

BRANDON HILL DRAINAGE IMPROVEMENTS

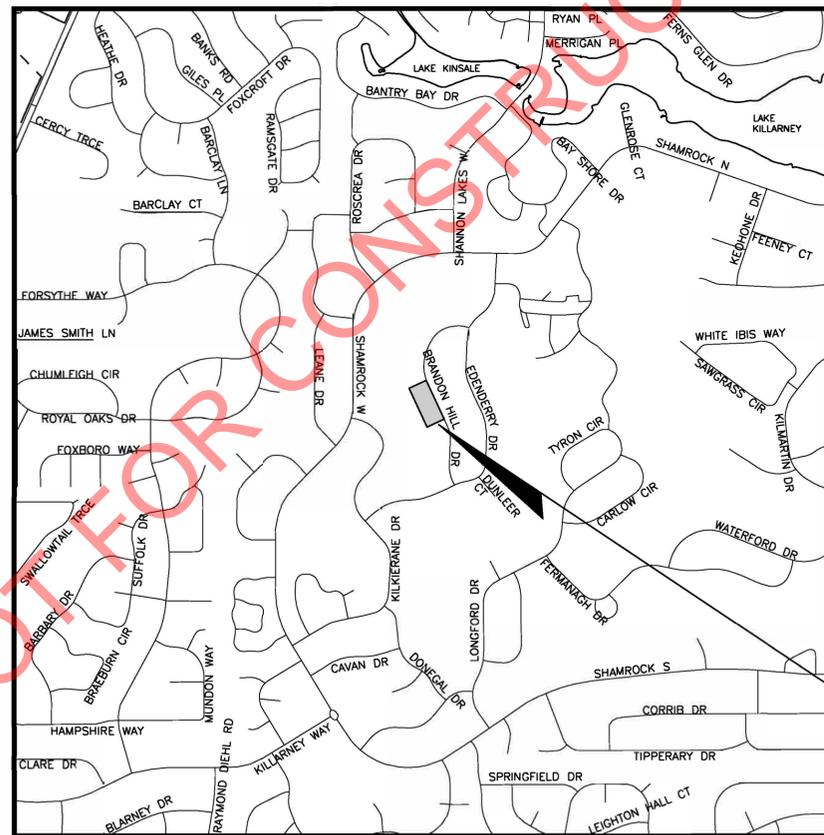
PLANS PREPARED FOR:



UNDERGROUND UTILITIES AND
PUBLIC INFRASTRUCTURE DEPARTMENT
UU&PI ENGINEERING
STORMWATER MANAGEMENT
C.O.T. WORK ORDER NO. 1600489

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LOCATION MAP

1" = 1000'

NORTH AMERICAN VERTICAL DATUM OF 1988

PLANS PREPARED BY:



SINGHOFEN & ASSOCIATES, INC.
Stormwater Management and Civil Engineering
11723 Orpington Street, Suite 100
Orlando, Florida 32817
Phone (407) 879-3001 Fax (407) 679-2691
DBPR No. 5112

ENGINEER OF RECORD:

ROBERT B. GAYLORD

P.E. NO.: 51373

PROJECT LOCATION

GOVERNING STANDARDS AND SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS FY 2017-18 AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION JAN. 2018 EDITION, AS AMENDED BY CONTRACT DOCUMENTS.

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

REVISIONS			
NO.	DESCRIPTION	BY	DATE

BRANDON HILL DRAINAGE IMPROVEMENTS

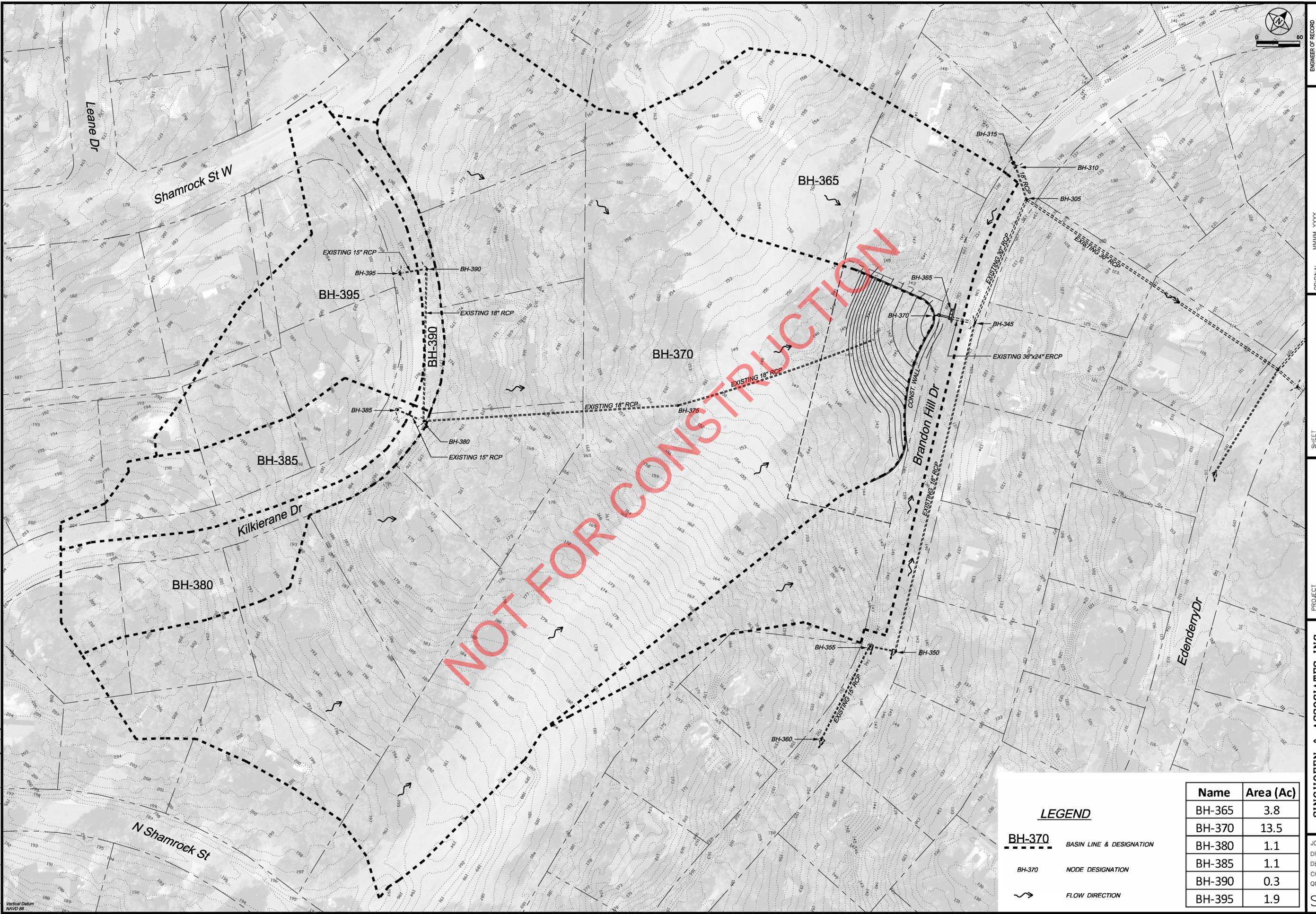
APPROVED FOR CONSTRUCTION

Fernando S. Francisco

UU&PI ENGINEERING DIVISION

DATE: November 20, 2019

11/19/2019
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NOT FOR CONSTRUCTION



