

Rademacher, Julia

From: VanPelt, Frank
Sent: Wednesday, October 25, 2017 2:26 PM
To: Kurtock, Doug
Cc: Waller, David; Nelson, James; Ponitz, Shannon; PeKala, James; McCorkle, John
Subject: Finished Set of Plans for the Site Improvements
Attachments: PDF Site Set - 10-19-17.pdf

Importance: High

Although the Building design format is still to be determined I have attached the final set of construction drawings for the site improvements. These drawings are set up to accommodate the anticipated square footage of impervious area that will be required for the final building design.

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

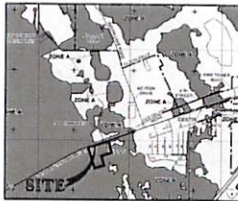
FIRST STEP HOMELESS ASSISTANCE SHELTER DAYTONA BEACH, FLORIDA FINAL SITE PLAN DEV #2017-104

GENERAL NOTES

- EXISTING ZONING: C, VOLUSIA COUNTY
- BOUNDARY AND TOPOGRAPHIC SURVEY BASED ON SURVEY PREPARED BY SLIGER & ASSOCIATES, INC. DATED 8/18/17
- UNDERGROUND UTILITY LOCATIONS AS FIELD MARKED BY THE FOLLOWING COMPANIES OR THEIR REPRESENTATIVES:
FLORIDA POWER & LIGHT COMPANY 3000 SPRUCE CREEK ROAD
PORT ORANGE, FL 32129 (386) 322-3425
4141 900 N. NOVA ROAD
DAYTONA BEACH, FL 32117 (386) 257-7950
SPECTRUM 1475 S. NOVA ROAD
DAYTONA BEACH, FL 32114 (386) 760-9941
TECO PEOPLES GAS 1722 RIDGEWOOD AVE
HOLLY HILL, FL 32117 (386) 527-8377
CITY OF DAYTONA BEACH 950 BELLEVUE ROAD
DAYTONA BEACH, FL 32114 (386) 671-8635
- LOCATIONS OF EXISTING UTILITIES ARE SHOWN BASED ON AVAILABLE DATA.
- IT IS THE CONTRACTOR'S 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.
- CONTRACTOR TO PROVIDE AS BUILT DRAWINGS OF ALL IMPROVEMENTS ON 24" x 36" MYLAR, SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR.
- THERMOPLASTIC STRIPING AND TRAFFIC CONTROL SIGNAGE TO MEET FOOT AND CITY OF DAYTONA BEACH SPECIFICATIONS.
- 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.
- 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 0.800 GAUGE 5522-H38 ALUMINUM BEAMS. ALL STOP SIGNS SHALL BE HIGH INTENSITY STEEL ONLY OF 3" x 12" ROUND ALUMINUM POSTS (V) CHANNEL POSTS MAY BE USED FOR ALL SIGNS SMALLER THAN 36" x 48". ALL WARNING SIGNS SHALL BE 30" x 30".
- THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND/OR LICENSES TO COMMENCE CONSTRUCTION.
- ALL CONCRETE SHALL DEVELOP A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF PLANS, SPECIFICATIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
- CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
- ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
- NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



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 35.00 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 TO 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 = 15,910 S.F.
PHASE 2 = 9,624 S.F.
TOTAL = 25,534 S.F. = 5.7% COVERAGE
IMPERVIOUS AREA:
PHASE 1 BUILDING = 15,910 S.F.
PHASE 1 SIDEWALKS, DRIVES & PARKING = 77,756 S.F.
TOTAL PHASE 1 IMPERVIOUS = 93,666 S.F. = 20.7%
PHASE 2 BUILDING = 9,624 S.F.
PHASE 2 PAVEMENT = 23,725 S.F.
SUB TOTAL PHASE 2 IMPERVIOUS = 33,349 S.F.
TOTAL IMPERVIOUS AREA = 127,015 S.F. = 28.2%
TOTAL LANDSCAPE AREA = 323,967 S.F. = 71.8%
TAX PARCEL #01-16-31-00-00-0020

PROJECT DESCRIPTION

CONSTRUCTION OF A 1-1 STORY 15,910 S.F. (PHASE 1) BUILDING & ASSOCIATED PAVING, DRAINAGE, UTILITY, LANDSCAPE, SIGNAGE & SIDEWALK IMPROVEMENTS.

PROJECT ADDRESSES

FIRST STEP SHELTER: 3889 WEST INTERNATIONAL SPEEDWAY BLVD
SANITARY LIFT STATION: 3887 WEST INTERNATIONAL SPEEDWAY BLVD

INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	BOUNDARY SURVEY
3	TOPOGRAPHIC SURVEY
4	DEMOLITION & EROSION CONTROL PLAN
5	SITE PLAN
6	CIVIL SITE PLAN
7	UTILITY SITE PLAN
8	LANDSCAPE PLAN
9	LANDSCAPE DETAILS
10-13	PAVING & DRAINAGE DETAILS
14-15	WATER STANDARD DETAILS
16-17	SEWER STANDARD DETAILS
18	SUMMARY OF PAY ITEMS PHASE 1

GENERAL INFORMATION

PROJECT NAME:
FIRST STEP HOMELESS ASSISTANCE SHELTER FINAL SITE PLAN
3889 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) 671-8015

**DESIGN ENGINEER/
LANDSCAPE ARCHITECT:**
PARKER MYNCHENBERG & ASSOC., INC.
PARKER MYNCHENBERG, P.E. #12545, L.A.#1553
CERTIFICATE OF AUTHORIZATION #3910
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) 761-5365

DEVELOPMENT CONSULTANT:
DOUGLAS R. KURTZ
E-ZONE MAINTENANCE & OPERATIONS MANAGER
CONSTRUCTION PROJECT & DEVELOPMENT MANAGER
CITY OF DAYTONA BEACH
13 S. ATLANTIC AVENUE
DAYTONA BEACH, FLORIDA 32118
(386) 671-3570 CELL (304) 964-5685
E-MAIL: kurtdoug@coadb.us

ARCHITECT:
HALL & OGLE ARCHITECTS, INC.
208 MAGNOLIA AVENUE
DAYTONA BEACH, FLORIDA 32114
(386) 255-6163 FAX (386) 257-5650
AA-C000925

**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

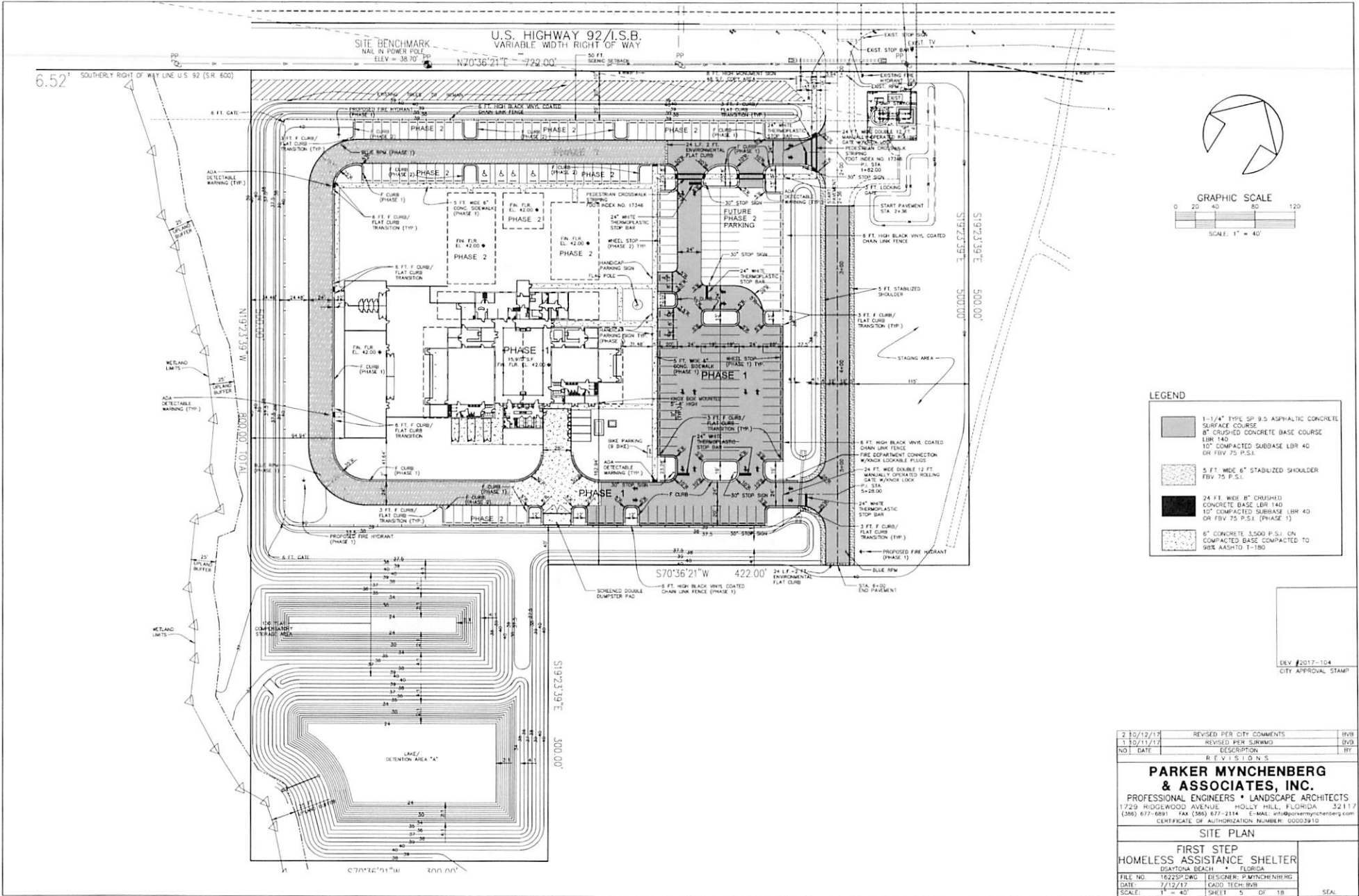
PARKING CALCULATION

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

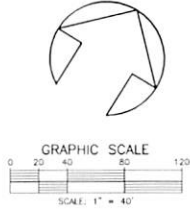
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1 10/11/17	REVISED PER SPRING	BVB
NO. DATE	DESCRIPTION	BY
R E V I S I O N S		
COVER SHEET		
FIRST STEP HOMELESS ASSISTANCE SHELTER DAYTONA BEACH • FLORIDA		
FILE: 1622CS.DWG	DESIGNER: P.MYNCHENBERG	P.E.
DATE: 7/12/17	CADD TECH: BVB	
SCALE: NONE	SHEET: 1 OF 18	32645

DEV #2017-104
CITY APPROVAL STAMP



LEGEND

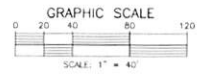
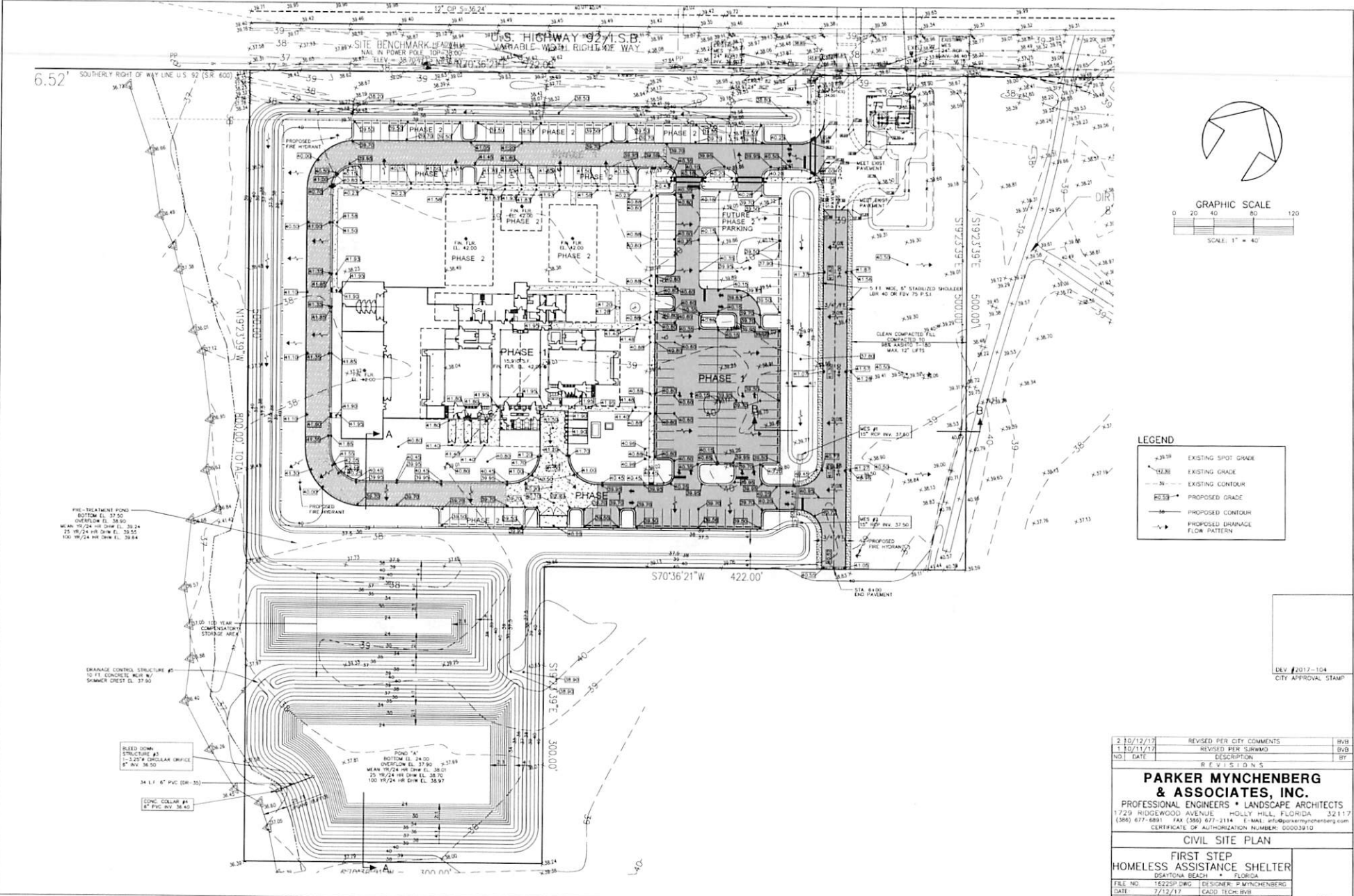
- 1-1 1/4" TYPE SP 9.5 ASPHALTIC CONCRETE SURFACE COURSE
- 8" CRUSHED CONCRETE BASE COURSE LBR 140
- 10" COMPACTED SUBBASE LBR 40 OR FBV 75 P.S.I.
- 5 FT. WIDE 6" STABILIZED SHOULDER FBV 75 P.S.I.
- 24 FT. WIDE 6" CRUSHED CONCRETE BASE LBR 140
- 10" COMPACTED SUBBASE LBR 40 OR FBV 75 P.S.I. (PHASE 1)
- 6" CONCRETE 3,500 P.S.I. ON COMPACTED BASE COMPACTED TO MEAS. ASD TO 1-180



