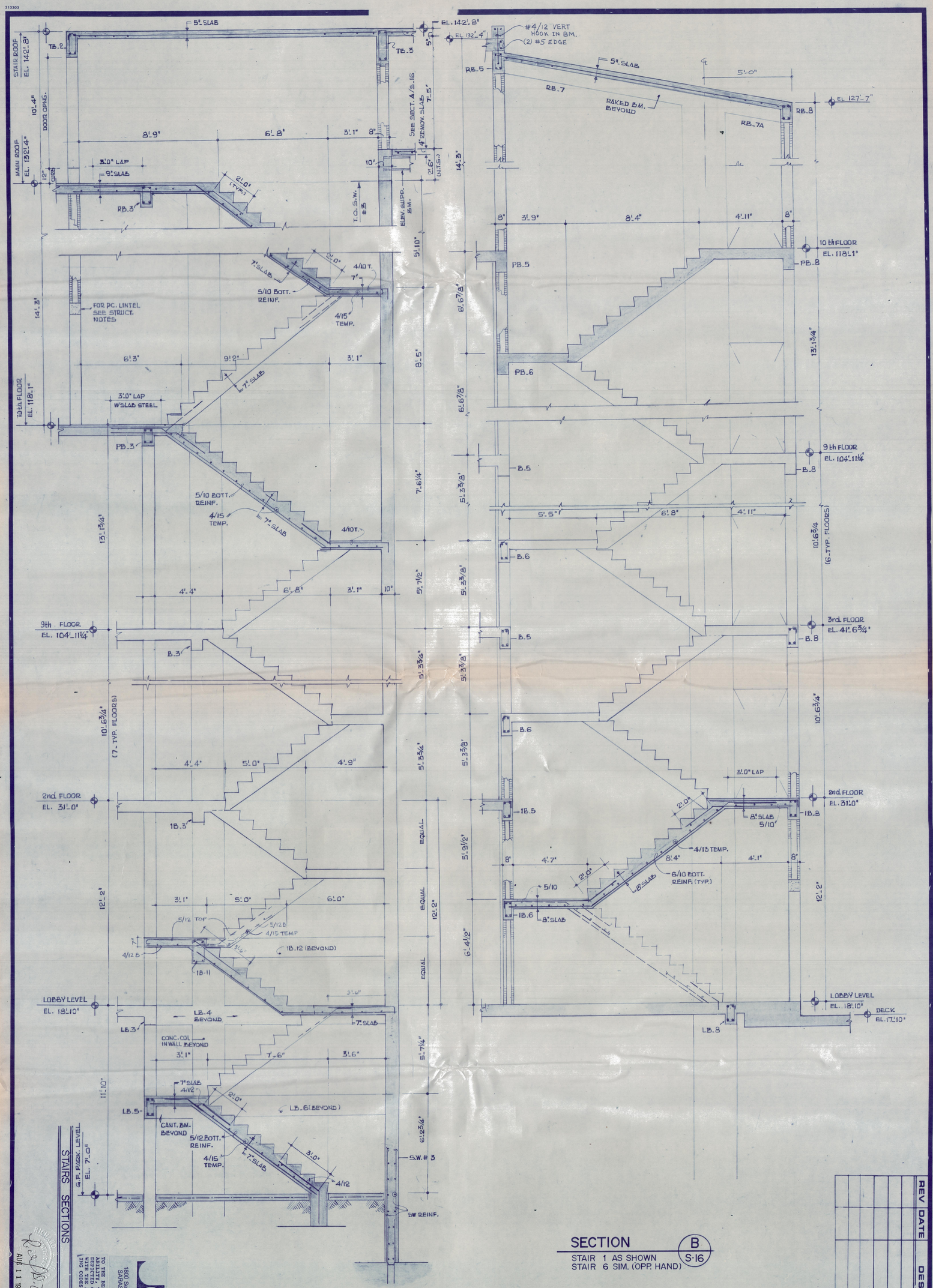
L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-15

90-810N

3004.78



SECTION A S-16
STAIR 7 AS SHOWN
STAIR 2 SIM. (OPP. HAND)

SECTION B S-16
STAIR 1 AS SHOWN
STAIR 6 SIM. (OPP. HAND)

SCALE: 3/8" = 1'-0"

STAIRS SECTIONS

JENKINS & CHARLAND
INCORPORATED
Consulting Engineers
1800 Second Street, Suite 795A
SARASOTA, FLORIDA 34236
(813) 952-1717

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AUG 11 1992
8/10/92

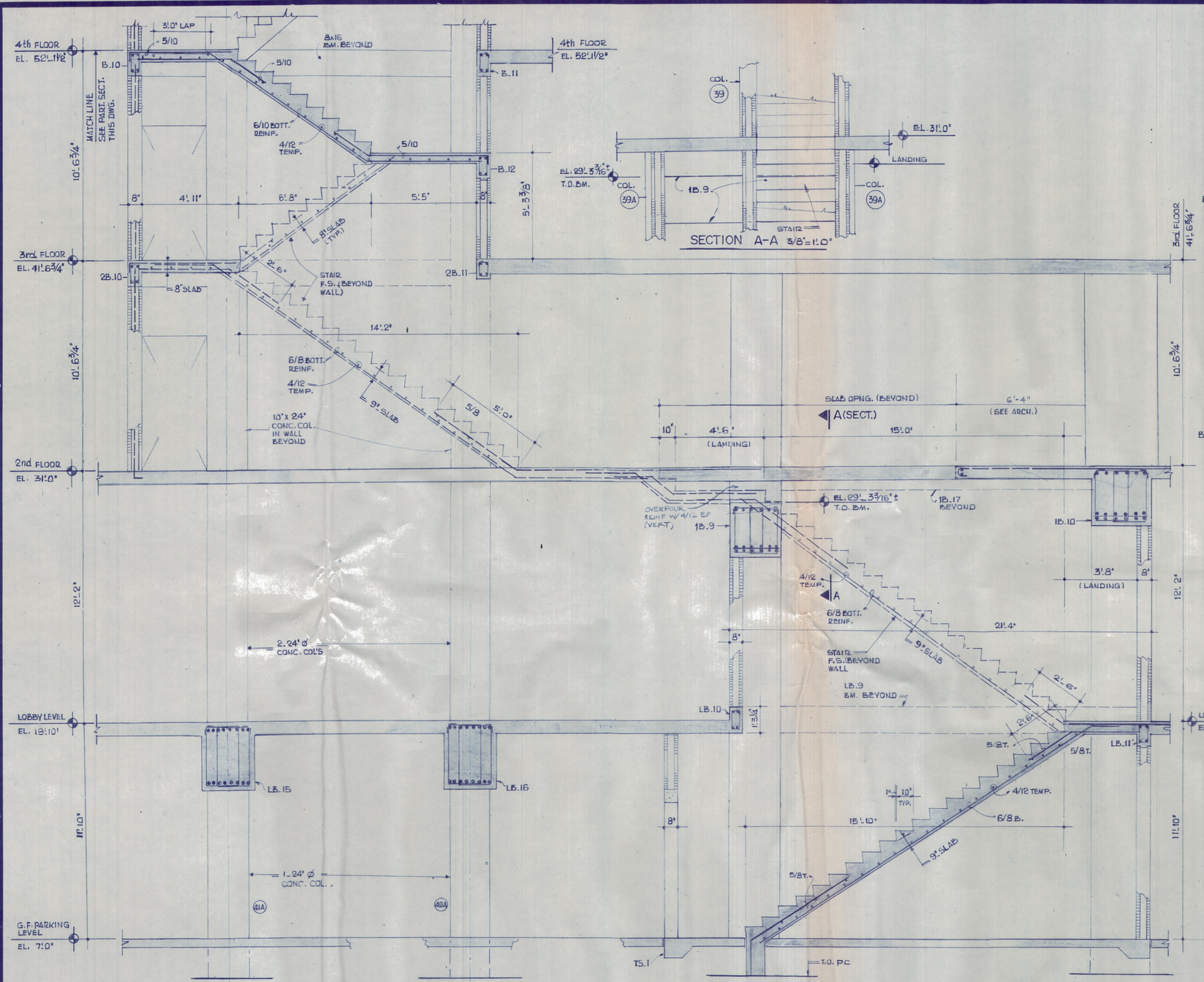
REV	DATE	DESCRIPTION

S-16 | D: | C:

L'Ambiance AT LONGBOAT KEY CLUB
YALE PROPERTIES LONGBOAT KEY, FL.

THE LAWRENCE GROUP
ARCHITECTS PALM BEACH, FLORIDA

REV	DATE	DESCRIPTION



SECTION
STAIR #4 3/8"=1'-0" A S-17

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STAIRS SECTION

AUG 11 1992 8/10/92

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA

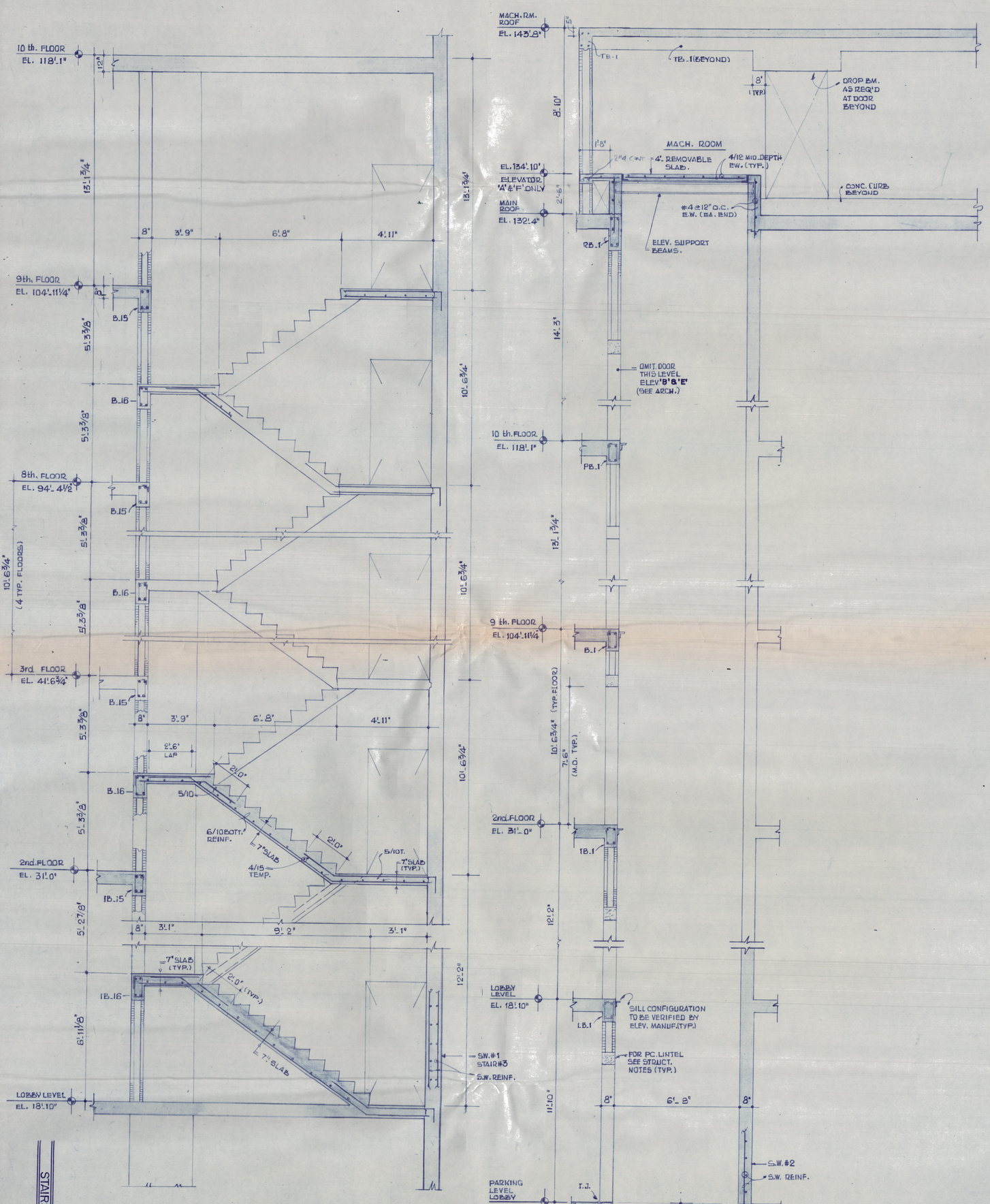
L'Ambiance AT LONGBOAT KEY CLUB
LONGBOAT KEY, FL.
YALE PROPERTIES

D: C:

S-17

90-810N

313303



SECTION A
STAIR #3 AS SHOWN
STAIR #5 SIMILAR (O.H.)
S-18

SCALE: 3/8"=1'-0"

SECTION B
ELEV. 'F' AS SHOWN - ELEV. 'E' SIM.
ELEV. 'A' (OPP. HAND) - ELEV. 'B' SIM.
S-18

STAIRS / ELEVATOR SECTIONS

AUG 11 1982

JENKINS & CHARLAND
Consulting Engineers
1550 Second Street, Suite 765A
SARASOTA, FLORIDA 33577
(813) 366-2236

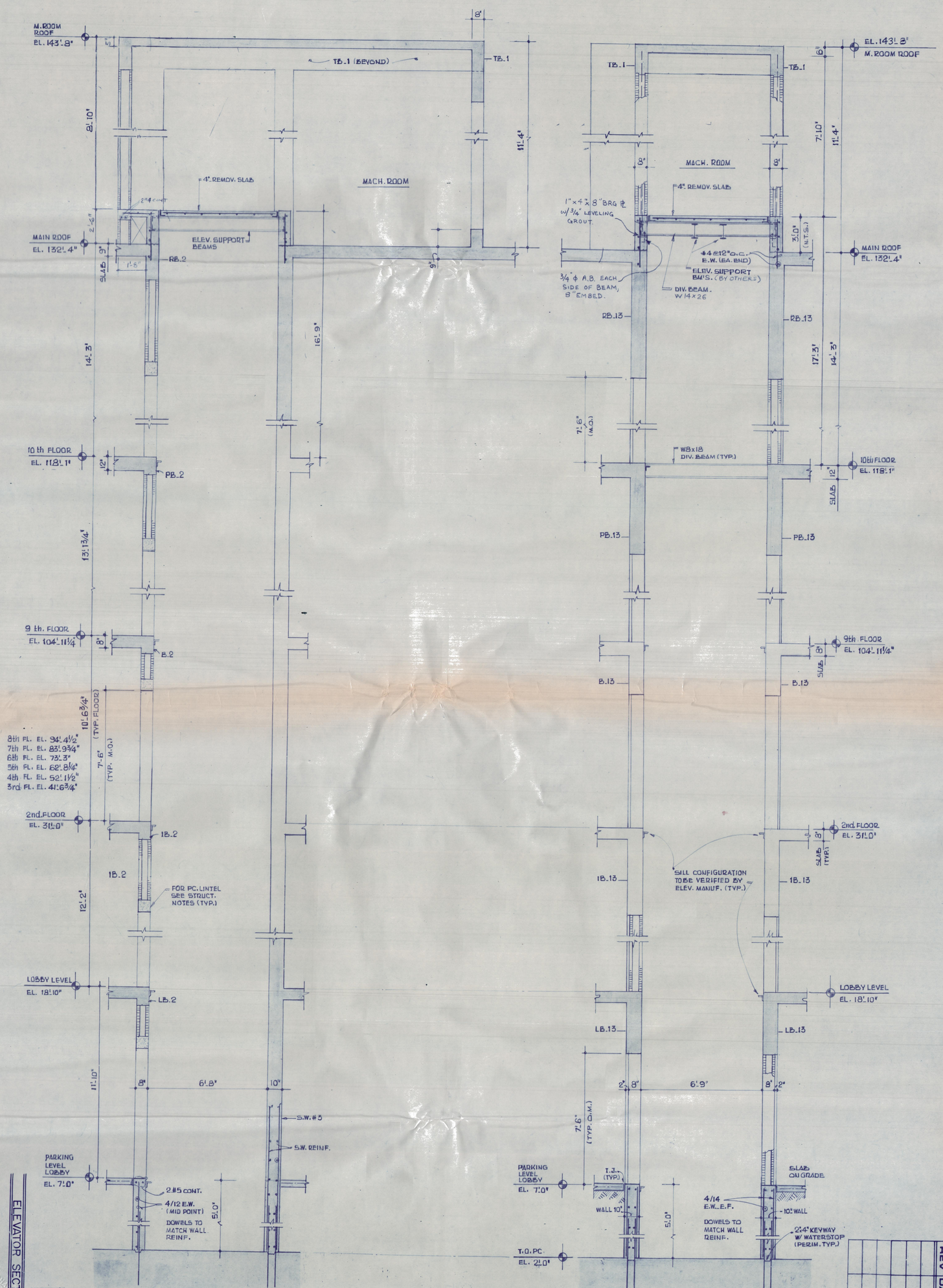
ALL USE OF THESE PLANS CONSTITUTES ACCEPTANCE OF THE RESTRICTIONS ON THE USE OF ARCHITECTS' PLANS AS CONTAINED IN THE CODES OF THE FLORIDA STATUTES AND THE AMERICAN INSTITUTE OF ARCHITECTS.

REV	DATE	DESCRIPTION

NION 96-8-98 | S-18 | D | C

L'Ambiance AT LONGBOAT KEY CLUB
YALE PROPERTIES
LONGBOAT KEY, FL.

