HVAC Kit	2	• 6 each 480 volt 3 phase 10ton HVAC units – 3 per building Units will include panel box(s). Panel box(s) are to be installed in the corner of the building, power cable, remote box and cable, panel box, and 20' of supply and return Mil Spec Flex Ducts. **Units cannot be exchanged for a different power supply once ordered! Please specify your power requirements prior to placing an order if they are different from what is listed above! Additional charges may apply for optional power supplies.**  **The main power and connection to the panel box is the responsibility of the customer!** The customer is responsible for insuring that each HVAC unit is wired properly prior to commissioning each unit. If the customer neglects to insure the HVAC motors have been wired properly you run the risk of damaging the motors. The customer will bear all financial cost to replace or repair the HVAC unit in the event this occurs. Units will be installed up to 15' around the perimeter of the shelter. Customer is responsible for ensuring that area is level. Units have to be installed on a level grade.	$ 84,000.00
Installation Estimated: 4 work days per building	1	• Installation: Big Top Shelters will install the above shelter systems at your Daytona Beach, FL 32118 facility. Big Top Shelters will be responsible for all equipment, and non- union labor. Customer will be responsible for any and all safety course(s), training, 24/7 access to the site, removing all underground and overhead utilities, permits, dumpster for trash removal, foundation work, portalet or toilet facilities in near proximity to the site, special badges for clearance etc. prior to mobilization. Big Top Shelters is an installer of our product. We are not a construction company. If your site requires special licenses, has permit requirements, then a general contractor may be required. (See installation clause at the bottom of page.)	$ 27,500.00
Engineering	1	• Engineering: Stamped engineering by a professional engineer **If your site requires special licenses, permits, or other accessory items to meet the local code requirements or project specific requirements then a general contractor may be required. If the shelter is purchased or installed prior to any permit approval the customer bears the cost of any upgrades to meet local code. All engineering to support the structure is considered "by others", unless specifically noted on our drawings. That includes, but is not limited to, Shipping containers, concrete, soil, asphalt, custom support steel, etc.**	$ 1,800.00
Trim Kit	1	• Trim Kit Seals fabric to building base rail or specified foundation Please specify prior to placing order	Optional

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www.bigtopshelters.com
l.houck@bigtopshelters.com

Shipping and Handling	1	• **Pre pay and add:** Daytona Beach, FL 32118 Shipping is primarily via 102" x 48' long flatbed trailers. To maximize stacking, there is little to no dunnage below the frames. Due to weight and handling issues, dunnage can possibly result in damage to the frame. If you require dunnage there COULD be additional costs due to lessened space on the flatbed or special stacking requirements.	$ 2,400.00
GRAND TOTAL		**US DOLLARS.**	**$ 195,700.00**

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Payment Terms: ***50% Deposit With Order - Remaining Balance is Due Prior to Shipping.***
Lead Time: 4-5 weeks from the date of an approved purchase order. For a Big Top installation crew please consider 8 – 10 weeks, subject to customer needs. Please verify prior to placing an order and or a purchase decision. Lead times can be subject to change at any time.
Big Top accepts cash, credit cards (3% processing fee applies on all orders greater than $5,000.00), check, wire transfer, and ACH transactions.
Please make all checks payable to Big Top Manufacturing Inc.
Lead times are estimated based on our current schedule at the time of the dated proposal. The actual lead times will be based on the current schedule at the time of signed and approved purchase order date, and or approved deposit.
Please insure that your balance is paid prior to shipping. Your building will not be shipped and or released until full payment has been received.
Orders using net payment terms are subject to other rules.

Sincerely,

Lance Houck
Sales Representative
l.houck@bigtopshelters.com

Approved This Day of , 2016

P. O. #

Technical assistance/installation clause:

Fees for services are $ 830.00 for the United States and its territories, Canada, and the Caribbean. International Services are $1100.00 USD per day per person. Included is hotel, rental car, meals, taxies, and airport parking. Expenses for airfare, visas, transfers, special job site training, ferries, and others will be billed at actual costs. On domestic and international installations, the daily fee extends from portal to portal from Perry, Florida. The Daily fee continues during the week Monday through Sunday regardless of whether work can be performed on Saturday or Sunday. Travel arrangements and accommodations are to be arranged or agreed to by Big Top Mfg. or the technician. (Domestic & International flights are to be coach class and the hotel accommodations are to be with a standard chain hotel). All remaining balances will be settled on prior to the departure of the technician from the job site. There may be some International regions where a service technician is not available. Call for details.

Big Top will not be responsible for any damage to the grounds, shrubbery, underground utilities, asphalt, concrete, etc. due to the normal construction process necessary to install the above shelters unless specifically provided for in the purchase contract.

In the event the above proposal includes metal/aluminum entry equipment doors, unless the shelter is built on level concrete, we cannot take responsibility for its operation. If uneven - such as is routinely encountered on asphalt or soil, the framework will likely require modification on site resulting in additional costs.

Big Top will provide soil or concrete wedge anchors as a standard form of anchoring. Big Top makes no representation as to the structural integrity or suitability of the concrete or soil. Any other anchoring surface or method is at the sole risk of the end user. No representation is made as to water drainage due to slope or foundation issues.

Shelter is to be installed in accordance with the provided assembly instructions, under the guidance of our technician or via Big Top. If the end user chooses to owner install the shelter, finished photos are required including photos of the shelter with the anchors properly installed. In the event the shelter is ever relocated, new photos will be required including anchorage photos.

In the event the end user chooses to employ our technician, we make no representation as to the quality, suitability, or performance of the laborers or equipment provided. The estimate given is based upon typical installations worldwide but is not a guaranteed level of performance.

If Big Top is to fully install the shelter, unencumbered access is necessary. We assume a 7 day workweek. If the weekends cannot be worked, we will need to know this in ADVANCE to modify the proposal.

End user is responsible for permitting and any local taxes or tariffs, if any. If a turn-key installation by Big Top, it is the end user's responsibility to determine Big Top's ability to install the shelter based upon local licensing or permitting issues. All costs associated with this to be borne by the end user.

Shelter is defined as an equipment item. Proper maintenance is necessary to extend the life of the shelter frame, fabric, doors, and access panels. Proper maintenance includes but is not limited to checking fabric for proper taught ness and adjusting as necessary, adjusting cables, pulleys, trolleys, turnbuckles, lubricating moving parts, inspecting nuts, bolts, etc.

Lighting, winches, heating, A/C, dehumidification units, doors, etc. are covered under the product manufacturer's warranty.

Big Top Shelters is the installer of our product. We are not a construction company. If your site requires special licenses, permitting, or other accessory items to meet your local code requirements then a general contractor may be required. If the shelter is purchased or installed prior to permit approval the customer bears the cost of any upgrades to meet local code.

August 4, 2016

Bill Chapin
L. William Chapin
315 North Atlantic Ave
Daytona Beach, FL 32118

Dear Mr. Bill Chapin,

Please review the following quotation.

Proposal for: L. William Chapin

ITEM	QTY	DESCRIPTION	PRICE
Vinyl Structure	2	• 50' Wide X 100' Long X 20' Center Height X 12' Side wall $40,000.00 per building 18 OZ. Cover, Translucent White, Flame Retardant PVC Laminated fabric with polyester scrim. Frame Members: 18" truss using heavy wall tubular steel on 10' centers. Anchoring to be provided for a customer supplied concrete mounted foundation Unless otherwise stated, foundations other than concrete are assumed at 90% compaction or greater. It is the customer's responsibility to specify any foundation requirements prior to placing order. Fabric will end at ground level. All weld joints are coated for corrosion protection. All connections are made using a male to female/slip fit junction.	$ 80,000.00
End Wall	4	• Access end wall. 1ea 10'wide x 10'high disappearing door per building and 2ea personnel door per end wall, per building. Disappearing door to include all the necessary winch, trolleys, pulleys, cables, and a manual winch. Disappearing doors are not a pre engineered door system and should be considered a flap. Engineered door systems are available but require additional funds.	Included
Installation Estimated: 4 work days per building	1	• Installation: Big Top Shelters will install the above shelter systems at your Daytona Beach, FL 32118 facility. Big Top Shelters will be responsible for all equipment, and non- union labor. Customer will be responsible for any and all safety course(s), training, 24/7 access to the site, removing all underground and overhead utilities, permits, dumpster for trash removal, foundation work, portalet or toilet facilities in near proximity to the site, special badges for clearance etc. prior to mobilization. Big Top Shelters is an installer of our product. We are not a construction company. If your site requires special licenses, has permit requirements, then a general contractor may be required. (See installation clause at the bottom of page.)	$ 27,500.00

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3255 N. US 19
PERRY FL.
32347

Engineering	1	• Engineering: Stamped engineering by a professional engineer **If your site requires special licenses, permits, or other accessory items to meet the local code requirements or project specific requirements then a general contractor may be required. If the shelter is purchased or installed prior to any permit approval the customer bears the cost of any upgrades to meet local code. All engineering to support the structure is considered "by others", unless specifically noted on our drawings. That includes, but is not limited to, Shipping containers, concrete, soil, asphalt, custom support steel, etc.**	$ 1,800.00
Trim Kit	1	• Trim Kit Seals fabric to building base rail or specified foundation Please specify prior to placing order	Optional
Shipping and Handling	1	• **Pre pay and add:** Daytona Beach, FL 32118 Shipping is primarily via 102" x 48' long flatbed trailers. To maximize stacking, there is little to no dunnage below the frames. Due to weight and handling issues, dunnage can possibly result in damage to the frame. If you require dunnage there COULD be additional costs due to lessened space on the flatbed or special stacking requirements.	$ 1,600.00
GRAND TOTAL		**US DOLLARS.**	**$ 110,900.00**

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Sincerely,

Lance Houck
Sales Representative
l.houck@bigtopshelters.com

Approved This Day of , 2016

P. O. #

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PROGRAM:
Erect a **full-service homeless recovery facility** at the foot of Red John Road, across the street from the Stewart-Marchman ACT crisis center, and 1/4 mile from the Volusia County jail. The facility will be close to the center of the county.

The facility will consist of four residential pavilions along with staff and service components. The pavilions will be constructed of steel frame mounted on block perimeter walls, with the roof pitched 20 degrees toward the south. The pavilions will have high clerestory windows with remote motorized opening hardware on the north walls and operable windows at eye level on the south walls, so that the windows can be opened at appropriate times to enhance century effect air movement through the pavilions, which will be aided by large ceiling fans.

Three staff offices per pavilions will have both direct access into the pavilions and to the outside. The pavilions will each have lavatory and bathing components, as well as a lounge at one end of the open space. A highly efficient straight-line HVAC system will maintain a comfort level within the pavilions of 60°-80°.

The pavilions are configured to be expandable lengthwise, and a third band of pavilions could be added northward if additional capacity were to be needed in the future. Conversely, the size of the pavilions could be reduced prior to construction if found to be desirable.

Staff and service spaces are provided and connected to the pavilions by covered walkways so as to avoid costly internal corridors, similar to the strategy used to connect "portables" in schools.

The 28,000 sq. ft. of sloping roofs will provide the ability to install sufficient photovoltaic collectors to power the needs of the entire facility.

Wm CHAPIN
F.A.I.A. • ARCHITECT
williamchapin.com

VOLUSIA SAFE HARBOR

BUILDING AREAS AND COSTS:

Pavilion 1 - 6, 250 sq. ft.	
Pavilion 2 - 6,200 sq. ft.	
Pavilion 3 - 6,740 sq. ft.	
Pavilion 4 - 4,650 sq. ft.	
Total pavilions - 23,840 sq. ft. @ $85.00/ft =	$2,026,400
Kitchen/Storage - 2,580 sq. ft. @ $110.00/ft =	$ 283,000
Reception/triage/support - 6,380 sq. ft. @ 120.00/ft =	$ 701,800
Building total: 32,800 sq. ft. =	$3,011,200

PAD AREA

Pad area = 53,000 sq. ft (1.23 acres)	
Mitigation @ $100,000/acre.	
fill @ $10/sq.yd placed	
$150,000 site improvements (sewer, water, storm water, paving)	
Total pad placement complete =	$ 475,000
SUB-TOTAL	$3,486,200
Fees, contingencies (10%) =	$ 349,000
PROJECT TOTAL =	**$3,835,200**

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pile 1

PROGRAM:

Erect a **full-service homeless recovery facility** at the foot of Red John Road, across the street from the Stewart-Marchman ACT crisis center, and 1/4 mile from the Volusia County jail. The facility will be close to the center of the county.

The facility will initially consist of two residential pavilions along with staff and service components. The pavilions will be constructed of steel frame mounted on block perimeter walls, with the roof pitched 20 degrees toward the south. The pavilions will have high clerestory windows with remote motorized opening hardware on the north walls and operable windows at eye level on the south walls, so that the windows can be opened at appropriate times to enhance century effect air movement through the pavilions, which will be aided by large ceiling fans.

Three staff offices per pavilion will have both direct access into the pavilions and to the outside. The pavilions will each have lavatory and bathing components, as well as a lounge at one end of the open space. A highly efficient straight-line HVAC system will maintain a comfort level within the pavilions of 60°-80°.

The pavilions are configured to be expandable lengthwise, and a second band of pavilions could be added northward if additional capacity were to be needed in the future. The slabs for these two more pavilions should be constructed as part of phase 1, as they would be useful for other outdoor activities as shown

Staff and service spaces are provided and connected to the pavilions by covered walkways so as to avoid costly internal corridors, similar to the strategy used to connect "portables" in schools.

The 28,000 sq. ft. of sloping roofs will provide the ability to install sufficient photovoltaic collectors to power the needs of the entire facility.

Wm CHAPIN
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williamchapin.com

BUILDING AREAS AND COSTS:
Pavilion 1 - 6, 250 sq. ft.
Pavilion 2 - 6,200 sq. ft.

Total pavilions - 12,450 sq. ft. @ $85.00/ft =	$1,058,250
Kitchen/Storage - 2,580 sq. ft. @ $110.00/ft =	$ 283,000
Reception/triage/support - 6,380 sq. ft. @ 120.00/ft =	$ 701,800
Building total: 32,800 sq. ft. =	$2,043,050

PAD AREA
Pad area = 53,000 sq. ft (1.23 acres)
Mitigation @ $100,000/acre.
fill @ $10/sq.yd placed
$150,000 site improvements (sewer, water, storm water, paving)

Total pad placement complete =	$ 475,000
SUB-TOTAL	$2,518,050
Fees, contingencies (10%) =	$ 251,800
PROJECT TOTAL =	**$2,769,850**

ANALYSIS CONTRIBUTORS:

Coleman-Goodemote construction - Harold Goodemote
General building construction

Atlantic Central Industries - Steve Traulsen
Steel frame production and erection

Zev Cohen & Associates - Bobby Ball, CE
Civil engineering

Solar-Fit Energy Management Systems - Bill Gallagher
Solar thermal and photovoltaic systems

LEEPCORE Structural Insulated panels, Inc - John Norquist
Pavilion roof deck system

Halifax Urbal Ministries - Troy Ray, Mark Geallis
Food service, staff space programming

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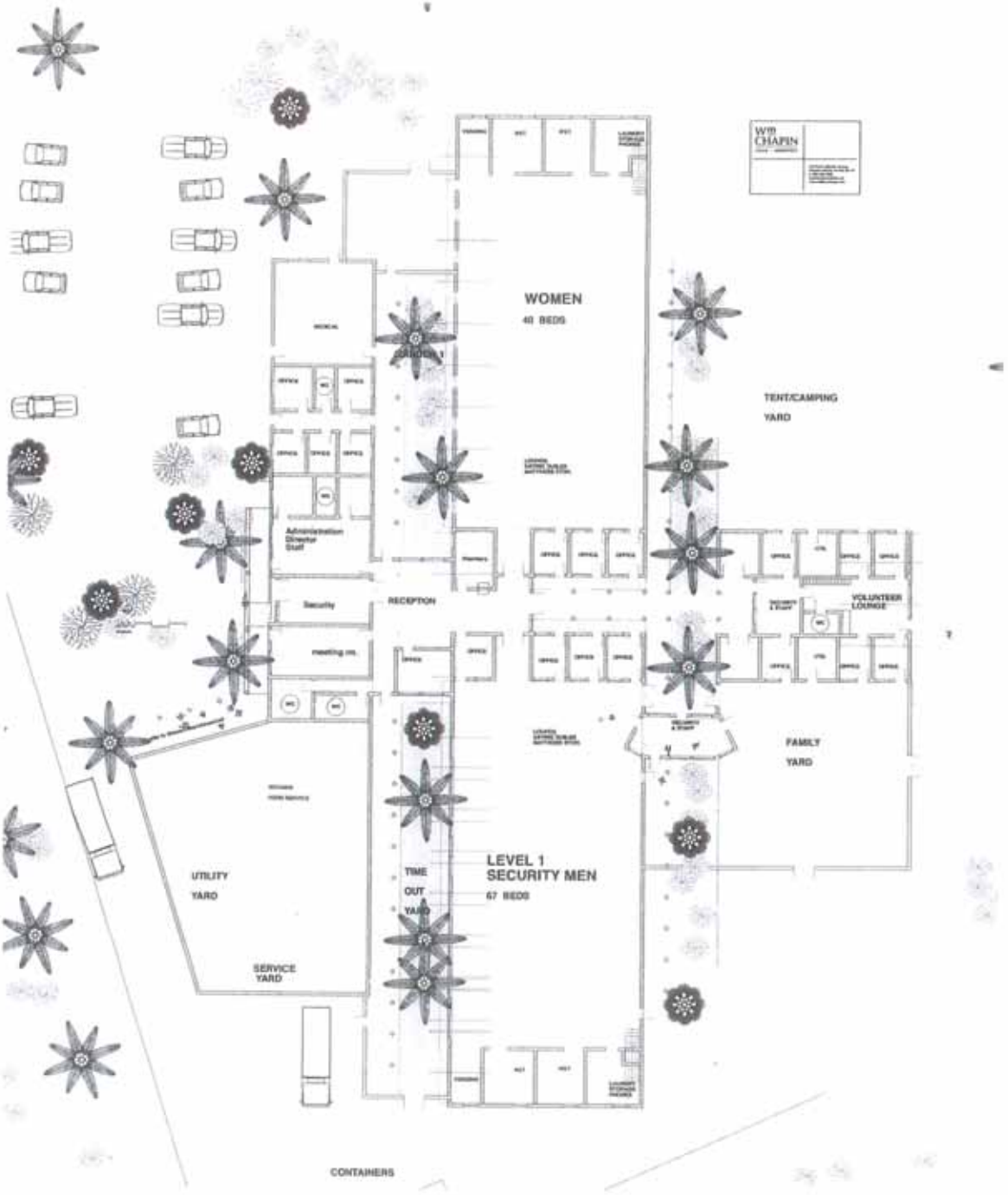

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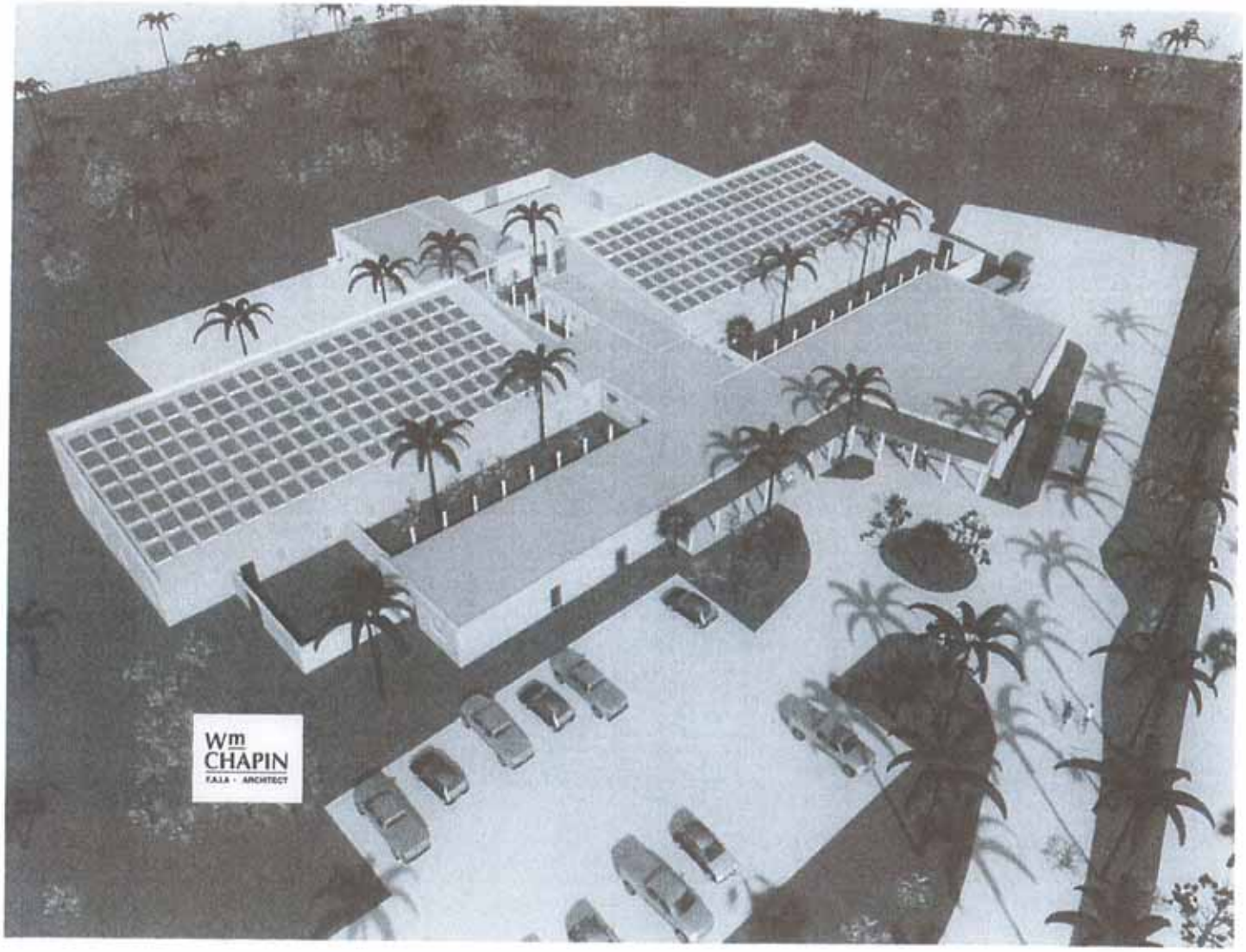

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Date of PIT Count: 1/26/2016
Population: Sheltered and Unsheltered Count

Total Households and Persons

	Sheltered			Unsheltered	Total
	Emergency	Transitional	Safe Haven		
Total Number of Households	191	88	0	439	**718**
Total Number of Persons	233	191	0	581	**1,005**
Number of Children (under age 18)	43	96		24	**163**
Number of Persons (18 to 24)	12	10	0	34	**56**
Number of Persons (over age 24)	178	85	0	523	**786**

Gender

	Sheltered			Unsheltered	Total
	Emergency	Transitional	Safe Haven		
Female	90	107	0	170	**367**
Male	143	84	0	411	**638**
Transgender (male to female)	0	0	0	0	**0**
Transgender (female to male)	0	0	0	0	**0**

Ethnicity

	Sheltered			Unsheltered	Total
	Emergency	Transitional	Safe Haven		
Non-Hispanic/Non-Latino	215	182	0	560	**957**
Hispanic/Latino	18	9	0	21	**48**

Race

	Sheltered			Unsheltered	Total
	Emergency	Transitional	Safe Haven		

Point In Time Summary for FL-504 - Daytona Beach/Daytona/Volusia, Flagler Counties CoC

White	170	94	0	431	695
Black or African-American	55	91	0	130	276
Asian	0	0	0	1	1
American Indian or Alaska Native	4	0	0	10	14
Native Hawaiian or Other Pacific Islander	0	0	0	2	2
Multiple Races	4	6	0	7	17

HALL & OGLE ARCHITECTS, INC.
AA-C000925

208 Magnolia Avenue
Daytona Beach, Florida 32114

PH: (386)255 -6163
FAX: (386)257-5650

August 11, 2017

Rev. Dr. Ronald Durham, D.D., D.P.S.
Community Relations Manager
City Manager's Office
City of Daytona Beach

Re: First Step Homeless Assistance Facility

Dr. Durham:

This letter is in response to inquiries as to Hall and Ogle's knowledge of and involvement in this project to this point.

As you are aware, Hall & Ogle has been assigned this project through our Continuing Services Contract with the City of Daytona Beach. We were engaged by the city last year to produce a study of utilizing pre-manufactured (purchased or leased) temporary construction units for this facility. This concept ultimately was not pursued by the city.

Previously, another architectural firm had developed a concept that utilized standard open tent structures and several shipping containers converted for use as health care and administrative services areas. This concept also was not pursued by the city.

Over the past year a new approach was being proposed as a temporary facility utilizing a Tensile Fabric system. This concept has been shared with the stakeholders and the city officials. The Project seems to be gaining traction as many in the community would like to see this project come into reality.

We were again contacted by the city during the month of July 2017, and asked to revisit and re-engage the project. At this time, the project was still lacking in development. The clarified objective was to design a facility utilizing conventional permanent construction systems within a building construction budget of $2,000,000.

We feel this is an important project for our community because of the obvious humanitarian need to provide assistance to the homeless component of our area, and quite frankly, we are honored and excited to be asked again to be involved in bringing it to fruition. We jumped back into the project with earnest, and because of the span of time that had lapsed from our original involvement, we began our research back at the beginning to reacquaint ourselves with the original concepts and project history.

We discovered that the facility was still only at a conceptual level of programming to date.

The following is a general comparison and summary of the design approaches from the studies requested of the two architectural firms involved.

Method 1

The new method proposed by the original firm is to develop the project in (3) phases to achieve full project build-out. Phase 1 of this method entails constructing a temporary facility utilizing a Tensile Fabric System. The building as proposed would utilize a raised precast concrete floor system on continuous 4 foot high stem wall foundations. It also requires the purchase or leasing of modular units (trailers) to accommodate the core functions of Administrative, Health Care, Food Services and all plumbing, shower and laundry services.

The proposed probable initial cost is $658,600 (including modular units) which from our research appears unrealistically low. This proposed cost would need to be reviewed carefully to verify that figure. This method has the advantage of a shorter construction time, potentially one third to one half the time required to construct a permanent facility (approximately a 3-6 month time savings). We are not able to determine if the proposed method meets the requirements of the core program at this time due to lack of information.

This method proposes to utilize this temporary facility for two to five years (or as required) depending on the status of future funding for the capitol cost of building the next phase of the project. The temporary building is proposed to be removed at additional expense at that time or at a future date. The short and long term operational costs of this method should be reviewed further to determine any cost savings or added expenses over a conventional/ permanent facility. The actual costs and program compliance of this proposed method would need further development to arrive at a more concise opinion of feasibility. (Reference the attached email discussing the Tensile Fabric System in more detail.)

It should be noted that the proposed construction figure of $658,600 is not the actual cost of the project, it is only the cost of a temporary solution that will be in addition to whatever the actual (yet to be determined) cost of the future permanent facility will be.

We would also like to acknowledge the enormous amount of work, effort, and dedication this firm has invested into the project. The project as a whole will benefit greatly from their input and research.

Method 2

Hall and Ogle continued our research to include multiple discussions and meetings with the various stakeholders in the project to refine the programming to a more functional level from which a realistic design could be produced from programmatic and budgetary standpoints. That programming was arrived at through the gracious input from several organizations who were already (and patiently) involved with the project such as Catholic Charities, whose business plan and personnel input was extremely helpful, beneficial, and greatly appreciated. Halifax Health was also instrumental in developing their part of the facility program requirements, as well as additional beneficial input from the City of Daytona Beach.

As a result of many hours of work and an evolution of the building geometry based in part on the design from the original architectural firm, a program was developed that addresses the needs envisioned by those parties dedicated to seeing this project become a reality. Based on that program, and with many more hours of work including revisiting the original design concepts, we were able to arrive at a solution that now resolves the many issues with a project of this size and nature. That solution provides for a permanent building, which revolves around separating the project into distinct functional phases so that the completed facility will meet the immediate needs in a timely fashion under the umbrella of a steadfast budget, while making the best use of the available funding allowing for future expansion under the subsequent phases of the project.

Our initial development of the building designed for Phase 1 was 16,907 square feet with a projected construction cost of $2,960,00. That cost was driven by the program requirements expressed by the contributing parties mentioned earlier, which, unfortunately, resulted in a 30 percent overage of the budget. We immediately started developing alternate concepts to bring the building to within the budget ceiling, which resulted in (2) options presented to the city as pathways to get there.

One option was to utilize temporary modular units for a portion of the building. This would also require funding for these units to come from another source. This option was rejected by the city.

The second option was to scale back the Administrative, Health Care, and Food Service areas. These areas still function adequately for the facility at a basic level with the ability to expand all of them back to the original desired program requirements through phased construction.

As stated before, when approached by the city to revisit the project in July, our research included reviewing all of the previous work and effort put into the project by all parties involved, which included basic foundational building concepts developed by both architectural firms to identify where additional cost savings could be developed. By combining desirable elements from all concepts and manipulating the evolving plan we arrived with a building geometry that not only achieved the necessary cost savings, but also improved the functionality of the facility and its spatial adjacencies and flexibility.

