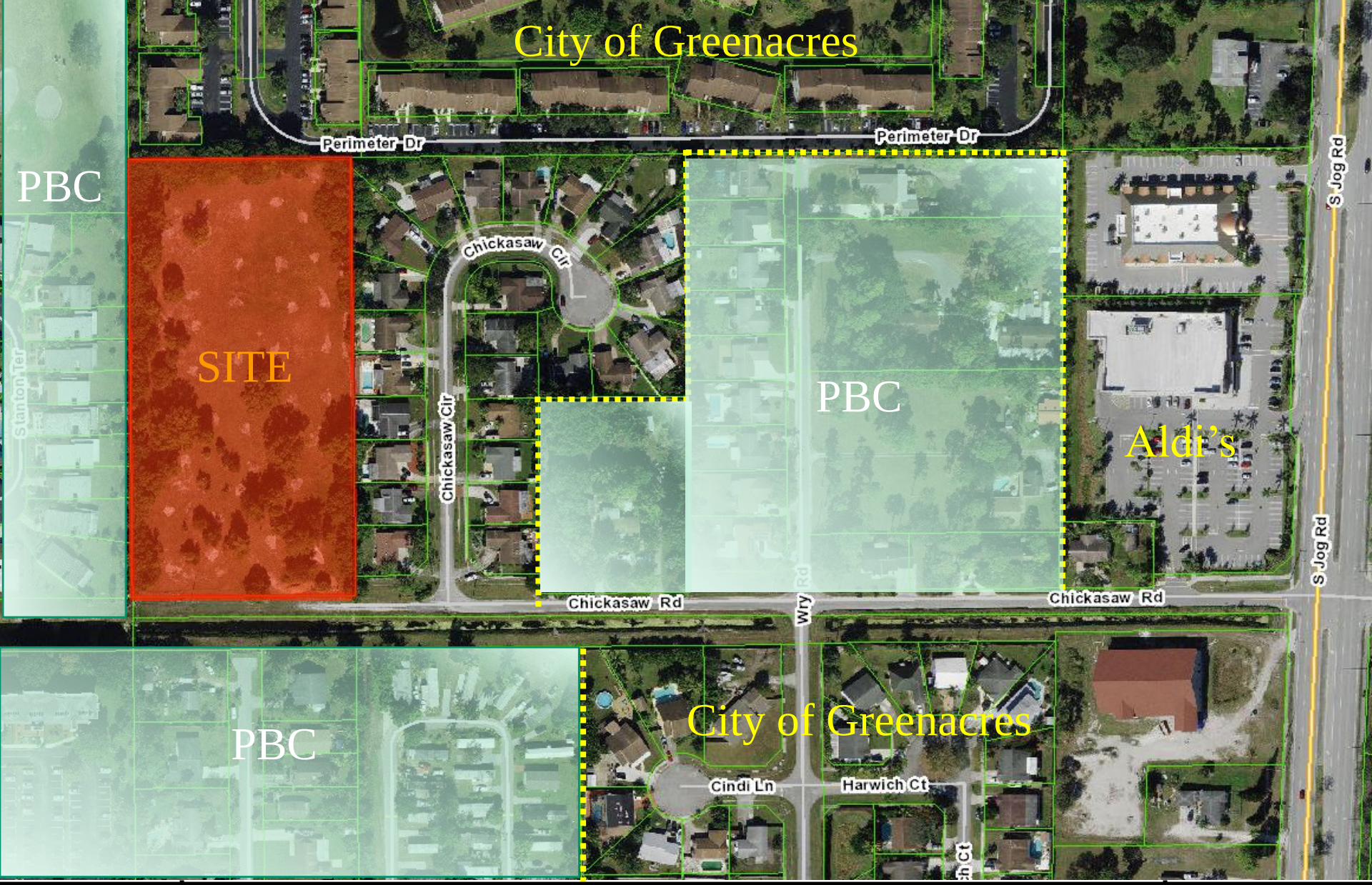
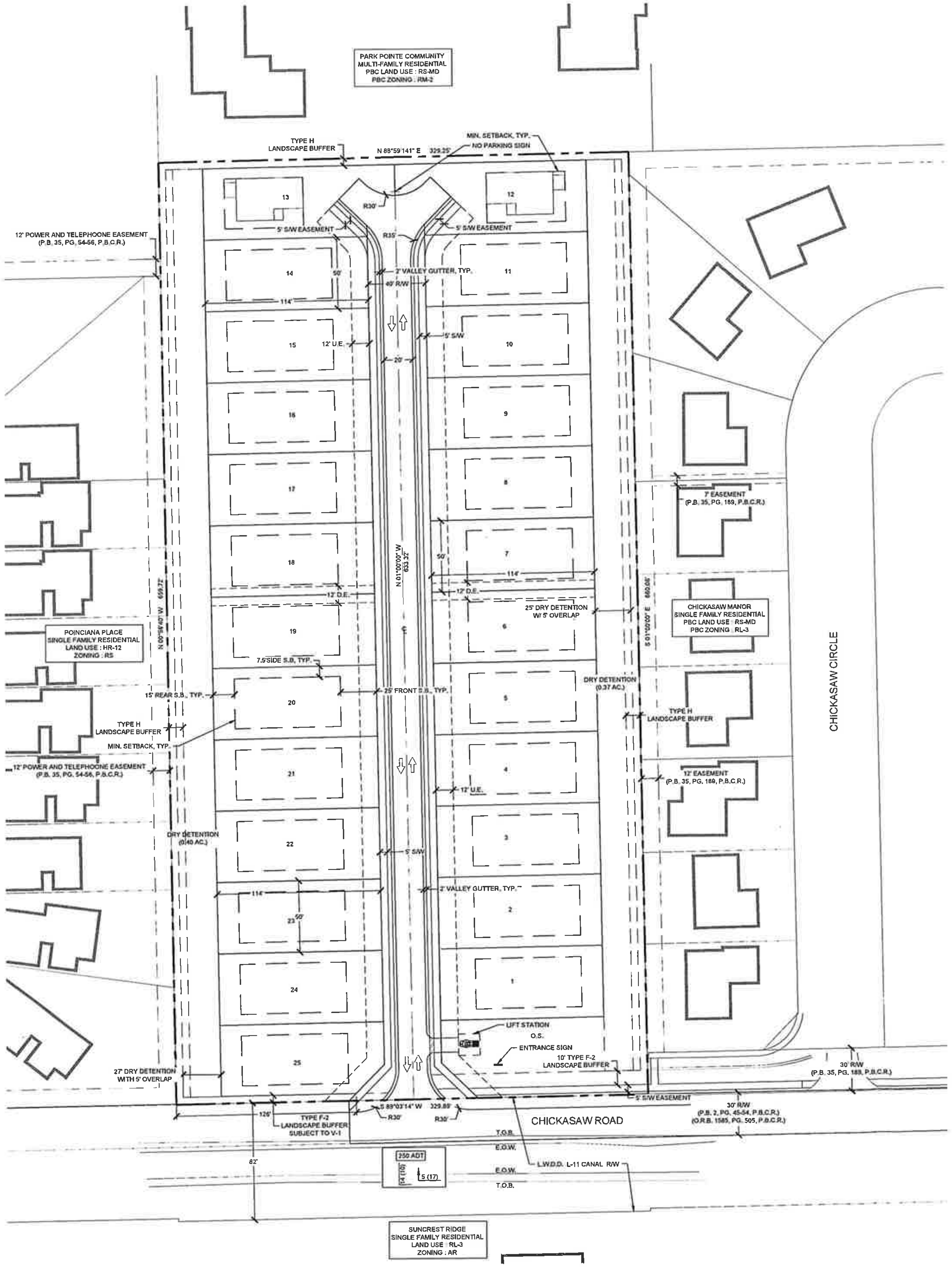


Sunset Springs

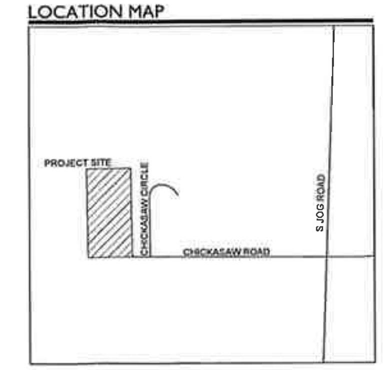
SP-21-01

Prepared By:
Planning Department
City of Greenacres
5800 Melaleuca Lane
Greenacres, FL 33463

North



LOCATION MAP



N

SCALE: 1" = 40'

PROPERTY DEVELOPMENT REGULATION CHART(SF) SEC. 16-337

SF	MIN. LOT SIZE	MAX.LOT COVERAGE	MIN.LOT WIDTH	MIN. LOT DEPTH	MIN. BUILDING SETBACKS FRONT	SIDE CORNER	SIDE	REAR	MAX. BLDG. HEIGHT
REQUIRED	5,000 S.F.	35%	50'	100'	25'	15'	7½'	15'	35'
PROPOSED	5,700 S.F.	35%	50'	114'	25'	15'	7½'	15'	35'

VARIANCE CHART

VARIANCE	CODE SECTION	REQUIRED	PROPOSED	VARIANCE
V1	SECTION 16-1286 PERIMETER BUFFER	10' WIDE	5'	-5' REDUCTION FOR 126' ON THE WEST PORTION OF THE ACCESS ROAD

LEGEND

AC. =	ACRES	P.B. =	PLAT BOOK
℄ =	CENTERLINE	PDR =	PROPERTY DEVELOPMENT REGULATIONS
C =	COMPACT SPACE	PG. =	PAGE
D.E. =	DRAINAGE EASEMENT	R =	RADIUS
D.U. =	DWELLING UNITS	R/W =	RIGHT-OF-WAY
E.O.W. =	EDGE OF WATER	S.F. =	SQUARE FEET
EX. =	EXISTING	S.P. =	SPACE
FLU =	FUTURE LAND USE	S/W =	SIDEWALK
LB =	LANDSCAPE BUFFER	T.O.B. =	TOP OF BANK
L.W.D.D. =	LAKE WORTH DRAINAGE DISTRICT	TYP =	TYPICAL
L=	LENGTH	U.E. =	UTILITY EASEMENT
O.R.B. =	OFFICIAL RECORD BOOK	Z =	ZONING
O.S. =	OPEN SPACE		

[dashed box] MAXIMUM BUILDABLE AREA

SITE DATA

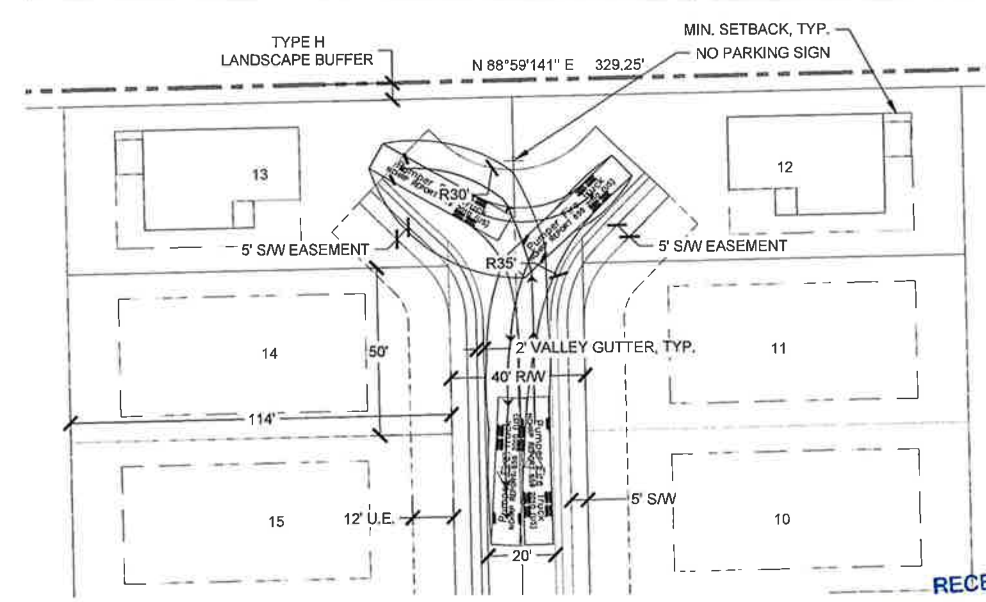
PROJECT NAME	CHICKASAW PROPERTY
PROPERTY CONTROL NUMBER	18424327050220360
PROPOSED USE	SINGLE FAMILY DETACHED
FLU DESIGNATION	RS-MD
ZONING DISTRICT	RM-2
GROSS SITE AREA	+/- 4.99 AC. (217,495 SF)
TOTAL R.O.W AREA	0.64 AC.
TOTAL RESIDENTIAL AREA	3.99 AC.
TOTAL LANDSCAPE BUFFER AREA	0.36 AC.
TOTAL DWELLING UNITS - SINGLE FAMILY DETACHED (50'x114')	25 D.U.
TOTAL DENSITY (25 D.U.)	5.01 D.U./AC.
HOUSING TYPE	SINGLE FAMILY DETACHED
BUILDING HEIGHT	35' MAX.
TOTAL GROSS FLOOR AREA (AVERAGE 1,631 SF PER UNIT x 25)	40,775 SF.
TOTAL NET BUILDING COVERAGE (40,775 SF)	18.74%
IMPERVIOUS SURFACE TOTAL	1.55 AC.
BUILDING	0.94 AC.
R.O.W.	0.61 AC.
PERVIOUS SURFACE TOTAL	3.41 AC.
BUFFERS	0.36 AC.
OPEN SPACE (TOTAL AREA LESS R.O.W-BUILDING AREA & BUFFERS)	3.08 AC

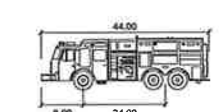
	REQUIRED / PROVIDED
TOTAL PARKING	75 SP. / 75 SP.
SINGLE FAMILY DETACHED (3 SP. PER D.U.)*	75 SP. / 100 SP.

*2 GARAGE SPACES, 2 DRIVEWAY SPACES PER UNIT = 100 SPACES

FIRE TRUCK AUTOTURN EXHIBIT

N.T.S.





RECEIVED by
CITY OF GREENACRES

OCT 1 2021

PLANNING & ENGINEERING

WGI
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS

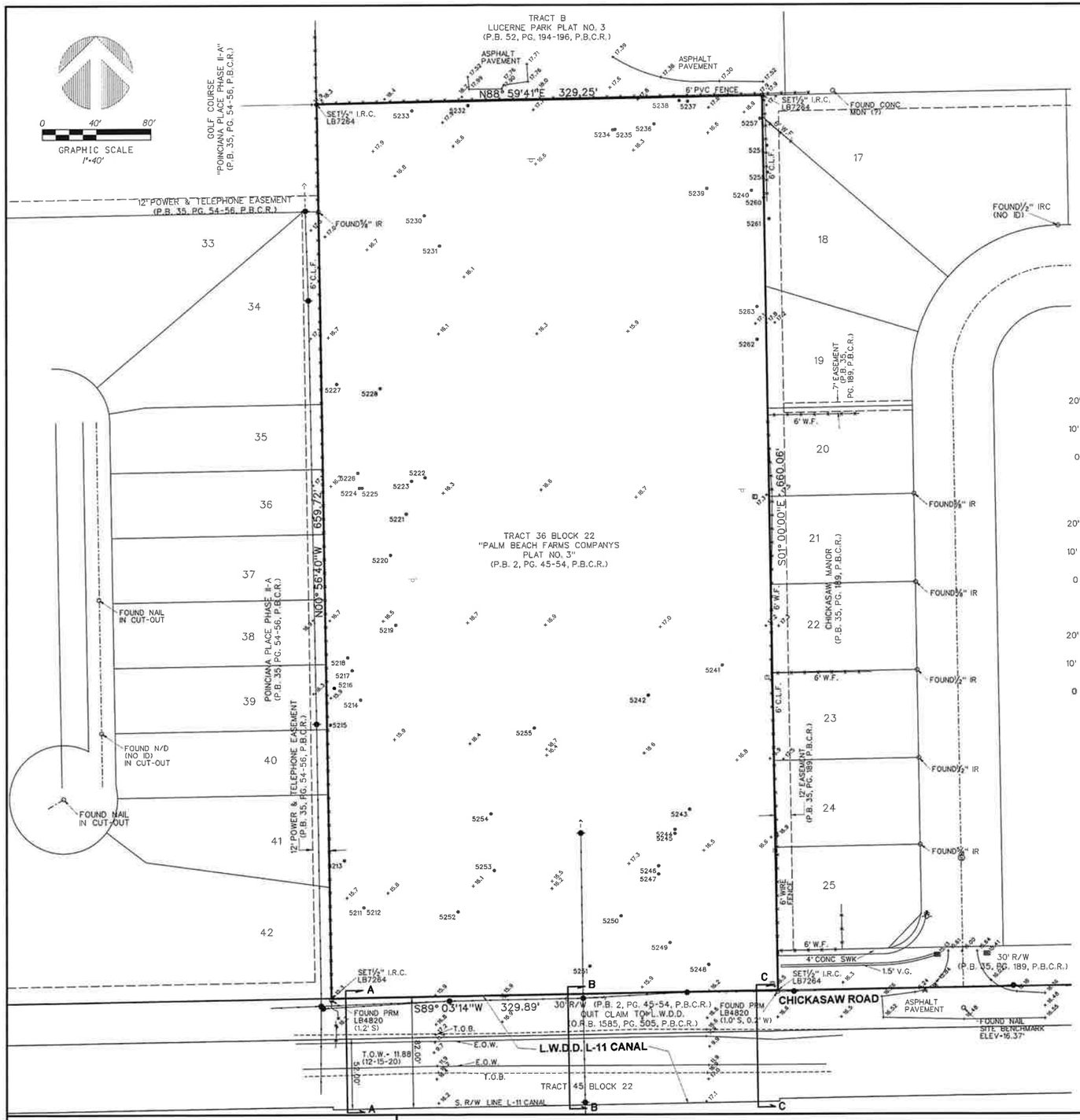
NO.	DATE	DESCRIPTION	BY

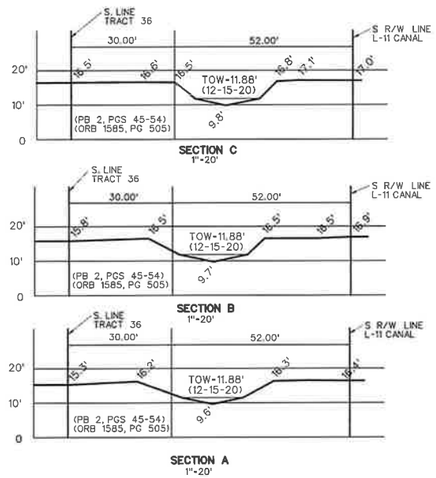
CAD	646400-PL-SITE-RESD.DWG
JOB NO.	6464.00
DRAWN BY	R.C.
CHECK BY	D.M.
DATE	3-12-21

SUNSET SPRINGS

SITE PLAN

SHEET:
SP-1





LEGAL DESCRIPTION

TRACT 36 BLOCK 22, "PALM BEACH FARMS COMPANYS PLAT NO. 3", ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 2, PAGES 45 THROUGH 54, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

SAID LANDS SITUATE IN THE CITY OF GREENACRES, PALM BEACH COUNTY, FLORIDA AND CONTAIN 4.993 ACRES, MORE OR LESS.

NOTES

1. REPRODUCTIONS OF THIS SKETCH ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
2. TITLE INFORMATION IS SHOWN ON THIS PAGE.
3. ELEVATIONS SHOWN HEREON ARE BASED ON PALM BEACH COUNTY BENCH-MARK "SILK OAK", HAVING AN ELEVATION OF 16.57' NAVD 1988. ALL ELEV-ATIONS ARE RELATIVE TO NAVD 1988.
4. BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF CHICKASAW ROAD HAVING AN ASSUMED BEARING OF SOUTH 89°03'14" WEST.
5. UNDERGROUND IMPROVEMENTS ARE NOT SHOWN.
6. ADDRESS IS 6645 CHICKASAW ROAD, GREENACRES, FL 33467
7. FLOOD INFORMATION IS AS FOLLOWS:
   COMMUNITY NUMBER: 120203
   MAP NUMBER : 12099C0569F
   EFFECTIVE DATE: 10-5-2017
   ZONE: X, AE
   BASE FLOOD ELEV: 16.3' FOR AE
8. THIS SURVEY IS CERTIFIED TO:
   A.

TITLE INFORMATION

SCHEDULE B-II
TITLE COMMITMENT • 2037-5093950
FIRST AMERICAN TITLE INSURANCE COMPANY
COMMITMENT DATE: DECEMBER 08, 2020 @ 8:00 AM

•	BOOK/PAGE	DESCRIPTION	AFFECTS?	PLOTTED?
9	PB 2/45	PLAT	YES	YES
	ORB 24682/1125	NOTICE	YES	NO

LEGEND

- STORM MANHOLE
- CONC. POWER POLE
- ELEC. HANDHOLE
- CATCH BASIN
- SANITARY MANHOLE
- CLEAN OUT
- WOOD POWER POLE
- METAL LIGHT POLE
- ANCHOR
- SIGN
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- TELEPHONE BOX
- TELEPHONE MANHOLE
- CABLE TV BOX
- FPL TRANSFORMER
- HANDICAP SPACE
- BACKFLOW PREVENTER
- TRAFFIC SIGNAL BOX
- OVERHEAD LINE
- FENCE
- ELEVATION
- TREE
- MAILBOX

ABBREVIATIONS

(C)	•	CALCULATED
C&G	•	CURB & GUTTER
C.L.F.	•	CHAIN LINK FENCE
CONC.	•	CONCRETE
O.C.R.	•	OADE COUNTY RECORDS
COR.	•	CORNER
D.E.	•	DRAINAGE EASEMENT
I.R.	•	IRON ROD
I.R.C.	•	IRON ROD AND CAP
L.B.	•	LICENSED BUSINESS
L.S.	•	LICENSED SURVEYOR
(M)	•	MEASURED
MON.	•	MONUMENT
O.R.B.	•	OFFICIAL RECORDS BOOK
P.B.	•	PLAT BOOK
P.B.C.R.	•	PALM BEACH COUNTY RECORDS
PG.	•	PAGE
P.S.M.	•	PROFESSIONAL SURVEYOR & MAPPER
U.E.	•	UTILITY EASEMENT
W.F.	•	WOOD FENCE
NAD	•	NAIL AND DISK
(P)	•	PLAT
(C)	•	CALCULATED
I.P.	•	IRON PIPE
FF.ELEV.	•	FINISHED FLOOR ELEVATION
C.B.S.	•	CONCRETE BLOCK AND STUCCO
T.O.W.	•	TOP OF WATER

TREE LIST

5211	4"	OAK	5237	18"	SABAL PALM
5212	4"	OAK	5238	18"	SABAL PALM
5213	8"	OAK	5239	18"	SABAL PALM
5214	4"	OAK	5240	18"	SABAL PALM
5215	18"	SABAL PALM	5241	18"	SABAL PALM
5216	12"	SABAL PALM	5242	12"	SABAL PALM
5217	12"	SABAL PALM	5243	12"	SABAL PALM
5218	18"	SABAL PALM	5244	10"	OAK
5219	16"	SABAL PALM	5245	16"	OAK
5220	12"	SABAL PALM	5246	18"	SABAL PALM
5221	10"	OAK	5247	6"	OAK X4
5222	6"	OAK	5248	12"	SABAL PALM X3
5223	12"	OAK	5249	12"	OAK
5224	4"	OAK	5250	6"	OAK X3
5225	4"	OAK	5251	12"	SABAL PALM X3
5226	4"	OAK X3	5252	6"	OAK
5227	12"	SABAL PALM	5253	6"	OAK X5
5228	6"	OAK	5254	6"	OAK X5
5229	6"	OAK	5255	10"	OAK
5230	18"	SABAL PALM	5257	12"	SLASH PINE
5231	10"	OAK	5258	12"	SLASH PINE
5232	12"	SABAL PALM	5259	12"	SLASH PINE
5233	12"	SABAL PALM	5260	12"	QUEEN PALM
5234	4"	OAK	5261	12"	SLASH PINE
5235	4"	OAK	5262	120"	BAMBOO CLUSTER
5236	4"	OAK X4	5263	18"	SABAL PALM

CERTIFICATION

I HEREBY CERTIFY THAT THE SURVEY SHOWN HEREON COMPLIES WITH STANDARDS OF PRACTICE FOR SURVEYS AS CONTAINED IN CHAPTER 5J-17.051, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES, AND THAT SAID SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS SURVEYED UNDER MY DIRECTION.

_____
JEFF S. HODAPP
SURVEYOR AND MAPPER
FLORIDA LICENSE NO. LS5111

LAST DATE OF FIELD WORK : DECEMBER 15, 2020.

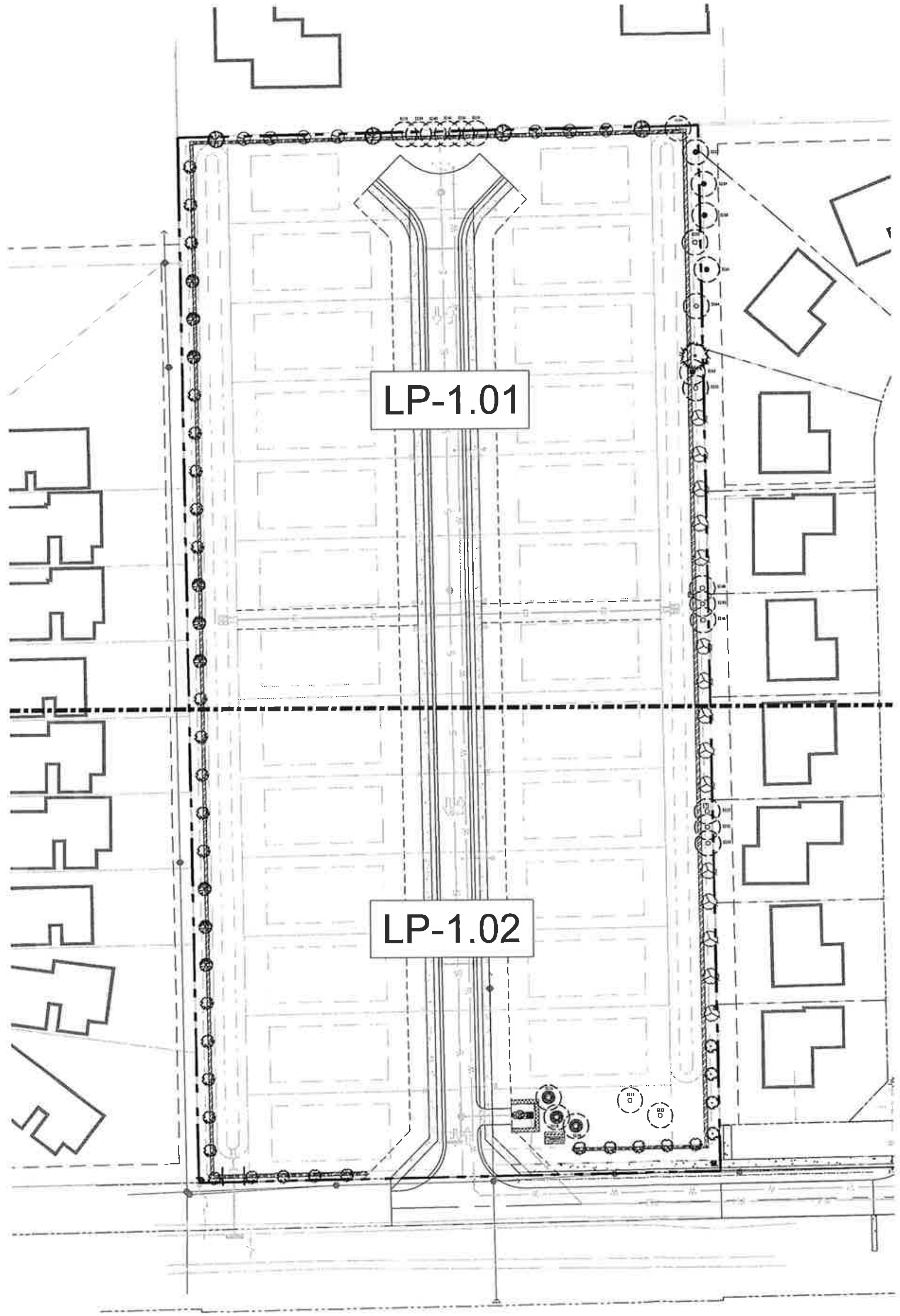
PERIMETER
SURVEYING & MAPPING
947 Clint Moore Road
Boca Raton, Florida, 33487
Certificate of Authorization No. LB7264
Tel: (561) 241-9988
Fax: (561) 241-5182

SUNSET SPRINGS
6645 CHICKASAW ROAD
BOUNDARY, TOPOGRAPHIC AND TREE SURVEY

NO.	DATE	BY	CK'D	REVISIONS:	FB/PG
1					
2					
3					
4					
5					
6					

Jeff S Hodapp
Digitally signed by Jeff S Hodapp
Date: 2021.07.07 08:24:35 -04'00'

JOB NO.	20247
SCALE	1"=40'
DRAWN	JSH
CHECKED	AR
SHEET	1 OF 1



LOCATION MAP

N

0 20 40 80
SCALE: 1" = 40'

SEP 3 0 2021

REGISTERED LANDSCAPE ARCHITECT
TIFFANY DELYNN MAY
LA6667274
STATE OF FLORIDA

LANDSCAPE REQUIREMENTS

GREENACRES, FLORIDA

PERIMETER LANDSCAPE	REQUIRED	PROVIDED
TYPE H BUFFER 1 TREE PER 25 LINEAR FEET 24" TALL HEDGE	NORTH BUFFER 330 LF / 25 = 14 TREES 24" TALL HEDGE EAST BUFFER 660 LF / 25 = 27 TREES 24" TALL HEDGE WEST BUFFER 660 LF / 25 = 27 TREES 24" TALL HEDGE	NORTH BUFFER 14 TREES PROVIDED (1 RELOCATED TREES + 6 RELOCATED PALMS @ 3:1 = 2 TREES + 11 PROPOSED TREES) 24" TALL HEDGE PROVIDED EAST BUFFER 28 TREES PROVIDED (4 EXISTING TREES + 2 RELOCATED TREE + 1 EXISTING PALM + 6 RELOCATED PALMS + 1 PROPOSED PALM @ 3:1 = 3 TREES + 19 PROPOSED TREES) 24" TALL HEDGE PROVIDED WEST BUFFER 27 TREES PROVIDED 24" TALL HEDGE PROVIDED
TYPE F-2 BUFFER 1 TREE PER 25 LINEAR FEET 24" TALL HEDGE	SOUTH BUFFER 240 LF / 25 = 10 TREES 24" TALL HEDGE	SOUTH BUFFER 10 TREES PROVIDED 24" TALL HEDGE PROVIDED
INTERIOR LANDSCAPE	**REQUIRED**	**PROVIDED**
MIN 1 TREE AND 3 SHRUBS PER 2,500 SQ FT OF OPEN SPACE AREA	OPEN SPACE AREA = 3,793 SQ FT 3,793 SQ FT / 2,500 = 2 TREES 3,793 SQ FT / 2,500 x 3 = 6 SHRUBS	3 TREES PROVIDED (2 RELOCATED TREES + 3 RELOCATED PALMS @ 3:1 = 1 TREE) 30 SHRUBS PROVIDED
TREE SPECIES	**REQUIRED**	**PROVIDED**
WHEN 41+ TREES REQUIRED, MIN 5 TREE SPECIES SHALL BE PROVIDED	80 TOTAL TREES REQUIRED 5 TREE SPECIES REQUIRED	7 TREE SPECIES PROVIDED
ENTRANCE SIGN PLANTING	**REQUIRED**	**PROVIDED**
24" HT SHRUBS SPACED MAX 24" O.C. IN A PLANTING BED MIN 3' IN WIDTH AROUND ALL FREESTANDING SIGNS	24" HT SHRUBS SPACED MAX 24" O.C. IN A PLANTING BED MIN 3' IN WIDTH AROUND ALL FREESTANDING SIGNS	24" HT SHRUBS HAVE BEEN PROVIDED IN PLANTING BED WITH MIN 3' WIDTH AROUND THE ENTRANCE SIGN

PLANT SCHEDULE OVERALL

TREES	QTY	COMMON NAME	BOTANICAL NAME	NATIVE	REMARKS
CS	4	Silver Buttonwood	Conocarpus erectus sericeus	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
CS3	28	Orange Geiger Tree	Cordia sebestena	No	MIN 12' HT, 2" DBH, MIN 5' SPRD
IC	7	Dahoon Holly	Ilex cassine	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
LI	4	Crape Myrtle	Lagerstroemia indica	No	MIN 12' HT, 2" DBH, MIN 5' SPRD
MF	9	Simpson's Stopper	Myrcianthes fragrans	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
PD2	15	Slash Pine	Pinus elliotti densa	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
SS	1	Cabbage Palmetto	Sabal palmetto	Yes	MIN 18' OA HT, CLEAN CUT

SHRUB AREAS	QTY	COMMON NAME	BOTANICAL NAME	NATIVE	REMARKS
CI	261	Coco Plum	Chrysobalanus icaco	Yes	MIN 24" HT, 24" SPRD, @ 24" O.C.
CI2	34	Coco Plum	Chrysobalanus icaco	Yes	MIN 4' HT, 24" SPRD, @ 24" O.C.
ID	12	Schillings Dwarf Yaupon Holly	Ilex vomitoria 'Schillings Dwarf'	Yes	MIN 24" HT, 24" SPRD, @ 24" O.C.
MC	10	Muhly Grass	Muhlenbergia capillaris	Yes	MIN 24" HT, 24" SPRD, @ 24" O.C.
PN	670	Wild Coffee	Psychotria nervosa	Yes	MIN 24" HT, 24" SPRD, @ 24" O.C.
TD	30	Dwarf Fakahatchee	Tripsacum floridanum	Yes	MIN 24" HT, 24" SPRD, @ 24" O.C.

WGI
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	07.09.2021	RESUBMITTAL	DN
2	10.01.2021	RESUBMITTAL	DN

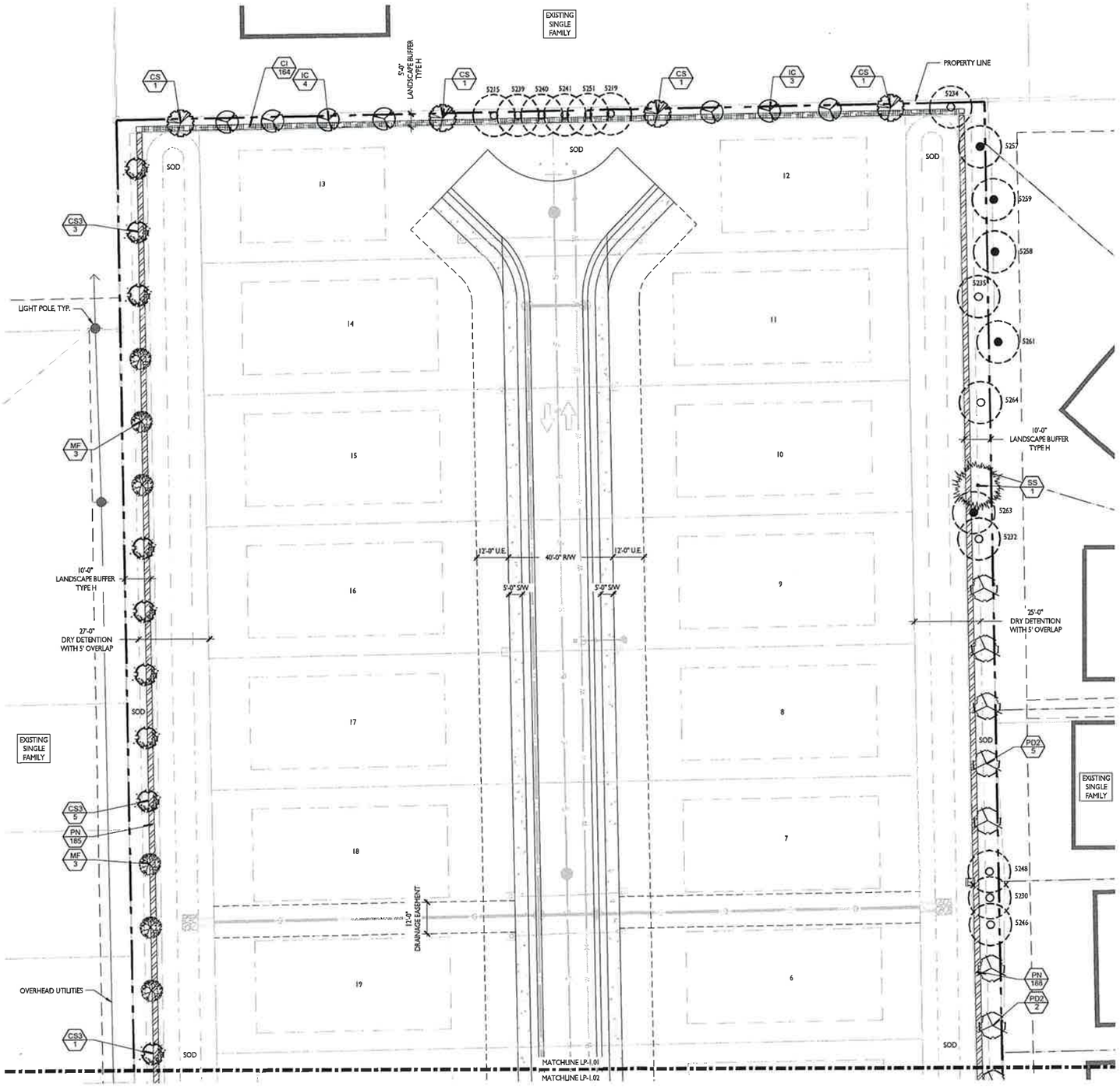
CAD	646400LP.DWG
JOB NO.	6464.00
DRAWN BY	DN
CHECK BY	TM
DATE	4-19-21

LANDSCAPE ARCHITECT OF RECORD
TIFFANY D MAY, PLA
FL # LA6667274

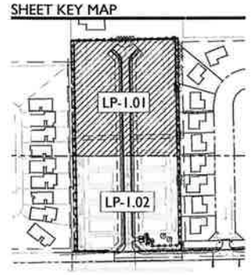
SUNSET SPRINGS

OVERALL LANDSCAPE PLAN

SHEET:
LP-1.00



SHEET KEY MAP



N

0 10 20 40

SCALE: 1" = 20'

LEGEND

TREE/ PALM TO PRESERVE

RELOCATED TREE/ PALM

WGI
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866 909 2220 www.wginc.com
Cert No. 6091 - LB No. 7055

NO.	DATE	DESCRIPTION	BY
1	07.09.2021	RESUBMITTAL	DN
2	10.01.2021	RESUBMITTAL	DN

REVISIONS

CAD 64640-LP.DWG	
JOB NO.	6464.00
DRAWN BY	DN
CHECK BY	TM
DATE	4-19-21

LANDSCAPE ARCHITECT OF RECORD
TIFFANY D MAY, PLA
FL # LA6667274

APPROVED by
CITY OF GREENACRES
OCT 1 2021
PLANNING & ENGINEERING

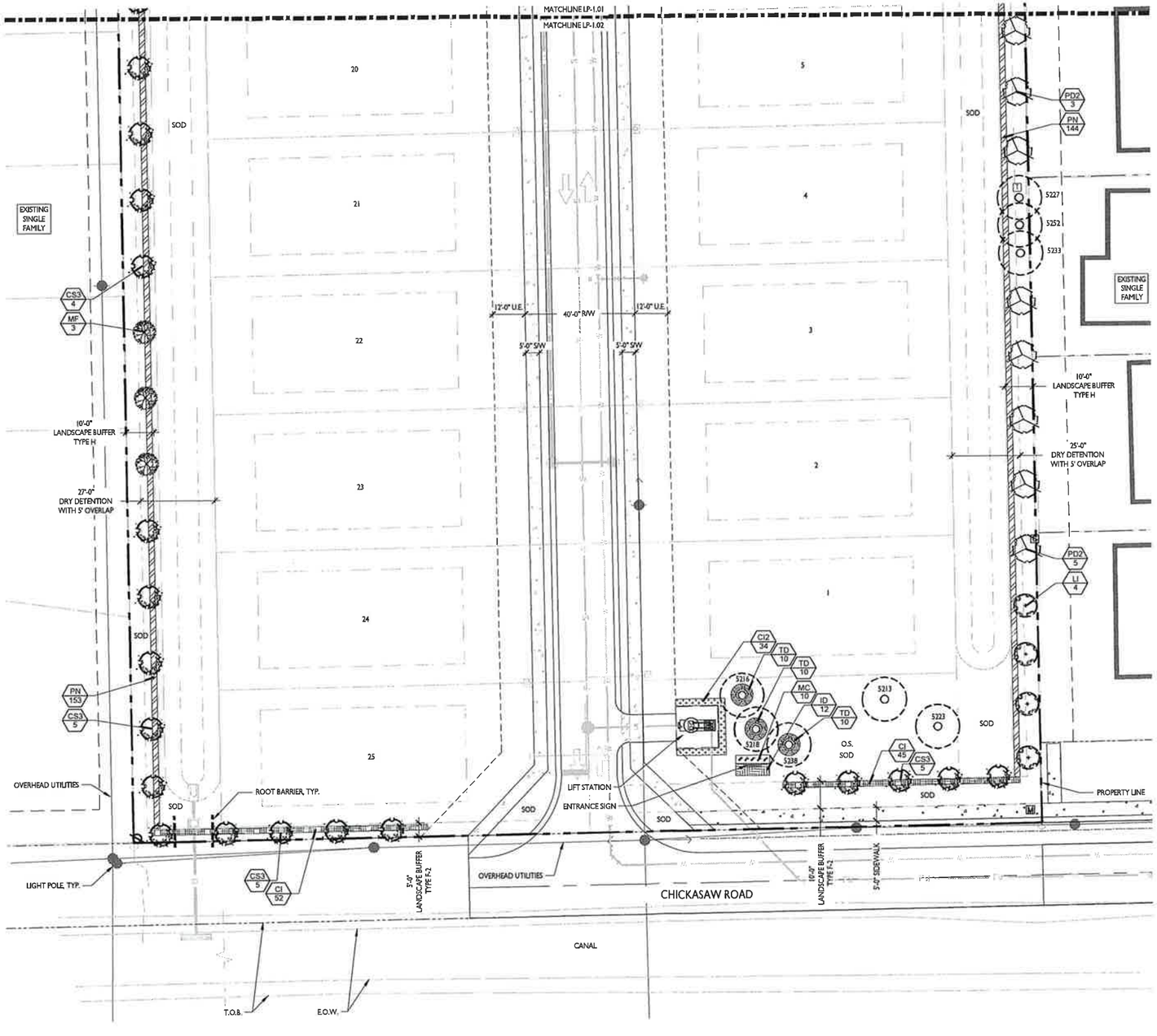
SEP 3 0 2021

REGISTERED LANDSCAPE ARCHITECT
TIFFANY DELYNN MAY
LA6667274
STATE OF FLORIDA

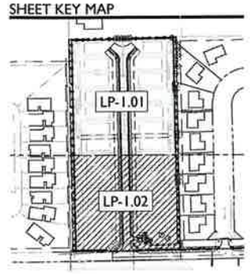
SUNSET SPRINGS

LANDSCAPE PLAN

SHEET:
LP-1.01



SHEET KEY MAP



N

0 10 20 40

SCALE: 1" = 20'

LEGEND

TREE/ PALM TO PRESERVE

RELOCATED TREE/ PALM

WGL
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866 909 2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	07.09.2021	RESUBMITTAL	DN
1	10.01.2021	RESUBMITTAL	DN

CAD 6484001-LP2.DWG	
JOB NO.	6484.00
DRAWN BY	DN
CHECK BY	TM
DATE	4-19-21

LANDSCAPE ARCHITECT OF RECORD
TIFFANY D MAY, PLA
FL # LA6667274

RECEIVED by
CITY OF GREENACRES
OCT 1 2021
PLANNING & ENGINEERING

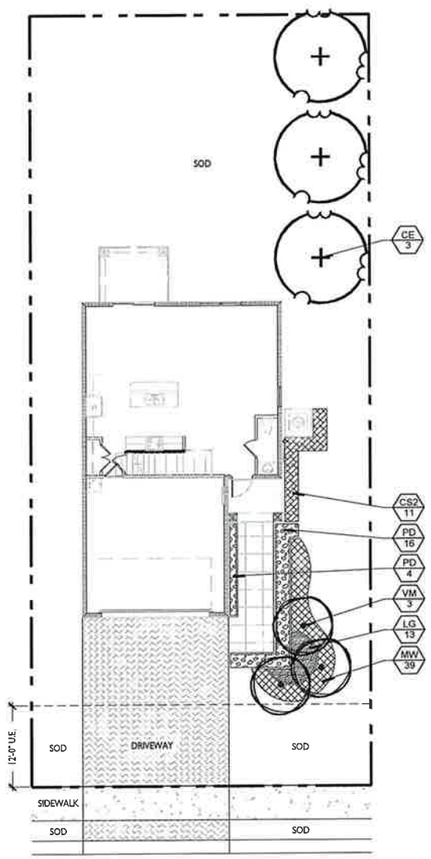
REGISTERED LANDSCAPE ARCHITECT
TIFFANY DELYNN MAY
LA6667274
STATE OF FLORIDA

SEP 3 0 2021

SUNSET SPRINGS

LANDSCAPE PLAN

SHEET:
LP-1.02



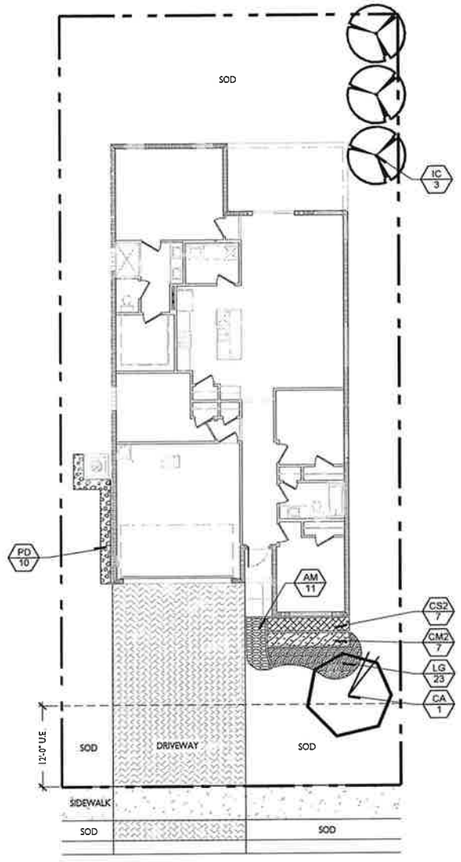
TYPICAL LANDSCAPE - AISLE MODEL

PERVIOUS AREA: 3,691 SQ FT - 65% OF LOT AREA
IMPERVIOUS AREA: 2,009 SQ FT - 35% OF LOT AREA

LANDSCAPE REQUIREMENTS		
INTERIOR LANDSCAPE	REQUIRED	PROVIDED
MIN 1 TREE AND 3 SHRUBS PER 1,500 SQ FT OF LOT AREA	LOT AREA = 5,700 SQ FT 5,700 SQ FT / 1,500 = 4 TREES 5,700 SQ FT / 1,500 x 3 = 12 SHRUBS	4 TREES PROVIDED (3 TREES + 3 PALMS @ 3:1 = 1 TREE) 31 SHRUBS PROVIDED