LEGEND	
	BH-370 BASIN LINE & DESIGNATION
	BH-370 NODE DESIGNATION
	FLOW DIRECTION

Name	Area (Ac)
BH-365	3.8
BH-370	13.5
BH-380	1.1
BH-385	1.1
BH-390	0.3
BH-395	1.9

ENGINEER OF RECORD

 DATE

ORIGINAL: M/M/M/YYYY
 REVISIONS:
 1 _____
 2 _____
 3 _____
 4 _____
 5 _____

SHEET

DRAINAGE MAP

PROJECT

BRANDON HILL
 DRAINAGE
 IMPROVEMENTS

SINGHOFEN & ASSOCIATES, INC.
 STORMWATER MANAGEMENT AND CIVIL ENGINEERING
 11723 Oranjestown Street, Suite 100
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JOB NO. 2017-007.20
 DRAWN: BJC
 DESIGNED: RBG
 CHECKED: AGH
 QC: RBG

SHEET 2

11/19/2019 N:\Tallahassee\Brandon_Hill_Drive\DCN\BH-GeneralNotes.dgn

GENERAL NOTES:

- THE CONTRACTOR SHALL HAVE ALL REQUIRED PERMITS IN-HAND PRIOR TO BEGINNING CONSTRUCTION, AND SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMITS OBTAINED BY THE CITY AND THOSE PERMITS OBTAINED BY THE CONTRACTOR.
- AT LEAST THREE CALENDAR DAYS PRIOR TO THE PRECONSTRUCTION CONFERENCE; THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A TENTATIVE BASE CONSTRUCTION SCHEDULE, A PRECONSTRUCTION SURVEY, A TRAFFIC CONTROL PLAN, AND A SEDIMENT AND EROSION CONTROL PLAN. NO WORK SHALL BEGIN PRIOR TO APPROVAL OF THE CONSTRUCTION SCHEDULE, PRECONSTRUCTION SURVEY, TRAFFIC CONTROL PLAN, AND SEDIMENT AND EROSION CONTROL PLAN.
- THE CONSTRUCTION SCHEDULE SHALL DESCRIBE IN DETAIL HOW THE CONSTRUCTION IS TO BE PHASED, ESTABLISH START AND FINISH DATES FOR ALL SIGNIFICANT CONSTRUCTION ACTIVITIES, AND IDENTIFY ALL CONTROLLING ITEMS OF WORK. THE SCHEDULE IS TO BE APPROVED BY THE ENGINEER, AND SHALL BE UPDATED ON A MONTHLY BASIS TO REFLECT ACTUAL WORK PROGRESS. THE UPDATED SCHEDULE SHALL BE SUBMITTED TO THE ENGINEER NO LATER THAN THREE DAYS PRIOR TO EACH SCHEDULED MONTHLY PROGRESS MEETING. PAYMENT FOR PREPARING, UPDATING AND SUBMITTING THE SCHEDULE SHALL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION.
- THE PRECONSTRUCTION SURVEY SHALL VERIFY THE CONTROL POINTS AND BENCH MARK ELEVATIONS PROVIDED BY THE ENGINEER AND SHALL ALSO ESTABLISH THE LOCATION AND DESCRIPTION OF ALL ADDITIONAL REFERENCE POINTS AND THE LOCATIONS, DESCRIPTIONS, AND ELEVATIONS OF ALL ADDITIONAL BENCHMARKS TO BE USED IN CONSTRUCTING THE PROJECT. THE SURVEY SHALL BE SIGNED AND SEALED BY A PROFESSIONAL SURVEYOR AND MAPPER REGISTERED IN THE STATE OF FLORIDA. SIGNIFICANT INCONSISTENCIES BETWEEN THE FIELD NOTES AND THE CONTROL POINTS AND BENCH MARK ELEVATIONS PROVIDED BY THE ENGINEER SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO ISSUANCE OF THE NOTICE TO PROCEED. PAYMENT SHALL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION.
- THE GEOTECHNICAL INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THIS INFORMATION MAY NOT ACCURATELY REFLECT ACTUAL SOIL CONDITIONS AS TO THE DEPTH, EXTENT OR CHARACTER OF THE MATERIAL TO BE ENCOUNTERED IN CONSTRUCTION OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE SUCH EXAMINATION OF THE SITE OF THE WORK AS MAY BE NECESSARY TO DETERMINE THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED.
- THE CONTRACTOR IS RESPONSIBLE FOR PRESERVING ALL PROPERTY CORNERS AND MONUMENTS SHOWN ON THE DRAWINGS OR FOUND DURING CONSTRUCTION. IF A PROPERTY CORNER OR MONUMENT IS DESTROYED OR DISTURBED, THE CONTRACTOR WILL HAVE IT REPLACED AND CERTIFIED BY A PROFESSIONAL SURVEYOR AND MAPPER REGISTERED IN THE STATE OF FLORIDA. ALL COSTS FOR PRESERVING, REPLACING AND CERTIFYING PROPERTY CORNERS AND MONUMENTS WILL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION.
- ANY NATIONAL GEODETIC SURVEY MONUMENT WITHIN THE LIMITS OF CONSTRUCTION MUST BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND:

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SURVEY AND MAPPING
3900 COMMONWEALTH BLVD.
TALLAHASSEE, FLORIDA 32399-3000
(850) 245-2118
public.services@dep.state.fl.us
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON INFORMATION PROVIDED BY THE UTILITY OWNERS, AVAILABLE RECORDS, AND SURVEYED FIELD INFORMATION. THE INFORMATION MAY NOT REFLECT ACTUAL CONDITIONS, INCLUDE ALL UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR SHOW THE UTILITIES IN THE CORRECT HORIZONTAL OR VERTICAL LOCATIONS. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS NECESSARY TO ESTABLISH THEIR LOCATIONS AND AVOID DAMAGE. THE FOLLOWING UTILITIES SHOULD BE CONTACTED FOR INFORMATION CONCERNING TYPE AND LOCATION OF THEIR FACILITIES. THE LIST MAY NOT INCLUDE ALL UTILITIES IN THE AREA.

