DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
415 RICHARD JACKSON BOULEVARD, SUITE 411
PANAMA CITY BEACH, FLORIDA 32407

September 3, 2020

Regulatory Division
North Permits Branch
Panama City Permits Section

PUBLIC NOTICE

Permit Application No. SAJ-2019-03512(SP-TLW)

TO WHOM IT MAY CONCERN: The Jacksonville District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403) as described below:

APPLICANT: Frazer 24, LLC
c/o Bret Clark
4705 Hamilton Mill Road, Suite 300
Buford, Georgia 30518

WATERWAY AND LOCATION: The project would affect waters of the United States associated with an unnamed tributary to St. Andrew Bay. The project site is located on the south side of Highway 98 (Back Beach Road), 0.2 mile north of Holley Lane and McElvey Road Intersection in Section 32, Township 3 South, Range 15 West, Panama City Beach, Bay County, Florida.

Directions to the site are as follows: From Highway 98 traveling south on Thomas Drive, turn right on McElvey Road for 0.2 miles to the intersection of McElvey Road and Holley Lane. Turn right on Holley Lane. Travel North on Holley Lane approximately 0.2 mile. Site is on the east side of Holley Lane.

APPROXIMATE CENTRAL COORDINATES: Latitude 30.1851°
Longitude -85.7644°

PROJECT PURPOSE:

Basic: Residential development

Overall: To provide multi-family housing opportunities to Naval Support Activity and east end of Panama City Beach.

EXISTING CONDITIONS: The project site is a 15.75 acre tract which consists of 14.55 acres of uplands and 1.20 acres of wetlands. The upland and wetland habitats on the property have been impacted by fire suppression and past silviculture practices. The wetland is vegetated with slash pine, sweetbay magnolia, titi, large gallberry, fetterbush, sweet pepperbush, wax myrtle, popcorn tree, grapevine, and greenbrier vine. In

addition, a large jurisdictional ditch is present on the north property boundary. The existing area surrounding the project area consists of a mix of commercial and residential properties.

PROPOSED WORK: The applicant seeks authorization to fill in 1.20 acres of wetlands in order to construct a 152 unit residential townhome development with associated infrastructure and stormwater facilities.

AVOIDANCE AND MINIMIZATION INFORMATION – The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

Jurisdictional impacts cannot be avoided due to the size and location of the wetlands. The project has minimized direct impacts by designing and limiting the project footprint to those necessary to construct the project. Project impacts avoid all impacts to the ditch on the northern boundary which drains into St. Andrews Bay. Erosion and sedimentation measures would be utilized.

COMPENSATORY MITIGATION – The applicant has offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment:

To offset unavoidable impacts that will occur from these authorized activities, the permittee has reserved, and shall purchase 0.72 non-forested wetland credits from the Breakfast Point Mitigation Bank.

CULTURAL RESOURCES: The Corps is aware of historic property/properties within or in close proximity of the permit area. The Corps will initiate consultation with the State Historic Preservation Office and those federally recognized tribes with concerns in Florida and the Permit Area, and the Advisory Council on Historic Preservation as applicable pursuant to 33 CFR 325, Appendix C and Section 106 of the National Historic Preservation Act, by separate letter.

ENDANGERED SPECIES: Based upon use of the Eastern Indigo Programmatic Effect Determination Key, the Corps has determined the proposed project may affect, but is not likely to adversely affect the Eastern Indigo Snake. No additional correspondence with U.S. Fish and Wildlife Service is required. Based on the Determination Key in the Standard Local Operating Procedures for Endangered Species (March 2020) document, the Corps determined that the proposed project would have no effect on the red cockaded woodpecker.

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The jurisdictional line has not been verified by Corps personnel.

AUTHORIZATION FROM OTHER AGENCIES: Water Quality Certification may be required from the Florida Department of Environmental Protection and/or one of the state Water Management Districts.

COMMENTS regarding the potential authorization of the work proposed should be submitted in writing to the attention of the District Engineer through the Panama City Permits Section, 415 Richard Jackson Boulevard, Suite 411, Panama City Beach, Florida 32407 Attention: Tracey Wheeler within 30 days from the date of this notice.

The decision whether to issue or deny this permit application will be based on the information received from this public notice and the evaluation of the probable impact to the associated wetlands. This is based on an analysis of the applicant's avoidance and minimization efforts for the project, as well as the compensatory mitigation proposed.

QUESTIONS concerning this application should be directed to the project manager, Ms. Tracey Wheeler, in writing at the Panama City Permits Section, 415 Richard Jackson Boulevard, Suite 411, Panama City Beach, Florida 32405; by electronic mail at Tracey.L.Wheeler@usace.army.mil; or, by telephone at (850) 287-0138.

IMPACT ON NATURAL RESOURCES: Coordination with U.S. Fish and Wildlife Service, Environmental Protection Agency (EPA), the National Marine Fisheries Services, and other Federal, State, and local agencies, environmental groups, and concerned citizens generally yields pertinent environmental information that is instrumental in determining the impact the proposed action will have on the natural resources of the area.

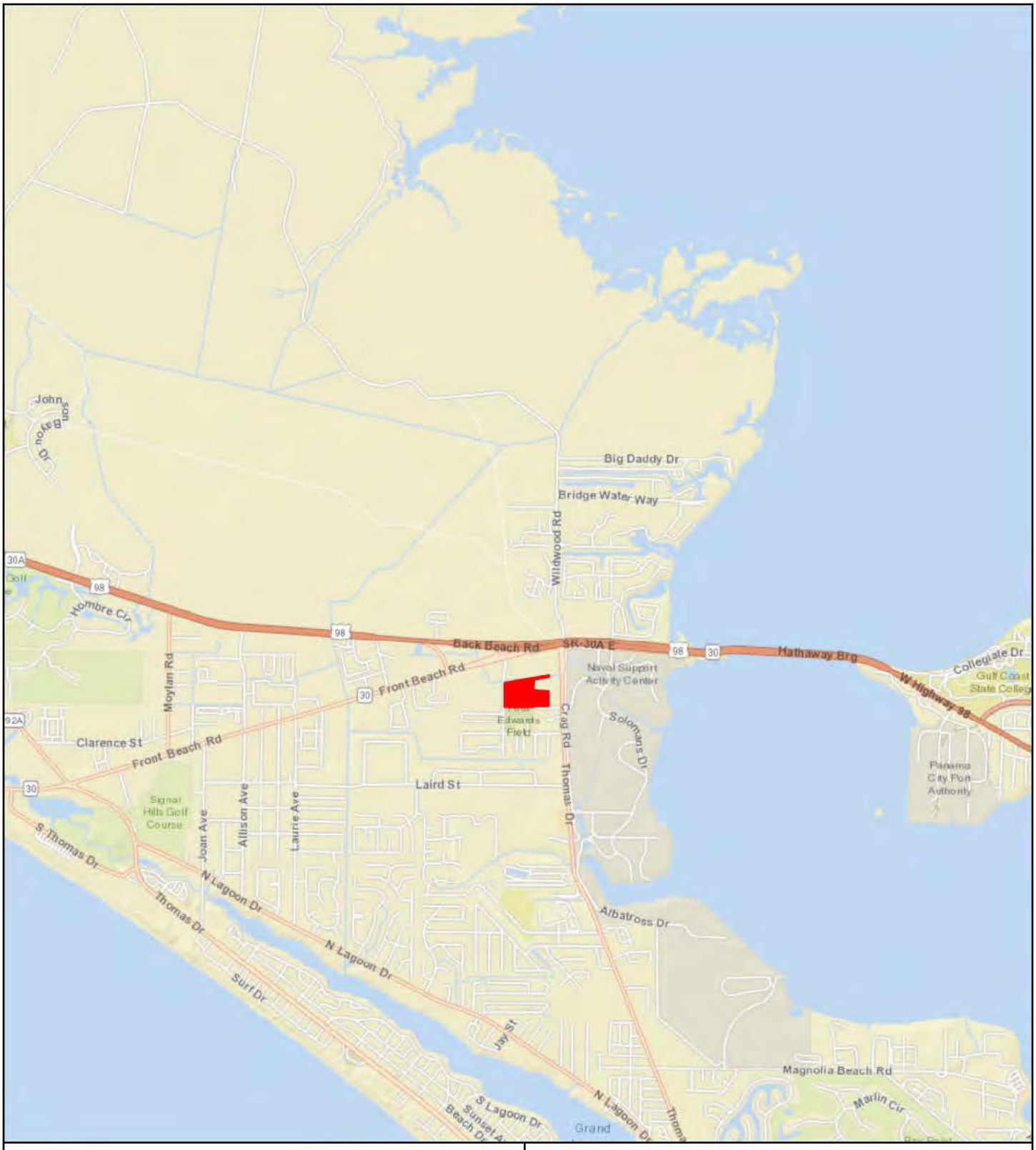
EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and

evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COASTAL ZONE MANAGEMENT CONSISTENCY: In Florida, the State approval constitutes compliance with the approved Coastal Zone Management Plan. In Puerto Rico, a Coastal Zone Management Consistency Concurrence is required from the Puerto Rico Planning Board. In the Virgin Islands, the Department of Planning and Natural Resources permit constitutes compliance with the Coastal Zone Management Plan.

REQUEST FOR PUBLIC HEARING: Any person may request a public hearing. The request must be submitted in writing to the District Engineer within the designated comment period of the notice and must state the specific reasons for requesting the public hearing.



Legend

Site Boundary 15.75 Acres

N

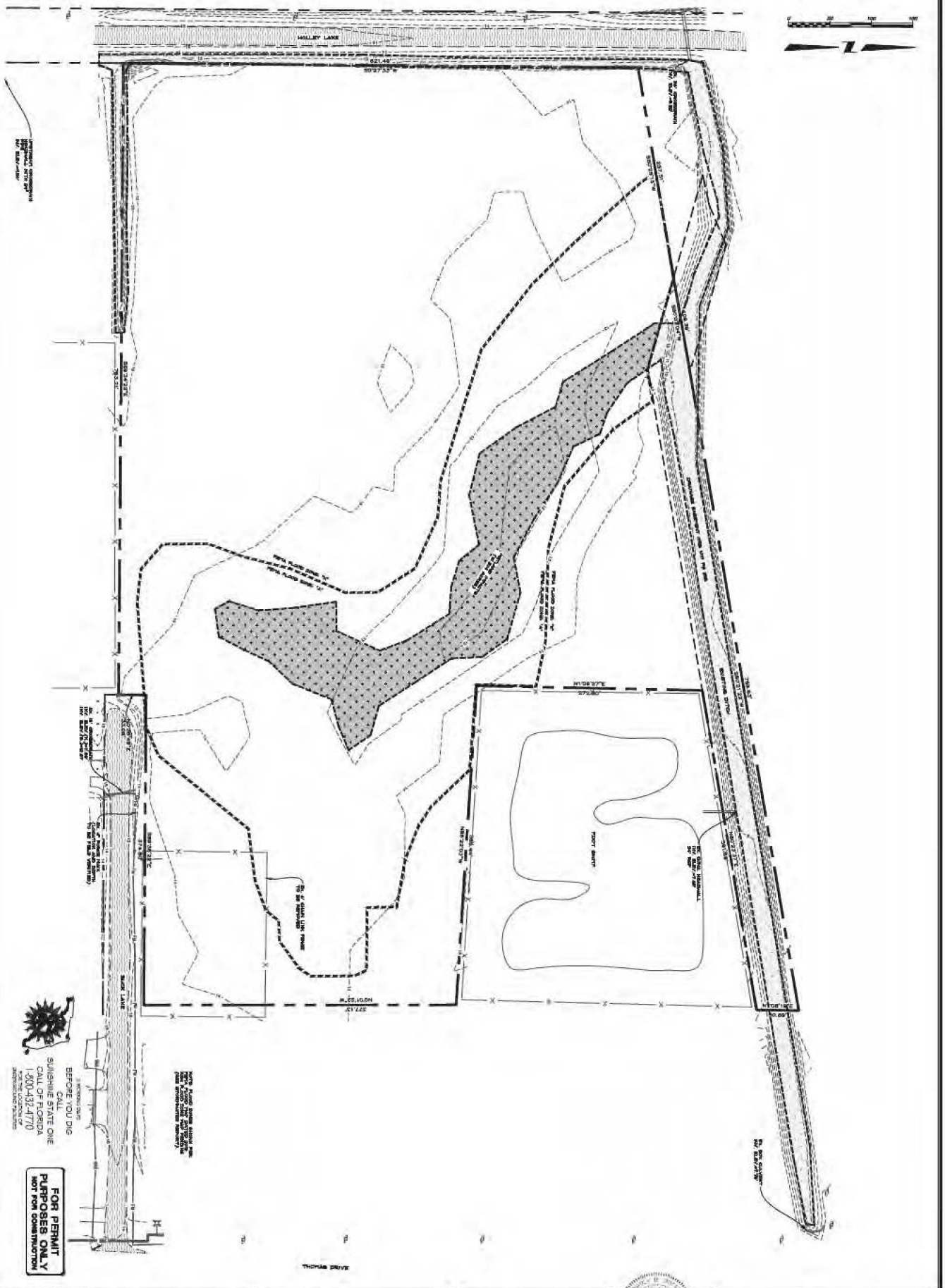
0 1 2 Miles

Location Map

Holley Lane Townhomes

Ecological Resource Consultants, Inc.

ERC#19-181
12-31-19 JJL



C2	HOLLEY LANE TOWNHOMES BAY COUNTY, FLORIDA COBALT PROPERTY DEVELOPMENT LLC	EXISTING CONDITIONS	KB ENGINEERING	REVISIONS DESCRIPTION / DATE

CONSTRUCTION PLANS FOR:

HOLLEY LANE TOWNHOMES

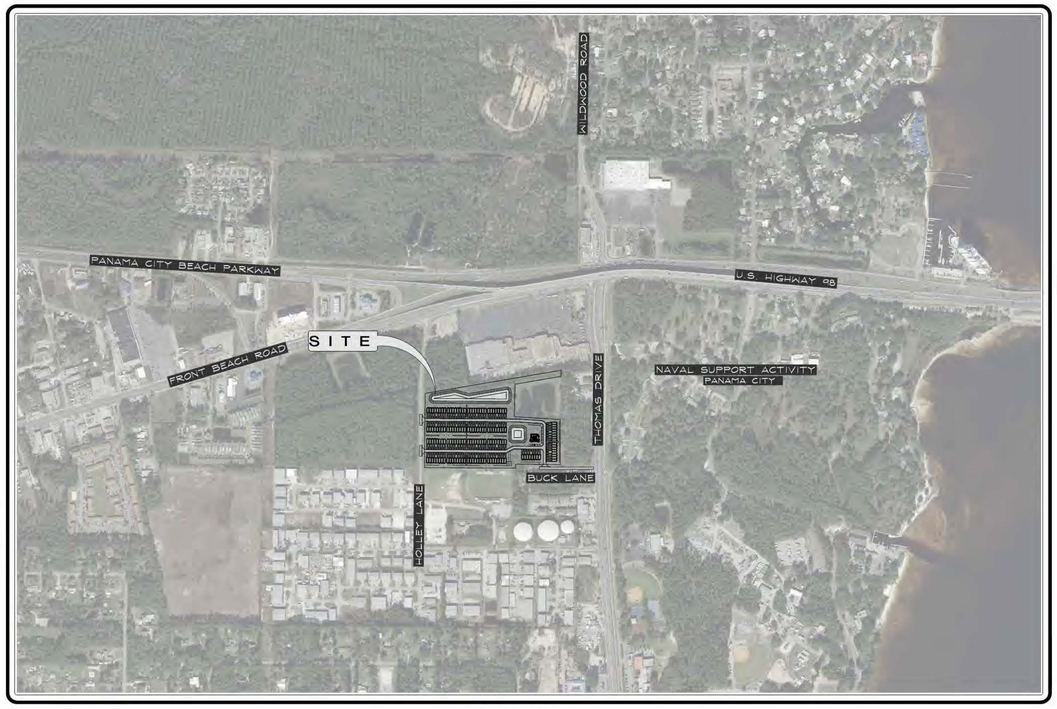
BAY COUNTY, FLORIDA
SECTION 32, T3S, R15W

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION

3 WORKING DAYS
BEFORE YOU DIG
CALL
SUNSHINE STATE ONE
CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
UNDERGROUND FACILITIES

STATEMENT OF COMPATIBILITY:

THIS PROJECT IS COMPATIBLE WITH SURROUNDING DEVELOPMENTS. THE PROPOSED PROJECT IS RESIDENTIAL WITH HEIGHTS NOT EXCEEDING SURROUNDING DEVELOPMENT, ADJACENT TO RESIDENTIAL COMPATIBLE SIZE LOTS OF EQUAL DENSITY. THERE ARE ADEQUATE NATURAL FEATURES BUFFERING ANY COMMERCIAL DEVELOPMENT.



SITE MAP
NOT TO SCALE

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SITE DATA

PARCEL ID NUMBER: 27883-025-000

FUTURE LAND USE: GENERAL COMMERCIAL
FLOOD ZONE: A, X

DESIGN CRITERIA

BAY COUNTY LAND DEVELOPMENT CODE

SPECIFICATIONS FOR CITY OF PANAMA CITY BEACH UTILITIES

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

NOTES

1) THE CONTRACTOR SHALL COMPLY WITH THE "FLORIDA TRENCH SAFETY ACT" (LAWS OF FLORIDA 90-96, OCTOBER 1, 1990) AND PROVIDE PROOF OF COMPLIANCE. THE CONTRACTOR MUST PROVIDE "NOTORIZED STATEMENT" TO THE OWNER, THAT THEY ARE IN COMPLIANCE WITH ALL APPLICABLE TRENCH SAFETY STANDARDS.

2) EVERY ATTEMPT TO LOCATE UNDERGROUND UTILITIES MUST BE MADE. THERE ARE THE POSSIBILITIES OF UNDERGROUND ELECTRICAL, TELEPHONE, ETC. THAT HAS NOT BEEN LOCATED. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, DEPTH AND TYPE OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

ENGINEER OF RECORD:

KIM B. BOTTOMY, PE
LICENSE No. 49921
KB ENGINEERING, LLC
4116 N. HWY 231
PANAMA CITY, FL. 32404
850-541-6222

SURVEYOR OF RECORD:

HULON E. WALSINGHAM, PLS
LICENSE No. 3257
COUNTY WIDE SURVEYING, INC.
958 JENKS AVENUE
PANAMA CITY, FL. 32401

GEOTECHNICAL ENGINEER:

MAGNUM ENGINEERING INC.
1026 PIERSON DRIVE
LYNN HAVEN, FL 32444
850-258-0994

PREPARED FOR :

COBALT PROPERTY DEVELOPMENT, LLC.
4705 HAMILTON MILL ROAD, STE 300
BUFORD, GA 30518

PROPERTY OWNER :

AR THOMAS, LLC.
1930 STONEGATE DR.
BIRMINGHAM, AL 35242

PREPARED BY :

KB ENGINEERING
4116 N. HWY 231, Panama City, FL 32404
PHONE (850) 541-6222 FAX (850) 785-8705
BOTENGINEER@COMCAST.NET CA#28257

JOB No. 19-261

WATER, SEWER CONSTRUCTION NOTES:

1) IT SHALL BE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE THE ACTIVITIES OF THE UTILITY COMPANIES INCLUDING BUT NOT LIMITED TO TV, TELEPHONE, GAS, POWER, ETC., AND PROVIDE IN ACCORDANCE WITH THE UTILITY COMPANY ANY NECESSARY CONDUITS FOR CROSSINGS UNDER PAVEMENT. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR THIS SERVICE. ANY DAMAGE CAUSED BY THE UTILITY COMPANY TO THE IMPROVEMENTS OF THE CONTRACTOR SHALL BE REPAIRED IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT REPAIRS ARE PERFORMED, EITHER BY THE CONTRACTOR OR THE UTILITY COMPANY AT NO COST TO THE OWNER.

2) COPIES OF THE TEST REPORTS FOR ASPHALT, BASE, SUB GRADE, FILL AND BACK FILL UNDER ROADWAYS AND STRUCTURES, AND UTILITY TRENCHES SHALL BE PROVIDED DIRECTLY TO THE ENGINEER FOR REVIEW. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE TESTING AND INSURE THAT ALL APPLICABLE TESTS HAS BEEN PERFORMED. FAILURE TO OBTAIN TEST RESULTS AT ANY POINT OF CONSTRUCTION WILL REQUIRE THE REMOVAL OF THE IMPROVEMENT AND REPLACEMENT BY CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER. IT SHOULD BE NOTED THAT THE ENGINEER WILL REQUIRE COMPACTION TESTING IN ACCORDANCE WITH THE TESTING SCHEDULE FOR UTILITY TRENCH FILL AND BACKFILLED.

3) ALL SANITARY SEWER AND WATER MAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH STANDARDS SET FORTH BY THE AMERICAN WATER WORKS ASSOCIATION (AWWA), AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).

4) IT SHALL BE THE RESPONSIBILITY OF THE UTILITY CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES (48 HOUR NOTICE) PRIOR TO BEGINNING CONSTRUCTION. IT SHALL FURTHER BE THE RESPONSIBILITY OF THE UTILITY CONTRACTOR TO HAVE ALL EXISTING UTILITIES PHYSICALLY LOCATED TO INSURE THAT THIS CONSTRUCTION DOES NOT DAMAGE ANY EXISTING UTILITIES WITHIN THE PROJECT AREA.

5) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AT NO ADDITIONAL EXPENSE TO THE OWNER, TO REPAIR OR CAUSE TO BE REPAIRED, ANY EXISTING UTILITIES OR STRUCTURES DAMAGED AS A DIRECT RESULT OF THIS WORK.

6) ALL GRAVITY SEWER LINES SHALL BE OF THE SIZE NOTED ON THE PLANS AND PROFILES. PIPES SHALL BE SDR 35 PVC.

7) SOIL COVER OVER ANY GRAVITY SEWER LINE OR LATERAL SHALL NOT BE LESS THAN 36 INCHES, EXCEPT WHERE STUBBED OUT AT THE PROPERTY LINE. PLUGGED END OF LATERAL WHERE FUTURE CONNECTION IS TO BE MADE SHALL BE AT LEAST 36" BELOW EXISTING GRADE.

8) THE CONTRACTOR SHALL FIELD VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES WITHIN THE PROJECT AREA TO INSURE NO CONFLICTS EXIST. SHOULD SUCH CONFLICTS OCCUR, THE CONTRACTOR SHALL CEASE OPERATIONS IN THE AFFECTED AREA AND NOTIFY THE OWNER'S ENGINEER, AND THE APPROPRIATE UTILITY TO RESOLVE THE CONFLICT BEFORE PROCEEDING WITH CONSTRUCTION IN THE AFFECTED AREA.

9) UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL CALL FOR A "FLASH TEST" ON ALL SEWER MAINS. PIPE ALIGNMENT SHALL CONFORM TO THE REQUIREMENTS OF THE ENGINEER AND ANY LINES NOT MEETING THE CITY REQUIREMENTS SHALL BE UNCOVERED AND RESET TO THE PRESCRIBED LINE AND GRADE. INFILTRATION/EXFILTRATION LIMITS TESTING SHALL CONFORM WITH ENGINEER'S REQUIREMENTS. AIR TEST TO BE IN ACCORDANCE WITH ASTM F1417 AND CLEANED & TELEVISED. PROVIDE VIDEO INSPECTION REPORT AND DVD FOR REVIEW BY CITY UTILITIES STAFF.

10) ALL WATER MAINS LESS THAN 4" SHALL BE ASTM D2241 SDR-21, 4"-8" SHALL BE AWWA C900 DR18 (PRESSURE CLASS 235), 10"-12" SHALL BE AWWA C900 DR25 (PRESSURE CLASS 165). ALL PIPE SHALL BE RESTRAINED JOINT (MEGALUG OR APPROVED EQUAL).

11) ALL VALVES 12" AND SMALLER SHALL BE CAST-IRON BODY, FULLY BRONZE MOUNTED RESILIENT-SEATED GATE VALVES CONFORMING TO AWWA C509, WIDE FLANGE OR SPIGOT ENDS, DEPENDING ON INSTALLATION. FLANGED GATE VALVES SHALL BE PROVIDED WITH 250 LB. AMERICAN STANDARD FLANGES, AWWA STANDARD C-509 RESILIENT SEAT, ALL SHUTOFF VALVES 16" AND LARGER SHALL BE BUTTERFLY VALVES, BUTTERFLY VALVES AND OPERATORS SHALL CONFORM TO THE AWWA STANDARD SPECIFICATIONS FOR RUBBER SEATED BUTTERFLY VALVES, DESIGNATION C-504 CLASS 1150 A OR B.

12) ALL VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 250 PSI, UNLESS OTHERWISE NOTED.

13) ALL VALVES SET BELOW GRADE, SHALL BE FITTED WITH HUB-TYPE OPERATORS AND SHALL HAVE A CAST IRON VALVE BOX INSTALLED CONCENTRICALLY OVER THE VALVE, BUTTERFLY VALVE OPERATOR SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-504.

14) ALL HARDWARE ACCESSORIES FOR VALVES, SADDLES, AND FITTINGS SHALL BE AS FOLLOWS:
CLAMPS, STRAPS AND WASHERS: STEEL ANSI/ASTM A 506
RODS: STEEL, ANSI/ASTM A 575
ROD COUPLINGS: MALLEABLE IRON, ANSI/ASTM A 197
BOLTS: STEEL ANSI/ASTM A 307
CAST IRON WASHERS: ANSI/ASTM A 126, CLASS A

15) TAPPING SLEEVES SHALL BE MECHANICAL JOINT SLEEVES OR FABRICATED STEEL SLEEVES AS SPECIFIED BELOW.
SLEEVES SHALL BE CAST OF GRAY-IRON OR DUCTILE IRON AND HAVE AN OUTLET FLANGE WITH THE DIMENSIONS OF THE CLASS 125 FLANGES SHOWN IN ANSI B16.1 PROPERLY RECESSED FOR TAPPING VALVE. GLANDS SHALL BE GRAY-IRON OR DUCTILE IRON. GASKETS SHALL BE VULCANIZED NATURAL OR SYNTHETIC RUBBER. BOLTS AND NUTS SHALL COMPLY WITH ANSI/AWWA C111/A21.11. SLEEVES SHALL BE CAPABLE OF WITHSTANDING A 200 PSI WORKING PRESSURE.

16) SLEEVES SHALL BE FABRICATED OF MINIMUM 3/8" CARBON STEEL MEETING ASTM A285 GRADE C. OUTLET FLANGE SHALL MEET AWWA C-270, CLASS "D" ANSI 150 LB. DRILLING AND BE PROPERLY RECESSED FOR THE TAPPING VALVE. BOLTS AND NUTS SHALL BE HIGH STRENGTH LOW ALLOY STEEL TO AWWA C111 (ANSI A21.11). GASKET SHALL BE VULCANIZED NATURAL OR SYNTHETIC RUBBER. SLEEVE SHALL HAVE MANUFACTURER APPLIED FUSION BONDED EPOXY COATING, MINIMUM 12 MIL THICKNESS.

