MANATEE COUNTY

April 8, 2009

TO: All Interested Proposers

Reference: Request For Proposal # 09-1314BG / Design Build Construction Services for GT Bray Recreation Center

ADDENDUM # 2

Proposers are hereby notified that this Addendum shall be acknowledged by them within their proposal and shall be made a part of the above named Proposal and Contract Documents.

The following items are issued to add to, modify, and clarify the Proposal and/or Contract Documents. These items shall have the same force and effect as the original Proposal and /or Contract Documents. Proposals are to be submitted on the specified date and shall conform to the additions and revisions listed herein.

1. Deadline for Clarification Requests was: April 3, 2009 at 5:00P.M.
2. See attached for answers to written Requests for Clarification .
3. Proposal Due Date and Time remain unchanged: April 14, 2009 at 10:00A.M.

If you have submitted a proposal prior to receiving this addendum, you may request in writing that your original, sealed proposal be returned to your firm. All sealed Proposals received will be opened on the date stated.

Sincerely,

R.C. "Rob" Cuthbert, C.P.M., CPPO
Purchasing Manager

Financial Management – Purchasing Division
Suite 803 - 1112 Manatee Avenue West, Bradenton, FL 34205
PHONE: 941.749.3014 * FAX: 941.749.3034
www.mymanatee.org

WADE TRIM

April 7 2009

Re: Request for Proposal # 09-1314BG / Design Build Construction Services for GT Bray Recreation Center

ADDENDUM #2

Prepared By: Wade Trim & Renker Eich Parks

Documents Issued: Attachment D Pages 1,4,5,9,11,17,18,20,24,27,28,33,34,36-52.

Description: Answers to questions and requests for information from interested proposers.

1. Q.: It appears that you are requesting a design/build proposal, under which we would furnish the design, all drawings and a GMP, however I see that there is already a civil engineer and architect involved in the project. Is it your true intent to contract for design/builder services, or will you be using Renker-Eich-Parks Architects and truly only need construction management/general contracting services from us under this RFP.
   A: Complete Design Build services are requested. The civil engineer and architect that prepared the Design Criteria Package are prohibited from submitting on the project.

2. Q: We are in need of a CAD file of the survey for GT Bray Park. How do we obtain this?
   A: Survey CAD file will be issued to the selected proposer.

3. Q: (7) Provide a Schematic Design or general layout drawings. Question: As part of our submission package, is Manatee County requesting schematic design layouts & concepts? Exterior and Interior Concept drawings. If Schematic design layouts are needed will the layouts be included in our submission book or 24x36. Plans to scale?
   A: Proposers to provide a statement that schematic design and general layout shall conform to Attachment D, Exhibits D & E in lieu of providing concepts and drawings. The selected proposer will work with County staff to develop concepts in more detail and review design alternatives.

4. Q: (11) Submit your firm's cost proposal. Question: Are proposal fees requested as part of this submission? Question: If so, the proposal should come from the contractor on the design team, correct?
   A: Design Build team to provide cost proposal as requested.

5. Q: The project budget is stated in two different areas of the RFP at two conflicting amounts. Is the budget for the Design Build Services at $3.2 million or at $3.8 million?

A: **The project budget is 3.2 million dollars.**

6. Q: Is it the intent of the RFP for the building to be designed to the LEED standards or for an actual certification commissioning of the facility? If so, to what level?
   A: Provide base LEED Certification and commissioning, see Section E – Scope of Services, E.06, page 18.

7. Q: The RFP calls for the submission of the attached Drug Free and Public Contracting certifications. These forms were not included in the RFP.
   A: The required forms are provided in Addendum #1 published March 24, 2009 on the Manatee County website and Onvia DemandStar.

8. Q: Is there any CAD file drawings available for download such as survey, site plan or floor plans?
   A: Survey CAD file and as built drawings will be issued to the selected proposer.

9. Q: Is there any drawings available for loan or viewing for example as built drawings of the gym or the aquatics building.
   A: As Built drawings of existing buildings will be provided to the successful proposer.

10. Q: Page 18 E.06 – It is our understanding that LEED commissioning services shall be provided by the design build team. It is our recommendation that this service be performed by a third party contracted directly by the Client in order to provide impartiality. Please provide final direction.
    A: LEED commissioning to be provided by the design build team.

11. Q: Page 12, line 7 -- Can the schematic design portion of the proposal be submitted in a separate package? This is in order to provide large format drawings.
    A: See answer to Question 3.

12. Q: Reduced copies of surveys completed by Lombardo, Foley, & Kolarick were furnished as a part of the RFP package. However, they are at such a small scale and poor resolution that no data is legible. We could have the Data available if the surveyor would release a CAD file for the use of the Design/Build teams. It would also be of great assistance in development of the required schematic plan. Could you please contact Bob Lombardo and authorize the release of this data to the proposers.
    A: Survey CAD file will be issued to the selected proposer.

13. Q: Is the "connector" between the proposed recreation center and the existing gym part of the base bid or part of alternate one meeting the requirements of the HMGP funding grant?
    A: Base Bid.

14. Q: The Space Planning Program lists a Roof Terrace, please define the use and area.
A: **To be used as an extension of Staff Break Room – anticipated for staff use only.**

15. Q: According to the glazing specification, the exterior is to be laminated impact glass. The HMGP funding grant indicates electric shutter protection for openings. Is the laminated glass part of the base bid and the electric shuttering part of alternate one? If part of alternate one, can the base bid glazing be reduced to non-impact glass?
A: **Base Bid is to include code compliant glazing meeting requirements listed in Design Criteria Package. Electric shuttering to be part of alternate and any glazing protected by shuttering need not be impact rated.**

16. Q: Activity center offices area as defined is 1,300 square feet; the program defines six areas "a part of the activity center office", which adds up to 570 square feet. What is the function of the remaining 730 square feet?
A: **In the remaining 730 sf allow for approximately 7 open office cubicle spaces @ 100 sf (+/-).**

17. Q: The Space Planning Program indicates the recreation supervisor as the only function to be a "private" office, are all other areas open work stations? The County is responsible for furniture, fixtures, and equipment, are these work stations part of the FFE?
A: **Yes.**

18. Q: The RFP indicates the Proposer to provide the Commissioning Agent; does Manatee County have their own Commissioning Agents on staff?
A: **Design build team to provide commissioning agent per USGBC requirements.**

19. Q: As defined in the DRC comments, the site is outlined as a 20-acre portion of GT Bray Park, which is 143 acres overall. Does the Lombardo, Foley & Kolarik survey provided in the RFP define the site area adequately? What is the date of the survey? Will the survey be provided to the selected Team for design use?
A: **Survey CAD file will be issued to the selected proposer.**

20. Q: Who is responsible for Line Item 13 of the DRC Comments to prepare a parking survey of the entire 143-plus acre site for the SUA application? If the proposer is responsible, is the County providing an adequate survey of the 143-acres to address this issue?
A: **Design build team is to be responsible for the parking survey. Parking survey to be prepared from currently available aerial maps ie: County or SWFWMD sources.**

21. Q: Will existing as-built drawings be made available to the Selected Team?

A: **As Built drawings of existing buildings will be provided to the successful proposer.**

22. Q: Section B.01 Minimum Experience to Be Considered, Item E, "Direct knowledge of this process to achieve compliance." Is this a continuation of Item D?
A: **Yes.**

23. Q: Section 2, Design Criteria, Divisions 31, 32, & 33 are missing. Can you please provide that information to us.
A: **See Attachment D pages 36-52 provided with Addendum #2.**

24. Q: Are the site plans available in large format PDF or as DWG files? We tried to enlarge from the 8.5x11 pdf and it's not legible.
A: **Survey CAD file will be issued to the selected proposer.**

25. Q: Are there as-built utility plans available?
A: **See survey and/or Manatee County utilities.**

26. Q: Are we responsible for the certification referenced in the SWFWMD pre-application meeting minutes?
A: **Yes, see Section E – Scope of Services, E.07, page 19.**

27. Q: Is there an additional level of design and/or grant participation for the HMGP grant expected from the Selected Team?
A: **Yes.**

28. Q: The written program for the Multi-Purpose Rooms A, B, and C indicates a direct relationship with a "Covered Outdoor Terrace". However, no information or guidance regarding the extent and type of uses to be accommodated in a "Covered Outdoor Terrace". Can you furnish some guidance in this area?
A: **To be used as an extension of Multi-Purpose Rooms.**

29. Q: The "bubble" diagram indicates a "Roof Terrace" however no specifics or guidance are given in the written program. Can you furnish some guidance for the "Roof Terrace"?
A: **To be used as an extension of Staff Break Room – anticipated for staff use only.**

30. Q: The written program indicates the Marketing Coordinator as being part of the Activity Center Office with an ***indirect*** relationship with the second floor offices. However, The "bubble" diagram indicates an office on the second floor for that function. Is there to be an office on both floors for a Marketing Coordinator? Please clarify.
A: **Yes.**

31. Q: The written program includes single occupant toilet rooms at 70 S.F. apiece for each sex on the second floor. However, the "bubble" diagram indicates "MEN'S WOMEN'S TOILETS" at 264 s.f. Please clarify.