These revisions also provide for additional building expansion past the desired program, allowing for the inevitable need for future growth of the facility as the community's needs change. Also, this expansion capability is before the planned Phase 2 (doubling) of the project. The revisions allow for centralizing the Dining/ Day area to the center of the facility to improve functionality and flexibility of space usage, also allowing options of how to build and condition this space creating additional cost savings.

We are presently studying additional options for utilizing various construction methods, materials, equipment and systems to enhance the balance of initial and long term costs.

After great effort and many hours of work, we have achieved a schematic design that meets the basic program requirements with the ability to achieve the enhanced program desires through a phased project schedule, resulting in a building that is 15,910 square feet. Our projection of probable cost is $2,007,000, which is now within 0.35 percent of the budget ceiling. Frank Van Pelt, Technical Services Division Director for the City of Daytona Beach Public Works Department has stated that he feels that

projected cost will actually be closer to $1,980,000. Additionally, we have also developed an alternate (if required) to reduce the building cost to $1,750,000. This option reduces the programmed women's population to 24 and the overall population to 102.

We are now finally confident that the City of Daytona Beach will be able to build this much needed permanent facility that meets the core functionality requirements utilizing conventional construction techniques and systems within the $2,000,000 budgetary ceiling.

This permanent facility will provide a dynamic, functional, first phase core that can expand and grow as the needs of the community change over time in an efficient and cost effective manner. Attached to this letter are reference drawing sheets A2.0.0, A2.0.1 and A2.0.2 for a graphical depiction of the final conceptual design options.

In conclusion, we would like to express our belief in this project, our recognition of its importance to our community and its benefit to many of our community that require the assistance it will provide. Now is the time to build on the efforts and foundation that has been built by so many involved to develop a Homeless Assistance Facility that serves this community and gives all in the homeless community a First Step towards Home!

We thankfully appreciate the opportunity to work with you on this project. Let me know if you have any questions.

Respectfully,

John E. Hall, Principal/ President

Hall & Ogle Architects, Inc.

-------- Forwarded Message --------
Subject: First Step Shelter Roofing Construction Systems---Tensile Fabric Roof/ Wall System and Conventional Roofing and Wall Systems
Date: Tue, 8 Aug 2017 20:34:29 +0000
From: VanPelt, Frank <VanPeltFrank@CODB.US>
To: john Hall <jhall@hoarchitects.com>

John,
For your use...

The following observations and comparisons are based upon the data provided in the Memo that I received and The City's institutional experience since its incorporation in 1876 constructing, owning and maintaining conventional roofing and wall systems for governmental, performance venues and other community buildings of all sizes and types:

- The Tensile Fabric System that is proposed is not a PTFE impregnated Fiberglass system like the systems used in the 3 example projects that are listed in the Memo and are located in Canada and the western United States.
- The Tensile Fabric material system specified by the vendor for use on the Shelter *is an 18 oz.* ***laminated PVC Tensile Fabric and is not a PTFE impregnated Fiberglass system***.
- The PVC in the Tensile Fabric material is sensitive over time to damage from and will be constantly exposed to Florida's high level of UV (sunlight) transmission requiring specialized maintenance to meet manufacturer's minimum projected life expectancy
- On the website of Big Top Manufacturing, the vendor supplying the PVC Tensile Fabric product, the Specifications chart shows that ***PVC Tensile Fabric has a 5 Year Warranty*** *maximum*
- The specification chart also shows an anticipated ***10 to 12 year total lifetime expectancy*** *meaning that total replacement of the roof and wall system is anticipated at that time or before.*
- Conventional roofing systems have *manufacturer's warranties that range from 15 to 20 years* and *manufacturer's anticipated lifetime expectancies that range from 20 to 50 years* and wall systems with total lifetime expectancies of up to 100 years.
- Given its anticipated lifetime and manufacturer's warranty period its appears that the use of a ***PVC Tensile Fabric roofing and wall system is intended for the construction of a more interim temporary structure where the system will be discarded upon the construction of a permanent structure*** with conventional roof and wall system structure.
- The use of conventional local proven roofing and wall systems will provide a permanent building core which can be expanded upon while maintaining the roof and essential wall system in place with minimum construction impacts to its residents, equipment and other HVAC, electrical and plumbing systems while the expansion is underway.
- The PVC material used in the Tensile Fabric is common in plastic product manufacturing. ***Its weather resistance, wind-load resistance and structural integrity degrades more rapidly of over time than conventional roofing and wall system materials when equally exposed to Florida's high UV (sunlight) levels and stormy weather events as indicated by the short warranty period and total replacement life expectancy***.
- The PVC fabric would require specialized maintenance (materials, means of access, patching methods, etc... which is beyond the capabilities of City staff and experienced local vendors have not yet been found locally.

- City staff is very familiar with the operation and maintenance of conventional roof and wall systems and if needed during catastrophic wind events additional expertise is readily available through numerous competitive local experienced vendors that are already under continuing services contracts to the City.
- It is intuitive when applying an industry standard energy efficiency calculation for sizing Heating and Air Conditioning systems and their annual usage of power that the large overhead volume of air space will not cool, heat and dehumidify efficiently over the lifetime of the structure adding significantly to the operating cost of the building and the arched steel beams will require electrical and mechanical systems to have specialized and more expensive designs to be installed between and on the widely spaced overhead arched beams and top provide the operating environment for the electronic technology that will be used throughout the administrative areas.

SUMMARY

- *The use of conventional roofing and wall systems has been repeatedly time tested in a wide range of environments across the world as well as locally showing that it produces the most efficient, life cycle cost-effect and durable structure and provides the interior environment that meets the needs of both human beings and technology through energy efficient means with the capability of future expansion with minimum disruption to existing operations.*
- ***The use of PVC Tensile Fabric for the roof and walls of the structure will take less time for construction and may be 5% to 8% cheaper upfront than conventional systems but it is still anticipated to be an interim throw away structure when replaced by a permanent conventional roof and wall system structure at a later date. The total life cycle cost of a PVC Tensile Fabric roof/wall system is intuitively more expensive due to operational and maintenance costs and requires significant disruption of existing operations hen expansion is required otherwise it would be the industry standard type of construction across the nation and locally.***

Frank M. Van Pelt, CPM
Technical Services Division Director,
Public Works Department
City of Daytona Beach, FL 32115
(386)671-8635

FLOOR PLAN
FIRST STEP HOMELESS SHELTER PHASE 1

BASE BID PLAN

BASE BID PLAN
BUILDING AREAS

ADMIN. RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,366 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,720 SF.
MAIN CURULATION AREA	1,992 SF.
WOMEN'S MISC. AREA	920 SF.
WOMEN'S DORM AREA	1,594 SF.
WOMEN'S TOILETS/ SHOWERS	568 SF.
MEN'S MISC. AREA	920 SF.
MEN'S DORM AREA	2,638 SF.
MEN'S TOILETS/ SHOWERS	568 SF.
FULL SERVICE KITCHEN	928 SF.
COVERED DECK AREA	500 SF.
TOTAL CONDITIONED AREAS	11,168 SF.
TOTAL NON-CONDITIONED AREAS	4,294 SF.
TOTAL AREA	**15,910 SF.**

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE W/ STAKEHOLDERS AND ENGINEERS REVIEW.

62 BEDS MIN. 125 BEDS MAX
146 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

HALL & OGLE ARCHITECTS, INC.

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE
SEAL

COMMISSION NO. 1613
SCALE
PROJECT ARCH: JEH
DRAWN: JP
CHECKED: JEH
DATE: 2-JULY-2017
SHEET NO. A2.0.0

JOHN E. HALL AR0010727

ALT. ONE OPTION

BUILDING AREAS

ADMIN. RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,366 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,400 SF.
MAIN CURULATION AREA	1,894 SF.
WOMEN'S MISC. AREA	438 SF.
WOMEN'S DORM AREA	786 SF.
WOMEN'S TOILETS/ SHOWERS	280 SF.
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MEN'S DORM AREA	2,638 SF.
MEN'S TOILETS/ SHOWERS	568 SF.
FULL SERVICE KITCHEN	928 SF.
COVERED DECK AREA	500 SF.
TOTAL CONDITIONED AREAS	9,402 SF.
TOTAL NON-CONDITIONED AREAS	4,294 SF.
TOTAL AREA	**13,686 SF.**

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE
W/ STAKEHOLDERS AND ENGINEERS REVIEW.

51 BEDS MIN. 102 BEDS MAX
123 MAX. W/ 21 OVERFLOW
30/70 SPLIT WOMEN TO MEN

FLOOR PLAN
FIRST STEP HOMELESS SHELTER PHASE 1
SCALE: 1/8" = 1'-0"

ALTERNATE 1 OPTION

HALL & OGLE ARCHITECTS, INC.

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.
DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE

SEAL

JOHN E. HALL AR0010727

COMMISSION NO. 1613

SCALE:

PROJECT ARCH: JEH
DRAWN: JP
CHECKED: JEH
DATE: 21-JULY-2017

SHEET NO. A2.0.1

OPTION AAA

BUILDING AREAS

ADMIN. RECPT./ OFFICES	1,776 SF.
HEALTH WARD AREA	2,346 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,400 SF.
MAIN CURULATION AREA	1,894 SF.
WOMEN'S MISC. AREA	1,330 SF.
WOMEN'S DORM AREA	2,390 SF.
WOMEN'S TOILETS/ SHOWERS	864 SF.
MEN'S MISC. AREA	1,330 SF.
MEN'S DORM AREA	3,966 SF.
MEN'S TOILETS/ SHOWERS	864 SF.
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TOTAL NON-CONDITIONED AREAS	4,294 SF.
TOTAL AREA	**21,790 SF.**

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE
W/ STAKEHOLDERS AND ENGINEERS REVIEW.

94 BEDS MIN. 189 BEDS MAX
210 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

FLOOR PLAN SCALE: 1/8" = 1'-0"
FIRST STEP HOMELESS SHELTER PHASE 1

OPTION AAA

HALL & OGLE ARCHITECTS, INC.

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE

SEAL

JOHN E. HALL AR0010727

COMMISSION NO.	SCALE
1613	
PROJECT ARCH: JEH	SHEET NO.
DRAWN: JP	
CHECKED: JEH	A2.0.2
DATE: 21-JULY-2017	

OPTION AAA
BUILDING AREAS

ADMIN. RECPT./ OFFICES	1,776 SF.
HEALTH WARD AREA	2,346 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,400 SF.
MAIN CURULATION AREA	1,894 SF.
WOMEN'S MISC. AREA	1,330 SF.
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NEED PROGRAM REVIEW/ ACCEPTANCE W/ STAKEHOLDERS AND ENGINEERS REVIEW

94 BEDS MIN. 189 BEDS MAX
210 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

FLOOR PLAN SCALE: 1/8" = 1'-0"
FIRST STEP HOMELESS SHELTER PHASE 1
OPTION AAA

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DAYTONA BEACH, FLORIDA 32114
PH (386) 255-8163
FAX (386) 257-5650
AA-C000625

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.
DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE
SEAL
JOHN E. HALL AR0010727

COMMISSION NO.	1613
SCALE	
PROJECT ARCH. JEH	
DRAWN JH	
CHECKED JEH	
DATE 2-JULY-2015	
SHEET NO.	A2.0.2

FLOOR PLAN SCALE: 1/8" = 1'-0"

FIRST STEP HOMELESS SHELTER PHASE I

BASE BID PLAN

BASE BID PLAN

BUILDING AREAS

ADMIN. RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,366 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,720 SF.
MAIN CURULATION AREA	1,992 SF.
WOMEN'S MISC. AREA	920 SF.
WOMEN'S DORM AREA	1,594 SF.
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TOTAL CONDITIONED AREAS	11,168 SF.
TOTAL NON-CONDITIONED AREAS	4,294 SF.
TOTAL AREA	**15,910 SF.**

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE
W/ STAKEHOLDERS AND ENGINEERS REVIEW.

62 BEDS MIN. 125 BEDS MAX
146 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

HALL & OGLE
ARCHITECTS, INC.
208 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
PH (386) 255-5182
FAX (386)257-6890
AA-C000575

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.
DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

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JOHN E. HALL AR0010727

COMMISSION NO. 1613

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DATE: 21-JULY-2017

SHEET NO. A2.0.0

24

FLOOR PLAN
FIRST STEP HOMELESS SHELTER PHASE 1

ALTERNATE 1 OPTION

ALT. ONE OPTION

BUILDING AREAS

ADMIN. RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,366 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,400 SF.
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TOTAL AREA	**13,686 SF.**

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE
W/ STAKEHOLDERS AND ENGINEERS REVIEW

51 BEDS MIN. 102 BEDS MAX
123 MAX. W/ 21 OVERFLOW
30/70 SPLIT WOMEN TO MEN

HALL & OGLE
ARCHITECTS, INC.
228 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
PH (386) 254-8183
FAX (386)257-0690
www.hallandogle.com
AA-C000925

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.
DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE
SEAL
JOHN E. HALL AR0010727

COMMISSION NO.	1613
PROJECT ARCH. JE=	
DRAWN JP	
CHECKED JE=	
DATE 2-JULY-2011	
SCALE	
SHEET NO.	A2.0.1

HALL & OGLE ARCHITECTS, INC.
AA-C000925

208 Magnolia Avenue
Daytona Beach, Florida 32114

PH: (386)255 -6163
FAX: (386)257-5650

August 22, 2017

Rev. Dr. Ronald Durham, D.D., D.P.S.
Community Relations Manager
City Manager's Office
City of Daytona Beach

Re: First Step Homeless Assistance Facility
Additional Facility Funding

Dr. Durham:

In response to your and Mr. Small's questions about what options would be available for the First Step Shelter if the State was to provide an additional $1.5 million to the project, we would like to offer the following possibilities:

1. Provide $250,000 of the funds to further develop the site work package above the current base design.

2. The base bid design would be able to expand to the full program requirements for phase 1 of the project:
   - +1,050 sf additional area for Health Services.
   - +840 sf additional area to Administration Services
   - +650 sf additional area to Food Services

3. Fully enclose the Central Area with glazing and provide conditioned space.

4. Design facility base plan to meet state requirements for a hurricane shelter.

5. Provide full I.T. / security equipment packages above base minimums.

6. Potentially grow the flex space to seat an additional 32 people, allowing more flexibility / functional use.

7. Provide 12' operable wall at flex space for added acoustical / functionality of flex space.

8. Improve acoustic performance of the facility in all areas.

9. Allow additional options in means/ methods and construction materials.

10. Potential for providing a permanent emergency generator (verses a portable unit brought in when emergency needs arise).

JOHN E. HALL

DAVID D. OGLE

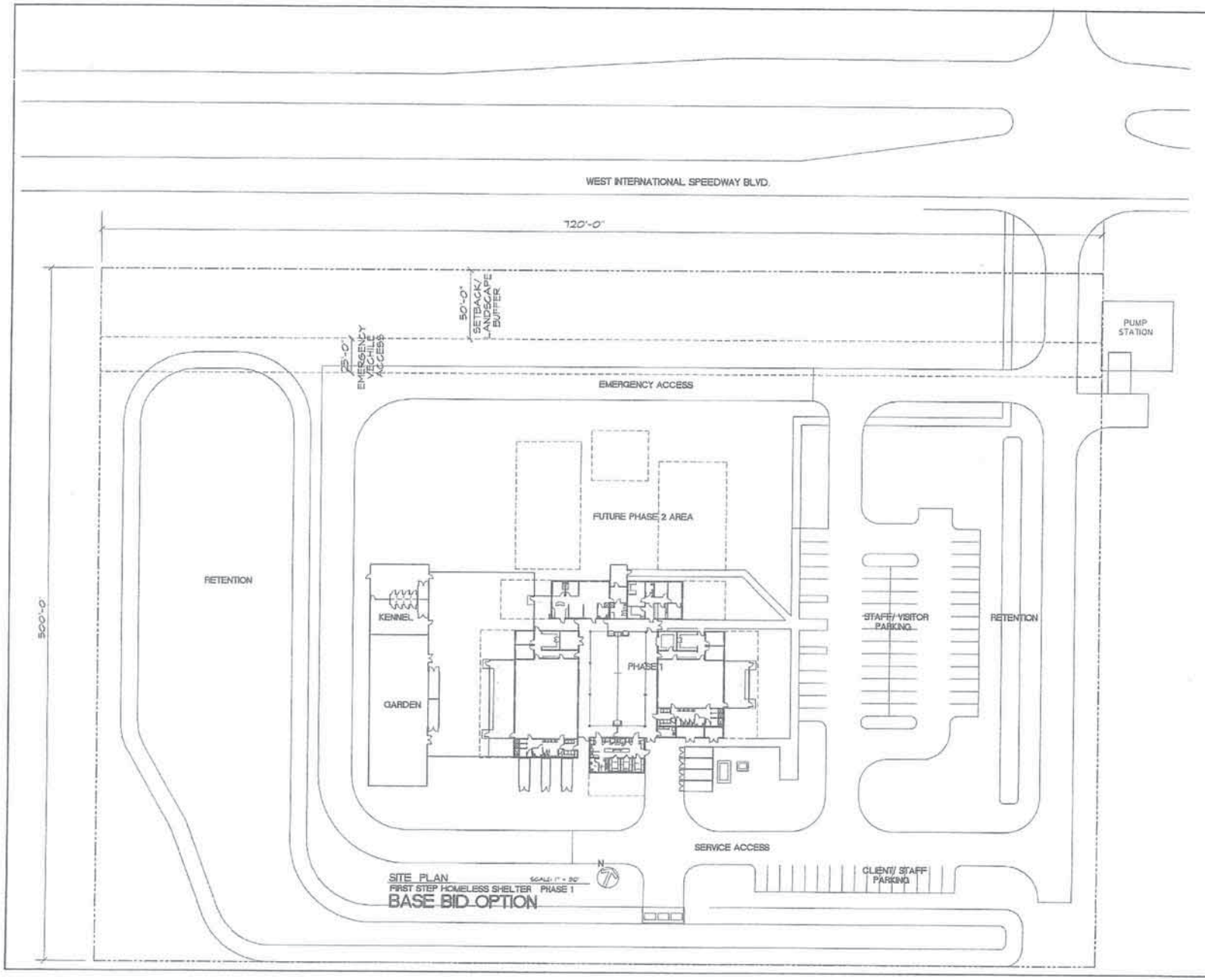
These are some of the expanded services and improved capabilities of the facility if the additional funds become available.

Let me know if you have any questions.

Respectfully,

John E. Hall, Principal/ President

Hall & Ogle Architects, Inc.



SITE PLAN SCALE: 1" = 30'
FIRST STEP HOMELESS SHELTER PHASE 1
BASE BID OPTION

BASE BID PLAN
BUILDING AREAS

ADMIN. RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,386 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,720 SF.
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WOMEN'S DORM AREA	1,594 SF.
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TOTAL CONDITIONED AREAS	11,168 SF.
TOTAL NON-CONDITIONED AREAS	4,742 SF.
TOTAL AREA	15,910 SF.

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE.
W/ STAKEHOLDERS AND ENGINEERS REVIEW.

62 BEDS MIN. 125 BEDS MAX
146 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

HALL & OGLE
ARCHITECTS, INC.
210 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
PH (386) 253-6122
FAX (386)257-6050
AA C000128

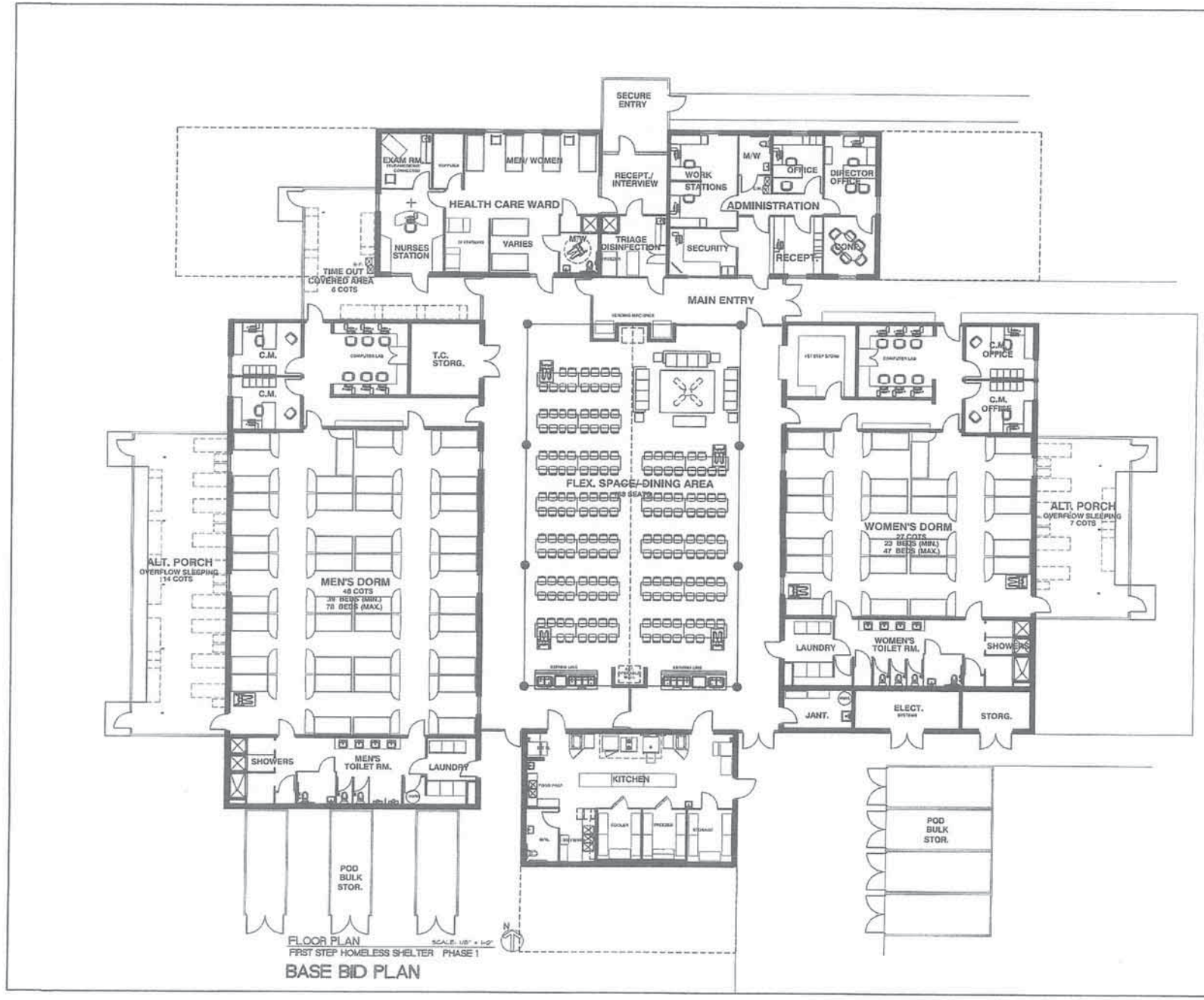
FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE:
SEAL:
JOHN E. HALL AR0007727

COMMISSION NO.	1613
SCALE:	
PROJECT ARCH: JEH	
DRAWN: JP	
CHECKED: JEH	
DATE: 21-JULY-2017	
SHEET NO.	A1.0



FLOOR PLAN
FIRST STEP HOMELESS SHELTER PHASE 1
SCALE: 1/8" = 1'-0"

BASE BID PLAN

BASE BID PLAN
BUILDING AREAS

ADMIN. RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,386 SF.
SECURE ENTRANCE	164 SF.
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NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE
W/ STAKEHOLDERS AND ENGINEERS REVIEW.

62 BEDS MIN. 125 BEDS MAX
146 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

HALL & OGLE
ARCHITECTS, INC.
204 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
PH (386) 239-6183
FAX (386) 257-5850
AA-C000625

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

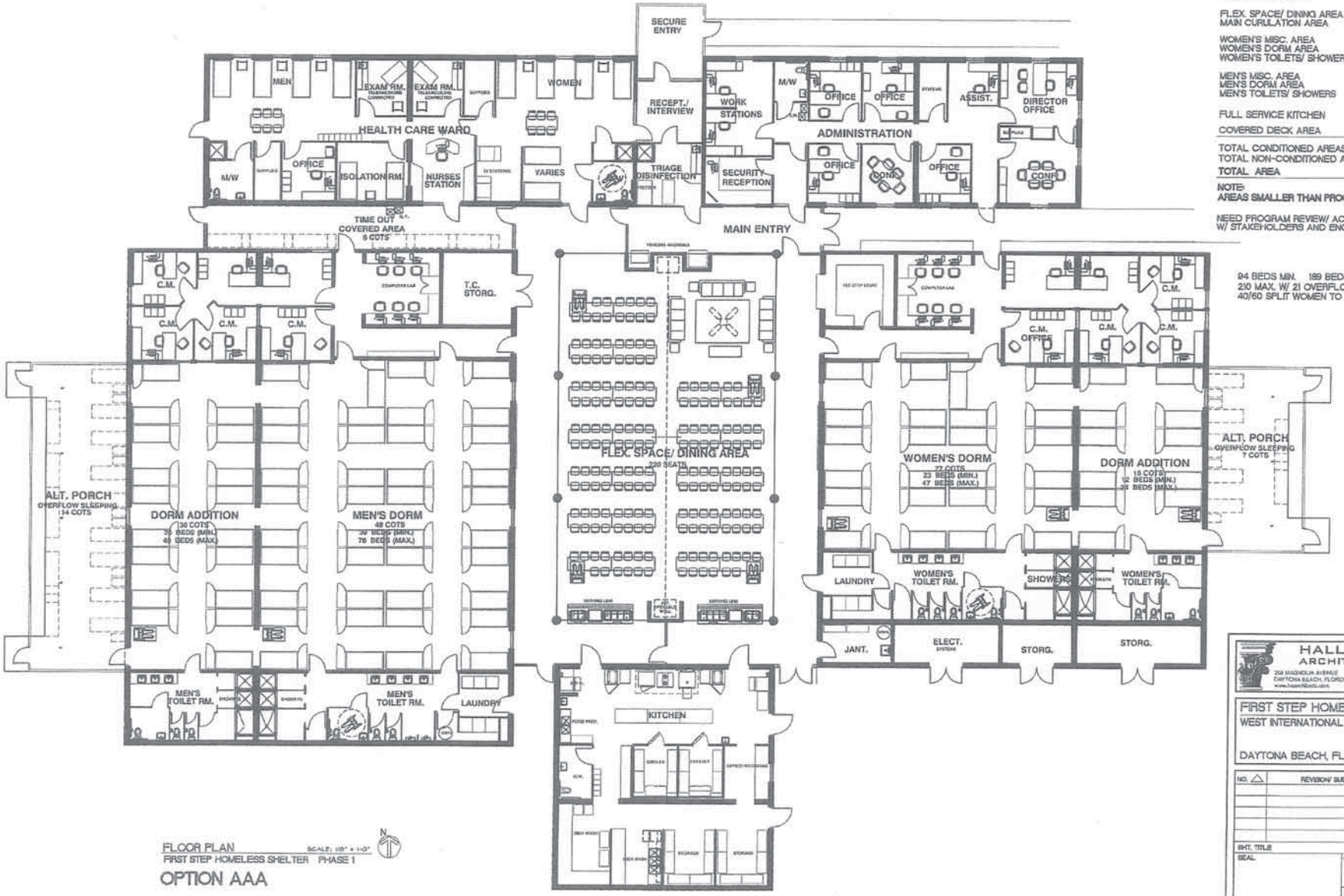
DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE
SEAL

JOHN E. HALL AR0016727

COMMISSION NO.	1613
SCALE:	
PROJECT ARCH. JEH	
DRAWN: JH	
CHECKED: JEH	
DATE: 21-JULY-2011	
SHEET NO.	A2.0.0



OPTION AAA
BUILDING AREAS

ADMIN. RECPT./ OFFICES	1,776 SF.
HEALTH WARD AREA	2,346 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,400 SF.
MAIN CURULATION AREA	1,894 SF.
WOMEN'S MISC. AREA	1,330 SF.
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WOMEN'S TOILETS/ SHOWERS	854 SF.
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MEN'S TOILETS/ SHOWERS	864 SF.
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NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE W/ STAKEHOLDERS AND ENGINEERS REVIEW.