17) MECHANICAL RESTRAINING DEVICES AS SPECIFIED HEREIN MAY BE SUBSTITUTED FOR THE RESTRAINED "LOCKED-TYPE" JOINTS MANUFACTURED BY THE DUCTILE IRON PIPE AND FITTING MANUFACTURER.

18) MECHANICAL JOINT RESTRAINT SHALL BE INCORPORATED IN THE DESIGN OF THE FOLLOWER GLAND AND SHALL INCLUDE A RESTRAINING MECHANISM WHICH, WHEN ACTUATED, IMPARTS MULTIPLE WEDGING ACTION AGAINST THE PIPE, INCREASING ITS RESISTANCE AS THE PRESSURE INCREASES. FLEXIBILITY OF THE JOINTS SHALL BE MAINTAINED AFTER BURIAL. GLANDS SHALL BE MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A536. RESTRAINING DEVICES SHALL BE OF DUCTILE IRON HEAT TREATED TO A MINIMUM HARDNESS OF 370 BHN. DIMENSIONS OF THE GLAND SHALL BE SUCH THAT IT CAN BE USED WITH THE STANDARDIZED MECHANICAL JOINT BELL AND TEE-HEAD BOLTS CONFORMING TO ANSI A21.11 AND ANSI/AWWA C153/A21.53. TWIST-OFF NUTS SHALL BE USED TO INSURE PROPER ACTUATING OF THE RESTRAINING DEVICES. THE MECHANICAL JOINT RESTRAINT DEVICE SHALL HAVE A WORKING PRESSURE OF AT LEAST 250 PSI WITH A MINIMUM SAFETY FACTOR OF 2:1.

19) BACTERIOLOGICAL TESTING SHALL BE IN ACCORDANCE WITH AWWA STANDARDS, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES.

20) CONTRACTOR SHALL DELIVER TO ENGINEER A LEGIBLE COPY OF THE BACTERIOLOGICAL TEST WITHIN (2) WEEKS OF SAID TEST AND SHALL ALSO DELIVER TO UTILITIES DEPARTMENT ENGINEER TWO (2) LEGIBLE COPIES AS REQUIRED.

21) PRESSURE AND LEAKAGE TESTING SHALL BE IN ACCORDANCE WITH AWWA STANDARDS. BEFORE BEGINNING THE ACTUAL PRESSURE TESTING, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. PRESSURE TESTING WILL BE DONE IN THE PRESENCE OF THE ENGINEER, AND WILL NOT BE CONSIDERED COMPLETE UNTIL APPROVED IN WRITING BY THE ENGINEER.
PRESSURE TEST TO BE AT 150 PSI FOR 2 HOURS.
TESTING, DISINFECTION AND FLUSHING SHALL BE DONE IN ACCORDANCE WITH AWWA C651 SPECIFICATIONS.
FLUSHING TO BE AT 3 FPS MINIMUM, 6X PIPE VOLUME MINIMUM.
ALL CORPORATION STOPS SHALL BE 1" FORD F1000.
ALL CURB STOPS SHALL BE 3/4" FORD B43-444W.
ALL FIRE HYDRANTS SHALL BE AMERICAN DARLING B-84B OR AVK 2780 NOSTALGIC.
PIPE COLORS SHALL BE:
SEWER PIPE: GREEN
POTABLE WATER: BLUE
RECLAIMED WATER: PURPLE
14 GAUGE COPPER WIRE TO BE INSTALLED OVER FORCEMAIN AND WATER LINES. IN ADDITION, A 2" WIDE DETECT TAPE SHALL BE INSTALLED 1' BELOW FINISH GRADE ELEVATION DIRECTLY OVER LOCATION OF FORCEMAIN AND WATER LINES.

GENERAL NOTES:

1) ALL DISTURBED AREAS ARE TO BE GRASSED. HYDROSEED @ 4:1 & FLATTER SOD @ STEEPER THAN 4:1 ALL SOD TO BE STAGGERED & PINNED.
2) CONTRACTOR TO FIELD VERIFY ALL UTILITIES ABOVE OR BELOW GROUND AND NOTIFY ALL UTILITY COMPANIES 2 DAYS PRIOR TO CONSTRUCTION.
3) ALL DEMOLISHED MATERIALS (I.e. SIGNS, CONCRETE, ASPHALT, ETC.) TO BE REMOVED AND DISPOSED OF IN LEGAL MANNER.
4) TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH CITY OF PANAMA CITY BEACH REQUIREMENTS. IT SHALL THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE ALL TESTS.
5) BAY COUNTY TRAFFIC ENGINEERING TECHNICAL SPECIAL PROVISIONS (TSP's), DATED AUGUST 2010 WILL BE FOLLOWED AND TAKE PRECEDENCE OVER THE STANDARD FDOT PEDESTRIAN DESIGN CRITERIA WHERE APPLICABLE.
6) ALL TRAFFIC STRIPING TO BE THERMOPLASTIC PER STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SEC: 711. (WAIT MINIMUM OF 30 DAYS AFTER ASPHALT CONCRETE PLACEMENT TO PLACE PERMANENT THERMOPLASTIC MARKING. TEMPORARY STRIPING TO BE PAINTED STOP BAR ONLY.)
7) PLACE DOUBLE 6" STAGGERED SINGLE ROLL 30" STRIP OF SOD ALONG THE EDGE OF ALL PAVEMENT, CURBING, SIDEWALKS, INLETS AND MITERED END SECTIONS.
8) NO LANE CLOSURES AT ANY TIME UNLESS APPROVED BY THE LOCAL FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) OFFICE. IF LANE CLOSURES ARE APPROVED BY FDOT, ALL LANES MUST BE REOPENED TO NORMAL TRAFFIC WITHIN 12 HOURS OF AN EVACUATION NOTICE FOR A HURRICANE, OR ANY OTHER EMERGENCY EVENT AND SHALL REMAIN OPEN FOR THE DURATION OF THE EVENT AS DIRECTED BY FDOT.
9) CONTRACTOR TO FIELD VERIFY ALL UTILITIES ABOVE OR BELOW GROUND, REMOVE AND RELOCATE EXISTING UTILITIES AS REQUIRED. CONTRACTOR NOTIFY ALL UTILITY COMPANIES 48 HOURS PRIOR TO ANY CONSTRUCTION.
10) FOR MAINTENANCE OF TRAFFIC CONTROL THROUGH WORK ZONES REFER TO FDOT INDEX AS APPLICABLE.
11) THE CONTRACTOR IS REQUIRED TO REVIEW THE COMPLETE PERMIT PRIOR TO CONSTRUCTION COMMENCEMENT AND TO NOTIFY ALL NECESSARY PARTIES PRIOR TO CONSTRUCTION.
12) A COPY OF THE PERMIT WILL BE KEPT ON SITE.
13) AN 8 1/2"x11" WEATHER RESISTANT SIGN, INCLUDING THE PERMIT NUMBER SHALL BE PLACED ON THE PROPERTY FACING THE ROAD.
14) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MONITOR ALL CONSTRUCTION ACTIVITY DURING THE ENTIRE CONSTRUCTION PROCESS.
15) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AN AS-BUILT SURVEY OF GRADING, DRAINAGE AND ALL STORMWATER MANAGEMENT FACILITIES. AS-BUILT SURVEY SHOULD MEET THE REQUIREMENTS OF CITY OF PANAMA CITY BEACH, BAY COUNTY AND THE NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT STANDARDS.

GENERAL NOTES CONTINUES:

16) AS-BUILT DRAWINGS WILL BE SUBMITTED TO SCR & ASSOCIATES IN DIGITAL FORMAT (AUTOCAD R14 OR LATER), AS WELL AS PAPER COPY SIGNED AND SEALED BY THE PROFESSIONAL LAND SURVEYOR OF RECORD.
17) THE EXACT LOCATION AND ELEVATION OF EXISTING STRUCTURES, UTILITIES, AND PIPING SHALL BE PHYSICALLY VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE CONSTRUCTION BEGINS. THESE DRAWINGS DO NOT PURPORT TO SHOW IN COMPLETE DETAIL ALL EXISTING STRUCTURES, UTILITIES, OR PIPING. THE CONTRACTOR SHALL EXAMINE ALL AVAILABLE RECORDS AND MAKE ALL EXPLORATIONS AND EXCAVATIONS AS REQUIRED TO DETERMINE THE LOCATION OF EXISTING STRUCTURES, UTILITIES, AND PIPING, WHENEVER NECESSARY. THE OWNER RESERVES THE RIGHT TO CHANGE LOCATION OF LINES TO AVOID CONFLICT WITH EXISTING STRUCTURES, UTILITIES, OR PIPING.
18) THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER OR OWNER'S ENGINEER OF ANY CONFLICT BEFORE PERFORMING ANY WORK IN THE AFFECTED AREA.
19) THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION.
20) THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF WORK CALLED FOR IN THESE CONTRACT DOCUMENTS.
21) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LEARN, KNOW, AND COMPLY WITH THE REGULATIONS, ORDINANCES, PERMIT AND INSPECTION REQUIREMENTS OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND COMPLY WITH THE CONDITIONS OF THE VARIOUS PERMITS OF THE GOVERNMENTAL AGENCIES. THE CONTRACTOR SHALL SCHEDULE THE REQUIRED INSPECTIONS AND APPROVALS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE NECESSARY AGENCIES OF CONSTRUCTION COMMENCEMENT.
22) ALL SPECIFICATIONS AND DOCUMENTS REFERRED TO SHALL BE OF LATEST ISSUE AND SHALL BE CONSIDERED A PART OF THESE DOCUMENTS AS THOUGH INCLUDED.
23) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SETTING OF CONSTRUCTION STAKES TO MARK THE LOCATION, ALIGNMENT, ELEVATION, AND GRADE OF THE WORK. THE STAKES PROVIDED SHALL BE ADEQUATE IN NUMBER, POSITION, AND ELEVATION SO THAT THE PHYSICAL ITEM CAN BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS. THE CONSTRUCTION LAYOUT SURVEY SHALL MEET THE MINIMUM TECHNICAL STANDARDS FOR LAND SURVEYING IN THE STATE OF FLORIDA (CHAPTER 21HH-6, FLORIDA ADMINISTRATIVE CODE), AND SHALL BE PERFORMED BY A PERSON OF ADEQUATE EXPERTISE. FAILURE TO PERFORM THE CONSTRUCTION STAKEOUT IN ACCORDANCE WITH THE CONSTRUCTION PLANS MAY RESULT IN REMOVAL AND REPLACEMENT OF THE IMPROVEMENTS AT NO EXPENSE TO THE OWNER. IN NO CASE SHALL THE CONTRACTOR SCALE INFORMATION FROM THE PLANS OR ATTEMPT TO CONSTRUCT IMPROVEMENTS WITHOUT PERFORMING THE CONSTRUCTION LAYOUT IN ACCORDANCE WITH THE INFORMATION CONTAINED HEREIN. SYMBOLS MAY NOT BE TO SCALE. SEE STANDARD DETAILS FOR EXACT APPROPRIATE DIMENSIONS.
24) THE CONTRACTOR SHALL PROVIDE SCR & ASSOCIATES AND CITY OF PANAMA CITY BEACH, AS-BUILT DRAWINGS, PREPARED BY A REGISTERED SURVEYOR, FOR ALL DRAINAGE AND STORMWATER IMPROVEMENTS.
25) IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN ADEQUATE TRAFFIC CONTROL AND TO PROVIDE DETOURS AROUND CONSTRUCTION ACTIVITIES.
26) PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL INSTALL ANY REQUIRED SILT FENCING OR BALED HAY BARRIERS (FDOT INDEX 102) FOR SILT CONTROL. THERE WILL BE NO DIRECT PAYMENT FOR THIS WORK. COST SHALL BE INCLUDED IN OTHER ITEMS OF WORK. LOCATION SHALL BE AS SHOWN ON THE PLANS AS A MINIMUM AND AS NEEDED DURING CONSTRUCTION.
27) WHERE IT BECOMES NECESSARY TO TEMPORARILY REMOVE, REPOSITION, OR SUPPORT EXISTING FACILITIES. THIS WORK SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE AND IN ACCORDANCE WITH REQUIREMENTS OF THE OWNER. THE CONTRACTOR SHALL PHYSICALLY EXAMINE THE ENTIRE PROJECT SITE AND INFORM HIMSELF FULLY IN ALL CONDITIONS PERTAINING TO THE PLACE WHERE THE WORK IS TO BE PERFORMED FOR PURPOSE OF DETERMINING HIS COST TO PERFORM THE WORK. THE CONTRACTOR SHOULD PAY SPECIAL ATTENTION TO AREAS INVOLVING CLEARING AND GRUBBING, EXISTING FACILITIES REMOVAL AND REPLACEMENT, OR RELOCATION.
28) WHEN WORK ALONG DRIVES REQUIRES THE REMOVAL AND REPLACEMENT OF EXISTING DRAINAGE STRUCTURES THE COST OF THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR RELATED ITEMS OF WORK.
29) ALL SODDING AND GRASSING SHALL BE IN ACCORDANCE WITH FDOT SPECIFICATION REGARDING MATERIALS, INSTALLATION AND INITIAL MAINTENANCE.
30) IF DURING CONSTRUCTION OR OPERATION OF THE STORMWATER MANAGEMENT SYSTEM, A STRUCTURAL FAILURE IS OBSERVED THAT HAS THE POTENTIAL TO CAUSE THE DIRECT DISCHARGE OF SURFACE WATER INTO THE FLORIDIAN AQUIFER SYSTEM, CORRECTIVE ACTIONS DESIGNED OR APPROVED BY A REGISTERED PROFESSIONAL SHALL BE TAKEN AS SOON AS PRACTICAL TO CORRECT THE FAILURE.
31) FOR WET POND CONSTRUCTION, IN AREAS CONTAINING FINE SANDS AND HIGH GROUND WATER TABLE, IT MAY BE NECESSARY TO STABILIZE POND SIDE SLOPES DURING CONSTRUCTION.
32) THE DEVELOPER OR DEVELOPER'S DESIGNATED AGENT MUST NOTIFY BAY COUNTY PUBLIC WORKS (JIM FAULKNER 850-248-8301 - jfaulkner@baycountyfl.gov) AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, INCLUDING LAND CLEARING OPERATIONS. A COPY OF NOTICE OF INTENT TO USE NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES WILL NEED TO BE PROVIDED TO PUBLIC WORKS ENGINEERING DIVISION.
33) IT IS UNLAWFUL FOR ANY PERSON TO DUMP, LEAVE OR BURY ANY SOLID WASTE ON PUBLIC OR PRIVATE PROPERTY. FAILURE TO DISPOSE OF SOLID WASTE AS SPECIFIED IN SECTION 22-149 OF BAY COUNTY MUNICIPAL CODE OF ORDINANCES IS PUNISHABLE UNDER SECTION 1-6.

TIMING OF CONTROLS/MEASURES:

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, THE SILT FENCES AND HAY BALES, STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT BASIN WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED PERMANENTLY IN ACCORDANCE WITH THE PLANS. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND THE EARTH DIKE/SWALES WILL BE REGRADED/REMOVED AND STABILIZED IN ACCORDANCE WITH THE EROSION AND TURBIDITY CONTROL PLAN. SEE SWPPP.

ENVIRONMENTAL SEQUENCE:

THE CONTRACTOR SHALL AT A MINIMUM IMPLEMENT THE CONTRACTOR'S REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE EROSION CONTROL PLAN. IN ADDITION THE CONTRACTOR SHALL UNDERTAKE ANY ADDITIONAL MEASURES REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS, DEPENDING ON THE NATURE OF MATERIALS AND METHODS OF CONSTRUCTION THE CONTRACTOR MAY BE REQUIRED TO ADD FLOCCULANTS TO THE RETENTION SYSTEM PRIOR TO PLACING THE SYSTEM INTO OPERATION.

SEQUENCE OF MAJOR ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1) INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2) INSTALL SILT FENCES AND HAY BALES, AS REQUIRED.
3) CONSTRUCT SEDIMENTATION BASIN.
4) CLEAR AND GRUB FOR DIVERSION SWALES/DIKES AND SEDIMENT BASIN AT PERMANENT POND LOCATION.
5) CONTINUE CLEARING AND GRUBBING.
6) STOCKPILE TOP SOIL IF REQUIRED.
7) PERFORM PRELIMINARY GRADING ONSITE, AS REQUIRED.
8) STABILIZE DENUDED AREA AND STOCKPILES AS SOON AS PRACTICABLE.
9) INSTALL UTILITIES, STORM SEWER, CURBS AND GUTTER.
10) APPLY BASE TO PROJECT.
11) COMPLETE GRADING AND INSTALL PERMANENT SEEDING/SOD AND PLANTING.
12) COMPLETE FINAL PAVING.
13) UPON SIGNIFICANT COMPLETION OF CONSTRUCTION, THE STORMWATER PIPING SYSTEM SHALL BE FLUSHED OUT TO REMOVE ACCUMULATED DEBRIS AND SEDIMENT.
14) UPON COMPLETION OF THE DEBRIS AND SEDIMENT REMOVAL FROM THE STORMWATER PIPING SYSTEM, THE PROPOSED STORMWATER MANAGEMENT FACILITY(S) SHALL BE FINE GRADED AND BE EXCAVATED A MINIMUM OF SIX INCHES BELOW THE DESIGN BOTTOM ELEVATION AND REPLACED WITH FILL HAVING A MINIMUM PERMEABILITY RATE OF 20 FEET/DAY WITH A MAXIMUM OF 5% SOIL FINES PASSING THE No. 200 SIEVE. THE BOTTOM SHALL BE SCARIFIED AND STABILIZED ACCORDING TO THESE PLANS. ONCE COMPLETED, NO HEAVY MACHINERY SHALL BE ALLOWED WITH THE STORMWATER MANAGEMENT FACILITY(S).
15) WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY DIVERSION SWALES/DIKES AND RESEED/ SOD, AS REQUIRED.

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION

PAVING, GRADING, AND EARTH WORK NOTES:

1) ANY DEFICIENCY IN THE QUANTITY OF MATERIAL FOR BACK FILLING THE TRENCHES, OR FOR FILLING DEPRESSIONS CAUSED BY SETTLEMENT, SHALL BE SUPPLIED BY THE CONTRACTOR AT NO COST TO THE OWNER. THIS ALSO APPLIES TO BASE COURSE UNDER PAVED STREETS.
2) ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE SEEDED, MULCHED, SODDED, STABILIZED, OR PLANTED WITH OTHER APPROVED LANDSCAPE MATERIAL, WITHIN FIVE (5) DAYS AFTER CONSTRUCTION.
3) PROPOSED SPOT ELEVATIONS REPRESENT PAVEMENT OR GROUND SURFACE GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.
4) THE CONTRACTOR SHALL INSTALL ALL TRAFFIC CONTROL DEVICES REQUIRED FOR THE PROJECT IN ACCORDANCE WITH THE LATEST EDITION OF THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5) ALL EXISTING CONCRETE, ASPHALT, TREES, STUMPS, AND OTHER DELETERIOUS MATERIAL TO BE REMOVED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FLORIDA LAWS. NO DEMOLISHED MATERIAL SHALL BE BURIED ON-SITE.
6) ALL EXISTING PAVEMENT TO BE REMOVED SHALL BE SAW CUT.
7) ALL PAVEMENT MARKINGS WITHIN FDOT RIGHT-OF-WAY SHALL BE MADE WITH THERMOPLASTIC IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION 711.

PAVEMENT TESTING AND INSPECTION REQUIREMENTS

1) TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TESTING SCHEDULE CONTAINED WITHIN THESE PLANS. SELECTION AND CONTRACTING WITH THE TESTING FIRMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE ALL TESTS.
2) ACCEPTANCE TESTING FOR NEW PAVEMENT SHALL CONSIST OF ONE PASS OF A STANDARD 15-FOOT ROLLING STRAIGHT EDGE OPERATED WHILE THE PAVEMENT IS STILL HOT. ALL DEFICIENCIES IN EXCESS OF 3/16 INCH SHALL BE CORRECTED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION 330.

BENCHMARK & ELEVATION NOTES:

1) ELEVATIONS SHOWN HEREON ARE BASED ON THE PROJECT ELEVATION DATUM AS CONTAINED IN THE TITLE BLOCK AND THE SITE BENCHMARKS AS SHOWN. VERTICAL LAYOUT TO BE PERFORMED USING THE PROVIDED SITE BENCHMARKS AND NOTES.
2) BENCHMARKS SHOWN HEREON SHALL BE USED IN THE CONSTRUCTION OF THE PROJECT. IN NO CASE SHALL ANY OTHER BENCHMARK OR ELEVATION REFERENCE BE USED IN THE CONSTRUCTION OF THE PROJECT. CONTRACTOR SHALL NOT USE THE ELEVATION OF EXISTING IMPROVEMENTS SHOWN HEREON OR FROM OTHER SOURCES AS A BASIS FOR CONSTRUCTION. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN THE REMOVAL AND REPLACEMENT OF CONSTRUCTED IMPROVEMENTS AT NO COST TO THE OWNER.
3) IN THE EVENT THAT BENCHMARKS ARE DISTURBED OR DESTROYED DURING CONSTRUCTION, CONTRACTOR SHALL NOTIFY SCR & ASSOCIATES FOR REPAIR OR REPLACEMENT. USE OF THE PROVIDED BENCHMARKS FOR VERTICAL CONTROL SHOULD BE PERFORMED IN ACCORDANCE WITH STANDARD SURVEYING TECHNIQUES AND THE MINIMUM TECHNICAL STANDS FOR SURVEYING IN THE STATE OF FLORIDA, FAC 61G17. PRIOR TO UTILIZING THE BENCHMARKS FOR VERTICAL LAYOUT, CONTRACTOR SHALL CHECK BETWEEN MINIMUM OF TWO PROVIDED BENCHMARKS TO INSURE THEIR INTEGRITY.

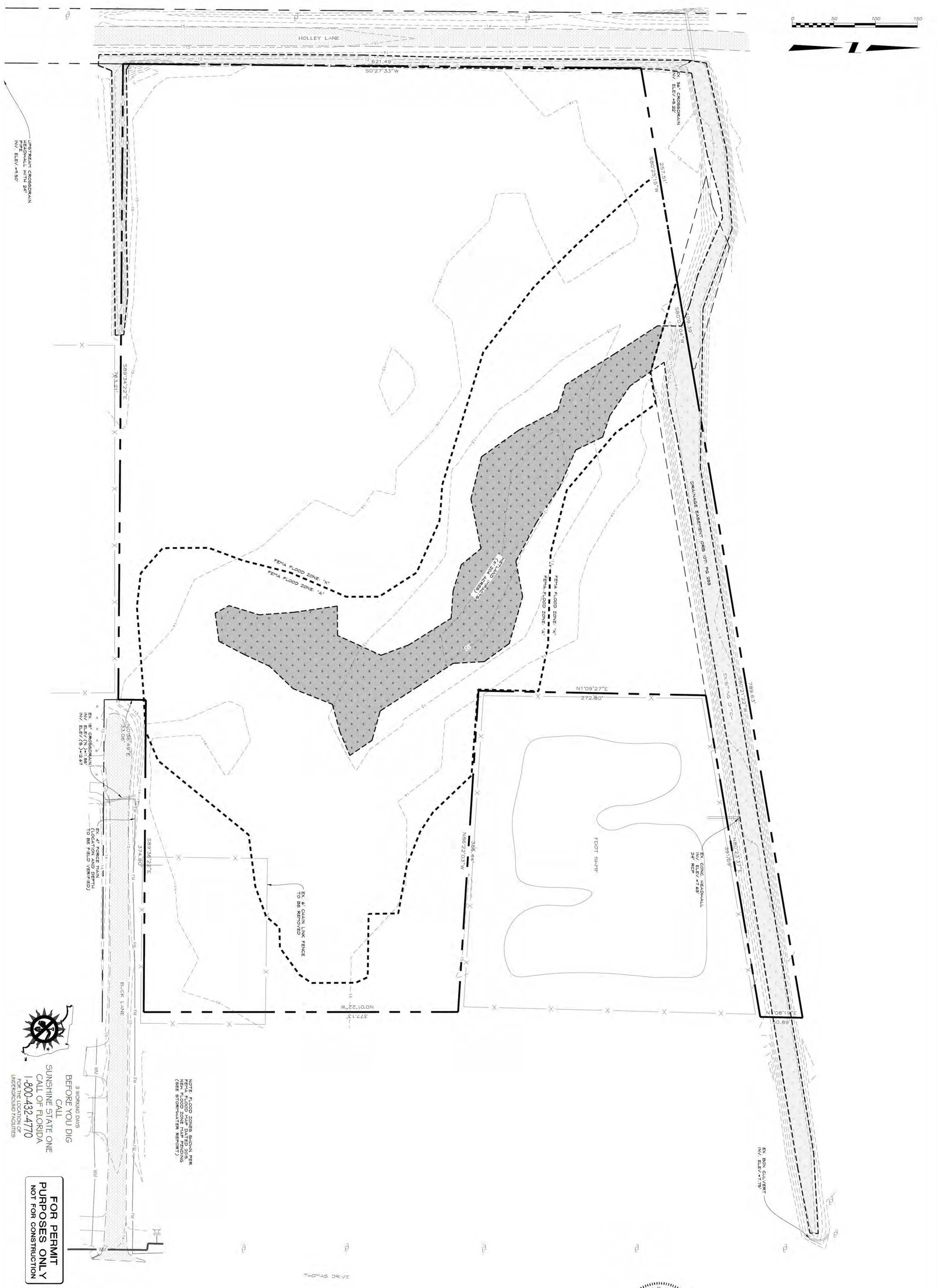
MINIMUM TECHNICAL STANDARDS CHECKLIST FOR UTILITY AS-BUILTS

CITY OF PANAMA CITY BEACH

DATED *MAY 2012*

SURVEYORS AND MAPPERS MUST MEET THE FOLLOWING MINIMUM STANDARDS OF ACCURACY, COMPLETENESS, AND QUALITY FOR THE CITY OF PANAMA CITY BEACH TO ACCEPT AS-BUILTS:

