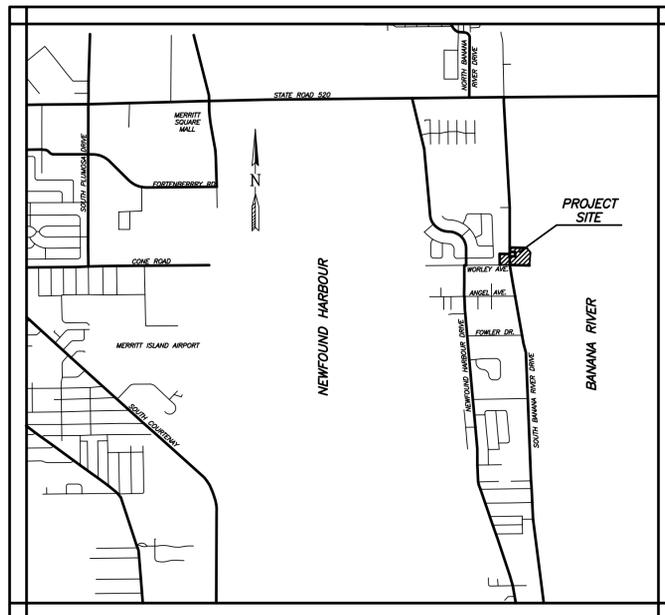


CONSTRUCTION PLANS MARINA VILLAGE

FOR

HARBOR HOMES, LLC

520 S. BANANA RIVER DRIVE, MERRITT ISLAND, FL. 32952 (321)449-8589



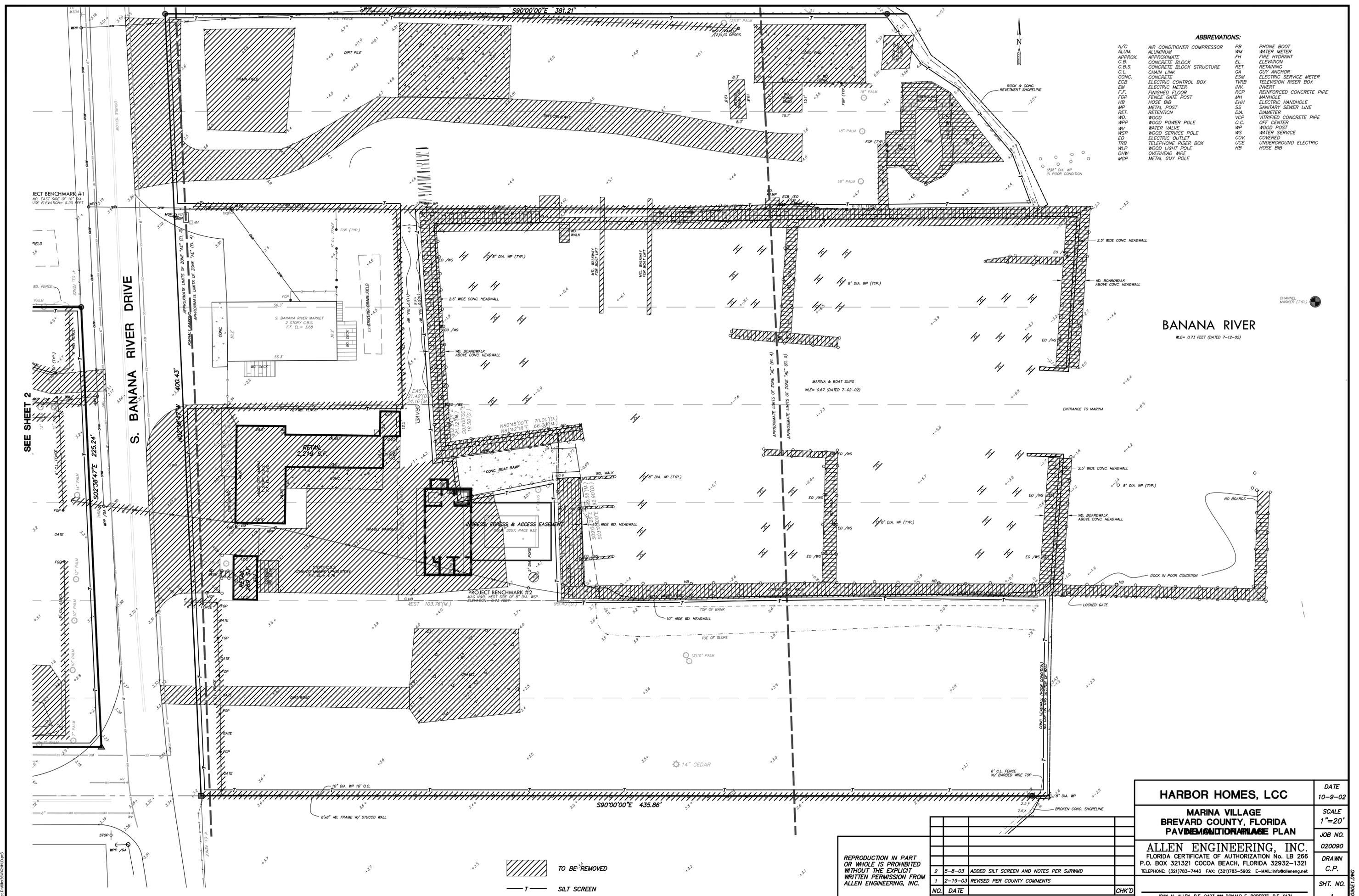
TO GET TO THE PROJECT SITE, FROM THE WEST, GO EAST ON STATE ROAD 520 TO THE TRAFFIC LIGHT AT SOUTH BANANA RIVER DRIVE, TURN SOUTH AND GO APPROXIMATELY 0.6 MILES. THE SITE IS JUST NORTH OF WORLEY AVENUE.

VICINITY MAP

ALLEN
Engineering, Inc.
ENGINEERS - SURVEYORS

106 DIXIE LANE (P.O. BOX 321321)
COCOA BEACH, FLORIDA 32932-1321
TELEPHONE: (321)783-7443 FAX: (321)783-5902
E-MAIL: info@alleneng.net

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ABBREVIATIONS:

A/C	AIR CONDITIONER COMPRESSOR	PB	PHONE BOOT
ALUM.	ALUMINUM	WM	WATER METER
APPROX.	APPROXIMATE	FH	FIRE HYDRANT
C.B.S.	CONCRETE BLOCK STRUCTURE	EL	ELEVATION
C.L.	CHAIN LINK	RET.	RETAINING
CONC.	CONCRETE	GA	GUY ANCHOR
ECB	ELECTRIC CONTROL BOX	EM	ELECTRIC SERVICE METER
EM	ELECTRIC METER	TVRB	TELEVISION RISER BOX
F.F.	FINISHED FLOOR	INV.	INVERT
FGP	FENCE GATE POST	RCP	REINFORCED CONCRETE PIPE
HB	HOSE BIB	MH	MANHOLE
MP	METAL POST	EHH	ELECTRIC HANDHOLE
RET.	RETENTION	SS	SEWER LINE
WD	WOOD	DIA.	DIAMETER
WPP	WOOD POWER POLE	VCP	VITRIFIED CONCRETE PIPE
WV	WATER VALVE	O.C.	OFF CENTER
WSP	WOOD SERVICE POLE	WP	WOOD POST
EO	ELECTRIC OUTLET	WS	WATER SERVICE
TRB	TELEPHONE RISER BOX	COV.	COVERED
WLP	WOOD LIGHT POLE	UGE	UNDERGROUND ELECTRIC
OHW	OVERHEAD WIRE	HB	HOSE BIB
MGP	METAL GUY POLE		

BANANA RIVER
M.E. = 0.73 FEET (DATED 7-12-02)

SEE SHEET 2

S. BANANA RIVER DRIVE

PROJECT BENCHMARK #1
80.0' EAST SIDE OF 10" DIA. WOP
ELEVATION = 5.20' (E.C.)

PROJECT BENCHMARK #2
MAX. NED. WEST SIDE OF 8" DIA. WOP
ELEVATION = 6.95' (E.C.)

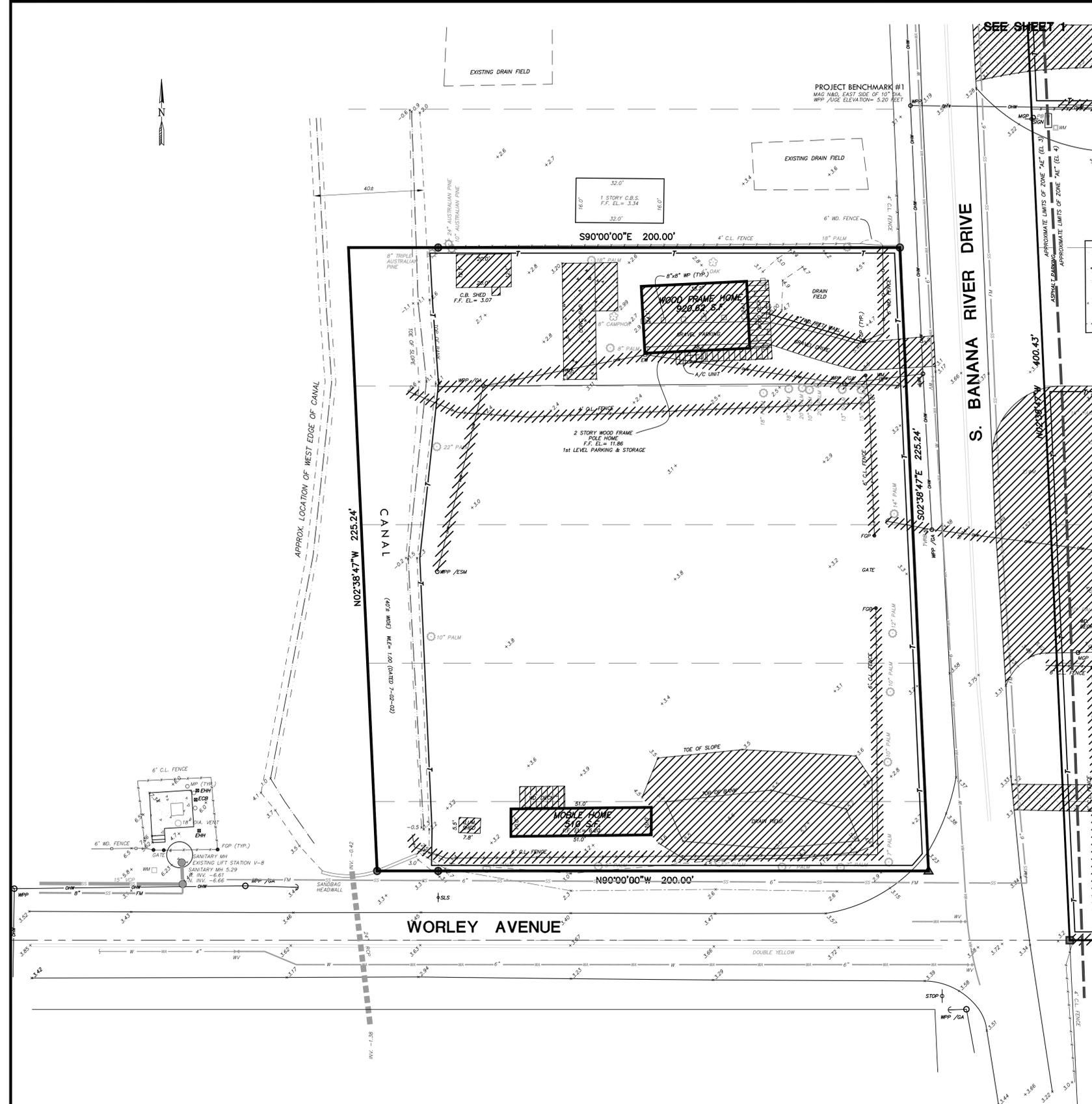


REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.

NO.	DATE	REVISIONS	CHK'D
2	5-8-03	ADDED SILT SCREEN AND NOTES PER SURVMD	
1	2-19-03	REVISED PER COUNTY COMMENTS	

HARBOR HOMES, LCC		DATE	10-9-02
MARINA VILLAGE BREVARD COUNTY, FLORIDA PAVEMENT/UTILITIES PLAN		SCALE	1"=20'
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO.	020090
		DRAWN	C.P.
		SHT. NO.	1
JOHN M. ALLEN, P.E. 9423 *** DONALD F. ROBERTS, P.E. 9131 MICHAEL S. ALLEN, P.E. 45798 *** JOHN H. WILT, P.E. 53233			

020090.CDW



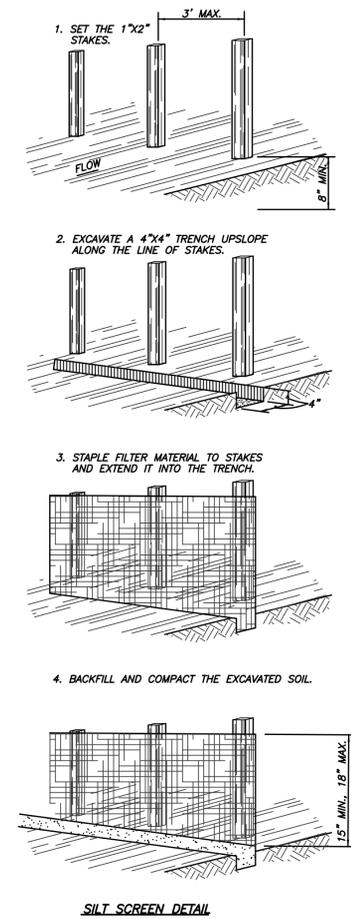
DESCRIPTION:

A portion of Lots 5 and 6 of J.J. Covey's Unrecorded Subdivision as recorded in Deed Book 410, Page 315 and lying in Section 31, Township 24 South, Range 37 East, Brevard County, Florida, being more particularly described as follows:
 Part of Government Lot 7, in Section 31, Township 24 South, Range 37 East, Brevard County, Florida, described as follows: Begin on the East right of way of the paved county road North 2 degrees 39 minutes 47 seconds West, 200.00 feet from the South line of Section 31, Township 24 South, Range 37 East, thence proceed East and along a line parallel to the said South line of said section and 200 feet distance therefrom 109.58 feet to the Southwest corner of land conveyed by Frank M. and Shirley M. Baker to Jackie and Patsy Ruth Loggins by deed recorded in Official Records 1160, Page 202; thence run North 00 degrees 32 minutes 20 second West along the West line of land described in Official Records Book 1160, Page 202, 100 feet to a point; thence run West and parallel to the South line of said Section 31, aforesaid and 300 feet distant therefrom to a point in the center of said paved county road; thence run Southerly down the center line of said paved county road 100 feet more or less to the POINT OF BEGINNING; and being the same land as described in deed from Banana River Enterprises, Inc. to Frank M. and Shirley M. Baker, recorded in Official Records Book 1044, Page 1015, except land conveyed by Frank M. and Shirley M. Baker to Jackie and Patsy Ruth Loggins by deed recorded in Official Records Book 1160, Page 202, and less all that portion of caption property lying within road right of way.

EROSION AND SEDIMENT CONTROL NOTES:

- Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upland land disturbance takes place.
- Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain undisturbed for longer than 30 days. Permanent stabilization shall be applied to areas that are to be left undisturbed for more than one year.
- After any significant rainfall, sediment control structures will be inspected for integrity. Any damaged devices shall be corrected immediately.
- Sediment will be prevented from entering any storm drain system, ditch, or channel. All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.
- Before temporary or newly constructed stormwater conveyance channels are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.
- Periodic inspection and maintenance of all sediment control structures must be provided to ensure intended purpose is accomplished. The Developer, Owner and/or Contractor shall be continually responsible for all sediment leaving the property. Sediment control measures shall be in working condition at the end of each working day.
- Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
- Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
 (a) No more than 500 linear feet of trench may be opened at one time.
 (b) Excavated material shall be placed on the uphill side of trenches.
 (c) Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
 (d) Restabilization shall be accomplished in accordance with these regulations.
- Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by tracking onto the paved surface. Where sediment is transported onto a public road surface with curbs and gutters, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual subdivision lots as well as to larger land-disturbing activities.
- Prior to the start of construction, silt screens shall be installed around the perimeter of the project as shown. However, the silt screen may be phased along with the construction schedule.
- Silt screens shall stay in-place and operational for duration of construction or until all soil has been stabilized.

SEE SHEET 1



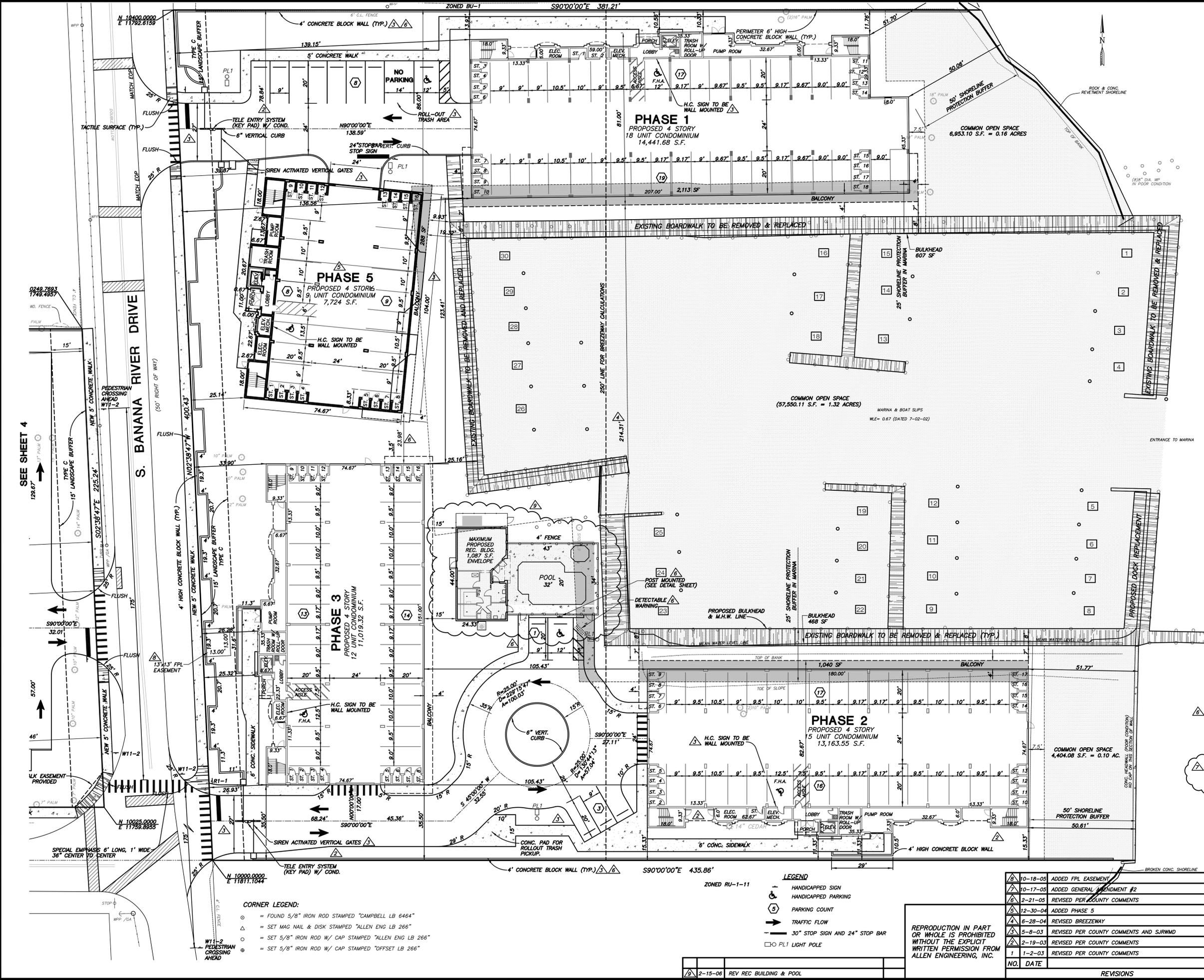
TO BE REMOVED
 SILT SCREEN

REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.

NO.	DATE	REVISIONS
2	5-8-03	ADDED SILT SCREEN AND NOTES PER SURMWD
1	2-19-03	REVISED PER COUNTY COMMENTS
		CHK'D

HARBOR HOMES, LCC		DATE 10-9-02
MARINA VILLAGE BREVARD COUNTY, FLORIDA DEMOLITION PLAN		SCALE 1"=20'
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO. 020090
		DRAWN C.P.
		SHT. NO. 2

JOHN M. ALLEN, P.E. 8423 *** DONALD F. ROBERTS, P.E. 9131
 MICHAEL S. ALLEN, P.E. 45788 *** JOHN H. WILT, P.E. 53233



- ABBREVIATIONS:**
- A/C AIR CONDITIONER COMPRESSOR
 - ALUM. ALUMINUM
 - APPROX. APPROXIMATE
 - C.B.S. CONCRETE BLOCK STRUCTURE
 - C.L. CHAIN LINK
 - CONC. CONCRETE
 - ECB ELECTRIC CONTROL BOX
 - EM ELECTRIC METER
 - F.F. FINISHED FLOOR
 - F.G.P. FENCE GATE POST
 - H.B. HOSE BIB
 - HP METAL POST
 - RET. RETENTION
 - WD. WOOD
 - W.P.P. WOOD POWER POLE
 - W.V. WATER VALVE
 - W.S.P. WOOD SERVICE POLE
 - EO ELECTRIC OUTLET
 - TRB TELEPHONE RISER BOX
 - W.L.P. WOOD LIGHT POLE
 - OHW OVERHEAD WIRE
 - MGP METAL GUY POLE
 - PB PHONE BOOT
 - WM WATER METER
 - FH FIRE HYDRANT
 - EL. ELEVATION
 - RET. RETAINING
 - GA GUY ANCHOR
 - ESM ELECTRIC SERVICE METER
 - TVRB TELEVISION RISER BOX
 - INV. INVERT
 - RCP REINFORCED CONCRETE PIPE
 - MH MANHOLE
 - EH ELECTRIC HANDHOLE
 - SS SANITARY SEWER LINE
 - DIA. DIAMETER
 - VCP VITRIFIED CONCRETE PIPE
 - O.C. OFF CENTER
 - WP WOOD POST
 - WS WATER SERVICE
 - COV. COVERED
 - UG UNDERGROUND ELECTRIC
 - HB HOSE BIB

[Hatched Area] DENOTES SHORELINE PROTECTION BUFFER IMPACT AREA
 [Dotted Area] DENOTES COMMON OPEN SPACE
 COMMON OPEN SPACE
 EAST SIDE: 4.01 AC. X 25% = 1.00 AC. (43,623 S.F.) REQUIRED
 1.63 AC. (70,857.29 S.F.) PROVIDED

BANANA RIVER
WLE= 0.73 FEET (DATED 7-12-02)

SLIP NO.	WIDTH	RECOMMENDED MAX. LENGTH
1	18'	32'
2	18'	32'
3	18'	32'
4	15'	32'
5	16'	32'
6	16'	32'
7	16'	32'
8	16'	32'
9	16'	32'
10	16'	32'
11	16.8'	32'
12	16.8'	32'
13	16.8'	42'
14	19.3'	42'
15	19.3'	42'
16	18.3'	54'
17	18.3'	54'
18	18.3'	54'
19	18.3'	54'
20	15'	36'
21	15'	36'
22	15'	36'
23	18'	36'
24	18'	36'
25	18'	36'
26	20.3'	70'
27	20.3'	70'
28	14'	32'
29	15'	42'
30	16.5'	42'

COASTAL TECH
CORPORATE OFFICE: 3825 20th Street, Vero Beach, FL 32909
VERO - DESTIN - SARASOTA - MELBOURNE - AUSTIN

TOTAL IMPACT AREA WITHIN 25' SHORELINE PROTECTION BUFFER
 31,837 SF x 30% = 9,551 SF ALLOWED
 IMPACTED AREA = 5,162 SF

GENERAL AMENDMENT #2: REVISION INCLUDES CONSTRUCTION OF SHALLOW ROADSIDE SWALES ALONG S. BANANA RIVER DRIVE & THE INSTALLATION OF A TRENCH DRAIN AT THE DRIVEWAY AS WELL AS DITCH BOTTOM INLET AND STORM SEWER OUTFALL PIPE.

- CORNER LEGEND:**
- = FOUND 5/8" IRON ROD STAMPED "CAMPBELL LB 6464"
 - △ = SET MAG NAIL & DISK STAMPED "ALLEN ENG LB 266"
 - = SET 5/8" IRON ROD W/ CAP STAMPED "ALLEN ENG LB 266"
 - = SET 5/8" IRON ROD W/ CAP STAMPED "OFFSET LB 266"

- LEGEND**
- △ HANDICAPPED SIGN
 - ♿ HANDICAPPED PARKING
 - PARKING COUNT
 - TRAFFIC FLOW
 - 30" STOP SIGN AND 24" STOP BAR
 - PL1 LIGHT POLE

REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.

