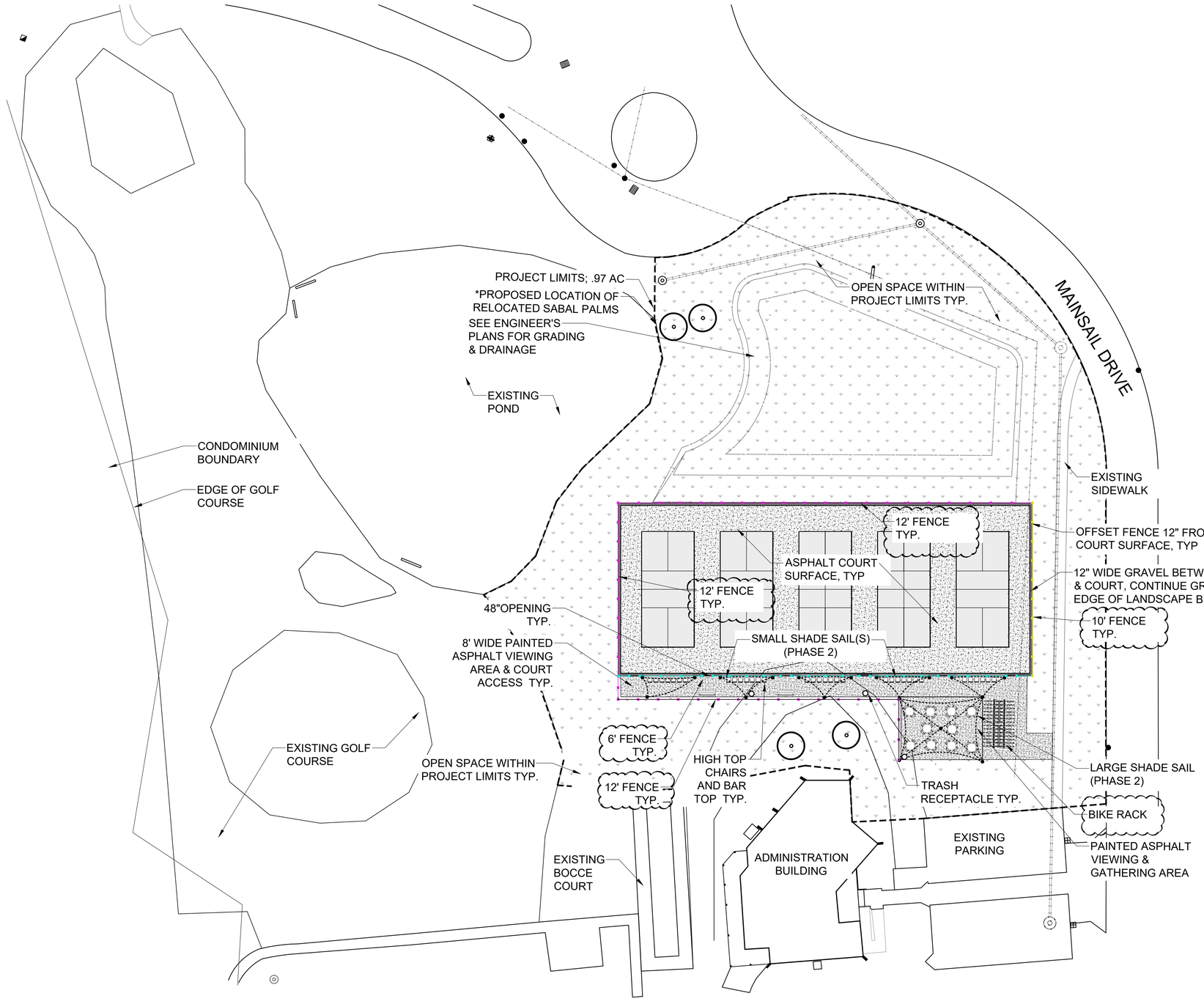
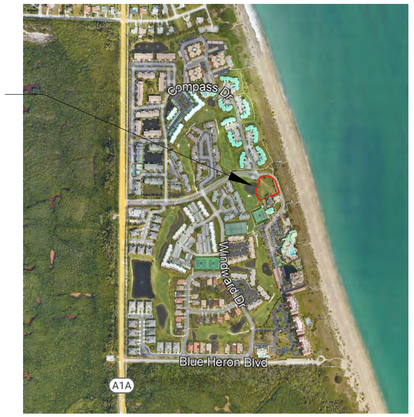


PROJECT LOCATION



SITE MAP

NTS

LEGAL DESCRIPTION

PORTION OF 7 35 41 GOVT LOT 3–LESS THAT PART ASSD IN SURFSIDE–UNIT 2 AND LESS A1A R/W AND LESS TO CITY OF FT AS IN OR 237–127 AND LESS THAT PART ASSD IN CATAMARAN I–A AND GOVT LOT 4– LESS A1A R/W AND GOVT LOT 5 – LESS THAT PART GOVT LOTS 3, 4 AND 5 ASSD IN CAPSTAN I AND LESS THAT PART GOVT LOT 4 ASSD IN CAPSTAN II AND LESS THAT PART GOVT LOT 4 ASSD IN BEACH CLUBHOUSE– SITE AND LESS THAT PART GOVT LOT 4 ASSD IN OCEAN VILLAS I AND LESS THAT PART OF LOTS 4 AND 5 ASSD IN OCEAN VILLAS IN BEACHTREE I AND LESS THAT PART GOVT LOT 4 AND LESS THAT PART OF GOVT LOT 5 ASSD IN BEACHTREE I CLUSTER AND LESS THAT PART GOVT LOTS 3 AND 4 ASSD IN GOLF VILLAS AND ASSD IN BEACHTREE II AND LESS THAT PART GOVT LOT 3 ASSD IN SEASCAPE I AND LESS THAT PART GOVT LOT 4 ASSD IN CATAMARAN II AND LESS THAT PART OF GOVT LOT 5 ASSD IN SEASCAPE II AND LESS OCEAN HOUSE AS IN OR 692–2016 AND LESS AS IN OR 692–2016 AND LESS THAT PART OF GOVT LOT 1 ASSD IN OCEANSIDE1 AT SOUTHPOINTE AS IN OR 1668–205 AND LESS THAT PART GOVT LOT 4 MPOAF:FROM SW COR OF SEC RUN S 89 17 30 E ALG S LI OF SEC 70.07 FT TO E R/W LI OF A1A;TH N 00 00 00 W ALG E R/W LI 390.05 FT TO POB;TH N 00 00 00 W ALG E R/W LI 294.83 FT;TH N 89 47 05 E 170.02 FT;TH N 13 51 52 E 89.55 FT TO CURVE CONC NCA OF 23 FT;TH NELY ALG ARC 100.79 FT TO CURVE CONC NWLY OF 51 FT;TH NELY ALG ARC 61.39 FT TO CURVE CONC WLY OF 22 FT;TH NWLY ALG ARC 31.50 FT TO S R/W LI OF CLIPPER BLVD;TH N 90 00 00 E ALG S R/W LI 49.71 FT TO CURVE CONC NJR OF 724.04 FT;TH ELY ALG ARC AND S R/W LI 10.42 FT;TH S 15 52 03 W 529.09 FT;TH N 83 58 20 W 253.63 FT TO POB (40.02 AC) (OR 1855–808, 815)

PROJECT DESCRIPTION: OCEAN VILLAGE POA PLANS TO ADD A PICKLEBALL FACILITY TO AN EXISTING AMENITY TRACT, THE WORK WILL CONSIST OF FIVE (5) PICKLEBALL COURTS, FENCING, ACOUSTICAL BLOCKING MATERIAL, LANDSCAPING, SEATING AREAS, BIKE RACKS, AND SHADE SAILS. ACOUSTICAL STUDIES HAVE BEEN PERFORMED IN MULTIPLE LOCATIONS WITHIN THE DEVELOPMENT IN AN EFFORT TO MINIMIZE NOISE IMPACTS TO NON-PLAYING RESIDENTS. THIS SITE HAS BEEN FOUND TO BE THE LEAST IMPACTFUL, AND WILL BE DESIGNED TO BE IN COMPLIANCE WITH ALL CITY OF FORT PIERCE NOISE ORDINANCE REQUIREMENTS. PROPOSED CONSTRUCTION WILL BE TAKING PLACE IN PART, EASTWARD OF THE COASTAL CONSTRUCTION CONTROL LINE.

WATER/SEWER: N/A

DRAINAGE: SEE DETAIL GRADING & DRAINAGE PLANS BY CIVIL ENGINEER

TRAFFIC : N/A

SOLID WASTE: THREE (3) TRASH RECEPTACLES WILL BE PROVIDED IN THE VIEWING AREA

SITE DATA	
OWNER:	Ocean Village POA
OWNER ADDRESS:	2400 Ocean Drive City of Fort Pierce, Florida 34949
SITE ADDRESS	2400 Ocean Drive City of Fort Pierce, Florida 34949
PARCEL ID:	PARCEL 1 2507–321–0001–000–5
JURISDICTION:	CITY OF FORT PIERCE
SEC/TOWN/RANGE:	7/35S/41E
PANEL NO.:	0813
FLOOD ZONE:	AE
ZONING:	R4–A
FUTURE LANDUSE:	HIR
LOT SIZE:	42,290 SF; .97 AC.

SITE AREA			
AREAS	S.F.	ACERS	PERCENTAGE
TOTAL SITE AREA	42,076 S.F.	.97 AC	100%
IMPERVIOUS AREAS			
PROPOSED ASPHALT COURT AREA	9,990 S.F.	0.23 A.C.	24.00%
PROPOSED PAVER VIEWING AREA	2,485 S.F.	0.06 A.C.	6.00%
PROPOSE PAVER WALKS	192 S.F.	0.004 A.C.	0.50%
EXISTING CONCRETE WALK	676 S.F.	0.015 A.C.	2.00%
TOTAL IMPERVIOUS AREA	13,343 S.F.	0.31 A.C.	32.00%
PERVIOUS AREAS			
LANDSCAPE AREA	28,733 S.F.	0.65 A.C.	68.00%
TOTAL PERVIOUS AREA	28,733 S.F.	0.65 A.C.	68.00%

Project Team

Landscape Architect:

LANDSCAPE ARCHITECTURAL SERVICES, LLC

1708 SE Joy Haven Street
Port St. Lucie, Fl. 34983
(772) 631-8400 | Paul@las-fl.com

Applicant:

Ocean Village POA

OCEAN VILLAGE PICKLEBALL COURTS

Fort Pierce, FL

Site Plan

Revisions		
Date	Init.	Description
11.14.23	PG	Site Plan
01.23.24	PG	Per Client Comments
02.14.24	PG	Per Client Comments
02.14.24	PG	Per Client Comments

REGISTERED LANDSCAPE ARCHITECT PAUL A. GOULAS LA 6666807 STATE OF FLORIDA

PAUL GOULAS, RLA
FLORIDA REG. # LA6666807

Drawn By: PG
Checked By: PG
Municipal Project:
Scale:

NORTH

SCALE: 1" = 20'

0 10' 20' 40'

SP-1

DRAWING INDEX:

LA-1: LANDSCAPE PLAN & PLANT SCHEDULE

LA-2: EXISTING TREE INVENTORY & DISPOSITION PLAN

LA-3: LANDSCAPE DETAILS & SPECIFICATIONS

General Landscape Notes:

1. All plants shall conform to established nursery grades and standards, to be Florida No. 1 or better, and shall be free of disease and insects at the time of installation.
2. Trees shall be a minimum of twelve (12) feet in height and have a caliper of (2.5) inches at four and one-half (4 1/2) feet above the ground when installed.
3. All required trees, except palms, shall have a minimum of five (5) feet of clear trunk and a minimum five (5) foot canopy spread at the time of planting.
4. All palm trees shall have a minimum clear trunk of ten (10) feet when installed. Three palm trees are equal to one shade tree having a mature canopy spread of fifteen (15) feet.
5. Shrubs shall be a minimum of twenty-four (24) inches in height above grade immediately after planting.
6. Groundcovers, other than grass, shall be planted in a manner as to present a finished appearance and reasonably complete coverage within four (4) months after planting.
7. Turf grass shall be installed using solid sod and shall be either Floratam sod, or approved Paspalum equal.
8. All landscape areas other than sod will be provided a mulch cover of at least three (3) inches. Cypress mulch shall not be used.
9. All existing native vegetation found on the site and is not in direct conflict with the proposed buildings or parking areas shall be left undisturbed. A suitable protective barrier, constructed of metal, wood, safety fencing, or other durable material, will be placed around the staked out locations of existing native vegetation.
10. No fill materials, construction materials, concrete, paint, chemicals, or other foreign materials shall be stored, deposited, or disposed of within any areas that have been staked or fenced off as being undisturbed native vegetation areas.
11. Existing understory shall be maintained in areas of undisturbed native vegetation.
12. All Category 1 exotic plant species will be eradicated from the site.
13. Conspicuous, durable barricades will be erected around each individual tree or areas of vegetation that are to be preserved. In the event that any protective barricades are removed or altered and land clearing or construction work is being conducted on the site, all work at the site will be stopped until the barriers are restored and any necessary corrective actions taken to repair or replant any vegetation removed or damaged as a result of these encroachments.
14. Irrigation to conform to all local and State regulations with regard to water consumption.
15. All new landscaping shall be provided with an automated irrigation system with rain sensor to provide 100% coverage through the establishment period, not less than 1-year.

811 Know what's below. Call before you dig.

Plant Schedule:

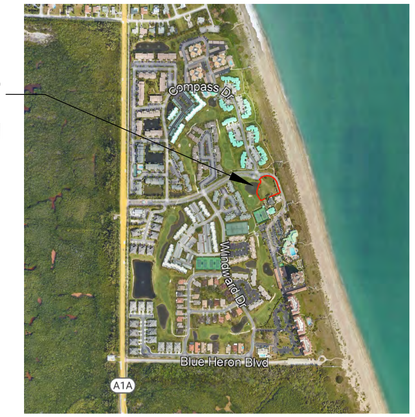
SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONTAINER	HEIGHT	WIDTH	NOTES	NATIVE
*EXISTING TREES TO REMAIN									
	LCE	7	Livistona chinensis	Chinese Fan Palm	Existing to Remain	8`OA			Non-native
	SSE	12	Sabal palmetto	Cabbage Palmetto	Existing to Remain	15`-22` OA, MIX HTS			Native
	WBE	3	Wodyetia bifurcata	Foxtail Palm	Existing to Remain	16`OA			Non-native
SHRUBS									
	COE	84	Conocarpus erectus	Green Buttonwood	25G	6`HT	4`W	F	Native
	MCG	9	Muhlenbergia capillaris	Pink Muhly	3G	24" HT	12"W	F	
EXISTING SHRUBS TO REMAIN									
	FGE	50	Ficus microcarpa 'Green Island'	Green Island Ficus	Existing to Remain	4` OA			Non-native

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONTAINER	HEIGHT	WIDTH	NOTES	NATIVE	SPACING
**SOD										
	SOD	TBD	Stenotaphrum secundatum `Floratam`	Floratam St. Augustine Sod	SOD			Free of Weeds and Pests		

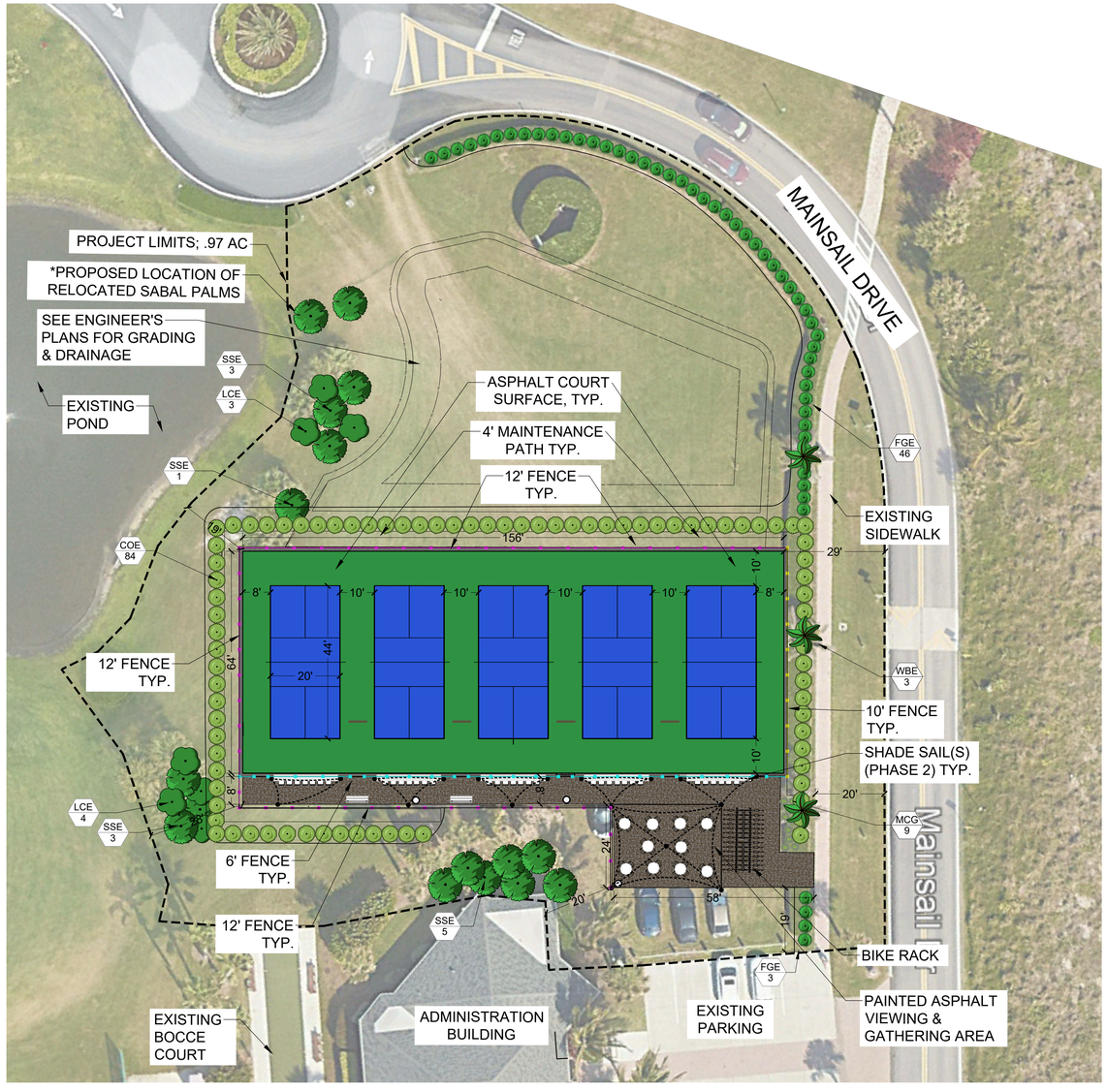
*SEE TREE PROTECTION DETAIL ON SHEET LA-2 FOR ALL TREES TO REMAIN; NO TREES ARE TO BE REMOVED FROM THE PROJECT SCOPE LIMITS.

**MAY BE SUBSTITUTED WITH PASPALUM SPECIES.

PROJECT LOCATION



SITE MAP
NTS



Project Team

Landscape Architect:

LANDSCAPE ARCHITECTURAL SERVICES, LLC

1708 SE Joy Haven Street
Port St. Lucie, Fl. 34983
(772) 631-8400 | Paul@las-fl.com

Applicant:

Ocean Village POA

OCEAN VILLAGE PICKLEBALL COURTS

Fort Pierce, FL

Landscape Plan

Revisions

Date	Init.	Description
11.14.23	PG	Landscape Plan
1.06.24	PG	Revised Per Comments (Addition of (Tree Disposition Plan)
01.23.24	PG	Per Client Comments
02.02.24	PG	Per Client Comments
02.14.24	PG	Per Client Comments
02.22.24	PG	Per Client Comments

REGISTERED LANDSCAPE ARCHITECT PAUL A. GOULAS LA 6666807 STATE OF FLORIDA

PAUL GOULAS, RLA
FLORIDA REG. # LA6666807

Drawn By:	PG
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Municipal Project:	
Scale:	

NORTH

SCALE: 1" = 20'

0 10' 20' 40'

LA-1

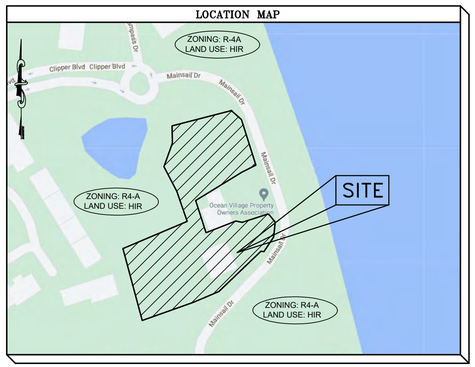
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CONDITIONAL USE SITE PLAN
FOR
OCEAN VILLAGE CLUBHOUSE
SECTION 07, TOWNSHIP 35 S, RANGE 41 E
CITY OF FT. PIERCE, FLORIDA

LEGAL DESCRIPTION

NOT AVAILABLE - SURVEY IS LIMITS OF CONSTRUCTION SURVEY

LOCATION MAP



DRAWING INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	EXISTING CONDITIONS AND POLLUTION PREVENTION
3	POLLUTION PREVENTION DETAILS
4A-4B	SOIL BORINGS
5	SITE PLAN
6	PAVING, GRADING AND DRAINAGE PLAN
7	CROSS SECTIONS
8-11	MISCELLANEOUS DETAILS
12	AERIAL
ATTACHED	SURVEY LANDSCAPE PLAN LIGHTING PLAN ARCHITECTURAL PLAN

SITE DATA

OWNER/DEVELOPER	OCEAN VILLAGE POA, INC. 2400 SOUTH OCEAN DRIVE FT. PIERCE, FL 34949
ENGINEER	SCHULKE, BITTLE & STODDARD, L.L.C. JODAH B. BITTLE, P.E. 57396 1717 INDIAN RIVER BLVD. SUITE 201 VERO BEACH, FL. 32960 (772) 770-9622
SURVEYOR:	MERIDIAN LAND SURVEYORS 1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FL 32960 PHONE (772) 794-1213
EXISTING USE	CLUBHOUSE WITH RACQUET COURTS
PROPOSED USE	CLUBHOUSE WITH RACQUET COURTS
PROJECT LOCATION	WEST SIDE OF MAINSAIL DRIVE AND SOUTH OF CLIPPER BOULEVARD
SITE ADDRESS	SURFSIDE DRIVE, FT. PIERCE, FL
PARCEL I.D. NUMBER	2507-321-0001-000-5
CURRENT LAND USE	HIR (HUTCHINSON ISLAND RESIDENTIAL)
CURRENT ZONING	R-4A (HUTCHINSON ISLAND MEDIUM DENSITY RESIDENTIAL)
PROPOSED ZONING	R-4A (HUTCHINSON ISLAND MEDIUM DENSITY RESIDENTIAL)
PHASING PLAN	~~PHASE 1: NEW CLUBHOUSE, ADDITION TO EXISTING TENNIS CONSTRUCT TWO (2) NEW COURTS, SIDEWALKS AND COURT, SIDEWALKS AND ADDITIONAL PARKING AREA~~ ~~PHASE 2: PROPOSED TWO ADDITIONAL TENNIS COURTS AND SIDEWALK CONNECTION FROM CLUBHOUSE TO TENNIS COURTS~~

DEVELOPMENT PARAMETERS :	EXISTING R-4A ZONING	PROPOSED DEVELOPMENT
MIN. LOT AREA	5,000 SF PER UNIT	40.02 ACRES
MIN. OVERALL LOT WIDTH	75'	>75'
MIN. INTERIOR LOT DEPTH	70'	>70'
MIN. YARD SETBACKS:		
FRONT (WEST)	25'	N/A
SIDE (NORTH)	10'	N/A
SIDE (SOUTH)	10'	N/A
REAR (WEST)	20'	N/A
MAX. LOT COVERAGE BY BLDGS	40%	8.5% 10.9%
MIN. OPEN SPACE	25%	~~41%~~ 41.4%
MAX. IMPERVIOUS AREA	75%	~~59%~~ 58.6%
MAXIMUM DENSITY	8 UNITS/ACRE	N/A
MAX. BLDG. HEIGHT	45'	20'

AREA CALCULATIONS:

SITE AREAS:	EXISTING			PROPOSED (BASED ON LIMITS OF CONSTRUCTION)				
DEVELOPABLE AREA:	1,743,271 SF	40.02 AC		1,743,271 SF	40.02 AC	40.02 AC		
LIMITS OF CONSTRUCTION:	75,542 SF	1.73 AC		75,542 SF	1.73 AC	1.73 AC	100.0%	100.0%
IMPERVIOUS AREA:	26,455 SF	0.60 AC		~~44,583 SF~~	44,288 SF	~~1.02 AC~~ 1.02 AC	~~59.0%~~	58.6%
EXIST. BUILDING AREA:	2,370 SF	0.05 AC		0 SF	0.00 AC	0.00 AC	0.0%	0.0%
EXIST. PAVING, CONC.:	24,085 SF	0.55 AC		~~9,567 SF~~	3,513 SF	~~0.22 AC~~ 0.08 AC	~~12.7%~~	4.7%
PROP. BUILDING AREA::	0 SF	0.00 AC		~~6,426 SF~~	8,250 SF	~~0.15 AC~~ 0.19 AC	~~8.5%~~	10.9%
PROP. PAVING, CONC.:	0 SF	0.00 AC		~~28,590 SF~~	32,525 SF	~~0.65 AC~~ 0.75 AC	~~37.8%~~	43.1%
PERVIOUS AREA:	49,087 SF	1.13 AC		~~30,959 SF~~	31,254 SF	~~0.71 AC~~ 0.72 AC	~~41.0%~~	41.4%
GREEN SPACE:	49,087 SF	1.13 AC		~~30,959 SF~~	31,254 SF	~~0.71 AC~~ 0.72 AC	~~41.0%~~	41.4%

NATIVE VEGETATION/PRESERVATION:
NO NATIVE AREA. SITE IS GRASS WITH TREES AND SHRUBS

PARKING CALCULATIONS:
EXISTING: RECREATION/CLUBHOUSE: 1 SPACE PER 200 SF
EXISTING 2,370 SF CLUBHOUSE WITH ADJACENT PARKING SPACES
2,370 SF X 1 SPACES / 200 SF = 12 SPACES
14 EXISTING PARKING SPACES TO THE SOUTH OF CLUBHOUSE

PROPOSED: RECREATION/CLUBHOUSE: 2 SPACE PER 200 SF
PROPOSED 6,426 SF CLUBHOUSE WITH ADJACENT PARKING SPACES
6,426 SF X 1 SPACES / 200 SF = 32 SPACES

PROVIDED: 14 EXISTING PARKING SPACES
18 PROPOSED PARKING SPACES
32 TOTAL PARKING SPACES

CONSTRUCTION SCHEDULE:

PHASE	DATE OF COMMENCEMENT	DATE OF COMPLETION
1	11/21	11/22
2	1/24	1/25

GENERAL NOTES
1. PROPOSED PUBLIC WATER SUPPLY – FT. PIERCE UTILITY AUTHORITY
2. PROPOSED PUBLIC SEWER – FT. PIERCE UTILITY AUTHORITY
3. GARBAGE IS HANDLED WITH CANS STORED IN THE UNITS. NO DUMPSTER PROPOSED.
4. THE PARCEL OF LAND SHOWN HEREON APPEARS TO BE IN FLOOD ZONE "X", "VE-8" AND "AE-4" ,PER FLOOD INSURANCE RATE MAP #12111C0194 K, DATED FEBRUARY 19, 2020.
5. ALL CONSTRUCTION ON SITE TO BE DONE PER ALL CITY OF FT. PIERCE STANDARDS AND SPECIFICATIONS.
6. ALL UTILITY CONSTRUCTION ON SITE TO BE DONE PER F.P.U.A. UTILITY STANDARDS AND SPECIFICATIONS, LATEST EDITION.
7. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST VERSIONS OF THE M.U.T.C.D., FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS, AND CITY OF FT PIERCE TYPICAL PAVEMENT MARKINGS AND SIGNING DETAILS. IN ADDITION, ALL PAVEMENT MARKINGS WITHIN THE RIGHT-OF-WAY SHALL BE INSTALLED IN THERMO-PLASTIC.
8. EXISTING DRIVES AND/OR INTERSECTIONS SHOWN ARE WITHIN THE 300' RADIUS REQUIRED FROM THE PROPOSED SITE.
9. THE EXISTING SPEED LIMIT FOR SEAWAY DRIVE IS 35 M.P.H.
10. ALL PROPOSED TRAFFIC CONTROL DEVICES SHOWN ON SITE TO BE PER THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
11. THE SITE LIGHTING (SOURCE OF ILLUMINATION) CANNOT BE VISIBLE FROM THE SITE.
12. ANY NUISANCE/EXOTIC PLANTS IN THE DEVELOPED AREA WILL BE REMOVED.
13. AT INTERSECTIONS, WALLS, FENCES, PLANTS OR SIGHT OBSTRUCTIONS OF ANY KIND OVER 18" IN HEIGHT ARE PROHIBITED WITHIN THE SITE DISTANCE TRIANGLE AS REQUIRED BY FDOT INDEX 546, 2014 EDITION.
14. ANY DISTURBED AREAS ON SITE OR IN THE COUNTY RIGHT-OF-WAY TO BE SODDED.
15. RUN-OFF FROM ROOF TO BE DIRECTED TO STORMWATER SYSTEM.
16. ALL LIGHTS MUST MEET THE FOLLOWING CRITERIA:
    - ALL POLES MUST BE BLACK OR BRONZE
    - ALL LIGHTS MUST BE DIRECTED DOWNWARD, WITH A 90 DEG. CUT-OFF
    - LIGHTS MUST NOT CAUSE GLARE ONTO ADJACENT R/W OR PROPERTIES.
17. ALL STOP SIGNS (R1-1) SHALL BE 30".
18. NO DEWATERING BETWEEN 8 PM AND 6 AM WITHOUT CITY OF FT PIERCE APPROVAL.
19. AN ENTRANCE GATE IS PROPOSED FOR THIS SITE.
20. CITY OF FT. PIERCE OR FDOT MAY HAVE UNDERGROUND CONDUIT FOR TRAFFIC SIGNAL INTERCONNECTIONS IN THIS AREA AS WELL AS OTHER TRAFFIC SIGNAL EQUIPMENT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT SUNSHINE STATE ONE CALL SYSTEM AT 1-800-432-4770 FOR LOCATIONS OF THIS EQUIPMENT AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION.
21. ALL SOLID, NON-BREAKAWAY OBJECTS (GATE POSTS/COLUMNS, BOLLARDS, STREET LIGHT POLES, ETC.) ALONGSIDE INTERIOR STREETS AND DRIVING AISLES SHALL BE LOCATED OUTSIDE THE CLEAR ZONE. FOR STREETS AND DRIVING AISLES WITH A DESIGN SPEED OF 25 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 2.5 FEET FROM THE FACE OF THE CURB (TYPE "D" OR "F"), OR 6 FEET FROM THE EDGE OF THE TRAVEL LANE. THIS APPLIES TO PUBLIC AND PRIVATE PROPERTY.
22. THE BEARING BASE FOR THIS SURVEY IS N00°55'22"W, ALONG THE EAST RIGHT OF WAY LINE OF STATE ROAD A-1-A. ALL OTHER BEARINGS SHOWN ARE RELATIVE THERETO.
23. THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. PRIMARY BENCHMARK UTILIZED IS NGS MONUMENT "B-770", EL= 3.64'. SITE BENCHMARKS ARE AS SHOWN HEREON.
24. ALL CONSTRUCTION WILL COMPLY WITH SECTIONS 17 AND 22 OF THE CITY OF FT. PIERCE CODE OF ORDINANCES.
25. ANY ABANDONED FLOW WELLS FOUND ON SITE SHALL BE PLUGGED PURSUANT TO D.O.H. AND SFWMD REGULATIONS.
26. ALL PAVEMENT MARKINGS IN THE RIGHT-OF-WAY SHALL BE 90 MIL, EXTRUDED TYPE, ALKYD BASE THERMOPLASTIC.
27. ALL HANDICAPPED PARKING SPACES SHALL BE PROPERLY SIGNED AND STRIPED IN ACCORDANCE WITH THE FDOT STANDARD INDEX 17346, 2014 EDITION.
28. ALL STOP SIGNS SHALL BE HIGH INTENSITY RETRO-REFLECTIVITY
29. ALL UTILITIES MUST BE PLACED UNDERGROUND.
30. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITY LINES AND STRUCTURES PRIOR TO CONSTRUCTION.
31. FIRE SPRINKLER SYSTEM IS PROPOSED FOR THIS BUILDING.
32. ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF FORT PIERCE CODE OF ORDINANCES SECTIONS 119 AND 125.

CONSTRUCTION NOTES

1. SUBMITTALS
A. PRODUCT DATA AND SHOP DRAWINGS
1. FOR ALL SITE WORK CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT PRODUCT DATA IN THE FORM OF MANUFACTURERS' CUT SHEETS AND CATALOG DATA FOR ALL PRODUCTS, MATERIAL AND EQUIPMENT CLEARLY INDICATING THE SPECIFIC PART OR PRODUCT CATALOG NUMBER(S) FOR APPROVAL.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PRODUCTS, MATERIALS AND EQUIPMENT REQUIRED TO BE FABRICATED, OR WHEN STANDARD PUBLISHED PRODUCT DATA IS NOT SUITABLE FOR USE.
3. SUBMIT 6 COPIES OF REQUESTED INFORMATION, NEATLY BOUND AND INDEXED PER CATEGORY FOR THE FOLLOWING:
   A. UTILITIES:
      ALL PIPE, FITTINGS, VALVES, OTHER MISCELLANEOUS APPURTENANCES, CONTROLS, PUMP STATION EQUIPMENT, COMPONENTS AND STRUCTURES, AND ALL OTHER UTILITY SYSTEM PRODUCTS, MATERIALS AND COMPONENTS AND SIMILAR CONTROLS.
   B. DRAINAGE:
      ALL PIPE, FITTINGS, AND COMPONENTS THEREOF, STRUCTURES, FRAMES, GRATES, LIDS, GASKETS,FASTENERS, COUPLINGS AND SIMILAR, AND ALL OTHER DRAINAGE SYSTEM PRODUCTS, MATERIALS, AND COMPONENTS AND SIMILAR CONTROLS.
   C. PAVING AND GRADING:
      FDOT CERTIFICATIONS AND LAB ANALYSIS/RESULTS FOR PAVEMENT, BASE, SUBGRADE, AND FILL MATERIALS. INCLUDE EVIDENCE (CERTIFICATIONS) THAT THE MATERIALS PROPOSED TO BE USED MEET OR EXCEED FDOT SPECIFICATIONS AND THE CONTRACT DOCUMENTS.
   D. SIGNING AND PAVEMENT MARKING:
      SIGN AND PAVEMENT MARKING PRODUCTS AND MATERIALS, AND EVIDENCE THAT THE PRODUCTS AND MATERIALS PROPOSED TO BE USED MEET OR EXCEED REQUIREMENTS SPECIFIED IN THE CONTRACT DOCUMENTS, LOCAL ENGINEERING DEPARTMENT, MUTCO AND FDOT SPECIFICATIONS.
   E. IRRIGATION:
      ALL PIPE, FITTINGS, VALVES, OTHER MISCELLANEOUS APPURTENANCES, CONTROLS, PUMP STATION EQUIPMENT, COMPONENTS AND STRUCTURES, AND ALL OTHER UTILITY SYSTEM PRODUCTS, MATERIALS AND COMPONENTS AND SIMILAR CONTROLS, WELLS, AND/OR OTHER IRRIGATION SOURCES. THE CONTRACTOR SHALL SUBMIT AN IRRIGATION COORDINATION DRAWING, INDICATING CONTRACTOR'S PROPOSED LOCATION OF MAIN LINES, SECONDARY LINES, HEAD LOCATIONS, WELL, PUMP, CONTROL PANEL, SENSORS, CONTROL VALVE AND VALVE LOCATIONS. THIS DRAWING SHOULD CLEARLY DEPICT ADJUSTMENTS OR CHANGES THE CONTRACTOR PROPOSES. THE DRAWINGS SHALL INDICATE ALL PROPOSED SUBSTITUTIONS OF SIZE, MATERIAL, AND/OR MANUFACTURER.
4. ALLOW TWO WEEKS FOR THE ENGINEER TO COMPLETE REVIEW OF PRODUCT DATA AND SHOP DRAWINGS. ENGINEER WILL NOT BE RESPONSIBLE FOR PROJECT DELAYS RELATED TO DELIVERY AND TRANSMISSION OF THE DOCUMENTS ONCE INFORMATION HAS LEFT ENGINEER'S OFFICE. ITEMS REQUIRING A LONG LEAD TIME SHOULD BE SUBMITTED AS SOON AS POSSIBLE.
5. THE CONTRACTOR SHALL PROVIDE A STAMP INDICATING ITS REVIEW AND APPROVAL, INITIALED OR SIGNED,CERTIFYING TO REVIEW OF SUBMITTAL, VERIFICATION OF PRODUCTS, FIELD MEASUREMENTS AND FIELD CONSTRUCTION CRITERIA, AND COORDINATION OF THE INFORMATION WITHIN THE SUBMITTAL WITH REQUIREMENTS OF THE WORK AND OF CONTRACT DOCUMENTS, INCLUDING PLANS AND SPECIFICATIONS OF OTHER DESIGN PROFESSIONALS (I.E.; ARCHITECT, MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERS).

B. TESTING
1. WATER: PRESSURE (MAIN AND TAPS), BACTERIOLOGICAL, BACKFILL DENSITIES, BACKFLOW PREVENTOR TESTS AND CERTIFICATION; AND AS PER PROJECT SPECIFICATIONS, LOCAL UTILITIES DEPARTMENT, AND FDEP REQUIREMENTS.
2. SEWER: EXFIL, TV, AND BACKFILL DENSITIES. PRESSURE TEST (MAINS AND TAPS) LIFT STATION START-UP, ALL PER PROJECT SPECIFICATIONS, COVB AND FDEP REQUIREMENTS.
3. DRAINAGE: EXFIL, LAMPING (FIELD), AND BACKFILL DENSITIES PER PROJECT SPECIFICATIONS AND LOCAL ENGINEERING REQUIREMENTS.
4. EARTHWORK & PAVING: DENSITIES, LBR'S AND F&V'S AS PER PROJECT SPECIFICATIONS AND LOCAL ENGINEERING REQUIREMENTS.
5. SUBMIT ALL TEST RESULTS FOR ENGINEERING REVIEW WITHIN 3 DAYS OF TESTING. FAILURE TO PROVIDE TEST RESULTS, OR PROVIDING FAILING TEST RESULTS WILL BE GROUNDS FOR DELAY AND/OR REJECTION OF PAY REQUEST APPLICATIONS.

C. AS-BUILTS
1. GRADING: LOCATION AND ELEVATION OF ALL: CONCRETE AND PAVEMENT (VEHICLE USE AND PEDESTRIAN USE IMPROVEMENTS) AT HI/LOW POINTS, EDGE OF PAVEMENT, AND CENTERLINE AT 50' ON CENTER AND AT CHANGE OF DIRECTION, GRADE BREAKS; PROPERTY LINES (CROSS SECTIONS 50' ON CENTER); TOP OF BANK AND T.O.E. OF SLOPE AND/OR CENTERLINE OF SWALES AND RETENTION AREAS; CROSS SECTIONS 50' ON CENTER ON STORMWATER LAKES FROM TOP TO BOTTOM; MECHANICAL PADS AND FINISHED FLOOR ELEVATIONS; DETAILED LOCATION AND TOPOGRAPHY OF DRIVEWAY TURNOUTS.
2. WATER AND SEWER FORCE MAINS: LOCATION, TOP ELEVATION AND STATE PLANE COORDINATES AT ALL FITTINGS, VALVES, CHANGES OF DIRECTION AND AT 100' ON CENTER.
3. GRAVITY SEWER:
   - SEWER STRUCTURES: DIAMETER OR SIZE, AND LOCATION AND ELEVATION OF STRUCTURES, TOP, BOTTOMS, AND SEWER INVERTS.
   - MAINS AND LATERALS: LOCATION AND INVERT ELEVATIONS AT CONNECTIONS, FITTINGS, AND TERMINATION.
   - LIFT STATIONS: HORIZONTAL LAYOUT AND LOCATION OF ALL EQUIPMENT, PANELS, VAULTS, WET WELL, VALVES; LOCATION OF CONDUIT RUNS AND WATER SERVICE/ HOSE BIBB; LOCATION AND INVERT ELEVATIONS OF GRAVITY AND FORCE MAINS TO AND FROM LIFT STATION; WET WELL DIAMETER, TOP AND BOTTOM ELEVATIONS; PUMP(S) SIZE, TYPE, DISCHARGE DIAMETER, MANUFACTURER AND MODEL #.
4. DRAINAGE: ALL STRUCTURES DIAMETER OR SIZE, LOCATION, AND ELEVATION OF TOP, BOTTOM, AND INVERT ELEVATIONS. ALL PIPES, DIAMETER, TYPE/MATERIAL; LOCATION AND INVERT ELEVATION AT CONNECTIONS, FITTINGS, AND TERMINATION POINTS.
5. IRRIGATION: ALL LINES, SYSTEM EQUIPMENT COMPONENTS, MATERIALS INCLUDING PIPES, VALVES, FITTINGS, SPRINKLER HEADS, AND MISCELLANEOUS APPURTENANCES.

D. OPERATION AND MAINTENANCE MANUALS
1. CONTRACTOR SHALL PROVIDE THE OWNER WITH OPERATION AND MAINTENANCE MANUALS FOR ALL OPERABLE EQUIPMENT (PUMP STATIONS AND CONTROLS, AUTOMATIC CONTROL VALVES, AND OTHER AUTOMATED EQUIPMENT; CONTROL PANELS, ETC.).
2. OPERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED AS A PRE-REQUISITE TO THE PROJECT BEING DEEMED SUBSTANTIALLY COMPLETE.

E. WARRANTY
THE CONTRACTOR SHALL PROVIDE ALL WARRANTIES, CERTIFICATIONS, GUARANTIES, AND WARRANTY BONDS AS SPECIFIED IN THE CONTRACT DOCUMENTS AND PERMIT CONDITIONS INCLUDING:
-UTILITY MAINTENANCE BOND - FOR ALL PUBLIC WATER AND SEWER UTILITIES INFRASTRUCTURE - (25% OF CONTRACT VALUE)
-ENGINEERING MAINTENANCE BOND - FOR ALL PAVING, GRADING, AND DRAINAGE IMPROVEMENTS AND INFRASTRUCTURE (25% OF CONTRACT VALUE)

F. OWNER TRAINING
THE CONTRACTOR SHALL INCLUDE 2 HOURS OF OWNER TRAINING (FOR EACH WATER, SEWER,DRAINAGE, AND IRRIGATION SYSTEMS) FOR ALL OPERABLE EQUIPMENT AND SHALL INCLUDE THE TIME FOR INITIAL ADJUSTMENTS OF EQUIPMENT AND TIME FOR ONE FOLLOW-UP VISIT AND ADJUSTMENTS OF EQUIPMENT 60 DAYS AFTER END USER HAD OPERATIONAL TIME WITH THE EQUIPMENT.

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING · LAND PLANNING · ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772 / 770-9622 FAX 772 / 770-9496 EMAIL info@sbsengineers.com

MARK	REVISION	DATE
1	REVISED PER COFP AND FDEP	10/07/21
2	REVISED PER COFP AND FDEP	01/12/22
3	REVISED PER NEW CLUBHOUSE	01/10/23

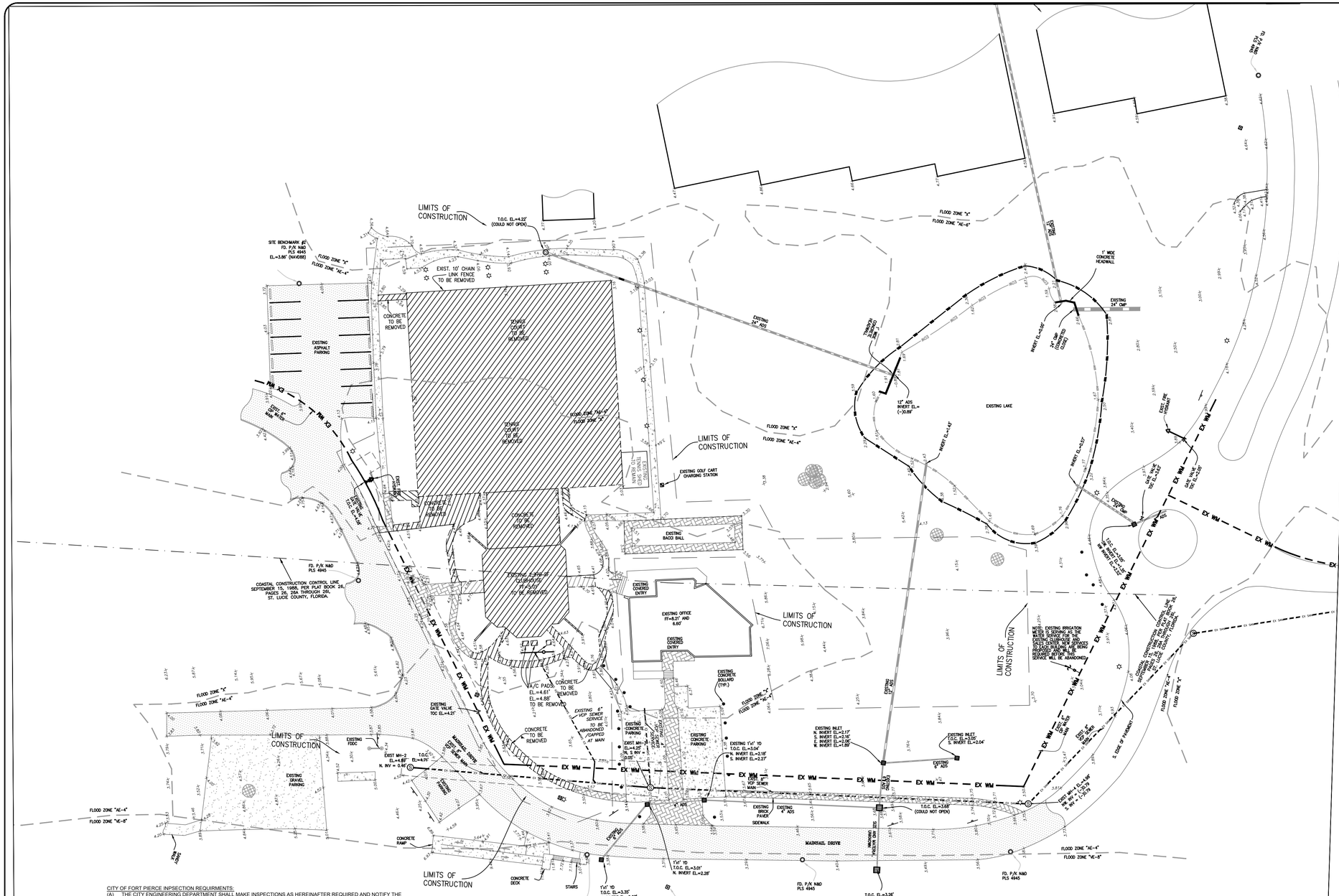
ENGINEER CERTIFICATION

JODAH B. BITTLE LICENSE No 57396 STATE OF FLORIDA PROFESSIONAL ENGINEER

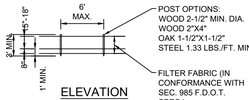
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JODAH B. BITTLE FL REG. NO. 57396
DATE: 1/30/2023

PROJECT NO. 21-032 | SHEET 1

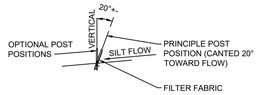
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LIMITS OF CONSTRUCTION
T.O.C. EL.=4.23' (COULD NOT OPEN)
SITE BENCHMARK #1 FD. P/N NAD PLS 4845 EL.=3.86' (NAVD88)
FLOOD ZONE "X"
FLOOD ZONE "AE-4"
EXIST. 10' CHAIN LINK FENCE TO BE REMOVED
CONCRETE TO BE REMOVED
EXISTING ASPHALT PARKING
TENNIS COURT TO BE REMOVED
(COULD NOT OPEN)
EXISTING 24" ADS
TRENCH DRAIN W/ GRATE
INVERT EL.=4.00'
1" WIDE CONCRETE HEADWALL
EXISTING 24" CMP
24" CMP CURRENTLY CLOSED
INVERT EL.=4.00'
12" ADS INVERT EL.= (~)0.69'
EXISTING LAKE
INVERT EL.=4.42'
INVERT EL.=4.03'
OUTFALL PIPE UNDER WATER
EX WM
EX WM 4"
GATE VALVE TOC EL.=5.00'
EXISTING 4" WM
GATE VALVE TOC EL.=5.00'
EXISTING GOLF CART CHARGING STATION
EXISTING BACO BALL
EXISTING COVERED ENTRY
EXISTING OFFICE FF=8.21' AND 6.00'
EXISTING CONCRETE BOLLARD (TYP.)
NOTE: EXISTING IRRIGATION METER IS SERVING AS THE WATER SERVICE FOR THE EXISTING CLUBHOUSE. NEW SERVICE TO BE INSTALLED WHERE SHOWN ON PLANS AND EXISTING METER TO BE ABANDONED AND REMOVED.
CONCRETE CONSTRUCTION CONTROL LINE SEPTEMBER 15, 1955, PER PLAT BOOK 26, PAGES 26, 26A THROUGH 26I, ST. LUCIE COUNTY, FLORIDA.
FD. P/N NAD PLS 4845
COASTAL CONSTRUCTION CONTROL LINE SEPTEMBER 15, 1955, PER PLAT BOOK 26, PAGES 26, 26A THROUGH 26I, ST. LUCIE COUNTY, FLORIDA.
EXISTING CLUBHOUSE FF=9.00' TO BE REMOVED
A/C PADS TO BE REMOVED EL.=4.61' EL.=4.55'
CONCRETE TO BE REMOVED
EXISTING 6" VCP SEWER SERVICE TO BE ABANDONED CAPPED AT MAIN
EXISTING GATE VALVE TOC EL.=4.21'
EXISTING FDOC
EXIST MH-2 EL.=4.89' N. INV = 0.46'
T.O.C. EL.=4.71'
MAINTENANCE ENTRY
EXIST. 8" SEWER MAIN
EXISTING GRAVEL PARKING
EXISTING CONCRETE PARKING
EXISTING 1'x1' YD T.O.C. EL.=3.04' N. INVERT EL.=2.18' S. INVERT EL.=2.27'
EXISTING INLET N. INVERT EL.=2.17' S. INVERT EL.=2.06' E. INVERT EL.=2.06' W. INVERT EL.=1.89'
EXISTING INLET T.O.C. EL.=3.00' INVERT EL.=2.04'
EXISTING 8" ADS
EDGE OF PAVEMENT
S. EDGE OF PAVEMENT
EXISTING 4" ADS
EXISTING BRICK PAVER SIDEWALK
EXISTING 4" ADS
EXISTING 6" VCP SEWER MAIN
MAINTENANCE ENTRY
MAINSAIL DRIVE
T.O.C. EL.=3.68' (COULD NOT OPEN)
DIST MH-1 T.O.C. EL.=4.49' 18" RC INV. = 0.79' S. INV.= 1.14'
FLOOD ZONE "AE-4" FLOOD ZONE "VE-8"
CONCRETE RAMP
CONCRETE DECK
STAIRS
1'x1' YD T.O.C. EL.=3.35' N. INVERT EL.=2.07'
1'x1' YD T.O.C. EL.=3.01' N. INVERT EL.=2.28'
FD. P/N NAD PLS 4845
SITE BENCHMARK #1 FDEP COASTAL RANGE MONUMENT "R~45A" EL.=9.57'(NAVD88)
T.O.C. EL.=3.26' (COULD NOT OPEN)
FD. P/N NAD PLS 4845
FD. P/N NAD PLS 4845
FLOOD ZONE "AE-4" FLOOD ZONE "VE-8"
FLOOD ZONE "X"
FLOOD ZONE "AE-4"
EX WM
EX WM 4"
EX WM 6"
EX WM 8"
EX WM 12"
EX WM 16"
EX WM 20"
EX WM 24"
EX WM 30"
EX WM 36"
EX WM 42"
EX WM 48"
EX WM 54"
EX WM 60"
EX WM 66"
EX WM 72"
EX WM 78"
EX WM 84"
EX WM 90"
EX WM 96"
EX WM

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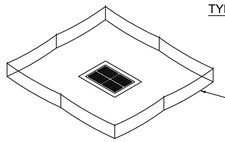
ELEVATION



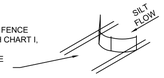
SECTION

NOTES: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (L.F.)

TYPE III SILT FENCE



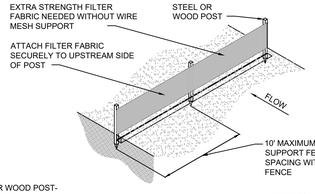
NOTE: SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART I, SHEET 1 OF 3 AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES SHEET 2 OF 3

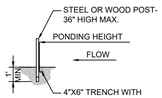


DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

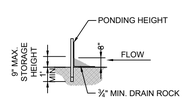
SILT FENCE APPLICATIONS-N.T.S.

NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.



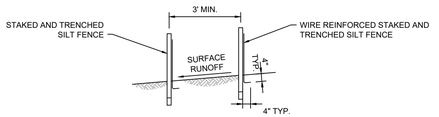


TRENCH DETAIL



INSTALLATION WITHOUT TRENCHING

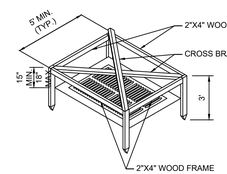
TYPE IV SILT FENCE-N.T.S.



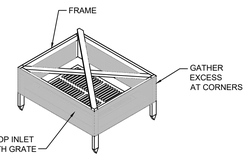
DOUBLE ROW STAKED SILT FENCE FOR USE AROUND WETLANDS-N.T.S.

COMPLETED INLET DITCH BOTTOM INLET

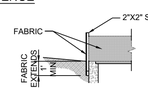
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



VIEW OF FRAME WITHOUT SILT FENCE



VIEW OF FRAME WITH SILT FENCE



SILT FENCE INLET PROTECTION-N.T.S.

- All turbidity, erosion, and sedimentation controls shall be in accordance with `Best Management Practices' as described in the Florida Land Development Manual: A Guide to Sound Land and Water Management.
- Reference F.D.O.T. Index #102.

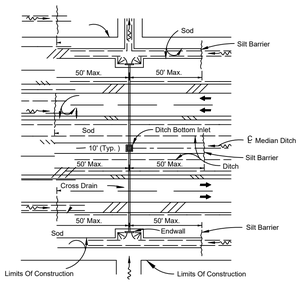
EROSION CONTROL DETAILS

N.T.S.

NOTES:

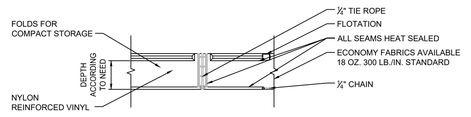
WETLAND PROTECTION PLAN

a. SILT FENCE MUST BE INSTALLED BY HAND ALONG SURVEYED CONSERVATION EASEMENT BOUNDARIES (AT TOE OF SLOPE-SEE SECTIONS EE,N,O) PRIOR TO CONSTRUCTION.
b. NO TURBID DISCHARGE TO WETLANDS IS PERMITTED.
c. ALL STOCKPILE AND/OR CONSTRUCTION STAGING AREAS MUST BE LOCATED 100 FT. FROM WETLANDS.



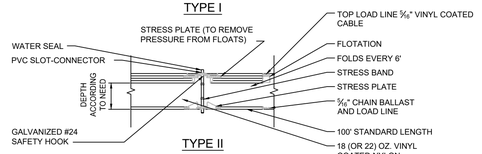
DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

TYPE I. DOT FOR WATERS WITH LOW CURRENTS (NO MORE THAN ONE FOOT PER SECOND) AND LIGHT WINDS: LAKES, PONDS, SMALL STREAMS, MARSHES. FLEXIBLE TOP FLOTATION SECTION WITH ENCAPSULATED EPS FOAM FLOTATION LOGS (6"X6"X4')



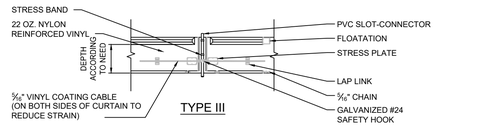
TYPE I

TYPE 2. DOT FOR HIGHER CURRENT WATERS (UP TO FIVE FEET PER SECOND): DEEPER LAKES, STREAMS, INTERCOASTAL AND TIDAL AREAS. INCLUDES AN ENCAPSULATED STEEL LOAD CABLE ALONG TOP OF BARRIER AND 8"X8"X4' FLOTATION LOGS. WEAR STRESS POINTS ARE REINFORCED WITH SHIELDS.