REV. #2017-104
CITY APPROVAL STAMP

2/10/12/17	REVISED PER CITY COMMENTS	RFV
1/10/11/17	REVISED PER SURVIMD	RFV
NO. DATE	DESCRIPTION	BY
R. E. V. I. S. I. O. N. S.		
PARKER MYNCHENBERG & ASSOCIATES, INC.		
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS		
1729 RIDGEWOOD AVENUE • HOLLY HILL, FLORIDA 32117		
(OR) 677-6891 FAX (386) 877-2114 E-MAIL: info@parkermychenberg.com		
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910		
SITE PLAN		
FIRST STEP HOMELESS ASSISTANCE SHELTER		
OSATONIA BEACH • FLORIDA		
FILE NO: 1622SP.DWG	DESIGNER: P.MYNCHENBERG	
DATE: 7/12/17	CADD TECH: RFV	
SCALE: 1" = 40'	SHEET: 5 OF 18	SEAL

6.52' SOUTHERLY RIGHT OF WAY LINE U.S. 92 (SR 600)



LEGEND

- +38.58 EXISTING SPOT GRADE
- +38.88 EXISTING GRADE
- N- EXISTING CONTOUR
- +53.58 PROPOSED GRADE
- O- PROPOSED CONTOUR
- >- PROPOSED DRAINAGE FLOW PATTERN

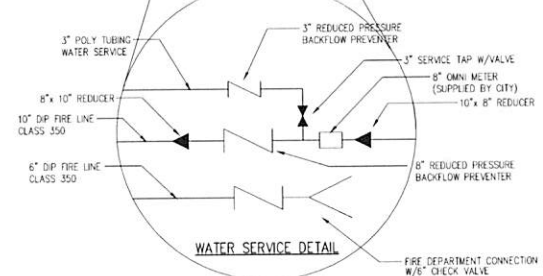
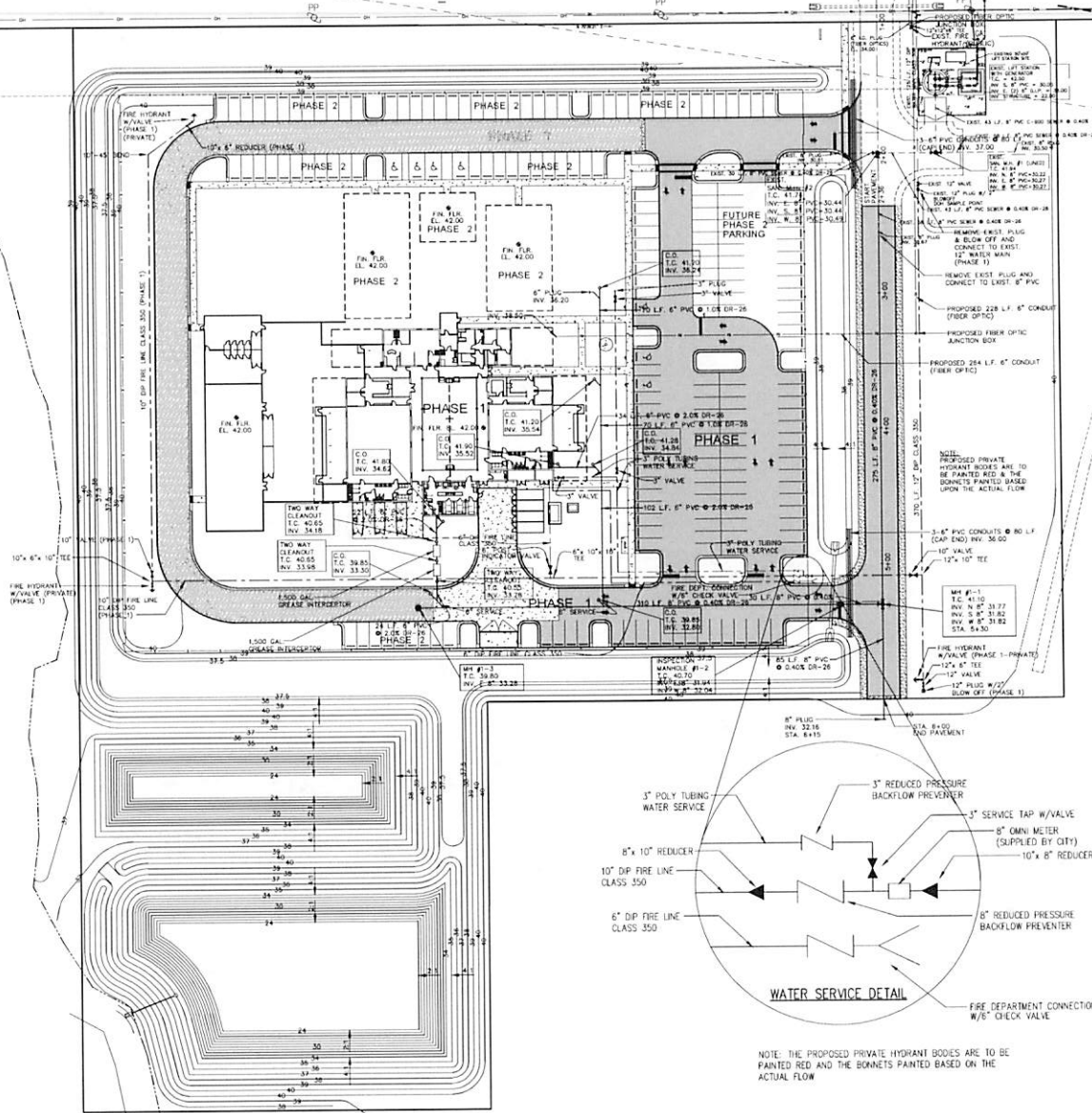
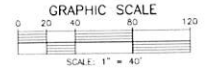
DEL #2017-104
CITY APPROVAL STAMP

2/10/17	REVISED PER CITY COMMENTS	HVB
1/10/17	REVISED PER SURVIMM	BVB
NOI DATE	DESCRIPTION	BY

PARKER MYNCHENBERG & ASSOCIATES, INC.
 PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
 1729 RIDGEWOOD AVENUE • HOLLY HILL, FLORIDA 32117
 (386) 677-6881 • FAX (386) 677-2114 • 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: 7/12/15	CADD TECH: HVB	
SCALE: 1" = 40'	SHEET: 6	OF 18

U.S. HIGHWAY 92/I.S.B.
VARIABLE WIDTH RIGHT OF WAY



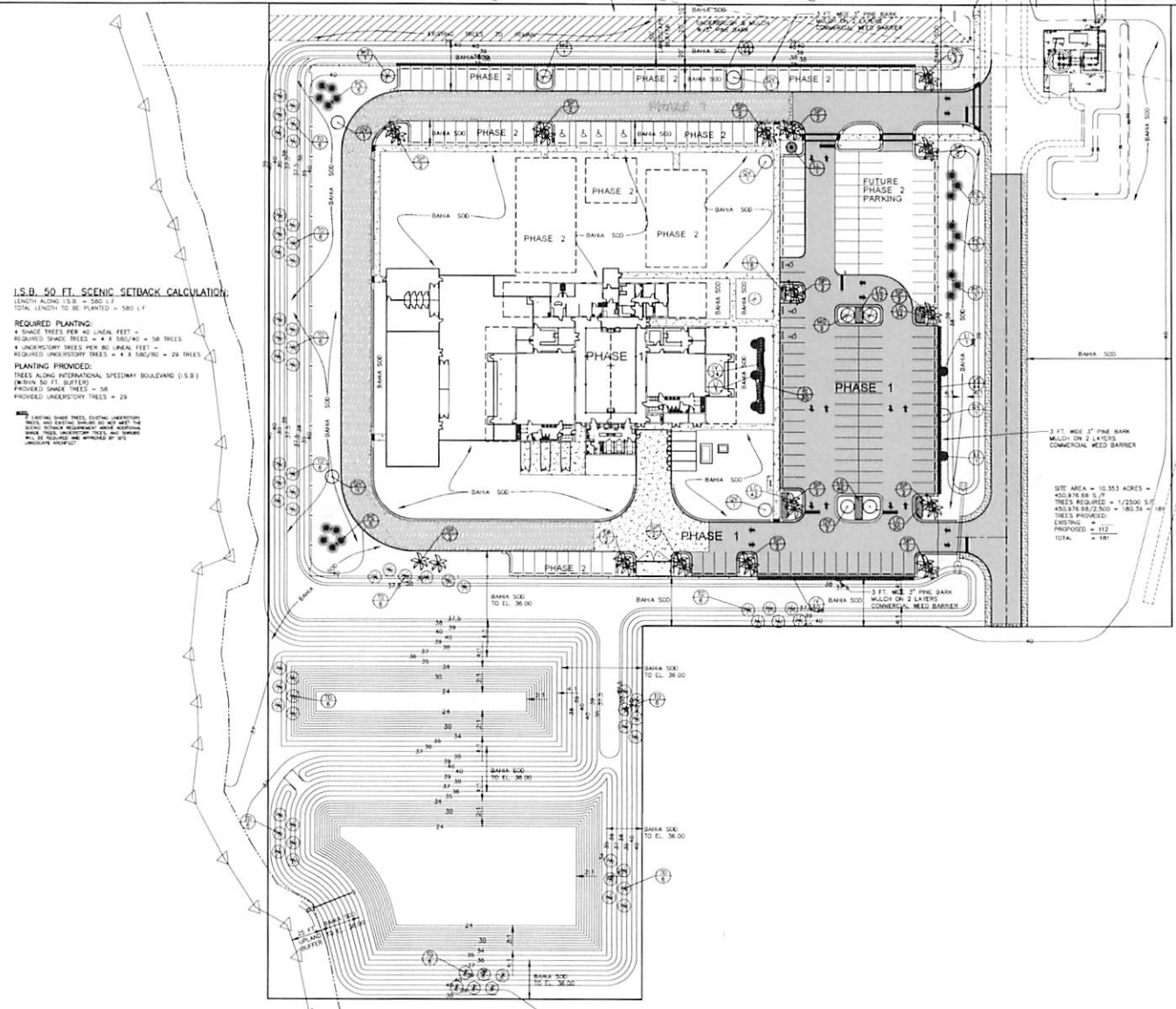
NOTE: THE PROPOSED PRIVATE HYDRANT BODIES ARE TO BE PAINTED RED AND THE BONNETS PAINTED BASED ON THE ACTUAL FLOW

DEV 2017-104
CITY APPROVAL STAMP

2 10/12/17	REVISED PER CITY COMMENTS	BVB
1 10/11/17	REVISED PER S.BROWD	BVB
NO DATE	DESCRIPTION	BY
R E V I S I O N S		
PARKER MYNCHENBERG & ASSOCIATES, INC.		
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS		
17219 RIDGEWOOD AVENUE HOLLY HILLS, FLORIDA 32117		
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com		
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910		
UTILITY SITE PLAN		
FIRST STEP HOMELESS ASSISTANCE SHELTER OSATONA BEACH • FLORIDA		
FILE NO. 1622SP-DWG	DESIGNER: P.MYNCHENBERG	
DATE: 7/12/17	CADD TECH: BVB	
SCALE: 1" = 40'	SHEET 2	OF 18
		SEAL

U.S. HIGHWAY 92/I.S.B.
VARIABLE WIDTH RIGHT OF WAY

BANK SIDE ALL DISTURBED AREAS
IN U.S.B. RIGHT-OF-WAY

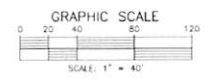


I.S.B. 50 FT. SCENIC SETBACK CALCULATION

LENGTH ALONG I.S.B. = 520 LF
TOTAL LENGTH TO BE PLANTED = 580 LF

REQUIRED PLANTING:
 4 SHADE TREES PER 40 LINEAL FEET = 58 TREES
 4 UNDERSTORY TREES PER 80 LINEAL FEET = 29 TREES
PLANTING PROVIDED:
 TREES ALONG INTERNATIONAL SPEEDWAY BOULEVARD (I.S.B.)
 (WITHIN 50 FT. BUFFER)
 PROVIDED SHADE TREES = 58
 PROVIDED UNDERSTORY TREES = 29

NOTES:
 1. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE CITY OF DAYTONA LANDSCAPE DESIGN MANUAL.
 2. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE CITY OF DAYTONA LANDSCAPE DESIGN MANUAL.
 3. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE CITY OF DAYTONA LANDSCAPE DESIGN MANUAL.
 4. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH THE CITY OF DAYTONA LANDSCAPE DESIGN MANUAL.