94 BEDS MIN. 189 BEDS MAX
210 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

FLOOR PLAN SCALE: 1/8" = 1'-0"
FIRST STEP HOMELESS SHELTER PHASE 1
OPTION AAA

HALL & OGLE ARCHITECTS, INC.
258 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
PH (386) 254-8163
FAX (386)257-5058
AA-0000325

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

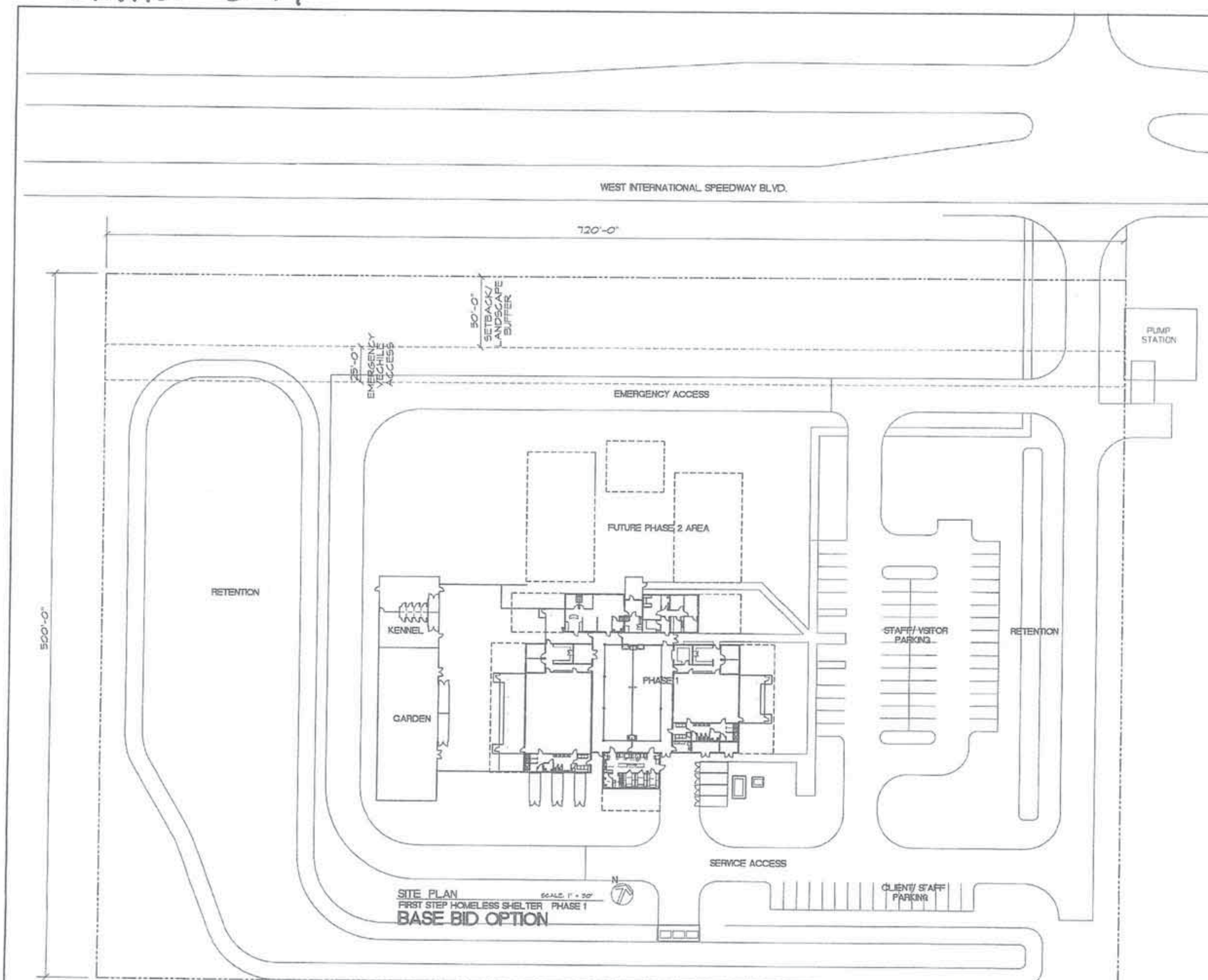
DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE
SEAL
JOHN E. HALL AR0010727

COMMISSION NO.	1613
SCALE	
PROJECT ARCH JEH	
DRAWN JH	
CHECKED JEH	
DATE 21-JULY-2011	
SHEET NO.	A2.0.2

FINAL 8-14



BASE BID PLAN

BUILDING AREAS

ADMIN. RECPT/ OFFICES	996 SF.
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NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE, W/ STAKEHOLDERS AND ENGINEERS REVIEW.

82 BEDS MIN. 125 BEDS MAX
146 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

HALL & OGLE ARCHITECTS, INC.

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.
DAYTONA BEACH, FLORIDA

NO. △	REVISION/ SUBMISSIONS	DATE

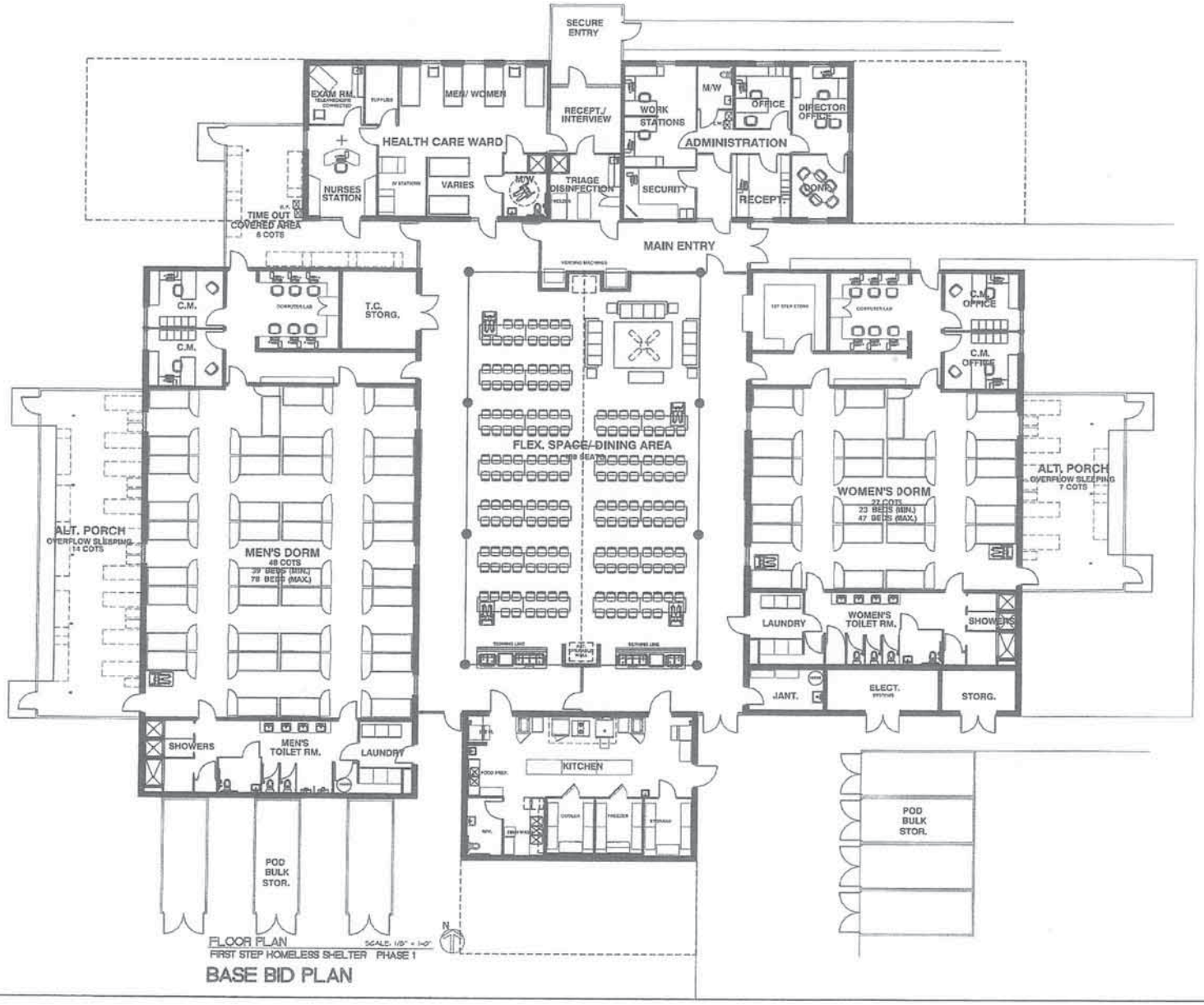
SHT. TITLE
SEAL

COMMISSION NO. 1613
SCALE
PROJECT ARCH JOH
DRAWN JH
CHECKED JOH
SHEET NO. A1.0

JOHN E. HALL

27

FINAL 8-14



FLOOR PLAN
FIRST STEP HOMELESS SHELTER PHASE 1
SCALE: 1/8" = 1'-0"

BASE BID PLAN

BASE BID PLAN
BUILDING AREAS

ADMIN. RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,368 SF.
SECURE ENTRANCE	164 SF.
FLEX. SPACE/ DINING AREA	2,720 SF.
MAIN CURULATION AREA	1,992 SF.
WOMEN'S MISC. AREA	820 SF.
WOMEN'S DORM AREA	1,594 SF.
WOMEN'S TOILETS/ SHOWERS	568 SF.
MEN'S MISC. AREA	920 SF.
MEN'S DORM AREA	2,638 SF.
MEN'S TOILETS/ SHOWERS	568 SF.
FULL SERVICE KITCHEN	928 SF.
COVERED DECK AREA	500 SF.
TOTAL CONDITIONED AREAS	11,168 SF.
TOTAL NON-CONDITIONED AREAS	4,294 SF.
TOTAL AREA	15,910 SF.

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE
W/ STAKEHOLDERS AND ENGINEERS REVIEW.

62 BEDS MIN. 125 BEDS MAX
146 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

HALL & OGLE
ARCHITECTS, INC.
258 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
PH (386) 252-4160
FAX (386) 257-5889

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

DAYTONA BEACH, FLORIDA

NO.	REVISIONS/ SUBMISSIONS	DATE

SHT. TITLE

SEAL

JOHN E. HALL AR0010727

COMMISSION NO.	1613
PROJECT ARCH. JEH	
DRAWN JH	
CHECKED JEH	
DATE: 21-MAY-2014	
SCALE:	
SHEET NO.	A2.0.0

FINAL 8-14

FLOOR PLAN
FIRST STEP HOMELESS SHELTER PHASE 1 SCALE: 1/8" = 1'-0"

ALTERNATE 1 OPTION

ALT. ONE OPTION

BUILDING AREAS

ADMIN RECPT./ OFFICES	996 SF.
HEALTH WARD AREA	1,366 SF.
SECURE ENTRANCE	184 SF.
FLEX. SPACE/ DINING AREA	2,400 SF.
MAIN CURULATION AREA	1,894 SF.
WOMEN'S MISC. AREA	438 SF.
WOMEN'S DORM AREA	786 SF.
WOMEN'S TOILETS/ SHOWERS	280 SF.
MEN'S MISC. AREA	920 SF.
MEN'S DORM AREA	2,638 SF.
MEN'S TOILETS/ SHOWERS	568 SF.
FULL SERVICE KITCHEN	928 SF.
COVERED DECK AREA	500 SF.
TOTAL CONDITIONED AREAS	9,402 SF.
TOTAL NON-CONDITIONED AREAS	4,294 SF.
TOTAL AREA	13,696 SF.

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE W/ STAKEHOLDERS AND ENGINEERS REVIEW.

51 BEDS MIN. 102 BEDS MAX
123 MAX. W/ 21 OVERFLOW
30/70 SPLIT WOMEN TO MEN

HALL & OGLE ARCHITECTS, INC.

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

DAYTONA BEACH, FLORIDA

NO.	REVISION/ SUBMISSIONS	DATE

SHT. TITLE
SEAL

COMMISSION NO. 1613
SCALE
PROJECT ARCH. JEH
DRAWN JH
CHECKED JEH
DATE 21-JULY-2017
SHEET NO. A2.0.1

JOHN E. HALL AR0009727

FINAL 8-14

OPTION AAA

BUILDING AREAS

ADMIN. RECPT./ OFFICES	1,776 SF.
HEALTH WARD AREA	2,346 SF.
SECURE ENTRANCE	164 SF.
FLEX SPACE/ DINING AREA	2,400 SF.
MAIN CURULATION AREA	1,894 SF.
WOMEN'S MISC. AREA	1,330 SF.
WOMEN'S DORM AREA	2,390 SF.
WOMEN'S TOILETS/ SHOWERS	864 SF.
MEN'S MISC. AREA	1,330 SF.
MEN'S DORM AREA	3,966 SF.
MEN'S TOILETS/ SHOWERS	864 SF.
FULL SERVICE KITCHEN	1,540SF.
COVERED DECK AREA	500 SF.
TOTAL CONDITIONED AREAS	17,496 SF.
TOTAL NON-CONDITIONED AREAS	4,294 SF.
TOTAL AREA	**21,790 SF.**

NOTE:
AREAS SMALLER THAN PROGRAM REQUIREMENTS

NEED PROGRAM REVIEW/ ACCEPTANCE.
W/ STAKEHOLDERS AND ENGINEERS REVIEW.

94 BEDS MIN. 189 BEDS MAX
210 MAX. W/ 21 OVERFLOW
40/60 SPLIT WOMEN TO MEN

FLOOR PLAN SCALE: 1/8" = 1'-0"
FIRST STEP HOMELESS SHELTER PHASE I
OPTION AAA

HALL & OGLE
ARCHITECTS, INC.

FIRST STEP HOMELESS SHELTER
WEST INTERNATIONAL SPEEDWAY BLVD.

DAYTONA BEACH, FLORIDA

NO. △	REVISION/ SUBMISSIONS	DATE

SHT. TITLE

SEAL	COMMISSION NO.	SCALE
	1613	
	PROJECT ARCH. JEH	SHEET NO.
	DRAWN: JH	A2.0.2
	CHECKED: JEH	
JOHN E. HALL AR0010727	DATE: 21-JULY-2017	

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH, FLORIDA
FINAL SITE PLAN DEV #2017-00

GENERAL NOTES

1. EXISTING ZONING: C, VOLUSIA COUNTY
2. BOUNDARY, AND TOPOGRAPHIC SURVEY BASED ON SURVEY PREPARED BY SLIGER & ASSOCIATES, INC. DATED: 8/18/17.
3. UNDERGROUND UTILITY LOCATIONS AS FIELD MARKED BY THE FOLLOWING COMPANIES OR THEIR REPRESENTATIVES:

FLORIDA POWER & LIGHT COMPANY PORT ORANGE, FL 32129	3000 SPRUCE CREEK ROAD (386) 322-3425
AT&T DAYTONA BEACH, FL 32117	500 N. NOVA ROAD (386) 257-7856
SPECTRUM DAYTONA BEACH, FL 32114	1475 S. NOVA ROAD (386) 760-9941
TECO PEOPLES GAS HOLLY HILL, FL 32117	1122 RIDGEWOOD AVE (386) 527-6017
CITY OF DAYTONA BEACH DAYTONA BEACH, FL 32114	950 BELLEVUE ROAD (386) 671-8630

4. LOCATIONS OF EXISTING UTILITIES ARE SHOWN BASED ON AVAILABLE DATA.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES AND TO DETERMINE IF OTHER UTILITIES WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK AND TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION (I.E. SHEETING, DE-WATERING, ETC.). CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES OR CONFLICTS.
   CONTRACTOR TO COORDINATE DEMOLITION AND CONSTRUCTION WITH ALL PUBLIC AND PRIVATE UTILITY COMPANIES TO AVOID CONFLICTS AND/OR INTERRUPTIONS OF SERVICE.
6. CONTRACTOR TO PROVIDE AS BUILT DRAWINGS OF ALL IMPROVEMENTS ON 24" X 36" MYLAR, SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR.
7. THERMOPLASTIC STRIPING AND TRAFFIC CONTROL SIGNAGE TO MEET FDOT AND CITY OF DAYTONA BEACH SPECIFICATIONS.
8. TRAFFIC CONTROL SIGNS TO BE IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS. ALL STOP SIGNS, SPEED LIMIT AND STREET SIGNS REQUIRED TO BE PROVIDED BY DEVELOPER TO CITY OF DAYTONA BEACH SPECIFICATIONS.
9. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES USING 3M BRAND "SCOTCHLIGHT" SHEETING (ENGINEER GRADE) ON MINIMUM 0.080 GAUGE 5052-H38 ALUMINUM BLANKS. ALL STOP SIGNS SHALL BE HIGH INTENSITY 30" OCTAGON INSTALLED ON 12', 5 LBS./FT. "U" CHANNEL POSTS (RAIL STEEL ONLY) OR 3" x 12", ROUND ALUMINUM POSTS."U" CHANNEL POSTS MAY BE USED FOR ALL SIGNS SMALLER THAN 36" x 48". ALL WARNING SIGNS SHALL BE 30" x 30".
10. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND/OR LICENSES TO COMMENCE CONSTRUCTION.
11. ALL CONCRETE SHALL DEVELOP A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI UNLESS OTHERWISE NOTED.
12. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF PLANS, SPECIFICATIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
13. CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
14. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
15. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

GENERAL INFORMATION

PROJECT NAME:
FIRST STEP HOMELESS ASSISTANCE SHELTER FINAL SITE PLAN
3888 WEST INTERNATIONAL SPEEDWAY BOULEVARD
DAYTONA BEACH, FLORIDA 32124

OWNER
CITY OF DAYTONA BEACH
P.O. BOX 2451
DAYTONA BEACH, FLORIDA 32115-2451
(386) 671-8010 FAX (386) 671-8025

DESIGN ENGINEER/ LANDSCAPE ARCHITECT:
PARKER MYNCHENBERG & ASSOC., INC.
PARKER MYNCHENBERG, P.E. #32645, L.A.#1551
CERTIFICATE OF AUTHORIZATION #2810
1729 RIDGEWOOD AVENUE
HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114
E-MAIL: info@parkermynchenberg.com

SURVEYOR:
SLIGER AND ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
3821 NOVA ROAD
PORT ORANGE, FL 32127
(386) 761-5385

ARCHITECT:
HALL & GOLE ARCHITECTS, INC.
208 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
(386)255-6163 FAX (386)257-5630
AA-C000825

DEVELOPMENT CONSULTANT:
DOUGLAS P. HURTOCK
E-ZONE MAINTENANCE & OPERATIONS MANAGER
CONSTRUCTION PROJECT & DEVELOPMENT MANAGER
CITY OF DAYTONA BEACH
123 S. ATLANTIC AVENUE
DAYTONA BEACH, FLORIDA 32118
(386)671-3570 CELL (304)984-3685
E-MAIL: hurtockd@codb.us

THE CITY OF DAYTONA BEACH INCORPORATED JULY 1876

ZONING MAP

FLOOD MAP

FEMA MAP NUMBER 12127C0350H
MAP REVISED FEBRUARY 19, 2014
ZONE X &
*ZONE A - NO BASE FLOOD ELEVATION DETERMINED

NOTE: DESIGN CALCULATIONS DETERMINED 100 YR FLOOD ELEVATION IS 28.00 MSL

LOCATION MAP

NOTE:
"NO CONSTRUCTION ON THE PROPOSED PORTIONS OF THIS PROJECT MAY COMMENCE UNTIL A MANDATORY PRE-CONSTRUCTION MEETING IS HELD WITH THE CITY, AS STATED IN THE APPROVED DEVELOPMENT ORDER FROM THE CITY OF DAYTONA BEACH. ANY CESSATION OF CONTINUOUS ON-GOING CONSTRUCTION ON THIS PROJECT OF 90 DAYS OR MORE SHALL TRIGGER A REQUIREMENT FOR ANOTHER PRE CONSTRUCTION MEETING BE HELD WITH THE CITY PRIOR TO CONTINUATION OF THE CONTINUING CONSTRUCTION."

SOILS MAP

LAND USE TABULATION

SITE AREA = 10.35 ACRES = 450,977 S.F.

PROPOSED BUILDING:
PHASE 1 = 15,810 S.F.
PHASE 2 = 9,624 S.F.
TOTAL = 25,534 S.F. = 5.7% COVERAGE

IMPERVIOUS AREA:
PHASE 1 BUILDING = 15,810 S.F.
PHASE 1 SIDEWALKS, DRIVES, & PARKING = 77,756 S.F.
TOTAL PHASE 1 IMPERVIOUS = 93,686 S.F. = 20.7%

PHASE 2 BUILDING = 9,624 S.F.
PHASE 2 PAVEMENT = 23,720 S.F.
SUB TOTAL PHASE 2 IMPERVIOUS = 33,344 S.F.

TOTAL IMPERVIOUS AREA = 127,030 S.F. = 28.2%
TOTAL LANDSCAPE AREA = 323,947 S.F. = 71.8%

TAX PARCEL #5101-00-00-0020

PROJECT DESCRIPTION

CONSTRUCTION OF A 1-STORY 15,810 S.F. (PHASE 1) BUILDING & ASSOCIATED PAVING, DRAINAGE, UTILITY, LANDSCAPE, SIGNAGE & SIDEWALK IMPROVEMENTS.

INDEX TO DRAWINGS

PARKING CALCULATION

PARKING REQUIRED:

PHASE 1
120 BED @ 1/2 = 60 SPACES
EMPLOYEES = 10 SPACES
TOTAL PARKING
REQUIRED PHASE 1 = 70 SPACES

PARKING PROVIDED:
STANDARD = 77
HANDICAPPED = 3
TOTAL = 80 SPACES

DEV #2017-
CITY APPROVAL STAMP

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS + LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114
E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003810

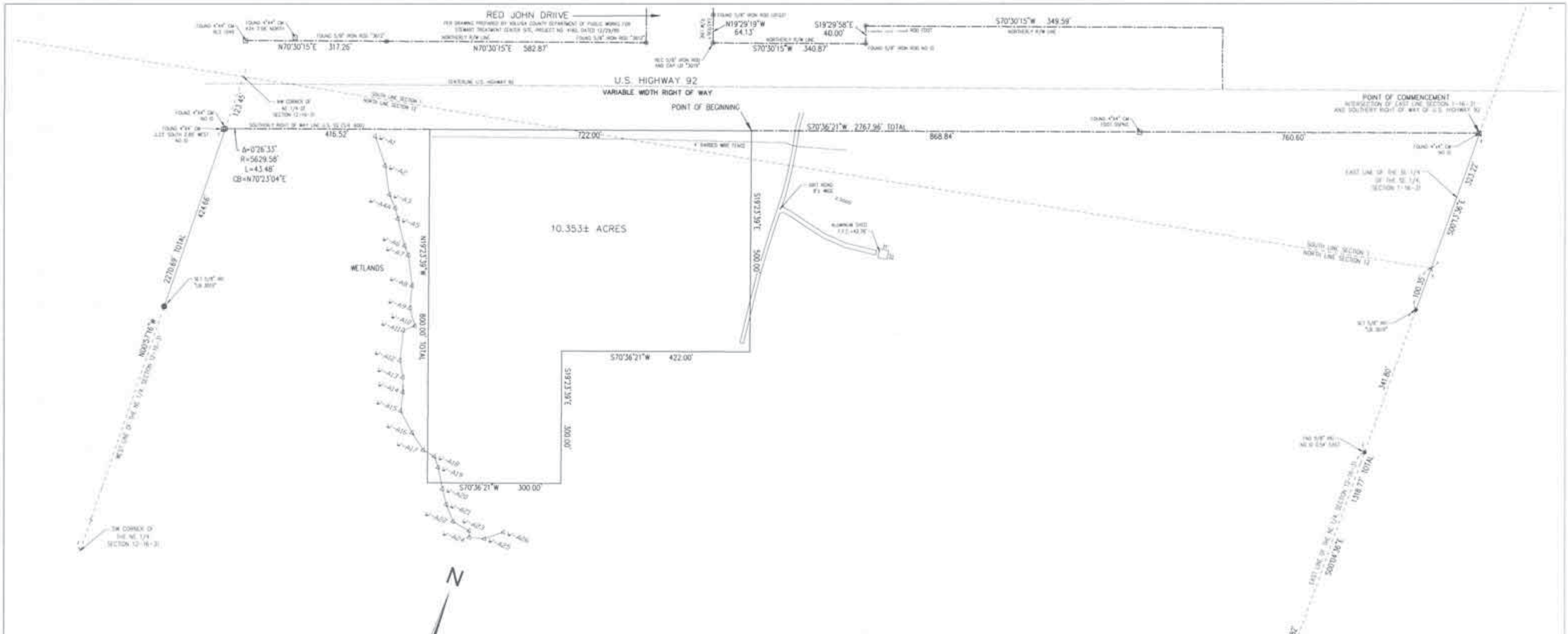
NO.	DATE	DESCRIPTION	BY
		REVISIONS	

COVER SHEET

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

Parker Mynchenberg, P.E.

FILE: 1602CE.DWG	DESIGNER: P.M/MYNCHENBERG
DATE: 7/3/2017	CADD TECH: BWB
SCALE: NONE	SHEET 1 OF 18



SURVEYORS NOTES

1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY/SKETCH OF DESCRIPTION THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY/SKETCH OF DESCRIPTION PREPARED WITHOUT BENEFIT OF AN ABSTRACT.

2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.

3. BEARING STRUCTURE BASED ON RECORD DEED AS RECORDED IN O.R.B. 6291, PAGE 3409 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, WITH THE BEARING ON THE EAST LINE OF THE NE 1/4, SECTION 12, TOWNSHIP SOUTH, RANGE 31 EAST BEING S00°04'36"E.

4. ELEVATIONS REFER TO N.A.V.D. OF 1988, PER N.G.S. BENCHMARK C-476 HAVING A PUBLISHED ELEVATION OF 37.83 FEET.

5. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.

6. THIS PROPERTY IS LOCATED IN FLOOD INSURANCE RATE MAP (F.I.R.M.) ZONE X AND A. THIS LOCATION IS DETERMINED BY SCALING FROM F.I.R.M. MAP NO. 12127C0350H; MAP EFFECTIVE DATE: FEBRUARY 19, 2014. APPROXIMATE SCALE: 1"= 2000'.

7. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."

8. UNLESS OTHERWISE SHOWN, RECORD DISTANCES AND DIRECTIONS AND FIELD MEASURED DISTANCES AND DIRECTIONS ARE THE SAME.

9. WETLANDS FLAGGED BY BIOLOGICAL CONSULTING SERVICES, INC.

10. WETLANDS LINES REVIEWED AND APPROVED BY ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REPRESENTATIVE LEE KISSICK ON AUGUST 30, 2017.

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

DESCRIPTION:

A PORTION OF THE SOUTHEAST 1/4 OF SECTION 1, AND THE NORTHEAST 1/4 OF SECTION 12, TOWNSHIP 16 SOUTH, RANGE 31 EAST, ALSO BEING THE NORTHERLY 400.00 FEET OF THAT PROPERTY DESCRIBED AS EXHIBIT B: DAYTONA PARCEL-2, IN OFFICIAL RECORDS BOOK 6291, PAGE 3409 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE INTERSECTION OF THE EASTERLY LINE OF SECTION 1, TOWNSHIP 16 SOUTH, RANGE 31 EAST AND THE SOUTHERLY RIGHT OF WAY LINE OF US HIGHWAY 92; THENCE ALONG THE SOUTHERLY RIGHT OF WAY LINE OF U.S. HIGHWAY 92, S70°36'21"W 760.60 FEET TO A CONCRETE F.D.O.T. MONUMENT; THENCE, CONTINUING ALONG SAID RIGHT OF WAY N70°36'21"W A DISTANCE OF 868.84 FEET TO THE POINT OF BEGINNING; THENCE, LEAVING SAID RIGHT OF WAY, S19°23'39"E A DISTANCE OF 500.00 FEET; THENCE S70°36'21"W A DISTANCE OF 422.00 FEET; THENCE, S19°23'39"E A DISTANCE OF 300.00 FEET; THENCE, S70°36'21"W A DISTANCE OF 300.00 FEET; THENCE, N19°23'39"W A DISTANCE OF 800.00 FEET TO A POINT IN THE SOUTHERLY RIGHT OF WAY LINE OF U.S. HIGHWAY 92; THENCE, ALONG THE SOUTHERLY RIGHT OF WAY LINE OF U.S. HIGHWAY 92 N70°36'21"E A DISTANCE OF 722.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 10.353 ACRES MORE OR LESS.

UTILITY STATEMENT:

THE INACCESSIBLE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY HAVE BEEN LOCATED FROM ABOVE GROUND FIELD UTILITY LOCATIONS PROVIDED BY SUNSHINE NETWORK, TICKET #________ ON OR ABOUT 8-30-99 AND/OR EXISTING AS-BUILTS DRAWINGS PROVIDED BY THE CLIENT. SLIGER AND ASSOCIATES, INC. (S&A) MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. LIKEWISE S&A DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ONLY THAT S&A HAS LOCATED THE UTILITIES AS ACCURATELY AS POSSIBLE FROM SAID FIELD LOCATIONS AND/OR AS-BUILTS PROVIDED BY OTHERS. S&A HAS NOT PHYSICALLY LOCATED THE ACTUAL INACCESSIBLE UNDERGROUND UTILITIES EXCEPT AS SPECIFICALLY NOTED AND DEPICTED ON THIS DRAWING.

ABBREVIATIONS

LEGEND

ADDITIONAL ABBREVIATIONS—TREE LEGEND

CP	CAMPHOR TREE	SB	SUGARBERRY TREE
MP	MAPLE TREE	CD	CEDAR TREE
SYC	SYCAMORE TREE	EM	ELM TREE
OK	OAK TREE	CIT	CITRUS TREE
SG	SWEET GUM TREE	PN	PINE TREE
HK	HICKORY TREE	PM	PALM TREE
CB	CHINABERRY TREE	HY	HOLLY

TREE TYPE — TREE SIZE (INCHES) DIAMETER AT BREAST HEIGHT — OK24 — MULTIPLE TRUNKS — TREE SYMBOL

SLIGER & ASSOCIATES, INC.