SUNSHINE STATE ONE-CALL OF FLORIDA 811 OR 800-432-4770 (5 DAYS NOTIFICATION PRIOR TO CONSTRUCTION)
CITY OF TALLAHASSEE/ELECTRICAL UTILITY 850-891-5091
CITY OF TALLAHASSEE/GAS UTILITY 850-891-5100
CITY OF TALLAHASSEE/WATER UTILITY 850-891-6107
CITY OF TALLAHASSEE/SEWER UTILITY 850-891-6107
COMCAST (CABLE TELEVISION) 850-574-4060
CENTURYLINK (TELEPHONE) 850-599-1502
AT&T (COMMUNICATIONS) 850-242-9087
SOUTHERN LIGHT (COMMUNICATIONS) 251-662-1170
- PRIOR TO ANY SCHEDULED INTERRUPTION OF UTILITY SERVICE, THE CONTRACTOR SHALL COORDINATE SUCH INTERRUPTION WITH THE UTILITY PROVIDER AND SHALL PROVIDE A MINIMUM 24-HOUR NOTICE TO THE AFFECTED PARTIES. IN THE CASE OF A WATER MAIN SHUT DOWN, A MINIMUM 24-HOUR NOTICE ALSO SHALL BE PROVIDED TO THE TALLAHASSEE FIRE DEPARTMENT. THE CONTRACTOR SHALL NOTIFY THE ELECTRIC UTILITY A MINIMUM OF TWO WEEKS PRIOR TO CONSTRUCTION IN THE VICINITY OF THEIR FACILITIES.
- THE CONTRACTOR SHALL NOTIFY THE GAS UTILITY (850-891-5100) A MINIMUM OF TWO WORKING DAYS PRIOR TO ANY EXCAVATION IN THE VICINITY OF GAS MAINS, AS REQUIRED BY CHAPTER 77-153 OF THE FLORIDA STATUTES. A GAS DEPARTMENT INSPECTOR WILL BE ON SITE WHEN WORK ACTIVITIES TAKE PLACE NEAR GAS MAINS. A MINIMUM OF 72 HOURS NOTICE SHALL BE PROVIDED FOR ANY REQUEST FOR GAS MAIN EXPOSURE OR ADJUSTMENT.
- ALL UTILITIES IN CONFLICT WITH CONSTRUCTION ARE TO BE ADJUSTED OR RELOCATED BY OTHERS UNLESS NOTED OTHERWISE ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
- WHERE THE REQUIRED MINIMUM SEPARATION BETWEEN UTILITIES IS SPECIFIED, THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- LIMITS OF CONSTRUCTION ARE DEFINED IN THE PLANS AND CONSIST OF ROADWAY RIGHTS-OF-WAY, CITY OF TALLAHASSEE PROPERTIES, DRAINAGE RIGHTS-OF-WAY, PERMANENT DRAINAGE AND/OR UTILITY EASEMENTS, AND TEMPORARY CONSTRUCTION EASEMENTS.
- NO TRENCHES WILL BE ALLOWED TO REMAIN OPEN OVERNIGHT.
- ALL EXISTING DRAINAGE STRUCTURES AND PIPES, PAVEMENT, SIDEWALKS, CURBS, ETC., WITHIN THE LIMITS OF CONSTRUCTION ARE TO REMAIN UNLESS OTHERWISE NOTED ON THE DRAWINGS OR DIRECTED BY THE ENGINEER. ALL DRAINAGE STRUCTURES, PIPES, PAVEMENT, SIDEWALKS, CURBS, ETC., THAT ARE TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND IF DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED WITH THE SAME TYPE AND MATERIAL AT NO COST TO THE CITY.
- ALL STORM MANHOLES OR STRUCTURES DESIGNATED TO BE ABANDONED IN PLACE SHALL BE REMOVED TO A MINIMUM OF THREE FEET BELOW GRADE AND FILLED WITH COMPACTED SAND.
- EXISTING CONCRETE AND ASPHALTIC CONCRETE DRIVEWAYS AND SIDEWALKS SHALL BE SAW-CUT AS REQUIRED FOR CONSTRUCTION.
- ALL SIDEWALKS AND CURB RAMPS REMOVED DURING CONSTRUCTION SHALL BE RECONSTRUCTED TO MEET CURRENT ADA STANDARDS.

