Development Order Plans

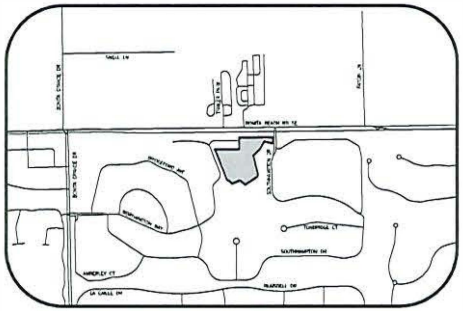
Located in Bonita Springs, Lee County
Section 05, Township 48 South, Range 26 East

Owner/Developer:

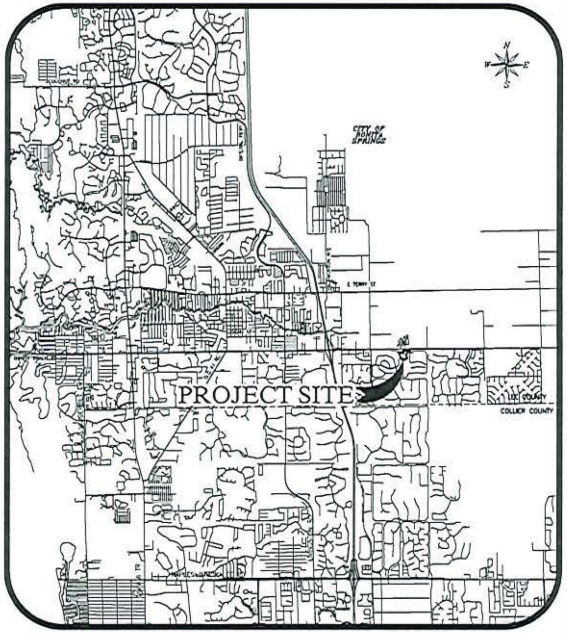
OWNER / DEVELOPER
Contact
Address 1
Address 2
City, State Zip Code
Tel: 100.555.1212
Fax: 100.555.1212

ORDINANCE XX-XX-AMENDMENT
COLLIER COUNTY ZONING: PUD
ENVIRONMENTAL RESOURCE PERMIT NO. XX-XXXXX-X

COLLIER COUNTY FOLIO NUMBER: XXXXXXXXX



Vicinity Map
N.T.S.



Location Map
N.T.S.

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Revisions

Revision	Date	Description	By

Prepared by:

GradyMinor
G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380

OSCAR LUCO, P.E.
G. GRADY MINOR & ASSOC., LLC
3800 VIA DEL REY
BONITA SPRINGS, FL 34134
NORTH FT. DELAGE RD 55719
EB/LB 0005151

SUBMITTAL: DO

DATE: 2023
FILE NAME: AGVF-DO-CC.DWG
JOB CODE: AGVF
SHEET NUMBER 1 OF 12

Development Order Plans

GradyMinor

UTILITY NOTES

1. BONITA SPRINGS UTILITIES (BSU) STANDARDS AND SPECIFICATIONS TO BE USED AT A MINIMUM.
2. SANITARY SEWAGE COLLECTION AND POTABLE WATER SYSTEMS – BONITA SPRINGS UTILITIES SHALL ONLY BE RESPONSIBLE FOR MAINTAINING THOSE SANITARY SEWER AND POTABLE WATER MAINS AND LATERALS WITHIN THE DESIGNATED PUBLIC UTILITY EASEMENTS AND UP TO THE CUSTOMER SIDE OF THE BACKFLOW PREVENTER FOR SIZES 2" AND SMALLER AND UP TO THE CUSTOMER SIDE OF THE METER FOR SIZES LARGER THAN 2". ALL MAINS, LATERALS AND/OR APPURTENANCES NOT LOCATED WITHIN PUBLIC EASEMENTS SHALL BE MAINTAINED BY THE OWNER AND/OR AN ASSOCIATION.
3. UNLESS OTHERWISE SPECIFIED, CROSS CONNECTION CONTROL SHALL FOLLOW BSU REQUIREMENTS.
4. ALL WATER LINES SHALL BE INSTALLED WITH A MINIMUM OF 30" COVER MEASURED FROM FINISHED GRADE UNLESS OTHERWISE SHOWN ON PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE MINIMUM COVER, REGARDLESS OF EXISTING GRADE. PERIODIC CHECKS FOR MINIMUM COVER WILL BE MADE BY THE CITY, BSU AND ENGINEER.
5. BONITA SPRINGS UTILITIES, FLORIDA POWER AND LIGHT, CENTURY LINK, COMCAST, ETC. MAY HAVE EXISTING UTILITIES ADJACENT TO AND/OR WITHIN THE PROPOSED CONSTRUCTION AREA. CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITIES TO LOCATE THEIR FACILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. THE LOCATION OF EXISTING UTILITIES AND STORM SEWER SHOWN ON THIS PLAN WAS BEEN PREPARED FROM RECORD DRAWINGS AND FIELD INFORMATION. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXACT LOCATION PRIOR TO CONSTRUCTION.
7. ALL UNDERGROUND UTILITIES AND INFRASTRUCTURE LOCATED BENEATH THE STABILIZED PORTION OF THE ROAD REDSHALL BE INSTALLED PRIOR TO COMPACTION OF THE SUBGRADE OR AS OTHERWISE DIRECTED BY THE OWNER.
8. DO NOT TIE WATER MAINS IN UNTIL LINES HAVE BEEN CLEARED BY FLORIDA DEPARTMENT OF HEALTH.
9. THE IRRIGATION SYSTEM SHALL BE OWNED AND MAINTAINED BY THE DEVELOPER OR HIS ASSIGN.
10. ALL CONDUITS FOR OTHER UTILITIES PER REQUIRES 10' HORIZONTAL SEPARATION FROM BSU INFRASTRUCTURE (5' FROM SERVICE LATERALS ONLY) SHALL BE PLACED A MINIMUM OF 18" VERTICAL AND 5' HORIZONTAL FROM POTABLE WATER, FORCE MAINS & SANITARY SEWER.
11. PRIVATE OWNED ON-SITE WATER LINES 3-INCH IN DIAMETER OR LESS SHALL MEET THE REQUIREMENTS OF ASTM D-1785 (SCH 40) OR ASTM D-2214 (SCH 80). PVC JOINTS SHALL BE PUSH-ON OR SOLVENT WELDED TYPE.
12. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SAFEGUARD ALL EXISTING STRUCTURES, UTILITIES AND SURVEY MARKERS IN THE AREA.
13. WATER MAINS SHALL BE PVC (AWWA C-900) DR-18 (CLASS 235)
14. ALL PVC GRAVITY SANITARY SEWER PIPE SHALL BE ASTM D3034 SDR 26 UNLESS OTHERWISE SHOWN
15. FORCE MAINS SHALL BE PVC (AWWA C-900) DR-18 (CLASS 235)
16. ALL WATER MAIN VALVES SHALL CONFORM TO AWWA C-509 RESILIENT SEATED TYPE.
17. ALL 8" SANITARY SEWER MAINS TO BE SLOPED AT 0.40% MINIMUM.
18. UNDERGROUND CONTRACTOR SHALL SCHEDULE AND COORDINATE WITH BONITA SPRINGS UTILITIES (239-992-0711) ENGINEERING DEPARTMENT ON THE FOLLOWING APPLICABLE CONSTRUCTION ITEMS:
    A. POTABLE WATER DISTRIBUTION
        1. CONNECTIONS
        2. PRESSURE TESTS
        3. FLUSHING AND BACTERIOLOGICAL TESTING
        4. METERS AND BACKFLOW PREVENTERS 2" OR SMALLER SHALL BE INSTALLED BY BSU.
    B. SANITARY SEWER COLLECTION AND PUMPING SYSTEM
        1. COLLECTION SYSTEM INSPECTION
        2. LOW PRESSURE AIR TESTING
19. WATER SERVICES TO BE STUBBED UP TO 2' ABOVE FINISH GRADE AND ATTACHED TO A 2" X 4" WOOD STAKE PAINTED BLUE PER BSU SPECIFICATIONS. STAKE SHALL BE BURIED A MINIMUM OF 2'.
20. ALL VALVES SHALL BE PLACED SUCH THAT VALVE PADS DO NOT LIE WITHIN THE CURB. VALVE PADS SHALL LIE ENTIRELY WITHIN OR OUTSIDE THE SIDEWALK.
21. ALL DOUBLE METER SERVICES SHALL BE 1" DR9, C901 POLYTUBE FROM THE MAIN TO THE DOUBLE METER BOX.
22. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY UNDERGROUND WORK.

ELECTRIC:	FLORIDA POWER AND LIGHT	(239) 353-6020
PHONE:	CENTURY LINK	(239) 263-6256
FIRE:	BONITA SPRINGS FIRE DISTRICT	(239) 992-3511
CATV:	COMCAST	(239) 432-1807
WATER AND SEWER:	BONITA SPRINGS UTILITIES	(239) 992-0711

OTHER UTILITIES MAY EXIST ON SITE, HOWEVER, IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAKE THIS DETERMINATION.

23. THE WATER METERS SHALL BE SIZED BY THE ENGINEER. METERS 2" AND SMALLER SHALL BE INSTALLED BY BSU. THE SERVICE LINES, BACKFLOW PREVENTOR AND METERS LARGER THAN 2" SHALL BE INSTALLED BY CONTRACTOR.
24. SANITARY LATERALS ARE 6" DIAMETER SDR26 PVC AT 1.00% MINIMUM SLOPE.
25. FIRE HYDRANT TO BE TEMPORARY BACTERIAL SAMPLING POINT. CONTRACTOR RESPONSIBLE FOR MAINTAINING SATISFACTORY ENVIRONMENT FOR SAMPLING.
26. TEMPORARY BACKFLOW PREVENTOR OR GAP CONFIGURATION MAY BE REQUIRED BY LOCAL FIRE CONTROL DISTRICT IF CONSTRUCTION WITH COMBUSTIBLE MATERIAL COMMENCES PRIOR TO THE ACCEPTANCE OF THE WATER MAIN BY BSU.
27. ALL WATER METER COMPONENTS THAT COME INTO CONTACT WITH DRINKING WATER SHALL CONFORM WITH NSF STANDARD 61.
28. FITTINGS SHALL BE USED FOR ALL HORIZONTAL AND VERTICAL DEFLECTIONS OF THE PRESSURE MAINS. BSU SPECIFICATIONS DO NOT ALLOW JOINT DEFLECTIONS OF THE PRESSURE MAINS.
29. ALL PRESSURE MAINS SHALL BE DEFLECTED WITH BENDS AROUND CATCH BASINS TO MAINTAIN 5' MINIMUM SEPARATION.
30. ANY LANDSCAPING DESTROYED DURING MAINTENANCE OF THE WATER AND/OR SEWER SYSTEMS SHALL NOT BE THE RESPONSIBILITY OF THE BSU TO REPLACE.
31. 1" AND 2" WATER SERVICE CASING UNDER ROAD TO BE 3" AND 4" SCH 40 PVC RESPECTIVELY.
32. LEE COUNTY DOT MUST BE OBTAINED PRIOR TO ANY CONSTRUCTION WITHIN THE BONITA BEACH RIGHT OF WAY