PROFESSIONAL LAND SURVEYORS

LICENSED BUSINESS CERTIFICATION NUMBER 3019

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PLAT PREPARED FOR THE FOLLOWING: (ONLY THE LAST DATE IS CERTIFIED ON SEALED COPY)

THIS PLAT OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND/OR INDIVIDUALS LISTED BELOW, ON THE MOST CURRENT DATE, AND SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL WHOMSOEVER.

TYPE OF SURVEY	CERTIFIED TO	SURVEY DATE	JOB NUMBER
BOUNDARY	CITY OF DAYTONA BEACH, FLORIDA	9-18-2017	17-0932
	NOT CERTIFIED TO ANY ENTITIES AND/OR INDIVIDUALS OTHER THAN THOSE LISTED ABOVE.		

VOLUSIA SAFE HARBOR
RED JOHN DRIVE & W.
INTERNATIONAL SPEEDWAY BLVD

FOR: CITY OF DAYTONA BEACH, FLORIDA

JOB NO. 17-0932

BOUNDARY SURVEY

I HEREBY CERTIFY THAT THIS PLAT MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

SURVEYORS NOTES

1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY/SKETCH OF DESCRIPTION THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY/SKETCH OF DESCRIPTION PREPARED WITHOUT BENEFIT OF AN ABSTRACT.

2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.

3. BEARING STRUCTURE BASED ON RECORD DEED AS RECORDED IN O.R.B. 6291, PAGE 3409 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, WITH THE BEARING ON THE EAST LINE OF THE NE 1/4, SECTION 12, TOWNSHIP SOUTH, RANGE 31 EAST BEING S00°04'36"E.

4. ELEVATIONS REFER TO N.A.V.D. OF 1988, PER N.G.S. BENCHMARK C-476 HAVING A PUBLISHED ELEVATION OF 37.60 FEET.

5. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.

6. THIS PROPERTY IS LOCATED IN FLOOD INSURANCE RATE MAP (F.I.R.M.) ZONE X AND A. THIS LOCATION IS DETERMINED BY SCALING FROM F.I.R.M. MAP NO. 12127C0330H. MAP EFFECTIVE DATE: FEBRUARY 19, 2014. APPROXIMATE SCALE: 1"= 2000'.

7. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."

8. UNLESS OTHERWISE SHOWN, RECORD DISTANCES AND DIRECTIONS AND FIELD MEASURED DISTANCES AND DIRECTIONS ARE THE SAME.

9. WETLANDS FLAGGED BY BIOLOGICAL CONSULTING SERVICES, INC.

10. WETLANDS LINES REVIEWED AND APPROVED BY ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REPRESENTATIVE LEE KISSICK ON AUGUST 30, 2017.

DESCRIPTION:

A PORTION OF THE SOUTHEAST 1/4 OF SECTION 1, AND THE NORTHEAST 1/4 OF SECTION 12, TOWNSHIP 16 SOUTH, RANGE 31 EAST, ALSO BEING THE NORTHERLY 400.00 FEET OF THAT PROPERTY DESCRIBED AS EXHIBIT B, DAYTONA PARCEL-2, IN OFFICIAL RECORDS BOOK 6291, PAGE 3409 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE INTERSECTION OF THE EASTERLY LINE OF SECTION 1, TOWNSHIP 16 SOUTH, RANGE 31 EAST AND THE SOUTHERLY RIGHT OF WAY LINE OF US HIGHWAY 92; THENCE ALONG THE SOUTHERLY RIGHT OF WAY LINE OF U.S. HIGHWAY 92, S70°36'21"W 780.50 FEET TO A CONCRETE F.D.O.T. MONUMENT; THENCE, CONTINUING ALONG SAID RIGHT OF WAY, N70°36'21"W A DISTANCE OF 868.84 FEET TO THE POINT OF BEGINNING; THENCE, LEAVING SAID RIGHT OF WAY, S19°23'39"E A DISTANCE OF 500.00 FEET; THENCE S70°36'21"W A DISTANCE OF 422.00 FEET; THENCE, S19°23'39"E A DISTANCE OF 300.00 FEET; THENCE, S70°36'21"W A DISTANCE OF 300.00 FEET; THENCE, N19°23'39"W A DISTANCE OF 800.00 FEET TO A POINT IN THE SOUTHERLY RIGHT OF WAY LINE OF U.S. HIGHWAY 92; THENCE, ALONG THE SOUTHERLY RIGHT OF WAY LINE OF U.S. HIGHWAY 92 N70°36'21"E A DISTANCE OF 722.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 10.353 ACRES MORE OR LESS.

UTILITY STATEMENT:

THE INACCESSIBLE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY HAVE BEEN LOCATED FROM ABOVE GROUND FIELD UTILITY LOCATIONS PROVIDED BY SUNSHINE NETWORK, TICKET #________ ON OR ABOUT 8-30-99 AND/OR EXISTING AS-BUILTS DRAWINGS PROVIDED BY THE CLIENT. SLIGER AND ASSOCIATES, INC. (S&A) MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. LIKEWISE S&A DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ONLY THAT S&A HAS LOCATED THE UTILITIES AS ACCURATELY AS POSSIBLE FROM SAID FIELD LOCATIONS AND/OR AS-BUILTS PROVIDED BY OTHERS. S&A HAS NOT PHYSICALLY LOCATED THE ACTUAL INACCESSIBLE UNDERGROUND UTILITIES, EXCEPT AS SPECIFICALLY NOTED AND DEPICTED ON THIS DRAWING.

ABBREVIATIONS

[illegible]

LEGEND

[illegible]

ADDITIONAL ABBREVIATIONS-TREE LEGEND

CP	CAMPHOR TREE	SB	SUGARBERRY TREE
MP	MAPLE TREE	CD	CEDAR TREE
SYC	SYCAMORE TREE	EM	ELM TREE
OK	OAK TREE	CIT	CITRUS TREE
SG	SWEET GUM TREE	PN	PINE TREE
HK	HICKORY TREE	PM	PALM TREE
CB	CHINABERRY TREE	HY	HOLLY

TREE TYPE — OK24 — TREE SIZE (INCHES) DIAMETER AT BREAST HEIGHT — MULTIPLE TRUNKS — TREE SYMBOL

FOR: CITY OF DAYTONA BEACH, FLORIDA

SCALE: 1"=60' — FIELD BOOK: 1380 — PAGE(S): 3-5 — SHEET 1 OF 1

TYPE OF SURVEY	SURVEY DATE	JOB NUMBER	PARTY CHIEF	DRAWN BY	CHECKED BY
SPECIFIC PURPOSE					
BOUNDARY SURVEY					
TOPOGRAPHIC SURVEY	8/18/2016	17-0932			
FOUNDATION LOCATION					
FINAL IMPROVEMENTS					
RECERTIFICATION					

SLIGER & ASSOCIATES, INC.

PROFESSIONAL LAND SURVEYORS

LICENSED BUSINESS CERTIFICATION NUMBER 3019

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PLAT PREPARED FOR THE FOLLOWING: (ONLY THE LAST DATE IS CERTIFIED ON SEALED COPY)

THIS PLAT OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND/OR INDIVIDUALS LISTED BELOW, ON THE MOST CURRENT DATE, AND SHALL NOT BE RELIED UPON BY ANY OTHER ENTITY OR INDIVIDUAL WHOMSOEVER.

TYPE OF SURVEY	CERTIFIED TO	SURVEY DATE	JOB NUMBER
TOPOGRAPHIC	CITY OF DAYTONA BEACH, FLORIDA	8-18-2017	17-0932

NOT CERTIFIED TO ANY ENTITIES AND/OR INDIVIDUALS OTHER THAN THOSE LISTED ABOVE.

VOLUSIA SAFE HARBOR
RED JOHN DRIVE & W. INTERNATIONAL SPEEDWAY BLVD

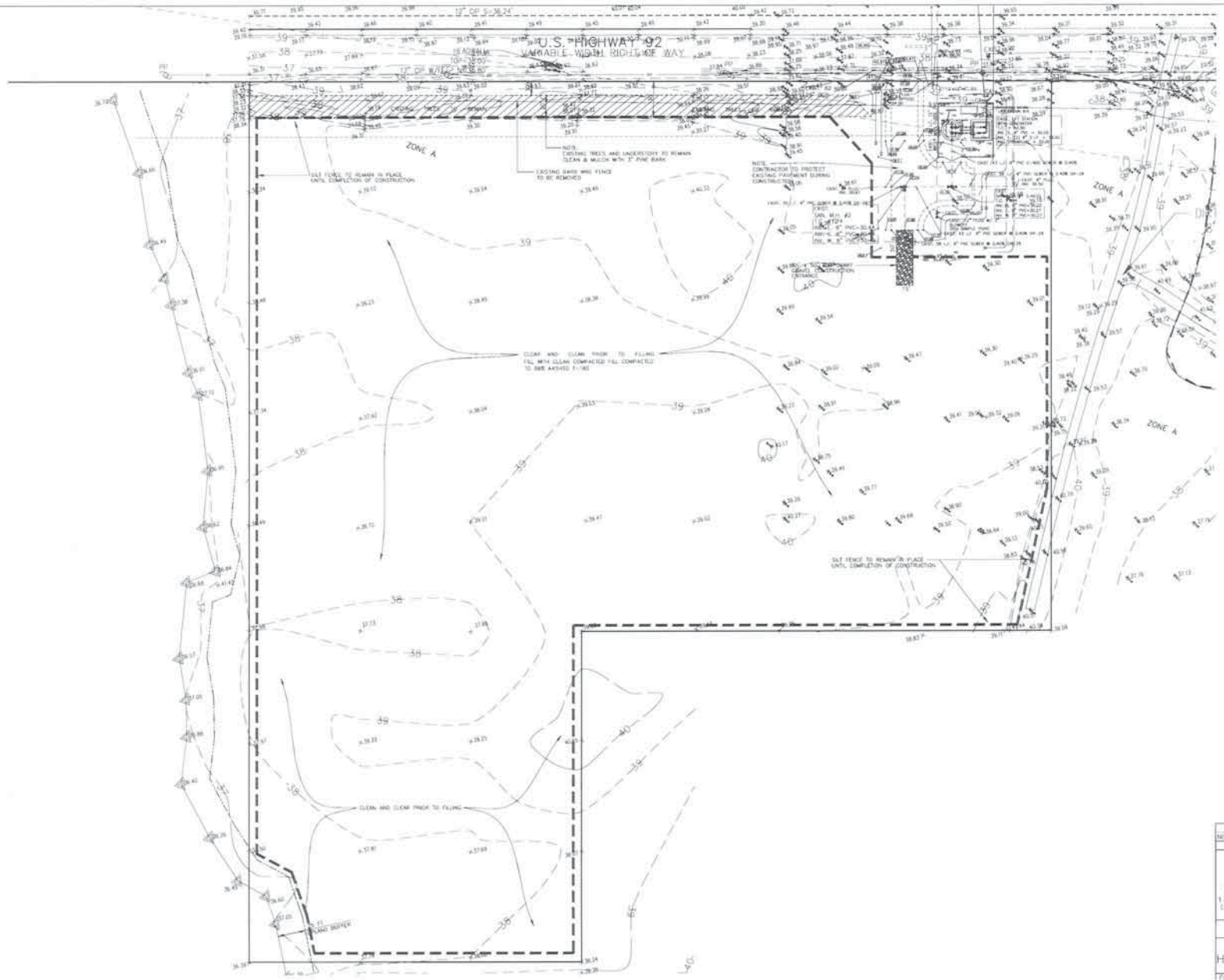
FOR: CITY OF DAYTONA BEACH, FLORIDA

JOB NO. 17-0932

TOPOGRAPHIC SURVEY

I HEREBY CERTIFY THAT THIS PLAT MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

J.E. ZAPORT, P.L.S. NO. 4046
STEVEN T. KRUGER, P.L.S. NO. 4722
D.O. VAN ALECK JR., P.S.M. NO. 6749
MICHAEL S. MURPHY, P.S.M. NO. 6208



DEV #2017-
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY

REVISIONS

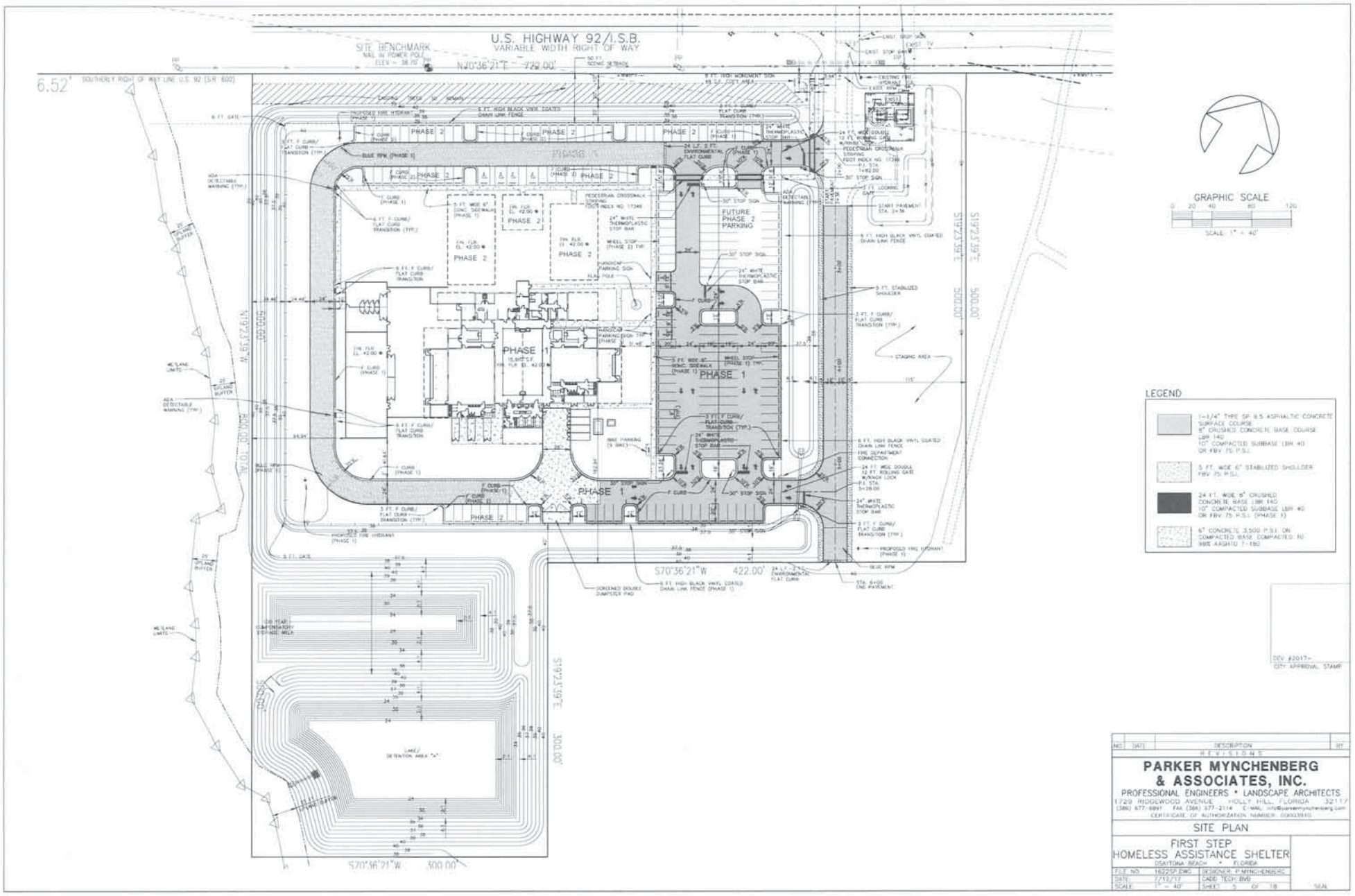
PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2174 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

DEMOLITION & EROSION CONTROL PLAN

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

FILE NO:	16225SP.DWG	DESIGNER: P.MYNCHENBERG	
DATE:	7/12/17	CADD TECH: BVB	
SCALE:	1" = 40'	SHEET 4 OF 18	SEAL

V:\2016\16225 FINAL SITE PLAN\16225P.dwg, 9/18/2017 9:54:26 AM, DWG To PDF.pc3


U.S. HIGHWAY 92/I.S.B.
VARIABLE WIDTH RIGHT OF WAY
SITE BENCHMARK
NAIL IN POWER POLE
ELEV = 38.70'
N20°36'21"E 722.00'
6.52' SOUTHERLY RIGHT OF WAY LINE U.S. 92 (S.R. 600)
PHASE 1
PHASE 2
FUTURE PHASE 2 PARKING
S70°36'21"W 422.00'
S70°36'21"W 300.00'
S19°23'39"E 500.00'
N19°23'39"W 500.00'
S19°23'39"E 300.00'
GRAPHIC SCALE
0 20 40 80 120
SCALE: 1" = 40'
LEGEND
1-1/4" TYPE SP 9.5 ASPHALTIC CONCRETE SURFACE COURSE
8" CRUSHED CONCRETE BASE COURSE LBR 140
10" COMPACTED SUBBASE LBR 40 OR FBV 75 P.S.I.
5 FT. WIDE 6" STABILIZED SHOULDER FBV 75 P.S.I.
24 FT. WIDE 8" CRUSHED CONCRETE BASE LBR 140
10" COMPACTED SUBBASE LBR 40 OR FBV 75 P.S.I. (PHASE 1)
6" CONCRETE 3,500 P.S.I. ON COMPACTED BASE COMPACTED TO 98% AASHTO T-180
DEV #2017-
CITY APPROVAL STAMP
NO. DATE DESCRIPTION BY
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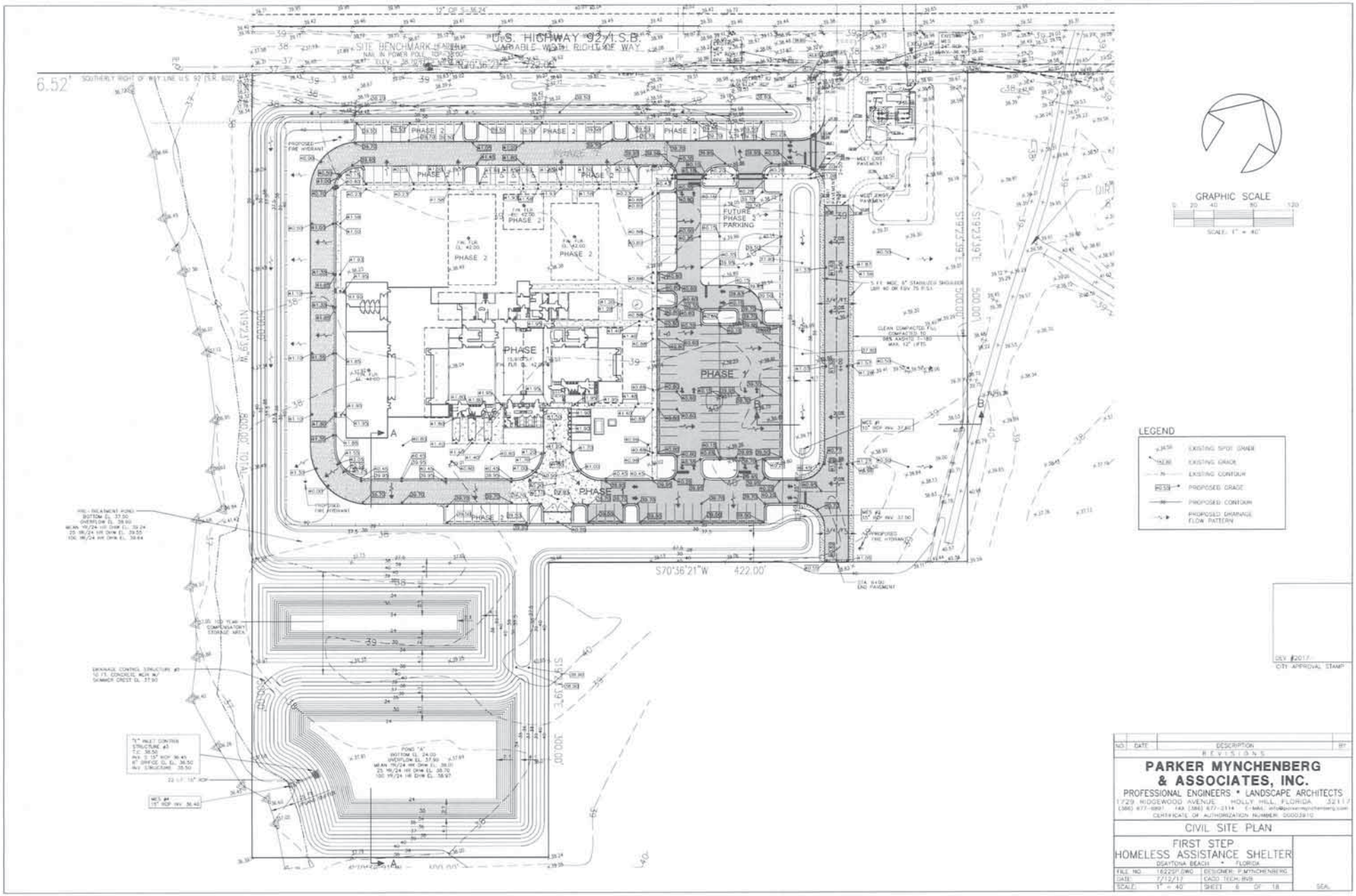
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 0000370
SITE PLAN
FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA
FILE NO. 16225P.DWG DESIGNER: P.MYNCHENBERG
DATE: 7/12/17 CADD TECH: BVB
SCALE: 1" = 40' SHEET 5 OF 18
SEAL



NO.	DATE	DESCRIPTION	BY
		REVISIONS	

PARKER MYNCHENBERG & ASSOCIATES, INC.

PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS

1729 RIDGEWOOD AVENUE • HOLLY HILL, FLORIDA 32117

(386) 677-0897 • FAX (386) 677-2314 • E-MAIL info@parkermynchenberg.com

CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

CIVIL SITE PLAN

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

FILE NO.	1622SP.DWG	DESIGNER: P.MYNCHENBERG	
DATE:	7/12/17	CADD TECH: BNB	
SCALE:	1" = 40'	SHEET 6 OF 18	SEAL

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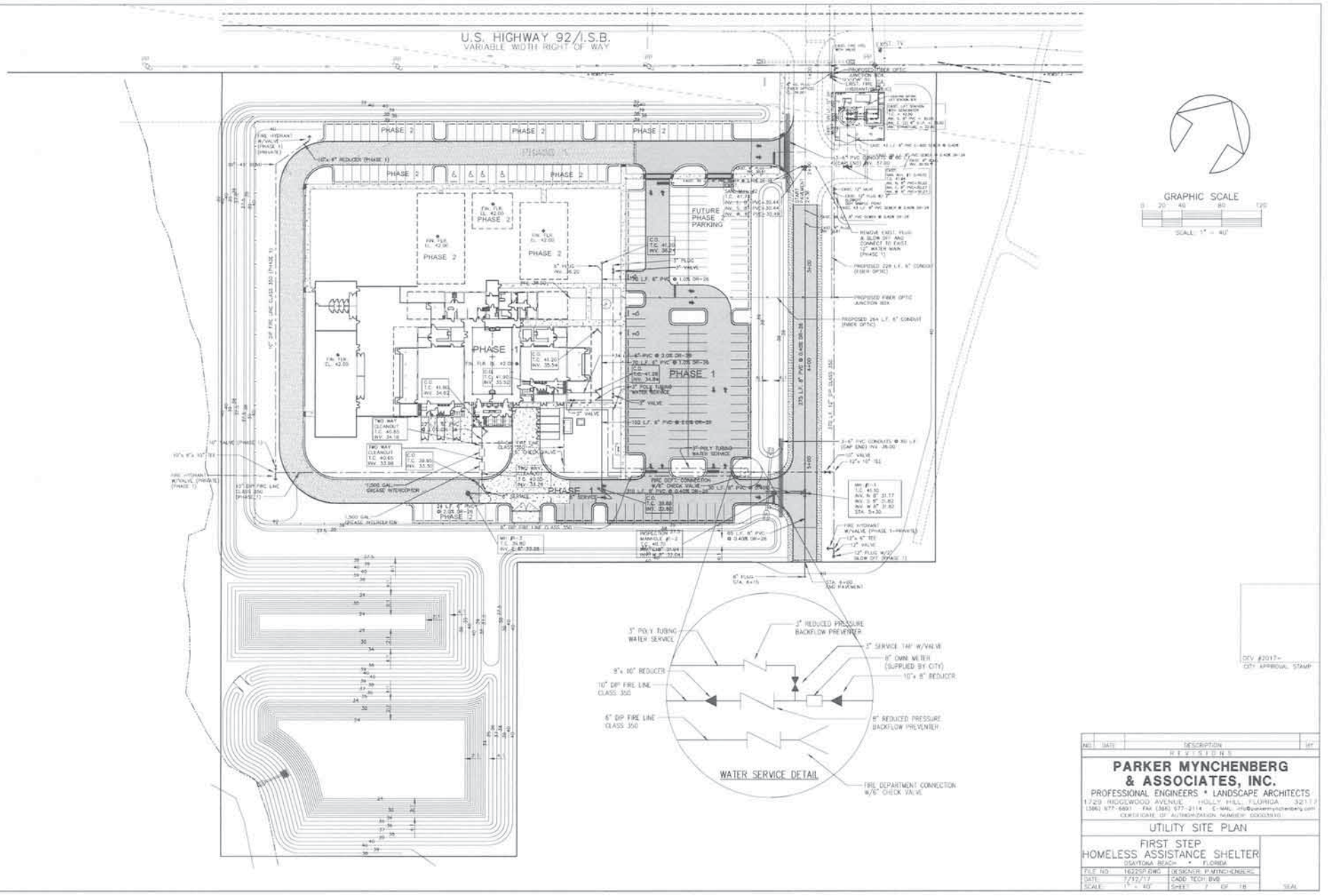

DEV #2017-
CITY APPROVAL STAMP

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(386) 677-6801 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 000011610

UTILITY SITE PLAN

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

FILE NO.	1622SP.DWG	DESIGNER: P.MYNCHENBERG	
DATE:	7/12/17	CADD TECH: BVB	
SCALE:	1" = 40'	SHEET 7 OF 18	SEAL

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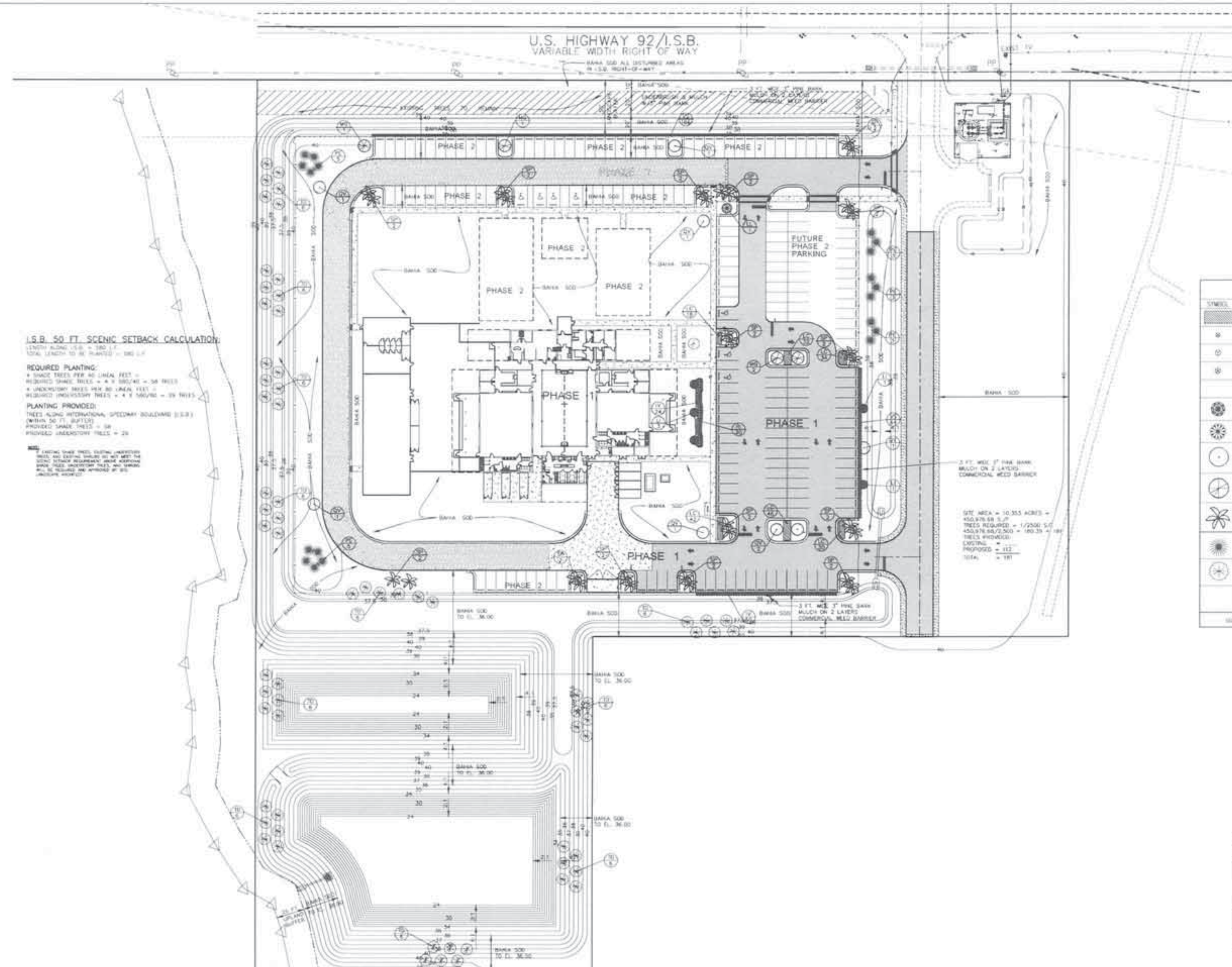

GRAPHIC SCALE

0 20 40 80 120

SCALE: 1" = 40'

PLANT LIST

SYMBOL	ABB.	QTY	BOTANICAL NAME	COMMON NAME	SIZE
	LC	202	LANTANA CAMARA	LANTANA	1 GAL., 12"-15" SPD. 20" O.C.
	RI*	30	RAPHIOLEPIS INDICA	INDIAN HAWTHORN	3 GAL., 24" O.C. 10" HT. MIN.
	IV*	74	ILEX VOMITORIA	YAUPON HOLLY	3 GAL., 30" O.C. 24" HT., MIN.
	VS	210	VIBURNUM SUSPENSUM	SANDANKWA VIBURNUM	3 GAL., 30" O.C. 24" HT., MIN.
	LI	5	LAGERSTROEMIA INDICA	CRAPE MYRTLE	15 GAL. MIN. MULTI-TRUNK 5'-6' HT.
	LL	7	LIGUSTRUM LUCIDUM	LIGUSTRUM TREE	15 GAL. MIN. MULTI-TRUNK 5' HT.
	QV*	8	QUERCUS VIRGINIANA	LIVE OAK	30 GAL., 10'-11' HT. 2" MIN. CAL.
	QV1*	–			65 GAL., 12'-13' HT. 2.7"-3" MIN. CAL.
	MG*	4	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	30 GAL., 8'-9' HT. 2.5" MIN. CAL.
	MG1*	–			65 GAL., 11'-12' HT. 3"-3.5" MIN. CAL.
	SP*	30	SABAL PALMETTO	SABAL PALM	14'-16' CLEAR TRUNK
	PE*	19	PINUS ELLIOTII	SLASH PINE	15 GAL., 7'-8' HT. 2"-2.5" MIN. CAL.
	TD*	86	TAXODIUM DISTICHUM	BALD CYPRESS	30 GAL., 9.5'-10' HT. 2.5"-2.75" MIN. CAL.
SOD			ARGENTINE BAHIA		

* DENOTES XERIC/DROUGHT TOLERANT PLANT

UEV #2017-
CITY APPROVAL STAMP

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		REVISIONS	

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CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

LANDSCAPE PLAN

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

FILE NO.	1622SP.DWG	DESIGNER: P.MYNCHENBERG	
DATE:	7/12/17	CADD TECH: BVB	
SCALE:	1" = 40'	SHEET 8 OF 18	SEAL

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LANDSCAPE NOTES

LANDSCAPE REQUIREMENTS:

1.) ALL PLANT MATERIALS SHALL BE FLORIDA NO. 1 GRADE, OR BETTER, ACCORDING TO THE CURRENT "GRADES AND STANDARDS FOR NURSERY PLANTS", STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE, TALLAHASSEE. TREES AND SHRUBS ARE TO BE CONTAINER-GROWN. NO BALL AND BURLAP OR NON-CONTAINERIZED PLANTS WILL BE ALLOWED.