- THE CONTRACTOR SHALL PUT FORTH EVERY REASONABLE EFFORT TO MINIMIZE DISRUPTION AND DISTURBANCE OF ADJACENT PROPERTIES. ACCESS BY PROPERTY OWNERS AND RESIDENTS TO THEIR PROPERTY SHALL BE MAINTAINED AT ALL TIMES. ANY BARRICADING OF ACCESS MUST BE COORDINATED WITH THE AFFECTED PROPERTY OWNERS AND RESIDENTS.
- ALL FENCES IN CONFLICT WITH CONSTRUCTION SHALL BE REMOVED AND REPLACED IN THEIR ORIGINAL LOCATIONS OR IN OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. THE CONTRACTOR MAY, AT HIS OPTION, USE NEW FENCING MATERIAL OF THE SAME TYPE THAT WAS REMOVED OR REUSE THE FENCING MATERIAL THAT WAS REMOVED IF IT IS UNDamAGED BY CONSTRUCTION ACTIVITIES. ALL FENCES DAMAGED BY CONSTRUCTION ACTIVITIES ARE TO BE REPLACED WITH NEW FENCING MATERIAL OF THE SAME TYPE THAT WAS REMOVED.
- THE CONTRACTOR SHALL EXERCISE DUE CARE IN THE REMOVAL OF EXISTING FENCES TO MAINTAIN SECURITY AT THE AFFECTED PROPERTIES AND TO ENSURE THE SAFETY OF PETS, ANIMALS AND CHILDREN. IF IN THE OPINION OF THE ENGINEER, REMOVAL OF A FENCE WILL RESULT IN AN UNACCEPTABLE REDUCTION IN SECURITY OR SAFETY, THE CONTRACTOR SHALL INSTALL A TEMPORARY FENCE AS DIRECTED BY THE ENGINEER PRIOR TO REMOVAL OF THE EXISTING FENCE. THE TEMPORARY FENCE SHALL REMAIN IN PLACE UNTIL THE PERMANENT FENCE IS INSTALLED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL TREES AND LANDSCAPING ON ADJACENT PROPERTIES, AND WILL BE SOLELY LIABLE FOR DAMAGE TO VEGETATION ON PROPERTIES ADJACENT TO CONSTRUCTION WORK ZONES. ALL TREES WITHIN THE LIMITS OF CONSTRUCTION THAT ARE NOT IDENTIFIED ON THE PLANS TO BE REMOVED SHALL BE PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE. TREE PROTECTION BARRICADES SHALL BE INSTALLED AND MAINTAINED AROUND ALL TREES THAT ARE TO BE PROTECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOT DISTURB GRASSING OR LANDSCAPING OUTSIDE CONSTRUCTION WORK ZONES. THE CONTRACTOR SHALL BE SOLELY LIABLE FOR DAMAGE TO VEGETATION OUTSIDE CONSTRUCTION WORK ZONES AND SHALL RESTORE AT NO COST TO THE CITY ANY AREAS THAT ARE DAMAGED INCLUDING AREAS WITHIN THE LIMITS OF CONSTRUCTION OR ON ADJACENT PROPERTIES USING, TO THE EXTENT PRACTICABLE, THE SAME TYPES AND SIZES OF PLANT MATERIAL THAT EXISTED PRIOR TO CONSTRUCTION.
- THE LOCATION AND CONSTRUCTION OF MAILBOXES SHALL BE IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE UNITED STATES POSTAL SERVICE. WHEN A MAILBOX IN CONFLICT WITH CONSTRUCTION IS REMOVED, THE CONTRACTOR SHALL FURNISH AND INSTALL A TEMPORARY MAILBOX AND SHALL MAINTAIN THE TEMPORARY MAILBOX UNTIL A NEW MAILBOX IS INSTALLED. THE CONTRACTOR SHALL CONSTRUCT A NEW MAILBOX TO MATCH, AS CLOSE AS PRACTICABLE, THE LOCATION, TYPE, SIZE, MATERIAL, AND COLOR OF THE ORIGINAL MAILBOX. IN LIEU OF CONSTRUCTING A NEW MAILBOX, THE EXISTING MAILBOX MAY BE REUSED IF IT MEETS THE RULES AND REGULATIONS OF THE UNITED STATES POSTAL SERVICE AND IS FUNCTIONALLY SOUND.
- DISTURBED AREAS SHALL BE COMPACTED (AT A MINIMUM) EQUAL TO ADJACENT UNDISTURBED GROUND EXCEPT WHEN OTHERWISE SPECIFIED.
- PROPERTIES ADJACENT TO WORK ZONES SHALL BE GRADED TO DRAIN WITHIN THE LIMITS OF CONSTRUCTION.
- ALL DISTURBED AREAS WITHIN CONSTRUCTION WORK ZONES ARE TO BE GRASSED EXCEPT FOR AREAS THAT ARE LANDSCAPED, PAVED, OR BELOW NORMAL WATER LEVEL. EXISTING GRASSED AREAS SHALL BE REPLANTED WITH SOD OF THE SAME GRASS TYPE AS EXISTING, UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. CENTIPEDE SOD WILL BE USED FOR DISTURBED AREAS NOT CURRENTLY GRASSED. REINFORCEMENT MAT SHALL BE INSTALLED BENEATH SOD PLACED ON SLOPES OF 1V:2H OR STEEPER, AND THE SOD SHALL BE STAPLED. COSTS FOR REINFORCEMENT MAT, STAPLING, FERTILIZING, AND WATERING SHALL BE INCLUDED IN THE UNIT PRICE OF THE PAY ITEM FOR PERFORMANCE TURF.
- PRIOR TO REQUESTING A FINAL INSPECTION, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOUR COMPLETE SETS OF CERTIFIED AS-BUILT RECORD DRAWINGS AND TWO COPIES OF THE DIGITAL FILES ON CD-ROM DISKS.

SUPPLEMENTAL GENERAL NOTES:
1. WANTMAN GROUP, INC. (850-210-0101), PROVIDED THE TOPOGRAPHY, BENCHMARKS, RIGHTS-OF-WAY AND UTILITY LOCATION INFORMATION SHOWN ON THE CONSTRUCTION DRAWINGS. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL VALVE BOXES ON GAS AND WATER MAINS WITHIN THE LIMITS OF CONSTRUCTION THAT ARE TO REMAIN IN SERVICE. PRIOR TO COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL ADJUST ALL VALVE BOXES WITHIN CONSTRUCTION AREAS SO THE TOPS ARE FLUSH WITH FINISHED PAVEMENT OR WITH FINISHED GRADE IN UNPAVED AREAS.