FIRE FLOW

FIRE FLOW CALCULATIONS

USE	BUILDING TYPE	AREA UNDER ROOF (SQ. FT.)	REQUIRED FLOW (GPM)	SPRINKLERED OR NON-SPRINKLERED	FIRE FLOW REDUCTION
MAINTENANCE FACILITY		1		UNSPRINKLERED	

FIRE NOTES

1. A SEPARATE PERMIT IS REQUIRED PRIOR TO INSTALLATION OF ANY FIRE LINE.
2. INSTALLATION OF ALL UNDERGROUND FIRE LINES SHALL COMPLY WITH THE 2010 EDITION OF NFPA 24.
3. UNDERGROUND FIRE SERVICE LINES FROM THE POINT OF CONNECTION TO 2' ABOVE GRADE AT THE RISERS WILL REQUIRE A SEPARATE PERMIT BY AND SHALL BE INSTALLED BY AN APPROPRIATELY LICENSED FIRE SPRINKLER CONTRACTOR OR A TYPE V UNDERGROUND CONTRACTOR AS DEFINED & OUTLINED IN 633.021, 633.521, & 633.539 F.S.
4. USE PVC C900 CL200 DR14 WHEN PIPE IS UNDER PAVEMENT.
5. THE BUILDING REQUIRES A STANDPIPE BE INCORPORATED INTO THE DESIGN OF THE FIRE PROTECTION SYSTEM BY A LICENSED CONTRACTOR IN ADDITION TO THE SPRINKLER SYSTEM INFRASTRUCTURE AS DUPICTED

NOTE

ALL COSTS AND EXPENSES OF ANY AND ALL REPAIRS, REPLACEMENTS, MAINTENANCE AND RESTORATIONS OF ABOVE GROUND IMPROVEMENTS INSTALLED WITHIN A C.U.E. SHALL BE THE SOLE FINANCIAL RESPONSIBILITY OF THE GRANTOR, ITS SUCCESSORS OR ASSIGNEES.

GENERAL NOTES

1. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88). CONVERSION FROM NAVD 88 TO NGVD 29 = (+)1.207 FEET
2. BLACK SILT FENCE SHALL BE PLACED ALONG THE PROPERTY LINES AND/OR CONSTRUCTION LIMITS PRIOR TO CONSTRUCTION. REFER TO CLEARING AND EROSION CONTROL PLAN SHEET FOR SILT FENCE CONSTRUCTION INFORMATION, AS APPLICABLE.
3. ALL DISTURBED AREAS SHALL RECEIVE SEED AND MULCH, EXCEPT WHERE SPECIFICALLY IDENTIFIED AS A PAY ITEM FOR A PARTICULAR AREA. SILLD AND MULCH IS INCIDENTAL TO THE PROJECT.
4. UTILIZE SYNTHETIC BALES, TEMPORARY BERMING, SOD, SEED, AND MULCH TO CONTROL EROSION AS REQUIRED OR DIRECTED BY THE OWNER OR ENGINEER OR TO MEET NPDES REQUIREMENTS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION AND CONTROL OF ANY EROSION, SEDIMENTATION OR SURFACE WATER TURBIDITY CAUSED BY HIS ACTIVITY.
6. CONTROL STRUCTURES, SEDIMENT SUMPS AND OTHER FEATURES PERMITTED AS PART OF THE WATER MANAGEMENT SYSTEM SHALL BE CONSTRUCTED AS EARLY AS POSSIBLE IN THE CONSTRUCTION SEQUENCE.
7. ALL JUNCTION BOX RIMS AND GRATE INLETS SHALL BE SET AT THE PROPOSED FINISHED GRADE. ENGINEER AND/OR OWNER MAY ADJUST RIM AND GRATE ELEVATIONS IN FIELD.
8. DURING CONSTRUCTION, GRATE INLET AND JUNCTION BOX OPENINGS SHALL BE COVERED WITH FILTER FABRIC (MIRAFI 140N OR APPROVED EQUAL) TO PREVENT DEBRIS AND FILL FROM FALLING INTO THE INLET
9. LANDSCAPING AND IRRIGATION SHALL BE INSTALLED PRIOR TO FINAL ACCEPTANCE.
10. EXISTING REFERS TO FACILITIES EITHER PREVIOUSLY CONSTRUCTED OR TO BE CONSTRUCTED UNDER SEPARATE DEVELOPMENT ORDER.
11. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DEVIATION IN PLAN INFORMATION SHALL BE REPORTED TO THE ENGINEER AND OWNER'S REPRESENTATIVE IMMEDIATELY.
12. CONTRACTOR IS REQUIRED TO OBTAIN FROM THE ENGINEER AND OWNER WRITTEN APPROVAL FOR ANY DEVIATION IN PLANS AND/OR SPECIFICATIONS.
13. NOTIFICATION TO THE CITY OF BONITA SPRINGS CONCERNING ANY DEVIATION IN PLANS AND/OR SPECIFICATIONS IS REQUIRED.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND USAGE OF THE EXISTING STREETS ADJACENT TO THE PROJECT. ALL TRAFFIC MAINTENANCE CONTROL SHALL BE IN ACCORDANCE WITH FLORIDA MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS. TRAFFIC CONTROL OPERATION PROCEDURES SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
15. INSTALLATION OF SUBSURFACE CONSTRUCTION, INCLUDING BUT NOT LIMITED TO WATER AND IRRIGATION LINES, SEWER LINES, PUBLIC UTILITIES AND STORM DRAINAGE IS REQUIRED PRIOR TO COMPACTION OF SUBGRADE AND ROADWAY CONSTRUCTION.
16. CONTRACTOR SHALL ATTEND PRE-CONSTRUCTION MEETING WITH BSU, CITY OF BONITA SPRINGS, OWNER AND ENGINEER PRIOR TO START OF CONSTRUCTION.
17. THE FIRE PROTECTION WATER SUPPLY INCLUDING FIRE HYDRANTS, SHALL BE INSTALLED AND IN-SERVICE PRIOR TO PLACING COMBUSTIBLE MATERIALS ON SITE. FIRE HYDRANTS SHALL BE MARKED IN A UNIFORM MANNER, IN ACCORDANCE WITH NFPA 291.
18. EXOTIC VEGETATION AS DEFINED BY CITY OF BONITA SPRINGS LAND DEVELOPMENT CODE (LDC), SHALL BE REMOVED FROM THE SITE AND SUBSEQUENT ANNUAL EXOTIC REMOVAL (IN PERPETUITY) SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
19. CONTRACTOR SHALL CLEAR ALL EXCAVATION AND FILL AREAS, THOSE PLANS, WHEN APPROVED BY THE CITY OF BONITA SPRINGS CONSTITUTE THE CLEARING LIMITS.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL TREES, BRUSH, STUMPS AND DEBRIS (INCLUDING EXISTING STRUCTURES) NOT REQUIRED TO REMAIN IN THE PROPOSED CONSTRUCTION AREA. WHERE SO DEPICTED BY THE OWNER'S REPRESENTATIVE, TREES AND VEGETATION WITHIN THE CLEARING LIMITS SHALL BE PROTECTED, LEFT STANDING, AND TRIMMED TO PREVENT DAMAGE TO LIMBS AND ROOTS DURING CONSTRUCTION.
21. CONTRACTOR SHALL REMOVE ALL MUCK AND OTHER UNSUITABLE MATERIAL FROM FILL AREAS PRIOR TO PLACEMENT OF FILL. ALL MUCK AND OTHER UNSUITABLE MATERIAL EXCAVATED FROM LAKES OR REMOVED FROM FILL AREAS SHALL BE STOCKPILED AND THEN PLACED WITHIN THE PROPOSED PROJECT AS DETERMINED BY OWNER.
22. ALL FILL SLOPES SHALL BE PROPERLY COMPACTED AS REQUIRED IN THE SPECIFICATIONS AND SHALL BE SEEDED OR SODDED AS DIRECTED BY OWNER WITHIN 24 HOURS OF FINAL GRADING.
23. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH FP&L ON THE INSTALLATION OF STREET OR PARKING LOT LIGHTS, UNDERGROUND INSTALLATION, TRANSFORMER INSTALLATION, ETC.
24. THE REVIEW AND APPROVAL OF THESE IMPROVEMENT PLANS DOES NOT AUTHORIZE THE CONSTRUCTION OF REQUIRED IMPROVEMENTS WHICH ARE INCONSISTENT WITH EXISTING EASEMENTS OF RECORDS.
25. THE PROPERTY OWNER IS RESPONSIBLE FOR REPLACEMENT OF ALL DEAD LANDSCAPE MATERIAL AND MAINTENANCE OF THE REQUIRED IRRIGATION SYSTEM AFTER THE EXPIRATION OF THE CONTRACTOR'S WARRANTY PERIOD.
26. A PORTION OF THIS SITE IS LOCATED IN A FLOOD PLAIN AND FLOOD WAY. COMPENSATING STORAGE HAS BEEN PROVIDED AND FLOODPLAIN LINE WILL BE REVISED PER FUTURE LOMAR.
27. THIS PROJECT SHALL NOT CAUSE ADVERSE IMPACTS TO GROUND AND/OR SURFACE WATERS.
28. SITE IS SAFE FOR BUILDING PURPOSES BASED ON REVIEW OF FEMA FLOOD MAPS AND USGS SOIL SURVEY OF LEE COUNTY. FOUNDATION DESIGN BY OTHERS.
29. THE SURVEY SHOWS EXISTING EASEMENTS, IF ANY, THAT WERE PROVIDED.
30. THIS SITE DOES NOT EXHIBIT FRESHWATER OR SALTWATER INUNDATION.
31. FIRE PROTECTION DESIGN SUBMITTED WITH THE INITIAL BUILDING PERMIT APPLICATION IS REQUIRED TO HAVE THE DESIGN CRITERIA OF SUCH SYSTEM OUTLINED PER FLORIDA ENGINEERING STANDARDS, 61G15-32.
32. NO POOL DRAINS/OVERFLOWS ARE TO CONNECT TO THE SANITARY SEWER SYSTEM. DISCHARGE INTO THE STORMWATER MANAGEMENT MUST FOLLOW FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION "FLORIDA GREEN LODGING PROGRAM BEST MANAGEMENT PRACTICE" FOR SWIMMING POOL DISCHARGES.