PLANT LIST

SYMBOL	ABB.	QTY	BOTANICAL NAME	COMMON NAME	SIZE
LC	202		LANTANA CANARIA	LANTANA	1 GAL., 12"-15" SPD, 20" DB
IB	B*	30	BAPHILEPS INDICA	INDIAN HARTSTON	3 GAL., 24" O.C., 10" HT. MIN.
IV*	74		ILEX VOMITORIA	HAWKWOOD HOLLY	3 GAL., 30" O.C., 24" HT. MIN.
VS	210		VERBENUM SUEPENSUM	SANDALWOOD VERBENUM	3 GAL., 30" O.C., 24" HT. MIN.
LI	5		LACONOSTICHA INDICA	CRAPE MYRTLE	15 GAL. MIN., 18"-24" MIN. CAL.
LL	1		LIQUIDAM LUCIDAM	LIQUIDAM TREE	15 GAL. MIN., 18"-24" MIN. CAL.
QV*	8		QUERCUS VIRGINIANA	WHITE OAK	30 GAL., 18"-24" HT., 2"-3" MIN. CAL.
MO*	4		MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	60 GAL., 18"-24" HT., 2"-3" MIN. CAL.
SP	30		SABAL PALMETTO	SABAL PALM	14"-18" CLEAN TRUNK
PE*	18		PRUNUS ELLIOTTI	SLOAN PINE	15 GAL., 7"-8" HT., 2"-2.5" MIN. CAL.
TE*	66		TAXODIUM DISTICHUM	SLAND CYPRESS	30 GAL., 8.5"-10" HT., 2.5"-2.75" MIN. CAL.
SD			ARGENTINE BAHIA		

* DENOTES KERIC/DROUGHT TOLERANT PLANT

REV #2017-104
 CITY APPROVAL STAMP

2 10/12/17	REVISED PER CITY COMMENTS	BVB
1 10/11/17	REVISED PER SARWMO	BVB
NO. DATE	DESCRIPTION	BY
R E V I S I O N S		
PARKER MYNCHENBERG & ASSOCIATES, INC.		
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS		
1729 RIDGEWOOD AVENUE • HOLLY HILL, FLORIDA 32117		
(386) 877-8891 • FAX (386) 877-2114 • E-MAIL: PMY@PARKERMYNCHENBERG.COM		
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

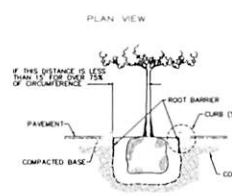
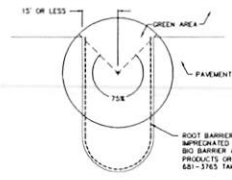
LANDSCAPE NOTES

LANDSCAPE REQUIREMENTS

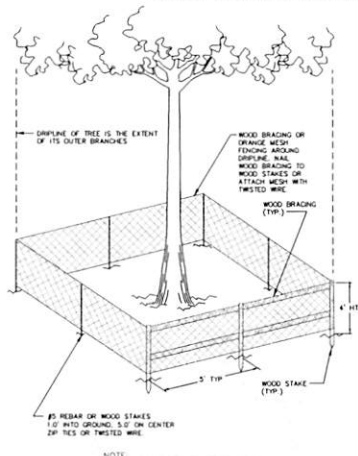
- 1) ALL PLANT MATERIALS SHALL BE FLORIDA OR BETTER ACCORDING TO THE CURRENT "GRANDS AND STANDARDS FOR FORESTRY PLANTS", STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE, TALLAHASSEE. TREES AND SHRUBS ARE TO BE CONTAINER GROWN. NO BALL AND BURLAP OR NON-CONTAINERIZED PLANTS WILL BE ALLOWED.
- 2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING PROJECT SOILS AND/OR RECOMMENDATIONS. PROPOSED CONTAINERS SHALL REPORT TO THE SOILS ARE ACCEPTABLE FOR PROPER GROWTH OF THE PROPOSED PLANT MATERIALS. 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 SHADERS CORRESPONDING.
- 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 STAMPS 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 MAINTAIN 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 MARKED 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) SOIL SHALL BE STRONG, SOLO SOIL PLACED EVENLY AND WITHOUT GAPS BETWEEN PIECES. GROUND SHALL BE THOROUGHLY METED BEFORE PLACING SOIL. SOIL SHALL BE PLACED TO LIMITS SHOWN AND TO THE EXTENT OF DAMAGED EXISTING SOIL. EXISTING GROUND SHALL BE STRIPPED BEFORE PLACING NEW SOIL.
- 12) THE LIVE OAKS SHALL BE CONTAINER GROWN AND NOT BAC 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 LANDSCAPE ARCHITECT.
- 15) LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THEIR OWN SQUARE FOOTAGE TAKEOFFS AND FIELD VERIFICATIONS FOR 100% SOIL COVERAGE FOR ALL ARE SPECIFIED BY THE PROJECT MANAGER.
- 16) ALL LANDSCAPE AREAS ARE TO BE PROVIDED WITH AUTOMATIC SPRINKLER SYSTEM WHICH WILL PROVIDE 100% COVERAGE AND SOIL OVERLAP.
- 17) LANDSCAPE CONTRACTOR TO PROVIDE DESIGN, LANDSCAPE ARCHITECT A DETAILED LANDSCAPE "AS-BUILT" DRAWING.
- 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 GAITHERSBURG 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 COMMENCING WITH THE WORK.

LANDSCAPE CERTIFICATION

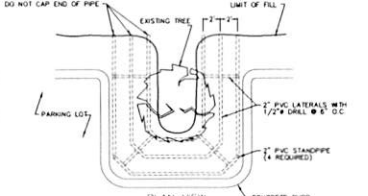
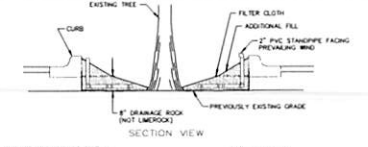
I HEREBY CERTIFY THE PROPOSED LANDSCAPE IMPROVEMENTS ASSOCIATED WITH THE NEW PARKING LOT AND BUILDING MEET OR EXCEED ALL REQUIREMENTS OF THE LAND DEVELOPMENT CODE (LDC).



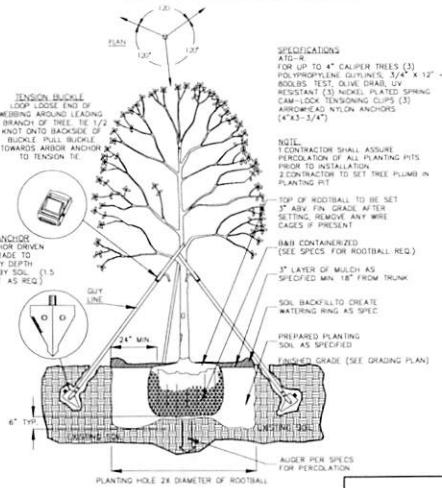
ROOT BARRIER DETAILS



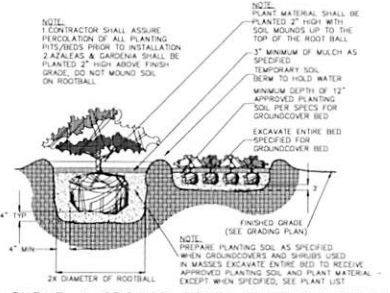
TREE PROTECTION BARRICADE



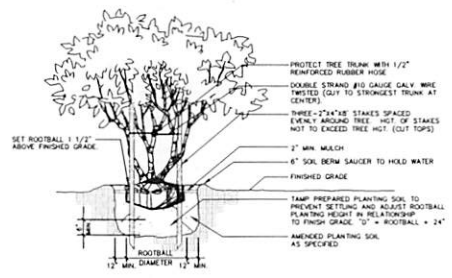
ROOT AERATION DETAILS



TREE PLANTING & GUY DETAILS



SHRUB & GROUND COVER PLANTING DETAIL



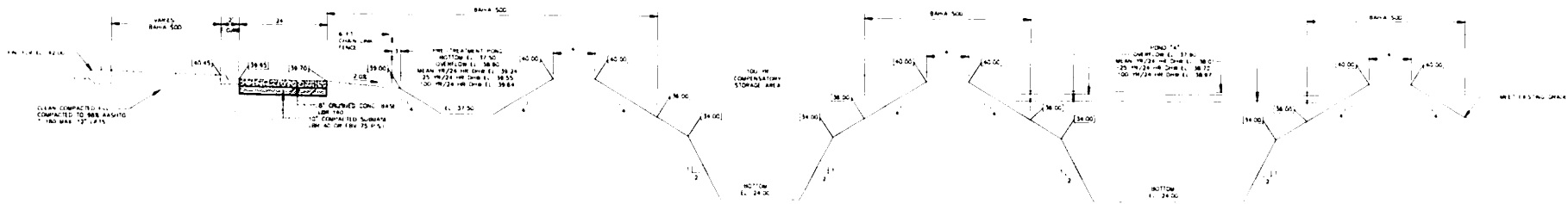
TYPICAL MULTI-TRUNK TREE

DEV 2017-104
CITY APPROVAL STAMP

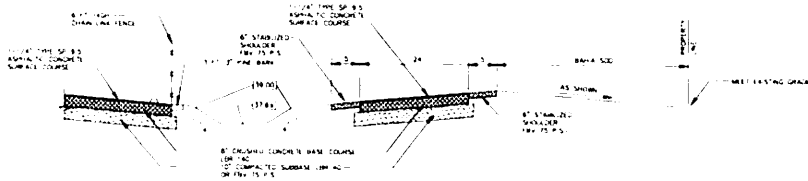
2/10/12/17	REVISED PER CITY COMMENTS	BVB
1/10/11/17	REVISED PER SURNAME	BVB
NO. DATE	DESCRIPTION	BY
R E V I S I O N S		
PARKER MYNCHENBERG & ASSOCIATES, INC.		
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS		
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117		
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com		
CERTIFICATION OF AUTHORIZATION NUMBER: 00003910		

LANDSCAPE DETAILS	
FIRST STEP HOMELESS ASSISTANCE SHELTER	
DAYTONA BEACH, FLORIDA	
FILE NO. 1622LD DWG	DESIGNER: P. MYNCHENBERG
DATE: 7/13/17	DRAWN: TSMAN, BVB
SCALE: NOT TO SCALE	SHEET: 9 OF 18

SEAL

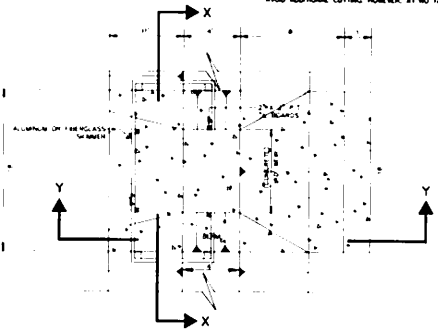


SECTION "A-A"

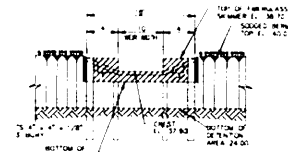


SECTION "B-B"

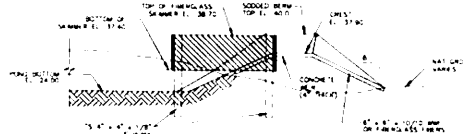
- NOTES:**
1. CONTRACTOR SHALL SLOPE THE TOP OF SKIMMER DOWN TO THE ORNST ELEVATION AT A SLOPE WHICH DOES NOT EXCEED 3:1 H. & V. SEE ADE #10.
 2. CONTRACTOR SHALL STABILIZE ALL EXPOSED & SOIL LOSS AREAS AROUND WEIR.
 3. A WEIR SHALL BE CUT OUT OF THE BOARD AT THE DESIGN CREST ELEVATION.
 4. ADDITIONAL PILES & BRACES MAY BE REQUIRED TO ACHIEVE THE REQUIRED WEIR DIMENSIONS.
 5. ALL FASTENERS SHALL BE STAINLESS STEEL SCREWS OR #8 HANG BOLTS.
 6. PILES SHALL BE PRESSURE-TREATED PRESUR-TREATED & FREE OF CRACKS & HOLLOWES.
 7. DIMENSION OF PRECAST SKIMMER IF REQUIRED, NO WOOD IS ACCEPTABLE.
 8. NO SPACES SHALL BE PERMITTED BETWEEN SKIMMER BOARDS, 2" & 3" TE BOARDS MAY BE REQUIRED TO PREVENT THE SKIMMER BOARDS FROM BUMPING IF THE LENGTH OF THE SKIMMER BOARD EXCEEDS 8 FEET.
 9. A MINIMUM OF 8" IS REQUIRED BETWEEN THE BOTTOM OF THE SKIMMER & THE POND BOTTOM IF THE 8" DOES NOT EXIST, THE CONTRACTOR SHALL OVERGRADE THE POND BOTTOM & SLOPE BACK TO THE POND AT A SLOPE OF NO STEEPER THAN 4:1 (H:V).
 10. CONTRACTOR MAY BE PERMITTED TO EXTEND THE LENGTH OF THE SKIMMER AS NEEDED TO AVOID ADDITIONAL CUTTING HOWEVER, IT NO THE WIDTH OF THE WEIR BE CHANGED.