NO.	DATE	REVISIONS
1	10-18-05	ADDED FPL EASEMENT
2	10-17-05	ADDED GENERAL AMENDMENT #2
3	2-21-05	REVISED PER COUNTY COMMENTS
4	12-30-04	ADDED PHASE 5
5	6-28-04	REVISED BREEZEWAY
6	5-8-03	REVISED PER COUNTY COMMENTS AND SJRWMD
7	2-19-03	REVISED PER COUNTY COMMENTS
8	1-2-03	REVISED PER COUNTY COMMENTS
9	2-15-06	REV REC BUILDING & POOL

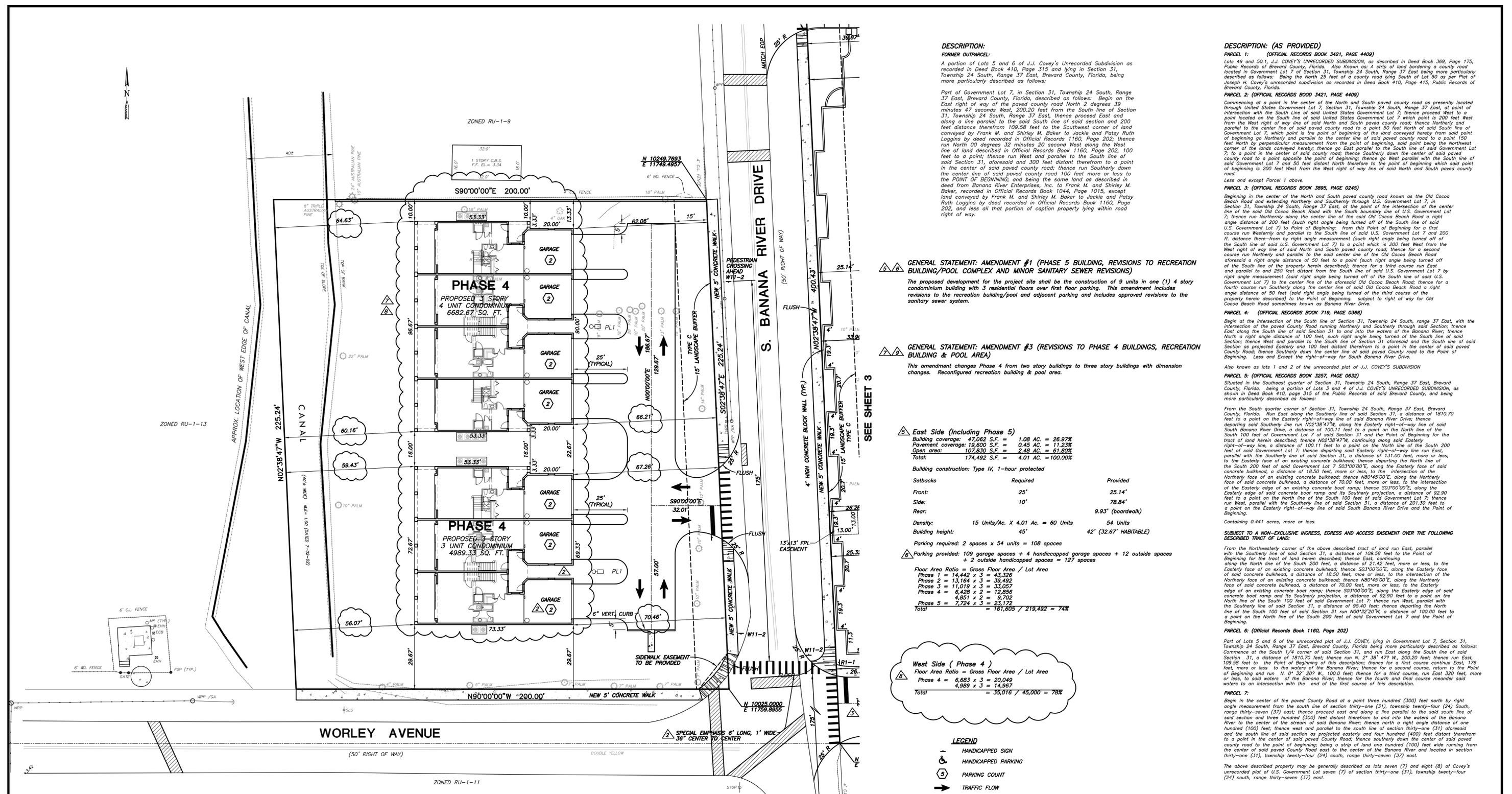
HARBOR HOMES, LCC

**MARINA VILLAGE
BREVARD COUNTY, FLORIDA
SITE AND STRIPING PLAN**

ALLEN ENGINEERING, INC.
FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266
P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321
TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net

DATE: 10-9-02
SCALE: 1"=20'
JOB NO.: 020090
DRAWN: C.P.
SHT. NO.: 3

JOHN M. ALLEN, P.E. 9423 *** DONALD F. ROBERTS, P.E. 9131
MICHAEL S. ALLEN, P.E. 45788 *** JOHN H. WILLY, P.E. 53233



DESCRIPTION:
FORMER OUTPARCEL:
 A portion of Lots 5 and 6 of J.J. Covey's Unrecorded Subdivision as recorded in Deed Book 410, Page 315 and lying in Section 31, Township 24 South, Range 37 East, Brevard County, Florida, being more particularly described as follows:
 Part of Government Lot 7, in Section 31, Township 24 South, Range 37 East, Brevard County, Florida, described as follows: Begin on the East right of way of the paved county road North 2 degrees 39 minutes 47 seconds West, 200.20 feet from the South line of Section 31, Township 24 South, Range 37 East, thence proceed East and along a line parallel to the said South line of said section and 200 feet distance therefrom 109.58 feet to the Southwest corner of land conveyed by Frank M. and Shirley M. Baker to Jackie and Patsy Ruth Loggins by deed recorded in Official Records Book 1160, Page 202; thence run North 00 degrees 32 minutes 20 seconds West along the West line of land described in Official Records Book 1160, Page 202, 100 feet to a point; thence run West and parallel to the South line of said Section 31, aforesaid and 300 feet distant therefrom to a point in the center of said paved county road; thence run Southerly down the center line of said paved county road 100 feet more or less to the POINT OF BEGINNING; and being the same land as described in deed from Banana River Enterprises, Inc. to Frank M. and Shirley M. Baker, recorded in Official Records Book 1044, Page 1015, except land conveyed by Frank M. and Shirley M. Baker to Jackie and Patsy Ruth Loggins by deed recorded in Official Records Book 1160, Page 202, and less all that portion of caption property lying within road right of way.

DESCRIPTION: (AS PROVIDED)
PARCEL 1: (OFFICIAL RECORDS BOOK 3421, PAGE 4408)
 Lots 49 and 50, J.J. COVEY'S UNRECORDED SUBDIVISION, as described in Deed Book 369, Page 175, Public Records of Brevard County, Florida. Also known as a strip of land bordering a county road located in Government Lot 7 of Section 31, Township 24 South, Range 37 East, being more particularly described as follows: Being the North 25 feet of a county road lying South of Lot 50 as per Plat of Joseph H. Covey's unrecorded subdivision as recorded in Deed Book 410, Page 415, Public Records of Brevard County, Florida.
PARCEL 2: (OFFICIAL RECORDS BOOK 3421, PAGE 4408)
 Commencing at a point in the center of the North and South paved county road as presently located through United States Government Lot 7, Section 31, Township 24 South, Range 37 East, at point of intersection with the South line of said United States Government Lot 7; thence proceed West to a point located on the South line of said United States Government Lot 7 which point is 200 feet West from the West right of way line of said North and South paved county road; thence Northerly and parallel to the center line of said paved county road to a point 50 feet North of said South line of Government Lot 7, which point is the point of beginning of the land conveyed hereby from said point of beginning go Northerly and parallel to the center line of said paved county road to a point 150 feet North by perpendicular measurement from the point of beginning, said point being the Northwest corner of the lands conveyed hereby; thence go East parallel to the South line of said Government Lot 7, to a point in the center of said county road, thence Southerly down the center of said paved county road to a point opposite the point of beginning; thence go West parallel with the South line of said Government Lot 7 and 50 feet distant North therefrom to the point of beginning which said point of beginning is 200 feet West from the West right of way line of said North and South paved county road.
 Less and except Parcel 1 above.
PARCEL 3: (OFFICIAL RECORDS BOOK 3895, PAGE 0245)
 Beginning in the center of the North and South paved county road known as the Old Cocoa Beach Road and extending Northerly and Southerly through U.S. Government Lot 7, in Section 31, Township 24 South, Range 37 East, at the point of intersection of the center line of the said Old Cocoa Beach Road with the South boundary line of U.S. Government Lot 7; thence run Northerly along the center line of the said Old Cocoa Beach Road a right angle distance of 200 feet (such right angle being turned off of the South line of said U.S. Government Lot 7); thence run Northerly and parallel to the South line of said U.S. Government Lot 7 and 200 feet distance therefrom by right angle measurement (such right angle being turned off of the South line of said U.S. Government Lot 7) to a point which is 200 feet West from the West right of way line of said North and South paved county road; thence for a second course run Northerly and parallel to the said center line of the Old Cocoa Beach Road aforesaid a right angle distance of 50 feet to a point (such right angle being turned off of the South line of the property herein described); thence for a third course run East and parallel to and 250 feet distant from the South line of said U.S. Government Lot 7 by right angle measurement (said right angle being turned off of the South line of said U.S. Government Lot 7) to the center line of the aforesaid Old Cocoa Beach Road; thence for a fourth course run Southerly along the center line of said Old Cocoa Beach Road a right angle distance of 50 feet (such right angle being turned off of the third course of the property herein described) to the Point of Beginning, subject to right of way for Old Cocoa Beach Road sometimes known as Banana River Drive.
PARCEL 4: (OFFICIAL RECORDS BOOK 719, PAGE 0368)
 Begin at the intersection of the South line of Section 31, Township 24 South, range 37 East, with the intersection of the paved County road running Northerly and Southerly through said Section 31, thence East along the South line of said Section 31 to and into the waters of the Banana River; thence North a right angle distance of 100 feet, such right angle being turned off of the South line of said Section 31, a distance of 131.00 feet, more or less, to the Easterly face of an existing concrete bulkhead; thence departing the North line of the South 200 feet of said Government Lot 7 503'00"00" along the Easterly face of said concrete bulkhead, a distance of 18.50 feet, more or less, to the intersection of the Northerly edge of an existing concrete bulkhead; thence N80°45'00"E, along the Northerly face of said concrete bulkhead, a distance of 70.00 feet, more or less, to the intersection of the Easterly edge of an existing concrete bulkhead; thence S03°00'00"E, along the Easterly edge of said concrete bulkhead, a distance of 92.90 feet to a point on the South 100 feet of said Government Lot 7; thence run West, parallel with the Southerly line of said Section 31, a distance of 201.30 feet to a point on the Easterly right-of-way line of said South Banana River Drive and the Point of Beginning. Containing 0.441 acres, more or less.
SUBJECT TO A NON-EXCLUSIVE INGRESS, EGRESS AND ACCESS EASEMENT OVER THE FOLLOWING DESCRIBED TRACT OF LAND:
 From the Northwest corner of the above described tract of land run East, parallel with the Southerly line of said Section 31, a distance of 109.58 feet to the Point of Beginning for the tract of land herein described; thence East, continuing along the North line of the South 200 feet, a distance of 214.62 feet, more or less, to the Easterly face of an existing concrete bulkhead; thence S03°00'00"E, along the Easterly face of said concrete bulkhead, a distance of 18.50 feet, more or less, to the intersection of the Northerly face of an existing concrete bulkhead; thence N80°45'00"E, along the Northerly face of said concrete bulkhead, a distance of 70.00 feet, more or less, to the intersection of the Easterly edge of an existing concrete bulkhead; thence S03°00'00"E, along the Easterly edge of said concrete bulkhead, a distance of 92.90 feet to a point on the South 100 feet of said Government Lot 7; thence run West, parallel with the Southerly line of said Section 31, a distance of 201.30 feet to a point on the Easterly right-of-way line of said South Banana River Drive and the Point of Beginning.
PARCEL 5: (Official Records Book 1160, Page 202)
 Part of Lots 5 and 6 of the unrecorded plot of J.J. COVEY, lying in Government Lot 7, Section 31, Township 24 South, Range 37 East, Brevard County, Florida being more particularly described as follows: Commence at the South 1/4 corner of said Section 31, and run East along the South line of said Section 31, a distance of 1810.70 feet; thence run N. 2° 38' 47" S, 200.20 feet; thence run East, 109.58 feet to the Point of Beginning of this description; thence for a first course continue East, 176 feet, more or less, to the waters of the Banana River; thence for a second course, return to the Point of Beginning and run N. 0° 32' 20" W, 100.0 feet; thence for a third course, run East 320 feet, more or less, to said waters of the Banana River; thence for the fourth and final course meander said waters to an intersection with the east of the first course of this description.
PARCEL 7:
 Begin in the center of the paved County Road at a point three hundred (300) feet north by right angle measurement from the south line of section thirty-one (31), township twenty-four (24) south, range thirty-seven (37) east; thence proceed east and along a line parallel to the said south line of said section and three hundred (300) feet distant therefrom to and into the waters of the Banana River to the center of the stream of said Banana River; thence north a right angle distance of one hundred (100) feet; thence west and parallel to the south line of section thirty-one (31) aforesaid and the south line of said section as projected easterly and four hundred (400) feet distant therefrom to a point in the center of said paved County Road; thence southerly down the center of said paved county road to the point of beginning; being a strip of land one hundred (100) feet wide running from the center of said paved county road east to the center of the Banana River and located in section thirty-one (31), township twenty-four (24) south, range thirty-seven (37) east.
 The above described property may be generally described as lots seven (7) and eight (8) of Covey's unrecorded plat of U.S. Government Lot seven (7) of section thirty-one (31), township twenty-four (24) south, range thirty-seven (37) east.

GENERAL STATEMENT: AMENDMENT #1 (PHASE 5 BUILDING, REVISIONS TO RECREATION BUILDING/POOL COMPLEX AND MINOR SANITARY SEWER REVISIONS)
 The proposed development for the project site shall be the construction of 9 units in one (1) 4 story condominium building with 3 residential floors over first floor parking. This amendment includes revisions to the recreation building/ pool and adjacent parking and includes approved revisions to the sanitary sewer system.

GENERAL STATEMENT: AMENDMENT #3 (REVISIONS TO PHASE 4 BUILDINGS, RECREATION BUILDING & POOL AREA)
 This amendment changes Phase 4 from two story buildings to three story buildings with dimension changes. Reconfigured recreation building & pool area.

East Side (Including Phase 5)
 Building coverage: 47,062 S.F. = 1.08 AC. = 26.97%
 Pavement coverage: 19,800 S.F. = 0.45 AC. = 11.23%
 Open area: 107,830 S.F. = 2.48 AC. = 81.80%
 Total: 174,492 S.F. = 4.01 AC. = 100.00%

Building construction: Type IV, 1-hour protected

Setbacks	Required	Provided
Front:	25'	25.14'
Side:	10'	78.84'
Rear:	9.93' (boardwalk)	
Density:	15 Units/Ac. X 4.01 Ac. = 60 Units	54 Units
Building height:	45'	42' (32.67' HABITABLE)

Parking required: 2 spaces x 54 units = 108 spaces
 Parking provided: 109 garage spaces + 4 handicapped garage spaces + 12 outside spaces + 2 outside handicapped spaces = 127 spaces

Floor Area Ratio = Gross Floor Area / Lot Area

Phase 1	= 14,442 x 3 = 43,326
Phase 2	= 13,164 x 3 = 39,492
Phase 3	= 11,019 x 3 = 33,057
Phase 4	= 6,428 x 2 = 12,856
Phase 5	= 4,851 x 2 = 9,702
Total	= 161,605 / 219,492 = 74%

West Side (Phase 4)
 Floor Area Ratio = Gross Floor Area / Lot Area
 Phase 4 = 6,683 x 3 = 20,049
 4,859 x 3 = 14,567
 Total = 35,016 / 45,000 = 78%

GENERAL STATEMENT:
 The proposed development for the project site shall be the construction of 45 units in three (3) 4 story condominiums with first floor parking, a recreation building and swimming pool on the Banana River side of South Banana River Drive. Seven (7) three story condominium units are proposed on the west side of South Banana River Drive. All building construction is concrete Type IV, 1-hour protected. The Marina is for the exclusive use of the residents. No sanitary facilities or supplies of fuel will be provided. Project includes the demolition of one 2,219 S.F. retail building, one 296 S.F. retail building, one 920 S.F. wood frame house, one C.B. shed, one 43 S.F. aluminum shed and one 510 S.F. mobile home.

CLIENT: Harbor Homes, LLC
 582 S. Banana River Dr.
 Merritt Island, FL 32952
 Telephone: (321)591-5673
 Fax: (321)799-0233

ENGINEER: Allen Engineering, Inc.
 106 Dixie Lane
 Cocoa Beach, FL 32931
 Telephone: (321)783-7443
 Fax: (321)783-5902

ARCHITECT: Jackson Kirschner
 1482 Pineapple Avenue
 Melbourne, FL 32935
 Telephone: (321)259-9197
 Fax: (321)253-3747

SITE INFORMATION:
 Acreage: 45.0000 S.F. = 3.75 acres
 East side: 163,350.00 S.F. = 3.75 acres
 West side: 45,000.00 S.F. = 1.03 acres
 Zoning: RU-2-15
 Adjacent zoning:
 North: BU-1
 South: RU-1-11
 West: RU-1-9 & RU-1-13

East Side
 Building coverage: 39,338.41 S.F. = 0.90 AC. = 24.08%
 Pavement coverage: 18,617.87 S.F. = 0.43 AC. = 11.40%
 Open area: 105,393.72 S.F. = 2.42 AC. = 84.52%
 Total: 163,350.00 S.F. = 3.75 AC. = 100.00%

Building construction: Type IV, 1-hour protected

Setbacks	Required	Provided
Front:	25'	25.32'
Side: Breezeway Calculations	0' to 35' = 30% 35' to 42.5' = 7.5% Total = 37.5%	
Side:	400' x 37.5% = 150.00'	11.33' + 214.31' + 10.33' = 235.97'
Side:	10'	13.50'
Rear:	50' (MHWL)	50.79'
Minimum lot size:	7,500 S.F.	163,350.00 S.F.
Minimum lot width:	75'	400.32'
Minimum lot depth:	75'	109.58'
Density:	15 Units/Ac. X 3.75 Ac. = 56 Units	45 Units
Building height:	45'	42' (32.67' HABITABLE)

Parking required: 2 spaces x 45 units = 90 spaces
 Parking provided: 93 garage spaces + 3 handicapped garage spaces + 13 outside spaces + 2 outside handicapped spaces = 111 spaces

West Side
 Building coverage: 11,672.00 S.F. = 0.27 AC. = 25.94%
 Pavement coverage: 7,590.66 S.F. = 0.17 AC. = 16.87%
 Open area: 25,737.34 S.F. = 0.59 AC. = 57.19%
 Total: 45,000.00 S.F. = 1.03 AC. = 100.00%

Building construction: Type IV, 1-hour protected

Setbacks	Required	Provided
Front:	25'	62.06'
Side: Corner	25'	29.67'
Side:	10'	10.00'
Rear:	20'	56.07'
Minimum lot size:	7,500 S.F.	45,000.00 S.F.
Minimum lot width:	75'	225.24'
Minimum lot depth:	75'	200.00'
Density:	15 Units/Ac. X 1.03 Ac. = 15 Units	7 Units
Building height:	45'	33.0' (32.0' HABITABLE)

Parking required: 2 spaces x 7 units = 14 spaces
 Parking provided: 14 garage spaces

- LEGEND**
- PL1 LIGHT POLE
 - ⊕ HANDICAPPED SIGN
 - ⊕ HANDICAPPED PARKING
 - ⊕ PARKING COUNT
 - TRAFFIC FLOW
 - ⊕ 30° STOP SIGN AND 24° STOP BAR

NOTES:
 1. The bearings shown are based on an assumed bearing of East for the South line of Government Lot 7, as said line is monumented and shown on the sketch of survey.
 2. There is a binding development plan on this property that states 80% of the units will be occupied by at least one person 55 years of age or older, and shall include a prohibition against residents 18 years of age or younger.
 3. The marina is private and for the exclusive use of the condominium.

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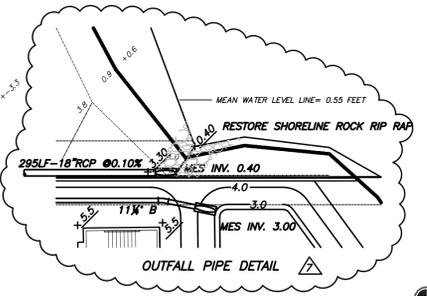
NO.	DATE	REVISIONS
6-5-06		REVISED PER COUNTY ZONING COMMENTS
2-16-06		REVISED BUILDING FOOTPRINTS
2-21-05		REVISED PER COUNTY COMMENTS
12-30-04		ADDED PHASE 5
6-28-04		REVISED BREEZEWAY
5-8-03		REVISED PER COUNTY COMMENTS AND SJRWMD
2-19-03		REVISED PER COUNTY COMMENTS
1-2-03		REVISED PER COUNTY COMMENTS

HARBOR HOMES, LCC		DATE	10-9-02
MARINA VILLAGE BREVARD COUNTY, FLORIDA SITE AND STRIPING PLAN		SCALE	1"=20'
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO.	020090
REVISIONS		DRAWN	C.P.
NO. DATE		SHT. NO.	4

JOHN M. ALLEN, P.E. 9423 *** DONALD F. ROBERTS, P.E. 9131
 MICHAEL S. ALLEN, P.E. 45788 *** JOHN H. WELT, P.E. 53233

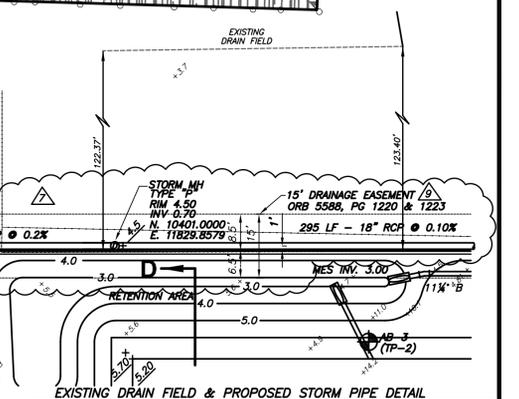
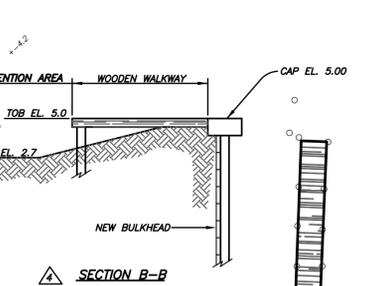
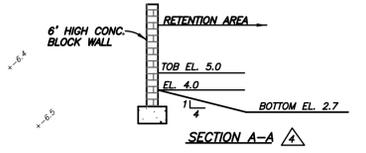
ABBREVIATIONS:

A/C	AIR CONDITIONER COMPRESSOR	PB	PHONE BOOT
ALUM.	ALUMINUM	WM	WATER METER
APPROX.	APPROXIMATE	FH	FIRE HYDRANT
C.B.S.	CONCRETE BLOCK STRUCTURE	EL.	ELEVATION
C.L.	CHAIN LINK	RET.	RETAINING
CONC.	CONCRETE	GA	GUY ANCHOR
ECB	ELECTRIC CONTROL BOX	ESM	ELECTRIC SERVICE METER
EM	ELECTRIC METER	TVRB	TELEVISION RISER BOX
F.F.	FINISHED FLOOR	INV.	INVERT
FOP	FENCE GATE POST	RCP	REINFORCED CONCRETE PIPE
HB	HOSE BIB	MH	MANHOLE
MP	METAL POST	EHH	ELECTRIC HANDHOLE
RET.	RETENTION	SS	SANITARY SEWER LINE
WD.	WOOD	DIA.	DIAMETER
WPP	WOOD POWER POLE	VCP	VITRIFIED CONCRETE PIPE
WV	WATER VALVE	Q.C.	OFF CENTER
WSP	WOOD SERVICE POLE	WP	WOOD POST
EO	ELECTRIC OUTLET	WS	WATER SERVICE
TRB	TELEPHONE RISER BOX	COV.	COVERED
WLP	WOOD LIGHT POLE	UGE	UNDERGROUND ELECTRIC
OWH	OVERHEAD WIRE	HB	HOSE BIB
MGP	METAL GUY POLE		



BANANA RIVER

WLE= 0.73 FEET (DATED 7-12-02)



PHASE 1
PROPOSED 4 STORY
18 UNIT CONDOMINIUM
14,441.68 S.F.
F.F.E. 6.00

PHASE 5
PROPOSED 4 STORY
9 UNIT CONDOMINIUM
7,724 S.F.
F.F.E. 5.80

PHASE 3
PROPOSED 4 STORY
12 UNIT CONDOMINIUM
11,019.32 S.F.
F.F.E. 5.80

PHASE 2
PROPOSED 4 STORY
15 UNIT CONDOMINIUM
13,163.55 S.F.
F.F.E. 6.00

BORING	EXIST. ELEV.	DEPTH OF GWI	DEPTH OF SHGWT	SHGWT ELEV.
AB-5	3.2	2.6	2.1	1.1
TH-1	3.5	2.3	1.2	2.3
TH-2	3.6	2.5	1.1	2.5
AB-6	3.5	3.0	2.7	0.8
TH-3	4.3	2.6	2.1	2.2
TH-4	4.2	3.3	2.9	1.4
AB-3	5.0	4.0	3.5	1.5
TH-5	4.7	3.9	3.3	1.4
TH-6	4.5	3.9	3.4	1.1

EAST
AREA: 2.50 ACRES = 108,900 S.F.
IMPERVIOUS AREA: 58,006 S.F. = 1.33 ACRES
VOLUME REQUIRED: [(1.25"/12) (58,006) + (0.5"/12) (108,900)] 1.5 = 15,870 C.F.