TYPE II

TYPE 3. DOT IS SIMILAR TO TYPE 2. DOT EXCEPT THAT POLYROPYLENE FILTER FABRIC IS PERMANENTLY INSERTED INTO THE BARRIER SKIRT TO MEET SOME STATE'S SPECIFICATIONS.



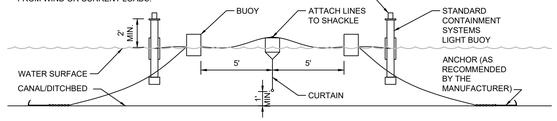
TYPE III



BLOW-UP OF SHACKLE CONNECTION

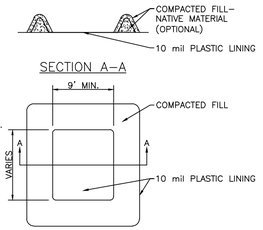
NOTE: ANCHORING TO BUOYS AS SHOWN REMOVES ALL VERTICAL FORCES FROM THE CURTAIN, HENCE, THE CURTAIN WILL NOT SINK FROM WIND OR CURRENT LOADS.

AUTOMATIC FLASHING LIGHT (ON AT DUSK-OFF AT DAWN) 100' ON CENTER SHALL BE USED IN NAVIGABLE CHANNELS ONLY

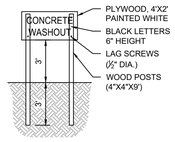


ORIENTATION WHEN INSTALLED (TIDAL SITUATION-TYPE III)-N.T.S.

NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. A ROLL OFF CONTAINER SPECIFICALLY MANUFACTURED FOR CONCRETE AND STUCCO WASHOUT MAY BE SUBSTITUTED.



PLAN
TYPE "ABOVE GRADE" WITH COMPACTED FILL

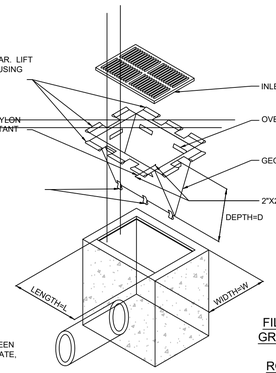


CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

CONCRETE & STUCCO WASTE MANAGEMENT–N.T.S.

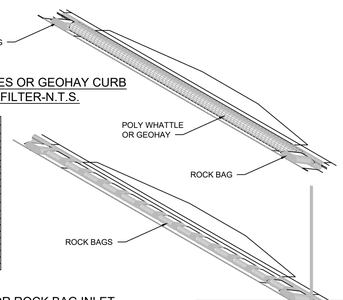
LOOPS SIZED FOR 1" REBAR. LIFT FILTER BAG FROM INLET USING REBAR FOR HANDLES.

½" BRIGHTLY COLORED NYLON ROPE, EXPANSION RESISTANT



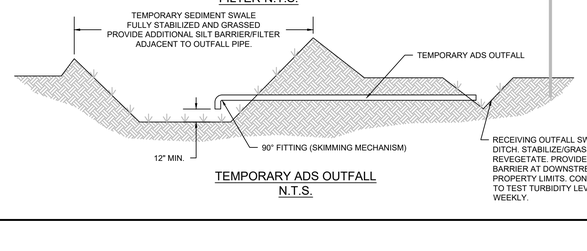
FILTER SACKS FOR GRATED INLETS AND STABILIZED ROADWAYS-N.T.S.

NOTE: IF FILTER FABRIC HAS BEEN INSTALLED BENEATH INLET GRATE, IT SHALL BE REMOVED IMMEDIATELY AFTER ROAD SURFACE HAS BEEN STABILIZED AND THE FILTER SACK SHALL BE IMMEDIATELY INSTALLED.



POLY WHATTLES OR GEOHAY CURB INLET FILTER-N.T.S.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS.
MULLEN BURST	ASTM D-3786	600 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	120 LBS.
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	#0 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL./MIN./SQ. FT.
PERMITTIVITY	ASTM D-4491	0.55 SEC.-1
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	130 LBS.
MULLEN BURST	ASTM D-3786	430 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	45 LBS.
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	#30 US SIEVE
FLOW RATE	ASTM D-4491	220 GAL./MIN./SQ. FT.
PERMITTIVITY	ASTM D-4491	1.5 SEC.-1

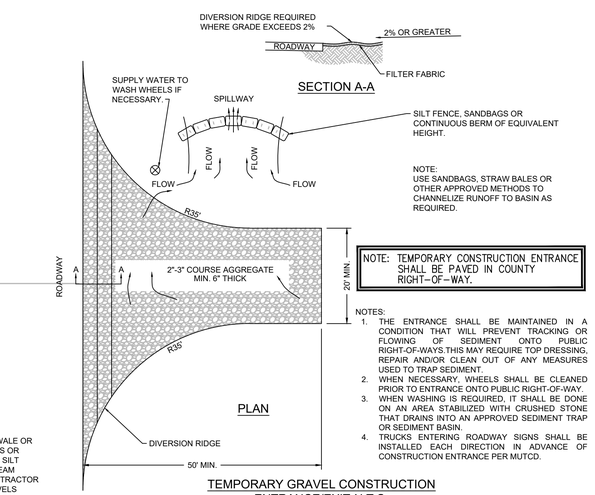


SOCK-PIPE OR ROCK BAG INLET FILTER-N.T.S.

TEMPORARY ADS OUTFALL N.T.S.

RECEIVING OUTFALL SWALE OR DITCH. STABILIZE/GRASS OR REVEGETATE. PROVIDE SILT BARRIER AT DOWNSTREAM PROPERTY LIMITS. CONTRACTOR TO TEST TURBIDITY LEVELS WEEKLY.

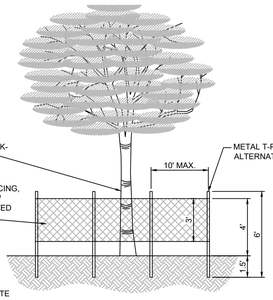
CONCRETE & STUCCO WASTE MANAGEMENT-N.T.S.



PLAN

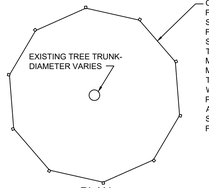
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT-N.T.S.

NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS.THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. TRUCKS ENTERING ROADWAY SIGNS SHALL BE INSTALLED EACH DIRECTION IN ADVANCE OF CONSTRUCTION ENTRANCE PER MUTCD.



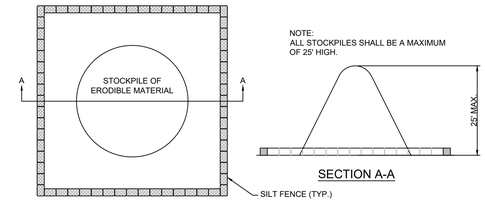
ELEVATION

NOTES:
1. ALL TREES RETAINED ON A SITE SHALL BE PROTECTIVELY BARRICADED BEFORE AND DURING CONSTRUCTION ACTIVITIES.
2. UNDERGROUND UTILITY LINES SHALL BE ROUTED AROUND EXISTING TREES TO THE OUTSIDE OF THE DRIPLINE WHERE ABLE.
3. INSTALLATION OF FENCES AND WALLS SHALL TAKE INTO CONSIDERATION THE ROOT SYSTEMS OF EXISTING TREES.
4. FENCE/BARRICADE SHALL BE INSTALLED AT PERIMETER OF ALL TRESS OR GROUP OF TREES TO BE PRESERVED. FENCE SHALL BE MAINTAINED DURING CONSTRUCTION.
5. DO NOT PARK HEAVY EQUIPMENT ON TREE ROOTS. DO NOT ADD FILL 4" TO 6" AROUND TREE. ALL WORK WITHIN THE CRZ MUST BE DONE BY HAND.



PLAN

PROTECTIVE FENCING FOR TREES-N.T.S.



SECTION A-A

NOTE:
FOR STOCKPILING ERODIBLE MATERIAL FOR EXTENDED PERIODS, THE AREA SHALL BE SEEDED AND MULCHED.

SEDIMENT CONTROL DETAIL FOR STOCKPILING OF ERODIBLE MATERIAL-N.T.S.



STAPLE DETAIL

EROSION CONTROL AND DEWATERING NOTES

1. 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 UPSLOPE LAND DISTURBANCE TAKES PLACE.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
3. 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.
4. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
5. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED.
6. AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY
7. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
8. 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.
9. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION.
10. PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE 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.
11. 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.
12. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
13. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION AND EROSION.
14. EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS IN INDEX NOS. 101, 102, AND 103 OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, AND THE DETAILS AND NOTES ON THE PLANS.
15. CONTRACTOR RESPONSIBLE FOR ALL SURFACE WATER DISCHARGES - RAINFALL RUN-OFF OR DEWATERING ACTIVITIES.
16. CONTRACTOR MUST INCORPORATE ALL BMP'S NECESSARY TO MEET OR EXCEED STATE WATER QUALITY REQUIREMENTS.
17. THIS POLLUTION PREVENTION PLAN IS A MINIMUM GUIDELINE ONLY. ADDITIONAL BMP'S MAY BE NECESSARY AT CONTRACTORS EXPENSE.
18. NO TURBID DISCHARGE. TURBIDITY READINGS ARE REQUIRED ONCE A WEEK (BY THE CONTRACTOR) AND MUST BE REPORTED TO THE PROJECT ENGINEER. LOCATION SHALL BE DETERMINED BY THE ENGINEER.
19. DEWATERING ACTIVITIES:
A - DISCHARGE MUST NOT EXCEED STATE WATER QUALITY STANDARDS.
B - CONTRACTOR MUST HAVE A TRANSFERABLE SJRWMD CONSUMPTIVE USE PERMIT KNOWN AS A "NOTICED GENERAL PERMIT FOR SHORT TERM CONSTRUCTION DE-WATERING", UNLESS DE-WATERING ACTIVITIES WILL RESULT IN LESS THAN 300,000 GPD FOR 30 DAYS OR LESS.
C - NO HYDRAULIC PUMPS MAY BE USED FOR DE-WATERING UNLESS APPROVED BY THE WATER MANAGEMENT DISTRICT FOR THAT AREA. DEWATERING EXISTING STORMWATER RETENTION AREAS (PONDS/LAKES) MAY BE EXEMPT FROM THIS CONDITION. CONTRACTOR TO CONFIRM WITH SJRWMD.
D - NO TURBID DISCHARGE. TURBIDITY READINGS ARE REQUIRED ONCE A WEEK AND MUST BE REPORTED TO THE PROJECT ENGINEER.
20. THE CONTRACTOR SHALL OBTAIN GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUND WATER FROM ANY NON-CONTAMINATED SITE ACTIVITY.
A - BEFORE DISCHARGE OF PRODUCED GROUND WATER CAN OCCUR FROM THE SITE, ANALYTICAL TESTS ON SAMPLES OF THE PROPOSED UNTREATED DISCHARGE WATER SHALL BE PERFORMED TO DETERMINE IF CONTAMINATION EXISTS BY CONTRACTOR). IF NONE EXISTS, THE RESULTS SHALL BE SUBMITTED TO THE FDEP INDUSTRIAL WASTEWATER PERMITTING WITHIN ONE WEEK OF COMMENCEMENT OF DISCHARGE (C.O. ALI KAZI, P.E., 3319 MAGUIRE BLVD. SUITE 232, ORLANDO, FL, 32803). WITH A LETTER NOTIFYING THE AGENCY THAT DE-WATERING ACTIVITIES WILL COMMENCE PURSUANT TO 62-621.300(2) F.A.C. AND THE SITE QUALIFIES FOR THE GENERIC PERMIT.
B - THE FACILITY IS AUTHORIZED TO DISCHARGE PRODUCED GROUND WATER FROM ANY NON-CONTAMINATED SITE ACTIVITY WHICH DISCHARGES BY A POINT SOURCE TO SURFACE WATERS OF THE STATE, AS DEFINED IN CHAPTER62-620, F.A.C., ONLY IF THE REPORTED VALUES FOR THE PARAMETERS LISTED IN TABLE 1 DO NOT EXCEED ANY OF THE LISTED SCREENING VALUES.
C - MINIMUM REPORTING REQUIREMENTS FOR ALL PRODUCED GROUND WATER DISCHARGERS. THE EFFLUENT SHALL BE SAMPLED (BY CONTRACTOR) BEFORE THE COMMENCEMENT OF DISCHARGE, AGAIN WITHIN THIRTY (30)DAYS AFTER COMMENCEMENT OF DISCHARGE, AND THEN ONCE EVERY SIX (6)MONTHS FOR THE LIFE OF THE PROJECT TO MAINTAIN CONTINUED COVERAGE UNDER THIS GENERIC PERMIT.SAMPLES TAKEN IN COMPLIANCE WITH THE PROVISIONS OF THIS PERMIT SHALL BE TAKEN PRIOR TO ACTUAL DISCHARGE OR MIXING WITH THE RECEIVING WATERS. THE EFFLUENT SHALL BE SAMPLED FOR THE PARAMETERS LISTED ON TABLE 1.
D - IF ANY OF THE ANALYTICAL TEST RESULTS EXCEED THE SCREENING VALUES LISTED IN TABLE 1, EXCEPT TOC, THE DISCHARGE IS NOT AUTHORIZED BY THIS PERMIT. IF T.O.C. IS EXCEEDED BECAUSE OF NATURALLY OCCURING ORGANIC COMPOUNDS, THE RESULT AND EXPLANATION FOR THE HIGH READING MUST BE SUBMITTED TO THE FDEP FOR REVIEW AND ISSUANCE OF AN EXEMPTION.
E - IF ANY SCREENING VALUES (OTHER THAN TOC) EXCEED THE THRESHOLDS, THEN A GENERIC PERMIT CANNNOT BE ISSUED, AND A SEPERATE INDIVIDUAL WASTERWATER PERMIT APPLICATION MUST BE SUBMITTED AT LEAST 90 DAYS PRIOR TO DATE OF DISCHARGE. THE ENGINEER OF RECORD MUST BE NOTIFIED IF THIS OCCURS.
21. THE CONTRACTOR SHALL OBTAIN A STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES, AND SHALL ADHERE TO ALL CONDITIONS OF THE PERMIT, INCLUDING INSPECTIONS, REPORTING, RECORD KEEPING AND CERTIFICATIONS.

	SCREENING VALUES FOR DISCHARGE INTO:	
Parameter	Fresh Waters	Coastal Waters
Total Organic Carbon (TOC)	10.0 mg/L	10.0 mg/L
pH, standard units	6.0-8.5	6.5-8.5
Total Recoverable Mercury	0.012 µg/L	0.025 µg/L
Total Recoverable Cadmium	9.3 µg/L	9.3 µg/L
Total Recoverable Copper	2.9 µg/L	2.9 µg/L
Total Recoverable Lead	0.03 mg/L	5.6 mg/L
Total Recoverable Zinc	86.0 µg/L	86.0 µg/L
Total Recoverable Chromium (Hex.)	11.0 µg/L	50.0 µg/L
Benzene	1.0 µg/L	1.0 µg/L
Naphthalene	100.0 µg/L	100.0 ug/L

MARK	REVISION	DATE
1	REVISED PER COPP AND FDEP	10/07/21
2	REVISED PER COPP AND FDEP	01/12/22

DRAWING	21-032 CONST
DESIGNED	JBB
DRAWN	JBB
CHECKED	JBB
DATE	04/30/21
SCALE	1"=10'

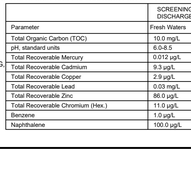
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SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING . LAND PLANNING . ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00008668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772-770-9622 FAX 772-770-9496 EMAIL jbittle@sbsengineers.com
WEBSITE https://www.sbsengineers.com

STORMWATER POLLUTION PREVENTION DETAILS

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION



Docusigned by:
JODAH B. BITTLE
FL REG. NO. 57396
A95E7769C6C469...
DATE: 1/30/2023

PROJECT NO. 21-032
SHEET 3

DocuSign Envelope ID: 60FD9234-1264-44B0-98B2-13889B9675EC

GFA INTERNATIONAL

FLORIDA'S LEADING ENGINEERING SOURCE

Report of Geotechnical Exploration

Ocean Village Club
2400 S Ocean Drive
Fort Pierce, Florida

April 16, 2021
GFA Project No. 3330.2100065.0000

For: Proctor & Associates General Contractors, LLC



607 NW Commodity Cove • Port St. Lucie, Florida 34986 • (772) 924-3575 • (772) 924-3580 (fax) • www.teamgfa.com
OFFICES THROUGHOUT FLORIDA

April 16, 2021

Mr. Barrett Englert
Proctor & Associates General Contractors, LLC
200 NE Dixie Highway
Stuart, Florida 34994

Subject: Report of Geotechnical Exploration
Ocean Village Club
2400 S Ocean Drive, Fort Pierce, Florida
GFA Project No. 3330.2100065.0000

Dear Mr. Englert:

GFA International, Inc. (GFA) has completed the subsurface exploration and geotechnical engineering evaluation for the above referenced project in accordance with the geotechnical and engineering service agreement for this project. The scope of services was completed in accordance with our Geotechnical Engineering Proposal No. 21-6471.00 REV#1 dated March 11, 2021, planned in conjunction with and authorized by Proctor & Associates General Contractors, LLC.

EXECUTIVE SUMMARY

The purpose of our geotechnical exploration was to determine the nature of the subsurface soils and general geomorphic conditions at the site and evaluate their impact upon the proposed construction. This report contains the results of our subsurface exploration and our engineering interpretations of these with respect to the project characteristics described to us, including providing recommendations for foundation design, pavement design and construction, site preparation, and earthwork construction.

Per our prior telephone discussions and email correspondence with you, GFA understands that a new clubhouse and parking area are planned for the Ocean Village Club. Based on the provided Conceptual Site Plan, the existing tennis courts and clubhouse building will be demolished to accommodate the new construction.

Specific design loads for the new clubhouse building have not been provided to GFA. For the foundation recommendations presented in this report, we assumed a maximum wall loading of 5 kips per linear foot and a maximum column load of 75 kips.

The recommendations provided herein are based upon the above considerations. If the stated conditions are incorrect or if the project description is revised, please inform GFA so that we may review our recommendations with respect to any modifications.

Two (2) tripod standard penetration test (SPT) borings, advanced to approximate depths of 20 feet, and five (5) auger borings with hand cone penetrometer (HCP) testing, advanced to approximate depths of 5 and 6 feet below the existing ground surface, were completed for this study. In addition to the SPT and auger borings, one (1) field exfiltration test (EX-1) was performed within the designated dry stormwater retention area. Undisturbed Shelby tube soil samples were obtained adjacent to the exfiltration test site for laboratory falling head permeability testing.

The subsurface soil conditions encountered at the boring locations generally consisted of loose to dense fine sand (SP), fine sand with silt (SP-SM), and silty fine sand (SM) to the termination depths.

Considering the results of our field exploration program, the subsurface soil conditions at the site are generally favorable for shallow foundation support of the proposed clubhouse structure. A maximum allowable soil bearing pressure of 2,500 psf may be used for foundation design.

The subgrade soils should be improved (densified) with compaction from the stripped grade prior to constructing the building pad. **Prior to placing fill to achieve final grade, the upper 2 feet of soil below stripped grade should be compacted to a minimum of 95 percent maximum dry density as determined by the modified Proctor test (ASTM D 1557).** Fill (including stem wall backfill) should be placed in 12-inch thick lifts and compacted to achieve a minimum 95 percent modified Proctor maximum dry density. After completing the footing excavations, the bearing subgrade to a depth of 2 feet should be compacted to not less than 95 percent modified Proctor maximum dry density.

We appreciate the opportunity to be of service during this phase of the project and look forward to a continued association. Please do not hesitate to contact us if you have any questions or comments, or if we may further assist you as your plans proceed.

Respectfully Submitted,
GFA International, Inc.
Florida Registry No. 4930

John Kent — Digitally signed by John Kent, Date: 2021.04.16 16:15:29 -04'00'

This item has been digitally signed and sealed by John Kent, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

John Kent, P.E.
Senior Project Engineer
Florida Registration No. 63218

Erik Soderstrom, E.I.
Geotechnical Department Manager

Distribution: Mr. Barrett Englert – Proctor & Associates General Contractors, LLC

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1.0 INTRODUCTION

1.1 Scope of Services

The objective of our geotechnical services was to collect subsurface data for the subject project, summarize the test results, and discuss apparent site conditions that may have geotechnical significance for the proposed construction. The following scope of services is provided within this report:

1. Prepare boring logs depicting the soil conditions encountered during our field exploration.
2. Review the soil samples obtained during our field exploration for classification and additional testing if necessary.
3. Evaluate the existing soil conditions found during our exploration with respect to foundation support for the proposed clubhouse structure.
4. Provide recommendations for foundation support of the structure, including foundation type, maximum allowable soil bearing capacity, and bearing elevations.
5. Provide recommendations for site preparation and earthwork construction.
6. Present recommended pavement sections using assumed design criteria and parameters, including guidelines for pavement subgrade preparation.
7. Provide the results of the field exfiltration testing and laboratory permeability testing.

1.2 Project Description

Per our prior telephone discussions and email correspondence with you, GFA understands that a new clubhouse and parking area are planned for the Ocean Village Club. Based on the provided Conceptual Site Plan, the existing tennis courts and clubhouse building will be demolished to accommodate the new construction.

Specific design loads for the new structure have not been provided to GFA. For the foundation recommendations presented in this report, we assumed a maximum wall loading of 5 kips per linear foot and a maximum column load of 75 kips.

The recommendations provided herein are based upon the above considerations. If the stated conditions are incorrect or if the project description is revised, please inform GFA so that we may review our recommendations with respect to any modifications.

2.0 OBSERVATIONS

2.1 Site Description

The project site is located just northwest of Mainsail Drive in Fort Pierce, Florida. At the time of our field exploration, the property was developed and was occupied by two tennis courts and a

support building. A golf course, various condominium buildings, and the Atlantic Ocean were located adjacent to the property.

2.2 Field Exploration

Two (2) tripod standard penetration test (SPT) borings, advanced to approximate depths of 20 feet, and five (5) auger borings with hand cone penetrometer (HCP) testing, advanced to approximate depths of 5 and 6 feet below the existing ground surface, were completed for this study. In addition to the SPT and auger borings, one (1) field exfiltration test (EX-1) was performed within the designated dry stormwater retention area. Undisturbed Shelby tube soil samples were obtained adjacent to the exfiltration test site for laboratory falling head permeability testing.

The Standard Penetration Tests (SPT) were performed in general accordance with ASTM D 1586, "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." The SPT test procedure consists of driving a 1.4-inch I.D. split-barrel sampler into the soil profile using a 140-pound hammer falling 30 inches. The number of blows per foot, for the second and third 6-inch increment, is referred to as the N-value. The N-value has been empirically correlated with various soil properties and provides an indication of soil strength.

The auger borings were performed in general accordance with ASTM D 1452, "Standard Practice for Soil Exploration and Sampling by Auger Borings." Hand Cone Penetrometer (HCP) tests were conducted at approximate one-foot depth intervals in the auger borings. The HCP test, in conjunction with information about the soil type, is empirically correlated to the relative density of subsurface soils.

Site specific survey staking of the borings was not provided for our field exploration. The borings were located using the provided Conceptual Site Plan, GPS coordinates, and estimating distances and relationships to the existing tennis courts, pavement areas, and other landmarks at the property.

2.3 Laboratory Testing

Soil samples recovered from our field exploration were returned to our laboratory where they were visually classified by a geotechnical engineer in general accordance with the Unified Soil Classification System (ASTM D 2487). Falling head permeability tests were performed on the Shelby tube samples to obtain horizontal (k_h) and vertical (k_v) coefficients of permeability of the soils. The permeability test results are summarized in Table 2.3.2 below.

Table 2.3.1 – Permeability Test Results

Sample Location	Sample Depth (feet)	Sample Description	Coefficient of Permeability, k (ft/day)	
			k_h	k_v
EX-1	2 - 2.5	Brown fine sand	10.8	1.8

The recovered samples were not evaluated, either visually or analytically, for chemical composition or environmental hazards. GFA will be pleased to perform these services for an additional fee, if required.

2.4 Geomorphic Conditions

The geology of the site as mapped on the USDA Soil Survey website consists of Arents, organic substratum (6) and Canaveral fine sand, 0 to 5 percent slopes (10). Since Arents are areas where the soils have been generally altered by grading, shaping, and covered with fill, the soils can be variable. Note that Soil Survey generally extends to a maximum depth of 80 inches below ground surface and is not indicative of deeper soil conditions.

Boring logs resulting from our field exploration are presented in Appendix D - Log of Boring Records. The logs contain the soil descriptions, the standard penetration test (SPT) N-values, and the hand cone penetrometer (HCP) values logged during the drilling and sampling activities. The logs represent information from the specific boring locations only and soil conditions may vary between the strata interfaces indicated on the logs. The soil classifications and descriptions shown on the logs are based upon visual characterizations of the recovered samples using the Unified Soil Classification System. See Appendix F - Discussion of Soil Groups, for a detailed description of various soil groups.

The subsurface soil conditions encountered at the boring locations generally consisted of loose to dense fine sand (SP), fine sand with silt (SP-SM), and silty fine sand (SM) to the termination depths.

2.5 Hydrogeological Conditions

On the dates of our field exploration (March 29 and April 7, 2021), groundwater was encountered in the borings at depths ranging from approximately 4 to 5 feet below the existing ground surface. Note that the groundwater table will fluctuate seasonally depending upon local rainfall and other site specific and/or local factors, including tidal influences from the nearby Atlantic Ocean. Brief ponding of stormwater may occur across the site after heavy or extended rainfall events.

During our field exploration, we performed one (1) auger boring and accompanying exfiltration test (EX-1) at the approximate location illustrated on the Test Location Plan in Appendix B. The test was conducted in general accordance with the South Florida Water Management District method for open hole constant head field testing. The hydraulic conductivity (K) value determined at test location EX-1 was 2.44 X 10^{-5} cfs/ft-ft. These test results are also presented in Appendix E - Exfiltration Test Results.

3.0 ENGINEERING EVALUATION AND RECOMMENDATIONS

3.1 General

Our geotechnical engineering evaluation of the site and subsurface conditions at the property, with respect to the planned construction, and our recommendations for site preparation, foundation support, pavement design, and earthwork construction, are based upon (1) our site observations, (2) the field data obtained, and (3) our understanding of the project information and structural conditions as presented in this report. If the stated conditions are incorrect, or if the project description is revised, please inform GFA so that we may review our recommendations with respect to any modifications.

We note that the applicability of geotechnical recommendations is very dependent upon project characteristics, specifically (1) improvement locations, (2) grade alterations, (3) and actual applied structural loads. For that reason, GFA must be provided with and review the preliminary and final site and grading plans for the project description is used, to validate all recommendations provided in this report. Without performing this review, our recommendations should not be relied upon for final design or construction of any site improvements.

3.2 Site Preparation

GFA recommends the following compaction requirements for this project:

- Proof Roll ..... 95 percent of modified Proctor
- Building Pad Fill ..... 95 percent of modified Proctor
- Footings ..... 95 percent of modified Proctor

The above compaction percentages are based upon the maximum dry density as determined by the modified Proctor test (ASTM D 1557). **All density tests should be performed to a depth of 2 feet below stripped surface and bottom of footings.** Density testing should be performed using either the nuclear method (ASTM D 6938) or the sand cone method (ASTM D 1556). Hand Cone Penetrometer (HCP) tests can also be performed to evaluate compaction.

Our recommendations for preparation of the site for use of shallow foundation systems are presented below. This approach to improving and maintaining site soils has been found to be successful on projects having similar soil conditions.

1. Initial site preparation should consist of removing vegetation, topsoil, near surface roots, existing pavement, and other miscellaneous debris within and to a distance of 5 feet beyond of the planned construction limits. Foundations and the below grade remains of former structures within the footprint of the new construction should also be removed. Similarly, irrigation and utility lines within the limits of the proposed construction should be removed or properly abandoned so that they will not adversely impact overlying structures.
2. Following site stripping and prior to the placement of fill, areas of surficial sand should be compacted (proof rolled) and tested. We recommend using a steel drum vibratory roller with sufficient static weight and vibratory impact energy to achieve the required compaction. Density tests should be performed on the proof rolled surface at a frequency of not less than one test per 2,500 square feet, or a minimum of three (3) tests, whichever is greater.
3. Fill material may then be placed for the building pad and general site grading, as required. The fill should be inorganic (i.e., contain less than 5 percent by weight organic material) and classified as SP, SW, GP, GW, SP-SM, SW-SM, GW-GP, or GP-GM. **GFA does not recommend using fill material having silt/clay-size soil fines contents exceeding 12 percent.** Fill should be placed in lifts having a maximum thickness of 12-inches. Each lift should be compacted and tested prior to the placement of the next lift. Density tests should be performed within the fill at a frequency of not less than one test per 2,500 square feet per lift in building areas, or a minimum of three (3) tests per lift, whichever is greater.

4. For foundations placed on structural fill or compacted native granular soils, the bearing subgrade should be tested for compaction and observed by an engineer or geologist or his/her representative to determine if the soil is free of organic and/or deleterious material. Density tests should be performed at a frequency of not less than one (1) density test per each isolated column footing and one (1) test per each 75 lineal feet of wall footing.
5. The contractor should consider the final grading contours contained in the project plans when executing backfilling and compaction operations.

3.3 Vibration Monitoring

Using vibratory compaction equipment at this site may disturb adjacent or nearby structures. We recommend that these structures be monitored by GFA both before and during compaction operations. A proposal for providing vibration monitoring services during earthwork construction will be provided upon request.

3.4 Design of Footings

A foundation system for any structure must be designed to resist bearing capacity failures, have settlements that are tolerable, and resist the environmental forces that the foundation may be subjected to over the life of the structure. The soil bearing capacity is the soil's ability to support loads without plunging into the soil profile. Bearing capacity failures are analogous to shear failures in structural design and are usually sudden and catastrophic.

Based on the results of the soil borings performed at the site, GFA recommends structure foundations be designed using a maximum allowable soil bearing pressure of 2,500 psf. Conventional shallow foundations and thickened-edge slab foundation systems should be embedded at least 12 inches below lowest adjacent grade. Furthermore, maintain minimum foundation widths of 18 and 24 inches for isolated strip and square footings, respectively, even if the maximum allowable soil bearing pressure is not developed in all cases.

Once site preparation has been performed in accordance with the recommendations described in this report, the soils should readily support the proposed structure bearing upon a properly designed and constructed shallow foundation system. Footings and columns should be structurally separated from the ground floor slab, as they will be loaded differently and at different times, unless a monolithic slab foundation is designed.

3.5 Settlement Estimates

Post construction settlements of the structure will be influenced by several interrelated factors, including (1) subsurface soil stratification and the strength/compressibility characteristics, (2) footing size, bearing level, applied loads, and resulting bearing pressure beneath the footings, and (3) the site preparation and earthwork construction techniques used by the contractor. Our settlement estimates for the proposed construction are based on the use of the site preparation and earthwork construction methods recommended in this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlements of the proposed construction.

We expect the majority of settlement to occur in an elastic manner and fairly rapidly during construction. Using the recommended maximum bearing pressure, the assumed maximum structural loads, and the field test data that we have correlated geotechnical strength and compressibility characteristics of the subsurface soils, we estimate that total settlements of the structure could be on the order of one (1) inch or less.

Differential settlements result from differences in applied bearing pressures and variations in the compressibility characteristics of the subsurface soils. Because of the general uniformity of the subsurface conditions and the recommended site preparation and earthwork construction methods presented in this report, we anticipate that differential settlements of the structure should be within tolerable magnitudes (0.5 inch or less).

3.6 Ground Floor Slabs

The clubhouse ground floor slab may be constructed upon existing grade or granular fill after completion of the foundation site preparation and fill placement procedures outlined in this report. We recommend that a modulus of subgrade reaction (k) of 150 pounds per cubic inch (pci) be considered during design. The floor slab should be structurally separated from walls and columns to allow for differential vertical movement, unless a monolithic slab foundation is designed.

Excessive moisture vapor transmission through foundation slabs can result in damage to floor coverings as well as cause other deleterious affects. An appropriate moisture vapor barrier should be placed beneath the slab to reduce moisture vapor from entering the structure through the slab. The barrier should be installed in general accordance with applicable ASTM procedures including sealing around pipe penetrations and at the foundation edges.

4.0 PAVEMENT DESIGN AND CONSTRUCTION CONSIDERATIONS

4.1 Pavement Design Sections

The pavement sections were designed based on assumed traffic loading criteria and previous experience with similar projects. Flexible pavement sections in this geographic area typically consist of an asphaltic wearing course, a base course, and a stabilized subgrade layer. Rigid pavements are constructed either directly upon prepared soil subgrades or upon a base course and stabilized subgrade for heavier loads.

Based on our experience and assumed traffic loading criteria, recommended pavement section thicknesses are provided in Table 4.1.1 below.

Table 4.1.1 - Design Pavement Sections

Pavement Type	Layer	Material Description	Layer Thickness, Light Duty	Layer Thickness, Heavy Duty
Flexible	(A)	Asphalt Wearing Surface FDOT SP-9.5 or SP-12.5	1.5	2.5
	(B)	Base rock (minimum LBR of 100), compacted to 98 percent of modified Proctor maximum dry density	6	8
	(SSG)	Stabilized subgrade (minimum LBR of 40), compacted to 98 percent of modified Proctor maximum dry density	12	12
		STRUCTURAL NUMBER (SN)	**2.7**	**3.5**
Rigid	(C)	FDOT Portland Cement Concrete	NA	8
	(B)	Base rock (minimum LBR of 100), compacted to 98 percent of modified Proctor maximum dry density	NA	-
	(CSG)	Soil subgrade compacted to 98 percent of modified Proctor maximum dry density	NA	12

4.2 Compacted Subgrade or Embankment Fill

The subgrade or embankment fill is the layer that supports the structural pavement section. Subgrade and embankment fill should be constructed following the criteria and procedures presented in Section 4.9 of this report.

4.3 Stabilized Subgrade

The stabilized subgrade is the portion of the pavement section between the compacted subgrade (embankment fill) and the base course. The stabilized subgrade should be compacted to at least 98 percent of modified Proctor maximum dry density (AASHTO T-180). The material should have a minimum Limerock Bearing Ratio (LBR) value of 40. Alternatively, the pavement section can be designed using native on-site soils having a lower LBR value. In this case, an LBR test of the native soils is performed and incorporated into a modified pavement design. Compliance tests should be performed on the stabilized subgrade for full depth at a frequency of one test per 5,000 square feet, or at a minimum of two test locations, whichever is greater.

4.4 Base Course

The base course is the portion of the pavement section between the surface course and stabilized subgrade. In areas where separation of at least 1.5 feet between the estimated wet seasonal high groundwater table and the bottom of the base material occurs, we recommend the base course be limerock or cemented coquina having a minimum Limerock Bearing Ratio (LBR) value of 100. The base material should be obtained from an approved source. The base material should be placed in maximum 6-inch-thick lifts and compacted to at least 98 percent of modified Proctor maximum dry density (AASHTO T-180).

If the separation between the estimated wet seasonal high groundwater table and the bottom of the base material is less than 1.5 feet, we recommend that asphaltic concrete base (FDOT SP-12.5) be used in lieu of limerock or cemented coquina. The subgrade should be mechanically stabilized (compacted) to a minimum of 98 percent of modified Proctor maximum dry density (AASHTO T-180). Compliance tests should be performed on the base course at a frequency of one test per 5,000 square feet, or a minimum of two test locations, whichever is greater.

4.5 Flexible (Asphalt) Pavement

Asphalt pavement should consist of either FDOT SP-9.5 or SP-12.5 asphaltic concrete. The mixes should be a current FDOT approved design for the materials used for the project. Samples of the materials delivered to the project should be tested to verify that the aggregate gradation and asphalt content satisfies the mix design specifications.

The asphalt should be compacted to meet the requirements of the latest edition of the FDOT Standard Specifications for Road and Bridge Construction. Compliance tests should be performed by obtaining cores to evaluate material thickness and density at a frequency of one test per 10,000 square feet, or a minimum of two test locations, whichever is greater.

4.6 Rigid (Concrete) Pavement

Rigid pavements should be constructed using concrete having a minimum 28-day compressive strength of 4,000 psi. Fill required to raise grades in pavement areas should be compacted to at least 98 percent of modified Proctor maximum dry density (AASHTO T-180).

The pavement slabs should be reinforced to make them as rigid as practical. Proper joints should be provided at the junctions of slabs so that a small amount of independent movement can without causing structural damage. Construction and control joints should be accordance with current American Concrete Institute (ACI) and industry practices.

The pavement sections presented in this report are minimum pavement section thicknesses typically used for similar type projects. The pavement materials and construction procedures should conform to FDOT, ACI, or appropriate city/county requirements.

4.7 Effects of Water

Premature pavement section deterioration can occur due to intrusion of the wet season high groundwater table and/or improper surface water runoff management. We recommend the pavement areas be constructed to have a minimum separation of 1.5 feet between the wet season high groundwater table and the base course, regardless of the type of base material. In addition, we recommend that the parking areas be constructed with full-depth curb sections. Using either extruded curb sections, which lie directly on top of the final surface course, or eliminating the curbing entirely, may allow runoff and/or irrigation water to migrate between the base and surface course. This condition can result in the separation of the surface course from the base course, causing a rippling effect, which results in premature deterioration of the pavement.

4.8 Construction Traffic

Incomplete pavement sections or pavement areas designed for light duty traffic will not perform satisfactory under construction traffic loading. We recommend that all construction traffic (i.e., construction equipment, vehicles, etc.) either be re-routed away from these areas or the pavement sections be designed to support construction phase loading conditions.

4.9 Pavement Site Preparation

Our recommendations for preparation of the site for pavement construction are noted below. This approach to improving and maintaining site soils has been found to be successful with similar soil conditions.

1. The construction limits should be cleared, stripped, and grubbed of all construction debris and existing pavement, topsoil, vegetation, and associated root systems to depths of their vertical reaches. This should be performed within and to a distance of 5 feet beyond the limits of the pavement areas.
2. Prior to initiating fill operations, the existing ground surface should be proof-rolled and compacted as discussed in Section 3.2 of this report. After completing the proof rolling and compaction operations, density tests should be performed at a frequency of one test per 5,000 square feet, or at a minimum of two test locations, whichever is greater, to confirm a minimum compaction compliance of 98 percent of modified Proctor maximum dry density (AASHTO T-180).
3. Fill material should be inorganic (classified as SP/GW) containing not more than 5 percent (by weight) fibrous organic materials. Fill material having silt/clay-size fines contents greater than 5 percent should not be used, including cyclone sand material. The fill should be placed in maximum 12-inch-thick lifts. Each lift should be compacted to a minimum density of 98 percent of modified Proctor maximum dry density (AASHTO T-180).
4. Compliance density tests should be performed within the fill at a frequency of not less than one test per 5,000 square feet per lift, or at a minimum of two test locations, whichever is greater.
5. Representative samples of both on-site and potential import materials proposed for use as fill should be obtained and tested to determine compliance with the project specifications. The testing should include moisture-density relations (AASHTO T-180) and particle size analysis.
6. The contractor should consider the final grading contours established by the site grading, paving, and drainage plans when executing backfilling and compaction operations.

5.0 REPORT LIMITATIONS

This consulting report has been prepared for the exclusive use of Proctor & Associates General Contractors, LLC and members of the design team for the planned construction at the Ocean Village Club located at 2400 S Ocean Drive in Fort Pierce Florida. This report has been prepared in accordance with generally accepted local geotechnical engineering practices; no other warranty, either express or implied, is made.

The evaluation submitted in this report is based in part upon the data collected during a field exploration. However, the nature and extent of variations throughout the subsurface profile may not become evident until construction. If variations then appear evident, it may be necessary to reevaluate information and professional opinions provided in this report. In the event changes are made in the nature, design, or location of the proposed construction, the evaluation and opinions contained in this report should not be considered valid unless the changes are reviewed, and conclusions modified or verified in writing by GFA.

GFA should be provided the opportunity to review the final civil plans, structural plans, and project specifications to determine if GFA's recommendations have been properly interpreted, communicated, and implemented. If GFA is not afforded the opportunity to participate in construction related aspects of overall site grading and foundation installation as recommended in this report or any report addendum, GFA cannot accept responsibility for the interpretation of our recommendations made in this report or in a report addendum for foundation performance.

6.0 BASIS FOR RECOMMENDATIONS

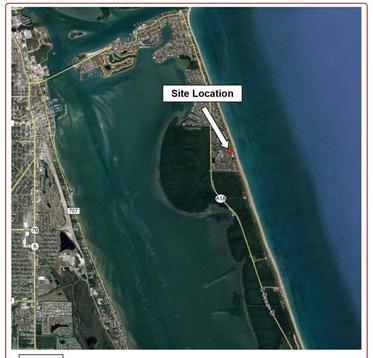
The analysis and recommendations submitted in this report are based on the data obtained from the borings performed at the locations indicated on the Test Location Plan in Appendix B. This report does not reflect any variations which may occur between borings. While the borings are representative of the subsurface conditions at their respective locations and for their vertical reaches, local variations characteristic of the subsurface soils of the region are anticipated and may be encountered. The delineation between soil types shown on the boring logs is approximate and the descriptions represent our interpretation of the subsurface conditions at the designated boring locations on the specific dates drilled.

Any third-party reliance of our geotechnical report or parts thereof is strictly prohibited without the expressed written consent of GFA International, Inc. The applicable SPT methodology (ASTM D 1586) and auger boring methodology (ASTM D 1452) used in performing our borings, and for determining penetration resistance and soil relative density, is specific to the sampling tools utilized and does not reflect the ease or difficulty to advance other tools or materials.

Site Vicinity Map

Ocean Village Clubhouse and Courts Replacement
2400 S Ocean Drive, Fort Pierce, Florida

PROJECT NO: 3330.2100065.0000 **DRAFTED BY: JR** **REVIEWED BY: JK** **DATE: 4/9/2021**



Appendix A - Vicinity Map

Test Location Plan

Ocean Village Clubhouse and Courts Replacement
2400 S Ocean Drive, Fort Pierce, Florida

PROJECT NO: 3330.2100065.0000 **DRAFTED BY: JR** **REVIEWED BY: JK** **DATE: 4/9/2021**



Legend
- Approximate 20" Standard Penetration Test Boring Locations
- Approximate Auger Boring Locations
- Approximate Exfiltration Test Location

Appendix B - Test Location Plan

SCHULKE, BITTLE & STODDARD, L.L.C.
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CERTIFICATION OF AUTHORIZATION NO.: 00006668
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TEL 772-770-9622 FAX 772-770-9496 EMAIL jbittle@sbsengineers.com
WEBSITE https://www.sbsengineers.com

MARK	REVISION	DATE
1	REVISED PER COPP AND TDEP	10/07/21
2	REVISED PER COPP AND TDEP	01/12/22

DRAWING 21-032 CONST | DRAWN dBB | DATE 04/30/21
DESIGNED dBB
CHECKED dBB
SCALE NTS

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SOIL BORINGS

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION

JODAH B. BITTLE — LICENSE — No 57396 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

Digitally signed by: Jodah B. Bittle
DocuSigned by: A95EE7265DC4E4...

JODAH B. BITTLE
FL REG. NO. 57396

DATE: 1/30/2023

PROJECT NO. 21-032 | SHEET 04A

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Appendix C - Notes Related to Borings

NOTES RELATED TO BORING RECORDS AND GENERALIZED SUBSURFACE PROFILES

1. Groundwater levels (if encountered) were recorded either during or following the boring completion on the date indicated. Fluctuations in groundwater levels are common - see the report text for a discussion.
2. The boring locations were identified in the field by estimated distances and offsets from existing reference marks and/or other site landmarks.
3. The completed boreholes were backfilled to adjacent site grade using drilling spoils and patched with asphalt cold mix in pavement areas.
4. The Log of Boring records represent our interpretation of soil conditions based on visual classification of the soil samples recovered from the borings.
5. The Log of Boring records are subject to the limitations, conclusions, and recommendations presented in the report text.
6. The Standard Penetration Test (SPT) N-values contained on the Log of Boring records refer to the total blow counts of a 140-pound drop hammer falling 30 inches required to drive a split-barrel sampler a total distance of 12 inches into soil strata at specific depth intervals.
7. The Hand Cone Penetrometer (HCP) values contained on Log of Boring records and the Cone Penetration Test (CPT) values contained on the Cone Penetration Sounding logs refer to the cone tip resistance recorded when pushing the cone tip into the soil strata at specific depth intervals.
8. The soil and/or rock strata interfaces shown on the Log of Boring records are approximate and may vary from those shown on the logs. The soil and/or rock descriptions shown on the Log of Boring records refer to conditions at the specific location tested. Soil/rock conditions may vary between test locations.
9. Relative density for coarse-grained soils (sands/gravels) and consistency for fine-grained soils (silts/clays) are described as follows:

Coarse Grained Soils (Sands and Gravels)				Fine Grained Soils (Silts and Clays)			
SPT N-Value	HCP Value (kg/cm²)	CPT Value (tsf)	Relative Density	SPT N-Value	HCP Value (kg/cm²)	CPT Value (tsf)	Consistency
0-4	0-15	0-20	Very Loose	0-2	0-20	0-3	Very Soft
5-10	17-56	21-40	Loose	3-4	21-35	4-6	Soft
11-30	57-116	41-120	Med. Dense	5-8	>35	7-12	Firm
31-50	117-196	121-200	Dense	9-15		13-25	Stiff
>50	> 196	>200	Very Dense	16-30		26-50	Very Stiff
				>30		>50	Hard

10. Grain size descriptions are as follows:

Description	Particle Size Limits
Boulder	Greater than 12 inches
Cobble	3 to 12 inches
Coarse Gravel	¾ to 3 inches
Fine Gravel	No. 4 sieve to ¾ inch
Coarse Sand	No. 10 to No. 4 sieve
Medium Sand	No. 40 to No. 10 sieve
Fine Sand	No. 200 to No. 40 sieve
Fines (Silt/Clay)	Smaller than No. 200 sieve

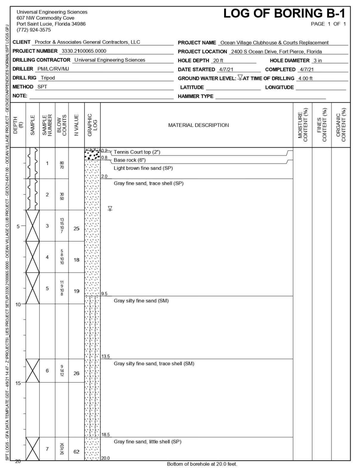
11. Definitions for modifiers used in soil/rock descriptions:

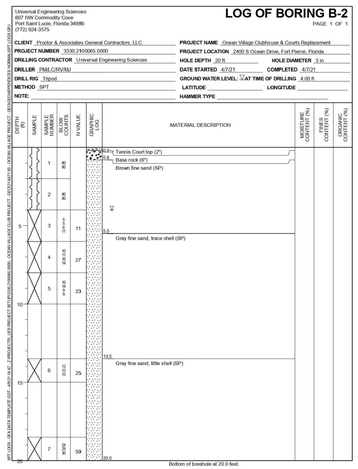
Proportion	Modifier	Approximate Root Diameter	Modifier
<5%	Trace	Less than ⅛"	Fine roots
5% to 12%	Little	⅛" to ¼"	Small roots
12% to 30%	Some	¼" to 1"	Medium roots
30% to 50%	And	Greater than 1"	Large roots

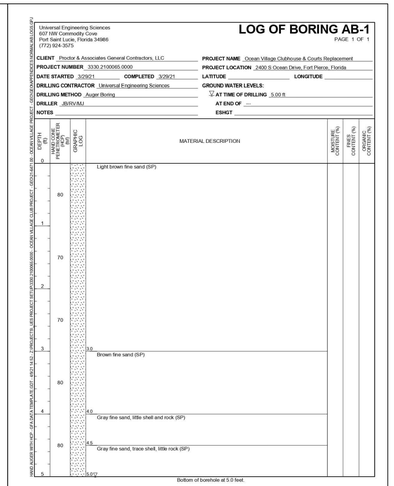
Organic Soils: Soils containing vegetative tissue in various stages of decomposition having a fibrous to amorphous texture. Usually having a dark brown to black color and an organic odor.
Organic Content Modifiers: <25%: Slightly to Highly Organic; 25% to 75%: Muck; >75%: Peat

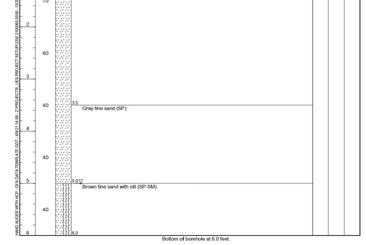
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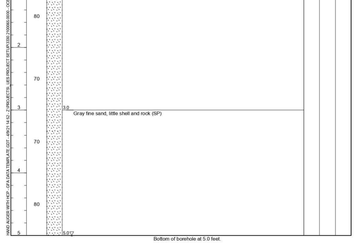
Appendix D - Log of Boring Records

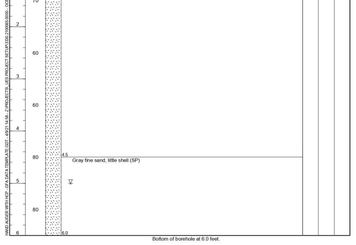


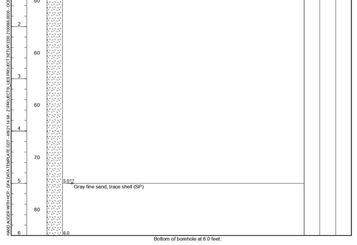












Appendix E - Hydraulic Conductivity Results

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EXFILTRATION TEST REPORT
South Florida Water Management District - Usual Open Hole Test

Client: Proctor & Associates General Contractors, LLC
Project No: 3330.2100065.0000

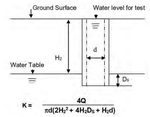
Project: Ocean Village Club
2400 S Ocean Drive
Fort Pierce, Florida

Test Date: 4/16/2021
Technician: PM

SOIL PROFILE

Test Location: EX-1	Depth (feet)	Soil Description	HCP
	0 - 2	Dark brown fine sand, trace silt (SP)	60
	2 - 6	Light brown fine sand, trace shell (SP)	70
			80
			80
			80
			80
	Depth to Water Table from Ground Surface (feet)		2.3

CALCULATION OF HYDRAULIC CONDUCTIVITY



K	Hydraulic Conductivity (cfs/ ft² – ft head)	2.44×10^{-04}
Q	Stabilized Flow Rate (cubic ft per second)	2.90×10^{-03}
d	Diameter of Test Hole (feet)	0.33
H_2	Depth to Water Table (feet)	2.3
D_5	Saturated Hole Depth (feet)	3.7

Notes:

GFA

Appendix F - Discussion of Soil Groups

DISCUSSION OF SOIL GROUPS

COARSE GRAINED SOILS

General. A soil is classified as coarse-grained if more than 50 percent of a representative sample of the material is retained on the No. 200 sieve.

GW and SW Groups. These groups comprise well-graded gravelly and sandy soils containing little or no plastic fines (less than 5 percent passing the No. 200 sieve). The low fines content does not noticeably change the shear strength characteristics of these soils and does not interfere with their free-draining characteristics.

GP and SP Groups. Poorly graded gravels and sands containing little or no plastic fines (less than 5 percent passing the No. 200 sieve) are in the GP and SP groups. The materials can be called uniform gravels, uniform sands, or non-uniform mixtures of very coarse materials and very fine sand, with intermediate sizes lacking (sometimes called skip-graded, gap-graded, or step-graded). This last group often results from borrow pit excavation in which gravel and sand layers are mixed.

GM and SM Groups. In general, the GM and SM groups comprise gravels or sands with fines (more than 12 percent passing the No. 200 sieve) having little or no plasticity. The plasticity index and liquid limit of soils in these groups plot below the "A" line on the plasticity chart. The gradation of the material is not considered significant and both well and poorly graded materials are included.

GC and SC Groups. In general, the GC and SC groups comprise gravelly or sandy soils containing fines (more than 12 percent passing the No. 200 sieve) having plasticity characteristics. The plasticity index and liquid limit of soils in these groups plot above the "A" line on the plasticity chart.

FINE GRAINED SOILS

General. A soil is classified as fine-grained if more than 50 percent of a representative sample of the material passes the No. 200 sieve.

ML and MH Groups. These groups comprise inorganic silts (ML) and elastic silts (MH) having either low (L) or high (H) liquid limits, respectively. ML soils have a liquid limit of less than 50 while MH soils have a liquid limit of 50 and greater. Silts and elastic silts can also contain varying amounts of sand and gravel. Also included in this group are loess sediments and rock flours.

CL and CH Groups. These groups comprise low plasticity (lean) clays (CL) and medium to high plasticity (fat) clays (CH) having either low (L) or high (H) liquid limits, respectively. CL soils have a liquid limit of less than 50 while CH soils have a liquid limit of 50 and greater. The low plasticity clays can also be sandy clays or silty clays. The moderate to high plasticity clays can also be sandy clays and include some volcanic clays.

OL and OH Groups. These groups comprise organic silts and clays. The soils are characterized by the presence of organic odor and/or dark color. The OL and OH soils are differentiated by determining and comparing their liquid limit values before and after oven drying representative soil samples.

HIGHLY ORGANIC SOILS

The highly organic soils are usually very soft and compressible and have undesirable construction characteristics. Particles of leaves, grasses, branches, or other fibrous vegetative matter are common components of these soils. They are not subdivided and are classified into one group with the symbol PT. Peat humus and swamp soils with a highly organic texture are typical soils of the group.