2.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING PROJECT SOILS. THE CONTRACTOR SHALL PROVIDE A CERTIFIED SOILS REPORT TO THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL VERIFY THAT ON-SITE SOILS ARE ACCEPTABLE FOR PROPER GROWTH OF THE PROPOSED PLANT MATERIAL. SHOULD THE CONTRACTOR FIND POOR SOIL CONDITIONS, THE OWNER'S REPRESENTATIVE SHALL BE CONSULTED PRIOR TO PLANTING.

3.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND WORK CALLED FOR IN THE LANDSCAPE PLAN DOCUMENTS. THE PLANT LIST QUANTITIES SHALL BE USED AS A GUIDE ONLY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES.

4.) ALL PLANT BEDS AND ALL EXISTING AND PROPOSED PARKING LOT ISLANDS SHALL BE DRESSED WITH 3" MINIMUM SHREDDED CYPRESS MULCH.

5.) THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR STABILITY AND PLUMB CONDITION OF ALL PLANTS AND SHALL BE LEGALLY LIABLE FOR ANY DAMAGE CAUSED BY INSTABILITY OF PLANT MATERIALS.

6.) THE CONTRACTOR SHALL DISPOSE OF STUMPS AND MAJOR ROOTS OF ALL PLANTS TO BE REMOVED.

7.) THE LANDSCAPE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH ALL OTHER WORK TO BE DONE ON SITE, PRIOR TO LANDSCAPE INSTALLATION.

8.) THE CONTRACTOR SHALL INSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT PITS. TEST HOLES FOR THE VISUAL INSPECTION OF DRAINAGE SHALL BE DUG PRIOR TO INSTALLATION OF ANY PLANTS. THE CONTRACTOR SHALL AMEND POOR DRAINAGE UNTIL ACCEPTABLE FOR PLANT SURVIVABILITY.

9.) PLANTING BACKFILL MIX SHALL BE 1/4 PEAT, 1/4 COMPOSTED COW MANURE, 1/2 CLEAN SOIL.

10.) THE CONTRACTOR SHALL REPLACE ALL PLANTS WHICH ARE NOT IN A HEALTHY, GROWING CONDITION PRIOR TO ACCEPTANCE. ALL PLANTS SHALL BE MAINTAINED AND GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF 90 DAYS FOLLOWING ACCEPTANCE BY THE OWNER. ANY PLANTS FOUND NOT TO BE IN A HEALTHY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

11.) SOD SHALL BE STRONG, SOLID SOD PLACED EVENLY AND WITHOUT GAPS BETWEEN PIECES. GROUND SHALL BE THOROUGHLY WETTED BEFORE PLACING SOD. SOD SHALL BE PLACED TO LIMITS SHOWN AND TO THE EXTENT OF DAMAGED EXISTING SOD. EXISTING GROUND SHALL BE STRIPPED BEFORE PLACING NEW SOD.

12.) THE LIVE OAKS SHALL BE CONTAINER GROWN AND NOT BAG AND BURLAP TYPE. LIVE OAKS SHALL BE PLANTED 2" ABOVE GRADE.

13.) PLANTING PLANS SHALL TAKE PRECEDENCE OVER PLANT LIST IN CASE OF DISCREPANCIES.

14.) NO CHANGES ARE TO BE MADE WITHOUT THE PRIOR CONSENT OF THE LANDSCAPE ARCHITECT AND OWNER. ADDITIONS AND/OR DELETIONS TO THE PLANT MATERIAL MUST BE APPROVED BY THE PROJECT MANAGER.

15.) LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THEIR OWN SQUARE FOOTAGE TAKEOFFS AND FIELD VERIFICATIONS FOR 100% SOD COVERAGE FOR ALL ARE SPECIFIED. THE PROJECT MANAGER.

16.) ALL LANDSCAPE AREAS ARE TO BE PROVIDED WITH AUTOMATIC SPRINKLER SYSTEM WHICH WILL PROVIDE 100% COVERAGE AND 50% OVERLAP.

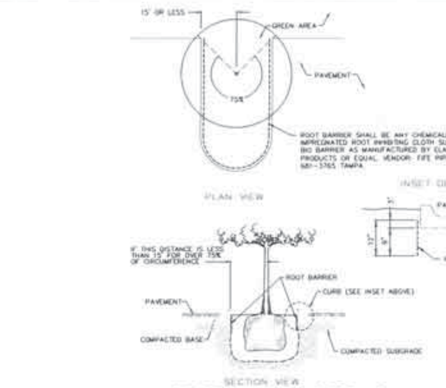
17.) LANDSCAPE CONTRACTOR TO PROVIDE DESIGN LANDSCAPE ARCHITECT A DETAILED LANDSCAPE "AS-BUILT".

18.) THE LANDSCAPE CONTRACTOR IS TO LOCATE AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO BEGINNING WORK. CONTACT PROPER UTILITY COMPANIES AND / OR GENERAL CONTRACTOR PRIOR TO DIGGING FOR FIELD VERIFICATION. THE CITY OF DAYTONA BEACH SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES TO UTILITY OR IRRIGATION LINES.

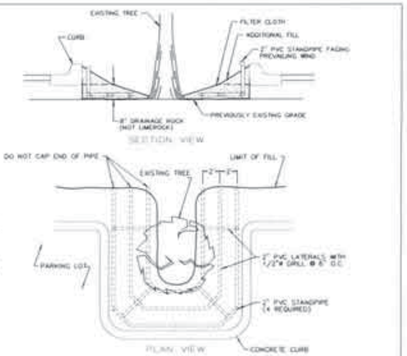
19.) THE LANDSCAPE CONTRACTOR IS TO LOCATE AND VERIFY ALL CURRENT DRAWINGS AND CHECK FOR DISCREPANCIES & BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCING WITH THE WORK.

LANDSCAPE CERTIFICATION

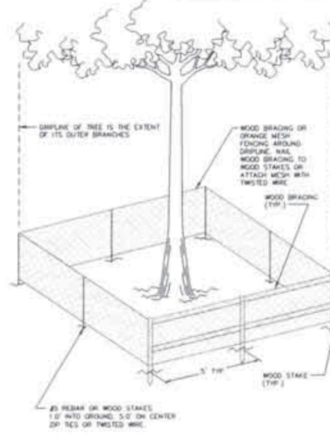
I HEREBY CERTIFY THE PROPOSED LANDSCAPE IMPROVEMENTS ASSOCIATED WITH THE NEW PARKING LOT AND BUILDING MEET OR EXCEED ALL REQUIREMENTS OF THE LAND DEVELOPMENT CODE (LDC).



ROOT BARRIER DETAILS

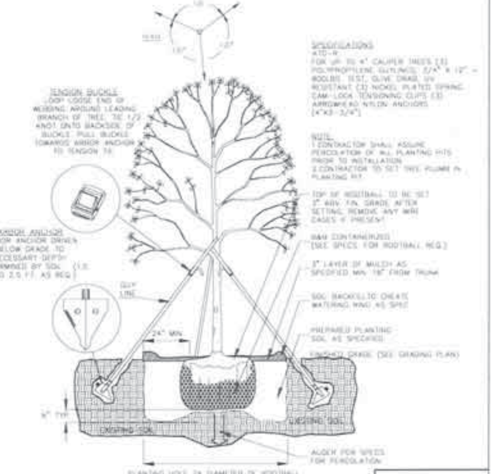


ROOT AERATION DETAILS



NOTE:
BARBED WIRE FENCING IS NOT PERMISSIBLE

TREE PROTECTION BARRICADE



TREE PLANTING & GUY DETAILS

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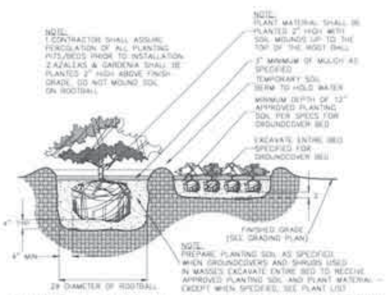
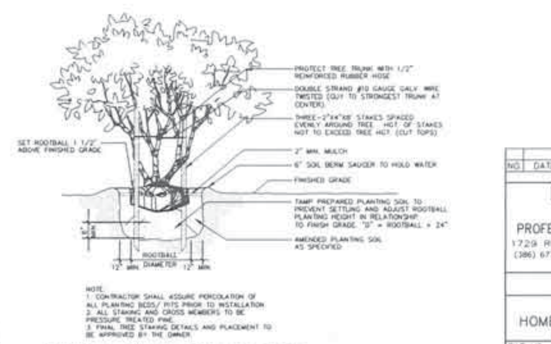
CITY APPROVAL STAMP



SHRUB & GROUND COVER PLANTING DETAIL



TYPICAL MULTI-TRUNK TREE
NTS

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

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CERTIFICATION OF AUTHORIZATION NUMBER: 00003910

LANDSCAPE DETAILS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

FILE NO.	1622LID.DWG	DESIGNER	P. MYNCHENBERG
DATE	7/12/17	DRAFTSMAN	BVB
SCALE	NOT TO SCALE	SHEET	9 OF 18

SEAL

STORMWATER CONSTRUCTION NOTES

1. ALL MATERIALS AND INSTALLATION AND SEDIMENT AND EROSION CONTROL METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY, FDEP, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT DESIGN STANDARDS (LATEST EDITION). THE USE OF BEST MANAGEMENT PRACTICES (BMP'S) IS REQUIRED.
2. BEST MANAGEMENT PRACTICES (BMP'S) FOR EROSION AND SEDIMENT CONTROL SHALL BE PLANNED, DESIGNED AND IMPLEMENTED THROUGHOUT THE SITE DEVELOPMENT ENGINEERING AND CONSTRUCTION PHASES.
3. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS ARE FOUND AT **http://www.codb.us/index.aspx?NID=382.** FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 130, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
4. CONTRACTOR SHALL FOLLOW REQUIRED EROSION AND SEDIMENT CONTROL PRACTICES AND INCLUDE AN EROSION CONTROL PLAN FOR REVIEW AND APPROVAL BY THE CITY PRIOR TO CONSTRUCTION. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO THE CITY'S EROSION AND SEDIMENT CONTROL STANDARD DETAILS ST-2.
5. CONTRACTOR WILL FOLLOW ALL OF THE CITY'S REQUIRED WASTE MANAGEMENT PRACTICES. ALL CONSTRUCTION, RENOVATION, AND DEMOLITION SITES ARE TO BE KEPT CLEAN AND FREE OF REFUSE, DEBRIS, AND LITTER DURING THE CONSTRUCTION, RENOVATION, OR DEMOLITION PROCESS. A CERTIFICATE OF OCCUPANCY FOR A NEWLY CONSTRUCTED OR RENOVATED BUILDING SHALL NOT BE ISSUED UNTIL ALL REFUSE AND LITTER CAUSED BY THE CONSTRUCTION OR REMODELING IS REMOVED FROM THE SITE AS PER THE DAYTONA BEACH CODE OF ORDINANCES CHAPTER 26 SECTION 78-5 AND 78-8.
6. ALL DEVELOPMENT PLANS SHALL BE CONSISTENT WITH THE DAYTONA BEACH LAND DEVELOPMENT CODE ARTICLE 1 PURPOSE, ADMINISTRATION AND ENFORCEMENT, ARTICLE 5 SECTION 2 STORMWATER MANAGEMENT, ARTICLE 4 LAND DEVELOPMENT ORDERS AND PROCEDURES, ARTICLE 5 SUBDIVISION AND SITE PLANS SECTION AND ARTICLE 7 SECTION 4 FLOOD PLAIN MANAGEMENT.
7. PIPED STORMWATER SYSTEMS SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT AND ACCESS WIDTH OF 20 FEET, AND MAY BE INCREASED DEPENDING UPON THE SIZE AND DEPTH OF PIPE.
8. CONCRETE EROSION CONTROL BMP'S MUST BE PROVIDED WHERE SWALES OR CULVERTS INTERCEPT DRAINAGE DITCHES.
9. SOIL EROSION AND SEDIMENT CONTROL BMP MEASURES, SATISFACTORY TO THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, FDEP AND THE CITY, SHALL BE IMPLIMTED DURING CONSTRUCTION.

STORMWATER
CONSTRUCTION NOTES
(PAGE 1 OF 4)
ST-1

STORMWATER CONSTRUCTION NOTES
(CONT'D)

10. IN GENERAL, ALL RETENTION/DETENTION SITES MUST BE CONSTRUCTED AND VEGETATED AS NECESSARY ON ALL PROJECTS PRIOR TO ANY ROAD, PARKING LOT, OR BUILDING CONSTRUCTION COMMENCING OR AS CURRENT PERMIT CONDITIONS DICTATE. SEWER AND WATER MAINS MAY BE INSTALLED PRIOR TO RETENTION/DETENTION SITE CONSTRUCTION IF DEWATERING IS NOT REQUIRED. HOWEVER BMP'S FOR EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED AS NECESSARY.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY AND ALL DEWATERING PERMITS THAT MAY BE REQUIRED (SEE ST-14 NOTE 3).
12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND MAINTAIN A COPY OF THE SJRWMD, NPDES, AND ALL OTHER JURISDICTIONAL PERMITS AT THE CONSTRUCTION SITE, AND ABIDE BY ALL CONDITIONS OF THOSE PERMITS.
13. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF TEMPORARY AND PERMANENT PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORMWATER INFRASTRUCTURE IN ORDER TO EVALUATE POTENTIAL CONFLICTS.
14. THE MAXIMUM PERMISSIBLE SLOPE OF ANY NEW SITE GRADING IS 1:3 (VERTICAL:HORIZONTAL). THIS LIMIT SHALL BE APPLIED TO ALL AREAS EXCEPT STORMWATER CONVEYANCE AND TREATMENT SYSTEMS WHICH HAVE A MAXIMUM SIDE SLOPE OF 1:4 (EXCEPT BELOW THE WATER TABLE WHERE STEEPER SLOPES ARE PERMISSIBLE).
15. ALL SWALES AND DITCHES SHALL HAVE A MAXIMUM PERMITTED FRONT (SIDE) SLOPE NOT STEEPER THAN 1 TO 4. THE MAXIMUM PERMITTED BACK (SIDE) SLOPE, SHALL BE 1:3, PROVIDED THAT A 2' WIDE BERM IS INSTALLED. DESIGN CENTERLINE AND TOP-OF-BANK ELEVATIONS SHALL BE NOTED AT INTERVALS OF 100' AND AT SIGNIFICANT GRADE CHANGES.
16. SWALES THAT ARE NORMALLY DRY AND INTENDED FOR CONVEYANCE OF STORMWATER RUNOFF AND ARE NOT INTENDED FOR RETENTION SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT WIDTH MEASURING 15 FEET. SWALED AREAS INTENDED FOR RETENTION SHALL PROVIDE APPROPRIATE EASEMENT AREAS FOR ACCESS AND MAINTENANCE MEASURED UPLAND FROM THE TOP OF BANK. AT A MINIMUM, THE SAID EASEMENT SHALL MEASURE 10 FEET IN WIDTH FROM THE TOP OF THE SWALE.
17. NORMAL ROADSIDE SWALES ARE PERMITTED TO BE CONSTRUCTED TO A MAXIMUM DEPTH OF 18" BELOW THE OUTSIDE EDGE OF PAVEMENT OR CONCRETE CURB.
18. WHEN CULVERTS ARE INSTALLED TO MAINTAIN THE FLOW OF EXISTING DRAINAGE WAYS WHERE NEWLY PROPOSED ROADS WOULD OTHERWISE SEVER THE DRAINAGE RIGHT-OF-WAY, THEN CULVERTS CROSSING RIGHTS-OF-WAY SHALL EXTEND FROM RIGHT-OF-WAY LINE TO RIGHT-OF-WAY LINE UNDER THE ROADWAY. CULVERTS SHALL BE DESIGNED TO ACCOMODATE THE FLOW FROM THE 100 YEAR - 24 HOUR STORM EVENT WITHOUT FLOODING ADJACENT PROPERTY OR SURCHARGING THE SAID ROADWAY.
19. WET POND DEPTHS SHALL BE EIGHT FEET (8') MINIMUM TO FIFTEEN FEET (15') MAXIMUM, MEASURED FROM THE TOP OF BANK.
20. WHEN A WET POND IS INCORPORATED WITHIN A SUBDIVISION AND IS ABUTTED BY LOTS, SUCH ABUTTING LOT LINES SHALL BE EXTENDED INTO THE LAKE PROPORTIONATELY ENCOMPASSING ALL OF THE LAKE AREA.
21. WET POND INFLOW AND OUTLET STRUCTURES SHALL GENERALLY BE CONSTRUCTED WITH REINFORCED CONCRETE AND SHALL BE SUBJECT TO THE APPROVAL OF THE CITY. SKIMMERS FOR WET PONDS SHALL BE CONSTRUCTED SUCH THAT THE BOTTOM EXTENDS 6" BELOW THE NORMAL WATER LEVEL AND 6" ABOVE THE OVERFLOW. FOR DRY PONDS, THE SKIMMER BOTTOM SHALL BE SET 6" BELOW THE LOWEST OVERFLOW ELEVATION AND 6" ABOVE THE HIGHEST POINT OF OVERFLOW. ALL SKIMMERS SHALL BE CONSTRUCTED OF MINIMUM 1/4" THICK ALUMINUM OR FIBERGLASS ADEQUATELY SUPPORTED TO PREVENT DEFLECTION.

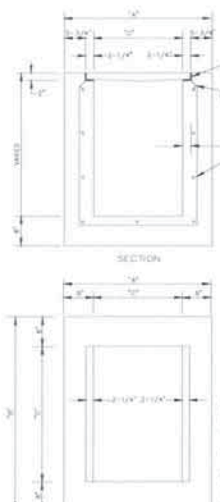
STORMWATER CONSTRUCTION NOTES
(CONT'D)

22. THE CITY MAY REQUEST THAT THE DEVELOPER SUBMIT A REPORT BY A QUALIFIED HYDROLOGIST OR HYDROGEOLOGIST ON THE IMPACT THE WET POND WILL HAVE ON NEIGHBORING WATER TABLE ELEVATIONS BOTH DURING CONSTRUCTION AND AFTER LAKE COMPLETION. THE CITY MAY REQUIRE GROUNDWATER MONITORING DURING THE LAKE EXCAVATION.
23. ADEQUATE MAINTENANCE BERMS, MINIMUM 10' IN WIDTH, SHALL BE PROVIDED AROUND THE ENTIRE PERIMETER OF ALL WET PONDS AND ASSOCIATED OUTFALLS DISCHARGING INTO AND OUT OF LAKES. APPLICABLE CROSS SECTIONS SHALL BE INCLUDED ON ALL FINAL DEVELOPMENT PLANS.
24. DEVELOPMENT PLANS FOR ALL STORMWATER MANAGEMENT SYSTEMS SHALL CONTAIN POP-OFF DATA (OVERFLOW), BOTTOM ELEVATION, NORMAL WATER LEVELS, MEAN ANNUAL SEASONAL HIGH WATER TABLE ELEVATION, TREATMENT VOLUME AND CORRESPONDING ELEVATION, 100 YEAR HIGH WATER LEVELS, AND THE DESIGN TAILWATER ELEVATION (IF APPLICABLE).
25. ALL STORM SEWERS AND CULVERTS LOCATED IN ROADWAY RIGHT-OF-WAYS AND ROADWAY EASEMENTS SHALL BE A MINIMUM OF CLASS III O-RING REINFORCED CONCRETE PIPE. OUTSIDE OF ROADWAY EASEMENTS AND R.O.W., PIPE MAY BE MADE OF ALTERNATE MATERIALS INCLUDING:
    A. SMOOTH INNER WALL HIGH DENSITY POLYETHYLENE (HDPE) IN ACCORDANCE WITH AASHTO M-294, AASHTO MP7, ASTM D3350 AND ASTM D3412 FOR SIZES UP TO 42" IN DIAMETER OR
    B. PVC IN ACCORDANCE WITH THE PROVISION NOTED IN THE "SEWER DETAILS" OF THESE SPECIFICATIONS.
26. ALL STORM SEWER PIPE JOINTS LOCATED IN ROADWAY RIGHT-OF-WAYS AND ROADWAY EASEMENTS SHALL BE ENTIRELY WRAPPED WITH NON-WOVEN FILTER FABRIC WITH A MINIMUM WIDTH OF 24" AND A MINIMUM OF 24" OVERLAP. GASKETS ARE NOT PERMITTED AS AN EQUIVALENT SUBSTITUTE FOR MEETING THIS REQUIREMENT. THIS PRACTICE IS ENCOURAGED ON PRIVATE SITES. ADDITIONALLY, ALL JOINTS SHALL BE RUBBER GASKETED FOR BOTH ROUND AND ELLIPTICAL PIPE.
27. DEPTH OF COVER MEASURED TO THE TOP OF PIPE (INCLUDING THE BELL JOINT) SHALL BE A MINIMUM OF 3 FEET OVER RCP. DEVIATION FROM THIS REQUIREMENT MAY BE ALLOWED BY INCREASING THE PIPE'S STRUCTURAL STRENGTH. IF AN ALTERNATE MATERIAL IS APPROVED, DEPTH OF COVER SHALL MEET MANUFACTURER'S RECOMMENDATION.
28. ALL STORM DRAINAGE PIPES LOCATED IN ROADWAY RIGHT-OF-WAYS AND ROADWAY EASEMENTS SHALL BE A MINIMUM OF FIFTEEN INCH (15") INSIDE DIAMETER OR EQUIVALENT. STORM DRAINAGE PIPES SMALLER THAN 15" ARE PERMITTED ON PRIVATE SITE PLANS PROVIDING THAT MAINTENANCE SHALL BE PERFORMED BY THE OWNER.
29. FOR NON-METALLIC STORMWATER FORCE MAINS A #12 UF INSULATED SINGLE STRAND COPPER WIRE SHALL BE ATTACHED TO ALL PIPES AND TERMINATED AT THE VALVES IN ACCORDANCE WITH RECLAIM WATER VALVE DETAIL RW-4.
30. STORM INLETS, MANHOLES, AND CATCH BASINS SHALL BE FDOT COMPLIANT EITHER POURED IN PLACE OR PRECAST REINFORCED CONCRETE STRUCTURES SHALL BE REQUIRED AT EACH CHANGE OF PIPE SIZE OR CHANGE IN PIPE DIRECTION. ALL STRUCTURES SHALL BE IN COMPLIANCE WITH ASTM C-478 AND SHALL HAVE 8" THICK WALLS. THINNER WALLS MAY BE PERMITTED PROVIDING THAT THE DESIGN IS IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 200 AND NO. 201. IN ADDITION, THIS REQUIREMENT MUST BE REFLECTED ON BOTH THE SHOP DRAWING AND AS-BUILT PLANS. STRUCTURES PLACED IN HIGH TRAFFIC AREAS SHALL BE OF TRAFFIC BEARING CONSTRUCTION IN ACCORDANCE WITH FDOT STANDARDS.
31. STORM INLETS SHALL BE SPACED IN SUCH A MANNER AS TO ACCEPT ONE HUNDRED (100) PERCENT OF THE DESIGN STORM RUNOFF WITHOUT IMPEDING THE FLOW OF TRAFFIC. FOR ROADWAY SECTIONS WITH DESIGN SPEEDS OF 45 MPH AND LESS AND WITHOUT FULL WIDTH SHOULDERS, SPREAD RESULTING FROM A RAINFALL INTENSITY OF FOUR INCHES (4") PER HOUR SHALL NOT EXCEED ONE-HALF OF THE TRAVEL LANE ADJACENT TO THE GUTTER. FOR SITE PLANS, INLET SPACING SHALL BE DESIGNED TO ACCEPT ONE HUNDRED (100) PERCENT OF THE RUNOFF FROM A RAINFALL INTENSITY OF FOUR INCHES (4") PER HOUR WITHOUT RESULTING IN PONDING OF WATER AROUND THE INLET.
32. FOR CONNECTIONS BETWEEN INLETS WITH PIPING 15" IN DIAMETER AND LARGER, THE MAXIMUM DISTANCES BETWEEN INLETS AND / OR CLEAN-OUT JUNCTION BOXES SHALL BE 300 FEET. CULVERTS SHALL BE SLOPED TO MAINTAIN A MINIMUM SELF-CLEANING VELOCITY OF 2.5 FEET PER SECOND USING A MANNING'S "n" OF 0.012. SPACING FOR CLEAN-OUTS AND INLETS FOR SMALLER PIPING SHALL BE REDUCED AND EVALUATED ON A CASE BY CASE BASIS.
33. ALL STORMWATER INLETS SHALL MEET FDOT CRITERIA IN THE FDOT DESIGN STANDARD LATEST EDITION.