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NO.	DATE	REVISIONS
1	12-22-05	REVISED R/W DRAINAGE IMPROVEMENTS PER COUNTY
2	10-17-05	AMENDED R/W DRAINAGE IMPROVEMENTS
3	4-28-05	REVISED RETENTION AREA
4	12-30-04	ADDED PHASE 5
5	7-10-03	REVISED PER SJRWMD
6	5-8-03	REVISED PER COUNTY COMMENTS AND SJRWMD
7	4-2-03	REVISED PER COUNTY COMMENTS
8	12-18-02	REVISED PER COUNTY COMMENTS

HARBOR HOMES, LCC

MARINA VILLAGE
BREVARD COUNTY, FLORIDA
PAVING AND DRAINAGE PLAN

ALLEN ENGINEERING, INC.
FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266
P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321
TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net

DATE: 10-9-02
SCALE: 1"=20'
JOB NO.: 020090
DRAWN: C.P.
SHT. NO.: 5

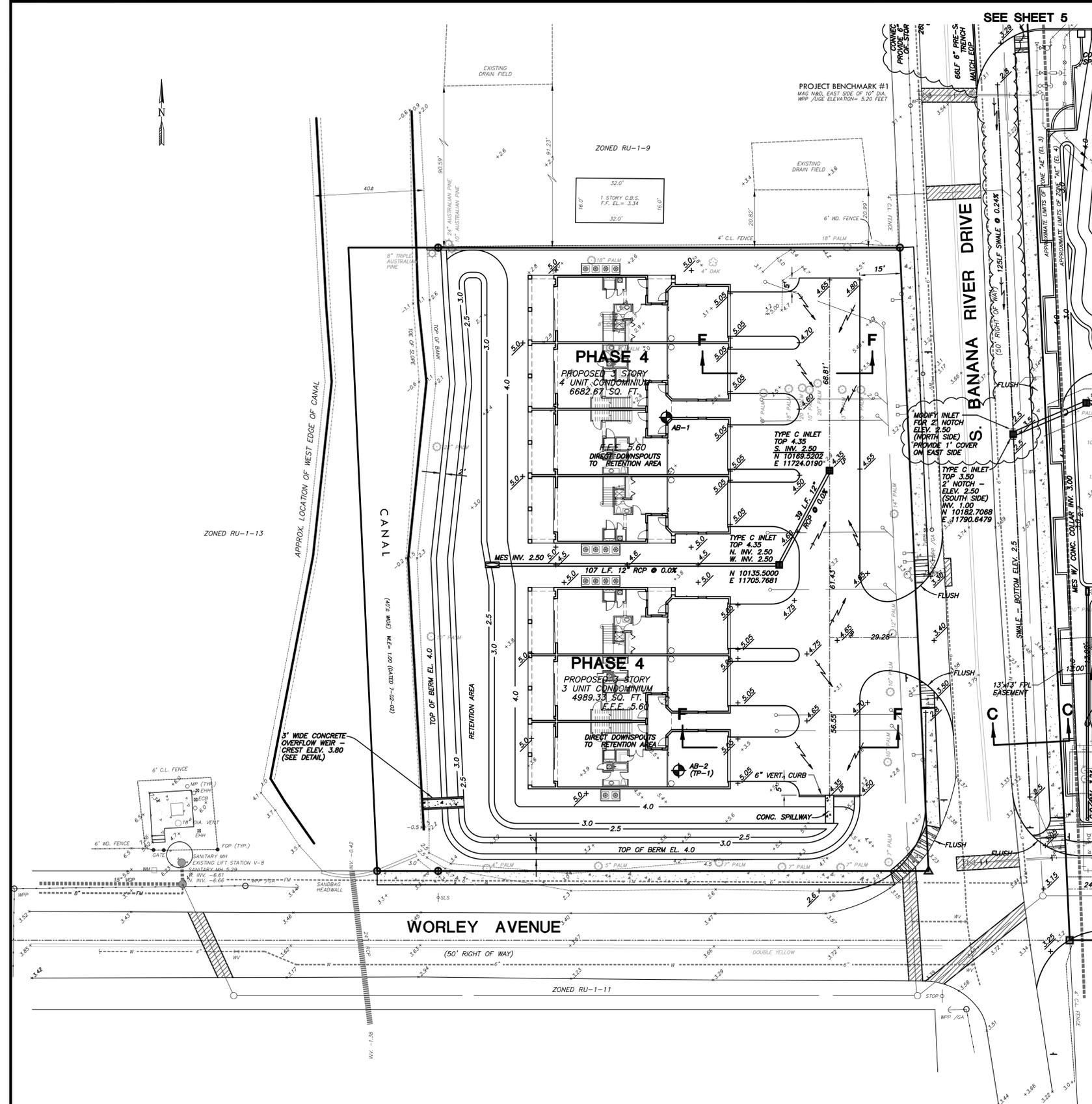
JOHN M. ALLEN, P.E. 9423 *** DONALD F. ROBERTS, P.E. 9131
MICHAEL S. ALLEN, P.E. 45788 *** JOHN H. WILY, P.E. 53233

1-5-06 ADD EASEMENT RECORDING INFORMATION

1.28 SAY 1.3

SEE SHEET 6

11/25/2009 10:11:56 AM



SEE SHEET 5

SEE SHEET 5

GENERAL NOTES:

- The Contractor shall notify all existing utility companies with facilities in the area at least 48 hours prior to construction.
City Gas - (800) 432-4770
City of Cocoa (Water) - (800) 432-4770
Southern Bell - (800) 432-4770
Florida Power & Light - (800) 432-4770
Brevard Co. Water Resources Department (Sanitary Sewers) - (800) 432-4770
- Notify Brevard County Engineering Inspection Office at (321) 633-2079 prior to start of construction.
- Locations of existing utilities as shown on plans are approximate but are based on best available information. Contractor shall determine the locations of utilities prior to construction.
- Any discrepancies on the drawings shall be brought to the attention of the Engineer before commencing work.
- The Contractor shall use appropriate measures to prevent erosion and transport of sediment to surface drains. The Contractor shall use hay bales, silt barriers or other appropriate measures to mitigate adverse impacts to existing surface water quality. Turbidity barriers must remain in place until construction is completed, soils are stabilized, and vegetation has been established. Sod areas steeper than 4H:1V.
- All pipe lengths are approximate and are measured from center of fittings and/or structures.
- Conflicts between water, storm sewer, and sanitary sewer are to be resolved by adjusting water lines as necessary upon approval by Owner's Engineer.
- All concrete used on project site shall have a minimum compressive strength of 3,000 PSI at 28 days, unless otherwise noted.
- Testing reports shall be copied to the County Engineer's and Allen Engineering's office and paid for by the developer.
- Prior to Certificate of Occupancy, the stormwater management system shall be in place, functioning properly and accepted by Brevard Co.
- The contractor is responsible for any damage within road and drainage R/W and landscape easement as a direct result of new construction.
- Traffic control will comply with DOT Index 623, sheets 1 and 2. Work affecting traffic shall be conducted between 9 AM and 3 PM unless approved by County Engineering.
- The elevations shown hereon are based on National Coast and Geodetic Survey Benchmark Q-206 elevation 6.201 National Geodetic Vertical Datum of 1929.
- According to the National Flood Insurance Program, Flood Insurance Rate Map (FIRM) for Brevard County, Florida and Incorporated Areas, Panel 360 of 727, this property is located in community panel number 125022 0360 E, Effective Date April 3, 1986, Map Index Date November 19, 1997 and lies within Special Flood Hazard Area FIRM Zone AE, Base Flood Elevation 3 feet, 4 feet and 5 feet. The FIRM Zone boundaries are approximate and are scaled from the referenced FIRM.
- This project is in compliance with Brevard County's Performance Standard defined by Section 62-2251 through 62-2272.
- The Contractor shall be responsible for any fines levied by the Regulatory Agencies due to use of improper techniques during dewatering.
- Construction shall comply with the conditions of Permits from the A.C.O.E., SJRWMD, and Brevard County.
- Access shall be provided by an unobstructed, 20 foot wide, all weather driving surface capable of supporting a 32-ton emergency vehicle. The driving surface shall be maintained during all phases of construction.
- See Sheet 2 for Erosion and Sediment Control Notes.

PAVING & DRAINAGE NOTES:

- All traffic control devices shall meet the requirements of the Manual on Uniform Traffic Control Devices for streets and highways, published by the U.S. Department of Transportation and Federal Highway Administration, and F.D.O.T. Roadway and Traffic Design Standards.
- Paving construction shall be in accordance with Brevard County requirements.
- The contractor shall adjust valve box covers, manhole rims and covers, grades, etc., necessary to match final grades as shown on plans.
- Existing off-site drainage patterns shall be maintained during construction.
- All underground utilities must be installed before roadway base and surface courses are constructed.
- The Contractor shall provide the Engineer with Paving and Drainage As-Built information from a Registered Surveyor, as follows:
Pavement Elevation at Elevation Points shown on plan
Drainage Structure Elevations at Tops & Inverts
Retention areas
The finished paving grades are due within 10 days after completion of the paving.
- All sidewalks and associated pedestrian facilities shall comply with ADA requirements.
- Final pool deck elevations shall be determined by pool designer.
- Pipe for roof drains shall be HDPE meeting AASHTO M252 type S, or AASHTO M294 type S, depending on the size of pipe. Pipe shall have a corrugated exterior, smooth interior, and push-on joints which are silt tight. Fittings shall conform to AASHTO M294. Fabricated fittings shall be welded on the inside and outside at all junctions. Gaskets shall be installed by the pipe manufacturer. Installation shall conform to ASTM D2321.
- Install Reinforced Concrete Pipe (RCP) storm sewers. Circular pipes shall have O-ring gaskets. Pipe joints shall be wrapped with filter fabric. PVC pipe shall meet ASTM D3034, SDR35 specifications.

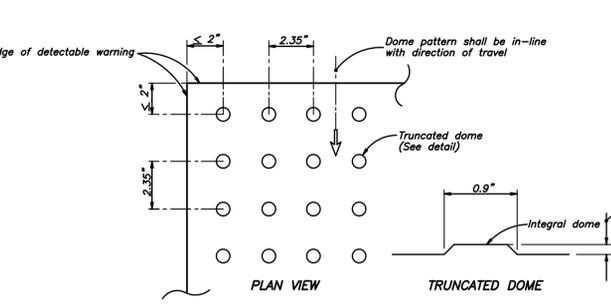
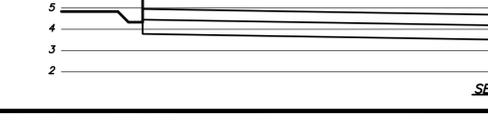
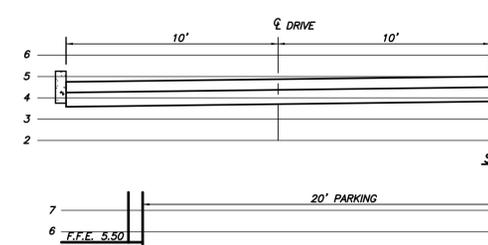
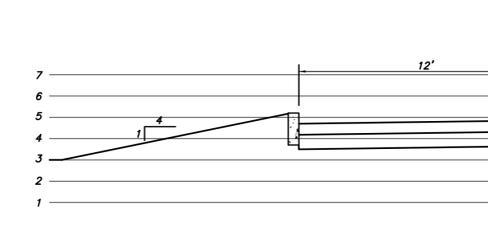
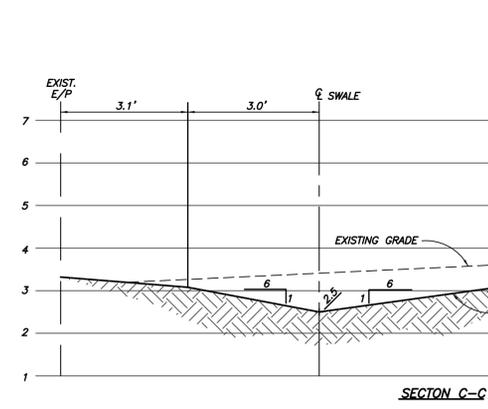
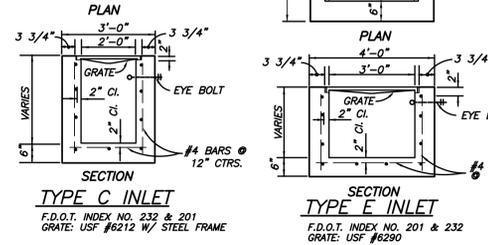
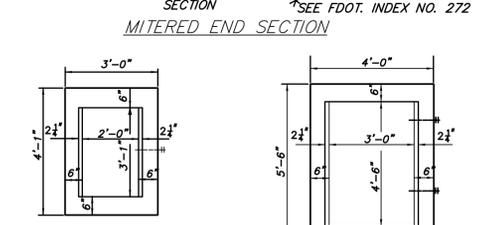
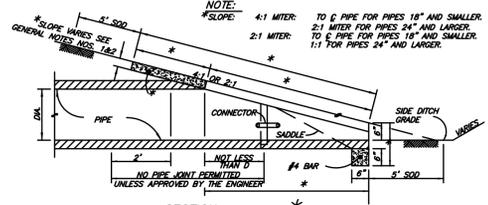
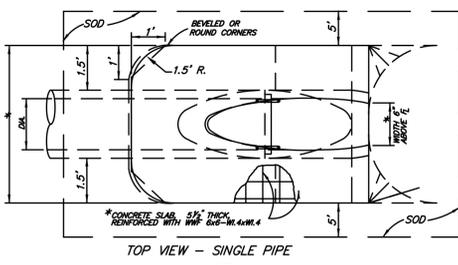
WEST
 AREA: 1.03 ACRES = 45,000 S.F.
 UPLAND AREA: 40,000 S.F. = 0.92 ACRES
 IMPERVIOUS AREA: 19,732 S.F. = 0.45 ACRES
 RETENTION REQUIRED: [(1.25'/12) (19,732) + (0.5/12) (40,000)] 1.5 = 5,583 C.F.

BORING	EXIST. ELEV.	DEPTH OF GW	DEPTH OF SHGW	SHGW ELEV.
AB-1	2.7	2.5	2.0	0.7
AB-2	3.5	2.8	2.3	1.2
AVG. ELEV. OF SHGW = 1.0				

REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.

NO.	DATE	REVISIONS
3-18-05		REVISED PER COUNTY COMMENTS
4	7-10-03	REVISED SECTION LETTERS
5-8-03		REVISED PER COUNTY COMMENTS AND SJRWMD
4-2-03		REVISED PER COUNTY COMMENTS
1	2-18-02	REVISED PER COUNTY COMMENTS
		CHK'D

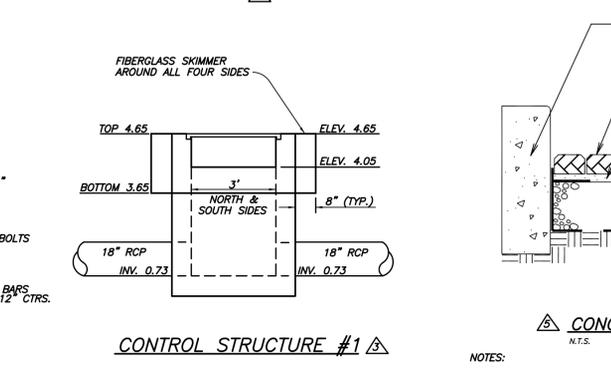
HARBOR HOMES, LCC		DATE	10-9-02
MARINA VILLAGE BREVARD COUNTY, FLORIDA PAVING AND DRAINAGE PLAN		SCALE	1"=20'
ALLEN ENGINEERING, INC.		JOB NO.	020090
FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		DRAWN	C.P.
JOHN M. ALLEN, P.E. 8423 DONALD F. ROBERTS, P.E. 9131 MICHAEL S. ALLEN, P.E. 45788 JOHN H. WILT, P.E. 53233		SHT. NO.	6



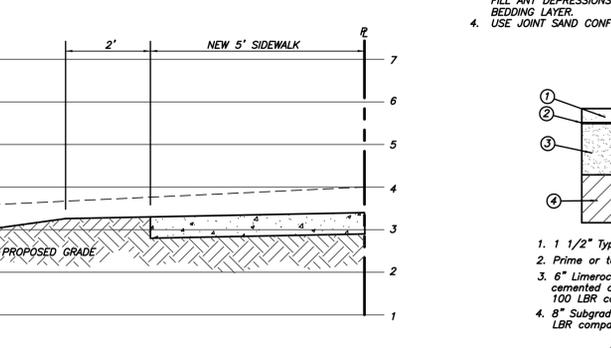
Edge of detectable warning
Dome pattern shall be in-line with direction of travel
Truncated dome (See detail)
Integral dome 0.2"

GENERAL NOTES
1. Curb ramp detectable warning surface shall extend the full width of the ramp and in the direction of travel 24" from the back of curb. Detectable warning surfaces shall be constructed by texturing a truncated dome pattern in conformance with U.S. Department of Justice A.D.A. Standards For Accessible Design A.D.A. Accessibility Guidelines, Section 4.29.2 (detail shown above left). Transition slopes are not to have detectable warnings.
2. Unless otherwise called out in the plans, the ramp detectable warning surface shall be colored brick red in accordance with Section 351 of the Standard Specifications.

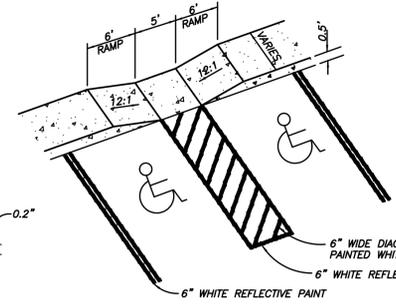
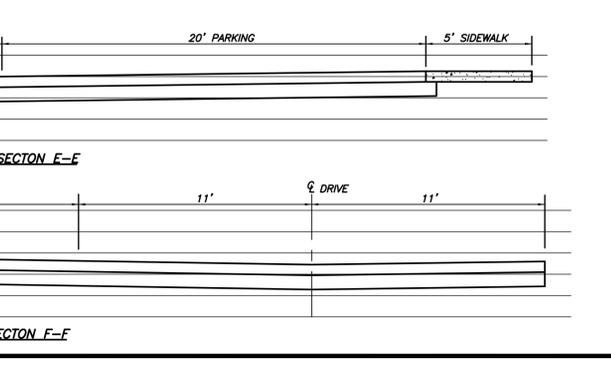
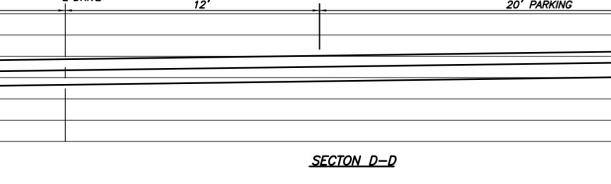
DESIGN NOTES
1. The color requirement in General Note 6 is to provide a dark-on-light visual contrast between the detectable warning surface and the adjacent walking surface. Where adjacent walking surfaces are colored or are constructed with materials other than standard Class 1 Portland Cement Concrete in accordance with Section 525 of the Standard Specification, the plans must provide for detectable warning surface colors or materials that provide the necessary contrast, either dark-on-light or light-on-dark.



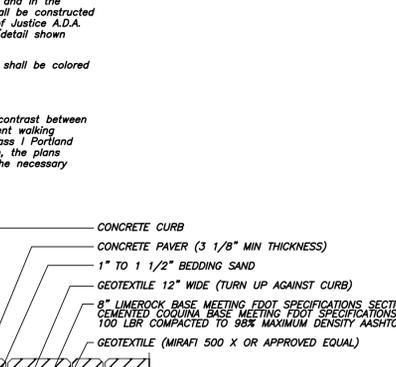
CONTROL STRUCTURE #1
FIBERGLASS SKIMMER AROUND ALL FOUR SIDES
CONCRETE CURB
CONCRETE PAVER (3 1/8" MIN THICKNESS)
1" TO 1 1/2" BEDDING SAND
GEOTEXTILE 12" WIDE (TURN UP AGAINST CURB)
8" LIMEROCK BASE MEETING FDOT SPECIFICATIONS SECTIONS 200 & 911, OR CEMENTED COQUINA BASE MEETING FDOT SPECIFICATIONS SECTIONS 250 & 915; 100 LBR COMPACTED TO 98% MAXIMUM DENSITY AASHTO T-180
GEOTEXTILE (MIRAFI 500 X OR APPROVED EQUAL)
10" SUBGRADE, STABILIZED WITH MARL MEETING FDOT SPECIFICATION 914; 40 LBR COMPACTED TO 98% MAXIMUM DENSITY AASHTO T 180



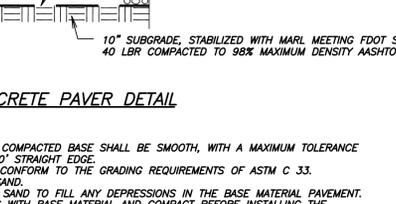
PAVEMENT SECTION-IN R/W
N.T.S.
1. 1 1/2" Type S-III asphaltic concrete surface course 1500 marshal stability.
2. Prime or tack coat - 1991 FDOT Section 300.
3. 6" Limerock base meeting FDOT Specifications Sections 200 and 911, or cemented coquina base meeting FDOT Specifications Sections 250 and 915; 100 LBR compacted to 98% maximum density AASHTO T-180.
4. 8" Subgrade, stabilized with marl meeting FDOT Specification 914; 40 LBR compacted to 98% maximum density AASHTO T 180.



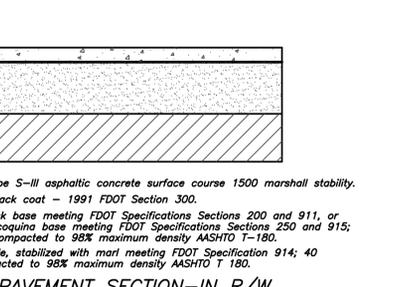
DISABLED RAMP DETAIL
6" WHITE REFLECTIVE PAINT
6" BLUE REFLECTIVE PAINT
6" WIDE DIAGONAL STRIPES PAINTED WHITE, 2" ON CENTER
6" WHITE REFLECTIVE PAINT



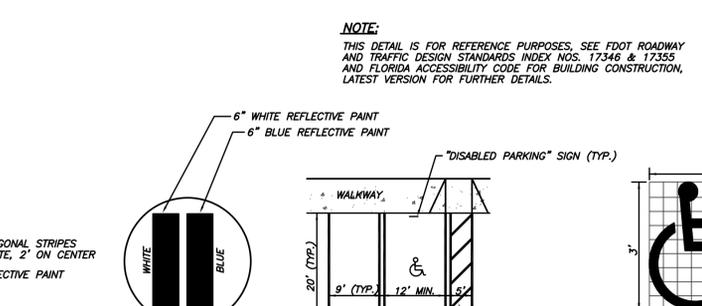
UNIVERSAL ACCESSIBLE LAYOUT WITH CURB CUT SHOWN
6" WHITE REFLECTIVE PAINT
6" BLUE REFLECTIVE PAINT
6" WHITE REFLECTIVE PAINT



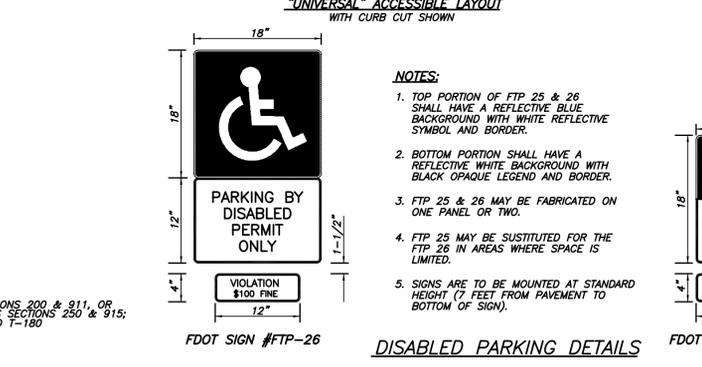
DISABLED PARKING DETAILS
18"
12"
6" WHITE REFLECTIVE PAINT
6" BLUE REFLECTIVE PAINT
6" WHITE REFLECTIVE PAINT
FDOT SIGN #FTP-26
FDOT SIGN #FTP-25



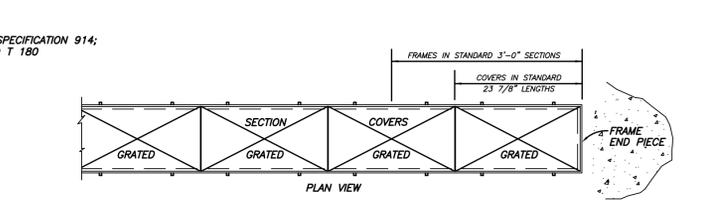
CONCRETE OVERFLOW WEIR
6.4"
2"
SECTION X-X
SECTION Y-Y
NOTE: USE 3000 PSI CONCRETE WITH FIBER MESH



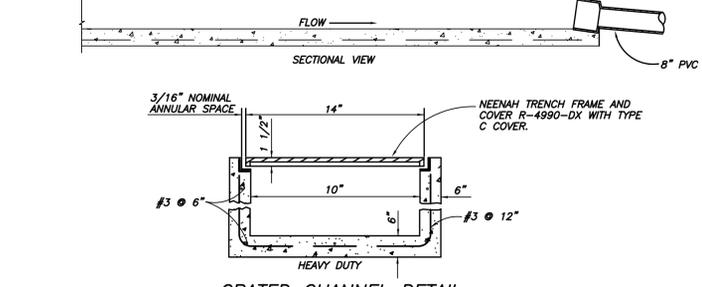
TYPICAL SECTION RETENTION AREA
N.T.S.
3'-6"
3'-0"
6"x6" WIRE MESH
SECTION Y-Y
EDGE OF PAVEMENT
1 #4 BAR
SECTION X-X
FIBERMESH REINFORCED 3,000 PSI CONCRETE
N.T.S.
VARIES - SEE PLAN
SLOPE 1/4" FT



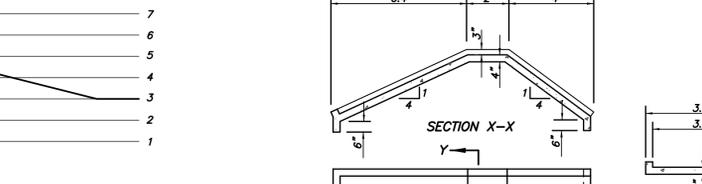
PUBLIC R/W SIDEWALK DETAIL
N.T.S.
5'
1/4" SLOPE



SIDEWALK DETAIL
N.T.S.
6'-0"
2"
EXPANSION JOINTS @ 30' CENTERS, DUMMY JOINTS @ 5'-0" O.C.