MARK	REVISION	DATE
1	REVISED PER COPP AND FDEP	10/07/21
2	REVISED PER COPP AND FDEP	01/13/22

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SOIL BORINGS

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION

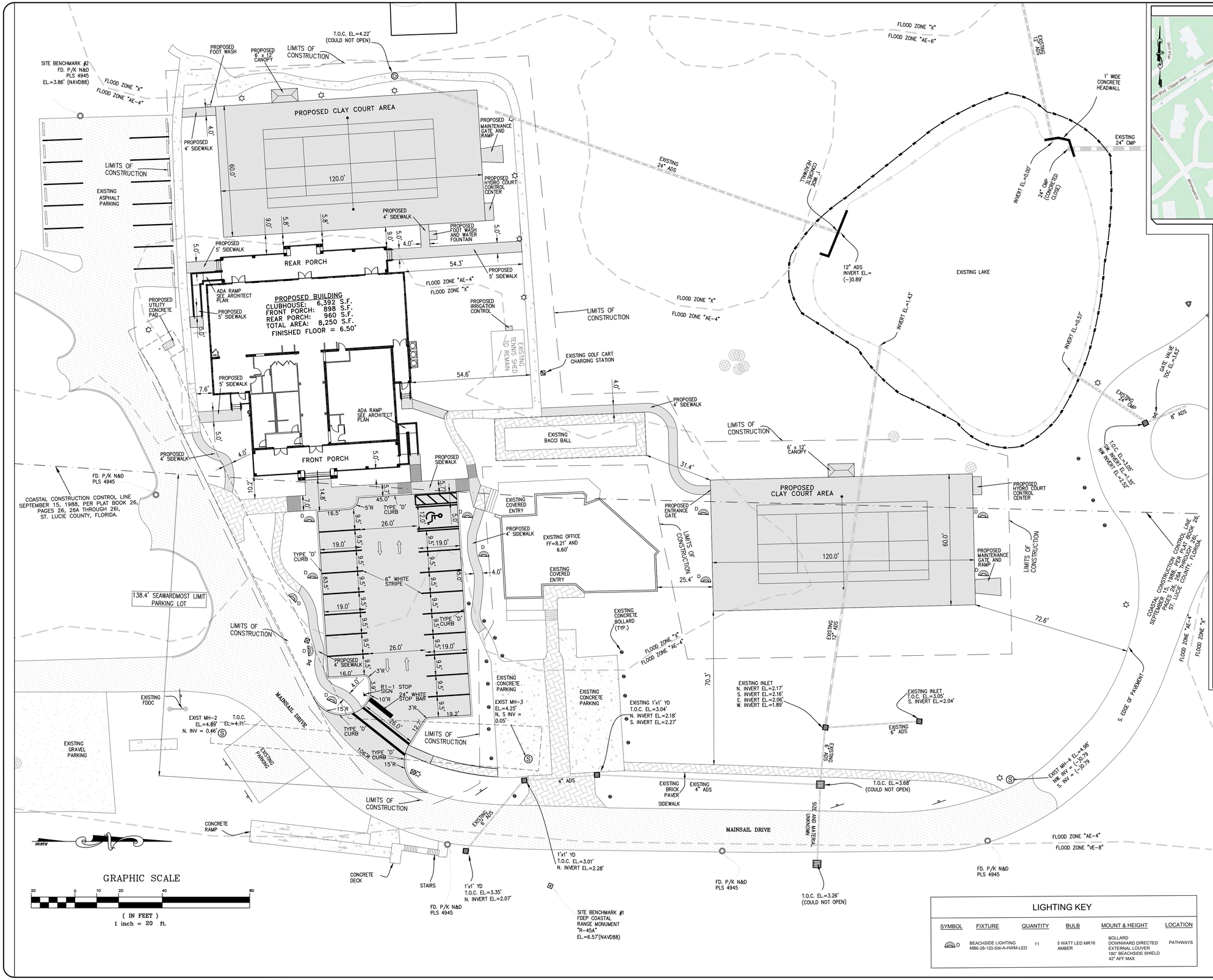
JODAH B. BITTLE LICENSE No 57396 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by: Jodah Bittle
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JODAH B. BITTLE
FL REG. NO. 57396
DATE: 1/30/2023

PROJECT NO. 21-032
SHEET 04B

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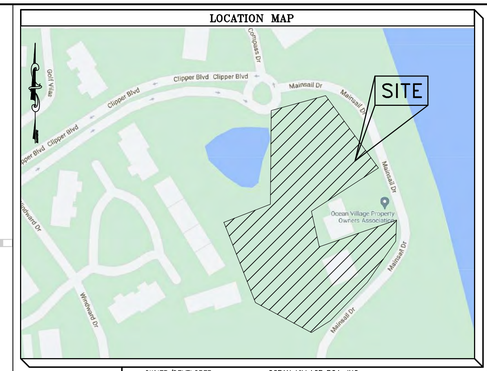


GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LOCATION MAP



OWNER/DEVELOPER	OCEAN VILLAGE POA, INC. 2400 SOUTH OCEAN DRIVE FT. PIERCE, FL 34949
ENGINEER	SCHULKE, BITTLE & STODDARD, L.L.C. JODAH B. BITTLE, P.E. 57396 1717 INDIAN RIVER BLVD. SUITE 201 VERO BEACH, FL 32960 (772) 770-9622
SURVEYOR:	MERIDIAN LAND SURVEYORS 1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FL 32960 PHONE (772) 794-1213
EXISTING USE	CLUBHOUSE WITH RACQUET COURTS
PROPOSED USE	CLUBHOUSE WITH RACQUET COURTS
PROJECT LOCATION	WEST SIDE OF MAINSAIL DRIVE AND SOUTH OF CLIPPER BOULEVARD
SITE ADDRESS	SURFSIDE DRIVE, FT. PIERCE, FL
PARCEL I.D. NUMBER	2507-321-0001-000-5
CURRENT LAND USE	HIR (HUTCHINSON ISLAND RESIDENTIAL)
CURRENT ZONING	R-4A (HUTCHINSON ISLAND MEDIUM DENSITY RESIDENTIAL)
PROPOSED ZONING	R-4A (HUTCHINSON ISLAND MEDIUM DENSITY RESIDENTIAL)
PHASING PLAN	PHASE 1: NEW CLUBHOUSE, ADDITION TO EXISTING TENNIS COURT, SIDEWALKS AND ADDITIONAL PARKING AREA PHASE 2: PROPOSED TWO ADDITIONAL TENNIS COURTS AND SIDEWALK CONNECTION FROM CLUBHOUSE TO TENNIS COURTS

DEVELOPMENT PARAMETERS :	EXISTING R-4A ZONING	PROPOSED DEVELOPMENT
MIN. LOT AREA	5,000 SF PER UNIT	40.02 ACRES
MIN. OVERALL LOT WIDTH	75'	>75'
MIN. INTERIOR LOT DEPTH	70'	>70'
MIN. YARD SETBACKS:		
FRONT (WEST)	25'	N/A
SIDE (NORTH)	10'	N/A
SIDE (SOUTH)	10'	N/A
REAR (WEST)	20'	N/A
MAX. LOT COVERAGE BY BLDGS	40%	8.5%
MIN. OPEN SPACE	25%	41%
MAX. IMPERVIOUS AREA	75%	59%
MAXIMUM DENSITY	8 UNITS/ACRE	N/A
MAX. BLDG. HEIGHT	45'	20'

AREA CALCULATIONS:	EXISTING			PROPOSED (BASED ON LIMITS OF CONSTRUCTION)		
SITE AREAS:						
DEVELOPABLE AREA:	1,743,271 SF	40.02 AC		1,743,271 SF	40.02 AC	
LIMITS OF CONSTRUCTION:	75,542 SF	1.73 AC		75,542 SF	1.73 AC	100.0%
IMPERVIOUS AREA:	26,455 SF	0.60 AC		44,583 SF	1.02 AC	59.0%
EXIST. BUILDING AREA:	2,370 SF	0.05 AC		0 SF	0.00 AC	0.0%
EXIST. PAVING, CONC.:	24,085 SF	0.55 AC		9,567 SF	0.22 AC	12.7%
PROP. BUILDING AREA::	0 SF	0.00 AC		6,426 SF	0.15 AC	8.5%
PROP. PAVING, CONC.:	0 SF	0.00 AC		28,590 SF	0.66 AC	37.8%
PERVIOUS AREA:	49,087 SF	1.13 AC		30,959 SF	0.71 AC	41.0%
GREEN SPACE:	49,087 SF	1.13 AC		30,959 SF	0.71 AC	41.0%

NATIVE VEGETATION/PRESERVATION:
NO NATIVE AREA. SITE IS GRASS WITH TREES AND SHRUBS

PARKING CALCULATIONS:
EXISTING: RECREATION/CLUBHOUSE: 1 SPACE PER 200 SF
EXISTING 2,370 SF CLUBHOUSE WITH ADJACENT PARKING SPACES
2,370 SF X 1 SPACES / 200 SF = 12 SPACES
14 EXISTING PARKING SPACES TO THE SOUTH OF CLUBHOUSE

PROPOSED: RECREATION/CLUBHOUSE: 2 SPACE PER 200 SF
PROPOSED 6,426 SF CLUBHOUSE WITH ADJACENT PARKING SPACES
6,426 SF X 1 SPACES / 200 SF = 32 SPACES

PROVIDED: 14 EXISTING PARKING SPACES
18 PROPOSED PARKING SPACES
32 TOTAL PARKING SPACES

CONSTRUCTION SCHEDULE:

PHASE	DATE OF COMMENCEMENT	DATE OF COMPLETION
1	11/21	11/22
2	1/24	1/25

LIGHTING KEY

SYMBOL	FIXTURE	QUANTITY	BULB	MOUNT & HEIGHT	LOCATION
D	BEACHSIDE LIGHTING MB6-28-120-5W-A-HWM-LED	11	5 WATT LED MR16 AMBER	BOLLARD DOWNWARD DIRECTED EXTERNAL LOUVER 180° BEACHSIDE SHIELD 42" AFF MAX	PATHWAYS

MB6 Fixture D

The MB6 is a classic-style bollard for concrete installation. MB-series bollards set the standard for durable, corrosion-resistant walkway lighting. The lamp is protected by a threaded glass lens. An internal brass collar with stainless steel mounting hardware helps ensure stability.

Wildlife Lighting Certification Number 2015-012



Construction Cast brass shade and louver assembly, .4" diameter brass tube x 0.090" wall thickness. (10.2 cm x 2.3 cm)

Mounting Concrete-mounted fixture uses 3/8" stainless steel anchor bolts through an internal brass mounting collar. Stainless steel hex nuts and washers below collar allow for leveling.

Lens Vapor-proof, tempered glass with threaded fitter.

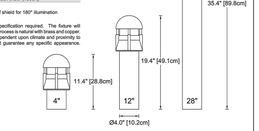
Shaft Height __ 4 4" [10 cm] __ 12 12" [30 cm] __ 28 28" [71 cm] Standard

Voltage / Lamp Options

12V	MR16 LED + GU5.3 + Remote transformer required	
One-piece	5W-A	5 Watt Amber (1500K)
120V / 230V	MR16 LED + GU10	
One-piece	5W-A	5 Watt Amber (1500K)

Accessory __ HSM-LED Half shield for 180° illumination

Finishes: Unfinished is standard; no specification required. The fixture will weather to a natural patina. The patina process is natural with brass and copper. Rate of patina and eventual color is dependent upon climate and proximity to the ocean. Thus, Beachside does not guarantee any specific appearance.



Weight: 22 lbs / 10 kg (28" shaft)

IP66
CSA Listed, file # 190030
2 year fixture warranty
3 year warranty on MR16 LED lamps

MADE IN USA

MB6 Footcandles at Radius from Fixture Base with Standard 28" Shaft Height

Lamp	1' / 30cm	2' / 61cm	3' / 91cm	4' / 122cm	5' / 152cm	6' / 183cm	7' / 213cm	8' / 244cm	9' / 274cm	10' / 305cm
5W-A	0.08	0.17	0.22	0.20	0.15	0.10	0.06	0.04	0.03	0.02

Project		By	Date

For ordering purposes, please specify (example: MB6—28—12V—5W-A—HSM-LED)

MB6	—	—	5W-A	—	
Fixture	Shaft Height	Voltage	Lamp	Accessory	

BEACHSIDE LIGHTING • 800-405-8702 • www.beachsidelighting.com

December 2017

MARK	REVISION	DATE
1	REVISED PER COPP AND FDEP	10/07/21
2	REVISED PER COPP AND FDEP	01/12/22
3	REVISED PER NEW CLUBHOUSE	01/10/23

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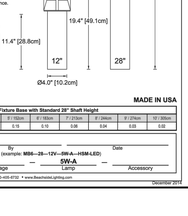
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CERTIFICATION OF AUTHORIZATION NO.: 00006668
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SITE PLAN

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION



JODAH B. BITTLE
FL. REG. NO. 57396

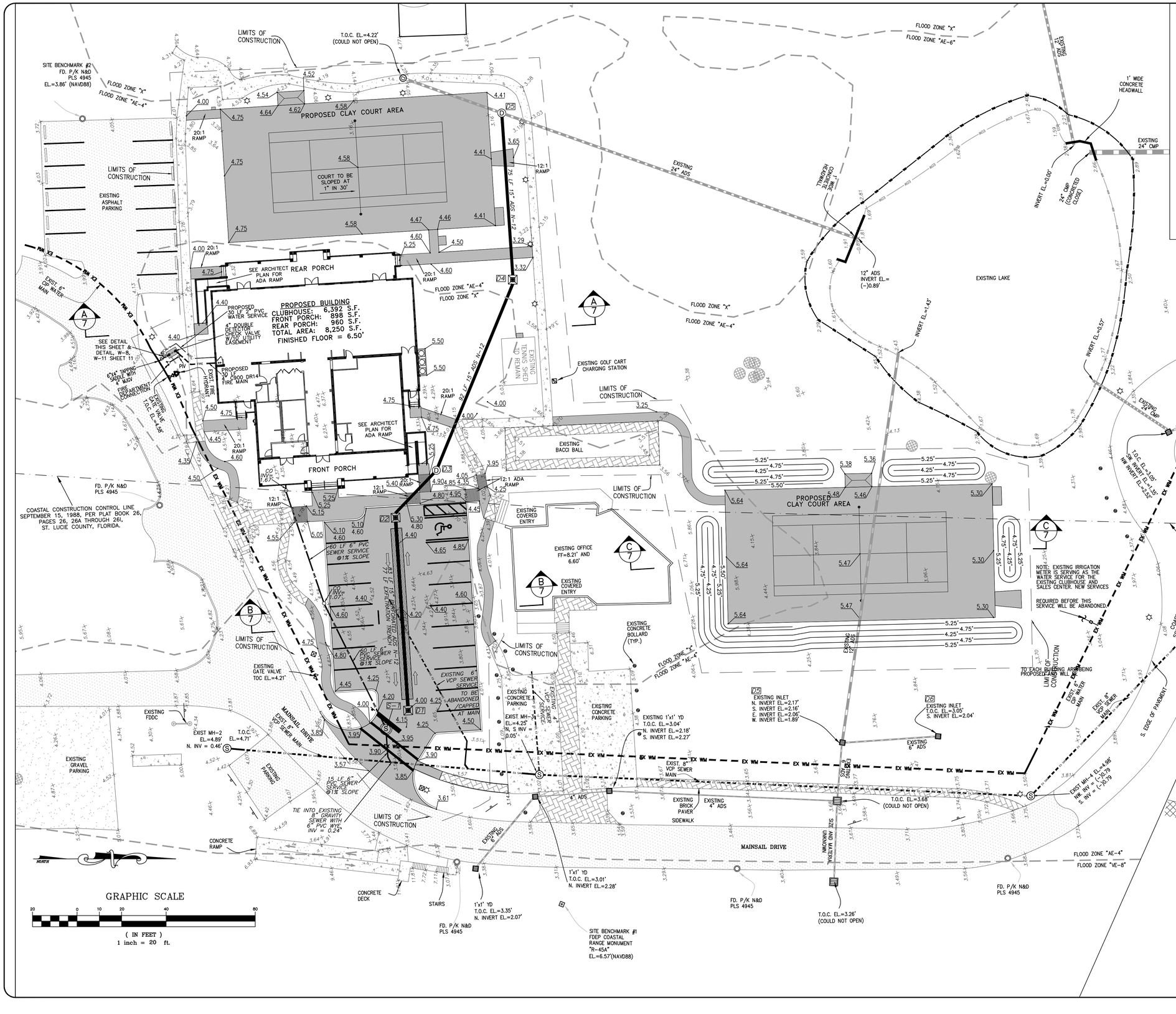
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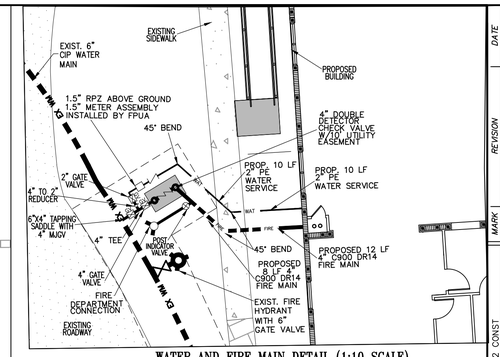
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PROJECT NO. 21-032

SHEET 05

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WATER AND FIRE MAIN DETAIL (1:10 SCALE)

PROPOSED DRAINAGE STRUCTURES

D1	MODIFIED TYPE 'C' INLET TOP =4.00' W. INV = 0.50'	D5	JUNCTION MANHOLE TOP =3.20' N. INV = (-)0.50' S. INV = (-)0.50' E. INV = (-)0.50' NOTE: CONTRACTOR TO FIELD VERIFY EXISTING PIPE INVERT BEFORE ORDERING STRUCTURE. REPORT TO ENGINEER.
D2	SEE DETAIL ON SHEET 08	D6	EXISTING INLET N. INVERT EL=2.17' S. INVERT EL=2.16' E. INVERT EL=2.06' W. INVERT EL=1.89'
D3	JUNCTION MANHOLE TOP =5.00' SE. INV = 0.75' NW. INV = 0.75'	D7	EXISTING INLET T.O.C. EL=3.05' S. INVERT EL=2.04'
D4	24" ADS YARD DRAIN TOP =3.00' W. INV = 0.00' SE. INV = 0.00'		

NOTE: CONTRACTOR TO VERIFY ALL EXISTING PIPE ELEVATIONS BEFORE CONSTRUCTING PROPOSED INLETS AND REPORT TO ENGINEER WITH ELEVATIONS.

PROPOSED SEWER STRUCTURES

S-1 PROPOSED SEWER MANHOLE
TOP = 4.05'
E. INV = 0.37'
W. INV = 0.47'

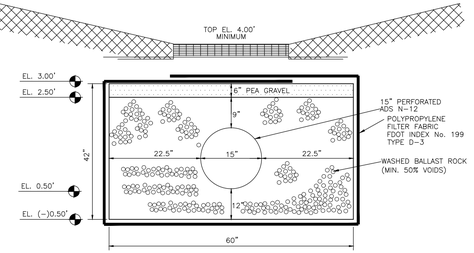
HATCH LEGEND

PROPOSED CONCRETE OR BRICK PAVERS

PROPOSED CONCRETE

LEGEND

EX SAN — EX SAN — EXISTING SANITARY SEWERLINE
SAN — SAN — PROPOSED SANITARY SEWERLINE
EXISTING DRAINAGE PIPE
PROPOSED DRAINAGE PIPE
EX WM — EX WM — EXISTING WATER MAIN
WAT — WAT — PROPOSED WATER MAIN
SF — SF — SF — FILTER FENCE/SEDIMENT BARRIER
EXISTING WOOD FENCE
PROPOSED FENCE
24.45 PROPOSED SPOT ELEVATION AT EOP/SIDEWALK
25.0 PROPOSED GRADE / CONTOUR
PROPOSED DRAINAGE FLOW DIRECTION
9.0'R PROPOSED EOP RADIUS
PROPANE 1,000 GAL UNDERGROUND PROPANE TANK
24" ADS YARD DRAIN
STORMTECH DRAIN
PROPOSED WALL
TRENCH DRAIN
STREET LIGHT
MODIFIED TYPE 'C' INLET
JUNCTION MANHOLE
DS-1 DRAINAGE STRUCTURE LABEL
FIRE HYDRANT
PROPOSED SIGN
S SEWER MANHOLE



NOTE: FILTER FABRIC SHALL BE SUBSURFACE DRAINAGE TYPE SECTION 985. ALL FILTER FABRIC JOINTS SHALL LAP A MINIMUM OF ONE (1) FOOT MEETING THE REQUIREMENTS OF FDOT STANDARDS.

NOTE: A THREE FOOT SEGMENT OF SOLID PIPE IS REQUIRED ADJACENT TO THE DRAINAGE BASIN

EXFILTRATION TRENCH DETAIL

N.T.S.

MARK	REVISION	DATE
1	REVISED PER CCPP AND FDEP	10/07/21
2	REVISED PER CCPP AND FDEP	01/12/22
3	REVISED PER NEW CLUBHOUSE	01/10/23

DRAWING 21-032 CONST
DESIGNED JBB | DRAWN JBB
CHECKED JBB | DATE 04/30/21
SCALE 1"=20'

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PAVING, GRADING & DRAINAGE PLAN

OCEAN VILLAGE CLUBHOUSE

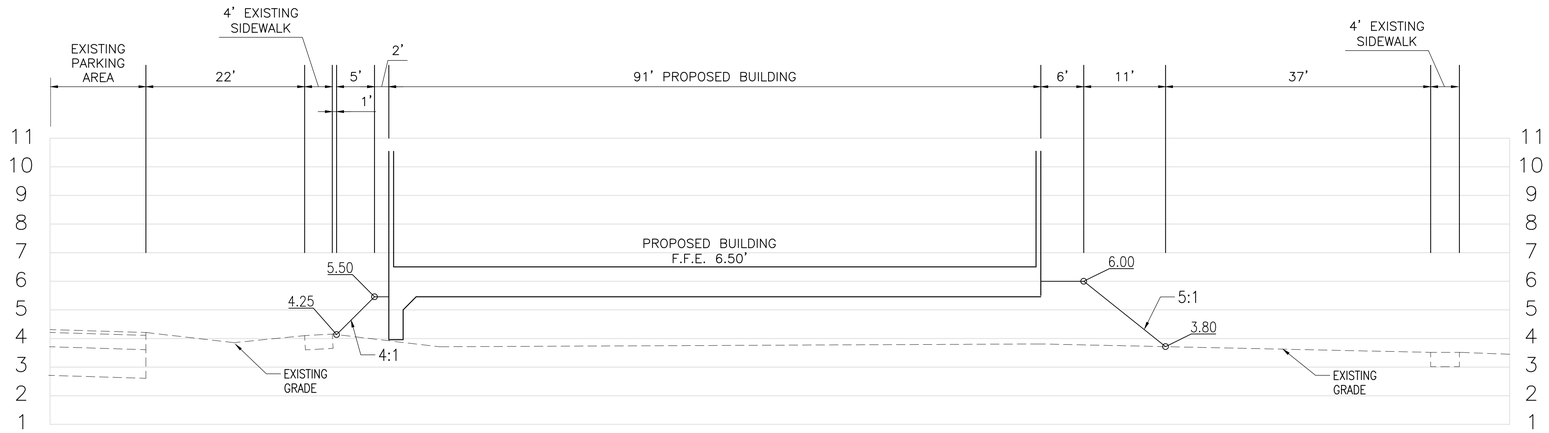
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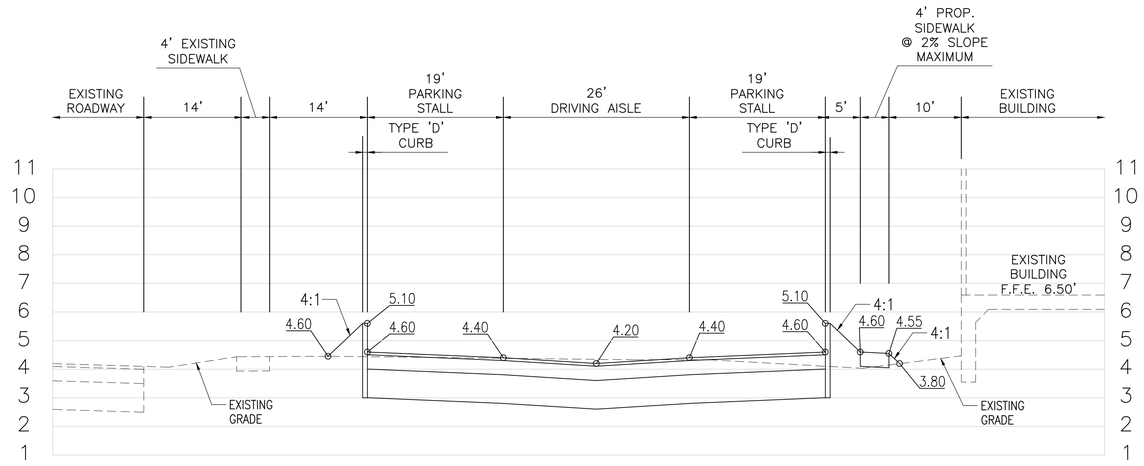
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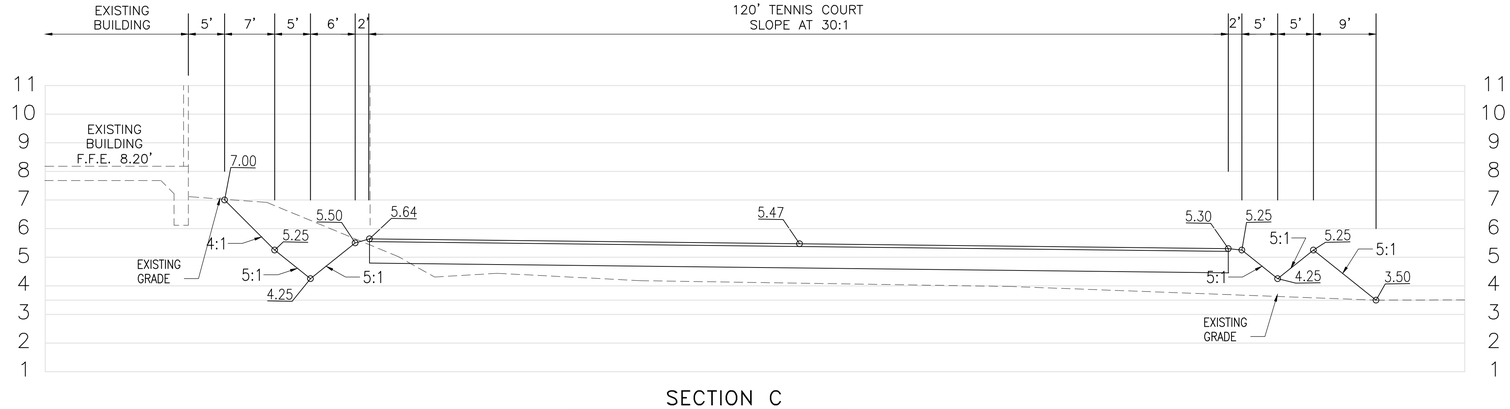
SECTION A

SCALE: NTS



SECTION B

SCALE: NTS



SECTION C

SCALE: NTS

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CROSS SECTION

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION

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Digitally signed by: Jodah Bittle A996F7669C6C45B...

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FL REG. NO. 57398
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PROJECT NO.	SHEET
21-032	07

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SPECIFICATIONS - CLEARING/GRADING/PAVING/DRAINAGE/UTILITY CONSTRUCTION

GENERAL
IT IS INTENDED THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST REVISIONS, BE USED WHERE APPLICABLE FOR VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STATE OF FLORIDA AND ITS DEPARTMENT OF TRANSPORTATION AND PERSONNEL, SUCH WORDING IS INTENDED TO BE REPLACED WITH THAT WORDING WHICH WOULD PROVIDE PROPER TERMINOLOGY, THEREBY MAKING SUCH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT. IN ADDITION THE CONTRACTOR SHALL REFER TO THE "FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS", LATEST REVISIONS. IF WITHIN THAT PARTICULAR SECTION ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE A PART OF THE STANDARD SPECIFICATIONS, ALSO.
ALL WORK SHALL BE IN A WORKMANLIKE MANNER AND SHALL CONFORM WITH ALL APPLICABLE CITY, COUNTY, STATE, AND FEDERAL REGULATIONS AND/OR CODES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED TO BEGIN WORK.
THE CONTRACTOR SHALL GIVE THE ENGINEER 24 HOURS NOTICE PRIOR TO REQUESTING INSPECTIONS AND SHALL SUPPLY ALL EQUIPMENT NECESSARY TO PROPERLY TEST AND INSPECT THE CONSTRUCTED WORK.
THE CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR FROM THE DATE OF PROJECT ACCEPTANCE, DURING WHICH ALL FAULTY CONSTRUCTION AND/OR MATERIALS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

CLEARING/GRUBBING
THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF ALL BUILDING, TIMBER, BRUSH, STUMPS, ROOTS, RUBBISH, DEBRIS, INCLUDING SEPTIC TANK, BUILDING FOUNDATIONS, PIPES, ETC., WITHIN THE LIMITS OF THE ROADWAY CONSTRUCTION. ALL AREAS WHERE STRUCTURES WILL BE CONSTRUCTED INCLUDING PIPE CULVERTS, AND AS OTHERWISE DEPICTED IN THE PLANS, ALL IN ACCORDANCE WITH SECTION 110 OF THE STANDARD SPECIFICATIONS.

GRADING
THE CONTRACTOR SHALL PERFORM ALL GRADING NECESSARY TO ACHIEVE THE PROPOSED PLAN GRADES. FINAL DRESSING SHALL HAVE A TOLERANCE OF 0.1 FT.+- FROM THE PLAN CROSS SECTIONS. GRADING SHALL INCLUDE ALL SHAPING, ROUGH GRADING, AND FINAL DRESSING REQUIRED FOR THE PROPOSED ROADWAY AND ROAD EMBANKMENTS WITHIN THE LIMITS DEPICTED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FINISHED GRADES UNTIL CONTRACT CLOSE-OUT, AND MUST RE-GRADE AS REQUIRED WHEN EROSION OR OTHER DISTURBANCES OCCUR. SEED/MULCH AND/OR SODDING SHALL BE INCORPORATED TO ASSIST IN THIS REGARD. HOWEVER, ANY LOSS OF SOD OR SEED/MULCH DURING THESE OCCURRENCES SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.

SOD:
SOD SHALL BE ST. AUGUSTINE OR ARGENTINE BAHIA - AS NOTED ON THE LANDSCAPE PLANS OR CONTRACT DOCUMENTS. SOD SHALL BE WELL MATTED WITH ROOTS AND SHALL BE SUFFICIENTLY THICK TO SECURE A DENSE STAND OF LIVE GRASS. THE SOD SHALL BE LIVE, FRESH AND UNINJURED AT THE TIME OF PLANTING AND SHALL BE REASONABLY FREE OF WEEDS AND OTHER GRASSES. THE RECEIVING GROUND SURFACE SHALL BE GRADED TO PROPER ELEVATIONS, FREE OF LARGE VOIDS, ROOTS, WEEDS OR PATCHES OF EXISTING GRASS. UPON LAYING, THE ENTIRE AREA SHALL BE ROLLED THOROUGHLY. ALL SODDED AREAS ARE TO BE WATERED TO KEEP SOD ALIVE UNTIL THE CONTRACTOR IS CLOSED OUT, DEAD SOD SHALL BE REPLACED BY CONTRACTOR.

EMBANKMENT CONSTRUCTION
ROADWAY EMBANKMENT CONSTRUCTION SHALL CONSIST OF ALL THE EMBANKMENT CONSTRUCTION REQUIRED FOR THE PROPOSED ROADWAY AND/OR PARKING LOT, BUILDING PADS, DITCHES AND SWALES IN ACCORDANCE WITH SECTION 120 OF THE STANDARD SPECIFICATIONS. EMBANKMENTS SHALL BE CONSTRUCTED FROM MATERIAL CONTAINING NO ROOTS OR OTHER OBJECTIONABLE MATTER, RUBBISH, OR OTHER DELETERIOUS MATERIALS THAT WILL NOT COMPACT TO A SUITABLE ENDURING ROAD BED. EXISTING EARTH SURFACES SHALL BE COMPACTED/PROOF ROLLED PRIOR TO PLACEMENT OF ANY EMBANKMENT MATERIAL.
MATERIAL: UNLESS OTHERWISE SPECIFIED, MATERIAL SHALL BE "TYPE 2 MATERIAL"
COMPACTION: - COMPACTED LIFTS, MINIMUM 98% MAXIMUM DRY DENSITY (AASHTO T-180)
- MIN. 100% MAX DENSITY ADJACENT TO STRUCTURES WITHIN PAVED AREAS
COMPENSATION: COMPENSATION FOR THE EMBANKMENT CONSTRUCTION SHALL BE MADE FULLY BY THE BID ITEMS FOR BORROW EXCAVATION (PER C.Y.), GRADING (PER L.F. OF ROADWAY OR PER ACRE OF SITE), AND REGULAR EXCAVATION (PER C.Y.) WHEN APPLICABLE.

EMBANKMENT AND BACKFILL MATERIAL:
TYPE 1: WELL GRADED CRUSHED STONE OR CRUSHED GRAVEL (ASTM C33-71A, GRADATION 67) - ¾" TO NO. 4 SIEVE.
TYPE 2: SANDY MATERIAL, AND MAY BE UNCLASSIFIED MATERIAL OBTAINED FROM CONTRACTOR'S EXCAVATIONS AND APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE FREE FROM MUCKED, ROOTS, HUMUS, PEAT, MUCK, AND OTHER ORGANIC MATERIALS, AND SHALL CONTAIN NO STONES, MASONRY, RUBBLE OR THE LIKE GREATER THAN ½ INCHES IN DIAMETER.
TYPE 3: SELECT GRANULAR SAND MATERIAL, FREE OF ORGANICS WITH LESS THAN 3% FINES PASSING THE NO. 200 SIEVE.

STAKING
CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

STABILIZING
STABILIZED SUBGRADE SHALL BE CONSTRUCTED TO THE FLORIDA BEARING VALUE OR L.B.R. AS PER PLAN FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, AND IN ACCORDANCE WITH SECTION 160 OF THE STANDARD SPECIFICATIONS, ALL STABILIZED AREAS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. ALL MATERIAL SHALL BE MIXED TO A HOMOGENEOUS MATERIAL.

BASE COURSE
THE BASE SHALL BE CONSTRUCTED OF EITHER LIMEROCK MATERIAL IN ACCORDANCE WITH SECTION 911 OR CEMENTED COQUINA SHELL MATERIAL IN ACCORDANCE WITH SECTION 915 OF THE STANDARD SPECIFICATIONS.
LIMEROCK BASE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 200 AND CEMENTED COQUINA SHELL BASE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 250 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ROCK PIT CERTIFICATION FOR CEMENTED COQUINA SHELL MATERIAL. BASE SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 AND TO AN L.B.R. VALUE WHEN SPECIFIED ON PLANS. BASE SHALL BE APPROVED PRIOR TO PRIME COAT.

PRIME AND TACK COAT
PRIME AND TACK COATS FOR THE BASE COURSE SHALL BE IN ACCORDANCE WITH SECTION 300 OF THE STANDARD SPECIFICATIONS.

ASPHALT CONCRETE SURFACE COURSE (A.C.S.C.)
TYPE SP 9.5 & TYPE SP 12.5 A.C.S.C. SHALL BE CONSTRUCTED FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, IN ACCORDANCE WITH SECTIONS 320, 330, AND 334 OF THE STANDARD SPECIFICATIONS.

CEMENT CONCRETE PAVEMENT:
CONSTRUCT PORTLAND CEMENT CONCRETE (TYPE II, CLASS I) PAVEMENT IN ONE COURSE ON A PREPARED STABILIZED SUBGRADE IN ACCORDANCE WITH SECTIONS 346 AND 350. PROVIDE STEEL REINFORCEMENT WHEN SPECIFIED IN THE PLANS.

CURB
ALL CURB CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 520 OF THE STANDARD SPECIFICATIONS, AND IN ACCORDANCE WITH F.D.O.T. INDEX NO. 300. PROVIDE CONTRACTION JOINTS AT 10-FOOT O.C. MAXIMUM. TRANSITION ENDS OF CURB FROM FULL TO ZERO HEIGHTS IN 3-FEET. CURB CUT RAMPS SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX NO. 304.

TESTING
THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN APPROVED INDEPENDENT TESTING LABORATORY TO CONDUCT ALL REQUIRED TESTS ON EMBANKMENT,SUBGRADE, BASE, PIPE BACKFILL AND BITUMINOUS SURFACE COURSE MATERIALS. TEST RESULTS MUST BE SUBMITTED PRIOR TO ANY REQUEST FOR PAYMENT ON THE ABOVE ITEMS.

THE SCHEDULE FOR TESTING THE ROAD/PAVEMENT AREAS CONSTRUCTION SHALL BE AS FOLLOWS:

A. EMBANKMENT:		DENSITY TESTS SHALL BE TAKEN AT A MAXIMUM OF 5,000 SF. INTERVALS FOR EACH 12" LIFTS CONSTRUCTED, AND AT ALL EXISTING/PROPOSED EARTH SURFACES.
B. SUBGRADE:	(1)	F.B.V./L.B.R. (PER PLAN) TEST SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF / 10,000 SF OR CLOSER AS MIGHT BE NECESSARY IN THE EVENT OF VARIATIONS IN SUBSOIL CONDITIONS. (MIN. OF 3 / 1 PER JOB)
	(2)	DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF OR CLOSER AS MIGHT BE NECESSARY.
C. BASE:	(1)	F.B.V./L.B.R. (PER PLAN) TEST SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF / 10,000 SF OR CLOSER (MIN. OF 3 / 1 PER JOB)
	(2)	DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 5000 SF OR CLOSER AS MIGHT BE NECESSARY.
D. PIPE BACKFILL:		DENSITY TESTS SHALL BE TAKEN AT A MAXIMUM OF 50 FT. INTERVALS, 1' ABOVE PIPE, 1' BELOW GRADE, MIN., AND AT PIPE DEPTHS GREATER THAN 5 FT. AN ADDITIONAL TEST SHALL BE TAKEN AT MID DEPTH OF BACKFILL
E. STRUCTURES:		A MINIMUM OF 1 DENSITY TEST SHALL BE PERFORMED IN THE STABILIZED SUBGRADE, AND WITHIN THE BACKFILL FOR EACH 12" LIFT ADJACENT TO EACH STRUCTURE INSTALLED.
F. BUILDING PAD:		AS SPECIFIED IN ARCHITECTURAL PLANS.
G. CURB PADS:		DENSITY TEST SHALL BE TAKEN AT A MAXIMUM OF 500 FT. INTERVALS.

ALL TESTS SHALL BE PAID FOR BY THE CONTRACTOR.

CLEAN-UP
THE CONTRACTOR MUST PROVIDE CLEAN-UP OF EXCESS CONSTRUCTION MATERIAL UPON COMPLETION OF THE PROJECT. THE SITE MUST BE LEFT IN A NEAT, CLEAN, GRADED CONDITION.

DRAINAGE STRUCTURE SPECIFICATIONS
STORM INLETS AND MANHOLES SHALL BE CONSTRUCTED IN GENERAL ACCORDANCE WITH SECTION 425 OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI. ALL REINFORCING STEEL TO BE ASTM A 615-72 GRADE 40, FY = 40,000 PSI, AND SHALL BE HANDLED AND PLACED IN ACCORDANCE WITH ACI 318-71. PRECAST CONCRETE MANHOLES AND STORM INLETS MAY BE USED UPON THE ENGINEER'S APPROVAL OF THE MANUFACTURER'S SHOP DRAWINGS.

PRECAST INLETS/MANHOLES
ALL STORM INLETS SHALL BE PRECAST REINFORCED CONCRETE IN ACCORDANCE WITH APPLICABLE REFERENCES TO FDOT DRAWINGS IN THE "FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS", LATEST EDITION. TYPE II PORTLAND CEMENT SHALL BE USED IN THE CONCRETE MIX. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28-DAYS OF 4000 PSI.

CULVERT PIPES
INSTALL PIPE CULVERTS AND STORM SEWERS IN ACCORDANCE WITH SECTION 430 AND RELATED SECTIONS OF THE STANDARD SPECIFICATIONS AT THE LOCATIONS DEPICTED IN THE PLANS. FURNISH AND INSTALL SANDTIGHT (WATERTIGHT TO 2 PSI) PIPE JOINTS AND PIPE/STRUCTURE JOINTS. ALL JOINTS SHALL BE GASKETED. REINFORCED CONCRETE PIPES (R.C.P.) SHALL BE IN ACCORDANCE WITH SECTION 941 OF THE STANDARD SPECIFICATIONS CORRUGATED ALUMINUM PIPE SHALL BE IN ACCORDANCE WITH SECTION 945 OF THE STANDARD SPECIFICATIONS. ADS (CORRUGATED POLYETHYLENE) SHALL BE IN ACCORDANCE WITH SECTION 948-2.3 OF THE STANDARD SPECIFICATIONS.

BACKFILLING OVER PIPE CULVERT AND STORM SEWERS SHALL BE COMPLETED IN MAXIMUM 4" LIFTS TO THE SPRINGLINE MAXIMUM 6" LIFTS, TO A POINT 12" ABOVE THE PIPE, AND IN 12" LIFTS BEYOND, COMPACTED TO A MINIMUM OF 98% OF MAXIMUM DRY DENSITY. TYPE 2 MATERIAL SHALL BE USED FOR ALL BACKFILL, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR BY THE ENGINEER.

FURNISH AND INSTALL FILTER FABRIC JACKET AROUND ALL PIPE JOINTS AND THE JOINT BETWEEN THE PIPE AND THE STRUCTURE IN ACCORDANCE WITH DESIGN STANDARDS INDEX NUMBERS 201 & 280. USE FABRIC MEETING THE PHYSICAL REQUIREMENTS OF TYPE 3 SPECIFIED ON THE DESIGN STANDARDS, INDEX 199. THE FABRIC SHALL EXTEND A MINIMUM OF 12 INCHES (300 MM) BEYOND EACH SIDE OF THE JOINT OR BOTH EDGES OF THE COUPLING BAND, IF A COUPLING BAND IS USED. THE FABRIC SHALL HAVE A MINIMUM WIDTH OF 24 INCHES (600 MM) AND A LENGTH SUFFICIENT TO PROVIDE A MINIMUM OVERLAP OF 24 INCHES (600 MM). SECURE THE FILTER FABRIC JACKET AGAINST THE OUTSIDE OF THE PIPE BY METAL OR PLASTIC STRAPPING OR BY OTHER METHODS APPROVED THE THE ENGINEER.

CONCRETE
UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28-DAYS OF 3000 PSI. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE AND THE APPLICABLE BUILDING CODES HAVING JURISDICTION IN THE AREA.

RECORD DRAWINGS
CONTRACTOR SHALL KEEP AND MAINTAIN RECORD DRAWINGS ON THE PROJECT SITE AT ALL TIMES WHICH SHALL BE ANNOTATED BY THE CONTRACTOR DEPICTING ANY CHANGES MADE IN THE FIELD WHICH DIFFER FROM THE CONTRACT DRAWINGS. RECORD DRAWINGS SHALL INCLUDE, BUT ARE NOT LIMITED TO, HORIZONTAL LOCATION AND VERTICAL ELEVATION OF INVERT AND TOP OF CULVERTS, SEWER MANHOLES, DRAINAGE STRUCTURES, INLETS, UTILITY MAINS AND AS-BUILTS OF ALL LAKE BANKS, LOT/BLDG., PADS, SWALES, BERMS, CURBS, PAVEMENT, SIDEWALKS- DEPICTING HORIZONTAL LOCATION AND ELEVATIONS. CONTRACTOR SHALL SUBMIT COMPLETE AND FINAL RECORD DRAWINGS TO ENGINEER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL INSPECTION AND FINAL PAYMENT.

THE CONTRACTOR SHALL BE REQUIRED TO HAVE A SURVEYOR PROVIDE CERTIFIED RECORD DRAWINGS/AS-BUILTS. THESE DRAWINGS SHALL BE PROVIDED IN AN ACAD ELECTRONIC FILE AS WELL AS ON SIGNED/SEALED HARD COPIES. THE AS-BUILTS MUST MEET I.R.C. UTILITY DEPT. CRITERIA FOR WATER MAIN AND SEWER AS-BUILTS, INCLUDING TIES TO STATE PLANE COORDINATES.

INSPECTION
MINIMUM CONSTRUCTION INSPECTION CHECKPOINTS
THE ENGINEER SHALL BE NOTIFIED 24 HOURS IN ADVANCE:
A. PRIOR TO ANY MAJOR DEVIATION FROM THE APPROVED PLANS.
B. UPON COMMENCING ANY EARTHWORK.
C. PRIOR TO COMPACTION TEST SPACE AND COMPACTION.
D. PRIOR TO POURING CURBS, SIDEWALKS OR OTHER FLATWORK.
E. UPON BEGINNING OF SPREADING OF ROCK BASE MATERIAL
F. UPON COMPLETION OF GRADING AND COMPACTION OF BASE MATERIAL AND PRIOR TO PRIMING.
G. IMMEDIATELY PRIOR TO AND UPON APPLICATION OF A.C.S.C.
H. UPON COMPLETION OF CONSTRUCTION.

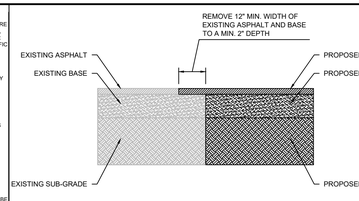
ACCEPTABLE TEST RESULTS MUST BE PROVIDED TO THE ENGINEER PRIOR TO COMMENCING SUCCESSIVE STEPS OF CONSTRUCTION, INCLUDING:
- PIPE BACKFILL AND EMBANKMENT DENSITIES PRIOR TO SUBGRADE PREPARATION.
- SUBGRADE TESTING PRIOR TO BASE PREPARATION, CONCRETE CURB OR SIDEWALK CONSTRUCTION.
- BASE TESTING PRIOR TO APPLICATION OF SURFACE COURSE.

WHERE REFERENCES ARE MADE TO ROADWAY CONSTRUCTION, IT IS INTENDED TO INDICATE CONSTRUCTION FOR ROADWAYS AND/OR PARKING LOTS/DRIVEWAYS.

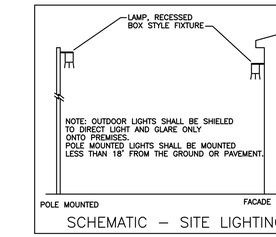
TRAFFIC/PAVEMENT MARKING NOTES:
1. ALL PARKING SPACE MARKINGS AND ROADWAY MARKINGS ON PRIVATE DRIVEWAYS/STREETS WITH THE EXCEPTION TO THE HANDICAPPED PARKING SPACES SHALL BE MARKED IN REFLECTORIZED TRAFFIC PAINT AND BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATIONS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019-20.
2. ALL HANDICAPPED PARKING SPACES SHALL BE PROPERLY SIGNED AND MARKED IN ACCORDANCE WITH THE F.D.O.T.'S STANDARD INDEX NO. 711-001.
3. TRAFFIC FLOW ARROWS THRU PARKING AREAS ARE FOR DIRECTION AND ARE TO BE PAINTED.
4. STOP BARS SHALL BE 24" WIDE.
5. FDOT STANDARD PLANS FOR ROAD CONSTRUCTION, MUTCD, AND INDIAN RIVER COUNTY DRAWINGS FOR PAVEMENT MARKINGS, SIGNING & GEOMETRICS, ALL LATEST EDITIONS.
6. ALL PAVEMENT MARKINGS FOR THE PROPOSED PUBLIC ROADWAYS AND ALL MARKINGS AT INTERSECTIONS OF PRIVATE ROADS/DRIVEWAYS WITH PUBLIC ROADS SHALL BE EXTRUDED TYPE ALKYD BASE THERMOPLASTIC AND SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
7. SPECIAL MARKINGS (CROSS WALK, STOP BARS, ROADWAY CONTINUOUS STRIPING, THRU ARROWS, PAVEMENT MARKINGS FOR TRAFFIC SEPARATORS, ETC. SHALL BE IN ACCORDANCE WITH THE F.D.O.T., INDEX NO. 711-001.
8. ALL FDOT DESIGN STANDARDS INDICES CORRESPONDING TO THE 2019-20 EDITION.

SIGNS:
1. ALL SIGNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND INDIAN RIVER COUNTY DRAWINGS FOR PAVEMENT MARKINGS, SIGNING & GEOMETRICS, ALL LATEST EDITIONS.
2. ALL SIGNS SHALL BE TYPE 'C' SINGLE COLUMN GROUND SIGNS IN ACCORDANCE WITH F.D.O.T. INDEX NO. 700-010. WIND LOAD SHALL BE ZONE 3 (80 M.P.H.).
3. ALL SIGNS PLACEMENT SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX NO. 700-101 AND INDIAN RIVER COUNTY DRAWINGS FOR PAVEMENT MARKINGS, SIGNING & GEOMETRICS.

ADDITIONAL SPECIFICATIONS FOR WORK WITHIN A PUBLIC R.O.W.:
1. THE LOCAL MEDIA SHALL BE CONTACTED A WEEK PRIOR TO ANY LANE CLOSURES ON THE STATE ROAD SYSTEM AS IT WILL OCCUR DURING PEAK HOURS OR OVER THE SPAN OF MORE THAN ONE DAY. CONTACT BARBARA KELLEHER, FDOT PUBLIC INFORMATION OFFICE AT 954-777-4090 FOR GUIDANCE ON WHO TO CONTACT. PROVIDE A COPY OF THE PRESS RELEASE TO:
FLORIDA DEPARTMENT OF TRANSPORTATION
PUBLIC INFORMATION OFFICE
3400 WEST COMMERCIAL BOULEVARD
FORT LAUDERDALE, FLORIDA 33309
2. ALL MATERIALS AND CONSTRUCTION WITHIN FDOT RIGHT-OF-WAY SHALL CONFORM TO THE FDOTROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION STANDARD SPECIFICATIONS (LATEST EDITION) AND THE SUPPLEMENTS THERETO.
3. THE APPLICANTS ENGINEER RESPONSIBLE FOR CONSTRUCTION INSPECTION SHALL INSURE THAT THE MAINTENANCE OF TRAFFIC PLAN (MOT) FOR THE PROJECT IS IN ACCORDANCE WITH THE APPLICABLE FDOT INDEX NUMBERS (600 SERIES) AND THESE DOCUMENTS. FOR MAINTAINING TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (U.S DEPARTMENT OF TRANSPORTATION, FHWA). THE CONTRACTOR SHALL PROVIDE NECESSARY M.O.T. AS SPECIFIED IN THE PLANS AND PERMITS, AND AS DIRECTED IN THE FIELD BY THE ENGINEER OR PUBLIC WORKS/FDOT REPRESENTATIVE.
4. AT THE END OF EACH WORK PERIOD, ANY DROP-OFF IN THE AREA ADJACENT TO THE TRAVEL WAY OF THE STATE ROAD SHALL BE BACKFILLED IN ACCORDANCE WITH STANDARD INDEX 600 OR SHALL BE OTHERWISE PROTECTED WITH TEMPORARY BARRIER WALL AT THE CONTRACTORS EXPENSE.
5. IF THE APPLICANT PROPOSES A ROADWAY THAT HAS BEEN SELECTED AS A HURRICANE OR DISASTER EVACUATION ROUTE, THE APPLICANT, AT THE PRE-CONSTRUCTION CONFERENCE, SHALL BE REQUIRED TO PRESENT, AS PART OF THE WORK PLAN, AN EMERGENCY FUNCTIONAL RESTORATION PLAN TO ADDRESS EVENTUALITIES SUCH AS HURRICANES.
6. THE CONTRACTOR MUST CALL THE APPROPRIATE COUNTY TRAFFIC ENGINEERING DIVISION, HAVING JURISDICTION OVER THE PROJECT AT LEAST 48 HOURS, BEFORE ANY EXCAVATION WITHIN THE FDOT RIGHT-OF-WAY TO DETERMINE THE LOCATION OF THE EXISTING TRAFFIC SIGNAL INTERCONNECT CABLE.
7. THE LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. RELOCATION OF UTILITIES SHALL BE COORDINATED WITH UTILITY COMPANIES AFTER IDENTIFICATION OF CONFLICT BY CONTRACTOR. CONTRACTOR WILL NOTIFY ENGINEER IN ADVANCE BEFORE ANY RELOCATION.
8. BEFORE PERMIT APPROVAL AND CONSTRUCTION OF THIS PROJECT, THE APPLICANT MUST CONTACT THE FLORIDA DEPARTMENT OF TRANSPORTATION LOCAL MAINTENANCE OFFICE TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE TELEPHONE NUMBER IS 954-776-4300 OR 1-800-300-8236.
9. THE APPLICANT AT THE EARLIEST CONVENIENT TIME SHALL NOTIFY IN WRITING ALL RIGHT-OF-WAY USERS AFFECTED BY THE CONSTRUCTION OF THIS PROJECT.
10. ALL CURB CUT RAMPS MUST FACE IN THE DIRECTION OF PEDESTRIAN TRAVEL.
11. ALL MOT LANE CLOSURE SIGNS SHALL BE COVERED WHEN LANES ARE NOT CLOSED. NO LANES ARE TO BE CLOSED EXCEPT AT TIMES PRESCRIBED BY THE DEPARTMENT.
12. LIMEROCK BASE SHALL BE A MINIMUM OF 12" AND COMPACTED IN 6" LIFTS TO 98% MAXIMUM DENSITY ACCORDING TO AASHTO-180. CONSTRUCTION TO CONFORM TO SECTION 200. BASE TO BE PRIMED AFTER COMPACTION.
13. STABILIZED SUBGRADE SHALL BE A MINIMUM OF 12" THICK AND COMPACTED TO 98% MAXIMUM DENSITY ACCORDING TO AASHTO-180. MATERIAL TO HAVE A MINIMUM L.B.R. OF 40 AND CONFORM TO SECTION 160.
14. REMOVE ALL MUCK, OVERBURDEN, AND ROOT MATERIAL TO THE HIGHT OF WAY LINE, AND BACKFILL TO THE REQUIRED SUBGRADE WITH CLEAN, GRANULAR MATERIAL IN MAXIMUM 6" LIFTS COMPACTED TO 100% OF MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T99-C SPECIFICATIONS, AND EACH LIFT TESTED BEFORE PLACING NEXT LIFT.
15. FLAGGERS MUST BE PRESENT DURING THE INGRESS AND EGRESS OF CONSTRUCTION VEHICLES TO AND FROM THE PROJECT SITE. WARNING SIGNS MUST BE ERECTED ADVISING MOTORIST OF TRUCKS ENTERING THE HIGHWAY.



SAW-CUT
N.T.S.

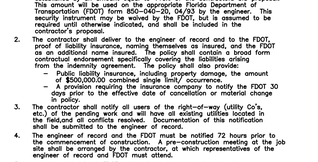


SCHEMATIC – SITE LIGHTING

CONSTRUCTION NOTES

Conditions of Construction Within F.D.O.T. Right-of-Way

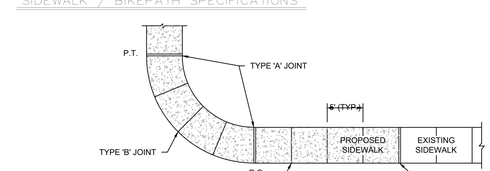
1. The contractor shall provide a security instrument in the form of a performance bond in the estimated dollar amount of the improvements/work within the state road right-of-way. This dollar amount shall be established by an amount equal to 110% of the contractors bid proposal. This amount will be used on the appropriate Florida Department of Transportation (FDOT) form 850--040--20, 04/93 by the engineer. This security instrument may be waived by the FDOT, but is presumed to be required until otherwise indicated, and shall be included in the contractor's proposal.
2. The contractor shall deliver to the engineer of record and to the FDOT, proof of liability insurance, naming themselves as insured, and the FDOT as an additional name insured. The policy shall contain a broad form contractual endorsement specifically covering the liabilities arising from the indemnity agreement. The policy shall also provide:
   - Public liability insurance, including property damage, the amount of $500,000.00 combined single limit/ occurrence.
   - A provision requiring the insurance company to notify the FDOT 30 days prior to the effective date of cancellation or material change in policy.
3. The contractor shall notify all users of the right--of--way (utility Co's, etc.) of the pending work and will have all existing utilities located in the field,and all conflicts resolved. Documentation of this notification shall be submitted to the engineer of record.
4. The engineer of record and the FDOT must be notified 72 hours prior to the commencement of construction. A pre--construction meeting at the job site shall be arranged by the contractor, at which representatives of the engineer of record and FDOT must attend.
5. All conditions of the FDOT permit must be strictly adhered to.
6. All construction shall be performed in accordance with the "FDOT Standard Specifications for Road and Bridge Construction," latest edition and shall reference the "FDOT Standard Specifications for Road and Bridge Construction," latest revisions.
7. Construction specifications listed on Sheet C--3 shall be adhered to.



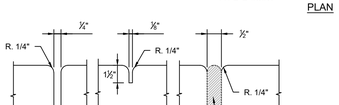
ON--SITE: 4.5" THICK CONCRETE MINIMUM.
OFF--SITE: 6.0" THICK CONCRETE MINIMUM.
3,000 P.S.I. @ 28 DAYS.

SIDEWALK NOTES:
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH THE "SUGGESTED SPECIFICATIONS FOR CONCRETE AREAS" PREPARED BY THE PORTLAND CEMENT ASSOCIATION AND IN ACCORDANCE WITH FDOT INDEX NO. 310.
2. SAWED JOINTS SHALL BE CONSTRUCTED AT A MAXIMUM OF 5--FEET O.C., AND SHALL BE IN ACCORDANCE W./ FDOT INDEX NO. 310.
3. AT LEAST THREE (3) COMPRESSIVE STRENGTH CYLINDER SAMPLES SHALL BE TAKEN FOR EACH 10,000 SQUARE FEET OF PAVEMENT OR FIVE (5) PER DAY, WHICHEVER IS GREATER. SLUMP SHALL BE 2 TO 4 INCHES (AASHTO T--119). COMPRESSIVE STRENGTH SHALL BE REPORTED AT 7, 14, AND 28 DAYS.
4. CONSTRUCT UPON FIRM, STABILIZED GROUND, COMPACTED TO 95% MAXIMUM DRY DENSITY.
5. SURFACE WITH LIGHT BROOM FINISH.
6. SOD ALL DISTURBED AREAS.
7. RECESS SIDEWALK AS REQUIRED IF BRICK PAVERS CALLED FOR IN PLANS
8. SIDEWALK/CURB MAY BE CONSTRUCTED AS ONE INTEGRAL POUR. PROVIDE MIN. 8"x8" THK'N EDGE
9. PROVIDE REINFORCEMENT AS SPECIFIED IN PLAN SHEETS.