PLANT SCHEDULE AISLE

TREES	QTY	COMMON NAME	BOTANICAL NAME	NATIVE	REMARKS
CE	3	Green Buttonwood	Conocarpus erectus	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
VM	3	Montgomery Palm	Veitchia montgomeryana	No	MIN 12' CLEAR TRUNK
SHRUB AREAS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
CS2	11	Silver Buttonwood	Conocarpus erectus senceus	Yes	MIN 24" HT, 24" SPRD, @ 24" O C
PD	20	Dwarf Podocarpus	Podocarpus macrophyllus 'Dwarf Pringles'	No	MIN 24" HT, 18" SPRD, @ 24" O C
GROUND COVERS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
LG	13	Evergreen Giant Liriyturf	Liriope muscari 'Evergreen Giant'	No	18" HT, 18" SPRD, @ 18" O C
MW	39	Wart Fern	Microsorum scolopendrium	No	18" HT, 18" SPRD, @ 18" O C



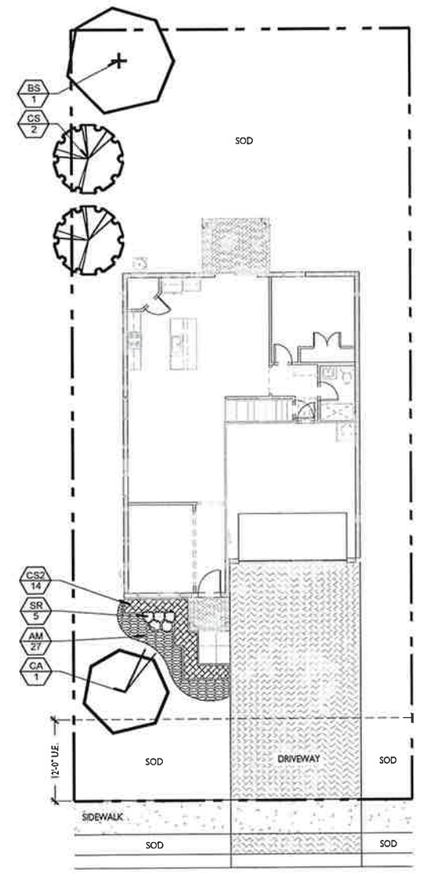
TYPICAL LANDSCAPE - MERRITT MODEL

PERVIOUS AREA: 2,758 SQ FT - 48% OF LOT AREA
IMPERVIOUS AREA: 2,942 SQ FT - 52% OF LOT AREA

LANDSCAPE REQUIREMENTS		
INTERIOR LANDSCAPE	REQUIRED	PROVIDED
MIN 1 TREE AND 3 SHRUBS PER 1,500 SQ FT OF LOT AREA	LOT AREA = 5,700 SQ FT 5,700 SQ FT / 1,500 = 4 TREES 5,700 SQ FT / 1,500 x 3 = 12 SHRUBS	4 TREES PROVIDED 24 SHRUBS PROVIDED

PLANT SCHEDULE MERRITT

TREES	QTY	COMMON NAME	BOTANICAL NAME	NATIVE	REMARKS
CA	1	Autograph Tree	Clusia rosea	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
IC	3	Dahoon Holly	Ilex cassine	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
SHRUB AREAS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
CM2	7	Magnificent Croton	Codiaeum variegatum 'Magnificent'	No	MIN 24" HT, 24" SPRD, @ 24" O C
CS2	7	Silver Buttonwood	Conocarpus erectus senceus	Yes	MIN 24" HT, 24" SPRD, @ 24" O C
PD	10	Dwarf Podocarpus	Podocarpus macrophyllus 'Dwarf Pringles'	No	MIN 24" HT, 18" SPRD, @ 24" O C
GROUND COVERS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
AM	11	Foxtail Fern	Asparagus densiflorus 'Myersii'	No	18" HT, 18" SPRD, @ 18" O C
LG	23	Evergreen Giant Liriyturf	Liriope muscari 'Evergreen Giant'	No	18" HT, 18" SPRD, @ 18" O C



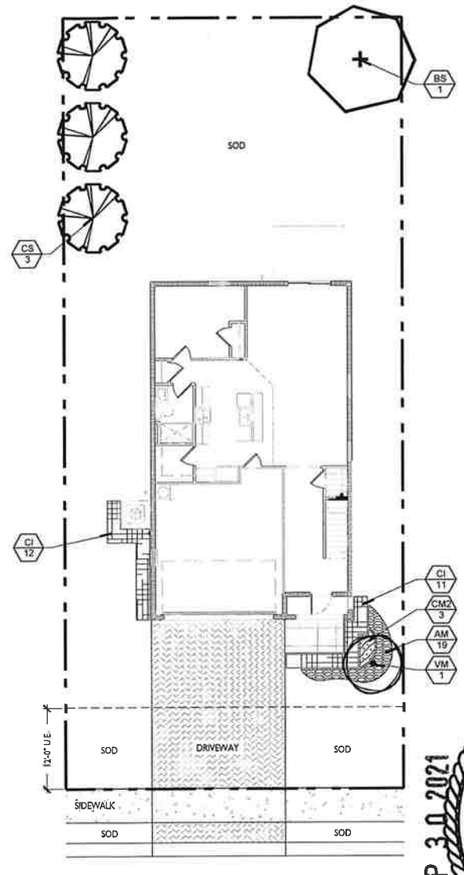
TYPICAL LANDSCAPE - PARKER MODEL

PERVIOUS AREA: 3,307 SQ FT - 58% OF LOT AREA
IMPERVIOUS AREA: 2,393 SQ FT - 42% OF LOT AREA

LANDSCAPE REQUIREMENTS		
INTERIOR LANDSCAPE	REQUIRED	PROVIDED
MIN 1 TREE AND 3 SHRUBS PER 1,500 SQ FT OF LOT AREA	LOT AREA = 5,700 SQ FT 5,700 SQ FT / 1,500 = 4 TREES 5,700 SQ FT / 1,500 x 3 = 12 SHRUBS	4 TREES PROVIDED 19 SHRUBS PROVIDED

PLANT SCHEDULE PARKER

TREES	QTY	COMMON NAME	BOTANICAL NAME	NATIVE	REMARKS
BS	1	Gumbo Limbo	Bursera simaruba	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
CA	1	Autograph Tree	Clusia rosea	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
CS	2	Silver Buttonwood	Conocarpus erectus senceus	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
SHRUBS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
SR	5	Bird Of Paradise	Strelitzia reginae	No	MIN 36" HT, 24" SPRD
SHRUB AREAS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
CS2	14	Silver Buttonwood	Conocarpus erectus senceus	Yes	MIN 24" HT, 24" SPRD, @ 24" O C.
GROUND COVERS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
AM	27	Foxtail Fern	Asparagus densiflorus 'Myersii'	No	18" HT, 18" SPRD, @ 18" O C



TYPICAL LANDSCAPE - ROBIE MODEL

PERVIOUS AREA: 3,597 SQ FT - 63% OF LOT AREA
IMPERVIOUS AREA: 2,103 SQ FT - 37% OF LOT AREA

LANDSCAPE REQUIREMENTS		
INTERIOR LANDSCAPE	REQUIRED	PROVIDED
MIN 1 TREE AND 3 SHRUBS PER 1,500 SQ FT OF LOT AREA	LOT AREA = 5,700 SQ FT 5,700 SQ FT / 1,500 = 4 TREES 5,700 SQ FT / 1,500 x 3 = 12 SHRUBS	4 TREES PROVIDED 26 SHRUBS PROVIDED

PLANT SCHEDULE ROBIE

TREES	QTY	COMMON NAME	BOTANICAL NAME	NATIVE	REMARKS
BS	1	Gumbo Limbo	Bursera simaruba	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
CS	3	Silver Buttonwood	Conocarpus erectus senceus	Yes	MIN 12' HT, 2" DBH, MIN 5' SPRD
VM	1	Montgomery Palm	Veitchia montgomeryana	No	MIN 12' CLEAR TRUNK
SHRUB AREAS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
CI	23	Cassi Flum	Chrysobalanus icaco	Yes	MIN 24" HT, 24" SPRD, @ 24" O C
CM2	3	Magnificent Croton	Codiaeum variegatum 'Magnificent'	No	MIN 24" HT, 24" SPRD, @ 24" O C
GROUND COVERS	**QTY**	**COMMON NAME**	**BOTANICAL NAME**	**NATIVE**	**REMARKS**
AM	19	Foxtail Fern	Asparagus densiflorus 'Myersii'	No	18" HT, 18" SPRD @ 18" O C

N

0 5 10 20
SCALE: 1" = 10'

WGI
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	07.09.2021	RESUBMITTAL	DN
2	10.01.2021	RESUBMITTAL	DN

CAD 6484X00-LPDWG | JOB NO. 6484.00 | DRAWN BY DN | CHECK BY TM | DATE 4-19-21

TIFFANY DELYNN MAY
LICENSED
LANDSCAPE ARCHITECT
LA6667274
STATE OF FLORIDA
REGISTERED LANDSCAPE ARCHITECT
SEP 30 2021

SUNSET SPRINGS

TYPICAL LANDSCAPE PLAN

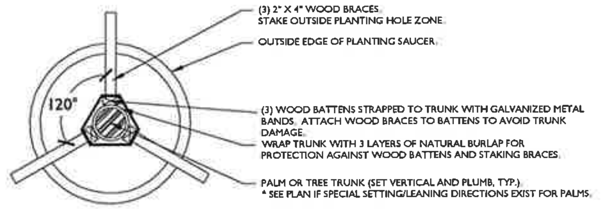
SHEET: LP-1.03

RECEIVED by CITY OF GREENACRES
OCT 1 2021
PLANNING & ENGINEERING

SMALL PALM STAKING PLAN

NOTE:
1. APPLICABLE TO ALL PALMS WITH CALIPER SIZE OF LESS THAN SIX (6) INCHES.
2. ALL TREE SUPPORTS MATERIALS ARE TO BE REMOVED FROM EACH TREE ONCE IT IS ESTABLISHED. TYPICALLY SIX MONTHS FOR SHADE TREES OR ONE YEAR FOR PALMS.

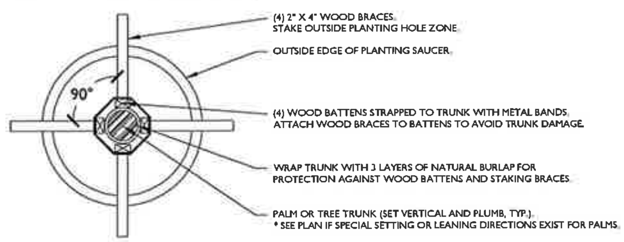
NTS.



LARGE PALM OR TREE STAKING PLAN

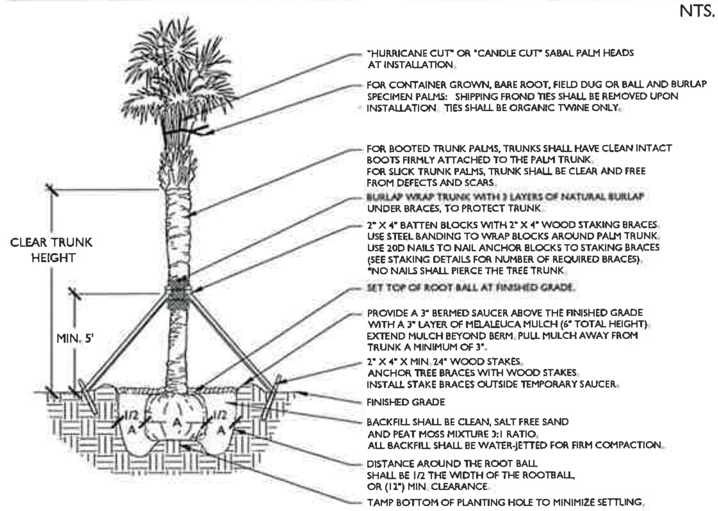
NOTE:
1. APPLICABLE TO ALL MULTI-TRUNK PALMS AND PALMS WITH CALIPER SIZE OF SIX (6) INCHES OR GREATER
2. ALL TREE SUPPORTS MATERIALS ARE TO BE REMOVED FROM EACH TREE ONCE IT IS ESTABLISHED. TYPICALLY SIX MONTHS FOR SHADE TREES OR ONE YEAR FOR PALMS.

NTS.



PALM PLANTING DETAIL

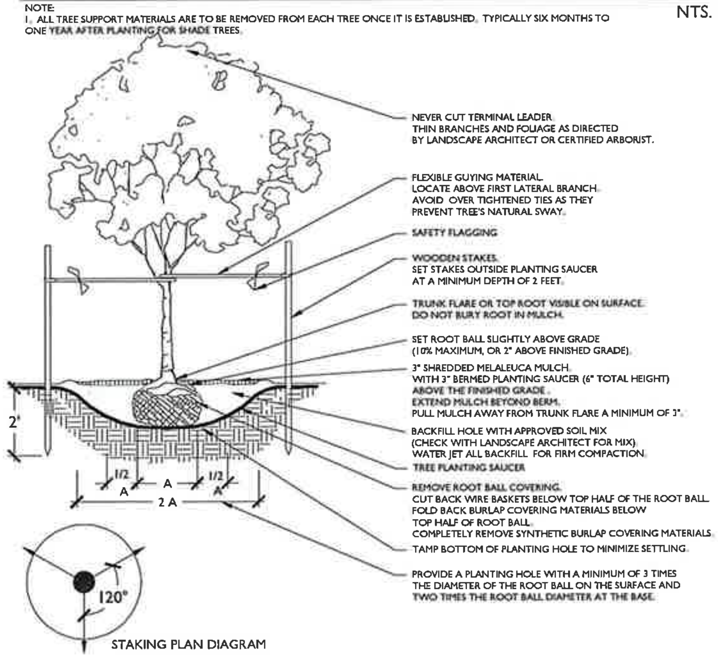
NTS.



TREE PLANTING DETAIL

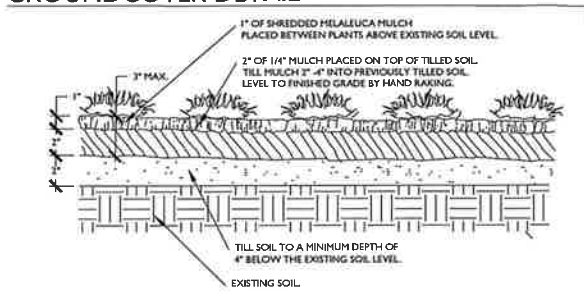
NOTE:
1. ALL TREE SUPPORT MATERIALS ARE TO BE REMOVED FROM EACH TREE ONCE IT IS ESTABLISHED. TYPICALLY SIX MONTHS TO ONE YEAR AFTER PLANTING FOR SHADE TREES.

NTS.



GROUNDCOVER DETAIL

NTS.

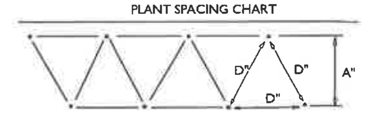


PLANT SPACING DETAIL

NTS.

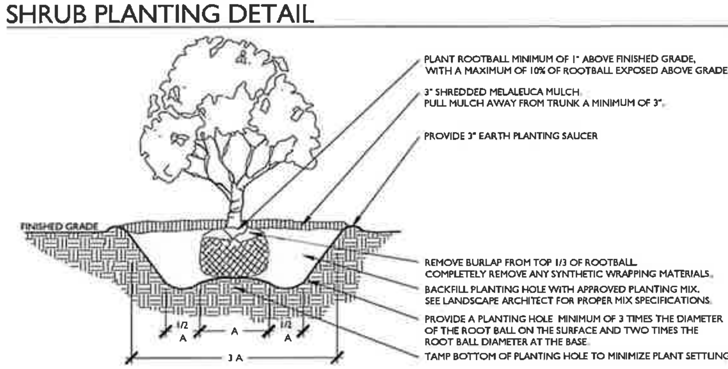
SPACING "D"	ROW "A"
6" O.C.	5.2"
8" O.C.	6.93"
10" O.C.	8.66"
12" O.C.	10.4"
18" O.C.	15.6"
24" O.C	20.8"
30" O.C	26.0"
36" O.C	31.2"
48" O.C	41.6"

PLANT SPACING CHART



SHRUB PLANTING DETAIL

NTS.

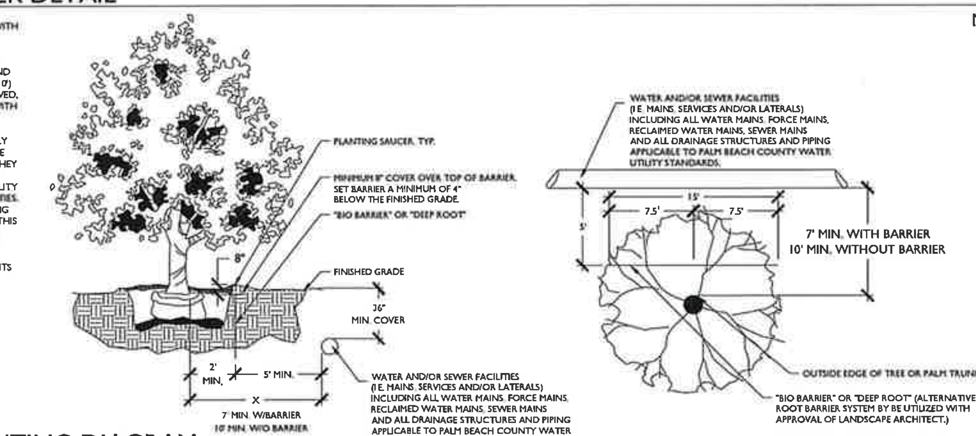


ROOT BARRIER DETAIL

NOTE:
1. TREES ARE TO BE INSTALLED WITH A MINIMUM TEN FOOT (10') SEPARATION FROM ANY PUBLIC WATER OR PUBLIC SEWER MAIN AND/OR SERVICE, HYDRANTS, AND LIFT STATIONS. IF A TEN FOOT (10') SEPARATION CANNOT BE ACHIEVED, THE TREE SHALL BE INSTALLED WITH A ROOT BARRIER SYSTEM.

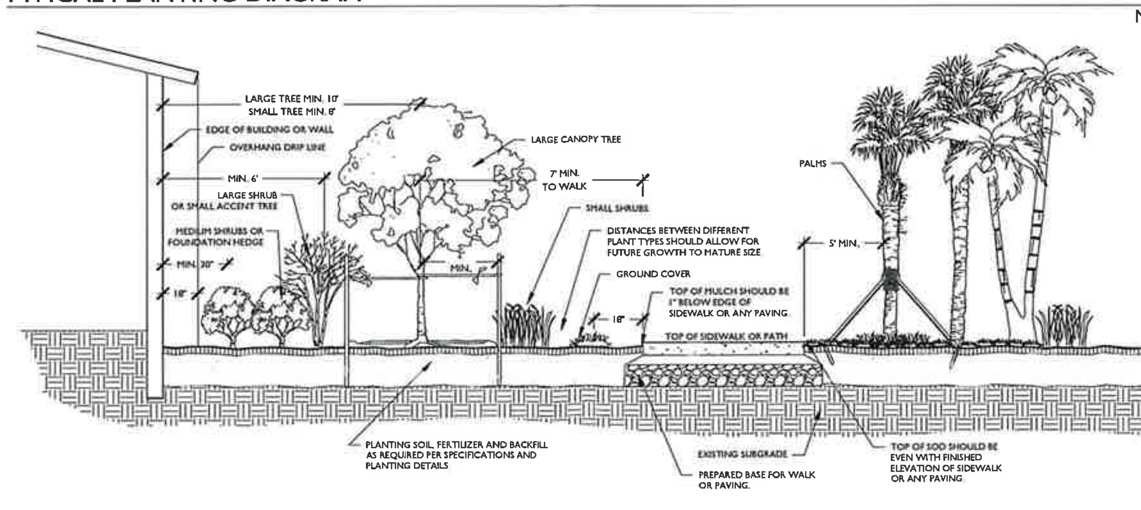
2. ROOT BARRIERS SHALL COMPLY WITH ALL REQUIREMENTS OF THE MUNICIPALITY WITHIN WHICH THEY ARE LOCATED AS WELL AS WITH ANY REQUIREMENTS OF THE UTILITY HOLDER OF THE AFFECTED UTILITIES. IN THE EVENT THAT CONFLICTING REQUIREMENTS EXIST BETWEEN THIS ROOT BARRIER DETAIL AND THE MUNTICPALITY/UTILITY HOLDER REQUIREMENTS, THE MORE STRINGENT OF THE REQUIREMENTS SHALL BE APPLICABLE.

NTS.



TYPICAL PLANTING DIAGRAM

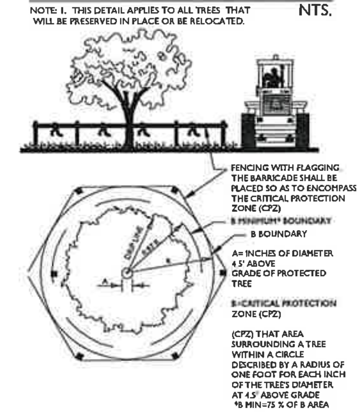
NTS.



TREE PROTECTION DETAIL

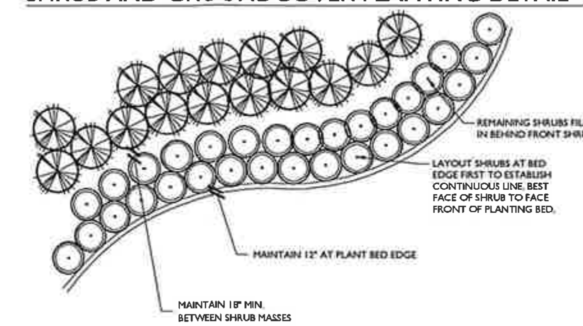
NOTE: 1. THIS DETAIL APPLIES TO ALL TREES THAT WILL BE PRESERVED IN PLACE OR BE RELOCATED.

NTS.



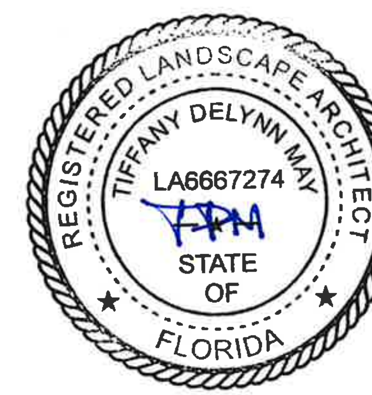
SHRUB AND GROUNDCOVER PLANTING DETAIL

NTS.



LANDSCAPE NOTES:

1. STRUCTURAL ELEMENTS AND HARDSCAPE FEATURES INDICATED ON LANDSCAPE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. LANDSCAPE PLANS ARE TO BE UTILIZED FOR LOCATION OF LIVING PLANT MATERIAL ONLY. LANDSCAPE PLANS SHOULD NOT BE UTILIZED FOR STAKING AND LAYOUT OR LOCATION OF ANY STRUCTURAL SITE FEATURES INCLUDING BUT NOT LIMITED TO: BUILDINGS, SIGNAGE, PATHWAYS, EASEMENTS, BERMS, WALL, FENCES, UTILITIES OR ROADWAYS.
2. CONTRACTOR SHALL ACQUIRE ALL APPLICABLE FEDERAL, STATE, LOCAL, JURISDICTIONAL OR UTILITY COMPANY PERMITS REQUIRED PRIOR TO REMOVAL, RELOCATION, AND/OR INSTALLATION OF LANDSCAPE MATERIALS INDICATED WITHIN PLAN DOCUMENTS. THE CONTRACTOR SHALL HAVE PERMITS "IN HAND" PRIOR TO STARTING WORK. LANDSCAPE ARCHITECT SHALL BEAR NO RESPONSIBILITY FOR WORK PERFORMED WITHOUT PERMITTED DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES TO THE WORK, AT NO ADDITIONAL COST TO THE OWNER, AS A RESULT OF UNAUTHORIZED WORK PRIOR TO RECEIPT OF PERMIT.
3. TREES SHOWN ON THIS PLAN ARE FOR GRAPHIC REPRESENTATION ONLY. TREE SPACING IS BASED ON DESIGN REQUIREMENTS AND THE TREES SHOWN ON THESE PLANS ATTEMPT TO ACCOMPLISH THAT SPACING WHILE MAINTAINING THE REQUIRED SETBACKS FROM UTILITIES. IN THE EVENT OF A CONFLICT, AFFECTED PLANT MATERIAL SHALL BE FIELD ADJUSTED WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT TO AVOID CONFLICTS WITH THE WITH EXISTING AND PROPOSED UTILITIES, LIGHT POLES, DRAINAGE STRUCTURES OR LINES, LAKE MAINTENANCE EASEMENTS OR OTHER AFFECTED SITE FEATURES.
4. ANY PLANTING WITHIN THE SIGHT TRIANGLES SHALL PROVIDE UNOBSTRUCTED VIEWS AT A LEVEL BETWEEN 30" AND 8' ABOVE THE PAVEMENT.
5. ALL UTILITY BOXES/ STRUCTURES TO BE SCREENED ON 3 SIDES W/ APPROVED PLANTING MATERIAL.
6. IRRIGATION IS REQUIRED PROVIDING 100% COVERAGE WITH A MAXIMUM OF 50% OVERLAP, AN AUTOMATIC RAIN SENSOR MUST BE INCLUDED.
7. ALL PLANT MATERIAL TO BE INSTALLED SHALL CONFORM TO FLORIDA POWER AND LIGHT'S (FPL'S) RIGHT TREE RIGHT PLACE GUIDELINES.
8. IN CASE OF DISCREPANCIES PLANS TAKE PRECEDENCE OVER PLANT LIST.
9. LANDSCAPE CONTRACTOR RESPONSIBLE FOR VERIFICATION OF ALL QUANTITIES PRIOR TO BIDDING.
10. REMOVAL OF EXISTING VEGETATION IS RESPONSIBILITY OF LANDSCAPE CONTRACTOR.
11. RELOCATION OF EXISTING VEGETATION IS RESPONSIBILITY OF LANDSCAPE CONTRACTOR. REFER TO SPECIFICATIONS FOR RELOCATION INSTRUCTIONS.
12. ALL PLANT MATERIAL TO BE FLORIDA GRADE #1 AT TIME OF INSTALLATION UNLESS OTHERWISE NOTED.



SEP 30 2021

WGI
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866 909 2220 www.wginc.com
Cert No. 6091 - LB No. 7055

NO.	DATE	DESCRIPTION	BY
1	07.09.2021	RESUBMITTAL	DN
2	10.01.2021	RESUBMITTAL	DN

REVISIONS

CAD	646400-LP.DWG
JOB NO.	6464.00
DRAWN BY	DN
CHECK BY	TM
DATE	4-19-21

LANDSCAPE ARCHITECT OF RECORD
TIFFANY D MAY, PLA
FL # LA6667274

SUNSET SPRINGS

LANDSCAPE DETAILS

SHEET:
LP-3.01

Landscape Planting - Part I. General

I. Description of Work.
A. Provide all exterior planting as shown on the drawings or inferable therefrom and/or as specified in accordance with the requirements of the Contract Documents. Landscape plans provided indicate the proposed location of living plant material only. Structural elements and hardscape features indicated on the landscape plans are for information purposes only. Landscape plans are not to be utilized for staking and layout or location of any structural site features including but not limited to, buildings, signage, pathways, easements, utilities or roadways.
B. These specifications include standards necessary for and incidental to the execution and completion of planting as indicated on the prepared drawings and specified herein.
C. All applicable federal, state and local permits shall be attained prior to the removal, relocation, or installation of plant materials indicated within the plan documents.
D. Protection of existing features. During construction, protect all existing trees, shrubs, and other specified vegetation, site features and improvements, structures, and utilities specified herein and/or on submitted drawings. Removal or destruction of existing plantings is prohibited unless specifically authorized by the owner, and with permit as required by associated federal, state and local government agencies.

II. Applicable Standards
A. American National Standards for Tree Care Operations, ANSI A300. American National Standards Institute, 11 West 42nd Street, New York, N.Y. 10036.
B. American Standard for Nursery Stock, ANSI Z60.1. American Nursery and Landscape Association, 1250 Eye Street, NW, Suite 500, Washington, D.C. 20005.
C. Hortus Third, The Staff of the L.H. Bailey Hortorium. 1976. MacMillan Publishing Co., New York.
D. Florida Department of Agriculture "Grades and Standards for Nursery Plants", most recent addition.
E. National Arborist Association- Pruning Standards for Shade Trees
F. All standards shall include the latest additions and amendments as of the date of advertisement for bids

III. Qualifications
A. Landscape planting and related work shall be performed by a firm with a minimum of five years experience specializing in this type of work. All contractors and their sub-contractors who will be performing any landscape work included in this section of the specification shall be approved by the landscape architect.
B. Landscape Contractor shall be licensed and shall carry any necessary insurance and shall protect the Landscape Architect and Owner against all liabilities, claims or demands for injuries or damage to any person or property growing out of the performance of the work under this contract. All workers shall be covered by Workman's Compensation Insurance.

IV. Requirements of Regulatory Agencies
A. Certificates of inspection shall accompany the invoice for each shipment of plants as may be required by law for transportation. File certificates with the landscape architect prior to acceptance of the material. Inspection by federal or state authorities at place of growth does not preclude rejection of the plants at the site.

V. Submittals
A. Manufacturer's Data: Submit copies of the manufacturer's and/or source data for all materials specified, including soils, soil amendments and fertilizer materials. Comply with regulations applicable to landscape materials.
B. Samples: Submit samples of all topsoil, soil mixes, mulches, and organic materials. Samples shall weigh 1 kg (2 lb) and be packaged in plastic bags. Samples shall be typical of the lot of material to be delivered to the site and provide an accurate indication of color, texture, and organic makeup of the material.
C. Nursery Sources: Submit a list of all nurseries that will supply plants, along with a list of the plants they will provide and the location of the nursery.
D. Soil Test: Submit soil test analysis report for each sample of topsoil and planting mix from a soil testing laboratory approved by the landscape architect.
1. Provide a particle size analysis, including the following gradient of mineral content:

USDA Designation	Size in mm
Gravel	+2 mm
Very Course Sand	1-2 mm
Coarse Sand	0.5-1 mm
Medium Sand	0.25-0.5 mm
Fine Sand	0.1-0.25 mm
Very fine sand	0.05-0.1 mm
Silt	0.002-0.05 mm
Clay	smaller than 0.002

2. Provide a chemical analysis, including the following:
a. pH and buffer pH
b. Percentage of organic content by oven-dried weight.
c. Nutrient levels by parts per million, including phosphorus, potassium magnesium, manganese, iron, zinc, and calcium. Nutrient test shall include the testing laboratory recommendations for supplemental additions to the soil based on the requirements of horticultural plants.
d. Soluble salt by electrical conductivity of a 1:2, soil: water, sample measured in millimho per cm.
e. Cation exchange capacity (CEC).
E. Material Testing: Submit the manufacturers particle size analysis, and the pH analysis and provide a description and source location for the content material of all organic materials.
F. Maintenance Instructions: Prior to the end of maintenance period, Landscape Contractor shall furnish three copies of written maintenance instructions to the Landscape Architect for transmittal to the Owner for maintenance and care of installed plants through their full growing season.

VI. Utility Verification
A. The contractor shall contact the local utility companies for verification of the location of all underground utility lines in the area of the work. The contractor shall be responsible for all damage resulting from neglect or failure to comply with this requirement.

Part 2. Materials

I. Plants
A. Plants shall be true to species and variety specified and nursery-grown in accordance with good horticultural practices under climatic conditions similar to those in the locality of the project for at least two years. They shall have been freshly dug.
1. All plant names and descriptions shall be as defined in Hortus Third.
2. All plants shall be grown and harvested in accordance with the American Standard for Nursery Stock and Florida Department of Agriculture Grades and Standards for Nursery Plants.
3. Unless approved by the landscape architect, plants shall have been grown at a latitude not more than 325 km (200 miles) north or south of the latitude of the project unless the provenance of the plant can be documented to be compatible with the latitude and cold hardiness zone of the planting location.
B. Unless specifically noted, all plants shall be exceptionally heavy, symmetrical, and so trained or favored in development and appearance as to be unquestionably and outstandingly superior in form, compactness, and symmetry. They shall be sound, healthy, vigorous, well branched, and densely foliated when in leaf; free of disease and insects, eggs, or larvae; and shall have healthy, well-developed root systems. They shall be free from physical damage or other conditions that would prevent vigorous growth.
1. Trees with multiple leaders, unless specified, will be rejected. Trees with a damaged or crooked leader, bark abrasions, sunscald, disfiguring knots, insect damage, or cuts of limbs over 20 mm (3/4 in.) in diameter that are not completely closed will be rejected.
C. Plants shall conform to the measurements specified, except that plants larger than those specified may be used if approved by the landscape architect. Use of larger plants shall not increase the contract price. If larger plants are approved, the root ball shall be increased in proportion to the size of the plant.
1. Caliper measurements shall be taken on the trunk 150 mm (6 in.) above the natural ground line for trees up to and including 100 mm (4 in.) in caliper, and 300 mm (12 in.) above the natural ground line for trees over 100 mm (4 in.) in caliper. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to branch tip. Plants shall be measured when branches are in their normal position. If a range of sizes is given, no plant shall be less than the minimum size, and no less than 50 percent of the plants shall be as large as the maximum size specified. Measurements specified are minimum sizes acceptable after pruning, where pruning is required. Plants that meet measurements but do not possess a standard relationship between height and spread, according to the Florida Department of Agriculture Grades and Standards for Nursery Plants, shall be rejected.
D. Substitutions of plant materials will not be permitted unless authorized in writing by the landscape architect. If proof is submitted in writing that a plant specified is not obtainable, consideration will be given to the nearest available size or similar variety, with a corresponding adjustment of the contract price.
E. The plant schedule provided at the end of this section, or on the drawing, is for the contractor's information only, and no guarantee is expressed or implied that quantities therein are correct or that the list is complete. The contractor shall ensure that all plant materials shown on the drawings are included in his or her bid.
F. All plants shall be labeled by plant name. Labels shall be attached securely to all plants, bundles, and containers of plant materials when delivered. Plant labels shall be durable and legible, with information given in weather-resistant ink or embossed process lettering.
G. Selection and Tagging
1. Plants shall be subject to inspection for conformity to specification requirements and approval by the landscape architect at their place of growth and upon delivery. Such approval shall not impair the right of inspection and rejection during progress of the work.
2. A written request for the inspection of plant material at their place of growth shall be submitted to the landscape architect at least ten calendar days prior to digging. This request shall state the place of growth and the quantity of plants to be inspected. The landscape architect may refuse inspection at this time if, in his or her judgment, sufficient quantities of plants are not available for inspection or landscape architect deems inspection is not required.
3. All field grown deciduous trees shall be marked to indicate the trees north orientation in the nursery. Place a 1-in. diameter spot of white paint onto the north side of the tree trunk within the bottom 12 inches of the trunk.
H. Anti-Desiccants
1. Anti-desiccants, if specified, are to be applied to plants in full leaf immediately before digging or as required by the landscape architect. Anti-desiccants are to be sprayed so that all leaves and branches are covered with a continuous protective film.
I. Balled and Burlapped (B&B) Plant Materials.
1. Trees designated B&B shall be properly dug with firm, natural balls of soil retaining as many fibrous roots as possible, in sizes and shapes as specified in the Florida Department of Agriculture Grades and Standards for Nursery Plants. Balls shall be firmly wrapped with synthetic, natural, or treated burlap, and/or wire. All synthetic fabric should be removed from the rootball prior to planting. True biodegradable burlap can be left around the root ball. The root collar shall be apparent at surface of ball. Trees with loose, broken, processed, or manufactured root balls will not be accepted, except with special written approval before planting.
J. Container Plants
1. Plants grown in containers shall be of appropriate size for the container as specified in the most recent edition of the Florida Department of Agriculture Grades and Standards for Nursery Plants and be free of circling roots on the exterior and interior of the root ball.
2. Container plants shall have been grown in the container long enough to have established roots throughout the growing medium.
K. Bareroot and Collected Plants
1. Plants designated as bareroot or collected plants shall conform to the American Standard for Nursery Stock.
2. Bareroot material shall not be dug or installed after bud break or before dormancy.
3. Collected plant material that has not been taken from active nursery operations shall be dug with a root ball spread at least 1/3 greater than nursery grown plants. When specified or approved, shall be in good health, free from disease, insect or weed infestation and shall not be planted before inspection and acceptance at the site. Testing may be required at the discretion of the Landscape Architect and/or the Owner and shall be provided at no additional cost.
L. Specimen Material: Plant material specified as specimens are to be approved by the Landscape Architect before being brought to the site. Unless otherwise noted on the drawings, these plants shall be Florida Fancy.
M. Palms
1. Coconut Palms shall be grown from a certified seed.
2. All palm species except Sabal palmetto shall have roots adequately wrapped before transporting.
3. Sabal palms shall have a hurricane cut. Sabal palms shall be installed on site at the earliest opportunity in the construction process. All Sabal palms shall be from Palm Beach County or other sandy soils. All Sabal palms shall be Florida Fancy.
4. For booted trunk palms, trunks shall have clean intact boots firmly attached to the palm trunk. For slick trunk palms, trunk shall be clear and free from defect and scars.
5. The Contractor shall treat all palms as required to prevent infestation by the palmetto weevil.
N. Sod
1. Sod shall be graded #1 or better. Sod shall be loam or muck grown with a firm, full texture and good root development. Sod shall be thick, healthy and free from defects and debris including but not limited to dead thatch, insects, fungus, diseases and contamination by weeds, other grass varieties or objectionable plant material.
2. Sod shall be sufficiently thick to insure a dense stand of live grass. Sod shall be live, fresh, and uninjured at the time of planting. Plant sod within 48 hours after harvesting.
3. Sod area shall be all areas not otherwise identified and shall include the area beyond the property line to the edge of pavement and/or edge of water.
O. Immediately after harvesting plants, protect from drying and damage until shipped and delivered to the planting site. Rootballs shall be checked regularly and watered sufficiently to maintain root viability.
P. Transportation and Storage of Plant Material
1. Branches shall be tied with rope or twine only, and in such a manner that no damage will occur to the bark or branches.
2. During transportation of plant material, the contractor shall exercise care to prevent injury and drying out of the trees. Should the roots be dried out, large branches broken, balls of earth broken or loosened, or areas of bark torn, the landscape architect may reject the injured tree(s) and order them replaced at no additional cost to the owner. All loads of plants shall be covered at all times with tarpaulin or canvas. Loads that are not protected will be rejected.
3. All bareroot stock sent from the storage facility shall be adequately covered with wet soil, sawdust, woodchips, moss, peat, straw, hay, or other acceptable moisture-holding medium, and shall be covered with a tarpaulin or canvas. Loads that are not protected in the above manner may be rejected.
4. Plants must be protected at all times from sun or drying winds. Those that cannot be planted immediately on delivery shall be kept in the shade, well protected with soil, wet mulch, or other acceptable material, and kept well watered. Plants shall not remain unplanted any longer than three days after delivery. Plants shall not be bound with wire or rope at any time so as to damage the bark or break branches. Plants shall be lifted and handled with suitable support of the soil ball to avoid damaging it.
Q. Mechanized Tree Spade Requirements
Trees may be moved and planted with an approved mechanical tree spade. The tree spade shall move trees limited to the maximum size allowed for a similar B&B root-ball diameter according to the American Standard for Nursery Stock or the manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller. The machine shall be approved by the landscape architect prior to use. Trees shall be planted at the designated locations in the manner shown in the plans and in accordance with applicable sections of the specifications

II Materials for Planting
A. Mulch: Except as otherwise specified, mulch shall be shredded Melaleuca mulch - grade "A". All Melaleuca mulch shall be made entirely from the wood and bark of the Melaleuca quinquinerva tree. It shall not contain more than 10% bark (by volume). Shreds and chips shall not be larger the ¾" diameter and 1½" in length. Mulch shall be free of weeds, seeds, and any other organic or inorganic material other than Melaleuca wood and bark. It shall not contain stones or other foreign material that will prevent its eventual decay. This shall be applied to all planted areas where indicated so that, after installation, the mulch thickness will not be less than 3". Submit sample for approval.
B. Peat: Shall be horticultural peat composed of not less than 60% decomposed organic matter by weight, on an oven dried basis. Peat shall be delivered to the site in a workable condition free from lumps.
C. Gravel Mulch: Use only where specifically indicated on the plans of the size and type shown. Unless otherwise specified it shall be water-worn, hard durable gravel, washed free of loam, sand, clay and other foreign substances. It shall be a minimum of 3" deep and shall be contained with edging or other approved gravel stop as indicated on the plans. It shall be a maximum of 1 1/2", a minimum of 3/4" and of a readily-available natural gravel color range. Provide geotextile filter fabric below aggregate rock.
Submit sample for approval.
D. Root Barrier: Where specified, root barriers shall be installed on all tree and palm material in accordance with the root barrier detail provided within the plan drawings. Root barriers shall comply with all requirements of the municipality within which they are located as well as with any utility holder requirements of any affected utilities. In the event that conflicting requirements exist between the root barrier detail provided within the plan documents and the municipality/utility holder requirements, the more stringent of the requirements shall be applicable.
E. Planter Edging: Use only where specifically indicated on plans. Edging shall be the color black.
F. Anti-desiccant: shall be an emulsion specifically manufactured for agricultural use, which provides a protective film over plant surfaces. Anti-desiccants shall be delivered in containers of the manufacturer and shall be mixed according to the manufacturer's directions. Submit manufacturer literature for approval.

III. Materials for Soil Amendment
A. Pine Bark: Horticultural-grade milled pine bark, with 80 percent of the material by volume sized between 0.1 and 15.0 mm.
1. Pine bark shall be aged sufficiently to break down all woody material. Pine bark shall be screened.
2. pH shall range between 4 and 7.0.
3. Submit manufacturer literature for approval.
B. Organic Matter: Leaf matter and yard waste composted sufficiently to break down all woody fibers, seeds, and leaf structures, and free of toxic and nonorganic matter. Organic matter shall be commercially prepared compost. Submit 0.5 kg (1 lb) sample and suppliers literature for approval.
C. Course Sand: Course concrete sand, ASTM C-33 Fine Aggregate, with a Fines Modulus Index of 2.75 or greater.
1. Sands shall be clean, sharp, natural sands free of limestone, shale and slate particles.
2. Provide the following particle size distribution:

Sieve	Percentage Passing
3/8 in (9.5 mm)	100
No. 4 (4.75 mm)	95-100
No. 8 (2.36 mm)	80-100
No. 16 (1.18 mm)	50-85
No. 30 (0.60 mm)	25-60
No. 50 (0.30 mm)	10-30
No. 100 (0.15 mm)	2-10

D. Lime: shall be ground, pelletized, or pulverized lime manufactured to meet agricultural standards and contain a maximum of 60 percent oxide (i.e, calcium oxide plus magnesium oxide). Submit manufacturer literature for approval.
E. Sulfur: shall be flowers of sulfur, pelletized or granular sulfur, or iron sulfate. Submit manufacturer literature for approval.
F. Fertilizer: Agricultural fertilizer of a formula indicated by the soil test. Fertilizers shall be organic, slow-release compositions whenever applicable. Submit manufacturer literature for approval.

IV. Planting Mix
A. Planting Mix
1. Planting Mix for Trees, Shrubs, Groundcovers and vines: Check with landscape architect for appropriate mixture.
2. Planting Mix for Palms: Mixture of course sand and peat mixed to the following proportion:

Component	Percent by Volume
Coarse Sand	75%
Peat	25%

B. Planting mix shall be thoroughly mixed, screened, and shredded.
C. Prior to beginning the mixing process, submit a 1-kg (2-lb) sample of the proposed mix with soil test results that indicate the mix ratio and the results achieved.
D. During the mixing process but prior to installing the mix, submit a 1-kg (2-lb) sample for each 200 cubic meters (250 cubic yards) of planting mix, taken randomly from the finished soil mix, with soil test results for approval. In the event that the test results do not meet the required particle size distribution, remix and resubmit a revised planting mix.
E. Make all amendments of lime/sulfur and fertilizer indicated by the soil test results at the time of mixing.
F. All mixing shall take place in the contractors yard, using commercial mixing equipment sufficient to thoroughly mix all components uniformly
G. Protect the planting mix from erosion prior to installation.

Part 3. Execution

I. Excavation of Planted Areas
A. Locations for plants and/or outlines of areas to be planted are to be staked out at the site. Locate and mark all subsurface utility lines. Approval of the stakeout by the landscape architect is required before excavation begins.
B. Tree, shrub, and groundcover beds are to be excavated to the depth and widths indicated on the landscape plan detail drawings. If the planting area under any tree is initially dug too deep, the soil added to bring it up to the correct level should be thoroughly tamped.
1. The sides of the excavation of all planting areas shall be sloped at a 45 degrees. The bottom of all beds shall slope parallel to the proposed grades or toward any subsurface drain lines within the planting bed. The bottom of the planting bed directly under any tree shall be horizontal such that the tree sits plumb.
2. Maintain all required angles of repose of the adjacent materials as shown on the drawings. Do not excavate compacted subgrades of adjacent pavement or structures.
3. Subgrade soils shall be separated from the topsoil, removed from the area, and not used as backfill in any planted or lawn area. Excavations shall not be left uncovered or unprotected overnight.
C. For trees and shrubs planted in individual holes in areas of good soil that is to remain in place and/or to receive amendment in the top 150-mm (6 in.) layer, excavate the hole to the depth of the root ball and to widths shown on the drawing. Slope the sides of the excavation at a 45 degree angle up and away from the bottom of the excavation.
1. In areas of slowly draining soils, the root ball may be set up to 75 mm (3 in.) or 1/8 of the depth of the root ball above the adjacent soil level,
2. Save the existing soil to be used as backfill around the tree.
3. On steep slopes, the depth of the excavation shall be measured at the center of the hole and the excavation dug as shown on the drawings.
D. Detrimental soil conditions: The landscape architect is to be notified, in writing, of soil conditions encountered, including poor drainage, that the contractor considers detrimental to the growth of plant material. When detrimental conditions are uncovered, planting shall be discontinued until instructions to resolve the conditions are received from the landscape architect.
E. Obstructions: If rock, underground construction work, utilities, tree roots, or other obstructions are encountered in the excavation of planting areas, alternate locations for any planting shall be determined by the landscape architect.

II. Installation of Planting Mix
A. Prior to the installation of the planting mix, install subsurface drains, irrigation main lines, lateral lines, and irrigation risers shown on the drawings.
B. The landscape architect shall review the preparation of subgrades prior to the installation of planting mix.
C. Do not proceed with the installation of planting mix until all utility work in the area has been installed.
D. Protect adjacent walls, walks, and utilities from damage or staining by the soil. Use 12-mm (1/2 in.) plywood and/or plastic sheeting as directed to cover existing concrete, metal, masonry work, and other items as directed during the progress of the work.
1. Clean up any soil or dirt spilled on any paved surface at the end of each working day.
2. Any damage to the paving or architectural work caused by the soils installation contractor shall be repaired by the general contractor at the soils installation contractors expense.
E. Till the subsoil into the bottom layer of topsoil or planting mix.
1. Loosen the soil of the subgrade to a depth of 50 to 75 mm (2 to 3 in.) with a rototiller or other suitable device.
2. Spread a layer of the specified topsoil or planting mix 50 mm (2 in.) deep over the subgrade. Thoroughly till the planting mix and the subgrade together.
3. Immediately install the remaining topsoil or planting mix in accordance with the following specifications. Protect the tilled area from traffic. DO NOT allow the tilled subgrade to become compacted.
4. In the event that the tilled area becomes compacted, till the area again prior to installing the planting mix.
F. Install the remaining topsoil or planting mix in 200- to 250-mm (8- to 10-in.) lifts to the depths and shown on the drawing details. The depths and grades shown on the drawings are the final grades after soil settlement and shrinkage of the organic material. The contractor shall install the soil at a higher level to anticipate this reduction of soil volume, depending on predicted settling properties for each type of soil.
1. Phase the installation of the soil such that equipment does not have to travel over already-installed topsoil or planting mixes.
2. Compact each lift sufficiently to reduce settling but not enough to prevent the movement of water and feeder roots through the soil. The soil in each lift should feel firm to the foot in all areas and make only slight heel prints. Overcompaction shall be determined by the following field percolation test.
a. Dig a hole 250 mm (10 in.) in diameter and 250 mm (10 in.) deep.
b. Fill the hole with water and let it drain completely. Immediately refill the hole with water, and measure the rate of fall in the water level.
c. In the event that the water drains at a rate less than 25 mm (1 in.) per hour, till the soil to a depth required to break the overcompaction.
d. The landscape architect shall determine the need for, and the number and location of percolation tests based on observed field conditions of the soil.
3. Maintain moisture conditions within the soils during installation to allow for satisfactory compaction. Suspend installation operations if the soil becomes wet. Do not place soils on wet subgrade.
4. Provide adequate equipment to achieve consistent and uniform compaction of the soils. Use the smallest equipment that can reasonably perform the task of spreading and compaction.
5. Add lime, sulfur, fertilizer, and other amendments during soil installation. Spread the amendments over the top layer of soil and till into the top 100 mm (4 in.) of soil. Soil amendments may be added at the same time that organic matter, when required, is added to the top layer of soil.
6. Protect soil from overcompaction after placement. An area that becomes overcompacted shall be tilled to a depth of 125 mm (6 in.). Uneven or settled areas shall be filled and regraded.