THE LAWRENCE GROUP
ARCHITECTS
PALM BEACH, FLORIDA



SECTION A S-19
ELEV. EF AS SHOWN
ELEV. AB (OPP. HAND)

SECTION B S-19
ELEV. DI AS SHOWN
ELEV. CI (OPP. HAND)

ELEVATOR SECTIONS

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AUG 11 1992 3/10/92

REV	DATE	DESCRIPTION

N018-06 S-19 D C

L'Ambiance AT LONGBOAT KEY CLUB
YALE PROPERTIES LONGBOAT KEY, FL.

THE LAWRENCE GROUP
ARCHITECTS PALM BEACH, FLORIDA

COLUMN SCHEDULE

REV	DATE	DESCRIPTION

f'c 6000 psi CONC. | f'c 5000 psi CONC. | f'c 4000 psi CONC.

| | | |

REV	DATE	DESCRIPTION

SHEARWALL SCHEDULE

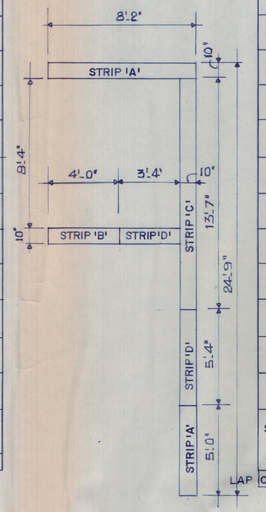
	SW #1		
MAIN ROOF EL. 132'-4"	4/18	4/18	4/18
10th FLOOR EL. 118'-1"	4/18		
9th FLOOR EL. 104'-11¼"	4/12		
8th FLOOR EL. 94'-4½"	5/12		
7th FLOOR EL. 83'-9¾"	6/12	4/18	
6th FLOOR EL. 73'-3"	7/12	4/12	
5th FLOOR EL. 62'-8¼"	8/12	5/12	
4th FLOOR EL. 52'-1½"	9/12	6/12	
3rd FLOOR EL. 41'-6¾"	9/10	6/12	
2nd FLOOR EL. 31'-0"	9/9	7/12	
LOBBY LEVEL EL. 18'-10"	9/6	9/12	
GR. FLOOR EL. 7'-0"	9/6	9/12	4/18
T.O. PILE CAP EL. 2'-0"	STRIP 'A'	STRIP 'B'	HORIZ.
LAP	CLASS 'C'	CLASS 'C'	30 Ø

4,000 / 5,000 / 6,000

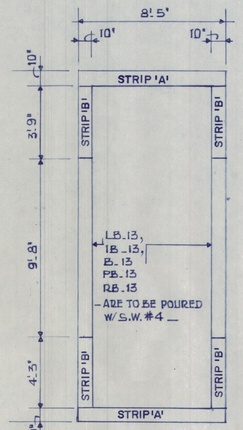
	SW #2		
	4/18	4/18 ℄	4/12
	4/18	4/18 ℄	4/12
	4/12	4/12 ℄	4/10
	5/12		
	6/12		
	8/12		
	9/12		
	9/12		
	9/8		
	9/6	4/12 ℄	
	9/5	5/12 ℄	
	9/5	5/12 ℄	4/10
	STRIP 'A'	STRIP 'B'	HORIZ.
LAP	CLASS 'C'	30 Ø	30 Ø

	SW #3				
	4/18	4/18	4/18	4/18	4/18
	4/12	4/12		4/18	4/18
	6/12	5/12	4/18	4/12	4/12
	7/12	7/12	4/12		
	9/12	8/12	5/12		
	10/12	9/12	5/12		
	11/12	10/12	6/12		
	11/8	10/8	7/12		
◆	11/4	10/8	7/12	4/12	4/12
◆	11/4	10/6	8/12	5/16	4/10
◆	11/4		9/12		
◆	11/4	10/6	9/12	5/16	4/10
	STRIP 'A'	STRIP 'B'	STRIP 'C'	STRIP 'D'	HORIZ.
LAP	CLASS 'C'	CLASS 'C'	CLASS 'C'	30 Ø	30 Ø

	SW #4			
	4/18	4/12	4/18	4/12
	4/18			
	4/12		4/18	
	6/12	4/12	4/12	
	7/12	4/9		
	9/12	5/9		4/12
	9/9	6/9		5/12
	9/6	7/9		5/12
	9/6	8/9		5/10
	10/6	9/9		5/9
	11/6	9/7		5/8
	11/6	9/7	4/12	5/8
	STRIP 'A' VERT.	STRIP 'B' VERT.	STRIP 'A' HORIZ.	STRIP 'B' HORIZ.
LAP	CLASS 'C'	CLASS 'C'	30 Ø	30 Ø



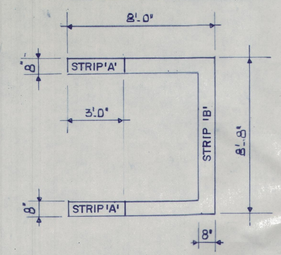
SW#3 STRIPS



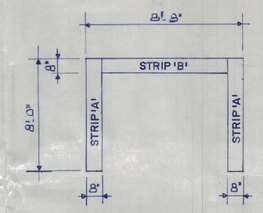
SW#4 STRIPS

NOTE ALL S.W. REINFORCING E.F.-UNLESS OTHERWISE NOTED.

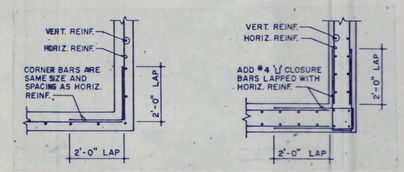
◆ INDICATES MECHANICAL SPLICE REQ'D, SPLICE MUST DEVELOP 125% OF YIELD STRESS OF BAR IN TENSION & COMPRESSION. ALLOW 2'-0" BETWEEN SPLICES. OPTIONAL: NO SPLICE REQ'D USE 2-LIFT BARS



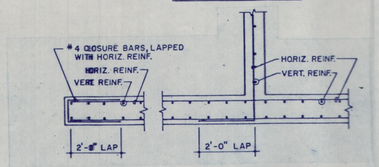
SW 1 STRIPS



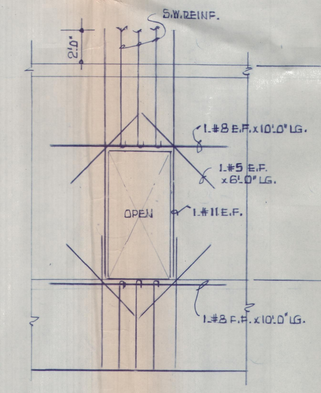
SW 2 STRIPS



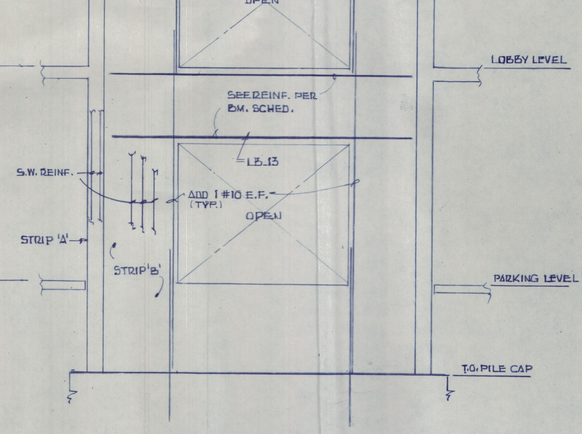
CORNER REINF.



END REINF. KEY REINF.



ELEVATION S.W. #3



ELEVATION S.W. #4

JENKINS & CHARLAND INCORPORATED
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SHEARWALL SCHED. & DETAILS

AUG 11 1992 8/10/92

LAWRENCE GROUP
PALM BEACH, FLORIDA

THE ARCHITECTS

L'Ambiance AT LONGBOAT KEY CLUB
YALE PROPERTIES
LONGBOAT KEY, FL.

D: C:

S-21

90-810N

313303

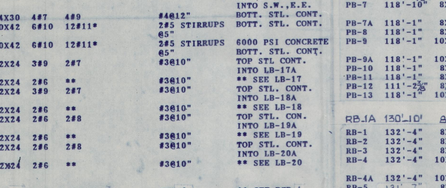
BEAM SCHEDULE

L'AMBIANCE
90-810

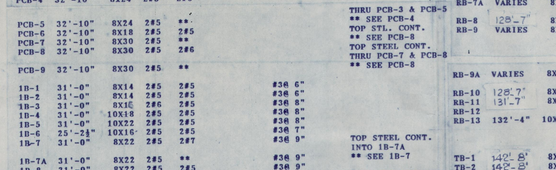
BEAM No.	ELEV TOP OF BEAM	SIZE W x H (INCH)	REINFORCING BOTT	REINFORCING TOP	REINFORCING 'C'	REINFORCING 'E'	CLOSED HOOP SIZE & SPACING	REMARKS
LB-1	18'-10"	8x14	2#5	2#5			#3@ 6"	
LB-2	18'-10"	8x14	2#5	2#5			#3@ 6"	
LB-3	18'-10"	8x19	2#5	2#5			#3@ 8"	TOP STEEL CONT. INTO LB- 4A
LB-4	18'-10"	10x19	2#6	2#5			#3@ 8"	** SEE LB-4
LB-4A	18'-10"	10x19	2#5	**			#3@ 8"	
LB-5	13'-2⅝"	10x19	2#5	2#5			#3@ 8"	TOP STEEL CONT. INTO LB-6A
LB-6	13'-2⅝"	10x19	2#5	2#5			#3@ 8"	** SEE LB-6
LB-6A	13'-2⅝"	10X19	2#5	**			#3@ 8"	
LB-7		NOT USED						
LB-8	18'-10"	8X16	2#6	2#5			#3@ 7"	
LB-9	19'-3¼"	8X18	2#5	2#5			#3@ 7"	
LB-10	19'-5¼"	8X18	2#5	2#5			#3@ 7"	
LB-11	18'-10"	8X18	2#6	2#5			#3@ 7"	
LB-12	17'-10"/ 18'-10"	24X30/ 42	6#9	6#11			#4@12"	
LB-13	18'-10"	10X42	12#9	12#9			#5@ 6"	EXTEND ALL HORIZ. REINF 44" INTO S.W.,E.E.
LB-14	17'-10"	24X30	4#7	4#9			#4@12"	BOTT. STL. CONT.
LB-15	18'-10"	30X42	6#10	12#11* 6S			2#5 STIRRUPS	BOTT. STL. CONT.
LB-16	18'-10"	30X42	6#10	12#11* 6S			2#5 STIRRUPS 6000 PSI CONCRETE	BOTT. STL. CONT.
LB-17	18'-10"	12X24	3#9	2#7			#3@10"	TOP STL CONT. INTO LB-17A
LB-17A	18'-10"	12X24	2#6	**			#3@10"	** SEE LB-17
LB-18	18'-10"	12X24	3#9	2#7			#3@10"	TOP STL. CONT. INTO LB-18A
LB-18A	18'-10"	12X24	2#6	**			#3@10"	** SEE LB-18
LB-19	18'-10"	12X24	2#6	2#8			#3@10"	TOP STL. CON. INTO LB-19A
LB-19A	18'-10"	12X24	2#6	**			#3@10"	** SEE LB-19
LB-20	18'-10"	12X24	2#6	2#8			#3@10"	TOP STL. CONT. INTO LB-20A
LB-20A	18'-10"	12X24	2#6	**			#3@10"	** SEE LB-20
PCB-2	33'-4"	8X30	2#6	**			#3@ 12	** SEE PCB-1, TOP STEEL CONT. THRU PCB-2
PCB-1	33'-4"	8X30	4#8*	2#8			#3@ 12	** SEE PCB-4 TOP STEEL CONT. THRU PCB-3 & PCB-5
PCB-3	32'-10"	8X24	2#5	**				** SEE PCB-4
PCB-4	32'-10"	8x24	2#5	2#6				TOP STL. CONT. ** SEE PCB-8
PCB-5	32'-10"	8X24	2#5	**				TOP STEEL CONT. THRU PCB-7 & PCB-8
PCB-7	32'-10"	8X30	2#5	2#5				** SEE PCB-8
PCB-8	32'-10"	8X30	2#5	2#6				
PCB-9	32'-10"	8X30	2#5	**				
1B-1	31'-0"	8X14	2#5	2#5			#3@ 6"	
1B-2	31'-0"	8X14	2#5	2#5			#3@ 6"	
1B-3	31'-0"	8X16	2#6	2#5			#3@ 8"	
1B-4	31'-0"	10X18	2#5	2#5			#3@ 8"	
1B-5	31'-0"	10X22	2#5	2#5			#3@ 8"	
1B-6	25'-9⅝"	8X16	2#5	2#5			#3@ 7"	
1B-7	31'-0"	8X22	2#5	2#7			#3@ 9"	TOP STEEL CONT. INTO 1B-7A
1B-7A	31'-0"	8X22	2#5	**			#3@ 9"	** SEE 1B-7
1B-8	31'-0"	8X22	2#5	2#5			#3@ 9"	
1B-9	29'-3¼"	32X42	12#11*	6#10			2#5 STIRRUPS 64-3/4"	6000 PSI CONCRETE HOOK BOTT. LAYER REINF. E.E.
1B-10	31'-0"	32X42	12#11*	6#10			2#5 STIRRUPS 64-3/4"	6000 PSI CONCRETE HOOK BOTT. LAYER REINF. E.E.
1B-11	22'-10⅝"	10X20½	2#5	2#5			#3@ 9"	
1B-12		NOT USED						
1B-12A		NOT USED						
1B-13	31'-0"	10X62	8#9	8#9			#5@ 6"O.C.	EXTEND ALL HORIZ. REINF. 44"INTO S.W.,E.E.
1B-14	31'-0"	10X19	2#7	2#5			#3@ 8"	
1B-15	31'-0"	8X19	2#5	2#5			#3@ 8"	
1B-16	25'-9⅝"	8X15½	2#5	2#5			#3@ 7"	
1B-17	31'-0"	8X18	2#8	2#6			#3@ 8"	
1B-18	30'-10"	12X24	2#7	2#6			#3@10"	
1B-19	30'-10"	12X24	2#6	2#6			#3@10"	
1B-20	31'-0"	42X42	22#11*	11#9			#2@5 STIRRUPS 6000 PSI CONC 5" O.C. COL. 11A & 68A SIDE REMAINDER @18"O.C.	
2B-10	41'-6⅜"	8X22	2#6	2#5			#3@ 7"	
2B-11	41'-6⅜"	8X12	2#5	2#5			#3@ 5"	
B-1	+/-0'-0"	8X15	2#5	2#5			#3@ 5"	
B-2	+/-0'-0"	8x15	2#5	2#5			#3@ 5"	
B-3	+/-0'-0"	16x12	2#5	2#5			#3@ 7"	
B-4	+/-0'-0"	10x19	2#5	2#5			#3@ 9"	
B-5	+/-0'-0"	10x22	2#5	2#5			#3@ 7"	
B-6	-5'-3⅝"	10x15	2#5	2#5			#3@ 7"	
B-7	+/-0'-0"	8x23	2#5	2#7			#3@ 10"	TOP STEEL CONT. INTO B-7A
B-7A	+/-0'-0"	8X23	2#5	**			#3@ 10"	** SEE B-7
B-8	+/-0'-0"	8X23	2#5	2#5			#3@ 10"	TOP STEEL CONT. INTO B-9A
B-9	+/-0'-0"	10X23	2#5	2#7			#3@ 10"	** SEE B-9
B-9A	+/-0'-0"	10X23	2#5	**			#3@ 10"	
B-10	+/-0'-0"	8X23	2#5	2#5			#3@ 10"	
B-11	+/-0'-0"	8X23	2#5	2#5			#3@ 10"	
B-12	-5'-3⅜"	8X15	2#5	2#5			#3@ 6"	EXTEND ALL HORIZ. REINF. 44" INTO S.W.,E.E.
B-13	+/-0'-0"	10X38	10#9	10#9			#5@ 6"	
B-14	+/-0'-0"	10X19	2#7	2#5			#3@ 8"	
B-15	+/-0'-0"	10X19	2#5	2#5			#3@ 8"	
B-16	-5'-3⅜"	8X15	2#5	2#5			#3@ 6"	
PB-1	118'-1"	8X15	2#5	2#5			#3@ 6"	TOP STEEL CONT. INTO PB-4A
PB-2	118'-1"	8X15	2#5	2#5			#3@ 6"	
PB-3	118'-1"	8X19	2#5	2#5			#3@ 8"	** SEE PB-4
PB-4	118'-1"	10X19	2#5	2#7			#3@ 8"	
PB-4A	118'-1"	10X19	2#5	**			#3@ 8"	TOP STEEL CONT. INTO PB-7A
PB-5	118'-10"	10X22	2#5	2#5			#3@ 9"	
PB-6	111'-2⅝"	10X19	2#5	2#5			#3@ 7"	** SEE PB-7
PB-7	118'-10"	8X22	2#5	2#7			#3@ 10"	
PB-7A	118'-1"	8X22	2#5	**			#3@ 10"	TOP STEEL CONT. INTO PB-9A
PB-8	118'-1"	8X22	2#5	2#5			#3@ 10"	
PB-9	118'-1"	10X22	2#5	2#7			#3@ 10"	** SEE PB-9
PB-9A	118'-1"	10X22	2#5	**			#3@ 10"	
PB-10	118'-1"	8X22	2#5	2#5			#3@ 10"	TOP STEEL CONT. INTO RB-4A
PB-11	118'-1"	8X23	2#5	2#5			#3@ 6"	
PB-12	111'-2⅝"	8X15	2#5	2#5			#4@16"	EXTEND ALL HORIZ. REINF. 44" INTO S.W.,E.E.
PB-13	118'-1"	10X66	7#9	2#9				
RB-1A	130'-10"	8x23	2x6	2x5			#3@ 10"	TOP STEEL CONT. INTO RB-7A
RB-1	132'-4"	8X23	2#6	2#5			#3@ 10"	
RB-2	132'-4"	8X23	2#6	2#5			#3@ 10"	
RB-3	132'-4"	8X19	2#5	2#5			#3@ 8"	
RB-4	132'-4"	10X19	2#6	2#7			#3@ 8"	** SEE RB-4
RB-4A	132'-4"	10X19	2#5	**			#3@ 8"	RAKE BM., TOP STEEL CONT. INTO RB-7A
RB-5	131'-7"	8X19	2#5	2#5				
RB-6								NOT USED
RB-7	VARIES	8X19	2#5	2#5				RAKE BM., ** SEE RB-7
RB-7A	VARIES	8X19	2#5	**				
RB-8	128'-7"	8X19	2#5	2#5				RAKE BM., TOP STEEL CONT. INTO RB-9A
RB-9	VARIES	8X19	2#5	2#5				
RB-9A	VARIES	8X19	2#5	**				RAKE BM., ** SEE RB-9
RB-10	128'-7"	8X19	2#5	2#5				
RB-11	131'-7"	8X19	2#5	2#5				
RB-12								NOT USED
RB-13	132'-4"	10x81	2#6	2#6			#4@12"	EXTEND ALL HORZ. REINF. 20" INTO S.W.,E.E.
TB-1	142'-8"	8X12	2#5	2#5				
TB-2	142'-8"	8X16	2#5	2#5				
TB-3	142'-8"	8X26	2#5	2#5				