PLAN VIEW OF WEIR/SKIMMER



SECTION "X-X"



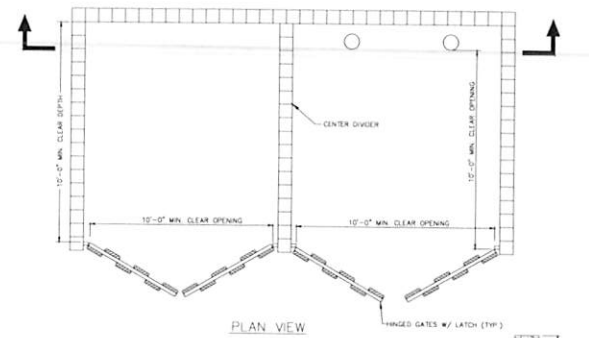
SECTION "Y-Y"

POND "A"
CONCRETE WEIR DETAILS
DRAINAGE CONTROL STRUCTURE #5

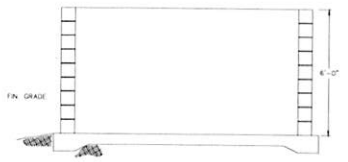
	<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> <tr> <td>2</td> <td>10/22/17</td> <td>REVISED PER CITY COMMENTS</td> <td>BWB</td> </tr> <tr> <td>1</td> <td>10/11/17</td> <td>REVISED PER SURMAD</td> <td>BWB</td> </tr> <tr> <td>NO.</td> <td>DATE</td> <td>DESCRIPTION</td> <td>BY</td> </tr> </table>	NO.	DATE	DESCRIPTION	BY	2	10/22/17	REVISED PER CITY COMMENTS	BWB	1	10/11/17	REVISED PER SURMAD	BWB	NO.	DATE	DESCRIPTION	BY	<p>8" REINFORCED CONCRETE (1800 PSI @ 28 DAYS)</p> <p>STAIN. ST. BARS GRADE #1 @ 18" O.C. P.S. ON 18" O.C. COMPARED TO USE #4 @ 18" O.C. (AS NOTED 7-18-17)</p> <p>N.T.S.</p>
NO.	DATE	DESCRIPTION	BY															
2	10/22/17	REVISED PER CITY COMMENTS	BWB															
1	10/11/17	REVISED PER SURMAD	BWB															
NO.	DATE	DESCRIPTION	BY															

DEV #2017-104
CITY APPROVAL STAMP

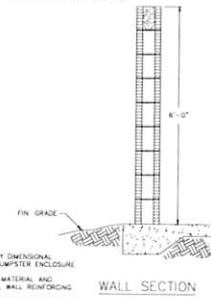
<p>PARKER MYNCHENBERG & ASSOCIATES, INC. PROFESSIONAL ENGINEERS & LANDSCAPE ARCHITECTS 1728 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117 (306)677-6091 FAX (306)677-2114 E-MAIL info@parkermynchenberg.com CERTIFICATE OF AUTHORIZATION NUMBER 00003910</p>			
<p>PAVING & DRAINAGE DETAILS</p>			
<p>FIRST STEP HOMELESS ASSISTANCE SHELTER DAYTONA BEACH • FLORIDA</p>			
<p>FILE NO 1822PRO DWG</p>	<p>DESIGNER P MYNCHENBERG</p>		
<p>DATE 7/27/17</p>	<p>CADD TECH BWB</p>		
<p>SCALE NONE</p>	<p>SHEET 11 OF 18</p>	<p>SEAL</p>	



PLAN VIEW



SECTION



WALL SECTION

- NOTES
1. BLOCK MUST BE FINISHED WITH STUCCO OR BRICK VENEER FINISH TO MATCH BUILDING
 2. DUMPSTER STRUCTURE SHALL MEET THE REQUIREMENTS OF CHAPTER 9, ARTICLE 9.3-30.0 OF THE LAND DEVELOPMENT CODE (LDC)
 3. SURFACE FINISHING REQUIRED (MIN. 3'-FOOT WIDE PLANTING AREA AROUND PERIMETER WALLS (EXCEPT OPENINGS))
 4. GATES TO BE CONSTRUCTED OF PRESSURE-TREATED WOOD OR APPROX. EQUIV.
 5. THE CITY HAS A CONTRACTOR FOR ROLL OFF SERVICE. NO OTHER CONTRACTOR SHALL BE PERMITTED TO PROVIDE THIS SERVICE. VERIFY COMPANY UNDER CONTRACT WITH THE CITY
 6. DUMPSTER ENCLOSURE HEIGHT MAY BE INCREASED TO A MAXIMUM HEIGHT OF 8'0\"/>
 - 7. IF BOLLARDS ARE INSTALLED CLEARANCE MUST BE MEASURED FROM BOLLARDS TO GATES

DUAL-USE DUMPSTER ENCLOSURE INDEX
M-10
MARCH 2014

- NOTE TO DESIGNER
1. THIS SETING REFLECTS CITY DIMENSIONAL REQUIREMENTS FOR THE DUMPSTER ENCLOSURE ONLY
 2. PROVIDE PROPOSED WALL MATERIAL AND HORIZONTAL AND VERTICAL WALL REINFORCING REQUIREMENTS
 3. PROVIDE PROPOSED SLAB DESIGN REQUIREMENTS INCLUDING REINFORCING
 4. PROVIDE ANY OTHER CONSTRUCTION DETAILS THAT MAY BE REQUIRED

DIMENSIONS & QUANTITIES												
D	X	A	B	C	E	F	G	M				
								Single	Double	Triple	Quad	
1/2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"
1/4"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"
3/8"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"
1/2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"
3/4"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"
1"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"
1 1/4"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"
1 1/2"	1 1/2"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"
1 3/4"	1 3/4"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"
2"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"
2 1/2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"
3"	3"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"
3 1/2"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"
4"	4"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"
4 1/2"	4 1/2"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"
5"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"
5 1/2"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"
6"	6"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"
6 1/2"	6 1/2"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"
7"	7"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"
7 1/2"	7 1/2"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"
8"	8"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"
8 1/2"	8 1/2"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"
9"	9"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"
9 1/2"	9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"
10"	10"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"
10 1/2"	10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"
11"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"
11 1/2"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"
12"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"
12 1/2"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"	18"
13"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"	18"	18 1/2"
13 1/2"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"	18"	18 1/2"	19"
14"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"	18"	18 1/2"	19"	19 1/2"
14 1/2"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"	18"	18 1/2"	19"	19 1/2"	20"
15"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"	18"	18 1/2"	19"	19 1/2"	20"	20 1/2"
15 1/2"	15 1/2"	16"	16 1/2"	17"	17 1/2"	18"	18 1/2"	19"	19 1/2"	20"	20 1/2"	21"
16"	16"	16 1/2"	17"	17 1/2"	18"	18 1/2"	19"	19 1/2"	20"	20 1/2"	21"	21 1/2"
16 1/2"	16 1/2"	17"	17 1/2"	18"	18 1/2"	19"	19 1/2"	20"	20 1/2"	21"	21 1/2"	22"
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18 1/2"	18 1/2"	19"	19 1/2"	20"	20 1/2"	21"	21 1/2"	22"	22 1/2"	23"	23 1/2"	24"
19"	19"	19 1/2"	20"	20 1/2"	21"	21 1/2"	22"	22 1/2"	23"	23 1/2"	24"	24 1/2"
19 1/2"	19 1/2"	20"	20 1/2"	21"	21 1/2"	22"	22 1/2"	23"	23 1/2"	24"	24 1/2"	25"
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29 1/2"	29 1/2"	30"	30 1/2"	31"	31 1/2"	32"	32 1/2"	33"	33 1/2"	34"	34 1/2"	35"
30"	30"	30 1/2"	31"	31 1/2"	32"	32 1/2"	33"	33 1/2"	34"	34 1/2"	35"	35 1/2"
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37"	37"	37 1/2"	38"	38 1/2"	39"	39 1/2"	40"	40 1/2"	41"	41 1/2"	42"	42 1/2"
37 1/2"	37 1/2"	38"	38 1/2"	39"	39 1/2"	40"	40 1/2"	41"	41 1/2"	42"	42 1/2"	43"
38"	38"	38 1/2"	39"	39 1/2"	40"	40 1/2"	41"	41 1/2"	42"	42 1/2"	43"	43 1/2"
38 1/2"	38 1/2"	39"	39 1/2"	40"	40 1/2"	41"	41 1/2"	42"	42 1/2"	43"	43 1/2"	44"
39"	39"	39 1/2"	40"	40 1/2"	41"	41 1/2"	42"	42 1/2"	43"	43 1/2"	44"	44 1/2"
39 1/2"	39 1/2"	40"	40 1/2"	41"	41 1/2"	42"	42 1/2"					

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 THE STANDARD OR GENERAL USE PERMITS AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO BEGINNING ANY DEWATERING ACTIVITIES OR IN ANY CONSTRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDING THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED SHALL REQUIRE A PERMIT AS REQUIRED BY THE CITY'S UTILITIES DEPARTMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON THE SQUARE FEET OF MAINTENANCE ACTIVITIES. DEWATERING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S WASTEWATER TREATMENT PLANT SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON THE SQUARE FEET OF MAINTENANCE ACTIVITIES. DEWATERING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S WASTEWATER TREATMENT PLANT SHALL BE SUBJECT TO ARTICLE 20 SECTION 31 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BAYVIEW STREET SUITE 100, DAYTONA BEACH, FL 32119 BEFORE ANY USE OF THE MSA MAY BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S WWS SYSTEM.
3. ALL WORK PERFORMED UPON POTABLE WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONDUCTED BY AN UNDERGROUND UTILITY CONTRACTOR OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
4. 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-BUILT DRAWINGS (INCLUDING THE CITY'S AS-BUILT DRAWING REQUIREMENTS) ARE PROVIDED TO THE CITY PRIOR TO ANY USE OF THIS SYSTEM.
5. WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED TO COMPLY WITH THE CITY'S FIRE (MFR) FLOW CODE.
6. ALL WATER SERVICE LINES SHALL BE MARKED WITH A 2" x 4" LUMBER (PRESSURE TREATED) EXTENDING A FEET ABOVE GRADE, IMPRINT OF THE METER BOX WITH 2" OF ENDSIDE COILED AND CAPPED WITH AN ELSTER HYDROSEAL CAP AND ANGLE OF THE METER BOX.
7. ALL WATER SERVICES SHALL BE MARKED WITH AN "X" 5/8" DIA INTO THE CURB.
8. ALL WATER SERVICES SHALL BE MARKED WITH AN "X" 5/8" DIA INTO THE CURB.
9. ALL TAPPING OF MAINS SHALL BE PERFORMED WITH A UTILITY REPRESENTATIVE PRESENT. ALL TAPPING OF MAINS SHALL BE PERFORMED WITH THE CITY'S UTILITIES DEPARTMENT. ALL TAPPING OF MAINS SHALL BE COORDINATED WITH THE WATER DISTRIBUTION DIVISION (DMS) UTILITIES.
10. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION STATIONS & OFFSETS FROM THE CENTER LINE OF CONSTRUCTION AND RIGHT-OF-WAY LINES TO THE PROPOSED LOCATIONS OF ALL WATER MAINS.
11. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW MAIN BENCH LAD.
12. ALL WATER MAINS SHALL BE LAID ON A FIRM UNDISTURBED FOUNDATION WITH ALL UNDESIRABLE MATERIAL (MUCK, ROCK, COALS, ETC) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
13. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95% IN UNPAVED AREAS AND 95% IN PAVED AREAS IN ACCORDANCE WITH AASHTO T-100 MODIFIED PROCTOR TEST.
14. 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 ABOVE THE PIPE AND AT 12 HORIZONTAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 1 OF 4)

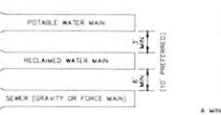
W-1

POTABLE WATER MAIN TO BE CENTERED ABOVE THE CROSSING MAIN FOR MINIMUM 3" SEPARATION.