1. MUST IDENTIFY THE RESPONSIBLE SURVEYOR AND MAPPER.
2. SHALL STATE THE TYPE OF SURVEY IT DEPICTS AND THE PURPOSE OF THE SURVEY.
3. MUST BEAR THE NAME, CERTIFICATE OF AUTHORIZATION NUMBER, AND STREET AND MAILING ADDRESS OF THE BUSINESS ENTITY ISSUING THE AS-BUILT SURVEY, ALONG WITH THE NAME AND LICENSE NUMBER OF THE SURVEYOR IN RESPONSIBLE CHARGE.
4. MUST REFLECT A SURVEY DATE, WHICH IS THE DATE OF ACQUISITION. WHEN THE GRAPHICS OF THE AS-BUILT SURVEY ARE REVISED, BUT THE SURVEY DATE STAYS THE SAME, THE AS-BUILT SURVEY MUST LIST DATES FOR ALL REVISIONS.
5. MUST BE SIGNED AND SEALED BY THE SURVEYOR IN RESPONSIBLE CHARGE.
6. A DESIGNATED "NORTH ARROW" AND EITHER A STATED SCALE OR GRAPHIC SCALE SHALL BE SHOWN.
7. APPROPRIATE LINE TYPES, LINE WEIGHTS, AND LINE WIDTHS SHALL BE USED ON THE AS-BUILT DRAWING TO DIFFERENTIATE EXISTING FROM PROPOSED AND WATER FROM SEWER, RECLAIM, AND STORM. ALL PHYSICAL ITEMS (I.E. PIPES, VALVES, ETC.), SURVEYED BOUNDARIES, AND EASEMENTS SHOULD BE CLEARLY MARKED, AND DIMENSIONED, AND IDENTIFIED BY SIZE AND MATERIAL.
8. ALL UTILITIES IN THE PUBLIC RIGHT OF WAY AND WITHIN EASEMENTS OR TO THE END OF THE PUBLICLY OWNED PORTION OF THE UTILITY (I.E. METER AND BACKFLOW PREVENTER, CLEANOUT, ETC.) SHALL BE SHOWN WITH ASSOCIATED SIZES LABELED. THIS INCLUDES, BUT IS NOT LIMITED TO, STUB-OUTS/LATERALS, METERS, BFP'S, WATER MAINS, FORCE MAINS, GRAVITY SEWER MAINS, MANHOLES, STORM WATER PIPING AND ASSOCIATED STRUCTURES, VALVES, FIRE HYDRANTS, LIF



FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION

BEFORE YOU DIG CALL SUNSHINE STATE ONE CALL OF FLORIDA 1-800-432-4770 FOR THE LOCATION OF UNDERGROUND FACILITIES
3 WORKING DAYS

PROJECT NAME:	HOLLEY LANE TOWNHOMES BAY COUNTY, FLORIDA
CLIENT NAME:	COBALT PROPERTY DEVELOPMENT, LLC.
SHEET TITLE:	EXISTING CONDITIONS

KB ENGINEERING
411 G N. HWY 231, Panama City, FL 32404
PHONE (850) 541-6222 FAX (850) 785-5705
BOTENGINEER@COMCAST.NET GA#28257

DESIGN ENGINEER: 69921 — STATE OF FLORIDA — KIMBERLY R. BOTTOMS — REGISTERED PROFESSIONAL ENGINEER
LICENSE NUMBER 69921 — 10-10-19 — STATE OF FLORIDA — DATE SIGNED

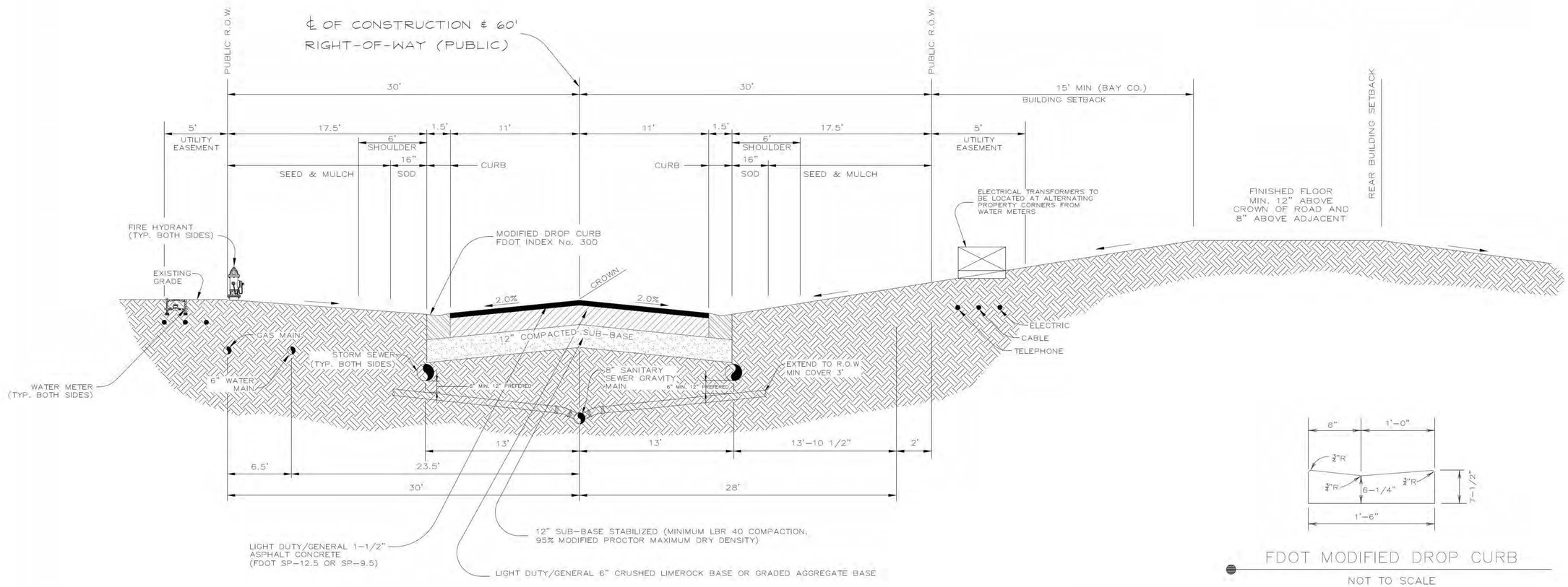
REVISIONS

No.	DESCRIPTION	DATE
1		
2		
3		
4		

DESIGNED: KRB AS SHOWN
DRAWN: KRB AS SHOWN
CHECKED: KRB
PROJECT No.: 19-021
ITEM No.: HOLLEY LANE TOWNHOMES
ISSUE DATE: 10-10-19
SHEET: C.2

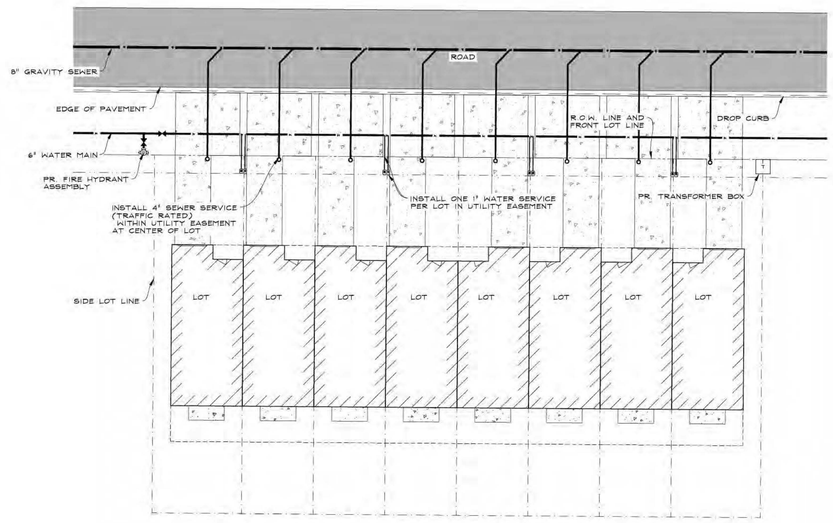
3 WORKING DAYS
BEFORE YOU DIG
CALL
SUNSHINE STATE ONE
CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
UNDERGROUND FACILITIES

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION



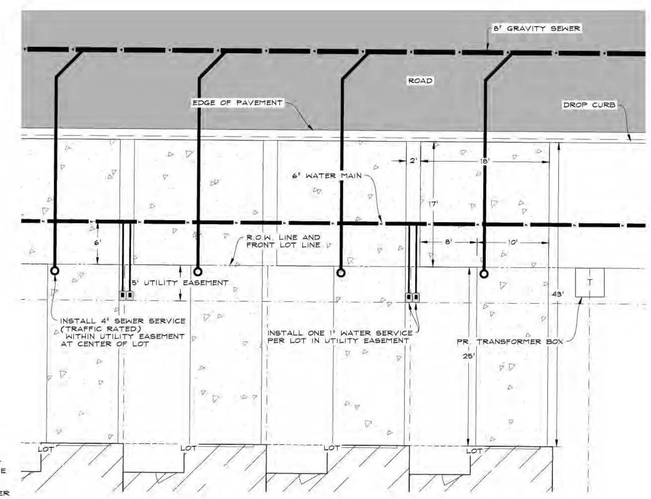
FDOT MODIFIED DROP CURB

NOT TO SCALE



TOWNHOME UTILITY SERVICES DETAIL

1" = 20'



NOTE:
WATER SERVICE AND FIRE HYDRANT LOCATIONS ARE SUBJECT TO CHANGE BASED ON THE GULF POWER PLAN. PLANS MUST BE REVISED TO AVOID ANY CONFLICT WITH THE GULF POWER PLAN

LOT UTILITY SERVICES DETAIL

1" = 10'

HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE

KIMBERLY A. BOTKINS
REGISTERED ENGINEER
STATE OF FLORIDA
LICENSE NUMBER 73921
PROFESSIONAL ENGINEER
DATE SIGNED 10-10-19

KB ENGINEERING
411 E.N. HWY 231, Panama City, FL 32404
PHONE (850) 341-0222 FAX (850) 785-6705
KBENGINEERING@GMAIL.NET CA#30427

SHEET TITLE: TYPICAL SECTIONS

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE	AS SHOWN
VRT. SCALE	AS SHOWN
PROJECT No.	19-261
FILE No.	N/A
ISSUE DATE	NOT ISSUED
SHEET:	C.3

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE NO.	STRUCTURE TYPE	LOCATION	TOP INVERT ELEVATION	PIPE IN	PIPE OUT
DS-1	MES	Bolley Lane STA. 13+82.88 OFF. 152.01 LT.		9.50', S, 30" RCP	
DS-2	TYPE C INLET	Bolley Lane STA. 13+82.95 OFF. 12.50 LT.	15.00'	12.36', W, 18" RCP 11.40', S, 24" RCP	10.00', N, 30" RCP
DS-3	TYPE C INLET	Bolley Lane STA. 13+82.95 OFF. 12.50 RT.	15.00'	11.50', S, 24" RCP	11.50', N, 24" RCP
DS-4	TYPE C INLET	Bolley Lane STA. 12+12.95 OFF. 12.50 LT.	15.50'	12.53', S, 18" RCP	12.53', E, 18" RCP
DS-5	TYPE C INLET	Bolley Lane STA. 12+12.95 OFF. 12.50 RT.	15.50'		12.55', N, 18" RCP
DS-6	TYPE C INLET	Bolley Lane STA. 13+82.95 OFF. 130.00 RT.	15.00'	11.75', S, 24" RCP	11.75', N, 24" RCP
DS-7	TYPE C INLET	Huck Lane STA. 28+83.02 OFF. 12.50 LT.	15.00'	12.23', W, 18" RCP 11.90', S, 18" RCP	11.90', N, 24" RCP
DS-8	TYPE C INLET	Huck Lane STA. 28+83.02 OFF. 12.50 RT.	15.00'	9.00', S, 12" ADS	12.00', N, 18" RCP
DS-9	YARD DRAIN	Huck Lane STA. 28+83.02 OFF. 123.00 RT.	14.50'		9.00', N, 12" ADS
DS-10	TYPE C INLET	Huck Lane STA. 27+13.02 OFF. 12.50 LT.	15.50'	12.63', S, 18" RCP	12.40', E, 18" RCP
DS-11	TYPE C INLET	Huck Lane STA. 27+13.02 OFF. 12.50 RT.	15.50'		12.55', N, 18" RCP
DS-12	MES	Bolley Lane STA. 17+25.31 OFF. 153.08 LT.		9.50', S, 24" RCP	
DS-13	TYPE C INLET	Bolley Lane STA. 17+50.00 OFF. 12.50 LT.	15.00'	9.75', S, 24" RCP	9.75', N, 24" RCP
DS-14	TYPE C INLET	Bolley Lane STA. 17+50.00 OFF. 12.50 RT.	15.00'	10.00', E, 24" RCP 10.00', S, 24" RCP	10.00', N, 24" RCP
DS-15	MES	Bolley Lane STA. 17+63.49 OFF. 84.86 RT.			9.90', N, 24" RCP
DS-16	TYPE C INLET	Bolley Lane STA. 20+19.99 OFF. 12.50 RT.	15.00'	11.00', NE, 18" RCP 11.00', S, 24" RCP	11.00', W, 24" RCP
DS-17	TYPE C INLET	Bolley Lane STA. 20+19.99 OFF. 12.50 LT.	15.00'	9.00', E, 12" ADS	11.25', SW, 18" RCP
DS-17.1	YARD DRAIN	Bolley Lane STA. 20+49.86 OFF. 29.67 LT.	14.48'		9.00', W, 12" ADS
DS-18	TYPE C INLET	Bolley Lane STA. 21+88.88 OFF. 12.49 RT.	15.50'	12.00', E, 18" RCP 12.00', S, 18" RCP	12.00', N, 24" RCP
DS-19	TYPE C INLET	Bolley Lane STA. 21+88.88 OFF. 12.51 LT.	15.50'	9.00', E, 12" ADS	12.10', W, 18" RCP
DS-20	YARD DRAIN	Bolley Lane STA. 21+88.88 OFF. 123.01 LT.	14.56'		9.00', W, 12" ADS
DS-21	TYPE C INLET	Bolley Lane STA. 22+58.18 OFF. 19.61 RT.	15.67'		12.20', N, 18" RCP
DS-22	MES	Huck Lane STA. 32+83.74 OFF. 54.98 LT.		12.00', S, 18" RCP	
DS-23	TYPE C INLET	Huck Lane STA. 32+50.00 OFF. 12.50 LT.	15.00'	12.06', SE, 18" RCP	12.06', N, 18" RCP
DS-24	TYPE C INLET	Huck Lane STA. 32+52.92 OFF. 12.50 RT.	15.00'	9.00', SE, 12" ADS	12.09', NW, 18" RCP
DS-24.1	YARD DRAIN	Huck Lane STA. 33+45.41 OFF. 124.17 RT.	14.75'		9.00', NW, 12" ADS
DS-25	MES	Huck Lane STA. 25+26.11 OFF. 82.64 RT.			11.75', N, 30" RCP
DS-26	MES	Huck Lane STA. 25+25.84 OFF. 91.72 LT.		11.50', S, 30" RCP	
DS-27	MES	Bolley Lane STA. 10+26.42 OFF. 93.42 RT.			10.75', N, 30" RCP
DS-28	MES	Bolley Lane STA. 10+26.12 OFF. 94.06 LT.		10.50', S, 30" RCP	

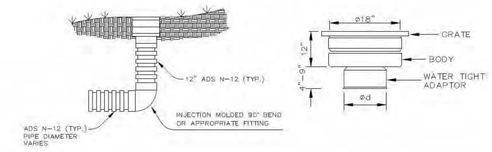
*SEE SHEET C.10 FOR OUTFALL STRUCTURE DETAILS

SEWER STRUCTURE SCHEDULE

STRUCTURE NO.	STRUCTURE TYPE	LOCATION	TOP INVERT ELEVATION	INVERT IN ELEVATION	INVERT OUT ELEVATION
LIFT STATION		Huck Lane STA. 32+12.58 OFF. 98.62 RT	16.86'	6.36', 8" PVC	
SS-2	MANHOLE	Huck Lane STA. 32+26.06 OFF. 6.22 RT	15.19'	7.72', 8" PVC 6.83', 8" PVC 6.26', 8" PVC	6.75', 8" PVC
SS-3	MANHOLE	Huck Lane STA. 25+50.00 OFF. 0.00 T	15.44'	8.91', 8" PVC	8.81', 8" PVC
SS-4	MANHOLE	Huck Lane STA. 25+50.00 OFF. 0.00 T	16.00'		10.50', 8" PVC
SS-5	MANHOLE	Huck Lane STA. 33+00.00 OFF. 0.00 T	15.34'	8.63', 8" PVC	8.53', 8" PVC
SS-6	MANHOLE	Huck Lane STA. 35+47.42 OFF. 0.00 T	15.90'	9.47', 8" PVC 9.47', 8" PVC	9.61', 8" PVC
SS-7	MANHOLE	Bolley Lane STA. 20+00.00 OFF. 0.01 LT.	16.23'		9.90', 8" PVC
SS-8	MANHOLE	Bolley Lane STA. 20+42.02 OFF. 4.63 LT.	15.21'		10.25', 8" PVC
SS-9	MANHOLE	Bolley Lane STA. 17+27.95 OFF. 0.00 T.	15.31'	7.96', 8" PVC	7.86', 8" PVC
SS-10	MANHOLE	Bolley Lane STA. 14+50.00 OFF. 0.00 T	15.44'	9.16', 8" PVC	9.06', 8" PVC
SS-11	MANHOLE	Bolley Lane STA. 10+50.00 OFF. 0.00 T	15.89'		10.75', 8" PVC

DRAINAGE PIPE SCHEDULE

PIPE No.	MATERIAL	SIZE	LENGTH
DP-1	RCP	30"	±136'
DP-2	RCP	24"	±25'
DP-3	RCP	18"	±165'
DP-4	RCP	18"	±25'
DP-5	RCP	24"	±114'
DP-6	RCP	24"	±114'
DP-7	RCP	18"	±25'
DP-8	ADS	12"	±107'
DP-9	RCP	18"	±165'
DP-10	RCP	18"	±25'
DP-11	RCP	24"	±139'
DP-12	RCP	24"	±25'
DP-13	RCP	24"	±40'
DP-14	RCP	24"	±258'
DP-15	RCP	18"	±25'
DP-16	RCP	24"	±149'
DP-17	RCP	18"	±25'
DP-17.1	ADS	12"	±136'
DP-18	ADS	12"	±106'
DP-19	RCP	18"	±67'
DP-20	RCP	18"	±60'
DP-21	RCP	18"	±25'
DP-21.1	ADS	12"	±124'
DP-22	RCP	30"	±64'
DP-23	RCP	30"	±67'



INLINE YARD DRAIN
NOT TO SCALE

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION

HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE
1		
2		
3		
4		
5		

I HEREBY CERTIFY THAT THE ENGINEERING FEATURES CONTAINED IN THESE PLANS AND DESIGNS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA, LICENSE NO. 69201
KIM BOTTOMS, P.E. STATE OF FLORIDA PROFESSIONAL ENGINEER
10-10-19

KB ENGINEERING
4116 N. HWY 231, Panama City, FL 32404
PHONE: (850) 341-4222 FAX: (850) 785-4705
POWERED BY KB GROUP, INC. CA #30

SHEET TITLE: DRAINAGE SCHEDULE

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HOR. SCALE AS SHOWN
VER. SCALE AS SHOWN
PROJECT No 19-261
FILE No N/A
ISSUE DATE NOT ISSUED
SHEET: C.4

SYMBOLS & ABBREVIATIONS

℄	CENTERLINE	BTTM.	BOTTOM
±	MORE OR LESS	INV.	INVERT
S.M.F.	STORMWATER MANAGEMENT FACILITY	R.C.P.	REINFORCED CONCRETE PIPE
P.P.V.	PERMANENT POOL VOLUME	SEC.	SECTION
HRZ.	HORIZONTAL	R.O.W.	RIGHT-OF-WAY
VRT.	VERTICAL	TYP.	TYPICAL
No.	NUMBER	REQ.	REQUIREMENTS
LB	LICENSED BUSINESS	P.V.C.	POLYVINYL CHLORIDE
P.E.	PROFESSIONAL ENGINEER	UON	UNLESS OTHERWISE NOTED
R	RADIUS	SHWT	SEASONAL HIGH WATER TABLE
EL.	ELEVATION	T.O.B.	TOP OF BANK
F.F.E.	FINISHED FLOOR ELEVATION	SMF	STORMWATER MANAGEMENT FACILITY
CONC.	CONCRETE	L.S.	LIFT STATION
SF	SQUARE FEET		PROPOSED SLOPE DIRECTION ARROW
N	NORTH		TIE IN POINT OF PROPOSED GRADE TO EXISTING GRADE
E	EAST		PIPE CONTINUES OUTSIDE THE SURVEY'S SCOPE
S	SOUTH	12.0	PROPOSED SPOT ELEVATION
W	WEST		GEOTECHNICAL BORE LOCATION
EX.	EXISTING		
LF	LINEAR FEET		
D.E.	DRAINAGE EASEMENT		
U.E.	UTILITY EASEMENT		
D.U.E.	DRAINAGE & UTILITY EASEMENT		

SITE LABEL KEY

(A) STOP SIGN – R1-1

(B) STREET NAME SIGNS – D3-1

(C) 2' WIDE PAINTED WHITE STOP BAR

(D) 20' LONG DOUBLE YELLOW PAINTED STRIPS

(E) PAINTED "STOP" STREET MARKING

SITE DATA TABLE

TOTAL SITE AREA	15.75 AC.
DEVELOPMENT AREA	15.53 AC.
ZONE	GENERAL COMMERCIAL
NUMBER OF UNITS	152
DENSITY	10 du/ac
IMPERVIOUS SURFACE RATIO	53%
MINIMUM LOT FRONTAGE	50' (SQUARE)/20' (IRREGULAR)

BUILDING SETBACKS

FRONT	25'
REAR	20'
SIDE	5'

HEIGHT AND DENSITY REQUIREMENTS

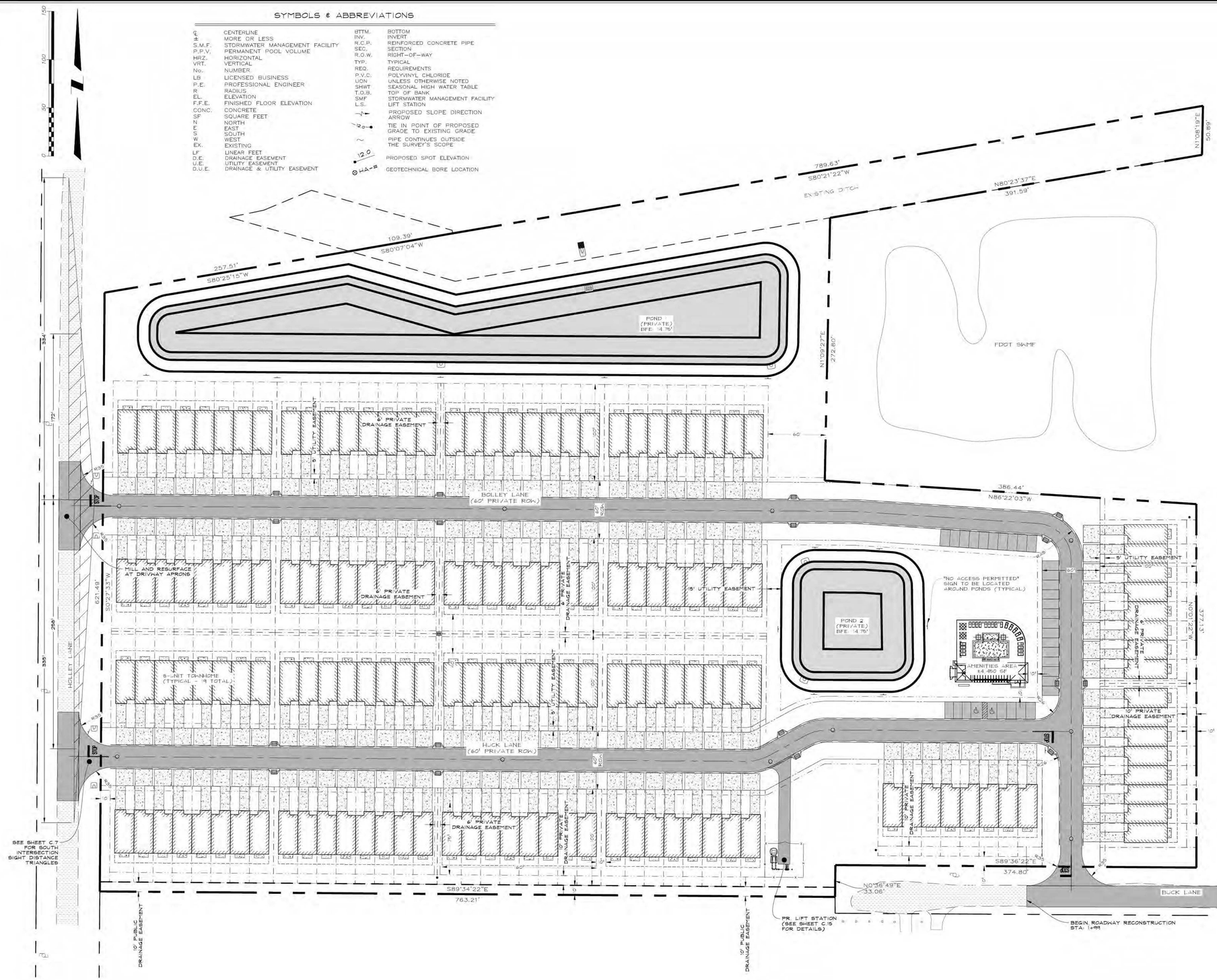
HEIGHT	45'
DENSITY	REQD=15du/ac PROVIDED; 9.65 U/AC

PARKING TABLE

	REQUIRED	PROVIDED
POOL	(1 SPACE PER 200 SF) 4,450 SF = 23 SPACES	33 SPACES

LINETYPE & HATCHING LEGEND

EXISTING		PROPOSED
	ASPHALT PAVEMENT	
	POND PPV	
	RIGHT OF WAY	
	BOUNDARY	
WM	POTABLE WATER MAIN	W
FM	SEWER FORCE MAIN	FM
SW	GRAVITY SEWER MAIN	S
25	ELEVATION CONTOUR	25
	DRAINAGE PIPE	
	LOT LINE	
	UTILITY EASEMENT	
	DRAINAGE EASEMENT	



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1-800-432-4770
FOR THE LOCATION OF UNDERGROUND FACILITIES

HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE

KIMBERLY BOWDEN
STATE OF FLORIDA
PROFESSIONAL ENGINEER
LICENSE NUMBER 93211
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY KIMBERLY BOWDEN ON 10-19
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

KB ENGINEERING
411 E.N. HWY 231, Panama City, FL 32404
PHONE (850) 341-4222 FAX (850) 785-6705
KBENGINEERING@GMAIL.NET CA#30521

SHEET TITLE: SITE PLAN

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE AS SHOWN
VRT. SCALE AS SHOWN
PROJECT No. 19-261
FILE No. N/A
ISSUE DATE NOT ISSUED
SHEET: C.5

SYMBOLS & ABBREVIATIONS

℄	CENTERLINE	BTTM.	BOTTOM
±	MORE OR LESS	INV.	INVERT
S.M.F.	STORMWATER MANAGEMENT FACILITY	R.C.P.	REINFORCED CONCRETE PIPE
P.P.V.	PERMANENT POOL VOLUME	SEC.	SECTION
HRZ.	HORIZONTAL	R.O.W.	RIGHT-OF-WAY
VRT.	VERTICAL	TYP.	TYPICAL
No.	NUMBER	REQ.	REQUIREMENTS
LB	LICENSED BUSINESS	P.V.C.	POLYVINYL CHLORIDE
P.E.	PROFESSIONAL ENGINEER	UON	UNLESS OTHERWISE NOTED
R	RADIUS	SHWT	SEASONAL HIGH WATER TABLE
EL.	ELEVATION	T.O.B.	TOP OF BANK
F.F.E.	FINISHED FLOOR ELEVATION	SMF	STORMWATER MANAGEMENT FACILITY
CONC.	CONCRETE	L.S.	LIFT STATION
SF	SQUARE FEET		PROPOSED SLOPE DIRECTION ARROW
N	NORTH		TIE IN POINT OF PROPOSED GRADE TO EXISTING GRADE
E	EAST		PIPE CONTINUES OUTSIDE THE SURVEY'S SCOPE
S	SOUTH	12.0	PROPOSED SPOT ELEVATION
W	WEST	B-HA-5	GEOTECHNICAL BORE LOCATION
EX.	EXISTING		
LF	LINEAR FEET		
D.E.	DRAINAGE EASEMENT		
U.E.	UTILITY EASEMENT		
D.U.E.	DRAINAGE & UTILITY EASEMENT		

EX. 36" CROSSDRAIN
INV. ELEV.=8.22'

257.51'
S80°25'15"W

109.39'
S80°07'04"W

DRAINAGE EASEMENT ORB 1071 PG 283

789.63'
S80°21'22"W

EXISTING DITCH

N80°23'37"E
391.59'

N10°38'19"E
50.89'

EX. BOX CULVERT
INV. ELEV.=7.75'

EX. CONC. HEADWALL
INV. ELEV.=7.68'
24" RCP

POND
(PRIVATE)
BFE: 14.75'

FDOT SWMF

N11°09'27"E
272.80'

FEMA FLOOD ZONE "X"
FEMA FLOOD ZONE "A"

6' PRIVATE
DRAINAGE EASEMENT

FFE: 17.21'
FFE: 16.75'
FFE: 16.80'

386.44'
N86°22'03"W

MILL AND RESURFACE
AT DRIVWAY APRONS

HOLLEY LANE

N621.49'

POND 2
(PRIVATE)
BFE: 14.75'

FFE: 17.00'

N00°01'22"W
372.13'

10' PRIVATE
DRAINAGE EASEMENT

FFE: 17.25'

NOTE: FLOOD ZONES SHOWN PER FEMA FLOOD MAP DATED 2018. NEW FLOOD ZONE MAP PENDING (SEE STORMWATER REPORT).