A: **Bubble diagram indicating enlarged toilets for both Men and Women takes precedence over Space Program Information, due to request for toilet facilities to have more than one toilet fixture, therefore needing to be ADA compliant.**

32. Q: The extent of site development is unclear, especially relative to landscaped areas and "Outdoor Terraces" and walkways approaching the building. The sketch site plan indicates a drop off circle to the west of the buildings. However, the majority of the parking is located in a large lot to the north of the Gym. Are any walkways to that parking lot to be improved and landscaped?
A: **The main "control point" entrance will be to the west for the purposes of the RFP response. There is an existing walkway to remain between the gym and the aquatic center that connects to the north parking lot. Ideas for improved site layout/circulation will be considered after the design build team is selected.**

33. Q: We expect that the new building will be connected to existing utilities at the building site.
A: **Yes.**

34. Q: The Soil Report recommends excavating the entire site area to 1 foot below the stripped ***existing grade***. Our experience with demolished buildings is that the existing grade is significantly disturbed by the demolition process. Typically, the entire area of the demolished buildings needs to be sub-excavated to below the disturbed soils and re-compacted as the building pad for the new structure. That depth will typically exceed the 1 foot specified in the soil report.
A: **We agree that the disturbed soils will likely extend deeper than 1 foot in the demolished building areas. All the foundation slabs and pavement associated with the existing structures should be removed. Any disturbed soils below the slabs/pavements should also be removed and then re-compacted to at least 1 foot below the stripped (exposed) grade.**

35. Q: We do understand that the northernmost building will remain in operation until completion of the new 2 story building. Preparation of that portion of the site and construction of the bus drop off will be completed at that time.
A: **Yes.**

Sincerely,

WADE TRIM, INC.

Sharon Heal Eichler RLA, ASLA
LEED®AP, Associate, Project Manager

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ATTACHMENT D

GT Bray Recreation Center
Design Criteria

Manatee County
Board of County Commissioners

Larry Bustle – District One
Dr. Gwendolyn Y. Brown – Chair, District Two
John R. Chappie – District Three
Ron Getman – District Four
Donna Hayes – District Five
Carol Whitmore – At Large
Joe McClash – At Large

Manatee County Property Management Department
Jim Staples - Director
In conjunction with
Manatee County Parks and Recreation Division
Cindy Turner - Director

Prepared by:

WADETRIM
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RENKER · EICH · PARKS ARCHITECTS
1609 MLK Street North
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March 2009

SECTION 1: DESIGN REQUIREMENTS

Applicable Codes:

Florida Building Code 2007
NFPA 101 Life Safety Code
Florida Fire Prevention Code
Florida Building Code Plumbing
Florida Building Code Mechanical
Florida Building Code Fuel Gas
National Electrical Code NFPA 70
City Of Bradenton
Manatee County Health Department
Southwest Florida Water Management District
Florida Department of Environmental Regulation
EPA

Building Structural Systems:

The structural building envelope is to be composed of one or combinations of the following:

-Cast-in-place Concrete
-Concrete Masonry Units (CMU) Load bearing or infill
-Precast Prestressed Concrete
-Structural Steel Frame
-Open Web Steel Bar Joist
-Cold Formed Steel Truss Systems
-Steel Floor or Roof Decks

Building Expansion:

- The building is to be designed for the programmed second floor expansion including load bearing elements and foundations.
- All design disciplines to account for future expansion in the building design.

Building Foundations:

-Refer to the Geotechnical Engineering Services Report Prepared by Professional Service Industries, Inc.

Building Classification and Area Calculations:

USE AND OCCUPANCY CLASSIFICATION – CHAPTER 3 FBC 2007 (Note: Mixed Use Occupancy)

ASSEMBLY GROUP A -3 (Gymnasium w/out seating and Lecture)
Assembly – Unconcentrated as Per FBC / 2007
BUSINESS GROUP B (Civic Administration)

TYPES OF CONSTRUCTION – CHAPTER 6 (table 601)

TYPE: II-B, SPRINKLERED

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

Structural Frame –	0
Bearing Walls (int and ext) –	0
Floor Construction	0
Roof Construction	0

GENERAL BUILDING HEIGHTS AND AREAS – CHAPTER 5
ALLOWABLE HEIGHT AND AREAS
ASSEMBLY GROUP A-3 - 9,500 SF
BUSINESS GROUP B - 23,000 SF
AREA INCREASE ALLOWED FOR AUTOMATIC SPRINKLER SYSTEM (FBC 506.3) = 300%

Fire Rating Requirements
FIRE SEPARATION REQUIREMENTS HOURS (Table 508.3.3)
ASSEMBLY A-3 TO BUSINESS - 1 HR. (Allowed in sprinkled building)
Note Storage Areas incidental to Business Occupancy need not be provided fire separation if less that 1,000 sf. (note b.)

Occupant Load and Exit Calculations:
Egress Width Per Occupant Served
Stairways = 0.3 inch
Other = 0.2 inch

Life Safety Requirements:
Exit Access Travel Distance (FBC 1016.1) with Sprinkler System
250 ft.
No dead end corridors.
Fire Extinguishers to be – Type 2A-10bc.

Wind Load Building Requirements:
Project is located in Manatee County, Florida.
Basic Wind Speed - 130 mph. Alternate design to 170 mph.
Exposure 'B'.
Category III – Importance Factor I=1.15
Fully enclosed building meeting all impact, component, and cladding requirements.
All building design loads shall meet referenced code requirements.

See Alternate in Division 01 General Requirements for EHPA Enhanced Hurricane Protection.

Live Load Building Requirements:
Office Area – 50 psf
Recreation Area – 100 psf
Lobbies and Corridors – 100 psf
Partitions – 20 psf
File loading as required

Deflection Limits:
All structural elements are to meet the deflection limits of Section 1604 of the FBC.