SUPPLEMENTAL GENERAL NOTES - STORMWATER CONSTRUCTION:
1. IF THE PLANS DO NOT DESIGNATE A TYPE OF PIPE, EITHER STEEL REINFORCED CONCRETE PIPE (MINIMUM CLASS III) IN ACCORDANCE WITH STANDARD SPECIFICATION 449-4 OR FLORIDA DEPARTMENT OF TRANSPORTATION APPROVED POLYPROPYLENE PIPE MAY BE USED. NON-REINFORCED CONCRETE PIPE MAY NOT BE USED. WHEN THE PLANS DESIGNATE A TYPE OF PIPE, THE CONTRACTOR MAY USE ONLY THE TYPE DESIGNATED. THE CONTRACTOR SHALL NOT USE A TYPE OF PIPE NOT DESIGNATED ON THE DRAWINGS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER. POLYPROPYLENE PIPE MAY NOT BE USED FOR OPEN-ENDED PIPE RUNS, SUCH AS PIPES CONNECTING TO DITCHES OR PONDS. ON OPEN-ENDED PIPE RUNS, STEEL REINFORCED CONCRETE PIPE SHALL BE USED FOR THE ENTIRE RUN OF PIPE FROM THE OPEN END TO THE NEAREST DRAINAGE STRUCTURE. ALL PIPES SHALL BE CUT FLUSH WITH THE INSIDE OF DRAINAGE STRUCTURES.
2. ALL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING SELECT MATERIAL FOR THE SOIL ENVELOPE AS SHOWN ON THE STORM DRAIN PIPE INSTALLATION DETAIL. BACKFILL AROUND POLYPROPYLENE PIPE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
3. ALL JOINTS OF CONCRETE PIPES, CULVERTS, AND STORM DRAINS SHALL HAVE A FILTER FABRIC JACKET AS DETAILED ON STANDARD INDEX NO. 280, UNLESS NOTED OTHERWISE ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
4. ALL PIPE CULVERTS AND STORM DRAINS 48-INCHES OR LESS IN DIAMETER SHALL BE VIDEO TAPED IN ACCORDANCE WITH SECTION 430-4.8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. UNLESS NOTED OTHERWISE IN THE PLANS, THE CONTRACTOR SHALL TAKE OWNERSHIP OF ALL EXCAVATED MATERIALS NOT SUITABLE FOR BACKFILLING AND OF ALL EXCAVATED SUITABLE MATERIALS THAT ARE NOT REQUIRED FOR BACKFILLING OR FOR OTHER USE ON SITE AND SHALL DISPOSE OF THE MATERIALS OUTSIDE THE PROJECT LIMITS AT NO ADDITIONAL COST TO THE CITY.
6. ALL CURB INLETS, DITCH BOTTOM INLETS, AND MANHOLES SHALL HAVE TRAFFIC BEARING FRAMES AND COVERS OR GRATES MEETING HS-20 LOADING REQUIREMENTS UNLESS OTHERWISE SHOWN ON THE PLANS.
7. ALL STORM DRAIN COVERS SHALL BE TYPE USF T (U.S. FOUNDRY NO. 8017195), NPR15-728 (EJ GROUP COVER NO. 3062A2), OR APPROVED EQUAL.
8. ALL TYPE J STRUCTURE BOTTOMS SHALL HAVE A MINIMUM 6'-0" WALL HEIGHT WHEN POSSIBLE.
9. ALL GRATES SHALL BE CHAINED AND LOCKED IN ACCORDANCE WITH STANDARD INDEX NO. 201. COST OF EYEBOLTS AND CHAIN SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE STRUCTURES.

- UTILITIES IN CONFLICT WITH THE INSTALLATION OF A NEW STORM DRAIN ARE TO BE ADJUSTED OR RELOCATED TO ELIMINATE THE CONFLICT. IF THE CONFLICT CANNOT BE REASONABLY AVOIDED, A CONFLICT STRUCTURE WITH ACCESS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD INDEX NO. 307 WITH THE EXCEPTION THAT FOR UTILITY CONFLICT CONDITION II (PRESSURE OR FLUID CARRIER INSTALLATIONS), A CARRIER PIPE IS NOT REQUIRED IF DUCTILE IRON PIPE IS USED FOR THE UTILITY AND NO PIPE JOINTS ARE LOCATED WITHIN THE CONFLICT STRUCTURE. "NOTCHING" OF A STORM DRAIN PIPE OR STRUCTURE TO ACCOMMODATE A UTILITY SHALL NOT BE ALLOWED. NO UTILITY SHALL BE INSTALLED THROUGH ANY PORTION OF A STORM DRAIN PIPE WITHOUT A CONFLICT STRUCTURE.

SUPPLEMENTAL GENERAL NOTES - TRAFFIC CONTROL:
1. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN THAT DESCRIBES THE MEASURES TO BE EMPLOYED DURING CONSTRUCTION TO WARN MOTORISTS AND PEDESTRIANS OF HAZARDS, TO ADVISE MOTORISTS OF THE PROPER TRAVEL PATH THROUGH OR AROUND THE WORK AREA, TO DELINEATE AREAS WHERE TRAFFIC SHOULD NOT OPERATE, AND TO SEPARATE AND PROTECT MOTORISTS, PEDESTRIANS, AND THE WORK FORCE DURING ALL PHASES OF THE WORK. THE PLAN SHALL ALSO CONSIDER ACCESS TO BUSINESSES WITHIN THE CONSTRUCTION AREA AND PROVIDE BUSINESS ENTRANCE SIGNS TO ROUTE MOTORISTS TO DESIGNATED PARKING AREAS. THE CONTRACTOR SHALL OBTAIN APPROVAL OF THE TRAFFIC CONTROL PLAN FROM THE CITY OF TALLAHASSEE ELECTRIC UTILITY-TRAFFIC ENGINEERING PRIOR TO BEGINNING CONSTRUCTION. PAYMENT FOR PREPARING AND SUBMITTING THE TRAFFIC CONTROL PLAN SHALL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION.
2. ACCESS TO BUSINESS AND RESIDENTIAL DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
3. NO ROADWAYS (INCLUDING COUNTY ROADS) SHALL BE CLOSED WITHOUT PRIOR APPROVAL OF THE CITY OF TALLAHASSEE ELECTRIC UTILITY-TRAFFIC ENGINEERING.
4. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND/OR THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS.
5. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE BEFORE THE START OF CONSTRUCTION ON AFFECTED ROADWAYS.
6. WARNING LIGHTS SHALL BE USED ON BARRICADES DURING HOURS OF DARKNESS IN ACCORDANCE WITH INDEX NO. 600.