NOTES:

1. * INDICATES' (2) LAYERS OF REINFORCEMENT.
2. IF BEAM DEPTH IS 36" OR GREATER, ADD 1#4 HORIZONTAL @12" E.F.
3. B-1 THRU B-16 ELEVATIONS ARE REFERENCED TO FINISH FLOOR ELEVATION.
4. INDICATES MULTIPLE LAYERS - (2) BARS PER LAYER.
5. 8" BEAM WIDTH - NOMINAL FOR TB'S, USE 7-5/8"; FOR BEAMS USE 8" MIN.
6. S.W. INDICATES SHEARWALL
7. E.E. INDICATES EACH END
8. B- BEAMS ELEVATION REFERENCED TO TYPICAL FLOOR, TOP OF SLAB.

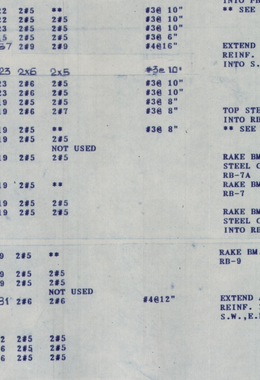


TYPICAL ANCHOR DETAIL

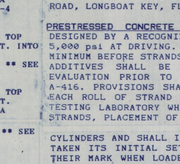


TYPICAL CANTILEVER and TYPICAL SPAN & INTERIOR SUPPORT

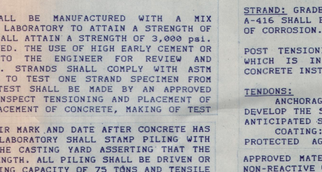
POST TENSIONED SLAB



TYPICAL MASONRY WALL CONSTRUCTION

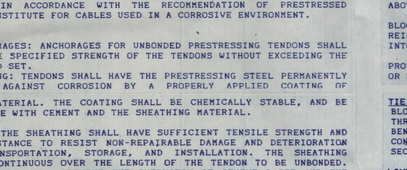


DOVETAIL ANCHOR DETAIL



TYPICAL REINFORCING OF OPENING IN SLAB

1. OMIT ADDED BARS AT OPENINGS OF 10" OR LESS AND RUN NORMAL REINFORCING BY SIDE OF OPENING.
2. * = HOOK BARS AT AFFECTED ENDS WHERE BARS CANNOT BE EXTENDED PAST THE OPENING.
3. OPENINGS SHALL BE SHOWN ON THE STEEL PLACING DRAWINGS AND REINFORCED ACCORDINGLY.



TYPICAL BENDING DIAGRAM FOR BEAMS

1. START STIRRUP SPACING FROM FACE OF SUPPORT.
2. ADD 1 ℄ LONGITUDINAL WHERE CORNER OF STIRRUP IS VACANT.

STRUCTURAL NOTES

90-810

GENERAL NOTES: STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR SLEEVES, DEPRESSIONS, AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.

ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO INSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS.

DESIGN LOADS: THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH THE STANDARD BUILDING CODE, 1988 EDITION WITH 1989 AND 1990 AMENDMENTS, BY THE SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL, INC. THE FOLLOWING SUPERIMPOSED LOADINGS HAVE BEEN UTILIZED:

ROOF:
- LIVE LOAD - 20 psf.
- DEAD LOAD - 25 psf.

STAIRWAYS:
- LIVE LOAD - 100 psf.

LIVING AREAS:
- LIVE LOAD - 40 psf.
- DEAD LOAD - 20 psf.

WIND: CHAPTER 1205
140 MPH REGION

FOUNDATIONS: SEE THE FOLLOWING REPORT FOR COMPLETE GEOTECHNICAL RECOMMENDATIONS AND INSTALLATION PROCEDURES. SITE PREPARATION AND FOUNDATION INSTALLATION SHALL COMPLY WITH REPORT No. 89-8137 PREPARED BY: ARDAMAN & ASSOCIATES, INC. TITLED: SUBSURFACE SOIL EXPLORATION, "L'AMBIANCE, LONGBOAT CLUB ROAD, LONGBOAT KEY, FLORIDA".

PRESTRESSED CONCRETE PILES: SHALL BE MANUFACTURED WITH A MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ATTAIN A STRENGTH OF 5,000 psi AT DRIVING. CONCRETE SHALL ATTAIN A STRENGTH OF 3,000 psi. MINIMUM BEFORE STRANDS ARE RELEASED. THE USE OF HIGH EARLY CEMENT OR ADDITIVES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND EVALUATION PRIOR TO FABRICATION. STRANDS SHALL COMPLY WITH ASTM A-416. PROVISIONS SHALL BE MADE TO TEST ONE STRAND SPECIMEN FROM EACH ROLL OF STRAND USED. THE TEST SHALL BE MADE BY AN APPROVED TESTING LABORATORY WHICH SHALL INSPECT TENSIONING AND PLACEMENT OF STRANDS, PLACEMENT OF SPIRAL, PLACEMENT OF CONCRETE, MAKING OF TEST CYLINDERS AND SHALL INSCRIBE THEIR MARK AND DATE AFTER CONCRETE HAS TAKEN ITS INITIAL SET. TESTING LABORATORY SHALL STAMP PILING WITH THEIR MARK WHEN LOADED OUT AT THE CASTING YARD ASSERTING THAT THE PILING HAVE ATTAINED DRIVING STRENGTH. ALL PILING SHALL BE DRIVEN OR JETTED AND DRIVEN TO A SAFE BEARING CAPACITY OF 75 TONS AND TENSILE CAPACITY OF 16 TONS FOR 14x14 PILES USING AN APPROPRIATE DRIVING FORMULA.

PRICE OF PILING SHALL INCLUDE COST OF RETAPPING. PILES TO BE CUT OFF SQUARE AT PROPER ELEVATIONS ALLOWING A MINIMUM OF 18" OF PILE STEEL TO PROJECT INTO GRADE BEAMS AND/OR PILE CAPS.

LOAD TESTS SHALL BE MADE ON THE PILING IN PLACE. THE CRITERIA AS SET FORTH IN THE STANDARD BUILDING CODE SHALL BE USED TO ESTABLISH ACCEPTABILITY OF TESTED PILES. LOAD TESTING APPARATUS AND PROCEDURE SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE BEGINNING OF THE TEST. LOCATION OF THE LOAD TEST SHALL BE AT THE DISCRETION OF THE ENGINEER. VERIFICATION THAT THE LOAD TEST REQUIREMENTS HAVE BEEN MET SHALL BE MADE BY AN INDEPENDENT GEOTECHNICAL CONSULTANT EMPLOYED BY THE OWNER AND APPROVED BY THE ENGINEER.

AN AS-BUILT SURVEY OF PILE LOCATIONS SHALL BE PERFORMED BY A FLORIDA REGISTERED LAND SURVEYOR. PILES SHALL BE LOCATED ON THE AS-BUILT DRAWINGS HORIZONTALLY AND VERTICALLY FROM THE COLUMN CENTERLINES. SUBMIT THE AS-BUILT DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL.

FORMWORK AND SHORING (CONCRETE SLABS AND BEAMS): NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH. A MINIMUM OF 3 STORIES OF SHORING AND (/OR) RESHORING SHALL BE USED WHICH SHALL CONSIST OF ONE COMPLETE SET OF VERTICAL SHORES AND TWO SETS OF VERTICAL SHORES THAT COMPRISE AT LEAST 50% OF A COMPLETE SET. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORING AND RESHORES SHALL MEET REQUIREMENTS SET FORTH IN ACI STANDARDS 347 AND 301. DRAWINGS FOR SHORING AND RESHORING SHALL BE PREPARED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER.

PLUMBING SLEEVES: MINIMUM SLEEVE SPACING SHALL BE TWO DIAMETERS CENTER TO CENTER OF THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES, WHICHEVER IS GREATER. PRIOR TO CONSTRUCTION SLEEVE LOCATIONS AND SIZES SHALL BE APPROVED BY THE ENGINEER.

REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60 DEFORMED BARS, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL BENDING DIAGRAM AND PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS. SECURE APPROVAL OF SHOP DRAWINGS PRIOR TO COMMENCING FABRICATION.

EPOXY COATED REINFORCING STEEL: TOP BARS AT EXPOSED AREAS AS BALCONIES AND AS SHOWN ON STRUCTURAL PLANS SHALL BE EPOXY COATED ACCORDING TO ASTM A775.

WELDED WIRE FABRIC: TO CONFORM TO ASTM A-185, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS. MINIMUM LAP SHALL BE ONE SPACE PLUS TWO INCHES.

CONCRETE: SHALL BE PER AN APPROVED MIX DESIGN PROPORTIONED TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

- 6000 psi FOR COLUMNS & SHEARWALLS BELOW 4TH FLOOR.
- 5000 psi FOR COLUMNS & SHEARWALLS BELOW 6TH FLOOR.
- 4000 psi FOR ALL OTHER STRUCTURAL CONCRETE AND SHEARWALL PILE CAPS.
- 3000 psi FOR COLUMN PILE CAPS, GRADE BEAMS, & SLAB-ON-GRADE.

SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN THAT STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE. ALL SLABS SHALL BE CURED USING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1 AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

WATER/CEMENT RATIO FOR CONCRETE AT EXTERIOR BALCONIES SHALL NOT EXCEED 0.40 BY WEIGHT.

POST TENSIONED SLAB:

DESIGNATION: POST TENSIONING IS DESIGNATED ON THE STRUCTURAL PLANS AND SHOP DRAWINGS.

STRAND: GRADE 270, 1/2" NOMINAL DIAMETER STRAND CONFORMING TO ASTM A-416 SHALL BE USED IN TENDONS. ALL STRAND SHALL BE CLEAN AND FREE OF CORROSION.

POST TENSIONING CABLES SHALL HAVE A CORROSION PROTECTION SYSTEM WHICH IS IN ACCORDANCE WITH THE RECOMMENDATION OF PRESTRESSED CONCRETE INSTITUTE FOR CABLES USED IN A CORROSIVE ENVIRONMENT.

TENDONS:

ANCHORAGES: ANCHORAGES FOR UNBONDED PRESTRESSING TENDONS SHALL DEVELOP THE SPECIFIED STRENGTH OF THE TENDONS WITHOUT EXCEEDING THE ANTICIPATED SET.

COATING: TENDONS SHALL HAVE THE PRESTRESSING STEEL PERMANENTLY PROTECTED AGAINST CORROSION BY A PROPERLY APPLIED COATING OF APPROVED MATERIAL. THE COATING SHALL BE CHEMICALLY STABLE, AND BE NON-REACTIVE WITH CEMENT AND THE SHEATHING MATERIAL.

SHEATHING: THE SHEATHING SHALL HAVE SUFFICIENT TENSILE STRENGTH AND WATER RESISTANCE TO RESIST NON-REPAIRABLE DAMAGE AND DETERIORATION DURING TRANSPORTATION, STORAGE, AND INSTALLATION. THE SHEATHING SHALL BE CONTINUOUS OVER THE LENGTH OF THE TENDON TO BE UNBONDED. THE SHEATHING SHALL PREVENT THE INTRUSION OF CEMENT PASTE AND THE ESCAPE OF COATING MATERIAL.

CONCRETE: CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 psi. AT 28 DAYS. TENSIONING OF THE CONCRETE SLAB SHALL NOT COMMENCE UNTIL THE CONCRETE STRENGTH INDICATED BY COMPRESSION TESTS ON CYLINDERS EXCEED 2500 psi. ALL SLAB CONCRETE SHALL REMAIN SHORED UNTIL THE CONCRETE IS STRESSED. 3 DAY CYLINDER BREAKS SHALL BE REQUIRED PRIOR TO STRESSING TO DETERMINE IF MINIMUM STRENGTH HAS BEEN ACHIEVED.

TENDON LOCATION: TENDONS SHALL BE LOCATED AS SHOWN ON APPROVED SHOP DRAWINGS. ADEQUATE CHAIRS AND SUPPORT BARS SHALL BE FURNISHED TO HOLD TENDONS IN THEIR CORRECT POSITION DURING THE PLACEMENT OF CONCRETE. TENDONS SHALL NOT VARY MORE THAN 1/8" FROM THE SPECIFIED POSITION. SLIGHT DEVIATIONS IN SPACING OF TENDONS WILL BE PERMITTED WHERE REQUIRED TO AVOID OPENINGS, INSERTS, AND DOWELS. WHERE THERE IS CONFLICT BETWEEN TENDONS AND BONDED REINFORCING STEEL, THE TENDON LOCATION HAS PRIORITY.

MISCELLANEOUS:

A) ALL INSERTS FOR SUSPENDED MECHANICAL AND ARCHITECTURAL WORK SHALL BE CAST IN PLACE. IF ADDITIONAL FASTENERS ARE REQUIRED, POWER DRIVEN FASTENERS WILL BE PERMITTED ONLY WHERE IT CAN BE SHOWN THAT THE INSERTS ARE LOCATED SO AS TO AVOID TENDONS. TENDONS SHALL NOT BE CUT.

B) SHOP DRAWINGS SHOWING ALL DETAILS OF END ANCHORAGES, CONNECTIONS, BLOCKOUTS OF ALL HOLES, INSERTS AND OTHER POST-TENSIONING DETAILS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. SHOP DRAWING SHALL BEAR THE SIGNATURE AND IMPRESSED SEAL OF A FLORIDA REGISTERED PROFESSIONAL ENGINEER.

C) RECORDS SHALL BE KEPT BY THE PLACING CONTRACTOR OF ALL JACKING FORCES AND ELONGATIONS AND SUBMITTED PROMPTLY TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO BURN OFF OF EXCESS TENDON.

D) STRESSING HARDWARE SHALL BE COATED BY THE CONTRACTOR WITH CORROSION PREVENTATIVE MATERIAL (ASPHALTIC PAINT OR SIMILAR) AFTER COMPLETION OF STRESSING OPERATION. ANCHOR BLOCKOUTS SHALL BE FILLED WITH A NON-SHRINK GROUT (APPROVED BY THE STRUCTURAL ENGINEER) AFTER BURN OFF BY GENERAL CONTRACTOR.

E) GENERAL CONTRACTOR TO COORDINATE THE DETAILING AND PLACING OF TENDONS AND MILD STEEL BETWEEN SUPPLIERS AS REQUIRED.

F) JOB SITE INSTRUCTION OF REINFORCING PLACER'S PERSONNEL PROVIDED BY A QUALIFIED FIELD SUPERINTENDENT FROM THE STAFF OF THE POST TENSIONING SUPPLIER. PLACING OF REINFORCING STEEL AND POST-TENSIONING SHALL BE DONE BY THE SAME FIRM. SUCH PLACING SUBCONTRACTOR SHALL HAVE LOCAL EXPERIENCE IN POST-TENSIONING WORK AND SHALL HAVE SUCCESSFULLY COMPLETED AT LEAST TWO OTHER SIMILAR STRUCTURES UNDER THE SAME FIRM NAME.

G) CHAIRS FOR TENDON SUPPORTS SHALL BE SUPPLIED BY TENDON SUPPLIER. ALL OTHER CHAIRS SHALL BE SUPPLIED BY REINFORCING STEEL SUPPLIER.

SUPPLIERS: POST TENSIONING MATERIALS SHALL BE SUPPLIED BY VSL CORPORATION (MIAMI, FL), OR APPROVED EQUAL. MATERIAL SHALL BE SUPPLIED ONLY BY FIRMS HAVING LOCAL REPRESENTATION, AND STAFFED WITH A STRUCTURAL ENGINEER HAVING A MINIMUM OF 3 YEARS DESIGN EXPERIENCE IN THE DESIGN AND CONSTRUCTION OF POST TENSIONED STRUCTURES AND REGISTERED AS A PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA.