DETAIL AND
SIDEWALK / BIKEPATH SPECIFICATIONS

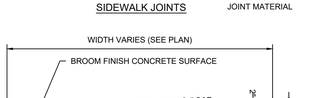


PLAN



SIDEWALK JOINTS

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
'A'	100' MAX. SPACING, P.C./P.T. OF CURVES, JUNCTION OF EXISTING AND NEW SIDEWALKS.
'B'	5'-0" CENTER TO CENTER
'C'	WHERE SIDEWALK ABUTS CONCRETE CURBS, DRIVEWAYS AND SIMILAR STRUCTURES.

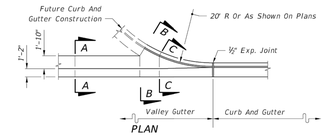


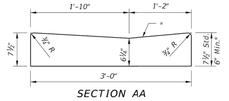
STANDARD CROSS SECTION

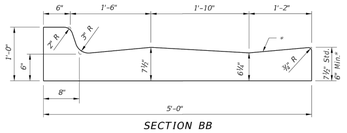
TABLE OF SIDEWALK THICKNESS	
LOCATION	'T'
PEDESTRIAN ONLY AREAS	4"
DRIVEWAYS AND OTHER TRAFFIC AREAS	6"

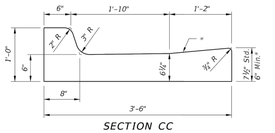
NOTE:
1. ALL SIDEWALK STREET CROSS

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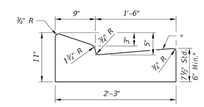


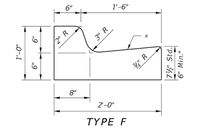
VALLEY GUTTER

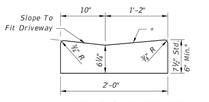
* When used on high side of roadways, the cross slope of the gutter shall match the cross slope of the adjacent pavement. The thickness of the lip shall be 6", unless otherwise shown on plans.

◪ Rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.

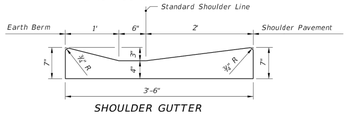
For use adjacent to concrete or flexible pavement. For details depicting usage adjacent to flexible pavement, see Sheet 2. Expansion joint, preformed joint filler and joint seal are required between curb & gutter and concrete pavement only, see Sheet 2.

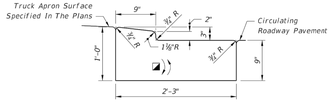


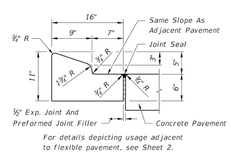


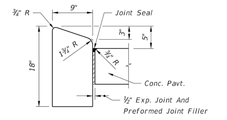


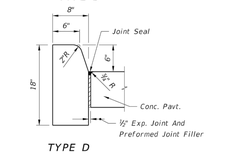
Note: To be paid for as parent curb.











Note: For use adjacent to concrete or flexible pavement, concrete shown. Expansion joint, preformed joint filler and joint seal are required between curbs and concrete pavement only, see Sheet 2.

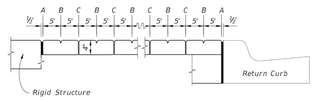
CONCRETE CURB

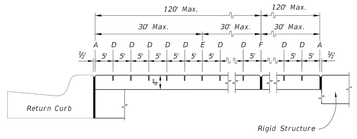
CONCRETE CURB AND GUTTER

LAST REVISION 11/01/17	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	CURB AND GUTTER	INDEX 520-001	SHEET 1 of 2

GENERAL NOTES:

1. Construct sidewalks in accordance with Specification 522. Use 6" concrete for Sidewalks and Curb Ramps Located within Curb Returns (See Plan View). Install all other concrete with thickness as shown, unless otherwise detailed in the Plans.
2. Include detectable warnings on sidewalk curb ramps in accordance with Index 522-002.
3. For Driveways see Index 522-003.
4. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 6 mils and not more than ½".
5. Construct sidewalks with Edge Beam through the limits of any surface mounted Pedestrian/Bicycle Railing or Pipe Guiderail shown in the plans. (See RAILING DETAIL)





LONGITUDINAL SECTION

LEGEND:

A- ½" Expansion Joints (Preformed Joint Filler) between the sidewalk and; driveways, sidewalk-intersections, and all other fixed objects (e.g. drainage inlets and utility poles).

B- ⅛" Dummy Joints, Tooled

C- ½" Formed Open Joints

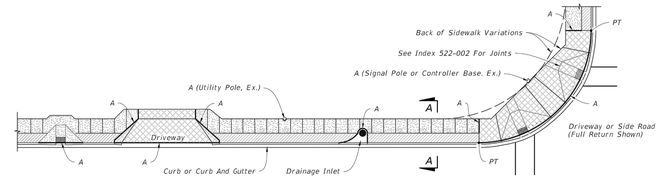
D- 3/16" Saw Cut Joints, 1½" Deep (within 96 hours) Max. 5' Centers

E- 3/16" Saw Cut Joints, 1½" Deep (within 12 hours) Max. 30' Centers Joint(s) Required When Length Exceeds 30'

F- ½" Expansion Joint When Run Of Sidewalk Exceeds 120'. Intermediate locations when called for in the plans or at locations as directed by the Engineer.

G- Cold Joint With Bond Breaker, Tooled

SIDEWALK JOINTS



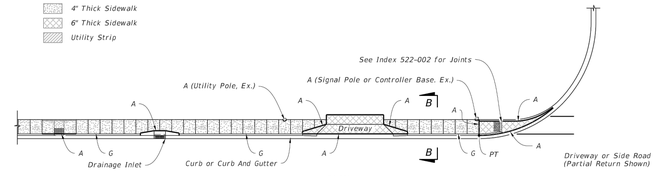
SIDEWALK WITH UTILITY STRIP

LEGEND:

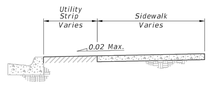
4" Thick Sidewalk

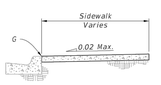
6" Thick Sidewalk

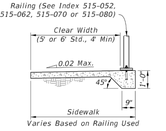
Utility Strip



SIDEWALK WITHOUT UTILITY STRIP







GENERAL NOTES AND CONCRETE SIDEWALK ON CURBED ROADWAYS

LAST REVISION 11/01/18	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	CONCRETE SIDEWALK	INDEX 522-001	SHEET 1 of 2

MARK	REVISION	DATE
1	REVISED PER COPP AND FDEP	10/07/21
2	REVISED PER COPP AND FDEP	01/12/22

DRAWING 21-032 CONST
DESIGNED JBB | DRAWN JBB
CHECKED JBB | DATE 04/30/21
SCALE NTS

THE DRAWINGS ARE THE PROPERTY OF THE ENGINEER, WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. COPY OR USE FOR OTHER PROJECTS WITHOUT WRITTEN CONTRACT WITH THE ENGINEER, UNAUTHORIZED USE WILL BE PROSECUTED PURSUANT TO THE COPYRIGHT LAWS.

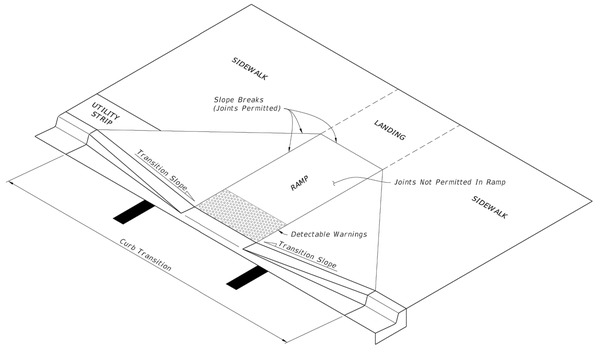
SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING . LAND PLANNING . ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00006668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772-770-9622 FAX 772-770-9496 EMAIL jbittle@sbsengineers.com
WEBSITE https://www.sbsengineers.com

MISCELLANEOUS DETAILS

OCEAN VILLAGE CLUBHOUSE

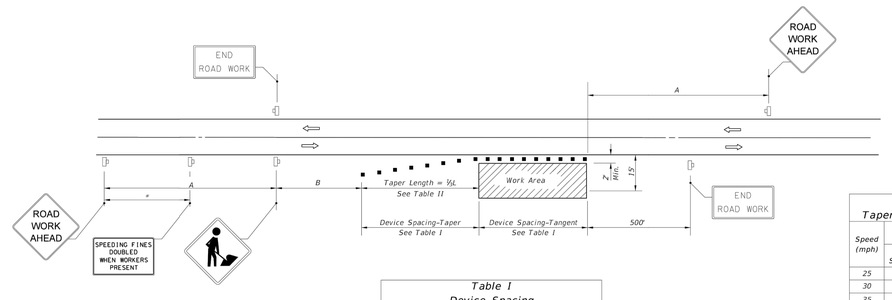
GENERAL NOTES:

1. Cross Slopes and Grades:
   - A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
   - B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
   - C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
   - D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
2. Curb, Curb and Gutter and/or Sidewalk:
   - A. Refer to Index 522-001 for concrete thickness and sidewalk details.
   - B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
3. Curb Ramp Alpha-Identification:
   - A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
   - B. Alpha-identifications CR-I and CR-J are intentionally omitted.
4. Detectable Warnings:
   - A. Install detectable warnings in accordance with Specification 527.
   - B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
   - C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.
5. Detectable Warnings – Acceptance Criteria:
   - A. Color and texture shall be complete and uniform.
   - B. 90% of individual truncated domes shall be in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.
   - C. There shall be no more than 4 non-compliant domes in any one square foot.
   - D. Non-compliant domes shall not be adjacent to other non-compliant domes.
   - E. Surfaces shall not deviate more than 0.10" from a true plane.



CURB RAMP NOMENCLATURE

LAST REVISION 11/01/19	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 1 of 7



DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.) A	Spacing (ft.) B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

*Midway between signs.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.) Cones or Tubular Markers Taper	Cones or Tubular Markers Tangent	Type I or Type II Barricades or Vertical Panels or Drums Taper	Type I or Type II Barricades or Vertical Panels or Drums Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II
Taper Length - Shoulder

Speed (mph)	½L (ft) 8' Shldr.	10' Shldr.	12' Shldr.	Notes
25	28	35	42	L= WS²/60
30	40	50	60	
35	55	68	82	
40	72	90	107	
45	120	150	180	L=WS
50	133	167	200	
55	147	183	220	
60	160	200	240	
65	173	217	260	
70	187	233	280	

8' minimum shoulder width

½L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

SYMBOLS

Work Area

Channelizing Device (See Index 102-600)

Work Zone Sign

Lane Identification + Direction of Traffic

GENERAL NOTES

1. When four or more work vehicles enter the through traffic lanes in a one hour period or less (excluding establishing and terminating the work area), the advanced FLAGGER sign shall be substituted for the WORKERS sign. For location of flaggers and FLAGGER signs, see Index 102-603.
2. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign only on the side where the shoulder work is being performed.
3. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
4. For general TCZ requirements and additional information, refer to Index 102-600.

DURATION NOTES

1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   - a. Work operations are 60 minutes or less.
   - b. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

LAST REVISION 11/01/17	DESCRIPTION:	FDOT FY 2020-21 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK ON SHOULDER	INDEX 102-602	SHEET 1 of 1

ENGINEER CERTIFICATION

JODAH B. BITTLE LICENSE No 57396 STATE OF FLORIDA PROFESSIONAL ENGINEER

JODAH B. BITTLE
FL. REG. NO. 57396

DocuSigned by: Jodah Bittle
A99EF7069C6C4F0...

DATE: 1/30/2023

PROJECT NO. 21-032 | SHEET 09

DocuSign Envelope ID: 60FD9234-1264-44B0-98B2-13889B9675EC

FORT PIERCE UTILITIES AUTHORITY
WATER DISTRIBUTION NOTES

1. ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE FORT PIERCE UTILITIES AUTHORITY.
2. WATER MAINS WHERE SPECIFIED AS POLYVINYL CHLORIDE (PVC) SHALL CONFORM TO AWWA C-900 OR C-905, PRESSURE CLASS 150, DR (18). WATER MAINS WHERE SPECIFIED AS POLYETHYLENE (PE) SHALL CONFORM TO AWWA C-901 OR C-906, STANDARD CODE DESIGNATION PE3408, PIPE CLASS 200, DIMENSION RATIO (DR) 17 FOR DIRECT BURY, (DR) 11 FOR DIRECTIONAL BORING, AND (DR) 9 FOR 2 INCH AND SMALLER PIPELINES.
3. WATER MAIN, WHERE SPECIFIED AS DUCTILE IRON PIPE , SHALL CONFORM TO ANSI/AWWA C151/A21.51 AND SHALL BE PRESSURE CLASS 250 (MINIMUM).
4. POLYVINYL CHLORIDE WATER MAIN SHALL BE BLUE IN COLOR OR WHITE IN COLOR WITH BLUE STRIPES. THE USE OF IDENTIFICATION TAPE ATTACHED TO THE TOP OF THE PIPE MAY BE USED IN LIEU OF MARKING ON THE PIPE, ALSO DIP PIPE SHALL REQUIRE THE USE OF IDENTIFICATION TAPE AND THIN WIRE.
5. FITTINGS SHALL BE DUCTILE IRON CONFORMING TO ANSI/AWWA C-110/A21.10, CLASS 250 MIN., CEMENT LINED AND FACTORY COATED
6. GATE VALVES SHALL BE MUELLER RESILIENT SEAT, KENNDY KEN-SEAL, AMERICAN OR APPROVED EQUAL. VALVES SHALL CONFORM TO AWWA C-509.
7. WATER LINES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH FPUA DESIGN AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL SUBMIT CERTIFIED DENSITY TESTS AS REQUIRED BY FPUA ENGINEERING AND THE CITY, COUNTY, FDOT, IN CASES WHERE PAVED AREAS FALL WITHIN THE JURISDICTION OF LOCAL OR STATE AGENCIES, THE COMPACTION REQUIREMENTS SHALL NOT BE LESS THAN THE MINIMUM REQUIRED BY THE APPROPRIATE RESPONSIBLE AGENCY.
8. NO FIELD CHANGES OR DEVIATIONS FROM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE FPUA ENGINEER AND CITY/COUNTY/FDOT ENGINEER.
9. THE CONTRACTOR SHALL NOTIFY FPUA ENGINEERING AND CITY/COUNTY/FDOT ENGINEERING 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
10. A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, FPUA, AND CITY/ COUNTY/FDOT ENGINEER SHALL BE MANDATORY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. TRAFFIC CONTROL, BARRICADES, ETC., SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS AND APPROVED BY THE CITY ENGINEER.
12. MINIMUM COVER SHALL BE 36 INCHES EXCEPT AS APPROVED BY THE UTILITIES ENGINEER AND CITY/ COUNTY/FDOT ENGINEER. PIPES WITH COVER LESS THAN 30 INCHES SHALL BE CONSTRUCTED OF DUCTILE IRON OR IN PVC CASING.
13. DISTURBED AREAS SHALL BE RESTORED IN CONFORMANCE WITH THE APPLICABLE GOVERNING AGENCY REQUIREMENTS.
14. EXISTING UTILITIES AND DRAINAGE SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION AND PROTECTED BY THE CONTRACTOR.
15. WATER MAINS SHALL BE TESTED AND DISINFECTED IN ACCORDANCE WITH THE APPLICABLE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AWWA C-651 FOR DISINFECTION.

WATER DISTRIBUTION	G-1 NOTES
02-08 DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # DETAIL NOTES 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJM DRAWN BY: SCALE: N.T.S.	
JJM APPROVED: DATE: JLC 2010	SHEET 1 OF 2

FORT PIERCE UTILITIES AUTHORITY
WATER DISTRIBUTION NOTES
CONTINUED

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING UTILITIES AND DRAINAGE.
17. THE CONTRACTOR SHALL FURNISH RECORD DRAWING INFORMATION TO THE ENGINEER INCLUDING LOCATIONS OF VALVES, FITTINGS, SERVICE CONNECTIONS, BLOWOFFS, AIR RELEASE VALVES, AND ANY OTHER PERTINENT INFORMATION NECESSARY TO LOCATE ITEMS CONSTRUCTED UNDER THIS PROJECT, AS REQUIRED BY THE UTILITIES ENGINEER.
18. THE CONTRACTOR SHALL TAP EXISTING LINES UNDER THE SUPERVISION OF THE FORT PIERCE UTILITIES AUTHORITY ONLY AFTER TESTING AND DISINFECTION HAS BEEN COMPLETED AND APPROVED ON THE TAPPING VALVE AND SLEEVE.
19. WATER MAIN SHALL BE MARKED BY THE USE OF CONTINUOUS 10 GAUGE THHN MULTI STRANDED WIRE (BLUE IN COLOR) AND IDENTIFICATION TAPE WITH "WATER" MARKED ON TAPE, PERMANENTLY ATTACHED TO THE TOP OF THE WATER MAIN IN ACCORDANCE WITH THE FORT PIERCE UTILITIES AUTHORITY SPECIFICATIONS.
20. SERVICE TAPS SHALL BE PLACED APPROXIMATELY TEN FEET AWAY FROM GATE VALVES, AS SHOWN, FOR TESTING. FOLLOWING TESTING AND STERLIZATION OF WATER LINE. CONTRACTOR SHALL PLACE A BRASS PLUG IN CORPORATION STOPS AND CURB STOPS SHALL BE REMOVED FROM TESTING LOCATIONS.
21. MECHANICAL RESTRAINTS TO BE USED ON ALL FITTINGS AND PLACED IN ACCORDANCE WITH MANUFACTURER'S OR ENGINEER'S RECOMMENDATIONS (WHICHEVER IS MORE STRINGENT) AND FPUA REQUIREMENTS.
22. ALL MAINS SHALL BE TESTED AT A MINIMUM OF 150 PSI. TESTING METHODS SHALL CONFORM TO AWWA C-600. – 2 HR MINIMUM TEST

$$L = \frac{SD(P)^{1/2}}{148{,}000}$$

L= LEAKAGE IN GPH
S= LENGTH OF PIPE IN FEET
D= PIPE DIAMETER IN INCHES
P= TESTING PRESSURE IN PSI

23. PRIOR TO ANY TESTING, ALL MAINS 6" IN DIA. AND LARGER SHALL HAVE A SWAB PASSED THRU THE ENTIRE LENGTH OF THE LINE. WATER SWAB SHOULD BE PLACED AT THE JOINT OF NEW LINE. END OF MAIN SHOULD BE "TURNED UP" AT 45% AND EXTENDED SO THAT SWABBING AND A FULL BORE FLUSH CAN BE ACCOMPLISHED. BLOW-OFF ASSY CAN THEN BE PLACED. WHERE LINES BRANCH, SWABS WILL BE PLACED IN BRANCH LINES AND SEQUENTIALLY SWABBED AND FLUSHED.
24. A MINIMUM SIX FEET AND PREFERABLY TEN FEET HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY WASTEWATER LINES. 6 INCHES MINIMUM VERTICAL SEPARATION IF WATER MAIN IS OVER WASTEWATER AND 12 INCHES IF WATER MAIN IS UNDER SHALL BE MAINTAINED BETWEEN THE WATER MAIN AND ANY WASTWATER LINES. THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE OR STRUCTURE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE WASTEWATER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING, AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGHTS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.
25. WHERE A WATER MAIN IS TO BE INSTALLED BELOW A STORM DRAIN PIPE, A MINIMUM OF 6 INCHES OF VERTICAL CLEARANCE BETWEEN PIPES SHALL BE CONSTRUCTED OF DIP AT THE CROSSING, AND SHALL BE MECHANICALLY RESTRAINED WITHIN 20 FEET OF THE CROSSING.
26. CONTRACTOR SHALL COMPLY WITH FLORIDA TRENCH SAFETY ACT REQUIREMENTS.

WATER DISTRIBUTION	G-1 NOTES
02-08 DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # DETAIL NOTES 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJM DRAWN BY: SCALE: N.T.S.	
JJM APPROVED: DATE: JLC 2010	SHEET 2 OF 2

FORT PIERCE UTILITIES AUTHORITY WASTEWATER CONSTRUCTION NOTES

1. ALL CONSTRUCTION MATERIAL, INSTALLATION AND TESTING SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF THE FORT PIERCE UTILITIES AUTHORITY.
2. GRAVITY SEWER MAIN SHALL BE POLYVINYL CHLORIDE SDR-26, GREEN OR WHITE IN COLOR, GRAVITY SEWER MAIN SHALL HAVE LOCATOR TAPE WITH "SEWER" MARKED ON TAPE AND SHALL CONFORM TO ASTM D-3034.
3. THE MANHOLE BASE SHALL BE SET ON A FIRM, DRY AND STABLE OR COMPACTED BASE FOUNDATION. IF NECESSARY, THE CONTRACTOR SHALL UTILIZE ROCK TO PROVIDE A FIRM AND SUITABLE MANHOLE BASE FOUNDATION.
4. WASTEWATER LINES SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH FPUA DESIGN AND CONSTRUCTION STANDARDS. THE CONTRACTOR SHALL SUBMIT CERTIFIED DENSITY TESTS AS REQUIRED BY FPUA ENGINEERING AND THE CITY ENGINEERING DEPARTMENT. IN CASES WHERE PAVED AREAS FALL WITHIN THE JURISDICTION OF LOCAL OR STATE AGENCIES, THE COMPACTION REQUIREMENTS SHALL NOT BE LESS THEN THE MINIMUM REQUIRED BY THE APPROPRIATE RESPONSIBLE AGENCY.
5. A 1% MINIMUM SLOPE SHALL BE MAINTAINED ON ALL SANITARY SERVICE LATERALS.
6. THE CONTRACTOR SHALL FURNISH RECORD DRAWING INFORMATION TO THE ENGINEER CONSISITING OF PIPE SIZES, LOCATION OF SERVICE TEE WYES, DIAMETER OF SERVICES, LOCATION OF ANY FITTINGS, FINAL RIM AND INVERT ELEVATION OF ALL MANHOLES AND ANY OTHER PERTINENT INFORMATION NECESSARY TO LOCATE ITEMS CONSTRUCTED UNDER THIS PROJECT.
7. MAINTAIN SIX FEET AND PREFERABLY 10 FEET HORIZONTAL DISTANCE BETWEEN WATER MAINS AND SEWER MAINS AS A MINIMUM.
8. WASTEWATER FORCE MAINS, WASTEWATER COLLECTION LINES, AND STORM SEWERS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. A MINIMUM VERTICAL DISTANCE OF 12 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE SHALL BE PROVIDED WHENEVER POSSIBLE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE WASTEWATER PIPE JOINTS AND THE WATER PIPE JOINTS ARE EQUIDISTANCE FROM THE POINT OF CROSSING, AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.
9. A PRE-CONSTRUCTION CONFERENCE BETWEEN THE ENGINEER, THE CONTRACTOR, AND FPUA/CITY COUNTY/FDOT SHALL BE MANDATORY PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
10. NO FIELD CHANGES OR DEVIATIONS FORM THE DESIGN SHALL BE MADE WITHOUT PRIOR APPROVAL FPUA/CITY/COUNTY/FDOT ENGINEER,
11. TRAFFIC CONTROL, BARRICADES, ETC., SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.
12. CONTRACTOR SHALL NOTIFY FORT PIERCE UTILITIES AUTHORITY 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
13. WASTEWATER FORCE MAIN SHALL BE POLYVINYL CHLORIDE CONFORMING TO AWWA C-900, AND SHALL BE CLASS 150, DR-18.
14. WASTEWATER FORCE MAIN SHALL BE GREEN IN COLOR.
15. FITTINGS SHALL BE DUCTILE IRON, CONFORMING TO ANSI/AWWA C-110/A21.10 CLASS 250 MIN. AND INTERIOR EPOXY COATED.
16. WASTEWATER FORCE MAIN SHALL BE MARKED BY THE USE OF CONTINUOUS 10 GAUGE THHN WIRE (GREEN IN COLOR) PERMANENTLY ATTACHED TO THE TOP OF THE FORCE MAIN WITH LOCATOR TAPE MARKED "SEWER" ON TAPE IN ACCORDANCE WITH FPUA SPECIFICATIONS.
17. MINIMUM COVER SHALL BE 36 INCHES, PIPES WITH COVER LESS THAN 30 INCHES SHALL REQUIRE PRIOR APPROVAL OF THE UTILITES ENGINEER AND SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE.
18. EACH SERVICE LATERAL WILL BE MARKED WITH A LOCATOR BALL AS MANUFACTURED BY 3M CORPORATION, OR APPROVED EQUAL AS REQUIRED BY FPUA ENGINEER.
19. ALL MANHOLES SHALL HAVE SEWER RAIN GUARDS INSTALLED AS REQUIRED BY FPUA ENGINEER.
20. THE CONTRACTOR SHALL COMPLY WITH THE FLORIDA TRENCH SAFETY ACT REQUIREMENTS.

WASTEWATER CONSTRUCTION NOTES FPUA REQUIREMENTS	G-2 CONSTRUCTION NOTES
02-08 DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # DETAIL NOTES 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJM DRAWN BY: SCALE: N.T.S.	
JJM APPROVED: DATE: JLC 2010	SHEET 1 OF 1

STANDARD SEPARATION STATEMENT FOR WATER / SEWER CONFLICTS

1. SANITARY SEWER, FORCE MAINS, AND STORM SEWERS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. SANITARY SEWERS, FORCE MAINS AND STORM SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 6 INCHES, PREFERABLY 12 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHEN ABOVE, AND AT LEAST 12 INCHES OF SEPARATION WHEN THE WATER MAIN IS BELOW.

WHERE SANITARY SEWER, FORCE MAINS, STORM SEWERS MUST CROSS A WATER MAIN WITH LESS THAN 6 INCHES VERTICAL SEPARATION, BOTH THE SEWER AND WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) CENTERED ON THE CROSSING. (DIP IS NOT REQUIRED FOR STORM SEWERS.) SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED.

ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING), AT SUCH CROSSINGS PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III of CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 62-610, F.A.C.

WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN 6 INCHES VERTICAL CLEARANCE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP (EXCEPT STORM SEWERS) AND NEW PIPES SHALL BE ARRANGED TO MEET THE CROSSING REQUIREMENTS ABOVE.

2. A MINIMUM 3-FTOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF STORM SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.

A MINIMUM 3-FOOT, AND PREFERABLE 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN VACUUM TYPE SANITARY SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.

A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN "ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.

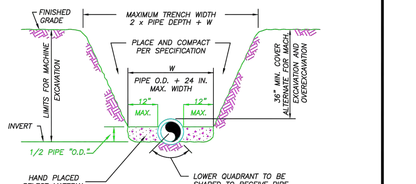
A MINIMUM 6-FOOT, AND PREFERABLE 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN GRAVITY OR PRESSURE TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO 3 FOOT WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER

IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON A UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN, AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 6 INCHES ABOVE THE TOP OF THE SEWER.

WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 6 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP (EXCEPT STORM SEWER) WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES, THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).

3. ALL DIP SHALL BE PRESSURE CLASS 250 MIN.. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED AS DETERMINED BY THE DESIGN ENGINEER.

STANDARD SEPARATION STATEMENT FOR WATER/SEWER CONFLICT	G-3 WATER/SEWER CONFLICT
02-08 DATE: REVISION: BY: APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # DETAIL NOTES 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJM DRAWN BY: SCALE: N.T.S.	
JJM APPROVED: DATE: JLC 2010	SHEET 1 OF 1

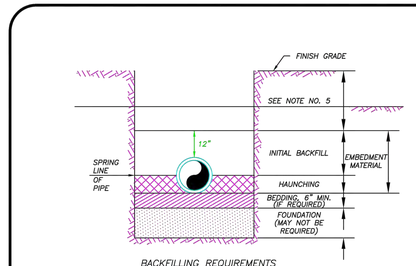


NOTES:

1) THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.
2) INITIAL BACKFILL SHALL BE HAND PLACED TO 12" ABOVE THE PIPE. BACKFILL SHALL BE MECHANICALLY TAMPED TO A MINIMUM OF 100% OF MAX. DENSITY AS DETERMINED BY AASHTO METHOD T-99.

TYPICAL TRENCH DETAIL
N.T.S.

TYPICAL TRENCH DETAIL	M-1
12-09 DATE: CONCRETE SLAB REVISION: SLL BY: A.C APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC DRAWN BY: SCALE: N.T.S.	
SLL APPROVED: DATE: JLC 2015	SHEET 1 OF 1

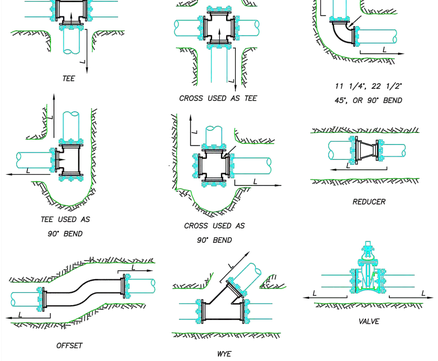


BACKFILLING REQUIREMENTS
N.T.S.

NOTES:

1) IN CERTAIN SOIL CONDITIONS A FOUNDATION MAY BE REQUIRED.
2) BEDDING IS REQUIRED PRIMARILY TO BRING THE TRENCH BOTTOM UP TO GRADE. BEDDING MATERIALS SHALL PROVIDE A UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE.
3) HAUNCHING MATERIAL SHALL BE HAND PLACED TO THE SPRINGLINE OF THE PIPE. MATERIAL SHALL BE CONSOLIDATED UNDER THE PIPE AND HAND TAMPED TO PROVIDE ADEQUATE SIDE SUPPORT.
4) INITIAL BACKFILL MATERIAL SHALL BE HAND PLACED TO 12" ABOVE THE TOP OF PIPE. THE SOIL SHALL BE COMPACTED TO 100% MAX. DENSITY.(AASHTO T-99)
5) BACKFILL SHALL BE COMPACTED TO 100% OF MAX. DENSITY AS PER AASHTO T-99, TO A POINT 30" BELOW PROPOSED PROFILE GRADE OR EXISTING GRADE. THE FINAL 30" OF BACKFILL SHALL BE COMPACTED TO 98% OF MAX. DENSITY AS PER AASHTO T-180.
6) DENSITY TEST SHALL BE PERFORMED AT AREAS DETERMINED BY THE UTILITIES ENGINEER OR PERMIT AGENCY HAVING JURISDICTION, AT THE CONTRACTORS EXPENSE.
7) CONTRACTOR TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL TRENCH SAFETY REGULATIONS.

BACKFILLING REQUIREMENTS	M-2
12-09 DATE: CONCRETE SLAB REVISION: SLL BY: A.C APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC DRAWN BY: SCALE: N.T.S.	
SLL APPROVED: DATE: JLC 2015	SHEET 1 OF 1



MECHANICAL JOINT ANCHORING REQUIREMENTS
N.T.S.

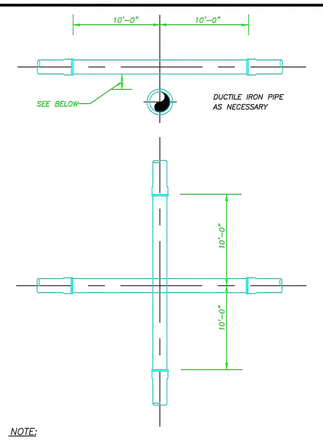
MECHANICAL JOINT ANCHORING REQUIREMENTS	M-3
12-09 DATE: CONCRETE SLAB REVISION: SLL BY: A.C APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC DRAWN BY: SCALE: N.T.S.	
SLL APPROVED: DATE: JLC 2015	SHEET 1 OF 1

MECHANICAL JOINT RESTRAINT NOTES

NOTES:

1) THE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE REQUIRED LENGTH TO BE RESTRAINED BASED UPON THE PROJECT AREA SOIL TYPE, PROPOSED TRENCH CONDITIONS AND DEPTH, PRESSURE OF 150 PSI, AND A SAFETY FACTOR OF TWO (2). A DRAWING OF EVERY TYPICAL FITTING ASSEMBLY WITHIN THE PROJECT SHALL BE SUBMITTED WHICH REFLECTS THE RESTRAINT DETAIL PROPOSED FOR USE, INCLUDING LENGTH OF PIPE RESTRAINT.
2) REQUIRED RESTRAINED LENGTH CALCULATIONS SHALL ALSO CONSIDER THE CONDITIONS OF OTHER BENDS OR FITTINGS THAT WILL BE LOCATED WITHIN THE CALCULATED RESTRAINED LENGTH (L) OF THE BEND OR FITTING IN QUESTION.
3) EVERY JOINT OR FITTING MUST BE RESTRAINED ON BOTH SIDES OF THE BEND AND FOR TEES ALONG THE BEND ALSO.

MECHANICAL JOINT RESTRAINT NOTES	M-4
12-09 DATE: CONCRETE SLAB REVISION: SLL BY: A.C APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC DRAWN BY: SCALE: N.T.S.	
SLL APPROVED: DATE: JLC 2015	SHEET 1 OF 1

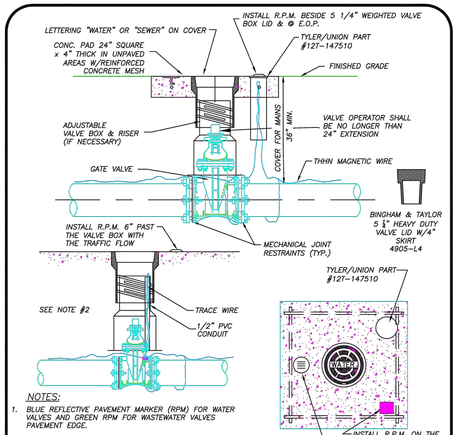


NOTE:

PLEASE REFER TO FORT PIERCE UTILITIES STANDARD SEPARATION STATEMENT FOR WATER / SEWER CONFLICTS.

UTILITY CROSSING DETAIL
N.T.S.

UTILITY CROSSING DETAIL	M-5
12-09 DATE: CONCRETE SLAB REVISION: SLL BY: A.C APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC DRAWN BY: SCALE: N.T.S.	
SLL APPROVED: DATE: JLC 2015	SHEET 1 OF 1



NOTES:

1. BLUE REFLECTIVE PAVEMENT MARKER (RPM) FOR WATER VALVES AND GREEN RPM FOR WASTEWATER VALVES PAVEMENT EDGE.
2. FOR WATER AND WASTEWATER VALVES INSTALLED IN PAVED AREAS, ELIMINATE CONCRETE PAD AND ENCASE THE MAGNETIC WIRE IN 1/2" PVC INSIDE THE VALVE BOX SEVEN INCHES BELOW GRADE.
3. DIP MAY BE USED AS RISERS ONLY IF A VALVE BOX IS NOT MANUFACTURED FOR THAT DEPTH. NO PVC RISERS SHALL BE USED IN ANY CIRCUMSTANCES.

TYPICAL GATE VALVE & VALVE BOX DETAIL
N.T.S.

TYPICAL GATE VALVE & VALVE BOX DETAIL	M-6
12-09 DATE: CONCRETE SLAB REVISION: SLL BY: A.C APPD.	WATER/WASTEWATER ENGINEERING
DESIGNED: COMPUTER FILE # MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
JJC DRAWN BY: SCALE: N.T.S.	
SLL APPROVED: DATE: JLC 2015	SHEET 1 OF 1

MARK	REVISION	DATE
1	REVISED PER COFP AND FDEP	10/07/21
2	REVISED PER COFP AND FDEP	01/12/22

DRAWING 21-032 CONST	DRAWN JBB
DESIGNED JBB	DATE 04/30/21
CHECKED JBB	SCALE N.T.S.

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SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING . LAND PLANNING . ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00006668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772-770-9622 FAX 772-770-9496 EMAIL jbittle@sbsengineers.com
WEBSITE https://www.sbsengineers.com

MISCELLANEOUS DETAILS

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION

JOAH B. BITTLE LICENSE No 57396 STATE OF FLORIDA PROFESSIONAL ENGINEER

Docusigned by: Joah Bittle A696E77669C6C488...

JOAH B. BITTLE
FL REG. NO. 57396
DATE: 1/30/2023
PROJECT NO. 21-032
SHEET 10

DocuSign Envelope ID: 60FD9234-1264-44B0-98B2-13889B9675EC

MATERIAL UPGRADE NOTES

MATERIAL UPGRADES ARE REQUIRED FOR UTILITY INSTALLATIONS THAT ARE IN CLOSE PROXIMITY TO SALT WATER (FOR EXAMPLE, HUTCHINSON ISLAND, INDIAN RIVER FLOOD PLAIN AND AREAS EAST OF U.S. HIGHWAY 1) AND AS DIRECTED BY FPUA WATER/WASTEWATER ENGINEERING DEPARTMENT.

1) PIPE – ALL DUCTILE IRON PIPE SHALL BE EPOXY COATED (EXTERIOR)

2) FITTINGS – ALL DUCTILE IRON FITTINGS SHALL BE EPOXY COATED (EXTERIOR). PVC FITTINGS CAN ALSO BE USED. HOWEVER, PVC FITTINGS MUST BE EXTRUDED OR FORMED FITTINGS MEETING ALL AWWA REQUIREMENTS. NO FABRICATED FITTINGS WILL BE ALLOWED. ALL NUTS AND BOLTS SHALL BE 316SS ONLY.

3) RESTRAINTS – ALL MECHANICAL JOINT RESTRAINTS SHALL BE EPOXY COATED. ALL HARDWARE (RODS, NUTS, BOLTS, WASHERS) SHALL BE 316SS ONLY.

4) FIRE HYDRANTS – ALL NUTS AND BOLTS SHALL BE 316SS ONLY.

5) VALVES – ALL VALVES SHALL BE EPOXY COATED. ALL NUTS AND BOLTS SHALL BE 316SS. VALVE STEM AND 2-INCH OPERATING NUT SHALL BE CAST BRONZE.

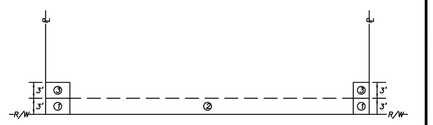
6) HARDWARE – 316 SS, A4-70 AND A4-80 ARE ACCEPTABLE NOMENCLATURES SEEN ON FASTENERS

7) ALL OTHER MATERIALS SHALL BE PROVIDED WITH MANUFACTURER'S STANDARD UPGRADES FOR USE IN CORROSIVE ENVIRONMENTS.

MATERIAL UPGRADE NOTES	M-13
03-09 CONCRETE SLAB; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: MISC. DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE:	
APPROVED: JJC; DATE: 2015; SHEET 1 OF 1	

GENERAL POLICY

WHERE COST JUSTIFIED AND OPERATIONALLY FEASIBLE, IT IS THE GENERAL POLICY OF THE F.P.U.A. TO PROVIDE WATER, ELECTRIC, SEWER AND GAS SERVICE FROM THE STREET SIDE OF A PIECE OF PROPERTY. DEPENDING ON FACTORS SUCH AS LOCATION OF EXISTING SUPPLY SOURCE FACILITIES, REAR OR SIDE LOT LINE SUPPLY MAY BE AUTHORIZED, BUT ONLY WITH PRIOR APPROVAL FROM THE F.P.U.A.

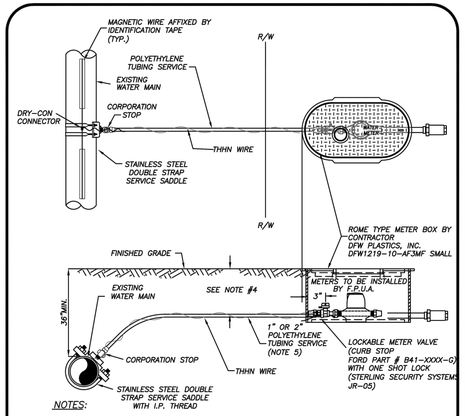


NOTES:

1. THE PREFERRED POINT OF CONNECTION TO THE F.P.U.A. WATER METER, AREA ① SHALL BE LOCATED IN THE CORNER OF THE PROPERTY SELECTED BY THE F.P.U.A. AS THE BEST LOCATION FOR THE WATER METER. EVERY EFFORT WILL BE MADE TO SELECT THE CORNER WHERE TWO WATER SERVICES AND METERS CAN BE CONNECTED.
2. IF PHYSICAL BARRIERS OR OTHER OBSTACLES PREVENT THE CONNECTION OF THE BUILDING SERVICE LINE TO THE F.P.U.A. WATER SERVICE, WITHIN AREA ① , THE F.P.U.A. ENGINEERING DEPARTMENT MAY AUTHORIZE THE CONNECTION ALONG THE PORTION OF THE R/W LINE MARKED AREA ② , OR ALONG THE PROPERTY LINES MARKED AREA ③ .
3. HORIZONTAL SEPARATION OF WATER AND WASTEWATER SERVICES SHOULD BE A MINIMUM OF 6 FEET AND PREFERABLY 10 FEET.
4. ALL METERS SHALL BE INSTALLED IN AN UNRESTRICTED AREA FOLLOWING EASE OF ACCESS AND PROVIDING ADEQUATE PROTECTION.
5. THE F.P.U.A. SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF THE WATER LATERAL WITHIN THE EASEMENT OR RIGHT-OF-WAY, UP TO THE POINT OF CONNECTION.

WATER METER PLACEMENT
(N.T.S.)

WATER METER PLACEMENT POLICY	W-1
03-08 02-15 REVISION; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: WATER DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2010; SHEET 1 OF 1	

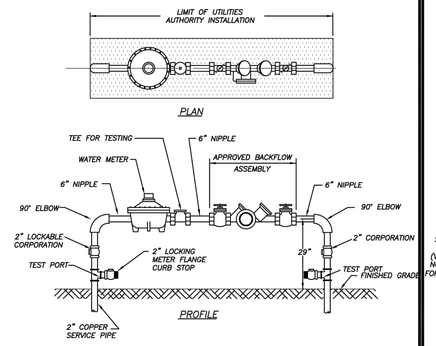


NOTES:

1. BLUE 10 GAUGE THHN WIRE SHALL BE ATTACHED TO THE SERVICE LINE.
2. WHERE SERVICES UNDER PAVEMENT ARE REQUIRED, THE POLYETHYLENE TUBING SHALL BE INSTALLED WITHIN SCHEDULE 40 PVC CASING PIPE.
3. 1" & 3/4" METER SIZES SHALL REQUIRE A LOCKABLE METER VALVE. (CURB STOP)
4. MINIMUM COVER IN UNPAVED AREAS SHALL BE 30", IN PAVED AREAS OR PLANNED ROADWAYS OR SWALES MIN. COVER SHALL BE 36".
5. FOR 2" COMMERCIAL SERVICE INSTALLATIONS, FPUA WILL INSTALL ABOVE GROUND METER PER DETAIL W-8.

TYPICAL SINGLE WATER SERVICE CONNECTION
(N.T.S.)

TYPICAL SINGLE WATER SERVICE CONNECTION	W-2
03-09 DESIGN; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: WATER DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2020; SHEET 1 OF 1	

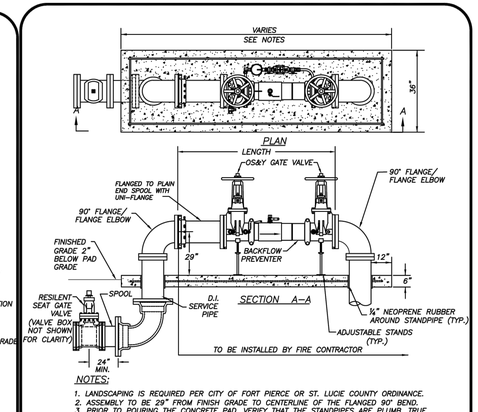


NOTES:

1. LANDSCAPING REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE. NO PLANTS OR TREES WITHIN 18" AROUND METER OR BACKFLOW. NO SOLDER JOINTS.
2. ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.

WATER METER/BACKFLOW PREVENTER ASSEMBLY
DOMESTIC SERVICE (COMMERCIAL)
(N.T.S.)

WATER METER/BACKFLOW PREVENTER ASSEMBLY-DOMESTIC SERVICES (METER SIZE 2" OR LESS)	W-8
03-09 DESIGN; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: WATER DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2010; SHEET 1 OF 1	



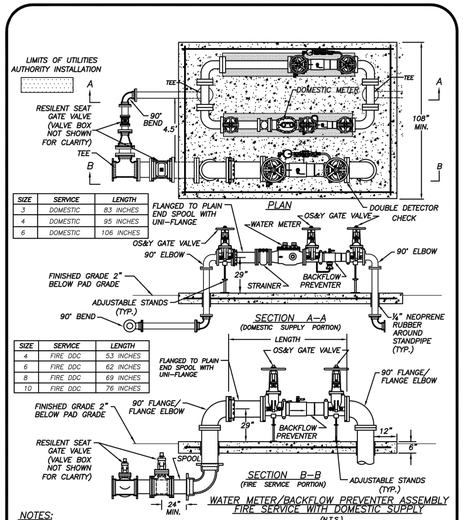
NOTES:

1. LANDSCAPING IS REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE.
2. ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.
3. PRIOR TO POURING THE CONCRETE PAD, VERIFY THAT THE STANDPIPES ARE PLUMB, TRUE AND INSTALLED AT THE SAME ELEVATIONSIN THE PRESENCE OF AN FPUA INSPECTOR.
4. ALL CONCRETE SHALL HAVE FIBERGLASS MESH REINFORCEMENT WITH #4 REBAR 3" FROM THE OUTER PERIMETER.

SIZE	SERVICE	LENGTH
4	DOUBLE DETECTOR	53 INCHES
6	DOUBLE DETECTOR	62 INCHES
8	DOUBLE DETECTOR	69 INCHES
10	DOUBLE DETECTOR	76 INCHES

BACKFLOW PREVENTER ASSEMBLY-4"-10" FIRE SERVICE
(N.T.S.)

BACKFLOW PREVENTER ASSEMBLY 4"-10" FIRE SERVICE	W-10
03-09 CONCRETE PAD; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: WATER DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2010; SHEET 1 OF 1	



SIZE	SERVICE	LENGTH
3	DOMESTIC	83 INCHES
4	DOMESTIC	95 INCHES
6	DOMESTIC	106 INCHES

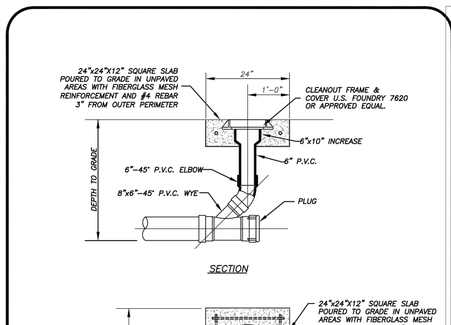
SIZE	SERVICE	LENGTH
4	FIRE DDC	53 INCHES
6	FIRE DDC	62 INCHES
8	FIRE DDC	69 INCHES
10	FIRE DDC	76 INCHES

WATER METER/BACKFLOW PREVENTER ASSEMBLY FIRE SERVICE WITH DOMESTIC SUPPLY
(N.T.S.)

NOTES:

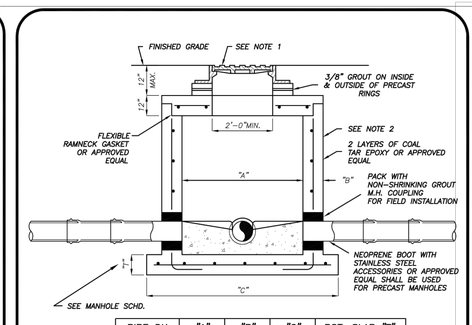
1. LANDSCAPING IS REQUIRED PER CITY OF FORT PIERCE OR ST. LUCIE COUNTY ORDINANCE. NO PLANTS OR TREES WITHIN 36" AROUND METER TO ALLOW MAINTENANCE WITHOUT DAMAGE TO PLANTS ETC.
2. NO SOLDER JOINTS.
3. ASSEMBLY TO BE 29" FROM FINISH GRADE TO CENTERLINE OF THE FLANGED 90° BEND.
4. DOMESTIC SERVICE 2" OR LESS, USE 2" POLY STUBBED 12" ABOVE GRADE.
5. ALL CONCRETE SHALL HAVE FIBERGLASS MESH REINFORCEMENT WITH #4 REBAR 3" FROM THE OUTER PERIMETER

WATER METER/BACKFLOW PREVENTER FIRE SERVICE WITH DOMESTIC SUPPLY	W-11
03-09 CONCRETE PAD; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: WATER DETAILS 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE:	
APPROVED: JJC; DATE: 2010; SHEET 1 OF 1	



TERMINAL CLEANOUT DETAIL (COMMERCIAL)
(N.T.S.)

TERMINAL CLEANOUT DETAIL WASTEWATER	S-4B
10-08 REVISION; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2010; SHEET 2 OF 3	



PIPE DIA.	"A"	"B"	"C"	BOT. SLAB "T"
8"-24"	4'-0"	"8"	76"	8"
30"-36"	5'-0"	"8"	88"	10"
42"-48"	6'-0"	"8"	100"	12"

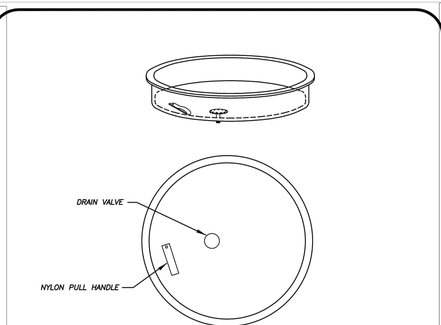
TYPICAL MANHOLE DIMENSIONS

NOTES:

1) MANHOLE FRAME & COVER WITH THE WORDS " SANITARY SEWER" CAST IN THE COVER. U.S. FOUNDRY 170 OR APPROVED EQUAL.
2) ALL CONCRETE MANHOLES TO BE 4000 P.S.I. TO MEET OR EXCEED ASTM C478 ALL CEMENT TO BE TYPE II ACID RESISTANT. REINFORCING AREA OF 0.02 SQ. IN/FT FOR WALL SECTION MIN. TO MEET OR EXCEED ASTM A 185.
3) A MAXIMUM OF 2 LAYERS OF PRECAST CONCRETE RINGS, IF REQUIRED.
4) RAIN GUARDS SHALL BE INSTALLED IN MANHOLES THAT HAVE GRAVITY MAINS 12" OR LESS.

SHALLOW MANHOLE
DEPTH OF LESS THAN 5'-0"
(N.T.S.)

PRECAST MANHOLE DEPTH OF LESS THAN 5'-0"	S-6
02-08 REVISION; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2010; SHEET 1 OF 1	

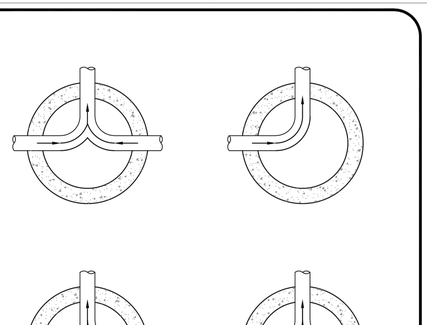


NOTES:

1) SEWER RAIN GUARDS SHALL BE INSTALLED ON ALL MANHOLES WHERE GRAVITY MAINS ARE 12" OR LESS AND IN AREAS DESIGNATED BY ENGINEER TO BE IN A FLOOD AREA.
2) SEWER RAIN GUARDS SHALL BE MANUFACTURED BY PARSON ENVIRONMENTAL PRODUCTS, INC., PART # PMI-23S (PARSON MANHOLE INSERTS) WITH DOUBLE VALVING, OR APPROVED EQUAL.
3) RAINGUARDS MUST BE "SNUG" FIT.

RAINGUARD DETAIL
(N.T.S.)

RAINGUARD DETAIL	S-11
03-09 REVISION; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2010; SHEET 1 OF 1	



NOTES:

1) INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2) SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOWS.

FLOW PATTERNS FOR INVERT CHANNELS

FLOW PATTERNS FOR INVERT CHANNELS	S-12
DATE: REVISION; SLL; JJC	WATER/WASTEWATER ENGINEERING
DESIGNED: JJC; COMPUTER FILE #: SEWER DETAIL 200602.DWG	FT. PIERCE UTILITIES AUTHORITY
DRAWN BY: SLL; SCALE: N.T.S.	
APPROVED: JJC; DATE: 2010; SHEET 1 OF 1	

MARK	REVISION	DATE
1	REVISED PER COPP AND FDEP	10/07/21
2	REVISED PER COPP AND FDEP	01/12/22

DRAWING 21-032 CONST
DESIGNED JBB | DRAWN JBB
CHECKED JBB | SCALE N.T.S. | DATE 04/30/21

THE DRAWINGS ARE THE PROPERTY OF THE ENGINEER, WHETHER THE PROJECT IS EXECUTED OR NOT. REUSE OF DRAWINGS BY OR NOT COPY OR USE FOR OTHER PROJECTS IS PERMITTED ONLY BY WRITTEN CONSENT OF THE ENGINEER. UNAUTHORIZED USE WILL BE PROSECUTED PURSUANT TO THE COPYRIGHT LAWS.

SCHULKE, BITTLE & STODDARD, L.L.C.
CIVIL & STRUCTURAL ENGINEERING . LAND PLANNING . ENVIRONMENTAL PERMITTING
CERTIFICATION OF AUTHORIZATION NO.: 00006668
1717 INDIAN RIVER BLVD., SUITE 201 VERO BEACH, FLORIDA 32960
TEL 772-770-9622 FAX 772-770-9496 EMAIL jbittle@sbsengineers.com
WEBSITE https://www.sbsengineers.com

MISCELLANEOUS DETAILS

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION

JODAH B. BITTLE LICENSE No 57396 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by: JODAH B. BITTLE
FL REG. NO. 57396
AIGGE17095GC469
DATE: 1/30/2023

PROJECT NO. 21-032 | SHEET 11

DocuSign Envelope ID: 60FD9234-1264-44B0-98B2-13889B9675EC



MARK	REVISION	DATE
1	REVISED PER COFP AND FDEP	10/07/21
2	REVISED PER COFP AND FDEP	01/12/22

DRAWING 21-032 CONST

DESIGNED JBB | DRAWN JBB

CHECKED JBB | DATE 04/30/21

SCALE 1"=20'

THE DRAWINGS ARE THE PROPERTY OF THE ENGINEER, WHETHER THE PROJECT FOR WHICH THEY ARE PREPARED IS EXECUTED OR NOT. COPY OR USE FOR OTHER PROJECTS WITHOUT PRIOR WRITTEN CONTRACT WITH THE ENGINEER. UNAUTHORIZED USE WILL BE PROSECUTED PURSUANT TO THE COPYRIGHT LAWS.