III. Fine Grading
A. It shall be the responsibility of the Contractor to finish grade (min. 6" below adjacent F.F.E.). Finish grades in planting areas shall be one inch lower than adjacent paving and are to include 3" of mulching. New earthwork shall blend smoothly into the existing earthwork, and grades shall pitch evenly between spot grades. All planted areas must pitch to drain at a minimum of 1/4" per foot. Any discrepancies not allowing this to occur shall be reported to the Landscape Architect prior to continuing work.
B. Fill all dips and remove any bumps in the overall plane of the slope.
1. The tolerance for dips and bumps in lawn areas shall be a 12-mm (1/2 in.) deviation from the plane in 3,000 mm (10 ft).
2. The tolerance for dips and bumps in shrub planting areas shall be a 25-mm (1 in.) deviation from the plane in 3,000 mm (10 ft).
3. All fine grading shall be inspected and approved by the landscape architect prior to planting, mulching, sodding, or seeding.
C. Berming shall not be placed within 10' of any existing tree nor will it be allowed to encroach upon any utility, drainage, or maintenance easement. Berming shall not impede or obstruct any necessary swales needed to drain other areas for the property.

IV. Planting Operations
A. Plants shall be set on flat-tamped or unexcavated pads at the same relationship to finished grade as they were to the ground from which they were dug, unless otherwise noted on the drawings. Plants must be set plumb and braced in position until topsoil or planting mix has been placed and tamped around the base of the root ball. Improper compacting of the soil around the root ball may result in the tree settling or leaning. Plants shall be set so that they will be at the same depth and so that the root ball does not shift or move laterally one year later.
1. Determine the elevation of the root flare and ensure that it is planted at grade. This may require that the tree be set higher than the grade in the nursery.
2. If the root flare is less than 50 mm (2 in.) below the soil level of the root ball, plant the tree the appropriate level above the grade to set the flare even with the grade. If the flare is more than 50 mm (2 in) at the center of the root ball the tree shall be rejected.
B. Lift plants only from the bottom of the root balls or with belts or lifting harnesses of sufficient width not to damage the root balls. Do not lift trees by their trunk or use the trunk as a lever in positioning or moving the tree in the planting area.
C. Remove plastic, paper, or fiber pots from containerized plant material. Pull roots out of the root mat. Loosen the potting medium and shake away from the root mat. Immediately after removing the container, install the plant such that the roots do not dry out. Pack planting mix around the exposed roots while planting.
D. The roots of bare-root trees shall be pruned at the time of planting to remove damaged or undesirable roots (those likely to become a detriment to future growth of the root system). Bare-root trees shall have the roots spread to approximate the natural position of the roots and shall be centered in the planting pit. The planting-soil backfill shall be worked firmly into and around the roots, with care taken to fill in completely with no air pockets.
E. Cut ropes or strings from the top of shrub root balls and trees smaller than 3 in. caliper after plant has been set. Remove burlap or cloth wrapping and any wire baskets from around top half of balls. Do not turn under and bury portions of burlap at top of ball.
1. Do not immediately remove the ropes and burlap from trees larger than 3 in. caliper. Return to each tree three months after planting and cut all ropes around the trunks and tops of the root balls of these trees.
2. Completely remove any waterproof or water-repellant strings or wrappings from the root ball and trunk before backfilling.
F. Set balled and burlapped trees in the hole with the north marker facing north unless otherwise approved by the landscape architect.
G. Place native soil, topsoil, or planting mix into the area around the tree, tamping lightly to reduce settlement.
1. For plants planted in individual holes in existing soil, add any required soil amendments to the soils, as the material is being backfilled around the plant. Ensure that the amendments are thoroughly mixed into the backfill.
2. For plants planted in large beds of prepared soil, add soil amendments during the soil installation process.
3. Ensure that the backfill immediately around the base of the root ball is tamped with foot pressure sufficient to prevent the root ball from shifting or leaning.
H. Solid sod shall be laid with closely abutting joints with a tamped or rolled, even surface. Stagger strips to offset joints in adjacent courses. Bring the sod edge in a neat, clean manner to the edge of all paving and shrub areas. Sod along slopes shall be pegged to hold sod in place along slopes or banks a wood peg acceptable to the Landscape Architect shall be used at no additional cost to the Owner. If, in the opinion of the Landscape Architect, top-dressing is necessary after rolling, clean sand will be evenly applied over the entire surface and thoroughly washed in without additional charge.
I. Thoroughly water all plants immediately after planting. Apply water by hose directly to the root ball and the adjacent soil.
J. Remove all tags, labels, strings, etc. from all plants.
K. Remove any excess soil, debris, and planting material from the job site at the end of each workday.
L. Form watering saucers 100 mm (4 in.) high immediately outside the area of the root ball of each tree as indicated on the drawings.

V. Relocation of Existing Material:
A. Landscape Contractor shall root prune trees which are to be relocated in accordance with approved horticultural practices and the following procedures.
1. Select a healthy tree
2. Selectively trim the canopy removing dead limbs, cross branching over crowned areas, and lower undesirable limbs. Fertilize and water trees before pruning.
3. Root prune 50% of the root system approximately 18"-2' deep (depending upon species and size). This is done by hand with sharp hand tools or a root pruning saw. The diameter of the root ball to be pruned is 8-12 inches per every one inch of diameter at breast height of the tree.
4. Back fill the existing soil with peat moss to stimulate new root growth of the pruned roots.
5. Water in thoroughly and treat with a mycorrhizae and a low nitrogen fertilizer (so not to burn the pruned roots). Brace trees if deemed necessary.
6. The root pruned tree should be watered every day (especially during warm months of the season), the equivalent of 5 gallons for every DBH of tree per day.
7. Root pruned trees should be let to stand for a minimum of 6 weeks for trees less than 8" DBH and as long as 3 months for larger specimens prior to transplanting.
8. For best results and survivorship, new root growth should be evident on root pruned trees prior to transplanting.
9. Upon transplanting, water should be applied every day as outlined in step 6 for at least one year.

VI. Staking and Guying
A. The Contractor shall stake all trees and palms in accordance with the tree and palm staking details provided within the plan drawings. Alternate methods of guying or staking may be employed with the prior approval of the Landscape Architect.
B. The Contractor shall be responsible for the replacement or adjustment of all trees, palms or shrubs that fall or lean during the guarantee period. The Contractor shall be responsible for any damage caused by the failing or leaning of trees.
C. Stakes and guys shall be installed immediately upon approval or planting, and shall be removed in accordance with the staking details provide within the plan drawings. Any tree that is not stable at the end of the warranty period shall be rejected.

VII. Pruning
A. Plants shall not be heavily pruned at the time of planting. Pruning is required at planting time to correct defects in the tree structure, including removal of injured branches, waterspouts, suckers, and interfering branches. Healthy lower branches and interior small twigs should not be removed except as necessary to clear walks and roads. In no case should more than one-quarter of the branching structure be removed. Retain the normal or natural shape of the plant.
B. All pruning shall be completed using clean, sharp tools. All cuts shall be clean and smooth, with the bark intact with no rough edges or tears.
C. Pruning of large trees shall be done from a hydraulic man-lift such that it is not necessary to climb the tree.

VIII. Mulching
A. All trees, palms, shrubs, and other plantings will be mulched with mulch previously approved by the landscape architect. The mulch shall be a minimum 3" thick layer over all tree, shrub and ground cover planting areas, unless otherwise specified. All mulch layers shall be of the specified thickness at the time of the final acceptance of the work. Mulch must not be placed within 3 inches of the trunks of trees, palms or shrubs.
B. Place mulch at least 3" in depth in a circle around all trees located in lawn areas. The diameter of the circle shall be 16" in diameter larger than the ball of the plant provided. Mulch must not be placed within 3 inches of the trunks of trees, palms or shrubs.

IX. Maintenance of Trees, Shrubs, and Vines
A. Maintenance shall begin immediately after each plant is planted and continue until its acceptance has been confirmed by the landscape architect.
B. Maintenance shall consist of pruning, watering, cultivating, weeding, mulching, fertilizing, tightening and repairing guys and stakes, resetting plants to proper grades or upright position, restoring of the planting saucer, and furnishing and applying such sprays or other materials as necessary to keep plantings free of insects and disease and in vigorous condition.
C. Planting areas and plants shall be protected at all times against trespassing and damage of all kinds for the duration of the maintenance period. If a plant becomes damaged or injured, it shall be treated or replaced as directed by the landscape architect at no additional cost.
D. Watering: Contractor shall irrigate as required to maintain vigorous and healthy tree growth. Overwatering or flooding shall not be allowed. The contractor shall monitor, adjust, and use existing irrigation facilities, if available, and furnish any additional material, equipment, or water to ensure adequate irrigation. Root balls of all trees and large shrubs shall be spot watered using hand-held hoses during the first four months after planting, as required to ensure adequate water within the root ball.
E. During periods of restricted water usage, all governmental regulations (permanent and temporary) shall be followed. The contractor may have to transport water from ponds or other sources, at no additional expense to the owner when irrigation systems are unavailable.
F. Remove soil ridges from around watering basins prior to end of maintenance period, as directed by Landscape Architect

X. Acceptance
A. The landscape architect shall inspect all work for acceptance upon written request of the contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.
B. Acceptance of plant material shall be for general conformance to specified size, character, and quality and shall not relieve the contractor of responsibility for full conformance to the contract documents, including correct species.
C. Upon completion and re-inspection of all repairs or renewals necessary in the judgment of the landscape architect, the landscape architect shall certify in writing that the work has been accepted.

XI. Acceptance in Part
A. Work may be accepted in parts when the landscape architect and contractor deem that practice to be in their mutual interest. Approval must be given in writing by the landscape architect to the contractor verifying that the work is to be completed in parts. Acceptance of work in parts shall not waive any other provision of this contract.

XII. Guarantee Period and Replacements
A. The guarantee period for trees and shrubs shall begin at the date of acceptance.
B. The contractor shall guarantee all plant material to be in healthy and flourishing condition for a period of one year from the date of acceptance.
C. When work is accepted in parts, the guarantee periods extend from each of the partial acceptances to the terminal date of the guarantee of the last acceptance. Thus, all guarantee periods terminate at one time.
D. The contractor shall replace, without cost, as soon as weather conditions permit, and within a specified planting period, all plants determined by the landscape architect to be dead or in an unacceptable condition during and at the end of the guarantee period. To be considered acceptable, plants shall be free of dead or dying branches and branch tips and shall bear foliage of normal density, size, and color. Replacements shall closely match adjacent specimens of the same species. Replacements shall be subject to all requirements stated in this specification.
E. The guarantee of all replacement plants shall extend for an additional period of one year from the date of their acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of said extended guarantee period, the landscape architect may elect subsequent replacement or credit for that item.
F. At the end of the guarantee, the contractor shall reset grades that have settled below the proposed grades on the drawings.
G. The contractor shall make periodic inspections, at no extra cost, during the guarantee period to determine what changes, if any, should be made in the maintenance program. If changes are recommended, they shall be submitted in writing to the landscape architect. Claims by the contractor that the owners maintenance practices or lack of maintenance resulted in dead or dying plants will not be considered if such claims have not been documented by the contractor during the guarantee period.

XIII. Final Inspection and Final Acceptance
At the end of the guarantee period and upon written request of the contractor, the landscape architect will inspect all guaranteed work for final acceptance. The request shall be received at least ten calendar days before the anticipated date for final inspection. Upon completion and re-inspection of all repairs or renewals necessary in the judgment of the landscape architect at that time, the landscape architect shall certify, in writing, that the project has received final acceptance.

WGI.
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	07.09.2021	RESUBMITTAL	DN
2	10.01.2021	RESUBMITTAL	DN

CAD 6480D-P.DWG | JOB NO. 6484.00 | DRAWN BY DN | CHECK BY TM | DATE 4-19-21

REGISTERED LANDSCAPE ARCHITECT
TIFFANY DELYNN MAY
LA6667274
STATE OF FLORIDA
10-01-2021

SUNSET SPRINGS

LANDSCAPE SPECIFICATIONS

RECEIVED by CITY OF GREENACRE
OCT 1 2021
PLANNING & ENGINEERING

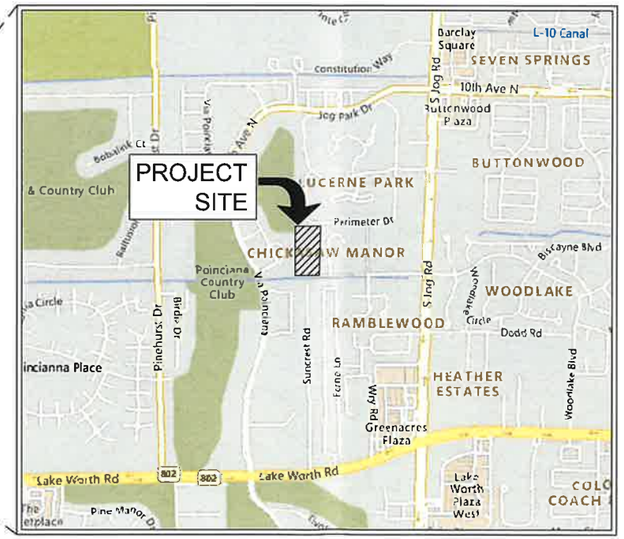
SHEET
LP-3.02

SUNSET SPRINGS
GREENACRES, FLORIDA
PRELIMINARY ENGINEERING PLANS

PREPARED FOR:
D.R HORTON, INC.
6123 LYONS ROAD
COCONUT CREEK, FL 33073

D·R·HORTON
America's Builder

LOCATION MAP



PROJECT LOCATED IN
SECTION 22/ TOWNSHIP 44 SOUTH / RANGE 42 EAST

SHEET INDEX

PERMIT TRACKING			
PERMITTING AGENCY	PERMIT NAME	PERMIT NUMBER	EXPIRATION DATE
LWDD		R1-21-0044	
CITY OF GREENACRES		SP-21-01	

VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983, FLORIDA STATE PLANES, EAST ZONE, U.S. FEET (NAD83)

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

PREPARED BY:
WGI
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

CONSULTANTS:

PROJECT TITLE:

SUNSET SPRINGS
6645 CHICKASAW ROAD
GREENACRES, FL 33467

ENGINEER OF RECORD
TRAVIS D. DOUGLAS, PE
PE# 88589
10/1/21

NO:	DATE:	DESCRIPTION:

DRAWN DATE:	10/1/21
DRAWN BY:	GAT
CHECKED BY:	CJH
PROJECT #:	6464.00

PRELIMINARY ENGINEERING PLANS

SHEET #:	TOTAL SHEETS
C-0	16

GENERAL NOTES

1. REGULATIONS - ALL CONSTRUCTION SHALL BE DONE IN A WORKMAN LIKE MANNER AND SHALL CONFORM TO ALL COUNTY, STATE AND FEDERAL REGULATIONS AND OR CODES INCLUDING BUT NOT LIMITED TO THE CURRENT PALM BEACH COUNTY AND FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) LATEST REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES TO BEGIN WORK AND PAY ALL REQUIRED FEES ASSOCIATED WITH SAME.
2. STANDARD DETAILS AND SPECIFICATIONS - STATE, COUNTY AND CITY CONSTRUCTION DETAILS AND SPECIFICATIONS SHALL BE APPLIED TO THE APPROPRIATE AREAS OF THE PLANS, GENERALLY DIFFERENTIATED BY PROPERTY OWNERSHIP LINES OR INTENT OF THE DESIGN. ANY CONFLICTS BETWEEN GOVERNING STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. DATUM - UNLESS OTHERWISE NOTED, ELEVATIONS SHOWN HEREON REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). HORIZONTAL DATA SHOWN HEREON REFERS TO N.A.D. 83 FLORIDA STATE PLANE EAST ZONE. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE CONSTRUCTION BEGINS OR RESUMES.
4. CHANGES - ALL CHANGES SHALL BE SUBMITTED IN WRITING AND APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
5. GUARANTEE - THE CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIAL FOR A PERIOD OF ONE YEAR FROM THE DATE OF PROJECT ACCEPTANCE, DURING WHICH ALL FAULTY CONSTRUCTION AND/OR MATERIAL SHALL BE REPLACED AT THE CONTRACTORS EXPENSE.
6. SHOP DRAWINGS - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND PBCWUD APPROVAL. STRUCTURE SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.
7. MAINTENANCE OF TRAFFIC (M.O.T.) - UNLESS OTHERWISE PERMITTED, THE CONTRACTOR SHALL MAINTAIN EXISTING PEDESTRIAN AND VEHICULAR TRAFFIC AND ACCESS AT ALL TIMES DURING CONSTRUCTION AND SHALL PROVIDE THE NECESSARY TEMPORARY PAVEMENT, BARRICADES, LIGHTING, SIGNS, FLAGMEN, ETC. FOR THE SAFETY OF THE PUBLIC. THE CONTRACTOR SHALL SUBMIT M.O.T. AND A.D.A. ACCESS PLANS TO THE ENGINEER FOR REVIEW AND CITY, COUNTY AND STATE APPROVAL OF WORK TO BE DONE WITHIN THEIR RIGHTS OF WAY. M.O.T. SHALL BE IN ACCORDANCE WITH A.D.A., M.U.T.C.D. AND F.D.O.T. INDEX SERIES 600.
8. RECORD DRAWINGS - THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL. RECORD DRAWINGS MUST BE SIGNED AND SEALED BY A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF FLORIDA AND BE REFERENCED TO THE DATUM SHOWN IN THE CONSTRUCTION PLANS. ANY UNMARKED UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE INCORPORATED INTO THE RECORD DRAWINGS. ALL UTILITIES MUST BE SHOWN IN THEIR AS-BUILT LOCATION.
9. RESPONSIBILITY - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL VERIFY THE LOCATION, SIZE AND MATERIAL OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE APPROPRIATE UTILITY COMPANY SHALL BE NOTIFIED PRIOR TO ANY CONSTRUCTION IN OR AROUND THAT UTILITY. CALL "SUNSHINE STATE ONE CALL" AT 1-800-432-4770 PRIOR TO ANY EXCAVATION. THE ENGINEER AND OWNER SHALL BE HELD HARMLESS AGAINST ALL CLAIMS OR DAMAGES.
10. RESTORATION - THE CONTRACTOR SHALL IMMEDIATELY REPAIR AND RESTORE EXISTING SITE FEATURES INCLUDING PAVEMENT, DRIVEWAYS, PIPES, FENCES, TRAFFIC CONTROL DEVICES, MAILBOXES AND PROPERTY CORNERS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES. THE REPAIR AND RESTORATION SHALL CONFIRM TO APPLICABLE STANDARDS AS GOVERNED.
11. OPEN TRENCHES - ALL OPEN TRENCHES AND HOLES SHALL BE PROPERLY MARKED AND BARRICADED TO INSURE THE SAFETY OF VEHICULAR AND PEDESTRIAN TRAFFIC. NO OPEN TRENCHES OR HOLES SHALL BE LEFT OPEN DURING NIGHT TIME HOURS WITHOUT EXPRESSED PERMISSION FROM THE OWNER, ENGINEER AND REGULATING AGENCIES. ALL TRENCHES SHALL COMPLY WITH OSHA TRENCH SAFETY ACT PROVISIONS.
12. CONFLICTS - ANY CONFLICTING INFORMATION BETWEEN REGULATING AGENCIES AND THE CONSTRUCTION DOCUMENTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER. AFFECTED CONSTRUCTION SHALL NOT COMMENCE OR RESUME UNTIL PERMISSION IS GRANTED BY THE ENGINEER OR OWNER.

CLEARING AND GRUBBING

1. CLEARING - CLEARING SHALL BE LIMITED TO THE CONSTRUCTION AREA AND/OR AS DIRECTED BY THE ENGINEER OR OWNER AND APPROVED BY THE COUNTY.
2. GRUBBING - ALL STUMPS, ROOTS, BURIED LOGS OR OTHER UNSUITABLE MATERIAL WITHIN THE LIMITS OF PAVEMENT CONSTRUCTION SHALL BE REMOVED TO A DEPTH OF 3 FEET BELOW FINISHED PAVEMENT ELEVATION AND REPLACED WITH CLEAN FILL.
3. DEBRIS REMOVAL - ALL DEBRIS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED. ANY MATERIAL RETAINED ON-SITE FOR MORE THAN 30 DAYS SHALL BE STORED IN CONTAINERS APPROVED BY THE ENGINEER AND COUNTY.
4. PROTECTION - THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL EXISTING BUILDINGS, UTILITIES, STRUCTURES THAT ARE ABOVE OR BELOW GROUND AND SHALL HOLD THE ENGINEER AND OWNER HARMLESS AGAINST ALL CLAIMS OR DAMAGES.
5. LANDSCAPED AREAS - ALL LANDSCAPE PLANTING AREAS SHALL BE FREE OF BASE ROCK AND CONSTRUCTION DEBRIS AND EXCAVATED TO A MINIMUM DEPTH OF 30" OR TO CLEAN, NATIVE SOIL. REFER TO THE LANDSCAPE PLANS (BY OTHERS) FOR ADDITIONAL PLANTING INFORMATION AND DETAILS.
6. MUCK - ANY MUCK ENCOUNTERED WITHIN 10' OF THE PAVEMENT AND BUILDING AREAS SHALL BE REMOVED AND REPLACED WITH CLEAN FILL MATERIAL.
7. HARDPAN - ANY HARDPAN ENCOUNTERED IN THE DETENTION AREA SHALL BE REMOVED AND REPLACED WITH CLEAN, GRANULAR FILL MATERIAL.

WATER AND SEWER NOTES

1. RIM ELEVATIONS ARE BASED ON PROPOSED FINISH GRADES. VERTICAL ADJUSTMENTS OF RIMS AND VALVE BOXES MAY BE NECESSARY DUE TO FIELD CONDITIONS. ADJUSTMENTS ARE TO BE MADE BY THE CONTRACTOR WHEN THE BASE COURSE IS IN PLACE OR SITE GRADING IS COMPLETE. COST OF ADJUSTING IS TO BE INCLUDED IN BASE BID.
2. WATER AND SEWER MAINS AND SERVICES TO CLEAR DRAINAGE MANHOLES AND INLETS BY A MINIMUM OF 3'.
3. PVC WATER MAINS SHALL BE LAID WITH NO DEFLECTIONS AT THE JOINTS AND PIPES SHALL NOT BE DEFLECTED.
4. WATER PIPE AND FITTINGS SHALL BE COLOR CODED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320 OF THE F.A.C.
5. SEWER FORCE MAINS AND FITTINGS SHALL BE COLOR CODED IN ACCORDANCE WITH SUBPARAGRAPH 62-604.300 OF THE F.A.C.
6. DETECTABLE MAGNETIC TAPE SHALL BE INSTALLED 12" ABOVE CROWN OF PIPE. TAPE OVER WATER MAINS SHALL BE 6" BLUE. TAPE OVER FORCE MAINS SHALL BE 6" GREEN OR BROWN. THE TAPE SHALL BE MAGNETIC AND MANUFACTURED BY THOR ENTERPRISES OR APPROVED EQUAL.
7. ELECTROMAGNETIC SENSOR (EMS) MARKERS SHALL BE PLACED ACCORDING TO THE STANDARD DETAIL AS WELL AS ALL CHANGES IN PIPE DIRECTION AND AT 500' (MAX) INTERVALS ALONG ENTIRE LENGTH.
8. MEGALUG RESTRAINTS, SECURED WITH THRUST BLOCKS AND/OR TIE-RODS (SEE DETAIL SHEETS), SHALL BE USED ON ALL UNDERGROUND FITTINGS. ABOVE GROUND FITTINGS SHALL BE FLANGED. RESTRAINED JOINTS AND FITTINGS SHALL BE VISUALLY INSPECTED AND ACCEPTED BY THE ENGINEER PRIOR TO BACKFILLING.
9. FIRE HYDRANTS SHALL BE INSTALLED PER PBCWUD DETAIL.
10. MAINTAIN A 6' CLEAR AREA AROUND ALL FIRE HYDRANTS.
11. ALL SERVICES SHALL HAVE AN RPZ BFP DEVICE INSTALLED ON THE DISCHARGE SIDE OF THE METER.
12. VALVE BOX COVERS ARE NOT TO FALL WITHIN CURBS.
13. UNLESS CALLED FOR IN THE PLANS, ALL WATER MAINS AND FORCE MAINS SHALL HAVE 36" MIN. COVER.
14. D.I.P. SEWER PIPE SHALL BE EPOXY LINED.
15. ALL SANITARY SEWER SERVICE LATERALS SHALL BE PRIVATE.
16. ALL MANHOLE LIDS SHALL HAVE PBCWUD LOGO INSCRIBED THEREON (NEW & EXISTING).
17. HIGH VOLTAGE CORROSION BARRIER TESTING FOR SANITARY SEWER MANHOLES TO BE PERFORMED BY A CERTIFIED LABORATORY AT NO COST TO PBCWUD.
18. NO CONNECTIONS SHALL BE MADE TO ANY FIRE HYDRANT OR BLOW-OFF WITHOUT FIRST OBTAINING PERMISSION AND A CONSTRUCTION METER FROM PBCWUD.
19. PRESSURE TEST CRITERIA SHALL CONFORM TO PBCHD AND PBCWUD STANDARDS. SEGMENT SHALL BE TESTED FOR TWO (2) HOURS AT A MINIMUM PRESSURE OF 150 PSI IN ACCORDANCE WITH THE CURRENT AWWA C-600 STANDARD. THE MAXIMUM QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE TESTED PIPE TO MAINTAIN THE SPECIFIED PRESSURE SHALL NOT EXCEED 50% OF THE APPLICABLE AWWA C-600 STANDARD.
20. HORIZONTAL PIPE SEPARATION DIMENSIONS ARE FROM WALL TO WALL OF PIPES AND STRUCTURES UNLESS NOTED OR EXPLICITLY SHOWN.
21. PRESSURE FITTINGS TO BE RESTRAINED PER PBCWUD SPECIFICATIONS.

PAVING AND DRAINAGE

1. SUBGRADE - SUBGRADE SHALL BE COMPACTED TO 98% MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-180 (ASTM-D1557) SPECIFICATIONS. ALL STUMPS, ROOTS, AND OTHER DELETERIOUS MATERIAL ENCOUNTERED SHALL BE REMOVED TO A DEPTH OF 3 FEET BELOW FINISHED ROAD GRADE AND REPLACED WITH CLEAN FILL COMPACTED TO NOT LESS THAN 100% OF MAXIMUM DENSITY. ALL SUCH MATERIAL SHALL BE REMOVED FROM WITHIN 8 FEET OF THE EDGE OF PAVEMENT. STABILIZED SUBGRADE SHALL CONFORM TO SECTION 160 OF FDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND HAVE A MINIMUM LBR OF 40.
2. BASE - APPROVED SHELLROCK AND LIMEROCK SHALL CONFORM TO APPLICABLE SECTIONS OF THE LATEST FDOT SPECIFICATIONS. BASE COURSE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 (ASTM 1557). PRIME COAT MINIMUM APPLICATION RATE OF 0.10 GAL/S.Y. TACK COAT MINIMUM APPLICATION RATE OF 0.05 GAL/SY.
3. ASPHALT CONCRETE - STRUCTURAL AND SURFACE COURSES SHALL CONFORM TO APPLICABLE SECTIONS OF THE CURRENT FDOT SPECIFICATIONS.
4. STRUCTURES - INLETS AND MANHOLES SHALL BE AS SPECIFIED ON THE PLANS AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE CURRENT FDOT SPECIFICATIONS. INLET GRATES SHALL BE SECURED IN ACCORDANCE WITH FDOT INDEX NO 201.
5. PIPES - DRAINAGE PIPES SHALL CONFORM WITH THE APPLICABLE SECTIONS OF THE CURRENT FDOT SPECIFICATIONS.
6. REINFORCING STEEL - ALL REINFORCING STEEL SHALL CONFORM TO ASTM A- 615 SPECIFICATIONS.

PAVING AND DRAINAGE - CONTINUED

7. CONCRETE - CONCRETE SHALL DEVELOP A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED ON THE PLANS AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE CURRENT FDOT SPECIFICATIONS.
8. PIPE BACKFILL - PIPE BACKFILL SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE CURRENT FDOT SPECIFICATIONS. PIPE BACKFILL SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO NOT LESS THAN 100% MAXIMUM DENSITY AS DEFINED BY AASHTO T-180.
9. TRAFFIC CONTROL DEVICES - ALL TRAFFIC CONTROL DEVICES, PAVEMENT MARKINGS AND SIGNS SHALL BE AS DEFINED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (MUTCD), PALM BEACH COUNTY TYPICAL #T-P-18 AND/OR THE CURRENT FDOT SPECIFICATIONS, WHERE APPLICABLE. THERMOPLASTIC MATERIAL SHALL BE USED FOR FINAL PAVEMENT MARKINGS EXCEPT PARKING SPACES. IF PAVER BRICKS ARE USED IN MARKED PAVEMENT, BRICKS OF APPROPRIATE COLOR AND CONTRAST SHALL BE USED IN LIEU OF PAINT OR THERMOPLASTIC MATERIAL. PAINT MAY BE USED FOR TEMPORARY STRIPING.
10. WHERE CONNECTIONS TO AN EXISTING DRAINAGE SYSTEM ARE PROPOSED, SAID EXISTING DRAINAGE STRUCTURES AND LINES SHALL BE CLEANED OF ALL SILT AND OTHER DEBRIS PRIOR TO SAID CONNECTIONS BEING MADE, AND WHERE THE EXISTING DRAINAGE SYSTEM INCLUDES DITCHES, SAID DITCHES SHALL BE CLEARED AND REWORKED, AS NECESSARY, TO RESTORE THEM TO AN APPROVED DESIGN SECTION. DRAINAGE SYSTEMS ARE TO BE CLEANED AND/OR GRADED TO THE POINT OF LEGAL POSITIVE OUTFALL.
11. ALL HANDICAP ACCESSIBLE RAMPS SHALL MEET ALL APPLICABLE LOCAL, STATE, AND FEDERAL ACCESSIBILITY GUIDELINES AND REGULATIONS. ANY MODIFICATIONS SHALL BE APPROVED BY THE ENGINEER OF RECORD. HANDICAP PARKING SIGNS SHALL BE PLACED A) BEHIND THE SIDEWALK OR B) ATTACHED TO BUILDING WALLS IN AREAS WHERE A SIDEWALK AND/OR BUILDING ABUTS THE STALL OR C) OUTSIDE THE TWO (2') FEET OVERHANG AREA WHERE WHEEL STOPS ARE NOT PROVIDED.
12. CONTRACTOR SHALL CONTACT PALM BEACH COUNTY TRAFFIC OPERATIONS AT 561-233-3900 FORTY-EIGHT (48) HOURS PRIOR TO CONSTRUCTION IF WORK IS BEING DONE WITHIN 10 FEET OF ANY SIGNAL EQUIPMENT
13. DAMAGES TO LOOPS OR ANY SIGNAL EQUIPMENT CAUSED BY CONSTRUCTION OF THIS PROJECT MUST BE REPAIRED OR REPLACED TO ORIGINAL OR BETTER CONDITION AT NO COST TO PALM BEACH COUNTY.

FIELD OBSERVATIONS AND TESTING

1. NOTIFICATION - THE CONTRACTOR SHALL NOTIFY THE ENGINEER, GOVERNMENT AND OTHER PERMITTING AGENCIES 48 HOURS PRIOR TO SCHEDULING FIELD OBSERVATIONS AND SHALL SUPPLY ALL EQUIPMENT NECESSARY TO TEST THE COMPLETED WORK. CALL "SUNSHINE ONE CALL" AT 1-800-432-4770 PRIOR TO ANY EXCAVATION.
2. THE UNDERGROUND CONTRACTOR SHALL SUBMIT ALL RECORD DATA, SIGNED AND SEALED BY A PROFESSIONAL SURVEYOR AND MAPPER REGISTERED IN THE STATE OF FLORIDA, TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CURB AND PAVEMENT CONSTRUCTION. ANY NECESSARY ADJUSTMENTS AT THIS TIME SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. DRAINAGE PIPES AND STRUCTURES SHALL BE INSPECTED BY THE ENGINEER AND COUNTY PRIOR TO BACKFILLING. ALL DRAINAGE SYSTEMS SHALL BE PUMPED DOWN TO BELOW THE INVERT AND LAMPED AS A REQUIREMENT OF THE FINAL DRAINAGE INSPECTION.
4. ALL TESTS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA AND ARE TO BE PAID FOR BY THE CONTRACTOR.
5. THE BASE ROCK CHEMICAL AND SIEVE ANALYSIS AND THE ASPHALT MIX AND DESIGN CRITERIA SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
6. PROCTOR AND DENSITY TESTS FOR SUBGRADE AND BASE MATERIAL SHALL BE TAKEN AS DIRECTED BY THE ENGINEER. PAVING DENSITY TESTS SHALL BE TAKEN A MINIMUM OF ONE PER 500 S.Y.
7. DENSITY TEST FOR PIPE TRENCHES SHALL BE TAKEN AT THE PIPE SPRING-LINE AND AT MAXIMUM ONE FOOT (1') LIFTS AS MEASURED FROM THE TOP OF PIPE. THE TESTS SHALL BE TAKEN AT A MAXIMUM SPACING OF EVERY 300 FEET MEASURED FROM THE STRUCTURE OR AT LEAST ONE TEST AT THE CENTER OF THE PIPE SEGMENT BETWEEN TWO STRUCTURES IF LESS THEN 300 FEET. TESTS SHALL BE TAKEN ON ALL SIDES WITHIN FIVE (5') OF EACH STRUCTURE. THE TEST LOCATION AT THE STRUCTURE SHALL BE ON ALTERNATING SIDES OF THE STRUCTURE WITH EACH LIFT TESTED. THE LOCATION AND DEPTH OF ALL TESTS SHALL BE CLEARLY INDICATED IN THE DESCRIPTION AREA ON THE TEST REPORT OR ILLUSTRATED IN A MAP.
8. TESTING - TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. TESTING REQUIREMENTS SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, BACKFILL DENSITY, PIPELINE INTEGRITY (HYDROSTATIC PRESSURE) AND ANY OTHERS REQUIRED BY THE ENGINEER, PBCWUD OR PERMITTING AGENCIES.

ROAD AND BRIDGE GENERAL NOTES

1. IF DURING THE PROPOSED CONSTRUCTION/CROSSING ANY EXISTING PB COUNTY STORM DRAIN PIPE/STRUCTURES ARE AFFECTED IN ANY WAY PB COUNTY R&B REQUIRES FULL RESTORATION OF THE AFFECTED SYSTEM TO LIKE OR BETTER THAN CONDITION AND TO PB COUNTY/FDOT STANDARDS.
2. ALL AFFECTED ROADWAYS ARE TO BE RESTORED FROM EOP TO EOP, LANE WIDTH MINIMUM, AND 50' IN EITHER DIRECTION (THOROUGHFARE) AND 25' MIN RESTORATION (NON-THOROUGHFARE).
3. IF ANY ADDITIONAL LANES ARE AFFECTED FOR ANY REASON DURING CONSTRUCTION, PB COUNTY R&B WILL REQUIRE THE ADDITIONAL LANES BE RESTORED TO LIKE OR BETTER CONDITION AND TO EQUAL DIMENSIONS AS THE ADJACENT LANES.
4. IF PB COUNTY SIDEWALK/PATHWAY/C&G/AND OR ADA FACILITIES ARE AFFECTED PB COUNTY R&B WILL REQUIRE RESTORATION OF A MINIMUM OF 10' AND TO BE LIKE OR BETTER THEN LIKE CONDITION PER FDOT/PB COUNTY STANDARDS.
5. SIDEWALKS WILL BE RESTORED BY REPLACING 2 FLAGS IF THE POINT OF CONSTRUCTION IS LOCATED AT A CONTROL JOINT AND THREE FLAGS IF THE POINT OF CONSTRUCTION IS LOCATED BETWEEN CONTROL JOINT. NOT PART JOINTS ACCEPTED.

ABBREVIATIONS

BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BOT	BOTTOM OF PIPE
BV	BUTTERFLY VALVE
CAP	CORRUGATED ALUMINUM PIPE
CO	CLEANOUT
CR	CURB RAMP
CS	CONTROL STRUCTURE
DBO	DESIGNED BY OTHERS
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DE	DRAINAGE EASEMENT
DIP	DUCTILE IRON PIPE
EL	ELEVATION
EX	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLANGE
FM	FORCE MAIN
GR	GRATE ELEVATION
GV	GATE VALVE
HC	HANDICAP ACCESSIBLE RAMP
HDPE	HIGH DENSITY POLYETHLENE PIPE
HP	HIGH POINT
I	INLET
INV	INVERT
LME	LAKE MAINTENANCE EASEMENT
MH	MANHOLE
NAD	NORTH AMERICAN DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
PBC	PALM BEACH COUNTY
PBCHD	PALM BEACH COUNTY HEALTH DEPARTMENT
PBCWUD	PALM BEACH COUNTY WATER UTILITIES DEPARTMENT
PVC	POLYVINLY CHLORIDE
P/L	PROPERTY LINE
RCP	REINFORCED CONCRETE PIPE
RED	REDUCER
R/W	RIGHT OF WAY
RPZ	REDUCED PRESSURE ZONE
SW	SIDEWALK
SAN	SANITARY SEWER
SP	SAMPLE POINT
STM	STORM SEWER
SW	SIDEWALK
TOB	TOP OF BANK
TOP	TOP OF PIPE
TYP	TYPICAL
UE	UTILITY EASEMENT
YD	YARD DRAIN
WM	WATER MAIN

WGI.
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

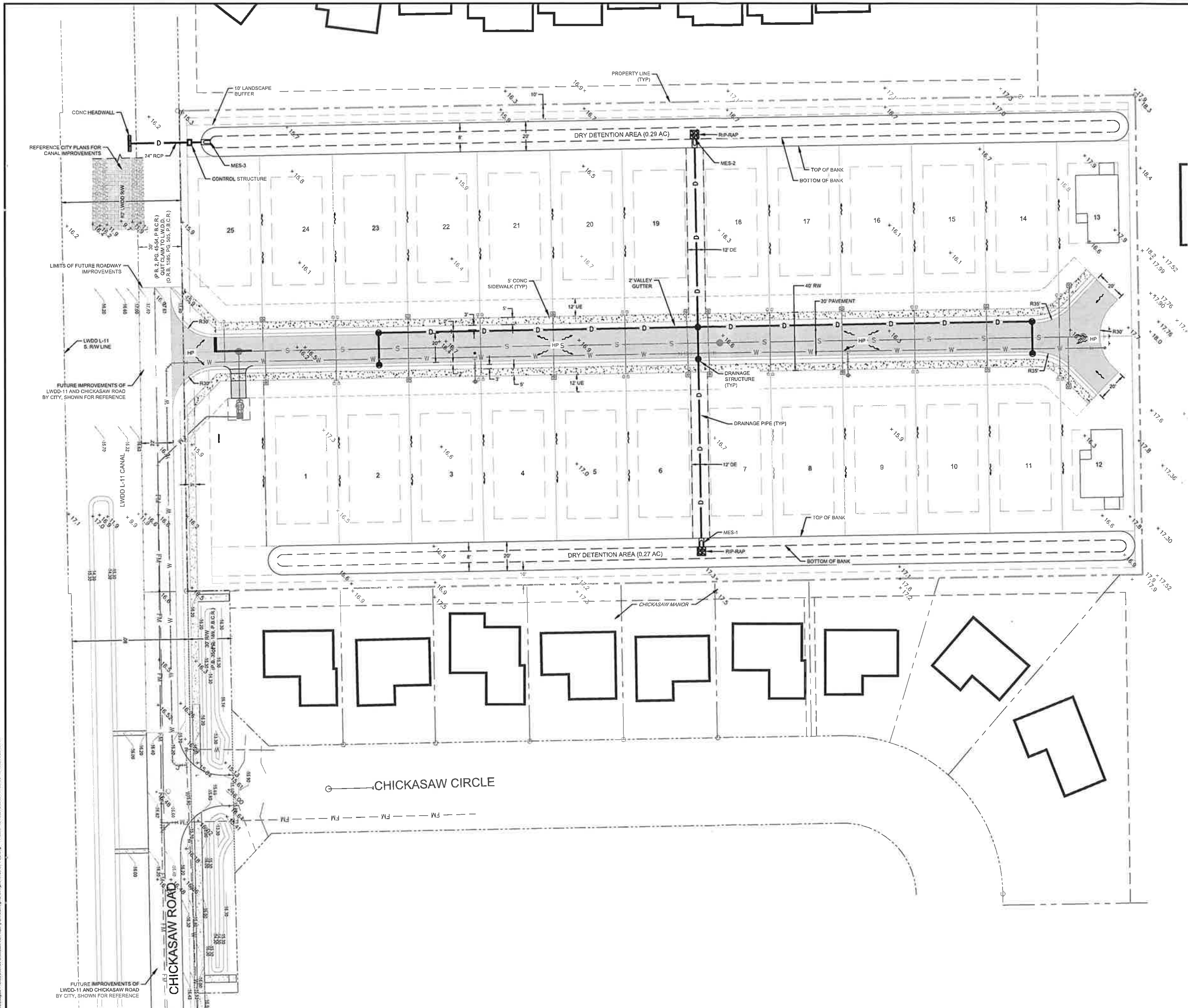
NO.	DATE	DESCRIPTION	REVISIONS	BY

CAD	6464OO-CV-CO.DWG
JOB NO.	6464.00
DRAWN BY	GAT
CHECK BY	CJH
DATE	07-09-21

ENGINEER OF RECORD
TRAVIS D. DOUGLAS, PE
PE# 68589

SUNSET SPRINGS
GREENACRES, FLORIDA
GENERAL NOTES

SHEET:
C-1



LEGEND

- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- STRUCTURE NUMBER — S-35
- RIM/GRATE EL. — 20.00
- INVERT EL. AND DIRECTION — 13.50 N / 13.00 S
- PROPOSED WATER MAIN — W
- PROPOSED SEWER PIPE — S
- PROPOSED DRAINAGE PIPE — D
- PROPOSED FORCE MAIN — FM
- EXISTING WATER MAIN — W
- EXISTING GRAVITY SEWER — S
- EXISTING DRAINAGE PIPE — D
- EXISTING SEWER FORCE MAIN — FM
- DRAINAGE STRUCTURES
- SANITARY MANHOLE
- FIRE HYDRANT
- FINISHED GROUND ELEVATION — (XX.XX)
- EXISTING GROUND ELEVATION — +17.45
- FLOW DIRECTION

NOTES

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. RIM ELEVATIONS ARE BASED ON PROPOSED FINISH GRADES. ADJUSTMENTS MAY BE NECESSARY DUE TO FIELD CONDITIONS. ADJUSTMENTS ARE TO BE MADE BY THE CONTRACTOR WHEN THE BASE COURSE IS IN PLACE OR THE GRADING IS COMPLETE. COST OF ADJUSTING RIMS IS TO BE INCLUDED IN THE BASE BID.
3. 5% MAX. LONGITUDINAL SLOPE AND 2% MAX. CROSS SLOPE ON ALL SIDEWALKS.
4. FIRE DEPARTMENT ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE PROVIDED WITH AN ALL-WEATHER DRIVING SURFACE. PER FIRE PREVENTION CODE NFPA-1 SEVENTH EDITION SECTION 18.2.3.5.2.
5. FIRE DEPARTMENT ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE PROVIDED WITH AN ALL-WEATHER DRIVING SURFACE. PER FIRE PREVENTION CODE NFPA-1 SEVENTH EDITION SECTION 18.2.3.5.2.

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Phone No. 866 909 2220 www.wginc.com
Cert No. 6091 - LB No. 7055

REVISIONS

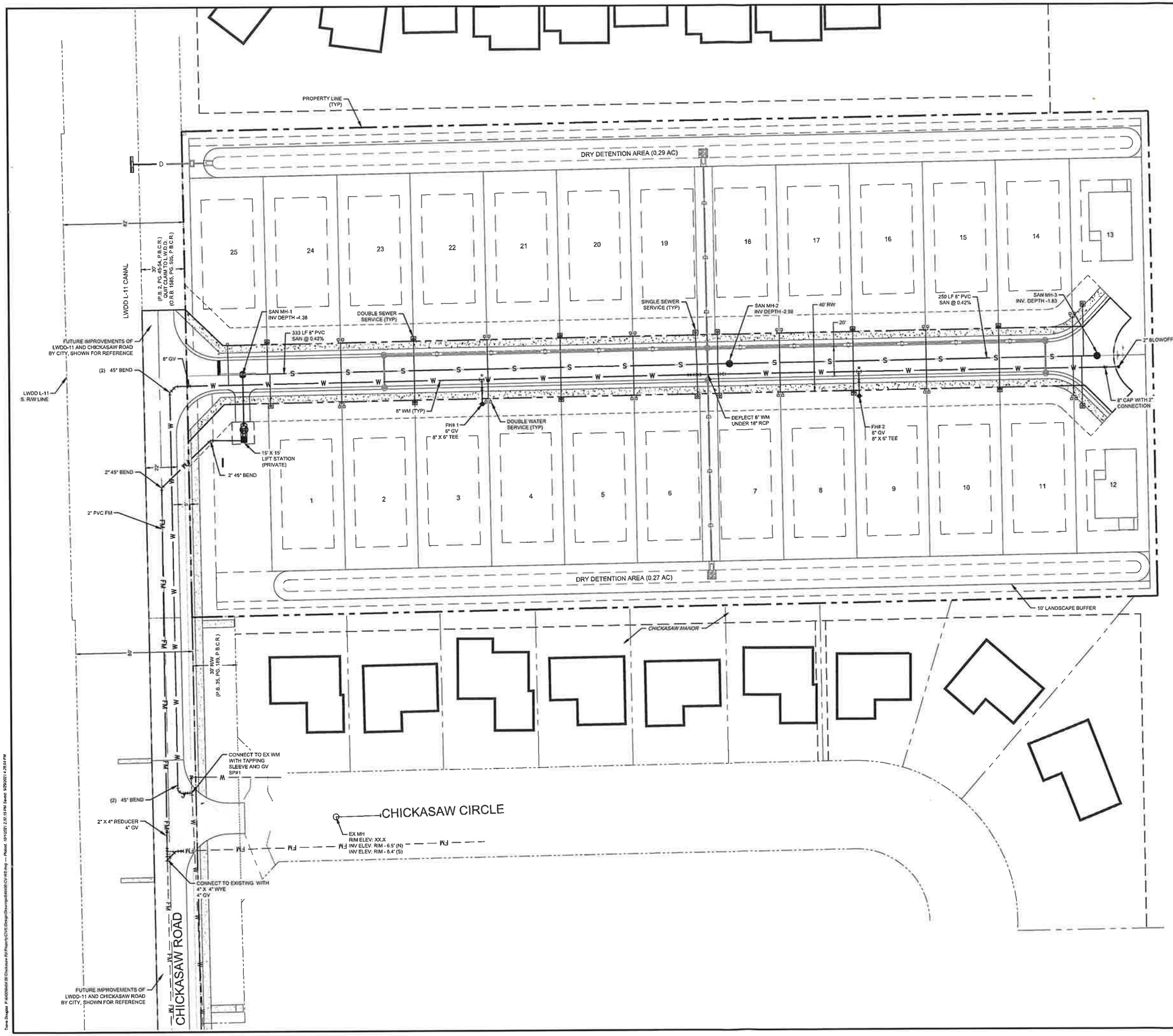
NO.	DATE	DESCRIPTION	BY

CAD	646400-CV-PGD.DWG
JOB NO.	6464.00
DRAWN BY	GAT
CHECK BY	CJH
DATE	07-09-21

ENGINEER OF RECORD
TRAVIS D. DOUGLAS, PE
PE# 86589

SUNSET SPRINGS
GREENACRES, FLORIDA
PAVING, GRADING AND DRAINAGE PLAN

SHEET:
C-2



N

0 15 30 60

SCALE: 1" = 30'

LEGEND

STRUCTURE NUMBER	MH-XX
RIM/GRATE EL.	20.00
INVERT EL. AND DIRECTION	13.50 N 13.50 S
PROPOSED WATER MAIN	W
PROPOSED SEWER PIPE	S
PROPOSED DRAINAGE PIPE	D
PROPOSED FORCE MAIN	FM
EXISTING WATER MAIN	W
EXISTING GRAVITY SEWER	S
EXISTING DRAINAGE PIPE	D
EXISTING SEWER FORCE MAIN	FM
NWL (NORMAL WATER LEVEL)	
DRAINAGE STRUCTURES	
SANITARY MANHOLE	
FIRE HYDRANT	
WATER SERVICE	
SANITARY SERVICE	

NOTES

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. CONTRACTOR SHALL FIELD VERIFY LOCATION (HORIZONTAL AND VERTICAL) OF EXISTING WATER MAIN AND SANITARY SEWER PRIOR TO CONSTRUCTION
3. ALL WATER AND SANITARY SEWER IMPROVEMENTS SHALL BE IN ACCORDANCE WITH PALM BEACH COUNTY WATER UTILITY DEPARTMENT.
4. INVERT DEPTH BASED ON DISTANCE BELOW FINISH GRADE.