S89°36'22"E
374.80'

N01°36'49"E
33.08'

BUCK LANE

763.21'
S89°34'22"E

10' PUBLIC
DRAINAGE EASEMENT

PR. LIFT STATION
(SEE SHEET C.15
FOR DETAILS)

EX. 18" CROSSDRAIN
INV. ELEV.(N.)=11.88'
INV. ELEV.(S.)=12.67

BEGIN ROADWAY RECONSTRUCTION
STA: 1+99

ROADWAY RECONSTRUCTION TO TIE
INTO EXISTING ASPHALT APRON

VARIES
FIN -2"
3:1
5:1
2:1 MAX

SWALE DETAIL
NOT TO SCALE

LINETYPE & HATCHING LEGEND

EXISTING		PROPOSED
	ASPHALT PAVEMENT	
	POND PPV	
	RIGHT OF WAY	
	BOUNDARY	
WM	POTABLE WATER MAIN	W
FM	SEWER FORCE MAIN	FM
SW	GRAVITY SEWER MAIN	S
25	ELEVATION CONTOUR	25
	DRAINAGE PIPE	
	LOT LINE	
	UTILITY EASEMENT	
	DRAINAGE EASEMENT	

UPSTREAM CROSSDRAIN
HEADWALL WITH 24"
PIPE
INV. ELEV.=8.50'

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FOR THE LOCATION OF
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HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE

KIMBERLY A. BOTOS
PROFESSIONAL ENGINEER
LICENSE NUMBER 69321
STATE OF FLORIDA
DIGITALLY SIGNED
2020-10-19

KB ENGINEERING
411 E.N. HWY 231 | Panama City, FL 32404
PHONE: (850) 341-4222 FAX: (850) 785-0705
POWERED@KBENGINEERING.NET CA#30521

SHEET TITLE:
DRAINAGE & GRADING PLAN

PROJECT NAME:
HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME:
COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE AS SHOWN
VRT. SCALE AS SHOWN
PROJECT No. 19-261
FILE No. N/A
ISSUE DATE NOT ISSUED
SHEET: C.6

SYMBOLS & ABBREVIATIONS

℄	CENTERLINE	BTTM.	BOTTOM
±	MORE OR LESS	INV.	INVERT
S.M.F.	STORMWATER MANAGEMENT FACILITY	R.C.P.	REINFORCED CONCRETE PIPE
P.P.V.	PERMANENT POOL VOLUME	SEC.	SECTION
HRZ.	HORIZONTAL	R.O.W.	RIGHT-OF-WAY
VRT.	VERTICAL	TYP.	TYPICAL
No.	NUMBER	REQ.	REQUIREMENTS
LB	LICENSED BUSINESS	P.V.C.	POLYVINYL CHLORIDE
P.E.	PROFESSIONAL ENGINEER	UON	UNLESS OTHERWISE NOTED
R	RADIUS	SHWT	SEASONAL HIGH WATER TABLE
EL.	ELEVATION	T.O.B.	TOP OF BANK
F.F.E.	FINISHED FLOOR ELEVATION	SMF	STORMWATER MANAGEMENT FACILITY
CONC.	CONCRETE	L.S.	LIFT STATION
SF	SQUARE FEET		PROPOSED SLOPE DIRECTION ARROW
N	NORTH		TIE IN POINT OF PROPOSED GRADE TO EXISTING GRADE
E	EAST		PIPE CONTINUES OUTSIDE THE SURVEY'S SCOPE
S	SOUTH	12.0	PROPOSED SPOT ELEVATION
W	WEST	HA-5	GEOTECHNICAL BORE LOCATION
EX.	EXISTING		
LF	LINEAR FEET		
D.E.	DRAINAGE EASEMENT		
U.E.	UTILITY EASEMENT		
D.U.E.	DRAINAGE & UTILITY EASEMENT		

LINETYPE & HATCHING LEGEND

EXISTING		PROPOSED
	ASPHALT PAVEMENT	
	POND, PPV	
	RIGHT OF WAY	
	BOUNDARY	
WM	POTABLE WATER MAIN	W
FM	SEWER FORCE MAIN	FM
SW	GRAVITY SEWER MAIN	S
25	ELEVATION CONTOUR	25
	DRAINAGE PIPE	
	LOT LINE	
	UTILITY EASEMENT	
	DRAINAGE EASEMENT	

789.63'
S80°21'22"W
EXISTING DITCH
N80°23'37"E
391.59'
N11°08'19"E
50.89'
109.39'
S80°07'04"W
257.51'
S80°25'15"W
N11°09'27"E
272.80'
FDOT SWMF
6" CROSS WITH FIRE HYDRANT ASSEMBLY(N.) AND 4" REDUCER(S.)
±337 LF OF 6" PVC WATER MAIN
UTILITY EASEMENT
PR FIRE HYDRANT ASSEMBLY
±940 LF OF 6" PVC WATER MAIN
386.44'
N88°22'03"W
INSTALL 6" CAP AND VALVE
FLEXIBLE PVC TO BE USED UNDER PAVEMENT
SS-11
SS-10
SS-9
SS-8
5' UTILITY EASEMENT
S0°27'33"W
621.49'
394'
172'
VIGILANT LANE
±308 LF OF 4" PVC
PR. TRANSFORMER BOX - TYP
5' UTILITY EASEMENT
1" WATER METER WITH REDUCED BACK FLOW PREVENTER
2" WATER METER FOR IRRIGATION
N0°37'22"W
437.13'
SS-4
SS-3
SS-2
SS-5
SS-6
INSTALL 6" TEE & (2) 6" GATE VALVE
INSTALL 6" CAP AND VALVE
6" CROSS WITH FIRE HYDRANT ASSEMBLY(S.) AND 4" REDUCER(N.)
±337 LF OF 6" PVC WATER MAIN
PR. FIRE HYDRANT ASSEMBLY
FLEXIBLE PVC TO BE USED UNDER PAVEMENT
LIFT STATION
1" WATER METER WITH REDUCED BACK FLOW PREVENTER
±940 LF OF 6" PVC WATER MAIN
PR. FIRE HYDRANT ASSEMBLY
FLEXIBLE PVC TO BE USED UNDER PAVEMENT
SS-7
±181 LF OF 4" FORCEMAIN
INSTALL 4" TAPPING SLEEVE & GATE VALVE
S89°36'22"E
374.80'
±498 LF OF 6" PVC WATER MAIN
MINIMUM SEPARATION PER DETAIL M-35A, ON SHEET C.14
INSTALL 6"X24" TAPPING SLEEVE & 6" GATE VALVE
335'
250'
S89°34'22"E
763.21'
N0°38'49"E
33.06'
BUCK LANE
10' PUBLIC DRAINAGE EASEMENT
10' PUBLIC DRAINAGE EASEMENT
PR. LIFT STATION (SEE SHEET C.15 FOR DETAILS)
EX. 4" FORCE MAIN (LOCATION AND DEPTH TO BE FIELD VERIFIED)
EX. 24" WATER MAIN (LOCATION AND DEPTH TO BE FIELD VERIFIED)

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FOR THE LOCATION OF UNDERGROUND FACILITIES

HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE

KIMBERLY A. BOTOOK — PROFESSIONAL ENGINEER — STATE OF FLORIDA — LICENSE NUMBER 83211
DATE SIGNED 10-10-19

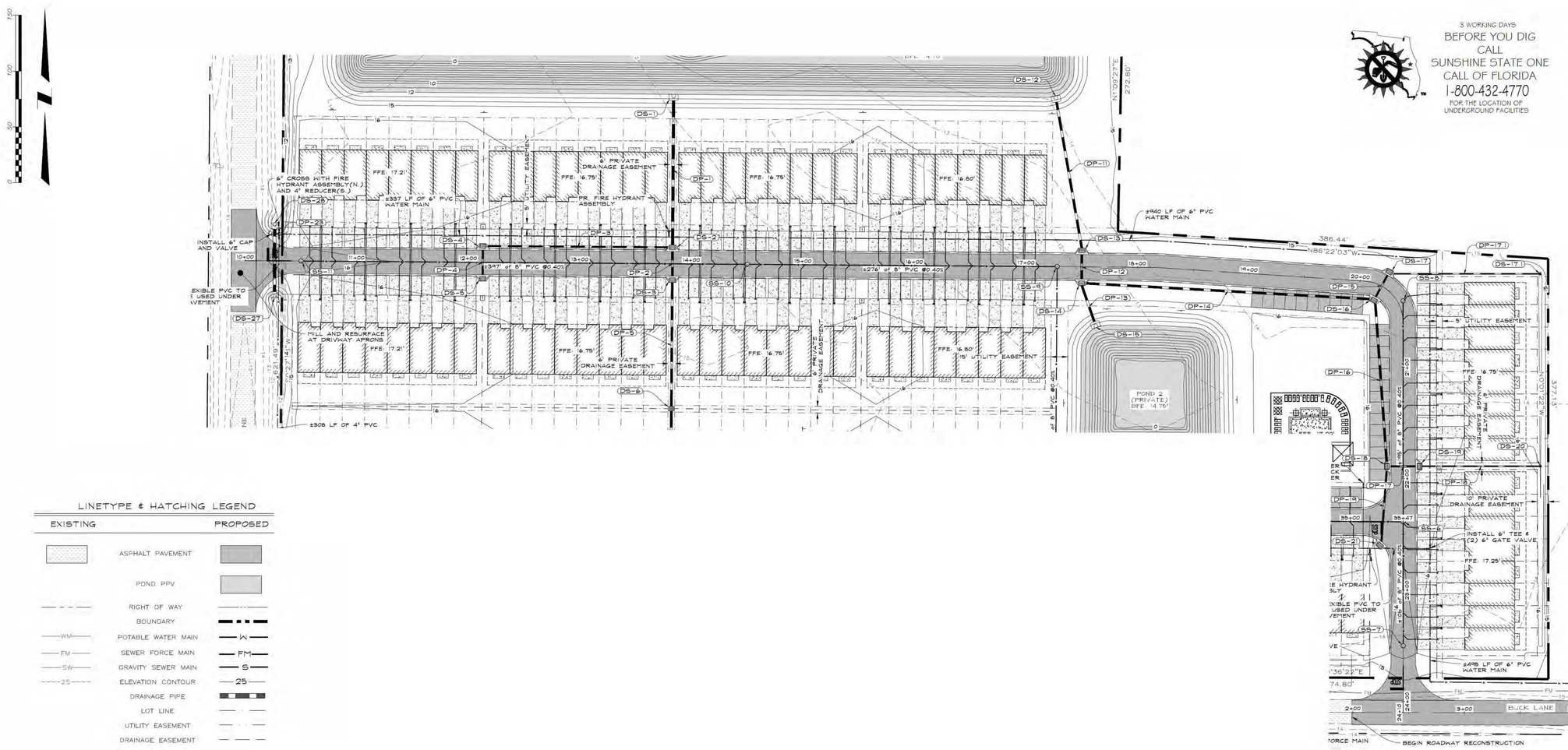
KB ENGINEERING
411 E.N. HWY 231, Panama City, FL 32404
PHONE (850) 341-4222 FAX (850) 785-6705
BOTOOK@KBENGINEERING.NET CA#30521

SHEET TITLE: UTILITY PLAN

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE	AS SHOWN
VRT. SCALE	AS SHOWN
PROJECT No.	19-261
FILE No.	N/A
ISSUE DATE	NOT ISSUED
SHEET:	C.7



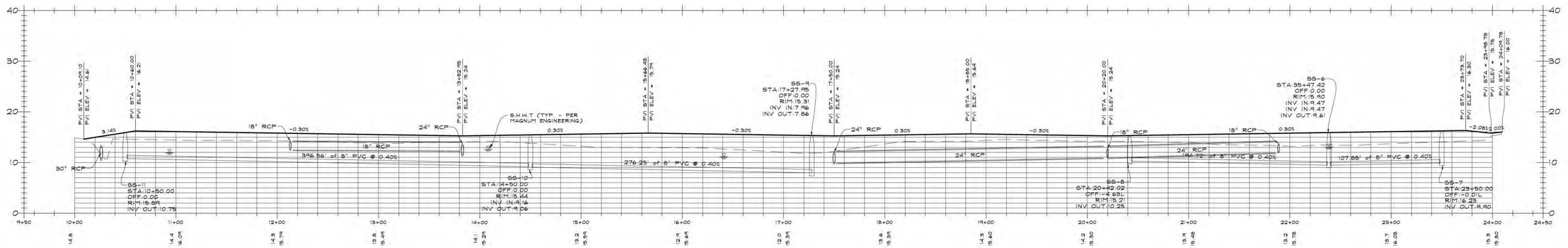
LINETYPE & HATCHING LEGEND

EXISTING		PROPOSED
	ASPHALT PAVEMENT	
	POND PPV	
	RIGHT OF WAY	
	BOUNDARY	
WM	POTABLE WATER MAIN	W
FM	SEWER FORCE MAIN	FM
SW	GRAVITY SEWER MAIN	S
25	ELEVATION CONTOUR	25
	DRAINAGE PIPE	
	LOT LINE	
	UTILITY EASEMENT	
	DRAINAGE EASEMENT	

BOLLEY LANE PLAN

BOLLEY LANE PROFILE

HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 10'



HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE

DESIGN ENGINEER: KIMBERLY K. BOLLEY, P.E. LICENSE NO. 73810 STATE OF FLORIDA — PROFESSIONAL ENGINEER — SIGNED 10-10-19

KB ENGINEERING
411 E.N. HWY 231, Panama City, FL 32404
PHONE (850) 541-4222 FAX (850) 785-6705
KBENGINEERING@GMAIL.NET

SHEET TITLE: BOLLEY LANE PLAN & PROFILE

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE	AS SHOWN
VRT. SCALE	AS SHOWN
PROJECT No.	19-261
PER No.	N/A
ISSUE DATE	NOT ISSUED
SHEET:	C.8

HOLLEY LANE TOWNHOMES

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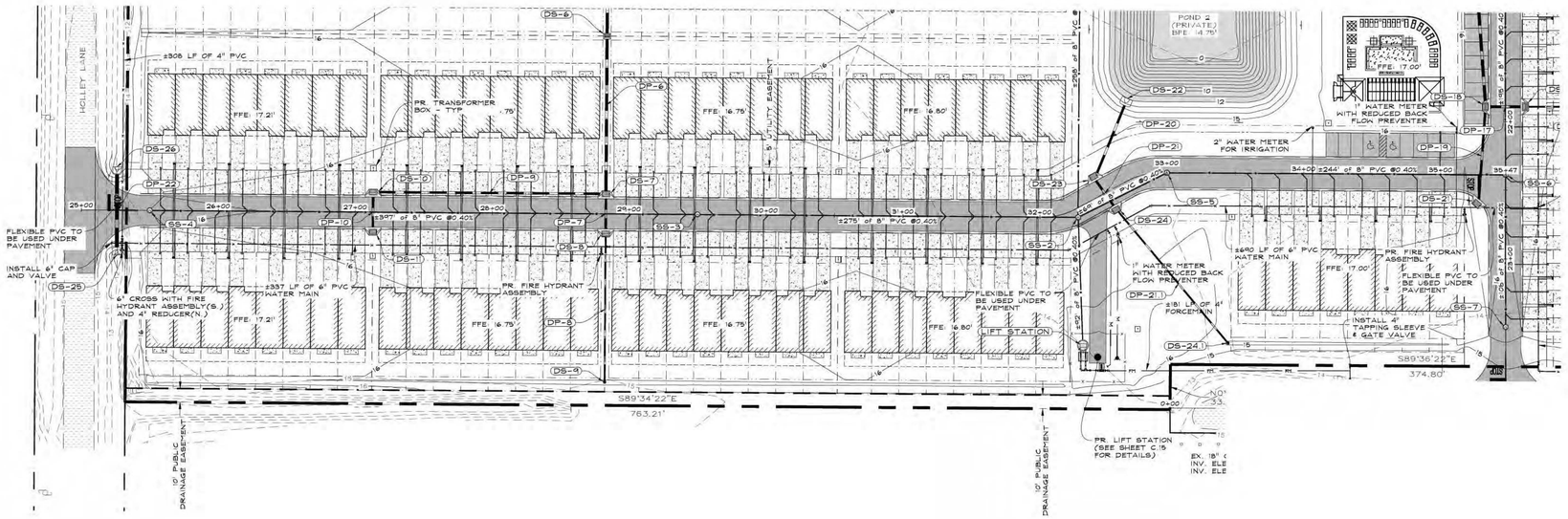
LINETYPE & HATCHING LEGEND

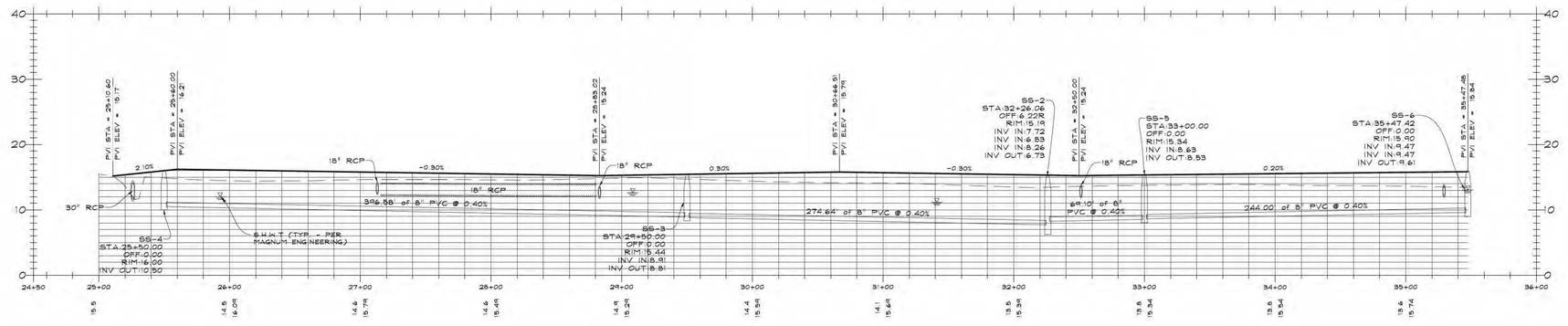
EXISTING		PROPOSED
	ASPHALT PAVEMENT	
	POND PPV	
	RIGHT OF WAY	
	BOUNDARY	
WM	POTABLE WATER MAIN	W
FM	SEWER FORCE MAIN	FM
SW	GRAVITY SEWER MAIN	S
25	ELEVATION CONTOUR	25
	DRAINAGE PIPE	
	LOT LINE	
	UTILITY EASEMENT	
	DRAINAGE EASEMENT	



HUCK LANE PLAN

HUCK LANE PROFILE

HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 10'



REVISIONS

No.	DESCRIPTION	DATE

DESIGN ENGINEER: Kim Bodnar, P.E.
LICENSE NUMBER: 72101
STATE OF FLORIDA
PROFESSIONAL ENGINEER
10-10-19
NOT SIGNED

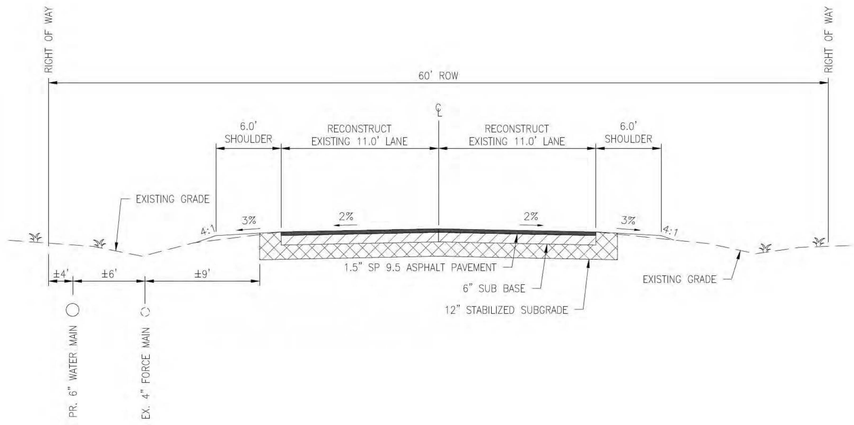
KB ENGINEERING
411 E.N. HWY 231, Panama City, FL 32404
PHONE (850) 341-4222 FAX (850) 785-6705
KIM@KBENGINEERINGFL.NET

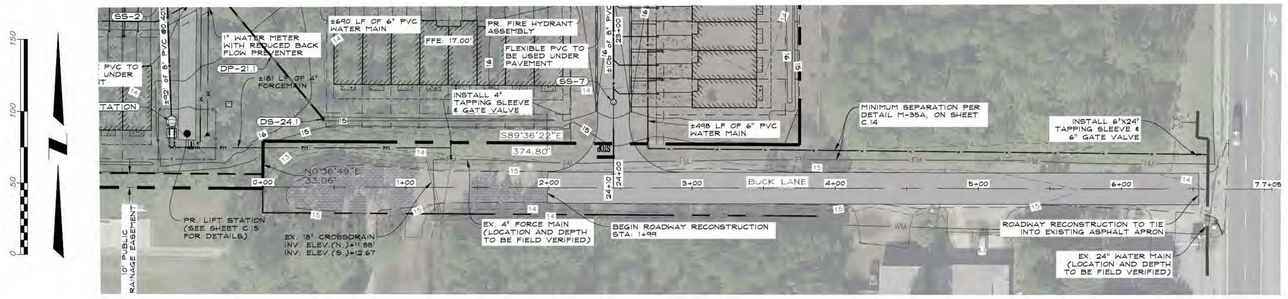
SHEET TITLE: HUCK LANE PLAN & PROFILE

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE	AS SHOWN
VRT. SCALE	AS SHOWN
PROJECT No.	19-261
FILE No.	N/A
ISSUE DATE	NOT ISSUED
SHEET:	C.9

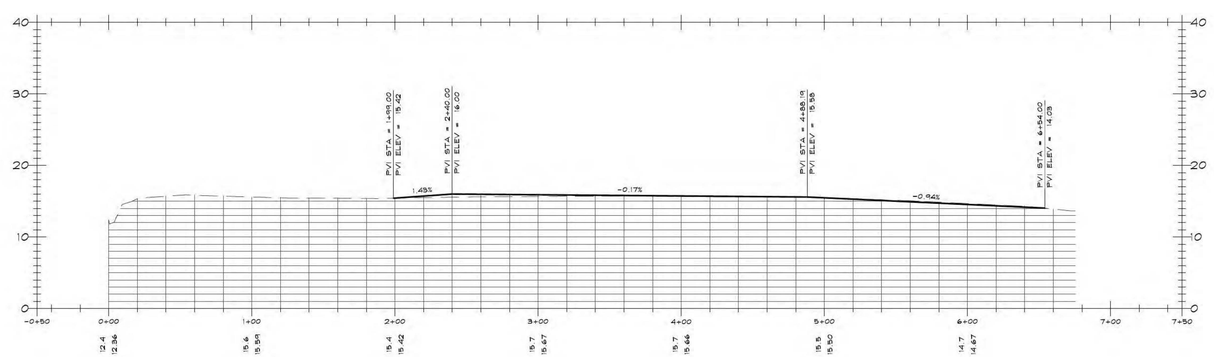




BUCK LANE PLAN

BUCK LANE PROFILE

HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 10'



3 WORKING DAYS
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CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF UNDERGROUND FACILITIES

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION

LINETYPE & HATCHING LEGEND

EXISTING		PROPOSED
	ASPHALT PAVEMENT	
	POND PPV	
	RIGHT OF WAY	
	BOUNDARY	
WM	POTABLE WATER MAIN	W
FM	SEWER FORCE MAIN	FM
SW	GRAVITY SEWER MAIN	S
25	ELEVATION CONTOUR	25
	DRAINAGE PIPE	
	LOT LINE	
	UTILITY EASEMENT	
	DRAINAGE EASEMENT	

REVISIONS

No.	DESCRIPTION	DATE

DESIGN ENGINEER: 10-1
KIMBERLY R. BOATRIGHT
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 70324
DATE SIGNED 10-10-19

KB ENGINEERING
411 E.N. HWY 231, Panama City, FL 32404
PHONE (850) 341-4222 FAX (850) 785-5705
KBENGINEERING@GMAIL.NET

HOLLEY LANE TOWNHOMES

SHEET TITLE: BUCK LANE PLAN & PROFILE

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE: AS SHOWN
VRT. SCALE: AS SHOWN
PROJECT No.: 19-261
FILE No.: N/A
ISSUE DATE: NOT ISSUED
SHEET: C.10