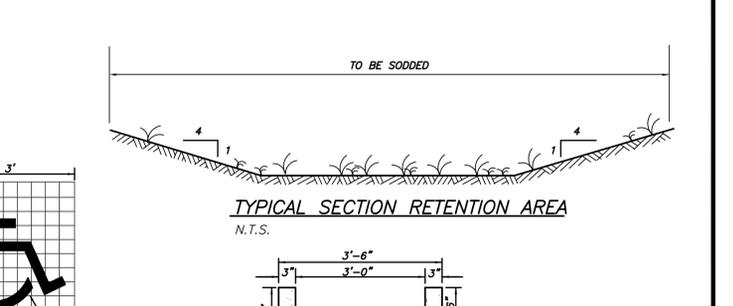


TIRE STOP DESIGN MINIMUM
APPROVED EQUIVALENT MAY BE SUBSTITUTED
N.T.S.
4" Min.
5" Max.
R=2 Cast Or Rubbed
8" Or 2" Holes
3" Pitch Optional
6'-0"
2" Min.
3" Max.
No. 4 Bars, 18" Long (Two Per Guard)

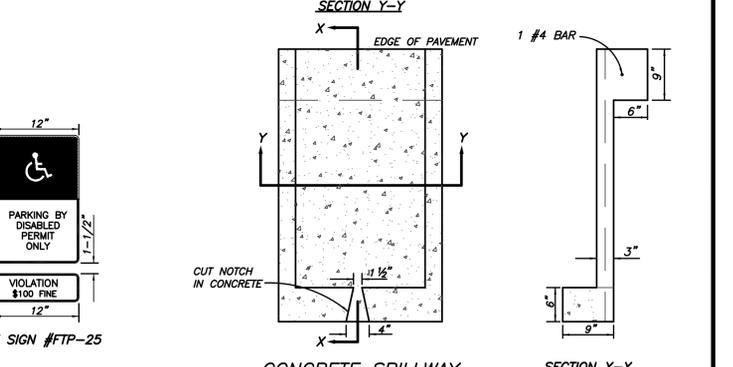


TRENCH DRAIN DETAIL
N.T.S.
6" RISER
14"x23" ERCP
TO STORM INLET
6"x 90" B
DISSIMILAR PIPE CONNECTION

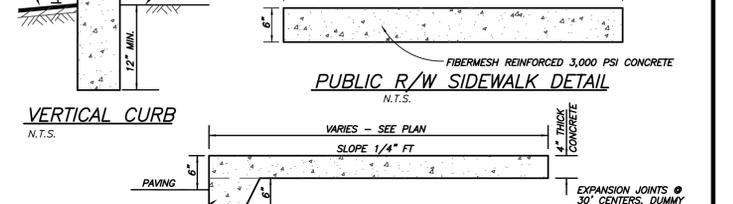
NO.	DATE	REVISIONS
1	1-7-03	REVISED PER COUNTY COMMENTS
2	3-27-03	REVISED PER COUNTY COMMENTS
3	5-8-03	REVISED PER SURVMD
4	2-21-05	REVISED PER COUNTY COMMENTS, ADD CONCRETE PAINT
5	5-4-05	ADDED CONCRETE PAVER DETAIL
6	10-17-05	ADDED TRENCH DRAIN DETAIL



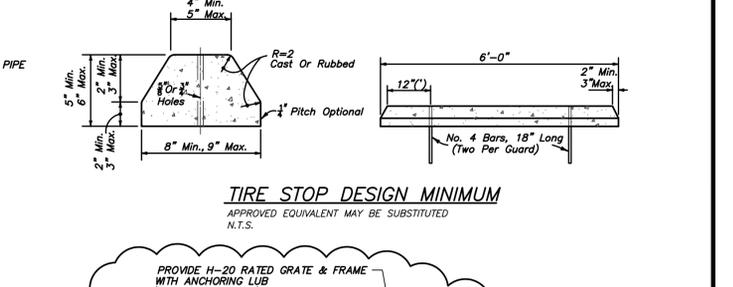
VERTICAL CURB
N.T.S.
6"
12"



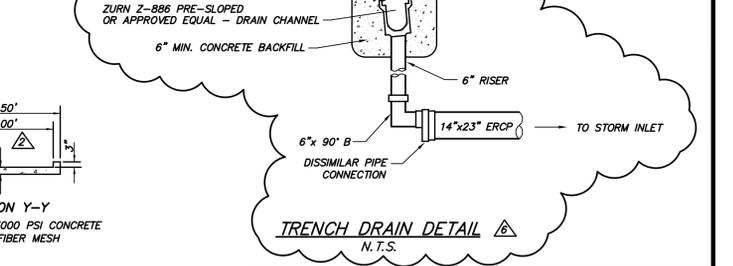
CONCRETE SPILLWAY
N.T.S.
6"
12"



GRATED CHANNEL DETAIL
3/16" NOMINAL ANNULAR SPACE
14"
NEENAH TRENCH FRAME AND COVER R-4990-DX WITH TYPE C COVER
HEAVY DUTY
#3 @ 6"
#3 @ 12"



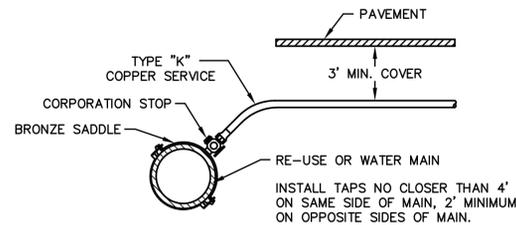
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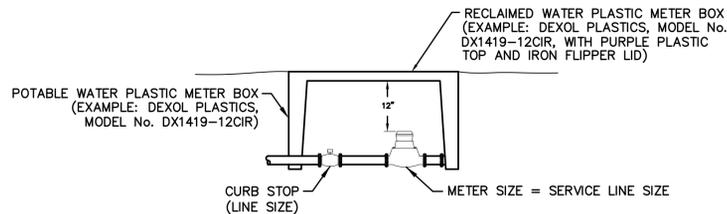
HARBOR HOMES, LLC
MARINA VILLAGE
BREVARD COUNTY, FLORIDA
PAVING AND DRAINAGE DETAILS

DATE	SCALE	JOB NO.	DRAWN	SHT. NO.
10-9-02	N.T.S.	020090	C.P.	9

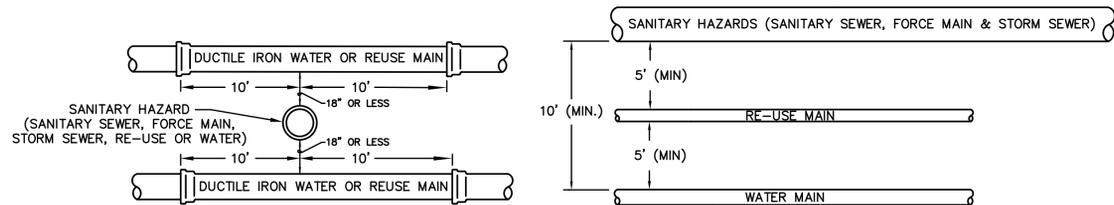
JOHN M. ALLEN, P.E. 9423 *** DONALD F. ROBERTS, P.E. 9131
MICHAEL S. ALLEN, P.E. 45788 *** JOHN H. WILY, P.E. 53233



TYPICAL SERVICE LINE
NTS
3/4" THROUGH 2"



TYPICAL POTABLE WATER SERVICE CONNECTION
NTS

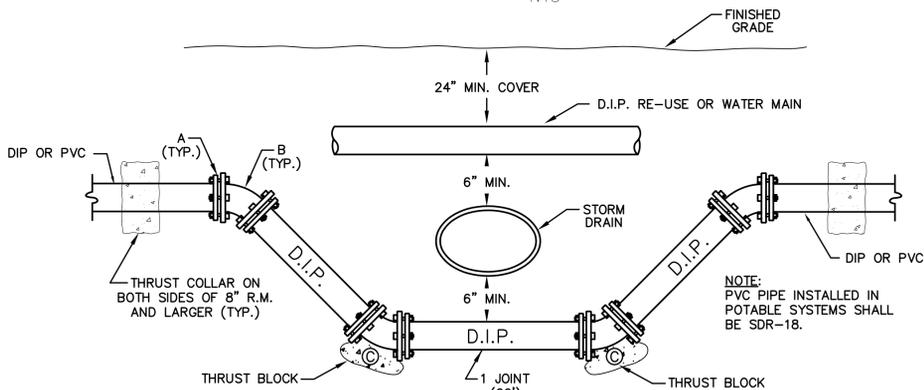


VERTICAL CLEARANCE

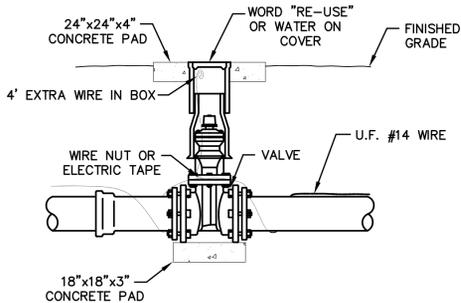
HORIZONTAL CLEARANCE

NOTE:
HORIZONTAL CLEARANCE AS SHOWN IN PARALLEL INSTALLATION ARE FOR PVC PIPE ONLY. IF CLEARANCE CAN NOT BE MAINTAINED DUCTILE IRON PIPE SHALL BE INSTALLED IN ACCORDANCE WITH "RECOMMENDED STANDARDS" FOR "WATER WORKS" (PER DER-1990-17-610.470) OR LATEST REVISION.

TYPICAL REQUIRED SEPARATION
NTS

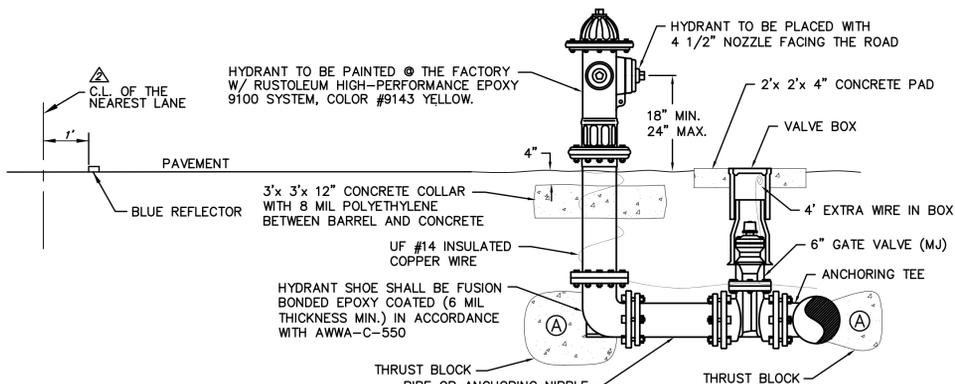


STORM DRAIN CROSSING
NTS



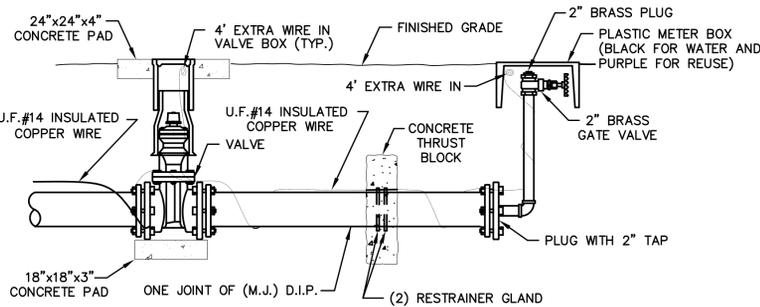
NOTE: IF THE DEPTH OF THE VALVE NUT IS GREATER THAN 48" BELOW GRADE, OR 30" BELOW GRADE AND UNDER THE WATER TABLE, A VALVE EXTENSION WILL BE REQUIRED.

BUTTERFLY OR GATE VALVE AND VALVE BOX DETAIL
NTS



NOTES:
1. CITY CREWS WILL APPLY FINISH COAT. A \$25.00 FEE WILL BE CHARGED PER HYDRANT, PAYABLE PRIOR TO FINAL INSPECTION.
2. HYDRANT RISERS WILL NOT BE PERMITTED.

FIRE HYDRANT DETAIL
NTS



NOTE: PERMANENT BLOW-OFFS DO NOT REQUIRE A JOINT OF D.I.P. OF A VALVE. ALSO ALL BLOW-OFFS NEED TO BE PLACED AT PROPERTY LINES.

2" TEMPORARY BLOW-OFF DETAIL
NTS

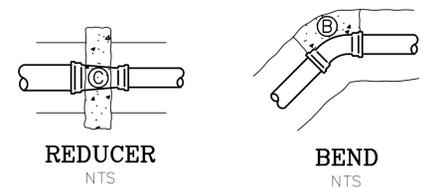
THRUST BLOCK NOTES

- 1.) WRAP ALL FITTINGS WITH POLYETHYLENE FILM BEFORE POURING THRUST BLOCK, MAKING CERTAIN TO KEEP CONCRETE AWAY FROM ALL BOLTS, GLANDS, AND FLANGES.
- 2.) THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED EARTH.
- 3.) REQUIRED VOLUMES OF BEARING AREAS TO BE AS SHOWN IN CHART. ADJUSTMENTS, IF NEEDED, WILL BE ALLOWED TO CONFORM TO TEST PRESSURE AND ALLOWABLE SOIL BEARING STRESS AS SHOWN IN SPECIFICATIONS.
- 4.) BEARING AREA FOR TRANSIT BLOCKS ON HORIZONTAL BENDS IS BASED ON A TEST PRESSURE OF 150 P.S.I. AND SOIL BEARING STRESS OF 2,000 P.S.F.. THE DEPTH TO THE THRUST BLOCK BASE TO BE EQUAL TO OR GREATER THAN TWICE THE HEIGHT. (EXAMPLE: IF BLOCK IS 2' THICK, THE BASE IS TO BE NO GREATER THAN 4' BELOW GRADE.)
- 5.) VERTICAL BEND THRUST BLOCKS TO BE THE SAME AS HORIZONTAL BENDS.
- 6.) BEARING AREA OF THRUST BLOCK TO BE NOT LESS THAN ONE SQUARE FOOT.

MINIMUM BEARING AREA (SQ. FT.)

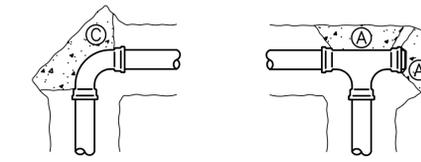
LETTER	PIPE SIZE									
	4"	6"	8"	10"	12"	16"	20"			
A	1-1/2	2-3/4	5	7-1/4	10-1/4	18	27-1/2			
B(22-1/2)	3/4	1	2	3	4	7	11			
B(45°)	1	2-1/4	3-3/4	5-1/2	8	13-3/4	21			
C	2	4	7	11-1/4	14-1/2	25-1/4	39			

THE FIGURES IN THIS TABLE REPRESENT AREA OF CONCRETE BLOCKING AGAINST THE VERTICAL TRENCH WALL OF UNDISTURBED EARTH IN SQUARE FEET AT 2000 P.S.F. SOIL BEARING CAPACITY.



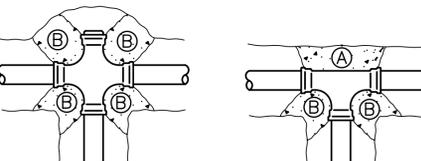
REDUCER
NTS

BEND
NTS



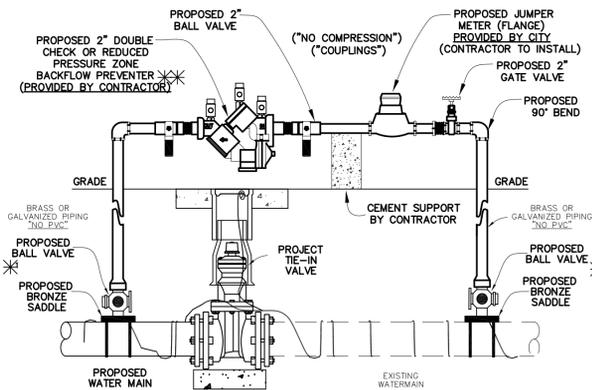
90° ELBOW
NTS

TEE & PLUG
NTS



CROSS & PLUG
NTS

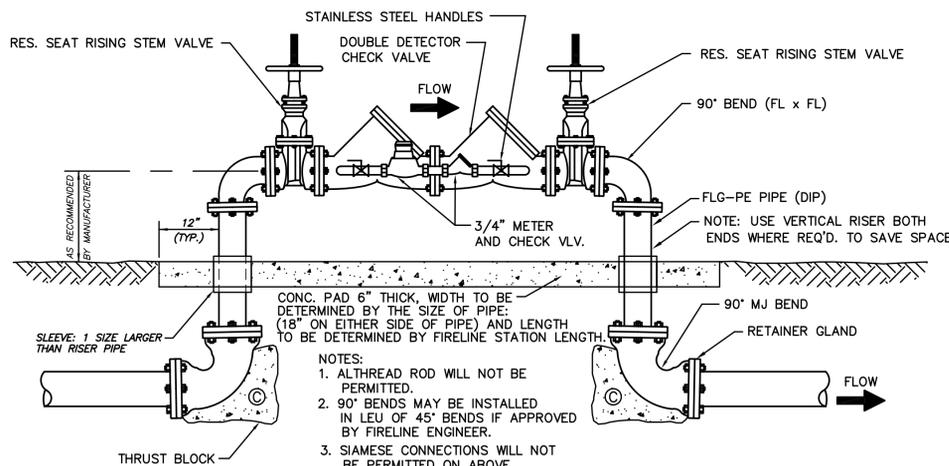
TEE
NTS



JUMPER & METER ASSEMBLY
NTS

NOTES

- * BACKFLOW PREVENTER TO BE TESTED AFTER INSTALLATION. CONTRACTOR TO PROVIDE TEST RESULTS TO INSPECTORS.
- * INLET: AWWA TAPER ("CC")
- * THREAD OUTLET: F.I.P. THREAD



- NOTES:**
1. ALTHREAD ROD WILL NOT BE PERMITTED.
 2. 90° BENDS MAY BE INSTALLED IN LEU OF 45° BENDS IF APPROVED BY FIRELINE ENGINEER.
 3. SIAMESE CONNECTIONS WILL NOT BE PERMITTED ON ABOVE GROUND PIPING.
 4. ASSEMBLY TO BE PAINTED RUST-O-THANE RED NO. 9405-1611
 5. ALL ABOVE GROUND BOLTS AND NUTS TO BE #304 STAINLESS STEEL.

DOUBLE DETECTOR CHECK VALVE
NTS

REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.

NO.	DATE	REVISIONS
1	2-21-05	REVISED PER COUNTY COMMENTS
1	4-2-03	REVISED PER COUNTY COMMENTS
		CHK'D

HARBOR HOMES, LLC		DATE 10-9-02
MARINA VILLAGE BREVARD COUNTY, FLORIDA WATER DETAILS		SCALE NTS
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO. 020090
		DRAWN COCOA
		SHT. NO. 12

JOHN M. ALLEN, P.E. 9423 *** DONALD F. ROBERTS, P.E. 9131
MICHAEL S. ALLEN, P.E. 45788 *** JOHN H. WILT, P.E. 53233

WATER – POTABLE & RECLAIMED

SECTION I. SCOPE OF WORK

1.1 GENERAL

All potable water, reclaimed water, and sewer mains and appurtenances must be installed in accordance with the City of Cocoa Utilities Department's Technical Provisions for the Construction of the Water Distribution System, the Water Reclamation System, and the Wastewater Collection System, the City of Cocoa Utilities Department Utilities Handbook, the approved plans, and the Standard Detail Sheet. Contractor requirements include:

- * Furnishing all labor, materials, tools and equipment necessary or incidental to the construction.
- * Obtaining and paying for all permits, inspections, and other official fees in connection with the work.
- * Arranging a pre-construction conference with the Engineering Division. It is recommended that the pre-construction meeting be scheduled prior to ordering materials.
- * Scheduling materials inspection, open ditch inspection, pressure/leakage test, and final inspection.

Any deviation from these requirements must be approved in writing by the Engineering Division Manager prior to commencement of construction.

Fees charged by the City are set by City Council by resolution and are listed on the appendix "Water Service Rates and Charges" made a part of the Utilities Handbook. Fees are subject to change without notice. The most current fees will be charged.

The Utilities Department and Engineering Division are located at 600 School Street, Cocoa, Florida, 32922. The Dispatch telephone number is (407) 639-7671; facsimile number is (407) 639-7663.

1.2 DEFINITIONS

The term "approved equal" is used to mean a part or item that has been approved in writing by the Engineering Division Manager, the Transmission/Distribution Superintendent, or the Utilities Director. A written request must be made in order to have an item accepted as an approved equal. Written specifications on the part or item must be furnished with the request.

Whenever a specification from a specific source is cited, the most current revision of that specification will be used.

Unless otherwise specified, "City" means City of Cocoa; "Utilities Department" means City of Cocoa Utilities Department; "Engineering Division" means City of Cocoa Utilities Department, Engineering Division.

SECTION II. MATERIAL SPECIFICATIONS

2.1 PIPE (see also Section 5.3 – Wire for locator wire specifications)

2.1.1 **Polyvinyl Chloride Pressure Pipe, 2"**. Polyvinyl chloride (PVC) pressure pipe (size 2") will be Class 200 (DR 21) and will be blue or white in color. Pipe will be supplied in standard 20-foot joints with thickened, integral solid-wall bell or coupling with the same DR as the barrel. No solvent-cement joints will be accepted. All PVC pipe and couplings will bear the U.L. label and NSF approval for potable water.

2.1.2 **Polyvinyl Chloride Pressure Pipe, 4"-12"**. Polyvinyl chloride pressure pipe (sizes 4" through 12") will be cast iron pipe equivalent outside diameter Class 150 (DR 18) conforming to the American Water Works Association's (AWWA) specification C900 and will be blue or white in color. Pipe will be in standard 20-foot lengths. All joints will be of the elastomeric-gasket type with thickened, integral solid-wall bell or coupling with the same DR as the barrel. All PVC pipe and couplings will bear the U.L. label and NSF approval for potable water.

2.1.3 **Polyvinyl Chloride Pressure Pipe, 16"**. Polyvinyl chloride pressure pipe (size 16") will be cast iron pipe equivalent outside diameter and a pressure rating of 235 p.s.i. (DR 18) conforming to AWWA specification C905 and will be blue or white in color. All joints will be of the elastomeric-gasket type with thickened, integral solid-wall bell or coupling with the wall the same DR as the barrel. All PVC pipe and couplings will bear the U.L. label and NSF approval for potable water.

2.1.4 **Ductile Iron, Ductile Iron pipe will be cement lined pressure Class 350 conforming to AWWA specification C151. Water main and storm drain crossing conflicts will be properly designed by the project engineer and approved by the Utilities Department prior to installation. Water mains that are less than 10 feet apart from building foundations or other permanent objects will be ductile iron pipe. In no case will water mains be located less than 5 feet from foundations. The above distances will be doubled for water mains larger than 8" in diameter. Foundations encasement conforming to AWWA specification C105 will be provided for all installations. The polyethylene will be sealed with tape.**

2.1.5 **Reclaimed Water**. PVC pipe installed in reclaimed water systems will be Class 150 (DR 18) conforming to AWWA specification C900 and will be purple in color. All PVC or ductile iron pipe will be installed with a 5"-wide purple adhesive identification tape affixed to the top of the pipe. Script in 1-1/2" black lettering will identify the main as "REUSE MAIN". Ductile iron pipe installed in the reclaimed water system will be pressure Class 350 for 12" and smaller and pressure Class 250 for 14" and larger, provided 3 feet of cover can be maintained. Where cover is less than 3 feet, pressure Class 350 is required. Ductile iron pipe with identification tape will be installed where horizontal separation of less than 5 feet or vertical separation of less than 18" from potable water mains or sewer mains exists.