EROSION & SEDIMENT CONTROL NOTES

1. ALL CONSTRUCTION ACTIVITIES SHALL INCORPORATE BEST MANAGEMENT PRACTICES (BMP'S) TO CONTROL EROSION, SEDIMENTATION, AND THE POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
2. CONTRACTOR SHALL MINIMIZE DISTURBANCE OF EXISTING VEGETATION (PARTICULARLY AROUND THE PROJECT PERIMETER) AND ADJACENT EXISTING DRAINAGE PATTERNS TO THE MAXIMUM EXTENT PRACTICAL DURING THE CONSTRUCTION PROCESS.
3. SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED ON SITE AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION, AND SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND CORRECTIVE ACTION TAKEN AS NECESSARY.
4. STORMWATER RETENTION, DETENTION, STORAGE AND CONVEYANCE SYSTEMS MUST BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACE WITHIN THE AREA SERVED BY THOSE SYSTEMS. ADEQUATE MEASURES MUST BE TAKEN TO PREVENT SILTATION OF THESE TREATMENT SYSTEMS AND CONTROL STRUCTURES DURING CONSTRUCTION. SILTATION MUST BE REMOVED FROM THE STORMWATER SYSTEM WHEN HALF FULL AND IMMEDIATELY PRIOR TO FINAL GRADING AND GRASSING OF THE PROJECT.
5. CONTRACTOR SHALL SOD ALL SWALES AND STORMWATER FACILITIES IN ACCORDANCE WITH TEMPORARY BMP'S WITHIN 14 DAYS AFTER CONSTRUCTION. THIS IS REQUIRED TO STABILIZE THE SLOPES AND MINIMIZE EROSION.
6. DURING ALL CONSTRUCTION OF THE PERMITTED SYSTEM INCLUDING STABILIZATION AND REVEGETATION OF DISTURBED SURFACES, CONTRACTOR IS RESPONSIBLE FOR THE SELECTION, IMPLEMENTATION, AND OPERATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED TO RETAIN ALL SEDIMENT ONSITE AND PREVENT VIOLATIONS OF THE WATER QUALITY STANDARDS IN ACCORDANCE WITH THE FLORIDA ADMINISTRATIVE CODE AND PROJECT PERMIT REQUIREMENTS.
7. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A PROTECTIVE COVER (VEGETATIVE OR SUITABLE ALTERNATIVE) FOR EROSION AND SEDIMENT CONTROL ON ALL LAND SURFACES EXPOSED OR DISTURBED BY CONSTRUCTION OF THE PERMITTED PROJECT, UNLESS MODIFIED BY ANOTHER CONDITION OF THE PERMIT OR OTHERWISE SPECIFIED ON A DISTRICT APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE PROTECTIVE COVER MUST BE INSTALLED WITHIN FOURTEEN (14) DAYS AFTER FINAL GRADING OF THE AFFECTED LAND SURFACE. A PERMANENT VEGETATIVE COVER MUST BE ESTABLISHED WITHIN 60 DAYS OF IT'S INSTALLATION. THE PERMITTEE'S REQUIREMENT TO MAINTAIN COVER ON OFFSITE AND ONSITE SURFACES SHALL NOT BE COMPLETE UNTIL AFTER THE WATER MANAGEMENT DISTRICT RECEIVES THE PERMITTEE'S STATEMENT OF COMPLIANCE.
8. AT A MINIMUM, SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED PER PLAN. ADDITIONAL BMP MEASURES MUST BE TAKEN TO MINIMIZE IMPACTS OF RECEIVING WATERS SUCH AS THE USE OF APPROVED BARRIERS AT INLETS, ADDITIONAL SILT FENCING, SOIL ANTI-TRACKING DEVICES AND SODDING.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE PROJECT LIMITS IN COMPLIANCE WITH ALL JURISDICTIONAL PERMIT AND CITY REQUIREMENTS.
10. ANY TIME THE CONTRACTOR NEEDS TO SUBMIT A NOTICE OF INTENT TO USE A GENERAL PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES, A COPY OF THE PERMIT SHALL ALSO BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT.
11. THE CONTRACTOR SHALL AS A MINIMUM PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) GUIDELINES.
12. DEWATERING ACTIVITIES SHALL BE APPROVED BY THE UTILITIES DEPARTMENT BEFORE DISCHARGING INTO THE CITY'S MS4 SYSTEM (ST-14 NOTE 3).

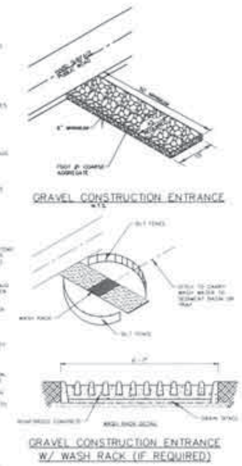
EROSION AND SEDIMENT
CONTROL NOTES
ST-5



INLET TYPE	DIMENSIONS A	B	C	D	E	F
"C"	3'-4"	4'-3"	2'-5"	3'-1"	3'-0"	2'-9"
"E"	4'-4"	5'-10"	3'-0"	4'-8"	4'-4"	3'-4"

NOTES:
1. ALL EXPOSED EDGES AND CORNERS TO BE CHAMFERED 3/4".
2. CAST IRON GRATES TO BE IN ACCORDANCE WITH FLORIDA D.O.T. SPECS.
3. TYPE "C" MODIFIED INLET IS A TYPE "E" TURNED 90° TO RECEIVE R.C.P.'S UP TO 48" DIA. INLETS RECEIVING R.C.P.'S LARGER THAN 48" DIA. SHALL BE IN ACCORDANCE WITH FLORIDA D.O.T. STANDARDS, AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. INLET WALLS AND FOOTINGS MAY BE EITHER POURED-IN-PLACE 2500 LB CONCRETE OR PRECAST CLASS "A" 3000 LB CONCRETE OR STANDARD MANHOLE BRICK (NO BLOCK) WITH 1/2" PLASTER (NO LIME) W/ 8" PRECAST CAP.
5. GRATES FOR TYPE "C" AND "E" MOD. ARE TO BE CAST IN TWO SECTIONS.
6. STEEL REINFORCING SHALL BE DESIGNED BY A FLA. REG. P.E., AND BE DESIGNED FOR EACH SPECIFIC STRUCTURE.
7. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

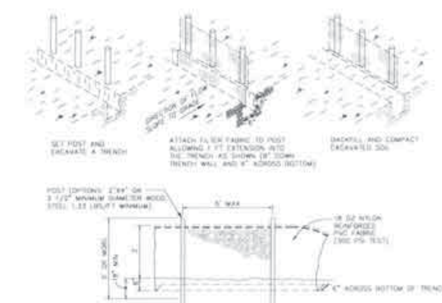
FDOT TYPE "C" & "E" INLET
NTS



GRAVEL CONSTRUCTION ENTRANCE
NTS

GRAVEL CONSTRUCTION ENTRANCE
W/ WASH RACK (IF REQUIRED)

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
NTS



NTS

NOTES:
1. MATERIALS, CONSTRUCTION METHODS AND MAINTENANCE SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND DESIGN STANDARDS CURRENT EDITION.
2. CONTRACTOR SHALL PROVIDE SILT FENCES, TURBIDITY BARRIERS OR APPROVED BARRIERS AT ALL STORMWATER DISCHARGE POINTS FOR EROSION CONTROL AND SEDIMENT CONTROL DURING CONSTRUCTION. DEPENDING UPON FLOW VELOCITIES AND VOLUME, REDUNDANT (MULTIPLE) PARALLEL FENCES MAY BE NEEDED.
3. CONTRACTOR SHALL ROUGH GRADE STORMWATER SWALES AND RETENTION AREAS VEGETATING IN COMPLIANCE WITH BEST MANAGEMENT PRACTICES PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS.
4. CONTRACTOR SHALL MEET ALL PERMIT CONDITIONS AS ESTABLISHED BY THE CITY OF DAYTONA BEACH AND ALL OTHER APPLICABLE AGENCIES, INCLUDING BUT NOT LIMITED TO COUNTY, FDOT, STATE, FEDERAL, AND THE SJRWMD.

STAKED SILT FENCE DETAIL

STAKED SILT
FENCE
DETAIL
ST-9

DEV. #2017
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

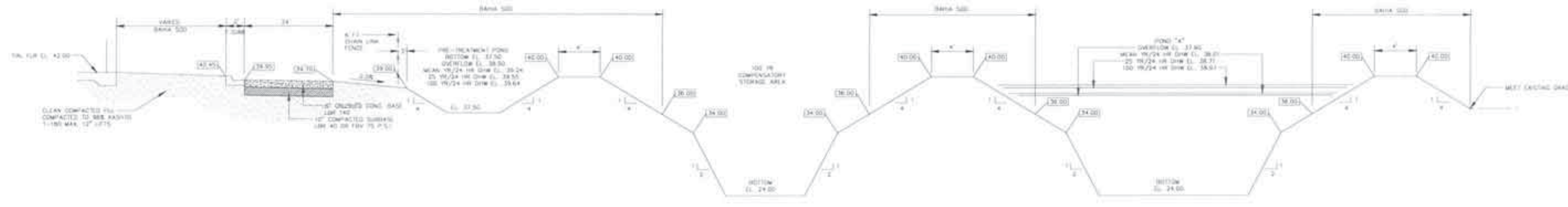
PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386)677-6891 FAX(386)677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

PAVING & DRAINAGE DETAILS

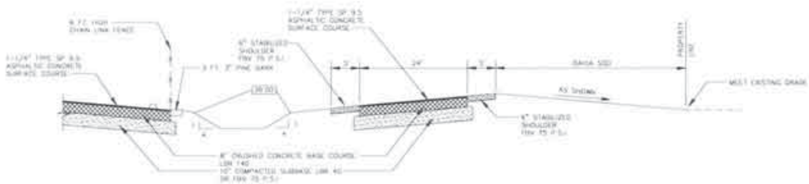
FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

FILE NO. 1622PD.DWG	DESIGNER: P.MYNCHENBERG
DATE: 7/12/17	CADD TECH: BVB
SCALE: NONE	SHEET 10 OF 18

SEAL



SECTION "A-A"



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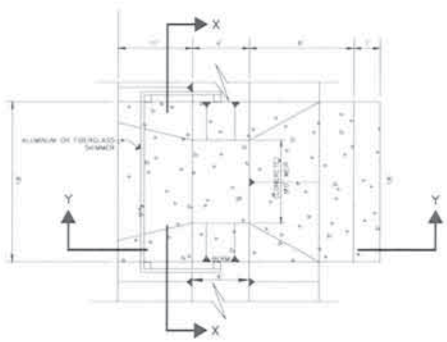
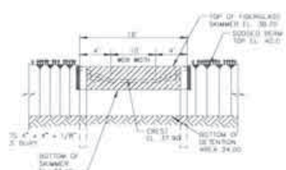
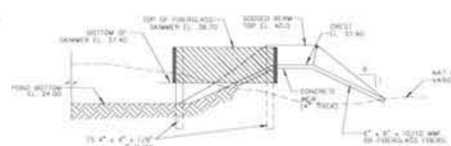


PLAN VIEW OF
WEIR/SKIMMER



SECTION "X-X"



SECTION "Y-Y"

POND "A"
CONCRETE WEIR DETAILS

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PAVING & DRAINAGE DETAILS

FIRST STEP
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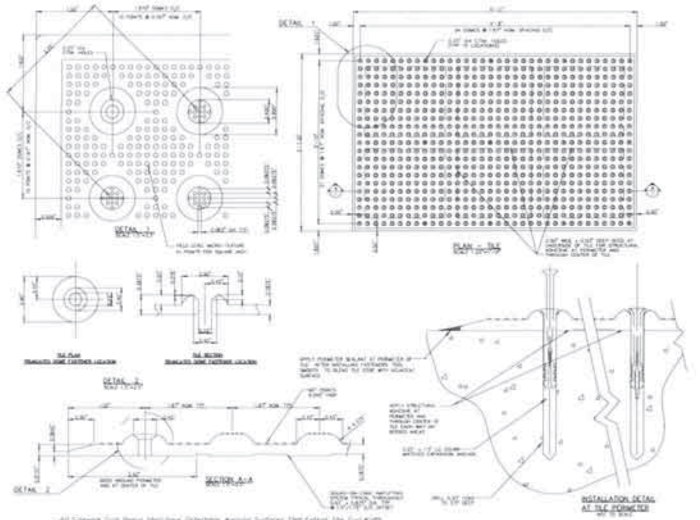
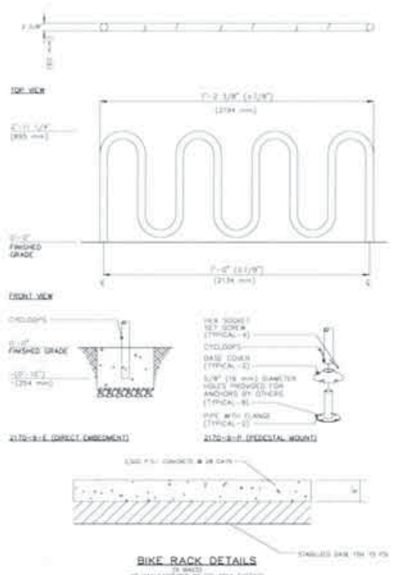
FILE NO. 1622PD.DWG	DESIGNER: P.MYNCHENBERG	SEAL
DATE: 7/12/17	CADD TECH: BVB	
SCALE: NONE	SHEET 11 OF 18	



All Sidewalk Curb Ramps Shall Have Detectable Warning Surfaces That Extend The Full Width Of The Ramp And In The Direction Of Travel 24 Inches (610 mm) From The Back Of Curb.

NOTE: On Ramps That Are Perpendicular With The Curb Line, The Dome Pattern Shall Be In-Line With The Direction Of Travel. On Ramps Intersecting Curbs On A Radius, The Dome Pattern Shall Be In-Line With The Direction Of Travel To The Extent Practical.

ADA DETECTABLE WARNING DETAIL

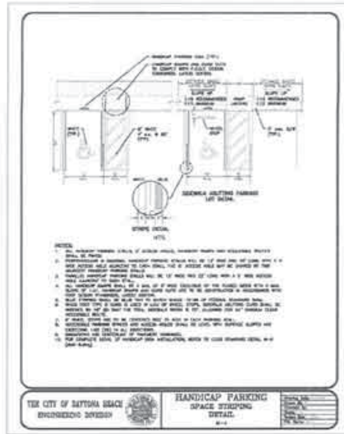


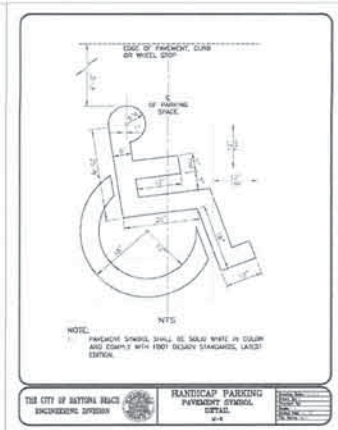
BIKE RACK DETAILS

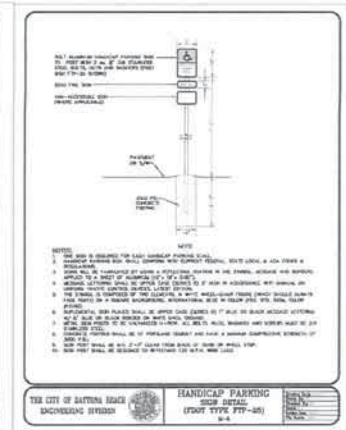
NOTES:

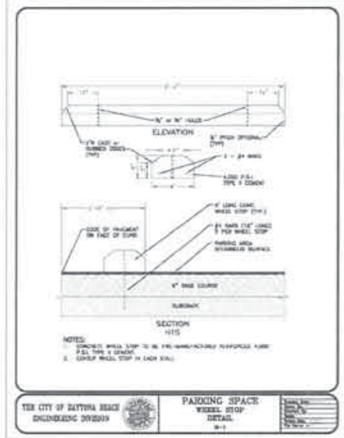
1. ADDRESS NUMBERS SHALL BE ARABIC NUMERALS. NUMBERS SHALL BE IN A COLOR CONTRASTING WITH THE STRUCTURE OR BACKGROUND SURFACE, AND NOT BE LESS THAN SIX (6) INCHES IN HEIGHT.
2. THE ADDRESS NUMBER SHALL BE AFFIXED HORIZONTALLY IN A CONSPICUOUS PLACE ON THE PRINCIPAL BUILDING SO THAT THE NUMBER IS CLEARLY LEGIBLE FROM THE ROADWAY ON WHICH IT IS ADDRESSED.
3. IF THE DISTANCE FROM THE ROADWAY ON WHICH A PRINCIPAL BUILDING IS ADDRESSED, OR THE CONFIGURATION OF THE PRINCIPAL BUILDING HAS AN OBSTRUCTION SUCH AS FENCES, TREES OR WALLS WHICH WOULD LIMIT VISIBILITY OF THE PRINCIPAL BUILDING FROM THE STREET OR ROADWAY, THE ADDRESS NUMBER SHALL BE POSTED HORIZONTALLY AT LEAST FOUR (4) FEET ABOVE GROUND LEVEL IN A CONSPICUOUS PLACE AT THE DRIVEWAY OR PROPERTY ENTRANCE IN A CONSPICUOUS PLACE LOCATED TWO (2) FEET OFF THE SIDE OF THE DRIVEWAY OR PROPERTY ENTRANCE.
4. A SEPARATE SIGN PERMIT IS REQUIRED.

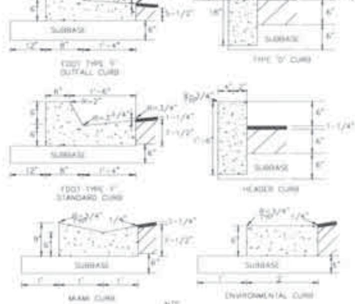
MONUMENT SIGN DETAIL











NOTES:

1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3000 P.S.I. CONCRETE.
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500'. CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM L.B.R. 40.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.
6. IN NO INSTANCE SHALL EXTRUDED CURBS (DEFINED AS HEADER-TYPE CURBS INSTALLED DIRECTLY ON TOP OF PAVEMENT) BE PERMITTED.
7. ALL ASPHALT AND/OR PAVER DRIVEWAY APRONS LOCATED IN PUBLIC RIGHTS-OF-WAY, SHALL INCLUDE CURBING.

ROADWAY CURB CONSTRUCTION DETAIL
DB M-7 DATED 2-23-07

DEV #2016
CITY APPROVAL STAMP

NO	DATE	DESCRIPTION	BY
		REVISIONS	

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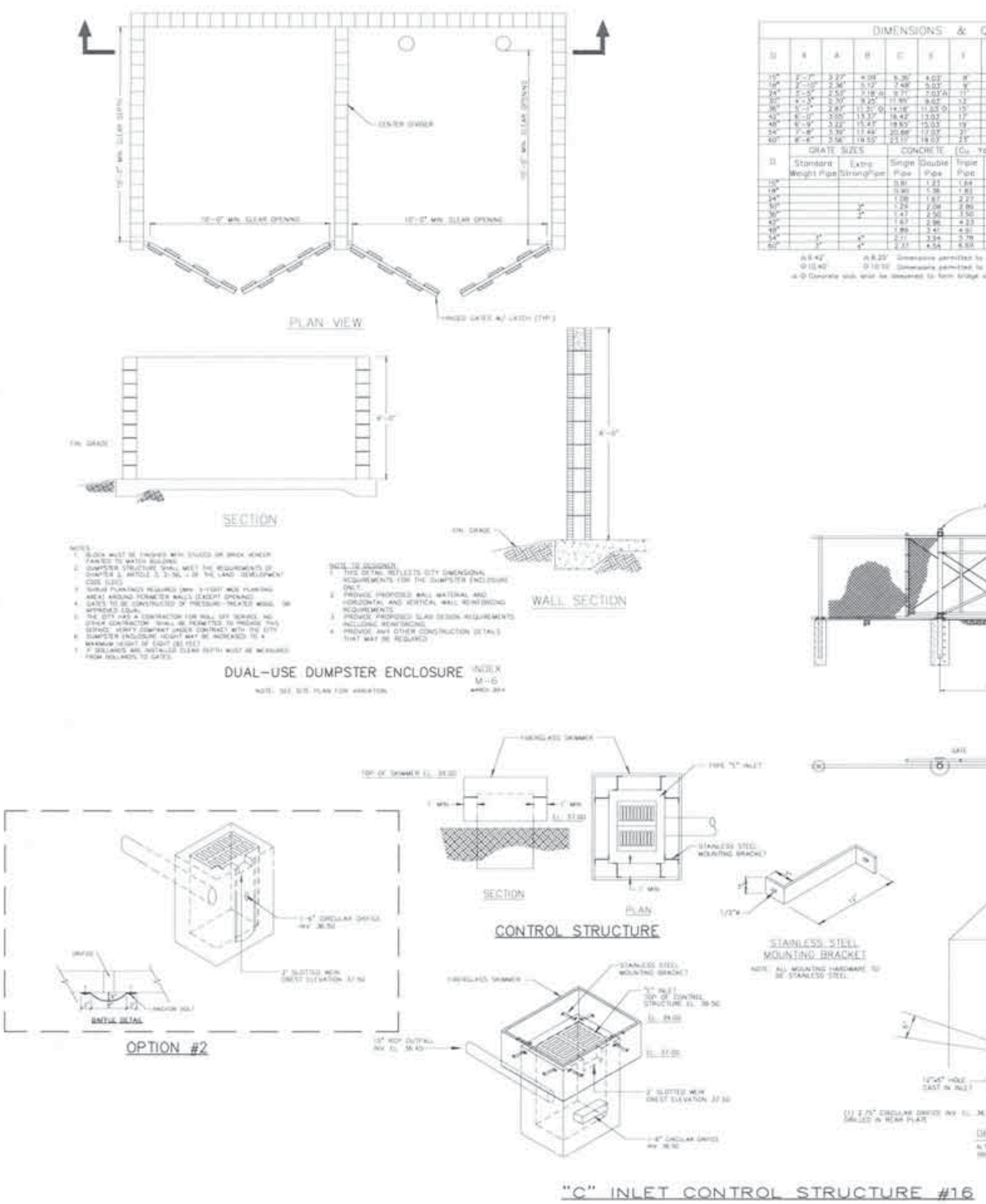
PAVING & DRAINAGE DETAILS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

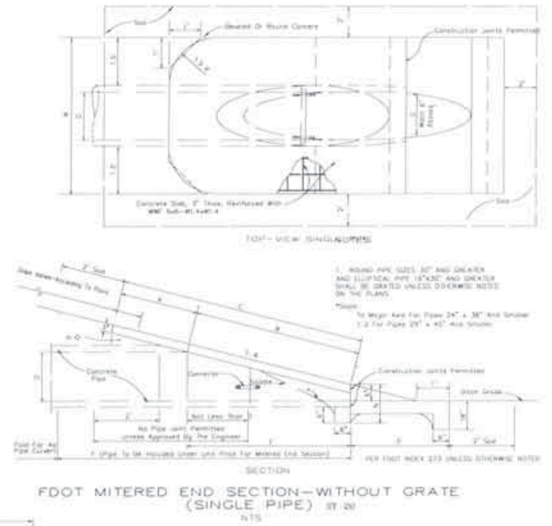
FILE NO. 1622PD.DWG	DESIGNER: P.MYNCHENBERG	SEAL
DATE: 7/12/17	CADD TECH: BVB	
SCALE: NONE	SHEET 12 OF 18	



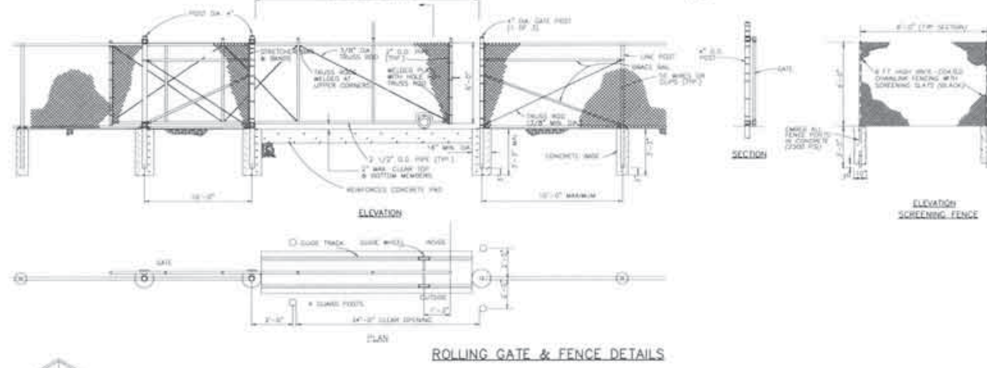
DIMENSIONS & QUANTITIES												
D	X	A	B	C	E	F	G	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad Pipe	N
15"	2'-7"	3.27'	4.08'	6.36'	4.03'	8"	1.22'	4.61'	7.21'	9.79'	12.37'	1.19'
18"	2'-10"	2.96'	5.12'	7.48'	5.03'	9"	1.41'	4.92'	7.75'	10.58'	13.42'	1.21'
24"	3'-5"	2.53'	7.18'A	9.71'	7.03'A	11"	1.73'	5.56'	8.92'	12.27'	15.75'	1.25'
30"	4'-3"	2.70'	9.25'	11.95'	9.02'	13"	2.00'	6.08'	10.33'	14.58'	18.83'	1.29'
36"	5'-1"	2.87'	11.21'Ø	14.18'	11.03'Ø	15"	2.24'	6.67'	11.75'	16.83'	21.92'	1.33'
42"	6'-0"	3.05'	13.37'	16.42'	13.02'	17"	2.45'	7.25'	13.25'	19.25'	25.25'	1.38'
48"	6'-9"	3.22'	15.43'	18.65'	15.03'	19"	2.65'	7.83'	14.58'	21.33'	28.08'	1.42'
54"	7'-8"	3.39'	17.44'	20.88'	17.03'	21"	2.83'	8.42'	16.08'	23.75'	31.42'	1.46'
60"	8'-6"	3.56'	19.55'	23.11'	19.03'	23"	3.00'	9.00'	17.50'	26.00'	34.50'	1.50'

D	GRATE SIZES Standard Weight Pipe	GRATE SIZES Extra Strong Pipe	CONCRETE (Cu. Yds.) Single Pipe	Double Pipe	Triple Pipe	Quad Pipe	SODDING (Sq. Yds.) Single Pipe	Double Pipe	Triple Pipe	Quad Pipe
15"			0.81	1.23	1.64	2.06	8	10	11	12
18"			0.90	1.36	1.83	2.30	9	10	12	13
24"			1.08	1.67	2.27	2.91	10	12	13	15
30"		2"	1.29	2.08	2.86	3.69	12	14	15	17
36"		2"	1.47	2.50	3.50	4.46	13	15	17	20
42"			1.67	2.96	4.23	5.51	14	17	19	22
48"			1.89	3.41	4.91	6.42	15	18	21	24
54"	2"	4"	2.11	3.94	5.78	7.59	17	20	23	27
60"	2"	4"	2.37	4.54	6.69	8.85	18	22	25	29

A 8.42' A 8.20' Dimensions permitted to allow use of 8' standard pipe lengths.
Ø 10.40' Ø 10.10' Dimensions permitted to allow use of 12' standard pipe lengths.
A-D Concrete slab shall be deepened to form bridge across crown of pipe. See section below.



FDOT MITERED END SECTION—WITHOUT GRATE (SINGLE PIPE) ST 20
NTS



ROLLING GATE & FENCE DETAILS

DEV. #2016
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY
REVISIONS			

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
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CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

PAVING & DRAINAGE DETAILS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH * FLORIDA

FILE NO. 1622PD.DWG	DESIGNER: P.MYNCHENBERG	SEAL
DATE: 7/12/17	CADD TECH: BVB	
SCALE: NONE	SHEET 13 OF 18	

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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 3 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO BEGINNING ANY POTABLE WATER SYSTEM CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7, SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, ON IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY OR ANY ACTIVITY WHICH CHANGES THE NATURAL AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A FEE AGREED TO BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT http://www.codelathrow.com/?id=262
3. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 MASON STREET, SUITE 100, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
4. ALL WORK PERFORMED UPON POTABLE WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY CONTRACTOR OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
5. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE DEPARTMENT OF HEALTH, AND THAT AS-BUILTS DRAWINGS (MEETING THE CITY'S AS-BUILT DRAWING REQUIREMENTS) ARE PROVIDED TO THE CITY PRIOR TO ANY USE OF THIS SYSTEM.
6. WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED TO COMPLY WITH THE CITY'S FIRE (WATER) FLOW CODE.
7. ALL WATER SERVICE ENDINGS SHALL BE MARKED WITH A 2" X 4" LUMBER (PRESSURE TREATED) EXTENDING 4 FEET ABOVE GRADE, INFRONT OF THE METER BOX WITH 2" OF ENDSTRACE COILED AND CAPPED WITH AN ELISER HYDRIGIENT CAP INSIDE OF THE METER BOX.
8. ALL WATER SERVICES SHALL BE MARKED WITH AN "S" SAW CUT INTO THE CURB.
9. ALL WATER VALVES SHALL BE MARKED WITH AN "A" SAW CUT INTO THE CURB.
10. ALL TAPPING OF MAINS SHALL BE PERFORMED WITH A UTILITY REPRESENTATIVE PRESENT. SCHEDULING OF THESE CONNECTIONS SHALL BE REQUIRE A MINIMUM OF 3 (THREE) BUSINESS DAYS FOR NOTIFICATION AND SHALL BE COORDINATED WITH THE WATER DISTRIBUTION DIVISION (386) 671-8913.
11. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION STATIONING & OFFSETS FROM THE CENTER LINE OF CONSTRUCTION AND RIGHT-OF-WAY LINES OR PROPOSED LOCATIONS OF ALL WATER MAINS.
12. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER CLEARANCE A MINIMUM OF 6 INCHES BELOW MAIN BEING LAID.
13. ALL WATER MAINS SHALL BE LAID ON A FIRM UNYIELDING FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, DEBRIS, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
14. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95% IN PAVED AREAS AND 90% IN UNPAVED AREAS IN ACCORDANCE WITH AASHTO T-180 MODIFIED PROCTOR TEST.
15. ON PROJECTS THAT ARE NOT INITIATED BY THE CITY IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 12 INCHES ABOVE THE PIPE AND AT 12 INCH VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.