SUPPLEMENTAL GENERAL NOTES - SEDIMENT AND EROSION CONTROL:
1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PREVENTION, CONTROL, AND ABATEMENT OF EROSION, WATER POLLUTION, AND THE TRANSPORTATION OF ERODED MATERIALS OFF SITE.
2. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER A SEDIMENT AND EROSION CONTROL PLAN TO ACCOMPANY THE STORMWATER POLLUTION PREVENTION PLAN AND THE SEDIMENT AND EROSION CONTROL PLAN INCLUDED IN THESE PLANS. THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE PREPARED IN ACCORDANCE WITH THE "FLORIDA EROSION AND SEDIMENT CONTROL MANUAL" AND SHALL BE SPECIFIC TO THE MEANS, METHODS, AND SEQUENCE OF CONSTRUCTION TO BE EMPLOYED BY THE CONTRACTOR AND SHALL IDENTIFY THE TYPES AND LOCATIONS OF CONTROLS THAT ARE TO BE IMPLEMENTED DURING EACH PHASE OF CONSTRUCTION AS SHOWN ON THE APPROVED CONSTRUCTION SCHEDULE TO MINIMIZE EROSION, PREVENT THE TRANSFER OF ERODED MATERIALS ONTO ANY OFF SITE PARCEL OR INTO ANY RECEIVING WATER, AND PREVENT VIOLATING STATE AND/OR FEDERAL PERMIT REQUIREMENTS. PAYMENT FOR PREPARING AND SUBMITTING THE SEDIMENT AND EROSION CONTROL PLAN AND FOR ANY MODIFICATIONS TO THE SEDIMENT AND EROSION CONTROL PLAN DURING CONSTRUCTION WILL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION. THE SEDIMENT AND EROSION CONTROL PLAN SHALL DESCRIBE BUT NOT BE LIMITED TO THE FOLLOWING ITEMS FOR EACH PHASE OF CONSTRUCTION OPERATIONS OR ACTIVITIES:
A. TYPES AND LOCATIONS OF ALL EROSION CONTROL DEVICES
B. ESTIMATED TIME EROSION CONTROL DEVICES WILL BE IN OPERATION
C. METHODS FOR CONTAINMENT OR REMOVAL OF ERODED MATERIALS FROM DISCHARGES RELATED TO DEWATERING OPERATIONS
D. METHODS FOR CONTAINMENT OR REMOVAL OF POLLUTANTS OR HAZARDOUS WASTES
E. METHODS FOR MAINTENANCE OF EROSION CONTROL DEVICES
F. SCHEDULES FOR MONITORING AND MAINTAINING EROSION CONTROL DEVICES
G. NAME AND PHONE NUMBERS OF PERSON RESPONSIBLE FOR MONITORING AND MAINTAINING EROSION CONTROL DEVICES
3. NO CONSTRUCTION ACTIVITIES SHALL BEGIN UNTIL THE SEDIMENT AND EROSION CONTROL PLAN HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER.
4. THE CONTRACTOR SHALL UPDATE THE SEDIMENT AND EROSION CONTROL PLAN WHENEVER THERE IS A CHANGE IN CONSTRUCTION SEQUENCE OR ACTIVITIES THAT HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS OFF SITE OR INTO ANY RECEIVING WATER AND SHALL SUBMIT THE UPDATED PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER.
5. EROSION AND SEDIMENT CONTROLS SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION AND SHALL BE IN PLACE BEFORE DISTURBING SOIL UPSTREAM OF THE CONTROL.
6. FIELD CONDITIONS MAY REQUIRE THE USE OF ADDITIONAL TYPES AND QUANTITIES OF SEDIMENT AND EROSION CONTROL DEVICES DURING CONSTRUCTION AS DETERMINED BY THE CONTRACTOR, THE ENVIRONMENTAL INSPECTOR, OR THE ENGINEER.
7. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROL DEVICES PRIOR TO SUSPENSION OF WORK ACTIVITIES EACH DAY, IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL TO ENSURE THAT THE DEVICES ARE PROPERLY LOCATED AND MAINTAINED FOR EFFECTIVENESS. ANY REQUIRED REMEDIAL ACTION SHALL BE PERFORMED IMMEDIATELY.
8. SEDIMENT TRAPPED BY THE EROSION CONTROL DEVICES IS TO BE REMOVED BY THE CONTRACTOR AFTER EACH RAIN STORM.
9. THE AMOUNT OF AREA DISTURBED AT ONE TIME SHALL BE LIMITED TO THE MINIMUM NECESSARY TO ADEQUATELY IMPLEMENT THE WORK. CONSTRUCTION OPERATIONS SHALL BE CONTROLLED TO MINIMIZE UNPROTECTED AREAS EXPOSED TO WEATHER, AND AREAS OUTSIDE THE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED.
10. EXCAVATED MATERIAL SHALL NOT BE DEPOSITED IN LOCATIONS WHERE IT COULD BE WASHED AWAY BY HIGH WATER OR BY STORMWATER RUNOFF, AND STOCKPILES SHALL BE COVERED OR ENCIRCLED WITH SEDIMENT CONTAINMENT DEVICES.
11. DURING THE INSTALLATION OF STORM DRAIN OR UTILITY PIPING, SYNTHETIC BALE BARRIERS SHALL BE PLACED BELOW THE WORK ZONES TO AID IN CONTROLLING THE TRANSFER OF ERODED MATERIAL OFF SITE.
12. NEW AND EXISTING DRAINAGE STRUCTURES SHALL BE PROTECTED FROM SILTATION DURING CONSTRUCTION. BARRIERS SHALL BE PLACED AROUND ALL INCOMPLETE STORMWATER INLETS AND MANHOLES DURING CONSTRUCTION. CURB INLET FILTERS SHALL BE PLACED ACROSS THE THROATS OF ALL EXISTING AND COMPLETED CURB INLETS.
13. EXISTING FLOW CAPACITY SHALL BE MAINTAINED IN THE DRAINAGE SYSTEMS TO CONVEY RUNOFF FROM RAIN STORMS THAT OCCUR DURING CONSTRUCTION. EXISTING DRAINAGE PIPES THAT ARE NOTED TO BE PLUGGED OR REMOVED SHALL REMAIN IN SERVICE UNTIL FLOWS CAN BE DIVERTED TO THE NEW DRAINAGE SYSTEM. WHERE NEW PIPES ARE TO BE INSTALLED IN CLOSE PROXIMITY TO EXISTING PIPES THAT ARE TO BE REMOVED, PROVISIONS SHALL BE MADE TO DIVERT FLOWS FROM THE EXISTING PIPES TO THE NEW PIPES PRIOR TO RAIN STORMS. TEMPORARY PIPES SHALL BE PLACED FOR THIS PURPOSE PRIOR TO SUSPENSION OF WORK ACTIVITIES EACH DAY.

- NO MORE THAN 500 FEET OF STORM DRAIN OR UTILITY PIPING SHALL BE INSTALLED WITHOUT BACKFILLING AND COMPACTING THE PIPE TRENCH.
- STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE, BUT IN NO CASE MORE THAN 14 DAYS AFTER CONSTRUCTION ACTIVITY IN THOSE PORTIONS OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL DISTURBED LAND AREAS SHALL BE COMPLETED IMMEDIATELY AFTER FINAL GRADING. WHEN IT IS NOT POSSIBLE TO PERMANENTLY PROTECT A DISTURBED AREA IMMEDIATELY AFTER GRADING OPERATIONS, TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE AND ESTABLISHED.
- THE CONTRACTOR SHALL OBTAIN AN ENVIRONMENTAL MANAGEMENT PERMIT FROM THE CITY OF TALLAHASSEE GROWTH MANAGEMENT DEPARTMENT FOR ALL STOCKPILE AND CONSTRUCTION STAGING AREAS LOCATED OUTSIDE THE LIMITS OF CONSTRUCTION.