FIRE FLOW

BUILDING NUMBER	NUMBER OF UNITS	REQUIRED FLOW (GPM)	PROVIDED FLOW (GPM)*
1	1	1500	2500
2	1	1500	2500
3	1	1500	2500
4	1	1500	3000
5	1	1500	3000
6	1	1500	3000
7	1	1500	3000
8	1	1500	3000
9	1	1500	2500
10	1	1500	2500
11	1	1500	2500
12	1	1500	2500
13	1	1500	2500
14	1	1500	2500
15	1	1500	2500
16	1	1500	2500
17	1	1500	3000
18	1	1500	3000
19	1	1500	3000
20	1	1500	3000
21	1	1500	3000
22	1	1500	2500
23	1	1500	2500
24	1	1500	2500
25	1	1500	2500

*CALCULATED FROM FIRE HYDRANT TO CLOSET POINT ON BUILDING (D): D < 250' = 1500 GPM, D < 500' = 1000 GPM, D < 1000 = 750 GPM

RECEIVED by CITY OF GREENACRES

OCT 1 2021

PLANNING & ENGINEERING

WGI
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.938.2220 www.wginc.com
Cert/No. 6691 - LB No. 7055

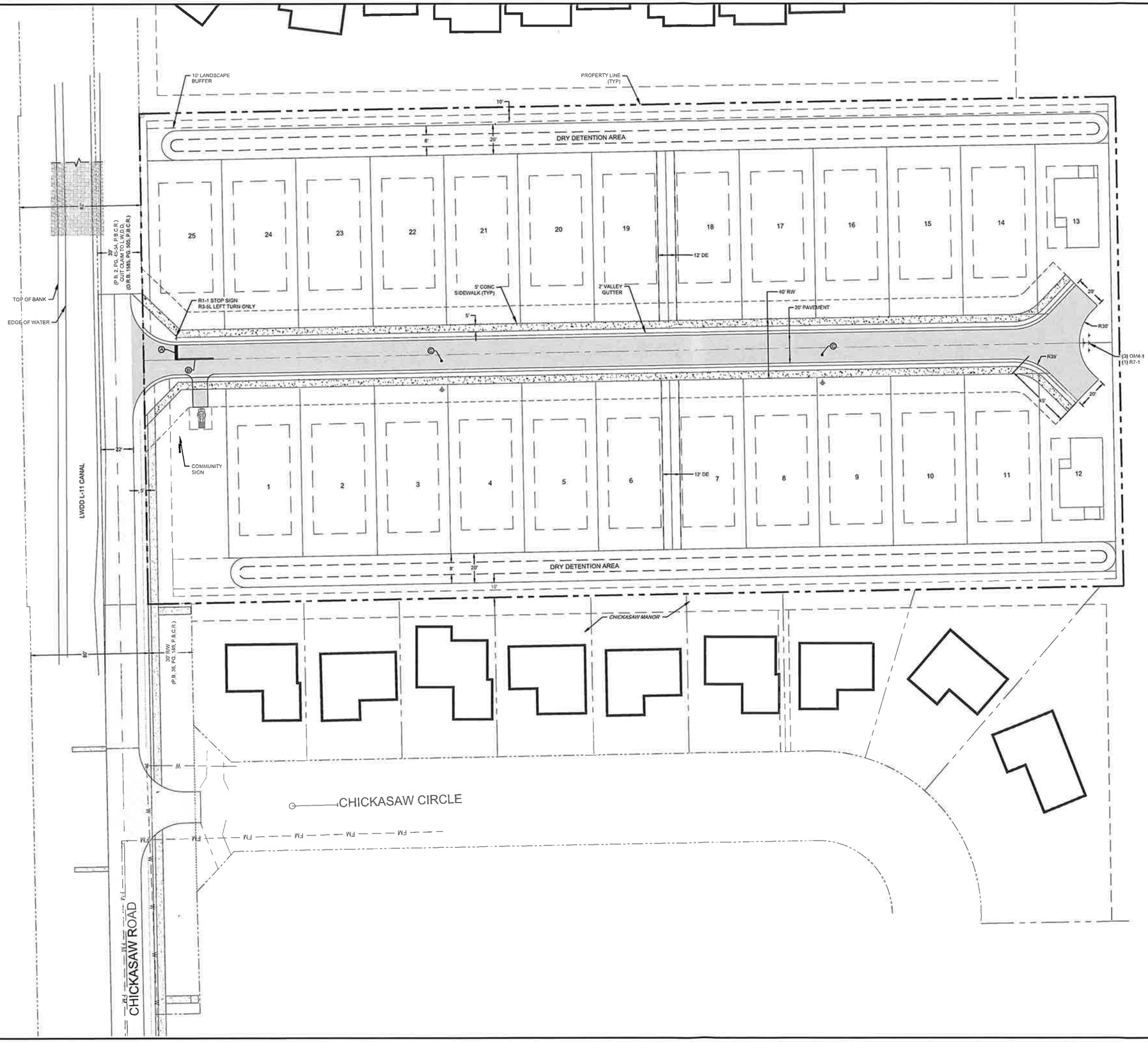
NO.	DATE	DESCRIPTION	BY
		REVISIONS	

CAD 64640DCIAWSD.DWG	
JOB NO.	8464.00
DRAWN BY	GAT
CHECK BY	CJH
DATE	07-09-21

ENGINEER OF RECORD
TRAVIS D. DOUGLAS, PE
PE# 68589

SUNSET SPRINGS
GREENACRES, FLORIDA
WATER AND SEWER PLAN

SHEET:
C-3



N

0 15 30 60

SCALE: 1" = 30'

PAVEMENT MARKING NOTES

1. LETTER DESIGNATIONS USED IN THE PLANS TO INDICATE THE TYPE OF STRIPE TO BE PLACED ARE:

   (A)= 24" SOLID WHITE
   (B)= 6" DOUBLE YELLOW
   (C)= RPM MONO-DIRECTIONAL WHITE/CLEAR

2. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND PALM BEACH COUNTY MANUAL TYPICAL NO, T-P-06-001.

3. PAINT MAY BE USED FOR TEMPORARY STRIPING. THERMOPLASTIC MATERIAL SHALL BE USED TO MARK ALL FINAL PAVEMENT EXCEPT PARKING STALLS.

4. IF PAVER BRICKS ARE USED IN STRIPED PAVEMENT, BRICKS OF APPROPRIATE COLOR SHALL BE USED IN LIEU OF PAINT OR THERMOPLASTIC MATERIAL.

R1-1
30 x 30"

R3-5L
30"x 36"
(LEFT ONLY)


OM4-1
16x 16"

R7-1
12 x 18"

WGL
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.908.2220 www.wglinc.com
Cert No. 6091 - LB No. 7055

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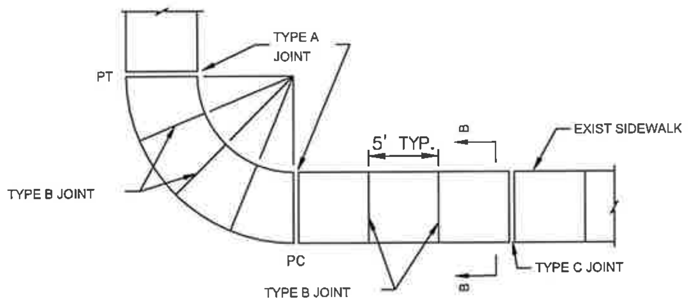
CAD 646402-CV-SMP.DWG	
JOB NO.	6464.00
DRAWN BY	GAT
CHECK BY	CJH
DATE	07-09-21

ENGINEER OF RECORD
TRAVIS D. DOUGLAS, PE
PE# 88589

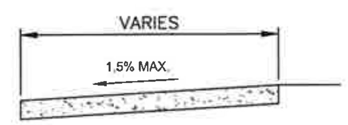
RECEIVED
CITY OF GREENACRES
OCT 1 2021
PLANNING & ENGINEERING

SUNSET SPRINGS
GREENACRES, FLORIDA
SIGNAGE AND MARKING PLAN

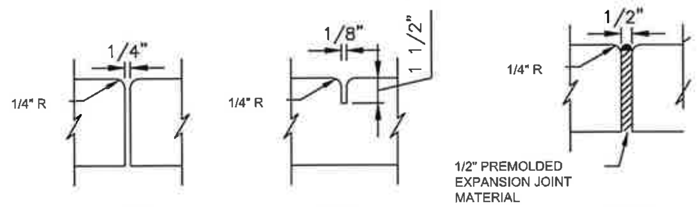
SHEET:
C-4



PLAN



SECTION B-B



TYPE A

TYPE B

TYPE C

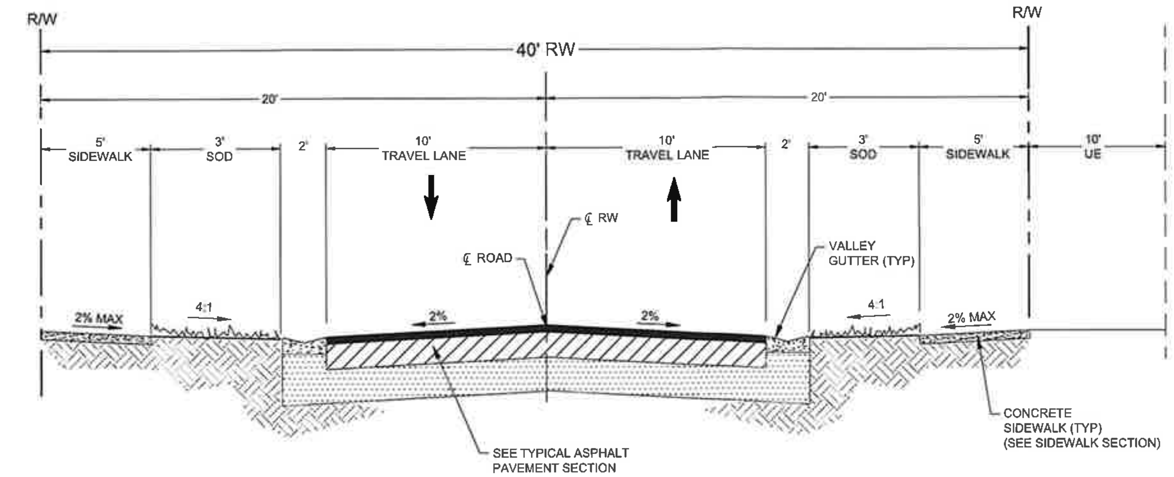
TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
TYPE A	P.C. & P.T. OF CURVES, JUNCTION OF EXIST, & NEW SIDEWALK
TYPE B	5'-0" CENTER TO CENTER ON SIDEWALKS
TYPE C	WHERE SIDEWALK ABUTS CONCRETE CURB, DRIVEWAYS, & SIMILAR STRUCTURES

NOTES:

1. SIDEWALKS TO BE PORTLAND CEMENT CONCRETE, MIN 3000 PSI @ 28 DAYS.
2. BASE TO BE 6" COMPACTED SOIL (NO VAPOR BARRIER)
3. SIDEWALKS TO BE BROOMED FINISHED WITH EVEN DUSTLESS SURFACE.

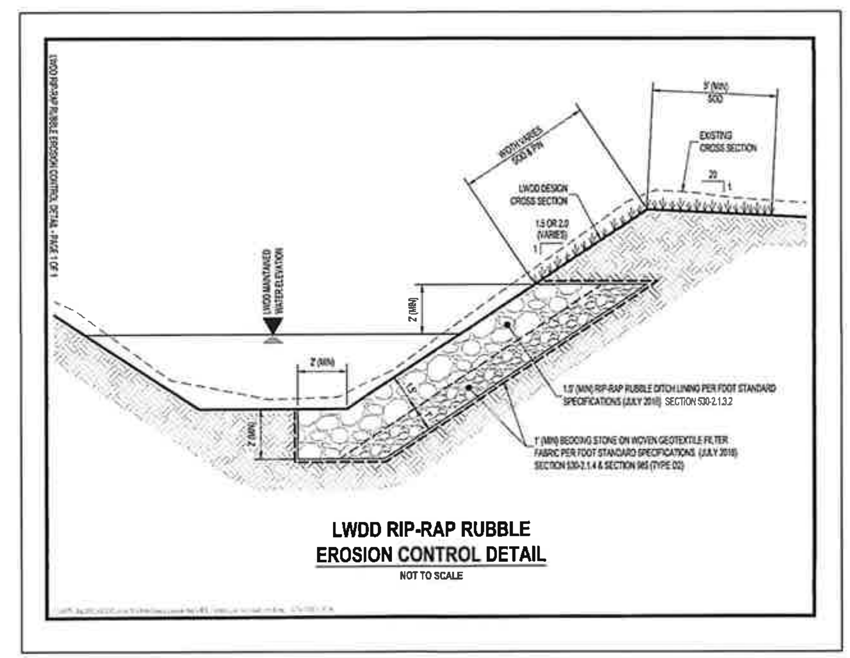
SIDEWALK CONSTRUCTION

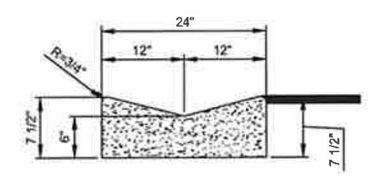
SCALE: NONE



40' LOCAL STREET SECTION

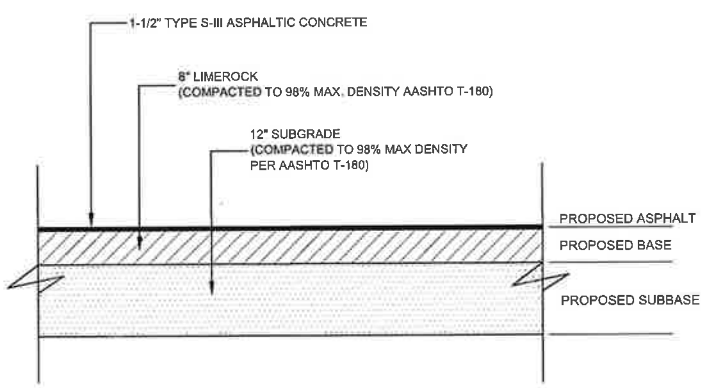
SCALE: NONE





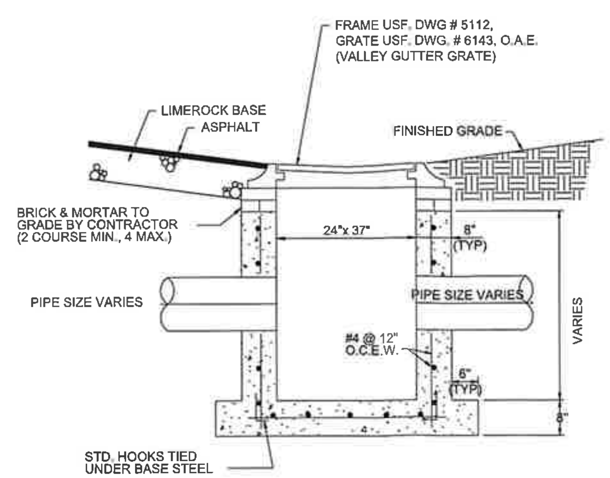
2' VALLEY GUTTER

SCALE: NONE



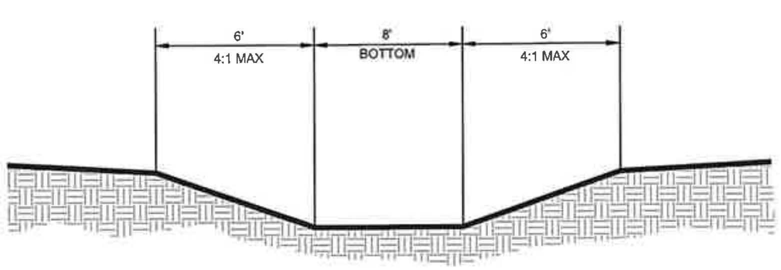
TYPICAL ASPHALT PAVEMENT SECTION

SCALE: NONE



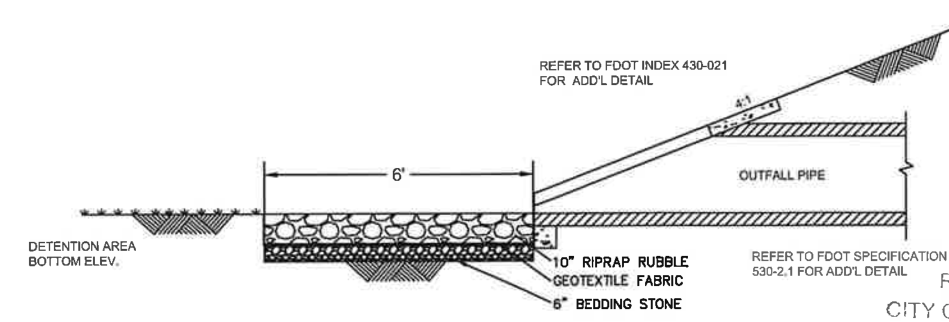
CATCH BASIN DETAIL (TYPE C)

SCALE: NONE



DRY DETENTION TYPICAL SECTION

SCALE: NONE



MITERED END DETAIL WITH RIPRAP

SCALE: NONE

WGI.
2035 Vista Parkway, West Palm Beach, FL 33411
Phone No. 866.909.2220 www.wginc.com
Cert No. 6091 - LB No. 7055

NO.	DATE	DESCRIPTION	BY
REVISIONS			

CAD	6464.00-CV-PD.DWG
JOB NO.	6464.00
DRAWN BY	GAT
CHECK BY	CJH
DATE	07-09-21

ENGINEER OF RECORD
TRAVIS D. DOUGLAS, PE
PE# 68569

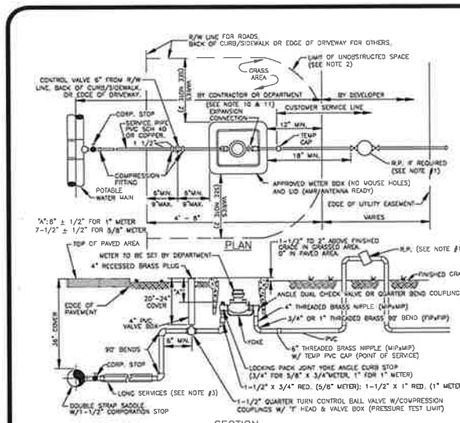
SUNSET SPRINGS

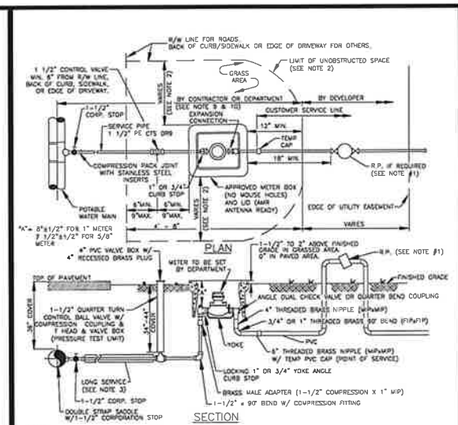
GREENACRES, FLORIDA

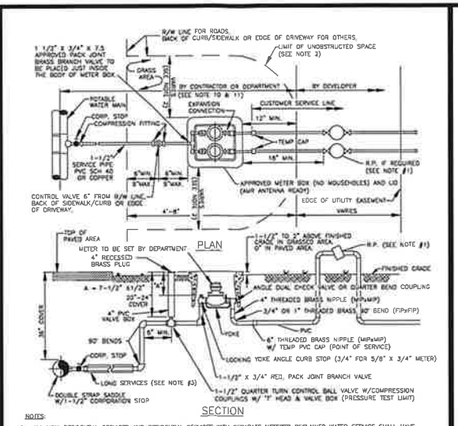
PAVING, GRADING AND DRAINAGE DETAILS

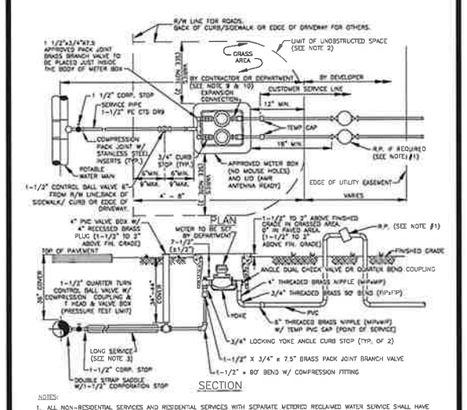
SHEET:

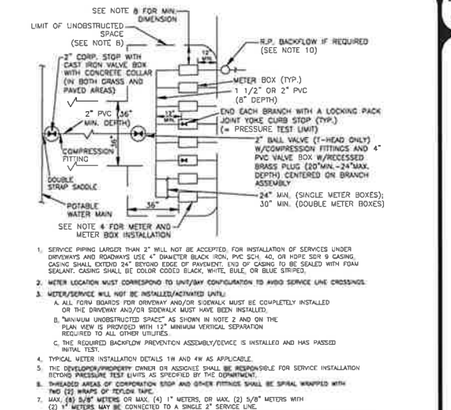
C-5

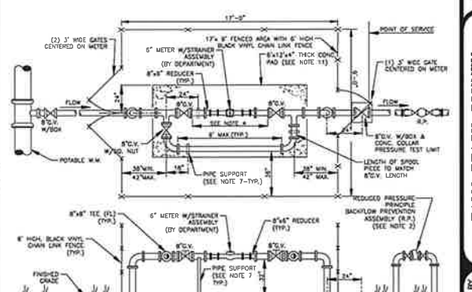












NOTES:

1. ALL NON-RESIDENTIAL SERVICES AND RESIDENTIAL SERVICES WITH SEPARATE METERED RECLAIMED WATER SERVICE SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
2. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.
3. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS USE MIN. 3" DIAMETER BLACK IRON, PVC SCH 40 OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. END OF CASING TO BE SEALED WITH FOAM SEALANT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
4. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS ON SAME SIDE OF A PVC PIPE SECTION SHALL BE MIN. 10' APART.
5. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. WATER SERVICE LINES AND TAPS SHALL NOT BE PLACED UNDER DRIVEWAYS WHENEVER POSSIBLE AND IF REQUIRED, ONLY WITH PRIOR DEPARTMENT APPROVAL.
6. COPPER SHALL BE "TYPE K" CONTINUOUS AND SUITABLE FOR UNDERGROUND SERVICE WITH FLARED CONNECTIONS. PVC PIPE SHALL BE SCH. 40 WITH SCH 80 PVC FITTINGS. ALL BRASS SHALL BE "LEAD FREE".
7. MAXIMUM SERVICE LENGTH IS 100' TO METER.
8. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
9. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
10. METER TO BE INSTALLED BY DEPARTMENT. THE PIPING BEYOND THE CONTROL VALVE SHALL BE INSTALLED BY THE DEVELOPER OR THE DEPARTMENT DEPENDING ON TYPE OF SERVICE INSTALLATION REQUIRED.
11. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR INSTALLATION OF SERVICES BEYOND PRESSURE TEST LIMITS AS SPECIFIED BY THE DEPARTMENT.
12. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE.
13. METER BOXES IN NON-GRASS AREAS SHALL HAVE TRAFFIC RATED LIDS.
14. A 12" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED FOR METER BOXES OUTSIDE OF GRASS AREA. THE BASE SHALL EXTEND MINIMUM 12" BEYOND THE METER BOX PERIMETER.

POTABLE WATER SERVICE SINGLE 5/8" X 3/4" & 1" METER INSTALLATION DETAIL (PVC) * 1W

NOTES:

1. ALL NON-RESIDENTIAL SERVICES AND RESIDENTIAL SERVICES WITH SEPARATE METERED RECLAIMED WATER SERVICE SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
2. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.
3. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS USE MIN. 3" DIAMETER BLACK IRON, PVC SCH 40 OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. END OF CASING TO BE SEALED WITH FOAM SEALANT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
4. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS ON SAME SIDE OF A PVC PIPE SECTION SHALL BE MIN. 10' APART
5. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. WATER SERVICE LINES AND TAPS SHALL NOT BE PLACED UNDER DRIVEWAYS WHENEVER POSSIBLE AND IF REQUIRED, ONLY WITH PRIOR DEPARTMENT APPROVAL.
6. MAXIMUM SERVICE LENGTH IS 100' TO METER.
7. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
8. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
9. METER TO BE INSTALLED BY DEPARTMENT. THE PIPING BEYOND THE CONTROL VALVE TO BE INSTALLED BY THE DEVELOPER OR THE DEPARTMENT DEPENDING ON THE TYPE OF SERVICE INSTALLATION REQUIRED.
10. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR INSTALLATION OF SERVICES BEYOND PRESSURE TEST LIMITS AS SPECIFIED BY THE DEPARTMENT.
11. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE.
12. METER BOXES IN NON-GRASS AREAS SHALL HAVE TRAFFIC RATED LIDS.
13. A 12" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED FOR METER BOXES OUTSIDE OF GRASS AREA. THE BASE SHALL EXTEND MIN. 12" BEYOND THE METER BOX PERIMETER.
14. STAINLESS STEEL INSERTS ARE REQUIRED FOR ALL COMPRESSION FITTINGS.
15. PVC SHALL BE SCHEDULE 40 PIPE WITH SCHEDULE 80 FITTINGS. ALL BRASS FITTINGS SHALL BE "LEAD FREE".

POTABLE WATER SERVICE SINGLE 5/8" X 3/4" & 1" METER INSTALLATION DETAIL (POLYETHYLENE) * 2W

NOTES:

1. ALL NON-RESIDENTIAL SERVICES AND RESIDENTIAL SERVICES WITH SEPARATE METERED RECLAIMED WATER SERVICE SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
2. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.
3. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS USE MIN. 3" DIAMETER BLACK IRON, PVC SCH 40 OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. END OF CASING TO BE SEALED WITH FOAM SEALANT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
4. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS ON SAME SIDE OF A PVC PIPE SECTION SHALL BE MIN. 10' APART
5. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. WATER SERVICE LINES AND TAPS SHALL NOT BE PLACED UNDER DRIVEWAYS WHENEVER POSSIBLE AND IF REQUIRED, ONLY WITH PRIOR DEPARTMENT APPROVAL.
6. COPPER SHALL BE "TYPE K" CONTINUOUS AND SUITABLE FOR UNDERGROUND SERVICE WITH FLARED CONNECTIONS. PVC PIPE SHALL BE SCH. 40 WITH SCH 80 PVC FITTINGS. ALL BRASS SHALL BE "LEAD FREE".
7. MAXIMUM SERVICE LENGTH IS 100' TO METER.
8. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
9. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
10. METER TO BE INSTALLED BY DEPARTMENT. THE PIPING BEYOND THE CONTROL VALVE SHALL BE INSTALLED BY THE DEVELOPER OR THE DEPARTMENT DEPENDING ON TYPE OF SERVICE INSTALLATION REQUIRED.
11. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR INSTALLATION OF SERVICES BEYOND PRESSURE TEST LIMITS AS SPECIFIED BY THE DEPARTMENT.
12. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE.
13. METER BOXES IN NON-GRASS AREAS SHALL HAVE TRAFFIC RATED LIDS.
14. A 12" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED FOR METER BOXES OUTSIDE OF GRASS AREA. THE BASE SHALL EXTEND MINIMUM 12" BEYOND THE METER BOX PERIMETER.

POTABLE WATER SERVICE DUAL 5/8" X 3/4" METER INSTALLATION DETAIL (PVC) * 3W

NOTES:

1. ALL NON-RESIDENTIAL SERVICES AND RESIDENTIAL SERVICES WITH SEPARATE METERED RECLAIMED WATER SERVICE SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
2. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.
3. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS USE MIN. 3" DIAMETER BLACK IRON, PVC SCH 40 OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. END OF CASING TO BE SEALED WITH FOAM SEALANT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
4. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS ON SAME SIDE OF A PVC PIPE SECTION SHALL BE MIN. 10' APART
5. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. WATER SERVICE LINES AND TAPS SHALL NOT BE PLACED UNDER DRIVEWAYS WHENEVER POSSIBLE AND IF REQUIRED, ONLY WITH PRIOR DEPARTMENT APPROVAL.
6. MAXIMUM SERVICE LENGTH IS 100' TO METER.
7. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
8. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
9. METER TO BE INSTALLED BY DEPARTMENT. THE PIPING BEYOND THE CONTROL VALVE TO BE INSTALLED BY THE DEVELOPER OR THE DEPARTMENT DEPENDING ON THE TYPE OF SERVICE INSTALLATION REQUIRED.
10. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR INSTALLATION OF SERVICES BEYOND PRESSURE TEST LIMITS AS SPECIFIED BY THE DEPARTMENT.
11. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE.
12. METER BOXES IN NON-GRASS AREAS SHALL HAVE TRAFFIC RATED LIDS.
13. A 12" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED FOR METER BOXES OUTSIDE OF GRASS AREA. THE BASE SHALL EXTEND MIN. 12" BEYOND THE METER BOX PERIMETER.
14. STAINLESS STEEL INSERTS ARE REQUIRED FOR ALL COMPRESSION FITTINGS.
15. PVC SHALL BE SCHEDULE 40 PIPE WITH SCHEDULE 80 FITTINGS. ALL BRASS FITTINGS SHALL BE "LEAD FREE".

POTABLE WATER SERVICE DUAL 5/8" X 3/4" METER INSTALLATION DETAIL (POLYETHYLENE) * 4W

1. SERVICE PIPING LARGER THAN 2" WILL NOT BE ACCEPTED. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS USE 4" DIAMETER BLACK IRON, PVC SCH. 40, OR HDPE SDR 9 CASING. CASING SHALL EXTEND 24" BEYOND EDGE OF PAVEMENT. END OF CASING TO BE SEALED WITH FOAM SEALANT. CASING SHALL BE COLOR CODED BLACK, WHITE, BULE, OR BLUE STRIPED.
2. METER LOCATION MUST CORRESPOND TO UNIT/BAY CONFIGURATION TO AVOID SERVICE LINE CROSSINGS.
3. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
4. TYPICAL METER INSTALLATION DETAILS 1W AND 4W AS APPLICABLE.
5. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR SERVICE INSTALLATION BEYOND PRESSURE TEST LIMITS AS SPECIFIED BY THE DEPARTMENT.
6. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE.
7. MAX. (8) 5/8" METERS OR MAX. (4) 1" METERS, OR MAX. (2) 5/8" METERS WITH (2) 1" METERS MAY BE CONNECTED TO A SINGLE 2" SERVICE LINE.
8. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.
9. PVC PIPE SHALL BE SCHEDULE 40 PIPE WITH SCHEDULE 80 FITTINGS. ALL BRASS FITTINGS SHALL BE "LEAD FREE".
10. ALL NON-RESIDENTIAL SERVICES AND RESIDENTIAL SERVICES WITH SEPARATE METERED RECLAIMED WATER SERVICE SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.

POTABLE WATER TYPICAL CONNECTION FOR MULTIPLE SERVICES * 5W

NOTES:

1. ALL NON-RESIDENTIAL SERVICES AND RESIDENTIAL SERVICES WITH SEPARATE METERED RECLAIMED WATER SERVICE SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
2. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.
3. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS, USE MIN. 4" DIAMETER BLACK IRON, PVC SCH 40, OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. CASING TO BE SEALED WITH FOAM SEALANT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
4. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS SPACED BETWEEN 18" AND 48" SHALL BE OFFSET TO EACH SIDE OF THE MAIN. TAPS ON THE SAME SIDE OF A PVC PIPE SECTION SHALL BE MIN. 10' APART.
5. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. WATER SERVICE LINES AND TAPS SHALL NOT BE PLACED UNDER DRIVEWAYS WHENEVER POSSIBLE AND IF REQUIRED, ONLY WITH PRIOR DEPARTMENT APPROVAL.
6. MAXIMUM SERVICE LENGTH IS 100' TO METER.
7. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
8. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
9. SERVICE COMPONENTS SHALL BE CONSTRUCTED FOR THE METER TO BE INSTALLED "TRUE" AND "PLUMB" AND TO ALLOW METER READING THROUGH THE METER READER LID.
10. APPROVED COPPER SETTER ASSEMBLY REQUIRED. PVC SHALL BE SCHEDULE 40 PIPE WITH SCHEDULE 80 FITTINGS. ALL BRASS FITTINGS SHALL BE "LEAD FREE".
11. METER TO BE INSTALLED BY THE DEPARTMENT. THE PIPING BEYOND THE CONTROL VALVE SHALL BE INSTALLED BY THE DEVELOPER OR THE DEPARTMENT, DEPENDING ON THE TYPE OF SERVICE INSTALLATION REQUESTED.
12. ALL HARDWARE FOR FLANGED CONNECTIONS (BOLTS, ETC.) TO BE STAINLESS STEEL.
13. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE. ALL BRASS FITTINGS SHALL BE "LEAD FREE".
14. METER BOXES IN NON-GRASS AREAS SHALL HAVE TRAFFIC RATED LIDS.
15. A 4" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED. THE BASE SHALL EXTEND MINIMUM 12" BEYOND THE METER BOX PERIMETER.

POTABLE WATER 1 1/2" METER INSTALLATION * 6W

NOTES:

1. ALL NON-RESIDENTIAL SERVICES AND RESIDENTIAL SERVICES WITH SEPARATE METERED RECLAIMED WATER SERVICE SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
2. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.
3. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS, USE MIN. 4" DIAMETER BLACK IRON, PVC SCH 40, OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. CASING TO BE SEALED WITH FOAM SEALANT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
4. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS SPACED BETWEEN 18" AND 48" SHALL BE OFFSET TO EACH SIDE OF THE MAIN. TAPS ON THE SAME SIDE OF A PVC PIPE SECTION SHALL BE MIN. 10' APART.
5. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. WATER SERVICE LINES AND TAPS SHALL NOT BE PLACED UNDER DRIVEWAYS WHENEVER POSSIBLE AND IF REQUIRED, ONLY WITH PRIOR DEPARTMENT APPROVAL.
6. MAXIMUM SERVICE LENGTH IS 100' TO METER.
7. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
8. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
9. SERVICE COMPONENTS SHALL BE CONSTRUCTED FOR THE METER TO BE INSTALLED "TRUE" AND "PLUMB" AND TO ALLOW METER READING THROUGH THE METER READER LID.
10. APPROVED COPPER SETTER ASSEMBLY REQUIRED. PVC SHALL BE SCHEDULE 40 PIPE WITH SCHEDULE 80 FITTINGS. ALL BRASS FITTINGS SHALL BE "LEAD FREE".
11. METER TO BE INSTALLED BY THE DEPARTMENT. THE PIPING BEYOND THE CONTROL VALVE SHALL BE INSTALLED BY THE DEVELOPER OR THE DEPARTMENT, DEPENDING ON THE TYPE OF SERVICE INSTALLATION REQUESTED.
12. ALL HARDWARE FOR FLANGED CONNECTIONS (BOLTS, ETC.) TO BE STAINLESS STEEL.
13. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE. ALL BRASS FITTINGS SHALL BE "LEAD FREE".
14. METER BOXES IN NON-GRASS AREAS SHALL HAVE TRAFFIC RATED LIDS.
15. A 4" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED. THE BASE SHALL EXTEND MINIMUM 12" BEYOND THE METER BOX PERIMETER.

POTABLE WATER 2" METER INSTALLATION * 7W

NOTES:

1. ALL SERVICE PIPING SHALL BE 4" DUCTILE IRON WITH 4" GATE VALVES WITH VALVE BOXES AND CONCRETE COLLARS (IF APPLICABLE).
2. ONLY APPROVED METER BOXES SHALL BE USED. THE METER BOX LID SHALL BE A DEPARTMENT APPROVED LID. THE BOX AND LID SHALL BE PROVIDED BY THE CUSTOMER AND PLACED ABOVE GROUND NEAR THE METER LOCATION. THE PROPERTY OWNER SHALL EXCAVATE THE METER BOX AREA TO EXPOSE THE BYPASS PIPING THEN INSTALL THE BOX AND BACKFILL THE AREA AFTER THE METER INSTALLATION.
3. APPROVED RESTRAINED FLANGED ADAPTERS ARE REQUIRED. PLACE 4"x3" FLANGED REDUCERS AS SHOWN ON DETAIL.
4. ALL SERVICES SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE AT 36" MINIMUM AND NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
5. WATER METER SHALL BE INSTALLED BY THE DEPARTMENT. LAYING LENGTH OF THE METER TO BE CONFIRMED PRIOR TO SERVICE INSTALLATION.
6. SERVICE COMPONENTS SHALL BE CONSTRUCTED FOR THE METER TO BE INSTALLED "TRUE" AND "PLUMB".
7. THE ENTIRE ASSEMBLY (WITHOUT METER/SPOOL PIECES AS SHOWN) SHALL BE PRESSURE TESTED AS REQUIRED.
8. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 2 AND ON THE PLAN VIEW IS PROVIDED WITH 12" MINIMUM VERTICAL SEPARATION REQUIRED TO ALL OTHER UTILITIES.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
9. BYPASS PIPING SHALL BE INSTALLED ON THE RIGHT SIDE OF METER IN DIRECTION OF FLOW UNLESS OTHERWISE PREVIOUSLY APPROVED BY THE DEPARTMENT.
10. ALL HARDWARE FOR FLANGED CONNECTIONS (BOLTS, ETC.) TO BE STAINLESS STEEL.
11. METER BOX LID SHALL BE TRAFFIC RATED FOR ALL INSTALLATION LOCATIONS.
12. A 4" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED. THE BASE SHALL EXTEND MINIMUM 12" BEYOND THE METER BOX PERIMETER.
13. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER BOX AND BYPASS PIPING SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.

POTABLE WATER 3" METER INSTALLATION * 8W

NOTES:

1. ALL SERVICE PIPING SHALL BE 6" DUCTILE IRON WITH 6" GATE VALVES. THE 6" GATE VALVE FOR BYPASS PIPING SHALL HAVE A SQUARE NUT.
2. ALL SERVICES SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE, NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
3. APPROVED RESTRAINED FLANGED ADAPTERS ARE REQUIRED.
4. THE ENTIRE METER ASSEMBLY INCLUDING BYPASS (EXCLUDING WATER METER) SHALL BE PRESSURE TESTED AS REQUIRED.
5. WATER METER SHALL BE INSTALLED BY THE DEPARTMENT. LAYING LENGTH OF THE METER TO BE CONFIRMED PRIOR TO SERVICE INSTALLATION.
6. SERVICE COMPONENTS SHALL BE CONSTRUCTED FOR THE METER TO BE INSTALLED "TRUE" AND "PLUMB".
7. PIPE SUPPORTS SHALL BE CONSTRUCTED PER WUD STANDARD DETAIL 47W AND SHALL BE LOCATED PER THIS DETAIL.
8. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 12 AND ON THE PLAN VIEW IS PROVIDED.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
9. BYPASS PIPING SHALL BE INSTALLED ON THE RIGHT SIDE OF METER IN DIRECTION OF FLOW UNLESS OTHERWISE PREVIOUSLY APPROVED BY THE DEPARTMENT.
10. ALL HARDWARE FOR FLANGED CONNECTIONS SHALL BE STAINLESS STEEL 304 OR PRIOR APPROVED EQUAL BY THE DEPARTMENT.
11. CONCRETE PAD FOR WATER METER ASSEMBLY SHALL BE 4" THICK WITH 4"x4" WIRE MESH. CONCRETE PAD IS REQUIRED TO BE BROOM FINISHED AND INSTALLED PRIOR TO THE WATER METER ASSEMBLY.
12. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER ASSEMBLY CONCRETE PAD SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.

POTABLE WATER 4" METER INSTALLATION * 9W

NOTES:

1. ALL SERVICE PIPING SHALL BE 8" DUCTILE IRON WITH 8" GATE VALVES. THE 8" GATE VALVE FOR BYPASS PIPING SHALL HAVE A SQUARE NUT.
2. ALL SERVICES SHALL HAVE AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (R.P.). THE INITIAL TEST OF THE R.P. SHALL BE PERFORMED BY THE DEPARTMENT. THE R.P. SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF SERVICE. NOT TO EXCEED 48" WITHOUT PRIOR DEPARTMENT APPROVAL.
3. APPROVED RESTRAINED FLANGED ADAPTERS ARE REQUIRED.
4. THE ENTIRE METER ASSEMBLY INCLUDING BYPASS (EXCLUDING WATER METER) SHALL BE PRESSURE TESTED AS REQUIRED.
5. WATER METER SHALL BE INSTALLED BY THE DEPARTMENT. LAYING LENGTH OF THE METER TO BE CONFIRMED PRIOR TO SERVICE INSTALLATION.
6. SERVICE COMPONENTS SHALL BE CONSTRUCTED FOR THE METER TO BE INSTALLED "TRUE" AND "PLUMB".
7. PIPE SUPPORTS SHALL BE CONSTRUCTED PER WUD STANDARD DETAIL 47W AND SHALL BE LOCATED PER THIS DETAIL.
8. METER/SERVICE WILL NOT BE INSTALLED/ACTIVATED UNTIL:
   - A. ALL FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK MUST BE COMPLETELY INSTALLED OR THE DRIVEWAY AND/OR SIDEWALK MUST HAVE BEEN INSTALLED.
   - B. "MINIMUM UNOBSTRUCTED SPACE" AS SHOWN IN NOTE 12 AND ON THE PLAN VIEW IS PROVIDED.
   - C. THE REQUIRED BACKFLOW PREVENTION ASSEMBLY/DEVICE IS INSTALLED AND HAS PASSED INITIAL TEST.
9. BYPASS PIPING SHALL BE INSTALLED ON THE RIGHT SIDE OF METER IN DIRECTION OF FLOW UNLESS OTHERWISE PREVIOUSLY APPROVED BY THE DEPARTMENT.
10. ALL HARDWARE FOR FLANGED CONNECTIONS SHALL BE STAINLESS STEEL 304 OR PRIOR APPROVED EQUAL BY THE DEPARTMENT.
11. CONCRETE PAD FOR WATER METER ASSEMBLY SHALL BE 4" THICK WITH 4"x4" WIRE MESH. CONCRETE PAD IS REQUIRED TO BE BROOM FINISHED AND INSTALLED PRIOR TO THE WATER METER ASSEMBLY.
12. LIMIT OF UNOBSTRUCTED SPACE FROM SIDE OF WATER METER ASSEMBLY CONCRETE PAD SHALL BE 36" MINIMUM FOR SHRUBS AND SIMILAR OBSTRUCTIONS WITH 60" MINIMUM FOR TREES, WALLS, AND OTHER SIMILAR OBSTRUCTIONS.

POTABLE WATER 6" METER INSTALLATION * 10W

POTABLE WATER #1 STANDARD DETAILS

CONSULTANT:

IT'S THE LAW !
CALL 48 HOURS BEFORE YOU DIG
1-800-432-4770
SUNSHINE STATE ONE CALL OF FLORIDA, INC.
UTILITIES NOTIFICATION CENTER

DESIGNED BY: WUD
DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

PROJECT NO.
6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

NO.	DATE	REVISION / REMARKS	BY
	JUNE 2019	* GENERAL REVISION	J.L.

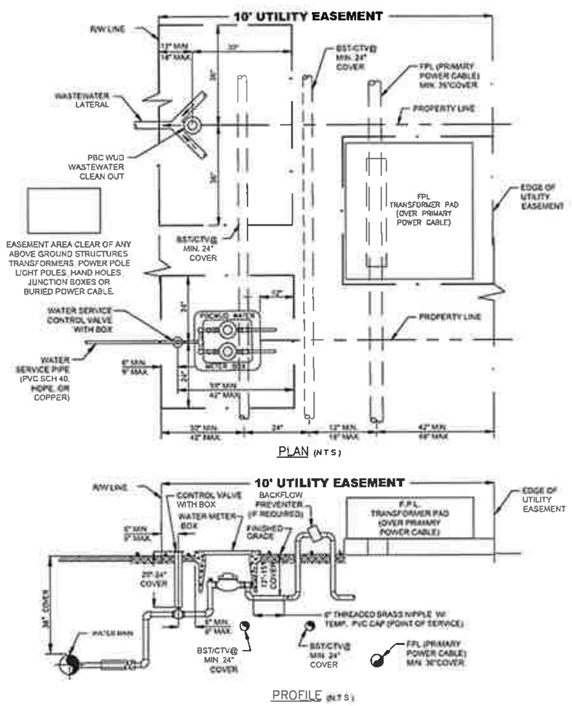
STD DETAILS

SHEET NUMBER
C-6
OF
17

SEAL

Oct 01, 2021

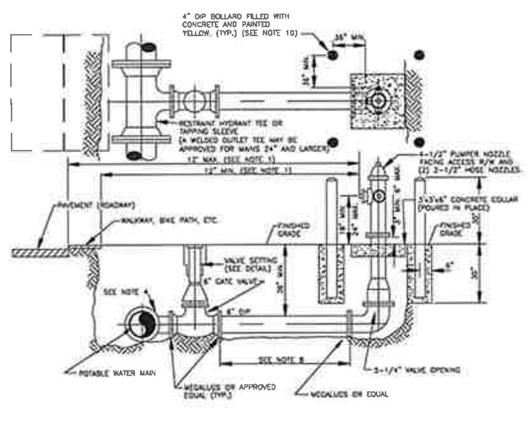
Drawing: P:\6400\6464.00 Chickasaw Rd Property\CIVIL\Design\Drawings\646400-CV-WSD.dwg\WUD PWS-1 - Last Modified: Fri, Oct 01, 2021 - 2:36pm



NOTES:

1. THE DETAIL WAS DEVELOPED IN COLLABORATION WITH UTILITY COMPANIES SUPPLYING VARIOUS UTILITY SERVICES TO P.B.C.W.U.D. CUSTOMERS.
2. THE DIMENSIONS SHOWN SHALL SERVE AS A GENERAL GUIDELINE TO INSTALL UTILITIES WITHIN A 10' WIDE UTILITY EASEMENT PARALLELING A RIGHT-OF-WAY.
3. THE PARTICIPATING UTILITIES PLEDGE TO OBSERVE, FOLLOW, AND ENFORCE THE INSTALLATION PARAMETERS SHOWN ON THIS DETAIL.