WATER CONSTRUCTION
& DESIGN STANDARDS
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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS
(CONT'D)

15. WHERE POTABLE WATER AND SANITARY SEWER MAINS CROSS WITH LESS THAN TWELVE (12) INCHES OF VERTICAL CLEARANCE OR WHERE THE SEWER MAIN IS ABOVE THE WATER MAIN, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE, OR UPGRADED TO C-900 PVC PIPE FOR A MINIMUM LENGTH OF TWENTY (20) FEET, CENTERED ON THE POINT OF CROSSING. A MINIMUM HORIZONTAL SEPARATION OF SIX (6) FEET (SIDE TO SIDE) BETWEEN POTABLE WATER MAINS AND SEWER MAINS SHALL BE MAINTAINED WHEN AT ALL POSSIBLE. WHEN THE SIX (6) FOOT HORIZONTAL SEPARATION CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF AT LEAST 18" ABOVE THE SEWAGE MAIN. ALTERNATIVELY, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE OR ENCLOSED IN A WATER TIGHT CARRIER PIPE, OR UPGRADED TO PRESSURE RATED PVC PIPE (MEETING THE AWWA C-900 OR C-905 SPECIFICATION) AND PRESSURE TESTED. (SEE PIPE SEPARATION DETAIL (W-3) AND UTILITY PIPE ENCASEMENT DETAIL (W-8)).
16. WATER MAINS ARE TO BE CONSTRUCTED A MINIMUM OF FOUR FEET MEASURED FROM THE OUTSIDE WALL OF THE WATER MAIN, BEHIND THE BACK OF CURB OR OUTSIDE OF THE EDGE OF ROADWAY PAVEMENT, WHICHEVER IS GREATER.
17. A THREE (3) INCH WIDE METALLICS LOCATOR TAPE SHALL BE USED FOR ALL PRESSURIZED MAINS INSTALLED. THE LOCATOR TAPE SHALL BE NON-CORROSIBLE CONSISTING OF POLYETHYLEN FILM WITH METALLIC FILM AND SHALL BE CONTINUOUSLY MARKED TO IDENTIFY THE NOTIFIENDED PIPELINE. THE TAPE SHALL BE INSTALLED EIGHTEEN INCHES DIRECTLY ABOVE THE PIPE.
18. ALL NON-METALLIC WATERLINES SHALL HAVE #12 SINGLE STRAND UF RATED INSULATED COPPER WIRE ATTACHED. THE ENDS NEED TO BE SEALED WITH LIQUID TAPE.
19. SINGLE RESIDENTIAL WATER SERVICES SHALL BE A COPPER 1" MINIMUM, OR ENDOT, ENDOTRACE POLY-TUBE (MEETS THE SPECIFICATIONS OF NSF-14, AND AWWA C901).
20. ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE, AND SHALL HAVE A MINIMUM COVER OF 36 INCHES.
21. WATER MAINS SHALL BE DUCTILE IRON PIPE (D.I.P.), CLASS 350, CEMENT LINED UNLESS OTHERWISE APPROVED BY THE CITY. ALL NON DUCTILE IRON PIPE HORIZONTAL DIRECTIONAL DRILL WATER MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
22. ALL POTABLE WATER MAINS SHALL USE A THRUST RESTRAINT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES.
23. MECHANICAL (MJ) CLASS RESTRAINED JOINTS, SHORT GASKETS, OR STAR GRIPS SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF SKIRT ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES.
24. SHIPPER RING GASKETS SHALL BE USED AS APPROPRIATE FOR RESTRAINING PRESSURE PIPE TO FITTINGS, ETC.
25. WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 750 FEET SPACING OF VALVES ON PRIMARY TRANSMISSION MAINS WILL BE DETERMINED BY THE CITY.
26. AT ALL WATER MAIN TEES AND VALVES, SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
27. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
    A. RESILIENT SEAT GATE VALVES (AWWA C-509)
    B. TAPPING VALVES WITH MECHANICAL TAPPING SLEEVE.
28. ALL WATER VALVES, INCLUDING CONCRETE COLLAR (WITH DIBBS CAP), SHALL BE ADJUSTED TO FINISHED GRADE AND THE VALVE BOX LID, PRIMED PAINTED BLUE TO MAKE THEM PLAINLY VISIBLE.
29. UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS, WATER VALVES SHALL BE COMPLETELY OPENED BY PUBLIC UTILITIES PERSONNEL. AT NO TIME SHALL CONTRACTOR OPERATE ANY EXISTING VALVES WITHOUT A CITY INSPECTOR PRESENT.
30. ALL VALVES 2" AND SMALLER SHALL BE CURB STOPS. VALVES LARGER THAN 2" SHALL BE GATE VALVES.

WATER CONSTRUCTION
& DESIGN STANDARDS
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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS
(CONT'D)

31. TYPICALLY, A MINIMUM OF ONE FIRE HYDRANT SHALL BE LOCATED AT EVERY INTERSECTION. OTHER FIRE HYDRANTS SHALL BE LOCATED SO AS TO PROVIDE A MAXIMUM 500 FOOT RADIUS OF COVERAGE. ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL. THE PRIMARY HYDRANT PORT IS TO FACE THE STREET.
32. IN AREAS WHERE RECLAIMED WATER IS NOT AVAILABLE, THE CONTRACTOR SHALL BE REQUIRED TO TRANSVEER THE WATER FROM THE POTABLE WATER LINES WITH NECESSARY BACKFLOW PREVENTION DEVICES TO THE NON-POTABLE WATER LINES FOR UTILIZATION IN THEIR PRESSURE TEST.
33. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL POTABLE MAINS 8" OR GREATER IN DIAMETER. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR.
34. WITH RESPECT TO FLUSHING, PIGGING, TESTING, AND TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
35. THE CITY RESERVES THE RIGHT TO PERFORM THE SAMPLING AND ANALYSIS FOR BACTERIOLOGICAL CLEARANCE OF THE WATER MAIN. ANY RETESTING WILL BE AT THE CONTRACTOR'S EXPENSE.
36. POTABLE WATER SYSTEM EXTENSIONS MAY NOT BE USED PRIOR TO FINAL TESTING UNTIL CLEARANCE IS ACCEPTED BY THE CITY OF DAYTONA BEACH AND THE VOLUSIA COUNTY HEALTH DEPARTMENT.
37. A BACK FLOW PREVENTER (BFP) SHALL BE PLACED ON ALL POTABLE AND FIRELINES SERVING COMMERCIAL PROPERTIES AND RESIDENTIAL WHERE ALTERNATIVE WATER IS AVAILABLE. THE TYPE OF BACKFLOW PREVENTERS REQUIRED ARE AS FOLLOWS:
    POTABLE WATER SERVICE: REDUCED PRESSURE ZONE (RP).
    FIRELINE SERVICING A FIRE SPRINKLER SYSTEM AND/OR PRIVATE FIRE HYDRANT: DOUBLE CHECK VALVE SYSTEM.
    FIRELINE: DOUBLE CHECK VALVE SYSTEM.
    IN CASES WHERE A WATER LINE SERVES BOTH DOMESTIC AND FIRE SERVICES, A REDUCED PRESSURE ZONE (RP) SHALL BE REQUIRED.
38. ALL JACK & BORES REQUIRED WITH COMMERCIAL DEVELOPMENTS SHALL BE AT THE SOLE COST OF THE OWNER / DEVELOPER.
39. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-97 STANDARDS. ON UPGRADES FOR BURST PROTECTION MAY BE REQUIRED WHEN USING THE C-900-07 STANDARDS.
40. CHLORINATED WATER MUST BE DE-CHLORINATED PRIOR TO DISCHARGE INTO ANY JURISDICTIONAL WETLAND OR WATER BODY AS PER AWWA STANDARD, ANSI/AWWA C655-09.

WATER CONSTRUCTION
& DESIGN STANDARDS
(PAGE 3 OF 4)
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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS
TESTING REQUIREMENTS

1. ON ALL PROJECTS (OTHER THAN THOSE INITIATED BY THE CITY) THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE, TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. HOWEVER, ON ALL CITY PROJECTS THE TESTING WILL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN ON ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. INDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL POTABLE WATER MAINS SHALL BE FLUSHED, DISINFECTED, PRESSURE TESTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE WHEN APPROPRIATE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR AND SHALL COORDINATE WITH CITY PERSONNEL AT THE WATER TREATMENT PLANT AT LEAST 3 (THREE) BUSINESS DAYS PRIOR TO BEGINNING FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING. NO HOSE OR FIRE HYDRANT SHALL BE USED IN THE COLLECTION OF BACTERIOLOGICAL SAMPLES. THE SAMPLING TAP MUST BE DESIGNATED AND CLEAN, AND DISINFECTED AND FLUSHED PRIOR TO SAMPLING. SAMPLING TAP SHALL BE SMOOTH, UNTHREADED 1/2" HOSE BIB. DISINFECTION & SAMPLING SHALL BE SCHEDULED AT THE CITY'S CONVENIENCE.
3. PRESSURE TEST FOR TAPPING SADDLES AND VALVES, (MINIMUM OF 30 MINUTES AT 150 PSI OR 30 MINUTES AT MANUFACTURERS LARGER TESTING PRESSURE).
4. WATERMAINS SHALL BE PRESSURE TESTED TO 150 PSI FOR 4 HOURS. TESTING SHALL BE IN ACCORDANCE WITH AWWA C-600 AND AWWA C-605 AS APPLICABLE, WITH ALLOWABLE LEAKAGE TO BE 6 GALLONS PER 6" DIA. OF PIPE, PER K OF MAIN TO BE TESTED.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * (GPH)

AVERAGE PRESSURE TEST	NOMINAL PIPE DIAMETER - INCHES																AVERAGE TEST PRESSURE
(PSI)	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54	(PSI)
400	0.46	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82	4.78	5.73	6.69	7.64	8.60	9.56	10.19	400
450	0.43	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.50	5.41	6.31	7.21	8.11	9.01	9.61	450
500	0.40	0.56	0.84	1.12	1.40	1.68	1.97	2.25	2.53	2.81	3.37	4.21	5.06	5.90	6.74	7.58	8.43	8.99	500
550	0.38	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.90	4.68	5.46	6.24	7.02	7.80	8.32	550
600	0.35	0.48	0.73	1.00	1.24	1.45	1.74	1.99	2.24	2.49	2.99	3.73	4.48	5.23	5.98	6.72	7.47	7.97	600
650	0.33	0.47	0.70	0.93	1.17	1.40	1.63	1.87	2.10	2.33	2.80	3.50	4.20	4.90	5.60	6.30	7.00	7.47	650
700	0.31	0.43	0.65	0.87	1.08	1.30	1.52	1.73	1.95	2.17	2.60	3.25	3.90	4.55	5.20	5.85	6.50	6.94	700
750	0.29	0.40	0.61	0.81	1.01	1.21	1.42	1.62	1.82	2.02	2.42	3.03	3.63	4.23	4.84	5.44	6.05	6.45	750
800	0.27	0.38	0.57	0.76	0.95	1.14	1.33	1.52	1.71	1.90	2.28	2.85	3.41	3.98	4.55	5.12	5.69	6.07	800
850	0.26	0.36	0.54	0.72	0.90	1.08	1.26	1.44	1.62	1.80	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.75	850
900	0.24	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	2.04	2.55	3.06	3.57	4.08	4.59	5.10	5.44	900
950	0.23	0.32	0.48	0.64	0.80	0.96	1.12	1.28	1.44	1.60	1.92	2.40	2.88	3.36	3.84	4.32	4.80	5.12	950
1000	0.22	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.25	2.70	3.15	3.60	4.05	4.50	4.80	1000

* IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.

WHERE:
L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

$$L = \frac{SD\sqrt{P}}{133,200}$$

WATER CONSTRUCTION
& DESIGN STANDARDS
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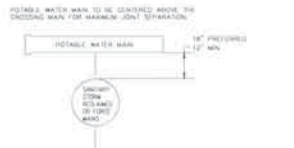


CROSS SECTIONAL VIEW

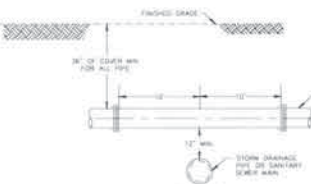
PLAN VIEW

NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE TEN FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST TWELVE INCHES AND PREFERABLY EIGHTEEN INCHES ABOVE OR AT LEAST TWELVE INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE POTABLE WATER MAIN ABOVE THE OTHER PIPELINE. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE AND CONDUIT. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

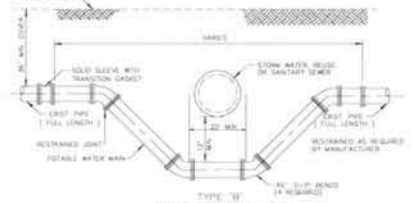
AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, 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 III OF CHAPTER 62-610, F.A.C.

PIPE SEPARATION DETAIL
NTS

PIPE SEPARATION
DETAIL
W-7



TYPE "A"
CROSS SECTIONAL VIEW

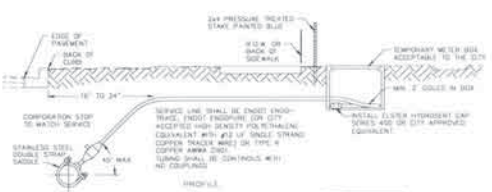


TYPE "B"
CROSS SECTIONAL VIEW

NOTES:
1. TYPE "A" CROSSING SHALL BE THE PREFERRED CONFIGURATION. TYPE "B" MAY BE USED ONLY UPON SPECIFIC APPROVAL.
2. CONCRETE ENCASEMENT OF A SANITARY SEWER MAIN IS AN ALTERNATIVE METHOD OF ADDRESSING A CONFLICT WHEN 12" VERTICAL SEPARATION DISTANCE CANNOT BE MAINTAINED. IN SUCH INSTANCES, THE MINIMUM PIPE VERTICAL SEPARATION SHALL BE 9". (NOTE THAT THIS DOES NOT APPLY TO SERVICE LATERALS. SEE STANDARD DETAILS S-3A AND S-3B).
3. LOWERING OF EXISTING WATER MAIN & FORCE MAIN BY DEFLECTION METHOD MAY BE ACCEPTABLE IF EXISTING FIELD CONDITIONS PERMIT AND APPROVAL IS RECEIVED FROM CODB.
4. LENGTH OF SECTION BASED ON MINIMUM LENGTH AS DETERMINED BY DIPRA RESTRAINED JOINT MANUAL.
5. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.).

TYPICAL PIPE CROSSING DETAIL
NTS

TYPICAL PIPE
CROSSING
DETAIL
W-8



NOTES:
1. METER AND METER BOX SHALL BE FURNISHED BY CITY FORCES.
2. METER SHALL BE INSTALLED WITHIN SIDEWALK OR R.O.W. AS SHOWN.
3. BACKFLOW PREVENTION DEVICE (DOUBLE CHECK VALVE ASSEMBLY) WILL BE REQUIRED ON RESIDENTIAL SERVICES WHERE AN ALTERNATIVE (LOW HAZARD) WATER SUPPLY EXISTS. LOW HAZARD SUPPLY SOURCES INCLUDE REUSE, A WELL, AND STORMWATER FOR IRRIGATION.
4. IRRIGATION METERS REQUIRE AN APPROVED BACKFLOW PREVENTER.
5. ACCEPTABLE MANUFACTURERS: SEE S3001 APPROVED PRODUCT LIST.
6. SERVICE SADDLES SHALL BE STAINLESS STEEL STRAPS (POLY COATED ACCEPTABLE MANUFACTURERS) INCLUDE: SMITH BLAIR (ROCKWELL), JCM, FORD OR APPROVED EQUAL.
7. ALL METER LOCATIONS ON COMMERCIAL SITES SHALL BE LOCATED AS SHOWN ON THE CITY APPROVED SITE PLAN AND FIELD VERIFIED HORIZONTALLY & VERTICALLY BY THE OWNER OR OWNER'S REPRESENTATIVE.

TYPICAL WATER SERVICE
LATERAL DETAIL
NTS

WATER SERVICE
CONNECTION
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NOTE:
PROVIDE RESTRAINED JOINTS ON ALL PIPE AND FITTINGS AS REQUIRED.

SEP 2017
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

PARKER MYNCHENBERG & ASSOCIATES, INC.
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(386)677-6891 FAX(386)677-2174 E-MAIL:info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

WATER STANDARD DETAILS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH * FLORIDA

FILE NO. 1622WD_REV.dwg	DESIGNER: P.MYNCHENBERG
DATE: 7/12/17	CADD TECH: RWB
SCALE: NONE	SHEET 14 OF 16

SEAL

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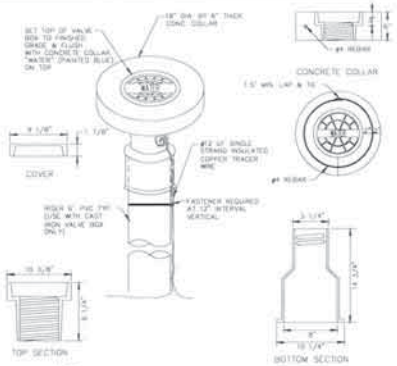
LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	Water Main / 3 ft. minimum	Water Main / 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred.	Alternate 3 ft. minimum / Water Main
Vacuum Sanitary Sewer	Water Main / 10 ft. preferred / 3 ft. minimum	Water Main / 12 inches is preferred, 6 inches minimum	Alternate 9 ft. minimum / Water Main
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	Water Main / 10 ft. preferred / 6 ft. minimum (3)	Water Main / 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred.	Alternate 3 ft. minimum / Water Main
On-Site Sewage Treatment & Disposal System	10 ft. minimum	--	--

(1) Water mains should cross above other pipes. Where water mains must be below other pipes, the minimum separation is 12 inches.
(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
(3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

Separation: Clear horizontal is provided for pipes not touching water. Please refer to F.A.C. Rule 62-555.314 for additional, complete and current information.

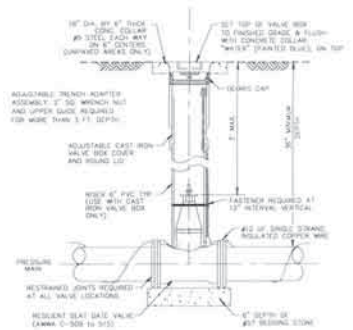
WATER MAIN
SEPARATION CHART
W-9



NOTE
1. WATER MAIN VALVE BOX AND COVER SHALL BE ADJUSTABLE SCREW TYPE.
2. TRACER WIRE TO BE INSTALLED ON ALL NON-METALLIC MAINS.

WATER MAIN
VALVE BOX
N.T.S.

MAIN VALVE BOX
DETAIL
W-17



POTABLE WATER COVER

NOTES:
1. NOD OR BOLT TO MORE APPLICABLE
2. SEE CODE'S APPROVED PRODUCT LIST FOR ACCEPTABLE MANUFACTURERS.
3. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.)

WATER VALVE & VALVE BOX DETAILS
N.T.S.

WATER VALVE AND
VALVE BOX
DETAIL
W-16

SCHEDULE OF LENGTHS OF RESTRAINED DIP (FT.)

FITTING	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEE OR DEAD END
PIPE SIZE (IN.)					
4"	21 (28)	10 (18)	10 (18)	10 (18)	37 (55)
6"	30 (36)	10 (18)	10 (18)	10 (18)	52 (78)
8"	38 (45)	10 (18)	10 (18)	10 (18)	67 (100)
10"	45 (54)	10 (22)	10 (18)	10 (18)	81 (122)
12"	52 (62)	22 (26)	10 (18)	10 (18)	94 (141)
14"	60 (72)	25 (30)	10 (18)	10 (18)	107 (160)
16"	68 (80)	27 (33)	10 (18)	10 (18)	120 (180)
18"	74 (87)	31 (36)	10 (18)	10 (18)	132 (198)
20"	80 (94)	33 (39)	10 (18)	10 (18)	144 (216)
24"	92 (108)	38 (45)	10 (22)	10 (18)	167 (250)
30"	105 (124)	44 (52)	21 (25)	10 (18)	188 (282)
36" *	89 (80)	28 (34)	10 (18)	10 (18)	135 (204)
42" *	78 (93)	31 (37)	10 (18)	10 (18)	191 (229)
48" *	90 (108)	40 (46)	18 (18)	10 (18)	212 (254)

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

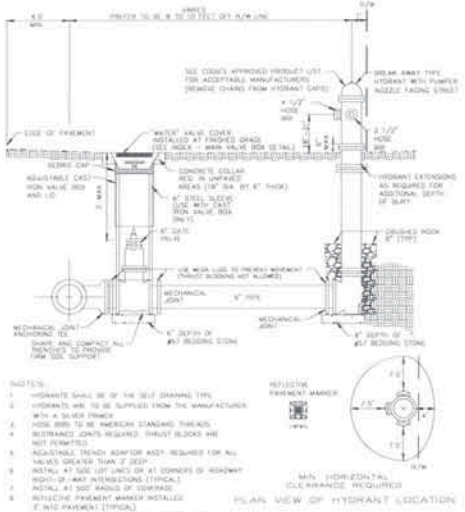
TABLE APPLIES TO DUCTILE IRON PIPE FOR THE FOLLOWING CONDITIONS:
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2

VALUES IN PARENTHESIS (X) ARE FOR PIPE ENCASED IN POLYETHYLENE.

* VALUES APPLY TO DUCTILE IRON PIPE AT 150 PSI TEST PRESSURE.

DIP RESTRAINED JOINT TABLE

DIP
RESTRAINED JOINT
TABLE
W-10

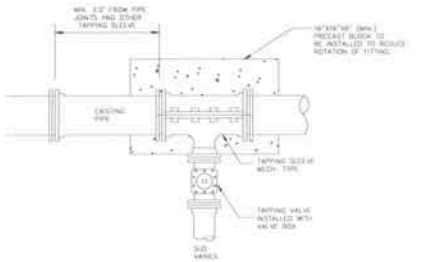


NOTES:
1. HYDRANTS SHALL BE OF THE SELF DRAINING TYPE.
2. HYDRANTS ARE TO BE SUPPLIED FROM THE MANUFACTURER WITH A SILVER FINISH.
3. HOSE SIZES TO BE AMERICAN STANDARD THREADS.
4. RESTRAINED JOINTS REQUIRED. THRUST BLOCKS ARE NOT PERMITTED.
5. ADJUSTABLE TRENCH ADAPTOR ASST. REQUIRED FOR ALL VALVES GREATER THAN 3' DEEP.
6. INSTALL AT SIDE LOT LINES OR AT CORNERS OF ROADWAY RIGHT-OF-WAY INTERSECTIONS (TYPICAL).
7. INSTALL AT 500' RADIUS OF COVERAGE.
8. REFLECTIVE PAVEMENT MARKER INSTALLED 3' INTO PAVEMENT (TYPICAL).
9. FIRE HYDRANT TESTING SHALL BE FLOWED THRU THE 2 1/2" OPENINGS. TEST RESULTS SHALL BE ACTUAL, NOT ESTIMATED. FLOW TESTING SHALL BE SUBMITTED TO THE CITY AS LISTED:
   ACTUAL GPM ____
   STATIC ____ PSI
   RESIDUAL ____ PSI
   THE CITY WILL DETERMINE THE COLOR OF THE BONNET.
10. FIRE HYDRANT BODY SHALL BE PAINTED COLOR 151 (Dark Yellow) PRIOR TO ACCEPTANCE BY THE CITY.

PLAN VIEW OF HYDRANT LOCATION

FIRE HYDRANT ASSEMBLY
N.T.S.

FIRE HYDRANT
ASSEMBLY
DETAIL
W-18



EPOXY COATED STEEL, STAINLESS STEEL, AND SPLIT DUCTILE MECHANICAL TAPPING SLEEVES ARE ALL PERMITTED FOR ALL TYPES OF PIPE MATERIALS.

INSTALL REQUIRED RESTRAINED JOINTS IN AD INSTANCE SHALL THRUST BLOCK BE PERMITTED.

ALL TAPPING OF MAINS SHALL BE PERFORMED BY THE CITY AND BILLED IN ACCORDANCE WITH THE ADOPTED FEE RESOLUTION.

TAPPING SLEEVE & VALVE

18 V 2017
CITY APPROVAL STAMP

NOTE:
PROVIDE RESTRAINED JOINTS ON ALL PIPE AND FITTINGS AS REQUIRED

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386)677-6891 FAX(386)677-2114 E-MAIL:ktod@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

WATER STANDARD DETAILS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH * FLORIDA

FILE NO: 1622WD_REV.dwg	DESIGNER: P.MYNCHENBERG
DATE: 7/12/17	CADD TECH: WB
SCALE: NONE	SHEET 15 OF 18

SEAL

X:\FIRST STEP FINAL SITE PLAN\1622WD_REV.dwg, 9/18/2017 9:49:27 AM, DWG To PDF.pc3

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 2 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY SANITARY SEWER CONSTRUCTION.
2. ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD ON GENERAL USE PERMIT AS PER ARTICLE 7, SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES, DEWATERING ACTIVITIES INCLUDE, THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAINTENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS MAY BE FOUND AT: http://www.codb.us/index.aspx?NID=262. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIA STREET SUITE 100, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. UPON COMPLETION, THE CONTRACTOR SHALL PROVIDE THE CITY UTILITIES DEPARTMENT WITH A CCTV INSPECTION LOG ON DVD AND A PRINTED REPORT FOR ALL GRAVITY MAINS AND LATERALS CONSTRUCTED. ALL WORK, WITH THE EXCEPTION OF FINAL GRADE ADJUSTMENT TO THE MANHOLES, SHALL BE COMPLETED PRIOR TO COMMENCING THE CCTV INSPECTION. THE CONTRACTOR SHALL COORDINATE THE CCTV INSPECTION TIME WITH THE CITY UTILITY INSPECTION PRIOR TO INITIATING THE WORK. FINAL PAVING SHALL NOT COMMENCE UNTIL APPROVAL HAS BEEN RECEIVED FROM THE CITY UTILITY INSPECTOR.
4. SEWER LATERALS LOCATIONS SHALL BE MARKED ALONG THE OUTSIDE OF THE CURB WITH A SAW CUT "V", OR BY A METAL TAB SET INTO THE PAVEMENT.
5. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL FORCE MAINS EQUAL TO OR GREATER THAN 6" IN DIAMETER AND PRIMARY TRANSMISSION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADWAYS, LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CITY.
6. WITH RESPECT TO TIE-IN CONNECTIONS AND CORING OPERATIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
7. ALL WORK PERFORMED UPON SANITARY SEWER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY A LICENSED UNDERGROUND UTILITY CONTRACTOR OR LICENSED GENERAL CONTRACTOR, WHO IS LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
8. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP), AS BUILTS ARE PROVIDED TO THE CITY'S UTILITIES DEPARTMENT PRIOR TO ANY USE OF THE SYSTEM.
9. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL FORCE MAINS, VALVES, MANHOLES & LATERALS FROM THE BASELINE CONSTRUCTION AND FROM RIGHT-OF-WAY LINE.
10. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORM WATER INFRASTRUCTURE IN ORDER TO ELIMINATE POTENTIAL CONFLICTS.
11. ALL SANITARY STANDARD DETAILS SHALL APPLY TO ALL CONSTRUCTION WORK PERFORMED IN THE CITY OF DAYTONA BEACH BY REFERENCE IN THESE NOTES (S-1 TO S-16).
12. ALL VALVES SHALL BE IDENTIFIED #2 SUCH WITH AN ENGRAVED BRASS 2" x 6" NAME PLATE EMBEDDED IN SURFACE OF CONCRETE COLLAR WITH SIZE, TYPE AND NUMBER OF TURNS.
13. FOR AS-BUILTS INFORMATION SEE THE CITY'S AS-BUILT DRAWING REQUIREMENTS ATTACHED TO THE BACK OF THE UTILITIES DEPARTMENT'S STANDARD DETAILS.

SANITARY SEWER
CONSTRUCTION & DESIGN
STANDARDS
(PAGE 1 OF 4)
S-1

POTABLE WATER MAIN TO BE CENTERED ABOVE THE CROSSING MAIN FOR MAXIMUM JOINT SEPARATION.

SECTIONAL VIEW

A minimum HORIZONTAL separation of 6' OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND POTABLE WATER MAINS.

A Minimum HORIZONTAL separation of 6' OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND SEWER COLLECTION.