CROSS 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 SEWER COLLECTION LINES AND POTABLE WATER MAINS.

PLAN VIEW

NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF SIX FEET, AND PREFERRED TEN FEET, BETWEEN THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY, OR PRESSURE-TYPE SANITARY SEWER, WASTE WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 82-015, 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-TYPE SANITARY SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST TWELVE INCHES, AND PREFERRED FIFTEEN INCHES, ABOVE THE TOP OF THE SEWER. NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTE WATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 22 INCHES ABOVE 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 PIPE SHALL BE CENTERED ABOVE ALL WATER MAINS AND AT LEAST THREE FEET FROM ALL JOINTS IN GRAVITY-TYPE SANITARY SEWERS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART II OF CHAPTER 82-015, F.A.C. AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY-TYPE SANITARY SEWERS, WASTE WATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 82-015, F.A.C.

PIPE SEPARATION DETAIL (N1S)

PIPE SEPARATION DETAIL (N1S)

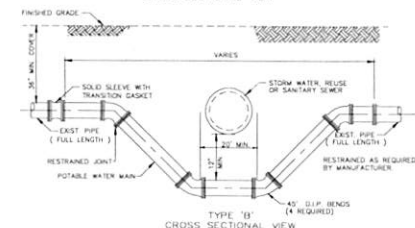
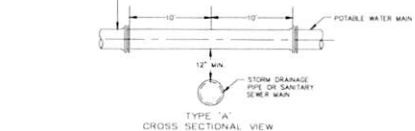
PIPE SEPARATION DETAIL (N1S)

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. THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SURFACE AT LEAST 18" ABOVE THE SEWAGE MAIN. ALTERNATIVELY, THE SEWER MAIN SHALL BE ENCASED WITH CONCRETE OR ENCASED IN A WATER TIGHT CORRUGATED PIPE, OR UPGRADED TO PRESSURE RATED PIPE (MEETING THE SPECIFICATIONS OF NSF-1A AND AWWA C900).
16. PIPE SEPARATION DETAIL (N-5) AND UTILITY PIPE ENCASEMENT DETAIL (N-6).
17. 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, WHEREVER IS GREATER.
18. THREE HIGH MOW MAINTAINED LOCATOR TAPES SHALL BE USED FOR ALL PRESSURIZED MAINS INSTALLED. THE LOCATOR TAPES SHALL BE NON-CORROSIVE CONSISTING OF POLYETHYLENE FILM WITH METALLIC FILM AND SHALL BE CONTINUOUSLY MARKED TO IDENTIFY THE REFERENCED PIPELINE. THE TAPES SHALL BE INSTALLED EIGHTEEN INCHES DIRECTLY ABOVE THE PIPE.
19. ALL NON-METALLIC WATERLINES SHALL HAVE #12 SINGLE STRAND OF WATER PULVULATED COPPER WIRE ATTACHED TO THE ENDS NEED TO BE SEALED WITH LIQUID TAPE.
20. SINGLE RESIDENTIAL WATER SERVICES SHALL BE A COPPER 1/2" MINIMUM OR ENDOURANCE POLY-PIPE (MEETS THE SPECIFICATIONS OF NSF-1A AND AWWA C900).
21. ALL WATER MAINS SHALL BE NON-APPROVED FOR POTABLE WATER USE AND SHALL HAVE A MINIMUM COVER OF 36 INCHES.
22. WATER MAINS SHALL BE DUCTILE IRON PIPE (DIP), CLASS 300 CEMENT LINED UNLESS OTHERWISE APPROVED BY THE CITY. ALL NON-DUCTILE IRON PIPE HORIZONTAL DISCHARGE DRILL WATER MAINS SHALL HAVE A MINIMUM HORING PRESSURE RATING OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
23. ALL POTABLE WATER MAINS SHALL USE A BURST RESTRAINT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES.
24. METALLIC BURST RESTRAINT JOINTS (GASKET CASINGS OR STEEL CAPS) SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF BURST JOINTS NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA BURST RESTRAINT DESIGN GUIDELINES.
25. GASKETTING CASSETS SHALL BE USED AS APPROPRIATE FOR RESTRAINED PRESSURE PIPE TO FITTINGS, VALVES, ETC.
26. 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.
27. AT ALL WATER MAIN TRENCHES AND VALVES, SHALL BE INSTALLED ON ALL LEADS EXCEPT ONE.
28. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
 - A. RESIDENT SEAT GATE VALVES (AWWA C-509)
 - B. TAPPING VALVES WITH MECHANICAL TAPPED SLAVE
29. ALL WATER VALVES INCLUDING CONCRETE COLLAR WITH GASKET CASSET SHALL BE ADJUSTED TO FINISH GRADE AND THE VALVE BOX LID PAINTED PLANT BLUE TO MAKE THEM PLAINLY VISIBLE.
30. 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.
31. ALL VALVES 24" AND SMALLER SHALL BE CURB STOPS. VALVES LARGER THAN 24" SHALL BE GATE VALVES.

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 2 OF 4)

W-2



- 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 7" INSTEAD THAT THIS DOES NOT APPLY TO SEWER LATERALS. SEE STANDARD OF PRACTICE 5-1A AND 5-1B.
 3. LOWERING OF EXISTING WATER MAIN & FORCE MAIN BY DEFLECTION METHOD MAY BE ACCEPTABLE IF EXISTING FIELD CONDITIONS PERMIT AND APPROVAL IS RECEIVED FROM CDDO.
 4. LENGTH OF SECTION BASED ON MINIMUM LENGTH AS DETERMINED BY DIPRA RESTRAINED JOINT MANUAL.
 5. INSTALLED RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20" MIN).

TYPICAL PIPE CROSSING DETAIL (N1S)

TYPICAL PIPE CROSSING DETAIL (N1S)

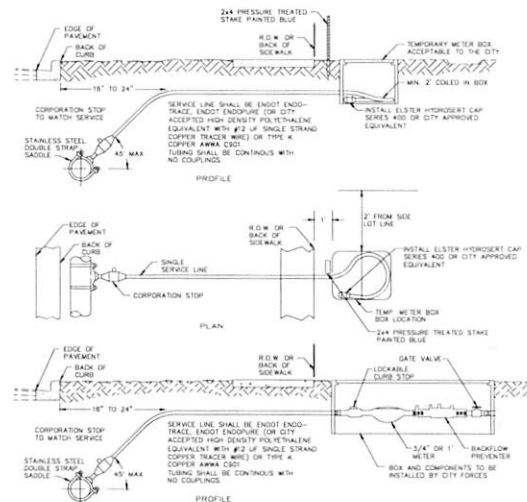
TYPICAL PIPE CROSSING DETAIL (N1S)

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

32. 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 RADII OF COVERED AREA. FIRE HYDRANTS SHALL BE MAINTAINED AS CLOSE AS POSSIBLE TO THE STREET FOR FIRE PERSONNEL. THE PRIMARY HYDRANT POINT IS TO FACE THE STREET.
33. IN AREAS WHERE RECLAIMED WATER IS NOT AVAILABLE, THE CONTRACTOR SHALL BE REQUIRED TO TRANSFER THE WATER FROM THE POTABLE MAIN TO THE NECESSARY BACKFLOW PREVENTION DEVICES TO THE NON-POTABLE WATER LINES FOR UTILIZATION IN THEIR RESPECTIVE TEST.
34. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL POTABLE MAINS 6" OR GREATER IN DIAMETER (HANDING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR).
35. WITH RESPECT TO FLOODING, PIDDING, TESTING, AND IN CONNECTION, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 8:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
36. THE CITY RESERVES THE RIGHT TO WITHHELD THE SAMPLING AND ANALYSIS FOR BACTERIOLOGICAL CLEARANCE OF THE WATER MAIN. ANY REFUSAL WILL BE AT THE CONTRACTOR'S EXPENSE.
37. POTABLE WATER SYSTEM EXTENSIONS MAY NOT BE USED PRIOR TO FINAL TESTING. FINAL CLEARANCE IS ACCEPTED BY THE CITY OF DAYTONA BEACH AND THE VOLusia COUNTY HEALTH DEPARTMENT.
38. A BACKFLOW 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:
 - A. POTABLE WATER SERVICE, REDUCED PRESSURE ZONE (RPZ) FIRELINE SERVING A FIRE SPRINKLER SYSTEM AND/OR PRIVATE FIRE HYDRANT, DOUBLE CHECK VALVE SYSTEM.
 - B. FIRELINE, DOUBLE CHECK VALVE SYSTEM.
39. IN CASES WHERE A WATER LINE SERVES BOTH DOMESTIC AND FIRE SERVICES, A REDUCED PRESSURE ZONE (RPZ) SHALL BE REQUIRED.
40. ALL NEW WORKS REQUIRED WITH COMMERCIAL DEVELOPMENTS SHALL BE AT THE SOLE COST OF THE OWNER / DEVELOPER.
41. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-87 STANDARDS OR UPDATES FOR BURST PROTECTION MAY BE REQUIRED WHEN USING THE C-900-87 STANDARDS.
42. COLORMATED WATER MUST BE DE-COLORMATED PRIOR TO DISCHARGE INTO ANY JURISDICTION, WETLAND OR WATER BODY AS PER ANAS STANDARDS, ANAS/AWWA C850-09.

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 3 OF 4)

W-3



- NOTES:**
1. METER AND METER BOX SHALL BE FURNISHED BY CITY FORCES.
 2. METER SHALL BE INSTALLED BEHIND SIDEWALK OR R.O.W. AS SHOWN.
 3. BACKFLOW PREVENTION DEVICE (DOUBLE CHECK VALVE ASSEMBLY) SHALL BE INSTALLED ON THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTE WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 82-015, F.A.C.
 4. IRRIGATION SYSTEMS REQUIRE AN APPROVED BACKFLOW PREVENTER.
 5. ACCEPTABLE MANUFACTURERS SEE CDDO'S APPROVED PRODUCT LIST.
 6. SERVICE SADDLES SHALL BE STAINLESS STEEL STRIPS-FRONT COATED. ACCEPTABLE MANUFACTURERS INCLUDE: SETH BLAIR (DODD/ULL), JOM FORD OR APPROVED ECU.
 7. ALL WATER LOCATIONS ON COMMERCIAL SITES SHALL BE IDENTIFIED AS SHOWN ON THE CITY APPROVED AS-BUILT MAPS. THE LOCATION OF ALL WATER MAINS, SERVICE LATERALS, PLAN AND FIELD MARKED HORIZONTALLY & VERTICALLY BY THE OWNER OR OWNER'S REPRESENTATIVE.

TYPICAL WATER SERVICE LATERAL DETAIL (N1S)

TYPICAL WATER SERVICE LATERAL DETAIL (N1S)

TYPICAL WATER SERVICE LATERAL DETAIL (N1S)

TYPICAL WATER SERVICE LATERAL DETAIL (N1S)

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TYPICAL WATER SERVICE LATERAL DETAIL (N1S)

TYPICAL WATER SERVICE LATERAL DETAIL (N1S)

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 COMPLETELY PROPER. HOWEVER, ON ALL PROJECTS THE TESTING WILL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. INDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON THE EARTH. TEST RESULTS SHALL BE FURNISHED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL POTABLE WATER MAINS SHALL BE FLOWED, DISINFECTED, PRESSURE TESTED AND BACTERIOLOGICALLY CURED 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 WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WATER TREATMENT PLANT AT LEAST 3 (THREE) BUSINESS DAYS PRIOR TO BEGINNING FLOW OF THE MAINS PRIOR TO THE COMMENCEMENT OF PIDDING. TESTING AND FLOW OF FIRE HYDRANT SHALL BE USED IN THE COLLECTION OF BACTERIOLOGICAL SAMPLES. THE SAMPLING TAP MUST BE DEGASEATED AND CLEAN AND DISINFECTED AND FLOWED PRIOR TO SAMPLING. SAMPLING TAP SHALL BE SMOOTH, UNTHREADED 1/2" HOSE BIB DISINFECTED & 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 MANUFACTURER'S LABELED TESTING PRESSURE).
4. WATERMANS SHALL BE PRESSURE TESTED TO 150 PSI FOR 4 HOURS. TESTING SHALL BE IN ACCORDANCE WITH AWWA C-850 AND AWWA C-500 AS APPLICABLE, WITH ALLOWABLE LEAKAGE TO BE X GAL/HR PER K' DIA. OF PIPE, PER K' OF MAIN TO BE TESTED.