CALCULATIONS: SUBMIT COMPLETE DESIGN CALCULATIONS COMPLYING WITH ACI 318-83 CHAPTER 18 (AND APPLICABLE SECTIONS) FOR ALL POST TENSIONED ELEMENTS IN THE STRUCTURE. SHOP DRAWINGS SHALL NOT BE REVIEWED UNTIL SUCH CALCULATIONS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER. ALL SUBMITTALS SHALL FOLLOW CRITERIA LISTED BELOW AND BEAR THE SIGNATURE AND IMPRESSED SEAL OF A FLORIDA REGISTERED PROFESSIONAL ENGINEER. ANY PROPOSED POST-TENSION DESIGN CHANGES WHICH REQUIRE CHANGES IN MILD STEEL REINFORCING FROM THAT SHOWN IN THE STRUCTURAL DRAWINGS, SHALL HAVE CHANGES CLEARLY SHOWN ON THE SUBMITTED SHOP DRAWINGS.

PENETRATIONS: NO PENETRATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE LOCATED ON THESE DRAWINGS W

PROCTOR DATA

1. GRAY SLIGHLTY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 102.9 pcf @ 13.9% MOISTURE
   (AASHTO T-180) Backfill

2. BROWN/GREY SLIGHTLY SILTY
   FINE SAND WITH TRACE ROCK AND SHELL
   MAXIMUM DRY DENSITY 106.7 pcf @ 13.8% MOISTURE
   (AASHTO T-180) Fill material

N

SCALE: 1" = 10'

□ LOCATION OF PILE

■ COMPACTION TEST LOCATION - BACKFILL MATERIAL

⌀ COMPACTION TEST LOCATION - FILL MATERIAL

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

PILE LOCATIONS FOR

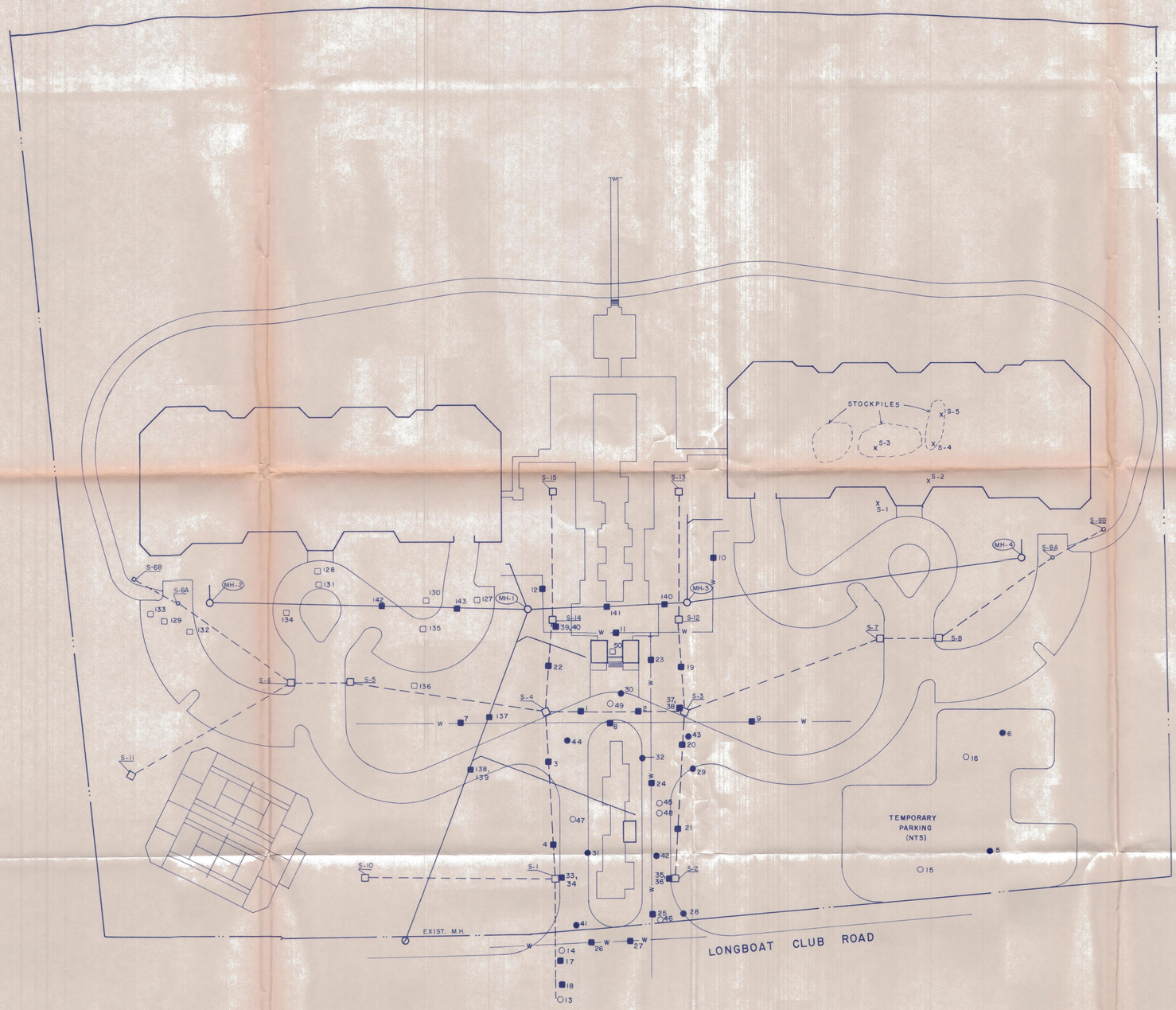
L'AMBIANCE
LONGBOAT CLUB ROAD

LONGBOAT KEY, FLORIDA

DRAWN BY: kad	CHECKED BY:	DATE: 10/7/91
FILE NO. 90-8284	APPROVED BY:	

FIGURE 2

GULF OF MEXICO



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   (AASHTO T-180) LBR = 94.0% Subbase
3. BROWN SLIGHTLY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 125.1 pcf @ 10.5% MOISTURE
   (AASHTO T-180) Base
4. GRAY SLIGHTLY SILTY FINE SAND WITH SOME ROCK (BASE)
   MAXIMUM DRY DENSITY 124.0 pcf @ 10.5% MOISTURE
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   (AASHTO T-180) Fill material
6. TAN SLIGHTLY SILTY FINE SAND WITH TRACE SHELL
   MAXIMUM DRY DENSITY 119.5 pcf @ 8.5% MOISTURE
   (AASHTO T-180) FILL
7. LIGHT TAN SLIGHTLY SILTY FINE SAND WITH CLAY
   MAXIMUM DRY DENSITY 112.6 pcf @ 13.2% MOISTURE
   (AASHTO T-180) FILL

■ COMPACTION TEST LOCATION - BACKFILL MATERIAL
● COMPACTION TEST LOCATION - SUBBASE MATERIAL
○ COMPACTION TEST LOCATION - SHELL BASE MATERIAL
□ COMPACTION TEST LOCATION - FILL MATERIAL
× SAMPLE LOCATION

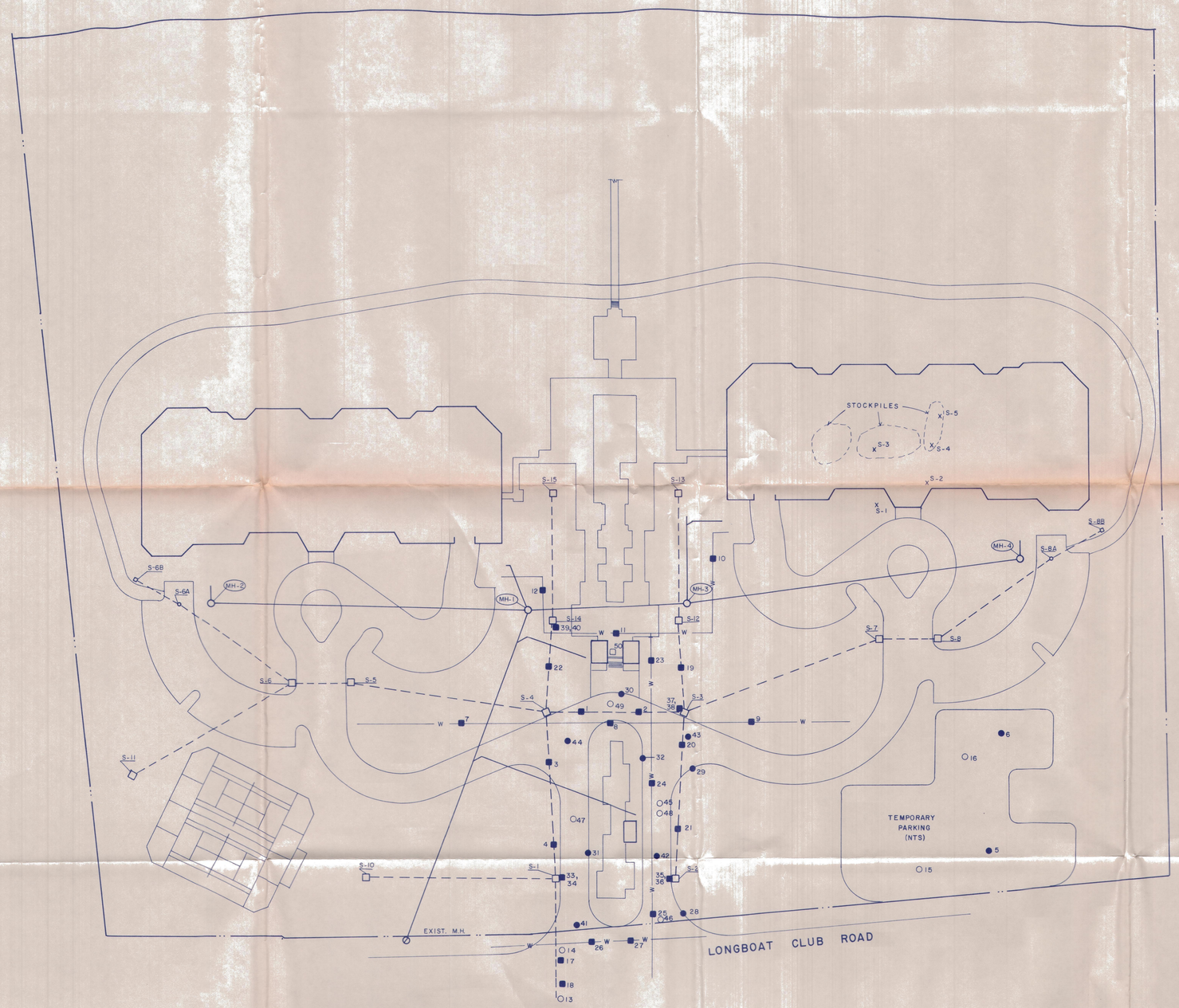
Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

COMPACTION TEST LOCATIONS FOR
L'AMBIANCE
LONGBOAT KEY, FLORIDA

DRAWN BY: kac	CHECKED BY:	DATE: 12/7/90
FILE NO. 90-8284	APPROVED BY: DRS-7	

FIGURE 1

GULF OF MEXICO



SCALE: 1" = 50'

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■ COMPACTION TEST LOCATION - BACKFILL MATERIAL
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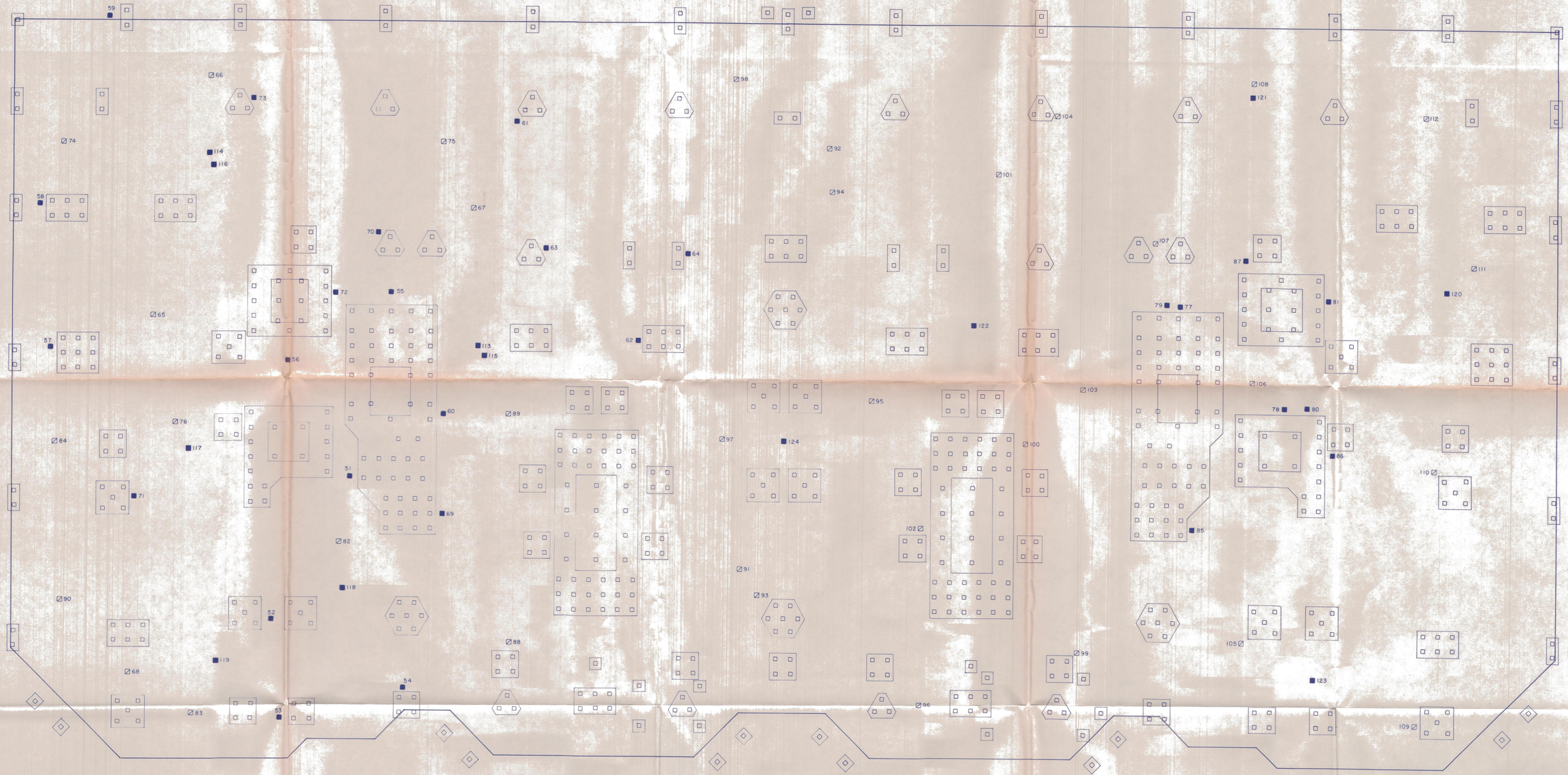
○ COMPACTION TEST LOCATION - SHELL BASE MATERIAL
□ COMPACTION TEST LOCATION - FILL MATERIAL
x SAMPLE LOCATION

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

COMPACTION TEST LOCATIONS FOR
L'AMBIANCE
LONGBOAT KEY, FLORIDA

DRAWN BY: kac	CHECKED BY:	DATE: 12/7/90
FILE NO. 90-8284	APPROVED BY:	

FIGURE 1



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PILE LOCATIONS FOR
L'AMBIANCE
LONGBOAT CLUB ROAD
LONGBOAT KEY, FLORIDA