A minimum HORIZONTAL separation of 6' OUTSIDE TO OUTSIDE, SHALL BE MAINTAINED BETWEEN SEWER COLLECTION LINES AND POTABLE WATER MAINS.

NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE; HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE AND CONDUIT. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART II 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.

PIPE SEPARATION DETAIL
NTS.

PIPE SEPARATION
DETAIL
S-16

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

14. ALL LIFT STATION METHOD FASTENERS AND THROUGH-TOP CONNECTORS THAT CONTACT THE WETWELL LIQUID AS WELL AS NUTS AND BOLTS SHALL BE 316 SS FASTENERS.
15. ALL GRAVITY SANITARY SEWER MAIN LINES SHALL BE 8" DIAMETER MINIMUM COMMERCIAL SERVICE LATERALS ALL SHALL BE SIXTEEN 6" DIA OR LARGER. ALL SINGLE FAMILY RESIDENTIAL SERVICE LATERALS SHALL BE 6" – SINGLE SERVICES WITH CLEAN OUTS INSTALLED AT PROPERTY LINE.
16. ALL GRAVITY SANITARY SEWER MAIN LINES SHALL BE GREEN PVC SDR-26, ASTM D-3034, OR C-900 DR-35 MINIMUM PRESSURE CLASS 100 IN PLACES WHERE A MINIMUM COVER OF 4.0' CANNOT BE MAINTAINED OR IN DEPTHS OF TEN (10) FEET OR GREATER C-900 DR C-905 GREEN PVC SR-25, MINIMUM PRESSURE CLASS 100 SHALL BE USED.
17. FOR SINGLE FAMILY HOMES, SINGLE SIX INCH SEWER SERVICES LATERALS SHALL BE CONSTRUCTED AT EACH LOT OR UNIT AND LOCATED ON THE DOWNSTREAM SIDE OF THE LOT CENTER LINE. THESE SERVICES SHALL BE EXTENDED 4 FEET ABOVE GROUND AT THE PROPERTY LINE WITH A PVC RISER AND PLUG BEING EASILY VISIBLE FROM THE ROAD. RUBBER SEAL FITTINGS SHALL BE USED ON ALL LINES. NO GLUED JOINTS ARE PERMITTED ON LATERALS.
18. FOR MULTI-FAMILY AND COMMERCIAL SITES, SIX INCH MINIMUM SEWER SERVICES AND CLEANOUTS SHALL BE PROVIDED AS APPROVED BY THE CITY.
19. ALL SANITARY SEWER FORCE MAINS, INCLUDING FITTINGS, SHALL BE DUCTILE IRON PIPE (D.I.P.), EPOXY LINED, CLASS 350 FORCE MAIN MINIMUM DEPTH OF COVER SHALL BE 36". ALL FORCE MAINS SHALL BE DISTINCTLY MARKED BY A GREEN STRIPE OR COLORED GREEN. ALL NON-ZIP HORIZONTAL DIRECTIONAL DRILL FORCE MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
20. ALL SANITARY SEWER FORCE MAINS SHALL USE A THRUST RESTRAINT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION GUIDELINES. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.
21. AS A GENERAL RULE, THE NUMBER OF JOINTS SHALL BE LIMITED WHENEVER POSSIBLE. IN SPECIAL CASES WHERE A FIGHT REPAIR TO AN 8" TO 12" PVC SEWER MAIN IS REQUIRED, THE PROPER RISER WRAP AROUND SLEEVE MAY BE ALLOWED BY SPECIAL APPROVAL BY THE CITY.
22. ALL IN-LINE SANITARY SEWER FORCE MAIN VALVES SHALL BE RESILIENT SEAT GATE VALVES UNLESS OTHERWISE NOTED. VALVES SHALL BE SPACED A MAXIMUM OF 1000 FEET APART.
23. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-97 STANDARDS. OR UPGRADES FOR BURST PROTECTION MAY BE REQUESTED WHEN USING THE C-900-97 STANDARDS.
24. MINIMUM GRAVITY SANITARY SEWER SLOPES ARE AS FOLLOWS:

6" PIPE	0.400
10" PIPE	0.265
12" PIPE	0.225
15" PIPE	0.165

OR OTHERWISE NOTED BY THE UTILITIES DEPARTMENT.

25. GRAVITY SANITARY SEWER LINES SHALL BE INSTALLED WHENEVER POSSIBLE UNDER PAVED AREAS WITHIN PUBLIC RIGHT-OF-WAYS. UTILITY EASEMENTS SHALL BE PROVIDED WHENEVER PUBLICLY-OWNED SEWER LINES ARE CONSTRUCTED OUTSIDE OF A PUBLIC RIGHT-OF-WAY.
26. GRAVITY SANITARY SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT UNLESS ANOTHER METHOD IS PREVIOUSLY APPROVED BY THE CITY.
27. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING OPERATIONS, DEWATER THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING LAID WITHIN THE AREA OF THE TRENCH.
28. ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES IS NOT ACCEPTABLE. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
29. ON ALL EXCAVATION AND BACKFILLING THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING IN ORDER TO PROVIDE FOR THE SAFETY OF WORKERS, AS WELL AS REPRESENTATIVES OF THE CITY, THE DESIGN ENGINEER, AND THE DEVELOPER.
30. ALL TRENCHES SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL AND COMPACTED TO THE SPECIFIED MINIMUM COMPACTION (100% IN UNPAVED AREAS AND 98% IN PAVED AREAS) OF THE OPTIMUM DENSITY OF THAT MATERIAL BASED ON THE ASSHTO T-180 MODIFIED PROCTOR TEST.

SANITARY SEWER
CONSTRUCTION & DESIGN
STANDARDS (CONT'D)
(PAGE 2 OF 4)
S-2

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

37. THE CONTRACTOR SHALL INSTALL A #12 UF SINGLE STRAND COPPER WIRE, OR SIMILAR DEVICE AS MAY BE APPROVED BY THE CITY FOR THE FULL LENGTH OF ALL NON-METALLIC SEWAGE FORCE MAINS. THIS PIPE LOCATOR #12 SHALL BE INSTALLED BETWEEN 12" AND 24" BELOW FINISHED GRADE OR AS DIRECTED BY THE MANUFACTURER. TAPE SHALL BE COLOR CODED GREEN FOR SANITARY SEWER AND FORCE MAIN. LOCATOR WIRE/DEVICE SHALL TERMINATE AT A LOCATION AND IN A MANNER CONVENIENT FOR CITY LOCATOR STAFF.
32. ALL SEWER LINES MUST ARE CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAYS WITHIN SIDE YARDS, BACKYARDS, AND OTHER POORLY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF GREEN C-900 PVC. ABSOLUTELY NO USE OF PLASTIC STRONE FITTINGS SHALL BE ALLOWED.
33. ALL LOCAL COLLECTION SANITARY SEWER MANHOLES SHALL BE PRECAST WITH A MINIMUM INSIDE DIAMETER OF 4 FEET. MANHOLES OVER 6 FEET IN DEPTH SHALL HAVE THE BOTTOM PRE-CAST SECTION AT A MINIMUM OF FOUR FEET TALL.
34. STANDARD MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 400 FEET.
35. ALL SEWER FITTINGS TO BE "SHADOT" OR APPROVED EQUAL.
36. MANHOLE RIMS SHALL MATCH FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 0.5 FEET AND MAXIMUM OF 1.0 FEET ABOVE GRADE GENERALLY IN UNPAVED AREAS.
37. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE.
38. RUBBER BOOTS AND STAINLESS STEEL BANDS SHALL BE UTILIZED IN THE CONNECTION OF THE SEWER MAIN TO THE MANHOLES (SEE STANDARD MANHOLE AND BOOT DETAIL).
39. INDIVIDUAL SANITARY SERVICE CONNECTIONS ON NEW CONSTRUCTION SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES, AND MUST BE CONNECTED TO SEWER MAIN LINES BY USE OF WYE CONNECTIONS, UNLESS OTHERWISE APPROVED BY THE CITY.
40. SANITARY SEWER DROP MANHOLES SHALL ONLY BE USED UNDER SPECIAL CONDITIONS AS APPROVED BY THE CITY. DROPS LESS THAN 2.0' SHALL NOT BE ALLOWED.
41. ALL SANITARY SEWER MANHOLE COVERS SHALL HAVE THE WORD "SANITARY" CAST INTO THEM AS SHOWN ON DETAIL S-8.
42. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM SHALL BE FIBERGLASS OR POLY-ETHYLENE LINED. RETRO-FITTING OF MANHOLES WITH LINERS SHALL BE REQUIRED WHEN NEW CONNECTIONS SUCH AS THIS ARE MADE. FIBERGLASS SHALL BE A MINIMUM 1/4" THICKNESS UNLESS APPROVED OTHERWISE BY THE CITY. OTHER TYPES OF LINING METHODS AND MATERIALS MAY BE CONSIDERED ON A CASE BY CASE BASIS UNDER SPECIAL CIRCUMSTANCES WHERE HYDROGEN SULFIDE IS A MAJOR CONCERN. MANHOLES UPSTREAM AND/OR DOWNSTREAM OF THE FORCE MAIN TIE-IN OR WET WELL MAY ALSO BE REQUIRED TO HAVE LININGS INSTALLED.
43. EZ-VAULT PLASTIC, AS MANUFACTURED BY PRESS SEAL GASKET CORPORATION, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND METHELL JOINTS WHILE ONE LAYER OF 8" MEAT COATED ON EACH JOINT. A CITY INSPECTOR SHALL PERSONALLY INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS.
44. ANY NEW OR EXISTING ESTABLISHMENT WITH THE POTENTIAL TO DISCHARGE INDUSTRIAL OR COMMERCIAL WASTES INTO THE SEWER SYSTEM SHALL CONSTRUCT AND MAINTAIN AT HIS EXPENSE A SUITABLE CONTROL MANHOLE, OR MANHOLES, DOWNSTREAM FROM ANY TREATMENT, STORAGE, OR OTHER APPROVED WORKS, PRIOR TO THE CITY'S COLLECTION SYSTEM TO FACILITATE OBSERVATION, MEASUREMENT, AND SAMPLING OF ALL WASTES, INCLUDING ALL DOMESTIC SEWAGE FROM THE ESTABLISHMENT.
45. THE CONTROL MANHOLE OR MANHOLES SHALL BE CONSTRUCTED AT SUITABLE AND DATE-FACTORY LOCATIONS MAKING THE MANHOLE ACCESSIBLE TO CITY PERSONNEL AT ALL TIMES FOR SAMPLING.
46. SANITARY SEWER LIFT STATIONS AND FORCE MAINS SIZE, MATERIAL, AND DESIGNS SHALL BE APPROVED BY THE CITY. LIFT STATIONS SHALL BE CONSTRUCTED WITH A MINIMUM WET WELL AS PER THE LIFT STATION DETAIL. A MINIMUM OF 6 FEET SHALL BE MAINTAINED BETWEEN LOWEST INFLUENT INVERT AND METHELL FLOOR.
47. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PREPARE AND SUBMIT FLOTATION CALCULATIONS TO SIZE THE BASE OF THE WET WELL, AND ANY MANHOLES AS DEEMED NECESSARY BY THE CITY.

SANITARY SEWER
CONSTRUCTION & DESIGN
STANDARDS (CONT'D)
(PAGE 3 OF 4)
S-3

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS

TESTING REQUIREMENTS

1. THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS EMPLOYMENT TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. TESTING SHALL BE COMPLETED AND TEST DOCUMENTS SUBMITTED TO THE CITY AT A MINIMUM FREQUENCY OF ONE SET OF TESTS PER EACH 300 FOOT OF PIPING AND ONE ADDITIONAL SET OF TESTS AT EVERY MANHOLE. IDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR / DEVELOPER.
3. THE CITY OF DAYTONA BEACH RESERVES THE RIGHT TO REQUIRE THE DEVELOPER TO PERFORM VACUUM TESTING OF ALL SANITARY MANHOLES AND TO AIR TEST SEWER MAINS.
4. ALL PROPOSED SEWER FORCE MAINS SHALL BE FLUSHED, PRESSURE TESTED AND CLEANED FOR SERVICE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED SITE INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WASTEWATER TREATMENT PLANT AT LEAST (2) THREE BUSINESS DAYS PRIOR TO BEGINNING A FULL-DIAMETER FLUSH OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING. (SUBJECT TO AVAILABILITY).
5. SANITARY SEWER FORCE MAINS SHALL BE PRESSURE TESTED TO 150 PSI FOR 2 HOURS WITH ALLOWABLE LEAKAGE TO BE X GALLONS PER 4" DIA OR PIPE PER 4" OF MAIN TO BE TESTED.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * - GPH

AVERAGE TEST PRESSURE (PSI)	NOMINAL PIPE DIAMETER – INCHES																AVERAGE TEST PRESSURE (PSI)
	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54	
450	0.46	0.84	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.82	4.78	5.73	6.69	7.64	8.60	9.56	10.15	450
400	0.45	0.80	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.60	4.50	5.41	6.31	7.21	8.11	9.01	9.61	400
350	0.43	0.76	0.84	1.13	1.40	1.69	1.97	2.25	2.53	3.37	4.21	5.06	5.90	6.74	7.58	8.43	8.98	350
300	0.41	0.72	0.78	1.04	1.30	1.56	1.82	2.08	2.34	3.12	3.90	4.68	5.46	6.24	7.02	7.80	8.32	300
275	0.39	0.70	0.75	1.00	1.25	1.50	1.75	2.00	2.24	2.99	3.74	4.49	5.23	5.98	6.73	7.47	7.97	275
250	0.38	0.67	0.72	0.95	1.19	1.43	1.66	1.90	2.14	2.85	3.56	4.27	4.99	5.70	6.41	7.12	7.59	250
225	0.36	0.64	0.69	0.91	1.14	1.37	1.60	1.82	2.05	2.73	3.42	4.10	4.78	5.47	6.15	6.83	7.29	225
200	0.32	0.61	0.64	0.85	1.06	1.28	1.49	1.70	1.92	2.56	3.19	3.82	4.46	5.09	5.73	6.37	6.80	200
175	0.30	0.53	0.56	0.74	0.93	1.11	1.30	1.49	1.67	2.23	2.78	3.34	3.90	4.45	5.01	5.56	5.94	175
150	0.28	0.51	0.53	0.71	0.89	1.06	1.24	1.42	1.59	2.12	2.65	3.18	3.71	4.24	4.77	5.30	5.66	150
125	0.25	0.46	0.47	0.64	0.79	0.95	1.11	1.27	1.43	1.90	2.38	2.85	3.33	3.80	4.28	4.75	5.07	125
100	0.23	0.38	0.40	0.53	0.66	0.80	0.93	1.06	1.20	1.59	1.99	2.39	2.79	3.19	3.59	3.98	4.26	100

* IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.

$$L = \frac{ND\sqrt{P}}{133,200}$$

WHERE:
L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
N = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE).

SANITARY SEWER
TESTING REQUIREMENTS
NOTES
(PAGE 4 OF 4)
S-4

NOTE:
PROVIDE RESTRAINED JOINTS ON ALL PIPE AND FITTINGS AS REQUIRED.

DEV #2017-
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
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CERTIFICATE OF AUTHORIZATION NUMBER: 00003916

SEWER STANDARD DETAILS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH * FLORIDA

FILE NO. 16220_REV.dwg	DESIGNER: P.MYNCHENBERG
DATE: 7/12/17	CADD TECH: BWB
SCALE: NONE	SHEET 16 OF 18

SEAL

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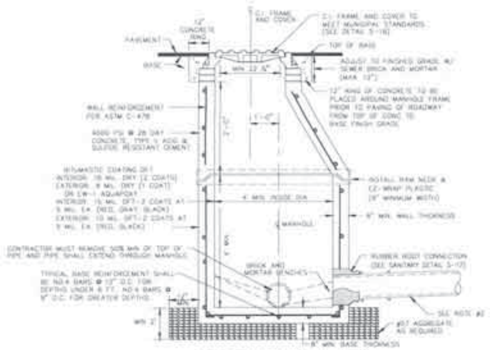


CROSS SECTIONAL VIEW

NTS

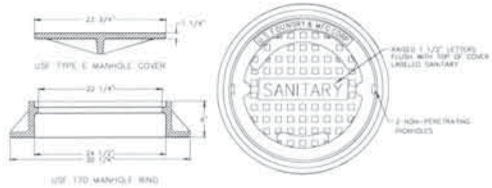
NOTES:

1. ON TRANSITIONS BETWEEN LARGER DIAMETER AND SMALLER SEWER COLLECTORS, INVERTS OF SEWERS SHALL BE MATCHED.
2. LAST 8' OF F.M. 12" PIPING ENTERING SEWER MANHOLE SHALL BE P.V.C. C-900 PLACED AT A NEGATIVE GRADE. 13" AND ABOVE SHALL BE P.V.C. C-905.
3. NON-PENETRATING PICK-HOLES IN ALL CONCRETE SECTIONS.
4. DFT = DRY FILM THICKNESS.
5. 0.1' = DROP ACROSS MANHOLE TYP. (MEASURED DIA. OF CONCRETE RING)
6. MANHOLES 8' DEEP OR GREATER SHALL HAVE A MIN. 4' HIGH WALL BASE.
7. ANY PIPE ENTERING MANHOLE MUST HAVE A RUBBER BOOT CONNECTION.
8. MORTAR TO CONTAIN "HYDRATITE", OR APPROVED EQUAL, TO PREVENT SHRINKAGE.
9. SUB-GRADE BENEATH MANHOLES SHALL BE UNDISTURBED GRANULAR UNSATURATED SOIL. No. 57 AGGREGATE STONE SHALL BE USED IN WET CONDITIONS AND/OR WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.
10. CONTRACTOR SHALL PROVIDE THICKER MANHOLE WALLS AND BASES AS REQUIRED TO PREVENT FLOTATION BASED ON HISTORIC HIGH GROUND WATER TABLE ELEVATIONS AS DETERMINED USING ACCEPTED ENGINEERING PRACTICES AND/OR APPROVED BY UTILITIES DEPARTMENT.
11. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.
12. NO BUG HOLES OR HONEYCOMB WILL BE ACCEPTED.
13. ENDS OF THE TOP AND BOTTOM SECTIONS OF THE MANHOLE SHALL FIT FLUSH TOGETHER.
14. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM, OR ANY MANHOLE WITHIN 200 FEET OF A LIFT STATION, SHALL BE FIBERGLASS OR PVC LINED. RETRO-FITTING OF MANHOLES WITH LINERS SHALL BE REQUIRED WHEN NEW CONNECTIONS SUCH AS THIS ARE MADE. FIBERGLASS SHALL BE A MINIMUM 1/2" THICKNESS UNLESS APPROVED OTHERWISE BY THE CITY. LINING SHALL BE AGRU SURE-GRIP OR PRE-APPROVED EQUAL.

STANDARD SANITARY SEWER MANHOLE

SANITARY SEWER MANHOLE AND GENERAL NOTES

S-13



NOTES:

1. UNLESS DETAILED PLANS SHOW OTHERWISE, ALL MANHOLE RING AND COVER CASTINGS IN PAVED AREAS ARE TO BE ADJUSTED TO FINAL GRADE, SEALED AND SECURED IN PLACE WITH A CONCRETE COLLAR AFTER THE ROAD BASE IS PLACED AND JUST PRIOR TO PLACEMENT OF ASPHALT WEARING SURFACE.
2. CONCRETE COLLAR AROUND MANHOLE FRAME IS REQUIRED IN PAVED AREAS ONLY.

SANITARY SEWER COVER & GENERAL NOTES

NTS

SANITARY SEWER COVER DETAIL

S-18

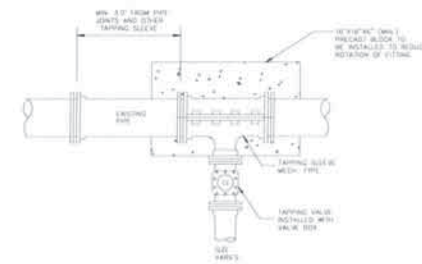
SCHEDULE OF LENGTHS OF RESTRAINED PVC PIPE (FT.)					
FITTING	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEE OR DEAD END
PIPE SIZE (IN.)					
4"	20	18	18	18	45
6"	28	18	18	18	63
8"	36	18	18	18	82
10"	44	20	18	18	98
12"	51	21	18	18	116
14"	57	24	18	18	132
16"	63	26	18	18	148
18"	69	29	18	18	163
20"	75	31	18	18	179
24"	87	36	18	18	208
30"	103	43	20	18	248

LENGTHS BETWEEN HEAVY LINES INDICATE ONE FULL LENGTH (18' MIN.) OF PIPE TO BE RESTRAINED.

TABLE SHOWS MINIMUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED.

TABLE APPLIES TO PVC PIPE FOR THE FOLLOWING CONDITIONS:

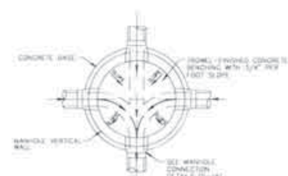
TEST PRESSURE: 150 PSIG
SOIL TYPE: SP
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2



NOTES:

1. EPOXY COATED STEEL, STAINLESS STEEL, AND SPLIT DUCTILE MECHANICAL TAPPING SLEEVES ARE ALL PERMITTED FOR ALL TYPES OF PIPE MATERIALS.
2. INSTALL REQUIRED RESTRAINED JOINTS. IN NO INSTANCE SHALL THRUST BLOCK BE PERMITTED.
3. ALL TAPPING OF MAINS SHALL BE PERFORMED BY THE CITY AND BILLED IN ACCORDANCE WITH THE ADOPTED FEE RESOLUTION.

TAPPING SLEEVE & VALVE



NOTES:

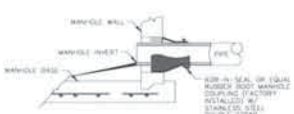
1. FLOW CHANNELS SHALL HAVE THE SAME SLOPES AS THE SEWERS THEY ARE CONNECTED TO. (EXCEPT THAT AT CHANGES OF DIRECTION EXCEEDING 45°, THE DROP SHALL BE 0.1' MINIMUM)
2. NO STANDING WATER WILL BE ALLOWED.
3. FORM BENCH IN MANHOLE FROM MID-LINE OF 8" PIPE TO WALL OF MANHOLE, 3/4" PER FT. OF SLOPE. FOR LARGER PIPE, CONSTRUCT FROM INSIDE CROWN OF PIPE WITH 3/4" PER FT. OF SLOPE TO WALL.

SANITARY MANHOLE INVERT DETAIL

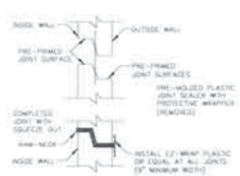
NTS

SANITARY MANHOLE INVERT DETAIL

S-16



MANHOLE PIPE CONNECTION DETAIL FOR NEW CONNECTIONS IN EXISTING MANHOLES



PRECAST JOINT CONNECTION

NOTES:

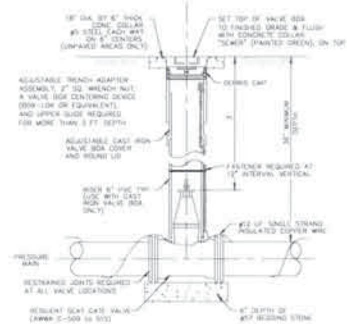
1. ALL NEW CONNECTIONS TO EXISTING SANITARY SEWER MANHOLES SHALL UTILIZE A CORING METHOD AND THE IN-FIELD INSTALLATION OF A RUBBER BOOT INTO THE MANHOLE.
2. BOOTS SHALL BE SNAPPED IN PLACE AND WATER TIGHT.

RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL

NTS

RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL

S-17



SEWER VALVE COVER

NOTES:

1. ROD OR BOLT TIE WHERE APPLICABLE.
2. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL VALVES AND VALVE BOXES BY STATE PLANE COORDINATES WITH STATION & OFFSETS FROM CL OF R/W.
3. #12 INSULATED SOLID COPPER UF TRACER WIRE SHALL BE LAID THE ENTIRE LENGTH OF THE REUSE PIPE. ALL CONNECTION ENDS SHALL USE LIQUID TAPE AND A DIRECT BURIED SPLICE KIT (LAWSON 45213) OR EQUIVALENT.
4. ANY VALVE DEEPER THAN 36" SHALL HAVE AN EXTENSION BOLTED ON THE VALVE. THE OPERATING NUT SHALL BE 12" BELOW FINISHED GRADE.
5. WHERE PLUG VALVES ARE SPECIFIED THE CONCRETE COLLAR SURROUNDING THE TOP OF THE VALVE BOX SHALL HAVE AN ENGRAVED 2" x 6" BRASS NAME PLATE CLEARLY MARKED "PLUG VALVE" IN 1" HIGH BLOCK PRINT LETTERS.

SANITARY VALVE & VALVE BOX DETAILS

NTS

SANITARY VALVE AND VALVE BOX DETAIL

S-19

DEV #2017-
CITY APPROVAL STAMP

NOTE:
PROVIDE RESTRAINED JOINTS ON ALL PIPE AND FITTINGS AS REQUIRED.

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

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CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

SEWER STANDARD DETAILS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH * FLORIDA

FILE NO. 16225D_REV.dwg	DESIGNER: P.MYNCHENBERG	
DATE: 7/12/17	CADD TECH: BVB	
SCALE: NONE	SHEET 17 OF 18	SEAL

SUMMARY OF PAY ITEMS

ISB/RED JOHN ROAD UTILITY IMPROVEMENTS

ENGINEER'S QUANTITY ESTIMATE

PAVING & DRAINAGE

ITEM	DESCRIPTION	QUANTITY	UNIT
1	Mobilization	1	LS
2	Clearing & Grubbing	2	AC
3	Earthwork	1	LS
4	Bahia Sod	1,875	SY
5	Maintenance of Traffic	1	LS
6	Striping & Signage	1	LS
7	24" RCP	82	LF
8	24" MES with Grates	2	EA
9	1" Type SP-9.5 Asphalt Surface Course (Traffic C)	175	SY
10	1 1/4" Type SP-9.5 Asphalt Surface Course	553	SY
11	2" Type SP-12.5 Asphalt Surface Course (Traffic C)	175	SY
12	10" Crushed Concrete Base (LBR 140) Compacted to 98% Density Per AASHTO T-180 Modified Proctor Test	180	SY
13	12" Stabilized Sub Base Type-B, LBR 40	180	SY
14	8" Crushed Concrete Base Course LBR 140	553	SY
15	6" Stabilized Shoulder LBR 40 or FBV 75 PSI	167	SY
16	10" Compacted Sub Base LBR 40 or FBV 75 PSI	564	SY
17	6" Concrete Paving with #4 Rebar at 12" O.C.	32	SY
18	2' Environmental Curb	48	LF

SANITARY SEWER

ITEM	DESCRIPTION	QUANTITY	UNIT
19	Sanitary Lift Station w/Generator	1	LS
20	6" HDPE Directional Drill DR-11 (FM)	155	LF
21	6" DIP Sewer Forcemain Class 350	42	LF
22	Sanitary Manhole (Lined)	1	EA
23	8" PVC Gravity Sewer Pipe DR 26	232	LF
24	8" Plug	1	EA
25	Sanitary Manhole	1	EA
26	6" M.J. 90° Bends	2	EA
27	6" M.J. 45° Bends	2	EA
28	8" x 6" M.J. Tapping Sleeve & Valve	1	EA
29	8" x 6" Fused M.J. Transition Coupling	2	EA

FIBER OPTIC

ITEM	DESCRIPTION	QUANTITY	UNIT
30	6" HDPE Fiber Optic Directional Drill	175	LF
31	6" Plug	2	EA
32	3M EMS Ball Marker	2	EA

WATER

ITEM	DESCRIPTION	QUANTITY	UNIT
33	12" HDPE Directional Drill	165	LF
34	12" DIP Water Main	157	LF
35	6" DIP Water Main	5	LF
36	1" ENDOT Estopure Water Line w/Tracker Wire	18	LF
37	1" Service Tap w/3/4" Water Meter, Meter Box, and Reduced Pressure Backflow Preventer	1	EA
38	Fire Hydrant w/Valve	1	EA
39	3/4" Hose Bib w/18" Brass Stand Pipe	1	EA
40	12" x 12" M.J. Tapping Sleeve w/Valve	1	EA
41	12" Valve	1	EA
42	12" x 12" x 6" M.J. Tee	1	EA
43	12" x 12" Fused M.J. Transition Coupling	3	EA
44	12" M.J. Plug	1	EA
45	12" M.J. 45° Bend	5	EA
46	2" Blow Off Assembly	1	EA

SOIL EROSION & SEDIMENT CONTROL

ITEM	DESCRIPTION	QUANTITY	UNIT
47	Staked Silt Fencing	600	LF
48	Gravel Construction Entrance	1	EA

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CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

SUMMARY OF PAY ITEMS

FIRST STEP
HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH • FLORIDA

FILE:1622_SUM OF PAY ITEMS.dwg	DESIGNER: P.MYNCHENBERG
DATE: 7/12/17	CADD TECH: BWB
SCALE: NONE	SHEET 18 OF 18

SEAL

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