SITE DATA

		ACRES	SQ. FT.	%
TOTAL SITE AREA	=	9.08	395341	100
IMPERVIOUS			2	00
BUILDING	=	0.00	1	00
PAVEMENT (INCLUDES	=	0.00	1	00
LAKE	=	0.00	1	00
OPEN RETENTION	=	0.00	1	00
PERVIOUS	=	9.08	395339	100

(INCLUDES FRESHWATER AND WETLANDS, FLOODPLAIN COMPENSATION, BUFFERS, LANDSCAPE AREAS)

	REQUIRED (FT)	PROVIDED (FT)
MINIMUM LOT SIZE	S.F.	43560 S.F. (±0.19 AC)
MINIMUM LOT WIDTH	FT	150.77FT
MINIMUM BUILDING SETBACKS		
FRONT (N)	FT	100.3FT
REAR (S)	FT	14.2FT
SIDE (E)	FT	16.5FT
SIDE (W)	FT	61.3FT

ZONING DATA SHEET TABLE		
	REQUIRED (FT)	PROVIDED (FT)
ACTUAL HEIGHT	77FT	22.2FT
STAIR HEIGHT	16FT	22FT

NOTE: MINIMUM VERTICAL OVERHEAD CLEARANCE OF 13'6" PROVIDED.

PERIMETER LANDSCAPE BUFFERING

BY ADJACENT VACANT (FUTURE DEVELOPMENT) NORTHSIDE	10 WIDE, TYPE A
BY ADJACENT VACANT SOUTHSIDE	10 WIDE TYPE A
BY ADJACENT BEACH BOULEVARD EASTSIDE	20 WIDE, TYPE D
BY ADJACENT RESIDENTIAL AREA WESTSIDE	10 WIDE, TYPE A

UTILITIES SERVING THIS SITE

WASTEWATER & WATER SERVICE	BONITA SPRINGS UTILITIES, INC. 11900 E. TERRY STREET BONITA SPRINGS, FL 34135 239-992-0711
DISPOSAL	ADVANCE DISPOSAL 17101 PINE RIDGE ROAD FORT MYERS BEACH, FL 33931 239-334-1224
ELECTRIC SERVICE	FLORIDA POWER AND LIGHT COMPANY 13634 WINKLER ROAD FT. MYERS, FL 33908 800-228-2345 239-353-6020
TELEPHONE SERVICE	CENTURY LINK 800-786-6272 239-263-6256
CABLE SERVICE	COMCAST 24830 S. TAMIAMI TR BONITA SPRINGS, FL 34134 800-391-3000 239-432-1807
FIRE AND RESCUE SERVICE	BONITA SPRINGS FIRE CONTROL AND RESCUE 27701 BONITA GRANDE DR BONITA SPRINGS, FL 34135 239-949-8200
GAS SERVICE	TECO GAS 5901 ENTERPRISE PARKWAY FORT MYERS, FL 33905 877-832-6747

LEGEND

Revision	Date	Description	By

DESIGNED BY: M.C.D.
DRAWN BY: C.G.K.
APPROVED: M.J.D.
JOB CODE: WCMF
SCALE: #####

GradyMinor
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4300

G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

GENERAL INFORMATION SHEET

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+)

OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWP/RNG: 05/48S/26E
DATE: 2023
SUBMITTAL TYPE: DD
SHEET 2 OF 12

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LEGEND

ESMT	EASEMENT
MH	EX. SAN. SEWER MAN HOLE
SSO	EX. SAN. SEWER SERVICE w/CO
SV	EX. SAN. SEWER PLUG VALVE
CO	EX. SAN. SEWER CLEANOUT
F.M.	SAN. SEWER FORCE MAIN
W.M.	WATER MAIN
W.S.	EX. WATER SERVICE w/METER
FH	EX. FIRE HYDRANT
WV	EX. W.M. GATE VALVE & VALVE BOX
IV	EX. IRRIGATION CONTROL VALVE
MH	EX. STORM DRAINAGE MANHOLE
	EX. STORM DRAINAGE INLET STRUCTURE
MES	EX. MITERED END SECTION
FES	EX. FLARED END SECTION
	EX. ELECTRICAL STRUCTURE
	EX. TELECOMMUNICATIONS UTILITY
LP	EX. LIGHT POLE
WPP	EX. WOODEN POWER POLE
UP	EX. UTILITY POLE
	EX. GRADE ELEVATION

Revision	Date	Description	By

DESIGNED BY: M.G.D.
DRAWN BY: C.G.K.
APPROVED: M.J.S.
JOB CODE: WCMF
SCALE: 1" = 50'

GradyMinor

Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Port Myers: 239.690.4388

G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

AERIAL AND EXISTING CONDITIONS PLAN

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+)

OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWN/RNG: 05/48S/26E
DATE: 2023
SUBMITTAL TYPE: DO
SHEET 3 OF 12

CATCH BASIN PROTECTION DETAIL
N.T.S.

NOTES:

1. BALES SHOULD BE ANCHORED w/2-1"x2' (OR 1" DIA.)x4' WOOD STAKES. STAKES OF OTHER MATERIAL OR SHAPE PROVIDING EQUIVALENT STRENGTH MAY BE USED IF APPROVED BY ENGINEER. STAKES OTHER THAN WOOD SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
2. RAILS AND POSTS SHALL BE 2"x4" WOOD. OTHER MATERIALS PROVIDING EQUIVALENT STRENGTH MAY BE USED IF APPROVED BY ENGINEER.
3. ADJACENT BALES SHALL BE BUTTED FIRMLY TOGETHER.
4. WHERE USED IN CONJUNCTION w/SILT FENCE, BALES SHALL BE PLACED ON THE UPSTREAM SIDE OF THE FENCE.

EROSION CONTROL NOTES:

1. SILT FENCE SHALL BE INSTALLED ALONG THE PROPERTY LINES AND/OR CONSTRUCTION LIMITS PRIOR TO INITIATING CLEARING AND DEMOLITION. SILT FENCE SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF CONSTRUCTION OF APPLICABLE SITE INFRASTRUCTURE.
2. THE CONTRACTOR SHALL UTILIZE SUITABLE EROSION CONTROL DURING CLEARING. PROTECTIVE BARRIERS WILL REMAIN IN PLACE FOR DURATION OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE LEGAL DISPOSAL OF ALL CLEARING DEBRIS OFF OWNER'S PROPERTY.
3. UTILIZE SYNTHETIC BALES, TEMPORARY BERMING, SOD, SEED, AND MULCH TO CONTROL EROSION AS REQUIRED OR DIRECTED BY THE OWNER OR ENGINEER OR TO MEET NPDES REQUIREMENTS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION AND CONTROL OF ANY EROSION, SEDIMENTATION, OR SURFACE WATER TURBIDITY CAUSED BY HIS ACTIVITY.
5. DURING CONSTRUCTION, GRATE INLET AND JUNCTION BOX OPENINGS SHALL BE COVERED WITH FILTER FABRIC (MIRAFI 140N OR APPROVED EQUAL) TO PREVENT DEBRIS AND FILL FROM FALLING INTO THE INLET.

TYPICAL SILT FENCE DETAIL
N.T.S.

GRAVEL OR PAVED CONSTRUCTION ENTRANCE DETAIL (RUBBLE STRIP)
N.T.S.

LEGEND

Revision	Date	Description	By

DESIGNED BY: M.C.D.
DRAWN BY: C.G.K.
APPROVED: M.J.D.
JOB CODE: WCMF
SCALE: 1" = 20'

GradyMinor

Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266

G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380

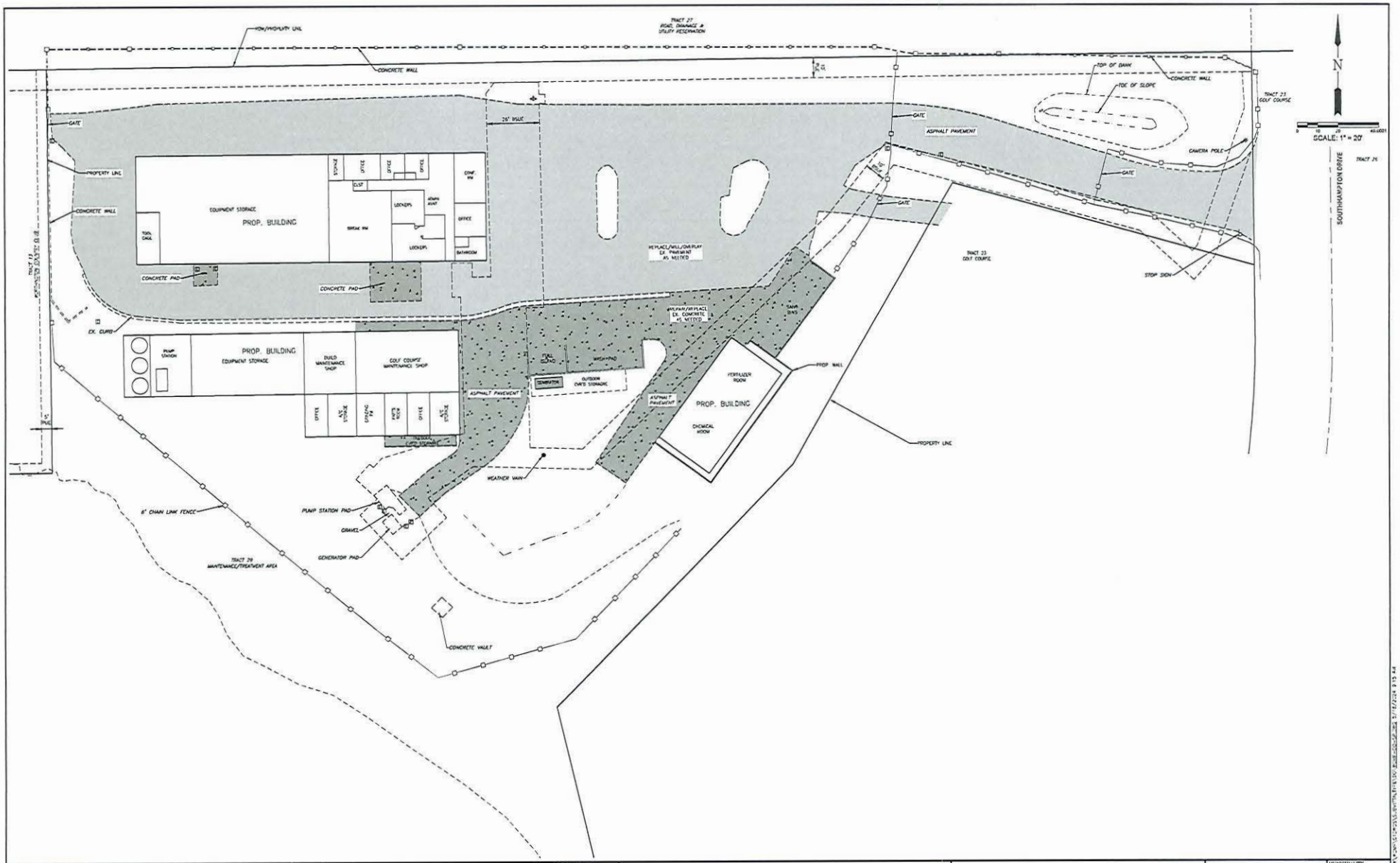
WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

EROSIONS CONTROL AND DEMOLITION PLAN

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88) CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+) .

OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWNSHP/RNG: 05/49S/26E
DATE: 2023
SUBMITTAL TYPE: DD
SHEET 4 OF 12



LEGEND

EX. PAVEMENT
PROP. PAVEMENT
EX. SIDEWALK
PROP. SIDEWALK/CONCRETE
EX. PAVERS
PROP. PAVERS
PROP. DECORATIVE PAVERS
EX. PRESERVE
PROP. PRESERVE

Revision	Date	Description	By

WETLANDS
ALTERNATE METLAND BUFFER

DRAFTED BY: M.G.D.
DRAWN BY: C.G.K.
APPROVED: M.J.D.
JOB CODE: WGMF
SCALE: 1" = 20'

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Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000256

Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380

G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

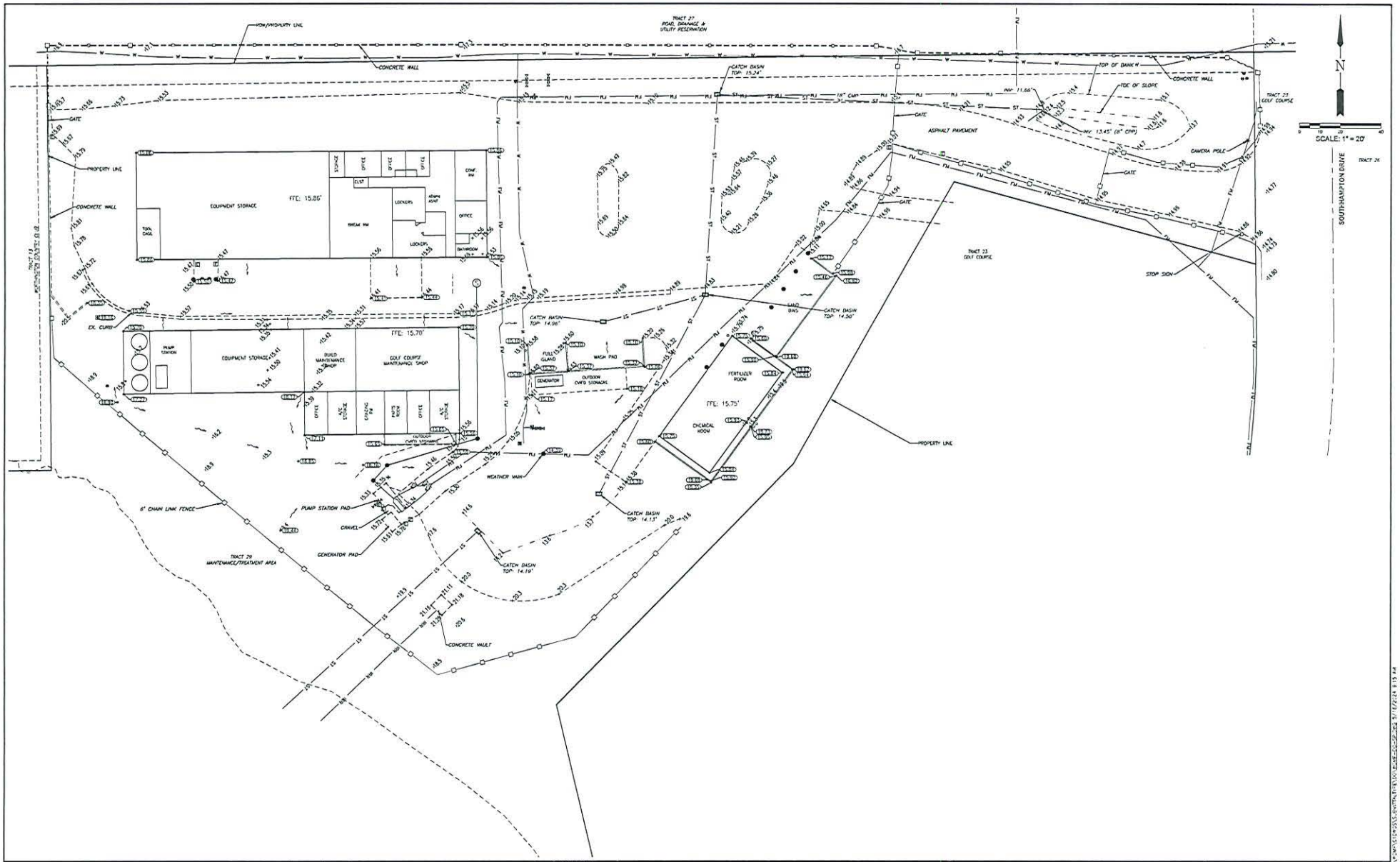
WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

SITE PLAN

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+)

OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWNSHP/RNG: 05/48S/25E
DATE: 2023
SUBMITTAL TYPE: DD
SHEET 5 OF 12



LEGEND

LBE	LANDSCAPE BUFFER EASMT	TOW	TOE OF SLOPE
EASMT	EASEMENT	EOW	EDGE OF WATER
CB	CATCH BASIN	NOW	NO OWNER WALVE
CS	CONTROL STRUCTURE		FLOW DIRECTION
DNI	DECH BOTTOM INLET	20.00	PROPOSED GRADE
JB	JUNCTION BOX	20.00	EXISTING GRADE
MES	MITERED END SECTION		
PE	PIPE END WARP NAP		
TI	THROAT INLET		
TOB	TOP OF BANK		

Revision	Date	Description	By

DESIGNED BY: M.C.D.
DRAWN BY: C.D.K.
APPROVED: M.J.D.
JOB CODE: WCMF
SCALE: 1" = 20'

GradyMinor

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G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

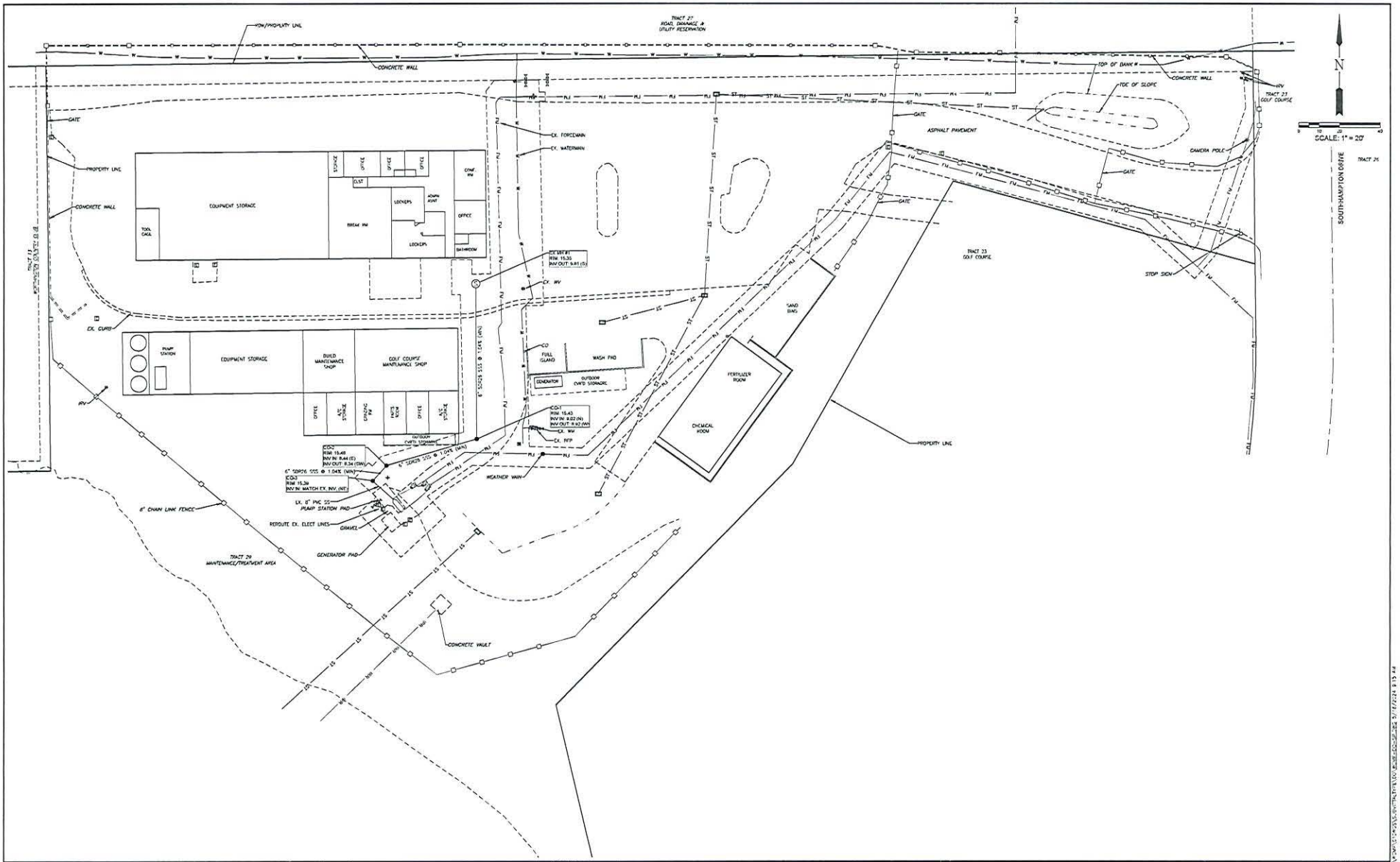
WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

GRADING DRAINAGE IMPROVEMENTS PLAN

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+) .

OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88716

MUNICIPALITY: BONITA SPRINGS
SEC/TWNSHP/RNG: 05/48S/26E
DATE: 2023
SUBMITTAL TYPE: DD
SHEET 6 OF 12



LEGEND

Revision	Date	Description	By

DESIGNED BY: M.C.D.
DRAWN BY: C.G.W.
APPROVED: M.J.D.
JOB CODE: WGMF
SCALE: 1" = 20'

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3800 Via Del Rey
Bonita Springs, Florida 34134

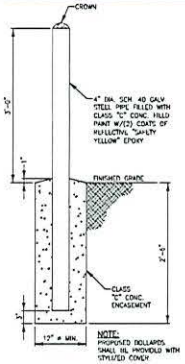
WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

UTILITIES PLAN

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+) .

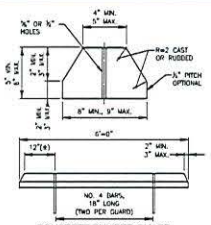
OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWNSHP/RNG: 05/48S/26E
DATE: 2023
SUBMITTAL TYPE: DD
SHEET 7 OF 12

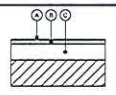


NOTE:
PROPOSED BOLLARDS SHALL BE PROVIDED WITH STYLIZED CONCH

ROLLARD POST
N.T.S.



CONCRETE BUMPER GUARD
N.T.S.



(A) 1.5" ASPHALT WEARING SURFACE COMPACTED TO 95% OF THE LABORATORY MARSHALL DENSITY. F.D.O.T. TYPE S-III, MIX. 405E RECYCLE.

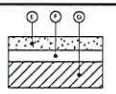
(B) 6" LIMEROCK OR SHELL ROCK BASE LBR 100, COMPACTED TO AT LEAST TO 98% OF THE MODIFIED PROCTOR

(C) 12" STABILIZED SUBBASE LBR 40, COMPACTED TO AT LEAST 98% OF THE MODIFIED PROCTOR

ASPHALT DETAIL
N.T.S.

NOTES:

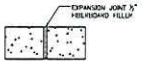
1. BASE MATERIAL SHALL BE EXTENDED A MINIMUM OF 1 FOOT BEYOND THE BACK OF CURB AND SUB-BASE SHALL BE EXTENDED 1 FOOT MIN. BEYOND THE BASE.
2. CONCRETE PAVEMENT SHOULD BE CONSTRUCTED ONLY OVER STABLE AND SMOOTH COMPACTED SUBGRADES. ANY SURFACE DISTURBANCES OR WHEEL RUTTING SHOULD BE REPAIRED PRIOR TO PLACEMENT OF CONCRETE.
3. THE SUBGRADE SHOULD BE THOROUGHLY WETTED IMMEDIATELY PRIOR TO THE PLACEMENT OF CONCRETE TO MINIMIZE ABSORPTION OF MOISTURE FROM THE CONCRETE DURING CURING.
4. CONCRETE PAVEMENT THICKNESS SHOULD BE UNIFORM THROUGHOUT, WITH THE EXCEPTION OF CURBING OR THICKENED EDGES.
5. CONCRETE PAVEMENT CAN BE USED IN PLACE OF ASPHALT.



(E) 8" CONCRETE (4000 PSI), 10' X 10' CONTROL JOINT SPACING W/ MIN. 1=1/4" SAW-CUT DEPTH.

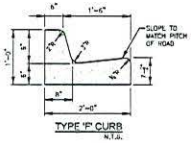
(F) 4" LIMEROCK OR SHELL ROCK BASE LBR 100, COMPACTED TO AT LEAST TO 98% OF THE MODIFIED PROCTOR

(G) 12" COMPACTED SUB-BASE, MIN LBR 20 COMPACTED TO 98% MAX. DENSITY (ASTM D-1557)

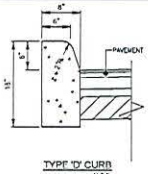


NOTE:
CONTRACTOR SHALL COMPLY WITH THE DESIGN DATA AND RECOMMENDATION OF THE PCA "DESIGN AND CONSTRUCTION OF CONCRETE PAVEMENT MANUAL" FOR CONCRETE PAVEMENT JOINT SPACING. THIS IS TO INCLUDE: CONTROL/CONSTRUCTION, CONTRACTION AND ISOLATION JOINTS.

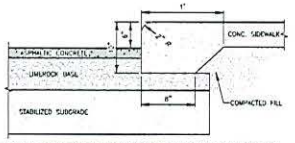
CONCRETE PAVEMENT CONSTRUCTION
N.T.S.



TYPE "F" CURB
N.T.S.



TYPE "D" CURB
N.T.S.

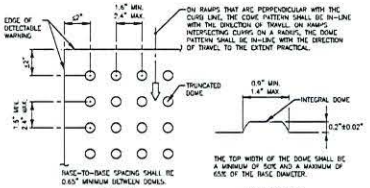


ALTERNATE SECTION AT PAVEMENT/SIDEWALK INTERFACE
N.T.S.

CURB NOTES:

1. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS, UNLESS OTHERWISE NOTED.
2. ALL EXPANSION JOINTS SHALL BE CONSTRUCTED WITH 1/2" BITUMINOUS IMPREGNATED EXPANSION JOINT MATERIAL.
3. AN EXPANSION JOINT SHALL BE PLACED AT THE END OF ALL RETURNS & AT INTERVALS NOT TO EXCEED 50', WITH CONTRACTION JOINTS AT 10' MAX. INTERVALS BETWEEN.

REFERENCE:
FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 2020-021 AS APPLICABLE.

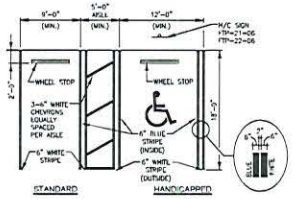


PLAN VIEW

TRUNCATED DOME

ALL SIDEWALK CURB RAMPS SHALL HAVE DETECTABLE WARNING SURFACES THAT EXTEND THE FULL WIDTH OF THE RAMP AND IN THE DIRECTION OF TRAVEL 24 INCHES (610 MM) FROM THE BACK OF CURB.

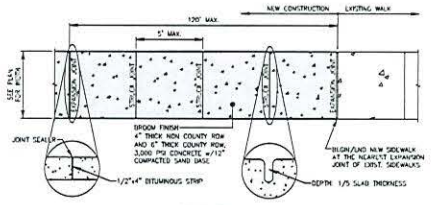
CURB RAMP DETECTABLE WARNING DETAIL
N.T.S.



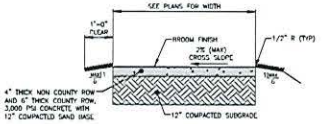
TYPICAL PARKING SPACES DETAIL
N.T.S.

NOTES:

1. DIMENSIONS ARE TO CENTERLINE OF MARKINGS.
2. BLUE PAVEMENT MARKINGS SHALL BE TRIED TO MATCH FS180 OF FEDERAL STANDARD 595a.
3. THE FTP-22-D6 PANEL SHALL BE MOUNTED BELOW THE FTP-21-D6 SIGN



PLAN VIEW



NOTES:

1. THE PROPOSED FILL SHALL BE COMPACTED IN 12" LIFTS TO 95% MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-180 AND THE ENGINEER'S SPECIFICATIONS.
2. SUBGRADE FOR THE CONCRETE SIDEWALK SHALL BE 12" THICK SAND, COMPACTED TO A FIRM EVEN SURFACE, TRUE TO GRADE AND CROSS-SECTION, AND BE MOIST WHEN CONCRETE IS PLACED.
3. SIDEWALK SHALL HAVE CONTRACTION JOINTS AT 5' INTERVALS AND AN EXPANSION JOINT EVERY 120' MAXIMUM.
4. A CLEAR 1' WIDE GRADED AREA WITH A MAXIMUM 1:6 SLOPE SHOULD BE PROVIDED ADJACENT TO THE SIDEWALK IN GRASS OR LANDSCAPE AREAS.
5. IF A DROP-OFF GREATER THAN 10" THAT IS CLOSER THAN 2' FROM THE EDGE OF THE SIDEWALK OR A SLOPE STEEPER THAN 1:3 THAT BEGINS CLOSER THAN 2' FROM THE EDGE OF THE SIDEWALK, THEN THESE AREAS SHOULD BE CONSIDERED A HAZARD AND SHIELDED WITH A RAILING, FENCE OR OTHER APPROVED BARRIER IN COMPLIANCE WITH FDW 222.4, LATEST EDITION.
6. SIDEWALKS SHALL HAVE TOOLED EDGES.
7. CONSTRUCTION JOINTS SHALL BE LOCATED AT STRUCK JOINTS OR EXPANSION JOINTS ONLY.
8. SIDEWALKS LOCATED WITHIN FDOT FRONT OF WAY SHALL COMPLY WITH FDOT STD. PLANS INDEX #522-001 AND CORRESPONDING SPECIFICATIONS.

TYPICAL SIDEWALK SECTION
N.T.S.

LEGEND

Revision	Date	Description	By

DESIGNED BY: M.C.D.
DRAWN BY: C.G.K.
APPROVED: M.J.D.
JOB CODE: WCMF
SCALE: ########

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WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

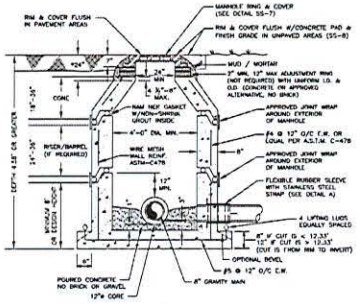
CONSTRUCTION DETAILS

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+) .