3 WORKING DAYS
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FOR THE LOCATION OF
UNDERGROUND FACILITIES

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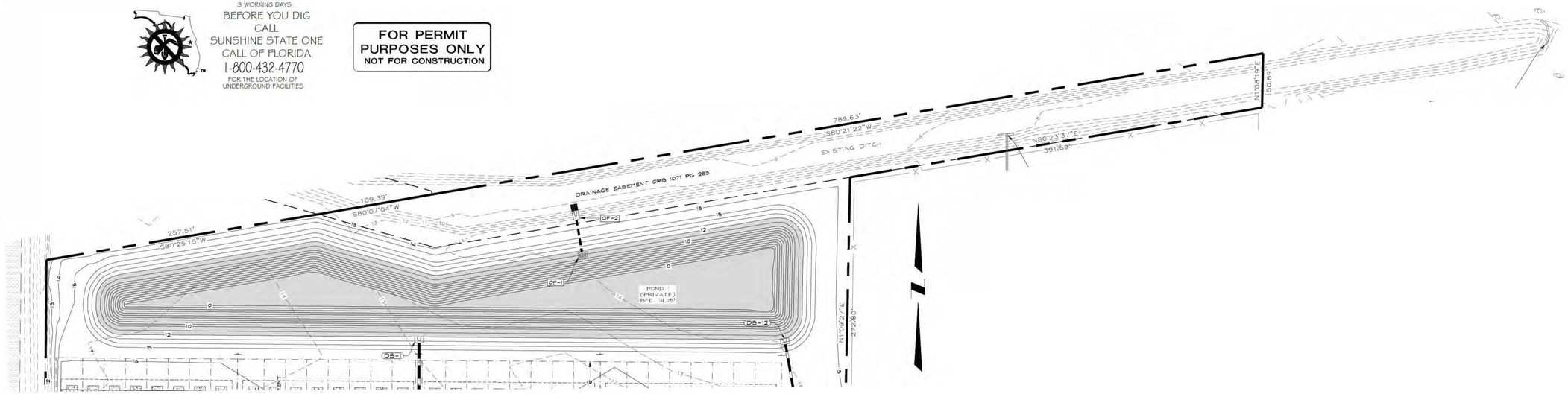
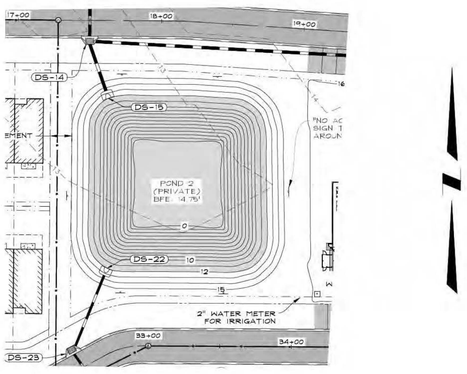
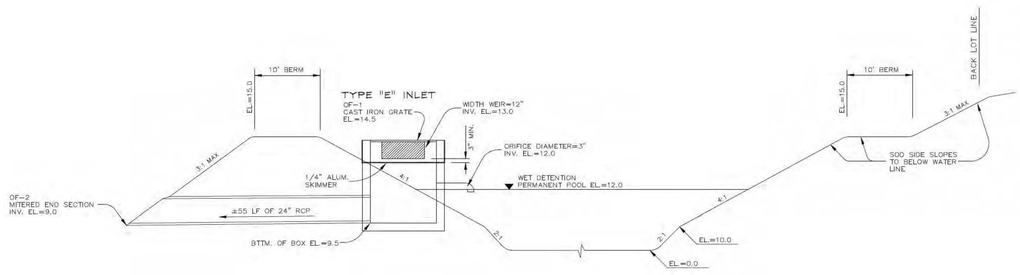


STORMWATER MANAGEMENT FACILITY No. 1
SCALE: 1" = 50'



STORMWATER MANAGEMENT FACILITY No. 2
SCALE: 1" = 50'



STORMWATER POND AND OUTFALL TYPICAL SECTION
NOT TO SCALE

HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE

DESIGN ENGINEER: KIMBERLY B. BOWDOIN
LICENSE NO. 72010
STATE OF FLORIDA
PROFESSIONAL ENGINEER
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY KIMBERLY B. BOWDOIN, PE ON 12-10-19
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

KB ENGINEERING
4116 N. Hwy 231, Panama City, FL 32404
PHONE (850) 341-0222 FAX (850) 785-8705
kbengineering@gmail.net CA#30307

SHEET TITLE:
STORMWATER MANAGEMENT FACILITY PLAN

PROJECT NAME:
HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME:
COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE AS SHOWN
VRT. SCALE AS SHOWN
PROJECT No. 19-261
PER No. N/A
ISSUE DATE NOT ISSUED
SHEET: C.11

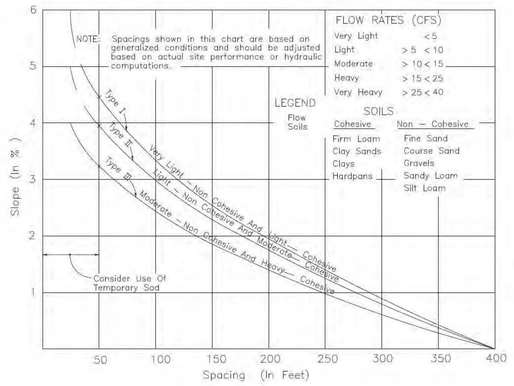
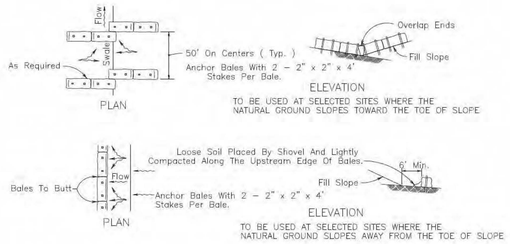
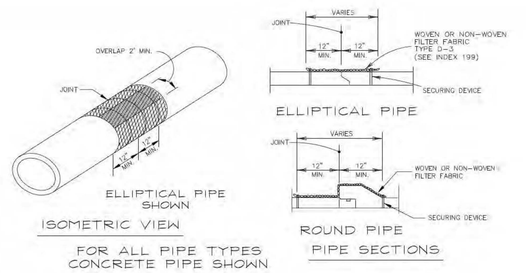


CHART I
RECOMMENDED SPACING FOR TYPE I AND TYPE II
HAY BALE BARRIERS, AND TYPE III SILT FENCES



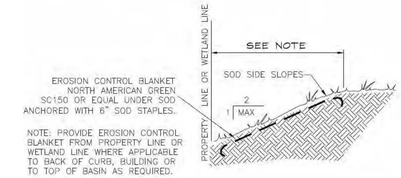
BARRIERS FOR FILL SLOPES
NOT TO SCALE



FILTER FABRIC JACKET
NOT TO SCALE

3 WORKING DAYS
BEFORE YOU DIG
CALL
SUNSHINE STATE ONE
CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
UNDERGROUND FACILITIES

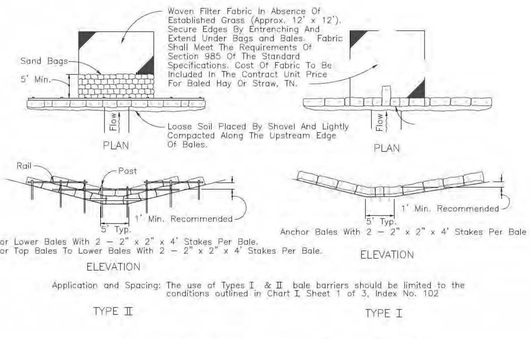
FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION



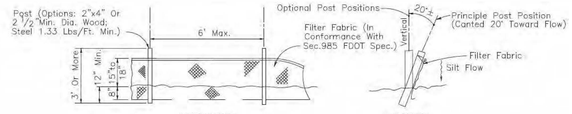
SLOPE STABILIZATION NOTES

FLAT TO 1:3 – SEED AND MULCH, HYDRO-SEED OR SOD.
1:3 TO 1:2 – SOD LAPPED AND PINNED.
1:2 TO 1:1 – EROSION CONTROL BLANKET AND SOD.
1:1 OR GREATER – RETAINING WALL OR ARMOR FORM.

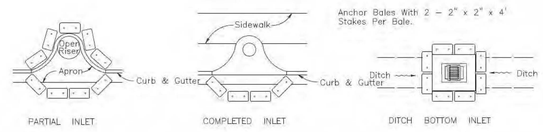
SLOPE STABILIZATION DETAIL
NOT TO SCALE



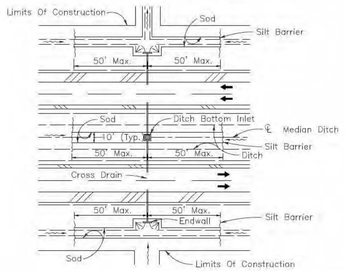
BARRIER FOR UNPAVED DITCHES
NOT TO SCALE



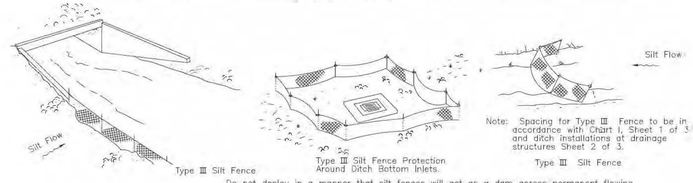
TYPE III SILT FENCE
NOT TO SCALE



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
NOT TO SCALE



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES
NOT TO SCALE

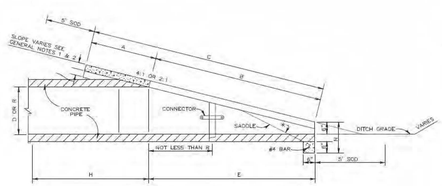


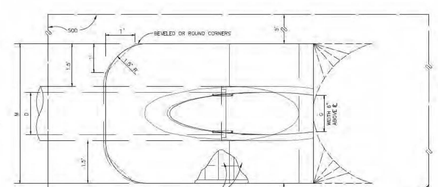
Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS
NOT TO SCALE

GRAVEL PAD IS REQUIRED TO PROVIDE BUFFER AREA WHERE VEHICLES CAN DROP THEIR MUD AND SEDIMENT TO AVOID TRANSPORTING IT ONTO PAVED STREETS, TO CONTROL EROSION FROM SURFACE RUNOFF, AND TO HELP CONTROL DUST.

SEDIMENT TRACKING CONTROL WITH GRAVEL PAD
NOT TO SCALE

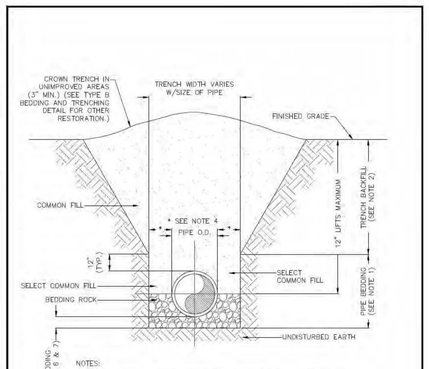




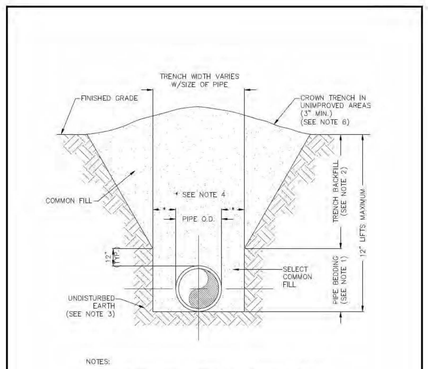
ROUND PIPE DIMENSIONS & QUANTITIES

	D	X	A	B	C	E	F	G	H	M SINGLE PIPE	M DOUBLE PIPE	M TRIPLE PIPE	M QUAD PIPE	N	5-1/2" CONC. SLAB (CY) SINGLE PIPE	5-1/2" CONC. SLAB (CY) DOUBLE PIPE	5-1/2" CONC. SLAB (CY) TRIPLE PIPE	5-1/2" CONC. SLAB (CY) QUAD PIPE	SODDING (SQ. YDS.) SINGLE PIPE	SODDING (SQ. YDS.) DOUBLE PIPE	SODDING (SQ. YDS.) TRIPLE PIPE	SODDING (SQ. YDS.) QUAD PIPE
2:1 SLOPE	15"	2'-7"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	3.4'	4.63'	7.71'	9.79'	12.37'	1.19'	0.38	0.58	0.77	0.96	21	24	27	30
	18"	2'-10"	1.97'	2.74'	4.71'	2.36'	6'	1.41'	3.4'	4.92'	7.75'	10.58'	13.42'	1.21'	0.44	0.65	0.87	1.09	22	25	28	31
	24"	3'-5"	2.06'	3.85'	5.91'	3.56'	7'	1.73'	3.4'	5.50'	8.92'	12.33'	15.75'	1.25'	0.54	0.83	1.12	1.42	24	28	32	35
4:1 SLOPE	15"	2'-7"	2.27'	4.09'	6.36'	4.03'	8'	1.22'		4.63'	7.71'	9.79'	12.37'	1.19'	0.57	0.87	1.15	1.44	23	26	29	32
	18"	2'-10"	2.38'	5.12'	7.48'	5.03'	9'	1.41'	4.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.66	0.99	1.31	1.65	33	28	37	35
	24"	3'-5"	2.53'	7.18' Δ	9.71'	7.03' Δ	11'	1.73'	4.0'	5.50'	8.92'	12.33'	15.75'	1.25'	0.85	1.30	1.75	2.20	28	32	36	40

MITERED END SECTION
NOT TO SCALE



CITY OF P.C.B. UTILITIES DEPARTMENT			
REV.	DATE	TRENCH DETAIL TYPE A BEDDING	M-1
	MAR. '18		
	DATE OF APPROVAL		



CITY OF P.C.B. UTILITIES DEPARTMENT			
REV.	DATE	TRENCH DETAIL TYPE B BEDDING	M-2
	MAR. '18		
	DATE OF APPROVAL		

HOLLEY LANE TOWNHOMES

REVISIONS

NO.	DESCRIPTION	DATE

KB ENGINEERING
41 E & W HWY 231 | Panama City, FL 32404
PHONE (850) 541-6222 FAX (850) 785-8705
kbengineering@knology.net CA#30307

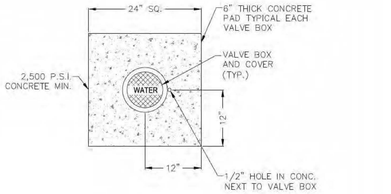
SHEET TITLE: EROSION CONTROL DETAILS

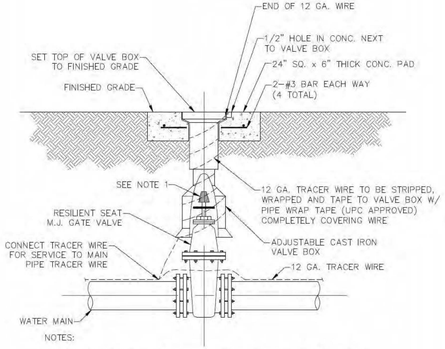
PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE	AS SHOWN
VRT. SCALE	AS SHOWN
PROJECT No.	19-261
FILE No.	N/A
ISSUE DATE	NOT ISSUED
SHEET:	C.12

HOLLEY LANE TOWNHOMES

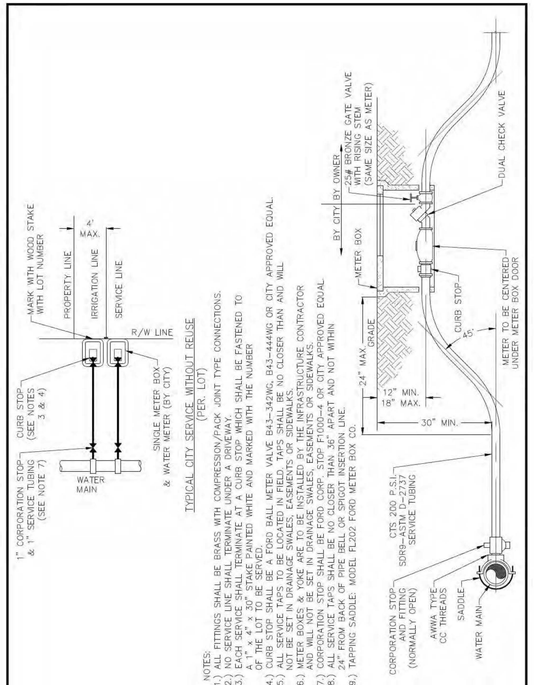




NOTES:

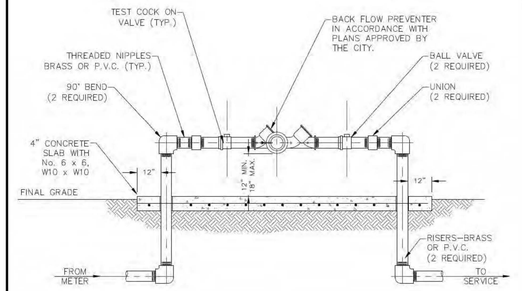
1.) THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

CITY OF P.C.B. UTILITIES DEPARTMENT			
REV.	DATE	WATER GATE VALVE & BOX DETAIL (4" TO 10")	W-1
1	MAR '12		
2	JUL '17		
DATE OF APPROVAL			



NOTES:
1.) ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.
2.) NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.
3.) CURB STOP SHALL BE LOCATED AT PROPERTY LINE AND SHALL BE FASTENED TO A 1" x 4" x 30" STAKE PAINTED WHITE AND MARKED WITH THE NUMBER OF THE LOT TO BE SERVED.
4.) CURB STOP SHALL BE A FORD BALL METER VALVE B43-342WQ, B43-444WQ OR CITY APPROVED EQUAL.
5.) ALL SERVICE LINES TO BE LOCATED IN THE CENTER OF THE LOT AND SHALL BE NO CLOSER THAN AND WILL NOT BE SET IN DRAINAGE SWALES, EASEMENTS OR SIDEWALKS.
6.) METER BOXES & YOKE ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL BE SET IN LANDSCAPE AREAS WHERE POSSIBLE, OUTSIDE OF SIDEWALKS.
7.) CORPORATION STOP SHALL BE FORD FB1000-3-NL OR CITY APPROVED EQUAL.
8.) ALL SERVICE TAPS SHALL BE NO CLOSER THAN 36" APART AND NOT WITHIN 24" FROM BACK OF PIPE BELL OR SPIGOT INSERTION LINE.
9.) TAPPING SADDLE: MODEL FLX02 FORD METER BOX CO.

CITY OF P.C.B. UTILITIES DEPARTMENT			
REV.	DATE	3/4" & 1" WATER METER ASSEMBLY DETAIL	W-5A
3	DEC '15		
4	MAY '17		
DATE OF APPROVAL			



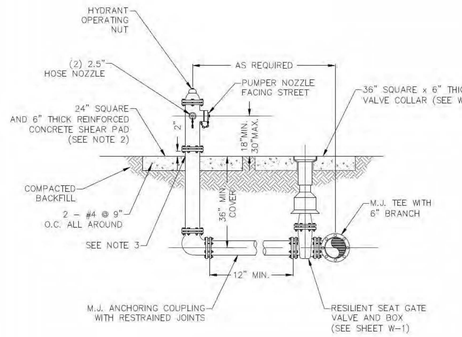
NOTES:

1.) ALL PIPE AND FITTINGS 2" AND SMALLER SHALL BE THREADED SCHEDULE 40 BRASS OR PVC.

2.) PROVIDE PROTECTION AGAINST FREEZING, INSULATION OR "HOTBOX".

CITY OF P.C.B. UTILITIES ENGINEERING DEPARTMENT			
REV.	DATE	REDUCED PRESSURE BACK FLOW PREVENTER FOR 3/4,1,1-1/2 & 2"	W-15
1	MAR '12		
2	OCT '15		
DATE OF APPROVAL			

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION



NOTES:

1.) FIRE HYDRANT SHALL BE SUPPLIED WITHOUT A WEEP HOLE OR WITH A PERMANENTLY PLUGGED WEEP HOLE.

2.) THE SHEAR PAD MAY BE RECESSED UP TO 6 INCHES BELOW FINISHED GRADE.

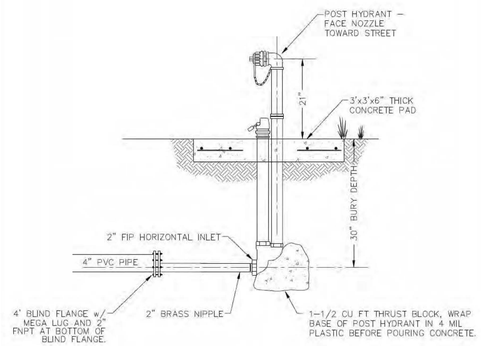
3.) CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 6" MINIMUM.

4.) HYDRANT SHALL BE AVK MODEL 2780 NOSTALGIC, AMERICAN DARLING B-84-B, OR US FIRE HYDRANT, MODEL SENTINEL 250 WITH 5S VALVE ROD.

5.) A WEATHER SHIELD SHALL BE PROVIDED TO PROTECT OPERATING STEM OR NUT.

6.) THE HYDRANT'S UPPER AND LOWER STEM, BREAK COUPLING, INTERNAL PINS AND CLIPS, AND ALL EXTERNAL BOLTING SHALL BE MANUFACTURED OF STAINLESS STEEL.

CITY OF P.C.B. UTILITIES DEPARTMENT			
REV.	DATE	5-1/4" FIRE HYDRANT ASSEMBLY DETAIL	W-16A
1	MAR '12		
2	APR '15		
3	MAR '16		
DATE OF APPROVAL			



POST HYDRANTS SHALL BE NON-FREEZING, SELF DRAINING TYPE WITH A 30" BURY. HYDRANTS SHALL BE FURNISHED WITH A 2" FIP HORIZONTAL INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN LEFT. BRONZE OPERATING MECHANISM AND ALUMINUM PLUNGER DESIGN, AND BE SERVICEABLE FROM ABOVE GRADE WITH NO DIGGING. THE OUTLET SHALL ALSO BE BRONZE AND BE 2-1/2" NST. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE. MAINGAURD NO. 77 AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO, OR CITY APPROVED EQUAL.

CITY OF P.C.B. UTILITIES DEPARTMENT			
REV.	DATE	FLUSHING POST HYDRANT ASSEMBLY DETAIL	W-16C
DATE OF APPROVAL			

HOLLEY LANE TOWNHOMES

REVISIONS

No.	DESCRIPTION	DATE
1		
2		
3		
4		

KB ENGINEERING
41 U.S. HWY 231, Panama City, FL 32404
PHONE (850) 541-6222 FAX (850) 785-8705
bottomley@gulf.net CA#31057

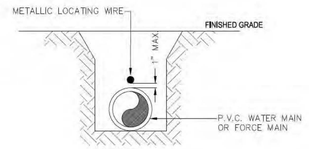
SIGNED
10-18
KIMBERLY B. BOTTOMLEY
STATE OF FLORIDA
PROFESSIONAL ENGINEER
LICENSE NUMBER 59121

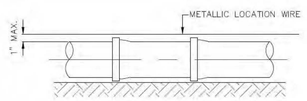
SHEET TITLE: UTILITY DETAILS - WATER

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE AS SHOWN
VRT. SCALE AS SHOWN
PROJECT No. 19-261
FILE No. N/A
ISSUE DATE NOT ISSUED
SHEET C.13





NOTES:

1.) PVC PIPE SHALL REQUIRE INSULATED METALLIC LOCATING WIRE (12 GAUGE COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE BURIED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE.

2.) LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH VALVE BOX AND BE CAPABLE OF EXTENDING 12" ABOVE TOPOF BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION.

3.) USE DUCT TAPE AS NECESSARY TO HOLD WIRE ON THE TOP OF THE PIPE.

4.) ALL SPLICES SHALL BE MADE USING A WATER-TIGHT SEALING METHOD APPROVED BY THE CITY.

CITY OF P.C.B.
UTILITIES DEPARTMENT

REV	DATE
1	MAR '12

DATE OF APPROVAL

PVC PIPE LOCATING WIRE DETAIL

M-7

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

MAIN PIPE SIZE	HORIZ. BENDS			*TEES						REDUCERS			PLUGS
				SIZE / LENGTH						SIZE / LENGTH			
36	106	44	21	X36 163	X30 102	X24 39	X20 1	X16 1		X30 78	X24 141	X20 175	257
30	93	39	19	X30 132	X24 68	X20 22	X16 1	X12 1		X24 78	X20 121	X16 156	222
24	79	33	16	X24 99	X20 53	X16 3	X12 1	X10 1		X20 56	X16 101	X12 137	185
20	68	29	14	X20 75	X16 26	X12 1	X10 1	X8 1		X16 56	X12 100	X10 117	159
16	57	24	12	X16 51	X12 1	X10 1	X8 1			X12 56	X10 78	X8 96	131
12	45	19	9	X12 25	X10 1	X8 1	X6 1			X10 30	X8 54	X6 74	102
10	39	16	8	X10 1	X8 1	X6 1				X8 29	X6 53	X4 71	87
8	33	14	7	X8 1	X6 1	X4 1				X6 31	X4 52		72
6	25	11	5	X6 1	X4 1					X4 29			55
4	18	8	4	X4									39

NOTES:

1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.

2.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.

5.) PIPE SIZES ARE GIVEN IN INCHES.

6.) PIPE LENGTHS ARE GIVEN IN FEET.

7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 150 PSI.

8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.

9.) RESTRAINED LENGTHS ARE TO BE USED FOR POTABLE WATER.

10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

CITY OF P.C.B.
UTILITIES DEPARTMENT

REV	DATE
1	MAR '12

DATE OF APPROVAL

RESTRAINED LENGTHS FOR P.V.C. POTABLE & REUSE WATER

M-15

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

MAIN PIPE SIZE	HORIZ. BENDS			*TEES						REDUCERS			PLUGS
				SIZE / LENGTH						SIZE / LENGTH			
48	86	36	17	X48 117	X42 77	X36 36	X30 1	X24 1		X42 50	X36 93	X30 129	214
42	78	33	16	X42 100	X36 58	X30 14	X24 1	X20 1		X36 50	X30 93	X24 128	193
36	71	30	14	X36 81	X30 37	X24 1	X20 1	X16 1		X30 52	X24 94	X20 117	171
30	62	26	13	X30 61	X24 14	X20 1	X16 1	X12 1		X24 52	X20 81	X16 104	148
24	53	22	11	X24 40	X20 6	X16 1	X12 1	X10 1		X20 37	X16 58	X12 81	124
20	46	19	9	X20 25	X16 1	X12 1	X10 1	X8 1		X16 38	X12 67	X10 78	106
16	38	16	8	X16 9	X12 1	X10 1	X8 1			X12 38	X10 52	X8 64	88
12	30	13	8	X12 1	X10 1	X8 1	X6 1			X10 20	X8 36	X6 50	68
10	26	11	6	X10 1	X8 1	X6 1				X8 20	X6 36	X4 47	58
8	22	9	5	X8 1	X6 1	X4 1				X6 21	X4 39		48
6	17	7	4	X6 1	X4 1					X4 19			37
4	12	5	3	X4									26

NOTES:

1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.

2.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.

3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.

4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.

5.) PIPE SIZES ARE GIVEN IN INCHES.