Interior Wall and Finish Requirements (Table 803.5)

Interior Finishes	Class
Vertical Exits and Passage Ways	B/C
Exit Access Corridors and Other Exit Ways	B
Rooms and enclosed Spaces	C

DIVISION 22 – PLUMBING
- PLUMBING FIXTURES
- PIPE AND FITTINGS
- PLUMBING INSULATION
- CLEANING

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING
- HVAC EQUIPMENT & EFFICIENCY
- IAQ VENTILATION & TEMPERATURE CONTROL
- HVAC DUCTWORK
- HVAC INSULATION
- HVAC TEST AND BALANCING

DIVISION 26 – ELECTRICAL
- GENERAL WIRING AND EQUIPMENT
- INTERIOR LIGHT FIXTURES
- EXTERIOR LIGHT FIXTURES
- LIGHTING CONTROL
- POWER DISTRIBUTION

DIVISION 27 – COMMUNICATIONS
- SLEEVES
- OUTLETS AND BOXES
- COMMUNICATION ROOM WORK

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY
- FIRE ALARM
- VOICE/ALARM SIGNALING

SITE AND INFRASTRUCTURE SUBGROUP

DIVISION 31 – EARTHWORK
- SITE CLEARING
- EARTH MOVING
- DEWATERING
- EXCAVATION SUPPORT AND PROTECTION

DIVISION 32 - EXTERIOR IMPROVEMENTS
- ASPHALT PAVING
- CONCRETE PAVING
- CHAIN LINK FENCES AND GATES
- PLANTING IRRIGATION
- TURF AND GRASSES
- PLANTS

DIVISION 33 - UTILITIES
- COMMOM WORK RESULTS FOR UTILITIES
- STORM UTILITY DRAINAGE PIPING

6. Execution: Includes Plan Implementation, Salvaging, Recycling, and Disposal.

SUSTAINABLE DESIGN REQUIREMENTS: Includes administrative requirements and procedures for compliance with certain USGBC LEED prerequisites and credits needed for the Project to obtain minimum **LEED ® Certification.**

1. Related Sections: Divisions 01 through 33 Sections for LEED requirements
   specific to the work of each of these sections. Requirements may or may not include reference to LEED.
2. Definitions.
3. Submittals: Includes Action Plans, Progress Reports, and Documentation Submittals.
4. Quality Assurance: Includes requirements for a Waste Management Coordinator.
5. Products: Includes Recycled Content, Regional Materials, Certified Wood, and Low-Emitting Materials.
6. Execution: Includes Refrigerant Removal, Construction Waste Management, and Construction Indoor-Air-Quality Management.
7. Reference Document: LEED Project Checklist

GENERAL COMMISSIONING REQUIREMENTS: Includes administrative requirements and procedures that apply to implementation of commissioning without regard to specific systems, assemblies, or components.

1. Definitions:
   a. OPR: Owner's Project Requirements.
   b. BoD: Basis of Design.
   c. CxA: Commissioning Authority.
2. Commissioning Team.
3. Owner's Responsibilities: Includes preparation of the OPR. A/E is to prepare the BoD.
   Owner provides both the OPR and the BoD to the CxA.
4. Contractor's Responsibilities: Includes integrating and coordinating commissioning
   process activities with construction schedule.
5. CxA's Responsibilities: Includes providing the commissioning plan.

FACILITY CONSTRUCTION SUBGROUP

DIVISION 02 - EXISTING CONDITIONS

SELECTIVE STRUCTURE DEMOLITION: Demolition and removal of selected portions of buildings and site elements to accommodate building and site work as described in the Design Criteria Package.

DIVISION 03 – CONCRETE

CAST-IN-PLACE CONCRETE:

1. Interior Fire Rated Glazing
   a. Fire rated glass ceramic.
2. Exterior Laminated Glazing
   a. ¼" heat strengthened tinted exterior lite.
   b. .090 " PV Interlayer
   c. ¼" heat strengthened interior lite.
3. Interior Regular Duty Glazing
   a. ¼" Tempered

LOUVERS AND VENTS: Fixed and adjustable louvers; wall vents:
1. Aluminum Architectural grade, water and weather proof.

DIVISION 09 – FINISHES

GYPSUM BOARD AND NON-STRUCTURAL METAL FRAMING: Gypsum Board and Steel framing for gypsum board partitions and ceilngs.
1. Steel Framing: Minimum 20 ga.

PORTLAND CEMENT PLASTERING: Comply with ASTM C 926 for applications indicated. Fiber Content: Add fiber to base-coat mixes.

1. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork.
2. Base-Coat Mixes for Use over Concrete Unit Masonry: Single base coats for two-coat plasterwork.
3. Job-Mixed Finish-Coat Mixes.

TILING Ceramic mosaic, and wall tile.
1. Toilet/Locker/ Showers Floor Tile – Unglazed ceramic mosaic 2" x 2" w/ integral sanitary cove base.
2. Wall Tile – Glazed matt finish 6" x 6" tile.
3. Warming Kitchen Area – 6" x 6" Quarry tile w/ non slip surfacing.

ACOUSTICAL PANEL CEILINGS Wet formed mineral fiber based panels with exposed suspension systems.
1. Provide the following:
   a. Armstrong – Ultima Fine Texture - Item No. 1911
   b. Edge/Joint Detail: Beveled Tegular.
   c. Thickness: 3/4 inch.
   d. Modular Size: 24 by 24 inches.
2. Suspension Sytem: Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation, with prefinished 15/16-inch- wide metal caps on flanges.
   a. Structural Classification: Heavy-duty system.
   b. Face Design: Flat, flush.
   c. Cap Finish: Painted, White.

RESILIENT BASE AND ACCESSORIES Resilient base, stair accessories, and molding accessories.

RESILIENT SHEET FLOORING Vinyl and rubber sheet floor coverings.

RESILIENT TILE FLOORING Rubber, and vinyl composition.

TILE CARPETING Modular carpet tile for commercial applications.

WALL COVERINGS Vinyl/woven glass-fiber wall coverings and acoustical wall treatment.

EXTERIOR PAINT AND COATING SYSTEMS: Commercial Grade Exterior Products And Systems.

1. MPI Standards: Products: Comply with MPI standards for commercial grade products.
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems used.
3. Low-Emitting Materials: Comply with requirements as sated in Sustainable Design Requirements in Division 01 General Requirements.

INTERIOR PAINT AND COATING SYSTEMS: Commercial Grade Interior Products And Systems.

1. MPI Standards: Products: Comply with MPI standards for commercial grade products.
2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems used.
3. Low-Emitting Materials: Comply with requirements as stated in Sustainable Design Requirements in Division 01 General Requirements.

DIVISION 10 – SPECIALTIES

VISUAL DISPLAY SURFACES:

1. Markerboards and Tackboards.

DIRECTORIES:

1. Nonilluminated type with changeable message strips.

SIGNAGE:

1. Interior Room and Wayfinding Signage.

TOILET COMPARTMENTS: Solid Color Reinforced Composite (SCRC) toilet enclosures, entrance screens and shower dividers.

1. Overhead braced floor anchored.
2. Panels, Pilaster and Walls: 1 inch thick.

OPERABLE PARTITIONS:

1. Panel Operation: Manually operated, paired panels.
2. Panel Construction: Provide top reinforcement as required to support panel from suspension components and provide reinforcement for hardware attachment. Fabricate panels with tight hairline joints and concealed fasteners.

1. Provide 1 unit at each exterior door of set of doors - 5'-0" deep x door width + 2'-0".

DIVISION 13 - SPECIAL CONSTRUCTION
NA

DIVISION 14 - CONVEYING EQUIPMENT
HYDRAULIC ELEVATORS: Standard pre-engineered hydraulic passenger elevators.
Rated Capacity: 2100 lbs.
Rated Speed: 110 ft./min.
Clear Car Inside: 5' - 8" x 4' - 3"
Cab Height: Nominal

Hoistway Entrance Size: 3' - 0" wide x 7'-0 high

1. Elevator car enclosures, hoistway entrances and signal equipment.
2. Jack(s).
3. Operation and control systems.
4. Accessibility provisions for physically disabled persons.
5. Equipment, machines, controls, systems and devices as required for safely operating the specified elevators at their rated speed and capacity.
6. Materials and accessories as required to complete the elevator installation.

FACILITY SERVICES SUBGROUP

DIVISION 21 - FIRE SUPPRESSION
This section covers the furnishing and installing of a complete wet pipe automatic sprinkler system, and appurtenances. The fire protection system shall comply with the requirements of NFPA 13.
Work included in this specification shall consist of:

1. Arrange for, obtain and bear the cost of necessary permits, bonds, fees and engineering.
2. Make the connection to the existing main.
3. Furnish and install alarm bell on the outside of the building.
4. Furnish and install fire department connection.
5. Do the testing of all piping and necessary clean up from fire protection work.
6. Furnish the shop drawings and certificates of inspection.
7. All materials and equipment shall be UL listed and bear the UL label.