AWWA PRESSURE TEST	NOMINAL PIPE DIAMETER - INCHES	AREA OF PIPE	TEST PRESSURE
150	12	113.1	150
150	14	153.9	150
150	16	201.1	150
150	18	254.3	150
150	20	312.5	150
150	22	375.7	150
150	24	443.9	150
150	26	517.1	150
150	28	595.3	150
150	30	678.5	150
150	32	766.7	150
150	34	860.9	150
150	36	961.1	150
150	38	1067.3	150
150	40	1179.5	150
150	42	1297.7	150
150	44	1421.9	150
150	46	1552.1	150
150	48	1688.3	150
150	50	1830.5	150
150	52	1978.7	150
150	54	2132.9	150
150	56	2293.1	150
150	58	2459.3	150
150	60	2631.5	150
150	62	2809.7	150
150	64	2993.9	150
150	66	3184.1	150
150	68	3380.3	150
150	70	3582.5	150
150	72	3790.7	150
150	74	3994.9	150
150	76	4205.1	150
150	78	4421.3	150
150	80	4643.5	150
150	82	4871.7	150
150	84	5105.9	150
150	86	5346.1	150
150	88	5592.3	150
150	90	5844.5	150
150	92	6102.7	150
150	94	6366.9	150
150	96	6637.1	150
150	98	6913.3	150
150	100	7195.5	150

* IF THE PRELIMINARY TEST OBTAINS 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
 D = NOMINAL DIAMETER OF PIPE, IN INCHES
 A = AREA, TEST PRESSURE DURING THE LEAKAGE TEST, IN SQUARE INCHES (GAGE)

WATER CONSTRUCTION & DESIGN STANDARDS (PAGE 4 OF 4)

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REV #2017-104 CITY APPROVAL STAMP

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

NO.	DATE	DESCRIPTION	BY
3	10/12/17	REVISED PER CITY COMMENTS	BVB
1	10/11/17	REVISED PER S/R/M/D	BVB
NO.	DATE	DESCRIPTION	BY

PARKER MYNCHENBERG & ASSOCIATES, INC.
 PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
 1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
 (386) 977-6951 FAX (386) 977-2114 E-MAIL: PMY@PARKERMYNCHENBERG.COM
 CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

WATER STANDARD DETAILS

FIRST STEP
 HOMELESS ASSISTANCE SHELTER
 DAYTONA BEACH, FLORIDA

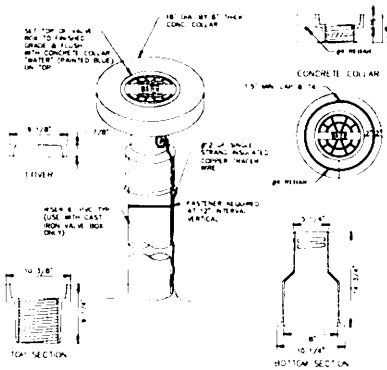
FILE NO: 1622WB_REV_042
 DATE: 7/12/17
 SCALE: NONE
 SHEET 14 OF 18

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

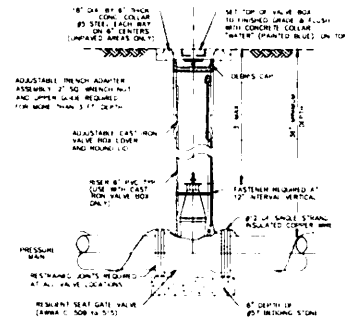
Other Pipe	Horizontal Separation	Crossings (I)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (I)	Water Main 12" minimum	Water Main 12 inches as the minimum, except for storm sewer, then 6 inches at the minimum and 12 inches as preferred	Alternate 78" maximum
Vacuum Sanitary Sewer	Water Main 12" preferred 6" minimum	Water Main 12 inches as preferred 6 inches minimum	Alternate 78" maximum
Gravity or Pressure Sanitary Sewer, Force Main, Reclaimed Water (II)	Water Main 12" preferred 6" minimum (I)	Water Main 12 inches as the minimum, except for gravity sewer, then 6 inches at the minimum and 12 inches as preferred	Alternate 78" maximum
On-Site Sewage Treatment & Disposal System	12" minimum		

- Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.
- Reclaimed water requested under Part 221 of Chapter 62 B.F.C.
- For gravity sanitary sewer below the bottom of the water main, a vertical clearance of 6 inches above the top of the gravity sanitary sewer is required to meet the required separation of 12 inches.

WATER MAIN SEPARATION CHART



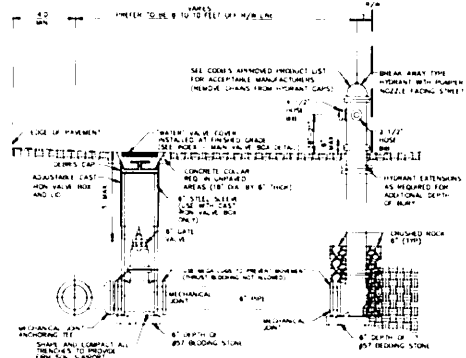
WATER MAIN VALVE BOX
N15
MAIN VALVE BOX
DETAIL
W 17



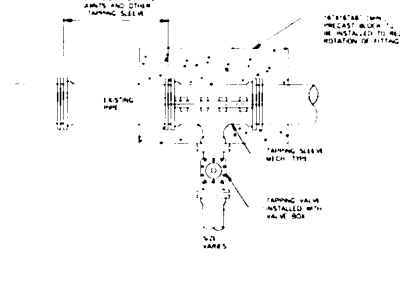
WATER VALVE AND VALVE BOX
N16
WATER VALVE & VALVE BOX DETAILS
W 16

PIPE SIZE (IN)	RESTRAINTS (NO. REQUIRED)	RESTRAINTS (NO. REQUIRED)	RESTRAINTS (NO. REQUIRED)	RESTRAINTS (NO. REQUIRED)	RESTRAINTS (NO. REQUIRED)
12	2	2	2	2	2
14	2	2	2	2	2
16	2	2	2	2	2
18	2	2	2	2	2
20	2	2	2	2	2
22	2	2	2	2	2
24	2	2	2	2	2
26	2	2	2	2	2
28	2	2	2	2	2
30	2	2	2	2	2
32	2	2	2	2	2
34	2	2	2	2	2
36	2	2	2	2	2
38	2	2	2	2	2
40	2	2	2	2	2

NOTES:
1. RESTRAINTS SHALL BE OF THE SELF-CLEANING TYPE.
2. RESTRAINTS ARE TO BE SUPPLIED FROM THE MANUFACTURER WITH A BURST RATING.
3. JOINT BOXES TO BE AMERICAN STANDARD JOINTS.
4. RESTRAINT JOINTS REQUIRED: THIRST BLOCKS ARE NOT PERMITTED.
5. ADJUSTABLE FRENCH ADAPTER ASSEMBLY REQUIRED FOR ALL MAINS GREATER THAN 12" DEEP.
6. INSTALL AT 90° TO LINES OF AT CORNERS OF HORIZONTAL MAINS.
7. INSTALL AT 90° TO MAINS OF CONDUIT.
8. REFLECTIVE PAVEMENT MARKER INSTALLED.
9. HYDRANT TESTING SHALL BE ACCORDING TO THE CITY AS LISTED.
10. THE CITY WILL DETERMINE THE COLOR OF THE BURNER.
11. REFLECTIVE PAVEMENT MARKER SHALL BE PAINTED COLOR TO BE YELLOW OR TO BE ACCEPTABLE BY THE CITY.



FIRE HYDRANT ASSEMBLY
N15
FIRE HYDRANT ASSEMBLY
DETAIL
W 18



TAPPING SLEEVE & VALVE

CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY
1	2/2/27	REVISED PER CITY COMMENTS	PHB
2	10/11/17	REVISED PER DRAWING	PHB

REVISIONS

PARKER MYNCHENBERG & ASSOCIATES, INC.
 PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
 1729 RIDGEWOOD AVENUE • HOLLY HILL, FLORIDA 32117
 (386) 877-8801 FAX (386) 877-2118 • WWW.PARKERMYNCHENBERG.COM
 CERTIFICATE OF AUTHORIZATION NUMBER: 00003990

WATER STANDARD DETAILS

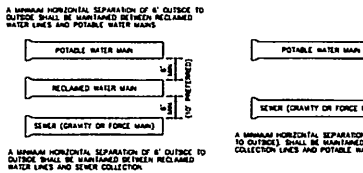
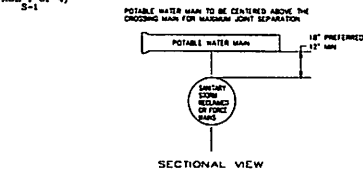
FIRST STEP
 HOMELESS ASSISTANCE SHELTER
 DAYTONA BEACH, FLORIDA

FILE NO: 162240-001-002 (S) LOWER W/DP/MP/MB/BRG
 DATE: 2/2/27 (CAD) TECH: PHB
 SCALE: NONE (SHEET 15 OF 16) SEAL:

**SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS**

1. THE OTHER UTILITIES DEPARTMENT SHALL REVIEW A NUMBER OF BUSINESS DAYS ADVANCE (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY SANITARY SEWER CONSTRUCTION.
2. ALL REMEDIATION ACTIVITIES EITHER DIRECTLY OR INDIRECTLY USE THE CITY'S STORMWATER SYSTEM TO REMOVE GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS SET FORTH IN SECTION 17 OF THE DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO CHANGING ANY REMEDIATION ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITIES REMEDIATING ACTIVITIES, THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENGAGED WALK, EXTERIOR OR INTERIOR ALLOWING CONSTRUCTION OR MAINTENANCE TO BE COME IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE APPROVED AREA AND SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER AND FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON THE SCHEDULE OF MAINTENANCE ACTIVITIES DISCUSSING DIRECTLY OR INDIRECTLY INTO THE CITY'S WASTEWATER PERMIT APPLICATIONS MAY BE FOUND AT: <http://www.ci.davtona.fl.us/permits.htm>. THESE FEES ARE SUBJECT TO SECTION 31 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT ITS MAIN STREET 100, DAYTONA BEACH, FL 32114 BEFORE ANY USE OF THE MSA WILL BE ALLOWED FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S WASTEWATER SYSTEM.
3. UPON COMPLETION, THE CONTRACTOR SHALL PROVIDE THE CITY UTILITIES DEPARTMENT WITH A CITY INSPECTION LOG ON DVD AND A PRINTED REPORT FOR ALL GRANTY MAINS AND LATERALS. CONSTRUCTION SHALL BE COMPLETED PRIOR TO COMMENCING THE CITY INSPECTION. THE CONTRACTOR SHALL COORDINATE THE CITY INSPECTION WITH THE CITY UTILITY INSPECTOR PRIOR TO INITIATING THE NORMAL PAVING SHALL NOT COMMENCE UNTIL APPROVAL HAS BEEN RECEIVED FROM THE CITY UTILITY INSPECTOR.
4. SEWER LATERALS LOCATIONS SHALL BE MARKED ABOVE THE GROUND WITH A 3/4" DIA. 1" OR BY A METAL TAB SET INTO THE PAVEMENT.
5. THE CONTRACTOR SHALL BE REQUIRED TO INSTALL ALL FORCE MAINS EQUAL TO OR GREATER THAN 8" IN DIAMETER AND PRIMARY TRANSMISSION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADS. LANDING AND EXHAUSTION POINTS SHALL BE DETERMINED BY THE CITY.
6. WITH RESPECT TO SE-WR CONNECTIONS AND CORING OPERATIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW (NO MORE THAN 10:00 AM) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
7. ALL WORK PERFORMED UNDER 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 IN THE CITY.
8. UPON COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO FURNISH THE SYSTEM AS PROPOSED, UNLESS CHANGED AND ACCEPTED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AS-BUILTS ARE PROVIDED TO THE CITY UTILITIES DEPARTMENT FROM ANY USE OF THE SYSTEM.
9. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL DIMENSION THE LOCATION OF ALL FORCE MAINS, MANHOLE MANHOLE 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 AVOID 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-14).
12. ALL VALVES SHALL BE IDENTIFIED AS SUCH WITH AN ENGRAVED DISH 2" x 4" MARK PLACED ENGRAVED IN SURFACE OF CONCRETE COLLAR WITH SIZE, TYPE AND NUMBER OF TURNS.
13. FOR AS-BUILT 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 3 OF 4)**



NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL CLEARANCE OF AT LEAST 36 INCHES, AND PREFERABLY 48 INCHES, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED UNDERGROUND UTILITY. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN UNDERGROUND UTILITIES SHALL BE AS FOLLOWS: (S-1 TO S-14).
 RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A HORIZONTAL CLEARANCE OF AT LEAST 36 INCHES ABOVE THE TOP OF THE SEWER NEW OR RELOCATED UNDERGROUND WATER MAINS UNLESS OTHERWISE SPECIFIED OTHERWISE. UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PRESSURE CONVEYED WATER SHALL BE LAID TO 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 CROSSING DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE AND THE WATER MAIN JOINTS SHALL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. A MINIMUM OF 12 INCHES OF PROTECTIVE COVER SHALL BE MAINTAINED UNDER ALL JOINTS IN UNDERGROUND WATER MAINS UNLESS OTHERWISE SPECIFIED OTHERWISE. UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL CLEARANCE OF AT LEAST 36 INCHES FROM ALL JOINTS IN GRANTY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 82-161, F.A.C. AND AT LEAST THE FEET FROM ALL JOINTS IN GRANTY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 82-161, F.A.C.