DRAWN BY: kad	CHECKED BY:	DATE: 10/7/91
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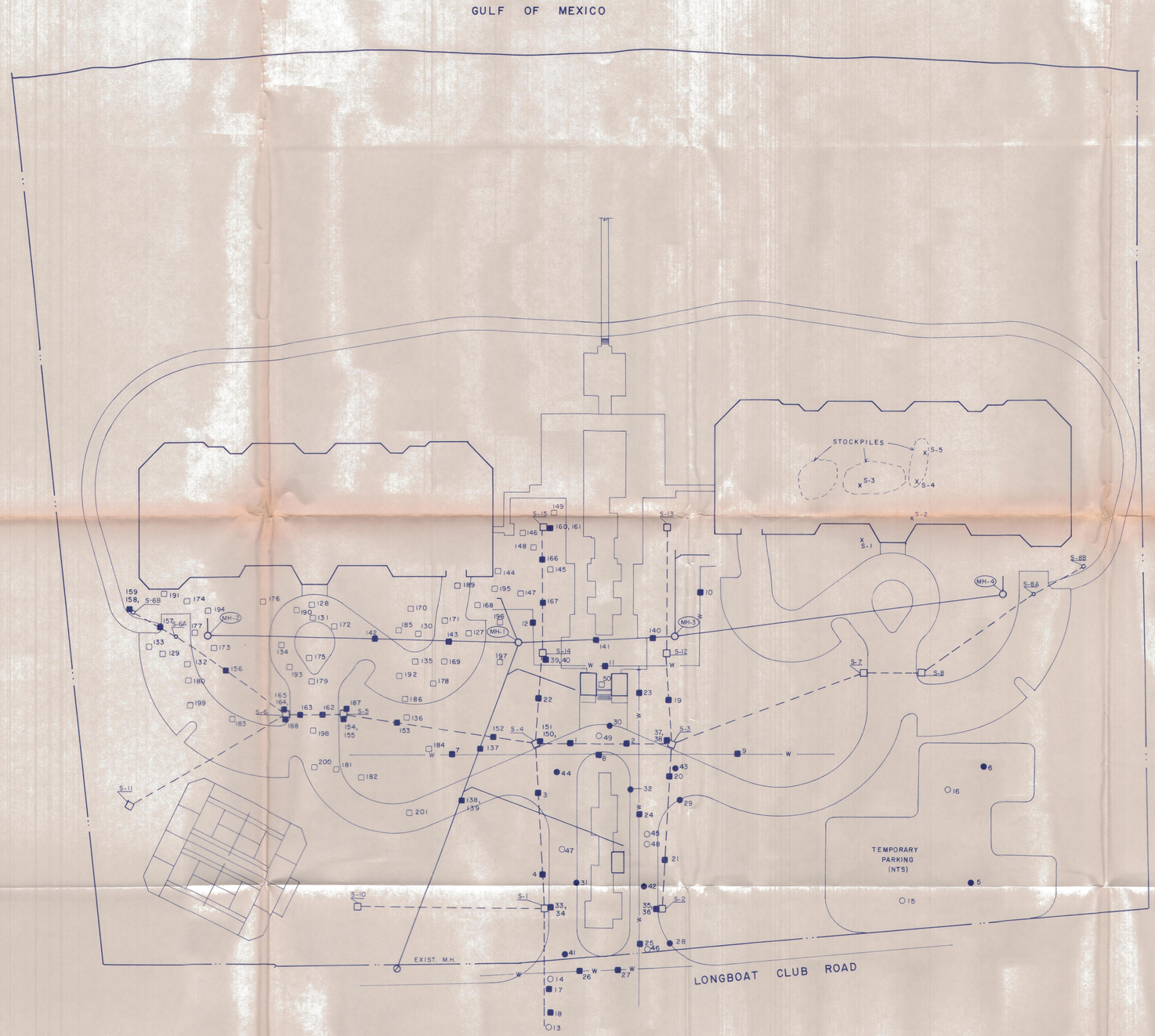
FIGURE 2



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   MAXIMUM DRY DENSITY 119.5 pcf @ 8.5% MOISTURE
   (AASHTO T-180) FILL
7. LIGHT TAN SLIGHTLY SILTY FINE SAND WITH CLAY
   MAXIMUM DRY DENSITY 112.6 pcf @ 13.2% MOISTURE
   (AASHTO T-180) FILL
8. LIGHT BROWN MODERATELY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 123.0 pcf @ 9.1% MOISTURE
   (AASHTO T-180) Fill

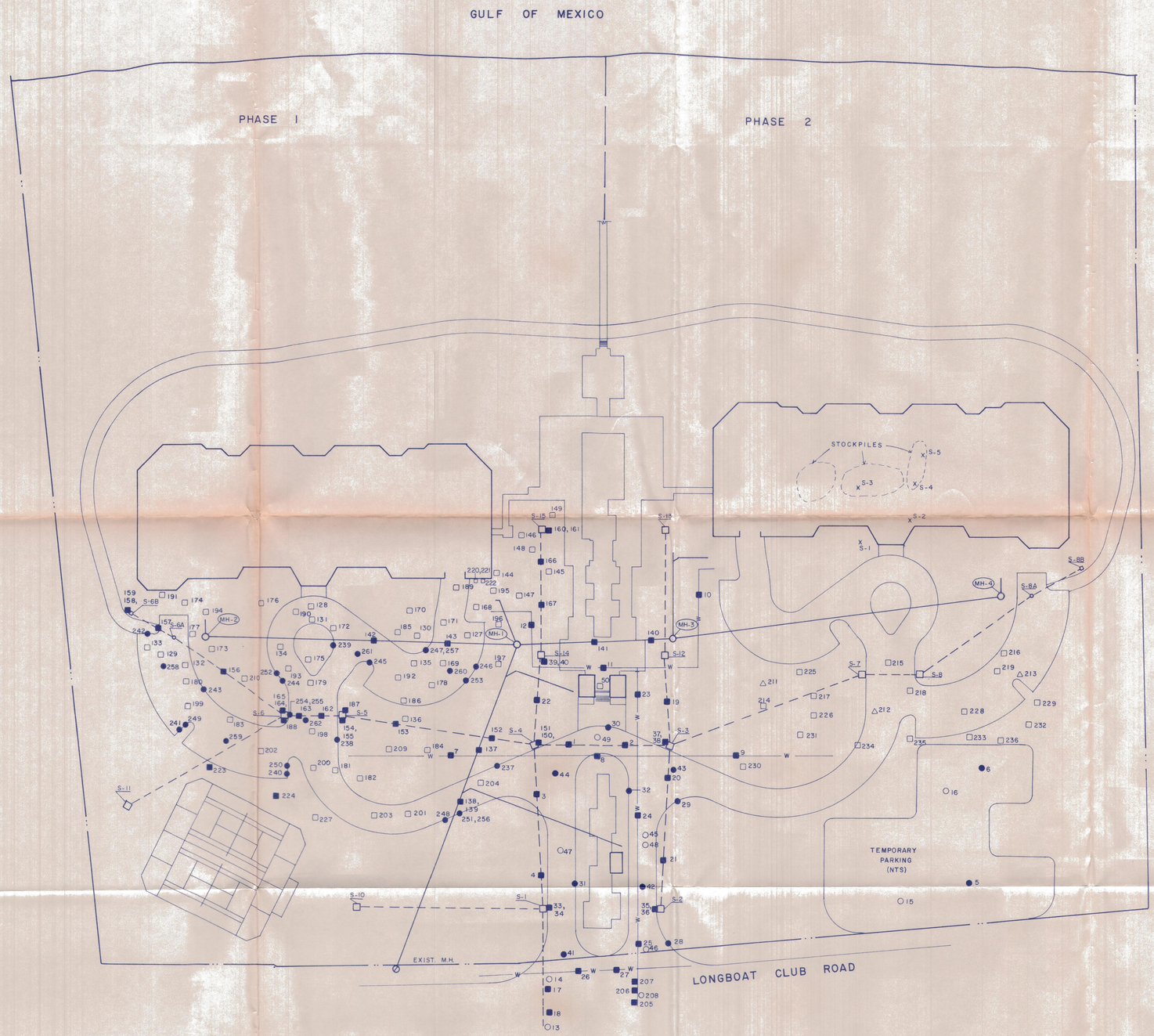
■ COMPACTION TEST LOCATION - BACKFILL MATERIAL
● COMPACTION TEST LOCATION - SUBBASE MATERIAL
○ COMPACTION TEST LOCATION - SHELL BASE MATERIAL
□ COMPACTION TEST LOCATION - FILL MATERIAL
x SAMPLE LOCATION

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

COMPACTION TEST LOCATIONS FOR
L'AMBIANCE
LONGBOAT KEY, FLORIDA

DRAWN BY: kac	CHECKED BY:	DATE: 12/7/90
FILE NO. 90-8284	APPROVED BY:	

FIGURE 1



SCALE: 1" = 50'

PROCTOR DATA

1. GRAY SLIGHTLY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 102.9 pcf @ 13.9% MOISTURE
   (AASHTO T-180) Backfill
2. BROWN SLIGHTLY SILTYFINE SAND WITH SHELL, ROCK & CLAY
   MAXIMUM DRY DENSITY 116.6 pcf @ 11.5% MOISTURE
   (AASHTO T-180) LBR = 94.0% Subbase
3. BROWN SLIGHTLY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 125.1 pcf @ 10.5% MOISTURE
   (AASHTO T-180) Base
4. GRAY SLIGHTLY SILTY FINE SAND WITH SOME ROCK (BASE)
   MAXIMUM DRY DENSITY 124.0 pcf @ 10.5% MOISTURE
   (AASHTO T-180); LBR = 110.0%
5. BROWN/GREY SLIGHTLY SILTY FINE SAND WITH TRACE ROCK AND SHELL
   MAXIMUM DRY DENSITY 106.7 pcf @ 13.8% MOISTURE
   (AASHTO T-180) Fill material
6. TAN SLIGHTLY SILTY FINE SAND WITH TRACE SHELL
   MAXIMUM DRY DENSITY 119.5 pcf @ 8.5% MOISTURE
   (AASHTO T-180) FILL
7. LIGHT TAN SLIGHTLY SILTY FINE SAND WITH CLAY
   MAXIMUM DRY DENSITY 112.6 pcf @ 13.2% MOISTURE
   (AASHTO T-180) FILL
8. LIGHT BROWN MODERATELY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 123.0 pcf @ 9.1% MOISTURE
   (AASHTO T-180) Fill

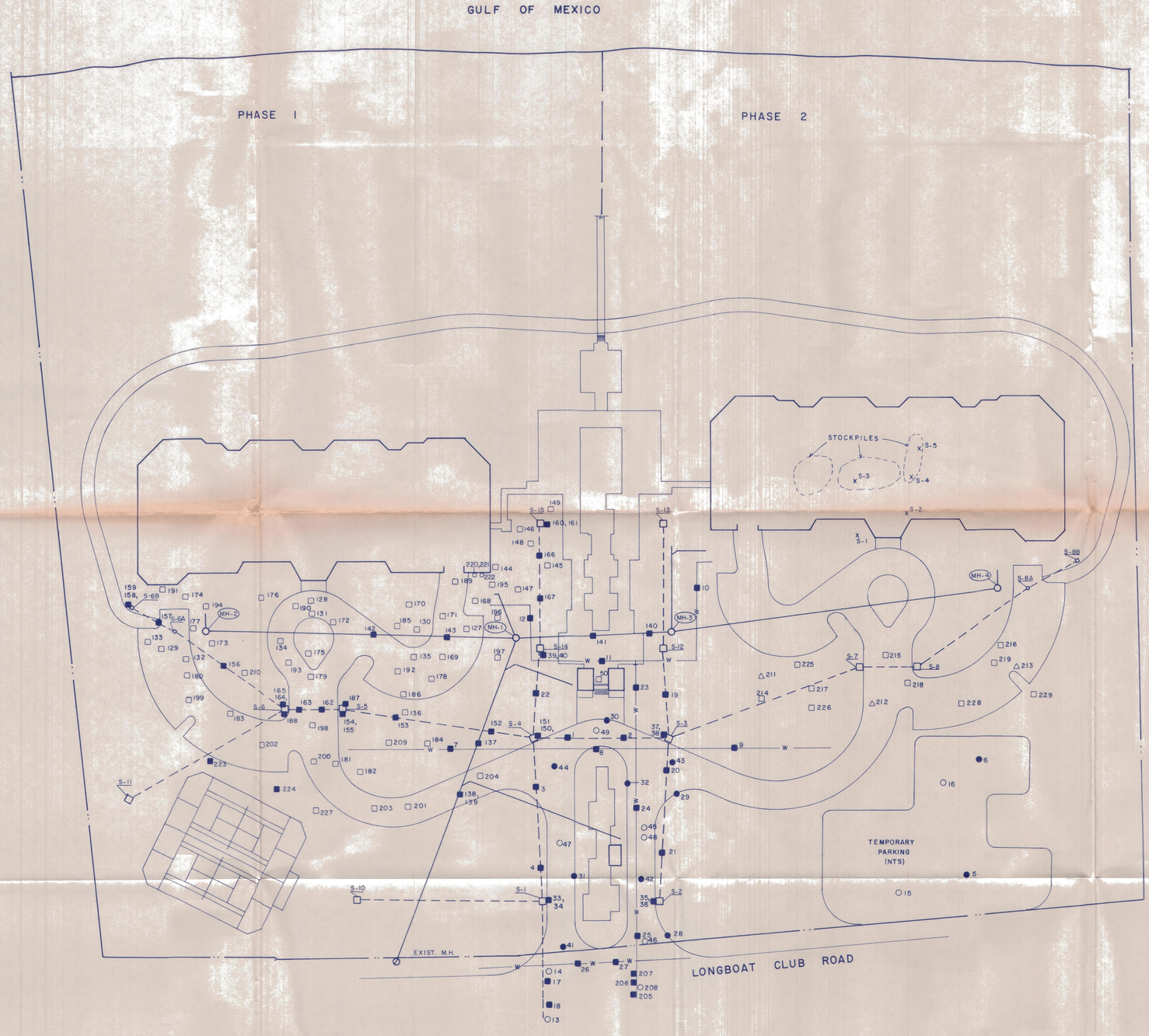
■ COMPACTION TEST LOCATION - BACKFILL MATERIAL
● COMPACTION TEST LOCATION - SUBBASE MATERIAL
○ COMPACTION TEST LOCATION - SHELL BASE MATERIAL
□ COMPACTION TEST LOCATION - FILL MATERIAL
x SAMPLE LOCATION

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

COMPACTION TEST LOCATIONS FOR
L'AMBIANCE
LONGBOAT KEY, FLORIDA

DRAWN BY: kac	CHECKED BY:	DATE: 12/7/90
FILE NO. 90-8284	APPROVED BY:	

FIGURE 1



PROCTOR DATA

1. GRAY SLIGHTLY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 102.9 pcf @ 13.9% MOISTURE
   (AASHTO T-180) Backfill
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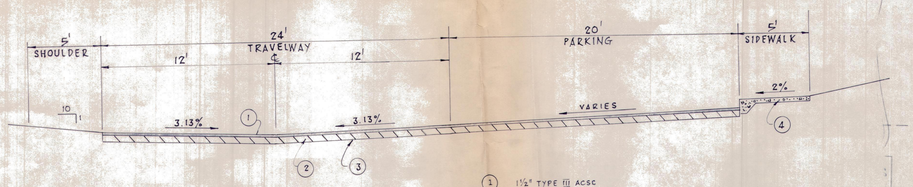
- ■ COMPACTION TEST LOCATION - BACKFILL MATERIAL
- ● COMPACTION TEST LOCATION - SUBBASE MATERIAL
- ○ COMPACTION TEST LOCATION - SHELL BASE MATERIAL
- □ COMPACTION TEST LOCATION - FILL MATERIAL
- x SAMPLE LOCATION

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

COMPACTION TEST LOCATIONS FOR
L'AMBIANCE
LONGBOAT KEY, FLORIDA

DRAWN BY: kac	CHECKED BY:	DATE: 12/7/90
FILE NO. 90-8284	APPROVED BY:	

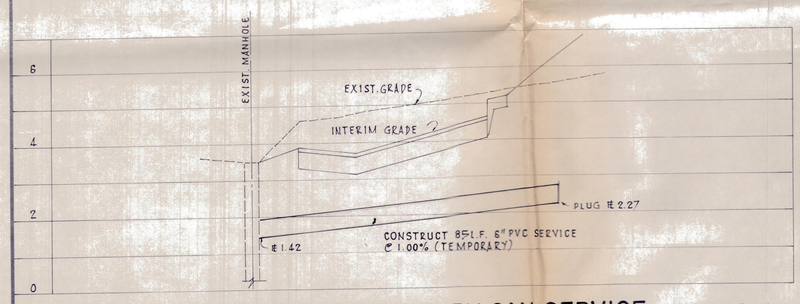
FIGURE 1



(3) 1½" TYPE III ACSC
(2) 6" PIT SHELL BASE LBR-100 COMPACTED TO 98% OF MAXIMUM DENSITY BY A.A.S.H.T. METHOD T-180
(3) COMPACTED SUB-BASE
(4) CONCRETE SIDEWALK 3000 P.S.I. @ 28 DAYS

TYPICAL DRIVEWAY SECTION (A-A)

SCALE: 1"=5"



PROFILE OF TEMPORARY SAN. SERVICE

SCALE: HOR. 1"=20'
VERT. 1"=2'



NOTE "A" TEMPORARY WASTEWATER COLLECTION SERVICE (6") TO BE CONSTRUCTED OVER 12" STORM PIPE. CLEARANCE ± 0.25'.

LTR.	DATE	REVISION	BY
A	11/13/90	ADDED 5 PARKING SPACES	MJ/EP
B	11/21/90	CHANGED 5' SIDEWALK TO 12'x8" TYPE III ASPH.	MJ/EP

SCALE: AS SHOWN
DATE: OCT., 1990
DESIGNED BY: H.V.C.
DRAWN BY: E.P.
CHECKED BY:
PROJECT NO: 2591-1

MILLARD J. YODER, P.E.
FL. CERT. NO. 33765

CONSULTING ENGINEERS & SURVEYORS
133 SOUTH McINTOSH RD.
SARASOTA, FLA. 33582

FOR: YALE PROPERTIES

L'AMBIANCE MISCELLANEOUS SERVICES

SALES CENTER SITE PLAN AND DETAILS

SMALLY, WELLFORD & NALVEN, Inc.

DRAWING NUMBER 1

REVISION

NO. G-2591-1001

AF 53466

⚠ NOTE: THIS PLAN IS FOR MASTER UTILITY LOCATIONS ONLY & IS NOT INTENDED FOR ANY OTHER PURPOSE.