6.) PIPE LENGTHS ARE GIVEN IN FEET.

7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 100 PSI.

8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.

9.) RESTRAINED LENGTHS ARE TO BE USED FOR SEWER AND RECLAIM WATER.

10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

CITY OF P.C.B.
UTILITIES ENGINEERING DEPARTMENT

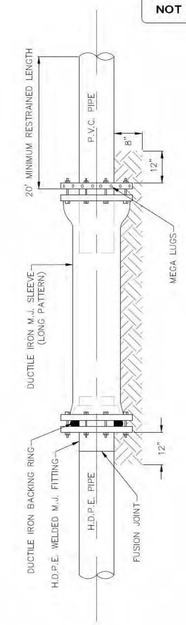
REV	DATE
1	MAR '12

DATE OF APPROVAL

RESTRAINED LENGTHS FOR P.V.C. SEWER

M-17

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION



CITY OF P.C.B.
UTILITIES DEPARTMENT

REV	DATE
1	MAR '12

DATE OF APPROVAL

H.D.P.E. TO P.V.C. TRANSITION CONNECTION DETAIL

M-27

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (SEE NTOE 1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER	WATER MAIN, 3' MIN.	WATER MAIN, 2" MIN. EXCEPT FOR STORM SEWER, THEN 6" IS THE MIN. AND 12" IS PREFERRED	ALTERNATE 3' MIN. WATER MAIN
VACUUM SANITARY SEWER	WATER MAIN, 10' PREFERRED 3' MIN.	WATER MAIN, 12" PREFERRED 6" MIN.	ALTERNATE 3' MIN. WATER MAIN
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN	WATER MAIN, 10' PREFERRED, 6' MIN. (SEE NTOE 2)	WATER MAIN, 2" MIN. EXCEPT FOR GRAVITY SEWER, THEN 6" IS THE MIN. AND 12" IS PREFERRED	ALTERNATE 6' MIN. WATER MAIN
ON - SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10' MIN.	-----	-----

(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MIN. SEPARATION IS 12".
(2) 3' FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6" ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
(3) IF REQUIRED SEPARATION CANNOT BE PROVIDED SEE DETAIL M-35B FOR REQ'D ADDITIONAL PROTECTION.

CITY OF P.C.B.
UTILITIES DEPARTMENT

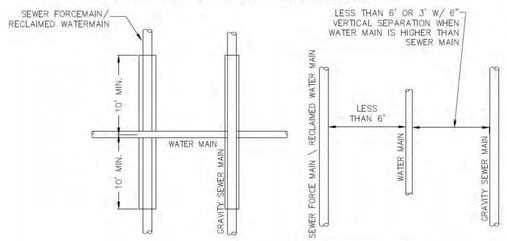
REV	DATE

DATE OF APPROVAL

STANDARD MAIN CROSSING/ SEPARATION DETAIL

M-35A

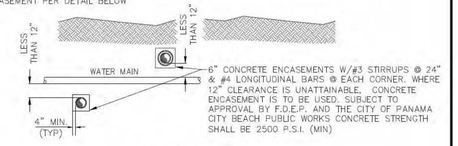
TO BE USED ONLY WHEN STANDARD SEPARATION (DETAIL M35A) CANNOT BE PROVIDED. USE OF PROVISIONS OF THIS DETAIL TO BE APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION



CROSSING - PLAN PARALLEL - PLAN

USE ANY OF THE FOLLOWING:

1.) GRAVITY SEWER ONLY – USE PRESSURE RATED PIPE PER AWWA STDS.
2.) ALL MAIN TYPES – USE WELDED OR FUSED JOINTS FOR EITHER WATER OR OTHER MAIN
3.) ALL MAIN TYPES – USE WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT PER DETAIL BELOW



CROSSING - SECTION

GENERAL NOTES:

A.) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
i. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND
ii. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

B.) THE USE OF ANY ASPECT OF THIS DETAIL MUST BE APPROVED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE CITY OF PANAMA CITY BEACH PUBLIC WORKS.

CITY OF P.C.B.
UTILITIES DEPARTMENT

REV	DATE

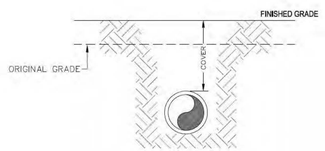
DATE OF APPROVAL

SPECIAL CASE MAIN CROSSING/ SEPARATION DETAIL

M-35B

PIPE COVERAGE TABLE

PIPE DIAMETER	REQUIRED COVER
UP TO 12"	36"
ABOVE 12" UP TO 24"	42"
30" AND ABOVE	48"



NOTES:

1. COVER SHALL BE MEASURED WHEN FINISH GRADES ARE ESTABLISHED.

2. COVER TOLERANCES ARE +6", -3", PROVIDED THE AVERAGE COVER MEETS TABLE REQUIREMENTS.

CITY OF P.C.B.
UTILITIES ENGINEERING DEPARTMENT

REV	DATE

DATE OF APPROVAL

REQUIRED PIPE COVERAGE TABLE

M-40

HOLLEY LANE TOWNHOMES

REVISIONS

NO.	DESCRIPTION	DATE
1		

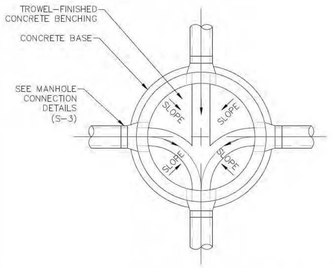
KB ENGINEERING
41 U.S. HWY 231, Panama City, FL 32404
PHONE (850) 341-6222 FAX (850) 785-0705
holleylane@gulf.net

SHEET TITLE: UTILITY DETAILS - WATER

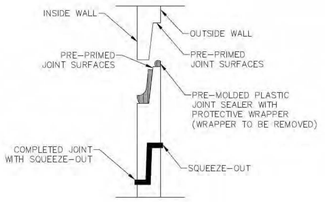
PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE AS SHOWN
VRT. SCALE AS SHOWN
PROJECT No. 19-261
FILE No. N/A
ISSUE DATE NOT ISSUED
SHEET: C.13



* SEE SHEET S–2 FOR CROSS SECTION AND NOTES

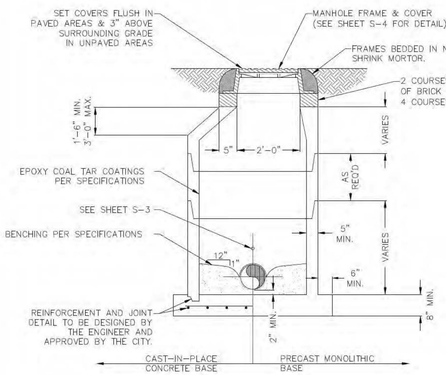


CITY OF P.C.B. — UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12

DATE OF APPROVAL

PRECAST CONCRETE MANHOLE DETAILS JOINTS & FLOW — S–1



NOTES:

1.) MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 18", MANHOLE DIAMETER FOR SEWERS GREATER THAN 18" SHALL BE AS APPROVED BY CITY.

2.) DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAILS.

3.) APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.

4.) MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS SHALL BE SEALED W/ NON–SHIRNK MORTAR.

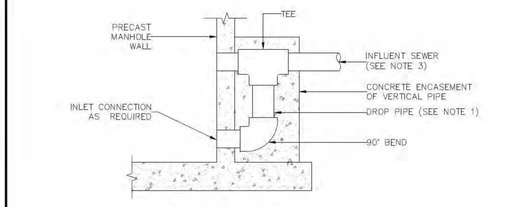
5.) MANHOLE COVERS IN SWALES OR DITCHES SHALL BE EXTENDED TO TOP OF BANK ELEVATION.

CITY OF P.C.B. — UTILITIES DEPARTMENT

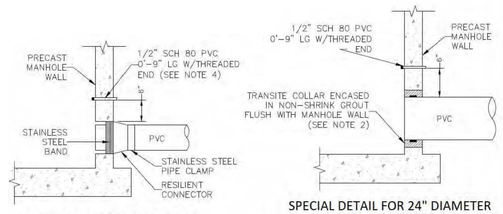
REV.	DATE
1	MAR '12

DATE OF APPROVAL

PRECAST CONCRETE MANHOLE DETAILS SECTION & NOTES — S–2



STANDARD DROP DETAIL



STANDARD PRECAST MANHOLE PIPE CONNECTION

SPECIAL DETAIL FOR 24" DIAMETER PIPE AND LARGER

NOTES:

1.) DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIAL AS THE INFLUENT SEWER.

2.) THE CITY MAY APPROVE ALTERNATE WATER TIGHT CONNECTION DETAILS FOR CONNECTION OF 24" DIAMETER AND LARGER. PIPES

3.) AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT 2' OR MORE ABOVE THE MANHOLE INVERT.

4.) 1/2" SCH 80 PVC PIPE IS INTEDED FOR PRESSURE TESTING OF GRAVITY SEWER MAINS.

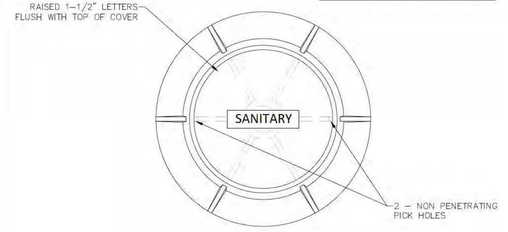
CITY OF P.C.B. — UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12

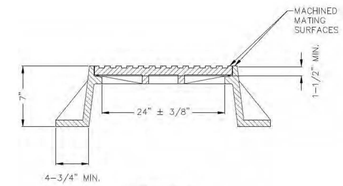
DATE OF APPROVAL

MANHOLE CONNECTION DETAILS — S–3

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION



PLAN



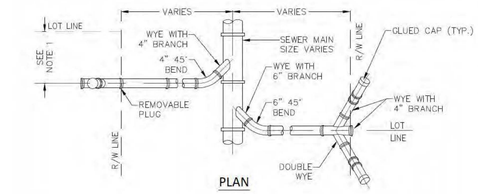
ELEVATION

CITY OF P.C.B. — UTILITIES DEPARTMENT

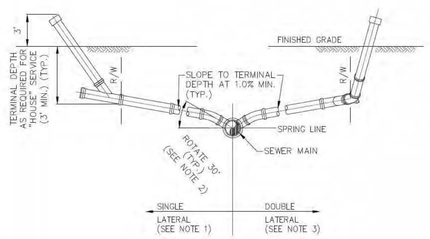
REV.	DATE
1	MAR '12

DATE OF APPROVAL

STANDARD MANHOLE FRAME AND COVER — S–4



PLAN



PROFILE

NOTES:

1.) LOCATE SINGLE LATERAL AS NEAR TO CENTER OF LOT AS POSSIBLE.

2.) INVERT OF SERVICE LATERAL SHALL NOT ENTER SEWER MAIN BELOW SPRING LINE.

3.) DOUBLE SERVICE LATERALS ONLY PERMITTED ON TAPS TO EXISTING GRAVITY MAINS WERE EXISTING ROAD PAVEMENT MUST BE CUT.

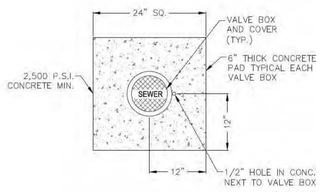
4.) ALL PIPE FITTINGS SHALL BE PVC ASTM 3034 SDR35, GREEN IN COLOR.

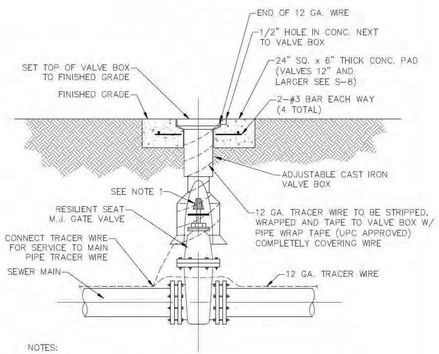
CITY OF P.C.B. — UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12

DATE OF APPROVAL

SERVICE LATERAL DETAIL — S–5





NOTES:

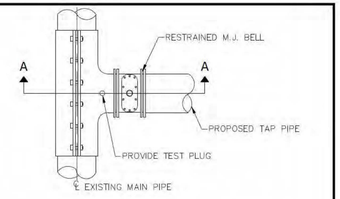
1.) THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

CITY OF P.C.B. — UTILITIES DEPARTMENT

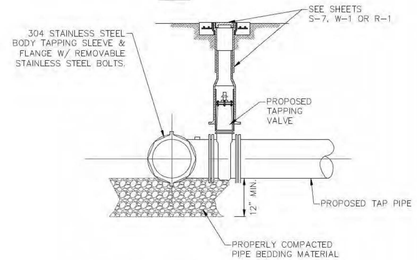
REV.	DATE
1	MAR '12
2	JUL '17

DATE OF APPROVAL

SEWER GATE VALVE & BOX DETAIL (4" TO 10") — S–7



PLAN



SECTION A-A

NOTES:

1.) NO TAPPING CUTS SHALL BE MADE BEFORE: A 60 MINUTE TEST AT 100 P.S.I. FOR FORCEMAINS, OR 150 P.S.I. FOR POTABLE WATERMAINS AND RECLAIM WATERMAINS IS PERFORMED.

2.) ALL TAPS MUST BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS LARGER) FROM A JOINT OR FITTING.

3.) CONTRACTOR TO SUPPLY A DRY HOLE, PROPERLY CONFIGURED, FOR TAPPING CREW TO WORK AND A BACK–HOE TO LOWER MACHINE INTO HOLE. TAPPING ASSEMBLY MUST BE BOLTED ON & PRESSURE TESTED BY THE CONTRACTOR & WITNESSED BY THE CITY PRIOR TO TAP.

CITY OF P.C.B. — UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12
2	MAY '13
3	MAY '17

DATE OF APPROVAL

TAPPING SLEEVE & VALVE DETAIL — M–21

HOLLEY LANE TOWNHOMES

REVISIONS

NO.	DESCRIPTION:	DATE

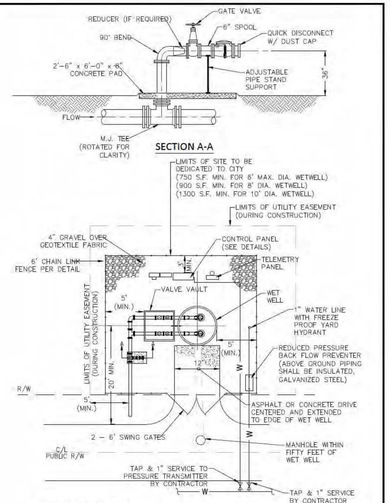
KB ENGINEERING
4114 N. HWY 231, Panama City, FL 32404
PHONE: (850) 541-0222 FAX: (850) 785-0705

SHEET TITLE: UTILITY DETAILS - SANITARY

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE	AS SHOWN
VRT. SCALE	AS SHOWN
PROJECT No.	19-261
FILE No.	N/A
ISSUE DATE	NOT ISSUED
SHEET	C.15

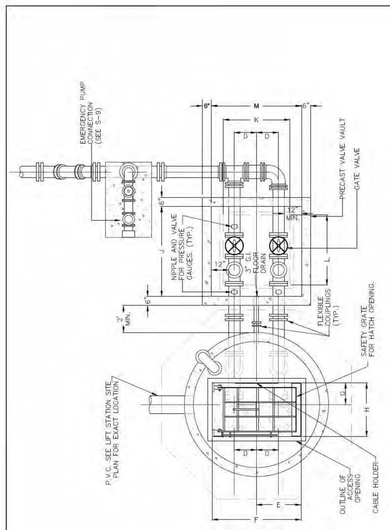


CITY OF P.C.B. UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12
2	AUG '12

DATE OF APPROVAL

PUMP STATION SITE PLAN — S-9



CITY OF P.C.B. UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12

DATE OF APPROVAL

PUMP STATION PLAN VIEW — S-11

PUMPING STATIONS	DIMENSIONS	ELEV. AT CONST.	PUMPING STATIONS	DIMENSIONS	ELEV. AT CONST.
DIM A	8'	—	DIM L	4'-0" MIN.	—
DIM B	6'-0"	—	ELEV M	4'-8" MIN.	
DIM C	20"	—	ELEV S	BOTTOM	2.6
DIM D	19" MIN.	—	ELEV T	LOW LEVEL	N/A
DIM E	28.5' MIN.	—	ELEV U	OFF	4.10
DIM F	5' MIN.	—	ELEV V	LEAD ON	4.85
DIM G	*	—	ELEV W	LAG ON	5.35
DIM H	*	—	ELEV X	ALARM	5.85
DIM J	6'-0" MIN.	—	ELEV Y	TOP	16.75
DIM K	3' MIN.	—	ELEV Z	INCOMING	6.35

* PER PUMP MANUFACTURERS REQUIREMENT.

GENERAL NOTES:

1.) ALL EXPOSED METAL SHALL BE PAINTED WITH 2 COATS OF INDUSTRIAL EXTERIOR ENAMEL, GLIDDEN HUNTER GREEN, (HEX#355E3B) OR CITY APPROVED EQUAL.
2.) WET WELL AND VALVE VAULT SHALL BE COATED WITH COAL TAR INSIDE AND OUT EXCEPT TOP SURFACE OF COVERS. (TWO COATS, 9 MILS EACH.)
3.) BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
4.) VALVE VAULT SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE SPINDLES WITH MINIMUM CLEARANCES AS SHOWN FOR 6" DIAMETER PIPE AND SMALLER. CLEARANCES SHALL INCREASE AS REQUIRED FOR LARGER PIPE SIZES.
5.) VALVE VAULT SHALL HAVE SEALED FLOOR AND DRAIN.
6.) ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
7.) THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN WET WELL.
8.) WET WELL AND VALVE VAULT COVERS SHALL BE ALUMINUM WITH 316 S.S. HARDWARE AND LOCK BRACKET. SIZE AS REQUIRED BY PUMP MANUFACTURER AND APPROVED BY THE CITY.
9.) FLEXIBLE COUPLING SHALL BE SLEEVE TYPE.
10.) PUMPS SHALL BE:

MANUFACTURER: WILO ; MODEL: FA 10.33E ; IMP: 204 MM ; DIA: 3.15" ;
MM. SPEED: 1740 ; RPM; DISCHARGE SIZE: 4 IN.; VOLTAGE: 230 ;
HZ.: 60 ; PHASE: 3 ; H.P.: 7.4 ;
MIN. SOLID SIZE: _____ IN.; CURVE: _____

MANUFACTURER: FLYGT ; MODEL: NP3127-HT3 ; IMP: 215 MM ; DIA: 4" ;
MM. SPEED: 1720 ; RPM; DISCHARGE SIZE: 4" IN.; VOLTAGE: 400 ;
HZ.: 60 ; PHASE: 3 ; H.P.: 10 ;
MIN. SOLID SIZE: _____ IN.; CURVE: _____

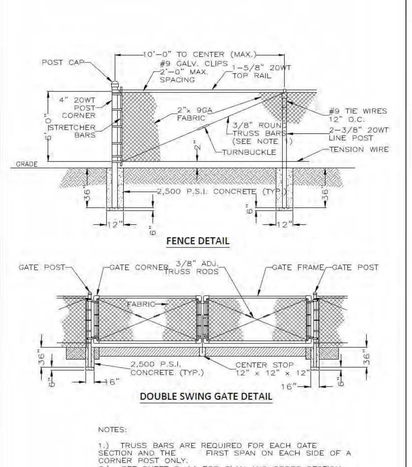
11.) OPERATING CONDITIONS SHALL BE 127 GPM AT 59 FEET TDH.
12.) ALL NUTS, BOLTS, WASHERS, ETC. IN WET WELL AND VALVE BOX TO BE 304 STAINLESS STEEL.

CITY OF P.C.B. UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12
2	MAR '12

DATE OF APPROVAL

PUMP STATION NOTES AND TABLE — S-12



NOTES:

1.) TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.
2.) SEE SHEET S-14 FOR PLAN AND CROSS SECTION VIEWS.
3.) FABRIC, POST, RODS & ACCESSORIES SHALL BE GALVANIZED WITH BLACK VINYL COATING.

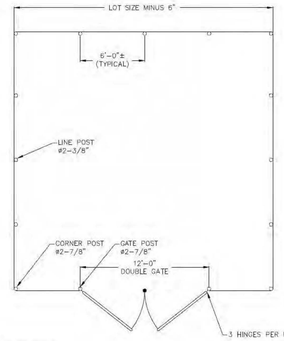
CITY OF P.C.B. UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12

DATE OF APPROVAL

CHAIN LINK FENCE DETAIL — S-13

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION



NOTE:
SEE SHEET S-13 FOR FRONT AND SIDE VIEWS.

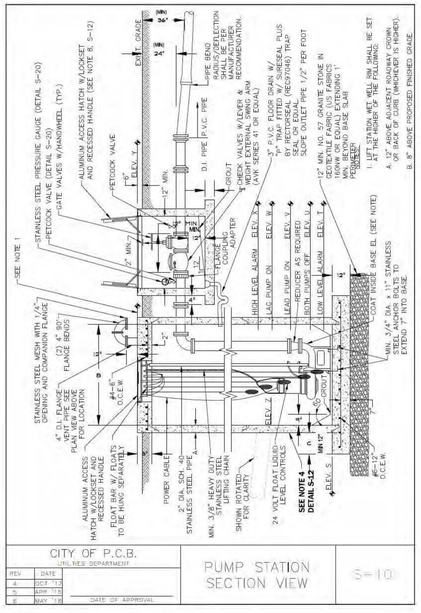
PLAN VIEW

CITY OF P.C.B. UTILITIES DEPARTMENT

REV.	DATE
1	MAR '12

DATE OF APPROVAL

TYPICAL LIFT STATION FENCE — S-14



CITY OF P.C.B. UTILITIES DEPARTMENT

REV.	DATE
A	SEP '12
B	NOV '12
C	MAY '13

DATE OF APPROVAL

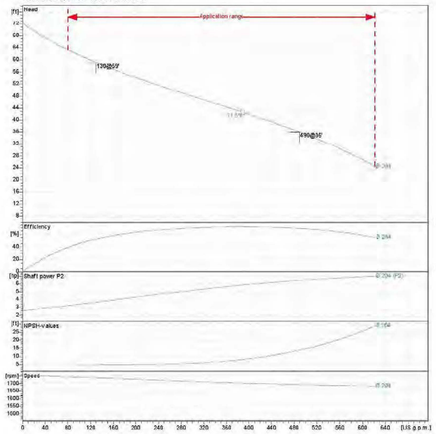
PUMP STATION SECTION VIEW — S-10

Project: PCB - Holley Lane TH PS — Created on: 2019-07-12
Project number: SCR — Created by: B. Justice

wilo

Performance curves — with motor
Submersible sewage pump — FA 10.33E — FK 17.1-4/12KEx

Pow er data referred to: Water, pure [100%]; 68 °F; 62.315lb/ft³; 1.0788E-5ft²/s
Tolerance as per: ISO 9906 / Annex A.2



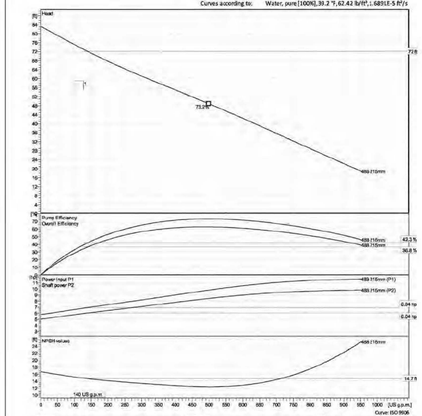
Pump				Duty point data		
Impeller Ø	designed	204 (8.03 in.)	mm	Volume flow	130.1	US g.p.m.
Nominal speed		1740	rpm	Head	59.1	ft
Frequency		60	Hz	Shaft power	P_2 3.7	hp
Impeller type		Single-channel		Hmp efficiency	52.7	%
	Motor			Pow er input	P_1 5.4	hp
Rated power		7.4	hp	Required pump NPSH	4.6	ft
Sel. explosion protection		1M		Speed	1704	rpm

WILO PUMP OPTION

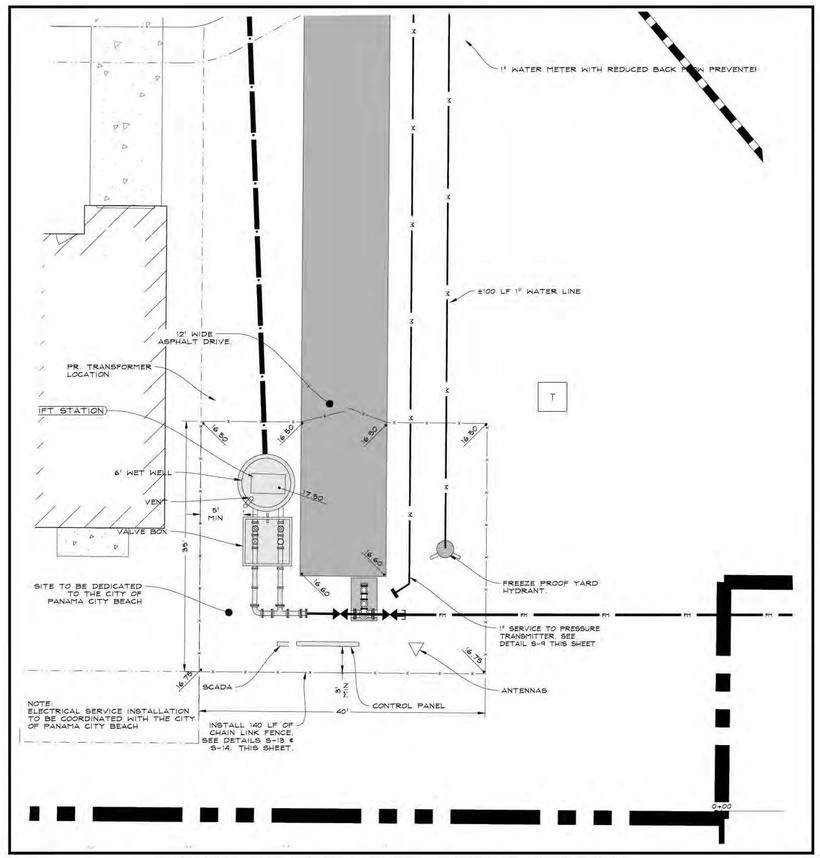
NP 3127 HT 3~ Adaptive 488
Performance curve
FLYGT a xylem brand

Duty point
Flow 140 US g.p.m. — Head 72 ft

Curves according to: Water, pure [100%], 39.2 °F, 62.42 lb/ft³, 1.6851E-5 ft²/s



FLYGT PUMP OPTION



PUMP STATION SITE SPECIFIC DETAIL
SCALE: 1" = 10'

HOLLEY LANE TOWNHOMES

REVISIONS

NO.	DESCRIPTION:	DATE

KB ENGINEERING
41 N.W. HWY 231 , Panama City, FL 32404
PHONE (850) 541-0222 FAX (850) 785-0705
holleylane@gulf.net CA#30007

STATE OF FLORIDA — KIRK BOZEMAN — LICENSE NUMBER 69231 — STATE OF FLORIDA — REGISTERED ENGINEER — 10-18 — SIGNED

SHEET TITLE: DETAILS - LIFT STATION

PROJECT NAME: HOLLEY LANE TOWNHOMES
BAY COUNTY, FLORIDA

CLIENT NAME: COBALT PROPERTY DEVELOPMENT, LLC.