STANDARDS, CODES AND REGULATIONS

Fire protection systems shall meet all provisions of the following:

NFPA 13 - Standard for the Installation of Sprinkler Systems.

Plumbing fixtures shall meet the minimum requirements of the Energy Policy Act of 1992 and the Florida Plumbing Code.

Maximum flow rates for fixtures shall be:

Water Closets	1.6 gallons per flush
Urinals	1 gallon per flush
Lavatories	.25 gallons per cycle (Lavatories shall be of the metering type only)
Sinks	2.2 gpm at 60 psi

Plumbing fixtures shall be provided to meet the minimum quantities required by the Florida Plumbing Code, Chapter 4, as shown on Table 403.1 for occupancy classification of A-3 and business.

Sensor Operated Fixtures: All flush valves and lavatory faucets shall be sensor operated, low voltage transformer powered (battery not acceptable) lightning protected.

PIPE AND FITTINGS APPLICATIONS

Use pipe, tube, fittings, and joining methods for piping systems according to the following applications.

Water Distribution Piping Below Ground: Use one the following:

2 to 3-1/2 Inches: Schedule 40 poly(vinyl chloride) (PVC) plastic water pipe, Schedule 40 PVC fittings, and solvent-cemented joints.

2-1/2 to 3-1/2 Inches: Hard copper tube, Type K, cast-copper-alloy solder-joint pressure fittings and soldered joints with Alloy Sn95 solder.

2 Inches and Smaller: Soft copper tube, Type K, cast-copper-alloy solder-joint pressure fittings, and soldered joints with Alloy Sn95 solder.

Water Distribution Piping Above Ground: Use one the following:

3-1/2 Inches and Smaller: Hard copper tube, Type L; wrought-copper or cast-copper-alloy pressure fittings; copper unions; bronze flanges; and solder joints with Alloy Sn95 solder.

3-1/2 Inches and Smaller: Schedule 40 CPVC plastic water pipe, Schedule 40 CPVC fittings, and solvent-cemented joints.

Soil, Waste, and Vent Piping Below Ground: Use the following:

5 to 12 Inches: Poly(vinyl chloride) (PVC) plastic DWV pipe; PVC socket-type drain, waste, and vent pipe pattern fittings in 5- and 6-inch sizes; PVC socket-type Schedule 40 fittings in 8-inch and larger sizes; and solvent-cemented joints.

Fill system or part thereof with water/chlorine solution containing at least 50 parts per million of chlorine. Isolate (valve off) and allow to stand for 24 hours.

Drain system or part thereof of previous solution and refill with water/chlorine solution containing at least 200 parts per million of chlorine. Isolate and allow to stand for 3 hours.

Flush system with clean, potable water until chlorine does not remain in water coming from system following allowed standing time.

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING

The building must meet LEED certifications requirements for New Construction. All prerequisites pertaining to HVAC systems shall be met. In addition, the mechanical engineer shall work with the design and construction team to ensure that the building design and construction achieves the minimum required points to meet LEED certification.

This Section includes:

HVAC Equipment & Efficiency
IAQ Ventilation & Temperature Control
HVAC Ductwork
HVAC Insulation
HVAC Test and Balancing

SUBMITTALS

Submit shop drawings and catalog data for the following:

HVAC Equipment – Manufacturer's submittals
HVAC Ductwork (shop drawings)
HVAC Insulation – Manufacturer's submittals

QUALITY ASSURANCE

NFPA Compliance: Comply with the following NFPA Standards:

NFPA 90A, "Standard for the Installation of Air Conditioning and Ventilating Systems," except as indicated otherwise.

HVAC Equipment & Efficiency:

HVAC equipment shall be either packaged or split system direct expansion.
No CFC refrigerants are allowed.
HVAC equipment efficiencies shall meet the minimum requirements of Chapter 13 of the Florida Building Code and the mandatory provisions of ASHRAE 90.1-2004.
HVAC equipment and building energy performance shall exceed the performance of an ASHRAE 90.1 baseline building by a minimum of 14% using the whole building performance rating method in Appendix G.

TEMPERATURE CONTROL

Zoning – Separate A/C systems shall be provided for first and second floors. HVAC systems shall be properly zoned to provide thermostat control for all unique spaces such as multi-purpose rooms, fitness rooms, game rooms and conference rooms. Spaces with similar exposures, functions and occupancy schedules such as adjoining offices may be grouped together on a single thermostat, but in no case shall one thermostat serve more than four occupied spaces. This may be accomplished by using any (or combinations) of the following; multiple A/C units, VAV boxes, Variable Refrigerant Flow Systems.
Incremental, "through the wall" or "window" A/C units shall not be used.

SPACE TEMPERATURES

HVAC systems shall be sized and controlled to maintain the indoor space temperature of 72 degrees F. in both the cooling and heating mode in all rooms.

IAQ & VENTILATION

The building ventilation shall meet the minimum requirements of ASHRAE 62.1-2004, ventilation rate procedure.

All return air systems and mechanical rooms shall be fully ducted. The use of plenums is prohibited.

All systems shall have controls that provide for "occupied" and "unoccupied" modes of operation. In the "unoccupied" mode, outside air dampers shall close and all building exhaust fans shall be off.

FLEXIBLE DUCTS

General: Comply with UL 181, Class 1.

Flexible Ducts - Insulated: Factory-fabricated, insulated, round duct, with an outer jacket enclosing glass fiber (1" thick in conditioned areas, 1-1/2" thick in non-conditioned spaces) insulation around a continuous inner liner. Flexible ducts shall be limited to a maximum length of 6 feet per air device.

SHEET METAL DUCTWORK (Fiberglass ductwork is not acceptable)

Sheet Metal, General: Provide sheet metal in thicknesses indicated, packaged and marked as specified in ASTM A 700.

Galvanized Sheet Steel: Lock-forming quality, ASTM A 527, Coating Designation G 90. Provide mill phosphatized finish for exposed surfaces of ducts exposed to view.

SEALING MATERIALS

8. Power Distribution. Provide a power distribution system that meets the requirements of the new building. Pay all fees and obtain permits. Coordinate with the power company the service details. Coordinate panel, system capacity and layout with HVAC equipment, user furnished equipment and general electrical equipment and lights. Provide spare capacity to allow expansion of second floor. Furnish equipment that meet the following minimum standards:
    - Panel boards. Commercial grade. Comply with NEMA PB1.
    - Dead Front, Bolt-on circuit breaker type with 25% spare spaces.
    - Short circuit rated to interrupt available symmetrical short-circuit current.
    - Heavy-Duty disconnect switches, quick-break, quick-make type with pad-lockable handle.
    - Motor controllers. Enclosed combination starters with HOA selector and pilot light.

9. Transient Voltage Surge Suppression. Provide TVSS protection at the main service panel and at the next level panel. Meet the following minimum standards:
    - Compliance with UL 1449(latest edition)
    - Service panel: Category C3. Surge current 120kA per phase with L-N; L-L; L-G and N-G mode suppression.
    - Panelboards: Class B locations. 30 kA, L-N; N-G mode suppression
    - Suppressed voltage rating: 400V, 120/208V; 800V, 277/480V.

DIVISION 27 – COMMUNICATIONS

Provide a complete cabling system for data/voice communications including cables, patch panels, racks and outlets, fully tested. Work and devices shall conform to relevant sections of TIA/EIA 568,569 and 606.

CABLES

Cables shall be UTP Cat 5e or higher complying with TIA/EIA-568. Cables shall be run concealed secured to walls with appropriate tie downs in accessible areas and run in conduit where exposed or in non-accessible spaces.

Terminate cables in patch panels with front RJ-45 jacks and rear 110 type connectors color coded for 568A wiring and integral labels located in racks at communication rooms. Provide and terminate cables in communication outlet faceplate with modular jackets for data and voice at locations selected locations.