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TEL 772-770-9622 FAX 772-770-9496 EMAIL jbittle@sbsengineers.com
WEBSITE https://www.sbsengineers.com

AERIAL

OCEAN VILLAGE CLUBHOUSE

ENGINEER CERTIFICATION

JODAH B. BITTLE LICENSE No 57396 STATE OF FLORIDA PROFESSIONAL ENGINEER

JODAH B. BITTLE FL. REG. NO. 57396

Digitally signed by: Jodah Bittle

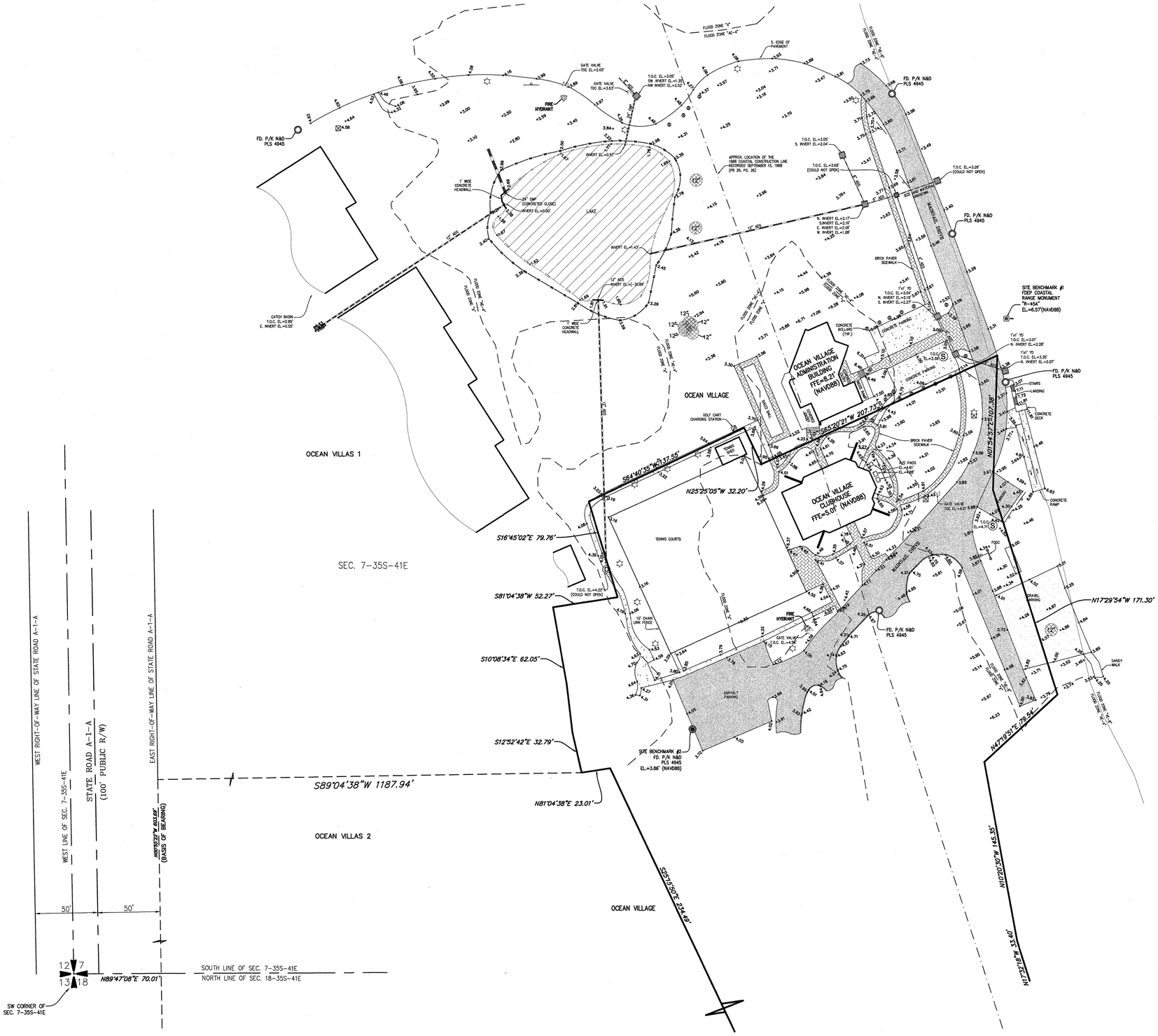
DATE: 1/30/2023

PROJECT NO. 21-032

SHEET 12

DocuSign Envelope ID: 60FD9234-1264-44B0-98B2-13889B9675EC

TOPOGRAPHIC SURVEY



REPORT OF SURVEY:

- TYPE OF SURVEY: TOPOGRAPHIC
- THIS SURVEY PERFORMED BY:

  MERIDIAN LAND SURVEYORS LB#6905 1717 INDIAN RIVER BLVD. SUITE 201 VERO BEACH, FLORIDA 32960
- PROFESSIONAL SURVEYOR & MAPPER IN RESPONSIBLE CHARGE: BILLY M. MOODY P.S.M. #5336
- NO LEGAL DESCRIPTION WAS FOUND IN THE ST. LUCIE COUNTY OFFICIAL RECORDS NOR PROVIDED BY THE CLIENT.
- ELEVATIONS AND DIMENSIONS SHOWN HEREON ARE MEASURED IN FEET AND DECIMAL PARTS THEREOF.
- THE LAST DATE OF FIELD WORK WAS: 03/18/2021
- THIS SURVEY DOES NOT CERTIFY TO THE EXISTENCE OR LOCATION OF ANY UNDERGROUND IMPROVEMENTS: UTILITIES, FOUNDATIONS, OR ENCROACHMENTS, EXCEPT AS SHOWN.
- NO INSTRUMENTS OF RECORD REGARDING EASEMENTS, RIGHT-OF-WAYS, OR OWNERSHIP WERE SUPPLIED TO THIS SURVEYOR, EXCEPT AS SHOWN.
- THE BEARING BASE FOR THIS SURVEY IS N00°55'22"W, ALONG THE EAST RIGHT OF WAY LINE OF STATE ROAD A-1-A. ALL OTHER BEARINGS SHOWN ARE RELATIVE THERETO.
- THE LIMITS OF CONSTRUCTION BOUNDARY LINE AS SHOWN ON THIS SURVEY IS BASED UPON A "LIMITS OF CONSTRUCTION" SURVEY PERFORMED BY ROLAND E. ROLLINS, PLS #4945 JOB # RR180604ASB3
- UNLESS OTHERWISE INDICATED, FOUND MONUMENTATION IS UNIDENTIFIED.
- THE PARCEL OF LAND SHOWN HEREON APPEARS TO BE IN FLOOD ZONE "X", "VE-8" AND "AE-6" , PER FLOOD INSURANCE RATE MAP #12111C0194 K, DATED FEBRUARY 19, 2020..
- THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. PRIMARY BENCHMARK UTILIZED IS NGS MONUMENT "B-770", EL.= 3.64'. SITE BENCHMARKS ARE AS SHOWN HEREON.

LEGEND & ABBREVIATIONS

SYMBOLS NOT SCALEABLE FOR SIZE

PLS	– PROFESSIONAL LAND SURVEYOR	☒	- CABLE TV BOX
PSM	– PROFESSIONAL SURVEYOR & MAPPER	℄	- CENTERLINE
LB	– LAND SURVEYING BUSINESS	⊡	- (CM) CONCRETE MONUMENT
℄	– CENTERLINE	▭	- CURB INLET
B.M.	– BENCHMARK	◎	- DRAINAGE MANHOLE
POC	– POINT OF COMMENCEMENT	⊠	- ELECTRIC BOX
POB	– POINT OF BEGINNING	⋈	- GATE VALVE
PCP	– PERMANENT CONTROL POINT		- GUY WIRE
PRM	– PERMANENT REFERENCE MONUMENT		- HYDRANT
IP	– IRON PIPE		- IRON PIPE
IRC	– IRON ROD & CAP		- IRON ROD & CAP
CM	– CONCRETE MONUMENT		- LIGHT POST
FD	– FOUND		- MITERED END SECTION
(P)	– PLAT		- POINT OF INTERSECTION
(OA)	– OVERALL		- SANITARY MANHOLE
R/W	– RIGHT OF WAY		- STREET SIGN
	– CABBAGE PALM		- SURFACE INLET
	– BEACH DAISY		- TELEPHONE SERVICE
	– SEAOATS		- TYPICAL ELEVATION
	– OAK		- WATER METER
	– SEAGRAPE		- WELL
	– EXOTIC		- WOOD UTILITY POLE

MERIDIAN
LAND SURVEYORS
1717 INDIAN RIVER BLVD, SUITE 201
VERO BEACH, FL. 32960 LB#6905
PHONE: 772-794-1213, FAX: 772-794-1096
EMAIL: INFO@MLS-LB6905.COM

PROJECT# 21-025
DATE: 5/4/21
F.B. 354 PG. 37
DRAWN BY: NJL
CHECKED BY:
SCALE: 1"= 30'
SHEET 1 OF 1

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

NORTH

PLAT OF SURVEY FOR
PROCTOR CONSTRUCTION
2400 S. OCEAN DR.
FT. PIERCE, FL 34949

NO.	DATE	REVISIONS	BY

THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF THE FLORIDA LICENSED SURVEYOR AND MAPPER NAMED BELOW.

STATE OF FLORIDA BILLY M. MOODY LICENSE NO. 5336 STATE OF FLORIDA

5/5/2021

BILLY M. MOODY, PROFESSIONAL SURVEYOR AND MAPPER #5336

RESOLUTION NO. 23-R25

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF FORT PIERCE, FLORIDA; **REVISING QUASI-JUDICIAL PROCEDURES** FOR THE CITY COMMISSION; PROVIDING FOR A SEVERABILITY CLAUSE; REPEALING ALL RESOLUTIONS IN CONFLICT HEREWITH; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City Commission adopted Resolution 17-R16 establishing quasi-judicial procedures; and

WHEREAS, the City Commission adopted Resolution 19-R35 revising the quasi-judicial procedures; and

WHEREAS, the City Commission has determined that minor revisions are necessary.

NOW THEREFORE, BE IT RESOLVED by the City Commission of the City of Fort Pierce, Florida as follows:

SECTION 1. When conducting quasi-judicial hearings, the City Commission shall follow the procedures as outlined in Exhibit "A."

SECTION 2. The provisions of this Resolution are declared to be severable and if any section, sentence, clause, or phrase of this Resolution shall, for any reason, be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this Resolution, which shall remain in effect, it being the legislative intent that this Resolution shall stand notwithstanding the invalidity of any part.

SECTION 3. All resolutions or parts of resolutions in conflict herewith are hereby repealed.

SECTION 4. This Resolution shall take effect immediately upon its adoption.

IN WITNESS HEREWITH, we hereunto set our hands and affix the Official Seal of the City of Fort Pierce, Florida, this 6th day of March, 2023.

Linda Hudson

Linda Hudson, Mayor

ATTEST:

Linda W. Cox

Linda W. Cox, City Clerk

Approved as to Form
And Correctness:

Tanya M. Earley, Esq.
City Attorney

Exhibit "A"

QUASI-JUDICIAL HEARING PROCEDURES AND RULES FOR EX PARTE COMMUNICATIONS

I. Scope and Applicability. These procedures shall apply to all quasi-judicial hearings held by the City Commission.

II. Proceedings. The Mayor (hereafter, the "Presiding Officer") shall conduct the proceedings and maintain order. The City Attorney shall represent the City Commission, rule on all evidentiary and procedural issues and objections, and advise the City Commission as to the applicable law and necessary factual findings. Hearings shall be conducted informally, but with decorum. Formal rules of procedure shall not apply except as set forth herein; however, fundamental due process shall be accorded.

III. Notice Required.

A. Notice of quasi-judicial hearings shall meet the requirements of Florida State Statutes and the City of Fort Pierce Code of Ordinances.

B. When the city is required by law to send notice by mail to adjacent property owner(s), the notice shall indicate that the public hearing will be quasi-judicial in nature, provide a physical copy or website link to the quasi-judicial procedures, and specify the deadline by which any request for party intervenor status must be received.

C. When the city is required by law to send notice by mail to adjacent property owner(s), city staff will mail such notice(s) on or about the date that the legal notice is submitted for advertisement. However, if an earlier mailing deadline is fixed by applicable statute or ordinance, city staff shall comply with that earlier deadline.

IV. Unauthorized Communications. In all quasi-judicial hearings, all rulings must be based only upon the evidence presented at the hearing. Ex parte communications with City Commissioners in quasi-judicial matters are permissible and the adherence to the following procedures shall remove the presumption of prejudice arising from ex parte communications with City Commissioners:

A. The substance of any ex parte communication with a City Commissioner which relates to a quasi-judicial action pending before the Commission is not presumed prejudicial to the action if the subject of the communication and the identity of the person, group, or entity with whom the communication took place is disclosed and made a part of the record before the final action on the matter.

B. A City Commissioner may read a written communication from any person. However, a written communication that relates to a quasi-judicial action pending before the Commission shall not be presumed prejudicial to the action, and such written communication shall be made a part of the record before final action on the matter.

C. City Commissioners may conduct investigations and site visits and may receive expert opinions regarding quasi-judicial action pending before them. Such activities shall not be presumed prejudicial to the action if the existence of the investigation, site visit, or expert opinion is made a part of the record before final action on the matter.

D. Disclosure made pursuant to subparagraphs A, B and C must be made before or during the public meeting at which a vote is taken on such matters, so that persons who have opinions contrary to those expressed in the ex parte communication are given a reasonable opportunity to refute or respond to the communication.

V. Witnesses and Supporting Materials. At least five (5) calendar days before a quasi-judicial hearing:

A. Staff shall prepare a report, recommendation and supporting materials, a copy of which shall be available to the applicant and to the public at the City Clerk's Office. Included in the supporting materials will be copies of all exhibits and documents upon which staff's recommendation is based.

B. The Applicant shall submit a detailed outline of the argument in support of their application, copies of all exhibits which will be presented at hearing and the names and addresses of all witnesses who will be called to testify in support of the application (including resumes for any witness the party intends to qualify as an expert).

C. The five calendar days deadline is necessary to ensure the Commission is given sufficient opportunity to review the written submissions prior to the hearing, and shall be strictly observed. Should the five (5) calendar day deadline be missed by either staff or the Applicant, the item may be continued at the discretion of the City Commission to the next available agenda.

VI. Party Intervenors. The City Attorney may allow a person to intervene as a Party Intervenor if they meet the following requirements:

A. The person must have an interest in the application, which is different than the public at large.

B. At least three (3) calendar days prior to the hearing, the person shall submit a written request to intervene including: a detailed outline of his or her interest in the application and argument in favor or against it, copies of all exhibits which will be presented at the hearing and the names and addresses of all witnesses who will be called to testify on their behalf (including resumes for any witness the person intends to qualify as an expert).

VII. Conduct of Hearing.

A. The Presiding Officer shall call the proceeding to order and announce that the hearing has begun.

B. The Presiding Officer shall inquire whether all parties, members of the public and Commission agrees to waive the quasi-judicial hearing.

C. When the quasi-judicial hearing is not waived, the City Attorney or Presiding Officer shall explain the rules concerning procedure, testimony, and admission of evidence.

D. When the quasi-judicial hearing is not waived, the City Clerk shall swear in all witnesses who are to testify at the hearing.

E. The order of proof shall be as follows:

1. A representative of the City's staff shall briefly describe the Applicant's request, introduce and review all relevant exhibits and evidence, report staff's recommendation, and present any testimony in support of staff's recommendation. Staff shall have a maximum of twenty (20) minutes to make their full presentation, including opening statement and all direct presentation by witnesses, but excluding any cross-examination or questions from the Commission. Any requests for extension of time shall be made to the Presiding Officer, but shall be solely at the discretion of the Presiding Officer.

2. The Applicant (or his/her representative or counsel) shall present evidence and testimony in support of the application. Applicant shall have a maximum of twenty (20) minutes to make his/her full presentation, including opening statement and all direct presentation by witnesses, but excluding any cross-examination or questions from the Commission. Any requests for extension of time shall be made to the Presiding Officer, but shall be solely at the discretion of the Presiding Officer.

3. Any Party Intervenor (or his/her representative or counsel) shall present evidence and testimony in support of or opposed to the application. A Party Intervenor shall have a maximum of twenty (20) minutes to make his/her full presentation, including opening statement and all direct presentation by witnesses, but excluding any cross-examination or questions from the Commission. Any requests for extension of time shall be made to the Presiding Officer, but shall be solely at the discretion of the Presiding Officer.

4. Any other persons present who wish to submit relevant information to the City Commission shall speak next for a maximum of three (3) minutes each. Members of the public will be permitted to present their non-expert opinions, but the Commission will be expressly advised that public sentiment is not relevant to the decision, which must be based only upon competent substantial evidence.

5. The Applicant will be permitted to make final comments.

6. The Party Intervenor will be permitted to make final comments.

7. The City's staff will make final comments.

8. At the discretion of the Presiding Officer, the Applicant may be permitted to respond to the final Party Intervenor and staff comments and recommendations.

F. The City Commission will conduct open deliberation of the application. The Presiding Officer shall have the ability to reopen the proceeding for additional testimony or argument by the parties when it is necessary and appropriate as determined at the discretion of the Presiding Officer. After deliberations, a vote shall be taken to approve, approve with conditions or deny the application.

VIII. Examination by Commissioners and City Attorney or Legal Advisor. Commissioners and the City Attorney may ask questions of City staff, the Applicant (or his/her representative or counsel) or Any Party Intervenor (or his/her representative or counsel) who presents testimony or evidence at any time during the proceedings until commencement of deliberation.

IX. Cross-Examination of Witnesses. After each witness testifies, the City staff representative, the Applicant's representative and/or the Party Intervenor's representative shall be permitted to question the witness, but such cross-examination shall be limited to matters about which the witness testified and shall be limited to five (5) minutes per side. Members of the public will not be permitted to cross-examine witnesses. Cross-examination shall be permitted only as would be permitted in a Florida court of law.

X. Rules of Evidence.

A. All evidence of a type commonly relied upon by reasonably prudent persons in the conduct of their affairs shall be admissible, whether or not such evidence would be admissible in a court of law in Florida. Irrelevant, immaterial, harassing, defamatory or unduly repetitive evidence shall be excluded.

B. Hearsay evidence may be used for the purposes of supplementing or explaining other evidence, but it shall not be sufficient by itself to support a finding unless it would be admissible over objection in a civil action.

C. Documentary evidence may be presented in the form of a copy or the original. Upon request, parties shall be given an opportunity to compare the copy with the original.

XI. Statements of Counsel. Statements of counsel, or any non-attorney representative, shall only be considered as argument and not testimony unless counsel or the

representative is sworn in and the testimony is based on actual personal knowledge of the matters which are the subject of the statements.

XII. Standard of Proof. The decision of the City Commission to approve, deny or modify an agenda item shall be based on competent substantial evidence. Competent substantial evidence is evidence which will establish a substantial basis from which the fact at issue can reasonably be inferred. It includes fact or opinion evidence offered by an expert on a matter that requires specialized knowledge and that is relevant to the issues to be decided. It is evidence a reasonable mind could accept as having probative weight and adequate to support a legal conclusion. Hypothetical, speculative, fear or emotion based generalized statements that do not address the relevant issues and that cannot be reasonably said to support the action advocated, are not competent substantial evidence.

XIII. Continuances and Deferrals. The City Commission shall consider requests for continuances made by City staff, the Applicant or a Party Intervenor and may grant continuances in its sole discretion. If, in the opinion of the City Commission, any testimony or documentary evidence or information presented at the hearing justifies allowing additional research or review in order to properly determine the issue presented, then the City Commission may continue the matter to a time certain to allow for such research or review.

XIV. Maintenance of Evidence and Other Documents. The Office of the City Clerk shall retain all of the evidence and documents presented at the hearing unless any such evidence is too large to be stored by the City Clerk or staff liaison. In that event, such evidence will be stored in the Planning Department.

THE SUNRISE CITY
FORT PIERCE
CITY CLERK'S OFFICE
Florida

March 20, 2024

Ocean Village POA
maney.gale@frsresidential.com

Leslie Olson, District Planning Group
leslie@districtplanninggroup.com

Lisa Reves, Becker Poliakoff
lreves@beckerlawyers.com

Chris Savino, Intervenor
chrisno33@yahoo.com

Dear Applicant, Owner and Intervenor:

Your Quasi-Judicial Hearing originally scheduled for Monday, March 18 was postponed to April 15, 2024. The meeting will be held at 5:05 p.m. in the City Hall Commission Chambers, 100 North U.S. #1, Fort Pierce, Florida, on an application for a Major Site Plan Amendment (Development Review) by property owner, Ocean Village POA, and representative, Leslie Olson, Principal of District Planning Group, to construct a 5-court Pickleball Amenity for the Ocean Village Residential Development and associated site improvements at or near 2400 South Ocean Drive in Fort Pierce, Florida, more specifically located at Parcel Control Number: 2507-321-0001-000-5.

It is important that you review the Quasi-Judicial procedures that can be found on the City's website using this link: https://www.cityoffortpierce.com/DocumentCenter/View/6740/Quasi-Judicial-Procedures.

Pursuant to the City Commission vote, all materials and evidence to be considered during the quasi-judicial hearing, other than the project documentation already submitted and included on the March 18, 2024 agenda, must be submitted no later than 5:00 p.m. on April 1, 2024. All documentation will be shared with all parties as soon as possible after April 1, 2024. Please submit documents to lcox@cityoffortpierce.com.

If you have any questions, please contact me or the Planning Department.

Very truly yours,

Linda W. Cox

Linda W. Cox
City Clerk

cc: Kev Freeman, Planning Director

Lisa A. Reves
Senior Attorney
Phone: 561.820.2878 Fax: 561.832.8987
lreves@beckerlawyers.com

Becker & Poliakoff
625 N. Flagler Drive
7th Floor
West Palm Beach, FL 33401

March 27, 2024

Via email to: shedges@cityoffortpierce.com

Ms. Sara Hedges, Esq.
City Attorney's Office
PO Box 1480
Fort Pierce, FL 34954-1480

Re: Ocean Village Property Owners Association, Inc. ("Association")

Dear Ms. Hedges,

Please be advised that this Firm serves as counsel to the Association in connection with the matters discussed herein. The Association submitted a major site plan development application to the City of Fort Pierce ("City"). That application was heard by the Planning Committee on February 12, 2024, and moved forward with a recommendation of approval. The same application was to be heard by the city council on March 18, 2024, but was postponed until April 15, 2024, to allow the Association time to obtain representation and for counsel to prepare for the hearing.

On March 12, 2024, Mr. Chris Salvino sent a letter to Mayor Hudon and City of Fort Pierce Commissioners. In this correspondence Mr. Salvino requests:

> "[O]fficial request for a Quasi-Judicial hearing to appeal the decision taken by the City Planning Board to approve the plan to build 5 pickleball courts in Ocean Village at 2400 South Ocean Drive on Hutchison Island to be heard at the Commissioner's Meeting at 5 pm on March 18th."

Ms. Linda Cox, City Clerk issued a letter on March 20, 2024, advising the Association, Leslie Olsen, District Planning Group and Chris Savino, Intervenor of the postponement of the Quasi-Judicial Hearing postponement. In the same correspondence. Ms. Cox advises of a deadline to submit evidence no later than 5:00 p.m. on April 1. 2024 so that "all documentation will be shared with all parties as soon as possible after April 1, 2024."

Resolution Number 23-R25 requires for a party to be deemed an intervenor they must meet the following requirements:

A. The person must have an interest in the application, which is different than the public at large.

B. At least three (3) calendar days prior to the hearing, the person shall submit a written request to intervene including: a detailed outline of his or her interest in the application and argument in favor or against it, copies of all exhibits which will be presented at the hearing and the names and addresses of all witnesses who will be called to testify on their behalf (including resumes for any witness the person intends to qualify as an expert).

Mr. Salvino did not request to intervene; he requested an appeal. He failed to provide all exhibits he will be presenting at the hearing, and he failed to provide names and addresses of all witnesses who will be called to testify. As such, the Association objects to the City, sua sponte designating Mr. Savino an Intervenor and request that the city grant him the same rights as any other interested party who wishes to object at a public hearing. The right to be heard at the hearing. No more no less.

Please note, under the terms of the Resolution, Mr. Savino has the right to submit documentation up and until three (3) days prior to the city commission hearing. The Resolution also provides for supporting material to be submitted up to five (5) calendar days before the quasi-judicial hearing.

In order to adequately represent Ocean Village, I have submitted public records requests and am still obtaining those documents. I received the bulk of those documents on March 26, 2024. The fact that the City is requiring documents to be submitted on April 1, 2024, only provides three (3) business days to review the documentation and prepare for a hearing that is scheduled for April 15, 2024. Since, the Resolution allows for the documentation to be provided up to five (5) days prior to the hearing, abbreviating the time frame that is typically afforded to applicants deprives my client the right to due process afforded to all other applicants.

Based on the forgoing, it is our expectation to be able to submit our backup documentation up until and including April 10, 2024, at 5:00 p.m. Additionally, please remove Mr. Salvino from all correspondence related to our application as he is not a party, has not qualified for Intervenor status and is merely an objector.

Very truly yours,



Lisa A. Reves

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Water Resource Management
Coastal Construction Control Line Program
2600 Blair Stone Road, M.S. 3522
Tallahassee, FL 32399-2400
Phone: (850) 245-8336

Permit No. -9033979 - SL

No. of Pages Attached: 5

FIELD PERMIT PURSUANT TO SECTION 161.053 OR 161.052, FLORIDA STATUTES

FINDINGS OF FACT AND CONCLUSION OF LAW: The request for a field permit was considered by the staff designee of the Department of Environmental Protection and found to be in compliance with the requirements of Chapter 62B-33, Florida Administrative Code (F.A.C.). Approval is specifically limited to the activity in the stated location and by the project description, approved plans (if any), attached standard conditions, and any special conditions stated below pursuant to Paragraph 161.053(5), Florida Statutes (F.S.). This permit may be suspended or revoked in accordance with Section 62-4.100, F.A.C.

PROJECT LOCATION:

N0070/N0230 of DEP R-45
2400 S. Ocean Dr. (Ocean Village)
Fort Pierce

PROJECT DESCRIPTION:

As per attached plan and in location(s) specified, permittee is authorized to construct landward pickle-ball court with perimeter walking paths, fencing and various other ancillary items. .

SPECIAL PERMIT CONDITIONS: The permit is valid only after all applicable federal, state, and local permits are obtained and does not authorize contravention of local setback requirements or zoning or building codes. This permit and public notice shall be posted on the site immediately upon issuance and shall remain posted along with local approval until the completion of any activity authorized by this permit. Other special conditions of this permit include:

It is the sole responsibility of owner/permittee to be familiar with all attached guidelines, conditions and requirements.

No additions and/or modifications are authorized to this permit w/o first obtaining Dept. authorization.

Additional local government permits and/or HOA authorizations may be necessary, if applicable and it is the sole responsibility of owner/permittee to obtain.

No impacts to the beach, dune and/or native dune vegetation are authorized.

STANDARD PERMIT CONDITIONS: The permittee shall comply with the attached standard field permit conditions.

APPLICANT INFORMATION: I hereby certify that I am either: (1a) the owner of the subject property or (1b) I have the owner's consent to secure this permit on the owner's behalf; and that (2) I shall obtain any applicable licenses or permits which may be required by federal, state, county, or municipal law prior to commencement of the authorized work; (3) I acknowledge that the authorized work is what I requested; and (4) I accept responsibility for compliance with all permit conditions.

Applicant's Signature S C DeBack Date 10/03/2023 Telephone No. (772) 489.0300

Applicant's Printed Name Steven C. DeBack Address 2400 S OCEAN DR, FORT PIERCE, FL 34949

If applicant is an agent:

OCEAN VILLAGE POA, INC.	2400 S OCEAN DR FORT PIERCE, FL 34949	(772) 489.0300
Printed name of property owner	*Property owner's address*	*Property owner's telephone no.*

DEPARTMENT FINAL ACTION AND FILING AND ACKNOWLEDGMENT: This field permit is approved on behalf of the Department of Environmental Protection by the undersigned staff designee, and filed on this date, pursuant to section 120.52, F.S., with the undersigned designated Deputy Clerk, receipt of which is hereby acknowledged.

	Jason Spanier	10/2/2024
Staff Designee/Deputy Clerk	*Printed Name of Designee/Deputy Clerk*	*Date*

EXPIRATION DATE: 10/2/2024

(Emergency permits issued pursuant to Section 62B-33.014, F.A.C., are valid for no more than ninety days and other field permits are valid for no more than 12 months. The staff designee may specify a shorter time limit.)

EMERGENCY PERMIT: ☐ YES ☑ NO Approved plans are attached: ☐ YES ☑ NO

POST PERMIT AND PUBLIC NOTICE CONSPICUOUSLY ON THE SITE

PUBLIC NOTICE

The foregoing constitutes final agency action. Any person whose substantial interests are affected by any decision made by the Department on the Field Permit has a right to request an administrative hearing in accordance with the provisions of Sections 120.569 and 120.57, F.S. The request for an administrative hearing must comply with the provisions of Rule 28-106.201, F.A.C., and must be received by the Department (at the address given below) within twenty-one (21) days from the date of this notice.

When the Department receives an adequate and timely filed request for hearing, the Department will request the assignment of an administrative law judge. Once the administrative law judge is requested, the Division of Administrative Hearings will have jurisdiction over the formal proceeding and the Department (as the referring agency) will take no further action with respect to the proceeding except as a party litigant.

Section 120.54(5)(b)4, F.S., and Rule 28-106.201(2), F.A.C., explain that the following items must be included in a petition for a formal administrative hearing

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceedings; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all issues of material fact disputed by the petitioner, or a statement that there are no disputed facts;

(e) A concise statement of the ultimate facts alleged, including a statement of the specific facts that the petitioner contends warrant reversal or modification of the Department's action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the Department's action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to its action.

A person may request an extension of time to petition for an administrative hearing. The person filing the request for extension must do so within the time limits for filing a petition described above. The request must state why an extension of time is needed. The Department will grant an extension only when good cause is shown.

If a petition or a request for time extension is filed, further order of the Department becomes necessary to effectuate this Field Permit. Accordingly, the Department's final action may be different from the position taken in this notice. Actions undertaken by any person under this permit, pending the lapse of time allowed for the filing of such a request for hearing, may be subject to modification, removal, or restoration.

Failure to petition within the allowed time frame constitutes waiver of any right that a person has to request a hearing under Section 120.57, F.S., and to participate as a party to the proceeding. If a legally sufficient petition for hearing is not timely received, this notice constitutes final agency action.

When this order becomes final and is filed with the Department Clerk, any party to the order has the right to seek judicial review under Section 120.57, F.S., and Rule 9.030(b)1(c) and 9.110, Florida Rules of Appellate Procedure. A notice of appeal must be filed within thirty (30) days with both the Department Clerk (see address below) and with the appropriate district court of appeal. The notice filed with the district court must be accompanied by the filing fee specified in Section 35.33(3), F.S. Any subsequent intervention will be only by the approval of the presiding officer on motion filed under Rules 28-5.207 or 60Q-2.010, F.A.C.

All requests for hearings are to be filed with the Department at the following address:

Florida Department of Environmental Protection
Office of General Counsel
Department Clerk
3900 Commonwealth Boulevard Mail Station 35
Tallahassee, Florida 32399-3000

STANDARD FIELD PERMIT CONDITIONS

The following conditions shall apply to **FIELD PERMITS** (unless waived by DEP or modified by special permit condition). In the event of a conflict between a field permit condition and a special permit condition, the special condition shall prevail.

1) The permittee shall carry out the construction or activity for which the permit was granted in accordance with the plans and specifications that were approved by DEP as part of the permit. Any deviation there from shall be grounds for suspension of the work and revocation of the permit pursuant to Section 120.60(7), F.S., and may result in assessment of civil fines or issuance of an order to alter or remove the unauthorized structure, or both. No other construction or activities shall be conducted. No modifications to project size, location, or structural design are authorized. A copy of the permit shall be conspicuously displayed at the project site.

2) The permittee shall conduct the construction or activity authorized under the permit using extreme care to prevent any adverse impacts to the beach and dune system, marine turtles and their nests and habitats, or adjacent property and structures.

3) The permittee shall allow any duly authorized member of the staff to enter upon the premises associated with the project authorized by the permit for the purpose of ascertaining compliance with the terms of the permit and with the rules of DEP, until all construction or activities authorized or required in the permit have been completed and the project accepted by DEP.

4) The permittee shall hold and save the State of Florida, DEP, its officers and employees, harmless from any damage (no matter how occasioned and no matter what the amount) to persons or property that might result from the construction or activity authorized under the permit and from any and all claims and judgments resulting from such damage.

5) The permittee shall allow DEP to use all submitted records, notes, monitoring data, and other information relating to construction or any activity under the permit for any purpose it may deem necessary or convenient, except where such use is otherwise specifically forbidden by law.

6) Construction traffic shall not operate and building materials shall not be stored on vegetated areas seaward of the control line, unless specifically authorized by the permit. If (in the opinion of DEP staff) this requirement is not being met, positive control measures shall be provided by the permittee at the direction of DEP staff. Such measures may include temporary fencing, designated access roads, adjustment of construction sequence, or other requirements.

7) The permittee shall not disturb existing beach and dune topography and vegetation except as expressly authorized in the permit. Before the project is considered complete, any disturbed topography or vegetation shall be restored (as prescribed in the permit) with suitable fill material or revegetated with appropriate beach and dune vegetation.

8) The fill material shall be obtained from a source landward of the control line and shall consist of sand which is similar to that already on the site in both grain size and coloration. This fill material shall be free of construction debris, rocks, or other foreign matter. A sample of the sand shall be provided to the staff representative of the Bureau of Beaches and Coastal Systems during the preconstruction conference.

9) If surplus sand fill results from any approved excavation seaward of the CCCL, such material shall be distributed seaward of the CCCL on the site, as directed by DEP staff (unless otherwise specifically authorized by the permit).

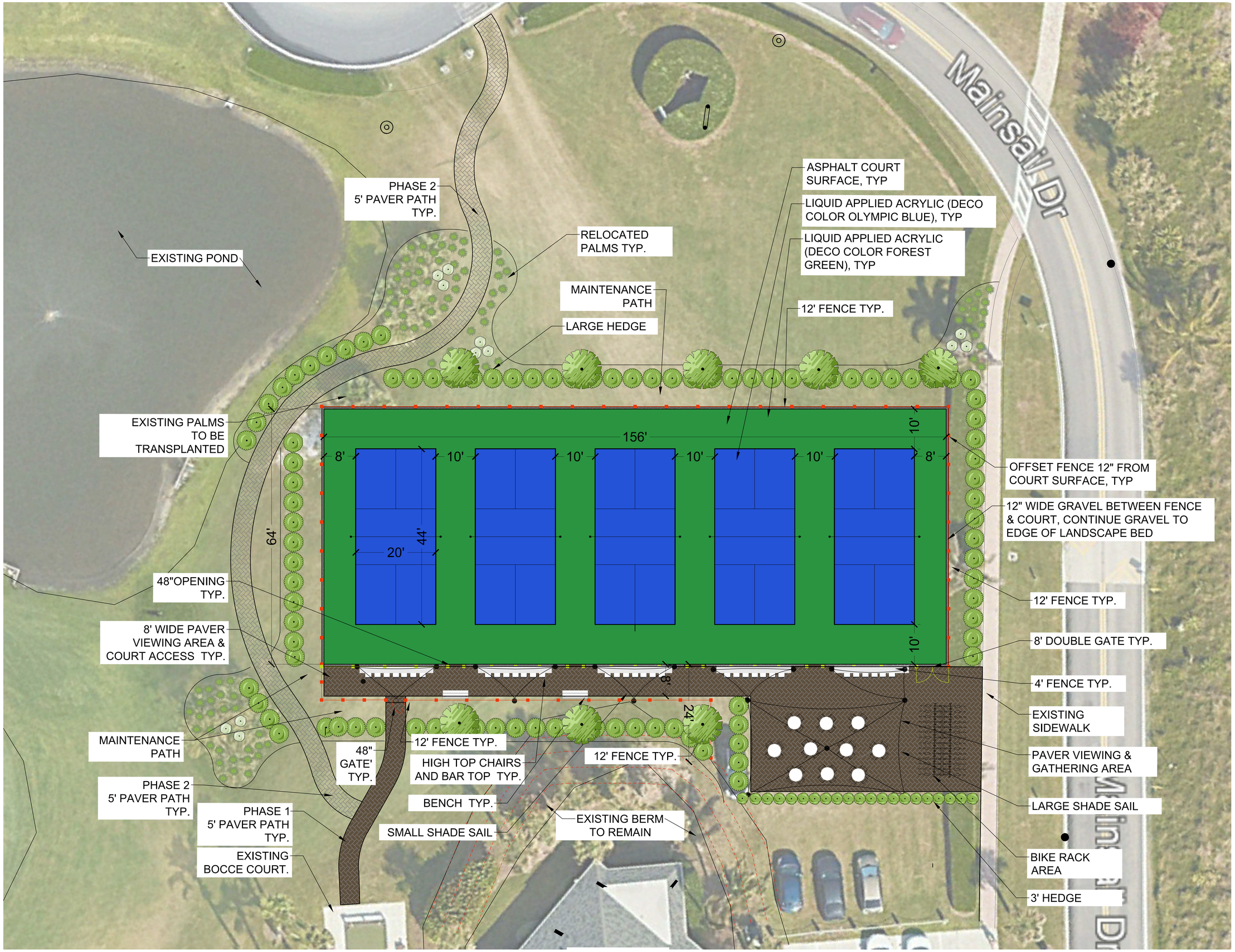
10) Any native salt-resistant vegetation destroyed during construction shall be replaced with plants of the same species or, by authorization of DEP, with other native salt-resistant vegetation suitable for beach and dune stabilization. Unless otherwise specifically authorized by the staff, all plants installed in beach and coastal areas (whether to replace vegetation displaced, damaged, or destroyed during construction or otherwise) shall be of species indigenous to Florida beaches and dunes (i.e., sea oats, sea grape, saw palmetto, panic grass, salt meadow hay cord grass, seashore salt grass, and railroad vine).

11) All topographic restoration and revegetation work is subject to approval and acceptance by DEP staff.

12) If not specifically authorized elsewhere in this permit, no operation, transportation, or storage of equipment or materials is authorized seaward of the dune crest or rigid coastal structure during the marine turtle-nesting season. The marine turtle-nesting season is May 1 through October 31 in all counties (except Brevard, Indian River, St. Lucie, Martin, Palm Beach and Broward counties where marine turtle nesting occurs during the period of March 1 through October 31).

13) If not specifically authorized elsewhere in this permit, no temporary lighting of the construction area is authorized at any time during the marine turtle-nesting season and no additional permanent exterior lighting is authorized.

14) This permit has been issued to a specified property owner and is not valid for any other person.



Project Team

Landscape Architect:

LANDSCAPE ARCHITECTURAL SERVICES, LLC

1708 SE Joy Haven Street
Port St. Lucie, Fl. 34983
(772) 631-8400 | Paul@las-fl.com

Applicant:

Ocean Village
POA

OCEAN VILLAGE PICKLEBALL COURTS

Fort Pierce, FL

Site Plan

Revisions

Date	Init.	Description
9.06.23	PG	Concept Plan
9.14.23	PG	Concept Plan
9.18.23	PG	Concept Plan
9.20.23	PG	Concept Plan

REGISTERED LANDSCAPE ARCHITECT
PAUL A. GOULAS
LA 6666807
STATE OF FLORIDA

PAUL GOULAS, RLA
FLORIDA REG. # LA6666807

Drawn By:	PG
Checked By:	PG
Municipal Project:	
Scale:	

NORTH

SCALE: 1" = 10'

0 5' 10' 20'

LA-1

ENVIRONMENTAL RESOURCE PERMIT APPLICATION REPORT

Application #	Submittal #	Submittal Date
240118-42045	285213	01/18/2024

FOR AGENCY USE ONLY

ACOE Application #	_____	DEP/WMD Application #	_____
Date Application Received	_____	Date Application Received	_____
Proposed Project Lat.	_____	Fee Received$	_____
Proposed Project Long.	_____	Fee Receipt#	_____

SECTION A

A. Type of Environmental Resource Permit Requested (Select One):

- ○ General Permit
- ○ Mitigation Bank (construction)
- ○ Mitigation Bank (conceptual)
- ◉ Individual
- ○ Conceptual
- ○ Request for Exemption Verification
- ○ Extension of Permit Duration
- ○ Formal Wetland Determination
- ○ Infomal Wetland Determination
- ○ Minor Modification
- ○ Minor Modification w/Transfer

B. Type of authorization being requested (Select One):

- ◉ Construction or operation of new works, activities and/or a stormwater management system; or a new Conceptual Approval
- ○ alteration, maintenance, or repair of previously permitted works, activities or Stormwater Management System
- ○ Abandonment or removal of works, activities and/or stormwater management system
- ○ Alteration or operation of an existing stormwater management system which was not previously permitted by the DEP or WMD
- ○ Operation only permit
- ○ Construction of additional phases of a permitted work, activity and/or stormwater management system
- ○ Request for exemption
- ○ Extension of permit duration
- ○ New Wetland Determination
- ○ Reissuance of Formal Wetland Determination

Provide previous permit number: N/A

C. How many components are being affected? : 0
Components include service area,credit assessment; success or release criteria; hydrologic structures or alterations; construction or mitigation design that does not increase the project area; elimination of lands; or monitoring or management plans.

State 404 Authorization

☐ By checking this box, I am indicating intent to apply for a State 404 Authorization, which refers to dredge and fill program permits or activities within waters of the United States. Please complete and attach Section I as part of this submittal.

☐ By checking this box, I hereby voluntarily waive, in accordance with Rule 62-330.090(8), F. A. C. the agency action deadlines in section 5.5.3 of Volume I in the event my project also requires a State 404 Program authorization (other than an exemption) under Chapter 62-331, F. A. C, and request that the agency actions for the ERP and State 404 Program authorizations be issued at the same time. (This is strongly recommended to ensure consistency, and to reduce the potential need for project modifications to resolve inconsistencies that may occur when the agency actions are issued at different times.) if this box is checked and the Agency(ies) determines that no State 404 Program authorization is required, the Agency will continue to abide by section 5.5.3 of Volume I.

D. Type of Activity you are applying(Check all that apply):

☑ For Activities in, on or over wetlands or other surface waters, or within 25 feet of a wetland or surface water. Wetlands and Surface waters are defined in Chapter=62-340.Examples include dredging, filling, outfall structures, docks, piers, over-water structures, shoreline, stabilization, mitigation, reclamation, restoration/enhancement (Section C)

☐ Activities within navigable or flowing surface waters such as multi-slip dock or marina, dry storage facility, dredging, bridge, breakwaters, reefs, or other offshore structures (Section D)

☑ Construction or alteration of a stormwater management system serving residential, commercial, transportation, industrial, agricultural, or other land uses, or a solid waste facility (excluding mines that are regulated by DEP) (Section E)

☐ Activities that are (or may be) located within, on or over state-owned submerged lands (See Chapter 18-21). (Section F)

☐ Creation or Modification of Mitigation Bank (refer to Chapter=62-342). (Section G)

E. For activities in, on or over wetlands or other surface waters, check type of federal dredge and fill permit requested

◉ Individual	○ Programmatic General	○ Letter of Permission
○ General	○ Nationwide	○ Not Applicable

F. Is this project part of a larger plan of development or sale?

○ Yes ◉ No

G. Impervious or semi-impervious area excluding wetlands or other surface waters (if applicable):0.51 acres

H. Volume of water the system is capable of impounding (if applicable):0.35 acres

OWNER(S) OF LAND:	ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER):
NAME:	NAME: Deback, Steve
ADDRESS:	ADDRESS: 2400 SOUTH OCEAN DRIVE Admin building
CITY,STATE,ZIP:	CITY,STATE,ZIP: Fort Pierce, FL 34949
COMPANY AND TITLE	COMPANY AND TITLE: OCEAN VILLAGE PROPERTY OWNERS ASSOCIATION, INC.
TELEPHONE: FAX:	TELEPHONE: 772-489-0300 FAX:
AGENT AUTHORIZED TO SECURE PERMIT (IF AN AGENT IS USED):	**CONSULTANT (IF DIFFERENT FROM AGENT):**
NAME: Albrecht, Kevin	NAME:
COMPANY AND TITLE: ALBRECHT ENGINEERING GROUP LLC	COMPANY AND TITLE:
ADDRESS: Po box 12962	ADDRESS:
CITY,STATE,ZIP: Fort Pierce, FL 34979	CITY,STATE,ZIP:
TELEPHONE: 772-323-9140 FAX:	TELEPHONE: FAX:

Project Location Details

Project Name: Ocean Village Pickleball Court
Project Acreage: 0.69
Irrigated Acreage:
Number of new or modified boat slips: _____
Total acres of work in, on or over wetlands or surface waters: 0.01
Project Address: 2400 SOUTH OCEAN DR
City, Town or Village: Fort Pierce
Zip: 34949
Latitude: _____
Longitude: _____
Directions to site from nearest major intersection: 1,500 feet east of Intersection of clipper Drive and A1A

County: ST LUCIE			
Sections	Township	Range	Land Grant
07	35	41	
Tax Parcel Id No			
2507-321-0001-000-5			

Applicant Signature/Owner Authorization

Kevin Albrecht

AUTHORIZED AGENT

01/18/2024
Date

Statement Of Agreement

By signing this application form, I am applying for, or I am applying on behalf of the applicant, for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relieve me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree, or I agree on behalf of my corporation, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001. I either own the property described in this application or I have legal authority to allow access to the property, and I consent, after receiving prior notification, to any site visit on the property by agents or personnel from the Department of Environmental Protection, the Water Management District and the U.S. Army Corps of Engineers necessary for the review and inspection of the proposed project specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review and inspection. Further, I agree to provide entry to the project site for such agents or personnel to monitor permitted work if a permit is granted.

Prepared by:

Name:	Kevin Albrecht
Agency of Employment:	Albrecht Engineering Group
Position:	Engineer
Email Address:	kalbrechtpe@gmail.com
Phone Number:	772-323-9140
Signature Date:	01/18/2024

Existing or Proposed Permits

Describe in general terms the proposed project, system, or activity.
Construction of 0.36-acre of new impervious area for a pickleball court and associated access elements, which is attenuated and treated with a 0.2-acre dry detention ponds. Only surface water impact is for the proposed outfall pipe MES.

Please identify by number any MSSW/Wetland resource/ERP/ACOE Permits pending, issued or denied for projects at the location, and any related enforcement actions.

Agency	Date	No.Type of Application	Action Taken

Note:The following information is required **only** for projects proposed to occur in,on or over wetlands that need a federal dredge and fill permit and/or authorization to use state owned submerged lands and is not necessary when applying solely for an Environmental Resource Permit. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant). Please attach a plan view showing the owner's names and adjoining property lines. Attach additional sheets if necessary.

1.	2.
3.	4.

Additional Existing Permit Information

Landuse	
RECREATIONAL INCLUDING GOLF	
Supporting Documentation	
File Name	**File Size**
Deed.pdf	843 KB
Project Location.pdf	642 KB
Pickle Ball Court Stormwater Calculations 01102024.pdf	2 MB
Ocean Village Pickleball Plans.pdf	2 MB

SECTION C

Activities in, on or over wetlands or surface waters.

(Describe, in general terms, the type of activity.Use less than 1500 Characters.)

- This projects surface water impacts include relocation/enlargement of an existing outfall pipe into a manmade pond within the existing golf course. The pond is interconnected to a series of manmade ponds within the community which are discharged through an existing control structure.

Supporting Documentation	
File Name	**File Size**

SECTION E

Construction or alteration of an engineered stormwater management system.

(Describe, in general terms, the type of activity.Use less than 1500 Characters.)

- Construction of 0.6 acre pickle ball facility and 0.2 acre stormwater pond.

Supporting Documentation	
File Name	**File Size**

THE SUNRISE CITY
FORT PIERCE
PLANNING DEPARTMENT
Florida

Leslie Olson, AICP
District Planning Group
130 South Indian River Drive, Suite 202
Fort Pierce, FL 34950

Project#: 23-07000026

Subject: Ocean Village Pickleball Courts – Major Site Plan – Parcel ID: 2507-321-0001-000-5 –- Technical Review Committee Comments for December 21, 2023 TRC Meeting

City of Fort Pierce Planning Department

1. A certified letter of completion by a landscape architect, cost estimate, and landscape bond pursuant to City Code 123-6 shall be required before the Final Certificate of Occupancy is approved for the site.
2. Prior to the issuance of any site clearing permits, the applicant shall provide a Tree Mitigation Survey with calculations and coordinate with the City of Ft. Pierce Arborist for the required mitigation of the City regulated trees proposed to be removed as a result of this site's development/construction activity.
3. Per City Code Section 26-40; Limit hours of operation for the Pickleball Courts to Monday through Saturday 7am-11pm, and Sunday 7am-1pm.
4. Adhere to the recommendations of the Pickleball Sound Analysis Report completed by PSM LLC for Pickleball Sound Mitigation prior to issuance of Final Certificate of Occupancy.
5. Adhere to the following Sound Mitigation recommendations:

- Install 14 ft high mass-loaded vinyl barriers along the west side of the proposed courts, 15 ft along the north and a 12 ft high absorbing barrier along the south side and enforce the use of quieter paddles. ***These steps will reduce frequent pickleball sound levels to or below 50 dBA outside of local residences on all floors of the buildings.***
- Diagonal corners for the fencing in three locations, ***which will enhance fence strength and reduce sound reflections.***
- The sound barriers along the north and west fence should not have gates or any openings that would permit sound to pass unobstructed. ***The fences do not need to have chain link material above the 10 ft height, if that assists in building the fencing. The south fence shields the building from pickleball sound, and it avoids reflecting sound to the north because of its absorbing characteristics but it can have one or two gates for entry into the playing area.***
- The use of paddles and tournament approved paddles that meet the requirements of PSM LLC Pickleball Sound Mitigation firm's latest Blue List of Recommended Paddles listed below:

THE PICKLEBALL PADDLE BLUE LIST

PICKLEBALL SOUND MITIGATION LLC

www.pickleballsound.com

Updated: November 4, 2023

Paddle Vendor	Paddle Model Name	Notes
CRBN	1 and 1x	
CRBN	2	
Diadem	Vice	1
Diadem	Warrior	
E6	16s	
Electrum	E Pro II	
Focus	Silencer	
Franklin	Pro Series 16 mm	
Gamma	Obsidian 16	
Gearbox	CX11	
Gearbox	CX14	
Gearbox	GX5 and GX6	
Joola	Ben Johns 16 mm	
Joola	Simone Jardim 16 mm	
Joola	Radius	
Master Athletics	Q1	1
One More	Vibe	
One More	Pro Custom	
Pickleball Rocks	The Dude	
Pickleball Rocks	Pink Widow	
Pro Drive	DRIVE	
Pro Kennex	Pro Speed	
Pro Kennex	Ovation	
Pro Pickleball	Infinity Widebody 16 MM	
Selkirk	Amped Epic	
Selkirk	Vanguard Invikta	
TMPR	Tantrum and TC-16	
Versix	Pro XL	
Wild Monkeys	Grizzly	
Wowlly	Surge XL	
Wolfe	Bite	

Note 1: Two of the above paddles are not USA Pickleball tournament approved

- ½ inch thick polyethylene, Nomex or aluminum core and fiberglass, graphite or composite face paddles are not permitted on these courts, since those models tend to be loud and to

have a pitch above 1,000 Hz. This includes paddle models such as the Onix Z5, the Engage Encore, the Pro-lite Champion and the Paddletek Element and other models.

LANDSCAPING CHECKLIST - Ocean Village Pickle Ball Courts (Major Site Plan)

		COMPLY	COMMENT
123-36	SINGLE AND TWO FAMILY Single-family and two-family dwelling that have less than 4,000 square feet of interior floor area	NO	
(1)	Slab on Grade go to 123-36(2)	-	
	36" High Shrub or Hedge Landscape skirt around building or Stone Wall.	-	
(2)	Minimum 4 trees location and maintenance.	-	
(3)	Grass and or landscaping for groundcover (comply with 124-37)	-	
(4)	Adjacent ROW sodded and trees planted	-	
123-36	GENERAL Does not apply to 123-36	GUIDE	<<<<LINK
(1)	PLANT MATERIALS - Florida No. 1 - Grades and Standards for Nursery Plants Part 1 and Part 2, Department of Agriculture		
a	TREES	-	
a.1	Trees 12ft high DBH 2.5" at 4.5 ft. Palms 10ft clear trunk		
a.2	15ft spread and 15ft high at maturity	-	
a.3	50% non-Palm	YES	
a.4	Root system barrier if close to ROW etc.	YES	
a.5	Trees not permitted: Melaleuca, leucadendron (punk tree), Schinus terebinthifolius (Brazilian pepper) and Casuarina sbp. (Australian pine)	-	
	Invasive - Category 1 not permitted	INVASIVE	<<<<LINK
b	SHRUBS AND HEDGES Minimum 24 inches high and form a 36" hich continous screen	YES	
	Fence /Planting screen minimum 6ft high if Abuting Residential	YES	
c	GROUND COVERS in lieu of grass - finished appearance within 3 months	YES	
d	GRASS Permanent Lawn standard	YES	
e	EXISTING PLANT MATERIAL Credit if incorporated	YES	
(2)	LANDSCAPED AREAS Each area should have at least one tree, shrub, grownd cover.	-	
(3)	LANDSCAPE STRIPS	-	
a.	6 ft wide if lot is <10,000 sq.ft. 10 ft wide if >10,000 sq.ft.		
b.	One tree for each 300 sq.ft of required landscape area - remainder covered with grass, groundcover or other as approved.	-	
(5)	OTHER PROPERTY Between ROW and Buildings covered with grass or other gound cover as approved	-	
(6)	VEHICULAR USE, BUILDING, RETENTION/DETENTION adjacent to other property	-	
a.	Vehicular Use abuting property but not ROW - 10 ft wide.		
b.	If (6)a required then one tree per 200 sq.ft of required, grass ground cover or other approved.	-	
(7)	INTERIOR VEHICLE USE AREAS (urban design options	-	
a.	Lot area > 4,000 sq.ft. 1 sq.ft. Landscaping to every 15 sq.ft. of vehicular use area (1:15). (Exception I-1 & I-2 @ 1:30) Minimum 100 ft x 10 ft		
b.	One tree for each 100 sq.ft of required landscape area - remainder covered with grass, groundcover or other as approved.	-	
c.	Existing Tree Preservation credit - Also refer to Code DBH @ 4.5 ft above ground >12"=500 sq.ft. 6"-12"=400 sq.ft. 3"- 6"= 100sq.ft	-	
(8)	Adjacent to Street ROW Department determines planting of shade trees in ROW.	-	
	Palms may be required for driveway entrances - clear vision	-	
(9)	OTHER AREAS - When C-1, C-2, C-3, C-4, C-5, I-1, or I-2 zone abuts a lot in an E-1, R-1, R-2, R-3, R-4, R-5, OS-1, or OS-2 Site obscuring fence/planted material - noise/visual buffer solid or planted standards.	YES	
(10)	SCREENING OF REFUSE COLLECTION AREAS Screening & Gates	-	
(11)	INSTALLATION STATEMENT	YES	
(12)	MAINTENANCE STATEMENT	YES	

THE SUNRISE CITY
FORT PIERCE
Florida
ENGINEERING
DEPARTMENT

TO : Vennis Gilmore, Assistant Planning Director

FROM : Tracy Telle, Assistant City Engineer TST

RE : Ocean Village Pickleball Courts Site Plan – 2400 S. Ocean Drive
TRC No. 23-07000026

DATE : December 12, 2023

This is to advise you that we have completed the review of the following documents as received by this office on December 7, 2023:

- [x] Site Plan Application
- [ ] Test Reports & Related Documents
- [ ] Record Drawings
- [ ] Clearances from all applicable Local, State and Federal Agencies
- [ ] Construction Drawings
- [ ] Executed Construction Contract
- [ ] Permits from applicable Local, State & Federal Agencies

Based on our reviews and appropriate site final inspection, we

- [x] Recommend
- [ ] Do Not Recommend

- [x] Site Plan Approval
- [ ] Building Permit
- [ ] C/O

Developer, Owner, Engineer, Contractor and other members of the Development Team must be aware, the above recommendation is based only on the construction requirements of the engineering plans and other engineering documentation approved by this department. The Development Team shall be responsible for the compliance with other City department requirements and all approved documents, as well as Local, State and Federal regulations. The development requirements for this project may necessitate additional construction requirements that are not subject to this department's review for approval.

- [x] See attached for advisory comments

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ENGINEERING ADVISORY COMMENTS:

1. The drainage plan was reviewed conceptually, and a thorough review of the plan will be conducted at time of Site Work Permit application.
2. Required permitting for the project may include South Florida Water Management District and Florida Department of Environmental Protection (NPDES Permit and CCCL General Permit).

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THE SUNRISE CITY
FORT PIERCE
BUILDING DEPARTMENT Florida

BUILDING DEPARTMENT
TECHNICAL REVIEW COMMITTEE (TRC)
COMMENT FORM

Meeting Date: 12.21.23
Property Address: Major Site Plan Amendment - Ocean Village Pickleball Courts - 2400 S. Ocean Drive

Please be advised that the project may trigger the requirements indicated below:

☑ 1. Building Official or his representative has no comment at the time of this meeting, but reserves the submission of comments upon completion of the official plan review.

☐ 2. Pre-construction meeting with the City's Building Department is requested.

☑ 3. All new construction or alterations shall meet the requirements of the Florida Building Code 7th Edition.

☑ 4. Building Permit required.

☑ 5. Signed and sealed construction drawings required.

☑ 6. Must meet the following Accessibility requirements:

- ☑ Accessible route
- ☑ Handicapped parking spaces
- ☐ Means of egress

☐ 7. Change of Use required

- ☐ Shall include a signed and sealed Life Safety Plan
- ☐ Shall include a signed and sealed comprehensive drawing, detailing how the building and elements will comply with the Florida Building Code requirements.

MEP

☐ 8. Property exists in Special Flood Hazard Area. All Federal and State requirements shall be addressed.

☐ 9. Flood Development Permit required.

☐ 10. Final plat and approved parcel ID's required to submit or DPCR and building permit review.

☐ 11. Open permits, requiring attention exist.

☐ 12. Shall meet the Fire Prevention Code:

- ☐ Sprinkler system is required.
- ☐ Smoke alarm system is required.