PIPE SEPARATION DETAIL
NTS
PIPE SEPARATION DETAIL
S-3

**SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS
(CONT'D)**

14. ALL LEFT STATION METRELL FASTENERS AND THROUGH-TOP CONNECTORS THAT CONTACT THE METRELL STATION AS SHOWN SHALL BE 3/8" DIA. FASTENERS.
15. ALL GRANTY SANITARY SEWER MAIN LINES SHALL BE 6" DIAMETER UNLESS OTHERWISE SPECIFIED OTHERWISE. ALL 6" DIA. LATERALS SHALL BE 4" DIA. UNLESS OTHERWISE SPECIFIED OTHERWISE.
16. ALL GRANTY SANITARY SEWER MAIN LINES SHALL BE GREEN PVC (SDR-35, AISEN D-3034, OR C-900) OR 12" UNLESS OTHERWISE SPECIFIED OTHERWISE. ALL 12" DIA. LATERALS SHALL BE GREEN PVC (SDR-35, AISEN D-3034, OR C-900) UNLESS OTHERWISE SPECIFIED OTHERWISE. UNLESS OTHERWISE SPECIFIED OTHERWISE, ALL 12" DIA. LATERALS SHALL BE GREEN PVC (SDR-35, AISEN D-3034, OR C-900) UNLESS OTHERWISE SPECIFIED OTHERWISE.
17. FOR SINGLE FAMILY HOMES, SINGLE OR HIGH SEWER SERVICES LATERALS SHALL BE CONSTRUCTED AT EACH LOT OR UNIT AND LOCATED ON THE DOWNSTREAM SIDE OF THE LEFT CENTER LINE. THESE SERVICES SHALL BE EXTENDED 1 FEET ABOVE GROUND AT THE PROPERTY LINE WITH A PVC FITTER AND PLUG SOON EASILY VISIBLE FROM THE ROAD. RUBBER SEAL FITTINGS SHALL BE USED ON ALL LINES. NO GLEED JOINTS ARE PERMITTED ON LATERALS.
18. FOR MULTIFAMILY AND COMMERCIAL USE, OR FOR UNUSUAL 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 (DIP), EXCEPT 12" DIA. 1200 FORCE MAIN UNLESS OTHERWISE SPECIFIED OTHERWISE. ALL 12" DIA. FORCE MAINS SHALL BE IDENTIFIED BY A GREEN STRIPE OR COLORED GROUND ALL NON-DRY HORIZONTAL CONNECTIONS. ALL 12" DIA. FORCE MAINS SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 160 PSF. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDENT ON SITE CONDITIONS.
20. ALL SANITARY SEWER FORCE MAINS SHALL USE A SMOOTH RESISTANT JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION GUIDELINES. IN NO INSTANCE SHALL THREATS BE PERMITTED.
21. AS A GENERAL RULE, THE NUMBER OF JOINTS SHALL BE LIMITED WHENEVER POSSIBLE. IN SPECIAL CASES WHERE A JOINT IS NECESSARY TO EXCEED 12" DIA. FORCE MAINS IS REQUIRED, THE PROPER JOINT SHALL BE APPROVED BY THE CITY.
22. ALL 12" DIA. SANITARY SEWER FORCE MAIN VALVES SHALL BE REINFORCED BRASS VALVES UNLESS OTHERWISE NOTED. VALVES SHALL BE REFERENCED TO A MAXIMUM OF 1000 FEET AWAY.
23. ALL C-900 PVC PIPE REQUIREMENTS ARE REFERENCED TO THE C-900-S-07 STANDARDS UNLESS OTHERWISE NOTED. VALVES SHALL BE REFERENCED WITH LOGIC THE C-900-S-07 STANDARDS UNLESS OTHERWISE NOTED BY THE UTILITIES DEPARTMENT.
24. UNUSUAL SANITARY SEWER SIZES ARE AS FOLLOWS:

12" DIA.	0.0038
14" DIA.	0.0048
16" DIA.	0.0058
18" DIA.	0.0068

 UNLESS OTHERWISE NOTED BY THE UTILITIES DEPARTMENT.
25. GRANTY SANITARY SEWER LINES SHALL BE INSTALLED WHENEVER POSSIBLE UNDER PAVED AREAS WITHIN PUBLIC RIGHT-OF-WAY. UTILITY EASEMENTS SHALL BE PROVIDED WHERE NECESSARY FOR PUBLIC-OWNED SEWER LINES ARE CONSTRUCTED OUTSIDE OF A PUBLIC RIGHT-OF-WAY.
26. GRANTY SANITARY SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A SLEWER INSTRUMENT UNLESS ANOTHER METHOD IS PREVIOUSLY APPROVED BY THE CITY.
27. THE CONTRACTOR SHALL AT ALL TIMES DURING PIPE LAYING OPERATIONS, DENOTE THE GROUND SUFFICIENTLY TO KEEP THE UNDERGROUND EXHAUSTION 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 SPOONY BEDDING FOR PIPES IS NOT ACCEPTABLE. ANY UNDESIRABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL, SATEFACTORY TO THE CITY.
29. ALL EXCAVATION AND BACKFILLING THE CONTRACTOR SHALL PROVIDE ADEQUATE TESTING 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 PROPOSED UNUSUAL CONSTRUCTION (SEE UNUSUAL DETAILS AND SEE IN PAVED AREAS) OF THE CITY. THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY UNUSUAL CONSTRUCTION OF THE CITY MATERIALS BASED ON THE ACCEPTED AND AVOIDED PROTECTION TEST.

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

**SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS
(CONT'D)**

31. THE CONTRACTOR SHALL INSTALL A FIT UP SINGLE STRAND COPPER WIRE, OR SIMILAR SERVICE AS MAY BE APPROVED BY THE CITY FOR THE FULL LENGTH OF ALL NON-METALLIC SERVICE FORCE MAINS. THE PIPE LOCATOR SHALL BE INSTALLED BETWEEN 12" AND 24" BELOW FINISHED GRADE OR IN A CONCEALED LOCATION. THE PIPE SHALL BE COLOR CODED OR IDENTIFIED FOR SANITARY SEWER AND FORCE MAIN. LOCATOR WIRE/CABLE SHALL TERMINATE AT A LOCATION AND IN A CONCEALED LOCATION AT THE CITY UTILITY DEPARTMENT.
32. ALL SEWER LINES WHICH ARE CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAYS WITHIN SIDE YARDS, BACKYARDS, AND OTHER PRIVATELY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF GREEN C-900 PVC, ABSOLUTELY NO USE OF PLASTIC EXTERN FITTINGS SHALL BE ALLOWED.
33. ALL LOCAL COLLECTION SANITARY SEWER MANHOLES SHALL BE PRECAST WITH A MINIMUM INSIDE DIAMETER OF 4 FEET. MANHOLES OVER 4 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 "HAND" OR APPROVED EQUAL.
36. MANHOLE RINGS SHALL MATCH FLOW WITH THE FLOW GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 8 FEET AND MAXIMUM OF 10 FEET ABOVE GRADE GENERALLY IN UNPAVED AREAS.
37. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERFERE WITH 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 TO MANHOLES AND MUST BE CONNECTED TO SEWER MAIN LINES BY USE OF THE CORRECTING UNLESS OTHERWISE APPROVED BY THE CITY.
40. SANITARY SEWER DROP MANHOLES SHALL ONLY BE USED UNDER SPECIAL CIRCUMSTANCES AS APPROVED BY THE CITY. DROPS LESS THAN 10' SHALL NOT BE ALLOWED.
41. ALL SANITARY SEWER MANHOLE COVERS SHALL HAVE THE WORD "SANITARY" CAST INTO THEM AS SHOWN ON DETAIL S-9.
42. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM SHALL BE FIBERGLASS OR POLY-ETHYLENE LINED. BEING FITTING OF MANHOLES WITH LINES SHALL BE REQUIRED FOR NEW CONNECTIONS SUCH AS THE NEW LINES. FIBERGLASS LINES SHALL BE A MINIMUM 1/2" THICKNESS UNLESS APPROVED OTHERWISE BY THE CITY. OTHER TYPES OF LINED MANHOLES AND MATERIALS MAY BE CONSIDERED IN CASE BY CASE BASIS. UNLESS OTHERWISE APPROVED OTHERWISE, THE FORCE MAIN TIE-IN OR WET WELL SHALL ALSO BE REQUIRED TO HAVE LINES INSTALLED.
43. GEL-WRAP PLASTIC AS MANUFACTURED BY PRESS SEAL, GAINET CORPORATION, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLES AND METRELL JOINTS. APPLY ONE LAYER OF GEL WRAP CENTERED 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 MANHOLE, DOWNSTREAM FROM ANY TREATMENT, STORAGE, OR OTHER APPROVED WORKS, PRIOR TO THE CITY'S COLLECTION SYSTEM TO FACILITATE OPERATION, MAINTENANCE, AND SAMPLING OF ALL WASTES, INCLUDING ALL DOMESTIC SEWAGE FROM THE ESTABLISHMENT.
45. THE CONTROL, MANHOLE OR MANHOLE SHALL BE CONSTRUCTED AT SUITABLE AND SATISFACTORY LOCATIONS WITHIN THE MANHOLE ACCESSIBLE TO CITY PERSONNEL AT ALL TIMES FOR SAMPLING.
46. SANITARY SEWER LEFT STATIONS AND FORCE MAIN SIZE, MATERIAL, AND DESIGN SHALL BE APPROVED BY THE CITY. LEFT STATIONS SHALL BE CONSTRUCTED WITH A MINIMUM NET WELL AS PER THE LEFT STATION DETAIL. A MINIMUM OF 6 FEET SHALL BE MAINTAINED BETWEEN LOWEST FLOOR FINISH AND METRELL FLOOR.
47. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PREPARE AND SUBMIT FLOTATION CALCULATIONS TO SIZE THE BASE OF THE WELL, AND ANY MANHOLES AS DEEMED NECESSARY BY THE CITY.

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

**SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS
TESTING REQUIREMENTS:**

1. THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT CONNECTION OF ALL FULL 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 RESULTS PER EACH 200 FEET OF PIPE AND ONE ADDITIONAL SET OF RESULTS 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 AND FOR BY THE CONTRACTOR / DEVELOPER.
3. THE CITY OF DAYTONA BEACH RESERVES THE RIGHT TO REQUIRE THE DEVELOPER TO PERFORM VADUUM TESTING OF ALL SANITARY MANHOLES AND TO AIR TEST SEWER MAINS.
4. ALL PROPOSED SEWER FORCE MAINS SHALL BE FLOWED, PRESSURE TESTED AND CLEANED FOR LEAKS 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 (3) THREE BUSINESS DAYS PRIOR TO BEGGING A FULL-DIAMETER FLOW OF THE MAINS PRIOR TO THE COMMENCEMENT OF PRESSURE TESTING (SUBJECT TO VARIATIONS).
5. SANITARY SEWER FORCE MAINS SHALL BE PRESSURE TESTED TO 100 PSF FOR 2 HOURS WITH ALLOWABLE LEAKAGE TO BE 2 GALLONS PER FT. DIA. OF PIPE PER FT. OF MAIN TO BE TESTED.

PIPE SIZE (IN)	ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE - 2 HOURS		REMARKS
	NOMINAL PIPE DIAMETER - INCHES	INCHES	
12	1.0	0.0000	
14	1.4	0.0000	
16	1.8	0.0000	
18	2.2	0.0000	
20	2.6	0.0000	
22	3.0	0.0000	
24	3.4	0.0000	
26	3.8	0.0000	
28	4.2	0.0000	
30	4.6	0.0000	
32	5.0	0.0000	
34	5.4	0.0000	
36	5.8	0.0000	
38	6.2	0.0000	
40	6.6	0.0000	
42	7.0	0.0000	
44	7.4	0.0000	
46	7.8	0.0000	
48	8.2	0.0000	
50	8.6	0.0000	
52	9.0	0.0000	
54	9.4	0.0000	
56	9.8	0.0000	
58	10.2	0.0000	
60	10.6	0.0000	
62	11.0	0.0000	
64	11.4	0.0000	
66	11.8	0.0000	
68	12.2	0.0000	
70	12.6	0.0000	
72	13.0	0.0000	
74	13.4	0.0000	
76	13.8	0.0000	
78	14.2	0.0000	
80	14.6	0.0000	
82	15.0	0.0000	
84	15.4	0.0000	
86	15.8	0.0000	
88	16.2	0.0000	
90	16.6	0.0000	
92	17.0	0.0000	
94	17.4	0.0000	
96	17.8	0.0000	
98	18.2	0.0000	
100	18.6	0.0000	

* IF THE PRESSURE UNDER TEST CONTAINS BENTONS OF WASTEWATER, THE ALLOWABLE LEAKAGE MAY BE 50% OF THE CORRECTED LEAKAGE FOR EACH SIZE.