SCALE: 1" = 50'

GULF OF MEXICO

RECORDED M.H.W. LINE (7-25-88) & PROPERTY LINE

M.H.W. LINE - JUNE 1990

DUNE - VEGETATION LINE

DUNE - VEGETATION LINE

FLORIDA COASTAL CONSTRUCTION CONTROL LINE - 1978

NOTE: LOCATE 8" FIRE LINE INSIDE FPL

8"-90° BEND

PROPOSED NORTH BUILDING

SOUTH BUILDING

SEE DETAIL 'A' FOR MORE DETAIL

POOL

8" @ BLDG. (4.40)

8" @ BLDG. (2.21)

8" @ BLDG. 4.42

8" @ BLDG. 3.45

MANHOLE No. 2

MANHOLE No. 1

MANHOLE No. 3

MANHOLE No. 4

SEE DETAIL 'B' FOR MORE DETAIL

6" GATE VALVE

6"x1" SADDLE TAP FOR 1" SERVICE

CORP STOP

FIRE HYDRANT ASSEMBLY

3" PVC SLEEVE UNDER ROADWAY (50 L.F.)

CONCRETE PAD SEE DWG. 6

APPROX. (200 L.F. 1" P.E. SERVICE) HAVING 30" COVER BELOW PROPOSED FINISH GRADE

TURN UP FOR FOUNTAIN CONNECTION USING SOLID PVC RISER SEE DETAIL A THIS DRAWING

UNDERGROUND CABLE TELEVISION

EXISTING MANHOLE

EXISTING 18"

EXISTING LIFT STATION

UNDERGROUND TELEPHONE CABLES

F.H. ASSEMBLY

DETAIL 'B'

REFER ALSO TO DWG. 19

SLEEVE (+24" COVER)

TIE-IN EXISTING 6" SEWER LINE

GUARD SHACK

GUARD HOUSE

1" WATER METER

EXISTING

WATER SERVICE

6" TEE

6"x6" CROSS

2-6" GATE VALVES W/ BOXES

EXISTING TEMP. BLOW-OFF

TEMP. BLOW OFF

6"-90° BEND (T.P. 5.00)

8"-90° BEND (T.P. 5.00)

FOR DETAILS SEE (18)

STATE OF FLORIDA COASTAL CONSTRUCTION CONTROL LINE ADOPTED JAN. 1988.

1" WATER METER W/ BACKFLOW PREVENTOR

FIRE HYDRANT ASSEMBLY

TEMPORARY SCH. 40 2" PVC

SALES CENTER

6" TEMPORARY SAN. SERVICE

TIE-IN TO EXISTING MANHOLE H. 1.90

TEMPORARY WATER METER & 2" CHECK VALVE

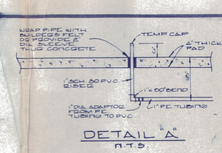
LONGBOAT CLUB ROAD

UNDERGROUND GAS LINES

OFF-SITE WATER LINE SEE (13)

[CONNECTION TO EXISTING WATER MAIN 9/92]

INFORMATION IN BRACKETS PROVIDED BY CONTRACTOR.



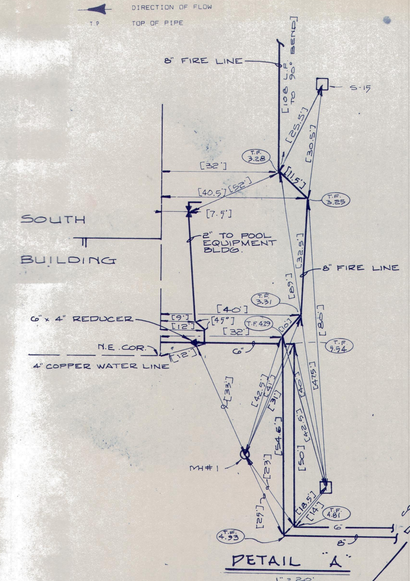
DETAIL 'A'
N.T.S.

SITE CONTRACTOR TO MAKE SANITARY CONNECTIONS TO BUILDING STUB-OUTS.

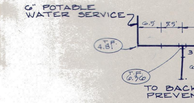
NOTES

1. ALL WATER LINES SHALL BE BLUE COLORED AWWA C-900 CLASS 150 DR 18 P.V.C. DUCTILE IRON FITTINGS AND PIPE SHALL BE THICKNESS CLASS 53 WITH ONE (ONE) MIL THICKNESS COAL TAR ENAMEL INSIDE AND OUTSIDE.
2. SANITARY SEWER GRAVITY PIPING SHALL BE GREEN COLORED AWWA C-900 CLASS 150 DR 18 P.V.C. DUCTILE IRON PIPE SHALL BE THICKNESS CLASS 52 WITH A 40 MIL INTERNAL POLYETHYLENE LINING AND A ONE (1) MIL THICKNESS COAL TAR EXTERIOR COATING. PVC FIRE MAIN SHALL BE AWWA C-900 CLASS 200 DR 14
3. ALL BELOW GROUND DUCTILE IRON PIPE SHALL BE WRAPPED COMPLETELY IN EIGHT (8) MIL BLACK POLYETHYLENE.
4. ALL POTABLE WATER AND FORCE MAIN PIPING BETWEEN THE BACKFLOW PREVENTORS AND FIVE FEET (5') FROM THE FACE OF THE BUILDING SHALL BE RESTRAINED JOINT PIPE. METHOD OF RESTRAINT WILL BE ONLY AS APPROVED BY THE ENGINEER.
5. THE PRIVATE FIRE MAIN PIPING ON THE BUILDING SIDE OF THE BACKFLOW PREVENTOR SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION ENGINEER. TESTING SHALL BE WITNESSED BY THE LONGBOAT KEY FIRE MARSHALL AND THE ENGINEER.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE TOWN OF LONGBOAT KEY SPECIFICATIONS.
7. THE SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND TESTING OF WATER & SEWER PIPING TO WITHIN FIVE FEET (5') OF THE FACE OF BUILDINGS. IF THE BUILDING PLUMBING PRECEDES THE SITE UTILITY CONSTRUCTION, IT SHALL BE THE SITEWORK CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE BUILDING CONNECTION, ELEVATIONS & TO CONNECT THE PIPING WITH APPROPRIATE ADAPTORS OR COUPLINGS.

B.C.	BACK OF CURB
C.L.	CENTERLINE
3.5	EXISTING SPOT ELEVATION
⊕	VALVE
◇	FIRE HYDRANT
⊘	POWER POLE
⊹	LIGHT POLE
CT	CABLE TV RISER
E	ELECTRICAL RISER
G	GAS RISER
	WATER LINE
	SANITARY SEWER LINE
	FIRE LINE
	GAS LINE
	CABLE TV
	CLEANOUT
	DIRECTION OF FLOW
T.P.	TOP OF PIPE



DETAIL "A"
1" = 20'



DETAIL "C"
1" = 20'

RECEIVED NOV 12 1992

LTR.	DATE	REVISION	BY
K	11/9/92	ADD RECORD DWG. INFO. CONFORM DRAWINGS TO CONSTRUCTION RECORDS	CRS/EP CAM-SAID
J	9/1/10	ADD SEWER CLEANOUT & TEMPORARY UTILITIES TO IT	WF/EP
H	10/24/97	ADDED 18" SEWER MAIN & MANHOLE #4	CAM/SAID
G	8/13/97	ADDED 14" GAS MAIN & 2" GAS MAIN TO BUILDING	CAM/SAID
F	2/27/95	ADDED FIRE LINE	CRS/EP
E	2/10/95	REV. WATER & FIRE LINES & P.E. CALCS.	CRS/EP
D	1/19/94	ADD UTILITY SHELL, POOL & BLDG. #2 REVISIONS	CAM

SCALE: 1"=50'
DRAWN BY: R.B.K.
CHECKED BY:
DATE: 7/90
DESIGNED BY: J.M.B.
PROJECT NO. 2591

11/9/92

WILLARD J. YOPER, P.E.
FL. CERT. NO. 45765

SARASOTA, FLA. 33582

133 SOUTH McINTOSH RD.

SURVEYORS & ENGINEERS

CONSULTING ENGINEERS & SURVEYORS

SMALLY, WELLFORD & NALVEN, Inc.

FOR: YALE PROPERTIES

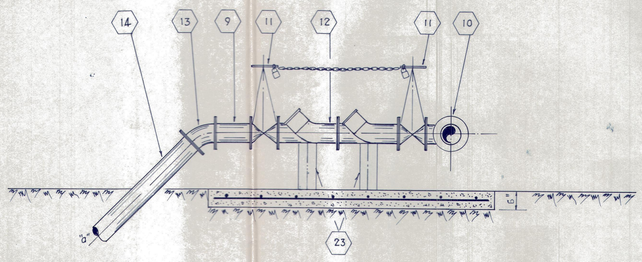
L'AMBIANCE
MASTER UTILITY PLAN

DRAWING NUMBER 12

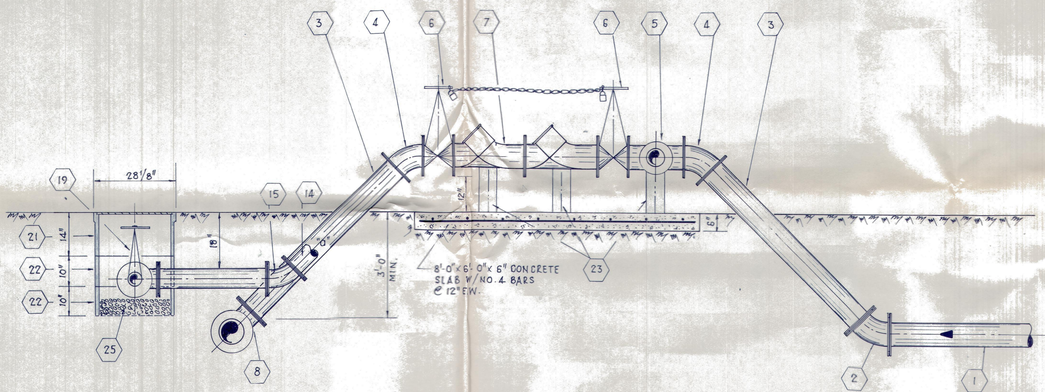
REVISION "K"

INDEX NO. G-2591-017

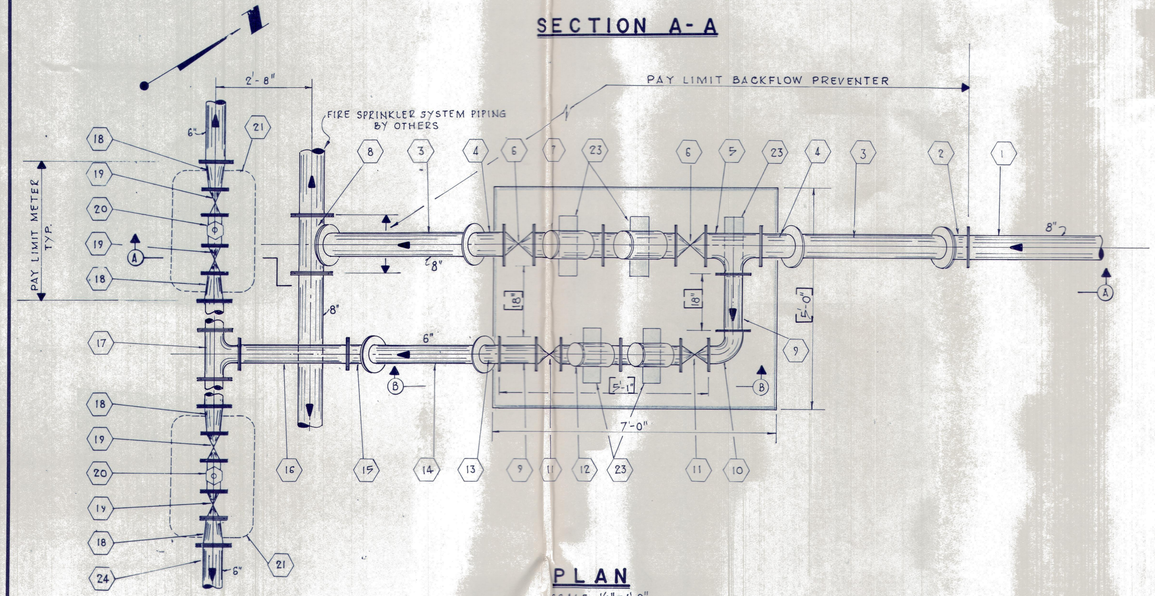
AF 53466



SECTION B-B



SECTION A-A



PLAN

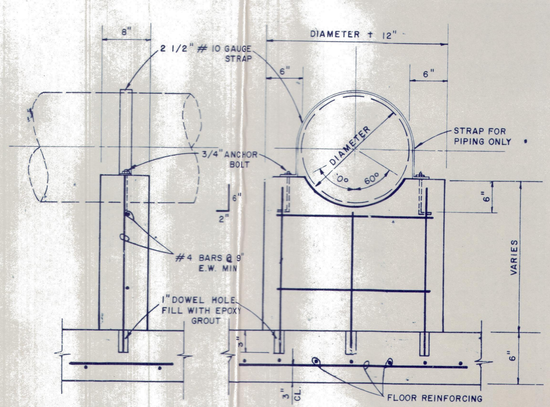
SCALE: 1/2" = 1'-0"

NOTES:

1. PRIOR TO ORDERING MATERIAL, PROVIDE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS FROM FIRE SPRINKLER CONTRACTOR TO ENGINEER TO OBTAIN VERIFICATION ON EQUIPMENT SIZES BASED ON FINAL FIRE SERVICE FLOW AND PRESSURE REQUIREMENTS. THE FIRE SPRINKLER SYSTEM DESIGNER IS RESPONSIBLE FOR THE ACCURACY OF ALL SERVICE PIPE AND FITTINGS TO PROVIDE PROPER FLOW CAPACITY.
2. NO ALTERNATE EQUIPMENT, MATERIAL OR ARRANGEMENT SHALL BE USED UNLESS PRIOR APPROVAL IS OBTAINED FROM THE ENGINEER.
3. ALL CONCRETE TO BE 3000 P.S.I. @ 28 DAYS FOR STRUCTURES SHOWN ON THIS DRAWING.
4. ALL PIPING AND FITTINGS THROUGHOUT THIS DETAIL SHALL BE RESTRAINED JOINT. NO FLANGES SHALL BE UTILIZED BELOW GROUND.

INFORMATION IN BRACKETS PROVIDED BY CONTRACTOR

1. 8" PVC (SDR 18) C-900 OR DUCTILE IRON PIPE, CLASS 53
2. 1 - 8" - 45 BEND, M.J.
3. 8" D.I.P. CLASS 53, RESTRAINED JOINT PIPE, FLANGED ONE END, LENGTH AS REQUIRED
4. 1 - 8" - 45° BEND, FL.
5. 1 - 8" x 8" x 6" TEE, FL.
6. 2 - 8" GATE VALVE FL.. PROVIDE 3/4" GALVANIZED CHAIN AND PADLOCK PER T.L.K. REQUIREMENTS FOR EACH VALVE IN NORMALLY OPEN POSITION
7. 1 - 8" MODEL 806 DDC DOUBLE CHECK BACKFLOW PREVENTER BY FEBCO
8. 8" x 8" x 8" TEE, M.J.
9. 6" D.I.P. CLASS 53, FL., LENGTH AS REQUIRED
10. 1 - 6" - 90° BEND, FL.
11. 2 - 6" GATE VALVE, FL.. PROVIDE 3/4" GALVANIZED CHAIN AND PADLOCK PER T.L.K. REQUIREMENTS FOR EACH VALVE IN NORMALLY OPEN POSITION
12. 1 - 6" MODEL 806 DOUBLE CHECK BACKFLOW PREVENTER BY FEBCO W/DETECTOR BY-PASS
1. 1 - 6" - 45° BEND, FL.
14. 6" D.I.P. CLASS 53, RESTRAINED JOINT PIPE, FLANGED ONE END, LENGTH AS REQUIRED
15. 1 - 6" - 45° BEND, M.J.
16. 6" D.I.P., LENGTH AS REQUIRED
17. 1 - 6" x 6" x 6" TEE, M.J.
18. 4 - 6" x 3" REDUCER, M.J.
19. 4 - 3" GATE VALVE, M.J. RESILIENT WEDGE WATEROUS SERIES 500 OR APPROVED EQUAL
20. 2 - 3" TURBINE METER BY PRECISION METERS, INC.
21. 2 - NO. 67TR BODY AND ONE PIECE STEEL TRAFFIC COVER WITH READING LID BY BROOKS PRODUCTS, INC.
22. 4 - NO. 67 BOX EXTENSIONS BY BROOKS PRODUCTS, INC.
23. CONCRETE PIPE SUPPORT, SEE DETAIL
24. 6" PVC (SDR14) C-900 OR DUCTILE IRON PIPE, CLASS 53
25. 6" THICK MIN. SMALL WASHED SHELL PLACED ON POLY FILTER X SUPPLIED BY CARTHAGE MILLS AND 2 LAYER OF 6 MIL BLACK VISQUEEN



CONCRETE SUPPORT FOR PIPE AND FITTING

N.T.S.

11/1992

LTR.	DATE	REVISION	BY
"A"	8/27/90	REVISED PER CITY & COMMENTS	MY/FP
"B"	10/30/90	ADDED PAY LIMITS	MY/FP
"C"	11/9/92	ADD RECORD DWG INFO.	CE/FP

DESIGNED BY: J.M.B
DRAWN BY: E.P.
CHECKED BY:
DATE: JULY, 1990
SCALE: AS SHOWN
PROJECT NO. 2591

MILLARD J. YODER, P.E.
FL. CERT. NO. 35765

SARASOTA, FLA. 33582
133 SOUTH McINTOSH RD.