HRZ. SCALE AS SHOWN
VRT. SCALE AS SHOWN
PROJECT No. 19-261
FILE No. N/A
ISSUE DATE NOT ISSUED
SHEET: C.16

BASIC ELECTRICAL REQUIREMENTS

SCOPE

THIS SCOPE COVERS THE FURNISHING, INSTALLATION, TESTING, ADJUSTING AND PLACING IN OPERATION ALL ELECTRICAL EQUIPMENT, DEVICES, FACILITIES, MATERIALS, AND AUXILIARY ITEMS NECESSARY FOR THE COMPLETE AND SUCCESSFUL OPERATION OF ALL ELECTRICAL EQUIPMENT AS HEREIN DESCRIBED, SHOWN ON THE PLANS, OR DEEMED NECESSARY FOR THE COMPLETION OF THE ELECTRICAL PORTION OF THE PROJECT. IT IS THE INTENT TO OUTLINE THE ELECTRICAL REQUIREMENTS OF THE CONTRACT IN SUCH A MANNER AS TO ENSURE THE SATISFACTORY CONSTRUCTION OF A FULLY OPERATIONAL SYSTEM AS SHOWN ON THE PLANS AND AS HEREIN DESCRIBED. THE ELECTRICAL SCOPE OF WORK IS AS FOLLOWS:

- SCADA
- LIFT STATION ELECTRICAL
- GROUNDING
- CONNECTION OF ELECTRICALLY POWERED MECHANICAL EQUIPMENT
- TEMPORARY CONSTRUCTION POWER
- ALL INCIDENTALS NECESSARY FOR A COMPLETE AND FULLY OPERATIONAL ELECTRICAL SYSTEM.

WORKING CLEARANCES

WORKING CLEARANCES AROUND EQUIPMENT REQUIRING ELECTRICAL SERVICES SHALL BE VERIFIED BY CONTRACTOR TO COMPLY WITH CODE REQUIREMENTS. SHOULD THERE BE APPARENT VIOLATIONS OF CLEARANCES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONNECTION OR PLACING OF EQUIPMENT.

IN THE CASE OF PANELBOARDS, SAFETY SWITCHES AND OTHER EQUIPMENT REQUIRING WIRE AND CABLE TERMINATION, THE CONTRACTOR SHALL ASCERTAIN THAT LUG SIZES AND WIRING GUTTERS OF SPACE ALLOWED FOR PROPER ACCOMMODATION AND TERMINATION OF THE WIRES AND CABLES ARE ADEQUATE.

WORKMANSHIP

ALL WORK SHALL BE ACCOMPLISHED BY PERSONS SKILLED IN PERFORMANCE OF THE REQUIRED TASK. ALL WORK SHALL BE DONE IN KEEPING WITH CONVENTIONS OF THE TRADE. WORK OF THIS DIVISION SHALL BE CLOSELY COORDINATED WITH WORK OF OTHER TRADES TO AVOID CONFLICT AND INTERFERENCE.
ALL CONDUCTORS INSIDE THE LIFT STATION ENCLOSURE SHALL BE IDENTIFIED WITH STANDARD VINYL-CLOTH SELF ADHESIVE CABLE/CONDUCTOR MARKERS OF WRAP-AROUND TYPE. MARKERS SHALL BE PLASTIC COATED AND PRE-NUMBERED TO SHOW CIRCUIT IDENTIFICATION. WRITE-ON TYPE MARKERS WILL NOT BE ACCEPTED. CONDUCTORS AND CABLES IN MANHOLES AND HANDHOLES SHALL BE IDENTIFIED BY PLASTIC TAGS WITH DIE STAMPED LETTERING.

ARRANGE WITH GULF POWER FOR THE SERVICES AND INSTALL THE SERVICES IN ACCORDANCE WITH THEIR REQUIREMENTS, REGULATIONS AND RECOMMENDATIONS.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE ALL OTHER ELECTRICAL SYSTEMS, MATERIALS AND WORKMANSHIP TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. HE SHALL CORRECT ALL DEFECTS ARISING WITHIN THIS PERIOD UPON NOTIFICATION BY THE OWNER OR ENGINEER, WITHOUT ADDITIONAL COMPENSATION.

MATERIAL STANDARDS

MATERIAL SHALL BE NEW AND COMPLY WITH STANDARDS OF UNDERWRITERS' LABORATORIES, INC., WHERE STANDARDS HAVE BEEN ESTABLISHED FOR THE PARTICULAR PRODUCT AND THE VARIOUS NEMA, ANSI, ASTM, IEEE, AEIC, IPCEA OR OTHER PUBLICATIONS REFERENCED.

TEST EQUIPMENT

THE CONTRACTOR SHALL PROVIDE ALL TEST EQUIPMENT AND SUPPLIES DEEMED NECESSARY BY THE ENGINEER/INSPECTOR AT NO EXTRA COST TO THE OWNER. THESE SUPPLIES SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: VOLT METERS, AMP METERS, LIGHT METERS, FUEL, GENERATOR LOAD BANKS, WATT METERS, MEGGER, DISTORTION TEST EQUIPMENT, AND OSCILLOSCOPES.

SUBMITTAL

SUBMIT SHOP DRAWING FOR APPROVAL BY THE OWNER, SUBMIT SHOP DRAWINGS AND PRODUCT DATA GROUPED TO INCLUDE COMPLETE SUBMITTAL OF RELATED SYSTEMS, EQUIPMENT, AND ACCESSORIES IN A SINGLE SUBMITTAL. NO ELECTRICAL WORK MAY BE PERFORMED UNTIL ALL SHOP DRAWINGS ARE APPROVED. SUBMIT SHOP DRAWINGS ON THE FOLLOWING SYSTEMS AS GROUPED BELOW:

- POWER/ELECTRICAL SYSTEM
  - CONDUIT
  - WIRE
  - PULL BOXES
  - PANEL BOARDS
  - PANEL BOARD LAYOUTS
  - BREAKERS
  - DISCONNECTS
  - FUSES
  - CONDUIT SUPPORT SYSTEMS
  - WIRING DEVICES
  - PUMP STARTERS
  - TRANSFORMERS
  - SURGE PROTECTION DEVICES
- LIFT STATION CONTROL SYSTEM
  - PUMP CONTROLLER
  - FLOATS
  - E-I-O SWITCHES
  - H-O-A METERS
  - PANIC PUSH BUTTONS
  - PUMP CONTROL
  - CONTROL RELAYS
  - CONTROL SCHEMATICS
- SCADA
  - RTUS
  - SOFTWARE
  - I/O BOARDS
  - RADIO EQUIPMENT
  - SYSTEM DIAGRAMS
  - MAIN COMPUTER EQUIPMENT
  - PLC INFORMATION
  - OIU SCHEMATICS OF RTU
  - PRESSURE TRANSMITTER
- UTILITY WORK
  - UTILITY COORDINATION INFORMATION
  - UTILITY CURVES
  - ETC.

MARK DIMENSIONS AND VALUES IN UNITS TO MATCH THOSE SPECIFIED.

REGULATORY REQUIREMENTS

CONFORM TO APPLICABLE SECTIONS OF THE BUILDING CODE FOR THE CITY OF PANAMA CITY BEACH AND ALL LOCAL RULES, REGULATIONS AND ORDINANCES.

FLORIDA DEP FORM 62-604.300(8)(b) NOTIFICATION/APPLICATION FOR CONSTRUCTING A DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEM

ELECTRICAL: CONFORM TO NFPA 70 NEC (LATEST EDITION).
CONFORM TO NFPA 820 (LATEST EDITION).

OBTAIN PERMITS AND REQUEST INSPECTIONS FROM AUTHORITY HAVING JURISDICTION.

FINAL INSPECTION AND TESTING

AFTER THE ELECTRICAL INSTALLATION IS COMPLETE, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER THE FOLLOWING INFORMATION WITH HIS REQUEST FOR FINAL INSPECTION:
THE ELECTRICAL WORK SHALL BE THOROUGHLY TESTED TO DEMONSTRATE THAT THE ENTIRE SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS AND IS OPERATING SMOOTHLY AND CONTINUOUSLY AS NEARLY AS POSSIBLE UNDER OPERATING CONDITIONS FOR A SUFFICIENT LENGTH OF TIME TO DEMONSTRATE CORRECT ALIGNMENT, WIRING CAPACITY, SPEED AND SATISFACTORY OPERATION. ALL MAIN SWITCHES AND CIRCUIT BREAKERS SHALL BE OPERATED, BUT NOT NECESSARILY AT FULL LOAD. CONTRACTOR MAY BE REQUIRED DURING FINAL INSPECTION, AT THE REQUEST OF THE ENGINEER TO FURNISH TEST INSTRUMENTS FOR USE DURING THE TESTING.

ALL PANEL BOARD AND ALL OTHER MAIN FEEDER CIRCUITS SHALL BE GIVEN A MEGGER TEST USING A 1000 VOLT MEGGER. THIS TEST SHALL BE PERFORMED AFTER CONDUCTORS ARE PULLED, BUT BEFORE FINAL CONNECTIONS ARE MADE. THE MEGGER READINGS SHALL BE TAKEN BETWEEN EACH WIRE AND ALL UNCONNECTED WIRES AND GROUND. THE WIRE IS SATISFACTORY IF NO LESS THAN 250 MEGOHMS. IN ANY EVENT, THE CONTRACTOR SHALL RECORD THE CIRCUIT DESIGNATION AND THE MEGGER READING OBTAINED. THIS WRITTEN RECORD SHALL BE SUBMITTED TO THE ENGINEER. THE COST OF THIS TEST OR ANY RETEST CAUSED BY INSUFFICIENT INSULATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK INDICATING ALL CONTROL AND POWER WIRING. THE AS-BUILT DRAWINGS SHALL INCLUDE DETAILED CONTROL SCHEMATIC FOR THE CONTROL SYSTEM. (ALL DRAWINGS SHALL BE DELIVERED TO THE OWNER IN AN AUTOCAD 2011 OR NEWER FORMAT.)

OVER-CURRENT PROTECTION DEVICES

PUMP CIRCUITS SHALL INCLUDE GROUND FAULT CIRCUIT INTERRUPTION PROTECTION. PROVIDE EITHER A THERMAL-MAGNETIC CIRCUIT BREAKER WITH BUILT-IN GFCI OR MOTOR CIRCUIT PROTECTION WITH EXTERNAL TRIPPING MEANS CONNECTED TO A GROUND-FAULT RELAY CIRCUIT.

SUPPORTING DEVICES

ALL SUPPORTING DEVICES SHALL BE STAINLESS STEEL UNLESS OTHERWISE INDICATED. ALL CABLES WITHIN WET WELL SHALL BE SUPPORTED W/ STAINLESS STEEL CABLE STRAIN RELIEF.

CONDUIT

CONDUIT BELOW GRADE SHALL BE RNC; SCH. 40, CONCRETE ENCASED.
EXPOSED CONDUIT SHALL BE RIGID ALUMINUM, WHERE IN CONTACT WITH CONCRETE OR EARTH, PROTECT CONDUIT WITH 3M SCOTCHRAP PIPE PRIMER AND THEN WRAPPED WITH ONE LAYER OF 3M SCOTCHRAP 51-ALL WEATHER CORROSION PROTECTION TAPE PER MANUFACTURER'S RECOMMENDATIONS.
CONDUIT SUPPORTS SHALL BE STAINLESS STEEL.
CONDUIT SHALL BE SIZED PER THE NEC.

DISCONNECT SWITCHES

ALL DISCONNECT SWITCHES SHALL BE 200,000 AIC FUSED DISCONNECT SWITCHES. ALL SWITCHES SHALL BE NEMA 4X STAINLESS STEEL.

GROUNDING

ALL CONDUIT RUNS SHALL HAVE A GROUND CONDUCTOR (color green) SIZED PER NEC.
GROUND RODS: 3/4"x10', STEEL COPPER-CLAD.

SCADA SYSTEMS

WORK INCLUDED

PROVIDE ALL LABOR, MATERIALS, NECESSARY EQUIPMENT, AND SERVICES TO DESIGN AND INSTALL A FULLY OPERATION SCADA AND CONTROL SYSTEM FOR THE PROPOSED NEW LIFT STATIONS AS INDICATED ON THE DRAWINGS, AND AS SPECIFIED HEREIN OR BOTH.

THE SCADA SYSTEM SUPPLIER SHALL PROVIDE ALL REQUIRED HARDWARE AND SOFTWARE AS REQUIRED FOR A FULLY OPERATIONAL SYSTEM.

REFERENCES

NEMA – INSTRUMENT SOCIETY OF AMERICA – STANDARDS AND RECOMMENDED PRACTICES FOR INSTRUMENTATION AND CONTROL

JIC – JOINT INDUSTRIAL COUNCIL.

SUBMITTAL

SUBMIT DETAILED POINT-TO-POINT WIRING DIAGRAMS. SUBMIT COMPLETE CATALOG INFORMATION ON ALL PROPOSED SYSTEM COMPONENTS IN A THREE RING BINDER AT THE TIME OF SHOP DRAWINGS FOR APPROVAL.

WARRANTY

ALL EQUIPMENT FURNISHED UNDER THIS SECTION SHALL BE WARRANTED FOR FULL REPLACEMENT BY THE CONTRACTOR AND THE EQUIPMENT MANUFACTURER FOR A PERIOD OF 1 YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.

CONTRACTOR/MANUFACTURER QUALIFICATIONS

AS BUILT DRAWINGS: THE CONTRACTOR SHALL PROVIDE AUTOCAD 2011 AND NEWER FORMATTED AS-BUILT DRAWINGS OF THE CONTROL EQUIPMENT. THE DRAWINGS SHALL INCLUDE POINT-TO-POINT WIRE DIAGRAMS, CONTROL ALGORITHMS, AND CABINET LAYOUTS: THE CONTRACTOR SHALL ALSO PROVIDE BOTH ELECTRONIC AND PAPER COPIES OF ALL PLC CODE.

AS BUILT ELECTRICAL SCHEMATICS SHALL BE LAMINATED TO THE INTERIOR DOOR OF EACH LIFT STATION ENCLOSURE ALL CONDUCTORS INSIDE THE LIFT STATION ENCLOSURE SHALL BE IDENTIFIED WITH STANDARD VINYL-CLOTH SELF ADHESIVE CABLE/CONDUCTOR MARKERS OF WRAP-AROUND TYPE. MARKERS SHALL BE PLASTIC COATED AND PRE-NUMBERED TO SHOW CIRCUIT IDENTIFICATION. WRITE-ON TYPE MARKERS WILL NOT BE ACCEPTED. CONDUCTORS AND CABLES IN MANHOLES AND HANDHOLES SHALL BE IDENTIFIED BY BRASS TAGS WITH DIE STAMPED LETTERING.

PROGRAMMABLE LOGIC CONTROLLER

GENERAL: ALL PLC EQUIPMENT SHALL BE THE STANDARD PRODUCTS OF A SINGLE MANUFACTURER WHO HAS BEEN REGULARLY ENGAGED IN THE PRODUCTION OF INDUSTRIAL CONTROL PRODUCTS FOR THE LAST TEN YEARS.

ALL MANUFACTURERS OF ALL PROPOSED CONTROL EQUIPMENT FOR THIS PROJECT MUST MAINTAIN A STOCKING DISTRIBUTOR WITHIN 250 MILES OF THE PROJECT SITE WHICH WILL PROVIDE WARranty EQUIPMENT REPLACEMENT.

ENVIRONMENTAL CONDITIONS: ALL PLC EQUIPMENT INSTALLED ON THIS PROJECT SHALL BE CAPABLE OF OPERATING AT A RELATIVE HUMIDITY OF UP TO 95% NON-CONDENSING AND SHALL BE CAPABLE OF OPERATING IN A TEMPERATURE RANGING FROM 0 TO 60 DEGREES CELSIUS. NO SPECIAL ENVIRONMENTAL ENCLOSURES SHALL BE REQUIRED TO MEET THESE ENVIRONMENTAL CONDITIONS.

SURGE PROTECTION: ALL PLC MODULES SHALL HAVE INTEGRAL SURGE PROTECTION EQUIPMENT CAPABLE OF MEETING OR EXCEEDING IEEE 472-1974 (ANSI C37-90A-1974). DIN RAIL MOUNTED SURGE PROTECTION SHALL BE PROVIDED FOR ALL I/O POINTS. ALL POWER TO THE PLC SHALL BE PROTECTED FROM SURGES IN ACCORDANCE WITH THE PLC MANUFACTURER'S RECOMMENDATIONS. ALL 4-20 MA SIGNALS SHALL BE PROTECTED WITH LOOP-POWERED ISOLATORS.

I/O MODULES: EACH I/O MODULE SHALL CONTAIN A STATUS LIGHT TO INDICATES THE MODULES CURRENT COMMUNICATION STATUS WITH THE CPU AND CURRENT STATUS OF ALL I/O FUNCTIONS. ALL ANALOG I/O MODULES SHALL PROVIDE AN ACCURACY OF 99.9%.

POWER SUPPLIES: THE PLC SHALL OPERATE WITH AN ELECTRICAL SERVICE OF 120 VAC SINGLE PHASE IN THE FREQUENCY RANGE OF 47 TO 63 HZ. THE POWER SUPPLY SHALL AUTOMATICALLY SHUT DOWN THE PLC WHENEVER ITS OUTPUT CURRENT IS DETECTED AS BEING EXCESSIVE.

PROGRAM STORAGE: THE PLC SHALL STORE ITS PROGRAM IN A SOLID-STATE BATTERY BACKUP RAM TYPE STORAGE. THE MEMORY SHALL BE CAPABLE OF STORING THE PROGRAM FOR 24 MONTHS UNDER WORST CASE CONDITIONS. (EEPROMS ARE REQUIRED).

WARRANTY: THE PLC MANUFACTURER SHALL PROVIDE A 3 YEAR FACTORY WARRANTY COVERING FULL REPLACEMENT OF THE PROVIDED PLC EQUIPMENT.

MODEMS: 9600 BAUD RADIO FOR LIFT STATIONS.

UPS UNITS: ALL PLC AND COMMUNICATION EQUIPMENT SHALL BE BACKED UP BY A UPS OR BATTERY POWER SUPPLY CAPABLE OF OPERATING THE SUPPLIED EQUIPMENT FOR 24 HOURS IN THE EVENT OF A POWER FAILURE. THE UPS UNITS SHALL BE DESIGNED TO HANDLE THE HEAT AND HUMIDITY ASSOCIATED WITH THIS PROJECT.

BATTERIES SHALL BE: 2 EA SEALED LEAD ACID / ABSORBENT GLASS MAT, SSAH, POWER SONIC PS-12550 OR EQUIVALENT

CPU: MICROLOGIX 1400 PLC (P/N 1766-L32BXB), DC INPUT MODULE (P/N 1762-IQ8) AND ANALOG INPUT MODULE (P/N 1762-IF4).

PUMP CONTROL ENCLOSURE

NEW RADIO EQUIPMENT

SEE RTU PANEL BILL OF MATERIALS NEW SHEET.

PLC PROGRAMMING

PROGRAMMING SHALL BE IN A SIMPLE LADDER DIAGRAM LANGUAGE OR HIGH LEVEL LANGUAGE (NO ASSEMBLY LANGUAGE ALLOWED). THE NUMBERING SYSTEM SHALL BE UNIFORM AND SHALL BE BASED ON A RACK, CARD, INPUT/OUTPUT SEQUENCE. THE PROGRAM SHALL BE WRITTEN FOR THIS SPECIFIC PROJECT AND SHALL USE THE INFORMATION FROM THE DRAWINGS AND THIS SPECIFICATIONS AS A BASIS. THE CONTRACT DOCUMENTS SHALL NOT BE WRITTEN IN SUCH A MANNER AS TO LIMIT THE SYSTEM TO NOT TO BE CONSTRUED AS LIMITATIONS IN THE MANNER IN WHICH THE PROGRAM IS TO BE WRITTEN. THE CONTRACT DOCUMENTS PRESENT A FRAMEWORK AROUND WHICH THE PROGRAM SHALL BE WRITTEN, THEREFORE, THE PROGRAMMER WILL BE EXPECTED TO BECOME INTIMATE WITH THE PROCESS WHICH IS TO BE CONTROLLED.

SCOPE OF CONTROL SYSTEMS

LIFT STATIONS: THE SCADA SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR TO PROVIDE CONTROL OF THE OWNER'S PROPOSED SEWAGE LIFT STATIONS. THE SYSTEM SHALL ALLOW THE OWNER TO MONITOR: PUMP RUN TIMES, PUMP SEAL FAILURES, PUMP OVER TEMPS, WET WELL LEVELS, POWER FAILURES, AND POWER PHASE FAILURES.

THE RTU SHALL CONTROL THE PROPOSED PUMP STATIONS.

REPORTS

ALARM REPORTS
SYSTEM MAINTENANCE REPORTS
FLOW REPORTS
PUMP RUN TIME REPORTS

SPARE PARTS

THE CONTRACTOR SHALL PROVIDE THE OWNER 1 SPARE SETS OF ALL EQUIPMENT USED FOR THE LIFT STATION SCADA SYSTEM. THIS INCLUDES ALL PLC MODULES, RELAYS, ETC.
(TO BE PROVIDED AS AN ALTERNATE BID)

FIELD QUALITY CONTROL

PROVIDE INSTRUCTION ON SITE SYSTEM OPERATION AS REQUIRED BUT NOT LESS THAN 1 DAY. TEST EACH FIELD INPUT AND ASSOCIATED OUTPUT.

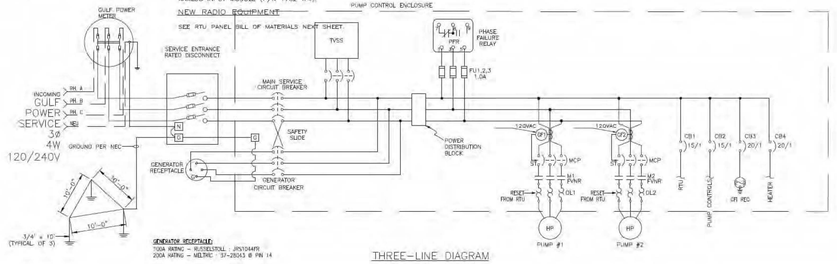
DOCUMENTATION

THE CONTRACTOR OF THE CONTROL SYSTEM SHALL PROVIDE A COMPLETE SET OF OM MANUALS AND SCHEMATICS IN A AUTOCAD 2011 OR NEWER FORMAT. THE OM MANUALS SHALL INCLUDE INFORMATION ON THE PLC EQUIPMENT AS WELL AS SYSTEM TROUBLE SHOOTING INFORMATION.

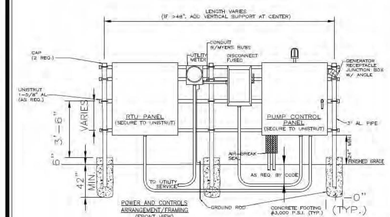
THE CONTRACTOR SHALL DELIVER DETAILED POINT-TO-POINT DRAWINGS TO THE OWNER IN BOTH A PAPER AND AUTOCAD 2011 AND NEWER FORMAT. THE INTEGRATOR SHALL PROVIDE DOCUMENTED PLC CODE AND DETAILED INSTRUCTIONS FOR THE INSTALLATION OF ADDITIONAL RTUS.

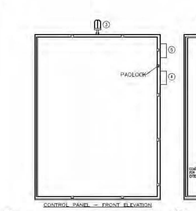
RADIO SURGE PROTECTION

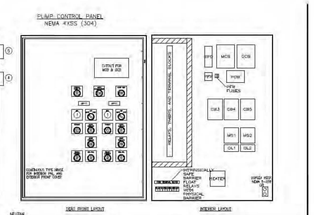
PROVIDE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

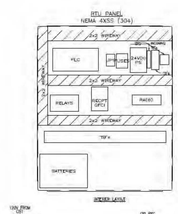


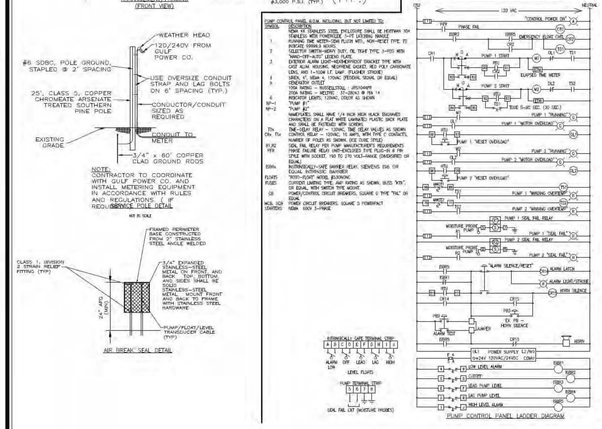
THREE-LINE DIAGRAM

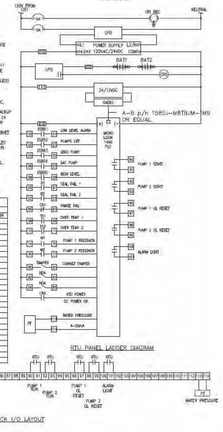


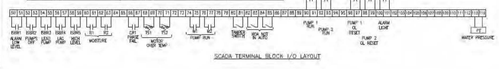












SCADA I/O LISTING

SIGNAL NO.	FROM	DESCRIPTION	SIGNAL TYPE: 24 V INPUT	RELAY OUT	ANALOG IN
I0-1	PUMP CUTOFF FLOAT SWITCH	PUMP CUTOFF SWITCH	X		
I0-2	LEAD PUMP FLOAT SWITCH	LEAD PUMP FLOAT SWITCH	X		
I0-3	LAG PUMP FLOAT SWITCH	FLOAT SWITCH	X		
I0-4	HIGH LEVEL ALARM FLOAT	FLOAT SWITCH	X		
I0-5	PUMP NO. 1 H-O-A SWITCH	SELECTOR SWITCH IN AUTO	X		
I0-6	PUMP NO. 2 H-O-A SWITCH	SELECTOR SWITCH IN AUTO	X		
I0-7	PUMP NO. 1	MOTOR RUNNING	X		
I0-8	PUMP NO. 1	MOTOR RUNNING FEEDBACK SIGNAL	X		
I0-9	PUMP NO. 1	MOTOR RUNNING FEEDBACK SIGNAL	X		
I0-10	PUMP NO. 1	PUMP OVERLOAD TRIPPED	X		
I0-11	PUMP NO. 2	SEAL FAIL	X		
I0-12	PUMP NO. 2	MOTOR RUNNING TEMP	X		
I0-13	PUMP NO. 2	MOTOR RUNNING FEEDBACK SIGNAL	X		
I0-14	PUMP NO. 2	PUMP OVERLOAD TRIPPED	X		
I0-15	CONTROL PANEL	TAMPER SWITCH	X		
I0-16	PHASE FAIL RELAY	POWER FAILURE	X		
I0-17	LOW LEVEL ALARM	LOW LEVEL ALARM	X		
O0-1	RTU	PUMP NO. 1 - RUNNING NEXT		X	
O0-2	RTU	PUMP NO. 2 - RUNNING NEXT		X	
O0-3	RTU	PUMP NO. 1 OVERLOAD RESET		X	
O0-4	RTU	PUMP NO. 2 OVERLOAD RESET		X	
O0-5	RTU	SPARE		X	
O0-6	RTU	SPARE		X	
O0-7	RTU	ALARM LIGHT FLASHING		X	
O0-8	RTU	HORN		X	
AI-1	RTU	WATER PRESSURE			X

RTU PANEL FOR RETROFIT ONLY

GENERAL SPECIFICATION:
SOME MODIFICATION MAY BE NECESSARY FOR THE INTENDED LIFT STATION. PLEASE CONSULT WITH CITY ENGINEER'S REPRESENTATIVE FOR SPECIFICS OF INDIVIDUAL STATIONS.