☐ 15. Other

Additional Comments/Requirements:

Building Official's or Representative's Signature _____ Date: 12/19/23

Fort Pierce Utilities Authority
Water/Wastewater Engineering
1701 South 37th Street
Fort Pierce, FL 34947
772.466.1600 x3402

Technical Review Committee Meeting

TECHNICAL REVIEW PROJECT: # 23-07000026

Major Site Plan Amendment - Ocean Village Pickleball Courts - 2400 S. Ocean Drive

Comments

FPUA W/WW Engineering: Approved.

FPUA Electric Engineering: Electric and Gas Engineering has reviewed the application. **Approved.**

Please contact Sal Scimeca for project coordination.

Sal Scimeca
Engineering Technician III
Electric & Gas Engineering
Fort Pierce Utilities Authority
<sscimeca@fpua.com>
772.466.1600 ext. 6957

FPUA Gas: N/A

FPUAnet Fiber: N/A

Lisa Cataline is a seasoned professional in the Real Estate industry, currently serving as the Regional Vice President and Broker for Coldwell Banker Paradise. With over a decade of experience in Real Estate, Lisa brings a wealth of knowledge and expertise to her role.

In her capacity, she oversees the daily operations of eight offices, managing a team of over 25 staff and 200+ agents. Prior to her career in Real Estate, Lisa spent over 20 years honing her skills in Human Resources and Operations, which has equipped her with a strong foundation in leadership and organizational management.

Since 2016, she has been deeply engaged in Ocean Village Sales and Rentals, leveraging her expertise and passion for Real Estate to make a significant impact in the community. Over the years, she has developed a profound love for Ocean Village and all it has to offer.

Education: Northwood University, Bachelor of Business Administration: Management



Lisa Cataline
Regional Vice President | Broker
Coldwell Banker Paradise
Lisa.Cataline@CBParadise.com
Office: 772-461-1324
Call: 704-280-5267

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LICENSEE DETAILS

4:41:07 PM 3/27/2024

Licensee Information

Name:	**REINWASSER, ALLEN (Primary Name)**
Main Address:	**200 S DORCHESTER AVE ROYAL OAK Michigan 48067**
County:	**OUT OF STATE**

License Information

License Type:	**Real Estate Broker or Sales**
Rank:	**Sales Associate**
License Number:	**SL3484736**
Status:	**Current,Active**
Licensure Date:	**11/20/2020**
Expires:	**09/30/2024**

Special Qualifications	Qualification Effective

Alternate Names

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LICENSEE DETAILS

1:47:37 PM 3/29/2024

Licensee Information

Name:	**CATALINE, LISA MARIE (Primary Name)**
Main Address:	**1831 CRESTVIEW DR APT A FT. PIERCE Florida 34949**
County:	**ST. LUCIE**

License Information

License Type:	**Real Estate Broker or Sales**
Rank:	**Broker**
License Number:	**BK3349993**
Status:	**Current,Active**
Licensure Date:	**03/07/2016**
Expires:	**09/30/2024**

Special Qualifications	Qualification Effective

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Robert M. Unetich | Professional Engineer

1811 Woodlands Circle
Pittsburgh, PA 15241
Cell: 412-780-4575
Email: Bob@pickleballsound.com
and itsrmu@aol.com

Professional Profile

An electrical engineer by training, active now as a consulting engineer specializing in pickleball sound.

Experienced in electronic product development and sound barrier design with over 50 years of engineering experience. Licensed as a professional Engineer in Pennsylvania since 1976.

Engineering and Management Career Summary

2022 – Present	Founder of Pickleball Sound Mitigation and Pickleball Sound Laboratories
2007 – Present	Owner of GigaHertz LLC, an electrical engineering and acoustics consulting firm located near Pittsburgh, PA. GigaHertz LLC has been active in pickleball acoustics consulting for about 6 years
2004 – 2007	Owner of Axcera LLC, a manufacturer of analog and digital radio frequency transmitters for television and wireless digital microwave services
1998 – 2004	Adjunct Professor of Engineering at Carnegie Mellon University Work included teaching courses in business for engineers and entry level electrical engineering
1982 – 1997	President of ITS Corporation, a manufacturer of television transmitters. ITS Corporation was acquired by ADC Telecommunications in 1996.
1978 – 1982	Engineering Manager of Broadcast Transmitters, RCA Corporation, Meadowlands, PA
1976 – 1978 `	Engineering Manager of Television Transmitters, Harris Corporation, Quincy, IL
1970 – 1976	Chief Engineer and VP of Engineering of EMCEE Broadcast Corp., White Haven, PA
1968 – 1970	Design Engineer for Honeywell Information Systems, Clearwater, FL. Involved in the design of early GPS receivers.

Education

1964 – 1968 BSEE from Carnegie Mellon University, Pittsburgh, PA

Patents

Several granted patents including a novel power supply design, a waveguide microwave filter and inventions in the field of diathermy.

Publications

Extensively published in the fields of pickleball sound, television technology and radio wave propagation. Currently the author of Pickleball Magazine's Rules Guru Column, the administrator of the facebook group Pickleball Sound Mitigation, the administrator of two pickleball referee facebook groups and a USA Pickleball Certified Referee.

PSM LLC
Pickleball Sound Mitigation

Pickleball Sound Analysis Final Report

For

Ocean Village POA, Fort Pierce, FL

December 8, 2023

Robery M Unetich

Executive Summary:

PSM LLC has studied the proposed pickleball court site plans for Ocean Village. We have considered a number of sound barrier designs and other pickleball sound mitigation methods to minimize the likely impact of pickleball sound at homes close to this site. Our recommendation is that these courts should have a minimum of **fourteen ft. high mass-loaded-vinyl (mlv) barriers along the north and the west court fences and 12 ft high sound absorbing barriers along the south fence** (to minimize reflected sound traveling to the north) and a 12 ft. wide barrier on the north-east side corner. It is not necessary to have chain link mesh reach above the 10 ft height and 10 or 12 ft chain link is generally available as are long heavy duty pipes for barrier support.

In addition, we recommend the use of paddles and tournament approved paddles that meet the requirements of our firm's latest Blue List of Recommended Paddles and the newly released requirements of USA Pick;leball **Noise Reduced** tournament approved paddles.

We also recommend that ½ inch thick polyethylene, Nomex or aluminum core and fiberglass, graphite or composite face paddles not be permitted on these courts, since those models tend to be loud and to have a pitch above 1,000 Hz. This includes paddle models such as the Onix Z5, the Engage Encore, the Pro-lite Champion and the Paddletek Element and other models.

If these recommendations are adopted, we believe that sound levels at all nearby homes, including condos to the north, will be below 50 dBA for the vast majority of all hits and that other player sounds will also be attenuated to near or below background noise levels.

To be effective, the barrier materials must be of sufficient weight and properly sized and installed. We recommend that the mlv weigh at least ½ pound per square ft. We will provide additional guidance about sizing and mounting these recommended barriers. We are confident that if all of these steps are taken, pickleball sound at this site will be within the requirements stated above.

We also have a set of suggestions about the fence design, such as installing diagonal corners to strengthen the fence.

Report Summary: This report is a follow-on report to the report delivered to Ocean Village on March 25 of 2022 and of a draft report delivered to Ocean Village on November 13 of this year.. Therefore, it does not provide the usual description of pickleball sound and how we measure it. The report does, however, predict pickleball sound levels with and without specific combinations of sound barrier designs.

It also adds updated information about quieter pickleball equipment, a topic that is evolving rapidly because of the increase in attention pickleball sound is receiving nationwide. A benefit of this evolution is that the sound levels of many of the new paddles entering the market are lower and this trend can be expected to continue.

In addition, this report includes on site noise data taken by a PSM LLC engineer on the morning of November 10, 2023 and the afternoon of November 21, 2023, where background noise was measured and recorded at six locations in order to qualify the typical average background noise level in the vicinity of the planned courts. The original report measured an average noise level of 48 dBA but the new noise appendix is a more comprehensive analysis of noise levels at this location and it deduces from the data that the average noise level for the two visits this year was 47.4 dBA. The complete site visit report is included as Appendix A

The design of the barriers recommended includes a consideration of noise ordinances, ANSI recommendations and the field experience of PSM LLC. The predictions of sound levels are experience based. The software used for analysis of barrier designs, ***Noise Tools,*** does a calculation of diffraction losses, reflected sound path echos and the insertion loss of barrier materials.

The initial drawing below is a site plan superimposed on a Google Earth satellite view. Local photos taken by PSM staff enable us to consider the heights and elevations of the building surrounding the proposed pickleball site. The software is using satellite photos obtained from Google Earth and elevation information of roof heights to predict sound levels resulting from a sound source placed to simulate players on the courts.

The Sections that follow include:

1. A Site Description
2. A review of local noise ordinances and the ANSI Recommendations
3. A plot of predicted sound levels with no barriers and with ordinary pickleball paddles
4. A plot of predicted sound levels with no barriers and with quieter paddles meeting the requirements of the PSM LLC Blue List and USAor better, which is attached as an Appendix
5. Several plots of predicted sound levels with different height barriers on four sides of the courts
6. Our Conclusions and Recommendations
7. The Blue List of Recommended Paddles
8. Appendix A: A Report on Background Noise Levels

Site Description

The Latest Court Layout Drawing



Satellite View with distances to close homes from the center of the court area:



The distances to homes from players in the center of the court location are about 250 ft. It is about 70 ft less for players on the west side of the courts, making it about 180 ft. The north fence is about 220 feet from the fence to homes.

The ground surface between the courts and the homes is primarily grass, which has a lower reflection coefficient than asphalt or concrete and ground reflection is included in the computer analysis.

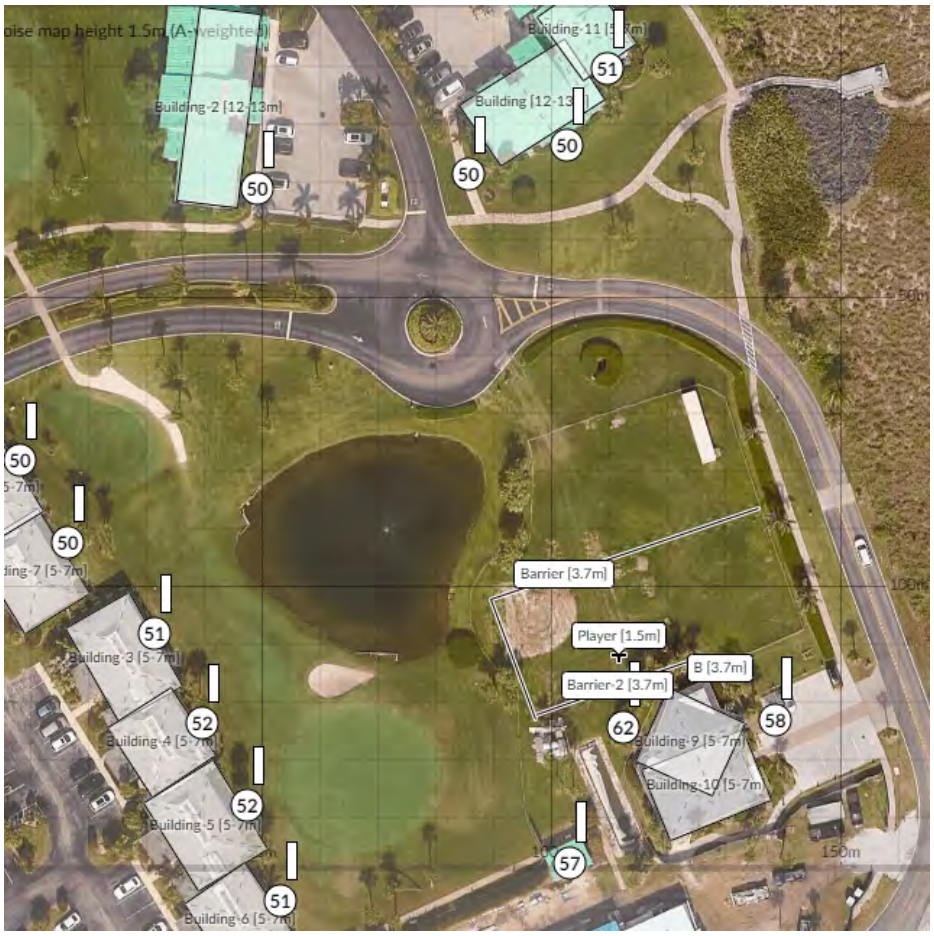
Adding Barriers and Quieter Paddles

While pickleball sound levels can reach 70 dBA at 100 feet from players over a hard surface, a barrier will reduce the ground reflection component by 3 dB and because of the inverse square law of energy distribution, levels will decrease by 6 dB when the distance doubles

Tests show that the enforced use of **tournament approved quieter paddles**, will reduce sound levels by 4 decibels. Using these factors we can calculate the predicted levels at the nearby homes with no barriers in place in the following plot



If we add barriers to three sides we will both attenuate the main path levels and attenuate the reflected path sounds. This next design plot adds three 12 ft high (3.7 meter) barrier sections along the north and west fences and a 12 ft high sound absorbing barrier along the south fence:



As seen above, sound levels are now close to but not under our established goal of under 50 dBA LAFmax at all residences.

It would be possible to reduce the levels by 2.5 decibels by requiring and enforcing the use of a quieter pickleball, such as the Onix Fuse, and this in fact one option. If that selection was made this would be the resulting sound level plot:



These levels are at the identified goal of 50 dBA or lower but it requires the enforced use of a ball such as the Onix Fuse.

Many pickleball players strongly prefer using the more popular tournament approved balls, the Franklin-X or Dura Fast 40. Rather than add a difficult to enforcement requirement on all players, we modeled the idea of increasing barrier heights and using the Franklin-X ball in the next soundscape plot.

We also added a 12 ft high by 12 ft. length of barrier covered fence in the north-east corner to reduce sound diffraction around that corner. It is called barrier # 5 in the plot.

This alternative design retains the use of the Franklin-X ball and it raises the barrier heights to 14 ft in two directions, west and north. We then obtained this plot:

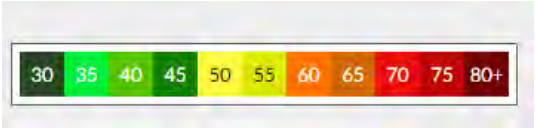


The 14 ft high barrier does not need to be fully covered by chain link mesh. Heavy duty support posts, which are readily available, can support a 14 ft high pipe frame. We recommend that a structural engineer be involved in the fence design.

The next plots also incorporate two diagonal fence sections in the north-west corners and north-east corners to strengthen the fencing.

Using the color graphics of Noise Tools Software, we see this soundscape in the following plot. This plot uses this color legend below for sound levels in dBA LAFmax metric.





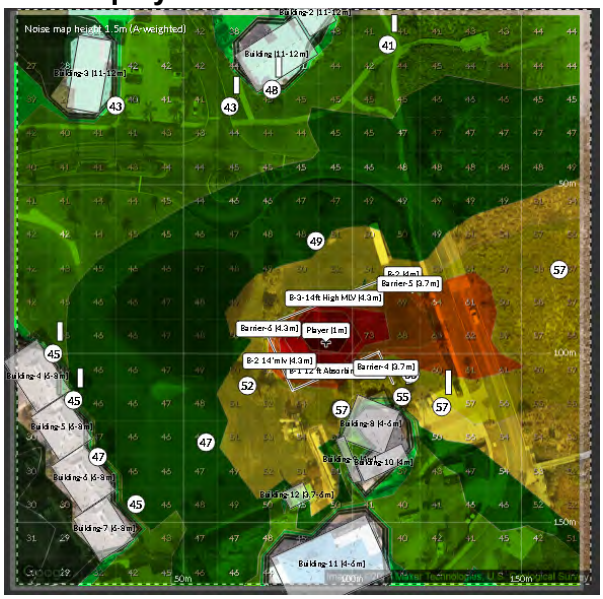
The player in the above has been positioned (on Court 3, assuming a left to right court numbering method) to create the highest distant sound level.

To test that setting, the player is now moved to each court and the new soundscapes are plotted below:

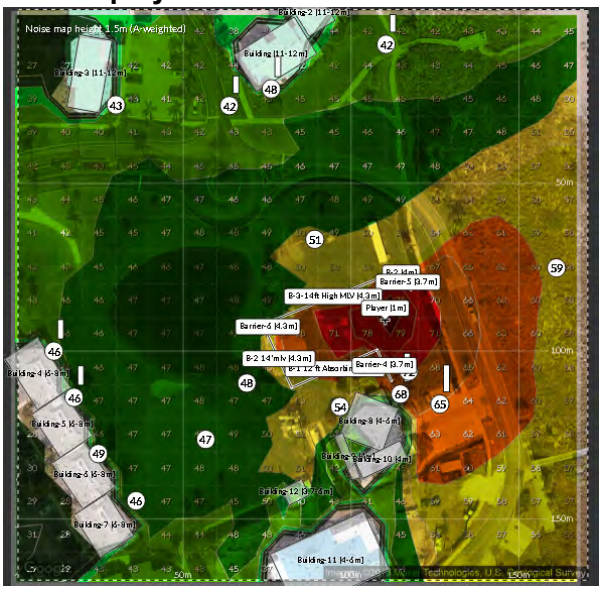
Court 1 player:



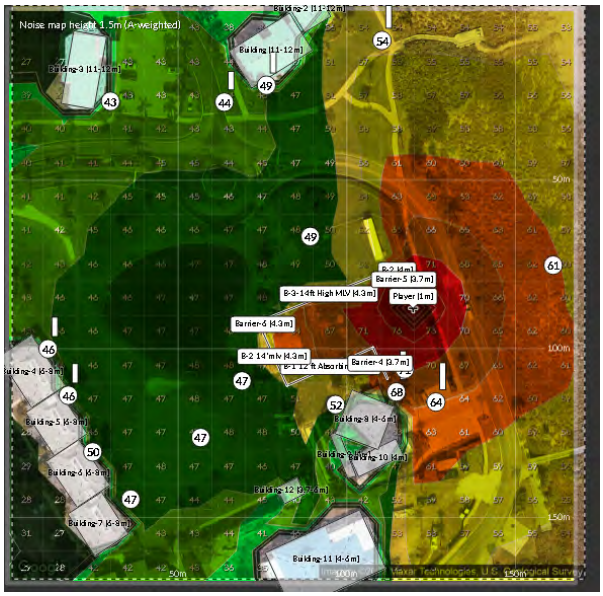
Court 2 player:



Court 4 player:



Court 5 player:



The above plots include the placements of hitters on all five courts and the predicted sound level does not exceed 50 dBA at homes. This combination of barriers includes 14 ft high mlv types on the north and west and a 12 ft high absorbing type along a portion of the south fencing plus a short section of mlv along the north east corner plus the use of quieter but tournament approved paddles and the most common tournament balls.

Sound levels are now below the target level of 50 dBA at all homes including on all floors. A 15 ft high barrier could be considered as an option.

The next plot assumes that the north barrier height is increased to 15 ft above the court surface. While this remains an option, the plot illustrates that the added reduction is modest.



If Ocean Village selects a fencing company that can install a fence of these varying heights, with the diagonal corners recommended and with sufficient wind loading capability, PSM LLC recommends the 14 ft high fence design be implemented.

Fort Pierce Noise Ordinances:

Noise is limited in ARTICLE II of the Fort Pierce Code of Ordinances. The followings sections, shown in italics, define the noise limits:

Sec. 26-37. - Purpose.

a) *Excessive, unnecessary or unusually loud noise is a detriment to the public health, comfort, convenience, safety, welfare and prosperity of city residents.*

(b)

b) *It is in the public interest that the regulations contained in this article be adopted as public policy to promote the public health, comfort, safety, welfare and repose of the city and its inhabitants.*

Sec. 26-38. - Terminology, standards, and definitions.

a)Definitions

b) ***Classification of use occupancy****. For purposes of defining the use occupancy, all premises containing habitually occupied sleeping quarters shall be considered residential use. All premises containing transient commercial sleeping quarters shall be considered commercial use. All premises containing businesses where sales, professional or other commercial uses are legally permitted shall be considered commercial use. All premises where manufacturing is legally permitted shall be considered industrial use. In cases of multiple use, the more restrictive use category shall prevail. Hospitals, nursing homes, schools, libraries, churches and all institutional uses shall be considered residential uses. Any area not otherwise classified shall conform to commercial standards.*

(c)

c) *Maximum permissible sound levels by use occupancy. It shall be unlawful to project a sound or noise, from one property into another property within the boundary of the use occupancy, which exceeds either the limiting noise spectra set forth in Table I below or exceeds the ambient noise level by more than three decibels when measured as specified under the noise enforcement practices as adopted by the city commission by ordinance.*

(1)

Sound or noise projecting from one use occupancy into another use occupancy with a different noise level limit shall not exceed the limits of the use occupancy into which the noise is projected.

(2)

The limits hereinabove referred to shall be in accordance with Table 1 in section 26-40.

Sec. 26-40. - Sound level limitations.

No person shall cause, suffer, allow, or permit the operation of any sound source in such a manner as to create a sound level that exceeds the sound level limits set forth in Table 1 when measured from the real property line of the nearest receiving property, using the slow response setting unless otherwise noted. Such a sound source would constitute a noise disturbance.

Table 1. Sound Level Limits by Receiving Property

Receiving Property Category	*Time*	*Sound Level Limit (dBA)*	*Sound Level Limit (dBC)*	*Sound Level Limit (dBZ)*
Residential	Monday through Saturday, 7:00 a.m.—11:00 p.m.	60	60	60
Residential	Sunday, 7:00 a.m.—1:00 p.m.	See subsection (1) of this section.	See subsection (1) of this section.	See subsection (1) of this section.
Residential	Sunday through Saturday, 11:00 p.m.—7:00 a.m.	See subsection (1) of this section.	See subsection (1) of this section.	See subsection (1) of this section.
Commercial	At all times	65	65	65
Industrial	At all times	70	70	70

(1) It shall be unlawful for any person to make, continue or cause to be made or continued within that portion of the city which has been designated as a residential or mixed use area of the city, between the hours of 11:00 p.m. and 7:00 a.m. of each day, and on Sunday from 7:00 a.m. to 1:00 p.m. any unreasonably loud, excessive, unnecessary, or unusual noise in such manner that noise produced, or the vibration made, by the same would be obvious, or cause discomfort and annoyance to an ordinary, reasonable prudent person at a distance greater than 50 feet from the real property line of the nearest receiving property. A sound level meter or sound level reading shall not be necessary for the enforcement of this subsection.

2) If the noise is an impulsive sound, the fast response setting shall be used and the daytime (7:00 a.m. to 11:00 p.m.) limits of Table 1 shall be increased by ten dBA, dBC, or dBZ.

Analysis of the Ordinances:

We defer to others the meaning of b) ***Classification of use occupancy****. Maximum permissible sound levels "****by use occupancy****",* which limits sound levels to within 3 decibels of background noise levels. While "**Use Occupancy**" may be a legal term, it is, in our view, not well defined in Article II of this code. In addition, this definition of background noise:

We have calculated an **Average Background Noise level** based upon our measurements.

The Sound Level Limits in Table 1 adjustment when impulse noise is being measured:

Table 1 of the ordinance establishes 60 dBA as the normal sound level limit except for impulse noise, which, according to Section 26-40 2), has a limit of 70 dBA as measured in the fast mode with a sound level meter. This is the ANSI defined mode our sound level predictions and measurements employ.

The above teaches us that the actual impulse noise level limit inFort Pierce is 70 dBA.

Conclusions:

Unless sound mitigation is employed, sound levels will exceed the ANSI recommendations and the recommendations of PSM LLC even if quieter gear is employed. It is necessary to add sound barriers to bring the noise levels down to about the background noise level.

Recommendations:

PSM LLC recommends that Ocean Village Install 14 ft high mass-loaded vinyl barriers along the north and west sides of the proposed courts along the north and a 12 ft high absorbing barrier along the south side and enforce the use of quieter paddles. These steps will reduce frequent pickleball sound levels to or below 50 dBA outside of local residences at all floors of the buildings.

We recommend the diagonal corners sections for the fencing in three locations, which will enhance fence strength and reduce sound reflections.

The sound barriers along the north and west fence should not have gates or any openings that would permit sound to pass unobstructed. The fences do not need to have chain link material above the 10 ft height, if that assists in building the fencing. The south fence shields the building from pickleball sound and it avoids reflecting sound to the north because of its absorbing characteristics but it can have one or two gates for entry into the playing area.

PSM LLC is available to recommend vendors and mounting methods for these barriers. Ocean Village will need to develop a hurricane plan to protect the sound barriers and buildings as much as practical during hurricane conditions.

Suggestions:

Diagonal fence corners with triangular piping to change elevations are suggested to strengthen the fence . Tall hedges may be added to improve the appearance of the sound barriers.

We suggest waterproof baseboards along the bottom of the fences for attachment to the sound barriers and to keep the sound barriers from absorbing water or preventing water drainage from the court.

We suggest break away tie wraps or bungy cords along the top of the sound barriers to increase the ability to survive high wind conditions and to facilitate quick removal and reinstallation.

PSM LLC is available to assist in obtaining multiple quotes on sound barrier material.

The following pages are the most recent list of quieter paddles published by PSM LLC. A revised list with additional paddles will be released in January of next year.

The Pickleball Paddle Blue List

Quieter Pickleball Paddles

List updated: November 23, 2023

Introduction: The following paddles have been selected and qualified for 'Blue List' status through a testing procedure that uses a combination of metrics in addition to loudness (sound pressure). This includes measuring the 'pitch' and duration of the sound produced when a pickleball is struck by a paddle.

These metrics were selected after reviewing with players and non-players the characteristics of a typical pickleball hit including input from some who consider impulse sounds of this type to be annoying.

The resulting criteria were established by PSM LLC in 2022 as a means of recommending paddles to communities and pickleball clubs that are attempting to mitigate the sound of pickleball.

Test Procedure: PSM LLC is a pickleball acoustics consulting firm. We have built a tall (16 feet) echo free (or anechoic) ball drop chamber for testing pickleballs and paddles. A calibrated microphone is mounted in this chamber and a computer outside the chamber analyzes the microphone output using REW and Audacity software.

Criteria: The paddles listed have a sound pressure level (SPL) below that generated by a selected standard ½ inch thick fiberglass faced paddle, currently the Gamma 412 model. In addition, these paddles have their spectral energy density below 900 Hz and a decay time of the primary vibration mode to less than 10% of its initial peak value under 5 milliseconds.

Using This List: PSM LLC updates the list as it tests and identifies additional paddles that meet the criteria.

Updating This List: To arrange additional paddle or pickleball testing, contact PSM LLC via email at bob@pickleballsound.com.

For an updated version of **The Blue List**, see the PSM LLC website (pickleballsound.com) as well as the Pickleball Sound Mitigation Facebook group page. **The Pickleball Paddle Blue List** is copyright free.

Paddle Guidance: Tests have shown paddles at least 16 mm thick with carbon fiber surfaces and deemed to be "Control" models by paddle suppliers are generally quieter and have a lower main pitch sound. There are numerous models now on the market that meet this criteria that PSM LLC has not tested so they are not on The Blue List.

THE PICKLEBALL PADDLE BLUE LIST

PICKLEBALL SOUND MITIGATION LLC

www.pickleballsound.com

(paddles listed alphabetically by vendor name)

Paddle Vendor	Paddle Model Name	Notes
CRBN	1 and 1x	
CRBN	2	
Diadem	Vice	1
Diadem	Warrior	
E6	16s	
Electrum	E Pro II	
Focus	Silencer	
Franklin	Pro Series 16 mm	
Gamma	Obsidian 16	
Gearbox	CX11	
Gearbox	CX14	
Gearbox	GX5 and GX6	
Joola	Ben Johns 16 mm	
Joola	Simone Jardim 16 mm	
Joola	Radius	
Master Athletics	Q1	1
One More	Vibe	
One More	Pro Custom	
Owl Sport	Owl	2
Pickleball Rocks	The Dude	
Pickleball Rocks	Pink Widow	
Pro Drive	DRIVE	
Pro Kennex	Pro Speed	
Pro Kennex	Ovation	
Pro Pickleball	Infinity Widebody 16 MM	
Selkirk	Amped Epic	
Selkirk	Vanguard Invikta	
TMPR	Tantrum and TC-16	
Versix	Pro XL	
Wild Monkeys	Grizzly	
Wowlly	Surge XL	
Wolfe	Bite	

Note 1: Not USA Pickleball Approved
Note 2: USA Pickleball Approved in the Quiet Category

Appendix A

Background Noise Site Visit Sound Analysis Report

For

Ocean Village, Fort Pierce, FL

November 30, 2023

Robert M Unetich

Executive Summary:

The PSM LLC November 13 Pickleball Sound Assessment Report relied upon background noise level data from a trip to Ocean Village on March 17, 2022, to establish a baseline background noise level. In that first trip, low wind conditions existed and an average noise level of 48 dBA was recorded along Mainsail Drive.

The early data did not include data from higher elevations or when there was no wind at all or when a strong breeze was present, so PSM LLC requested that we be permitted to collect additional data at the site. An additional purpose of the new site visits was to acquire more accurate building and ground surface elevation information.

Recognizing that sound levels can vary considerably, a trip was made by a PSM LLC engineer on the mornings of November 10th and an afternoon trip was made on November 21 to collect additional sets of field data at a variety of locations including locations previously not studied.

Noise level data from those trips is included in this report. In general, the ambient noise level, measured using a variety of acoustics metrics, confirms that 48 dBA is about the average noise level at residences but it was determined that the ambient noise levels at the six locations tested varied from 46.6 dBA to 50 dBA.

The November 13 Report provided recommendations to install a set of different height mass-loaded-vinyl sound barriers and for Ocean Village to require the use of quieter paddles in order to reduce pickleball sound levels close to or below the average background noise level

If these recommendations are adopted, we believe that sound levels at all nearby homes including condos to the north, will be below 50 dBA for the vast majority of all hits and that other player sounds will also be attenuated to near or below background noise levels.

Field Data:

This plot illustrates the six locations where noise data was collected, numbered 1 through 6:



	Venue:	**Ocean Village, Ft. Pierce, FL**				
	Date:	**Wednesday, November 01, 2023**				
	Microphone:	**Dayton Audio UMM-6**				
	Microphone	**Readings**				
Time	**Location**	**LAFmax**	**LAFmin**	**LZpeak**	**LAeq**	**Comments**
8:26 AM	1					In front of admin building
8:21 AM	2					In front of building to the west
8:08 AM	3A					In front of building to the west and a little further north - ground level
8:14 AM	3B					In front of same building as 3A above - 2nd floor balcony
8:01 AM	4					On road north of the courts; quite windy
7:47 AM	5					In front of 3-story condos to the north of the courts
7:41 AM	6					At base of the dune to the northeast of the courts

The November 10 site visit collected photos of buildings and it recorded the noise measurements taken with a calibrated sound level meter. The following page includes the data taken on that trip.

PSM LLC
Pickleball Sound Mitigation

Pickleball Field Test Data Rev 9

Date: 11/10/2023 Start Time: 7:30 AM End Time: 8:30 AM

Site Name: Ocean Village
City: Ft. Pierce State: FL

1811 Woodlands Circle
Pittsburgh, PA 15241
412-780-4575
pickleballsound.com
bob@pickleballsound.com
Engineer Dereck Prince
Client David Strothmann

Test Gear: REW Software Version: Computer: _____

Microphone: Mic Height: Above Surface: 5.0 ft

OR: Sound level Meter: Model Sper Scientific 840018C Calibrated on: 03-NOV-2023

Court Name/Description: _____ ASL: ____ Number of courts in use: _____

Number of players hitting; _____ # Men: _____ # Balls in Play: _____ Ball used Franklin-X or _____

Paddle Model Used by Hard Hitter facing microphone: Paddletek Element or _____

Receiving Location Addresses: A:_____ B: _____

C: _____ D: _____ Wind Speed: 0.0 mph

DATA: Readings are LAS in dBA Readings Taken At approx. 10-second intervals

Microphone Location Relative to Loud Hitter Facing Mic in Feet

Location	1	2	3	4	5	6
Conditions	Little wind	Little wind	Little wind	Little wind	Little wind	Little wind
Distance						
LAFmax						
1	42.2	44.5	45.0	44.7	42.0	39.2
2	40.5	44.0	48.0	43.1	42.2	38.3
3	43.0	44.3	45.6	43.5	42.3	39.0
4	42.7	43.6	44.0	41.6	42.4	39.9
5	41.6	45.2	43.7	41.5	41.3	39.3
6	42.0	43.5	44.7	41.8	43.2	40.1
7	42.3	44.4	44.3	41.8	44.4	39.5
8	41.7	47.7	42.7	42.2	43.0	38.5
9	42.4	47.5	41.9	42.6	41.8	39.4
10	40.0	44.3	42.1	42.1	42.0	39.6
11	41.5	45.1	41.9	42.5	44.3	39.7
Data Points						
Median:	**42.0**	**44.4**	**44.0**	**42.2**	**42.3**	**39.4**
Max:	**43.0**	**47.7**	**48.0**	**44.7**	**44.4**	**40.1**
LAFmin:						
LAeq:						

The median sound levels ranged from 39.4 to 44.4 dBA. The air was very calm at 0.0 mph. An additional trip was arranged for an afternoon later in the month and the following page is the data collected on that trip. On this trip, two sets of data were collected with two measurement tools, a Sper Type 2 calibrated sound level meter and a Dayton Audio calibrated microphone connected to a laptop software program that could calculate additional sound metrics. The entire set of data is shown below.

PSM LLC
Pickleball Sound Mitigation

Pickleball Field Test Data Rev 9

Date: 11/21/2023 Start Time: 6:10 PM End Time: 7:15 PM

Site Name: Ocean Village
City: Ft. Pierce State: FL

1811 Woodlands Circle
Pittsburgh, PA 15241
412-780-4575
pickleballsound.com
bob@pickleballsound.com
Engineer Dereck Prince
Client David Strothmann

Test Gear: REW Software Version: 5.20.13 Computer: Windows 11
Microphone: UMM-6 Mic Height: Above Surface: 5.0 ft
OR: Sound level Meter: Model Sper Scientific 840018C Calibrated on: 03-NOV-2023

Court Name/Description: _____ ASL: _____ Number of courts in use:
Number of players hitting: _____ # Men: _____ # Balls in Play: _____ Ball used Franklin-X or _____
Paddle Model Used by Hard Hitter facing microphone: Paddletek Element or _____
Receiving Location Addresses: A: 100 Mainsail Dr., Fort Pierce, FL B: _____
C: _____ D: _____ Wind Speed: 6.0 mph (avg.)

DATA: Readings are LAS in dBA Readings Taken At approx. 10-second intervals

Microphone Location Relative to Loud Hitter Facing Mic in Feet

Location #	1	2	3	4	5	6	Dune
Conditions	Slightly windy	Slightly windy	Slightly windy	Slightly windy	Slightly windy	Slightly windy	Slightly windy
Distance							
LASmax	58.0	56.6	65.4	61.9	55.9	55.2	61.7
1	58.5	48.3	52.7	51.9	53.6	49.2	57.1
2	50.8	48.1	53.0	48.4	50.4	50.2	59.2
3	52.3	48.0	52.9	52.5	51.4	47.0	55.3
4	53.7	47.5	52.7	50.1	49.6	49.6	55.5
5	52.3	46.7	54.3	50.0	51.0	47.4	56.3
6	52.5	48.3	53.5	51.8	51.4	48.9	57.9
7	49.8	49.3	55.7	53.5	51.3	48.3	56.7
8	51.1	47.7	53.5	51.6	52.4	48.6	56.8
9	49.0	50.3	54.2	52.1	50.2	47.1	61.8
10	50.7	50.6	55.1	53.6	52.0	48.2	54.3
11	50.2	48.3	51.2	54.2	49.5	48.1	59.4
Data Points							
Median:	51.1	48.3	53.5	51.9	51.3	48.3	56.8
Max:	58.5	50.6	55.7	54.2	53.6	50.2	61.8
LASmin:	51.2	49.4	55.5	51.8	51.5	49.7	53.4
LAeq:	55.7	53.0	57.9	56.7	54.2	52.8	58.6

The median values of sound levels measured varied from 48.3 dBA to 55.5 dBA on this afternoon with a light breeze. The next page will average the median numbers and it will do a more complex conversion of dBA levels to actual air pressure levels, which are then averaged before again being converted to dBA readings, to take into account that averaging sound pressure is actually the average of all sound pressures, not the average of logarithm derived representations.

	Location 1 Median	2	3	4	5	6	Top of Dune
Nov 10	**42.0**	**44.4**	**44.0**	**44.2**	**42.3**	**39.4**	
Nov 21	**51.1**	**48.3**	**53.5**	**51.9**	**51.3**	**48.3**	**56.8**
Simple average	**46.6**	**46.4**	**48.8**	**48.1**	**46.8**	**43.9**	
True Pressure Average in dBA	**47.7**	**46.6**	**50.0**	**48.9**	**47.9**	**44.9**	

If we now take the true average of all 6 pressure and then convert to decibels we get:

47.4 dBA

This figure, **47.4 dBA** is the actual average sound level of six locations over two sets of wind conditions. This figure is close to the average noise level of **48 dBA** measured on March 17, 2022.

Considering noise level data collected by PSM LLC at other sites across Florida, this represents a rather typical overall average noise level, indicating that this portion of Ocean Village is not especially noisy at ground level, considering that it is near the shore. The data taken on the dune of 56.8 dBA, which was as much as 8 decibels higher (louder) than the lowest sound level recorded, suggesting that the dunes assist in blocking sound from the east at lower elevations.

The data on the dune also suggests that the background noise level may be higher at higher elevations.

Analysis

We can now relate the background noise levels to the pickleball sound levels predicted in the November 13 report.

Conclusion:

The predicted noise levels at locations 1 through 6 are near or below the background noise levels measured if the recommended sound mitigation is installed.

SIEBEIN ACOUSTIC
ARCHITECTURAL | ENVIRONMENTAL

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January 22, 2023

Mr. James Dobbins
Ocean Village Property Owners Association, Inc.
2400 S Ocean Drive
Fort Pierce, FL 34949

Dear James:

This letter presents the site noise study for the Ocean Village pickleball project in Fort Pierce, Florida. The purpose of this study was to determine if sounds produced on site would meet the sound level limits of the St. Lucie County noise ordinance at the property boundaries. Acoustical measurements of existing ambient sound levels were recorded on site for an 18-hour period of time on November 27-28, 2022. Short term measurements of specific acoustic events including traffic noise from Windward Drive and Southpoint Drive, sounds from the tennis courts, HVAC noise from the nearby houses and condominiums, birds, insects, wind in the trees and other wildlife were also made during the site visit. An on site simulation of pickleball activities was performed and measured. A geometric divergence study of the sounds from the pickleball courts with the proposed activities was performed and projected sound levels were propagated from the courts to surrounding properties. Both studies showed that pickleball sounds at the locations closest to the proposed pickleball courts exceeded the City of Ft. Pierce noise ordinance criteria. Alternate sites were also studied. The site on the far side of the existing courts would meet the requirements with a 15 ft tall acoustic barrier. The site at the North Field would meet the criteria without the use of a barrier.

SOUND LEVELS AND DECIBELS

Sound is defined as a pressure disturbance in the air caused by a vibrating body that is capable of being heard or detected by the human ear. The average sound pressure level or equivalent continuous sound level (LAeq) of a time-varying sound is defined as the level of an equivalent steady sound at a specific location for the same measurement duration that has the same A-weighted sound energy as the time-varying sound. The maximum A-weighted sound level or LAFmax is the greatest sound level measured on a sound level meter using the fast response of the sound level meter during a designated time duration and an A-weighted filter. The L10 is the fast, A-weighted sound level exceeded 10 percent of the time.

Sounds are typically measured in decibels. A decibel is 10 times the logarithm to the base 10 of the pressure disturbance in the air compared to the pressure at the threshold of human hearing. Decibels cannot be added directly because they are logarithmic ratios. For example, 2 sounds of 50 decibels each added together result in a sound of 53 dB, not 100 dB. A summary of the way that sounds of different levels are added together is shown in Table 1.

Table 1. Examples of the addition of different sound levels (dBA).

Sound level 1	Sound level 2	Combined sound level	Explanation
50 dBA	50 dBA	53 dBA	When two sounds of equal level are combined, the result is a 3 dB increase in sound level
50 dBA	52 dBA	54 dBA	When one sound is combined with another sound that is 2-3 dB louder than first sound, the combined sound level is 2 dB louder than the louder sound
50 dBA	55 dBA	56 dBA	When one sound is combined with another sound that is 4-7 dB louder than the first sound, the combined sound level is 1 dB louder than the louder sound
50 dBA	60 dBA	60 dBA	When one sound is 10 dB louder than another, the combined sound level is approximately equal to the louder sound level

The differences in sound levels are not perceived by people linearly either. One sound must be 10 dB louder than another sound for it to be heard as approximately twice as loud as the first sound. A sound that is 0 to 1 dB louder than another sound is heard as approximately the same loudness as the first sound. A sound that is 2 to 3 dB louder than another sound is heard as barely louder than the first sound. A sound that is 5 to 6 dB louder than another sound is heard as noticeably louder, but not twice as loud as the first sound.

A summary of the perception of the relative loudness of two sounds is shown in Table 2. An acoustic thermometer showing the sound levels associated with different sounds is shown in Figure 1. The sound levels are measured in A-weighted decibels or dBA. An A-weighted decibel is one that has been adjusted so it corresponds to the relative loudness of middle level sounds as they are heard by human listeners. The low frequency or bass sounds are reduced by the A-weighting process and the higher pitch sounds that human ears are more sensitive to are increased slightly by the A-weighting process.

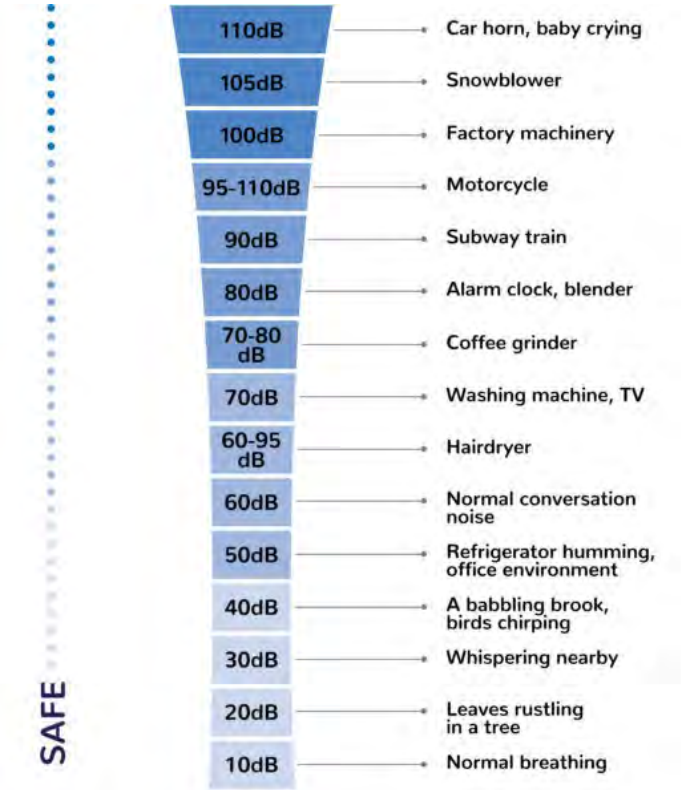


Figure 1. Acoustic Thermometer showing typical sounds and their associated levels.

Table 2. Perception of the relative loudness of 2 sounds.

Difference in sound level between two sounds	The louder sound is perceived as ____ the quieter sound
0 to 1 dB	Almost the same as
2-3 dB	Barely louder than
5-6 dB	Noticeably louder than, but not twice as loud as
10-12 dB	Approximately twice as loud as
15 dB	Approximately three times as loud as
20 dB	Approximately four times as loud as

In general terms, sound levels of 30 to 40 dBA are usually perceived by people as being relatively quiet. Normal conversation measured at approximately 3 feet from the person speaking is 60 to 65 dBA. Cars passing on a street, a washing machine, coffee grander, or a residential air-conditioning unit are approximately 65 to 75 dBA. Loud night clubs, machinery in a factory and amplified music at concerts are often played at levels of 100 to 110 dBA.

METHOD

The method for the Site Noise Study consisted of the items listed below.

I. Take sound level measurements at 1 location on site to document the range of existing ambient sound levels that occur over a 18 hour period of time.

II. Take short-term sound level measurements at 10 locations around the site to measure the existing ambient sound levels, as well as levels during a pickleball simulation.

III. Perform a Pickelball Simulation at 8:00am with doubles matches played on the proposed pickleball courts.

IV. Perform a geometric divergence study of the site to measure sound decay with distance of anticipated sound levels at the residential receivers. This study was done as verification of the pickleball simulation.

V. Calculate anticipated noise levels for the site showing anticipated sound levels on the site and propagated into the surrounding areas to determine if sound levels from the proposed pickleball courts will comply with the applicable noise ordinance.

CRITERIA

City of Ft. Pierce Noise Ordinance

The City of Ft. Pierce Noise Ordinance contains the following verbiage in the section *Maximum permissible sound levels by use occupancy*. "It shall be unlawful to project a sound or noise, from one property into another property within the boundary of the use occupancy, which exceeds either the limiting noise spectra set forth in Table I below or exceeds the ambient noise level by more than three decibels when measured as specified under the noise enforcement practices as adopted by the city commission by ordinance".

Table 1 of Section 2-40. Sound level limitations contains a day time sound level limit of 60 dBA, dBC and dBZ.

Note 2 states, "If the noise is an impulsive sound, the fast response setting shall be used and the daytime (7:00 a.m. to 11:00 p.m.) limits of Table 1 shall be increased by ten dBA, dBC, or dBZ".

Note 5 states, “In addition to the limits of Table 1, for any sound source which impacts residential property, the maximum allowable sound level limits for the individual octave bands whose centers are 31.5, 63 and 125 Hertz shall not exceed 65 dBA, dBC, or dBZ”.

Section 2-41 Exemptions contains Section a-8 states, “Non-amplified crowd noises resulting from the activities such as those planned by student, governmental or community groups.”.

Therefore, the sound level limit of 70 dBA, dBC and dBZ for the instantaneous sounds of impact of the paddle and the balls, or 3 dB above the ambient will be examined. Unamplified crowd noise is exempt, however, consideration should be given to this aspect of the activities, as it can be a controversial aspect of pickleball courts. Consider the same limitations of the noise ordinance to apply to the crowd noise as well to help maintain compatibility of the courts and the nearby residences.

Criteria to Consider
The 70 dBA, dBC, dBZ criteria for impulsive sound is very high and has the potential to disturb people of normal hearing sensitivities, especially given the highly impulsive nature of the pickleball impacts.

ANSI S12.9 is a national standard for quantifying annoyance caused by sound and is an appropriate method for assessing highly impulsive sound according to the unnecessarily loud criterion. Part 5 of the standard recommends a maximum day-night level of 55 dBA for residential areas. This translates into a 55 dBA adjusted equivalent-continuous sound pressure level limit for daytime activities.

INSTRUMENTATION

Short Term Measurements of Specific Acoustic Events
A Larson Davis Model 831 Sound Level Meter, which meets ANSI S1.4 requirements for type 1 sound level meters was used to record the overall A-weighted average sound levels as well as flat-weighted 1/1 and 1/3 octave band levels at the site for specific acoustic events. The meter was calibrated with a Larson Davis CAL 200 calibrator prior to and after testing and found to be within 0.1 dB of the initial calibration after testing. The microphone was held approximately 5’ - 6’ above the ground. A windscreen was attached to the microphone for all measurements. Qualitative observations of the type and character of sounds were noted by the Consultants during the measurement process.

Short term measurements were made at 4 locations on the site, shown in Figure 3. A summary table of the data is included in Appendix A.

L1 was located to the west of the courts at the nearest façade of the condominium.
Typical ambient sound levels varied from 42 to 52 dBA. Specific acoustic events at this location included traffic on Southpointe Drive, lawn maintenance, sounds from the tennis courts and pickleball courts, wind blowing, crickets, and cicadas.

L2 was the closest residence directly south of the multistory residential tower to the southwest of the courts.
Typical day time ambient sound levels varied from 43 to 44 dBA. Specific acoustic events at this location included traffic on Southpointe, sounds from the tennis courts, lawn maintenance, garbage trucks, wind blowing, crickets, and cicadas.

L3 was located at the residence across the street from L2 located on the inner curve of Southpointe Drive.
Typical day time ambient sound levels varied from 43 to 52 dBA. Specific acoustic events at this location included traffic on Southpointe, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

L4 was located at the residence across from the proposed pickleball courts to the south west.
Typical day time ambient sound levels varied from 46 to 51 dBA. Specific acoustic events at this location included traffic on Southpointe, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

L5 was the residence directly south of the proposed pickleball courts.
Typical day time ambient sound levels varied from 44 to 50 dBA. Specific acoustic events at this location included traffic on traffic on Southpointe, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

L6 was the residence directly south of the proposed pickleball courts.
Typical day time ambient sound levels varied from 43 to 53 dBA. Specific acoustic events at this location included traffic on Southpointe, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

L7 was the residence to the south east along Windward drive.
Typical day time ambient sound levels varied from 45 to 50 dBA. Specific acoustic events at this location included traffic on traffic on Southpointe and Windward Drive, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

L8 was the location nearest the multifamily residences to the south east across Windward Drive.
Sound levels varied from 45 to 48 dBA. Specific acoustic events at this location included traffic on Southpointe and Windward Drive, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

L9 was the location directly to the east of the proposed pickleball courts across Windward Drive.
Sound levels varied from 53-54 dBA. Specific acoustic events at this location included traffic Southpointe and Windward Drive, HVAC units running, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

L10 was the location at the multifamily residential tower directly to the North of the proposed pickleball courts.
Sound levels varied from 45 to 53 dBA. Specific acoustic events at this location included traffic Southpointe and Windward Drive, HVAC units running, lawn maintenance, garbage trucks, sounds from the tennis courts, wind blowing, crickets, and cicadas.

A tabular summary of A-weighted sound levels recorded at each location with qualitative descriptions of specific acoustic events are included in Appendix B.

Continuous Measurement of Average Sound Levels
A Larson Davis Model 831 Sound Level Meter, which meets ANSI S1.4 requirements for type 1 sound level meters was used to record the overall A-weighted average sound levels as well as flat-weighted 1/1 and 1/3 octave band levels at the site for specific acoustic events. The meter was calibrated with a Larson Davis CAL 200 calibrator prior to and after testing and found to be within 0.1 dB of the initial calibration after testing. The microphone was held approximately 5’ - 6’ above the ground. A windscreen was attached to the microphone for all measurements. Qualitative observations of the type and character of sounds were noted by the Consultants during the measurement process.

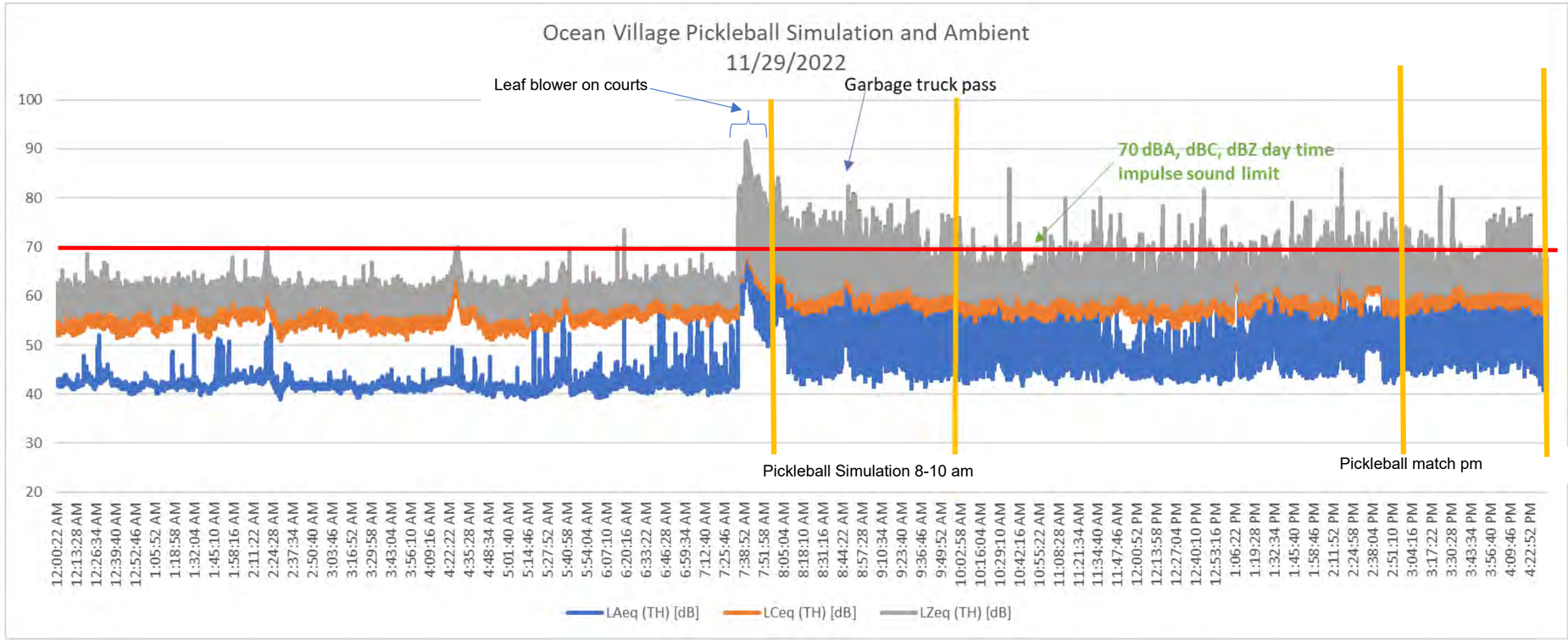
The sound level meter was placed at 1 location on the site to continuously record typical ambient sound levels on the site.

1. One Svantek 307A (R1) was fastened to a tree to measure sound levels near the south end of the proposed pickleball courts.

The meter was set to record continuously for approximately 18 hours. Figure 2 shows the LAeq, LCeq and LZeq from 12am through 4:25pm.

Ambient sound levels measured ranged from 39-53 dBA, 52-65 dBC and 59-67 dBZ during the night and 43-60 dBA, 55-72 dBC, and 60-68 dBZ during the day.

Sound levels during the pickleball simulation were 57-79dBA, 59-79 dBC and 59-79 dBZ. One-third octave band sound levels during the pickleball match varied at 31.5 Hz from 42-67 dBZ. One-third octave band sound levels during the pickleball match varied at 63 Hz from 47-71 dBZ. One-third octave band sound levels during the pickleball match varied at 125 Hz from 45-63 dBZ.



A graph of the data for this meter is shown in Figure 2.

Figure 2. This graph shows the period starting at 12am on 11/28/2022 through approximately 4:25 pm. The pickleball simulation took place from 8am-12pm on November 29, 2022. Sounds from this are included between the yellow lines. Another round of pickleball started up at approximately 3pm. The red line shows the 70 dBA, dBC and dBZ noise ordinance limit. Fast maximum sound levels from the simulation were above the 70 dB requirement, however, this location was just outside the courts and not on residential property, so the limit is likely not applicable at this location. The blue, orange and gray lines shows the existing sound levels measured on site. The measurements taken contained limited crowd noise.



Figure 3. Site map with short term measurement locations shown. Short term measurement locations are shown with yellow dots. The meter that logged sound levels continuously is shown with the blue dot. The proposed pickleball locations are shown in the red box.

THE STUDIES

Two pickleball studies were performed to examine the potential effects of relocating the pickleball courts to the 2 tennis courts to the east.

1. One study involved a pickleball simulation set up on the proposed courts with 4 players playing doubles matches on each court.

2. Another study called the Geometric Divergence Study was performed using the sound spectra obtained during the site visit to determine calculated sound levels to the nearby surrounding residences. This study was performed to provide a "worst case scenario" using one of the loudest sound sources from the pickleball matches to determine what a worst case scenario might result in and a comparison to the noise ordinance.

PICKLEBALL SIMULATION STUDY

A live pickleball simulation was performed on the proposed pickleball courts on November 28, 2022 from approximately 8am through 10am. Eight courts were set up with 4 people on each court, as shown in Figure 4.

Sound levels were measured at each of the 10 locations surrounding the proposed courts before and during the simulation to determine if sound levels met or exceeded the limits contained in the Ft. Pierce City Noise Ordinance.