CONSULTING ENGINEERS & SURVEYORS

DETECTOR CHECK VALVE & METER ASSEMBLY DETAIL

L'AMBIANCE

SMALLY, WELLFORD & NALVEN, Inc.

FOR: YALE PROPERTIES

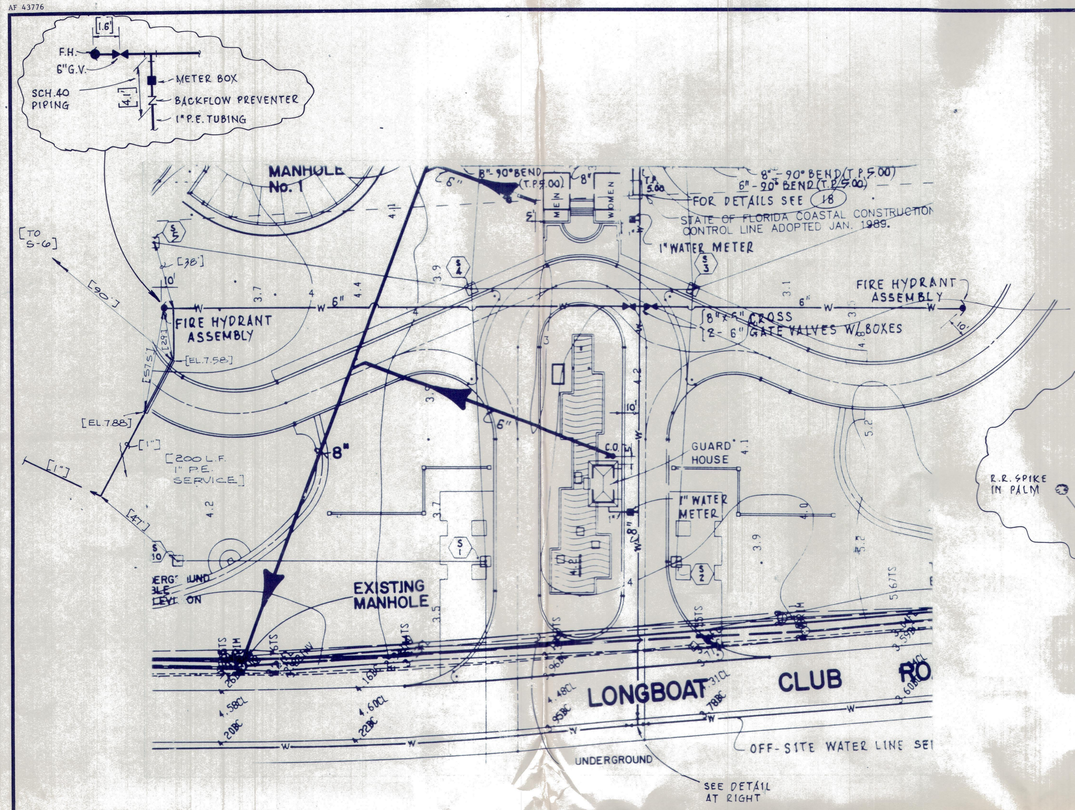
DRAWING NUMBER 18

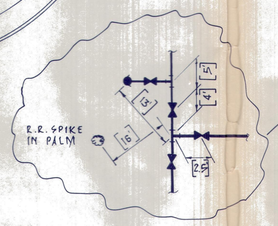
REVISION "D"

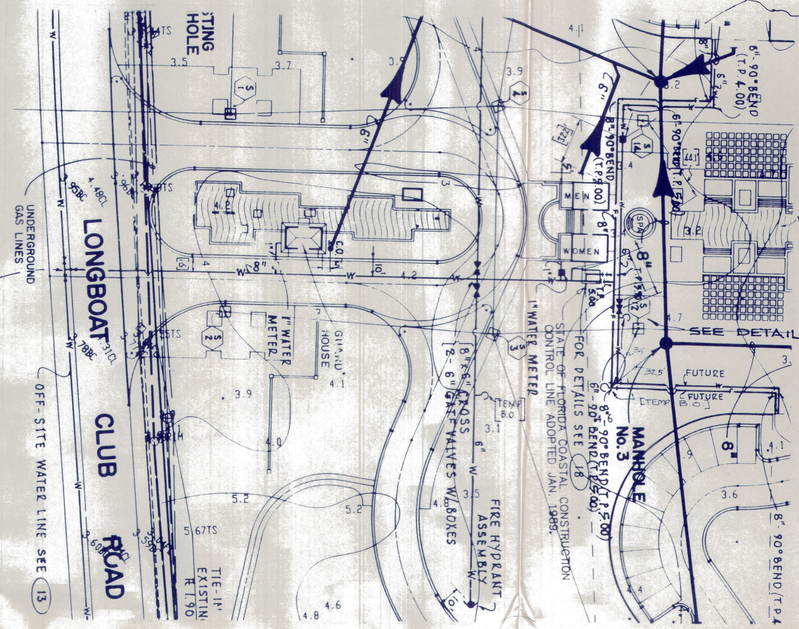
INDEX NO. G-2591-023

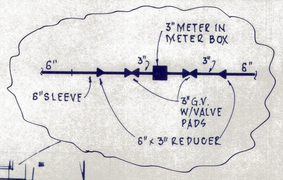
AF 43776

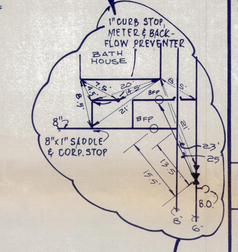
⚠ NOTE: THIS PLAN IS FOR USE FOR WATERLINES ONLY



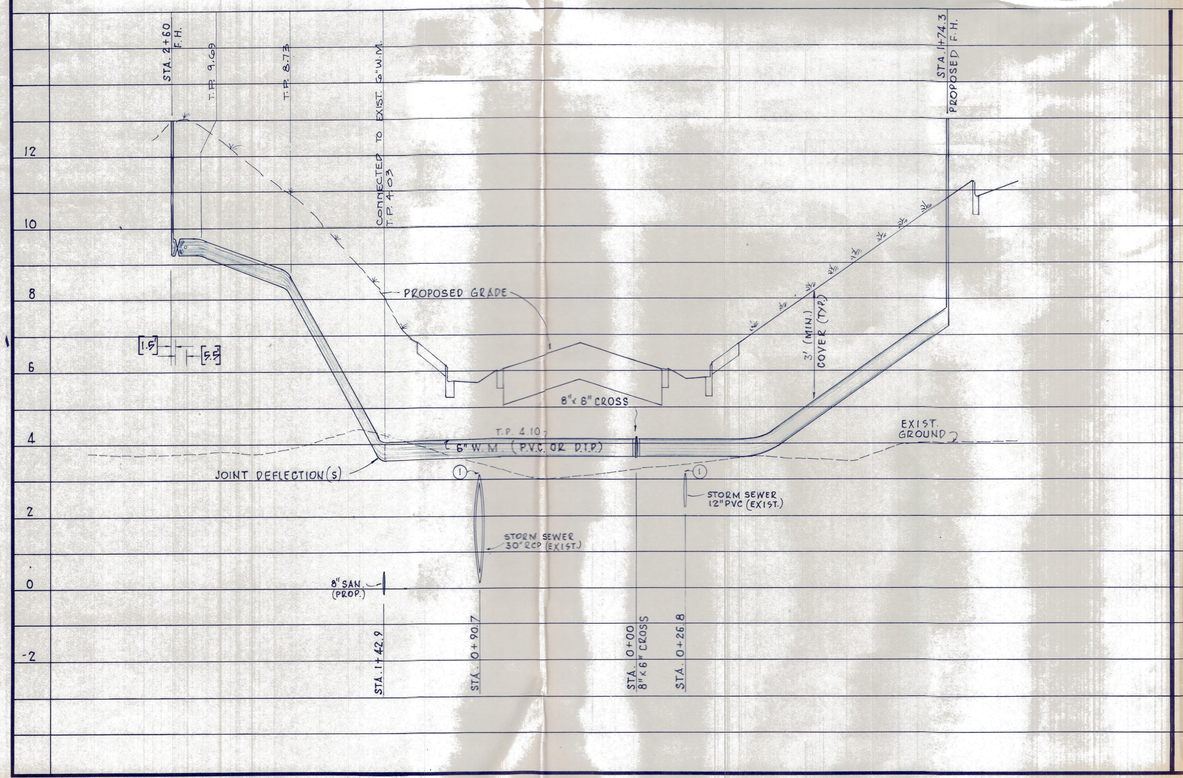


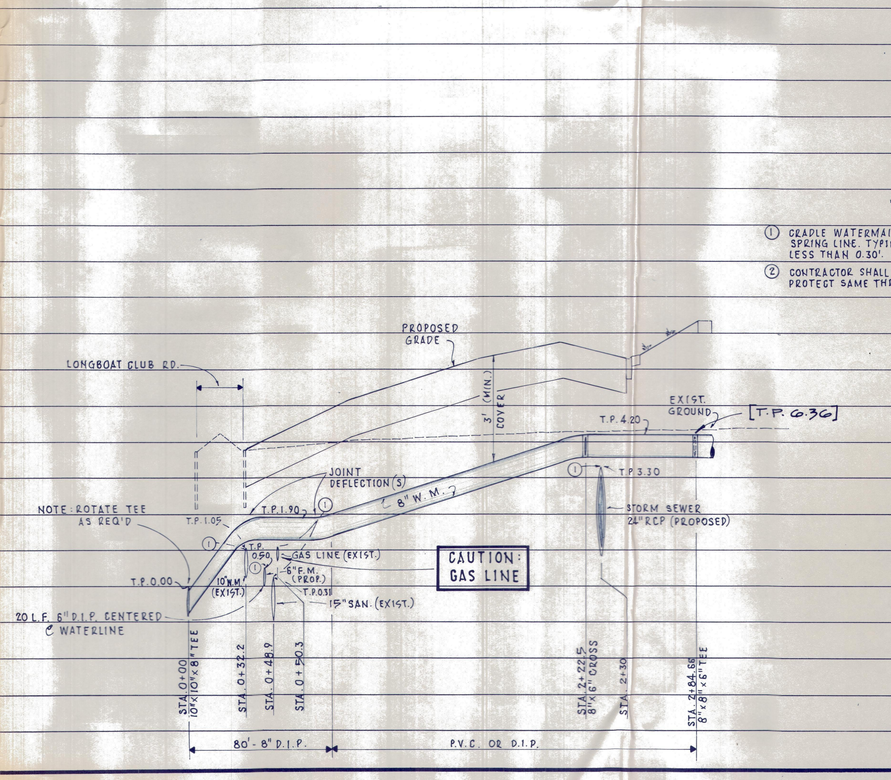


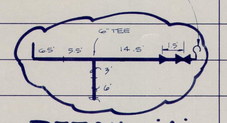




NOTE: DATA IN BRACKETS CONFORM DRAWINGS TO CONSTRUCTION RECORDS BY TRI-D SEPTEMBER, 1992







LTR.	DATE	REVISION
4	7-7-92	ADD WATER LINE TO STE.
5	9/8/92	ADD RECORD DWG. INFO

DESIGNED BY M.J.Y.
DATE: DEC. 1990
CHECKED BY
PROJECT NO. 2591
DRAWN BY E.P.
SCALE: HOR. 1"=40' VERT. 1"=2'
FL. CERT. NO. MILLARD J. YODER, P.E.

133 SOUTH McINTOSH RD. SARASOTA, FLA. 33582

SMALLY, WELLFORD & NALVEN, Inc. CONSULTING ENGINEERS & SURVEYORS

FOR: YALE PROPERTIES

L'AMBIANCE

WATERLINE PLAN & PROFILE

DRAWING NUMBER 19

REVISION "D"

INDEX NO. G-2591-031

6/25/93

Tony Mione?

L'ambiance
approved sidewalk
on condition
sod along

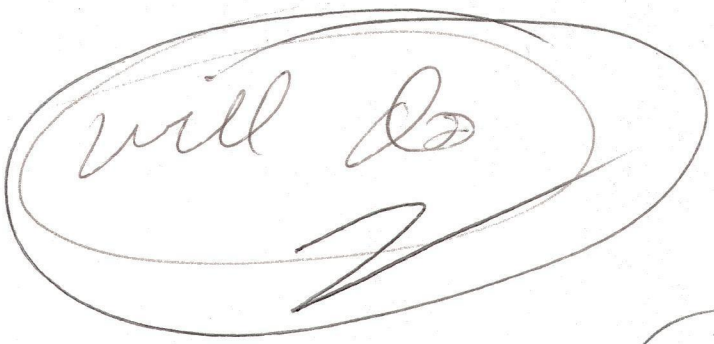
sidewalk be cut.

too high

needs to be

cut down

will do



CG

AF 53466

⚠ NOTE: THIS PLAN IS FOR MASTER UTILITY LOCATIONS ONLY & IS NOT INTENDED FOR ANY OTHER PURPOSE.

SCALE: 1" = 50'

GULF OF MEXICO

RECORDED M.H.W. LINE (7-25-88) & PROPERTY LINE

M.H.W. LINE - JUNE 1990

DUNE - VEGETATION LINE

DUNE - VEGETATION LINE

FLORIDA COASTAL CONSTRUCTION CONTROL LINE - 1978

NOTE: LOCATE 8" FIRE LINE INSIDE FPL

8" FIRE LINE

6"x30° BEND

6"x30° BEND

8" PLUG

214'

8"-90° BEND

[214'-0"]

PROPOSED NORTH BUILDING

SOUTH BUILDING

SEE DETAIL "A" FOR MORE DETAIL

POOL

DOOR

8" @ BLDG. (4.40)

8" @ BLDG. (2.21)

8" @ BLDG. 3.45

8" @ BLDG. 4.42

8"

MANHOLE No. 2

MANHOLE No. 1

MANHOLE No. 3

MANHOLE No. 4 BRING TO GRADE

SEE DETAIL 'B' FOR MORE DETAIL

6"x8" TEE

6"x8" WYE

6"x6" CROSS

2-6" GATE VALVES W/BOX'S

6" GATE VALVE

6"x1" SADDLE TAP FOR 1" SERVICE

CORP STOP

FIRE HYDRANT EL 8.73

FIRE HYDRANT ASSEMBLY

3" PVC SLEEVE UNDER ROADWAY (50 L.F.)

APPROX. 600 L.F. 1" P.E. SERVICE, HAVING 30" COVER BELOW PROPOSED FINISH GRADE

CONCRETE PAD SEE DWG. 6

TURN UP FOR FOUNTAIN CONNECTION USING SOLID PVC ELBOW SEE DETAIL 'A' THIS DRAWING

6" SEWER SERVICE

SLEEVE TIED IN EXISTING 6" SEWER LINE TO GUARD SHACK (+24" COVER)

STATE OF FLORIDA COASTAL CONSTRUCTION CONTROL LINE ADOPTED JAN. 1989.

1" WATER METER W/ BACKFLOW PREVENTOR

EXISTING TEMP BLOW-OFF

FIRE HYDRANT ASSEMBLY

TEMP BLOW OFF 6"-90° BEND (T.P. 5.00) 6"-90° BEND (T.P. 5.00) 6"-90° BEND (T.P. 5.00)

FOR DETAILS SEE (18)

GUARD HOUSE

1" WATER METER

EXISTING

TEMPORARY SCH. 40 2" PVC

SALES CENTER

6" TEMPORARY SAN. SERVICE

TEMPORARY WATER METER & 2" CHECK VALVE

TIE-IN TO EXISTING MANHOLE EL 1.90

UNDERGROUND CABLE TELEVISION SERVICE TO CONSTRUCTION TRAILER

EXISTING MANHOLE NO. 6

EXISTING 18"

3-4" PVC GTE CONDUITS

4" PVC GAS

LONGBOAT CLUB ROAD

EXISTING LIFT STATION

UNDERGROUND TELEPHONE CABLES

UNDERGROUND GAS LINES

OFF-SITE WATER LINE SEE (13)

[CONNECTION TO EXISTING WATER MAIN 9/92]

[6" x 1" SADDLE & CORP. STOP]

F.H. ASSEMBLY

REFER ALSO TO DWG. 19

DETAIL "B"

INFORMATION IN BRACKETS PROVIDED BY CONTRACTOR.

FOR CONSTRUCTION OF NORTH BLDG. - 10/93

WRAP PIPE WITH BUILDERS FELT OR APPROVED EQUAL & THUG CONCRETE

TEMP CAP

4" THICK CONCRETE PAD

6" SCH 80 PVC RISER

6"x6" BEND

1" P.E. TUBING

1" GALV. ADAPTOR COUPLING TO P.E. TUBING

1" GALV. ADAPTOR COUPLING TO PVC

DETAIL "A" N.T.S.

SITE CONTRACTOR TO MAKE SANITARY CONNECTIONS TO BUILDING STUB-OUTS.