TESTING

Cables and terminations shall be tested to verify both the electrical characteristics and correctness of the termination sequence and labeling. Testing connections shall be made to modular jacks at the outlets and at the patch panels.
Testing shall comply with the transmission standards in TIA/EIA-568 and will include length, cross talk, ACR at both ends, attenuation, impedances, reflections and bit error rate at all 100Base-T data rates.

SLEEVES

Steel pipe sleeve: EMT conduit 2 1/2" diameter minimum.
Rectangular Openings: Galvanized sheet steel.
Seals: Shrinkage-resistance grout to seal around sleeve and structure.
Fire rated walls or floors penetrations: Install sleeves that extend 2" minimum above finished floor level. Maintain fire rating of wall or floor at pathway of cable penetration sleeves with firestop material. Seal space outside of sleeve penetrating masonry or concrete with grout.

Outlet Boxes
Provide 4" square boxes 2 ½" deep min. flush wall mounted with extension to accommodate communication device plate. Extend one 1" conduit minimum up to access ceiling space. Conduit shall terminate with a 45 degree bend and plastic bushing.

Communication Room
Provide wall or floor mounting rack for communication equipment.
Provide plywood backboard with fire-retardant coat, 48" X 48" minimum.
Provide #6 AWG ground cable from building system ground. Leave coiled at board for future termination by communications contractor.

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

Provide a non-coded addressable system, with multiplex signal transmission, dedicated to fire alarm only. Provide complete with control unit, manual pull stations, area and duct smoke detectors and notification appliances with addressable interface devices. Provide digital alarm transmitter for remote alarm notification.

CODE COMPLIANCE
Comply with the requirements of NFPA 72 (Fire Alarm) and Life Safety code (NFPA 101) requirements for the building occupancy classification.

SUBMITTALS
Submittal shall be approved by the authorities having jurisdiction.
Provide shop drawings prepared by manufacturer certified technicians that will include product data, wiring diagrams, layout plans, riser diagram with notification circuit voltage drop and load, battery calculations, and installation details. Provide 25% minimum spare capacity in all circuits and battery installed capacity. Provide calculations for voice alarm speakers and amplifiers.

SYSTEM REQUIREMENTS
Upon receiving a fire alarm signal the control panel shall initiate actions required by the Codes that include as a minimum the following:

- Continuously operate alarm notification devices
- Activate voice/alarm communication system
- Identify alarm device at control unit and remote annunciator
- Transmit alarm signal to remote receiving station
- Recall elevator to recall floor
- Release door locks in designated egress path
- Shutoff air-conditioning equipment

"Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.

DIVISION 31 – EARTHWORK

All work under this Division shall be performed in accordance with OSHA regulations.

311000 SITE CLEARING

Site Clearing includes protecting existing vegetation to remain, removing existing vegetation, removing above and below grade site improvements, disconnecting, capping or sealing, and removing site utilities or abandoning site utilities in place and filling with flowable fill as required, temporary erosion and sedimentation control measures.

Provide erosion control and sediment control as required by local, state and federal agencies including NPDES Permit, installation and maintenance of devices during construction and local agency inspections.

Provide tree protection barriers and maintenance during construction per Manatee County / City of Bradenton requirements.

Provide documentation of existing structures, improvements, utilities and vegetation adjoining construction site that establishes preconstruction conditions before site clearing.

Except materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site and disposed of according to governing agency requirements.

Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport to recycling facilities.

312000 EARTH MOVING

Earth Moving includes preparing subgrades for slabs-on-grade, walks, pavements, excavating and backfilling for buildings and structures, drainage course for concrete slabs-on-grade, subbase course for concrete walks, subbase course and base course for asphalt paving, subsurface drainage backfill for walls and trenches, Excavating and backfilling trenches for utilities and pits for buried utility structures.

Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

Backfill material to be placed in accordance with FDOT Section 125. Maximum unit weight per cubic foot shall be as determined by AASHTO T99, Method C for compaction.

Soil Materials

Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations. Satisfactory Soils: Soil Classification as applicable according to ASTM D2487 free of rock or gravel larger than 1" diameter, debris, waste, organic materials, and other deleterious matter. Remove muck and unsuitable material from fill areas prior to placement of fill.

Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.

Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.

Sand: ASTM C 33; fine aggregate.

Geotextiles

Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288.

Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288.

312319 DEWATERING

Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control,

remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.

Design dewatering system, including comprehensive engineering analysis by a qualified professional engineer.

Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented.

Prevent surface water from entering excavations by grading, dikes, or other means.

Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.

Remove dewatering system when no longer required for construction.

Regulatory Requirements: Conform to the provisions of 2.01 Florida Environmental Land and Water Management Act of 1972 (F.S. 380.012 et seq.). Comply with governing agency notification regulations before beginning dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:

315000 EXCAVATION SUPPORT AND PROTECTION

Design, furnish, install, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.

Install excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to excavation.

Monitor vibrations, settlements, and movements.

Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.

Structural Steel: ASTM A 36/A 36M, ASTM A 690/A 690M, or ASTM A 992/A 992M.

Steel Sheet Piling: ASTM A 328/A 328M, ASTM A 572/A 572M, or ASTM A 690/A 690M; with continuous interlocks.

Cast-in-Place Concrete: ACI 301, of compressive strength required for application.

Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

DIVISION 32 – EXTERIOR IMPROVEMENTS

All work under this Division shall be performed in accordance with OSHA regulations.

321216 ASPHALT PAVING

Materials and construction to be in accordance with Manatee County / City of Bradenton standards.

TYPICAL SECTION

Asphaltic concrete pavement for vehicular use areas shall be 1.5 inch Type S-III, with 8 inch base course (LBR 100 min.) and 12 inch stabilized sub base (LBR 40).

MATERIALS

A. Coarse Aggregate
The coarse aggregate gradation shall conform to ASTM D692 and to coarse aggregate as specified in FDOT, Section 901.

B. Fine Aggregate
The fine aggregate gradation shall conform to ASTM D1073, AASHTO M29, and to fine aggregate as specified in FDOT, Section 902.

C. Mineral Filler
The mineral filler gradation shall conform to AASHTO M17 and to mineral filler as specified in FDOT, Section 917.

D. Bituminous Materials
1. Asphalt Cement
Viscosity grades for asphalt cement for use in pavement construction shall conform to ASTM D3381, AASHTO M226, and as specified in FDOT, Section 916.

2. Liquid Asphalts
Liquid asphalts for use in pavement construction shall conform to ASTM D2026, D2027, and D2028, AASHTO M81, and as specified in FDOT, Section 916.

3. Emulsified Asphalt
Emulsified asphalt for use in pavement construction shall conform to ASTM D244, and as specified in FDOT, Section 916.

MIXES

A. Composition of Mixtures

Asphaltic concrete pavement shall be Type S-III in accordance with Manatee County standards.

The specified aggregates, mineral filler (if required), and asphalt cement shall be combined as necessary to produce a mixture proportioned within the master gradation range limits shown in Table A and meeting the uniformity tolerance limits shown in Table C; bituminous mixtures shall also meet the mix design criteria specified in Table B.

Composition limits in Table A are shown in percent by weight, based on the total aggregate, including mineral filler, in the mixture.

The bituminous mixture, when tested at optimum asphalt content in accordance with ASTM D 1559, shall meet the requirements for stability, flow, and voids in mineral aggregate (VMA), as specified in Table B.

Table A
MASTER GRADATION RANGE
FOR BITUMINOUS MIXTURES

PERCENT BY WEIGHT TOTAL AGGREGATE PASSING SIEVES*

TYPE	3/4	2	3/8	NO. 4	NO. 10	NO. 40	NO.80	NO. 200
S-I	100	80-100	75-93	47-75	31-53	19-35	7-21	2-6
S-II**	83-98	80-100	62-78	47-63	33-49	19-35	9-18	2-6
S-III		88-100	88-100	60-90	40-70	20-45	10-30	2-6
TYPE II		90-100	90-100	80-100	55-90			2-12
TYPE III		80-100	80-100	65-100	40-75	20-45	10-30	2-10
PC-1	100	88-100	75-93	47-75	31-53	19-35	7-21	2-7
PC-2			90-100	80-90	60-80	24-60	10-40	3-12
PC-3			80-100	65-90	40-75	20-45	10-30	2-10

*In inches, except where otherwise indicated. Number sieves are U.S. Standard sieve series.