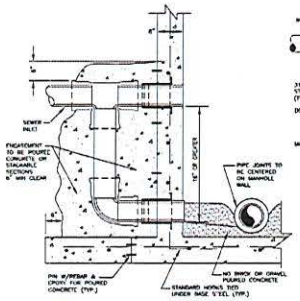
OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWNSHP/RNG: 05/48S/26E
DATE: 2023
SUBMITTAL TYPE: DD
SHEET 8 OF 12

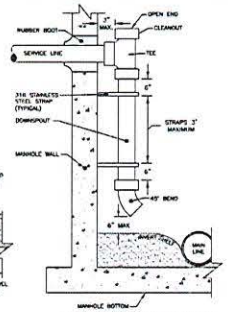
G:\ENGINEERING\PROJECTS\2-ENGINEERING\2315-BONITA\PROJECT\DWG\WCMF-CONSTRUCTION DETAILS.DWG 3/15/2024 9:15 AM



PRECAST MANHOLE – CONCENTRIC
SS-1

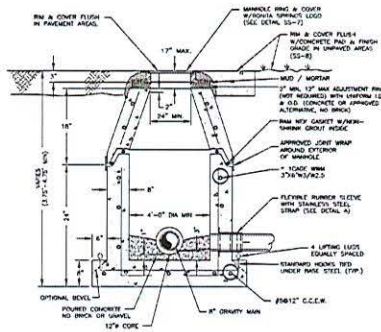


EXTERNAL DROP MANHOLE CONNECTION

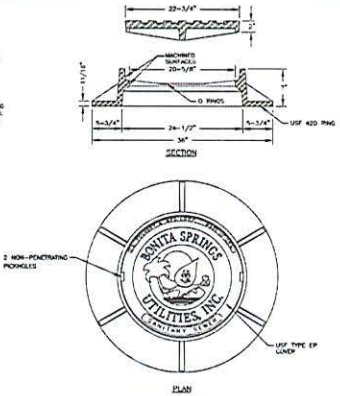


INTERNAL DROP MANHOLE CONNECTION
(WITH WRITTEN BSU APPROVAL ONLY)

DROP MANHOLE CONNECTIONS
SS-3



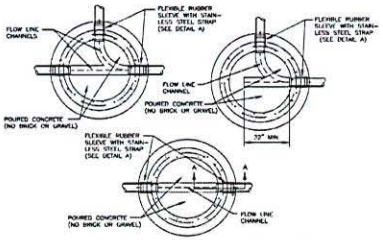
SHALLOW MANHOLE
SS-4



SECTION

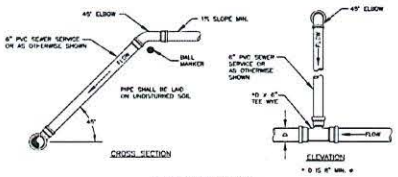
PLAN

MANHOLE RING & COVER DETAIL
SS-7



DETAIL A

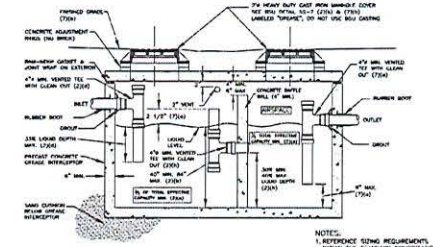
FLOW LINE CHANNELS
SS-8



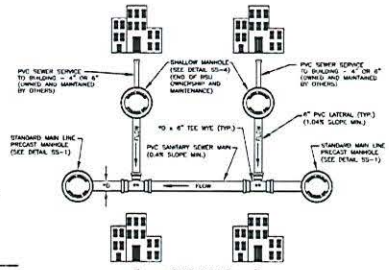
CROSS SECTION

ELEVATION

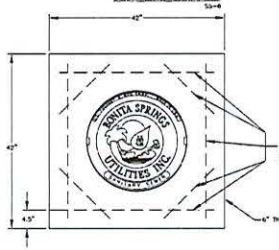
SEWER CONNECTION
FOR DEPTHS OVER 8 FEET
SS-10



GRAVITY GREASE INTERCEPTOR
SS-11

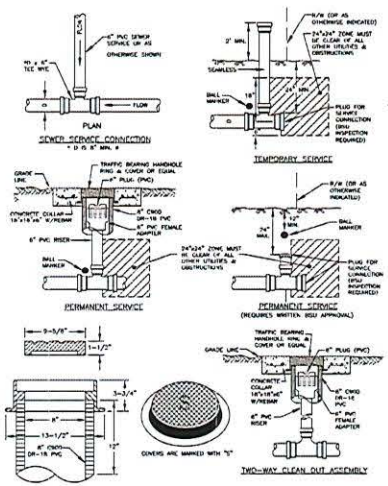


CONNECTION OPTIONS WITH SHALLOW MANHOLES FOR
MULTIPLE MULTI-FAMILY OR
MULTI-UNIT/MULTI STORY COMMERCIAL BUILDINGS
SS-29



MANHOLE CONCRETE COLLAR
SS-8

*FOR USE IN UNPAVED AREAS ONLY OR AT THE DISCRETION OF BSU



SEWER SERVICE CONNECTION

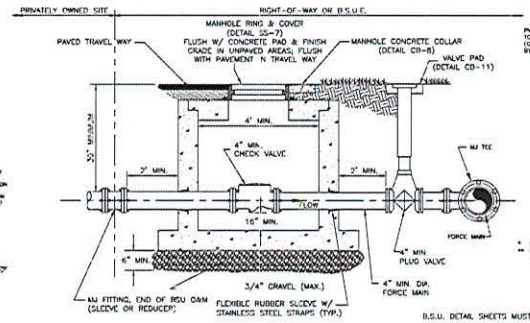
TEMPORARY SERVICE

PERMANENT SERVICE

PERMANENT SERVICE
(REQUIRES WRITTEN BSU APPROVAL)

TWO-WAY CLEAN OUT ASSEMBLY

CLEANOUT ASSEMBLY
SS-9



CHECK VALVE VAULT
SS-11

NOTES:
1. REFERENCE SIZING REQUIREMENTS WITHIN THE S.T.ANDARD SPECIFICATIONS
2. (FDEP) REPORT TO SECTION 46 FLORIDA ADMINISTRATIVE CODE CHAPTER 64E-6.013
3. TRAFFIC RATED PER F.A.C. 64E-6.013 (1)(f)

B.S.U. DETAIL SHEETS MUST REMAIN AS IS (NO ALTERATIONS)
IF ADDITIONAL DETAILS ARE REQUIRED SUBMIT ON SEPERATE SHEET

DETAIL SS-5 DELETED
DETAIL SS-2 DELETED

CLIENT: OWNER/DEVELOPER WORTHINGTON MASTER ASSN. INC	PROJECT: WCMF	
Bonita Springs Utilities, Inc	TITLE: WASTEWATER DETAILS	SCALE: NOT TO SCALE
		DATE: APRIL 2019
	11900 E. TORRY STREET BONITA SPRINGS, FLORIDA 34135 PHONE: (239) 992-0711 FAX: (239) 992-9223	DWG #: WMDET.DWG
		SHEET OF

LEGEND

Revision	Date	Description	By

DESIGNED BY:	M.C.D.
DRAWN BY:	C.G.K.
APPROVED:	M.J.D.
JOB CODE:	WCMF
SCALE:	######

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Q. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

BSU WASTEWATER DETAILS

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
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OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY	BONITA SPRINGS
SEC/TWN/RNP/RNG	05/48S/26E
DATE	2023
SUBMITTAL TYPE	00
SHEET	9 OF 12

RESTRAINT TABLE

PIPE SIZE	HORIZONTAL BENDS 90° BENDS Lv (FT.)	45° BENDS Lv (FT.)	22.5° BENDS Lv (FT.)	11.25° BENDS Lv (FT.)	VERTICAL OFFSETS 45° BENDS (Not Incl. Fl. Line) Lv (FT.)	Lm (FT.)	DEAD LIMIT Lr (FT.)
4"	27	11	5	3	31	8	60
6"	37	15	7	4	43	11	84
8"	46	20	10	5	57	15	110
10"	57	24	11	6	68	17	131
12"	67	24	11	6	68	19	131
16"	58	24	12	6	55	19	106
20"	70	29	14	7	67	23	129
24"	81	33	16	8	78	27	150

TEES BRANCH SIZE	Lm (FT.)	Lbr (FT.)	REDUCERS (SEE NOTES) SIZE	LA (FT.)	LB (FT.)
4"	10	11	6 x 4	64	47
6" 4" OR LESS	10	34 FITTING ONLY	8 x 6	60	46
			8 x 4	153	79
8" 8" 4" OR LESS	10	49	10 x 8	55	44
	10	17	10 x 6	133	81
	10	FITTING ONLY	12 x 10	46	36
10" 10" 8" 6" OR LESS	10	80	12 x 8	104	80
	10	41	16 x 12	61	45
	10	FITTING ONLY	16 x 10	103	63
12" 12" 10" 8" 4" OR LESS	10	79	20 x 18	58	45
	10	49	20 x 12	139	81
	10	15	24 x 20	55	45
	10	FITTING ONLY	24 x 16	128	67
16" 16" 12" 10" 8" OR LESS	10	73			
	10	38			
	10	14			
	10	FITTING ONLY			
20" 20" 16" 12" 10" OR LESS	10	95			
	10	63			
	10	24			
	10	FITTING ONLY			
24" 24" 20" 16" 12" 10" OR LESS	10	116			
	10	87			
	10	53			
	10	19			
	10	FITTING ONLY			

NOTES:

1. LENGTHS SHOWN ON THIS TABLE ARE TO BE INTERPRETED FOLLOWS:
   Lm = RESTRAINED LENGTH FROM HIGH SIDE FITTING OF A VERT. BEND
   Lbr = RESTRAINED LENGTH FROM LOW SIDE FITTING OF VERT. BEND
   Lr = RESTRAINED LENGTH ON BOTH SIDES FROM FITTING
   Lm = MINIMUM LENGTH TO FIRST JOINT OF RUN ON BOTH SIDES
   Lbr = RESTRAINED LENGTH REQUIRED ON BRANCH FROM FITTING
   LCB) = LENGTH OF PIPE ON SMALL SIDE PIECE OF FITTING
   LCB) = RESTRAINED LENGTH ON LARGE SIDE OF REDUCER
2. A SAFETY FACTOR = 2.5 IS USED FOR VERTICAL DEFLECTS TO COMPENSATE FOR SATURATED SOIL CONDITIONS. A SAFETY FACTOR = 2.0 IS USED FOR ALL OTHER CASES.
3. LCA) AND LCB) ABOVE ARE TWO OPTIONS FOR PROVIDING THE REQUIRED THRUST RESTRAINT FOR THE FITTING. EITHER LCA) LENGTH OF PIPE FREE OF FITTINGS, (BENDS, TEES, REDUCERS OR VALVES) ON THE SMALL SIDE OF THE REDUCER WILL PROVIDE THE REQUIRED RESTRAINT OR LCB) LENGTH CAN BE RESTRAINED ON THE LARGE SIDE OF THE FITTING.
4. THE FOLLOWING ARE ASSUMED:
   4"- 10" PVC WITH 30" MIN. COVER
   12" - 24" PVC WITH 36" MIN. COVER
   4" - 24" PIPE IS PVC
5. VALVES SHALL BE RESTRAINED ON EITHER SIDE OF THE FITTING AS A SEPARATE UNIT. VALVES SHALL BE RESTRAINED ON THE LENGTHS SHOWN ON THIS TABLE. IF THE SAME NOT PROVIDED, THEN WHERE THIS LENGTH CAN NOT BE PROVIDED FREE OF FITTINGS, ADDITIONAL RESTRAINT SHALL BE REQUIRED AS APPROVED BY ENGINEER.
6. ALL DEAD END LINES, PERMANENT OR TEMPORARY, SHALL BE RESTRAINED PER THE ABOVE RESTRAINT TABLE.
7. ALL VALVES SHALL BE RESTRAINED AS DEAD ENDS, IN BOTH FLOW DIRECTIONS, PER THIS TABLE.