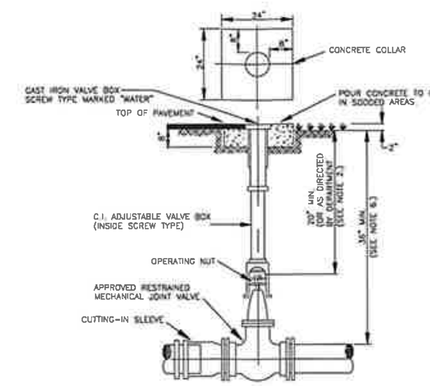
TYPICAL UTILITY INSTALLATION DETAIL IN A 10' UTILITY EASEMENT ADJACENT TO R/W * 11W



NOTES:

1. FIRE HYDRANT SHALL BE INSTALLED PLUMB AND TRUE IN UNOBSTRUCTED LOCATION AND SHALL NOT INTERFERE WITH PEDESTRIAN WALKWAYS, BIKE PATHS, AND SUCH OTHER SIMILAR PATHWAYS WITH THE EDGE OF THE PUMPER NOZZLE AND/OR HOSE NOZZLES BEING A MINIMUM OF 12" BEHIND SUCH PATHWAYS. A MINIMUM OF 7.5' FEET CLEARANCE IS REQUIRED FROM EACH SIDE AND REAR OF THE HYDRANT. THE FRONT OF THE HYDRANT PUMPER NOZZLE SHALL BE LOCATED A MAXIMUM OF 12' FROM THE EDGE OF PAVEMENT UNLESS OTHERWISE PREVIOUSLY APPROVED BY THE FIRE MARSHAL OFFICE HAVING JURISDICTION.
2. THE SAME MODEL HYDRANT SHALL BE USED THROUGHOUT CURRENT CONTRACT PHASE. HYDRANTS MUST BE ORDERED RED IN COLOR, WITH FINISHED EPOXY COAT APPLIED BY THE HYDRANT MANUFACTURER. HYDRANT SHALL BE FACTORY EQUIPPED WITH PLUGGED DRAIN HOLES.
3. VALVE SHALL BE PLACED ADJACENT TO MAIN AND RESTRAINED WITH MEGALUGS OR EQUAL.
4. HYDRANT TEES ARE PREFERRED.
5. ALL HYDRANTS SHALL BE TEE'D OFF OF MAINS.
6. HYDRANTS SHALL NOT BE PLACED IN SIDEWALKS, ROADWAYS, OR BIKEPATHS.
7. FIRE HYDRANT SHALL BE LOCATED 5' MINIMUM FROM EDGE OF PAVEMENT WITH RAISED CURBING AND 6' MINIMUM WITHOUT RAISED CURBING.
8. ON RUNS LONGER THAN 60 FEET ANOTHER VALVE IS REQUIRED LESS THAN ONE PIPE JOINT OF THE HYDRANT.
9. PAINT SAFETY RED, IF REQUIRED, WITH APPROVED PAINT.
10. BOLLARDS MAY BE REQUIRED FOR HYDRANTS WITH LESS THAN SIX (6) FEET TO EDGE OF PAVEMENT WITHOUT RAISED CURBING. NO BOLLARDS SHALL BE INSTALLED IN COUNTY AND/OR FDOT RIGHT-OF-WAY "CLEAR ZONE".
11. BURIED HYDRANT HARDWARE SHALL BE STAINLESS STEEL (TYPE 304L OR TYPE 304 BOLTS/TYPE 304 NUTS).
12. NO CONNECTION (TEE, TAP) IS ALLOWED BETWEEN THE HYDRANT CONTROL VALVE AND THE FIRE HYDRANT.
13. APPROVED SECURITY CAPS WITH CHAINS ARE REQUIRED FOR ALL NOZZLES.

TYPICAL FIRE HYDRANT INSTALLATION WITH BOLLARDS DETAIL * 12W



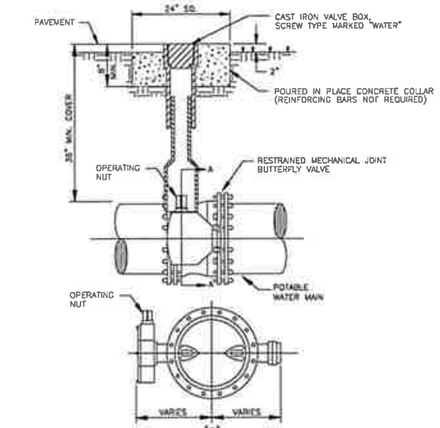
NOTES:

1. CONCRETE COLLAR IS NOT REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION.
2. WHEN OPERATING NUT IS DEEPER THAN 36" A ONE PIECE EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 20"-30" BELOW FINISHED GRADE. EXTENSION BOLTS & NUTS ARE TO BE STAINLESS STEEL. A HIGH STRENGTH STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
3. VALVE BOXES SHALL HAVE COVERS MARKED "WATER".
4. VALVE BOX EXTENSION TO BE D.I.P. OR C-900 PVC SDR 18 (BLUE)
5. A CUT-IN INSTALLATION SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
6. IN ORDER TO MAINTAIN ADEQUATE COVER OVER VALVE NUT, THE FOLLOWING MINIMUM COVERS OVER PIPE ARE REQUIRED

GATE VALVE SIZE	MIN. COVER OVER PIPE
16"	48"
20"	54"
24"	60"
30"	72"
36"	84"

7. VALVES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS WHENEVER POSSIBLE.

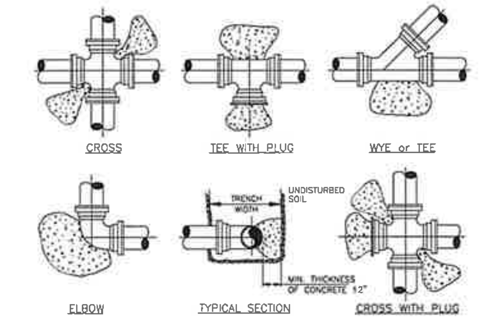
POTABLE WATER MAIN TYPICAL GATE VALVE SETTING AND MAIN CUT-IN DETAIL 13W



NOTES:

1. CONCRETE COLLAR IS NOT REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION.
2. WHEN TOP OF OPERATING NUT IS DEEPER THAN 42" AN EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 24"-30" BELOW FINISHED GRADE. EXTENSION BOLTS & NUTS ARE TO BE STAINLESS STEEL. A HIGH STRENGTH STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
3. VALVE BOXES SHALL HAVE COVERS MARKED "WATER".
4. A CUT-IN INSTALLATION SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
5. EXTENSION VALVE BOX TO BE D.I.P. OR C-900 PVC OR 18 (COLOR, BLUE)
6. VALVES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS WHENEVER POSSIBLE.

POTABLE WATER MAIN TYPICAL BUTTERFLY VALVE SETTING 14W

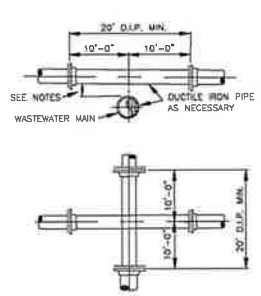


PIPE	THRUST BLOCK AREA REQ'D	REMARKS	NOTE:
4"	2.0 SQ. FT.	VALUES ARE FOR 90° BEND, BASED ON 2000 P.S.F. SAFE BEARING LOAD AND PIPE PRESSURE OF 150 P.S.I. FOR OTHER SOILS & PRESSURES THE AREA REQUIRED IS IN DIRECT PROPORTION	FOR OTHER FITTINGS USE THE FOLLOWING FACTORS. TEE 100% 45° BEND 71% 22 1/2° BEND 39% 11 1/4° BEND 20% DEAD END 100%
6"	4.0 SQ. FT.		
8"	6.6 SQ. FT.		
10"	10.0 SQ. FT.		
12"	14.0 SQ. FT.		
14"	18.6 SQ. FT.		

NOTES:

1. CONCRETE THRUST BLOCKS OR THRUST COLLARS MAY BE UTILIZED ONLY IF NECESSARY FOR CONNECTIONS TO AN EXISTING PIPING SYSTEM, OTHERWISE MECHANICAL RESTRAINTS SHALL BE USED. KEEP "T" BOLTS CLEAR OF CONCRETE, WRAPPED IN VISQUEEN FOR FUTURE ACCESS, WITH A MINIMUM OF 1' THICKNESS BETWEEN THE FITTING AND SOIL.
2. BEFORE POURING CONCRETE, PLUGS SHALL BE WRAPPED WITH VISQUEEN AND A BOARD PLACED IN FRONT.
3. CONCRETE SHALL BE 2500 P.S.I. MINIMUM.
4. THE ENGINEER OF RECORD SHALL SUBMIT A THRUST BLOCK SIZE CALCULATION FOR TEE CONNECTIONS INTO UNRESTRAINED EXISTING MAINS LARGER THAN 14".
5. THE ENGINEER OF RECORD SHALL SUBMIT A PIPE RESTRAINT DESIGN FOR INLINE EXTENSIONS OF A EXISTING UNRESTRAINED MAIN IF MECHANICAL JOINT RESTRAINT CAN NOT BE INSTALLED ON THE EXISTING MAIN.

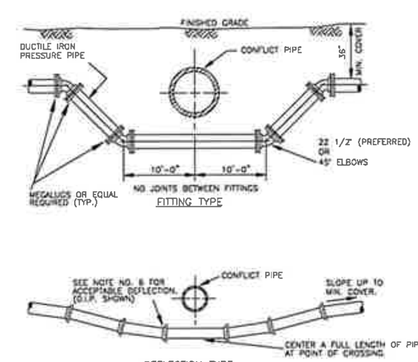
TYPICAL THRUST BLOCKS FOR PRESSURE PIPE 20W



NOTES:

1. STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 12" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
2. WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN (A MIN. 6' SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS). MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.
3. FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
4. WASTEWATER LATERALS SHALL CROSS UNDER POTABLE WATER MAINS WITH A MIN. 12" VERTICAL SEPARATION WHENEVER POSSIBLE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, A 20' SECTION OF DUCTILE IRON PIPE POTABLE WATER MAIN CENTERED ON THE CROSSING IS REQUIRED AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6". WHERE THERE IS NO ALTERNATIVE TO A WASTEWATER LATERAL PIPE CROSSING OVER A POTABLE WATER MAIN, A MINIMUM 12" VERTICAL SEPARATION IS REQUIRED, THE LATERAL SHALL BE P.V.C. C-900 SDR18 OR BETTER. THE POTABLE WATER MAIN SHALL BE D.I.P. AND THE PIPE JOINTS SHALL BE EQUIDISTANT FROM THE POINT OF CROSSING.
5. POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCASED IN A MIN. 10' LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
6. WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

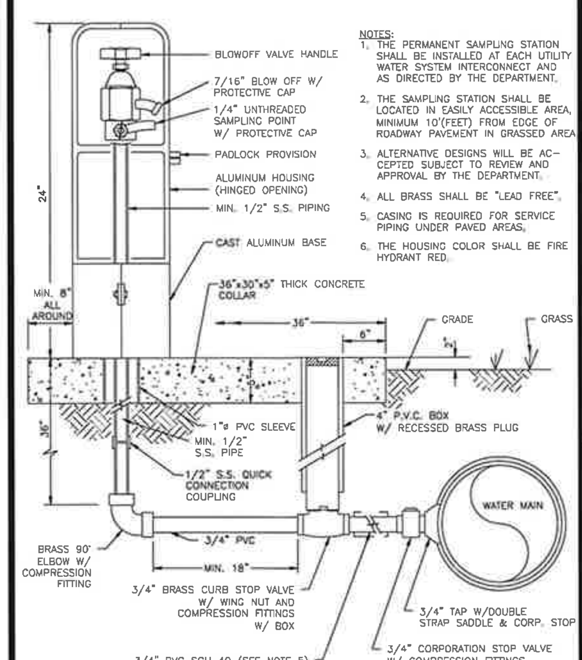
POTABLE WATER, WASTEWATER MAIN AND STORM SEWER CONFLICT 18W



NOTES:

1. STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 12" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
2. WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN (A MIN. 6' SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS.) MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.
3. FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
4. FITTINGS SHALL BE RESTRAINED.
5. THE DEFLECTION TYPE CROSSING IS PREFERRED.
6. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
7. ALL EXPOSED TIE STEEL SHALL BE COATED WITH COAL-TAR EPOXY.
8. POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCASED IN A MIN. 10' LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
9. WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

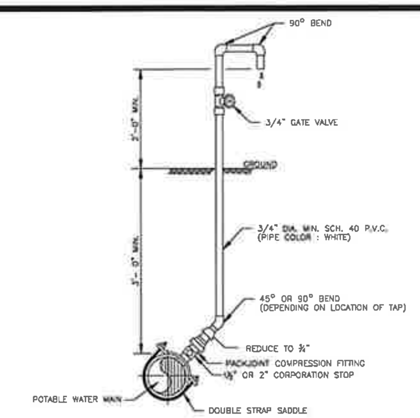
POTABLE WATER MAIN / FORCE MAIN PRESSURE PIPE CONFLICT DETAIL 19W



NOTES:

1. THE PERMANENT SAMPLING STATION SHALL BE INSTALLED AT EACH UTILITY WATER SYSTEM INTERCONNECT AND AS DIRECTED BY THE DEPARTMENT.
2. THE SAMPLING STATION SHALL BE LOCATED IN EASILY ACCESSIBLE AREA, MINIMUM 10'(FEET) FROM EDGE OF ROADWAY PAVEMENT IN GRASSED AREA
3. ALTERNATIVE DESIGNS WILL BE ACCEPTED SUBJECT TO REVIEW AND APPROVAL BY THE DEPARTMENT.
4. ALL BRASS SHALL BE "LEAD FREE".
5. CASING IS REQUIRED FOR SERVICE PIPING UNDER PAVED AREAS.
6. THE HOUSING COLOR SHALL BE FIRE HYDRANT RED.

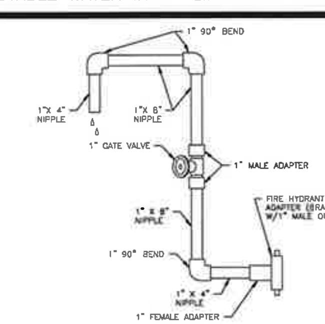
PERMANENT SAMPLING POINT 15W



NOTE:

1. SAMPLE POINT SHOULD BE A SERVICE LINE OR FIRE HYDRANT IF POSSIBLE.
2. THREADED AREAS OF CORPORATION STOP SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
3. CLOSE AND CAP CORPORATION STOP AFTER SAMPLING COMPLETION.

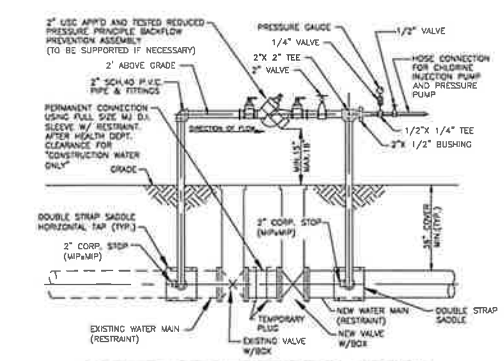
POTABLE WATER MAIN TEMPORARY SAMPLING POINT 16W



NOTES:

1. USE HYDRANT WRENCH ONLY.
2. ALL PIPES AND FITTINGS SCH. 40 P.V.C. (PIPE COLOR : WHITE).

POTABLE WATER MAIN FIRE HYDRANT SAMPLING POINT 17W



1. ENSURE PROPER RESTRAINT OF EXISTING VALVE AND EXISTING PIPE PRIOR TO NEW PIPE CONNECTION.
2. ENSURE PROPER OPERATION OF EXISTING VALVE.
3. INSTALL BY-PASS PIPING AS SHOWN. A NEARBY HYDRANT OR SERVICE TAP MAY BE USED AS A WATER SOURCE.
4. USING BY-PASS AND CHLORINE INJECTOR PUMP, DISINFECT NEW WATER MAIN (MIN. 50 CHLORINE PPM IS REQUIRED FOR DISINFECTION).
5. COMPLETE FILLING OF THE NEW WATER MAIN AND PERFORM BACTERIOLOGICAL TESTING.
6. REMOVE EXISTING BLOW OFF (IF APPLICABLE) AND EXISTING PLUG, CONNECT NEW MAIN TO EXISTING VALVE.
7. CRACK OPEN EXISTING VALVE AFTER INITIAL DISINFECTION AND FLUSH THE NEW WATER MAIN (PBCWUD PRESENCE IS REQUIRED).
8. REMOVE BY-PASS PIPING, CAP CORPORATION STOPS WITH BRASS CAPS.
9. PRESSURE TESTING IS REQUIRED AFTER SUCCESSFUL COMPLETION OF BACTERIOLOGICAL TESTING AND HEALTH DEPARTMENT RELEASE FOR "CONSTRUCTION WATER"(IF APPLICABLE). PRESSURE TEST TO BE PERFORMED AFTER BACKFILL/ ROAD BASE AND ROAD ROCK BASE INSTALLATION/ COMPACTION.
10. AN ALTERNATIVE TIE-IN PROCEDURE (PRESSURE TESTING PRIOR TO BACTERIOLOGICAL TESTING) MAY BE CONSIDERED WITH PRIOR APPROVAL (SEE SEPARATE DETAIL).
11. RECORD DRAWINGS TO SHOW DATA FOR ALL TEST TAPS.
12. ALL BRASS SHALL BE "LEAD FREE".

STANDARD POTABLE WATER MAIN TIE-IN 33W

POTABLE WATER #2 STANDARD DETAILS

CONSULTANT:

IT'S THE LAW! CALL 48 HOURS BEFORE YOU DIG 1-800-432-4770 SUNSHINE STATE ONE CALL OF FLORIDA, INC. UTILITIES NOTIFICATION CENTER

DESIGNED BY:	WUD	
DRAWN BY:	M. BUCKNER	Palm Beach County Water Utilities Department P.O.Box 16097 West Palm Beach, FL 33416-6097
CHECKED BY:	J. LAMMERT	
APPROVED BY:	WUD	

PROJECT NO. 6464.00

SUNSET SPRINGS GREENACRES, FLORIDA

PALM BEACH COUNTY FLORIDA

PALM BEACH COUNTY WATER UTILITIES DEPARTMENT P.O. BOX 16097 WEST PALM BEACH, FL 33416 (561)493-6000

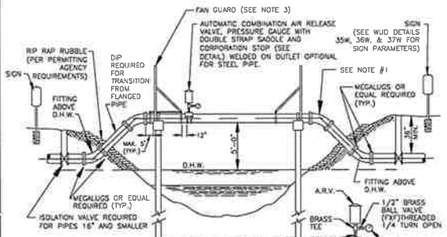
NO.	DATE	REVISION / REMARKS	BY
*	JUNE 2019	GENERAL REVISION	J.L.

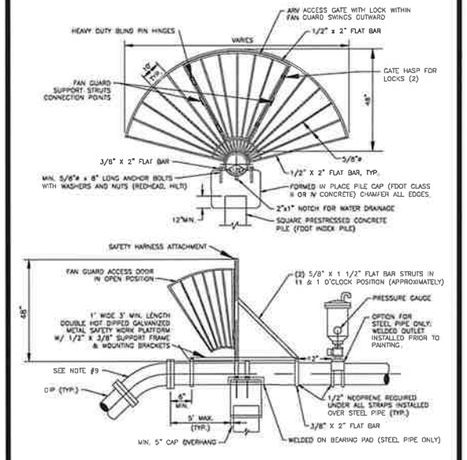
STD DETAILS

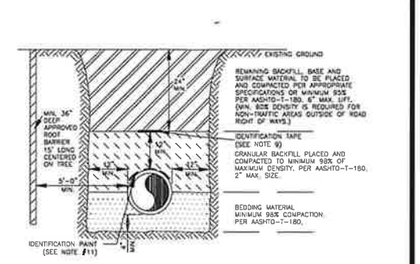
SHEET NUMBER C-7 OF 17

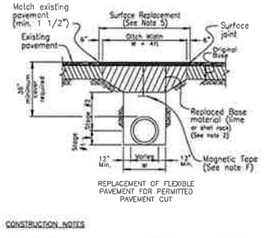
SEAL

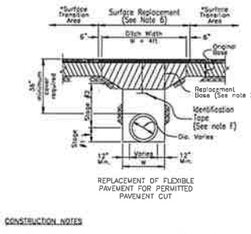
Oct 01, 2021

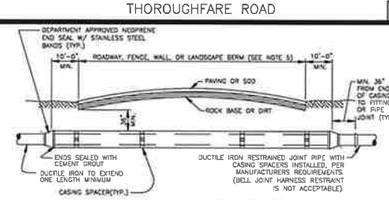


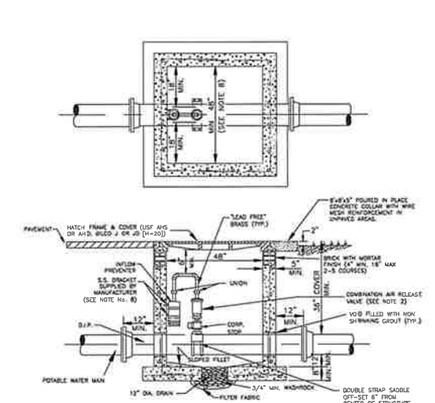


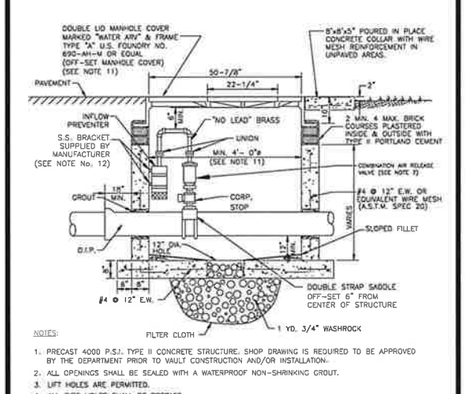


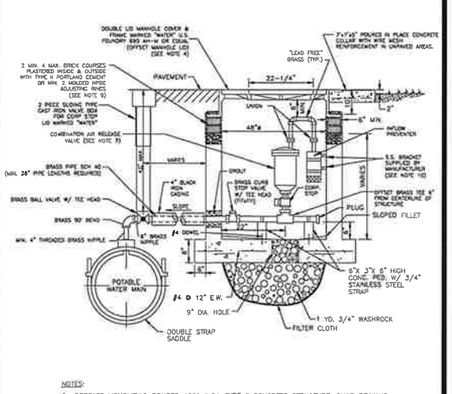


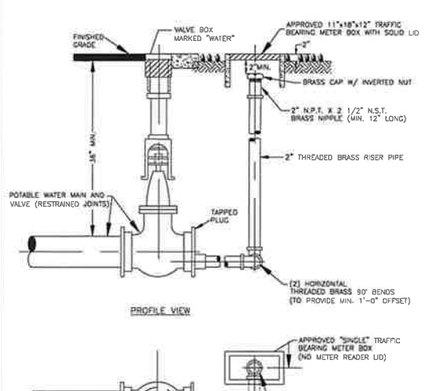












NOTES:

1. ALL EXPOSED PIPE SHALL BE DUCTILE IRON OR PREFABRICATED STEEL WITH FLANGED FITTINGS AND PROFILED GASKETS. RETAINER GLANDS AND UNIFLANGE TYPE FITTINGS ARE NOT TO BE SUBSTITUTED FOR FLANGED FITTINGS. PREFABRICATED STEEL PIPE MAY INCORPORATE WELDED ON LONG RADIUS UPPER BENDS. PREFABRICATED FLANGED PIPE SHALL BE FACTORY TESTED.
2. SPAN LENGTHS AS REQUIRED BY PERMITTING AGENCY
3. FAN GUARDS ARE REQUIRED. SEE FAN GUARD/PILE CAP DESIGN DETAILS FOR ADDITIONAL REQUIREMENTS. ACCESS PLATFORM AND GATE REQUIRED ON ARV SIDE ONLY.
4A. ALL EXPOSED PIPING SHALL BE PAINTED AS SPECIFIED IN THE APPROVED MATERIAL LIST.
4B. ALL HARDWARE SHALL BE PAINTED WITH COAL-TAR EPOXY.
5. PIPE SHALL BE CRADLED ON ½" THICK NEOPRENE.(DUROMETER GRADE 50,) CURRENT FDOT STANDARDS APPLY. NEOPRENE IS REQUIRED AT ALL STRAPS INSTALLED OVER STEEL PIPE. NEOPRENE SHALL EXTEND MIN. 1" BEYOND THE EDGES OF CRADLE AND STRAPS.
6. TIE-DOWN STRAPS MUST PROPERLY FIT AND SECURE PIPE IN CRADLE.
7. PIPE CRADLE IN CAP SHALL CONTACT ⅓ CIRCUMFERENCE OF PIPE. (SEE FAN GUARD DETAIL)
8. SHOW EXISTING CANAL CROSS SECTION ULTIMATE CANAL SECTION AND RELEVANT ELEVATIONS AND DISTANCES ON A TO SCALE DETAIL DRAWING.
9. PILE LIFT CABLE SHALL BE REMOVED BELOW SURFACE; HOLE SHALL BE FILLED WITH EPOXY CEMENT.
10. THREADED AREAS OF BRASS FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
11. THE PRESSURE GAUGE SHALL FACE THE CLOSEST FAN GUARD.
12. THE PRESSURE GAUGE SHALL BE "ASHCROFT NO. 45-1009A" OR APPROVED EQUAL.
13. THE PILES AND CAP DESIGN SHALL BE SHOWN ON TO SCALE SIGNED AND SEALED DETAIL DRAWINGS. (MIN. 12"x12" TYPE 1A FLORIDA DOT INDEX PILES ARE REQUIRED.) PILE PENETRATION BELOW CANAL BOTTOM SHALL BE 15' MINIMUM. MINIMUM LOAD CAPACITY OF 20 TONS PER PILE IS REQUIRED (FDOT STANDARDS APPLY). SIGNED AND SEALED SHOP DRAWINGS ARE REQUIRED.
14. STEEL PIPE SHALL HAVE WELDED ON BEARING PADS EXTENDING MIN. 1" BEYOND PIPE CRADLE THE PADS SHALL BE INSTALLED PRIOR TO PAINTING

POTABLE WATER MAIN TYPICAL AERIAL CANAL CROSSING – SINGLE PIPE (SINGLE PILES) ✳ 26W

NOTES:

1. FAN GUARDS SHALL BE PLACED AT EACH END OF CANAL CROSSING.
2. HARDWARE SHALL BE PAINTED WITH COAL TAR EPOXY.
3. FANGUARD WITH HARDWARE SHALL BE FABRICATED FROM DOUBLE HOT DIPPED GALVANIZED STEEL.
4. SHOP DRAWINGS FOR FANGUARDS, CAPS, AND PILES MUST BE SUBMITTED TO PBCWUD FOR REVIEW AND APPROVAL PRIOR TO PRE-CONSTRUCTION MEETING.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. MIN. 2" CONCRETE COVER OVER ALL STEEL.
6. SEE "TYPICAL CANAL CROSSING DETAIL" FOR ADDITIONAL REQUIREMENTS.
7. NO WELDING OF REBAR TO REBAR OR REBAR TO PILE STRANDS SHALL BE ALLOWED.
8. DESIGN DRAWINGS ARE REQUIRED.
9. LONG RADIUS WELDED ON UPPER BENDS ARE ACCEPTABLE FOR STEEL PIPE.
10. IF A PILE/CAP STEEL CONNECTION IS REQUIRED BY DESIGNING ENGINEER, MIN. (4) #8 REINFORCEMENT BARS SHALL BE DRILLED AND DOWELED (EPOXIED) MIN. 16" DEEP INTO THE PILE AND TIED WITH THE CAP STEEL.
11. ACCESS PLATFORM AND GATE REQUIRED ON ARV SIDE ONLY.

FAN GUARD/ PILE CAP DESIGN SINGLE PIPE (SINGLE PILES) 27W

NOTES:

1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"- 7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND DEBRIS.
5. DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM, MINIMUM 1 SET OF TESTS FOR EACH WASTEWATER GRAVITY MAIN RUN, OR AS DIRECTED BY THE INSPECTOR.
6. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
7. SEE SEPARATE DETAILS FOR "PIPE INSTALLATION UNDER EXISTING PAVEMENT – OPEN CUT."
8. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
9. APPROVED MAGNETIC TAPE IS REQUIRED FOR: ALL POTABLE WATER MAINS, FORCE MAINS AND RECLAIMED WATER MAINS. THE TAPE SHALL BE INSTALLED MAX. 24" BELOW FINISHED GRADE.
10. ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATION CLOSER THAN 10 FEET FROM UTILITY FACILITIES.
11. CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SEWER MAINS (GREEN), AND DIP RECLAIMED WATER MAINS (PURPLE).
12. PERMANENT ABOVE GROUND UTILITY MARKER SHALL BE INSTALLED IF REQUIRED BY PROPERTY OWNER GRANTING THE PIPE INSTALLATION PERMIT.
13. FOR PIPE INSTALLATIONS IN ROAD RIGHTS-OF-WAY, ROAD OWNER'S PERMIT SPECIFICATIONS SHALL APPLY.

TYPICAL TRENCH DETAIL/ ROOT BARRIER INSTALLATION DETAIL 23W

CONSTRUCTION PROCEDURES

THE BACKFILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 6" LIFTS. (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

STAGE 1:

THE CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.

STAGE 2:

THE CONTRACTOR SHALL OBTAIN A WELL-COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE TOP OF SUB-GRADE MATERIAL.

REPLACEMENT OF FLEXIBLE PAVEMENT FOR PERMITTED PAVEMENT CUT

CONSTRUCTION NOTES

1) BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8" – 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2) REPLACED BASE MATERIAL (PER LAND DEVELOPMENT DESIGN STANDARDS) OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE OR 12" MINIMUM, WHICHEVER IS GREATER.
3) ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
4) BASE MATERIAL SHALL BE PLACED IN TWO OR THREE LAYERS (6" MAX. PER LAYER) AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY.
5) SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE OR 1 1/2" SI ASPHALTIC CONCRETE WITH RC-70 PRIME COAT AT 0.10 GAL/SQ. YD.
6) PIPE SHALL BE PLACED IN A DRY TRENCH.

GENERAL NOTES

A) ALL ROADWAY REPAIR WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND COUNTY PPM# EL-O-3606.
B) DENSITY TESTS SHALL BE TAKEN IN 1 FT LIFTS ABOVE THE PIPE AT INTERVALS OF 400 FT MAXIMUM (1 SET MINIMUM) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION DIVISION AS PART OF THEIR FIELD REVIEW.
C) ENGINEER-OF-RECORD SHALL PROVIDE FULL-TIME INSPECTION DURING THE ENTIRETY OF THE OPEN-CUT OPERATION, BEGINNING WITH THE EXCAVATION AND CONTINUING THROUGH THE COMPLETION OF THE PAVING.
D) IF THE PAVEMENT IS NOT COMPLETELY RESTORED IMMEDIATELY FOLLOWING THE OPEN CUT, A SMOOTH TEMPORARY PATCH (MINIMUM 1.25" ASPHALT) SHALL BE INSTALLED, PROPERLY MATCHING THE EXISTING GRADING OF THE ROADWAY. THE TEMPORARY PATCH SHALL BE ALLOWED TO REMAIN IN PLACE AND BE MAINTAINED FOR A PERIOD NO LONGER THAN 45 DAYS. THE COUNTY RETAINS THE RIGHT TO USE POSTED SURETY TO COMPLETE ANY RESTORATION WORK THAT HAS NOT BEEN COMPLETED IN THE 45 DAYS PERIOD. ALTERNATIVE TEMPORARY TRENCH PROTECTION (STEEL PLATES OR OTHERS) MAY BE APPROVED BY THE CONSTRUCTION COORDINATION DIVISION.
E) FOR THE FINAL RESTORATION, THE ROAD SHALL BE MILLED AND RESURFACED WITH 1-1/2" (ONE AND A HALF INCH) OF SIII OR SI ASPHALT SURFACE COURSE FOR A FULL LANE WIDTH ENCROACHED BY THE TRENCH.
F) APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE COUNTY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
G) CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY MAINS (GREEN), DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA.

OPEN CUT PIPE INSTALLATION NON-THOROUGHFARE ROAD 24W

CONSTRUCTION PROCEDURES

THE BACKFILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 6" LIFTS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

STAGE 1:

THE CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.

STAGE 2:

THE CONTRACTOR SHALL OBTAIN A WELL-COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE TOP OF SUB-GRADE MATERIAL.

REPLACEMENT OF FLEXIBLE PAVEMENT FOR PERMITTED PAVEMENT CUT

CONSTRUCTION NOTES

1) BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8" – 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2) REPLACED BASE MATERIAL OVER DITCH SHALL BE 16" MINIMUM FOR THOROUGHFARE PLAN ROADS.
3) ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
4) BASE MATERIAL (PER ROADWAY PRODUCTION DESIGN STANDARDS) SHALL BE PLACED IN TWO OR THREE LAYERS (6" MAX. PER LAYER) AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY.
5) * SURFACE TRANSITION AREA (SEE PLANS FOR LOCATION). OVERLAY OR MILL/RESURFACE FOR A DISTANCE OF 50'ON BOTH SIDES OF THE OPEN CUT AND FOR A FULL LANE WIDTH.
6) 1" SIII ASPHALTIC CONCRETE OVER 1 1/2" SI ASPHALTIC CONCRETE WITH RC-70 PRIME COAT AT 0.10 GAL/SQ. YD.
7) PIPE SHALL BE PLACED IN A DRY TRENCH.

GENERAL NOTES

A) ALL ROADWAY REPAIR WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND COUNTY PPM# EL-O-3605.
B) DENSITY TESTS SHALL BE TAKEN IN 1 FT LIFTS ABOVE THE PIPE AT INTERVALS OF 400 FT MAXIMUM (1 SET MINIMUM) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION DIVISION AS PART OF THEIR FIELD REVIEW.
C) ENGINEER-OF-RECORD WILL PROVIDE FULL-TIME INSPECTION DURING THE ENTIRETY OF THE OPEN-CUT OPERATION, BEGINNING WITH THE EXCAVATION AND CONTINUING THROUGH THE COMPLETION OF THE PAVING.
D) IF THE PAVEMENT IS NOT COMPLETELY RESTORED IMMEDIATELY FOLLOWING THE OPEN CUT, A SMOOTH TEMPORARY PATCH (MINIMUM 1.25" ASPHALT) SHALL BE INSTALLED, PROPERLY MATCHING THE EXISTING GRADING OF THE ROADWAY. THE TEMPORARY PATCH SHALL BE ALLOWED TO REMAIN IN PLACE AND BE MAINTAINED FOR A PERIOD NO LONGER THAN 45 DAYS. THE COUNTY RETAINS THE RIGHT TO USE POSTED SURETY TO COMPLETE ANY RESTORATION WORK THAT HAS NOT BEEN COMPLETED IN THE 45 DAYS PERIOD. ALTERNATIVE TEMPORARY TRENCH PROTECTION (STEEL PLATES OR OTHERS) MAY BE APPROVED BY THE CONSTRUCTION COORDINATION DIVISION.
E) THE FINAL RESTORATION, THE ROAD SHALL BE MILLED/RESURFACED FOR A FULL LANE WIDTH OF THE TRAVEL LANES ENCROACHED BY THE TRENCH AREA, INCLUDING A TRANSITION AREA OF 50 FT ON EACH SIDE OF THE TRENCH. THE PAVEMENT SHALL BE MILLED AND RESURFACED PER CONSTRUCTION NOTE 6.
F) APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE COUNTY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
G) CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY MAINS (GREEN), DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA.

OPEN CUT PIPE INSTALLATION THOROUGHFARE ROAD 25W

NOTES:

1. PRECAST 4000 P.S.I. TYPE II CONCRETE STRUCTURE. SHOP DRAWING IS REQUIRED TO BE APPROVED BY THE DEPARTMENT PRIOR TO VAULT CONSTRUCTION AND/OR INSTALLATION.
2. COMBINATION AIR RELEASE VALVE (ARV) SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED ALTHOUGH A 1" MINIMUM SIZED ARV IS REQUIRED ON POTABLE WATER MAIN INSTALLATIONS.
3. ALL OPENINGS SHALL BE SEALED WITH WATERPROOF NON-SHRINKING GROUT.
4. ALTERNATE VAULT AND COVER DESIGN MAY BE USED PROVIDED ALTERNATE VAULT AND/OR COVER SHOP DRAWINGS WERE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE VAULT AND/OR COVER BEING INSTALLED.
5. DUCTILE IRON PIPE IS REQUIRED THROUGH THE VAULT. NO PIPE JOINTS INSIDE OR WITHIN 12" OF THE VAULT.
6. THREADED AREAS OF BRASS FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
7. LARGER VAULTS WILL BE REQUIRED FOR PIPES LARGER THAN 12"

PIPE SIZE	MIN. VAULT SIZE
16"-24"	4'X5'
30"-42"	4'X6'

8. SHOP DRAWINGS ARE REQUIRED FOR CUSTOM MADE BRACKETS

POTABLE WATER MAIN UNDERGROUND AIR RELEASE VALVE ✳ AND VAULT IN NON-TRAFFIC AREAS OUTSIDE OF ROAD R/W 28W

NOTES:

1. PRECAST 4000 P.S.I. TYPE II CONCRETE STRUCTURE. SHOP DRAWING IS REQUIRED TO BE APPROVED BY THE DEPARTMENT PRIOR TO VAULT CONSTRUCTION AND/OR INSTALLATION.
2. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
3. LIFT HOLES ARE PERMITTED.
4. ALL PIPE HOLES SHALL BE PRECAST.
5. MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478 LATEST STANDARD.
6. CONCRETE COLLAR REQUIRED WHEN MANHOLE IS OUTSIDE OF PAVEMENT, SEE DETAIL.
7. COMBINATION AIR RELEASE VALVE (ARV) SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED ALTHOUGH A 1" MINIMUM SIZED ARV IS REQUIRED ON POTABLE WATER MAIN INSTALLATIONS.
8. DUCTILE IRON PIPE IS REQUIRED THROUGH THE VAULT. NO PIPE JOINTS INSIDE OR WITHIN 18" OF THE MANHOLE.
9. THREADED AREAS OF BRASS FITTINGS SHALL BE SPIRAL WRAP WITH TWO WRAPS OF TEFLON TAPE.
10. POTABLE WATER MAINS 12" AND SMALLER, AN ALTERNATE VAULT AND COVER DESIGN MAY BE USED PROVIDED ALTERNATE VAULT AND/OR COVER SHOP DRAWINGS WERE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE VAULT AND/OR COVER BEING INSTALLED.
11. LARGER MANHOLES WILL BE REQUIRED FOR PIPES LARGER THAN 12"

PIPE SIZE	MIN. MANHOLE DIAMETER
16"-24"	60"
30"-42"	72"

12. SHOP DRAWINGS ARE REQUIRED FOR CUSTOM MADE BRACKETS
13. MANHOLES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS.

POTABLE WATER MAIN AIR RELEASE MANHOLE IN PAVED AREAS AND ROAD R/W ✳ 29W

NOTES:

1. PRECAST MONOLITHIC POURED 4000 P.S.I. TYPE II CONCRETE STRUCTURE. SHOP DRAWING IS REQUIRED TO BE APPROVED BY THE DEPARTMENT PRIOR TO VAULT CONSTRUCTION AND/OR INSTALLATION.
2. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
3. ALL PIPE HOLES SHALL BE PRECAST.
4. ALTERNATIVE VAULT DESIGN MAY BE USED WITH AN APPROVED 32" DIAMETER HINGED MANHOLE COVER PROVIDED ALTERNATE VAULT AND/OR COVER SHOP DRAWING WAS SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE VAULT AND/OR COVER BEING INSTALLED.
5. ARV, TAP AND PIPING TO BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED.
6. COMBINATION AIR RELEASE VALVE (ARV) SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED ALTHOUGH A 1" MINIMUM SIZED ARV IS REQUIRED ON POTABLE WATER MAIN INSTALLATIONS.
7. SHOP DRAWING IS REQUIRED FOR REVIEW AND APPROVAL.
8. THREADED AREAS OF BRASS FITTINGS AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
9. IN LIEU OF BRICK WORK, APPROVED PRECAST CONCRETE ADJUSTING RINGS MAY BE USED. INSTALLATION SHALL FOLLOW MANUFACTURERS RECOMMENDATIONS.
10. SHOP DRAWINGS ARE REQUIRED FOR CUSTOM MADE BRACKETS
11. PIPE AND FITTINGS SHALL BE NO LEAD BRASS.
12. MANHOLES SHALL BE INSTALLED OUTSIDE TRAFFIC AREAS.

POTABLE WATER MAIN OFF-SET UNDERGROUND AIR RELEASE VALVE ✳ 30W

PROFILE VIEW

PLAN VIEW

NOTES:

1. TEMPORARY DEAD END BLOWOFF ONLY ALLOWED WITH PRIOR DEPARTMENT APPROVAL.
2. BLOWOFF BOX TO BE LOCATED IN GRASS AREA, MIN. 2' FROM SIDEWALK OR PAVEMENT
3. PERMANENT DEAD ENDS REQUIRE THE INSTALLATION OF AN APPROVED AUTOMATIC FLUSHING ASSEMBLY.
4. ALL BRASS SHALL BE "LEAD FREE".

TYPICAL 2" TERMINAL BLOWOFF POTABLE WATER DISTRIBUTION MAINS 21W

CARRIER PIPE SIZE	STEEL CASING INSIDE DIAMETER (MIN)	MINIMUM WALL THICKNESS (SEE NOTE 2)
4"	12"	.188
6"	14"	.250
8"	20"	.250
10"	20"	.250
12"	24"	.250
14"	24"	.250
16"	30"	.312
18"	30"	.312
20"	36"	.372
24"	42"	.500
30"	48"	.500
36"	54"	.625
42"	60"	.625
48"	72"	.625

NOTES:

1. A PROFILE DRAWING TO SCALE FOR EACH JACK AND BORE, DIRECTIONAL DRILL, OR DIRECT BURIED INSTALLATION IS REQUIRED TO BE APPROVED BY THE DEPARTMENT PRIOR TO INSTALLATION. IF A SPLIT CASING IS REQUIRED THEN SHOP DRAWINGS ARE REQUIRED TO BE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO CONSTRUCTION AND/OR INSTALLATION.
2. THICKER WALL CASINGS AND LARGER COVER OVER CASING MAY BE REQUIRED BY THE RIGHT-OF-WAY OWNER.
3. STEEL CASING SHALL BE COATED OUTSIDE WITH COAL TAR EPOXY (MIN. 16 MILS DFT) AND BE PAINTED WITH A 4" MINIMUM WIDE CONTINUOUS STRIPE, COLOR CODED TO MATCH THE PIPE INSIDE, ALONG THE TOP AXIS OF THE CASING.
4. PIPE IN CASING SHALL BE PULLED TO FULLY ENGAGE RESTRAINT.
5. STEEL CASING IS REQUIRED FOR ALL WATER MAIN INSTALLATIONS UTILIZING JACK AND BORE CONSTRUCTION AND WHEN MAINS ARE INSTALLED UNDER FENCES, WALLS, OR LANDSCAPE BERMS. WHEN THE CASING IS INSTALLED UNDER FENCES, WALLS, OR LANDSCAPE BERMS IT SHALL BE CENTERED ON THE PREVIOUS BARRIER AND IS REQUIRED TO EXTEND 10' MINIMUM PAST BARRIER ON EACH SIDE UNLESS OTHERWISE PREVIOUSLY APPROVED BY THE DEPARTMENT.

POTABLE WATER MAIN CASING INSTALLATION DETAILS ✳ 22W

POTABLE WATER #3
STANDARD DETAILS

CONSULTANT:

IT'S THE LAW !
CALL 48 HOURS BEFORE YOU DIG
1-800-432-4770
SUNSHINE STATE ONE CALL OF FLORIDA, INC.
UTILITIES NOTIFICATION CENTER

DESIGNED BY: WUD
DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

PROJECT NO.
6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

NO.	DATE	REVISION / REMARKS	BY
	JUNE 2019	✳ GENERAL REVISION	J.L.

STD DETAILS

SHEET NUMBER
C-8
OF
17

SEAL

Oct 01, 2021

RECEIVED by
CITY OF GREENACRES
2021
PLANNING & ENGINEERING

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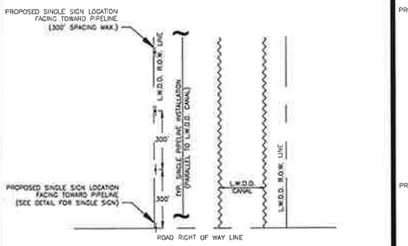

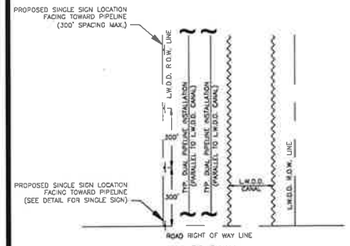

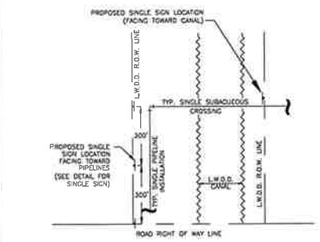

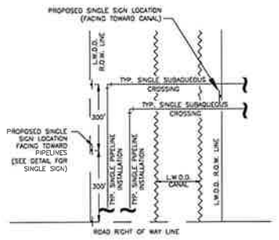

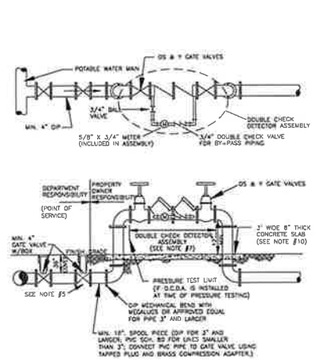

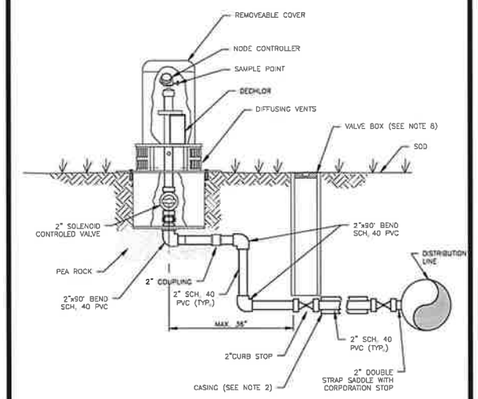

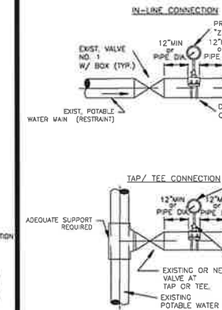

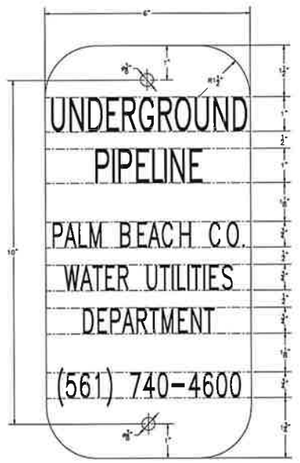

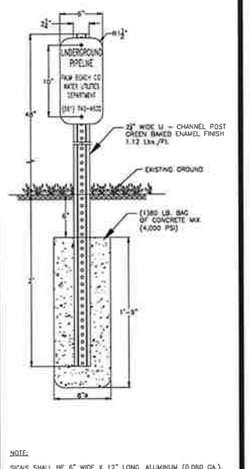

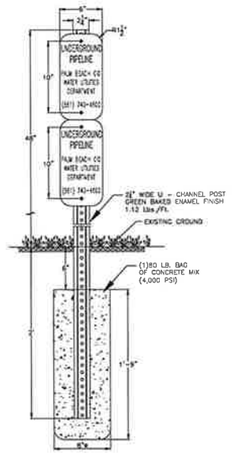

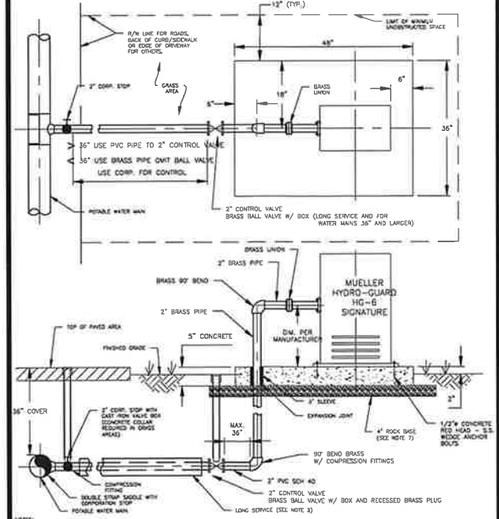

NOTE:

1. UNDERGROUND PIPELINE WARNING SIGNS ARE TO BE PLACED AT THE POINT IN WHICH THE LINE INGRESSES AND EGRESSES THE L.W.D.D. RIGHT-OF-WAY.
2. SIGN SPACING IS TO BE A MAXIMUM OF 300' ALONG THE L.W.D.D. RIGHT-OF-WAY, AS CLOSE AS POSSIBLE TO THE L.W.D.D. RIGHT-OF-WAY.