**100% passing 1-1/2 inch sieve and 97-100% passing the 1-inch sieve.

Table B
MIX DESIGN CRITERIA FOR
DENSE-GRADED AGGREGATES

MIX TYPE	MINIMUM MARSHAL STABILITY (LBS.)	FLOW (0.01 IN.)	MINIMUM VMA (%)	AIR VOIDS (%)	MINIMUM EFFECTIVE ASPHALT CONTENT (%)
S-I	1,500	8-14	14	3-55.0	
S-II	1,500	8-14	13	3- 5	5.0
S-III	1,500	8-14	15	3- 7	5.5
TYPE II	500 - 750	7-16	18	5-16	6.0
TYPE III	750 - 1,000	7-16	15	5-12	5.5
SAHM	300 - 500	7-16	15	5-16	6.0
PC-1	1,800	8-14	14-20	3-5	5-9
PC-2	1,000	8-16	18-30	3-7	5-9
PC-3	1,500	8-16	15-23	4-8	5-9

*If Type S-I Asphaltic Concrete is to be the final pavement surface, the range of air voids shall be four (4) percent to six (6) percent.

Table C
UNIFORMITY TOLERANCE LIMITS
FOR BITUMINOUS MIXTURE

MIXTURES TYPE	RANGE	PERCENTAGE PASSING DESIGNATED SIEVES 3/8-IN	NO.10	NO.40	NO.200	BITUMEN CONTENT
S-I S-II S-III	1*	±5.0	±5.0	±4.0	±2.0	±0.4
II III	1*	±7.0	±5.0	±5.0	±2.0	±0.4
PC-1	1*	4.0	3.0	3.0	1.5	0.4
PC-2	1*	4.0	3.0	3.0	1.5	0.4
PC-3	1*	4.0	3.0	3.0	1.5	0.4

*Range 1: Maximum allowable deviations permitted from Job Mix Formula within the Master Gradation Range.

***The bitumen content may exceed 0.6% above the design content but shall not exceed 0.6% above the optimum bitumen content.

321313 CONCRETE PAVING

Materials and construction to be in accordance with Manatee County / City of Bradenton standards.

TYPICAL DETAIL

Concrete pavement for vehicular use areas shall be 6 inch thickness 3,400 PSI, 28 day. Concrete pavement for non-vehicular use sidewalks shall be 4 inch thickness, 3,000 PSI, 28 day. Compacted subgrade to be 12 inches depth at 98% modified proctor. Provide control joints at five foot on center and expansion joints at 25 foot on center for all concrete pavements and curbs.

Walkways shall meet ADA requirements: 2% cross slope maximum and 1:20 maximum longitudinal slope.

MATERIALS

A. Concrete
1. Concrete shall be in accordance with FDOT, Section 345, Class II, 3,400 psi strength; Type I cement; 6.0 sacks cement per cubic yard; Grade 5 or 9 coarse aggregate; silica sand fine aggregate 6.0% $\pm$ 1.0% air content; 3-inch maximum slump; no admixtures. Type III cement may be used for high early strength concrete.

B. Ready-Mixed Concrete
1. Ready-mixed concrete shall conform to ASTM C94.

C. Water
1. Water to be used for mixing and curing concrete shall be reasonably clean and free from oil, salt, acid, alkali, chlorides, sugar, vegetable, or other substances injurious to the finished product. Waters from sources approved by the Local Health Department as potable may be used without test. Water requiring testing shall be tested in accordance with the current Method of Test for Quality of Water to be used in Concrete, AASHTO T26.

D. Concrete Curing Compounds
1. White membrane curing compound for curing concrete shall conform to AASHTO M148, Type 1 clear, or Type 2 white per FDOT Section 925.

E. Premolded Joint Filler
1. Fiber joint filler shall conform to ASTM D1751.

F. Steel Hook Bolts
1. Hook bolts shall conform to ASTM A706, or for Grade 60 of ASTM A615, A616, or A617. Hook bolts shall be 5/8-inch diameter, self-tapping.

G. Joint Sealant
1. Hot-poured type joint sealant shall conform to ASTM D1190.

MIXES

A. Concrete Mix

1. Concrete shall contain a minimum of six (6) sacks, 94 pounds per sack, of cement per cubic yard and shall yield a minimum compressive strength of 3,400 psi at 28 days.

2. Cement shall be air-entraining Portland cement ASTM C150, Type 1. If high-early strength concrete is desired, Type III is required.

3. High-early concrete can be obtained for small areas by the addition of one sack of cement, Type 1, per cubic yard of concrete.

4. The air content of the concrete shall be 6.0% $\pm$ 1.0% by volume.

5. Maximum slump of the concrete shall be three (3) inches.

6. Ready-mixed concrete in accordance with ASTM C94.

323113 CHAIN LINK FENCES AND GATES

Match existing chain link fencing with top rail and bottom rail at playground. Extend and replace to provide continuous enclosure for existing playground area. Provide up to two new gates. Locate gates with Manatee County Property Management Department approval.

328400 PLANTING IRRIGATION

Design and construct modifications to existing irrigation system to provide 100% coverage for proposed turf and landscaped areas. Acceptable manufacturers are Hunter, Rain Bird, and Toro or equal. Review existing irrigation system with and obtain approval of manufacturer(s) from Manatee County Property Management Department before proceeding with irrigation system design.

Provide sufficient number of heads with spray patterns necessary to provide required coverage without overspray on to walkways, buildings and equipment. Provide low volume irrigation systems as appropriate for sustainable design and LEED ® certification.

Irrigation Piping: Class 200 PVC mainline, Class 160 PVC laterals and Schedule 40 PVC sleeves. Provide a 3 inch sleeve under all walks, drives and parking.

329200 TURF AND GRASSES

Match existing turf species with sod for new turf areas and areas disturbed by construction. Sod shall be top quality weed and disease free, installed tightly butted to create a level and even surface free from dips and holes. Sod shall be installed so that soil line at the base of the blade is even with adjacent walks, curbs and drives. Review existing turf with and obtain approval of turf species from Manatee County Property Management Department.

Replace and match existing Forever Lawn™ artificial turf at playground area that has been extended or disturbed by construction.

329300 PLANTS

MATERIALS

A. Plant Material

1. All plant material shall be Florida No. 1 or better according to Grades and Standards for Nursery Plants. All materials shall be healthy, vigorous, free of diseases and insects, pruned for best natural shape and without symptoms of nutritional deficiency. All plants must be true to variety, cultivar, and/or species. Plants must be naturally bushy, dense, in good foliage, well branched, and of good appearance. The nursery/nurseries from which they are derived shall be under regulatory inspection by the Florida State Department of Agriculture and/or the Florida State Plant Board or an equivalent agency, if derived from outside the state of Florida. Plants entering from outside the state of Florida must bear the entry certificate of the State Department of Agriculture of the state of Florida. All plant materials will be subject to approval for quality, size, and color. Plants lacking compactness or proper proportions, plants which are weak or thin, and plants injured by close planting in nursery rows will not be accepted. Plant materials which have been cut back from larger grades to meet certain specified requirements will be rejected. Plants used where symmetry is required shall be matched as nearly as possible. No wounds will be present with a diameter of more than 1-inch and such wounds will show vigorous growth on all edges.

2. Container Grown Trees and Plants shall have been grown in a container large enough and for a sufficient time to allow the root system to have developed well enough to hold the soil together firmly. Plants that have become pot bound or plants with a root system too large for the container will not be accepted.

3. All plants of the Palmacaea Family shall have the roots adequately wrapped before transplanting except when they are container grown. Burlapping will not be required if the palm is dug from marl or heavy soil that adheres to the roots and retains its shape without crumbling. During transporting and after arrival, root balls of palms shall be carefully protected from wind and exposure to the sun. Palms not planted within 12 hours after delivery to the job site, shall have their root balls covered with a moist material and the palm bud shall not be allowed to dry out.