2.2 VALVES AND VALVE BOXES

2.2.1 **Resilient Seat Gate Valves, 4"-16"**. Resilient seat gate valves will have mechanical joint ends as manufactured by American Flow Control, Model AFC-2500; U.S. Pipe, Metroscol; Gow Corporation; or an approved equal. The resilient seat gate valves must conform to AWWA specification C508 and be manufactured in the U.S.A. Resilient seats will be of natural or synthetic rubber and be bonded or mechanically attached to the gate using stainless steel hardware and will be rated at a working pressure of 200 psi. The interior and exterior of the valve body will be fusion bonded epoxy coated in accordance with AWWA specification C550 in order to provide a corrosion resistant surface. The coating must be applied in a manner to withstand the action of line fluids and operation of the sealing gate under long-term service. Valve seats must seal by compression only. Wedging or sliding the resilient seat is not acceptable. The valve will be supplied with 2"-square operating nuts and be designed to provide a bubble tight seal regardless of direction of flow. Opening the valve will be in the counter-clockwise direction. If the depth of the valve nut is greater than 48" below grade, or 30" below grade and under the water table, a valve extension stem will be required. The extension will have a centering collar and be mechanically attached to the valve operating nut, such as extensions manufactured by the General Engineering Company, Model #4840-0001-3, or an approved equal to be determined by the Transmission/Distribution Superintendent or his designee. See Exhibit 1.

2.2.2 **Butterfly Valves, 12" and larger**. Butterfly valves with mechanical joint ends will be rubber seated, 90° tight closing type, short body. The interior and exterior will be fusion bonded epoxy coated in accordance with AWWA specification C550. The valve shaft will be of 18-8 type 304 stainless steel or type 316 stainless steel. Body dimensions and minimum shaft diameter will be in accordance with Tables 3 and 4 of AWWA specification C504. The valve seat will be of molded natural or synthetic rubber, will be mechanically secured to the disc or to the valve body, and will mate against a stainless steel seat surface. Buried valves will be for submerged service and will be equipped with totally enclosed gear operators, permanently lubricated and equipped with adjustable stops for open and closed positions. The gear ratio will be such as to require not more than 50 foot pounds of input torque to operate the valve against the worst case of a water flow velocity of 10 feet per second at a pressure of 100 psi differential. A torque-limiting device will be supplied if the allowable operator input is less than 450 foot pounds. Each buried valve will have a standard 2"-square operating nut. The valve will open when the operator nut is turned counter-clockwise. If the depth of the valve nut is greater than 48" below grade, or 30" below grade and under the water table, a valve extension stem will be required. The extension will have a centering collar and will be mechanically attached to the valve operating nut, such as extensions manufactured by the General Engineering Company, Model #4840-0001-3, or an approved equal to be determined by the Transmission/Distribution Superintendent or his designee. See Exhibit 1.

2.2.3 **Valves, 2"**. Two-inch valves for use with 2" PVC distribution mains will be of the ball valve design, as manufactured by Ford Meter Box Company, Inc., Model #B11-777, or an approved equal. They will be equipped with a 2"-square operator, as manufactured by Ford Meter Box Company, Inc., Model #Q167, or an approved equal, for buried use. Ball valves will be adapted to other pipe line materials by use of brass nipples or PVC gasketed bell adapters. The 2" blowoff gate valve will be rated at 125 SWP or 250 WOG. All 2" gate valves must meet all E.P.A. and F.D.E.P. requirements regarding lead and zinc contents. Galvanized fittings and 2" brass wheel valves are acceptable only on blowoffs and will not be accepted at other locations. All valves must be manufactured in the U.S.A.

2.2.4 **Valve Boxes**. Valve boxes and lids must be manufactured in the U.S.A. Boxes and lids must be structurally equal to those produced by Trumbull or Tyler and must have 6"-1/4" minimum inside diameter. Cast iron valve boxes will consist of circular cast iron top and bottom section. The depth must be determined and the appropriate valve box must be installed. No PVC is permitted in the valve box. Boxes must be set flush with finished ground surface in such a manner as to permit easy use of a valve wrench and to prevent surface loads from being transmitted to the valve or pipe. Boxes must be telescopic and adjustable. Valve box lids should have the word "WATER" or "SEWER" or "REUSE", as appropriate, cast on the top. A concrete pad (24" x 24" x 4") will be poured around all boxes at finished grade level unless the valve is located in a paved roadway or parking lot.

2.2.5 **Check Valves**. Check valves for fireline systems will be the double detector check valve as manufactured by Febo, Model No. R06DDC; Watts, Model No. 709DDC; Ames, Silver Bullet; or an approved equal. Check valves will be installed immediately upstream of the detector check valves will be accepted as a complete approved assembly in accordance with the section on "Cross-Connection Control and Backflow Prevention" in the Utilities Handbook. Check valves must be installed horizontally above ground in a grassed area and painted with Rust-Oleum No. 9405-1611 Red Paint must be applied in accordance with the manufacturer's recommendations. The check valve will be installed with 12" minimum and 24" maximum clearance from finished grade. The Utilities Department will inspect the interior of the double detector check valve prior to installation.

2.3 FITTINGS

All fittings must be of the mechanical joint type with an approved joint restraint, or push-on joints with a gasket joint field restraint system, such as "Field Lok" as manufactured by U.S. Pipe or an approved equal. All fittings must be manufactured in the U.S.A.

2.3.1 **Cast Iron**. Cast iron fittings will be AWWA specification C110, Class 250, cement lined with inside seal coating. The fittings will be bituminous coated on the outside and be wrapped with 6 mil polyethylene (sealed with tape).

2.3.2 **Ductile Iron, 4"-16"**. Ductile iron compact fittings (sizes 4" through 16") must conform to AWWA specification C153. Ductile iron compact fittings will be mechanical joint with an interior cement lining with seal coating and an exterior bituminous coating. All fittings will be wrapped with 6 mils polyethylene (sealed with tape).

2.3.3 **Bolts**. All mechanical joint bolts must be CORTEN Steel.

2.3.4 **Tapping Saddles**. Tapping saddles on mains 4" to 12" in diameter will be cast iron body mechanical joint type. Saddles on mains 16" to 48" in diameter will be fabricated steel with O-ring seal, fusion bonded, epoxy coated with stainless steel nuts and bolts. The tapping valve must have centering ring and conform to Section 2.2.1 – Resilient Seat Gate Valves in these Technical Provisions.

2.3.5 **PVC**. Fittings for 2" PVC pipe will be PVC with rubber gasketed slip joints. No solvent weld joints will be accepted.

2.4 FIRE HYDRANTS

Fire hydrants must be manufactured in accordance with AWWA specification C503. Hydrants must have bronze main stem and cast breeding surfaces. They will be traffic type with drain holes plugged at the factory. Hydrants must be one of the following models:

- * Model Mark 73 with bronze drain ring, American Daring Valve and Manufacturing Company
- * Model No. A-421 Super Centurion 200, Mueller Company
- * Model #K-81A, ITT Kennedy
- * Claw Medallion, Claw Valve Company
- * U.S. Metropolitan, U.S. Pipe

Hydrants will have one 4-1/2" valve opening, one 4-1/2" pumper nozzle, and two 2-1/2" hose nozzles. Stem couplings are to be cast iron or nylon-coated steel. The upper valve plate must be bronze. The hydrant shoe will be coated inside with fusion bonded epoxy, 6 mil minimum. All hydrants will be painted at the factory with Rustoleum high-performance epoxy 9100 system, non-lead, dry film thickness 5 to 8 mils, color #9143 Yellow. City engineers will be in position with each new fire hydrant after the contractor has paid the appropriate charges.

Finish grade is to be established and the proper length hydrant installed by the contractor to acceptance by the City. The hydrant shall be a minimum of 18" and a maximum of 24" above finished grade. A 6" mechanical joint hydrant connection will be provided using a hydrant valve anchoring tee with integrally cast standard mechanical joint gland on 6" plain end branch. The contractor will not install risers or make repairs to hydrants. Adjustments or repairs to be made to the hydrant after installation will be done by the City. The contractor or developer will be charged the cost of labor and materials for this service and must provide payment in advance. At final inspection, if it is determined that a hydrant has been modified, the hydrant will be removed. Either the proper length hydrant will be installed by the City, at the contractor's or developer's expense, or the contractor may purchase a proper length hydrant and install it under the direction of Utilities Department personnel.

2.5 SERVICE CONNECTIONS, 3/4"-2"

All service connections will be single connections. Services that are 3/4" and 1" are to be type K annealed temper soft copper. All connections are to be of the flare type. 1-1/2" and 2" services are to be of type K drawn temper in straight lengths or annealed temper if furnished in coils. Absolutely no lead-based solder joints will be accepted. Any repairs of service lines will be by flare-to-flare coupling. No compression fittings will be accepted. Taps in the pipe will be the same nominal diameter as the service line. Service taps in PVC pipe will be drilled with a shell cutter; the plug will be removed.

2.5.1 **Saddles**. Saddles must be used for all connections to PVC pipe. Saddles must be bronze as manufactured by Mueller Company, Ford Meter Box Company, or Smith-Blair Company. The pipe sizes for these manufacturers are noted below:

MUELLER: For pipe sizes 4" to 12", for 3/4" and 1" services, the single strap design must be used. For 1-1/2" and 2" services, the double strap design must be used. Both designs are for the H-16000 series.

FORD: For pipe sizes 4" to 12", for 3/4" and 1" services, the style 101B single strap design must be used. For 1-1/2" and 2" services, the style 202B double strap design must be used. For pipe sizes 16" and larger, for 3/4", 1", 1-1/2", and 2" services, the style 202B double strap design must be used.

SMITH-BLAIR: For pipe sizes 4" to 12", for 3/4" and 1" services, the 321 series single strap design must be used. For pipe sizes 4" and larger, for 3/4", 1", 1-1/2" and 2" services, the 323 series double strap design must be used.

An approved equal may be used in lieu of any of the above-listed designs/models.

2.5.2 **Curb Stops, 3/4" and 1"**. Curb stops 3/4" and 1" in size will be Mueller Mark II Oriscol, Model No. H-14352 or No. B-24-352R ball valve, as manufactured by Mueller Company, Model No. B-23-232W can be used for 3/4" curb stops and Model No. B-23-444W for curb stops, as manufactured by Ford Meter Box Company, Model No. 4317, as manufactured by Hayes Manufacturing Company, or an approved equal. An acceptable curb stop must have locking wings and a swivel meter nut. Curb stops that are 1-1/2" or 2" will be flare-by-flange with locking wing. Model No. BF23-660W for 1-1/2", Model No. BF23-777W for 2", as manufactured by Ford Meter Box Company, Model No. 4316 as manufactured by Hayes Manufacturing Company, or an approved equal.

2.5.3 **Corporation Stops, 3/4" and 1"**. Corporation stops 3/4" and 1" will be of brass and equal to Model No. H-15000, manufactured by Mueller Company, Model No.F-600, as manufactured by Ford Meter Box Company, Model No. 5200, as manufactured by Hayes Manufacturing Company, or an approved equal. Corporation stops 1-1/2" and 2" will be brass and equal to Mueller Oriscol, as manufactured by Mueller Company, Model No. FB 600, as manufactured by Ford Meter Box Company, Model No. 4400, as manufactured by Hayes Manufacturing Company, or an approved equal.

2.5.4 **Location**. Service lines will be located at alternating tall lines outside the sidewalk within two feet of the right-of-way line as shown on approved plans or in a grassed area behind the curb if located in other than a subdivision. Curb stops will be installed to finished grade in a plastic meter box with an iron flipper lid with a full pin hinge, such as Model No. DX1419-120R, as manufactured by Dexel Plastics, or an approved equal. Service locations will be permanently stenciled on concrete curb or the street with a blue "W" for potable water or a purple "R" for reuse. Reuse services will be located at the appropriate lot corner water services where practical or with five feet minimum separation.

2.5.5 **Reclaimed Water**. Reclaimed water service will be installed to finished grade in a plastic meter box with a purple plastic top and iron flipper lid with a full pin hinge, such as Model No. DX1419-120R, as manufactured by Dexel Plastics, or an approved equal. A 3" x 5" permanent plastic tag, secured to the curb stop with a nylon tie wrap, will be supplied. Tags will be inscribed "REUSE WATER DO NOT DRINK".

2.6 INSPECTION OF MATERIALS

Materials delivered to the job site will be subject to inspection by the City prior to installation. All materials found to be defective or not meeting specifications shall be rejected. Inspection during the progress of the work shall be removed from the job site without delay. All materials delivered to the job site will be in accordance with the materials specifications. Materials not inspected by the City prior to installation will be uncovered by the contractor at his/her expense to verify compliance with these specifications. The contractor will furnish copies of the packing list(s) for materials upon demand.

SECTION III. PROTECTION OF PROPERTY AND OBSTRUCTIONS

3.1 **PROTECTION**. Temporary supports and/or adequate protection and maintenance must be provided on all underground and surface structures encountered in the progress of the work. Structures that have been disturbed will be restored to a condition equal to their original state upon completion of the work.

3.2 **OBSTRUCTIONS**. All utility owners must be notified prior to beginning construction. Any known obstructions will be shown on the plans. The utmost caution will be taken in operations to avoid damage to existing obstructions whether or not shown on the plans.

SECTION IV. TRENCH PREPARATION

4.1 **EXCAVATION**. Trenches will be opened so that the pipe can be installed to the alignment and depth required. It will be excavated only so far in advance of the pipe placement as necessary. The trench will be excavated to the depth required so as to provide a uniform and continuous bearing support for the pipe or undisturbed ground. Bell holes will be provided at each joint to permit jointing to be made and inspected properly.

During excavation, if ashes, cinders, mud or other organic material considered unstable is uncovered at the bottom of the trench at sub-grade, it will be removed and backfilled with approved material. This material will be compacted in layers to provide a uniform and continuous bearing characteristic of that area's soil condition. Where the bottom of the trench at sub-grade consists of soft material to such a degree that it cannot be removed and replaced with an approved material to support the pipe properly, a suitable foundation must be constructed. Excavated material will be piled in such a manner that it will not endanger work or obstruct natural water courses, sidewalks or driveways. Fire hydrants under pressure and valve boxes brought under utility controls will be left unobstructed and accessible at all times. Gutters will be kept clear or other satisfactory provisions will be made for street drainage.

4.2 **SHEETING AND BRACING**. Open cut trenches must be sheeted and braced as required by any governing State law, municipal ordinances, OSHA Standards, and as may be necessary to protect life, property, or the work. Trench bracing may be removed after backfilling has been completed or has been brought up to such an elevation as to permit its safe removal. The use of a trenching box may be used in place of sheeting and bracing where appropriate.

4.3 **DE-WATERING**. Excess water must not be allowed in the trench at any time. An adequate supply of well points, headers or pumps, all in first-class operating condition, may be used to remove the water. The use of gravel and pumps will also be an acceptable means of removing the water. The trench will be excavated no more than the available pumping facilities are capable of de-watering. Discharge from pumps will be accommodated in accordance with the St. Johns River Water Management District's requirements. The City is not responsible for obtaining de-watering permits.

SECTION V. PIPE LINE CONSTRUCTION

5.1 GENERAL

All water mains, service lines and appurtenances must be installed as specified on the approved plans and in accordance with the Standard Detail Sheet. Installation will conform to AWWA specification C600 except as modified herein.

5.2 **PIPE PLACEMENT**. The bottom of the trench will not be excavated below the specified grade. If undercutting occurs, the bottom of the trench will be brought up to the original grade with approved material and thoroughly compacted, as directed by the Engineering Division Manager. Before placing pipe into the trench, the outside of the spigot and the inside of the bell will be wiped clean, dry, and free from oil and grease. Every great precaution will be taken to prevent foreign material from entering the pipe. During placement operation, no debris, tools, clothing or other material will be placed in the pipe.

All mechanical joints will be made up in strict accordance with the manufacturer's specifications. Beveled ends will be removed from PVC pipe entering a mechanical joint. The bell will be carefully cleaned before the gasket is inserted. Gaskets must be evenly seated, the gland placed in position with the gasket. At all steel pipe joints, all steel joints will be made up in strict accordance with the manufacturer's specifications.

After placing a length of pipe in the trench, the spigot end will be centered in the bell, the pipe forced into the trench, brought to correct alignment, and the pipe compacted. Ductile iron pipe will be backfilled to the centerline of the pipe and compacted to ninety-five percent (95%) of standard Proctor T-99.

Pipe will be installed with 30" minimum cover. Maximum cover of 42" will be accepted. Cover depth will be determined from proposed finish grade as indicated on the plans. At times when pipe placement is not in progress, the open ends of pipe must be closed by a water-tight plug or other approved means. This provision will apply during the lunch hour as well as overnight. If water is in the trench, the seal will remain in place until the trench is pumped completely dry.

5.3 **WIRE**. A UF#14 locator wire will be installed on all potable water, reclaimed water, and sewer mains. The wire must be placed on the top of the pipe with at least one wrap around each section of pipe. A run of wire must run from the main to each hydrant. Each fire hydrant must have one wrap of the wire around the barrel located at final grade.

A run of wire will also be brought up in each valve box. The wire will have 4 feet of excess length. Wire is to be connected together using a yellow wire nut.

5.4 **BACKFILLING**. All backfilling material will be free from cinders, ashes, refuse, vegetable or organic material, boulders, rocks, stones, or other material which is considered unsuitable. When backfill material is not specified on the plans, backfilling with the excavated material may be acceptable provided that such material is suitable for backfilling. Pipe should be backfilled as soon as possible to minimize the length of open trench. Valves, fittings, and thrust blocks will be left uncovered until inspection by the Utilities Department has been completed.

5.5 **VALVES AND FITTINGS**. All valves and fittings will be set and joined to the pipe in the proper location as shown on the plans. Valves should be installed outside of the pavement where practical. A roadway valve box will be provided for every valve. This valve box must not transmit shock or stress to the valve and will be centered and plumb over the wrench nut of the valve. The box cover is to be flush with the surface of the finished pavement or grade level as specified in the plans. A 24" square concrete pad 4" in thickness will be poured around the valve box when it is located outside of pavement. A bronze or stainless steel disc will be cast into the pad for all valves 12" or larger. Valve nomenclature to be stamped into the disc will include the valve size, type, manufacturer's initials, number of turns, and direction to open the valve. (Example: 12" G.V. U.S.P. 20 c.c.w.)

5.6 **FIRE HYDRANTS**. All fire hydrants will be located as shown on the plans and marked on the pavement with a blue reflector. On unpaved streets, a blue reflector will be affixed to a post and placed as close to the edge of the road as feasible so as to be easily visible. The hydrants will be located in such a manner as to provide complete accessibility and in a manner so that the possibility of damage from vehicles or injury to pedestrians will be minimized. All hydrants must stand plumb with the pumper nozzle facing towards the curb and the bury line of the hydrant at the finished grade. Fire hydrants installed in State highway rights-of-way will be placed in accordance with any M.O.T. requirements. All fire hydrants will be connected to the main in the manner shown on the Standard Detail Sheet.

5.7 **THRUST BLOCKS**. Thrust blocks will be installed at all bends, fire hydrants, and as specified on the plans, in accordance with the Standard Detail Sheet. Metal harnesses, tie rods, or clamps of adequate strength to prevent movement may be installed at locations where thrust blocks are not practical. Rods and clamps will be stainless steel. A 20-foot length of mechanical joint ductile iron pipe will be installed at all main endings and a thrust collar will be poured around the pipe at a distance of 10 feet from the end of the joint.

5.8 **PIPE INSTALLED IN CASINGS**. Pipe to be installed under pavement where open trenching is not permitted will be installed through a steel casing which has been jacked and bored. Casing size will be as indicated below:

PIPE SIZE	MINIMUM CASING SIZE
4"	12"
6"	14"
8"	18"
10"	20"
12"	24"
16"	30"
20"	36"

Water mains must be pushed or pulled through the casing on pressure-treated wood skids attached to the pipe with stainless steel straps. Stainless steel casing spacers with polyethylene skids will be accepted in lieu of wood skids and are required on mains 12" in diameter and larger. The stainless steel casing spacers with polyethylene skids will be placed in accordance with manufacturer's recommendations. Casing spacers must be manufactured by Cascade or an approved equal. Restrained joints are required on mains installed inside casings.

5.9 **BLOWOFFS**. Flushing blowoffs are to be installed and constructed as shown on the Standard Detail Sheet. Blowoff materials include 2" galvanized pipe, threaded fittings, 2" brass wheel valve, and plastic meter box (purple for reuse). The plastic meter box is to be installed at grade over the wheel valve. The wheel valve will be within six inches of finished grade and will be plugged with a brass plug, 4" blowoffs will be required on both potable water and reclaimed water mains 12" and larger and must be constructed as shown on the Standard Detail Sheet. A reuse tag will be installed on reuse main blowoffs in a reuse meter box.

SECTION VI. TIE-INS TO EXISTING SYSTEMS

6.1 GENERAL

The contractor is not to operate any valve or remove any thrust block from City-owned mains except under direct supervision of a representative of the Utilities Department. All contractors must follow the procedures listed below for connecting new mains to existing water systems.

6.1.1 **Mains 8" and smaller**. Tie-in valves will be operated and pressure tested to verify water tightness prior to the tie-in. Valves that are not water tight must be replaced or a valve must be installed immediately adjacent to the valve; otherwise, the tie-in is not to be made until the system has been approved for service by F.D.E.P. The contractor will provide a 2" tap on the new main and a 2" tap on the existing main. The tie-in valve will be a 2" jumper equipped with a backflow preventer (double check) will be installed. The backflow preventer will be utilized for filling the main, flushing the main, providing water for bacteriological sampling, and maintaining pressure in the main after a successful bacteriological test. The tie-in valve is not to be operated and the jumper is not to be removed until clearance has been obtained from F.D.E.P. and the City. The project engineer will be required to provide an executed F.D.E.P. certificate of completion prior to clearance. After clearance, the tie-in valve will be opened, the jumper removed, and the main thoroughly flushed under the supervision of the Engineering Division.

6.1.2 **Mains 10" and larger**. The same procedure as noted for mains 8" and smaller will be used for mains 10" and larger except that a backflow preventer will be utilized for filling the main, providing water for bacteriological sampling, and maintaining pressure in the main after a successful bacteriological test. The tie-in valve can be opened for flushing and during chlorination only under the supervision of the Engineering Division. The tie-in valve is not to be operated and the jumper is not to be removed until clearance has been obtained from F.D.E.P. and the City. After clearance, the tie-in valve will be opened, the jumper removed, and the main thoroughly flushed under the supervision of the Engineering Division.

SECTION VII. TESTING

7.1 GENERAL

All newly installed pipe that has been backfilled must be tested at a gauge pressure of 150 psi in accordance with AWWA specification C600.

7.2 **FLUSHING**. The City will provide an adequate volume of water for the flushing, flushing, and testing of mains. The contractor, after applying the specific test pressure, will be expelled from the test section including service connections. If fire hydrants or blow-offs are not available at high elevations, taps at points of highest elevation will be made to facilitate removal and testing. When testing is complete, the service lines installed for air removal must be removed.

7.3 **HYDROSTATIC TEST**. A blowoff or fire hydrant will be installed at the end of the pipeline under test. The line being tested will be slowly filled with water to the specified test pressure. Before applying the specified test pressure, air will be expelled from the test section including service connections. If fire hydrants or blow-offs are not available at high elevations, taps at points of highest elevation will be made to facilitate removal and testing. When testing is complete, the service lines installed for air removal must be removed.

The line must hold the 150 psi test pressure for a two-hour test period. The first hour, it is to be witnessed by the contractor. The second hour must be witnessed by the Engineering Division personnel. Sufficient human resources are to be employed to insure inspection. If the line fails to meet the test, it will be repaired and re-tested until the test requirements are satisfied. Line pressure will be maintained to within 5 psi of the test pressure at all times.

7.4 **LEAKAGE TEST**. A leakage test at 150 psi will be performed on all newly installed sections of pipe after installation of all service connections. Any leakage observed must be less than the following per thousand feet of pipe:

SIZE	ALLOWABLE LEAKAGE
2"	0.20 Gallons/Hour
4"	0.33 Gallons/Hour
6"	0.50 Gallons/Hour
8"	0.67 Gallons/Hour
10"	0.83 Gallons/Hour
12"	1.06 Gallons/Hour
14"	1.16 Gallons/Hour
16"	1.32 Gallons/Hour

SECTION VIII. DISINFECTION & BACTERIOLOGICAL TESTING

8.1 GENERAL

The contractor must flush mains and arrange for complete disinfection by chlorination under the direction of the Utilities Department. Work will conform to applicable provisions of AWWA specification C651, "Disinfecting Water Mains". Water with a chlorine content of 100 ppm will be evenly distributed throughout the pipe system and allowed to remain in the pipe for twenty-four hours before it is flushed out. After flushing, the pipe should be flushed for 24 hours with water. Services to be installed and tie-ins made before testing must be disinfected in accordance with AWWA specification C651. Samples will be taken by Utilities Department personnel. Water mains must not be flushed between samples. The contractor will be charged a fee by the City to cover the cost of disinfection. After the contractor has received payment of pay for work for bacteriological testing at the time of pressure and leakage test inspection. Sample points are determined by the F.D.E.P. Samples are collected Monday through Thursday by City of Cocoa Sellers Plant personnel. Sellers Plant personnel can be contacted at (407) 639-7681 to schedule a sample pick-up. If samples taken do not demonstrate satisfactory results, re-chlorination is required. A fee will be charged by the City for additional sample collection and analysis.

Disinfection and bacteriological testing of reclaimed water mains is performed in the same manner as potable water mains. Sample points for reclaimed water mains, however, are determined by the Engineering Division Manager. Samples are collected Monday through Thursday by City of Cocoa Sellers Plant personnel. Sellers Plant personnel can be contacted at (407) 639-7681 to schedule a sample pick-up. If samples taken do not demonstrate satisfactory results, re-chlorination is required. A fee will be charged by the City for additional sample collection and analysis.