SUPPLEMENTAL GENERAL NOTES - TREE PROTECTION:
1. BARRICADE FENCING SHALL BE INSTALLED AT OR NEAR THE CRITICAL PROTECTION ZONE OF EACH TREE TO BE PROTECTED PRIOR TO INITIATION OF ANY CONSTRUCTION ACTIVITY, AND THE FENCING SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.
2. ALL ROOTS 3/4" IN DIAMETER AND LARGER OF TREES TO BE PROTECTED OR PRESERVED THAT ARE EXPOSED DURING TRENCHING AND EXCAVATION SHALL BE CLEANLY CUT WITH A HANDSAW AND COVERED IMMEDIATELY WITH SOIL OR KEPT MOISTENED WITH WET BURLAP OR PEAT MOSS UNTIL THE TRENCH CAN BE FILLED. WHEN IT IS NOT POSSIBLE TO BACKFILL IN THE SAME DAY, THE ROOTS SHALL BE FRESHLY CUT WITH A HANDSAW A REASONABLE DISTANCE FROM THE ORIGINAL CUT AND BACKFILLED IMMEDIATELY TO AVOID SOIL OR ROOT DEHYDRATION.

SUPPLEMENTAL GENERAL NOTES - UTILITY CONSTRUCTION - WASTEWATER
1. ALL UTILITY RELOCATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF TALLAHASSEE UTILITY STANDARDS AND SPECIFICATIONS.
2. MAINTAIN WASTEWATER COLLECTION SERVICES TO ALL CUSTOMERS AT ALL TIMES. PROVIDE WASTEWATER FLOW DIVERSION, AS NEEDED, TO MAINTAIN CONTINUOUS SANITARY SEWER SERVICE DURING CONSTRUCTION. WASTEWATER FLOW DIVERSION MAY CONSIST OF BY-PASS PUMPING, TRUCKS AND TRANSPORTATION; OR ANY OTHER METHOD APPROVED BY THE CITY.
3. DISPOSE OF SANITARY SEWER STRUCTURES AND PIPING, WHICH ARE REMOVED TO CONSTRUCT NEW SANITARY SEWER FACILITIES. THE COST IS INCIDENTAL TO PAY ITEMS FOR NEW SANITARY STRUCTURES AND PIPING.
4. EXISTING SANITARY SEWER PIPING AND STRUCTURES THAT ARE DESIGNATED ON THE PLANS TO BE PLACED OUT-OF-SERVICE (IN PLACE) SHALL BE PLUGGED AT INFLUENT AND EFFLUENT ENDS WITH MASONRY PLUGS UNLESS OTHERWISE NOTED. EXISTING STRUCTURES SHALL BE REMOVED THREE FEET BELOW FINISHED GRADE AND FILLED WITH EXCAVATABLE FLOWABLE FILL. THE COST IS INCIDENTAL TO PAY ITEMS FOR NEW SANITARY SEWER STRUCTURES AND PIPING.
5. SANITARY SEWER SERVICES – THE PLANS SHOW APPROXIMATE LOCATIONS OF ACTIVE AND INACTIVE SEWER SERVICE LATERALS, BASED ON PIPELINE INSPECTIONS CONDUCTED BY THE CITY. FIELD-VERIFY THE SIZE, MATERIAL AND LOCATION OF EXISTING ACTIVE SEWER LATERALS. ADJUST AND RECONNECT LATERALS AT THEIR FIELD-VERIFIED LOCATIONS AND SIZES, UNLESS OTHERWISE DIRECTED BY THE CITY. INSPECT ACTIVE PVC SEWER SERVICE LATERALS AND REPLACE IF NEEDED. THE NEW SEWER SERVICE LATERALS TO EXISTING LATERALS WITH A CLEAN OUT AT THE PROPERTY LINE. PLUG INFLUENT ENDS OF INACTIVE SEWER SERVICES WITH GROUT TO PLACE THEM OUT-OF-SERVICE.
6. SANITARY SEWER LATERALS THAT ARE TO BE CONSTRUCTED MAY BE INSTALLED BY OPEN-CUT, PIPE BURSTING OR OTHER TECHNIQUES ACCEPTABLE TO THE CITY. THE BID PRICE SHALL BE FULL COMPENSATION FOR SUCH INSTALLATIONS. PIPE BURSTING REQUIRES PRE AND POST CONSTRUCTION TV INSPECTIONS.
7. PREPARATION OF AS-BUILT RECORD DRAWINGS SHALL BE IN ACCORDANCE WITH SECTION 14 OF THE COT STANDARD SPECIFICATIONS. NO SEPARATE PAYMENT.

ENGINEER OF RECORD

DATE

SIGNATURE

ORIGINAL: M/M/M/ Y/Y/Y/Y

REVISIONS:

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SHEET

PROJECT

GENERAL NOTES

BRANDON HILL DRAINAGE IMPROVEMENTS

SINGHOFEN & ASSOCIATES, INC.
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SAI

JOB NO. 2017-007-20

DRAWN: BJC

DESIGNED: RBG

CHECKED: AGH

QC: RBG

SHEET 3

GENERAL PAY ITEM NOTES:

- NO SEPARATE PAYMENT WILL BE MADE FOR DEWATERING. THE COSTS FOR DEWATERING SHALL BE INCLUDED IN THE UNIT PRICES FOR ANY ITEMS REQUIRING DEWATERING.
- NO SEPARATE PAYMENT WILL BE MADE FOR FILTER FABRIC. THE COSTS FOR FILTER FABRIC SHALL BE INCLUDED IN THE UNIT PRICES FOR ANY ITEMS REQUIRING FILTER FABRIC.
- NO SEPARATE PAYMENT WILL BE MADE FOR VIDEO TAPING PIPE CULVERTS. THE COSTS FOR VIDEO TAPING ARE INCLUDED IN THE UNIT PRICES FOR PIPE CULVERT.
- ADDITIONAL QUANTITIES OF EROSION CONTROL AND/OR TREE PROTECTION ITEMS MAY BE NECESSARY AS DETERMINED DURING CONSTRUCTION BY THE CONTRACTOR, THE ENVIRONMENTAL INSPECTOR, OR BY THE ENGINEER AND MUST BE APPROVED BY THE ENGINEER.
- NO CONSTRUCTION VEHICLES OR CONTRACTOR PERSONNEL VEHICLES ARE ALLOWED WITHIN THE ADJACENT PROPERTIES OR DRIVEWAYS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING DAMAGE CAUSED BY HIS/HER PERSONNEL OR EQUIPMENT TO ADJACENT AREAS. NO ADDITIONAL PAYMENT WILL BE MADE FOR REPAIRING DAMAGE ADJACENT PROPERTIES AND DRIVEWAYS.
- UNIT PRICES FOR PIPES, CULVERTS, SEWER PIPE AND WATER MAIN INCLUDE THE COSTS FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVAL OF 1.5 INCH MINIMUM THICKNESS OF ASPHALT PAVEMENT MILLINGS OR FINE TYPE SP ASPHALTIC CONCRETE AT THE GROUND SURFACE OF ALL PIPE AND BOX CULVERT TRENCHES IN PAVED AREAS FOR THE PURPOSE OF SEDIMENT AND EROSION CONTROL UNTIL THE FINAL PAVEMENT IS PLACED.
- CONTRACTOR SHALL PROVIDE SPEC FORMLINER PATTERN NUMBER 1544 – ASHLAR DRY STACK. CONTRACTOR SHALL ADHERE TO THE SPEC FORMLINERS APPLICATION GUIDE AS PROVIDED BY THE CITY OF TALLAHASSEE. CONTRACTOR SHALL FOLLOW SECTION 400-14 - REMOVAL OF FORMS AS PER FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- CURB AND GUTTER AND ASPHALT DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED AT NO COST TO THE CITY.
- CONTRACTOR SHALL NOT PARK ANY CONSTRUCTION EQUIPMENT OUTSIDE THE LIMITS OF THE TEMPORARY BARRICADES.