4. As a specific requirement, all field grown or collected plant material shall be root pruned six weeks prior to transplanting. Plants grown in soil of a loose texture which does not readily adhere to the root system, or in the case of large plants or trees, shall have sound hog wire placed around the burlapped ball before the plant is removed from the excavation. The wire shall be looped and tensioned until the burlapped ball is substantially packaged so as to prevent loosening of the soil around the roots during handling. Wired balled and burlapped plants shall otherwise comply with the requirements for balled and burlapped plants described in American Standard for Nursery Stock.

5. Single trunk tree species shall have a single, straight trunk for a height of not less than 50% of the overall tree height.

B. Topsoil Backfill for Planting

1. Topsoil backfill that is indigenous to the area, naturally fertile, of a loamy-sand or sand-loam agricultural nature and free from substances deleterious to plant growth shall be imported to the project site. It shall be free of admixtures except as specified herein or on the drawings. It shall be free of sticks, stones, bottles, and other superfluous plant matter and materials. It shall be in a normally moist, unmuddy, and unwet condition.

2. Composition: 1/3 sterilized peat, 2/3 native topsoil.

3. Topsoil backfill is to have an acidity range of between pH 5.5 and 6.5 Organic content to be between 2% and 25%. Soluble salts to be between 175 ppm and 800 ppm. Permeability to be a minimum of 0.33 feet per day. Submit test results to the Owner's Representative per Article 1.03, Submittals, of this Section.

4. The pH reaction shall be adjusted to pH 5.5 - 7.0 by either adding sulfur to lower the pH level of alkaline soils or by adding dolomitic agricultural limestone to raise the pH level. The acceptable pH range for acidic environment plants such as azaleas is 4.5 - 5.5. The topsoil backfill is to be used for all exterior planting.

C. Peat and Humus

1. Peat shall be mixed with Topsoil Backfill for all planting beds.

2. Peat and humus shall be of a suitable type and shall consist of reed peat or sedge peat, but not peat moss. It shall be free of sticks, stones, weeds, roots, and of the undesirable debris and shall be derived from a source, which endogenously produces peat of this nature. It shall be delivered containing between 35% and 50% moisture. It shall be dark brown to black in color, granulated, free of lumps and shall have been conditioned in a storage pile for at least six months.

D. Fertilizer

All plant material will be fertilized during planting.

1. Pelletized Fertilizer
Fertilizer shall be "AGRIFORM 21 GRAM" tablets, slow release, 20-10-5 analysis or approved equal. Rates of application shall be as follows:

1-gallon can plants	1 tablet each
3-gallon can plants	2 tablets each
5-gallon can plants	3 tablets each
Palm Trees (single stem)	4-6 tablets each

Palm Trees (multiple stems)	1 tablet per each 3-inch of stem diameter, cumulative diameter measurement.
Trees	1 tablet per each 2-inch of caliper, for multiple trunks, the diameter measurement will be cumulative.

2. Ground Cover/Annual Flower Fertilizer

All ground covers and annuals will be fertilized during planting. Ground cover/annual flower fertilizer shall be "OSMOCOTE" Time Release Fertilizer 14-14-14 applied at manufacturer's suggested rates.

3. Turf Fertilizer (16-4-8) Guaranteed Analysis with 50% organic nitrogen by weight.

E. Sod

1. Sod shall be installed per plans and as necessary where existing lawn has been damaged due to construction and/or due to the storage of materials. Grass for sodding shall be freshly cut in squares one foot wide by one or two feet long. It shall be derived from an area having a soil type similar to the soil on which it is to be laid. It shall be healthy, free of weeds, insects including ground pearls and spittle bugs, in naturally green condition, and shall have an abundance of roots contained within a mat of topsoil derived in the harvesting process from the area where grown. Brown, dry, irregularly smooth, and/or unfresh sod will be rejected.

F. Mulch

1. Recycled Hardwood Log Mulch

Mulch material shall be commercially available recycled hardwood log mulch made from ground logs, limbs, and branches of 5 inch diameter or larger. The mulch shall be free of other vegetative yard waste, palm trees, metal, sand, plastic, and other foreign material. The mulch shall have the consistency and appearance of commercial harvested cypress mulch. Mulch pieces shall be fiberous and mat together. Wood chip pieces are not acceptable. The recycled hardwood log mulch shall be sterile and free from viable weed and grass seed. Sustainable source mulch may be used if above requirements are met and samples are approved by Manatee County Property Management Department.

G. Wound Dressing/Pruning Paint

1. Wounds may be treated if desired by the Landscape Contractor, only with a coat of Elmer's white "Glue All." Asphaltic base tree paint is not acceptable.

H. Insecticides/Pesticides/Herbicides

1. Pre-emergent herbicide is required for shrub and ground cover beds. A pre-emergent granular herbicide such as Dow Elanco Snapshot or Scotts OH II or approved

equal shall be applied to all planted beds and mulched tree saucers. The herbicide active ingredients shall be suitable for control of broadleaf weeds and annual grasses in landscape ornamental areas. The granular herbicide shall be applied by a hand held rotary applicator such as a whirlybird. The herbicide shall be applied at a rate recommended by the manufacturer. The granular herbicide shall be broadcast over the planting bed after the plants have been planted and before mulch is spread.

I. Antidesiccant

1. Antidesiccants are required for field grown trees. Antidesiccant shall be "Wilt Pruf" TM or approved equal delivered in manufacturer's container and used in accordance with the manufacturer's instructions.

J. Staking

1. Trees shall be self supporting at the time of installation. Staking and guying may be provided at the installer's discretion to prevent overturning until root anchoring occurs.

DIVISION 33 – UTILITIES

All work under this Division shall be performed in accordance with OSHA regulations.

Locate utility piping so that it will not extend beneath proposed structures and be adversely affected by the structure loads.

330500 COMMON WORK RESULTS FOR UTILITIES

Common work results for utilities includes piping, joining materials, transition fittings, sleeves, identification devices, grout, flowable fill, piped utility demolition, piping system, equipment installation requirements, painting, concrete bases, metal supports and anchorages.

Materials and construction to be in accordance with Manatee County / City of Bradenton utility standards.

POTABLE WATER

Requirements of Regulatory Agencies: Cleaning and Disinfection - Conform to the applicable requirements of state and local health authorities having jurisdiction for disinfection and testing.

A. Piping Systems

All water and fire mains to be as required by Manatee County. Water service pipes to be Polyethylene Class 200, DR 9 Driscopipe ™ or equal meeting AWWA C901.

1. Polyethylene Pressure Pipe
Polyethylene pipe and tubing 3" diameter and smaller shall be pressure SDR 11 (DIPS) Bluestripe, or equal, meeting the requirements of AWWA C901 (latest revision) and the following ASTM requirement:

Material Designation PPI/ASTM PE3408

Material Classification	ASTM D-1248 III C5 P34
Cell Classification	ASTM D-3350

2. Joints

Where PE pipe is jointed to PE pipe, it shall be by thermal butt fusion. Thermal fusion shall be accomplished in accordance with the recommendations of the pipe manufacturer and fusion equipment supplier. The contractor installing thermal butt fused PE pipe shall have a minimum of five (5) year's experience performing this type of work.

Mechanical joints and fittings shall meet the requirements of: AWWA C901, ASTM D3350 and ASTM D3140

B. Corporation Stops

Corporation stops, couplings and plugs shall be water service bronze of type and size required by Manatee County.

C. Service Clamps

Clamps shall be compatible with the main and service lead, with stainless steel straps with epoxy coated ductile material to avoid crushing the main out-of-round.

D. Curb Stops

Water service bronze of types and sizes required by Manatee County.

E. Threaded Fittings

Threads for water main service fittings shall conform to the requirements of AWWA C800 and AWWA C800 Appendix for Materials.