Figure 4. Pickleball doubles simulation set up on the proposed pickleball courts

RESULTS

Ambient Sound Levels

Sound levels were measured in the low to middle 40's in the evening in most locations except L9, which was 53 dBA and dominated by the HVAC at the front of the units running. Sound levels were measured in the middle 40's to low 50's in the day time with excursions over 70 dBA when lawn maintenance took place.

Pickleball Sound Levels

Although the noise ordinance contains A, C and Z weighting limits, the C and Z weightings include low frequency sounds which increase the overall sound level. The individual graphs were analyzed and it was determined that significant low frequency sounds were present in many of the measurements that were not attributed to the pickleball impacts, especially at the locations farther from the courts. Occasionally these sounds would increase the C and/or Z weighting over the 70 dB threshold despite the pickleball impacts not being over. Therefore, the A weighted frequency is more appropriate for the pickleball impacts to determine compliance.

Location L1 was the only location that satisfied both the 70 dB limit and the 3 dB increase above the ambient.
Location L1, L2, L3, L4, L, L8 had impacts lower than the 70 dB criteria. Location L9 had levels that approached the 70 dB criteria. Locations L5, L6 and L10 exceeded the 70 dB criteria.

Table 3. Sound levels measured without pickleball or other intruding sounds (ambient) and with pickleball, and the range of increase above the ambient at each location

Measurement Location	Ambient Measured	Pickleball impacts	Increase above ambient
L1	45-52 dBA	45-47 dBA	0 dBA
L2	43-44 dBA	45-58 dBA	0-14 dBA
L3	43-52dBA	45-58 dBA	2-15 dBA
L4	46-51 dBA	46-56 dBA	0-10 dBA
L5	44-50 dBA	52-72 dBA	2-28 dBA
L6	43-53 dBA	53-79 dBA	0-36 dBA
L7	45-50 dBA	53-68 dBA	3-23 dBA
L8	45-48 dBA	58-64 dBA	13-19 dBA
L9	53 dBA	55-70 dB	2-17 dBA
L10	45-53 dBA	63-77 dB	10-24 dBA

Key:

Meets Noise Ordinance
Approaches Noise Ordinance
Exceeds Noise Ordinance

GEOMETRIC DIVERGENCE STUDY

A noise study that examined the effects of geometric divergence, or sound decay over distance was performed to determine anticipated approximate sound levels of the pickleball activities at each of the nearest façades of the surrounding residences and to verify the field measurements. **This model studied the effect of sound decay from the anticipated sound sources on site due to distance. This was performed using a source sound spectrum measured during the pickleball matches on site. The resulting sound spectrum was calculated at the various distances of the closest residential façades.**

Table 3 lists the sound sources included in the acoustical calculations.

PICKLEBALL IMPACT SPECTRA

The octave band sound pressure level data measured at a live pickleball match that was previously measured by Siebein Associates, Inc. was used as the sound source data in the model. These measurements were made at multiple distances away from the courts and included four pickleball courts with doubles matches playing. One of the loudest sound spectra from that session was used in the model as a "worst case scenario", and included sounds from the 4 ongoing pickleball matches, pickleball paddles hitting balls and excited voices. This spectrum is shown in Table 3. A safety factor is also included in the spectra to account for differences in individual strikes with different strength, different paddles, etc.

This spectrum was also compared with data previously acquired in our database from another pickleball simulation and a live pickleball match with 4 doubles matches to determine if the level and spectra were comparable. The spectrum measured from the Svantek data was used at a distance of 30 ft which is louder than other typical spectra that have been previously studied as a "worst case" scenario.

Table 3: Sound sources included in the acoustical model.

Source Description	Frequency in Hertz								
	63	125	250	500	1000	2000	4000	8000	Overall Sound Level
Pickleball impact LAFmax spectra at 30 ft	59	56	54	67	73	78	60	56	79 dBA

RESULTS

Sounds from the geometric divergence study of the pickleball match exceeded the City Code's maximum permitted sound level of 70 dBA, dBC and dBZ at locations L10 and L9. Sound levels approach the 70 dB criteria at locations L4, L5 and L6. Sounds are below the 70 dB criteria at locations L1, L2, L3, L7 and L8.

Table 4: Table showing range of existing sound levels and projected sound levels on the property lines of the nearest neighboring properties.

Location	Ambient Sound levels Typical	Resulting Sound Level from Pickleball	Meets or Exceeds 70 dB sound level limit	Meets or Exceeds 3 dB above the ambient sound level
L1	45-52 dBA	61 dBA	Meets	Exceeds
L2	43-44 dBA	60 dBA	Meets	Exceeds
L3	43-52dBA	63 dBA	Meets	Exceeds
L4	46-51 dBA	68 dBA	Approach Exceedances	Exceeds
L5	44-50 dBA	68 dBA	Approach Exceedances	Exceeds
L6	43-53 dBA	69 dBA	Approach Exceedances	Exceeds
L7	45-50 dBA	65 dBA	Meets	Exceeds
L8	45-48 dBA	66 dBA	Meets	Exceeds
L9	53 dBA	72 dBA	Exceeds	Exceeds
L10	45-53 dBA	72 dBA	Exceeds	Exceeds

ALTERNATE LOCATION STUDIES

Two alternate locations were studied to determine if a different location was more suitable for the proposed pickleball courts.

Alternate Location 1

The 2 courts directly to the west of the proposed courts were studied to determine if relcoating the courts to this area would result in lower sound levels at the residential locations around the site.



Figure 5. Alternate proposed pickleball location

Table 5: Table showing range of existing sound levels and projected sound levels on the property lines of the nearest neighboring properties.

Location	Ambient Sound levels Typical	Resulting Sound Level from Pickleball	Meets or Exceeds 70 dB sound level limit	Meets or Exceeds 3 dB above the ambient sound level
L1	45-52 dBA	69 dBA	Approach Exceedances	Exceeds
L2	43-44 dBA	66 dBA	Meets	Exceeds
L3	43-52dBA	69 dBA	Approach Exceedances	Exceeds
L4	46-51 dBA	71 dBA	Exceeds	Exceeds
L5	44-50 dBA	71 dBA	Exceeds	Exceeds
L6	43-53 dBA	69 dBA	Approach Exceedances	Exceeds
L7	45-50 dBA	63 dBA	Meets	Exceeds
L8	45-48 dBA	61 dBA	Meets	Exceeds
L9	53 dBA	64 dBA	Meets	Exceeds
L10	45-53 dBA	70 dBA	Exceeds	Exceeds

Sounds from the geometric divergence study of the pickleball match exceeded the City Code's maximum permitted sound level of 70 dBA, dBC and dBZ at locations L10, L4 and L5. Sound levels approach the 70 dB criteria at locations L1, L3 and L6. Sounds are below the 70 dB criteria at locations L2, L7, L8, and L9.

Barrier Analysis

Barriers of 12-15 ft were analyzed to determine if they would reduce sound levels, especially to the residences at L10 in the middle and upper stories. Barriers are effective for the single story receivers that exceeded.

A barrier of 12 ft redeuced sound levels to the single story residences, but would not reduce sounds to the upper levels of the residential tower below the 70 dB criteria.

It was found a 15 ft barrier would be needed to reduce sound levels to the residences at the top of the residential tower at location L10, as well as the single story residnces.

Manufacturers such as Acoustiblok or Soundfighter can be considered.

https://acoustiblok.com/2013/04/08/pickleball-court-reduced-noise/

Pickleball Noise Solutions and Sound Barriers (soundfighter.com)

Please note that some communities have experienced a reduction of wind on the courts due to the solid barrier, which they believe results in uncomfortable environmetal conditions on the courts.

Alternate Location 2

A site that was located in the North Field was also studied. Ambient measurements were not made at this location, so therefore the level above the ambient is not known.

Figure 6. Site map of an alternate proposed site in North Field and residential towers surrounding.



RESULTS

Table 6: Table showing projected sound levels on the property lines of the nearest neighboring properties to the proposed location in the North Field.

Location	Resulting Sound Level from Pickleball	Meets or Exceeds 70 dB sound level limit
P1	64 dBA	Meets
P2	62 dBA	Meets
P3	60 dBA	Meets
P4	61 dBA	Meets
P5	61 dBA	Meets
P6	60 dBA	Meets

Sounds from the geometric divergence study show that the 70 dB criteria is met at all the nearest residential locations surrounding the site on the North Field wihout the use of a noise barrier.

RECOMMENDATIONS

1. The proposed site for the pickleball courts will require mitigation to reduce sound levels below the 70 dB criteria. The effectiveness of a sound barrier will be limited to the achieveable height. The residences at location L10 that are above the top of the barrier will only receive the benefit of sound decay due to distance. Even with a barrier of 15 ft height, sound levels above the shadow zone of the acoustic barrier (between 30-54 ft up the façade of the condominium at L10) would still reach levels of 70-71 dBA, which exceeds the 70 dB limit, the 3 dB above the ambient and 55 dBA criteria from ANSI.

2. It is recommended that an alternate location be selected that provides an adequate distance buffer between the courts and any surrounding residences.

3. The alternate site directly adjacent to the current proposed court site exceeds the 70dB criteria at 3 locations and approaches exceedances at 3 locations. A 15 ft tall acoustic barrier would need to be constructed along the perimeter of the courts to reduce sound levels to below the 70 dB criteria at all locations.

4. The site on the North Field meets the 70 dB criteria at all surrounding residential properties without the use of an acoustic barrier.

CONCLUSIONS

Conclusion 1: Current Proposed Site: On-Site Noise Simulation Study: **Exceeded maximum permitted sound level at several locations per the City Ordinance.** The sound levels of the pickleball simulation from the proposed pickleball courts exceeded the City Code's maximum permitted sound level of 70 dB at 3 of the residential locations measured and approached the maximum sound level at 1 location.

Conclusion 2: Current Proposed Site: Geometric Divergence Study: **Exceeded maximum permitted sound level at several locations per the City Ordinance.** The projected sound levels that were calculated that was used to verify the simulation measurements exceeded the City Code's maximum permitted sound level of 70 dB at 2 residential locations and approached exceedances at 3 locations.

Both the On-Site Noise Simulation and the Geometric Divergence study resulted in the locations directly facing the proposed courts to the South and the residential multifamily tower having sound levels that exceeded the criteria. The use of a wall would not benefit the residences in the multistory tower. Consider an alternate location that is farther from residential receivers and multi-story residential towers to locate the proposed pickleball courts.

Conclusion 3. Alternate Proposed Site – West Side of Courts. Geometric Divergence Study: **Exceeded maximum permitted sound level at 3 locations and approached at 3 locations per the City Ordinance.** The projected sound levels that were calculated that was used to verify the simulation measurements exceeded the City Code's maximum permitted sound level of 70 dB at 3 residential locations and approached exceedances at 3 locations. A 15 ft tall acoustic barrier surrounding the courts would be needed at this site to reduce sound levels to below the 70 dB criteria.

Conclusion 4. Alternate Proposed Site in North Field. Geometric Divergence Study**: Met maximum permitted sound level at all residential locations per the City Ordinance.** The sound levels were below the 70 dB threshold at this location and no acoustic barrier would be needed at this location unless new residences are built closer than the existing residences.

Please do not hesitate to contact us if you have any questions in this regard.

Sincerely,

SIEBEIN ASSOCIATES, INC.



Keely M. Siebein, ASA, INCE, LEED AP BD+C
Associate Principal Consultant

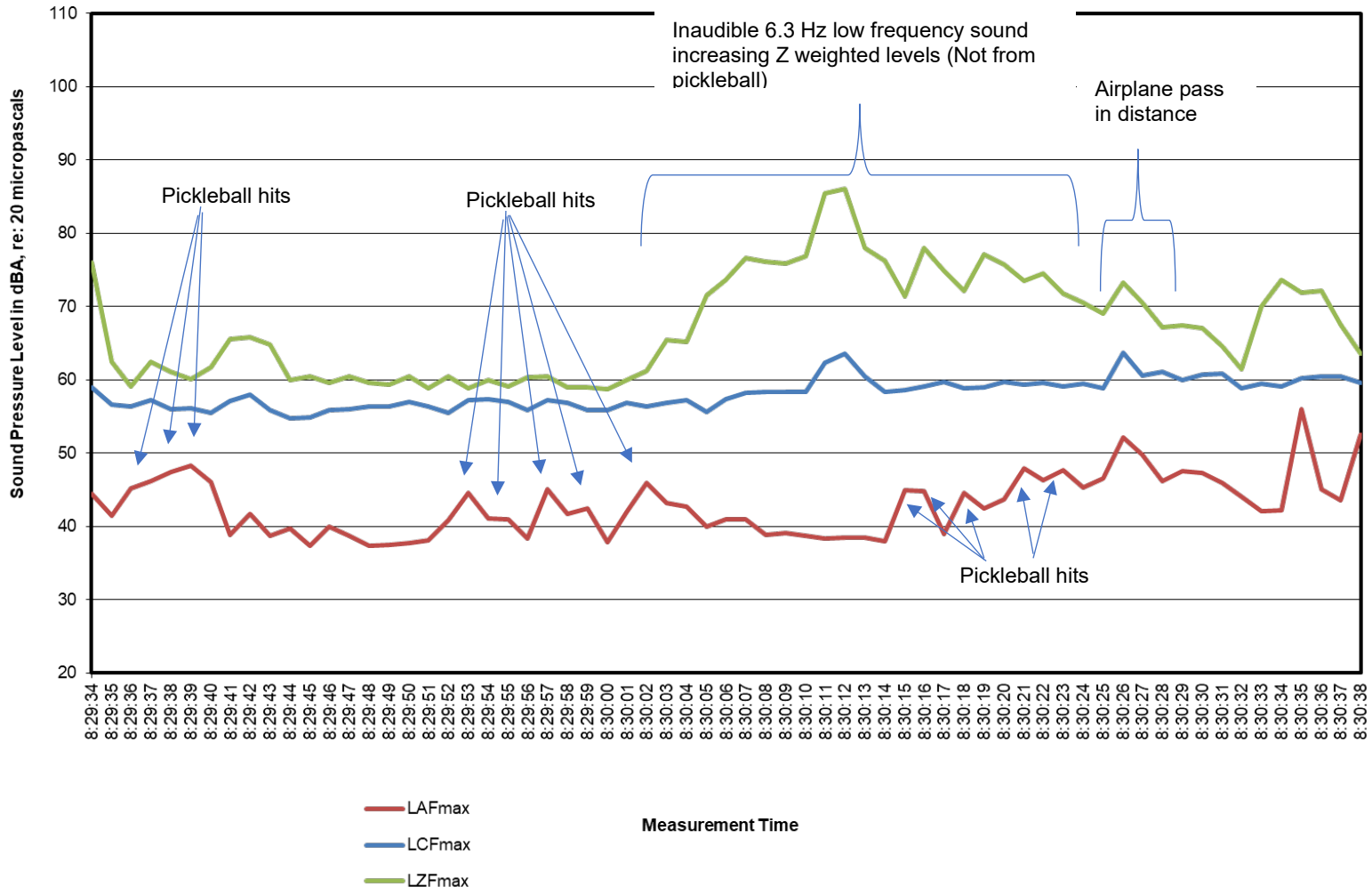
APPENDIX A
AMBIENT AND NON-PICKELBALL SOUND LEVEL MEASUREMENT TABLE

Location	Description	Range of Sound Levels (dBA)
L1	Quiet ambient, insects	43-48 dBA
L2	Quiet ambient, crickets, HVAC across street	43-45 dBA
L3	Quiet ambient, crickets, distant traffic	43-48 dBA
L4	Quiet ambient, crickets	46-48 dBA
L5	Quiet ambient, crickets, fountain in distance	44-45 dBA
L6	Quiet ambient, crickets, fountain in distance	43-45 dBA
L7	Quiet ambient, can pass, thump from car across street	45-50 dBA: ambient, up to 70 dBA: car pass, 59 dBA: thump
L8	Quiet ambient, crickets, fountain	44-45 dBA
L9	Quiet ambient, HVAC units on at 20 ft	52-53 dBA
L10	Quiet ambient, crickets, traffic in distance	42-46 dBA
L1	Ambient with lawn maintenance in distance	45-52 dBA
L2	leaf blower by court and in distance	49-57 dBA
L3	Quiet ambient	46-50 dBA
L4	Quiet ambient	47-51 dBA
L5	leaf blower on court	70-72 dBA
L8	trash truck pass	70-88 dBA
L6	Leaf blower	63-65 dBA
L5	leaf blower and garbage truck	65-78 dBA
L4	Leaf blower and garbage truck pass	68-75 dBA
L4	Leaf blower by residence	64-68 dBA

APPENDIX B
ACOUSTIC MEASUREMENT GRAPHS OF ON SITE PICKLEBALL SIMULATION

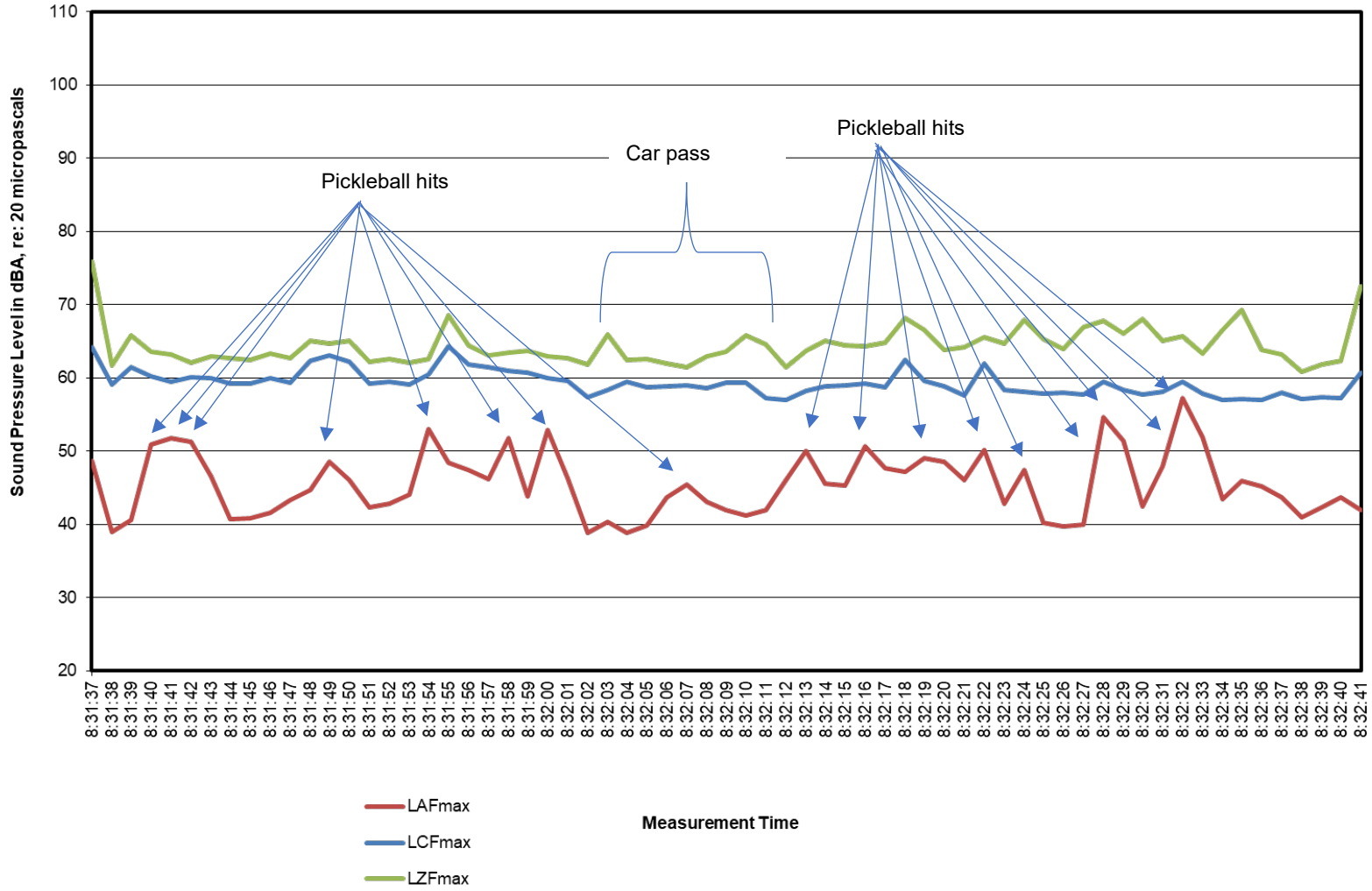
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Ocean Village
Location L1: LD 4 File 024
Pickleball audible then truck starts up

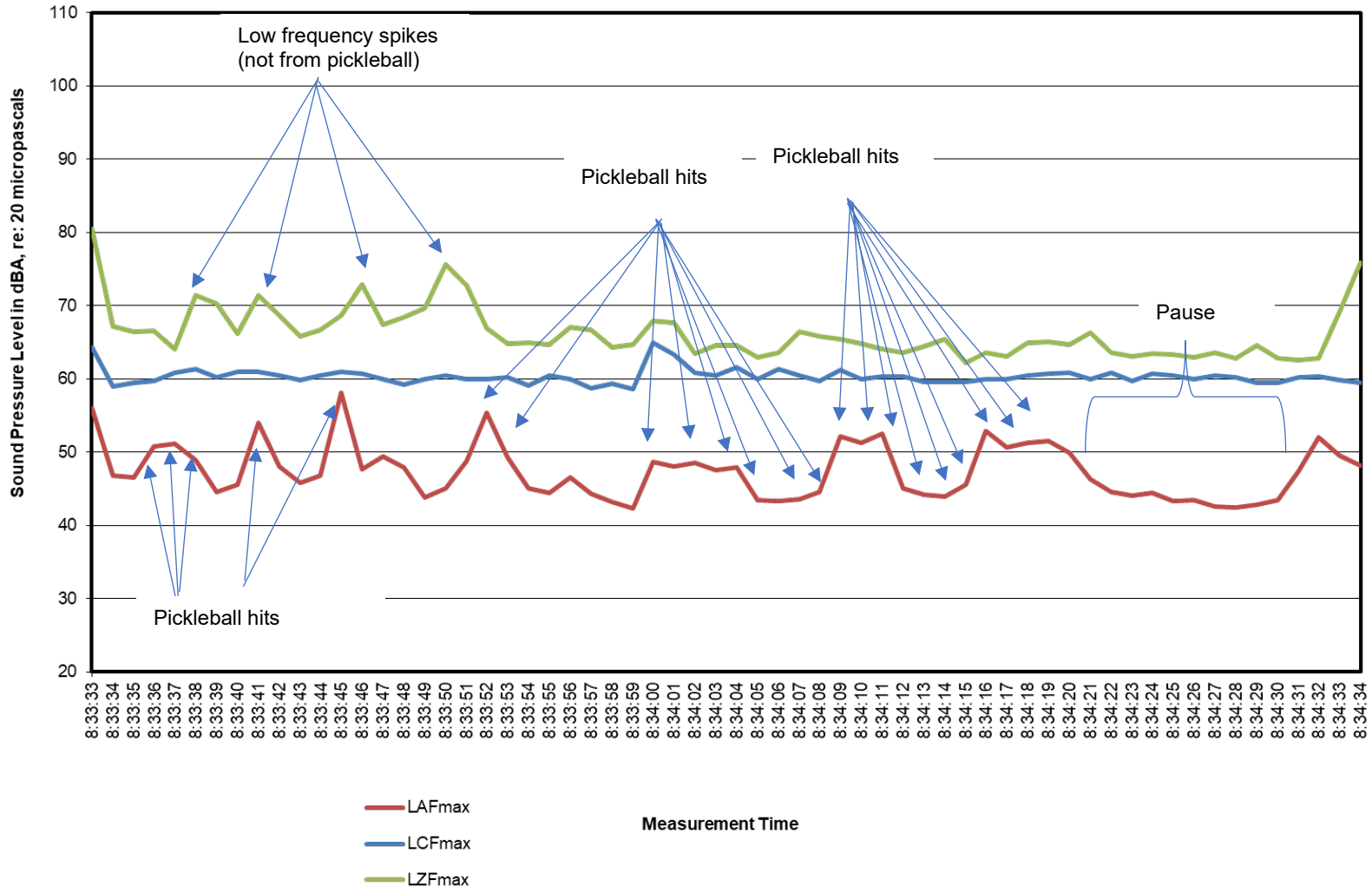


SIEBEIN ACOUSTIC

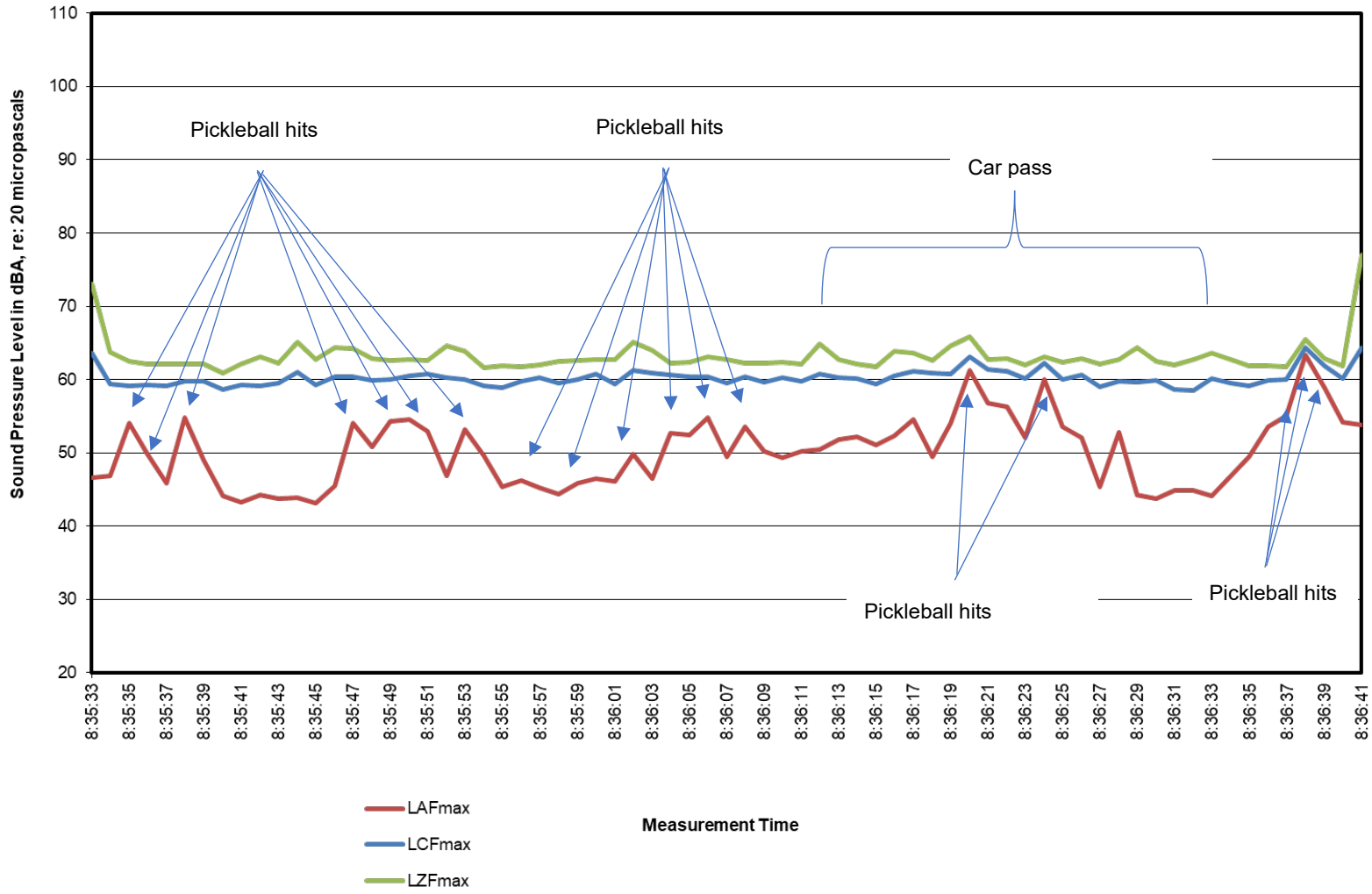
Ocean Village
Location L2: LD 4 File 025
Pickleball audible and voices



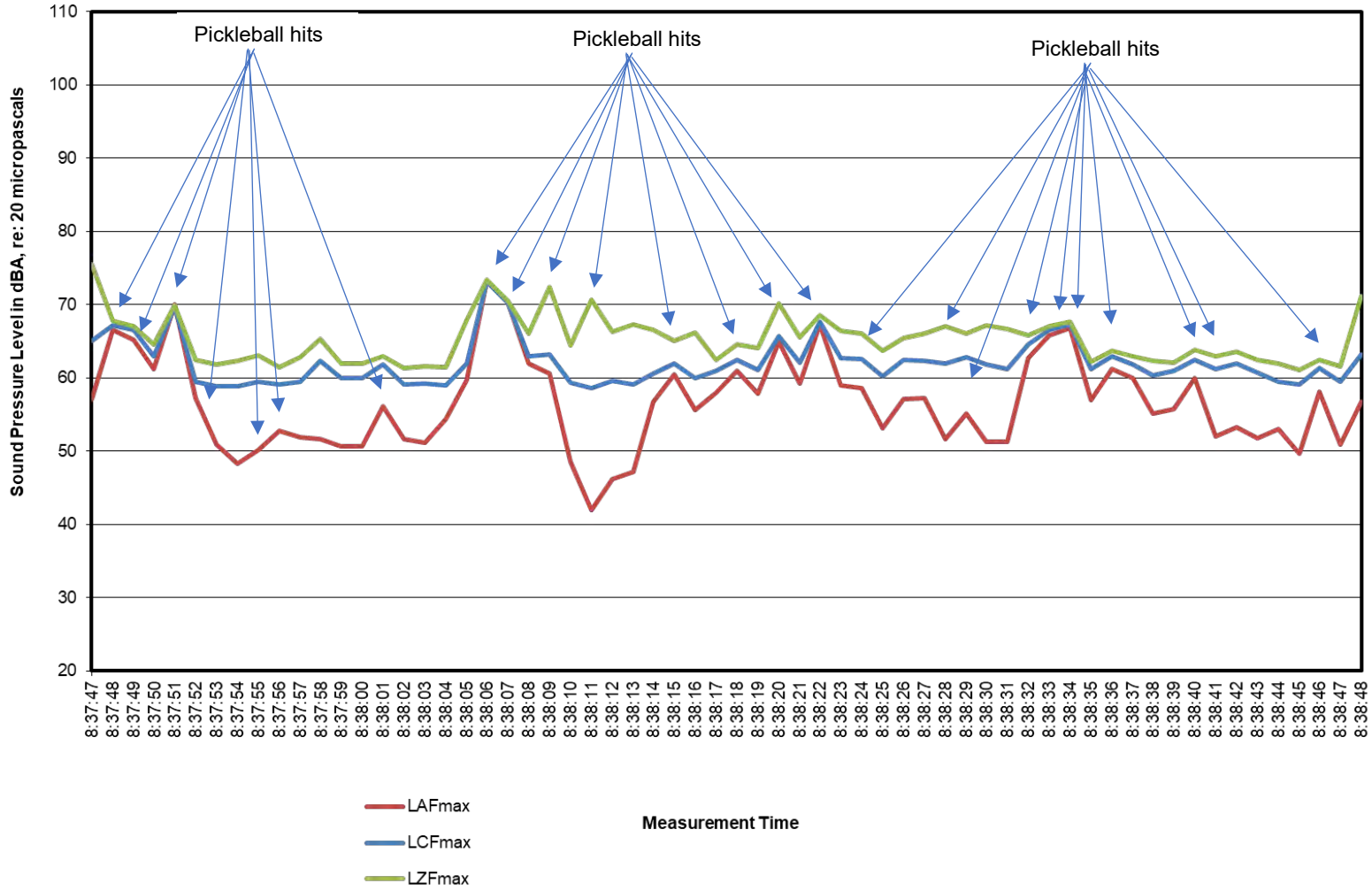
Ocean Village
Location L3: LD 4 File 026
Pickleball and voices



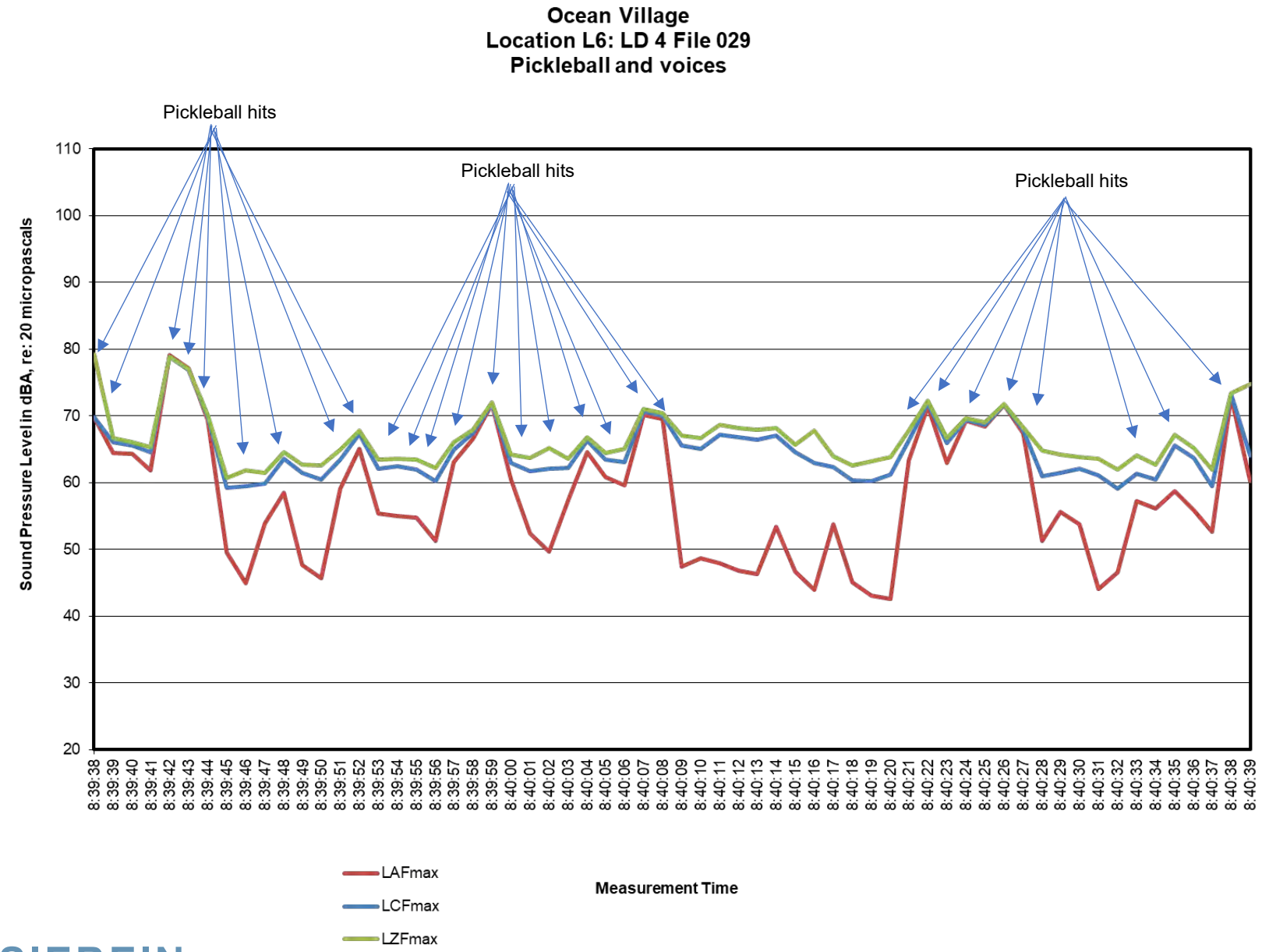
Ocean Village
Location L4: LD 4 File 027
Pickleball and voices

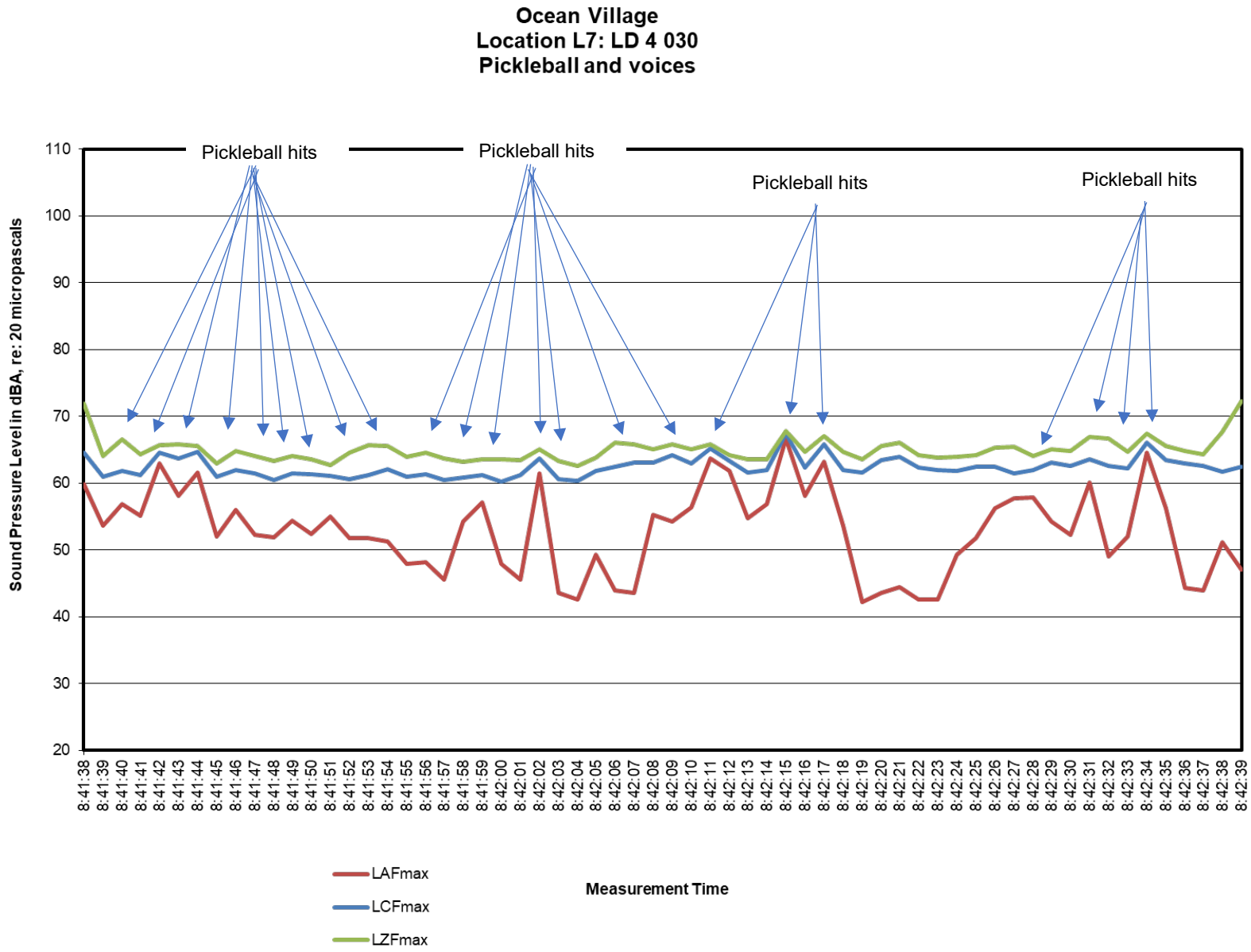


Ocean Village
Location L5 : LD 4 File 028
Pickleball and voices

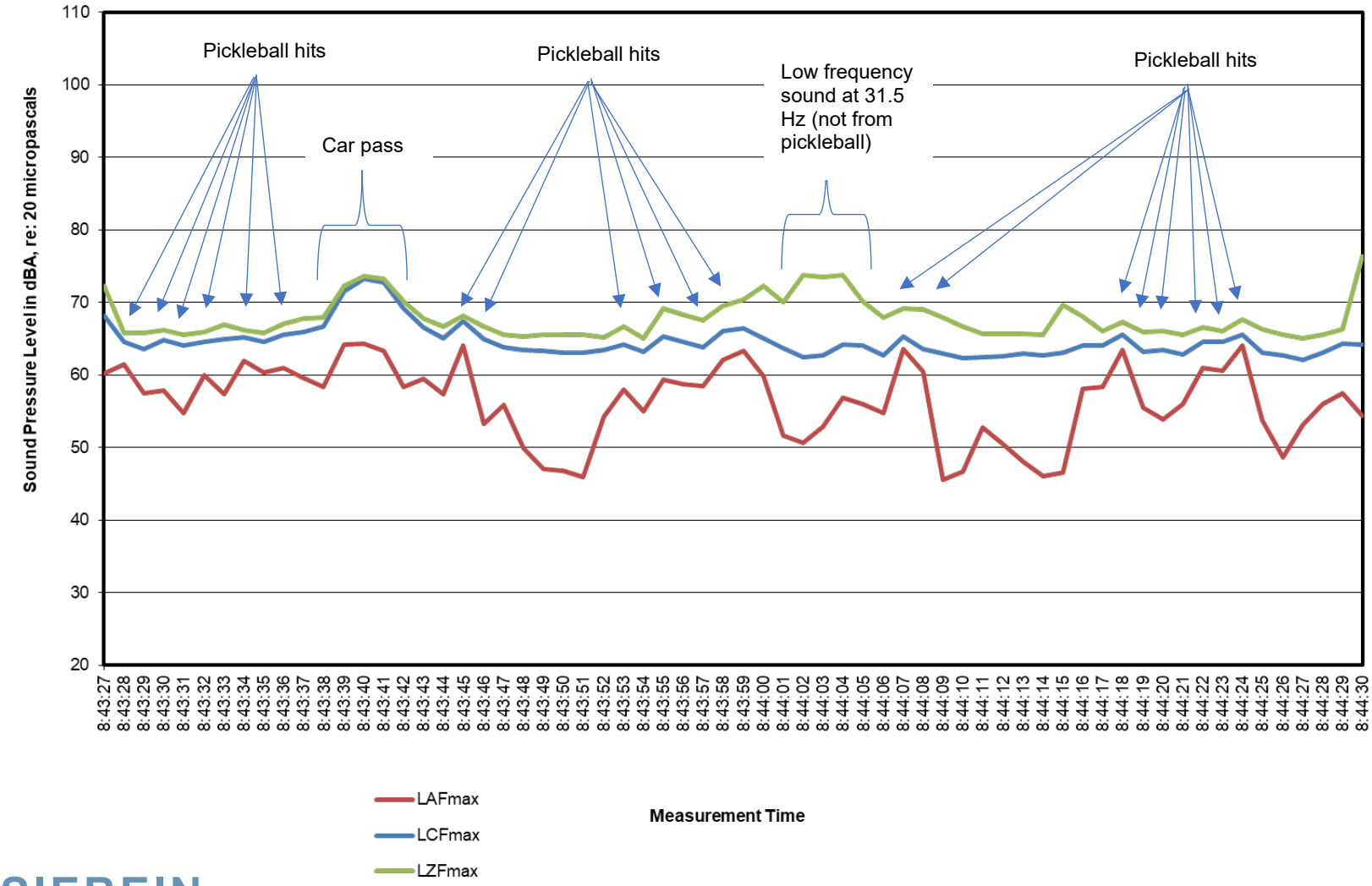


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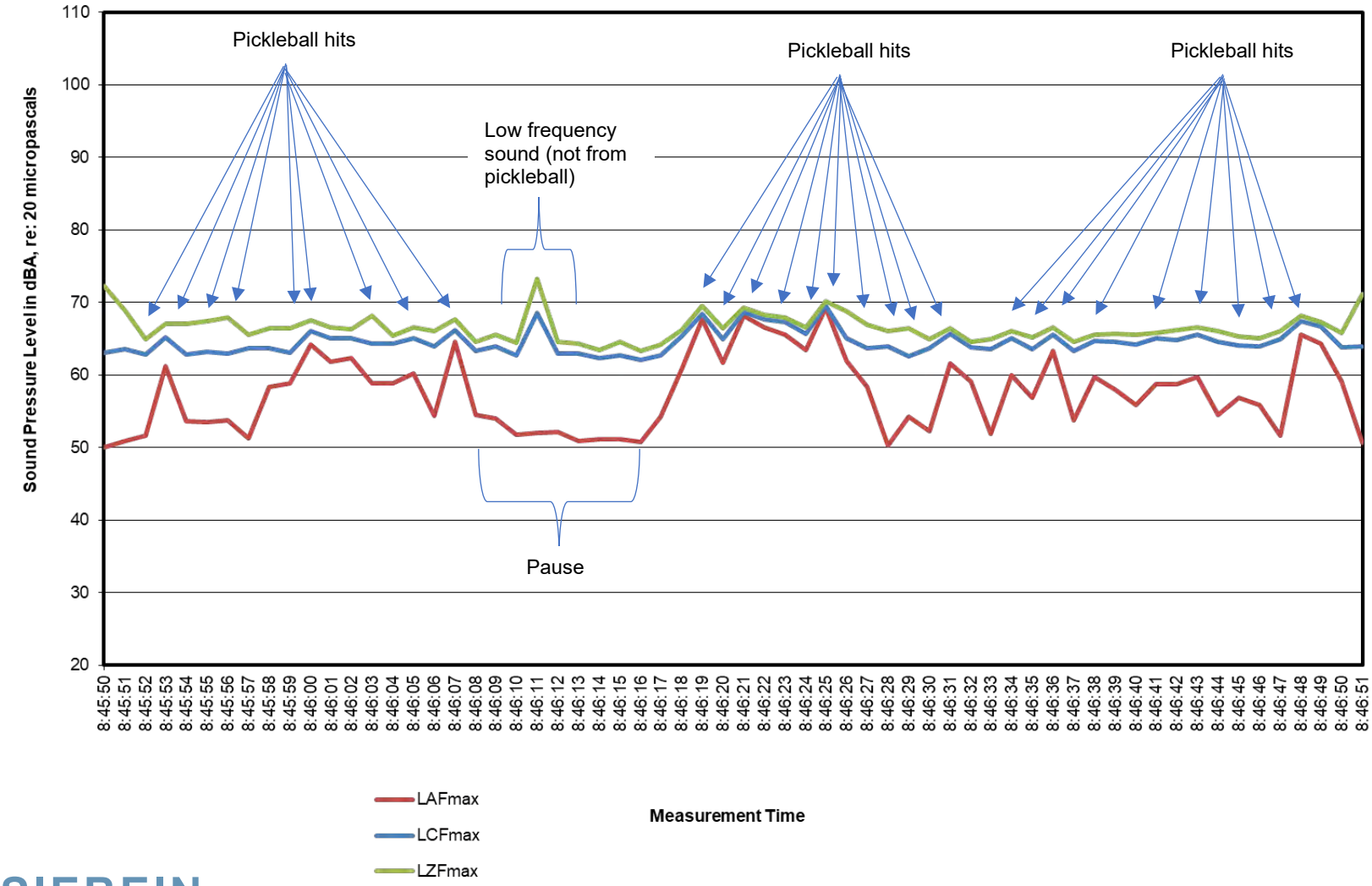

Ocean Village
Location L6: LD 4 File 029
Pickleball and voices
Pickleball hits
Pickleball hits
Pickleball hits
Sound Pressure Level in dBA, re: 20 micropascals
110
100
90
80
70
60
50
40
30
20
8:39:38
8:39:39
8:39:40
8:39:41
8:39:42
8:39:43
8:39:44
8:39:45
8:39:46
8:39:47
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8:40:31
8:40:32
8:40:33
8:40:34
8:40:35
8:40:36
8:40:37
8:40:38
8:40:39
LAFmax
LCFmax
LZFmax
Measurement Time


Ocean Village
Location L7: LD 4 030
Pickleball and voices
Pickleball hits
Pickleball hits
Pickleball hits
Pickleball hits
Sound Pressure Level in dBA, re: 20 micropascals
110
100
90
80
70
60
50
40
30
20
8:41:38
8:41:39
8:41:40
8:41:41
8:41:42
8:41:43
8:41:44
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8:42:32
8:42:33
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LCFmax
LZFmax
Measurement Time

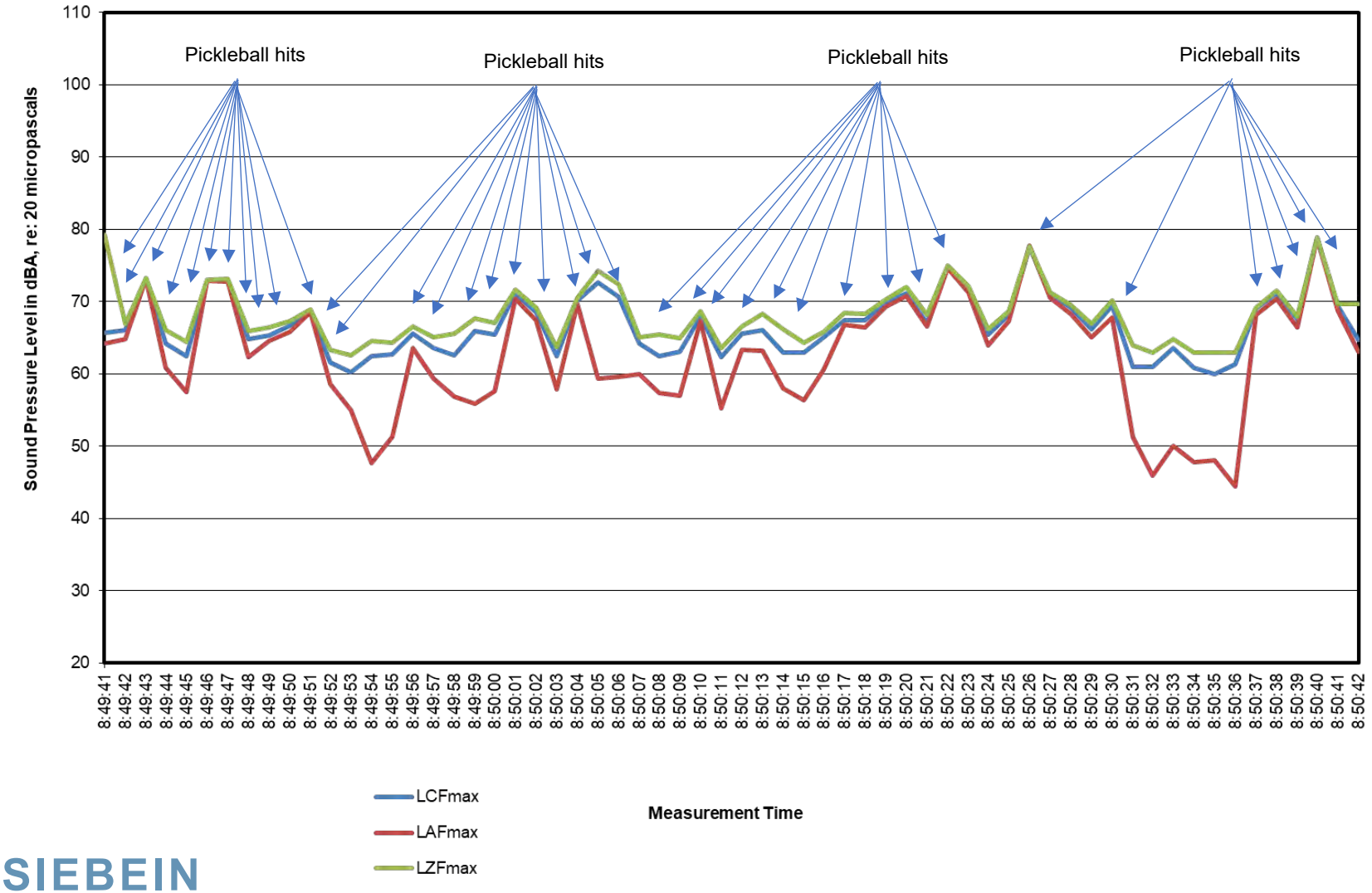
Ocean Village
Location L8: LD 4 031
Pickleball, car pass and voices



Ocean Village
Location L9: LD 4 032
Pickleball, car pass and voices

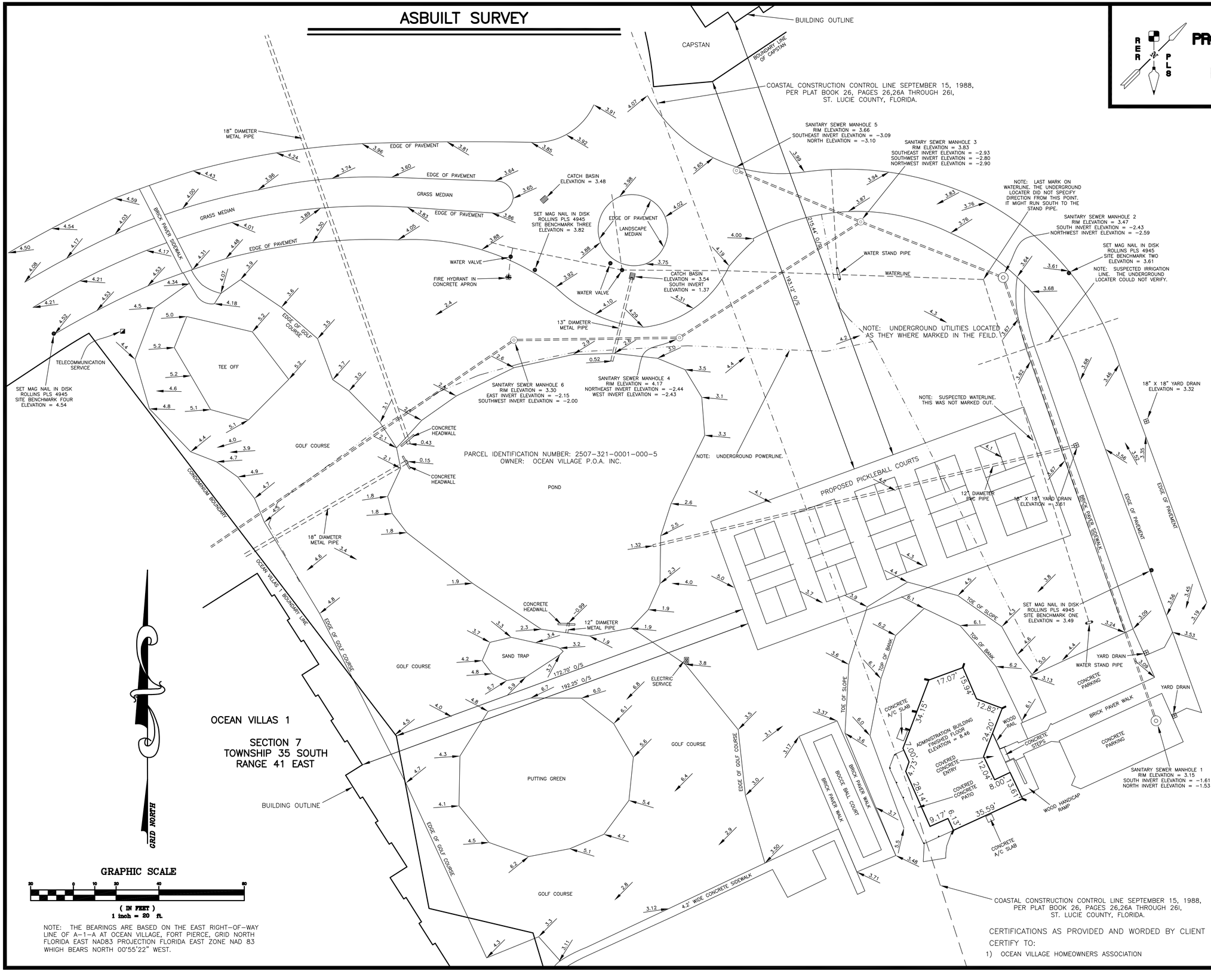


Ocean Village
Location L10: LD 4 File 033
Pickleball and voices



SIEBEIN ACOUSTIC

ASBUILT SURVEY



OCEAN VILLAS 1

SECTION 7
TOWNSHIP 35 SOUTH
RANGE 41 EAST

GRID NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NOTE: THE BEARINGS ARE BASED ON THE EAST RIGHT-OF-WAY LINE OF A-1-A AT OCEAN VILLAGE, FORT PIERCE, GRID NORTH FLORIDA EAST NAD83 PROJECTION FLORIDA EAST ZONE NAD 83 WHIGH BEARS NORTH 00°55'22" WEST.