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

**SANITARY SEWER
TESTING REQUIREMENTS
NOTES
(PAGE 4 OF 4)**

NOTE: PROVIDE REINFORCED JOINTS ON ALL PPE AND FITTINGS AS REQUIRED

REV #2017-104
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY
1	10/13/17	REVISION PER CITY COMMENTS	RMB
2	11/01/17	REVISION PER SFRMNO	RND

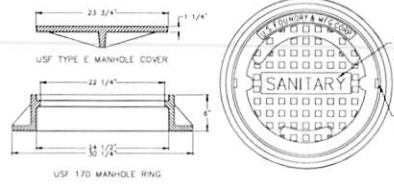
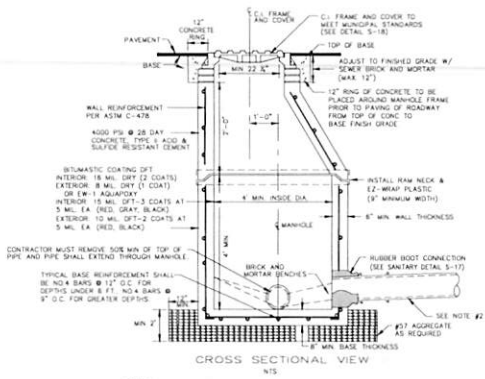
REVISIONS

PARKER MYNCHENBERG & ASSOCIATES, INC.
 PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
 1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
 (386) 877-8251 FAX (386) 877-2114 E-MAIL: info@parkermyncnberg.com
 CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

SEWER STANDARD DETAILS

FIRST STEP
 HOMELESS ASSISTANCE SHELTER
 DAYTONA BEACH, FLORIDA

FILE NO. 18225D, REV. 04/17, DESIGNER: P. MYNCHENBERG
 DATE: 7/19/17, CAD TECH: RMB
 SCALE: NONE, SHEET 18 OF 18, SEAL

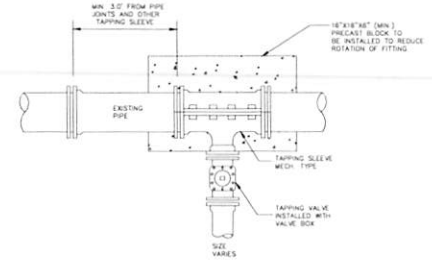


- NOTES:
- UNLESS DETAILED PLANS SHOW OTHERWISE, ALL MANHOLE RING AND COVER CASTINGS IN PAVED AREAS ARE TO BE ADJUSTED TO FINAL GRADE, SEALED AND REFINED IN PLACE WITH A CONCRETE COLLAR AFTER THE ROAD BASE IS PLACED AND JUST PRIOR TO PLACEMENT OF ASPHALT WEARING SURFACE.
 - CONCRETE COLLAR AROUND MANHOLE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

SANITARY SEWER COVER & GENERAL NOTES
NTS
SANITARY SEWER COVER DETAIL
S-18

FITTING	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEE OR DEAD END
4"	20	18	18	18	45
6"	28	18	18	18	63
8"	36	18	18	18	82
10"	44	28	18	18	98
12"	51	21	18	18	116
14"	57	24	18	18	132
16"	63	26	18	18	148
18"	69	28	18	18	163
20"	75	31	18	18	179
24"	87	36	18	18	208
30"	102	42	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: SF
COVER DEPTH: 3 FEET (MIN.)
SAFETY FACTOR: 1.5
TRENCH TYPE: 2



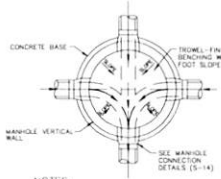
- NOTES:
- SPRAY COATED STEEL, STAINLESS STEEL, AND SPLIT DUCTILE MECHANICAL TAPPING SLEEVES ARE ALL PERMITTED FOR ALL TYPES OF PIPE MATERIALS.
 - INSTALL REQUIRED RESTRAINED JOINTS. IN NO INSTANCE SHALL THRUST BLOCK BE PERMITTED.
 - ALL TAPPING OF MAINS SHALL BE PERFORMED BY THE CITY AND BILLED IN ACCORDANCE WITH THE APPLICABLE REGULATION.

TAPPING SLEEVE & VALVE

- NOTES:
- ON TRANSITIONS BETWEEN LARGER DIAMETER AND SMALLER SEWER COLLECTORS, INVERTS OF SEWERS SHALL BE MATCHED.
 - LAST 80' OF 12" PIPING ENTERING SEWER MANHOLE SHALL BE P.V.C. C-905 PLACED AT A NEGATIVE GRADE. 12" AND ABOVE SHALL BE P.V.C. C-905.
 - NON-PENETRATING HOLES IN ALL CONCRETE SECTIONS.
 - DFT = DRY FILM THICKNESS.
 - D.T. = DROP ACROSS MANHOLE TYP. (MEASURED DIA. OF CONCRETE RING).
 - MANHOLES 6' DEEP OR GREATER SHALL HAVE A MIN. 4" HIGH WALL BASE.
 - ANY PIPE ENTERING MANHOLE MUST HAVE A RUBBER BOOT CONNECTION.
 - MORTAR TO CONTAIN "HYDRASTE", OR APPROVED EQUAL, TO PREVENT SHRINKAGE.
 - SUB-GRADE BENEATH MANHOLES SHALL BE UNDISTURBED GRANULAR UNSTABILIZED SOIL. NO #1 AGGREGATE STONE SHALL BE USED IN WET CONDITIONS AND/OR WHERE UNSATURABLE MATERIAL IS ENCOUNTERED.
 - CONTRACTOR SHALL PROVIDE THICKER MANHOLE WALLS AND BASES AS REQUIRED TO PREVENT FLOATION BASED ON HISTORIC HIGH-GROUND WATER TABLE ELEVATIONS AS DETERMINED USING ACCEPTED ENGINEERING PRACTICES AND/OR APPROVED BY UTILITIES DEPARTMENT.
 - SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.
 - NO SLOTH HOLES OR HOISTINGS WILL BE ACCEPTED.
 - ENDS OF THE TOP AND BOTTOM SECTIONS OF THE MANHOLE SHALL FIT FLUSH TOGETHER.
 - SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM OR ANY MANHOLE WITHIN 200 FEET OF A 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 ABSOLUTELY SURE-FIT OR PRE-APPROVED EQUAL.

STANDARD SANITARY SEWER MANHOLE

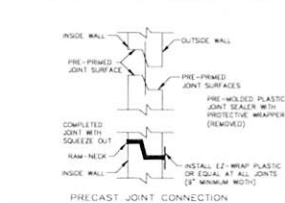
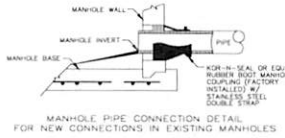
SANITARY SEWER MANHOLE AND GENERAL NOTES
S-13



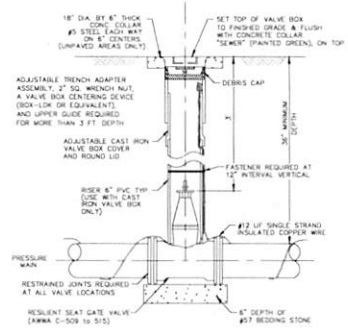
- NOTES:
- FLOW CHANNELS SHALL HAVE THE SAME SLOPES AS THE SEWERS THEY ARE CONNECTED TO (EXCEPT THAT AT CHANGES OF DIRECTION EXCEEDING 45°, THE DROP SHALL BE 0.1" MINIMUM).
 - NO STANDING WATER WILL BE ALLOWED.
 - FORM BENDS IN MANHOLE FROM MID-LINE OF 8" PIPE TO WALL OF MANHOLE 3/4" PER FT. OF SLOPE.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

SANITARY MANHOLE INVERT DETAIL
NTS

SANITARY MANHOLE INVERT DETAIL
S-16



RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL
NTS
RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL
S-19



- NOTES:
- ROD OR BOLT TIE WHERE APPLICABLE.
 - 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.
 - #12 INSULATED SOLID COPPER UP TRAZER WIRE SHALL BE LAD THE ENTIRE LENGTH OF THE RISE PIPE. ALL CONNECTION ENDS SHALL USE LIQUID TAP AND A DIRECT BURIED SPIKE KIT (LARGON 9333) OR EQUIVALENT.
 - ANY VALVE DEEPER THAN 36" SHALL HAVE AN EXTENSION BOLTED ON THE VALVE. THE OPERATING NUT SHALL BE 12" BELOW FINISHED GRADE.
 - WHERE PLUG VALVES ARE SPECIFIED THE CONCRETE COLLAR SURROUNDING THE TOP OF THE VALVE BOX SHALL HAVE AN ENGRAVED 2" x 8" BRASS NAME PLATE CLEARLY MARKED "PLUG VALVE IN 12\"/>

SANITARY VALVE & VALVE BOX DETAILS
NTS

SANITARY VALVE AND VALVE BOX DETAIL
S-19

REV #2017-104
CITY APPROVAL STAMP

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

NO.	DATE	DESCRIPTION	BY
1	10/12/17	REVISED PER CITY COMMENTS	BVB
1	10/11/17	REVISED PER SUBMITTAL	BVB
NO.	DATE	DESCRIPTION	BY

R E V I S I O N S

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS • LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386)677-6891 FAX(386)777-2314 E-MAIL:info@parkermycnberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

FIRST STEP HOMELESS ASSISTANCE SHELTER	
FILE NO: 1625D-REV-009	DESIGNER: P.MYNCHENBERG
DATE: 7/12/17	CADD TECH: BVB
SCALE: NONE	SHEET 17 OF 18

SUMMARY OF PAY ITEMS

FIRST STEP HOMELESS ASSISTANCE SHELTER-PHASE 1

ENGINEER'S QUANTITY ESTIMATE

PAVING & DRAINAGE

ITEM DESCRIPTION	QUANTITY	UNIT
1 Mobilization	1	LS
2 Clearing & Grubbing	10.35	AC
3 Earthwork	1	LS
4 Bohm Soe	1,875	SY
5 Maintenance of Traffic	1	LS
6 Striping & Signage	60	LF
7 15" MDP	2	EA
8 12" MES	5,233	SY
9 1 1/4" Type SP-9.5 Asphalt Surface Course		
10 8" Crushed Concrete Base (CCR 140) Composited to 98% Density Per AASHTO 1-100 Modified Proctor Test	7,497	SY
11 10" Compacted Sub Base, LDR 40	7,497	SY
12 6" Stabilized Shoulder, FBV 75 PS	496	SY
13 6" Concrete 3500 p.s.i.	1,199	SY
15 2" Environmental Curb	48	LF
16 Type F Curb	1,440	LF
17 Detachable Manhole	11	EA
18 PVC Bases Down	1	EA
19 Concrete Overflow Weir	1	EA

SANITARY SEWER

ITEM DESCRIPTION	QUANTITY	UNIT
20 8" PVC Gravity Sewer Pipe DR 26	700	LF
21 8" Plug	1	EA
22 Sanitary Manhole	3	EA
23 6" PVC Gravity Sewer Pipe DR 26	318	LF
24 6" Plug	1	EA
25 6" Cleanout	2	EA
26 6" Two Way Cleanout	3	EA

FIBER OPTIC

ITEM DESCRIPTION	QUANTITY	UNIT
27 6" HDPE Fiber Optic	492	LF
28 6" Plug	1	EA
29 Junction Box	2	EA

WATER

ITEM DESCRIPTION	QUANTITY	UNIT
30 12" DP Water Main	370	LF
31 10" DP Water Main	912	LF
32 8" DP Water Main	10	LF
33 6" DP Water Main	314	LF
34 3" Poly Tubing	383	LF
35 3" Service Tap w/Valve and Reduced Pressure Backflow Preventer	1	EA
36 Fire Hydrant w/Valve	3	EA
37 Fire Department Connection	1	EA
38 3" Valve	2	EA
39 12" x 6" Tee DP	1	EA
40 12" Valve DP	1	EA
41 12" Plug DP	1	EA
42 10" x 6" x 10" Tee DP	2	EA
43 10" Valve DP	1	EA
44 10" DP 45' Bend	1	EA
45 2" Blow Off Assembly	1	EA
46 10" x 6" Reducer DP	1	EA
47 10" x 8" Reducer DP	1	EA
48 8" x 10" Reducer DP	1	EA
49 8" Reduced Pressure Backflow Preventer	1	EA
50 6" Check Valve DP	1	EA
51 6" PVC Conduit	480	LF
52 6" Post Indicator Valve	1	EA

SOIL EROSION & SEDIMENT CONTROL

ITEM DESCRIPTION	QUANTITY	UNIT
53 Sloped Site Fencing	2,820	LF
54 Gravel Construction Entrance	1	EA

DEV #2017-104
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	BY
2	10/12/17	REVISED PER CITY COMMENTS	MBB
1	10/11/17	REVISED PER SURVING	MBB

REVISIONS

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS & LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386)677-6551 FAX(386)677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

SUMMARY OF PAY ITEMS

FIRST STEP HOMELESS ASSISTANCE SHELTER
DAYTONA BEACH, FLORIDA

PREPARED BY: P. MYNCHENBERG
DATE: 7/12/17
SCALE: NONE

DESIGNER: P. MYNCHENBERG
CADD TECH: BMB
SHEET 18 OF 18

SEAL