F. Polyvinyl Chloride (PVC) Piping Systems

1. Pipe and Couplings

Pressure class-rated PVC pipe and accessories four to twelve inch (4"-12") in diameter, where shown or as specified on the drawings, shall meet the requirements of AWWA SpecificationC-900 "Polyvinyl Chloride (PVC) Pressure Pipe". Pipe shall be Class 150, meeting the requirements of Dimensional Ratio (DR) 18 and shall have the dimension of ductile iron outside diameters. Each length of pipe shall be hydrotested to four (4) times its pressure class pressure by the manufacturer in accordance with AWWA C-900.

2. Joints

Push-on or mechanical elastomeric gasket type, conforming to ASTM D3139.

3. Fittings

Polyvinyl Chloride

Two hundred (200) pound Pressure Class conforming to AWWA C900 of types and sizes indicated on the Plans.

4. Gaskets

Elastomeric seal type conforming to ASTM F477.

5. Lubricants

Manufacturers standard non-toxic conforming to AWWA C900.

G. Valves and Hydrants

1. Bronze Bodied Gate Valves
Values shall be composed of brass conforming to ASTM B62 (85-5-5) and to federal specification WW-V-541, Class A, Type I, wedge disc, non-rising stem gate.

2. Resilient - Seated Line Valves
Valves shall conform to AWWA Standard C 509 with non-rising stems.

3. Fire Hydrants
Dry barrel breakaway compression type, 5 ¼", with counter clockwise opening fire hydrants conforming to AWWA C502-85 with approved U.L. Listed (AWWA, U.L., and F.M. colophons must be cast in upper barrel of each hydrant.

4. Tapping Sleeves
Mechanical joint sleeves shall be furnished complete with valve, stops, caps, plugs and joint accessories as indicated on the Plan. The sleeve shall be of a 2-section type.

H. Valve Boxes
Gray iron castings conforming to ASTM A48, Class 20. Overall length shall be adjustable to meet grade.

I. Bolts, Studs, and Nuts
Bolts, studs, and nuts shall be as specified on the Plans and shall conform to the requirements of AWWA C500 and the ASTM standards listed below:
Bronze ASTM B98, Steel ASTM A307, Grade B, Cadmium Plating ASTM A165, Grade N.S.,Zinc Coating ASTM A153 or A164, Type G.S.

Tee head bolts and nuts shall be high strength, low alloy steel conforming to ANSI/AWWA C111/A21.11.

J. Granular Material
Granular material shall be material passing a 1-inch sieve and at least 35% retained on a No. 200 sieve and meeting the approval of the Owner's Representative.

SANITARY SEWER

A. Plastic Pipe Systems

All sanitary mains to be SDR 26 (CL-160) pipe, pigmented green.

1. PVC Pipe
Pipe in sizes 6-inch through 12-inch, for use in non-pressure gravity sewer mains and laterals shall have an SDR of 26 and conform to ASTM D3034. PVC pipe sizes over 12-inch shall be approved by Manatee County. PVC pipe shall be made of PVC plastic, homogenous throughout and free from visible cracks, holes, foreign inclusions of other injurious defects. The pipe shall be uniform in color, density and other physical properties.

All pipe shall be in compliance with the above standard and be clearly marked as follows at intervals of 5 feet or less:

Manufacturer's name or trademark.
Nominal pipe size. PVC cell classification (eg. 12454-B)
The legend "Type PSM SDR-26 PVC Sewer Pipe" and the designation ASTM D-3034.

In addition to the above-mentioned requirements, all PVC sanitary pipe shall be color-coded green to conform to Manatee County Standards.

2. PVC Fittings

PVC sewer fittings shall conform to the requirements of ASTM D-3043 and shall be an SDR of 26. Six-inch PVC fittings for sewer laterals shall be SDR 26. Fittings shall be molded in one piece with elastomeric joints and minimum socket depths as measured in accordance with ASTM D-3034. Fittings not currently available in molded form may be fabricated in accordance with ASTM D-3034 with manufacturer's standard pipe bells and gaskets. Gasket shall have a minimum cross sectional area of 0.20 square inch and conform to ASTM F-477 specifications

3. Jointing PVC Pipe

The PVC joints shall be of the push-on type so that the pipe and fittings may be connected on the job without the use of solvent cement or any special equipment. The push-on joint shall be a single rubber gasket conforming to ASTM F-477, designed to be assembled by the positioning of a continuous molded rubber ring gasket in an annular recess in the pipe of fitting socket and the forcing of the plain end of the entering pipe into the socket, thereby compressing the gasket radially to the pipe to form a positive seal. The gasket and annular recess shall be designed and shaped so that the gasket is locked in place against displacement as the joint is assembled. The rubber ring joint shall be designed for thermal expansion or contraction with a total temperature change of at least 75 degrees F in each joint per length of pipe. The bell shall consist of an integral wall section with a solid cross-section elastomeric ring that shall meet requirements of ASTM F-477. The thickened bell section shall be designed to be at least as strong as the pipe wall. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of bacteria, and shall have no deteriorating effects on the gasket or pipe material.

Wyes and riser fittings shall be gasketed connections. If female adapters SDR 26 or 35 are available, solvent welds shall be acceptable upon approval by Manatee County / City of Bradenton.

Rubber doughnuts are not to be used.

B. Joints for Dissimilar Pipe

Joints between pipe of different materials shall be made using flanged connections. Metal piping shall not be threaded into plastic fittings, valves, or couplings, nor shall plastic piping be threaded into metal valves, fittings, or couplings.

C. Pipe Bedding and Pipe Cover Materials

Pipe bedding material shall be as required by FDOT. Pipe cover material shall be equal to common fill as required by FDOT. Pipe bedding and cover material for polyethylene

coated ductile pipe fittings shall be well graded sand.

D. Bolt, Studs, Nuts
Cadmium Plating: ASTM A165, Grade N.S.
Zinc Coating: ASTM A153 or A164, Type G.S.

E. Concrete
In accordance with FDOT Section 345, use Class II; 3,500-psi strength; Type I cement; 6.0 sacks cement per cubic yard; 5 coarse aggregate; silica sand fine aggregate; three (3) percent to six (6) percent air content; three (3) maximum slump; no admixtures without Manatee County's approval.

F. Concrete Reinforcement
In accordance with FDOT Section 931, use ASTM A615, Grade 60 for bars and ASTM A185 for welded wire fabric.

G. Granular Material
Granular material shall be material passing a 1-inch sieve and at least 35% retained on a No. 200 sieve and meeting the approval of the Manatee County.

UTILITY COLOR CODING
Utilities shall have detectable strips and /or be color coded as required by Manatee County / City of Bradenton and as according to the APW Uniform Color Code as follows:

Red: Electric.
Yellow: Gas, oil, steam, and dangerous materials.
Orange: Telephone and other communications.
Blue: Potable Water.
Green: Sanitary Sewer systems.
Lavender: Reclaimed Water

334100 STORM UTILITY DRAINAGE PIPING

Storm Utility Drainage Piping includes pipe and fittings, couplings, expansion joints and deflection fittings, cleanouts, drains, encasement for piping, manholes, channel drainage systems, catch basins, storm water inlets, storm water structures and outfalls.

Maintain existing drainage patterns directing flow away from buildings and in to storm water conveyance systems. Relocate existing storm water system components so that piping will not extend beneath the proposed building and be adversely affected by building loads.

Provide a minimum of 12 inch cover over storm piping. Provide pipe joints that are properly sealed.

Storm water pipe to be Reinforced Concrete Pipe (RCP) Class III, Wall B per ASTM C 76, Contech™ PVC A-2000 or Ultra-rib™ PVC as applicable. Inlets, manholes and junction boxes shall meet ASTM C 478. Inlets to be FDOT Inlet Type "D" per FDOT Standard Index 232.

Ensure positive drainage to prevent low areas "bird baths" in paved areas.

Storm water system shall be designed and constructed in accordance with Manatee County standards and SWFWMD requirements.

Conform to Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, current edition, for storm water system components such as inlets, man hole covers, reinforced concrete piping systems, PVC piping systems, and mitered end sections.