L.W.D.D. – SINGLE PIPE PARALLEL INSTALLATION UNDERGROUND PIPELINE SIGN INSTALLATION DETAIL **38W**

NOTE:

1. UNDERGROUND PIPELINE WARNING SIGNS ARE TO BE PLACED AT THE POINT IN WHICH THE LINE INGRESSES AND EGRESSES THE L.W.D.D. RIGHT-OF-WAY.
2. SIGN SPACING IS TO BE A MAXIMUM OF 300' ALONG THE L.W.D.D. RIGHT-OF-WAY, AS CLOSE AS POSSIBLE TO THE L.W.D.D. RIGHT-OF-WAY.

L.W.D.D. – DUAL PIPE PARALLEL INSTALLATION UNDERGROUND PIPELINE SIGN INSTALLATION DETAIL **39W**

NOTE:

1. UNDERGROUND PIPELINE WARNING SIGNS ARE TO BE PLACED ON BOTH SIDES OF THE CANAL CROSSING; AT THE INSIDE EDGE OF THE RIGHT-OF-WAY.
2. SIGN POST IS NOT TO BE PLACED DIRECTLY OVER PIPELINE. OFFSET SIGN POST 5' FROM PIPELINE.

L.W.D.D. – SINGLE PIPE SUBAQUEOUS CROSSING UNDERGROUND PIPELINE SIGN INSTALLATION DETAIL **40W**

NOTE:

1. UNDERGROUND PIPELINE WARNING SIGNS ARE TO BE PLACED ON BOTH SIDES OF THE CANAL CROSSING; AT THE INSIDE EDGE OF THE RIGHT-OF-WAY.
2. SIGN POST IS NOT TO BE PLACED DIRECTLY OVER PIPELINE. OFFSET SIGN POST 5' FROM PIPELINE.

L.W.D.D. – DUAL PIPE SUBAQUEOUS CROSSING UNDERGROUND PIPELINE SIGN INSTALLATION DETAIL **41W**

NOTES:

1. ALL PIPE AND FITTINGS UP TO THE D.C.D.A. SHALL BE DUCTILE IRON CEMENT LINED.
2. THE INITIAL TEST OF THE BACKFLOW PREVENTION ASSEMBLY SHALL BE PERFORMED BY THE DEPARTMENT PRIOR TO SERVICE ACTIVATION.
3. THE DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE APPROVED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA (U.S.C.) OR THE A.S.S.E. (WITH ONE YEAR FIELD TESTING).
4. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER OPERATION, MAINTENANCE AND SUBSEQUENT TESTING OF THE DOUBLE CHECK DETECTOR ASSEMBLY BY A CERTIFIED BACKFLOW TECHNICIAN .
5. WHEN FIRE LINE LENGTH IS OVER ONE PIPE LENGTH, LINE SHALL BE TERMINATED WITH A GATE VALVE (=POINT OF SERVICE). NO PIPE JOINTS / CONNECTIONS ARE PERMITTED BETWEEN POINT OF SERVICE AND VERTICAL 90° BEND
6. THE DESIGN SHALL MINIMIZE ANY POTENTIAL FOR WATER MAIN WITH NO FLOW. A FIRE HYDRANT LOCATED NEAR THE DOUBLE CHECK DETECTOR ASSEMBLY MAY BE REQUIRED FOR LONG, DEAD ENDING DEDICATED FIRE LINES.
7. AN APPROVED REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLY SHALL BE REQUIRED FOR ALL FIRE SYSTEMS WITH STORAGE TANKS AND/OR AUXILIARY WATER SUPPLY.
8. TAMPER SWITCHES MAY BE REQUIRED BY THE FIRE MARSHALL.
9. PIPE MATERIAL ON THE CUSTOMER SIDE OF POINT OF SERVICE SHALL COMPLY WITH FIRE MARSHALL REQUIREMENTS
10. 3' WIDE 6" THICK CONCRETE SLAB IS RECOMMENDED FOR ASSEMBLY SMALLER THAN 4".

DOUBLE CHECK DETECTOR ASSEMBLY **32W**

NOTES:

1. AUTOMATIC FLUSHING ASSEMBLY TO BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.
2. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS, USE MIN. 4" DIAMETER BLACK IRON, PVC SCH 40, OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. CASING TO BE SEALED WITH CEMENT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
3. AUTOMATIC FLUSHING ASSEMBLY TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE WATER MAIN WITHIN AN UTILITY EASEMENT OR ROAD RIGHT-OF-WAY WITH PRIOR DEPARTMENT APPROVAL. IF AUTOMATIC FLUSHING ASSEMBLY HOUSING IS INSTALLED IN ROAD RIGHT-OF-WAY IT SHALL NOT INTERFERE WITH CLEAR ZONE REQUIREMENTS AS SPECIFIED BY ROAD OWNER.
4. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
5. ALL HARDWARE (I.E. BOLTS, ETC.) REQUIRED FOR ASSEMBLY INSTALLATION SHALL BE 304 STAINLESS STEEL.
6. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE. ALL BRASS SHALL BE "LEAD FREE".
7. A 4" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED. THE BASE SHALL EXTEND MINIMUM 12" BEYOND AUTOMATIC FLUSHING ASSEMBLY PAD PERIMETER.
8. WHEN VALVE BOX IS LOCATED IN GRASS A CONCRETE COLLAR IS REQUIRED PER DEPARTMENT STANDARDS.

AUTOMATIC FLUSHING ASSEMBLY (TYPE A) * **43W**

NOTES:

1. THE "ALTERNATIVE" PROCEDURE MUST BE APPROVED BY WUD IN ADVANCE. IT ALLOWS THE NEW PIPE TO BE PRESSURE TESTED PRIOR TO BACTERIOLOGICAL TESTING.
2. BOTH VALVES SHALL BE KEPT CLOSED EXCEPT FOR FILLING AND FLUSHING.
3. WUD SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING.
4. PRESSURE TEST PUMP MAY BE CONNECTED TO SERVICE LINE, FIRE HYDRANT OR BLOWOFF IN THE TESTED WATER MAIN. NO EXTRA TAPS ARE PERMITTED UNLESS UNAVOIDABLE.
5. GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST. HOLE TO BE PLUGGED AT SADDLE WITH BRASS PLUG. A BRASS CAP IS REQUIRED.
6. THREAD AREAS OF CORPORATION STOP SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
7. ENSURE PROPER RESTRAINT OF EXISTING VALVE(S) AND PIPE PRIOR TO NEW CONNECTION.
8. SEE ALSO DETAIL FOR "STANDARD POTABLE WATER MAIN TIE-IN PROCEDURE"
9. RECORD DRAWINGS TO SHOW DATA FOR ALL TEST TAPS.
10. ALL BRASS SHALL BE "LEAD FREE".

ALTERNATIVE WATER MAIN TIE-IN **42W**

DEFINITIONS

GENERAL NOTES

1. DEPARTMENT – THE PALM BEACH COUNTY WATER UTILITIES DEPARTMENT.
2. CONTRACTOR – UTILITY CONTRACTOR AND ALL UTILITY SUBCONTRACTORS.
3. ENGINEER – ENGINEER RESPONSIBLE FOR INSPECTION AND CERTIFICATION.

PROCEDURE

1. A PRE-CONSTRUCTION MEETING IS TO BE HELD PRIOR TO DELIVERY OF MATERIALS AND INITIATION OF ANY POTABLE WATER, RECLAIMED WATER AND/OR WASTEWATER SYSTEM CONSTRUCTION. THE MEETING SHALL BE ATTENDED BY THE DEPARTMENT, CONTRACTOR, ENGINEER AND OTHER INTERESTED PARTIES.
2. ANY REVISIONS TO THE APPROVED PLANS SHALL BE CALLED TO THE ATTENTION OF THE DEPARTMENT PRIOR TO THE PRE-CONSTRUCTION MEETING. REVISED PLANS MUST BE APPROVED PRIOR TO THE MEETING.
3. FIVE (5) COPIES OF THE CURRENT APPROVED MATERIAL LIST AND ALL NECESSARY SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO SCHEDULING OF THE PRE-CONSTRUCTION MEETING.
4. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO PRECONSTRUCTION MEETING (DOT, HEALTH DEPARTMENT, COUNTY ENGINEER, ETC.).
5. THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION PLANS ON JOB SITE.
6. ALL MATERIALS SUPPLIED SHALL CONFORM TO PRODUCT LIST AND SHOP DRAWINGS AS APPROVED PRIOR TO CONSTRUCTION. SUBSTITUTE MATERIALS SHALL NOT BE APPROVED AFTER DELIVERY TO THE JOB SITE. ALL REQUESTS FOR MATERIAL SUBSTITUTION SHALL BE APPROVED PRIOR TO DELIVERY OF THESE MATERIALS TO THE JOB SITE.
7. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE APPROVED PLANS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. APPROVAL OF DEVELOPMENT PLANS BY THE DEPARTMENT IN NO WAY IMPLIES VERIFICATION OF THE ACCURACY OF THOSE PLANS OR FEATURES DEPICTED THEREON. ANY DISCREPANCY IN OR VARIATION FROM THE APPROVED PLANS IS TO BE BROUGHT TO THE ATTENTION OF THE DEPARTMENT BY THE ENGINEER AND CONTRACTOR. THE CONTRACTOR SHALL CONFIRM AND INSTALL (IF NECESSARY) ADEQUATE MECHANICAL PIPE / JOINT RESTRAINT ON EXISTING PIPES PRIOR TO CONNECTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS FROM ALL OTHER UTILITY FACILITIES.
10. THE CONTRACTOR OR ENGINEER SHALL SCHEDULE INSPECTIONS AND TESTS A MINIMUM OF 24-48 HOURS IN ADVANCE.
11. NO CONNECTION TO OR ANY OTHER CONSTRUCTION SHALL BE PERFORMED ON AN EXISTING DEPARTMENT OWNED OR MAINTAINED MAIN OR STRUCTURE WITHOUT THE PRESENCE OF A DEPARTMENT INSPECTOR.
12. FACILITIES PROPOSED HEREIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND THE DEPARTMENT'S MINIMUM STANDARDS. CONFLICTS BETWEEN THE PRECEDING DOCUMENTS SHOULD BE CALLED TO THE ATTENTION OF THE DEPARTMENT FOR RESOLUTION. DEVIATIONS FROM THE APPROVED PLANS MUST BE APPROVED IN ADVANCE BY THE DEPARTMENT.
13. UPON COMPLETION OF CONSTRUCTION, A FINAL INSPECTION SHALL VERIFY PROPER ADHERENCE TO ALL FACETS OF THE PLANS AND SPECIFICATIONS.

PRESSURE PIPE NOTES

1. THERE SHALL BE 36" MINIMUM COVER FROM FINISHED GRADE TO TOP OF PIPE.
2. DUCTILE IRON PIPE (DIP) THICKNESS SHALL CONFORM TO THE DEPARTMENT'S APPROVED MATERIAL LIST. POTABLE WATER AND RECLAIMED WATER MAINS DIP SHALL BE CEMENT LINED. FORCE MAIN DIP SHALL BE CERAMIC EPOXY LINED.
3. PVC PRESSURE PIPE SHALL BE C-900, SDR-18, 150 PSI.
4. ALL FITTINGS SHALL BE DUCTILE IRON WITH MECHANICAL JOINTS AND CEMENT OR APPROVED EPOXY LINING.
5. POTABLE WATER, RECLAIMED WATER AND WASTEWATER FORCE MAIN VALVES 10 INCHES AND SMALLER SHALL BE RESILIENT SEAT GATE VALVES. TWELVE-INCH (12") OR LARGER FORCE MAIN VALVES SHALL BE RESILIENT SEAT GATE VALVES OR ECCENTRIC PLUG VALVES (IF APPROVED IN ADVANCE BY DEPARTMENT). POTABLE WATER AND RECLAIMED WATER MAIN VALVES LARGER THAN 10 INCHES SHALL BE BUTTERFLY VALVES.
6. ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING, AND DISINFECTION MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND HEALTH DEPARTMENT STANDARDS AND REGULATIONS.

NOTE:

SIGN SHALL BE 6" WIDE X 12" LONG, ALUMINUM (0.080 GA.). SIGN COLOR IS WHITE WITH BLACK LETTERING. ROUNDED CORNERS (1.5" RAD.), 2 HOLES (3/8" DIAM.), 10" O.C.

UNDERGROUND PIPELINE SIGN DETAIL **35W**

NOTE:

SIGNS SHALL BE 6" WIDE X 12" LONG, ALUMINUM (0.080 GA.). SIGN COLOR IS WHITE WITH BLACK LETTERING. ROUNDED CORNERS (1.5" RAD.), 2 HOLES (3/8" DIAM.), 10" O.C.

SINGLE UNDERGROUND PIPELINE SIGN DETAIL **36W**

NOTES:

1. SIGNS SHALL BE 6" WIDE X 12" LONG, ALUMINUM (0.080 GA.). SIGN COLOR IS WHITE WITH BLACK LETTERING. ROUNDED CORNERS (1.5" RAD.), 2 HOLES (3/8" DIAM.), 10" O.C.
2. THE DUAL UNDERGROUND PIPELINE SIGN SHALL BE UTILIZED FOR TWO UNDERGROUND PIPELINES WITHIN THE L.W.D.D. RIGHT-OF-WAY.

DUAL UNDERGROUND PIPELINE SIGN DETAIL **37W**

NOTES:

1. 12" MINIMUM CLEARANCE TO BE MAINTAINED BETWEEN AUTOMATIC FLUSHING SYSTEM PAD AND ANY OBSTRUCTION.
2. FOR INSTALLATION OF SERVICES UNDER DRIVEWAYS AND ROADWAYS, USE MIN. 4" DIAMETER BLACK IRON, PVC SCH 40, OR HDPE SDR 9 CASING. CASING SHALL EXTEND MIN. 24" BEYOND EDGE OF PAVEMENT. CASING TO BE SEALED WITH CEMENT. CASING SHALL BE COLOR-CODED BLACK, WHITE, BLUE, OR BLUE STRIPED.
3. AUTOMATIC FLUSHING ASSEMBLY TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE WATER MAIN.
4. BEDDING (MIN. 4") AND COVER (MIN. 4") OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED WITH 2" MAXIMUM SIZE.
5. ALL HARDWARE FOR FLANGED CONNECTIONS (BOLTS, ETC.) TO BE STAINLESS STEEL.
6. THREADED AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO (2) WRAPS OF TEFLON TAPE. ALL BRASS SHALL BE "LEAD FREE".
7. A 4" THICK COMPACTED 3/4" ROCK BASE IS REQUIRED. THE BASE SHALL EXTEND MINIMUM 12" BEYOND AUTOMATIC FLUSHING ASSEMBLY PAD PERIMETER.

PRIOR DEPARTMENT APPROVAL REQUIRED BEFORE PROJECT BEING APPROVED FOR INSTALLATION.

AUTOMATIC FLUSHING ASSEMBLY (TYPE B) * **44W**

MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED

(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE		PIPE SIZE								300psi			
		4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
90° HORIZ. BEND		14	20	25	30	35	45	54	62	98	112	124	135
45° HORIZ. BEND		6	8	11	13	15	19	22	26	41	46	51	56
22.5° HORIZ. BEND		3	4	5	6	7	9	11	12	19	22	25	27
11.25° HORIZ. BEND		1	2	3	3	4	4	5	6	10	11	12	13
90° VERT. OFFSET	UPPER BEND	29	41	53	64	74	95	115	134	214	246	276	304
	LOWER BEND	7	10	13	16	19	25	30	35	57	66	74	83
45° VERT. OFFSET	UPPER BEND	12	19	24	29	34	39	48	56	89	102	114	126
	LOWER BEND	3	4	6	7	8	10	12	15	23	27	31	34
22.5° VERT. OFFSET	UPPER BEND	6	9	12	14	17	19	23	27	43	49	55	60
	LOWER BEND	1	2	4	4	4	5	6	7	11	13	15	16
11.25° VERT. OFFSET	UPPER BEND	3	4	6	7	8	9	11	13	21	24	27	30
	LOWER BEND	1	1	1	2	2	2	3	3	5	6	7	8
PLUG (DEAD END)		32	45	59	70	83	107	129	151	214	246	276	304
IN-LINE VALVE		32	45	45	45	45	55	65	80	110	125	140	155
TEE (BRANCH RESTRAINT)	4"X #	23	–	–	–	–	–	–	–	–	–	–	–
	6"X #	21	35	–	–	–	–	–	–	–	–	–	–
	8"X #	18	34	47	–	–	–	–	–	–	–	–	–
	10"X #	16	32	46	58	–	–	–	–	–	–	–	–
	12"X #	13	30	44	57	68	–	–	–	–	–	–	–
	16"X #	7	26	41	55	67	90	–	–	–	–	–	–
	20"X #	1	21	38	52	65	88	109	–	–	–	–	–
	24"X #	1	18	34	49	62	88	108	129	–	–	–	–
	30"X #	1	8	28	44	58	83	106	127	208	–	–	–
	36"X #	1	1	22	38	54	80	103	124	206	240	–	–
	42"X #	1	1	15	33	49	77	100	122	205	239	270	–
	48"X #	1	1	7	27	44	73	97	120	203	236	269	298
REDUCER (LARGER PIPE RESTRAINT)	6"X #	23	–	–	–	–	–	–	–	–	–	–	–
	8"X #	38	25	–	–	–	–	–	–	–	–	–	–
	10"X #	57	43	24	–	–	–	–	–	–	–	–	–
	12"X #	72	60	44	41	–	–	–	–	–	–	–	–
	16"X #	99	90	78	75	45	–	–	–	–	–	–	–
	20"X #	133	116	107	105	81	45	–	–	–	–	–	–
	24"X #	146	140	132	131	111	82	45	–	–	–	–	–
200psi	30"X #	209	204	197	188	177	153	116	75	–	–	–	–
	36"X #	243	236	233	226	217	196	158	135	74	–	–	–
	42"X #	273	270	265	259	252	234	211	183	133	72	–	–
	48"X #	301	298	294	289	283	268	249	226	183	131	71	–

NOTES:

1. THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
   - SOIL TYPE-SAND
   - TEST PRESSURE-150 PSI/200 PSI
   - DEPTH OF BURY-3'
   - TRENCH TYPE-3
   - SAFETY FACTOR- 1.5
   - VERTICAL OFFSET-3'
   - MINIMUM PIPE LENGTH ALONG TEE RUN-5'
2. THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
4. RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.
5. MULTIPLY PIPE LENGTH BY 1.4 FOR POLYETHYLENE ENCASED PIPE.
6. RESTRAINED PIPE LENGTHS EQUAL TO AN "INLINE VALVE" CONDITION ARE REQUIRED AT EACH END OF A TRANSITION FROM HDPE PIPE TO OTHER PIPE MATERIALS.
7. DESIGN ENGINEER IS RESPONSIBLE TO PROPERLY SIZE THE RESTRAINT PIPE LENGTHS FOR THE PROJECT

MECHANICAL THRUST RESTRAINT MINIMUM PIPE LENGTHS **34W**

MAXIMUM QUANTITY OF WATER (GALLONS PER HOUR) THAT MAY BE SUPPLIED TO MAINTAIN PRESSURE WITHIN 5 P.S.I. OF THE SPECIFIED TEST PRESSURE

(MECHANICAL OR PUSH-ON JOINT, 18 FT. NOMINAL LENGTHS, PER 1000 FT. OF PIPE)

AVG. TEST PRESSURE PSI	PIPE DIAMETER (INCHES) 2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
150	0.10	0.14	0.18	0.27	0.37	0.46	0.55	0.64	0.73	0.83	0.92	1.10	1.38	1.65	1.93	2.20
200	0.10	0.15	0.21	0.31	0.42	0.53	0.63	0.74	0.84	0.95	1.06	1.27	1.59	1.91	2.22	2.54

FORMULA BASIS: $L = \frac{(S) \times (D) \times (P)^{1/2}}{148{,}000} \times 1/2$

L = MAXIMUM QUANTITY OF WATER TO BE ADDED (GALLONS PER HOUR)
S = LENGTH OF PIPE TESTED (FEET)
D = DIAMETER OF PIPE (INCHES)
P = TEST PRESSURE (P.S.I.)

NOTES:

1. TO OBTAIN THE MAXIMUM QUANTITY OF WATER FOR PIPE WITH 20 FT. NOMINAL LENGTHS, MULTIPLY THE QUANTITY CALCULATED FROM THE TABLE BY 0.9
2. THE MAXIMUM QUANTITY OF ADDED WATER FOR A PIPELINE IS CALCULATED BY MULTIPLYING THE QUANTITY PER HOUR AS OBTAINED FROM THE ABOVE TABLE, BY THE DURATION OF THE TEST IN HOURS,AND BY THE TOTAL LENGTH OF THE LINE BEING TESTED DIVIDED BY 1,000. IF THE LINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE MAXIMUM QUANTITY ADDED WILL BE THE SUM OF THE COMPUTED QUANTITIES FOR EACH SIZE.
3. MAXIMUM TEST LENGTH = 2,500 FEET PER SECTION.
4. THIS STANDARD SHALL REFLECT ANY REVISION OF A.W.W.A. C-600. HOWEVER, THE MAXIMUM QUANTITY OF WATER ADDED SHALL NOT EXCEED 50% OF THE RECOMMENDED LIMIT PER APPLICABLE AWWA C-600 STANDARD.
5. STANDARD TEST PRESSURE = 150 P.S.I.; 200 P.S.I. FOR MAINS LARGER THAN 24"
6. PRESSURE TEST DURATION TO BE MIN. 2 HOURS.

POTABLE WATER MAIN PRESSURE TEST CRITERIA **31W**

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POTABLE WATER #4
STANDARD DETAILS

CONSULTANT:

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DESIGNED BY: WUD
DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

PROJECT NO.
6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
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(561)493-6000

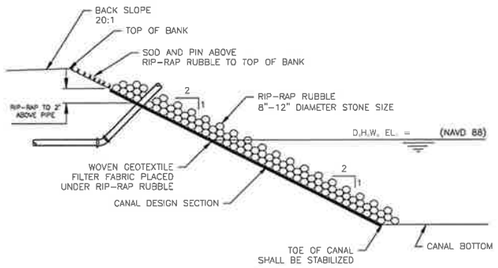
NO.	DATE	REVISION / REMARKS	BY
	JUNE 2019	GENERAL REVISION	J.L.

STD DETAILS

SHEET NUMBER
C-9
OF
17

SEAL

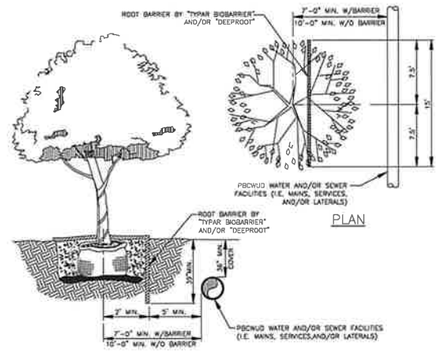
Oct 01, 2021



NOTES:

1. RIP-RAP RUBBLE AND ITS INSTALLATION MUST MEET CANAL OWNERSHIP SPECIFICATIONS AND PERMITTING REQUIREMENTS.
2. DUMP RUBBLE IN PLACE FORMING A COMPACT LAYER CONFORMING TO THE CANAL DESIGN SECTION SLOPE. ENSURE THAT RUBBLE DOES NOT SEGREGATE SO THAT SMALLER PIECES EVENLY FILL THE VOIDS BETWEEN LAGER PIECES.
3. AN ALTERNATIVE DESIGN WILL BE CONSIDERED AND MUST RECEIVE PRIOR APPROVAL FROM THE CANAL PROPERTY OWNER.

RIP-RAP RUBBLE DETAIL

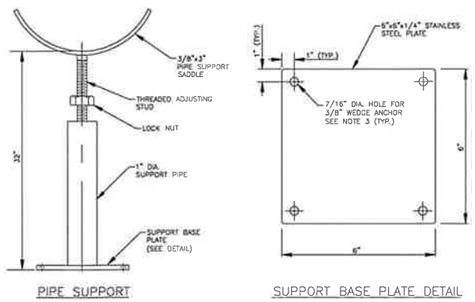


SECTION

NOTES:

1. TREES SHOWN ON THIS PLAN ARE FOR GRAPHIC REPRESENTATION ONLY. TREE SPACING IS BASED ON DESIGN REQUIREMENTS AND THE TREES SHOWN ON THESE PLANS ATTEMPT TO ACCOMPLISH THAT SPACING WHILE MAINTAINING THE REQUIRED SETBACKS FROM UTILITIES. TREES MAY BE FIELD ADJUSTED TO AVOID CONFLICTS WITH DRIVEWAYS AND UNDERGROUND UTILITIES. IN ANY CASE THE TREES SHALL BE LOCATED IN THE FIELD IN ACCORDANCE WITH THE PLANTING DETAILS SHOWN HEREON.
2. TREES ARE TO BE INSTALLED WITH A TEN FOOT (10') SEPARATION FROM ANY WATER OR SEWER MAIN AND/OR SERVICE, HYDRANTS, AND LIFT STATIONS. IF A TEN FOOT (10') SEPARATION CANNOT BE ACHIEVED, THE TREE CAN BE INSTALLED WITH A ROOT BARRIER SYSTEM. HOWEVER, IN NO CASE SHALL A TREE ENCROACH INTO A PBCUE WITHOUT PRIOR DEPARTMENT APPROVAL.
3. ONLY SOD CAN BE INSTALLED WITHIN 7.5' MINIMUM OF A FLUSHING HYDRANT UNLESS OTHERWISE APPROVED BY THE FIRE MARSHAL AND THE DEPARTMENT.
4. SOD ONLY SHALL BE INSTALLED WITHIN 3.0' MINIMUM OF ANY DEPARTMENT RECLAIMED WATER METER.

LANDSCAPE AND ROOT BARRIER DETAIL



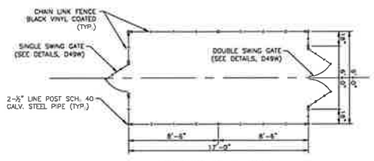
PIPE SUPPORT

SUPPORT BASE PLATE DETAIL

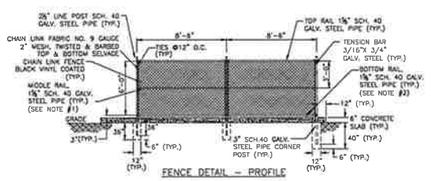
NOTES:

1. SHOP DRAWING FOR THE METER ASSEMBLY PIPE SUPPORT IS REQUIRED TO BE SUBMITTED FOR APPROVAL BY THE DEPARTMENT PRIOR TO THE PIPE SUPPORT BEING CONSTRUCTED AND/OR INSTALLED. ALL PIPE SUPPORTS FOR EACH METER ASSEMBLY INSTALLATION SHALL BE THE SAME.
2. ALL PIPE SUPPORT MATERIALS AND MOUNTING HARDWARE ARE REQUIRED TO BE 304 STAINLESS STEEL.
3. THE REQUIRED WEDGE ANCHORS FOR EACH SUPPORT SHALL BE 3/8" DIAMETER WITH NOMINAL EMBEDMENT OF 2-3/8". EACH ANCHOR SHALL HAVE A WASHER, LOCK WASHER, AND NUT.

ABOVE GROUND WATER METER INSTALLATION
PIPE SUPPORT



FENCE DETAIL - PLAN



FENCE DETAIL - PROFILE

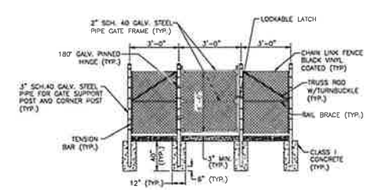
FENCE DESIGN NOTES FOR "OTHER UTILITY FACILITIES":

1. MIDDLE RAIL REQUIRED ONLY AT CORNERS AND CHANGES OF DIRECTION.
2. BOTTOM RAIL IS NOT REQUIRED; TENSION WIRE IS REQUIRED WOVEN THROUGH FABRIC AT MAX. 18" SPACING.

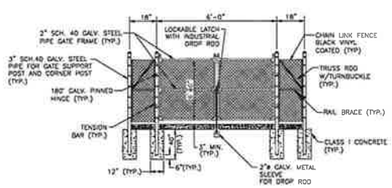
GENERAL NOTES:

1. BLACK VINYL COATING IS REQUIRED FOR ALL FENCE FABRIC, ALL POSTS, BRACES, RAILS, AND ACCESSORIES.
2. ALL POSTS SHALL BE CAPPED WITH GALVANIZED STEEL TOPS. LINE POST TOPS SHALL PROVIDE FOR PASSAGE OF TOP RAIL.
3. ALL WELDED JOINTS SHALL BE COATED WITH A 2 PART EPOXY PAINT.
4. RAIL SPLICES TO BE LOCATED WITHIN 12" OF A FENCE POST

ABOVE GROUND WATER METER ENCLOSURE
FENCE DETAIL



SINGLE SWING GATE DETAIL



DUAL SWING GATE DETAIL

GENERAL NOTES:

1. BLACK VINYL COATING IS REQUIRED FOR ALL FENCE FABRIC, ALL POSTS, BRACES, RAILS, AND ACCESSORIES.
2. ALL POSTS SHALL BE CAPPED WITH GALVANIZED STEEL TOPS. LINE POST TOPS SHALL PROVIDE FOR PASSAGE OF TOP RAIL.
3. ALL WELDED JOINTS SHALL BE COATED WITH A 2 PART EPOXY PAINT.
4. RAIL SPLICES TO BE LOCATED WITHIN 12" OF A FENCE POST

ABOVE GROUND WATER METER ENCLOSURE
SWING GATE DETAIL

PROJECT NO.
6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

NO.	DATE	REVISION / REMARKS	BY
1	JUNE 2019	PC GENERAL REVISION	LL

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PLANNING & ENGINE

POTABLE WATER #5
STANDARD DETAILS

CONSULTANT:

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DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

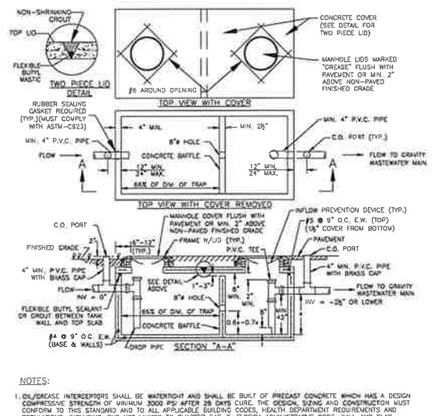
STD DETAILS

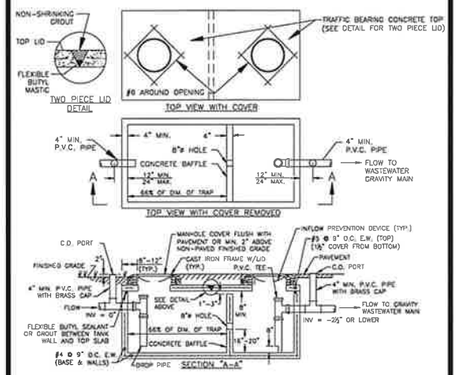
SHEET NUMBER
C-10
OF
17

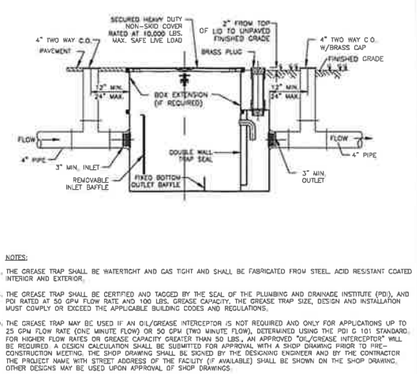
SEAL

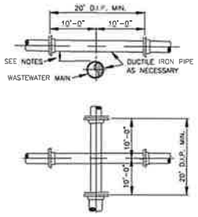
Oct 01, 2021

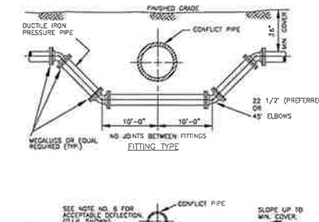
Drawing: P:\6400\6464 00 Chickasaw Rd Property\CIVIL\Design\Drawings\6464000-CV-WSD.dwg\WUD PWS-5 - Last Modified: Fri, Oct 01, 2021 - 2:36pm

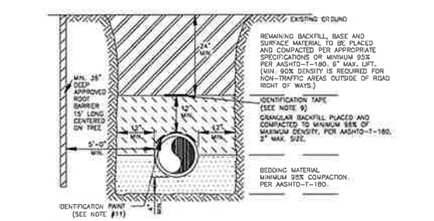


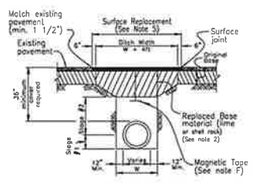


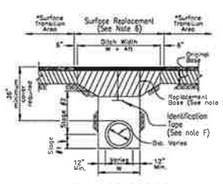












NOTES:

1. OIL/GREASE INTERCEPTORS SHALL BE WATERTIGHT AND SHALL BE BUILT OF PRECAST CONCRETE WHICH HAS A DESIGN COMPRESSIVE STRENGTH OF MINIMUM 3000 PSI AFTER 28 DAYS CURE. THE DESIGN, SIZING AND CONSTRUCTION MUST CONFORM TO THIS STANDARD AND TO ALL APPLICABLE BUILDING CODES, HEALTH DEPARTMENT REQUIREMENTS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO CHAPTER 64E-6, FLORIDA ADMINISTRATIVE CODE. WALL AND SLAB THICKNESS SHOWN ARE MINIMUMS, AND SHALL BE DETERMINED BY THE OWNER'S ENGINEER. THE CONCRETE BOX SHALL BE MONOLITHIC POURED AND SHALL HAVE A PRECAST HOLE ON EACH END ONLY FOR LATERAL. THE PRECAST HOLES SHALL HAVE CAST-IN BOOTS WHENEVER POSSIBLE. AN ALTERNATIVE TYPE OF INTERCEPTOR OTHER THAN A PRECAST CONCRETE STRUCTURE MAY BE INSTALLED ONLY WITH PRIOR DEPARTMENT APPROVAL. SHOP DRAWINGS ARE REQUIRED TO BE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE PRE-CONSTRUCTION MEETING FOR ALL INTERCEPTORS.
2. THE OIL/GREASE INTERCEPTOR SHALL BE USED FOR APPLICATIONS EXCEEDING 25 GPM FLOW RATE, DETERMINED USING THE PLUMBING AND DRAINAGE INSTITUTE PDI G101 STANDARD. A DESIGN CALCULATION MUST BE SUBMITTED FOR APPROVAL WITH A SHOP DRAWING PRIOR TO THE PRE-CONSTRUCTION MEETING. FOR APPLICATIONS UP TO 25 GPM FLOW RATE (ONE MINUTE FLOW) OR 50 GPM (TWO MINUTE FLOW), AN APPROVED OUTDOOR "GREASE TRAP" MAY BE USED; OTHER DESIGNS MAY BE CONSIDERED UPON SUBMITTAL AND APPROVAL OF SHOP DRAWINGS.
3. INSPECTION PORTS (CLEAN OUTS) ARE REQUIRED TO BE INSTALLED AT EACH END OF ANY TYPE OF INTERCEPTOR WITH PORTS TO REMAIN EASILY ACCESSIBLE FOR UTILITY INSPECTION AND SAMPLING.
4. THE INTERCEPTOR AND CLEAN-OUTS PORT SHALL BE LOCATED OUTSIDE AND IN NON-TRAFFIC AREA WHENEVER POSSIBLE. IF INSTALLED IN IN A TRAFFIC AREA MINI-MANHOLES ARE REQUIRED ON THE INSPECTION PORTS (CLEAN OUTS). THE SURFACE SURROUNDING THE INTERCEPTOR SHALL BE SLOPED TO DRAIN STORM WATER AWAY FROM THE INTERCEPTOR.
5. THE CAPACITY DETERMINATION FOR THE INTERCEPTOR IS THE RESPONSIBILITY OF THE OWNER/CUSTOMER. THE MINIMUM VOLUME OF ANY GREASE INTERCEPTOR SHALL BE 750 GALLONS AND THE MAXIMUM VOLUME OF A SINGLE GREASE INTERCEPTOR SHALL BE 1250 GALLONS. WHEN THE REQUIRED EFFECTIVE CAPACITY OF THE GREASE INTERCEPTOR IS GREATER THAN 1250 GALLONS, INSTALLATION OF MULTIPLE GREASE INTERCEPTORS IN SERIES IS REQUIRED.
6. NO BAFFLE IS REQUIRED IF THERE ARE MULTIPLE GREASE INTERCEPTORS INSTALLED IN SERIES. HOWEVER, CLEANOUT PORTS MUST BE INSTALLED ON EACH END OF EACH INTERCEPTOR.
7. THE PROPERTY OWNER/CUSTOMER SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE INTERCEPTOR.
8. THE GREASE INTERCEPTOR SHALL NOT BE USED FOR THE PURPOSE OF INTERCEPTING SAND AND OIL FROM NON- FOOD HANDLING ESTABLISHMENTS.
9. EACH FACILITY WITH AN OIL/GREASE INTERCEPTOR SHALL HAVE A SEPARATE (NOT SHARED) INTERCEPTOR AND SHALL BE INDIVIDUALLY METERED THROUGH THE DEPARTMENT.
10. A "GREASE TRAP" OR "OIL/GREASE INTERCEPTOR" SHALL BE REQUIRED TO RECEIVE THE DRAINAGE FROM FIXTURES AND EQUIPMENT (SINKS, DISHWASHERS, FLOOR DRAINS, CAN WASH AREAS, ETC.) WITH GREASE LADEN WASTE LOCATED IN COMMERCIAL FOOD PREPARATION AREAS SUCH AS RESTAURANTS, HOTEL KITCHENS, HOSPITALS, SCHOOL KITCHENS, BARS, FACTORY CAFETERIAS, CLUBS, ETC.
11. THE "GREASE TRAP" OR "OIL/GREASE INTERCEPTOR" SHALL BE LOCATED AS CLOSE AS PRACTICALLY POSSIBLE TO THE FIXTURES AND EQUIPMENT GENERATING GREASE.
12. A "SOLIDS INTERCEPTOR" SHALL BE CONSIDERED TO BE INSTALLED UPSTREAM OF A " GREASE TRAP" WHERE SUBSTANTIAL AMOUNT OF SOLIDS FROM FOOD GRINDERS, DISPOSALS MAY BE PRESENT.
13. MANHOLE COVER SHALL BE MACHINED TO ACCEPT INFLOW PROTECTOR.

OIL/ GREASE INTERCEPTOR

✳ 1S

NOTES:

1. SAND/OIL INTERCEPTORS SHALL BE WATERTIGHT AND SHALL BE BUILT OF PRECAST CONCRETE WHICH HAS A DESIGN COMPRESSIVE STRENGTH OF MINIMUM 3000 PSI AFTER 28 DAYS CURE. THE DESIGN, SIZING AND CONSTRUCTION MUST CONFORM TO THIS STANDARD AND TO ALL APPLICABLE BUILDING CODES, HEALTH DEPARTMENT REQUIREMENTS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO CHAPTER 64E-6, FLORIDA ADMINISTRATIVE CODE. WALL AND SLAB THICKNESS SHOWN ARE MINIMUMS, AND SHALL BE DETERMINED BY THE OWNER'S ENGINEER. THE CONCRETE BOX SHALL BE MONOLITHIC POURED AND SHALL HAVE A PRECAST HOLE ON EACH END ONLY FOR LATERAL. THE PRECAST HOLES SHALL HAVE CAST-IN BOOTS WHENEVER POSSIBLE.
2. AN ALTERNATIVE TYPE OF INTERCEPTOR STRUCTURE MAY BE INSTALLED ONLY WITH PRIOR DEPARTMENT APPROVAL. SHOP DRAWINGS ARE REQUIRED TO BE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE PRE-CONSTRUCTION MEETING FOR ALL INTERCEPTORS.
3. INSPECTION PORTS (CLEAN OUTS) ARE REQUIRED TO BE INSTALLED AT EACH END OF ANY TYPE OF INTERCEPTOR WITH PORTS TO REMAIN EASILY ACCESSIBLE FOR UTILITY INSPECTION AND SAMPLING.
4. THE INTERCEPTOR SHALL BE LOCATED IN GRASS AREA/NON-TRAFFIC AREA WHENEVER POSSIBLE. THE SURFACE SURROUNDING THE INTERCEPTOR SHALL BE SLOPED TO DRAIN STORM WATER AWAY FROM THE INTERCEPTOR.
5. THE CAPACITY DETERMINATION FOR THE INTERCEPTOR IS THE RESPONSIBILITY OF THE OWNER/CUSTOMER. THE MINIMUM VOLUME OF A SAND/OIL INTERCEPTOR SHALL BE 750 GALLONS. WHEN THE REQUIRED EFFECTIVE CAPACITY OF THE SAND/OIL INTERCEPTOR IS GREATER THAN 750 GALLONS, INSTALLATION OF SINGLE COMPARTMENT SAND/OIL INTERCEPTORS IN SERIES IS REQUIRED.
6. THE PROPERTY OWNER/CUSTOMER SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE INTERCEPTOR.
7. SAND/OIL INTERCEPTOR SHALL NOT BE USED FOR THE PURPOSE OF INTERCEPTION OF GREASE FROM FOOD HANDLING ESTABLISHMENTS.
8. EACH FACILITY REQUIRED TO HAVE A SAND/OIL INTERCEPTOR SHALL HAVE A SEPERATE INTERCEPTOR AND SHALL BE INDIVIDUALLY METERED THROUGH THE DEPARTMENT.
9. MANHOLE LIDS SHALL BE MACHINED TO ACCEPT INFLOW PREVENTER.

SAND/ OIL INTERCEPTOR

✳ 2S

NOTES:

1. THE GREASE TRAP SHALL BE WATERTIGHT AND GAS TIGHT AND SHALL BE FABRICATED FROM STEEL. ACID RESISTANT COATED INTERIOR AND EXTERIOR.
2. THE GREASE TRAP SHALL BE CERTIFIED AND TAGGED BY THE SEAL OF THE PLUMBING AND DRAINAGE INSTITUTE (PDI), AND PDI RATED AT 50 GPM FLOW RATE AND 100 LBS. GREASE CAPACITY. THE GREASE TRAP SIZE, DESIGN AND INSTALLATION MUST COMPLY OR EXCEED THE APPLICABLE BUILDING CODES AND REGULATIONS.
3. THE GREASE TRAP MAY BE USED IF AN OIL/GREASE INTERCEPTOR IS NOT REQUIRED AND ONLY FOR APPLICATIONS UP TO 25 GPM FLOW RATE (ONE MINUTE FLOW) OR 50 GPM (TWO MINUTE FLOW), DETERMINED USING THE PDI G 101 STANDARD. FOR HIGHER FLOW RATES OR GREASE CAPACITY GREATER THAN 50 LBS., AN APPROVED "OIL/GREASE INTERCEPTOR" WILL BE REQUIRED. A DESIGN CALCULATION SHALL BE SUBMITTED FOR APPROVAL WITH A SHOP DRAWING PRIOR TO PRE-CONSTRUCTION MEETING. THE SHOP DRAWING SHALL BE SIGNED BY THE DESIGNING ENGINEER AND BY THE CONTRACTOR. THE PROJECT NAME WITH STREET ADDRESS OF THE FACILITY (IF AVAILABLE) SHALL BE SHOWN ON THE SHOP DRAWING. OTHER DESIGNS MAY BE USED UPON APPROVAL OF SHOP DRAWINGS.
4. THE GREASE TRAP SHALL BE LOCATED OUTDOORS, EASY ACCESSIBLE FOR MAINTENANCE AND SAMPLING, PREFERABLY IN GRASS AREA, NOT IN TRAFFIC AREA, PARKING SPACES OR SIDEWALKS. THE SURFACE SURROUNDING THE GREASE TRAP SHALL BE SLOPED TO DRAIN STORM WATER AWAY FROM THE GREASE TRAP.
5. THE GREASE TRAP SHALL NOT BE USED FOR THE PURPOSE OF INTERCEPTING SAND AND OIL FROM NON-FOOD HANDLING ESTABLISHMENTS.
6. THE PROPERTY OWNER/CUSTOMER SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE GREASE TRAP.
7. EACH FACILITY WITH A GREASE TRAP SHALL BE INDIVIDUALLY METERED THROUGH THE DEPARTMENT.
8. EACH FACILITY WHICH IS REQUIRED TO INSTALL A GREASE TRAP SHALL HAVE A SEPARATE (NOT SHARED) GREASE TRAP.
9. INSPECTION PORTS (CLEAN OUTS) ARE REQUIRED TO BE INSTALLED AT EACH END OF ANY TYPE OF INTERCEPTOR WITH PORTS TO REMAIN EASILY ACCESSIBLE FOR UTILITY INSPECTION AND SAMPLING.
10. A "GREASE TRAP" OR "OIL/GREASE INTERCEPTOR" SHALL BE REQUIRED TO RECEIVE THE DRAINAGE FROM FIXTURES AND EQUIPMENT (SINKS, DISHWASHERS, FLOOR DRAINS, CAN WASH AREAS, ETC.) WITH GREASE LADDEN WASTE LOCATED IN COMMERCIAL FOOD PREPARATION AREAS SUCH AS RESTAURANTS, HOTEL KITCHENS, HOSPITALS, SCHOOL KITCHENS, BARS, FACTORY CAFETERIAS, CLUBS, ETC.
11. THE "GREASE TRAP" OR "OIL/GREASE INTERCEPTOR" SHALL BE LOCATED AS CLOSE PRACTICALLY POSSIBLE TO THE FIXTURES AND EQUIPMENT GENERATING GREASE.
12. GREASE TRAPS SHALL BE EQUIPPED WITH DEVICES TO CONTROL THE RATE OF FLOW, SO THE RATE OF THE FLOW DO NOT EXCEED 25 GPM. THE FLOW CONTROL DEVICE SHALL BE INSTALLED IN ACCORDANCE WITH THE CODE AND MANUFACTURER'S INSTRUCTIONS.
13. A "SOLIDS INTERCEPTOR" SHALL BE CONSIDERED TO BE INSTALLED UPSTREAM OF A " GREASE TRAP" WHERE SUBSTANTIAL AMOUNT OF SOLIDS FROM FOOD GRINDERS, DISPOSALS MAY BE PRESENT.