SECTION IX. CONNECTION TO EXISTING SYSTEM

9.1 GENERAL

Connections to existing City concrete mains will be made by the Utilities Department under the direction of the Engineering Division. Any charges for taps or connections made by the Utilities Department will be paid to the City by the owner or contractor prior to the installation. For all water main connections, the contractor must obtain all required permits; provide a dry pit area, all pit preparation including shoring and bracing, maintenance of traffic, all right-of-way restoration; and notify all utilities prior to construction. Taps on PVC, AC, or DIP mains that are from 4" through 12" in diameter will be made by the City. The contractor must contact the Transmission/Distribution Division to schedule the tap. When personnel from the Transmission/Distribution Division arrive on site to make the tap, the contractor will provide a dry work pit in accordance with OSHA standards. The contractor will provide the necessary equipment to lift the tapping machine into and out of the pit.

Tapping saddles and valves supplied by the contractor will be inspected by the Engineering Division prior to installation. The installed tapping saddle and valve must be tested with 100 psi for 15 minutes prior to tapping to insure a water-tight installation. The pressure test will be performed by the contractor and witnessed by a representative of the Engineering Division. After the pressure test of the saddle has been completed and payment of the tapping cost has been made to the City of Cocoa Customer Service Department, the contractor must contact the Transmission/Distribution Division to schedule the tap. When personnel from the Transmission/Distribution Division arrive on site to make the tap, the contractor will provide a dry work pit in accordance with OSHA standards. The contractor will provide the necessary equipment to lift the tapping machine into and out of the pit.

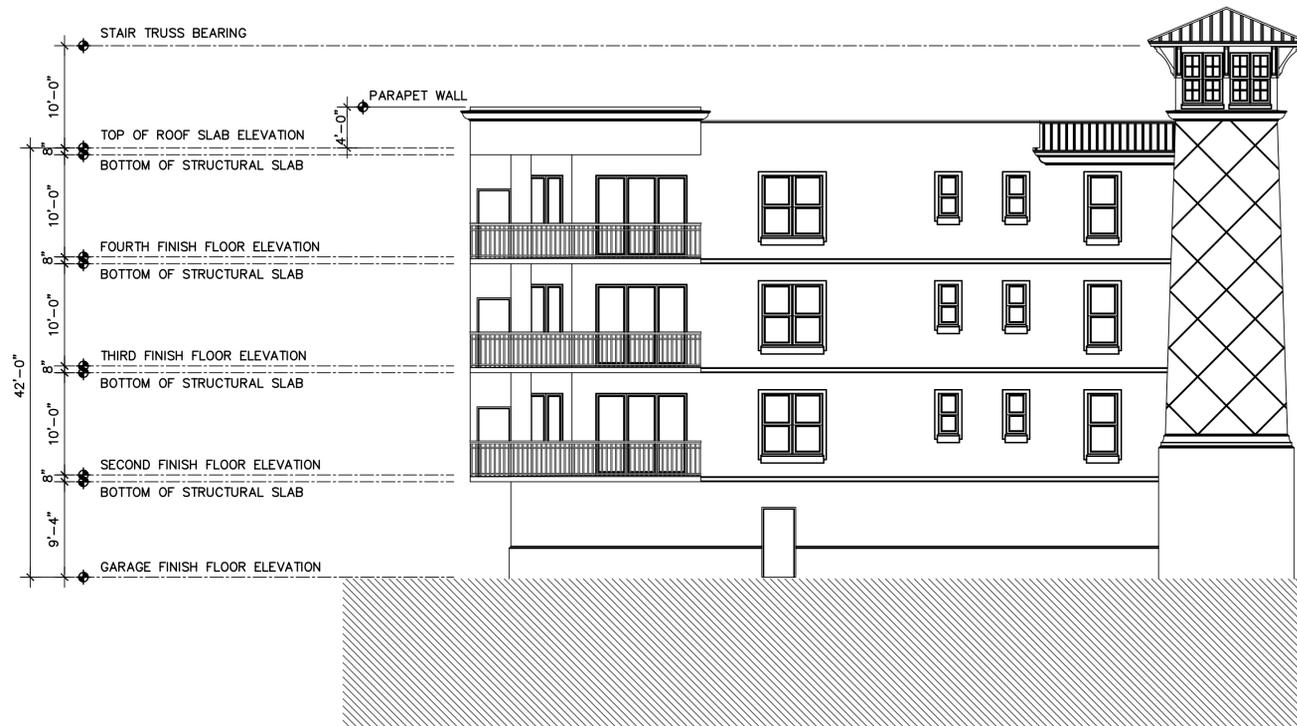
SECTION X. FINAL CLEAN-UP AND ACCEPTANCE

10.1 GENERAL

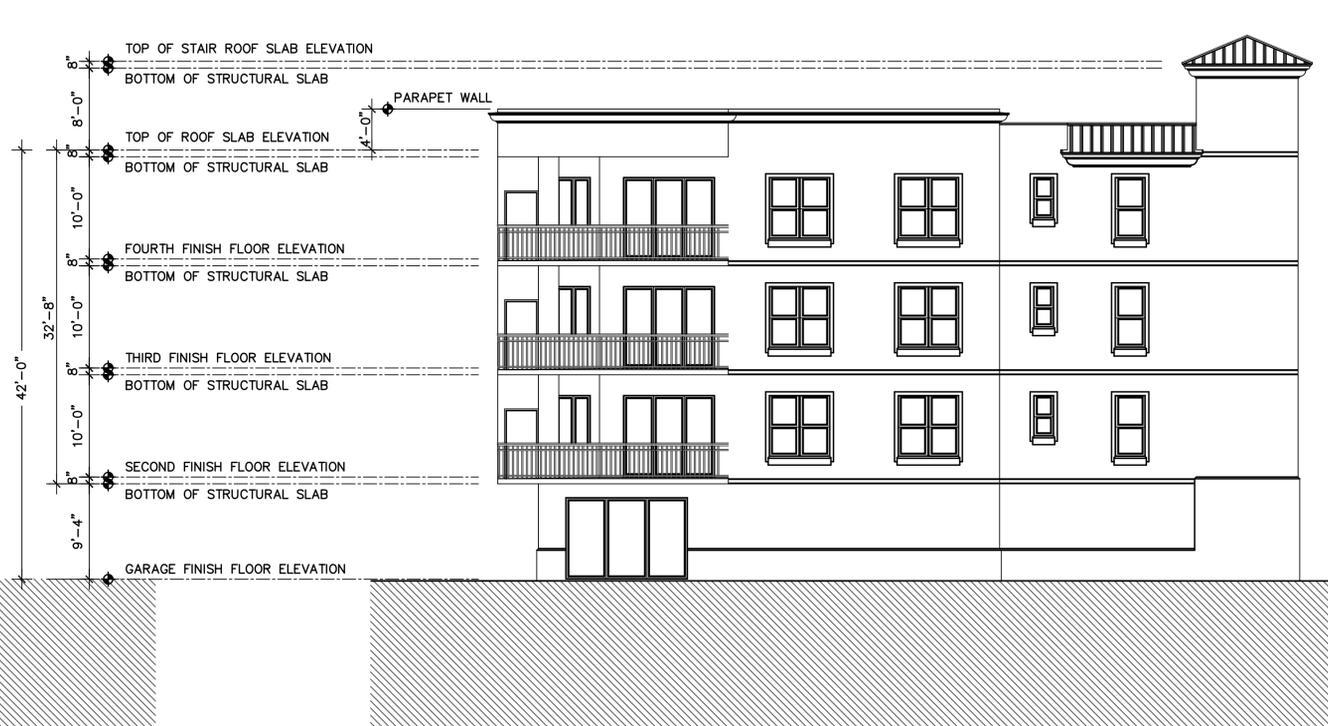
Upon completion of the work and before acceptance by the Utilities Department, the contractor will meet all permit conditions, remove all debris, and complete sodding, springing, or seeding if required by the plans. The contractor will leave all areas affected by his/her operations in a neat and presentable condition.

SECTION XI. FIRE SERVICE

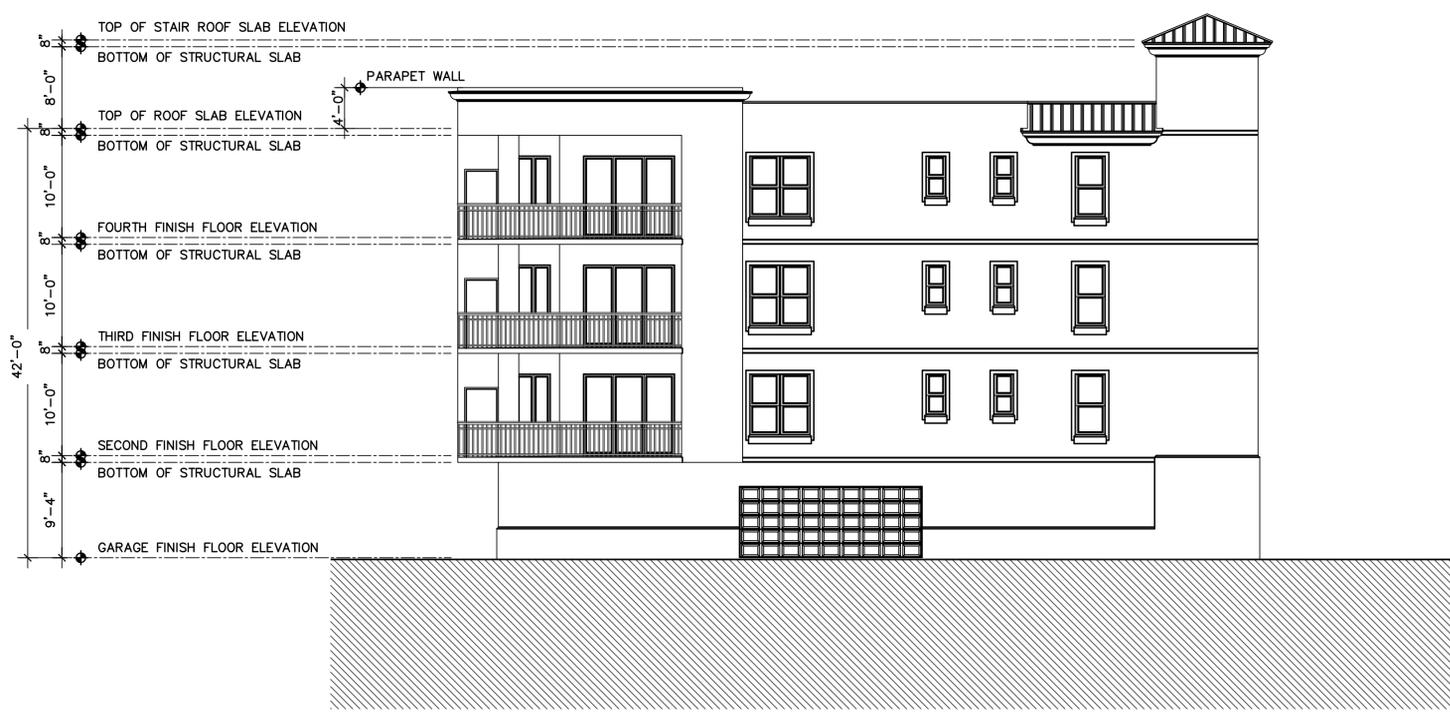
11.1 GENERAL



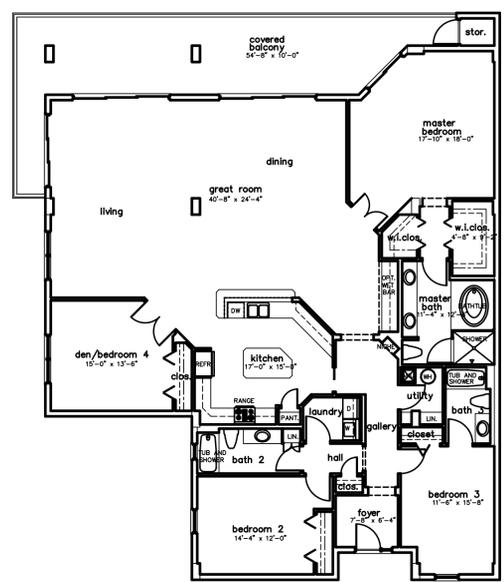
WEST BUILDING LEFT SIDE ELEVATION



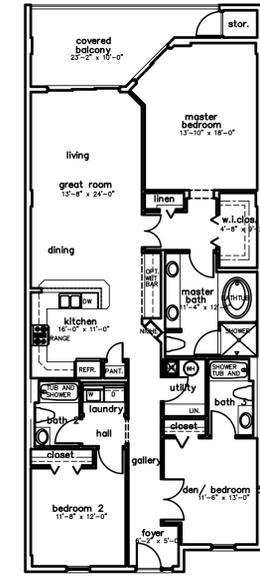
NORTH BUILDING LEFT SIDE ELEVATION



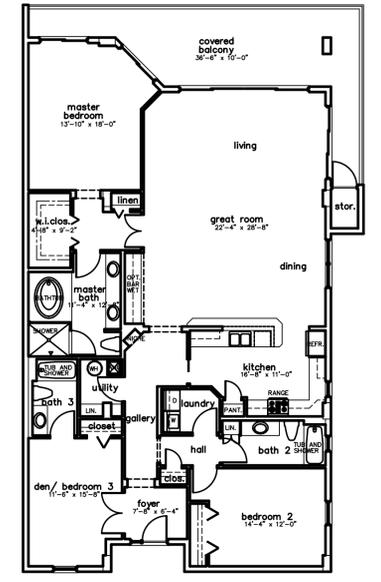
SOUTH BUILDING RIGHT SIDE ELEVATION



Unit A
2,989 sq.ft.



Unit B
1,743 sq.ft.



Unit C
2,279 sq.ft.

NO.	DATE	REVISIONS	CHK'D
1	4-2-03	REVISED PER COUNTY COMMENTS	

HARBOR HOMES, LCC		DATE 1-16-03
MARINA VILLAGE BREVARD COUNTY, FLORIDA ARCHITECTURAL ELEVATIONS AND UNITS		SCALE 1"=100'
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO. 020090
		DRAWN J.K.
		SHT. NO. A-1

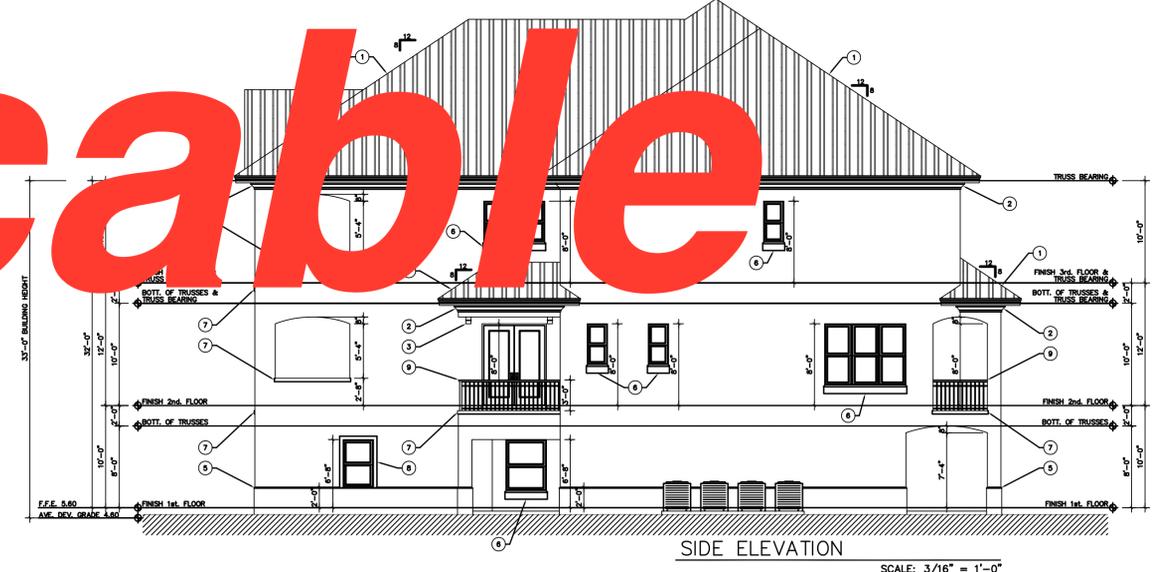
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020090ARCH-DWG



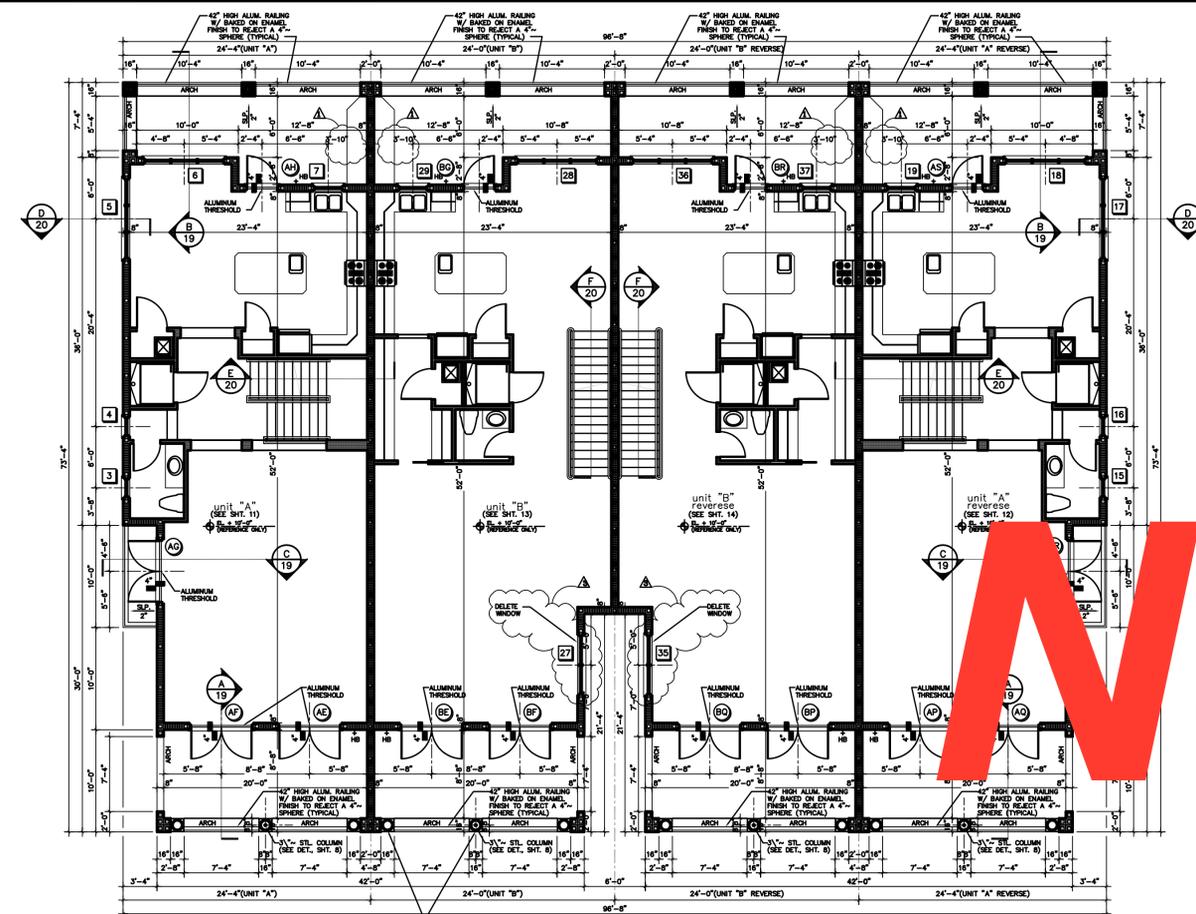
Not
Applicable

- ELEVATION LEGEND**
- ① 1/2\"
 - ② SMOOTH TEXTURED POLYMER THINSET POLYMER CONCRETE COATING FINISH BAND OVER 1/2\"
 - ③ SMOOTH TEXTURED CONCRETE COATING FINISH BAND WINDOW SILL MOLDING (SEE DETAIL A, SHEET 3)
 - ④ 1/4\"
 - ⑤ 1/4\"
 - ⑥ 1/4\"
 - ⑦ 1/4\"
 - ⑧ 1/4\"



NO.	DATE	REVISIONS	CHK'D

HARBOR HOMES, LCC		DATE 6-05-06
MARINA VILLAGE - PHASE 4 BREVARD COUNTY, FLORIDA ARCHITECTURAL ELEVATIONS - 4 UNIT		SCALE NTS
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO. 020090
REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.		DRAWN DAL
		SHT. NO. A-2

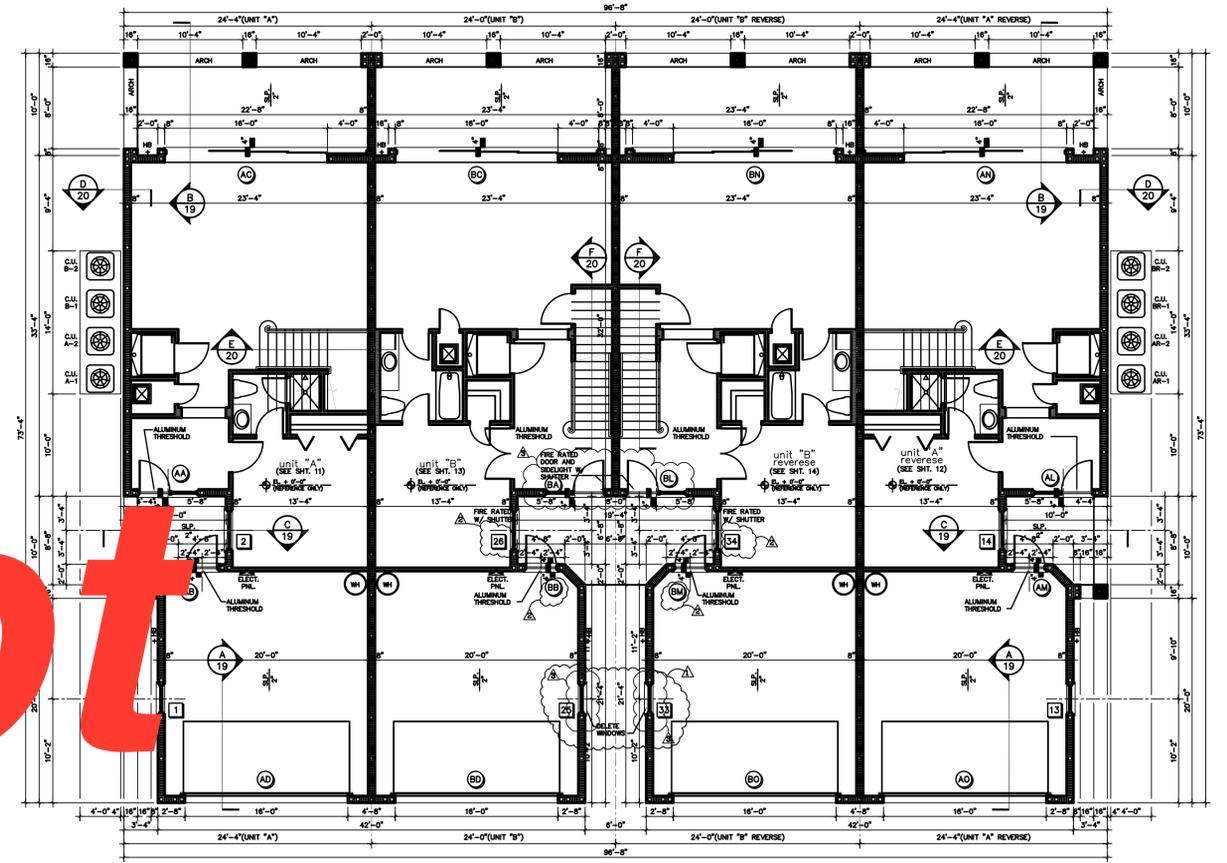


SECOND FLOOR LEVEL SQUARE FOOTAGE CALCS

UNIT "A" FLOOR AREA (GROSS):	1,281	UNIT "B" FLOOR AREA (GROSS):	1,297
UNIT "A" REAR TERRACE AREA:	217	UNIT "B" REAR TERRACE AREA:	217
UNIT "A" FRONT TERRACE AREA:	210	UNIT "B" FRONT TERRACE AREA:	210
UNIT "A" COVERED BALCONY AREA:	33	UNIT "B" COVERED BALCONY AREA:	33
UNIT "A" TOTAL AREA (GROSS):	1,741	UNIT "B" TOTAL AREA (GROSS):	1,767
UNIT "A" A/C (NET) FLOOR AREA:	1,087	UNIT "B" A/C (NET) FLOOR AREA:	1,127

SECOND FLOOR PLAN

SCALE 3/16" = 1'-0"