ROLAND E. ROLLINS
PROFESSIONAL LAND SURVEYOR
3221 SW CRUMPACKER STREET
PORT ST. LUCIE, FLORIDA 34953
772-873-4700

BENCHMARK REFERENCE:

FOUND BRASS DISK IN CONCRETE MONUMENT STAMPED RILEY ST. LUCIE COUNTY 2005 VERTICAL CONTROL DISK. FOUND 177 FEET PLUS OR MINUS SOUTH OF THE CENTERLINE OF COCONUT DRIVE ON THE EAST SIDE OF STATE ROAD A-1-A 3' PLUS OR MINUS EAST OF THE EAST EDGE OF A 5 FOOT CONCRETE SIDEWALK RUNNING NORTH AND SOUTH, 39 FEET PLUS OR MINUS NORTHWEST OF THE WEST END OF A OCEAN VILLAGE SIGN, 16 FEET PLUS OR MINUS WEST OF A WOOD UTILITY POLE.
ELEVATION = 3.839 N.A.V.D. OF 1988

ELEVATIONS BASED ON N.A.V.D. OF 1988 AND SHOWN THUS 1.0

FLOOD ELEVATION INFORMATION

MAP NUMBER 12111C0183J
DATE OF FIRM FEB. 16TH, 2012
COMMUNITY NUMBER 120286
PANEL 0183
BASE FLOOD ELEVATION 6.0
SUFFIX J
FIRM ZONE AE

ADDENDUM	FIELD BOOK	PAGE	DATE	BY	CHECKED
ASBUILT SURVEY	E.F.B.		08/14/2023	R.E.R.	R.E.R.
ASBUILT SURVEY	E.F.B.		10/18/2023	R.E.R.	R.E.R.
ASBUILT SURVEY SANITARY MANHOLES	E.F.B.		10/25/2023	R.E.R.	R.E.R.
LOCATE CONDO BUILDINGS	E.F.B.		03/15/2024	R.E.R.	R.E.R.

LEGEND:

- ⊙ = SET 5/8" IRON REBAR WITH CAP P.L.S. NUMBER 4945
- • = SET NAIL IN DISK P.L.S. NUMBER 4945 UNLESS OTHERWISE NOTED.
- ◎ = MANHOLE (M.H.)
- = CATCH BASIN (C.B.)
- = FIRE HYDRANT (F.H.)
- = WATER METER (W.M.)
- = WOOD POWER POLE (WD. P.P.)
- = CONCRETE POWER POLE (CONC. P.P.)
- = ANCHOR AND GUY WIRE
- = OVERHEAD WIRES
- = NOT TO SCALE
- = FENCELINE

NOTES:
1) LANDS SHOWN HEREON WERE NOT ABSTRACTED FOR EASEMENTS, OWNERSHIP AND/OR RIGHT-OF-WAYS OF RECORD.
2) NO UNDERGROUND OR INTERIOR IMPROVEMENTS WERE LOCATED EXCEPT AS NOTED.
3) LEGAL DESCRIPTION AS SUPPLIED BY CLIENT.
4) BUILDING TIES ARE 90° OR RADIAL TO THE PROPERTY LINE.
5) ALL EASEMENTS SHOWN ARE PER RECORD PLAT UNLESS OTHERWISE NOTED.

PLOT DATE AND TIME: 03/16/2024 10:20 AM EST

LOT SQUARE FOOTAGE: N/A

SCALE: 1" = 20'

DATE OF LAST FIELD WORK: 03/15/2024

I HEREBY CERTIFY THAT THE SURVEY SHOWN HEREON COMPLIES WITH STANDARDS OF PRACTICE FOR SURVEYS AS CONTAINED IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

THIS SURVEY WAS ELECTRONICALLY CERTIFIED BY ROLAND E. ROLLINS PROFESSIONAL LAND SURVEYOR NUMBER 4945 AS TIME STAMPED AND DIGITALLY SIGNED ABOVE. IF THIS SURVEY IS PRINTED IN PAPER FORM THEN IT BECOMES INVALID WITHOUT THE SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

JOB NUMBER: RR230801UD

CERTIFICATIONS AS PROVIDED AND WORDED BY CLIENT CERTIFY TO:

1) OCEAN VILLAGE HOMEOWNERS ASSOCIATION

Predictive Sound Analysis for Proposed Pickleball Courts at

Ocean Village

2400 South Ocean Drive

Fort Pierce, Florida

Executive Summary

Ocean Village is a gated community that is evaluating two locations to potentially build eight pickleball courts. Construction of new courts are proposed at a location on Mainsail Drive, in a field north of the administration building and an alternate site near the intersection of Windward Drive and Southpointe Drive, where four hard-surface tennis courts currently exist.

GigaHertz LLC was contracted by the Ocean Village Pickleball Committee to predict the sound levels expected at nearby residences and evaluate sound mitigation strategies for each location. This is a concern because both locations are within 300 feet of residences, and therefore fall within the distance that pickleball sound can be heard.
This report will provide details on: The Engineer's site visit; field testing; how sound is measured; actual sound levels as recorded at measured distances from condos; sound mitigation strategies; an actual case example and a formal recommendation.

Conclusions:

The proposed Mainsail Drive location offers the best choice for this community based on having the lowest predicted sound levels for nearby residences.

This predictive sound analysis was performed by Bob Unetich, professional Engineer and founder of GigaHertz LLC, a company specializing in radio and sound wave propagation. Mr Unetich's biography can be found at the end of this document.

GigaHertz LLC
1811 Woodlands Circle, Pittsburgh, PA 15241
www.gigahertzllc.com

This Google Earth photo shows the general area in Ocean Village including the current temporary courts and the grassy area where courts might be constructed.

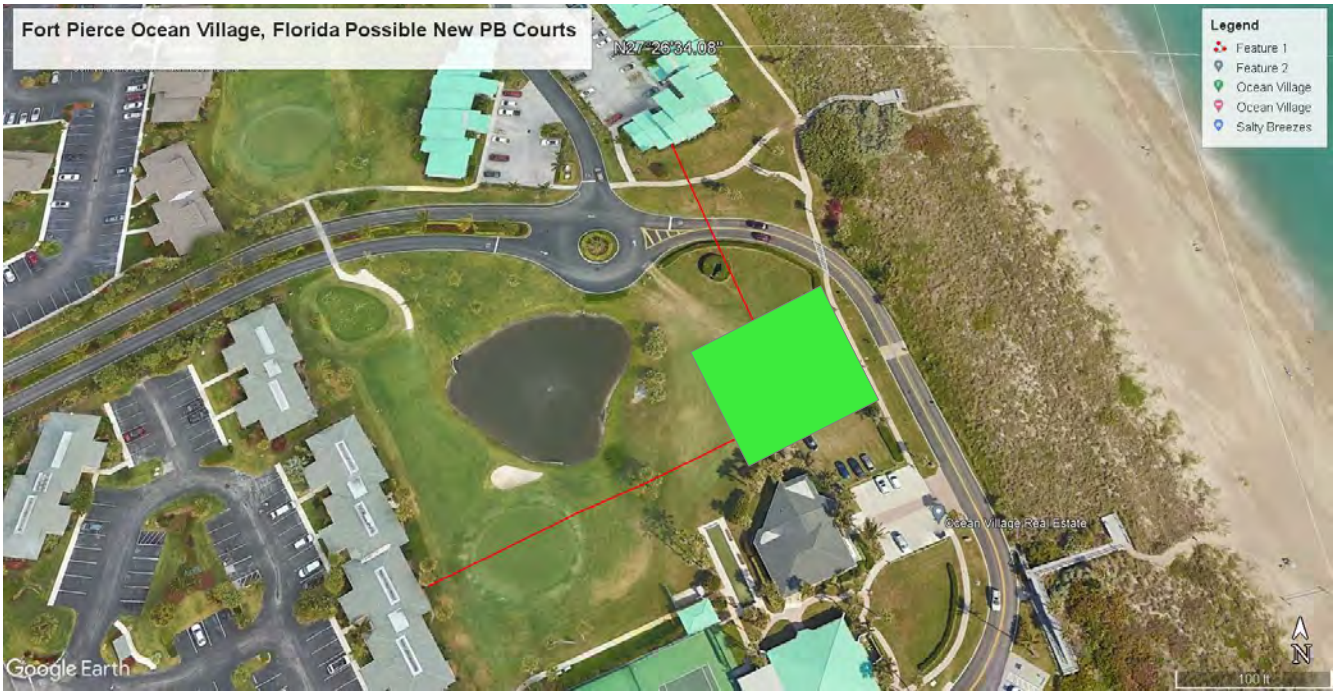


Current temporary courts overlined on a tennis court

Proposed new court location

Proposed alternative court location

Proposed New Pickleball Court Location along Mainsail Drive



The photos include distance measurement lines in red to nearby residences

Comments on locating the courts on Mainsail Drive

This location would place eight pickleball courts in the field north of the administration building. This location is commonly referred to as the “north field”.

Residences are in the three story building to the north at abou200 feet distance and to two story homes at about 225 feet to the west. The fences could be designed to be high enough and sturdy enough to allow sound barrier material like Acoustifence to block the line-of-sight sound path from all of the homes and achieve a 10 decibel or greater reduction in sound level. Reflected sound would travel to the east, towards the dunes and towards the south where there are no close homes.

Note: a 10 decibel reduction represents a 50% reduction in sound level perceived by the human ear.

This is a Google Earth view of the location of court locations on Windward Dr and Southpointe Dr and proposed move to the two tennis courts closest to Windward Drive.



Comments on moving the courts towards Windward Drive:

The pickleball court lines on the court to the west are in regular use. These courts are within one hundred feet of condos to the west, which results in sound reaching the residents in that area. These condos are multistory units and installing sound barrier material on the west fence would not block the line-of-sight sound path is not practical.

Moving pickleball play to the two tennis courts to the east would increase the distance to the

condos on the west but it will place pickleball closer to the two story residences to the east and closer to the single family homes to the south. There is a mid-rise condo to the north near these courts but the courts face the side of the condos away from doors and windows that open.

It would be possible to block the view, and the sound, of these courts from homes to the east and south with sound reflecting barrier material but that would further increase sound towards the north and possibly causing noise complaints from that direction.

Fort Pierce Sound Level Ordinances

There are existing ordinances concerning sound levels. Sound level ordinances generally use standard sound level measurement terminology, which will be explained in detail below. As is often the case, there are different permitted sound levels at different times of the day and on Sunday. This is Section 26-40 of the ordinances::

Sec. 26-40. Sound level limitations.

No person shall cause, suffer, allow, or permit the operation of any sound source in such a manner as to create a sound level that exceeds the sound level limits set forth in Table 1 when measured from the real property line of the nearest receiving property, using the slow response setting unless otherwise noted. Such a sound source would constitute a noise disturbance.

Table 1. Sound Level Limits by Receiving Property

Receiving Property Category	*Time*	*Sound Level Limit (dBA)*	*Sound Level Limit (dBC)*	*Sound Level Limit (dBZ)*
Residential	*Monday through Saturday, 7:00 a.m.—11:00 p.m.*	*60*	*60*	*60*
Residential	*Sunday, 7:00 a.m.—1:00 p.m.*	*See subsection (1) of this section.*	*See subsection (1) of this section.*	*See subsection (1) of this section.*
Residential	*Sunday through Saturday, 11:00 p.m.—7:00 a.m.*	*See subsection (1) of this section.*	*See subsection (1) of this section.*	*See subsection (1) of this section.*
Commercial	*At all times*	*65*	*65*	*65*
Industrial	*At all times*	*70*	*70*	*70*

(1) It shall be unlawful for any person to make, continue or cause to be made or continued within that portion of the city which has been designated as a residential or mixed use area of the city, between the hours of 11:00 p.m. and 7:00 a.m. of each day, and on Sunday from 7:00 a.m. to 1:00 p.m. any unreasonably loud, excessive, unnecessary, or unusual noise in such manner that noise produced, or the vibration made, by the same would be obvious, or cause discomfort and annoyance to an ordinary, reasonable prudent person at a distance greater than 50 feet from the real property line of the nearest receiving property. A sound level meter or sound level reading shall not be necessary for the enforcement of this subsection.

(2) If the noise is an impulsive sound, the fast response setting shall be used and the daytime (7:00 a.m. to 11:00 p.m.) limits of Table 1 shall be increased by ten dBA, dBC, or dBZ.

(3) In a multifamily dwelling, it shall be unlawful to create or permit to be created any noise that exceeds the daytime (7:00 a.m. to 11:00 p.m.) limit of 50 dBA, dBC, or dBZ and the nighttime (11:00 p.m. to 7:00 a.m.) limit of 40 dBA, dBC, or dBZ as measured from a neighbor's dwelling.

(4) In a mixed use building, it shall be unlawful to create or permit to be created any noise that exceeds the daytime (7:00 a.m. to 11:00 p.m.) limit of 55 dBA, dBC, or dBZ and the nighttime (11:00 p.m. to 7:00 a.m.) limit of 45 dBA, dBC, or dBZ as measured within the residential use portion of the building.

(5) In addition to the limits of Table 1, for any sound source which impacts residential property, the maximum allowable sound level limits for the individual octave bands whose centers are 31.5, 63 and 125 Hertz shall not exceed 65 dBA, dBC, or dBZ.

(Code 1983, § 11-52.18; Ord. No. 14-033, § 1, 12-1-2014)

Comments on the Ordinance

Pickleball sound has an “impulse” characteristic and according to note (2) above, this changes the permitted Sound Level Limit to 70 dBA during the day until 11:00 PM, except for Sunday, when the 70 dBA limit would apply only from 1:00 PM until 11:pm.

The sound estimates below and the field tests performed indicate that pickleball sound will not exceed this limit at “ the real property line of the nearest receiving property” at the Mainsail location if the recommended sound barriers are installed. There is risk of exceeding the limits at the Windward Drive location because of the proximity of nearby property lines.

Site Visit and Field Test of Pickleball Sound

At the request of members of the local pickleball committee, I made a trip to both possible court locations on March 17, 2022. At the Mainsail Drive location, we identified the locations where players on possible future courts would be closest to residences. At those locations, I set up a simulation of pickleball sound using a laptop running a repeating recording of a loud pickleball hit driving a 50 watt sound bar. We adjusted the sound power level to a nominal loud hit level of 80 dBA at 20 feet, representing loudest pickleball sound.

We set this level using a calibrated Sper Scientific Sound level Meter operating in the Fast Max Hold mode. Next we moved north to within 20 feet of the condo directly north of the sound bar location and measured the sound level and made measurements of normal ambient background noise levels. These measured levels at about 200 feet from the sound source were about 60 dBA, as expected at that distance. The nominal quiet background noise level was about 48 dBA on the Sper meter but it rose frequently to levels above 60 dBA because of vehicle noise and other extraneous sounds.

The recording used is of a single very hard hit and it represents the loudest sound level that might be heard several times per minute in aggressive pickleball play. At 200 feet, this level would be perceived as being more than twice as loud as the background noise level by most listeners. Our objectives included considering what sound reducing methods might be employed to reduce levels at surrounding residences. One method is to restrict the paddles and balls permitted on the courts to quieter models and we simulated that by adjusting down the sound level by 3 decibels to first simulate quieter balls and then 3 more decibels to simulate the use of quieter paddles.

We next simulated the impact a 12 ft. high sound barrier would have on the sound level. Sound barriers are frequently used and typically they are of heavy vinyl construction. They can hang from chain-link fencing with suitable tie wraps. These can be of either sound reflecting or sound absorbing types. One requirement is to block the line-of-sight path sound would travel if the barrier is to be fully effective. While 10 ft high fencing is common, 12 ft is readily available and the extra height would permit improved sound attenuation to the only 3rd floor condo to the north. If the courts were positioned to permit a 12 ft high barrier to substantially block the view of proposed courts, this would achieve over 10 decibels of sound reduction. Using that figure, we reduced the sound level from the sound bar by 10 decibels and again ran our sound measurement tests. The original 60 dBA readings dropped to just above the level of the background noise where we were standing, so accurate measurement data could not be taken but clearly we could discern a substantial reduction in pickleball sound. When we added further reductions in level, simulating the use of quieter gear, we could not measure any hits above background sound levels.

Next we aimed the sound bar towards the east and ran the same test near the closest condos to the east, which are over 250 feet away. Those levels were, as expected, lower and closer to the background noise level.

Finally, we moved to the Windward Drive location and observed the local conditions. There was pickleball play on tennis court 10 (west court). We discussed at length the possibility of using sound barriers on the east corner and south fences.

Adding sound barrier material to the south fence and south-east corner could reduce the sound levels to the homes south of these courts. However, if this sound barrier is of the sound reflecting type (Acoustifence), much of this reflected sound would propagate towards the six story condo building to the north. The use of absorbing sound barrier material in this location would mitigate this factor.

There would be no material benefit to installing sound barrier material along the four foot high east fence since it would not block line-of-sight ball strike sounds.

Measuring Sound Level

There are international and US standards about sound measurement and many communities have sound or noise level ordinances. A good tutorial on sound measurement can be found on Wikipedia under **Sound Level Meter.** This report uses the terms decibel and dBA to describe both relative changes in levels (in decibels or dB) and absolute levels (in dBA). While these terms are based on logarithms, they make the math of recording changes in level very simple and they relate well to human hearing characteristics.

For instance, a change of sound level of 10 dB is, on average, sensed as being twice as loud or half as loud. In addition, the sound level of ordinary activities and devices is easily expressed in dBA instead of a complex sound pressure number based on the unit of sound pressure, the Pascal. Here is a chart showing the normal sound level (in dBA) for many common situations.

Sound level meters can be used to measure sound accurately if we understand their design characteristics and if they are calibrated. Phone apps may be used as well but calibration is difficult and the microphone of a phone or tablet computer has an unknown directivity so absolute readings may not be accurate but relative readings, such as comparing one ball type to another, may be reasonably accurate.

Pickleball sound is an “impulse sound” lasting only milliseconds. For measurements, we recommend using the A scale (as used in the above chart), a “Fast Mode” of detection (normally 125 ms long time period for taking a measurement) and Max Hold or Peak Hold to store the highest reading during the measurement. If a meter has a range adjustment, we recommend a 30 to 80 dBA or similar range. A suitable quality meter is the Sper Scientific model 840018, readily available online for under $200.

Typical Sound Levels



Typical Sound Level Meter



Pickleball Sound

Pickleball is played with a hard plastic ball and a solid surface “paddle” (not a racket) and the sound of a hit is mainly determined by vibration of the paddle face when it is struck. If the force of the strike is hard, the face vibrates significantly and the vibrations reflect from the edges of the paddle about 1,000 times per second. These vibrations increase and decrease the nearby air pressure, which is equivalent to saying it makes a sound.

That sound travels away from the paddle (at the speed of sound) and it spreads out its energy over the surface area of the moving pressure wave. The area of the surface of this wave varies as the square of the distance, so the sound power level per unit area drops as the square of the distance from the hit.

This propagating wave has an “amplitude” or loudness and a “pitch”, which is related to how fast it is varying, but this variation in pressure is a complex combination of sounds. We can usually determine the main “pitch” of this sound. With hard paddles, this frequency of vibration is about 1,000 cycles per second and often just a little higher, at about 1,050 cycles per second (or Hertz), which is near musical note C6. This is often characterized as a “pop” sound.

Some paddles, using slightly softer and thicker materials, may have a dominant tone or pitch half as high in frequency, or around 500 Hz and near note C5, an octave lower note. Some are even are as low as C4 (known as middle C) and this is thought to be more of a “thud” sound instead of a “pop” by players.

The sound level varies considerably during play. Hard hits may be many times as loud as soft hits. These sounds have a short duration, measured on the order of tens of milliseconds and we can quantify them in numerous ways. Human hearing functions over an enormous range of levels from below a quiet whisper to the damaging level of jet engines, so there is a huge range of pressure levels that we can hear. To simplify the messy arithmetic involved, we use logarithms and “decibels” and an agreed set of standards to describe the absolute levels. This method can vary, but in general, we will measure sound in decibels relative to a defined reference level and along a curve that emulates the varying sensitivity of human hearing, called the A curve. The reference point is called Zero dBA. Normal conversation occurs at about 60 dBA. To hear this level clearly, we like our “background noise” to be low. A library noise level is usually about 40 dBA and distant traffic noise is often 40 to 50 dBA in a quiet community. A nearby lawnmower will usually be at about 90 dBA.

Pickleball sound on a court can often exceed 80 dBA but the level of any one hit is unpredictable and dependent on many factors. There is an average loudness associated with hard hitting and the hardness of the ball. Some of the most popular paddles and balls will produce sound levels of over 60 dBA two hundred feet away from a hard ball strike, although the average is closer to 60 dBA at that distance. There are slightly softer (but approved for tournament play) balls that are about 3 decibels quieter and there are slightly softer paddle models that are 3 decibels quieter. Selecting these quieter pieces of gear can therefore reduce the sound of play by 3 dB + 3dB or 6 decibels, although paddle and ball preferences are a personal decision. Enforcing the use of particular balls and paddles may be difficult on public courts. Since sound propagates according to the laws of physics we can estimate sound levels at various distances, which is done below after a description of sound mitigation options.

Pickleball Sound Mitigation Possibilities

Sound Barriers

Shrubs and trees are normally not very effective sound barriers. There are various commercial solid outdoor barrier types, including concrete walls, but for this set of sound level estimates, a hanging vinyl barrier like the Acoustiblok product known as Acoustifence is used. It is highly reflective of sound, which could be a problem since it sends reflected sound in another direction. There are also absorbing barrier types, like the eNoise Control outdoor blanket model UNC-XT-1, but they are heavier, more expensive and less durable. Acoustifence is used in these sound level estimates.

Earth barriers are effective but they require more land. Hanging barriers require consideration of the wind loading capability of a fence used for support and the fence will need to be high enough to handle the barrier. Sound will go over the barrier (by diffraction) and each increase in height by one foot achieves about a one decibel reduction in sound level.

Photos of Sound Barriers Installed at Pickleball Courts

Absorbing Blankets



Acoustifence



Using Quieter Balls

USA Pickleball, the US governing body of the sport, approves paddles and balls for sanctioned tournament play. While there are a few balls not approved for tournament play, most players will reject them. Of the Approved balls, the softer balls are about 2 or 3 decibels quieter than the harder balls. Of those Approved, the quietest that has been measured is the Monarch Outdoor Gen 2 ball. It is about 1 dB quieter than the Onix Fuse outdoor ball but it plays slower and most players will not like it as much as the Fuse. The Onix Fuse outdoor ball is therefore recommended. It is not the most common ball in use.

Quieter Paddles

Paddle designs vary but, as with balls, softer surfaces are quieter. The list published and available on The Pickleball Sound Mitigation Facebook Group Page is recommended. It contains about 100 paddles and new models are added every few months. Quieter paddles are being designed and we can expect quieter models to be released soon, so enforcing the use of quieter paddles can be of real benefit.

Time limits on play

It is useful to limit the hours of play if there are lights on the courts. It is not uncommon to limit play to 6 PM or 8 PM. The Ocean Village pickleball committee chairman stated that hours of play have already been defined as 8 am - dusk.

Sound Masking

Communities with very low background noise may add a sound such as water falling in a fountain or waves crashing into a shore to cover the sound of pickleball. There are streaming sounds available that could be directed to outdoor speakers to simulate certain sounds, such as rain falling on a tin roof, which has a similar pitch to pickleball pops and this could be switched on and off when pickleball is being played. Wind, ocean sounds, traffic and other ambient sounds provide some level of natural sound masking for the north field location.

Sound level Estimates

The next pages predict the likely sound levels at various distances from ball strikes, including the approximate distance of the homes near proposed courts. Estimates are shown for

1. No mitigation
2. paddle and ball limitations plus a 10 ft high barrier and, finally
3. paddle and ball limitations pus a 12 ft high barrier.
4. paddle and ball limitations only

In this next section, SPL stands for sound power level and BNL stands for background noise level.

Estimates of sound level at various distances from where a ball was hit without sound mitigation and with several sound mitigation options in use:

1. Assumptions: **No mitigation; No control of paddles and balls**; relatively strong competitive players and no physical obstructions in the way to reduce or reflect the sound waves:

Distance from the Hitter	Occasional SPL	Frequent SPL (~4 dB lower)
100 feet	70	66
200	64	**60**
300	60.5	56.5 (above the BNL)
400	58	54
500	56	52

2. Assumptions: **Paddles and balls are limited to accepted "quieter" models;** relatively strong competitive players **and a 10 ft high sound barrier is added to reduce or reflect the sound waves: (Achieves a 10 dB reduction)**

Distance from the Hitter	Occasional SPL	Frequent SPL
100 feet	54	50
200	48 (near the BNL)	44
300	44.5	40.5
400	42	38 (probably below the BNL)

3.**. Assumptions**: **Paddles and balls are limited to accepted "quieter" models;** relatively strong competitive players **and a 12 ft high sound barrier is added to reduce or reflect the sound waves: (Achieves a 12 dB reduction)**

Distance from the Hitter	Occasional SPL	Frequent SPL
100 feet	52	48
200	46	42
300	42.5	39.5(probably below the BNL)
400	40	36 (probably below the BNL)

4. Assumptions: Paddles and balls are limited to accepted "quieter" models; relatively strong competitive players and no physical obstructions in the way to reduce or reflect the sound waves: (*Achieves a 6 dB reduction)*

Distance from the Hitter	Occasional SPL	Frequent SPL
100 feet	64	60
200	58	54
300	54.5	50.5 (probably above the B N L)
400	52	48
500	50	46

A Case Study Example

This is a photo of an actual pickleball court arrangement with a 12 ft high absorbing barrier on all 4 sides. Homes are nearby on three sides of these courts.



In this installation, the HOA and pickleball club enforce the use of quiet paddles and only the Onix Fuse ball is permitted, in yellow or green colors.
Since this photo was taken a year ago, two more pickleball courts have been lined on the tennis court section. The sound blankets are bolted in place and would be unbolted and rolled down by the HOA if a hurricane approaches. The tan vertical lines on the outside of the material are overlapping Velcro and vinyl layers and each barrier section is 54 inches wide.

At this location, sound levels frequently exceeded 66 dBA at local homes with 200 feet of players before sound mitigation was attempted. Quieter balls and paddles dropped this SPL to about 60 dBA and the 12 ft high sound barrier dropped it to about 46 dBA at the closest home, near the typical BNL in this neighborhood, which is usually caused by distant road noise. There are loaner paddles and balls available for visitors. The chain link fence is high strength black vinyl type with close spacing on the pipes (the black lines) for added strength and wind loading protection. The temperatures on this court are not significantly different that outside the gate. The gate, seen in the bottom left corner is also covered by a sound blanket layer.

Recommendations

Constructing new courts along Mainsail Drive will most likely result in fewer sound complaints from neighbors. A 12 ft high fence with an Acoustifence reflective sound barrier attached will reduce the sound levels at residences to the north to near the background sound levels. Adding restrictions on paddle models and balls, if enforceable at this location, would drop sound levels about another 6 decibels and place the level at about the level of background sound this area experiences on quiet days.

Less desirable from a sound-level perspective is the alternate location of building eight pickleball courts on tennis courts 7 and 8, putting play much closer to single family homes and condos. Adding sound barriers to the east and south would reflect sound to the six-story condo building to the north, potentially causing additional sound problems in that direction.

New paddles typically cost under $200 each and balls are inexpensive. Develop a method of enforcing the use of quieter paddles and balls at either location. This might be difficult to enforce because of the high number of transient renters.

If Acoustifence is selected as a sound barrier, it should be installed only on selected sides. You can contact our office for more information about the use of sound absorbing blankets if that is being considered.

At 200 feet from players, it is possible to achieve, using 12 ft high sound barriers and quieter paddles and balls, a 75% reduction in perceived sound level relative to the use of loud equipment and no sound barriers and that would push the level down to typical background noise level.

Robert M Unetich
GigaHertz LLC

April 4, 2022

<u>Disclaimer:</u> The sound levels in this report are estimates. Actual levels will vary over time. Sound level is probabilistic, meaning it is predictable over a range and it has averages and other statistical characteristics but it has no exact single level.

This report makes no guarantee of performance of the sound mitigation methods described. In addition, it is not possible to determine what any particular person believes is an acceptable sound level. The estimates of background sound levels are simply estimates and will vary from one neighborhood to another and from one measurement method to another.

Sound barrier installations must take into account numerous technical requirements to be effective. This includes consideration of wind and water damage and the fact that sound may travel around any opening in the barrier, including along the bottom edge. Manufacturer's recommendations should be carefully followed to achieve acceptable results.

Bio of the author of this report:

Robert M Unetich is a registered professional engineer in Pennsylvania. He graduated from Carnegie Mellon's School of Engineering as an Electrical Engineer and he has worked extensively in radio wave and sound wave propagation. He has published numerous articles about both topics including chapters in engineering handbooks and he holds several patents.

He is the owner of GigaHertz LLC, an electronics and acoustics consulting company in Pittsburgh, PA and he is a USA Pickleball Certified Referee.

Mr Unetich administers the Facebook group Pickleball Sound Mitigation and he is a member of the staff of Pickleball Magazine, where he writes a column for the magazine.

He can be reached at 412-780-4575 and at rmu@gigahertzllc.com and at itsrmu@aol.com.

Ocean Village Pickleball Timeline

Prepared by Dave Strothmann

3/31/2024

2008 – Two paddle tennis courts converted to pickleball (Courts 1 and 2 by Bermuda Pool)

January 17 - February 15, 2019 – The board inia tes and 674 owners out of around 2400, complete an owner survey in an aS empt to idenPfy owner demographics, expectaPons, saPsfacPon, parPcipaPon in acvi e s and value of future improvements. 24.2% of respondents indicated they play pickleball (we only had 2 courts at the m e). More pickleball courts were included in the top 10 future improvements desired by owners. (This survey was done before the explosive growth in the popularity of the sport that has occurred over the past several years.) The results of this survey were included in the intervener applicaon packet.

June 2019 – Based on overwhelming demand at the exisn g courts, the Board creates recreaon commiS ee to study where addiPonal pickleball courts can be built

December 2019- To provide temporary relief, the Board votes to stripe 4 temporary courts on hard tennis court number 10, by the Catamaran II cluster.

January 2020 – A er complePng their analysis the RecreaPon commiS ee recommends addion of 4 permanent pickleball courts be built in North Field. Board decides to wait to fund and build the courts unl the community center building assessment is ready. The projects will be funded at the same m e through special assessment.

October 28, 2021 – POA board approves 8 pickleball courts in the North Field along with Community Center building to be funded through a special assessment.

November 29th, 2021 – Special assessment passed to fund Pickleball Courts and Community Center. MoPon introduced to change the previous moPon from pickleball courts to racket sport courts to give the board flexibility in deciding if clay tennis courts or pickleball courts should be built in the north field.

April 4, 2022 1st sound study contracted by the Pickleball CommiS ee with GigaHertz LLC. The study shows the North field locaPon is suitable for pickleball courts, and that the courts will not violate the Fort Pierce noise ordinance even with no sound miPgaPon in that locaPon. The report also notes that sound cannot be miPgated in the hard tennis court locaon .

Fall 2022 – Board votes to build a single clay tennis court in the North Field and move the pickleball courts to the hard tennis court locaPon. A revision to the approved site plan is iniPated to change the 8 pickleball courts into a single clay tennis court.

January 22.2023 – Second Sound study contracted by the POA with Siebein and Associates to prove that it is a suitable locaPon for the pickleball courts. The sound study confirms that placing the pickleball courts on the hard tennis courts will exceed the requirements of the Fort Pierce noise ordinance and cannot be effecPvely miPgated in that locaPon. Report notes that the North Field locaPon is suitable for placing the pickleball courts, and that the courts will not violate the Fort Pierce noise ordinance in that locaPon. The pickleball courts in ocean Village at both exisPng locaPons are closed due to concerns

about violang the noise ordinance. Plans to build a new tennis court in the north field are immediately scrapped because pickleball will not be located on two of the exisng hard tennis courts.

February 2023 - POA Eleco ns are held – 3 board members are replaced with 3 new members. All new board members support building the pickleball courts in the North Field as originally planned.

Spring 2023 - Discussions are held with nearby condo associaon s to try to appease their concerns and come to a compromise on the courts in the North Field. Capstan representav es propose a 4-court plan that deletes the 4 courts on the north side of the layout moving the courts 60 feet further away. The Pickleball CommiS ee rejects this plan based on experience with long wain g m es with the 4 temporary courts.

Summer 2023 – POA proposes a new court configuraPon changing from 8 to 7 courts to move the courts 60 feet further away from the Capstan condos on the north side of the courts.

December 2023 – The 7-court configuraPon is determined to not be feasible from a cost perspecPve, so a 5 court plan is developed. The change to the 5-court plan is discussed in the December 12 workshop and the December 21st board meeng . This plan s ll moves the courts 60 feet further away from the Capstan cluster than the original 8 court layout.

December 2023 –The POA contracts an acousc al analysis and design of sound mig aon with Pickleball Sound MiPgaPon, LLC. The report is received on December 8, 2023. Varying fence heights and different types of sound barriers are analyzed by ul izing state-of-the-art 3D sound propagaPon modeling so ware. The analysis is consistent with the two previous sound studies and indicates the courts will not violate the Fort Pierce noise ordinance, even with no sound mig aon in place. Based on the POA's desire to make the courts as quiet as possible a 14 foot fence height is recommended to achieve sound levels where the loudest sounds occasionally produced by the courts are 50 dBA or less. The results from modeling 12 foot fence heights are also fully documented in the report.

January 2024 – The OV building commiS ee deletes the single tennis court in the north field from the site plan in order to obtain the final cer ficate of occupancy for the community center building.

January 2024 – New site plan major revision is submiS ed adding 5 pickleball courts into the site plan

January 2024 – bids are received from mulpl e court construcon companies to build 5 pickleball courts with sound miPgaPon in place. All vendors recommend against the 14 foot fence opPon based on the structural loading related to wind against the sound barriers. They esm ate the 14 foot fence with sound miPgaPon requirement is not be feasible from a design and cost perspecv e. The build commiS ee decides to pursue the 12 foot fence opPon based on the feasibility and the analysis in the acousc al design report. The occasional loudest sounds at the nearest condos are expected to be 52 dBA with most sounds far below that level. (Noise ordinance allows for up to 70 dBA).

February – current – Designs for the courts and fencing are being finalized. The selected court construcPon company has engaged the services of a structural engineer to design the footer system for the 12 foot fence with sound miPgaPon panels installed. This is the last item required to obtain a firm fixed price on the courts. Next steps are obtaining our building permits.

DISTRICT PLANNING GROUP

MEMORANDUM

TO	Lisa A. Reves, P.A., Becker & Poliakoff
FROM	Leslie Olson, AICP
DATE	March 29, 2024
SUBJECT	OCEAN VILLAGE POA AMENITY CENTER PARKING DEMAND 3/6/2024 – 3/10/2024

In an effort to address every concern raised regarding the construction of the new Pickleball amenity proposed for Ocean Village, a snapshot Parking Demand Data Collection has been initiated by the Ocean Village Property Owner's Association (POA). Reports have been received that parking supply at the main amenity area can be limited when there is a convergence of peak restaurant use and special events held at the new Clubhouse. While the Property Owner's Association indicates most people walk or ride bikes within the active community, there are reports that parking can be limited at times when two or more amenities are at peak demand, especially when those amenities are drawing non-resident use.

Amenities served by the 130- parking spaces include tennis, golf, a clubhouse, the main pool (not open during this data-collection period), a restaurant open to the public, a tiki bar and bocce courts. In addition, the 5-court Pickleball amenity will be located in this general area, as it has been found to be the least impactful for residents following three (3) noise studies.

In response to parking concerns, security footage of the 130-space parking area was reviewed for the dates of March 6, 2024 (Wednesday) through March 11, 2024 (Sunday) to determine parking demand and peak hour usage for the most heavily-parked days of the week.

Images at 30-minute intervals were evaluated between the timeframes of 7:00 a.m. and dusk, and the number of parked cars counted. The data from this exercise is attached to this document. This initial data collection will inform a future, more intensive parking study to be completed following the reopening of the newly constructed main pool.

FINDINGS

	#/Spaces Available	# Occupied	% Occupied	Time of Day
Average Parking Demand	130	40	30.6%	N/A
Peak Parking Demand	130	81	63%	5:37 p.m., Friday
Pickleball Peak Use Hours	130	24 avg.	19% avg.	8:00 a.m. – 12:00 p.m.
Restaurant Peak Use Hours	130	60 avg.	47% avg.	Weekday: 3:00 – 6:00 p.m. Weekend: 12:00 – 8:00 p.m.

Analysis of the data shows that the current peak parking demand is in the late afternoon and evening on weekdays and between early afternoon and the evening on weekends. Because Ocean Village previously provided Pickleball play on converted tennis courts, the POA reports peak demand for Pickleball in the morning, between the hours of 8:00 a.m. and 12:00 p.m.

Therefore, even if there are some Pickleball players who drive instead of walk or bike, most usage will take place in off-peak hours when the average parking in the main amenity area is at 19% of capacity.

The POA remains committed to studying this problem and will be continuing a parking study following the re-opening of the main pool following construction, as that will change parking demand and peak usage hours. The parking study will include usage data and recommendations for alleviating any parking shortages, including POA policy revisions and potential construction of new parking.

In the interim, the POA Board has adopted new parking policies for Clubhouse use to ensure that parking for those special events is limited and does not compete with restaurant parking demand. Please see attached the adopted Parking Guidelines for clubhouse rental.

Ocean Village Parking Study 3-6-2024 through 3-10-2024

Conditions: Restaurant open 3-9 pm, no pool

Prepared by Dave Strothmann

	Avg % Occupied	*Avg Spaces*
Legend: Primary Pickleball Demand Hours	18.67%	24
Primary Restaurant Demand Hours	45.78%	60
Daily Peak Demand	55.85%	73
Highest Peak Demand	62.31%	81

Date	Day	Time	Restaurant	Street	Gravel	Golf	Tennis	OVCC	Admin	Total	Total avail	% occupied	Comments	Average Parking Demand/Space	Average % Occupied
6-Mar	Wed	6:37am	0	0	0	1	0	1	0	2	130	1.54%			
		7:37am	0	0	0	1	2	8	0	11	130	8.46%		**Pickleball Demand Hours**	
		8:07am	2	0	0	1	5	7	3	18	130	13.85%	Primary Pickleball Demand Hours	30	22.82%
		8:37am	4	0	1	1	6	7	6	25	130	19.23%	Primary Pickleball Demand Hours		
		9:07am	6	1	1	1	9	2	5	25	130	19.23%	Primary Pickleball Demand Hours		
		9:37am	7	1	1	1	7	5	3	25	130	19.23%	Primary Pickleball Demand Hours		
		10:07am	5	1	1	1	9	5	2	24	130	18.46%	Primary Pickleball Demand Hours		
		10:37am	8	1	1	2	11	4	3	30	130	23.08%	Primary Pickleball Demand Hours		
		11:07am	10	1	1	3	8	7	4	34	130	26.15%	Primary Pickleball Demand Hours		
		11:37am	8	1	1	4	10	9	4	37	130	28.46%	Primary Pickleball Demand Hours		
		12:07pm	12	1	1	5	14	13	3	49	130	37.69%	Primary Pickleball Demand Hours		
		12:37am	17	2	1	4	10	9	4	47	130	36.15%			
		1:07pm	17	1	1	3	10	6	4	42	130	32.31%			
		1:37pm	14	1	2	3	5	1	1	27	130	20.77%			
		2:07pm	12	3	2	2	4	1	2	26	130	20.00%			
		2:37pm	13	4	3	3	8	1	4	36	130	27.69%		**Restaurant Demand Hours**	
		3:07pm	23	6	3	4	8	1	4	49	130	37.69%	Primary Restaurant Demand Hou	59	45.16%
		3:37pm	30	4	5	3	12	2	4	60	130	46.15%	Primary Restaurant Demand Hours		
		4:07pm	31	9	7	4	13	2	3	69	130	53.08%	Primary Restaurant Demand Hours		
		4:37pm	34	8	9	2	11	2	2	68	130	52.31%	Primary Restaurant Demand Hours		
		5:07pm	30	6	9	6	4	2	1	58	130	44.62%	Primary Restaurant Demand Hours		
		5:37pm	32	6	9	5	6	2	0	60	130	46.15%	Primary Restaurant Demand Hours		
		6:07pm	24	6	6	1	4	6	0	47	130	36.15%	Primary Restaurant Demand Hours		
		6:37pm	20	3	4	1	1	2	0	31	130	23.85%			
7-Mar	Thurs	6:37am	0	0	0	0	0	2	0	2	130	1.54%			
		7:07am	0	0	0	0	0	1	0	1	130	0.77%			
		7:37am	0	0	0	0	0	7	0	7	130	5.38%		**Pickleball Demand Hours**	
		8:07am	3	2	0	0	0	8	4	17	130	13.08%	Primary Pickleball Demand Hours	26	19.91%
		8:37am	6	2	0	0	3	12	3	26	130	20.00%	Primary Pickleball Demand Hours		
		9:07am	7	2	0	2	4	4	3	22	130	16.92%	Primary Pickleball Demand Hours		
		9:37am	7	1	0	3	5	2	3	21	130	16.15%	Primary Pickleball Demand Hours		
		10:07am	7	1	0	3	3	1	3	18	130	13.85%	Primary Pickleball Demand Hours		
		10:37am	10	1	1	4	4	2	3	25	130	19.23%	Primary Pickleball Demand Hours		
		11:07am	10	1	0	3	6	4	2	26	130	20.00%	Primary Pickleball Demand Hours		
		11:37am	12	1	0	7	8	4	3	35	130	26.92%	Primary Pickleball Demand Hours		

		12:07pm	12	3	0	8	12	5	3	43	130	33.08%	Primary Pickleball Demand Hours				
		12:37pm	11	4	2	6	7	4	3	37	130	28.46%					
		1:07pm	11	6	2	6	7	3	3	38	130	29.23%					
		1:37pm	9	7	4	2	6	3	3	34	130	26.15%					
		2:07pm	9	6	3	2	7	3	3	33	130	25.38%					
		2:37pm	9	7	3	3	9	2	3	36	130	27.69%		**Restaurant Demand Hours**			
		3:07pm	12	6	3	3	10	2	4	40	130	30.77%	Primary Restaurant Demand Hou	51	39.56%		
		3:37pm	15	6	3	4	11	2	3	44	130	33.85%	Primary Restaurant Demand Hours				
		4:07pm	27	9	5	7	12	1	3	64	130	49.23%	Primary Restaurant Demand Hours				
		4:37pm	26	7	6	7	12	2	2	62	130	47.69%	Primary Restaurant Demand Hours				
		5:07pm	25	6	8	7	8	2	1	57	130	43.85%	Primary Restaurant Demand Hours				
		5:37pm	27	5	8	4	7	0	1	52	130	40.00%	Primary Restaurant Demand Hours				
		6:07pm	23	4	7	1	5	1	0	41	130	31.54%	Primary Restaurant Demand Hours				
		6:37pm	22	5	7	0	1	1	0	36	130	27.69%					
8-Mar	Friday	7:52am	0	0	0	0	0	4	0	4	130	3.08%		**Pickleball Demand Hours**			
		8:07am	2	0	0	0	2	4	2	10	130	7.69%	Primary Pickleball Demand Hours	25	18.89%		
		8:37am	3	0	0	0	4	5	2	14	130	10.77%	Primary Pickleball Demand Hours				
		9:07am	8	1	0	2	6	1	2	20	130	15.38%	Primary Pickleball Demand Hours				
		9:37am	7	1	0	2	5	1	2	18	130	13.85%	Primary Pickleball Demand Hours				
		10:07am	13	3	0	4	5	1	3	29	130	22.31%	Primary Pickleball Demand Hours				
		10:37am	9	2	0	4	8	1	4	28	130	21.54%	Primary Pickleball Demand Hours				
		11:07am	12	2	0	5	10	2	4	35	130	26.92%	Primary Pickleball Demand Hours				
		11:37am	11	1	0	4	10	5	4	35	130	26.92%	Primary Pickleball Demand Hours				
		12:07pm	16	1	0	3	5	5	2	32	130	24.62%	Primary Pickleball Demand Hours				
		12:37pm	14	5	0	3	7	3	2	34	130	26.15%					
		1:07pm	17	7	2	2	7	6	1	42	130	32.31%					
		1:37pm	19	7	3	3	7	7	0	46	130	35.38%					
		2:07pm	22	6	3	2	8	7	0	48	130	36.92%		**Restaurant Demand Hours**			
		2:37pm	25	6	4	1	7	7	2	52	130	40.00%	Primary Restaurant Demand Hou	71	54.36%		
		3:07pm	25	8	4	1	5	7	2	52	130	40.00%	Primary Restaurant Demand Hours				
		3:37pm	32	9	5	3	6	9	4	68	130	52.31%	Primary Restaurant Demand Hours				
		4:07pm	35	11	8	4	7	9	2	76	130	58.46%	Primary Restaurant Demand Hours				
		4:37pm	37	9	8	4	8	9	0	75	130	57.69%	Primary Restaurant Demand Hours				
		5:07pm	35	13	8	6	11	6	0	79	130	60.77%	Primary Restaurant Demand Hours				
		5:37pm	38	16	8	6	10	3	0	81	130	62.31%	Highest Peak Demand for Parking				
		6:07pm	34	15	9	5	6	5	0	74	130	56.92%	Primary Restaurant Demand Hours				
		6:37pm	39	15	11	5	5	4	0	79	130	60.77%	Primary Restaurant Demand Hours				
9-Mar	Sat	7:37am	1	0	0	2	0	2	0	5	130	3.85%		**Pickleball Demand Hours**			
		8:07am	1	0	0	2	5	3	0	11	130	8.46%	Primary Pickleball Demand Hours	24	18.21%		
		8:37am	3	0	0	2	6	2	0	13	130	10.00%	Primary Pickleball Demand Hours				
		9:07am	2	0	0	2	7	6	0	17	130	13.08%	Primary Pickleball Demand Hours				
		9:37am	4	0	0	3	5	5	0	17	130	13.08%	Primary Pickleball Demand Hours				

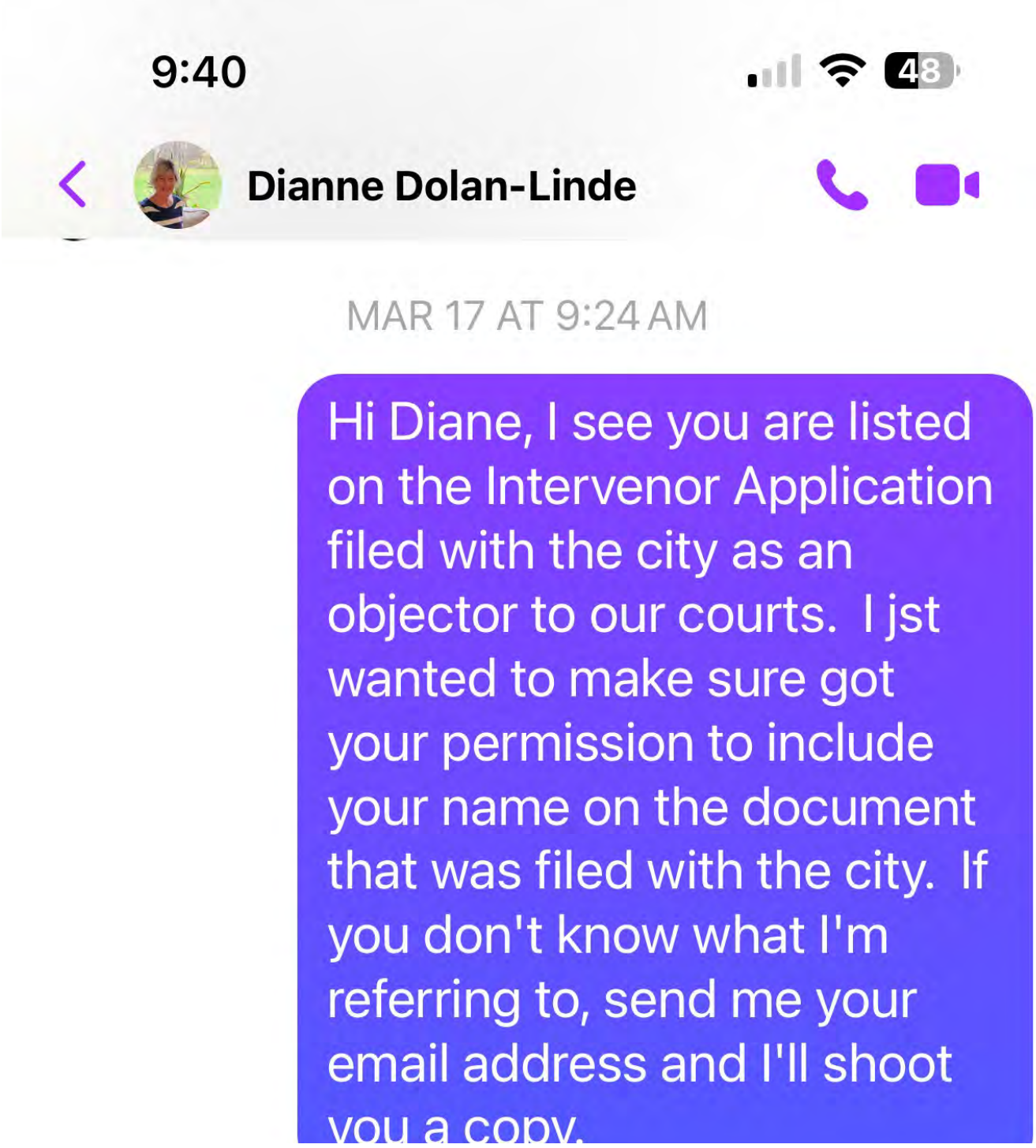
		10:07am	8	2	1	2	5	4	0	22	130	16.92%	Primary Pickleball Demand Hours				
		10:37am	11	2	2	2	6	4	0	27	130	20.77%	Primary Pickleball Demand Hours				
		11:07am	11	1	2	4	6	7	0	31	130	23.85%	Primary Pickleball Demand Hours				
		11:37am	10	2	2	6	7	8	0	35	130	26.92%	Primary Pickleball Demand Hours				
		12:07pm	12	3	3	5	6	11	0	40	130	30.77%	Primary Pickleball Demand Hours	**Restaurant Demand Hours**			
		12:37pm	12	5	5	5	6	8	0	41	130	31.54%	Primary Restaurant Demand Hou	56	42.96%		
		1:07pm	18	6	8	4	6	6	0	48	130	36.92%	Primary Restaurant Demand Hours				
		1:37pm	22	8	6	1	5	5	0	47	130	36.15%	Primary Restaurant Demand Hours				
		2:07pm	23	7	5	1	1	3	3	43	130	33.08%	Primary Restaurant Demand Hours				
		2:37pm	25	8	4	1	3	5	4	50	130	38.46%	Primary Restaurant Demand Hours				
		3:07pm	22	7	7	1	4	6	4	51	130	39.23%	Primary Restaurant Demand Hours				
		3:37pm	23	8	8	1	3	6	3	52	130	40.00%	Primary Restaurant Demand Hours				
		4:07pm	24	9	7	1	4	8	3	56	130	43.08%	Primary Restaurant Demand Hours				
		4:37pm	31	8	8	1	5	5	3	61	130	46.92%	Primary Restaurant Demand Hours				
		5:07pm	31	9	7	3	5	7	3	65	130	50.00%	Primary Restaurant Demand Hours				
		5:37pm	28	10	8	4	5	10	4	69	130	53.08%	Primary Restaurant Demand Hours				
		6:07pm	29	10	9	4	5	12	6	75	130	57.69%	Primary Restaurant Demand Hours				
		6:37pm	29	8	8	4	3	10	6	68	130	52.31%	Primary Restaurant Demand Hours				
10-Mar	Sun	7:37am	2	1	0	0	0	1	0	4	130	3.08%	Sunday times adjusted for DST	**Pickleball Demand Hours**			
		8:07am	1	1	0	0	0	2	0	4	130	3.08%	Primary Pickleball Demand Hours	18	13.50%		
		8:37am	1	1	0	0	4	1	0	7	130	5.38%	Primary Pickleball Demand Hours				
		9:07am	1	1	0	1	4	3	0	10	130	7.69%	Primary Pickleball Demand Hours				
		9:37am	2	1	0	5	9	4	0	21	130	16.15%	Primary Pickleball Demand Hours				
		10:07am	3	1	0	5	7	4	0	20	130	15.38%	Primary Pickleball Demand Hours				
		10:37am	2	2	1	5	5	4	0	19	130	14.62%	Primary Pickleball Demand Hours				
		11:07am	5	1	1	5	5	3	0	20	130	15.38%	Primary Pickleball Demand Hours				
		11:37am	9	1	1	5	6	3	0	25	130	19.23%	Primary Pickleball Demand Hours				
		12:07pm	15	1	2	7	6	1	0	32	130	24.62%	Primary Pickleball Demand Hours	**Restaurant Demand Hours**			
		12:37pm	26	1	2	6	4	1	0	40	130	30.77%	Primary Restaurant Demand Hou	61	46.87%		
		1:07pm	24	9	4	6	4	3	0	50	130	38.46%	Primary Restaurant Demand Hours				
		1:37pm	25	8	4	5	3	2	0	47	130	36.15%	Primary Restaurant Demand Hours				
		2:07pm	30	10	5	6	7	1	0	59	130	45.38%	Primary Restaurant Demand Hours				
		2:37pm	30	13	6	0	6	4	1	60	130	46.15%	Primary Restaurant Demand Hours				
		3:07pm	26	16	5	1	4	6	1	59	130	45.38%	Primary Restaurant Demand Hours				
		3:37pm	27	15	6	2	6	14	1	71	130	54.62%	Primary Restaurant Demand Hours				
		4:07pm	23	16	3	3	10	12	4	71	130	54.62%	Primary Restaurant Demand Hours				
		4:37pm	27	14	3	3	10	13	4	74	130	56.92%	Primary Restaurant Demand Hours				
		5:07pm	34	11	4	2	10	7	3	71	130	54.62%	Primary Restaurant Demand Hours				
		5:37pm	32	8	6	2	8	8	3	67	130	51.54%	Primary Restaurant Demand Hours				
		6:07pm	32	10	7	1	8	11	2	71	130	54.62%	Primary Restaurant Demand Hours				
		6:37pm	33	11	8	0	6	10	2	70	130	53.85%	Primary Restaurant Demand Hours				
		7:07pm	23	10	9	0	5	8	3	58	130	44.62%	Primary Restaurant Demand Hours				
		7:37pm	22	5	9	0	4	6	0	46	130	35.38%	Primary Restaurant Demand Hours				

Guidelines for Clubhouse Parking

- Limit events in the Community Center to 100 people.
- For community center events only, parking is limited to the 17 spaces in the Community Center parking lot plus 1 handicap space. The event sponsor must pay for security to ensure parking guidelines are enforced.
- A waiver for the guidelines can be requested through the general manager or their designated appointee.

Subject: People that were posted against PB
Date: Sunday, March 31, 2024 at 9:45:43 PM Eastern Daylight Time
From: Dave Strothmann
To: Leslie Olson
Attachments: image_123650291.JPG, image_123650291.JPG, image_123650291.JPG

Here is another. See the screen captures attached. I did not receive her email as stated in the last frame.



MAR 17 AT 10:10 AM

No idea what you are talking about. I didn't object to anything. Thanks for letting me know. Wondering how that could have happened.

Linded108@gmail.com



Aa

9:40

Dianne Dolan-Linde

Linded108@gmail.com

Subject: Fwd: Objectors to the pickleball court build project
Date: Sunday, March 31, 2024 at 9:21:31 PM Eastern Daylight Time
From: Dave Strothmann
To: Leslie Olson

Leslie,
See the message below.
Linda told Tom on Saturday, that she supports the pickleball construction project and feels strongly that this amenity is needed at Ocean Village. Apparently she wrote a Facebook post a long time ago when she was upset with a pickleball player that opposed the construction of a tennis court, and they latched onto that.

Dave

Dave Strothmann
Vice President, Ocean Village POA
303-819-1079
https://www.oceanvillage.com/

---------- Forwarded message ---------
From: **Linda Stephan** <linda.stephan@gmail.com>
Date: Thu, Mar 14, 2024 at 5:31PM
Subject: Re: Objectors to the pickleball court build project
To: Dave Strothmann <ovpoadave@gmail.com>

I did not authorize putting my name on that list.

Linda Stephan

> On Mar 14, 2024, at 4:08PM, Dave Strothmann <ovpoadave@gmail.com> wrote:
>
> Linda,
> Your name appears on page 18 of 93. Please let me know if you supported this and still do today. Your name was presented to the city already by Chris Savino.

Dave Strothmann
Vice President, Ocean Village POA
303-819-1079
https://www.oceanvillage.com/

<21995_Intervenor_-_Savino.pdf>