MANUFACTURER OF RTU SHALL FURNISH THE FOLLOWING:

- RTU: NEMA 4X STAINLESS STEEL ENCLOSURE TO BE HOFFMAN OR EQUIVALENT 304 STAINLESS WITH POWERGUIDE 3 PT LATCHING HANDLE.
- RTU: INCLOSURE TO INCLUDE:
- RTU RADIO: REMOTE TELEMETRY UNIT. TO MATCH EXISTING.
- SURGE PROTECTION: DIN RAIL MOUNTED BY PHOENIX OR EQUAL.
- POWER SUPPLY: 24 VOLT POWER SUPPLY TO POWER RADIO RTU AND ALL I/O.
- BATTERY BACKUP: 24 VOLT BATTERY SYSTEM WITH AUTOMATIC CHARGER AND BACKUP POWER ADEQUATE TO SUPPLY RADIO, RTU AND ALL I/O 24 VOLT POWER FOR 24 HOURS. BATTERIES SHALL BE: 2 EA SEALED LEAD ACID / ABSORBENT GLASS MAT, SSAH, POWER SONIC PS-12550 OR EQUIVALENT

CONTRACTOR WILL FURNISH A TYPICAL RTU CABINET THAT WILL HAVE AT LEAST THE FOLLOWING FEATURES

ALLEN-BRADLEY MICROLOGIX 1400 PLC, 1766-L32BXB, SERIES B, FIRMWARE 11 OR LATER
EXTRA SPACE(5 INCHES) TO THE RIGHT OF PLC TO ALLOW FUTURE ADDITION OF UP TO 3 1762 EXPANSION MODULES
QR450 RADIO MODEM AT 451.1375MHZ. PREFER HORIZONTAL MOUNTING WITH LEDS FACING OUTWARD.
2 –12V, 55AH BATTERIES. PREFERRED PLACEMENT IS LEFT HAND SIDE OF CABINET. PROVIDE FOR ADEQUATE CLEARANCE BETWEEN BATTERIES, TERMINAL BLOCKS AND CONNECTIONS FOR OTHER EQUIPMENT.
24VDC, 10A RATED POWER SUPPLY, WITH AN OUTPUT FOR POWER SUPPLY OK
SURGE SUPPRESSION FOR PLC INPUTS AND 120V POWER
A "BUMPLESS" BATTERY TRANSFER RELAY , TRANSTRONICS BVUPS-PFA OR EQUIVALENT
RF FEEDLINE ISOLATION / SURGE SUPPRESSOR. PREFERRED PLACEMENT IS ON RIGHT HAND SIDE BOTTOM.
SIEMENS ISR OR EQUAL INTRINSIC BARRIER
120 VAC CONVENIENCE RECEPTACLE
AT LEAST 8 2PDT OUTPUT RELAYS FOR PLC OUTPUTS
RELAYS WILL HAVE AT LEAST AN LED INDICATION FOR ENERGIZED AND A MANUAL LOCKING TAB TO HOLD CONTACTS IN ENERGIZED POSITION
EXTRA SPACE ON THE TERMINAL STRIP ON RAIL
CABINET WILL HAVE A LOCKABLE QUARTER TURN HANDLE.

SCADA RTU I/O LISTING FOR RTU RETRO FIT PANEL

FOR USE WITH MICROLOGIX 1400 PLC, 1768-L32BXB

SIGNAL NO.	FROM	DESCRIPTION	SIGNAL TYPE: 24 V INPUT	RELAY OUT	ANALOG IN
I0/0	DC POWER SUPPLY	DC POWER OK	X		
I0/1	CUTOFF FLOAT	FLOAT SWITCH	X		
I0/2	LEAD FLOAT (1ST CALL)	FLOAT SWITCH	X		
I0/3	LAG FLOAT (2ND CALL)	FLOAT SWITCH	X		
I0/4	HIGH LEVEL ALARM FLOAT	FLOAT SWITCH	X		
I0/5	LOW LEVEL ALARM FLOAT	FLOAT SWITCH	X		
I0/6	PUMP 1 HOA SWITCH	PUMP 1 HOA IN AUTO	X		
I0/7	MOTOR 1 AUX CONTACT	PUMP 1 RUNNING	X		
I0/8	MOTOR 1 OVERTEMP RELAY	MOTOR 1 OVERTEMP	X		
I0/9	MOTOR 1 SEAL FAIL RELAY	PUMP 1 SEALFAIL	X		
I0/10	MOTOR 1 OVERLOAD RELAY	MOTOR 1 OVERLOAD	X		
I0/11	PUMP 2 HOA SWITCH	PUMP 2 HOA IN AUTO	X		
I0/12	MOTOR 2 AUX CONTACT	PUMP 2 RUNNING	X		
I0/13	MOTOR 2 OVERTEMP RELAY	MOTOR 2 OVERTEMP	X		
I0/14	MOTOR 2 SEAL FAIL RELAY	PUMP 2 SEALFAIL	X		
I0/15	MOTOR 2 OVERLOAD RELAY	MOTOR 2 OVERLOAD	X		
I0/16	CONTROL PANEL DOOR SW	CONTROL PANEL INTRUSION	X		
I0/17	RTU PANEL DOOR SWITCH	RTU PANEL INTRUSION	X		
I0/18	STATION POWER FAIL	STA. INCOMING POWER FAIL	X		
I0/19	PUMP ROOM FLOOD	PUMP ROOM FLOOD OR SPARE	X		
O0/0		START PUMP1		X	
O0/1		START PUMP2		X	

THE CONTRACTOR WILL:

- COORDINATE WITH THE CITY'S REPRESENTATIVE FOR AN INTERCONNECT DIAGRAM WITH EXISTING CABINET.
- PROVIDE SUITABLE PLC & HMI PROGRAMMING. THE CONTRACTOR WILL PROVIDE SUITABLE MODIFICATIONS TO THE CITY'S MTU (MASTER POLLING STATION (PLC) AND SCADA/HMI)SOFTWARE.
- THE CONTRACTOR WILL PROVIDE SUITAB

SITE DESCRIPTION

PROJECT NAME AND LOCATION: HOLLEY LANE TOWNHOMES
THOMAS DRIVE
BAY COUNTY, FLORIDA, 32408

AGENT NAME AND ADDRESS: COBALT PROPERTY DEVELOPEMENT, LLC.
4705 HAMILTON MILL ROAD, SUITE 300
BUFORD, GEORGIA 30518

DESCRIPTION: TOWNHOMES, ROADWAY, PARKING & PONDS

SOIL DISTURBING ACTIVITIES WILL INCLUDE:
CLEARING AND GRUBBING, EARTHWORK, GRADING, STORM SEWER AND UTILITIES.

RUNOFF CURVE NUMBERS:

1.	PRE-CONSTRUCTION	C=0.54
2.	DURING CONSTRUCTION	C=0.45
3.	POST-CONSTRUCTION	C=0.73

SOILS:
SEE SOIL BORING REPORT FOR SOILS DATA.

SITE MAPS:
* SEE ATTACHED GRADING FOR PRE & POST DEVELOPMENT GRADES, AREAS OF SOILS DISTURBANCE, LOCATION OF SURFACE WATERS, WETLANDS, PROTECTED AREAS, MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS AND STORMWATER DISCHARGE POINTS.

* SEE ATTACHED EROSION AND TURBIDITY CONTROL PLAN FOR LOCATION OF TEMPORARY STABILIZATION PRACTICES AND TURBIDITY BARRIERS.

* SEE GRADING NOTES FOR REQUIREMENTS FOR TEMPORARY AND PERMANENT STABILIZATION.

SITE AREA:
1. TOTAL AREA OF CONTIGUOUS PROPERTY = 15.76 ACRES±
2. TOTAL AREA TO BE DISTURBED = 14.79 ACRES±

NAME OF RECEIVING WATERS: NONE

CONTROLS

THIS PLAN UTILIZES BEST MANAGEMENT PRACTICES TO CONTROL EROSION AND TURBIDITY CAUSED BY STORMWATER RUNOFF. AN EROSION AND TURBIDITY PLAN HAS BEEN PREPARED TO INSTRUCT THE CONTRACTOR ON PLACEMENT OF THESE CONTROLS. IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN THE CONTROLS PER PLAN AS WELL AS ENSURING THAT PLAN IS PROVIDING THE PROPER PROTECTION AS REQUIRED BY FEDERAL, STATE AND LOCAL LAWS. REFER TO "CONTRACTORS RESPONSIBILITY" FOR A VERBAL DESCRIPTION OF THE CONTROLS THAT MAY BE IMPLEMENTED.

STORM WATER MANAGEMENT
STORMWATER DRAINAGE WILL BE PROVIDED BY: ONSITE COLLECTION & ATTENUATION

ONSITE IMPROVEMENTS
SEE SITE, GRADING & DRAINAGE AND UTILITY PLANS.

TIMING OF CONTROLS/MEASURES

REFER TO "CONTRACTORS RESPONSIBILITY" FOR THE TIMING OF CONTROL/MEASURES.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

CONTROL/MEASURES.
IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS RELATED TO STORM WATER MANAGEMENT AND EROSION AND TURBIDITY CONTROLS, THE FOLLOWING PERMITS HAVE BEEN OBTAINED.

NWFWMD ENVIRONMENTAL RESOURSE PERMIT

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED: _____
SCOT C. RUTHERFORD, PE

DATED: _____

GENERAL

THE CONTRACTOR SHALL AT A MINIMUM IMPLEMENT THE CONTRACTOR'S REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN. IN ADDITION THE CONTRACTOR SHALL UNDERTAKE ADDITIONAL MEASURES REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS, DEPENDING ON THE NATURE OF MATERIALS AND METHODS OF CONSTRUCTION THE CONTRACTOR MAY BE REQUIRED TO ADD FLOCCULANTS TO THE RETENTION SYSTEM PRIOR TO PLACING THE SYSTEM INTO OPERATION.

SEQUENCE OF MAJOR ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. INSTALL SILT FENCES AND HAY BALES, AS REQUIRED.
3. CONSTRUCT SEDIMENTATION BASIN.
4. CLEAR AND GRUB FOR DIVERSION SWALES/DIKES AND SEDIMENT BASIN AT PERMANENT POND LOCATION.
5. CONTINUE CLEARING AND GRUBBING.
6. STOCKPILE TOP SOIL IF REQUIRED.
7. PERFORM PRELIMINARY GRADING ONSITE, AS REQUIRED.
8. STABILIZE DENUDED AREA AND STOCKPILES AS SOON AS PRACTICABLE.
9. INSTALL UTILITIES, STORM SEWER, CURBS AND GUTTER.
10. APPLY BASE TO PROJECT.
11. COMPLETE GRADING AND INSTALL PERMANENT SEEDING/SOD AND PLANTING.
12. COMPLETE FINAL PAVING.
13. UPON SIGNIFICANT COMPLETION OF CONSTRUCTION, THE STORMWATER PIPING SYSTEM SHALL BE FLUSHED OUT TO REMOVE ACCUMULATED DEBRIS AND SEDIMENT.
14. UPON COMPLETION OF THE DEBRIS AND SEDIMENT REMOVAL FROM THE STORMWATER PIPING SYSTEM, THE PROPOSED STORMWATER MANAGEMENT FACILITY(S) SHALL BE FINE GRADED) AND BE EXCAVATED A MINIMUM OF SIX INCHES BELOW THE DESIGN BOTTOM ELEVATION AND REPLACED WITH FILL HAVING A MINIMUM PERMEABILITY RATE OF 20 FEET/DAY WITH A MAXIMUM OF 5% SOIL FINES PASSING THE No. 200 SIEVE. THE BOTTOM SHALL BE SCARIFIED AND STABILIZED ACCORDING TO THESE PLANS. ONCE COMPLETED, NO HEAVY MACHINERY SHALL BE ALLOWED WITH THE STORMWATER MANAGEMENT FACILITY(S).
15. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY DIVERSION SWALES/DIKES AND RESEED/ SOD, AS REQUIRED.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, THE SILT FENCES AND HAY BALES, STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT BASIN WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED PERMANENTLY IN ACCORDANCE WITH THE PLANS. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED) SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND THE EARTH DIKE/SWALES WILL BE REGRADED/REMOVED AND STABILIZED IN ACCORDANCE WITH THE EROSION AND TURBIDITY CONTROL PLAN.

ENDANGERED SPECIES AND CRITICAL HABITAT

1. ARE THERE ENDANGERED SPECIES ON SITE?
2. ARE THERE CRITICAL HABITAT ON SITE?

IF YES TO EITHER QUESTION, PLEASE EXPLAIN:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

CONTROLS

IT IS THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN. IT IS ALSO THE CONTRACTORS RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED, MAINTAINED AND FUNCTIONING PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROLS SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED, TO ENSURE THE SITE MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND TURBIDITY CONTROL REQUIREMENTS. THE FOLLOWING BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED BY THE CONTRACTOR AS REQUIRED BY THE EROSION AND TURBIDITY CONTROL PLAN AND AS REQUIRED TO MEET THE EROSION AND TURBIDITY REQUIREMENTS IMPOSED ON THE PROJECT SITE BY THE REGULATORY AGENCIES.

EROSION AND SEDIMENT CONTROLS
STABILIZATION PRACTICES

1. HAY BALE BARRIER: HAY BALE BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:

   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OR DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2 ACRES.
   C. WHERE EFFECTIVENESS IS REQUIRED FOR LESS THAN 3 MONTHS.
   D. EVERY EFFORT SHOULD BE MADE TO LIMIT THE USE OF STRAW BALE BARRIERS CONSTRUCTED IN LIVE STREAMS OR IN SWALES WHERE THERE IS THE POSSIBILITY OF A WASHOUT. IF NECESSARY, MEASURES SHALL BE TAKEN TO PROPERLY ANCHOR BALES TO ENSURE AGAINST WASHOUT.

   REFER TO EROSION CONTROL DETAILS FOR CONSTRUCTING THE HAY BALE BARRIER. ALSO REFER TO THE EROSION CONTROL PLAN FOR PROPER LOCATION.

2. FILTER FABRIC BARRIER: FILTER FABRIC BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:

   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OF DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2 ACRES..

   REFER TO THE EROSION CONTROL DETAILS FOR PROPER CONSTRUCTION OF THE FILTER FABRIC BARRIER.

3. BRUSH BARRIER WITH FILTER FABRIC: BRUSH BARRIER MAY BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WHERE ENOUGH RESIDUE MATERIAL IS AVAILABLE ON SITE.

4. LEVEL SPREADER: A LEVEL SPREADER MAY BE USED WHERE SEDIMENT-FREE STORM RUNOFF IS INTERCEPTED AND DIVERTED AWAY FROM THE GRADED AREAS ONTO UNDISTURBED STABILIZED AREAS. THIS PRACTICE APPLIES ONLY TO THOSE SITUATIONS WHERE THE SPREADER CAN BE CONSTRUCTED ON UNDISTURBED SOIL AND THE AREA BELOW THE LEVEL LIP IS STABILIZED. THE WATER SHOULD NOT BE ALLOWED TO RECONCENTRATE AFTER RELEASE.

5. STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHOULD BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER COLLECTION FACILITY.

6. EXPOSED AREA LIMITATION: THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING AND GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL BE MINIMIZED.

7. INLET PROTECTION: INLETS AND CATCH-BASINS WHICH DISCHARGE DIRECTLY OFF-SITE SHALL BE PROTECTED FROM SEDIMENT-LADEN STORM RUNOFF UNTIL THE COMPLETION OF ALL CONSTRUCTION OPERATIONS THAT MAY CONTRIBUTE SEDIMENT TO THE INLET.

8. DUST CONTROL: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE RE-EXCAVATED OR DRESSED AND RECEIVE FINAL TREATMENT WITHIN 30 DAYS SHALL BE STABILIZED.

9. TEMPORARY SEEDING AND MULCHING: SLOPES STEEPER THAN 6:1 THAT FALL WITHIN THE CATEGORY ESTABLISHED IN PARAGRAPH 8 ABOVE SHALL ADDITIONALLY RECEIVE MULCHING OF APPROXIMATELY 2 INCHES LOOSE MEASURE OF MULCH MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA ADEQUATE TO PREVENT MOVEMENT OF SEED AND MULCH.

10. TEMPORARY GRASSING: THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED OR HYDROMULCHED OR OTHER SUITABLE METHODS IF REQUIRED TO ASSURE OPTIMUM GROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER. TEMPORARY GRASSING SHALL BE THE SAME MIX AND AMOUNT REQUIRED FOR PERMANENT GRASSING IN THE CONTRACT SPECIFICATIONS.

11. TEMPORARY REGRASSING: IF, AFTER 14 DAYS FROM SEEDING, THE TEMPORARY GRASSED AREAS HAVE NOT ATTAINED A MINIMUM 75 PERCENT GOOD GRASS COVER, THE AREA WILL BE REWORKED AND RESEEDED AND APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.

12. MAINTENANCE: ALL FEATURES OF THE PROJECT DESIGNED AND CONSTRUCTED TO PREVENT EROSION AND SEDIMENT SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION AS THEY WERE ORIGINALLY DESIGNED AND CONSTRUCTED.

13. PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFFSITE FACILITIES.

14. PERMANENT SEEDING: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL, AS A MINIMUM, BE SEEDED. THE SEEDING MIX MUST PROVIDE BOTH LONG-TERM VEGETATION AND RAPID GROWTH SEASONAL VEGETATION. SLOPES STEEPER THAN 4:1 SHALL BE SEEDED AND MULCHED OR SODDED.

STRUCTURAL PRACTICES

1. TEMPORARY DIVERSION DIKE: TEMPORARY DIVERSION DIKES MAY BE USED TO DIVERT RUNOFF THROUGH A SEDIMENT-TRAPPING FACILITY.

2. TEMPORARY SEDIMENT TRAP: A SEDIMENT TRAP SHALL BE INSTALLED IN A DRAINAGEWAY AT A STORM DRAIN INLET OR AT OTHER POINTS OF DISCHARGE FROM A DISTURBED AREA.

   THE FOLLOWING SEDIMENT TRAPS MAY BE CONSTRUCTED EITHER INDEPENDENTLY OR IN CONJUNCTION WITH A TEMPORARY DIVERSION DIKE:

   A. BLOCK AND GRAVEL SEDIMENT FILTER – THIS PROTECTION IS APPLICABLE WHERE HEAVY FLOWS AND/OR WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

   B. GRAVEL SEDIMENT TRAP – THIS PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

   C. DROP INLET SEDIMENT TRAP – THIS PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (S<0.50%) AND WHERE SHEET OR OVERLAND FLOWS (Q<0.5OCFS) ARE TYPICAL. THIS METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS SUCH AS IN STREET OR HIGHWAY MEDIANS.

3. OUTLET PROTECTION: APPLICABLE TO THE OUTLETS OF ALL PIPES AND PAVED CHANNEL SECTIONS WHERE THE FLOW COULD CAUSE EROSION AND SEDIMENT PROBLEMS TO THE RECEIVING WATER BODY. SILT FENCES AND HAY BALES ARE TO BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE DISCHARGING STRUCTURE AS SHOWN ON THE OUTLET PROTECTION DETAIL.

4. SEDIMENT BASIN: WILL BE CONSTRUCTED AT THE COMMON DRAINAGE LOCATIONS, THE PROPOSED STORM WATER PONDS (OR TEMPORARY PONDS) WILL BE CONSTRUCTED FOR USE AS SEDIMENT BASINS. THESE SEDIMENT BASINS MUST PROVIDE A MINIMUM OF 67 CUBIC YARDS OF STORAGE PER ACRE DRAINED UNTIL FINAL STABILIZATION OF THE SITE. THE VOLUME OF THE BASIN AT CLEAN OUT SHALL BE 22 CUBIC YARDS PER ACRE.

THE 67 CUBIC YARDS OF STORAGE AREA PER ACRE DRAINED DOES NOT APPLY TO FLOWS FROM OFFSITE AREAS AND FLOWS FROM ONSITE AREAS THAT ARE EITHER UNDISTURBED OR HAVE UNDERGONE FINAL STABILIZATION WHERE SUCH FLOWS ARE DIVERTED AROUND BOTH THE DISTURBED AREA AND THE SEDIMENT BASIN. ANY TEMPORARY SEDIMENT BASINS CONSTRUCTED MUST BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR STRUCTURAL FILL. ALL SEDIMENT COLLECTED IN PERMANENT OR TEMPORARY SEDIMENT TRAPS MUST BE REMOVED UPON FINAL STABILIZATION.

OTHER CONTROLS

WASTE DISPOSAL
WASTE MATERIALS

ALL WASTE MATERIALS EXCEPT LAND CLEARING DEBRIS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. THE DUMPSTER WILL BE EMPTIED AS NEEDED AND THE TRASH WILL BE HAULED TO A STATE APPROVED LANDFILL. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED AT THE CONSTRUCTION SITE BY THE CONSTRUCTION SUPERINTENDENT. THE INDIVIDUAL WHO MANAGES THE DAY-TO-DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES AND THE SITE SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES DAY-TO-DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NEEDED TO PREVENT POSSIBLE SPILLAGE. THE WASTE WILL BE COLLECTED AND DEPOSED OF IN ACCORDANCE WITH STATE AND LOCAL WASTE DISPOSAL REGULATIONS FOR SANITARY SEWER OR SEPTIC SYSTEMS.

OFFSITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED STREET ADJACENT TO THE SITE ENTRANCE WILL BE SWEPT AS NEEDED TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH THE TARPAULIN.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION:

☒ Concrete	☒ Fertilizers	☒ Wood
☒ Asphalt	☒ Petroleum Based Products	☒ Masonry Blocks
☐	☒ Cleaning Solvents	☒ Roofing Materials
☒ Detergents	☒ Paints	☒ Metal Studs
☐	☐	☐

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

* AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.

* ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

* PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

* SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

* WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

* MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

* THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE MATERIALS ONSITE RECEIVE PROPER USE AND DISPOSAL.

HAZARDOUS PRODUCTS

THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

* PRODUCTS WILL BE KEPT IS ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

* ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.

* IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ONSITE:

PETROLEUM PRODUCTS

ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED AREA. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS

CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED ON SITE AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, LIQUID ABSORBENT (I.e.KITTY LITTER OR EQUAL), SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

SPILL OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE OF THE SPILL.

THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.

THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE/SHE WILL DESIGNATE AT LEAST ONE OTHER SITE PERSONNEL WHO WILL REVIEW SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IF APPLICABLE, IN THE OFFICE TRAILER ONSITE.

MAINTENANCE/INSPECTION PROCEDURES

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

THE FOLLOWING ARE INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS.

* NO MORE THAN 10 ACRES OF THE SITE WILL BE DENUDED AT ONE TIME WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

* ALL CONTROL MEASURES WILL BE INSPECTED BY THE SUPERINTENDENT, THE PERSON RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATION OF SOMEONE APPOINTED BY THE SUPERINTENDENT, AT LEAST ONCE A WEEK AND FOLLOWING ANY STORM EVENT OF 0.5 INCHES OR GREATER.

* ALL TURBIDITY CONTROL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.

* BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.

* SILT FENCE WILL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND.

* THE SEDIMENT BASINS WILL BE INSPECTED FOR THE DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY OR AT THE END OF THE JOB, WHICHEVER COMES FIRST.

* DIVERSION DIKES/SWALES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.

* TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.

* A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. A COPY OF THE REPORT FORM TO BE COMPLETED BY THE INSPECTOR IS ATTACHED. THE REPORTS WILL BE KEPT ON SITE DURING CONSTRUCTION AND AVAILABLE UPON REQUEST TO THE OWNER, ENGINEER OR ANY FEDERAL, STATE OR LOCAL AGENCY APPROVING SEDIMENT AND EROSION PLANS, OR STORM WATER MANAGEMENT PLANS. THE REPORTS SHALL BE MADE AND RETAINED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR AT LEAST THREE YEARS FROM THE DATE THAT THE SITE IS FINALLY STABILIZED AND THE NOTICE OF TERMINATION IS SUBMITTED THE REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE.

* THE SITE SUPERINTENDENT WILL SELECT UP TO THREE INDIVIDUALS WHO WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

* PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE SUPERINTENDENT. THEY WILL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.

NON-STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:

* WATER FROM WATER LINE FLUSHING.

* PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).

* UNCONTAMINATED GROUNDWATER (FROM DEWATERING EXCAVATION).

ALL NON-STORM WATER DISCHARGES WILL BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE.

CONTRACTOR'S CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

_____

DATED: _____

FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION

BUSINESS NAME AND ADDRESS OF CONTRACTOR & ALL SUBS	SIGNATURE	RESPONSIBLE FOR/DUTIES
		GENERAL CONTRACTOR
		SUB-CONTRACTOR
		SUB-CONTRACTOR
		SUB-CONTRACTOR

BUSINESS NAME AND ADDRESS OF CONTRACTOR & ALL SUBS	SIGNATURE	RESPONSIBLE FOR/DUTIES
		SUB-CONTRACTOR
		SUB-CONTRACTOR
		SUB-CONTRACTOR
		SUB-CONTRACTOR

3 WORKING DAYS
BEFORE YOU DIG
CALL
SUNSHINE STATE ONE
CALL OF FLORIDA
1-800-432-4770
FOR THE LOCATION OF
UNDERGROUND FACILITIES

NOTE TO CONTRACTOR:

THIS IS THE CONTRACTORS CERTIFICATION REQUIRED BY THE EPA'S NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES), STORMWATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION SITES OVER 1 ACRES. THIS CERTIFICATION MUST BE COMPLETED WEEKLY AND AFTER EVERY RAINFALL EVENT OVER 0.5 INCHES. IT IS SUGGESTED THAT THIS SHEET BE REMOVED FROM THE PLAN SET AND DUPLICATED AS NEEDED BY THE CONTRACTOR.

PROJECT:

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM
TO BE COMPLETED EVERY 7 DAYS AND WITHI