RESTRAINT TABLE
CB-1

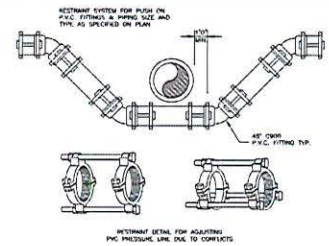
LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing w/ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	Water Main 3 ft. minimum	Water Main 12 inches to the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is the preferred	Absolute 3 ft. minimum; Water Main
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Absolute 3 ft. minimum; Water Main
Gravity or Pressure Sanitary Sewer Sanitary Sewer Force Main, Reclaimed Water (4)	Water Main 10 ft. preferred 6 ft. minimum (3)	Water Main 12 inches to the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is the preferred	Absolute 6 ft. minimum; Water Main
Sanitary Sewer Force Main, Reclaimed Water (4)	10 ft. minimum	—	—

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

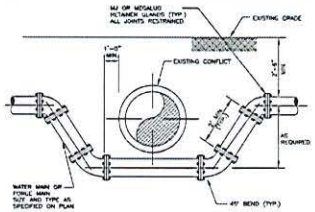
Disclaimer: This document is provided for illustrative purposes only. Please refer to F.A.C. Rule 62-555.314 for relevant and current requirements.

CROSSING DETAIL
CB-7

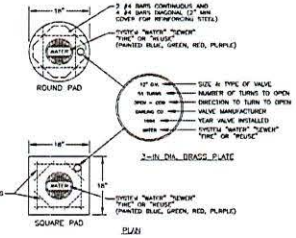


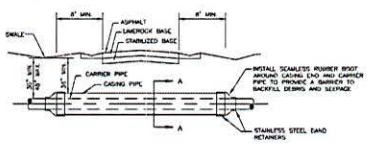
RESTRAINT DETAIL FOR ADJUSTING PVC PRESSURE LINE DUE TO CONFLICTS

PVC PRESSURE LINE CONFLICT ADJUSTMENT FITTINGS
CB-6



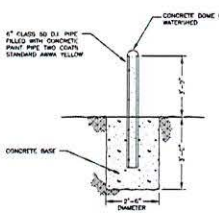
CONFLICT ADJUSTMENT MJ
CB-9



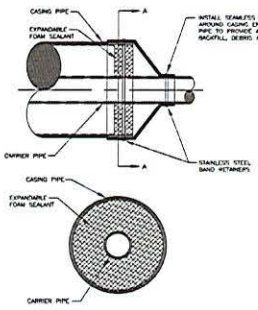


NOTE:
UNDERGROUND CROSSING REQUIRES A MINIMUM VERTICAL CLEARANCE OF 48" BELOW PAVEMENT SURFACE FOR FREEWAYS, 36" FOR OTHER HIGHWAYS, OR 30" BELOW UNPAVED GROUND INCLUDING DITCH GRADE PER F.D.O.T.

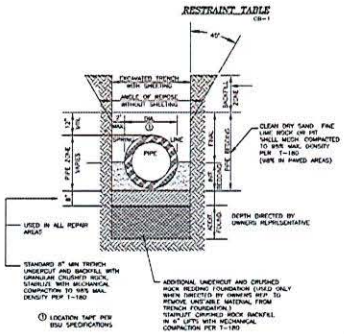
JACK AND BORE
CB-10



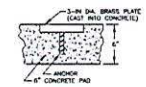
GUARD POST DETAIL
CB-12



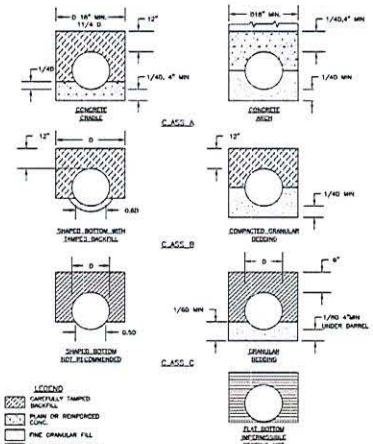
END SEAL/CASING PIPE
CB-13



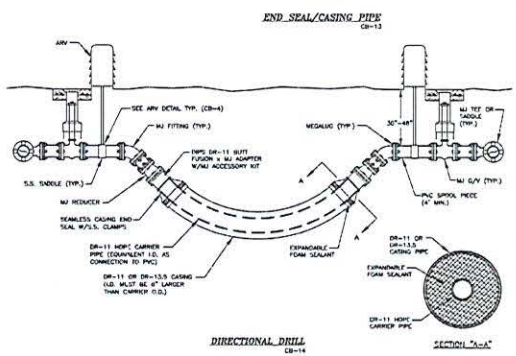
TRENCH CROSS SECTION
CB-9



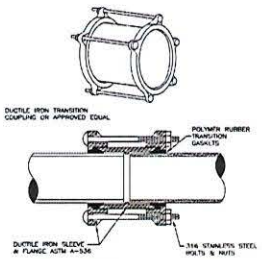
VALVE PAD
CB-11



PIPE BEDDING
CB-3

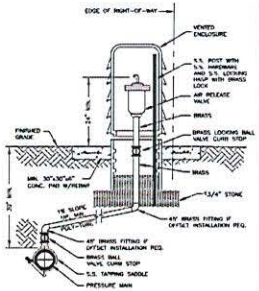


DIRECTIONAL DRILL
CB-14

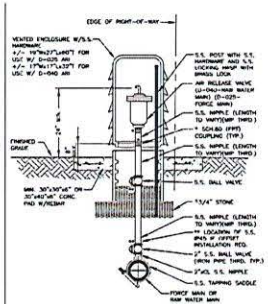


JOINS CAST IRON, DUCTILE IRON, ASBESTOS-CEMENT, C-900 BY MECHANICAL JOINT COMPRESSION PRINCIPAL

DUCTILE IRON TRANSITION COUPLING
CB-5



AIR RELEASE VALVE (WATRR)
(2" ONLY)
CB-4



AIR RELEASE VALVE (RAW WATER/SEWER)
(2" ONLY)
CB-4

DETAIL CB-2 DELETED

WORKLANDS COMMENTS
© GRADY MINOR AND ASSOCIATES, P.A.

B.S.U. DETAIL SHEETS MUST REMAIN AS IS (NO ALTERATIONS)
IF ADDITIONAL DETAILS ARE REQUIRED SUBMIT ON SEPERATE SHEET

CLIENT: OWNER/DEVELOPER WORTHINGTON MANTIN ASSN. INC
PROJECT: WCMF

Bonita Springs Utilities, Inc

TITLE: COMBINATION WATER/WASTEWATER DETAILS
11900 E. TERRY STREET
BONITA SPRINGS, FLORIDA 34135
PHONE: (239) 992-0711 FAX: (239) 992-9223

SCALE: NOT TO SCALE
DATE: APRIL 2019
DWG #: COMWDIT.DWG
SHEET OF

LEGEND

Revision	Date	Description	By

DESIGNED BY: M.C.D.
DRAWN BY: C.G.K.
APPROVED: M.J.D.
JOB CODE: WCMF
SCALE: ########

GradyMinor
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380
G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

BSU COMBINATION DETAILS

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+) .

OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWN/RNG: 05/48S/26E
DATE: 2023
SUBMITTAL TYPE: 50
SHEET 10 OF 12

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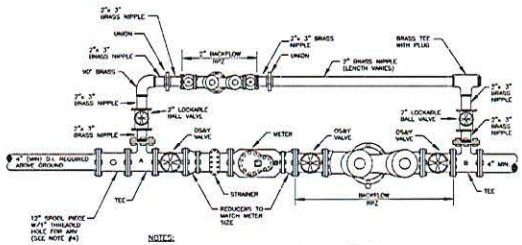
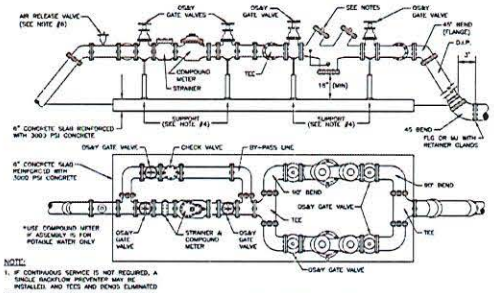


NOTES:

1. METER SIZE DETERMINES CONFIGURATION SIZE BETWEEN TEE "A" & "B".
2. ENTIRE APPARATUS TO BE PAINTED WT-1 UV RATED PAINT (EXCEPT METER).
3. CONSULT BSU "BACKFLOW PREVENTION CROSS CONNECTION CONTROL PROGRAM" FOR APPROVED SIZES, MODEL NUMBERS & MANUFACTURERS.
4. "A" STYLE BACKFLOWS REQUIRE A LOCATION FOR AN AIR RELEASE VALVE.

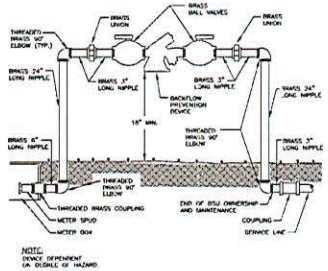
STANDARD METER/BACKFLOW ASSEMBLY DETAIL
(3" OR LARGER)
BF-1



NOTE:

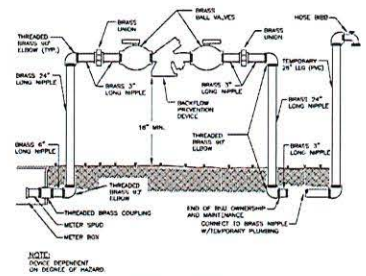
1. IF CONTINUOUS SERVICE IS NOT REQUIRED, A SINGLE BACKFLOW PREVENTER MAY BE INSTALLED AND TEES AND BENDS ELIMINATED
2. DEVICE DEPENDENT ON DEGREE OF HAZARD.
3. METER BYPASS LINE OPTIONAL. DEPENDENT ON CUSTOMER NEEDS/CONTINUOUS SUPPLY DURING METER REPAIR.
4. SUPPORT TO BE STAINLESS STEEL.
5. CONSULT BSU "BACKFLOW PREVENTION CROSS CONNECTION CONTROL PROGRAM" FOR APPROVED SIZES, MODEL NUMBERS & MANUFACTURERS.
6. "A" STYLE BACKFLOWS REQUIRE A LOCATION FOR AN AIR RELEASE VALVE.

3" OR LARGER COMPOUND METER AND BACKFLOW PREVENTER
(ONLY WITH BSU PRIOR APPROVAL)
BF-2



NOTE:
DEVICE DEPENDENT ON DEGREE OF HAZARD.