NOTES

1. ALL WATER LINES SHALL BE BLUE COLORED AWWA C-900 CLASS 150 DR 18 P.V.C. DUCTILE IRON FITTINGS AND PIPE SHALL BE THICKNESS CLASS 53 WITH ONE (ONE) MIL THICKNESS COAL TAR ENAMEL INSIDE AND OUTSIDE.
2. SANITARY SEWER GRAVITY PIPING SHALL BE GREEN COLORED AWWA C-900 CLASS 150 DR 18 P.V.C. DUCTILE IRON PIPE SHALL BE THICKNESS CLASS 52 WITH A 40 MIL INTERNAL POLYETHYLENE LINING AND A ONE (1) MIL THICKNESS COAL TAR EXTERIOR COATING. PVC FIRE MAIN SHALL BE AWWA C-900 CLASS 200 DR 14
3. ALL BELOW GROUND DUCTILE IRON PIPE SHALL BE WRAPPED COMPLETELY IN EIGHT (8) MIL BLACK POLYETHYLENE.
4. ALL POTABLE WATER AND FIRE MAIN PIPING BETWEEN THE BACKFLOW PREVENTORS AND FIVE FEET (5') FROM THE FACE OF THE BUILDING SHALL BE RESTRAINED JOINT PIPE. METHOD OF RESTRAINT WILL BE ONLY AS APPROVED BY THE ENGINEER.
5. THE PRIVATE FIRE MAIN PIPING ON THE BUILDING SIDE OF THE BACKFLOW PREVENTOR SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION ENGINEER. TESTING SHALL BE WITNESSED BY THE LONGBOAT KEY FIRE MARSHALL AND THE ENGINEER.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE TOWN OF LONGBOAT KEY SPECIFICATIONS.
7. THE SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND TESTING OF WATER & SEWER PIPING TO WITHIN FIVE FEET (5') OF THE FACE OF BUILDINGS. IF THE BUILDING PLUMBING PRECEEDS THE SITE UTILITY CONSTRUCTION, IT SHALL BE THE SITEWORK CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE BUILDING CONNECTION ELEVATIONS & TO CONNECT THE PIPING WITH APPROPRIATE ADAPTORS OR COUPLINGS.

NORTH BLDG.

POOL

(41.9')

(63.4')

C.O.

(14.5')

(27.7')

WALL

MANHOLE #3

(27.5')

6" W.M.

(22.5')

B.C. BACK OF CURB
C.L. CENTERLINE
EXISTING SPOT ELEVATION
VALVE
FIRE HYDRANT
POWER POLE
LIGHT POLE
CABLE TV RISER
ELECTRICAL RISER
GAS RISER
WATER LINE
SANITARY SEWER LINE
FIRE LINE
GAS LINE
CABLE TV
CLEANOUT
DIRECTION OF FLOW
TOP OF PIPE

8" FIRE LINE

S-13

SOUTH BUILDING

8" TO POOL EQUIPMENT BLDG.

8" FIRE LINE

6"x4" REDUCER

N.E. COR.

4" COPPER WATER LINE

MH#1

S-14

CONTINUED DETAIL 'C'

PETAIL "A"

RECEIVED
DEC 22 1993
PUBLIC WORKS DEPT.

PRINTED
DEC 21 1993
SMALLY, WELLFORD & NALVEN
A DIVISION OF WILSON, MILLER, BARTON & PEEK, INC.

6" POTABLE WATER SERVICE

3' G.V.

3' BLOW-OFF

3' D.I.P.

6"x3" REDUCER

6" D.I.P.

TO BACKFLOW PREVENTER

DETAIL "C"

CFR/EP 10-26-93 ADD SWING TIES FOR N. BLVD UTILITIES
CFR/DB 10-05-93 REVISE WATER & FIRE LINES FOR NORTH BLDG.
CFR/EP 6-30-93 ADD BUILDING SERVICES
CFR/EP 6-30-93 ADD REQUIRED DWG NOS. CLEAR UTS
CFR/EP 6-30-93 CONFORM DRAWINGS TO CONSTRUCTION RECORDS

LTR	DATE	REVISION	BY
A	9/1/92	ADD SWING TIES FOR N. BLVD UTILITIES	MV/EP
B	10/15/92	ADDED "A" & "B" DETAILS, REVISED BUILDING SERVICES	JMB/CFR
C	10/29/92	ADDED FIRE LINE	CFR/EP
D	2/17/93	REVISED WATER LINES TO 1" & 2"	MV/DB
E	5/10/93	ADD WATER LINE & DETAIL 'A'	MV/DB
F	5/19/93	ADD UTILITY ONLY NOTE & DETAIL 'C'	CFR/EP

SCALE: 1" = 50'
DESIGNED BY: J.M.B.
DATE: 7/90
DRAWN BY: R.B.K.
CHECKED BY:
PROJECT NO: 2591
MILLARD F. SNYDER, P.E. FL DEPT NO. 35765

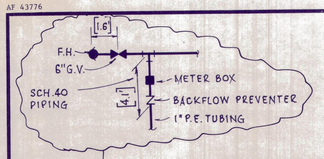
SARASOTA, FLA. 33582
133 SOUTH McINTOSH RD.
SURVEYORS & ENGINEERS
CONSULTING ENGINEERS & SURVEYORS

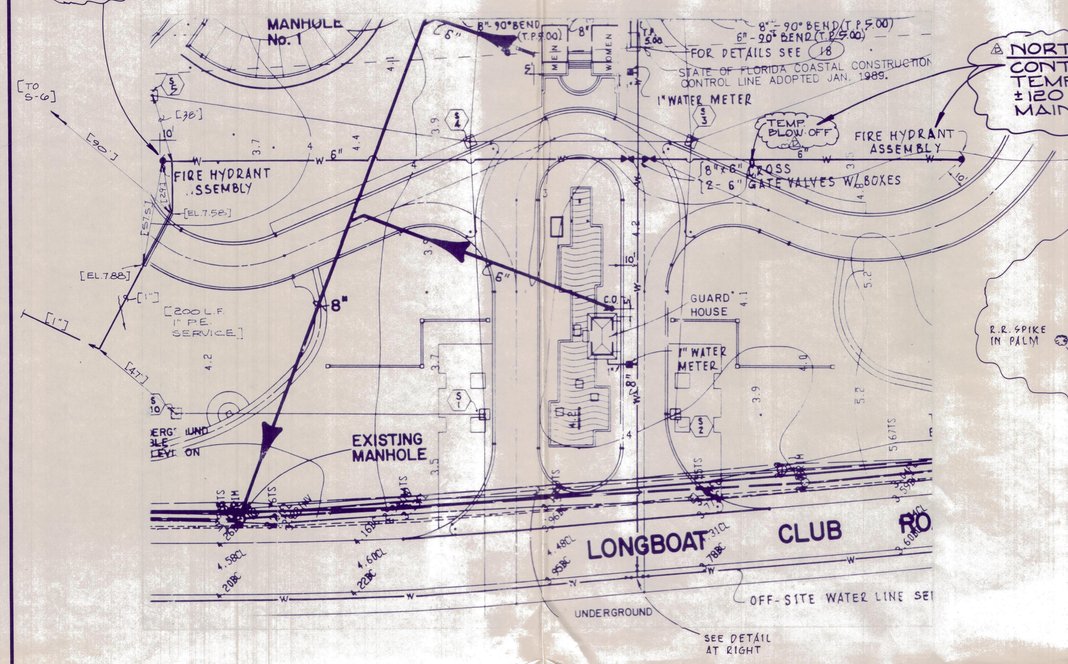
FOR: YALE PROPERTIES
L'AMBIANCE
MASTER UTILITY PLAN
SMALLY, WELLFORD & NALVEN, Inc.

DRAWING NUMBER 12
REVISION "F"

INDEX NO G-2591-017

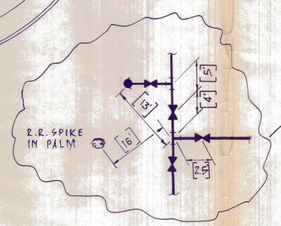
AF 43776

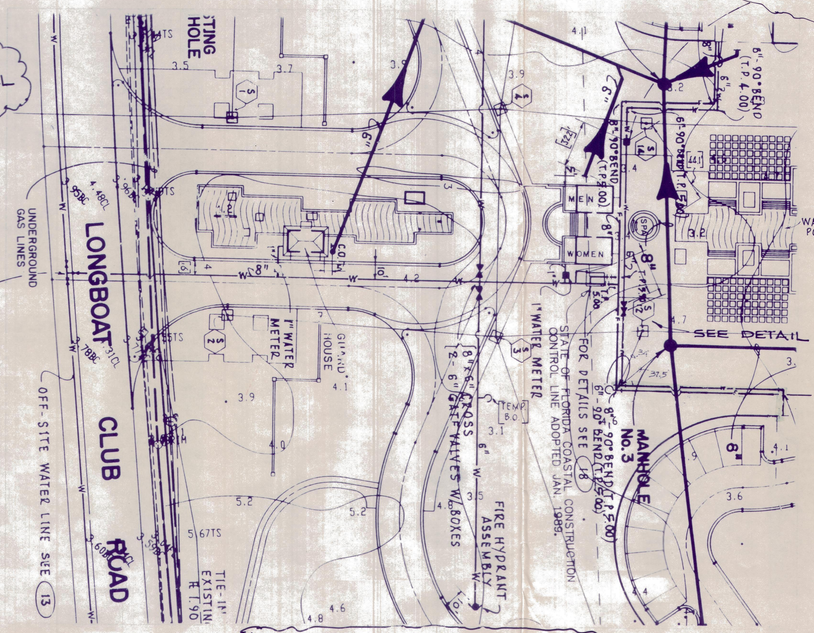


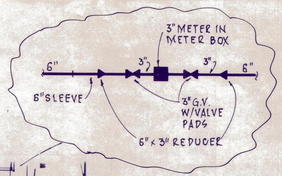


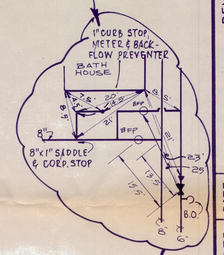
⚠ NOTE: THIS PLAN IS FOR USE FOR WATERLINES ONLY

⚠ NORTH BUILDING: CONTRACTOR TO REMOVE TEMP. BLOW-OFF & INSTALL ±120 L.F. OF 6" WATER MAIN & FIRE HYRANT



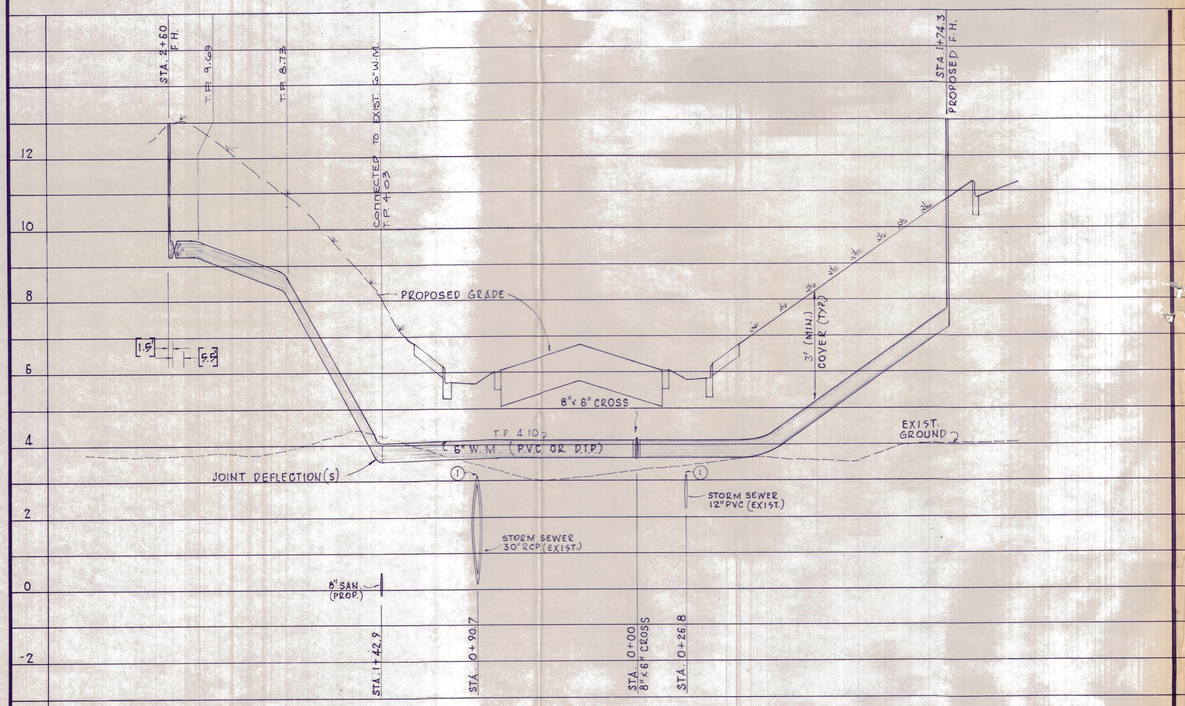






⚠ REFER TO DETAIL AT LEFT & ON DWG. (12) FOR ADDITIONAL INFORMATION

NOTE: DATA IN BRACKETS CONFORM DRAWINGS TO CONSTRUCTION RECORDS BY TRI-D SEPTEMBER, 1992



NORTH BUILDING

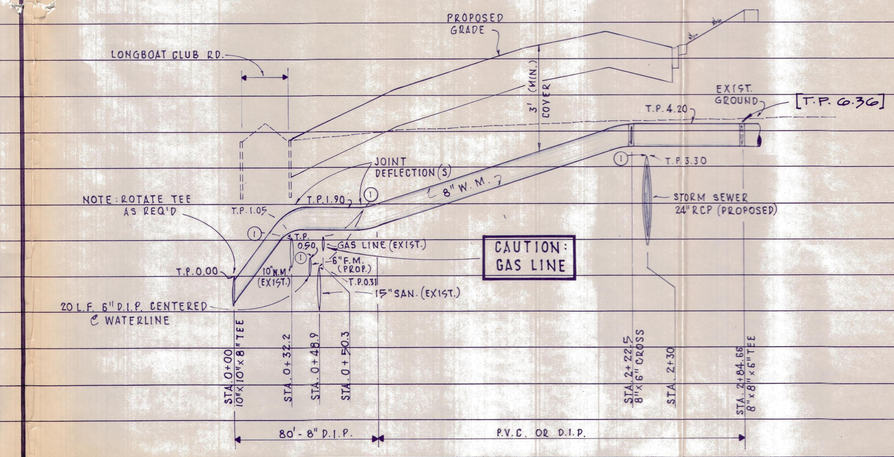
POTABLE WATER MAIN CONCTRUCTION DECEMBER 1993.

REFER TO DWG. 12 FOR RECORD INFORMATION.

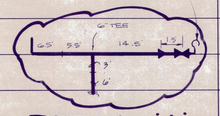
REFER TO DETAIL 'A' BELOW

① CRADLE WATERMAIN PIPE WITH CONCRETE TO SPRING LINE. TYPICAL WHERE SEPARATION IS LESS THAN 0.30'.

② CONTRACTOR SHALL VERIFY UTILITY LOCATIONS AND PROTECT SAME THROUGHOUT CONSTRUCTION.



TEMPORARY BLOW-OFF



DETAIL 'A'

PRINTED DEC 21 1993 SMALLY, WELLFORD & NALVEN A DIVISION OF WILSON MILLER, BARTON & PEEK, INC.

LTR.	DATE	REVISION	BY
E	7-7-92	ADD WATER LINE TESTING NOTE & REVISION	HOWARD
F	11/6/92	ADD RECORD DWG. INFO.	CRE/EB
G	12-21-93	ADD NORTH BLDG. & REFERENCE NOTES RECORD INFO	CRE/EB

DESIGNED BY: M.J.Y.
DATE: DEC., 1990
CHECKED BY: MILLARD J. YODER, P.E.
PROJECT NO. 2591
FL. CERT. NO.
SCALE: HOR. 1"= 40' VERT. 1"= 2'
DRAWN BY: E.P.

FOR: YALE PROPERTIES

L'AMBIANCE
WATERLINE PLAN & PROFILE

133 SOUTH McINTOSH RD. SARASOTA, FLA. 33582

SMALLY, WELLFORD & NALVEN, Inc. CONSULTING ENGINEERS & SURVEYORS

DRAWING NUMBER 19

REVISION "G"

INDEX NO. G-2591-031

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PROCTOR DATA

1. GRAY SLIGHLTY SILTY FINE SAND WITH SHELL
MAXIMUM DRY DENSITY 102.9 pcf @ 13.9% MOISTURE
(AASHTO T-180) Backfill

N

SCALE: 1" = 10'

□ LOCATION OF PILE

■ COMPACTION TEST LOCATION - BACKFILL MATERIAL

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

PILE LOCATIONS FOR

L'AMBIANCE
LONGBOAT CLUB ROAD

LONGBOAT KEY, FLORIDA

DRAWN BY: kad	CHECKED BY:	DATE: 10/7/91
FILE NO. 90-8284	APPROVED BY:	

FIGURE 2

PROCTOR DATA:

1. GRAY SLIGHLTY SILTY FINE SAND WITH SHELL
   MAXIMUM DRY DENSITY 102.9 pcf @ 13.9% MOISTURE
   (AASHTO T-180) Backfill

2. BROWN/GREY SLIGHTLY SILTY
   FINE SAND WITH TRACE ROCK AND SHELL
   MAXIMUM DRY DENSITY 106.7 pcf @ 13.8% MOISTURE
   (AASHTO T-180) Fill material

N

SCALE: 1" = 10'

□ LOCATION OF PILE

■ COMPACTION TEST LOCATION - BACKFILL MATERIAL

⊠ COMPACTION TEST LOCATION - FILL MATERIAL

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

PILE LOCATIOIIS FOR

L'AMBIANCE
LONGBOAT CLUB ROAD

LONGBOAT KEY, FLORIDA

DRAWN BY: kad	CHECKED BY:	DATE: 10/7/91
FILE NO. 90-8284	APPROVED BY:	