GREASE TRAP

✳ 3S

NOTES:

1. STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 12" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
2. WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN (A MIN. 6' SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS). MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.
3. FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
4. WASTEWATER LATERALS SHALL CROSS UNDER POTABLE WATER MAINS WITH A MIN. 12" VERTICAL SEPARATION WHENEVER POSSIBLE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, A 20' SECTION OF DUCTILE IRON PIPE POTABLE WATER MAIN CENTERED ON THE CROSSING IS REQUIRED AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6". WHERE THERE IS NO ALTERNATIVE TO A WASTEWATER LATERAL PIPE CROSSING OVER A POTABLE WATER MAIN, A MINIMUM 12" VERTICAL SEPARATION IS REQUIRED, THE LATERAL SHALL BE P.V.C. C-900 SDR18 OR BETTER, THE POTABLE WATER MAIN SHALL BE D.I.P. AND THE PIPE JOINTS SHALL BE EQUIDISTANT FROM THE POINT OF CROSSING.
5. POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCASED IN A MIN. 10' LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
6. WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

POTABLE WATER MAN, WASTEWATER MAIN, AND STORM SEWER CONFLICT

4S

NOTES:

1. STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 12" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
2. WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN (A MIN. 6' SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS.) MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.
3. FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
4. FITTINGS SHALL BE RESTRAINED.
5. THE DEFLECTION TYPE CROSSING IS PREFERRED.
6. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
7. ALL EXPOSED TIE STEEL SHALL BE COATED WITH COAL-TAR EPOXY.
8. POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCASED IN A MIN. 10' LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
9. WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

POTABLE WATER MAIN/FORCE MAIN PRESSURE PIPE CONFLICT

5S

NOTES:

1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"- 7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND DEBRIS.
5. DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM, MINIMUM 1 SET OF TESTS FOR EACH WASTEWATER GRAVITY MAIN RUN, OR AS DIRECTED BY THE INSPECTOR.
6. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
7. SEE SEPARATE DETAILS FOR "PIPE INSTALLATION UNDER EXISTING PAVEMENT – OPEN CUT."
8. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
9. APPROVED MAGNETIC TAPE IS REQUIRED FOR: ALL POTABLE WATER MAINS, FORCE MAINS AND RECLAIMED WATER MAINS. THE TAPE SHALL BE INSTALLED MAX. 24" BELOW FINISHED GRADE.
10. ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATION CLOSER THAN 10 FEET FROM UTILITY FACILITIES.
11. CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SEWER MAINS (GREEN), AND DIP RECLAIMED WATER MAINS (PURPLE).
12. PERMANENT ABOVE GROUND UTILITY MARKER SHALL BE INSTALLED IF REQUIRED BY PROPERTY OWNER GRANTING THE PIPE INSTALLATION PERMIT.
13. FOR PIPE INSTALLATIONS IN ROAD RIGHTS-OF-WAY, ROAD OWNER'S PERMIT SPECIFICATIONS SHALL APPLY.

TYPICAL TRENCH DETAIL ROOT BARRIER INSTALLATION

8S

CONSTRUCTION PROCEDURES

THE BACKFILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 6" LIFTS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

STAGE 1:

THE CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.

STAGE 2:

THE CONTRACTOR SHALL OBTAIN A WELL-COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE TOP OF SUB-GRADE MATERIAL.

REPLACEMENT OF FLEXIBLE PAVEMENT FOR PERMITTED PAVEMENT CUT

CONSTRUCTION NOTES

1) BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8" – 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2) REPLACED BASE MATERIAL (PER LAND DEVELOPMENT DESIGN STANDARDS) OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE OR 12" MINIMUM, WHICHEVER IS GREATER.
3) ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
4) BASE MATERIAL SHALL BE PLACED IN TWO OR THREE LAYERS (6" MAX. PER LAYER) AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY.
5) SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE OR 1 1/2" SI ASPHALTIC CONCRETE WITH RC-70 PRIME COAT AT 0.10 GAL/SQ. YD.
6) PIPE SHALL BE PLACED IN A DRY TRENCH.

GENERAL NOTES

A) ALL ROADWAY REPAIR WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND COUNTY PPM# EL-O-3606.
B) DENSITY TESTS SHALL BE TAKEN IN 1 FT LIFTS ABOVE THE PIPE AT INTERVALS OF 400 FT MAXIMUM (1 SET MINIMUM) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION DIVISION AS PART OF THEIR FIELD REVIEW.
C) ENGINEER-OF-RECORD SHALL PROVIDE FULL-TIME INSPECTION DURING THE ENTIRETY OF THE OPEN-CUT OPERATION, BEGINNING WITH THE EXCAVATION AND CONTINUING THROUGH THE COMPLETION OF THE PAVING.
D) IF THE PAVEMENT IS NOT COMPLETELY RESTORED IMMEDIATELY FOLLOWING THE OPEN CUT, A SMOOTH TEMPORARY PATCH (MINIMUM 1.25" ASPHALT) SHALL BE INSTALLED, PROPERLY MATCHING THE EXISTING GRADING OF THE ROADWAY. THE TEMPORARY PATCH SHALL BE ALLOWED TO REMAIN IN PLACE AND BE MAINTAINED FOR A PERIOD NO LONGER THAN 45 DAYS. THE COUNTY RETAINS THE RIGHT TO USE POSTED SURETY TO COMPLETE ANY RESTORATION WORK THAT HAS NOT BEEN COMPLETED IN THE 45 DAYS PERIOD. ALTERNATIVE TEMPORARY TRENCH PROTECTION (STEEL PLATES OR OTHERS) MAY BE APPROVED BY THE CONSTRUCTION COORDINATION DIVISION.
E) FOR THE FINAL RESTORATION, THE ROAD SHALL BE MILLED AND RESURFACED WITH 1-1/2" (ONE AND A HALF INCH) OF SIII OR SI ASPHALT SURFACE COURSE FOR A FULL LANE WIDTH ENCROACHED BY THE TRENCH.
F) APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE COUNTY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
G) CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY MAINS (GREEN), DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA.

OPEN CUT PIPE INSTALLATION NON–THOROUGHFARE ROAD

6S

CONSTRUCTION PROCEDURES

THE BACKFILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 6" LIFTS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

STAGE 1:

THE CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.

STAGE 2:

THE CONTRACTOR SHALL OBTAIN A WELL-COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE TOP OF SUB-GRADE MATERIAL.

REPLACEMENT OF FLEXIBLE PAVEMENT FOR PERMITTED PAVEMENT CUT

CONSTRUCTION NOTES

1) BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8" – 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2) REPLACED BASE MATERIAL OVER DITCH SHALL BE 18" MINIMUM FOR THOROUGHFARE PLAN ROADS.
3) ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
4) BASE MATERIAL (PER ROADWAY PRODUCTION DESIGN STANDARDS) SHALL BE PLACED IN TWO OR THREE LAYERS (6" MAX. PER LAYER) AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY.
5) * SURFACE TRANSITION AREA (SEE PLANS FOR LOCATION). OVERLAY OR MILL/RESURFACE FOR A DISTANCE OF 50'ON BOTH SIDES OF THE OPEN CUT AND FOR A FULL LANE WIDTH.
6) 1" SIII ASPHALTIC CONCRETE OVER 1 1/2" SI ASPHALTIC CONCRETE WITH RC-70 PRIME COAT AT 0.10 GAL/SQ. YD.
7) PIPE SHALL BE PLACED IN A DRY TRENCH.

GENERAL NOTES

A) ALL ROADWAY REPAIR WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND COUNTY PPM# EL-O-3605.
B) DENSITY TESTS SHALL BE TAKEN IN 1 FT LIFTS ABOVE THE PIPE AT INTERVALS OF 400 FT MAXIMUM (1 SET MINIMUM) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION DIVISION AS PART OF THEIR FIELD REVIEW.
C) ENGINEER-OF-RECORD WILL PROVIDE FULL-TIME INSPECTION DURING THE ENTIRETY OF THE OPEN-CUT OPERATION, BEGINNING WITH THE EXCAVATION AND CONTINUING THROUGH THE COMPLETION OF THE PAVING.
D) IF THE PAVEMENT IS NOT COMPLETELY RESTORED IMMEDIATELY FOLLOWING THE OPEN CUT, A SMOOTH TEMPORARY PATCH (MINIMUM 1.25" ASPHALT) SHALL BE INSTALLED, PROPERLY MATCHING THE EXISTING GRADING OF THE ROADWAY. THE TEMPORARY PATCH SHALL BE ALLOWED TO REMAIN IN PLACE AND BE MAINTAINED FOR A PERIOD NO LONGER THAN 45 DAYS. THE COUNTY RETAINS THE RIGHT TO USE POSTED SURETY TO COMPLETE ANY RESTORATION WORK THAT HAS NOT BEEN COMPLETED IN THE 45 DAYS PERIOD. ALTERNATIVE TEMPORARY TRENCH PROTECTION (STEEL PLATES OR OTHERS) MAY BE APPROVED BY THE CONSTRUCTION COORDINATION DIVISION.
E) THE FINAL RESTORATION, THE ROAD SHALL BE MILLED/RESURFACED FOR A FULL LANE WIDTH OF THE TRAVEL LANES ENCROACHED BY THE TRENCH AREA, INCLUDING A TRANSITION AREA OF 50 FT ON EACH SIDE OF THE TRENCH. THE PAVEMENT SHALL BE MILLED AND RESURFACED PER CONSTRUCTION NOTE 6.
F) APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE COUNTY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
G) CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY MAINS (GREEN), DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA.

OPEN CUT PIPE INSTALLATION THOROUGHFARE ROAD

7S

I. FORCE MAINS AND GRAVITY WASTEWATER MAINS WITHIN WELLFIELD PROTECTION ZONE

PRESSURE TEST PROCEDURE TO FOLLOW THE CURRENT AWWA C-600 STANDARD (150psi, (2) HOUR DURATION).

THERE SHALL BE NO PRESSURE DROP IN THE PIPE DURING THE TEST ("ZERO" FILL-UP TOLERANCE).

II. FORCE MAINS OUTSIDE OF WELLFIELD PROTECTION ZONE

MAXIMUM QUANTITY OF WATER (GALLONS PER HOUR) THAT MAY BE SUPPLIED TO MAINTAIN PRESSURE WITHIN 5 P.S.I. OF THE SPECIFIED TEST PRESSURE

(MECHANICAL OR PUSH-ON JOINT, 18 FT. NOMINAL LENGTHS, PER 1000 FT. OF PIPE)

AVG. TEST PRESSURE PSI	PIPE DIAMETER (INCHES)															
	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
150	0.10	0.14	0.18	0.27	0.37	0.46	0.55	0.64	0.73	0.83	0.92	1.10	1.38	1.65	1.93	2.20

FORMULA BASIS: $L = \frac{(S) \times (D) \times (P)^{1/2}}{148{,}000} \times 1/2$

L = MAXIMUM QUANTITY OF WATER TO BE ADDED (GALLONS PER HOUR)
S = LENGTH OF PIPE TESTED (FEET)
D = DIAMETER OF PIPE (INCHES)
P = TEST PRESSURE (P.S.I.)

NOTES:

1. TO OBTAIN THE MAXIMUM QUANTITY OF WATER FOR PIPE WITH 20 FT. NOMINAL LENGTHS, MULTIPLY THE QUANTITY CALCULATED FROM THE TABLE BY 0.9
2. THE MAXIMUM QUANTITY OF ADDED WATER FOR A PIPELINE IS CALCULATED BY MULTIPLYING THE QUANTITY PER HOUR AS OBTAINED FROM THE ABOVE TABLE, BY THE DURATION OF THE TEST IN HOURS,AND BY THE TOTAL LENGTH OF THE LINE BEING TESTED DIVIDED BY 1,000. IF THE LINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE MAXIMUM QUANTITY ADDED WILL BE THE SUM OF THE COMPUTED QUANTITIES FOR EACH SIZE.
3. MAXIMUM TEST LENGTH = 2,500 FEET PER SECTION.
4. THIS STANDARD SHALL REFLECT ANY REVISION OF A.W.W.A. C-600, HOWEVER, THE MAXIMUM QUANTITY OF WATER ADDED SHALL NOT EXCEED 50% OF THE RECOMMENDED LIMIT PER APPLICABLE AWWA C-600 STANDARD.
5. STANDARD TEST PRESSURE = 150 P.S.I.
6. PRESSURE TEST DURATION TO BE MIN. 2 HOURS.

PRESSURE TEST CRITERIA FOR GRAVITY WASTEWATER MAIN IN WELL FIELD & FORCE MAIN

10S

GRAVITY WASTEWATER MAIN

NOTE:

DUCTILE IRON FITTINGS (WYE, TEE, SLEEVES) ARE REQUIRED FOR DUCTILE IRON AND/OR C-900 PVC MAIN.

DUCTILE IRON-MECHANICAL JOINT (FORCE MAIN)

NOTE:

MEGALUGS OR EQUAL ARE REQUIRED THROUGHOUT ASSEMBLY.

WASTEWATER SYSTEM STANDARD CUT-IN DETAILS

9S

WASTEWATER #1
STANDARD DETAILS

CONSULTANT:

DESIGNED BY: WUD
DRAWN BY: M. BUCKNER
CHECKED BY: J.LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

PROJECT NO.
6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

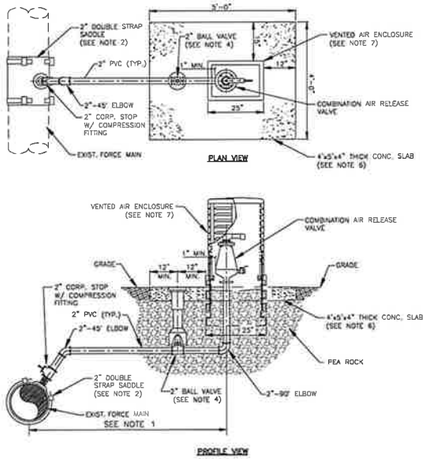
NO.	DATE	REVISION/ REMARKS	BY
	JUNE 2019	GENERAL REVISION	J.L.

STD DETAILS

SHEET NUMBER
C–11
OF
17

SEAL

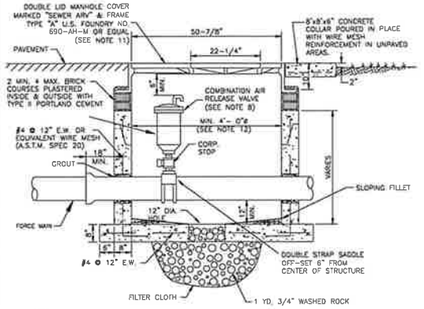
Oct 01, 2021



NOTES:

1. OFF-SET DISTANCE VARIES ON LOCATION OF FORCE MAIN TO ARV ENCLOSURE. IN NO CASE SHALL THE OFF-SET DISTANCE EXCEED 10' UNLESS OTHERWISE APPROVED BY THE DEPARTMENT PRIOR TO INSTALLATION.
2. 2" DOUBLE STRAP SADDLE TO BE INSTALLED ON A 45 DEGREE ANGLE IN THE DIRECTION OF THE OFF-SET ARV ENCLOSURE.
3. ALL PVC PIPING AND FITTINGS TO BE SCHEDULE 80.
4. 2" BALL VALVE AND CORPORATION STOP SHALL BE BRASS WITH COMPRESSION FITTINGS ON EACH END.
5. ALL FITTINGS AND VALVES SHALL BE COMPRESSION TYPE.
6. CONCRETE PAD FOR WATER METER ASSEMBLY SHALL BE 4" THICK WITH WIRE MESH (4"x4")
7. VENTED ENCLOSURE SHALL BE CHANNELL COMPANY #SPH1420, SEE APPROVED MATERIALS AND EQUIPMENT LIST. ENCLOSURE SHALL BE CAPABLE OF ALLOWING THE SAME AMOUNT OF AIR FLOW AS THE ARV.
8. THIS FORCE MAIN OFF-SET ARV REQUIRES PREVIOUS DEPARTMENT APPROVAL PRIOR TO INSTALLATION.

FORCE MAIN AIR RELEASE VALVE W/ VENTED AIR ENCLOSURE * 85S



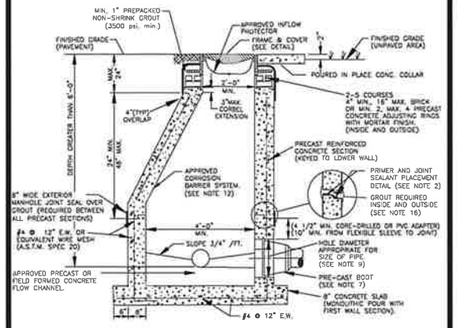
NOTES:

1. PRECAST 4000 P.S.I. TYPE II CONCRETE STRUCTURE. SHOP DRAWING IS REQUIRED TO BE APPROVED BY THE DEPARTMENT.
2. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
3. LIFT HOLES ARE PERMITTED.
4. ALL PIPE HOLES SHALL BE PRECAST.
5. MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478 LATEST STANDARD.
6. COAT INSIDE WITH AN APPROVED PROTECTIVE CORROSION BARRIER SYSTEM.
7. CONCRETE COLLAR REQUIRED WHEN MANHOLE IS OUTSIDE OF PAVEMENT, SEE DETAIL.
8. COMBINATION AIR RELEASE VALVE (ARV) SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED ALTHOUGH A 2" MINIMUM SIZED ARV IS REQUIRED ON FORCE MAIN INSTALLATIONS.
9. DUCTILE IRON PIPE IS REQUIRED THROUGH THE MANHOLE, NO PIPE JOINTS INSIDE THE MANHOLE.
10. THREADED AREAS OF CORPORATION STOP SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
11. FORCE MAINS 12" AND SMALLER, AN ALTERNATIVE VAULT AND COVER DESIGN MAY BE USED PROVIDED ALTERNATE VAULT AND/OR COVER SHOP DRAWINGS WERE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE VAULT AND/OR COVER BEING INSTALLED.
12. LARGER MANHOLES WILL BE REQUIRED FOR PIPES LARGER THAN 12"

PIPE SIZE	MIN. MANHOLE DIAMETER
16"-24"	60"
30"-42"	72"

13. MANHOLES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS.

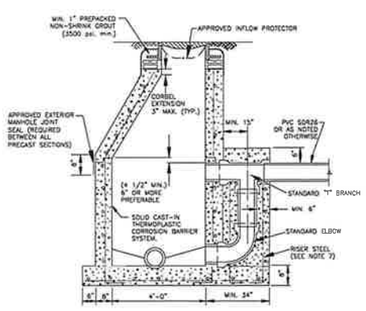
FORCE MAIN AIR RELEASE VALVE AND MANHOLE IN PAVED AREAS AND ROAD R/W * 40S



NOTES:

1. PRECAST CONCRETE TYPE II 4000 P.S.I. CALCAREOUS AGGREGATE REQUIRED (MIN. CaCO3 CONTENT: 65% IN LARGE AGGREGATE, 50% IN CONCRETE SCREENING).
2. INSTALL APPROVED JOINT SEALANT AT ALL RISER JOINTS WITH GROUT ON INSIDE AND OUTSIDE. MANHOLE SHOP DRAWINGS SHALL INCLUDE THE SIZE AND PLACEMENT OF JOINT SEALANT. AN APPROVED JOINT PRIMER SHALL BE APPLIED BY THE PRECASTER (TONGUE SECTION ONLY).
3. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
4. FLOW CHANNELS SHALL BE PRECAST OR FIELD CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM. (SEE DETAIL)
5. LIFT HOLES ARE PERMITTED.
6. ALL PIPE HOLES SHALL BE PRECAST OR CORE - DRILLED.
7. A. FOR THE PIPE ENTERING MANHOLE WITH PRECAST HOLES USE THE APPROVED PRECASTED FLEXIBLE MANHOLE SLEEVE FOR THE APPROPRIATE PIPE DIAMETER AND DIMENSION RATIO. DOUBLE BANDING IS REQUIRED FOR FLEXIBLE MANHOLE SLEEVE.
   B. CONNECTION TO A MANHOLE WITH A CORE DRILLED HOLE SHALL BE MADE USING A 6" MIN. PVC C900 DR 18 AND THE APPROVED PVC-MANHOLE ADAPTER. THE ADAPTER SHALL NOT EXTEND MORE THAN 1"INTO THE MANHOLE.
   C. THE INSIDE AND OUTSIDE SPACE BETWEEN PIPE AND MANHOLE WALL SHALL BE FILLED WITH GROUT
8. HIGGS LOOPS SHALL NOT BE DESIGNED TO EXCEED 1.80 FEET AND NOT CONSTRUCTED TO EXCEED 2.0 FEET. MAX. 6" INSIDE DROP IS PERMITTED FOR MANHOLES WITH 3 OR MORE INVERTS AND MANHOLES WITH A CHANGE IN FLOW DIRECTION OF MORE THAN 45 DEGREES.
9. 4" DIAMETER PIPE: 13" HOLE FOR PVC - 10" DIAMETER PIPE: 17" HOLE FOR PVC.
10. MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH ASTM C-478, LATEST STANDARDS.
11. MINIMUM 5 FEET IS REQUIRED BETWEEN OUTSIDE OF MANHOLE AND A SERVICE WYE.
12. MANHOLES TO BE COATED INSIDE WITH AN APPROVED CORROSION BARRIER SYSTEM. SOLID THERMOPLASTIC CAST-IN LINER IS REQUIRED FOR LAST MANHOLE PRIOR TO LIFT STATION, MANHOLES DEEPER THAN 14 FT., MANHOLES WITH OUTSIDE DROP, AND MANHOLES WITH A FORCE MAIN CONNECTION. (SEE APPROPRIATE DETAILS)
13. APPROVED INFLOW PROTECTORS ARE REQUIRED.
14. MANHOLES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS.
15. SPECIAL PRE-APPROVED GROUT IS REQUIRED FOR PRECAST STRUCTURES WITH ANTIMICROBIAL ADMIXTURE.

STANDARD MANHOLE 13S



NOTES:

1. ALL DETAILS AND SPECIFICATIONS FOR STANDARD MANHOLES ARE APPLICABLE EXCEPT FOR REFERENCES TO DROP ASSEMBLY AND CAST IN LINERS.
2. THE PRECAST BASE SHALL EXTEND FULLY UNDER THE DROP ASSEMBLY.
3. MASONRY CONSTRUCTION ABOVE THE EXTENDED PRECAST BASE, IF FILLED WITH CONCRETE, IS PERMISSIBLE.
4. BRICK AND CONCRETE RUBBLE ARE PERMITTED AS FILLER IN DROP ENCASEMENT.
5. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2.0 FEET OR MORE ABOVE THE MAIN INVERT CHANNEL. DROP CONNECTIONS SHOULD NOT BE DESIGNED FOR LESS THAN A 2.4 FOOT DROP.
6. PVC SDR 26 PIPE WITH PVC SCH 35 FITTINGS SHALL BE UTILIZED IN THE DROP ASSEMBLY.
7. RISER STEEL TO BE CAST IN PLACE WITH BASE (4 #005) OR USE 4 - 1/2" DIA. COIL LOOP INSERTS CAST IN PLACE WITH BASE (TO BE USED WITH 1/2" DIA. #005). COIL LOOP INSERTS TO BE "DAYTON SUPERIOR" B18, 1/2"x 4" OR APPROVED EQUAL.

DROP CONNECTION PRECAST MANHOLE 15S

GENERAL NOTES

DEFINITIONS

1. DEPARTMENT – THE PALM BEACH COUNTY WATER UTILITIES DEPARTMENT.
2. CONTRACTOR – UTILITY CONTRACTOR AND ALL UTILITY SUBCONTRACTORS.
3. ENGINEER – ENGINEER RESPONSIBLE FOR INSPECTION AND CERTIFICATION.

PROCEDURE

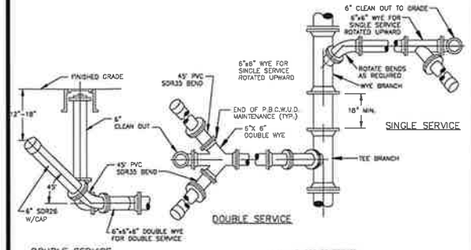
1. A PRE-CONSTRUCTION MEETING IS TO BE HELD PRIOR TO DELIVERY OF MATERIALS AND INITIATION OF ANY POTABLE WATER, RECLAIMED WATER AND/OR WASTEWATER SYSTEM CONSTRUCTION. THE MEETING SHALL BE ATTENDED BY THE DEPARTMENT, CONTRACTOR, ENGINEER AND OTHER INTERESTED PARTIES.
2. ANY REVISIONS TO THE APPROVED PLANS SHALL BE CALLED TO THE ATTENTION OF THE DEPARTMENT PRIOR TO THE PRE-CONSTRUCTION MEETING. REVISED PLANS MUST BE APPROVED PRIOR TO THE MEETING.
3. FIVE (5) COPIES OF THE CURRENT APPROVED MATERIAL LIST AND ALL NECESSARY SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO SCHEDULING OF THE PRE-CONSTRUCTION MEETING.
4. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO PRECONSTRUCTION MEETING. (DOT, HEALTH DEPARTMENT, COUNTY ENGINEER, ETC.).
5. THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION PLANS ON JOB SITE.
6. ALL MATERIALS SUPPLIED SHALL CONFORM TO PRODUCT LIST AND SHOP DRAWINGS AS APPROVED PRIOR TO CONSTRUCTION. SUBSTITUTE MATERIALS SHALL NOT BE APPROVED AFTER DELIVERY TO THE JOB SITE. ALL REQUESTS FOR MATERIAL SUBSTITUTION SHALL BE APPROVED PRIOR TO DELIVERY OF THESE MATERIALS TO THE JOB SITE.
7. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE APPROVED PLANS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. APPROVAL OF DEVELOPMENT PLANS BY THE DEPARTMENT IN NO WAY IMPLIES VERIFICATION OF THE ACCURACY OF THOSE PLANS OR FEATURES DEPICTED THEREON. ANY DISCREPANCY IN OR VARIATION FROM THE APPROVED PLANS IS TO BE BROUGHT TO THE ATTENTION OF THE DEPARTMENT BY THE ENGINEER AND CONTRACTOR. THE CONTRACTOR SHALL CONFIRM AND INSTALL (IF NECESSARY) ADEQUATE MECHANICAL PIPE / JOINT RESTRAINT ON EXISTING PIPES PRIOR TO CONNECTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS FROM ALL OTHER UTILITY FACILITIES.
10. THE CONTRACTOR OR ENGINEER SHALL SCHEDULE INSPECTIONS AND TESTS A MINIMUM OF 24-48 HOURS IN ADVANCE.
11. NO CONNECTION TO OR ANY OTHER CONSTRUCTION SHALL BE PERFORMED ON AN EXISTING DEPARTMENT OWNED AND MAINTAINED MAIN OR STRUCTURE WITHOUT THE PRESENCE OF A DEPARTMENT INSPECTOR.
12. FACILITIES PROPOSED HEREIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND THE DEPARTMENT'S MINIMUM STANDARDS. CONFLICTS BETWEEN THE PRECEDING DOCUMENTS SHOULD BE CALLED TO THE ATTENTION OF THE DEPARTMENT FOR RESOLUTION. DEVIATIONS FROM THE APPROVED PLANS MUST BE APPROVED IN ADVANCE BY THE DEPARTMENT.
13. UPON COMPLETION OF CONSTRUCTION, A FINAL INSPECTION SHALL VERIFY PROPER ADHERENCE TO ALL FACETS OF THE PLANS AND SPECIFICATIONS.

PRESSURE PIPE NOTES

1. THERE SHALL BE 36" MINIMUM COVER FROM FINISHED GRADE TO TOP OF PIPE.
2. DUCTILE IRON PIPE (DIP) THICKNESS SHALL CONFORM TO THE DEPARTMENT'S APPROVED MATERIAL LIST. POTABLE WATER AND RECLAIMED WATER MAINS DIP SHALL BE CEMENT LINED. FORCE MAIN DIP SHALL BE CERAMIC EPOXY LINED.
3. PVC PRESSURE PIPE SHALL BE C-900, SDR-18, 150 PSI.
4. ALL FITTINGS SHALL BE DUCTILE IRON WITH MECHANICAL JOINTS AND CEMENT OR APPROVED EPOXY LINING.
5. POTABLE WATER, RECLAIMED WATER AND WASTEWATER FORCE MAIN VALVES 10 INCHES AND SMALLER SHALL BE RESILIENT SEAT GATE VALVES. TWELVE-INCH (12") OR LARGER FORCE MAIN VALVES SHALL BE RESILIENT SEAT GATE VALVES OR ECCENTRIC PLUG VALVES (IF APPROVED IN ADVANCE BY DEPARTMENT). POTABLE WATER AND RECLAIMED WATER MAIN VALVES LARGER THAN 10 INCHES SHALL BE BUTTERFLY VALVES.
6. ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING, AND DISINFECTION MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND HEALTH DEPARTMENT STANDARDS AND REGULATIONS.

GRAVITY SEWER NOTES

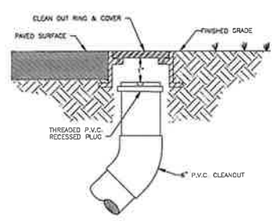
1. MANHOLES AND OTHER CASTINGS SHALL BE INSPECTED BY THE DEPARTMENT BEFORE PLACEMENT AND BEFORE APPLICATION OF THE CORROSION BARRIER SYSTEM (IF APPLICABLE).
2. ALL OPENINGS IN PRECAST MANHOLES SHALL BE CAST AT TIME OF MANUFACTURE OR CORED IN FIELD.
3. ALL MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE, AND SHALL REST ON A FIRM, CAREFULLY GRADED SUBGRADE, WHICH SHALL PROVIDE UNIFORM BEARING UNDER BASE.
4. PVC WASTEWATER GRAVITY PIPE SHALL CONFORM TO ASTM D-3034, SDR 26 WITH PVC SCH 35 FITTINGS, OR PVC C-900 SDR 18, PIPE AND FITTINGS, WITH PUSH-ON RUBBER GASKET JOINTS.
5. DIP GRAVITY SEWER PIPE SHALL BE PRESSURE CLASS 350, EPOXY LINED.
6. THE COMPLETED GRAVITY WASTEWATER SYSTEM SHALL BE INSPECTED BY THE DEPARTMENT TO VERIFY ALIGNMENT AND INTEGRITY. THERE SHALL BE NO LEAKAGE. ALL MAINS SHALL BE LAMPED, SHOWING A FULL CIRCLE OF LIGHT, DURING THESE INSPECTIONS. THE MAIN SHALL BE CLEAN AND DRY.



NOTES:

1. MIN. 3' AND 5' MAX. DEPTH IS REQUIRED, UNLESS PLANS SHOW OTHERWISE, FOR SERVICE LATERAL WYE AT THE CLEAN OUT ENDING P.B.C.W.U.D. OWNERSHIP AND MAINTENANCE RESPONSIBILITY.
2. CLEAN OUT IS TO BE INSTALLED PER DEPARTMENT STANDARDS PRIOR TO WATER METER INSTALLATION.
3. WASTEWATER MAIN WYE BRANCH TO MATCH MAIN PIPE MATERIAL.
4. CLEAN OUTS DESIGNATING THE END OF THE DEPARTMENT'S MAINTENANCE RESPONSIBILITY SHALL BE LOCATED WITHIN AN UTILITY EASEMENT OR RIGHT-OF WAY DEDICATED FOR UTILITIES.
5. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR CLEAN OUT INSTALLATION PRIOR TO WATER METER INSTALLATION AS SPECIFIED BY THE DEPARTMENT.
6. SEE MINIMUM SEPARATION STATEMENT FOR P.V.C. C-900 SDR 18 PIPE MATERIAL REQUIREMENTS AT WASTEWATER LATERAL/POTABLE WATER MAIN CROSSINGS.
7. ALONG STREETS WITH ADJACENT NON-EXCLUSIVE UTILITY EASEMENT, THE CLEANOUT ENDING PBCWUD MAINTENANCE RESPONSIBILITY SHALL BE INSTALLED 1'-3' INTO THE UTILITY EASEMENT.
8. MIN. 3' HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN CLEANOUTS AND EDGE OF PAVEMENT, BACK OF CURB, EDGE OF DRIVEWAY, LIGHTPOLES, TRANSFORMERS, POWER POLES.

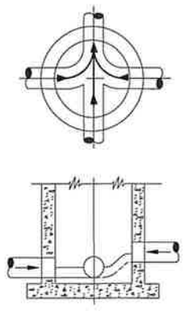
TYPICAL WASTEWATER SERVICE CONNECTION 12S



NOTES:

1. CLEANOUTS TO BE LOCATED IN GRASS AREA WHENEVER POSSIBLE, MIN. 3' FROM EDGE OF PAVEMENT, BACK OF CURB, EDGE OF DRIVEWAY, LIGHT POLES, TRANSFORMERS, OR POWER POLES.
2. CLEANOUTS SHALL NOT BE INSTALLED IN TRAFFIC LANES OR AREAS UNDER HEAVY TRAFFIC LOADS.
3. THE COVER TO BE MARKED "S".
4. CLEANOUTS TO BE INSTALLED PRIOR TO WATER METER RELEASE.
5. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR CLEANOUT INSTALLATION PRIOR TO WATER METER INSTALLATION AS SPECIFIED BY THE DEPARTMENT.
6. A CONCRETE COLLAR MAY BE REQUIRED IF CLEANOUT IS LOCATED BETWEEN DRIVEWAYS. A SPECIAL CONSTRUCTION DETAIL WILL BE REQUIRED.
7. ALONG STREETS WITH ADJACENT NON-EXCLUSIVE UTILITY EASEMENTS, THE CLEANOUTS ENDING PBCWUD MAINTENANCE RESPONSIBILITY SHALL BE INSTALLED MIN. 12", MAX. 18" INTO THE EASEMENT.

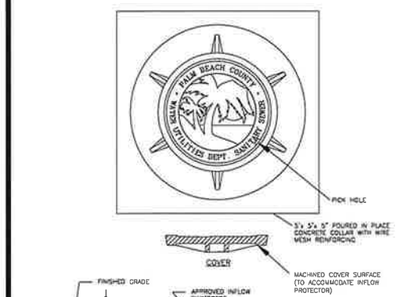
TYPICAL CLEANOUT INSTALLATION 11S



NOTES:

1. PROPERLY SHAPED INVERT CHANNELS AND SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS TO PROVIDE FOR SMOOTH FLOWS.
2. SERVICE LATERALS SHALL NOT ENTER MANHOLES UNLESS SPECIFIED ON PLANS AND THEN MUST BE TREATED AS MAINS (ELEVATIONS SHOWN, PRECAST HOLE, FLOW CHANNEL)
3. APPROVED PRECAST POLYPROPYLENE OR FIBER REINFORCED POLYMER (FRP) FLOW CHANNELS WITH INTEGRATED PIPE INVERTS (SEE SEPARATE DETAILS), PRECAST CONCRETE FLOW CHANNELS, OR FIELD INSTALLED CONCRETE FLOW CHANNELS ARE REQUIRED.
4. SIDEWALLS OF FLOW CHANNELS SHALL BE AT LEAST HALF OF PIPE HEIGHT AT ALL POINTS.
5. NO INSIDE DROP LARGER THAN 6" SHALL BE ALLOWED WITH 3 OR 4 INVERTS AND MANHOLES WITH A CHANGE OF DIRECTION OF FLOW OF MORE THAN 45 DEGREES.
6. THE FIELD APPLIED CORROSION BARRIER SYSTEM SHALL BE INSTALLED AFTER INVERT CHANNEL CONSTRUCTION UNLESS PRECAST THERMOPLASTIC BASELINER IS USED. THE FIELD APPLIED CORROSION BARRIER MAY NOT BE APPLIED TO THE FLOW CHANNEL.

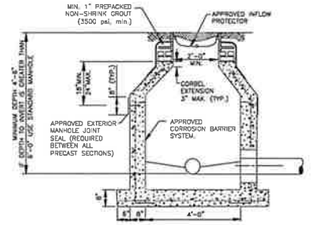
INVERT FLOW CHANNELS 16S



NOTES:

1. COLLAR IS REQUIRED ONLY WHEN MANHOLE IS OUT OF PAVEMENT.
2. STANDARD FRAME AND COVER SIZE SHALL BE SEVEN INCHES (7"). A 4" FRAME MAY ONLY BE USED WITH PRIOR APPROVAL.
3. A STEEL MANHOLE RISER, APPROVED PRECAST CONCRETE ADJUSTING RINGS OR ADDITIONAL BRICKS MAY BE USED TO ELEVATE EXISTING MANHOLE COVERS TO RESURFACED GRADE (MAX. 4" HEIGHT).
4. COVER SHALL FIT FLUSH WITH THE FRAME WITH THE INFLOW PROTECTOR INSTALLED.

GRAVITY SEWER MANHOLE FRAME & COVER 17S



NOTE:

ALL STANDARD MANHOLE NOTES AND DETAILS ARE APPLICABLE.

SHALLOW MANHOLE 14S

WASTEWATER #2
STANDARD DETAILS

CONSULTANT:

IT'S THE LAW! CALL 48 HOURS BEFORE YOU DIG 1-800-432-4770 SUNSHINE STATE ONE CALL OF FLORIDA, INC. UTILITIES NOTIFICATION CENTER

DESIGNED BY:	WUD	
DRAWN BY:	M. BUCKNER	Palm Beach County
CHECKED BY:	J. LAMMERT	Water Utilities Department
APPROVED BY:	WUD	P.O.Box 16097
		West Palm Beach, FL 33416-6097

RECEIVED BY CITY OF GREENACRES OCT 1 2021 PLANNING

PROJECT NO. 6464.00

SUNSET SPRINGS
GREENARCES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

NO.	DATE	REVISION / REMARKS	BY
1	JUNE 2019	GENERAL REVISION	J.L.

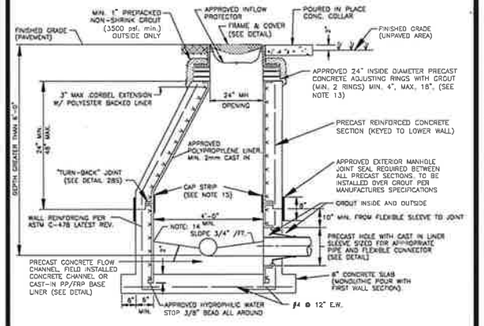
STD DETAILS

SHEET NUMBER C-12 OF 17

SEAL

Oct 01, 2021

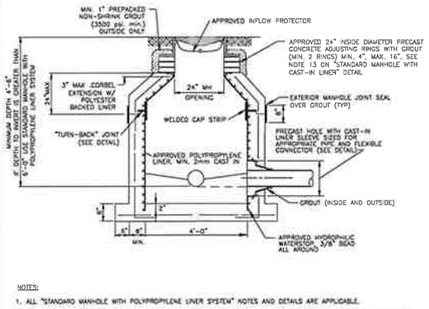
Drawing: P:\6400\6464 00 Chickasaw Rd Property\CIVIL\Design\Drawings\6464x00-CV-WSD.dwg\WUD WW-2 - Last Modified: Fri, Oct 01, 2021 - 2:36pm



NOTES:

1. PRECAST CONCRETE TYPE II 4000 P.S.I. CALCAREOUS AGGREGATE REQUIRED (MIN. CaCO3 CONTENT: 65% IN LARGE AGGREGATE, 50% IN CONCRETE SCREENING).
2. APPROVED PRIMER AND SEALANT GASKET AT ALL RISER JOINTS. SEALANT GASKET SIZE AND PLACEMENT SHALL BE CALLED OUT ON SHOP DRAWINGS. PRIMER TO BE APPLIED BY THE PRECASTER (TONGUE SECTION ONLY).
3. ALL PIPE OPENINGS SHALL BE GAS TIGHT AND WATER TIGHT WITH NO EXPOSED CONCRETE SURFACES.
4. CAST OPENINGS SHALL BE MANUFACTURED WITH A POLYPROPYLENE SLEEVE CAST IN. APPROVED FLEXIBLE MANHOLE CONNECTORS SHALL BE USED AT PIPE CONNECTIONS. HOLE SIZE PER BOOT MANUFACTURER'S SPECIFICATIONS. DOUBLE PIPE CLAMPS MUST BE INSTALLED ON FLEXIBLE SLEEVES WHERE REQUIRED BY BOOT MANUFACTURERS INSTALLATION INSTRUCTIONS.
5. CORED PIPE OPENINGS SHALL BE INSTALLED PER DETAIL. APPROVED FLEXIBLE CONNECTOR WILL BE INSTALLED ONTO POLY-PROPYLENE WALL SLEEVE. WALL SLEEVE SHALL BE EPOXIED INTO CORED OPENING AND THERMAL WELDED TO WALL LINER
6. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM, APPROVED CAST-IN PP/FRP BASE LINER IS ACCEPTABLE (SEE DETAIL).
7. LIFT HOLES ARE PERMITTED.
8. INSIDE DROPS SHALL NOT BE DESIGNED TO EXCEED 1.00 FEET AND NOT CONSTRUCTED TO EXCEED 2.0 FEET. MAX. 6" INSIDE DROP IS PERMITTED FOR MANHOLES WITH 3 OR MORE INVERTS AND MANHOLES WITH A CHANGE IN FLOW DIRECTION OF MORE THAN 45 DEGREES.
9. MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH ASTM C-478, LATEST STANDARD.
10. MINIMUM 5 FEET IS REQUIRED BETWEEN OUTSIDE OF MANHOLE AND SERVICE WYE OR ANY PIPE JOINT.
11. ONLY APPROVED THERMOPLASTIC LINER SYSTEM SHALL BE USED. LINERS MUST BE WELDED BY LINER MFG CERTIFIED WELDERS AND BE CAST INTO THE MANHOLE BY A LINER MANUFACTURER CERTIFIED PRECASTER.
12. APPROVED INFLOW PROTECTORS ARE REQUIRED.
13. MAXIMUM HEIGHT OF CHIMNEY SHALL NOT EXCEED 24" (INCLUDING FRAME CASTING).
14. SEAL INVERT BENCH AND CHANNEL TO WALL LINER WITH 3M WEATHERSEAL 5354 SEALANT TAPE OR APPROVED EQUAL.
15. MIN. 4" WIDE FIELD WELDED CAP STRIP IS REQUIRED FOR ALL JOINTS.
16. SOLID THERMOPLASTIC CAST-IN LINER IS REQUIRED FOR LAST MANHOLE PRIOR TO LIFT STATION, MANHOLES DEEPER THAN 14 FT., MANHOLES WITH OUTSIDE DROP, AND MANHOLES WITH A FORCE MAIN CONNECTION. (SEE APPROPRIATE DETAILS)
17. MANHOLES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS.

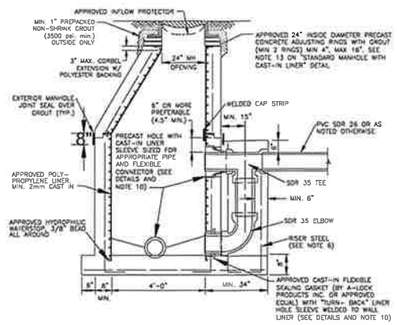
STANDARD MANHOLE WITH CAST-IN LINER **18S**



NOTES:

1. ALL "STANDARD MANHOLE WITH POLYPROPYLENE LINER SYSTEM" NOTES AND DETAILS ARE APPLICABLE.
2. SEAL INVERT BENCH AND CHANNEL TO WALL LINER WITH 3M WEATHERSEAL 5354 SEALANT TAPE (OR APPROVED EQUAL).
3. SEE SEPARATE DETAIL FOR OPTIONAL CAST-IN POLYPROPYLENE OR FIBER REINFORCED POLYMER BASE LINER.

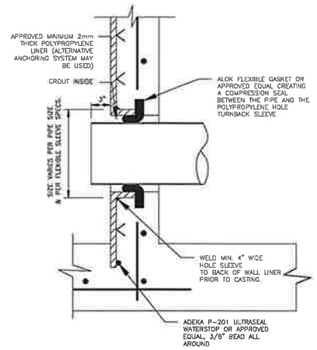
SHALLOW MANHOLE WITH CAST-IN LINER **19S**



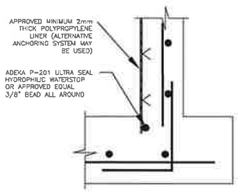
NOTES:

1. ALL DETAILS AND SPECIFICATIONS FOR "STANDARD MANHOLE WITH SOLID POLYPROPYLENE LINER SYSTEM" ARE APPLICABLE EXCEPT FOR REFERENCES TO DROP ASSEMBLY.
2. THE PRECAST BASE SHALL EXTEND FULLY UNDER THE DROP ASSEMBLY.
3. PRECAST DROP ENCASEMENT REQUIRED UP TO TOP EDGE OF 90 DEGREE ELBOW, BRICK AND CONCRETE RUBBLE ARE PERMITTED AS FILLER IN REMAINDER OF DROP ENCASEMENT.
4. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2.0 FEET OR MORE ABOVE THE MAIN INVERT CHANNEL. DROP CONNECTIONS SHOULD NOT BE DESIGNED FOR LESS THAN A 2.4 FOOT DROP.
5. PVC SDR 26 PIPE WITH PVC SDR 35 FITTINGS SHALL BE UTILIZED IN THE DROP ASSEMBLY.
6. DROP ENCASEMENT REINFORCING STEEL TO BE CAST IN PLACE WITH BASE (4 RODS) OR USE 4-1/2" DIA. CDL LOOP INSERTS CAST IN PLACE WITH BASE (TO BE USED WITH 1/2" CDL RODS). CDL LOOP INSERTS TO BE "DAYTON SUPERIOR" B16, 1/2"X 4" OR APPROVED EQUAL.
7. MIN. 4" WIDE FIELD WELDED CAP STRIP IS REQUIRED OVER ALL JOINTS.
8. SEAL INVERT BENCH AND CHANNEL TO WALL LINER WITH 3M WEATHERSEAL 5354 SEALANT TAPE (OR APPROVED EQUAL).
9. SEE SEPARATE DETAIL FOR OPTIONAL CAST-IN POLYPROPYLENE OR FIBER REINFORCED POLYMER BASE LINER.

OUTSIDE DROP MANHOLE WITH CAST-IN LINER **20S**

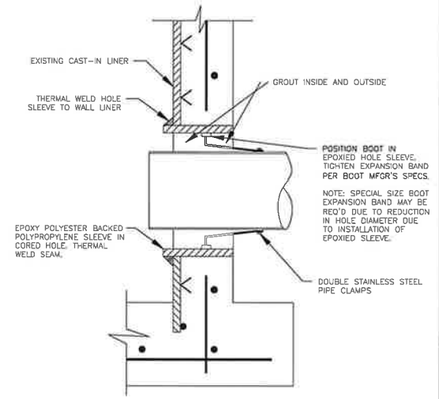


PIPE TO DROP MANHOLE CONNECTION LOWER INVERT **25S**



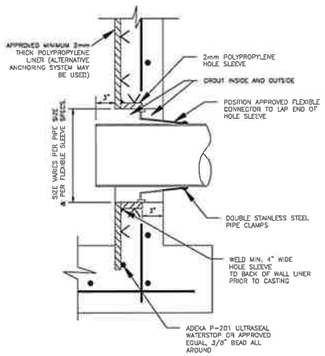
NOTE:
THIS STYLE WATERSTOP IS USED ON STRUCTURES CAST WITH A MONOLITHICALLY POURED BOTTOM SLAB.