BACKFLOW PREVENTION DEVICE 3/4", 1", 2"
(NEW INSTALLATIONS BY BSU)
EXCEPT FOR BACKFLOWS ON FIRE LINES)
BF-3



NOTE:
DEVICE DEPENDENT ON DEGREE OF HAZARD.

CONTRACTOR'S TEMPORARY HOSE BIBB BACKFLOW PREVENTION DEVICE 3/4", 1", 2"
(INSTALLED BY BUILDER)
BF-5

CONSULTANT COMMENTS:
Q. GRADY MINOR AND ASSOCIATES, P.A.

B.S.U. DETAIL SHEETS MUST REMAIN AS IS (NO ALTERATIONS)
IF ADDITIONAL DETAILS ARE REQUIRED SUBMIT ON SEPERATE SHEET

CLIENT: OWNER/DEVELOPER WORTHINGTON MASTER ASSN, INC	PROJECT: WCMF	
Bonita Springs Utilities, Inc	TITLE: BACKFLOW DETAILS	SCALE: NOT TO SCALE
		DATE: APRIL 2019
	11900 E. TERRY STREET BONITA SPRINGS, FLORIDA 34135 PHONE: (239) 992-0711 FAX: (239) 992-9223	DWG. #: BAKFLW.DWG
DETAIL BF-4 DELETED		SHEET OF

LEGEND

Revision	Date	Description	By

DRAWN BY: M.C.D.
DRAWN BY: C.G.K.
APPROVED: M.J.D.
JOB CODE: WCMF
SCALE: ########

GradyMinor
Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266
Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380

Q. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

BSU BACKFLOW DETAILS

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+)

OSCAR LUGO, P.E.
FLORIDA P.E. LICENSE NO. 68719

MUNICIPALITY: BONITA SPRINGS
SEC/TWSHP/RNG: 07/48S/26E
DATE: 2023
SUBMITTAL TYPE: 00
SHEET 11 OF 12

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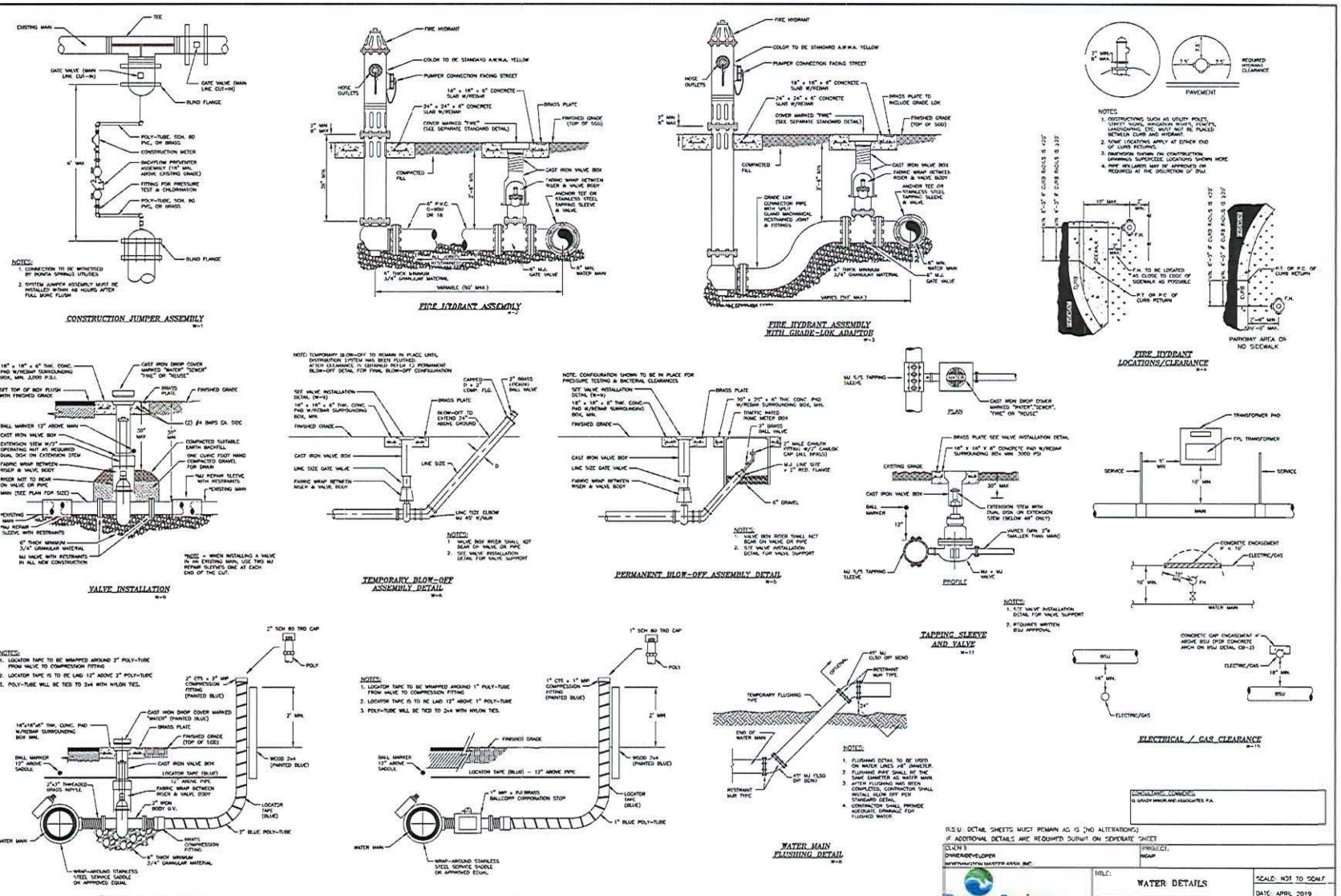

LEGEND

Revision	Date	Description	By

DESIGNED BY: M.C.D.
DRAWN BY: C.G.K.
APPROVED: M.J.D.
JOB CODE: WGMT
SCALE: ########

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Civil Engineers • Land Surveyors • Planners • Landscape Architects
Cert. of Auth. EB 0005151 Cert. of Auth. LB 0005151 Business LC 26000266

Bonita Springs: 239.947.1144 www.GradyMinor.com Fort Myers: 239.690.4380

G. Grady Minor and Associates, LLC
3800 Via Del Rey
Bonita Springs, Florida 34134

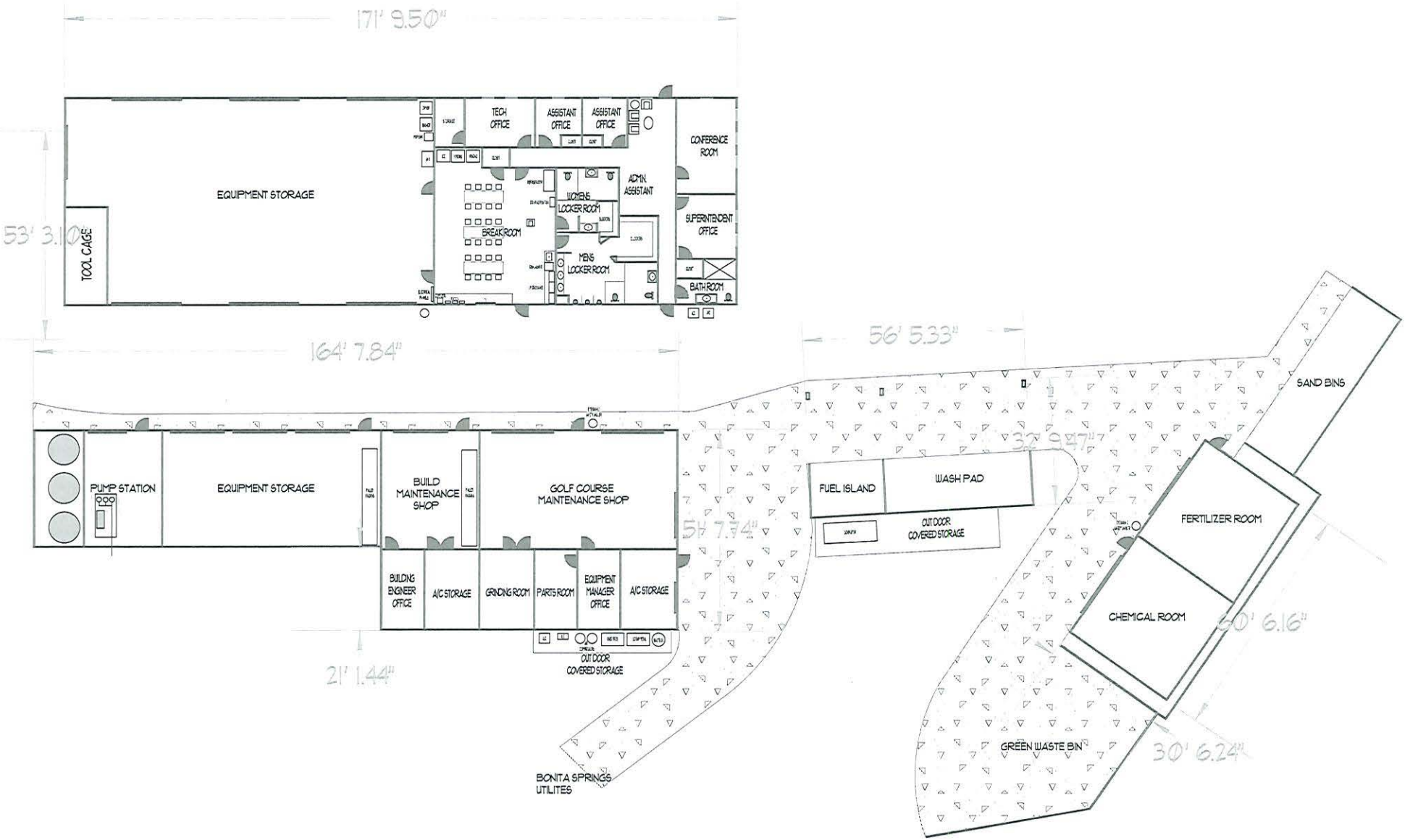
WORTHINGTON COUNTRY CLUB MAINTENANCE FACILITY

BSU WATER DETAILS

ELEVATIONS SHOWN HEREON ARE BASED UPON NORTH AM ERICAN VERTICAL DATUM 1988 (NAVD '88)
CONVERSION FACTOR TO NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD '29) IS (+) :

DUCAN LUGU, P.E.
FLORIDA P.E. LICENSE NO 88719

MUNICIPALITY: BONITA SPRINGS
SEC/TWSHP/RGE: 07/48S/25E
DATE: 2023
SUBMITTAL TYPE: 60
SHEET 12 OF 12



Revision #: 1 Date: 6/12/2023	Scale: 1" = 20'	Landscape Plan: 2 Maintenance building	Landscape Design by: Worthington