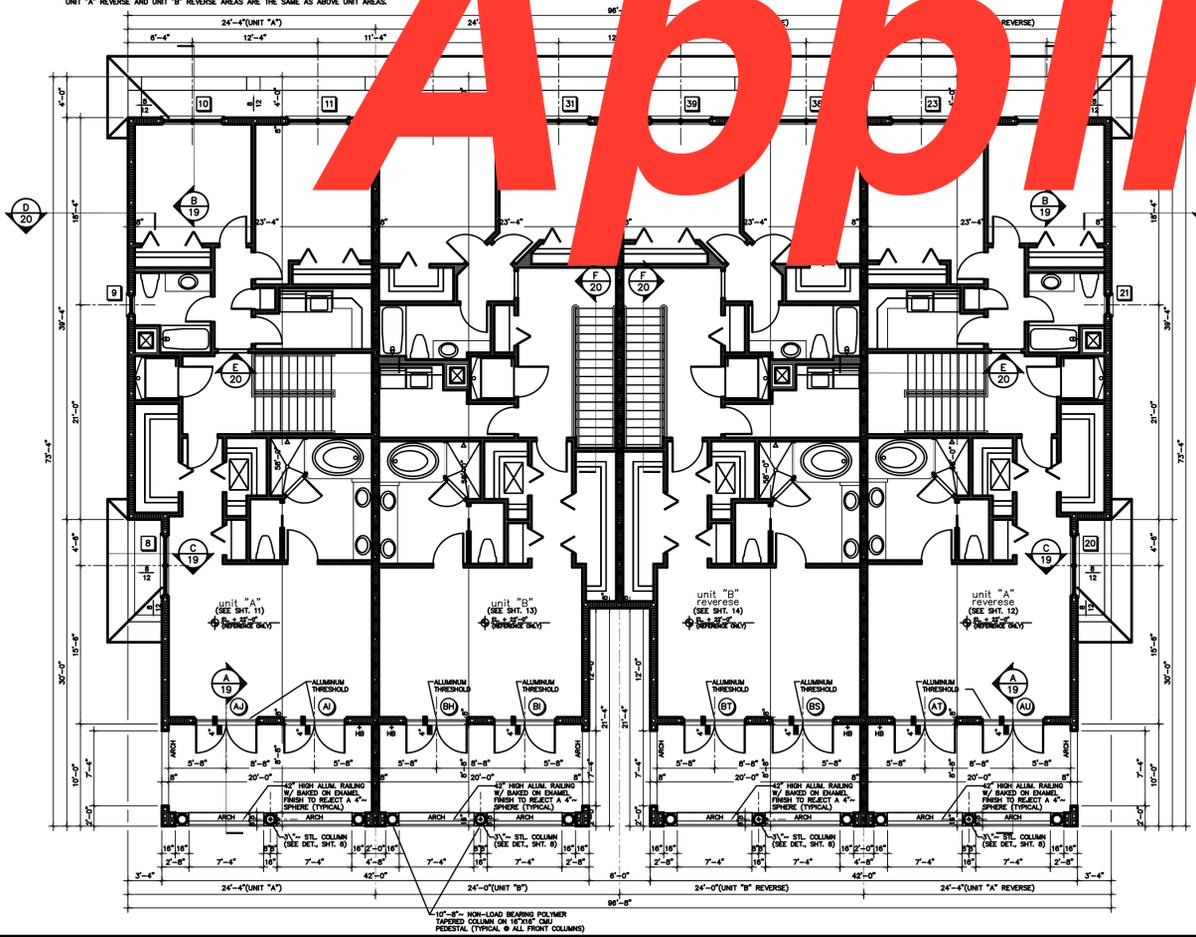


FIRST FLOOR PLAN

SCALE 3/16" = 1'-0"

FIRST FLOOR LEVEL SQUARE FOOTAGE CALCS

UNIT "A" FLOOR AREA (GROSS):	918	UNIT "B" FLOOR AREA (GROSS):	925
UNIT "A" GARAGE AREA:	478	UNIT "B" GARAGE AREA:	478
UNIT "A" REAR TERRACE AREA:	243	UNIT "B" REAR TERRACE AREA:	243
UNIT "A" COVERED ENTRY AREA:	240	UNIT "B" COVERED ENTRY AREA:	240
UNIT "A" TOTAL AREA (GROSS):	1,777	UNIT "B" TOTAL AREA (GROSS):	1,826
UNIT "A" A/C (NET) FLOOR AREA:	849	UNIT "B" A/C (NET) FLOOR AREA:	849



THIRD FLOOR PLAN

SCALE 3/16" = 1'-0"

THIRD FLOOR LEVEL SQUARE FOOTAGE CALCS

UNIT "A" FLOOR AREA (GROSS):	1,377	UNIT "B" FLOOR AREA (GROSS):	1,397
UNIT "A" GARAGE AREA:	739	UNIT "B" GARAGE AREA:	739
UNIT "A" TOTAL AREA (GROSS):	2,116	UNIT "B" TOTAL AREA (GROSS):	2,136
UNIT "A" A/C (NET) FLOOR AREA:	1,174	UNIT "B" A/C (NET) FLOOR AREA:	1,238

NOTE: UNIT "A" REVERSE AND UNIT "B" REVERSE AREAS ARE THE SAME AS ABOVE UNIT AREAS.

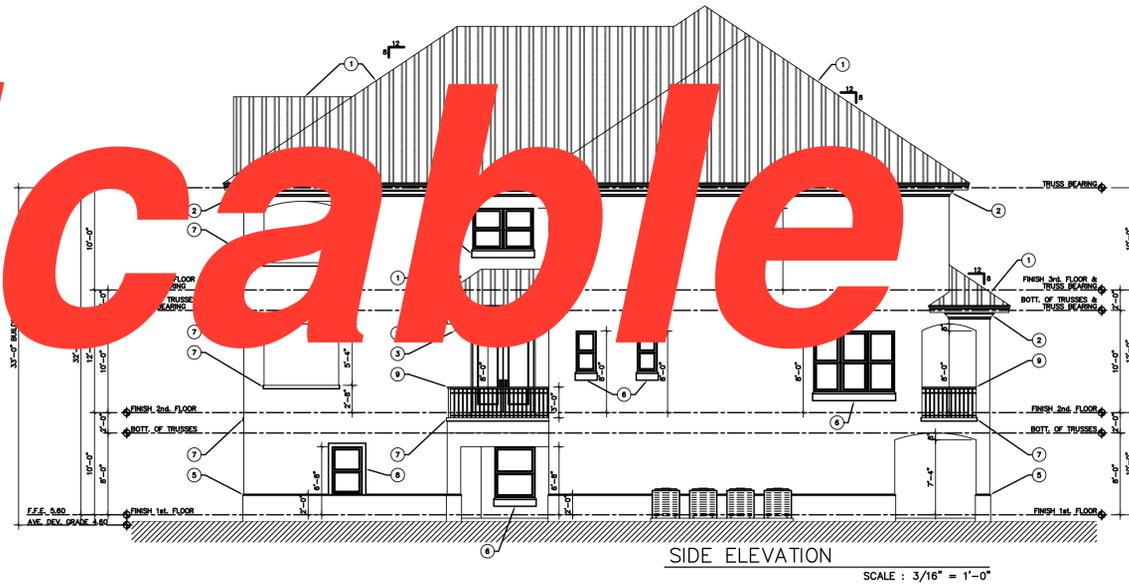
WALL LEGEND:
 2 HOUR RATED
 SEPARATION WALL
 STANDARD WALL
 WOOD FRAME
 AS INDICATED

Not Applicable

REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.

NO.	DATE	REVISIONS

HARBOR HOMES, LCC		DATE	6-05-06
MARINA VILLAGE - PHASE 4		SCALE	NTS
BREVARD COUNTY, FLORIDA		JOB NO.	020090
ARCHITECTURAL FLOOR PLANS - 4 UNIT		DRAWN	DAL
ALLEN ENGINEERING, INC.		SHT. NO.	A-3
FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266			
P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321			
TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net			



Not
Applicable

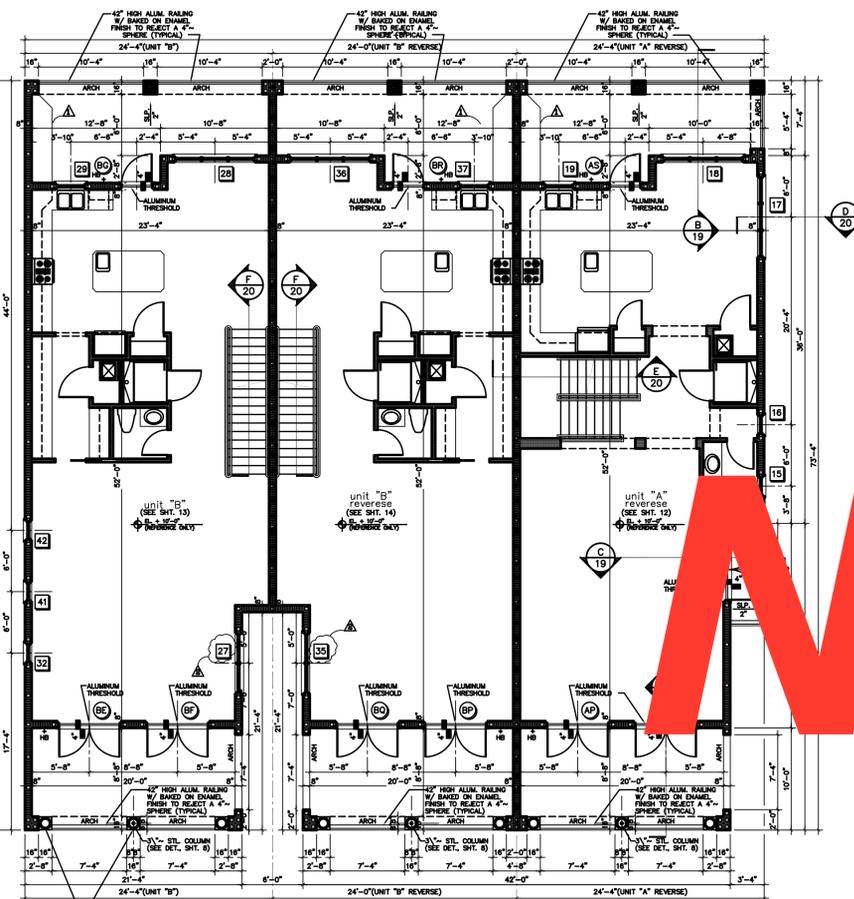
FINISH SCHEDULE

- 1. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 2. INTERIOR WALLS - 5/8" GYPSUM BOARD
- 3. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 4. INTERIOR WALLS - 5/8" GYPSUM BOARD
- 5. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 6. INTERIOR WALLS - 5/8" GYPSUM BOARD
- 7. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 8. INTERIOR WALLS - 5/8" GYPSUM BOARD
- 9. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 10. INTERIOR WALLS - 5/8" GYPSUM BOARD
- 11. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 12. INTERIOR WALLS - 5/8" GYPSUM BOARD
- 13. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 14. INTERIOR WALLS - 5/8" GYPSUM BOARD
- 15. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
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- 99. INTERIOR WALLS - 1/2" PLASTER OVER STUDS & LATH
- 100. INTERIOR WALLS - 5/8" GYPSUM BOARD

REPRODUCTION IN PART OR WHOLE IS PROHIBITED WITHOUT THE EXPLICIT WRITTEN PERMISSION FROM ALLEN ENGINEERING, INC.		CHK'D
NO.	DATE	REVISIONS

HARBOR HOMES, LCC		DATE 6-05-06
MARINA VILLAGE - PHASE 4 BREVARD COUNTY, FLORIDA ARCHITECTURAL ELEVATIONS - 3 UNIT		SCALE NTS
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO. 020090
		DRAWN DAL
		SHT. NO. A-4

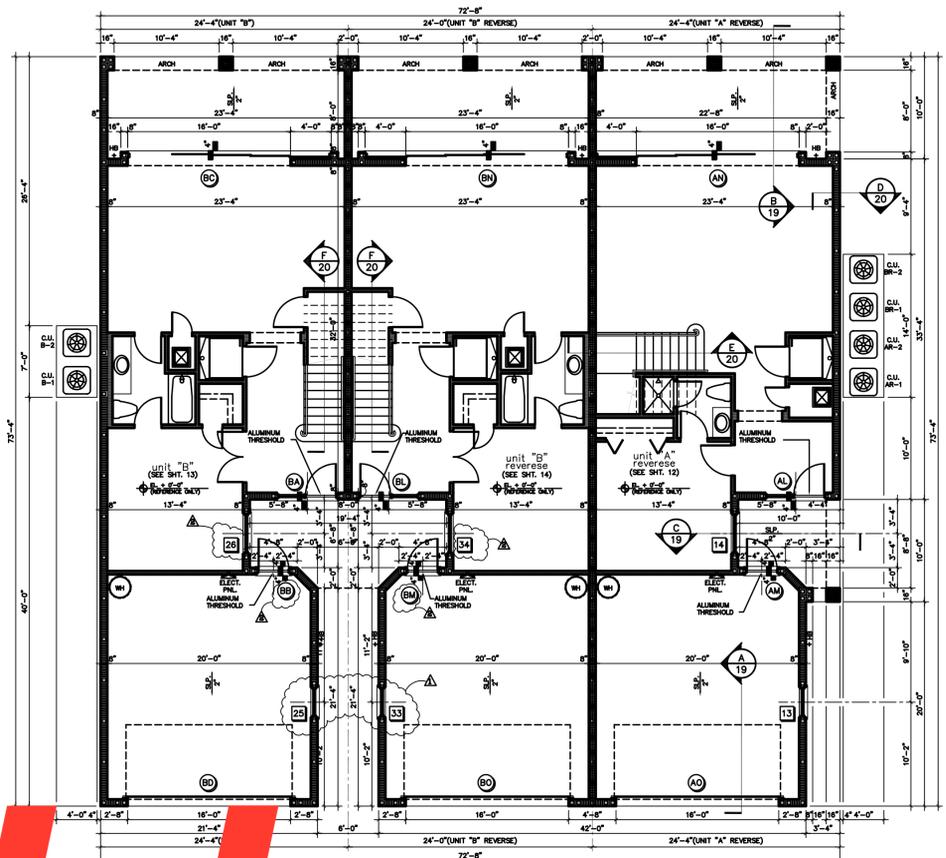
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SECOND FLOOR PLAN
SCALE 3/16" = 1'-0"

SECOND FLOOR LEVEL SQUARE FOOTAGE CALCS

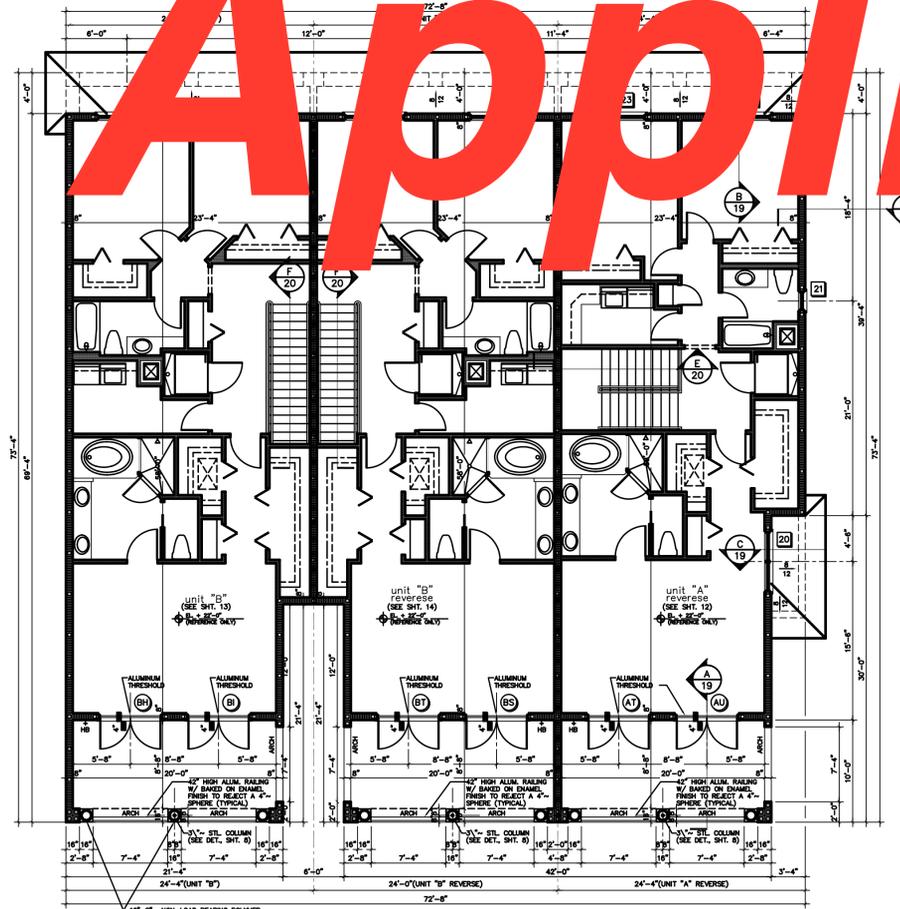
UNIT "B" FLOOR AREA (GROSS):	1,230'	UNIT "B" REV. FLOOR AREA (GROSS):	1,275'
UNIT "B" REAR TERRACE AREA:	214'	UNIT "B" REV. REAR TERRACE AREA:	211'
UNIT "B" FRONT TERRACE AREA:	1,388'	UNIT "B" REV. FRONT TERRACE AREA:	1,388'
UNIT "B" TOTAL AREA (GROSS):	1,232'	UNIT "B" REV. TOTAL AREA (GROSS):	1,284'
UNIT "B" A/C (NET) FLOOR AREA:	1,127'	UNIT "B" REV. A/C (NET) FLOOR AREA:	1,127'
UNIT "A" REV. FLOOR AREA (GROSS):	1,281'	UNIT "A" REV. FLOOR AREA (GROSS):	1,281'
UNIT "A" REV. REAR TERRACE AREA:	215'	UNIT "A" REV. REAR TERRACE AREA:	215'
UNIT "A" REV. FRONT TERRACE AREA:	1,377'	UNIT "A" REV. FRONT TERRACE AREA:	1,377'
UNIT "A" REV. COVERED BALCONY AREA:	382'	UNIT "A" REV. COVERED BALCONY AREA:	382'
UNIT "A" REV. TOTAL AREA (GROSS):	1,777'	UNIT "A" REV. TOTAL AREA (GROSS):	1,777'
UNIT "A" REV. A/C (NET) FLOOR AREA:	1,085'	UNIT "A" REV. A/C (NET) FLOOR AREA:	1,085'



FIRST FLOOR PLAN
SCALE 3/16" = 1'-0"

FIRST FLOOR LEVEL SQUARE FOOTAGE CALCS

UNIT "B" FLOOR AREA (GROSS):	1,230'	UNIT "B" REV. FLOOR AREA (GROSS):	1,275'
UNIT "B" GARAGE AREA:	488'	UNIT "B" REV. GARAGE AREA:	478'
UNIT "B" REAR TERRACE AREA:	214'	UNIT "B" REV. REAR TERRACE AREA:	211'
UNIT "B" COVERED ENTRY AREA:	122'	UNIT "B" REV. COVERED ENTRY AREA:	122'
UNIT "B" TOTAL AREA (GROSS):	1,720'	UNIT "B" REV. TOTAL AREA (GROSS):	1,685'
UNIT "B" A/C (NET) FLOOR AREA:	849'	UNIT "B" REV. A/C (NET) FLOOR AREA:	849'
UNIT "A" REV. FLOOR AREA (GROSS):	918'	UNIT "A" REV. FLOOR AREA (GROSS):	918'
UNIT "A" REV. GARAGE AREA:	478'	UNIT "A" REV. GARAGE AREA:	478'
UNIT "A" REV. REAR TERRACE AREA:	245'	UNIT "A" REV. REAR TERRACE AREA:	245'
UNIT "A" REV. COVERED ENTRY AREA:	382'	UNIT "A" REV. COVERED ENTRY AREA:	382'
UNIT "A" REV. TOTAL AREA (GROSS):	1,777'	UNIT "A" REV. TOTAL AREA (GROSS):	1,777'
UNIT "A" REV. A/C (NET) FLOOR AREA:	849'	UNIT "A" REV. A/C (NET) FLOOR AREA:	849'



THIRD FLOOR PLAN
SCALE 3/16" = 1'-0"

THIRD FLOOR LEVEL SQUARE FOOTAGE CALCS

UNIT "B" FLOOR AREA (GROSS):	1,410'	UNIT "B" REV. FLOOR AREA (GROSS):	1,397'
UNIT "B" REAR TERRACE AREA:	1,323'	UNIT "B" REV. REAR TERRACE AREA:	1,323'
UNIT "B" TOTAL AREA (GROSS):	1,323'	UNIT "B" REV. TOTAL AREA (GROSS):	1,323'
UNIT "B" A/C (NET) FLOOR AREA:	1,238'	UNIT "B" REV. A/C (NET) FLOOR AREA:	1,238'
UNIT "A" REV. FLOOR AREA (GROSS):	1,377'	UNIT "A" REV. FLOOR AREA (GROSS):	1,377'
UNIT "A" REV. FRONT TERRACE AREA:	1,388'	UNIT "A" REV. FRONT TERRACE AREA:	1,388'
UNIT "A" REV. TOTAL AREA (GROSS):	1,388'	UNIT "A" REV. TOTAL AREA (GROSS):	1,388'
UNIT "A" REV. A/C (NET) FLOOR AREA:	1,174'	UNIT "A" REV. A/C (NET) FLOOR AREA:	1,174'

LEGEND

- 2 HOUR SEPARATION
- TENANT SEPARATION (SEE DETAIL)
- STANDARD
- WOOD AS PARTITION (SEE PLANS)

Not Applicable

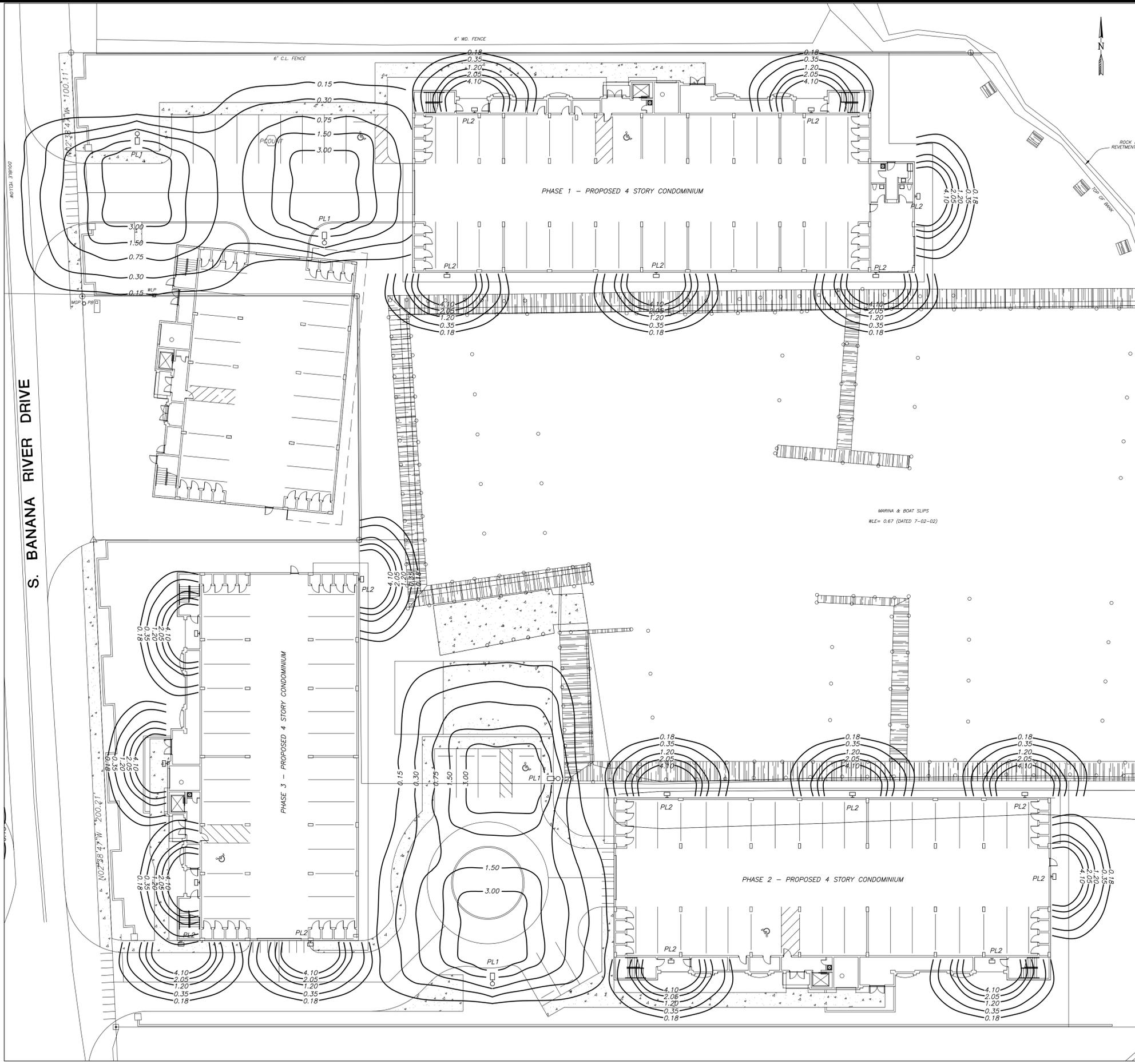
NO.	DATE	REVISIONS	CHK'D

HARBOR HOMES, LCC		DATE 6-05-06
MARINA VILLAGE - PHASE 4 BREVARD COUNTY, FLORIDA		SCALE NTS
ARCHITECTURAL FLOOR PLANS - 3 UNIT		JOB NO. 020090
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		DRAWN DAL
		SHT. NO. A-5

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SEE SHEET E-2

S. BANANA RIVER DRIVE

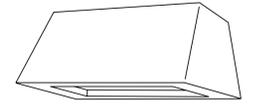


CONSTRUCTION NOTES:

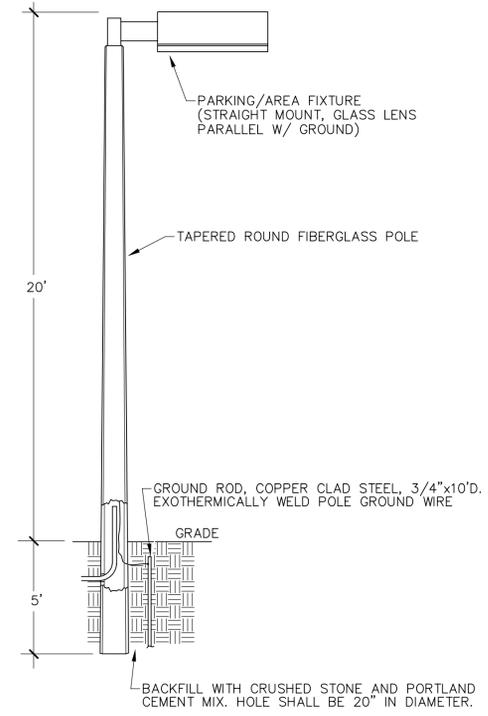
1. NO LIGHT SOURCE (BULB OR LENS) SHALL BE VISIBLE AT THE PROPERTY LINE.
2. SITE LIGHTING WILL COMPLY WITH BREVARD COUNTY'S PERFORMANCE STANDARD FOR LIGHTING PER SECTION 62-2257 AND WILL BE MET PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
3. FIXTURES TYPE "PL1" TO BE PROVIDED DURING SITE WORK PERFORMANCE, FIXTURES TYPE "PL2" TO BE FURNISHED ON EXTERIOR CONDOMINIUM WALLS DURING SUBSEQUENT PHASES 1, 2, 3 AND 4.
4. CONTRACTOR SHALL PROVIDE PROPER FIXTURE AND POLE ALIGNMENT TO INSURE PHOTOMETRIC PATTERNS WHICH CORRESPOND TO PLAN ISOLINES.