BASE MANHOLE SECTION WATERSTOP DETAIL **26S**

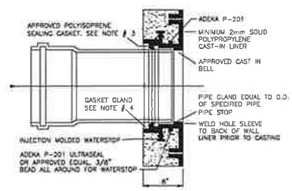


NOTE:
THERMAL WELDING AND EPOXY OF THE SLEEVE TO BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE LINER MANUFACTURER

CORED HOLE W/FLEX. CONNECTOR & TURNBACK SLEEVE POLYPROPYLENE LINER SYSTEM CAST-IN **24S**



PIPE TO MANHOLE CONNECTION – TYPE "A" **21S**



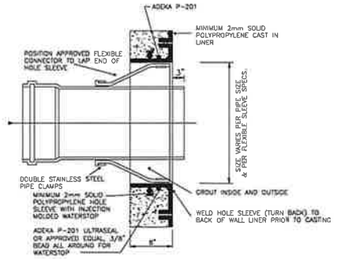
INSTALLATION:
1) CLEAN BELL
2) INSTALL GASKET AS SHOWN
3) LUBRICATE PIPE SPIGOT AND SLIDE INTO BELL AND GASKET UNTIL REACHING PIPESTOP
4) CHECK FOR WATERTIGHT CONNECTION

DO NOT LUBRICATE THE GASKET OR THE BELL

NOTES:
1) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE TYPE OF MANHOLE/PIPE CONNECTION.
2) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE PIPE SIZE, TYPE, GASKET TYPE, AND HOLE SIZE.
3) ONLY THE POLYISOPRENE GASKET SUPPLIED BY THE BELL MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS.
4) GASKET GLAND VARIES ACCORDING TO PIPE SIZE AND TYPE.
5) HOLE SLEEVES AND BELL CONNECTORS SHALL EXTEND TO THE OUTER PROFILE OF THE CONCRETE STRUCTURE AT MINIMUM PROVIDING A COMPLETELY LINED SURFACE WHERE THE GASKET AND HOLE LINER MATE TOGETHER.

CAST-IN BELL WITH COMPRESSION SEAL GASKET

PIPE TO MANHOLE CONNECTION – TYPE "B" **22S**



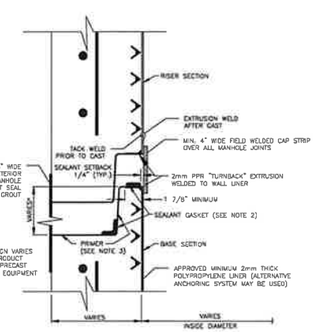
INSTALLATION:
1) CLEAN BOOT HUB
2) INSTALL RUBBER BOOT CONNECTOR (PER MANUFACTURER'S INSTRUCTIONS).
3) LUBRICATE PIPE SPIGOT AND SLIDE INTO RUBBER BOOT CONNECTOR.
4) TIGHTEN RUBBER BOOT CLAMPS (PER MANUFACTURER'S INSTRUCTIONS)
5) SECURE AND BACKFILL WITH PROPER MATERIAL AS SPECIFIED
6) CHECK FOR WATERTIGHT CONNECTION

DO NOT LUBRICATE THE BOOT CONNECTOR OR THE BOOT HUB

NOTES:
1) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE TYPE OF MANHOLE/PIPE CONNECTION.
2) MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE PIPE SIZE, TYPE, GASKET TYPE, AND HOLE SIZE.
3) ONLY THE POLYISOPRENE GASKET SUPPLIED BY THE BELL MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS.
4) GASKET GLAND VARIES ACCORDING TO PIPE SIZE AND TYPE.
5) HOLE SLEEVES AND BELL CONNECTORS SHALL EXTEND TO THE OUTER PROFILE OF THE CONCRETE STRUCTURE AT MINIMUM PROVIDING A COMPLETELY LINED SURFACE WHERE THE GASKET AND HOLE LINER MATE TOGETHER.

TURN BACK BOOT HUB WITH BOOT CONNECTOR

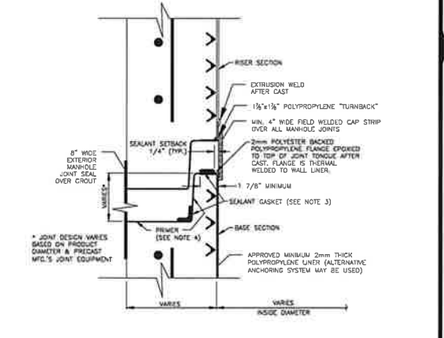
PIPE TO MANHOLE CONNECTION – TYPE "C" **23S**



NOTES:

1. LINER WELDING SHALL BE PERFORMED EXCLUSIVELY BY LICENSED, CERTIFIED WELDERS.
2. STRUCTURE SHOP DRAWINGS SHALL CALL OUT THE SIZE, TYPE AND PLACEMENT OF THE JOINT SEALANT.
3. JOINT PRIMER TO BE APPLIED BY THE PRECASTER (TONGUE SECTION ONLY)

TURN BACK JOINT INSTALLED PRIOR TO CAST **27S**



NOTES:

1. THE "AFTER CAST" "TURNBACK" JOINT IS USED WHEN THE "PRIOR TO CAST" "TURNBACK" JOINT IS NOT FEASIBLE.
2. LINER WELDING SHALL BE PERFORMED EXCLUSIVELY BY LICENSED, CERTIFIED WELDERS.
3. STRUCTURE SHOP DRAWINGS SHALL CALL OUT THE SIZE, TYPE AND PLACEMENT OF THE JOINT SEALANT.
4. JOINT PRIMER TO BE APPLIED BY THE PRECASTER (TONGUE SECTION ONLY).

TURN BACK JOINT INSTALLED AFTER CAST **28S**

WASTEWATER #3 STANDARD DETAILS

CONSULTANT:

IT'S THE LAW ! CALL 48 HOURS BEFORE YOU DIG 1-800-432-4770 SUNSHINE STATE ONE CALL OF FLORIDA, INC. UTILITIES NOTIFICATION CENTER

DESIGNED BY: WUD
DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

PROJECT NO. 6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

NO.	DATE	REVISION / REMARKS	BY
	JUNE 2019	GENERAL REVISION	JL

RECEIVED by CITY OF GREENACRES OCT 01 2021 PLANNING & ENGINEERING

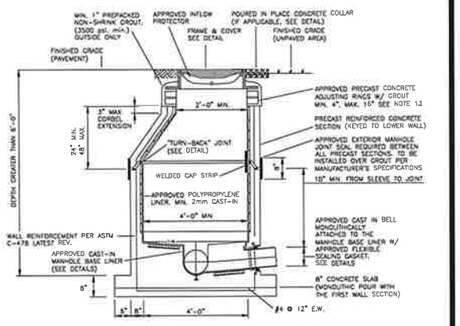
STD DETAILS

SHEET NUMBER C-13 OF 17

SEAL

Oct 01, 2021

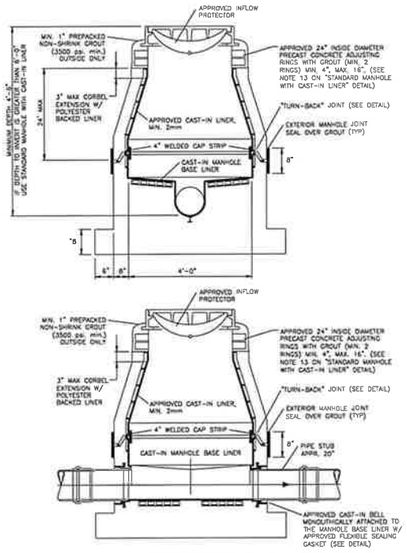
Drawing: P:\6400\6464.00 Chickasaw Rd Property\CIVIL\Design\Drawings\6464000-CV-WSD.dwg WUD WW-3 - Last Modified: Fri, Oct 01, 2021 - 2:36pm



NOTES:

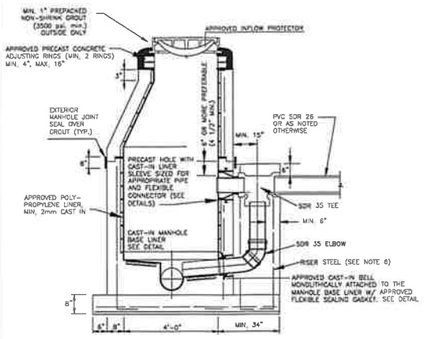
1. PRECAST CONCRETE TYPE II 4000 P.S.I. CALCAREOUS AGGREGATE REQUIRED (MIN. CaCO3 CONTENT: 65% IN LARGE AGGREGATE, 50% IN CONCRETE SCREENING).
2. RUBBER NEX (NU 106) OR APPROVED EQUAL AT ALL RISER JOINTS. SIZES TO BE SPECIFIED ON SHOP DRAWINGS.
3. ALL PIPE OPENINGS SHALL BE GAS TIGHT AND WATER TIGHT WITH NO EXPOSED CONCRETE SURFACES.
4. CAST OPENINGS SHALL BE MANUFACTURED WITH A POLYPROPYLENE SLEEVE CAST IN. APPROVED FLEXIBLE MANHOLE CONNECTORS SHALL BE USED AT PIPE CONNECTIONS. HOLE SIZE FOR BOOT MANUFACTURER'S SPECIFICATIONS. DOUBLE PIPE CLAMPS MUST BE INSTALLED ON FLEXIBLE SLEEVES WHERE REQUIRED BY BOOT MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. CORED PIPE OPENINGS SHALL BE INSTALLED PER DETAIL. APPROVED FLEXIBLE CONNECTOR WILL BE INSTALLED ONTO POLY-PROPYLENE WALL SLEEVE. WALL SLEEVE SHALL BE EPOXIED INTO CORED OPENING AND THERMAL WELDED TO WALL LINER. BY LICENSED CONTRACTOR.
6. FLOW CHANNELS SHALL DIRECT INFLUENT INTO FLOW STREAM. (SEE DETAIL)
7. LIFT HOLES ARE PROHIBITED.
8. INSIDE DROPS SHALL NOT BE DESIGNED TO EXCEED 18.0 FEET AND NOT CONSTRUCTED TO EXCEED 20 FEET, MAX. 6" INSIDE DROP IS PERMITTED FOR MANHOLES WITH 3 OR MORE INVERTS AND MANHOLES WITH A CHANGE IN FLOW DIRECTION OF MORE THAN 45 DEGREES.
9. MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH ASTM C-478, LATEST STANDARDS.
10. MINIMUM 5 FEET IS REQUIRED BETWEEN OUTSIDE OF MANHOLE AND SERVICE WYE.
11. MANHOLES SHALL BE LINED INSIDE WITH AN APPROVED POLYPROPYLENE LINER SYSTEM. LINERS MUST BE WELDED BY LINER MFG CERTIFIED WELDERS AND BE CAST INTO THE MANHOLE BY A LINER MANUFACTURER CERTIFIED PRECASTER.
12. APPROVED INFLOW PROTECTORS ARE REQUIRED.
13. MAXIMUM HEIGHT OF CHIMNEY SHALL NOT EXCEED 24" (INCLUDING FRAME CASTING).
14. APPROVED THERMO-PLASTIC CHIMNEY LINER SHALL COMPLETELY COVER THE PRECAST CONCRETE GRADE RINGS AND SHALL BE SEALED TO THE CORBEL LINER BY MEANS OF AN APPROVED POLYISOPRENE LIP SEAL GASKET AND SEALED TO THE RING USING APPROVED BUTYL STRIPS. SEE DETAILS.
15. SOLID THERMO-PLASTIC CAST-IN LINER SYSTEM IS REQUIRED FOR LAST MANHOLE PRIOR TO A LIFT STATION. MANHOLES DEEPER THAN 14 FEET, MANHOLES WITH AN OUTSIDE DROP, AND MANHOLES WITH A FORCE MAIN CONNECTION. SEE APPROPRIATE DETAILS.
16. MANHOLES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS.

STANDARD MANHOLE WITH CAST-IN LINER AND BASE LINER — 29S



NOTE: ALL CORRESPONDING STANDARD MANHOLE NOTES AND DETAILS SHALL APPLY.

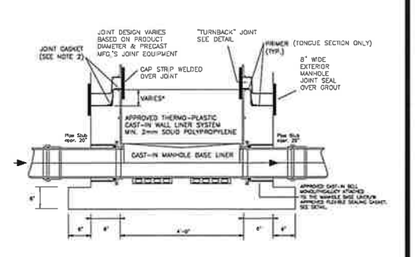
SHALLOW MANHOLE WITH CAST-IN LINER AND BASE LINER — 30S



NOTES:

1. ALL DETAILS AND SPECIFICATIONS FOR "STANDARD MANHOLE WITH SOLID POLYPROPYLENE LINER SYSTEM" ARE APPLICABLE EXCEPT FOR REFERENCES TO DROP ASSEMBLY.
2. THE PRECAST BASE SHALL EXTEND FULLY UNDER THE DROP ASSEMBLY.
3. PRECAST DROP ENCASEMENT REQUIRED UP TO TOP EDGE OF 90 DEGREE ELBOW. BRICK AND CONCRETE RUBBLE ARE PERMITTED AS FILLER IN REMAINDER OF DROP ENCASEMENT.
4. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2.0 FEET OR MORE ABOVE THE MAIN INVERT CHANNEL. DROP CONNECTIONS SHOULD NOT BE DESIGNED FOR LESS THAN A 2.4 FOOT DROP.
5. PVC SDR 26 PIPE WITH PVC SDR 35 FITTINGS SHALL BE UTILIZED IN THE DROP ASSEMBLY.
6. DROP ENCASEMENT REINFORCING STEEL TO BE CAST IN PLACE WITH BASE (6 RODS) OR USE 4-1/2" DIA. COIL LOOP INSERTS CAST IN PLACE WITH BASE (TO BE USED WITH 1/2" COIL RODS). COIL LOOP INSERTS TO BE "DAYTON SUPERIOR" B18, 1/2"x 4" OR APPROVED EQUAL.

OUTSIDE DROP MANHOLE WITH CAST-IN LINER AND BASE LINER — 31S



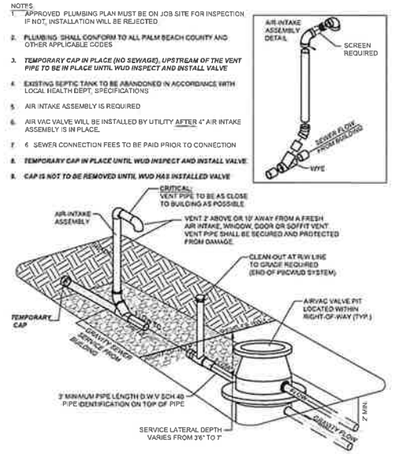
NOTES:

1. LINER WELDING SHALL BE PERFORMED EXCLUSIVELY BY LICENSED, CERTIFIED WELDERS.
2. SHOP DRAWINGS SHALL CALL OUT THE SIZE, TYPE AND POSITIONING OF THE APPROVED JOINT SEALANT.
3. PRIMER TO BE APPLIED BY THE PRECASTER (TONGUE SECTION ONLY).

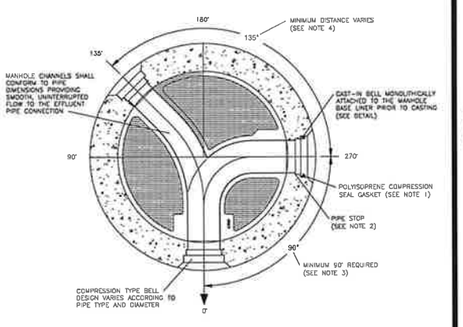
MANHOLE BASE SECTION — 32S

NOTES:

1. APPROVED PLUMBING PLAN MUST BE ON JOB SITE FOR INSPECTION IF NOT, INSTALLATION WILL BE REJECTED
2. PLUMBING SHALL CONFORM TO ALL PALM BEACH COUNTY AND OTHER APPLICABLE CODES
3. ***TEMPORARY CAP IN PLACE (NO SEWAGE), UPSTREAM OF THE VENT PIPE TO BE IN PLACE UNTIL WUD INSPECT AND INSTALL VALVE***
4. EXISTING SEPTIC TANK TO BE ABANDONED IN ACCORDANCE WITH LOCAL HEALTH DEPT. SPECIFICATIONS
5. AIR INTAKE ASSEMBLY IS REQUIRED
6. AIR VAC VALVE WILL BE INSTALLED BY UTILITY AFTER 4" AIR INTAKE ASSEMBLY IS IN PLACE.
7. 6" SEWER CONNECTION FEES TO BE PAID PRIOR TO CONNECTION
8. ***TEMPORARY CAP IN PLACE UNTIL WUD INSPECT AND INSTALL VALVE.***
9. ***CAP IS NOT TO BE REMOVED UNTIL WUD HAS INSTALLED VALVE***



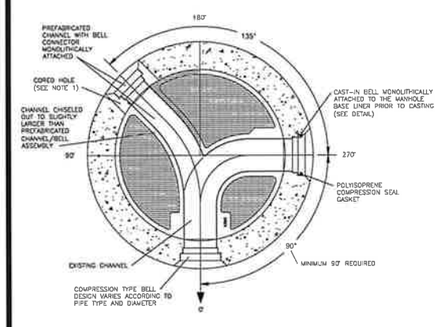
TYPICAL WASTEWATER SERVICE INSTALLATION FOR VACUUM SEWER SYSTEM — 82S



NOTES:

1. ONLY THE POLYISOPRENE GASKET PROVIDED BY THE MANHOLE BASE LINER MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS.
2. CONNECTION PIPES SHALL BE INSERTED COMPLETELY INTO THE BELL. CONNECTOR FLUSH WITH THE PIPE STOP PROVIDING A SMOOTH TRANSITION FROM PIPE TO MANHOLE BASE LINER CHANNEL.
3. MINIMUM OF 90 DEGREES BETWEEN INCOMING, LEFT OR RIGHT OF OUTGOING PIPE. DISTANCE BETWEEN CONNECTIONS MAY VARY ACCORDING TO MANHOLE DIAMETER, PIPE SIZE AND TYPE.
4. MINIMUM DISTANCE BETWEEN INFLUENT PIPE CONNECTIONS MAY VARY AND SHALL BE SPECIFIED BY THE LINER MANUFACTURER ACCORDING TO MANHOLE AND/OR PIPE DIAMETER AND TYPE.

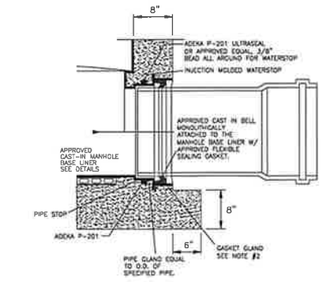
FLOW CHANNEL/PIPE CONNECTION TO NEW CAST-IN BASE LINER — 33S



NOTES:

1. CORED OPENING AND CHANNEL DIAMETER PER CHANNEL/BELL MANUFACTURER REQUIREMENTS. SIZES SHALL BE SPECIFIED ON SHOP DRAWING.
2. ***ONLY AN APPROVED CHANNEL/BELL ASSEMBLY PROVIDED BY THE BASE LINER MANUFACTURER SHALL BE USED.***
3. ***CHANNEL/BELL ASSEMBLY MUST BE COMPLETELY GROUTED IN PLACE USING AN APPROVED CEMENT.***
4. UPON "SETTING" OF GROUT, THE NEW CHANNEL/BELL ASSEMBLY MUST BE JOINED TO THE EXISTING MANHOLE BASE LINER BY EITHER THERMO-PLASTIC WELDING OR FRP PATCH AS SPECIFIED BY BASE LINER MANUFACTURER.

FLOW CHANNEL/ PIPE CONNECTION TO EXISTING CAST-IN BASE LINER — 34S



INSTALLATION:

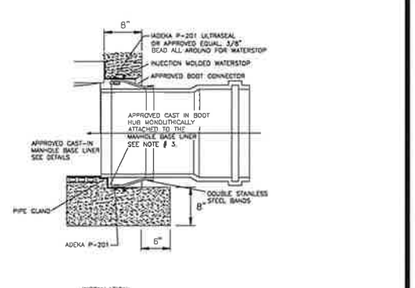
1. CLEAN BELL REMOVING ANY EXCESS CONCRETE SLURRY OR DIRT INSIDE BELL.
2. INSTALL GASKET AS SHOWN.
3. LUBRICATE PIPE SPIGOT AND SLIDE INTO BELL AND GASKET UNTIL REACHING PIPE STOP.
4. CHECK FOR WATERTIGHT CONNECTION. (VACUUM TESTING OR OTHER APPROVED METHOD).

DO NOT LUBRICATE THE GASKET OR THE BELL

NOTES:

1. MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE TYPE OF MANHOLE/PIPE CONNECTION.
2. ONLY THE POLYISOPRENE GASKET SUPPLIED BY THE BELL MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS
3. BOOT HUB VARIES ACCORDING TO GASKET MANUFACTURER'S SPECIFICATION FOR SPECIFIC PIPE SIZE AND TYPE.
4. MANHOLE SHOP DRAWINGS MUST IDENTIFY THE PIPE SIZE, TYPE, GASKET TYPE AND HOLE SIZE

PIPE TO MANHOLE CONNECTION DETAIL TYPE "A" (GASKET) — 35S



INSTALLATION:

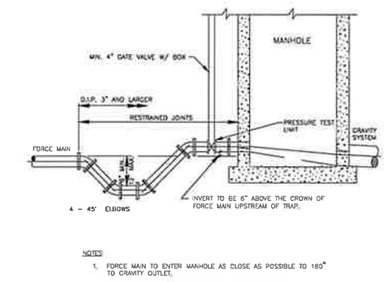
1. CLEAN BOOT HUB REMOVING ANY EXCESS CONCRETE SLURRY OR DIRT INSIDE BELL.
2. INSTALL RUBBER BOOT CONNECTOR (PER MANUFACTURER'S INSTRUCTIONS). HOSE STYLE EXPANDER BOLTS MUST BE ALIGNED WITH THE "TOP" OF BOOT HUB ACCESS NOTCH.
3. PRE-METER PIPE END AS REQUIRED TO PREDETERMINED PIPE DEFLECTION ANGLE. MERELY "DE-BURR" PIPE END - DO NOT CHAMFER OR BEVEL PIPE END.
4. LUBRICATE SPIGOT; ORIENT PIPE MITER; SLIDE INTO RUBBER BOOT CONNECTOR; "HOME" PIPE TO BASE LINER CHANNEL END; DEFLECT PIPE AS REQUIRED. INSPECT MANHOLE BASE INTERIOR FOR CHANNEL/PIPE INVERT ALIGNMENT AND SEAL; TIGHTEN RUBBER BOOT CLAMP (PER MANUFACTURER'S INSTRUCTIONS).
5. CHECK FOR WATERTIGHT CONNECTION; (VACUUM TESTING OR OTHER APPROVED METHOD).

DO NOT LUBRICATE THE GASKET OR THE BELL

NOTES:

1. MANHOLE SHOP DRAWINGS SHALL IDENTIFY THE TYPE OF MANHOLE/PIPE CONNECTION.
2. ONLY THE POLYISOPRENE GASKET SUPPLIED BY THE BELL MANUFACTURER SHALL BE USED IN COMPRESSION TYPE BELLS
3. BOOT HUB VARIES ACCORDING TO GASKET MANUFACTURER'S SPECIFICATION FOR SPECIFIC PIPE SIZE AND TYPE.
4. MANHOLE SHOP DRAWINGS MUST IDENTIFY THE PIPE SIZE, TYPE, GASKET TYPE AND HOLE SIZE

PIPE TO MANHOLE CONNECTION TYPE "B" (BOOT) — 36S



NOTES:

1. FORCE MAIN TO ENTER MANHOLE AS CLOSE AS POSSIBLE TO 180° TO GRAVITY OUTLET.
2. THE INVERT LEVEL OF FORCE MAIN AT POINT OF ENTRY SHALL BE 6" ABOVE OUTFLOW INVERT OF MANHOLE.
3. CORE ENTRY ONLY INTO EXISTING MANHOLES.
4. TRAP TO BE LOCATED PRIOR TO DROP INTO MANHOLE AND OUTSIDE OF PAVED AREAS.
5. USE TWO 45° ELBOWS PAST TRAP IF ELEVATION DROP IS REQUIRED TO ENTER MANHOLE.
6. CAST-IN OR FIELD INSTALLED FLOW CHANNEL IS REQUIRED.
7. MANHOLE WALL TO BE COATED WITH AN APPROVED SOLID THERMOPLASTIC CAST-IN CORROSION BARRIER SYSTEM.
8. TRAP JOINTS TO BE RESTRAINED.

FORCE MAIN ENTERING MANHOLE — 43S

WASTEWATER #4 STANDARD DETAILS

CONSULTANT:

DESIGNED BY: WUD
DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

PROJECT NO. 6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

NO.	DATE	REVISION / REMARKS	BY
	JUNE 2019	RE-GENERAL REVISION	J.L.

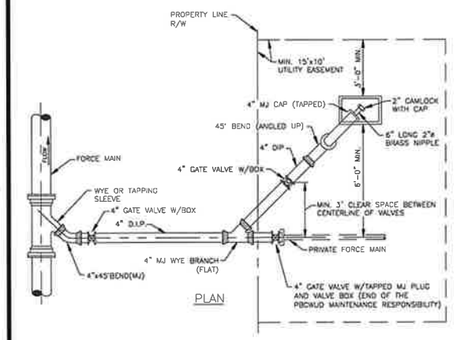
RECEIVED by CITY OF GREENACRES 2021

STD DETAILS

SHEET NUMBER C-14 OF 17

SEAL

Oct 01, 2021

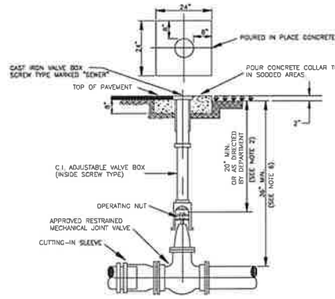


NOTE:

1. THE FLUSHING CONNECTION SHALL BE LOCATED IN GRASS AREA.
2. ALL 4" PIPES SHALL BE RESTRAINED.

CONNECTION OF PRIVATE FORCE MAIN UNDER 4" IN DIAMETER

37S



NOTES:

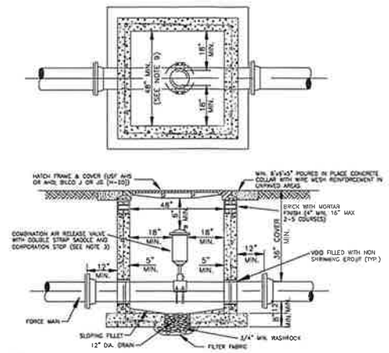
1. CONCRETE COLLAR IS NOT REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION.
2. WHEN OPERATING NUT IS DEEPER THAN 36" A ONE PIECE EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 30"-36" BELOW FINISHED GRADE. EXTENSION BOLTS & NUTS ARE TO BE STAINLESS STEEL. A HIGH STRENGTH STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
3. VALVE BOXES SHALL HAVE COVERS MARKED "SEWER".
4. EXTENSION VALVE BOX TO BE D.I.P. OR C-900 PVC DR 18 (COLOR: GREEN).
5. A CUT-IN INSTALLATION SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
6. IN ORDER TO MAINTAIN ADEQUATE COVER OVER VALVE NUT, THE FOLLOWING MINIMUM COVERS OVER PIPE ARE REQUIRED:

GATE VALVE SIZE	MIN. COVER OVER PIPE
16"	48"
20"	54"
24"	60"
30"	72"
36"	84"

7. PIPE SHALL BE RESTRAINED ON BOTH SIDES OF THE VALVE AS REQUIRED.
8. VALVES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS WHENEVER POSSIBLE.

TYPICAL FORCE MAIN GATE VALVE SETTING AND CUT-IN DETAIL

38S



NOTES:

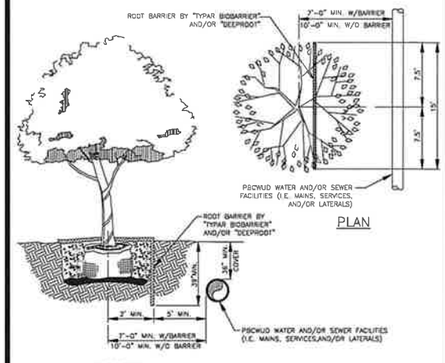
1. 4000 P.S.I. TYPE II CONCRETE.
2. VAULT SHALL BE PRECAST WITH STEEL REINFORCING. SHOP DRAWING IS REQUIRED TO BE APPROVED BY THE DEPARTMENT PRIOR TO VAULT CONSTRUCTION AND/OR INSTALLATION.
3. COMBINATION AIR RELEASE VALVE (ARV) SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED, ALTHOUGH A 2" MINIMUM SIZED ARV IS REQUIRED ON FORCE MAIN INSTALLATIONS.
4. ALL OPENINGS SHALL BE SEALED WITH WATERPROOF NON-SHRINKING GROUT.
5. ALTERNATE VAULT AND COVER DESIGN MAY BE USED PROVIDED ALTERNATE VAULT AND/OR COVER SHOP DRAWINGS WERE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO THE VAULT AND/OR COVER BEING INSTALLED.
6. COAT INSIDE WITH AN APPROVED CORROSION BARRIER SYSTEM.
7. DUCTILE IRON PIPE IS REQUIRED THROUGH THE VAULT. NO PIPE JOINTS WITHIN THE VAULT.
8. THREADED AREAS OF CORPORATION STOP SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
9. LARGER VAULTS WILL BE REQUIRED FOR PIPES LARGER THAN 12"

PIPE SIZE	MIN. VAULT SIZE
16"-24"	4'W x 5'L
30"-42"	4'W x 6'L

FORCE MAIN AIR RELEASE VALVE AND VAULT OUTSIDE OF R/W, NON-TRAFFIC AREAS

*

39S



NOTES:

1. TREES SHOWN ON THIS PLAN ARE FOR GRAPHIC REPRESENTATION ONLY. TREE SPACING IS BASED ON DESIGN REQUIREMENTS AND THE TREES SHOWN ON THESE PLANS ATTEMPT TO ACCOMPLISH THAT SPACING WHILE MAINTAINING THE REQUIRED SETBACKS FROM UTILITIES. TREES MAY BE FIELD ADJUSTED TO AVOID CONFLICTS WITH DRIVEWAYS AND UNDERGROUND UTILITIES, IN ANY CASE THE TREES SHALL BE LOCATED IN THE FIELD IN ACCORDANCE WITH THE PLANTING DETAILS SHOWN HEREON.
2. TREES ARE TO BE INSTALLED WITH A TEN FOOT (10') SEPARATION FROM ANY WATER OR SEWER MAIN AND/OR SERVICE, HYDRANTS, AND LIFT STATIONS. IF A TEN FOOT (10') SEPARATION CANNOT BE ACHIEVED, THE TREE CAN BE INSTALLED WITH A ROOT BARRIER SYSTEM, HOWEVER, IN NO CASE SHALL A TREE ENCROACH INTO A PBCWUD WITHOUT PRIOR DEPARTMENT APPROVAL.

LANDSCAPE AND ROOT BARRIER DETAIL

*

84S

MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED

(SOURCES: DIPRA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

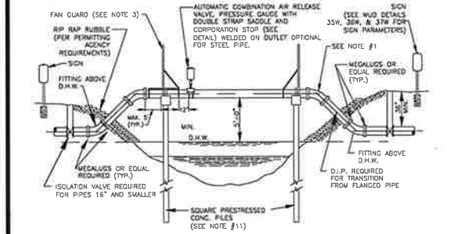
FITTING TYPE		PIPE SIZE 4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
90° HORIZ. BEND		14	20	25	30	35	45	54	62	73	84	93	101
45° HORIZ. BEND		6	8	11	13	15	19	22	26	30	35	38	42
22.5° HORIZ. BEND		3	4	5	6	7	9	11	12	15	17	18	20
11.25° HORIZ. BEND		1	2	3	3	4	5	5	7	8	8	9	10
90° VERT. OFFSET	UPPER BEND	29	41	53	64	74	95	115	134	160	185	207	228
	LOWER BEND	7	10	13	16	19	25	30	35	42	49	56	62
45° VERT. OFFSET	UPPER BEND	12	18	24	29	34	38	48	56	66	77	86	94
	LOWER BEND	3	4	6	7	8	10	12	15	18	20	23	26
22.5° VERT. OFFSET	UPPER BEND	6	9	12	14	17	19	23	27	32	37	41	45
	LOWER BEND	1	2	4	4	4	5	6	7	8	10	11	13
11.25° VERT. OFFSET	UPPER BEND	3	4	6	7	8	9	11	13	16	18	20	22
	LOWER BEND	1	1	1	2	2	2	3	3	4	5	5	6
PLUG (DD/D END)		32	45	58	70	83	107	129	151	180	185	207	228
IN-LINE VALVE		32	45	43	43	43	33	65	80	80	95	105	115
TEE (BRANCH RESTRAINT)	4"ø #	23	–	–	–	–	–	–	–	–	–	–	–
	6"ø #	21	35	–	–	–	–	–	–	–	–	–	–
	8"ø #	18	34	47	–	–	–	–	–	–	–	–	–
	10"ø #	16	32	46	58	–	–	–	–	–	–	–	–
	12"ø #	13	30	44	57	68	–	–	–	–	–	–	–
	16"ø #	7	28	41	55	67	90	–	–	–	–	–	–
	20"ø #	1	21	35	52	65	88	109	–	–	–	–	–
	24"ø #	1	16	34	49	62	86	108	129	–	–	–	–
	30"ø #	1	8	28	44	58	83	106	127	154	–	–	–
	36"ø #	1	1	22	38	54	80	103	124	153	179	–	–
	42"ø #	1	1	15	33	49	77	100	122	151	177	201	–
	48"ø #	1	1	7	27	44	73	97	120	149	176	200	222
REDUCER (LARGER PIPE RESTRAINT)	6"ø #	23	–	–	–	–	–	–	–	–	–	–	–
	8"ø #	38	25	–	–	–	–	–	–	–	–	–	–
	10"ø #	57	43	24	–	–	–	–	–	–	–	–	–
	12"ø #	72	60	44	41	–	–	–	–	–	–	–	–
	16"ø #	99	90	78	75	43	–	–	–	–	–	–	–
	20"ø #	123	116	107	105	81	45	–	–	–	–	–	–
	24"ø #	146	140	132	131	111	82	45	–	–	–	–	–
	30"ø #	137	153	148	141	133	113	87	56	–	–	–	–
	36"ø #	182	179	175	169	163	147	128	101	56	–	–	–
	42"ø #	205	202	199	194	189	175	150	128	105	54	–	–
	48"ø #	226	224	221	217	213	201	187	169	138	98	53	–

NOTES:

1. THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
   SOIL TYPE-SAND — TEST PRESSURE-150 PSI — DEPTH OF BURY-3'
   TRENCH TYPE-3 — SAFETY FACTOR- 1.5 — VERTICAL OFFSET-3'
   MINIMUM PIPE LENGTH ALONG TEE RUN-3'
2. THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
4. RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.
5. MULTIPLY PIPE LENGTH BY 1.8 FOR POLYETHYLENE ENCASED PIPE.
6. RESTRAINED PIPE LENGTHS EQUAL TO AN "INLINE VALVE" CONDITION ARE REQUIRED AT EACH END OF A TRANSITION FROM HDPE PIPE TO DI OR PCP PIPE MATERIALS.
7. DESIGN ENGINEER IS RESPONSIBLE FOR PROPER RESTRAINT PIPE LENGTH SIZING FOR THE PROJECT.

MECHANICAL THRUST RESTRAINT MINIMUM PIPE LENGTHS (FORCE MAINS)

41S



NOTES:

1. ALL EXPOSED PIPE SHALL BE DUCTILE IRON OR PREFABRICATED STEEL WITH FLANGED FITTINGS AND PROFILED GASKETS. RETAINER GLANDS AND UNIFLANGE TYPE FITTINGS ARE NOT TO BE SUBSTITUTED FOR FLANGED FITTINGS. PREFABRICATED STEEL PIPE MAY INCORPORATE WELDED ON LONG RADIUS UPPER BENDS. PREFABRICATED FLANGED PIPE SHALL BE FACTORY TESTED.
2. SPAN LENGTHS AS REQUIRED BY PERMITTING AGENCY
3. FAN GUARDS ARE REQUIRED. SEE FAN GUARD/PILE CAP DESIGN DETAILS, FOR ADDITIONAL REQUIREMENTS. ACCESS PLATFORM AND GATE REQUIRED ON ARV SIDE ONLY.
4A. ALL EXPOSED PIPING SHALL BE PAINTED AS SPECIFIED IN THE APPROVED MATERIAL LIST.
4B. ALL HARDWARE SHALL BE PAINTED WITH COAL-TAR EPOXY.
5. PIPE SHALL BE CRADLED ON ½" THICK NEOPRENE. (DUROMETER GRADE 50) CURRENT FDOT STANDARDS APPLY. NEOPRENE IS REQUIRED AT ALL STRAPS INSTALLED OVER STEEL PIPE. NEOPRENE SHALL EXTEND 1" BEYOND THE EDGES OF CRADLE AND STRAPS.
6. TIE-DOWN STRAPS MUST PROPERLY FIT AND SECURE PIPE IN CRADLE.
7. PIPE CRADLE IN CAP SHALL CONTACT ½ CIRCUMFERENCE OF PIPE. (SEE FAN GUARD DETAIL)
8. SHOW EXISTING CANAL CROSS SECTION, ULTIMATE CANAL SECTION, AND RELEVANT ELEVATIONS AND DISTANCES ON A TO SCALE DETAIL DRAWING.
9. PILE LIFT CABLE SHALL BE REMOVED BELOW SURFACE; HOLE SHALL BE FILLED WITH EPOXY CEMENT.
10. THREADED AREAS OF BRASS FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
11. THE PILES AND CAP DESIGN SHALL BE SHOWN ON TO SCALE SIGNED AND SEALED DETAIL DRAWINGS, MIN. 12"x12" TYPE 1A FLORIDA DOT INDEX PILES ARE REQUIRED. PILE PENETRATION BELOW CANAL BOTTOM SHALL BE 15' MINIMUM. MINIMUM LOAD CAPACITY OF 20 TONS PER PILE IS REQUIRED (FDOT STANDARDS APPLY). SIGNED AND SEALED SHOP DRAWINGS ARE REQUIRED.
12. PREFABRICATED STEEL PIPE SHALL HAVE WELDED ON BEARING PADS EXTENDING MIN. 1" BEYOND PIPE CRADLE. THE PADS SHALL BE INSTALLED BY STEEL PIPE MANUFACTURER PRIOR TO PAINTING.
13. FORCE MAIN CROSSINGS OVER BODIES OF WATER MAY BE SUBJECT TO A D.E.P. "NOTICED GENERAL ENVIRONMENTAL RESOURCE PERMIT" (NOP)

TYPICAL FORCE MAIN AERIAL CANAL CROSSING – SINGLE PIPE (SINGLE PILES)

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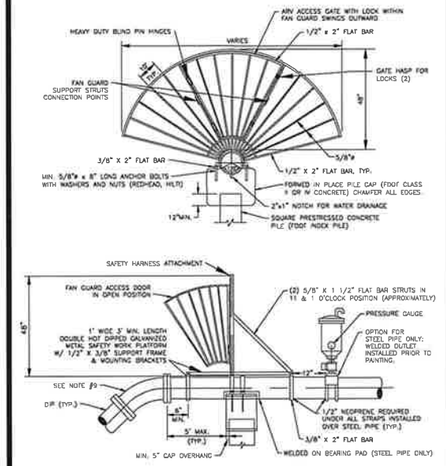
45S

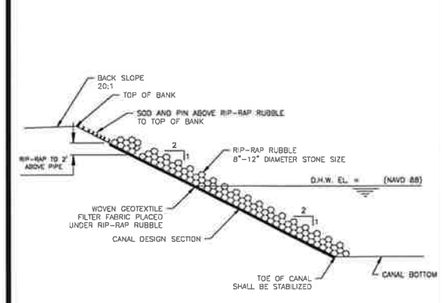


NOTES:

1. FAN GUARDS SHALL BE PLACED AT EACH END OF CANAL CROSSING.
2. HARDWARE SHALL BE PAINTED WITH COAL TAR EPOXY.
3. FANGUARD WITH HARDWARE SHALL BE FABRICATED FROM DOUBLE HOT DIPPED GALVANIZED STEEL.
4. SHOP DRAWINGS FOR FANGUARDS, CAPS, AND PILES MUST BE SUBMITTED TO PBCWUD FOR REVIEW AND APPROVAL PRIOR TO PRE-CONSTRUCTION MEETING.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. MIN. 2" CONCRETE COVER OVER ALL STEEL.
6. SEE "TYPICAL CANAL CROSSING DETAIL" FOR ADDITIONAL REQUIREMENTS.
7. NO WELDING OF REBAR TO REBAR OR REBAR TO PILE STRANDS SHALL BE ALLOWED.
8. DESIGN DRAWINGS ARE REQUIRED.
9. LONG RADIUS WELDED ON UPPER BENDS ARE ACCEPTABLE FOR STEEL PIPE.
10. IF A PILE/CAP STEEL CONNECTION IS REQUIRED BY DESIGNING ENGINEER, MIN. (4) #8 REINFORCEMENT BARS SHALL BE DRILLED AND DOWELED (EPOXIED) MIN. 16" DEEP INTO THE PILE AND TIED WITH THE CAP STEEL.
11. ACCESS PLATFORM AND GATE REQUIRED ON ARV SIDE ONLY.

FAN GUARD/ PILE CAP DESIGN – SINGLE PIPE (SINGLE PILES)

46S



NOTES:

1. RIP-RAP RUBBLE AND ITS INSTALLATION MUST MEET CANAL OWNERSHIP SPECIFICATIONS AND PERMITTING REQUIREMENTS.
2. DUMP RUBBLE IN PLACE FORMING A COMPACT LAYER CONFORMING TO THE CANAL DESIGN SECTION SLOPE. ENSURE THAT RUBBLE DOES NOT SEGREGATE SO THAT SMALLER PIECES EVENLY FILL THE VOIDS BETWEEN LAGER PIECES.
3. AN ALTERNATIVE DESIGN WILL BE CONSIDERED AND MUST RECEIVE PRIOR APPROVAL FROM THE CANAL PROPERTY OWNER.

RIP-RAP RUBBLE DETAIL

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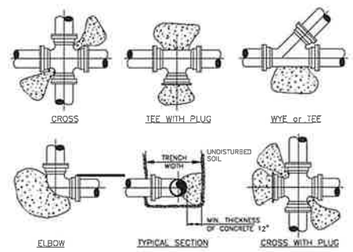
83S



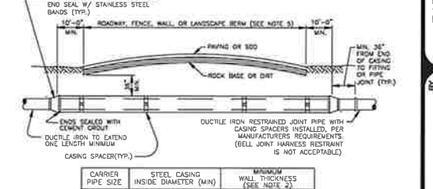
PIPE	THRUST BLOCK AREA REQ'D	REMARKS	NOTE: FOR OTHER FITTINGS USE THE FOLLOWING FACTORS:
4"	2.0 SQ. FT.	VALUES ARE FOR 90° BEND, BASED ON 2000 P.S.F. SAFE BEARING LOAD AND PIPE PRESSURE OF 150 P.S.I. FOR OTHER SOILS & PRESSURES THE AREA REQUIRED IS IN DIRECT PROPORTION	TEE 100%
6"	4.0 SQ. FT.		45° BEND 71%
8"	6.6 SQ. FT.		22 1/2° BEND 38%
10"	10.0 SQ. FT.		11 1/4° BEND 20%
12"	14.0 SQ. FT.		DEAD END 100%
14"	18.5 SQ. FT.		

NOTES:

1. CONCRETE THRUST BLOCKS OR THRUST COLLARS MAY BE UTILIZED ONLY IF NECESSARY FOR CONNECTIONS TO AN EXISTING PIPING SYSTEM, OTHERWISE MECHANICAL RESTRAINTS SHALL BE USED. KEEP "T" BOLTS CLEAN OF CONCRETE, WRAPPED IN VISQUEEN FOR FUTURE ACCESS, WITH A MINIMUM OF 1" THICKNESS BETWEEN THE FITTING AND SOIL.
2. BEFORE POURING CONCRETE, PLUGS SHALL BE WRAPPED WITH VISQUEEN AND A BOARD PLACED IN FRONT.
3. CONCRETE SHALL BE 2500 P.S.I. MINIMUM.
4. THE ENGINEER OF RECORD SHALL SUBMIT A THRUST BLOCK SIZE CALCULATION FOR TEE CONNECTIONS INTO UNRESTRAINED EXISTING MAINS LARGER THAN 14".
5. THE ENGINEER OF RECORD SHALL SUBMIT A PIPE RESTRAINT DESIGN FOR INLINE EXTENSIONS OF A EXISTING UNRESTRAINED MAIN IF MECHANICAL JOINT RESTRAINT CAN NOT BE INSTALLED ON THE EXISTING MAIN.

TYPICAL THRUST BLOCKS FOR PRESSURE PIPING

42S



CARRIER PIPE SIZE	STEEL CASING INSIDE DIAMETER (MIN)	MINIMUM WALL THICKNESS (SEE NOTE 2)
4"	12"	.188
6"	14"	.250
8"	20"	.250
10"	20"	.250
12"	24"	.250
14"	24"	.250
16"	30"	.312
18"	30"	.312
20"	36"	.372
24"	42"	.500
30"	48"	.500
36"	54"	.625
42"	60"	.625
48"	72"	.625

NOTES:

1. A PROFILE DRAWING TO SCALE FOR EACH JACK AND BORE, DIRECTIONAL DRILL, OR DIRECT BURIED INSTALLATION IS REQUIRED TO BE APPROVED BY THE DEPARTMENT PRIOR TO INSTALLATION. IF A SPLIT CASING IS REQUIRED THEN SHOP DRAWINGS ARE REQUIRED TO BE SUBMITTED AND APPROVED BY THE DEPARTMENT PRIOR TO CONSTRUCTION AND/OR INSTALLATION.
2. THICKER WALL CASINGS AND LARGER COVER OVER CASING MAY BE REQUIRED BY THE RICHT-OF-WAY OWNER.
3. STEEL CASING SHALL BE COATED OUTSIDE WITH COAL TAR EPOXY (MIN. 16 MILS DFT) AND BE PAINTED WITH A 4" MINIMUM WIDE CONTINUOUS STRIPE, COLOR CODED TO MATCH THE PIPE INSIDE, ALONG THE TOP AXIS OF THE CASING.
4. PIPE IN CASING SHALL BE INSULATED TO FULLY ENCASE RESTRAINT.
5. STEEL CASING IS REQUIRED FOR ALL WASTEWATER MAIN INSTALLATIONS UTILIZING JACK AND BORE CONSTRUCTION AND WHEN MAINS ARE INSTALLED UNDER FENCES, WALLS, OR LANDSCAPE BERMS. WHEN THE CASING IS INSTALLED UNDER FENCES, WALLS, OR LANDSCAPE BERMS IT SHALL BE CENTERED ON THE PREVIOUS BARRIER AND IS REQUIRED TO EXTEND 10' MINIMUM PAST BARRIER ON EACH SIDE UNLESS OTHERWISE PREVIOUSLY APPROVED BY THE DEPARTMENT.

WASTEWATER MAIN CASING INSTALLATION

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44S

WASTEWATER #5 STANDARD DETAILS

CONSULTANT:

DESIGNED BY: WUD
DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

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Water Utilities Department
P.O.Box 16097
West Palm Beach, FL 33416-6097

PROJECT NO. 6464.00

SUNSET SPRINGS
GREENACRES, FLORIDA

PALM BEACH COUNTY
WATER UTILITIES DEPARTMENT
P.O. BOX 16097
WEST PALM BEACH, FL 33416
(561)493-6000

NO.	DATE	REVISION / REMARKS	BY
1	JUNE 2019	RE-GENERAL REVISION	J.L.

STD DETAILS

SHEET NUMBER C-15 OF 17

SEAL

Oct 01, 2021

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