PLAN NOTES:

1. NUMBERS ON ISOLINES INDICATE FOOT CANDLE LEVELS.
2. PHOTOMETRICS FOR FIXTURE TYPE "PL1" BASED ON POLE MOUNTED, 250 WATT HIGH PRESSURE SODIUM ARCHITECTURAL AREA LUMINAIRE CONCOURSE III BY MCGRAW-EDISON, # CAL 250 HPS MT SL, WITH FORWARD THROW SPILL LIGHT ELIMINATOR OPTION. POLE MOUNTING HEIGHT: 20'.
3. PHOTOMETRICS FOR FIXTURE TYPE "PL2" BASED ON FULL CUTOFF, WALL MOUNTED, 70 WATT HIGH PRESSURE SODIUM LUMINAIRE BY LUMARK, #HIP T 70 120 LL. WALL MOUNTING HEIGHT: 10'.
4. SUBSTITUTION TO THE ABOVE SHALL BE SHOWN TO COMPLY WITH MAXIMUM LIGHT SPILLAGE RESTRICTIONS OF .2 FC OVER PROPERTY LINE.



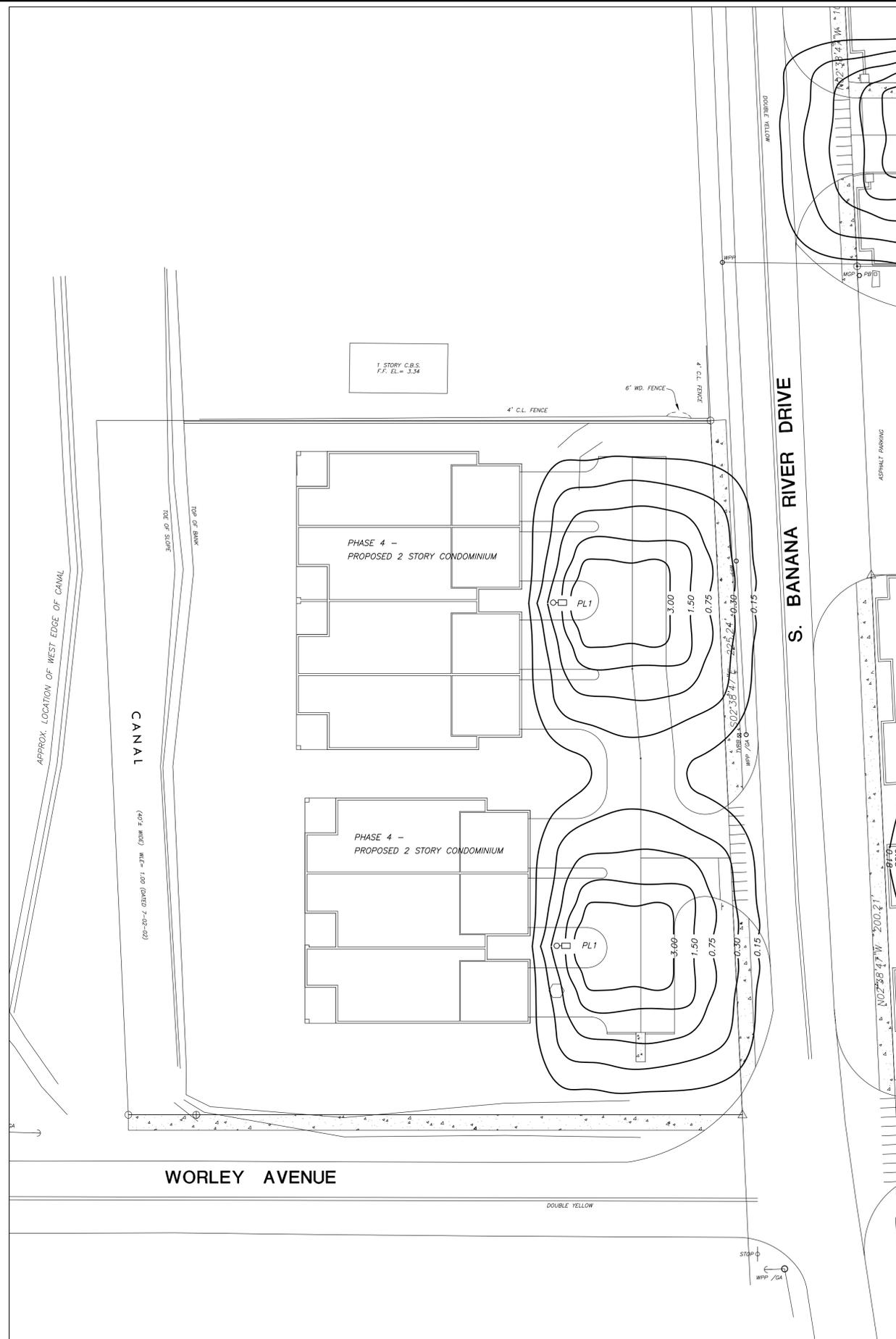
LIGHT POLE AND FIXTURE TYPE "PL2"



LIGHT POLE AND FIXTURE TYPE "PL1"

<p>HARBOR HOMES, LCC</p> <p>MARINA VILLAGE BREVARD COUNTY, FLORIDA</p>		DATE	10-9-02
		SCALE	1"=20'
<p>SITE LIGHTING PHOTOMETRICS PLAN</p>		SHT. NO.	E-1
E-1	<p>PILO ENGINEERING P.A. MICHAEL PILO, P.E. # 50067 540 HIBISCUS BLVD NERRITT ISLAND, FL 32952 (321) 427-3644</p>		

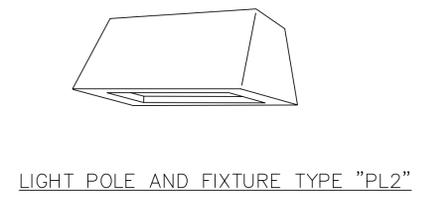
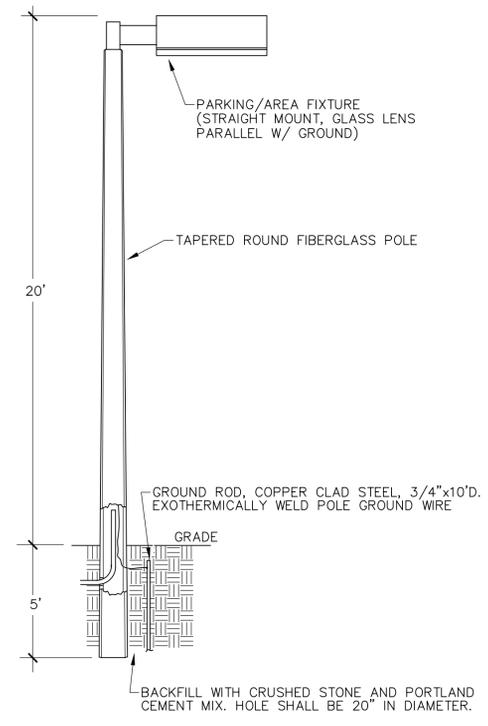
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SEE SHEET E-1

- CONSTRUCTION NOTES:**
1. NO LIGHT SOURCE (BULB OR LENS) SHALL BE VISIBLE AT THE PROPERTY LINE.
 2. SITE LIGHTING WILL COMPLY WITH BREVARD COUNTY'S PERFORMANCE STANDARD FOR LIGHTING PER SECTION 62-2257 AND WILL BE MET PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
 3. FIXTURES TYPE "PL1" TO BE PROVIDED DURING SITE WORK PERFORMANCE, FIXTURES TYPE "PL2" TO BE FURNISHED ON EXTERIOR CONDOMINIUM WALLS DURING SUBSEQUENT PHASES 1, 2, 3 AND 4.
 4. CONTRACTOR SHALL PROVIDE PROPER FIXTURE AND POLE ALIGNMENT TO INSURE PHOTOMETRIC PATTERNS WHICH CORRESPOND TO PLAN ISOLINES.

- PLAN NOTES:**
1. NUMBERS ON ISOLINES INDICATE FOOT CANDLE LEVELS.
 2. PHOTOMETRICS FOR FIXTURE TYPE "PL1" BASED ON POLE MOUNTED, 250 WATT HIGH PRESSURE SODIUM ARCHITECTURAL AREA LUMINAIRE CONCOURSE III BY MCGRAW-EDISON, # CAL 250 HPS MT SL, WITH FORWARD THROW SPILL LIGHT ELIMINATOR OPTION. POLE MOUNTING HEIGHT: 20'.
 3. PHOTOMETRICS FOR FIXTURE TYPE "PL2" BASED ON FULL CUTOFF, WALL MOUNTED, 70 WATT HIGH PRESSURE SODIUM LUMINAIRE BY LUMARK, #HPIP T 70 120 LL. WALL MOUNTING HEIGHT: 10'.
 4. SUBSTITUTION TO THE ABOVE SHALL BE SHOWN TO COMPLY WITH MAXIMUM LIGHT SPILLAGE RESTRICTIONS OF .2 FC OVER PROPERTY LINE.



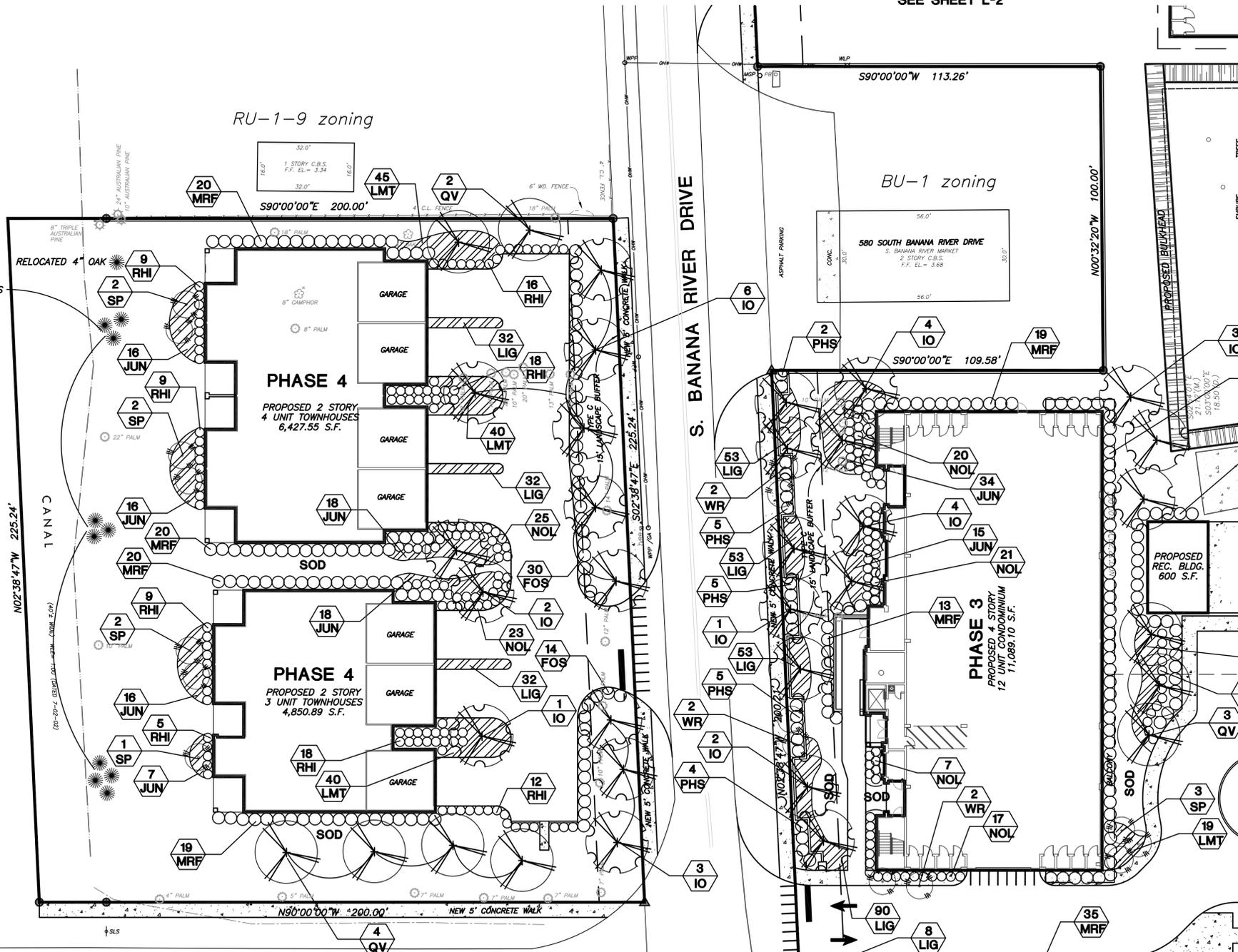
HARBOR HOMES, LCC		DATE 10-9-02
MARINA VILLAGE BREVARD COUNTY, FLORIDA		SCALE 1"=20'
SITE LIGHTING PHOTOMETRICS PLAN		
E-2	PILO ENGINEERING P.A. MICHAEL PILO, P.E. # 50067 540 Hibiscus Blvd NERRITT ISLAND, FL 32952 (321) 427-3644	SHT. NO.

SEE SHEET L-2

RU-1-9 zoning

BU-1 zoning

RU-1-9 & RU-1-13 zoning



PLANT SCHEDULE:

SYM	QUAN	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
IO	50	LEL "EAST PALATKA"	EAST PALATKA HOLLY	12"-14" HT., 2.5" DBH, 3" SPR	BRANCHED ABOVE 6'
PR	1	PHOENIX RECLINATA	SENECAL DATE APLM	14"-18" O.A., MIN. CANE 8' HT.	MIN. 5 CANES
QV	18	QUERCUS VIRGINIANA	LIVE OAK	12"-14" HT., 2.5" DBH, 3" SPR	BRANCHED ABOVE 6'
SP	33	SABAL PALMETTO	SABAL PALM	10"-16" C.T.	2' STAGGER IN HT.
WR	20	WASHINGTON ROBUSTA	WASHINGTON PALM	12"-24" C.T.	STAGGER HEIGHTS
FDS	115	FORESTIERA SEGREGATA	FLORIDA PRIVET	3 GAL. - 30" HT. X 18" SPR.	36" O.C.
JUN	294	JUNIPERUS CONFERTA "COMPACTA"	DWARF SHORE JUNIPER	1 GAL. - 8" HT. X 12" SPR.	30" O.C.
LIG	3	LIGUSTRUM JAPONICUM	LIGUSTRUM	7 GAL. - 48" HT. X 24" SPR.	SPACE AS SHOWN
LIR	353	LIRIOPE MUSCARI	LILYTURF	1 GAL.	18" O.C.
LMT	850	LANTANA MONTENIDENSIS	WEEDING LANTANA	3 GAL. - 12" HT. X 12" SPR.	24" O.C.
MRF	404	MYRSANTHES FRAGRANS	SIMPSON'S STOPPER	3 GAL. - 24" HT. X 18" SPR.	36" O.C.
NOL	169	NERIUM OLEANDER "PETITE"	DWARF OLEANDER	3 GAL. - 12" HT. X 18" SPR.	36" O.C.
PHS	21	PHILODENDRON SELLOUM	PHILODENDRON	3 GAL. - 24" HT. X 24" SPR.	48" O.C.
PSN	58	PSYCHOTRIA NERVOSA	WILD COFFEE	3 GAL. - 24" HT. X 18" SPR.	36" O.C.
RHI	177	RHAPLOLEPIS INDICA	INDIAN HAWTHORNE	3 GAL. - 24" HT. X 18" SPR.	36" O.C.

PLANTING NOTES

- Plant material shall be graded Florida No. 1 or better as outlined under Grades and Standards for Nursery Plants, State Plant Board of Florida, unless otherwise noted.
- Soil used for planting (planting mix) shall consist of 60% peat humus, 30% wood chips (pine bark passing through 3/4" screen) and sodast, 10% sand, and 0 lb. starter fertilizer per cubic yard. Soil mixture used to back fill planting pits shall consist of two parts existing topsoil from on-site and one part prepared planting mix (see above). Dolomite shall be used as needed to correct soil pH to 6.0-6.5.
- Plants shall be arranged in beds using triangular spacing.
- Plant fertilizer shall be Agriform 21 gran tablets, slow release, 20-10-5 analysis or approved equal. Rates of application shall be as recommended by manufacturer.
- Starter fertilizer shall be 6-6-6, 100% organic, with minor elements. This fertilizer shall have 40-50% of its total nitrogen in a water-insoluble form.
- Lawn areas shall be treated with fertilizer applied at a rate of twenty (20) pounds per 1000 square feet.
- All plant beds shall be top dressed with 2-3" shredded Metaleuca bark DR Cypress bark mulch.
- Methods of tree staking indicated on the drawings are suggestions only. The landscape contractor shall use whatever method he deems fit, however, he will be held liable for any damages caused to trees by improper staking methods, (or absence of staking) and is responsible for uprighting and replanting trees which are blown over.
- In the event of a discrepancy between drawings and plant schedule, the drawings shall prevail.
- Any trees that are to remain that are located in areas where construction is to occur shall be protected in the following manner: A barricade shall be constructed at the drip line of the tree. If this is not possible due to site constraints the barricade shall be placed a minimum of one (1) foot away from the tree for every inch of caliper. The barricade shall consist of a minimum 2"x4" posts with two (2) 1"x2" rails. The barricade shall be a minimum of 4' in height.
- All buffer plantings shall be maintained at a height of 4', except near driveways, where these plantings shall be maintained at a height of 3'.
- All areas disturbed by construction and not scheduled for trees, shrub, or groundcover installation shall be sodded unless otherwise noted. Contractor to determine final quantities.
- The contractor shall inspect the site prior to bidding and construction and notify the landscape architect/engineer of any discrepancies.
- The contractor shall exercise all caution and care to insure that stormwater surface drainage is maintained as designed by the engineer.
- Contractor must notify the County's landscape department of any tree relocation, preservation, or substitution prior to clearing of site.
- Irrigation will be by an automatic irrigation system.
- Landscaping shall not be located within 7.5 feet in front of and to the sides, and 4 feet to the rear of any fire hydrant or any fire department connections.

THIS PROJECT WILL COMPLY WITH BREVARD COUNTY ORDINANCE 02-26 - ALL NON-NATIVE PLANT MATERIAL TO BE REMOVED FROM THE SITE PRIOR TO FINAL ENGINEERING INSPECTION.
(NOTE: ALL AUSTRALIAN PINE ON THE SITE WILL BE REMOVED)

THIS PROJECT WILL COMPLY WITH BREVARD COUNTY ORDINANCE 02-35 AS IT RELATES TO SOIL TESTING AND AMENDMENTS PRIOR TO LANDSCAPE INSTALLATION.

ALL TREE PROPOSED TO BE REMOVED FROM THE SITE AND NOT INCLUDED IN THE LANDSCAPE CALCULATIONS MEET THE REMOVAL REQUIREMENTS OF ORDINANCE 02-26 FOR REMOVAL WITH NO REPLACEMENT REQUIRED.

LAND CLEARING & TREE PRESERVATION (Sec. 62-4366, b-2 & b-3)
The existing site is severely impacted with several buildings, a mobile home, various concrete, dirt, and gravel driveways, a pool/deck area and a septic drainfield. There is one 4" oak and one 14" cedar. The remaining tree on-site are 13 palm trees containing 174 caliper inches. There will be 117 caliper inches of palms preserved (67%). The trees exist on the site in such a distribution that no contiguous canopy is created. The newly installed landscaping will result in more canopy area than currently exist. In addition, the plan preserves 67% of the existing canopy.

WORLEY AVENUE

RU-1-11 zoning

RU-1-11 zoning

GENERAL STATEMENT:
The proposed development for the project site shall be the construction of three (3) 4 story condominiums over parking, a recreation building and swimming pool all on the Banana River side of South Banana River Drive. Seven (7) two story townhouse units are proposed on the west side of South Banana River Drive.

SITE INFORMATION:
Acres: East side: 163,350.00 S.F. = 3.75 acres
West side: 45,000.00 S.F. = 1.03 acres

Zoning: RU-2-15
Adjacent zoning: North: BU-1-11, South: RU-1-11, West: RU-1-9 & RU-1-13

East Side
Building coverage: 39,388.41 S.F. = 0.90 AC. = 24.11%
Pavement coverage: 18,617.87 S.F. = 0.43 AC. = 11.40%
Open area: 105,343.72 S.F. = 2.42 AC. = 64.49%
Total: 163,350.00 S.F. = 3.75 AC. = 100.00%

Density: 15 Units/Ac. X 3.75 Ac. = 56 Units
Parking required: 2 spaces x 45 units = 90 spaces
Parking provided: 92 garage spaces + 13 outside spaces = 105 spaces

West Side
Building coverage: 11,278.44 S.F. = 0.26 AC. = 25.06%
Pavement coverage: 6,453.98 S.F. = 0.19 AC. = 18.79%
Open area: 25,267.58 S.F. = 0.58 AC. = 56.15%
Total: 45,000.00 S.F. = 1.03 AC. = 100.00%

Density: 15 Units/Ac. X 1.03 Ac. = 15 Units 7 Units
Parking required: 2 spaces x 7 units = 14 spaces
Parking provided: 14 garage spaces + 7 outside spaces = 21 spaces

LANDSCAPE CALCULATIONS

Total site area: 3.56 Acres
East side: 2.53 acres (upland area)
West side: 1.03 acres

Total landscape points required: 3.56 (480) = 1709 points
*Total tree points required: 1709 points (.5) = 855 points

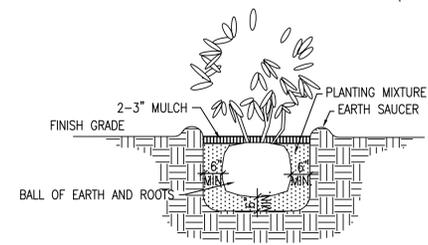
*Total tree points provided:
2 Large Trees (relocated) @ 10pts. each = 20 points
18 Palm Trees (relocated) @ 5pts. each = 90 points
18 Large Trees @ 10pts. each = 180 points
50 Medium Trees @ 10pts. each = 500 points
54 Palm Trees @ 5pts. each = 270 points
Total = 1060 points

16 palms preserved in place = 160 points
Total tree points = 1220 points

Total sodded area (8,200 SF/100) X 5 = 410 points
Total landscape area (woody shrubs only) (12,330 SF/100) X 10 = 1,233 points
Total landscape points = 1,643 points

16 exterior parking spaces - 6 interior trees with 400 SF landscaping provided for each tree.

Note: 10,500 S.F. Paspalum Vaginitum sod to be planted along the 50' river buffer.



SHRUB AND GROUNDCOVER PLANTING DETAIL

RANDY STEVENSON, ASLA

NO.	DATE	REVISIONS
4	6.18.03	REVISED PER COUNTY COMMENTS
3	5.2.03	REVISED PER COUNTY COMMENTS JRS
2	3.31.03	REVISED PER COUNTY COMMENTS JRS
1	3.20.03	REVISED PER COUNTY COMMENTS JRS
NO.	DATE	CHK'D

HARBOR HOMES, LCC		DATE 10-9-02
MARINA VILLAGE BREVARD COUNTY, FLORIDA LANDSCAPE PLAN		SCALE 1"=20'
ALLEN ENGINEERING, INC. FLORIDA CERTIFICATE OF AUTHORIZATION No. LB 266 P.O. BOX 321321 COCOA BEACH, FLORIDA 32932-1321 TELEPHONE: (321)783-7443 FAX: (321)783-5902 E-MAIL: info@alleneng.net		JOB NO. 020090
		DRAWN R.S.
		SHT. NO. L-1

Marina Village L.S. 12:27:02.dwg