STORMWATER PAY ITEM NOTES:

101-1: MOBILIZATION
THE UNIT PRICE ALSO INCLUDES ALL COSTS FOR PREPARATION OF AN APPROVED CONSTRUCTION PROGRESS SCHEDULE, AN APPROVED EROSION CONTROL PLAN, AN APPROVED TRAFFIC CONTROL PLAN, AN APPROVED DEWATERING PLAN, THE PRECONSTRUCTION SURVEY, PREPARING AND SUBMITTING APPROVED SHOP DRAWINGS, AND FURNISHING, INSTALLING, AND REMOVING THE PROJECT SIGNS.

102-1: MAINTENANCE OF TRAFFIC
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS REQUIRED TO IMPLEMENT THE APPROVED TRAFFIC CONTROL PLAN TO SAFELY MAINTAIN TRAFFIC AROUND OR THROUGH THE WORK ZONE NOT INCLUDED FOR PAYMENT UNDER OTHER RELATED PAY ITEMS, INCLUDING WARNING AND REGULATORY SIGNS, MESSAGE BOARDS, DRUMS, BARRICADES, CHANNELIZING DEVICES, TEMPORARY CONCRETE BARRIER, WARNING LIGHTS, FLAGGERS, BUSINESS ENTRANCE SIGNS, MAINTENANCE OF EXISTING DRIVEWAYS, TEMPORARY PAVEMENT, AND REMOVAL AND REINSTALLATION OF EXISTING SIGNS IN CONFLICT WITH CONSTRUCTION AS DIRECTED BY THE ENGINEER. NO ADJUSTMENTS WILL BE MADE TO THE CONTRACT PRICE FOR INCREASES IN CONTRACT TIME.

102-70: TEMPORARY BARRICADE FENCE (ORANGE)
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY BARRICADE FENCE. THIS ITEM IS TO BE USED FOR PEDESTRIAN SAFETY, TREE PROTECTION, OR AS DIRECTED BY THE ENGINEER.

104-14: STORMWATER POLLUTION PREVENTION
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES AS REQUIRED TO PREVENT THE OFF-SITE TRANSPORT OF SEDIMENT, INCLUDING SEDIMENT BARRIERS, SEDIMENT BASINS, AND CONTAINMENT SYSTEMS AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL. THE PRICE ALSO INCLUDES THE PERIODIC REMOVAL AND DISPOSAL OF ACCUMULATED SEDIMENT, AND REMOVAL AND DISPOSAL OFF-SITE OF EROSION AND SEDIMENT CONTROL MATERIALS, INCLUDING ROCK AND RUBBLE RIPRAP, AT COMPLETION OF CONSTRUCTION, FURNISHING AND PLACING SUITABLE MATERIAL AS REQUIRED TO FILL SEDIMENT SUMPS, ANY PERMITS AND FEES REQUIRED FOR OFF-SITE DISPOSAL, AND TURBIDITY MONITORING IN COMPLIANCE WITH THE ENVIRONMENTAL PERMITS.

104-15: SOIL TRACKING PREVENTION DEVICE
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION AND MAINTENANCE OF SOIL TRACKING PREVENTION DEVICES AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, INCLUDING EXCAVATION, GRADING, FILTER FABRIC, AND ROCK. THE PRICE ALSO INCLUDES REMOVAL AND DISPOSAL OFF-SITE OF ALL MATERIALS AT COMPLETION OF CONSTRUCTION, AND FURNISHING AND PLACING SUITABLE MATERIAL AS REQUIRED TO REPLACE EXCAVATED MATERIAL.

104-18: INLET PROTECTION SYSTEM
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION AND MAINTENANCE OF INLET PROTECTION SYSTEMS AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL AT EXISTING CURB AND DITCH BOTTOM INLETS, AND DURING ALL PHASES OF CONSTRUCTION OF NEW CURB AND DITCH BOTTOM INLETS. THE UNIT PRICE ALSO INCLUDES ROUTINE INSPECTIONS, SEDIMENT REMOVAL, CLEANING, REPLACEMENT OF DAMAGED OR NON-FUNCTIONING INLET PROTECTION SYSTEMS FOR THE DURATION OF CONSTRUCTION, AND REMOVAL AND DISPOSAL OFF-SITE OF ALL MATERIALS AT COMPLETION OF CONSTRUCTION.

110-1-1: CLEARING AND GRUBBING
THE UNIT PRICE ALSO INCLUDES REMOVAL AND DISPOSAL OF ALL BRUSH, TREES, STUMPS, ROOTS, RUBBISH, DEBRIS, REMOVAL AND DISPOSAL OF ASPHALT, BASE, SUB-BASE, CURBS, SIDEWALKS, DRIVEWAYS, DRAINAGE STRUCTURES, PIPES, FENCES, SANITARY SEWER PIPES & STRUCTURES, AND ALL OTHER STRUCTURES AND OBSTRUCTIONS NECESSARY TO BE REMOVED AND FOR WHICH OTHER ITEMS OF THE CONTRACT DO NOT SPECIFY THE REMOVAL THEREOF. PARTIAL PAYMENTS WILL BE BASED UPON THE ESTIMATED TOTAL VALUE OF WORK COMPLETED TO THE DATE OF THE ESTIMATE AS DETERMINED BY THE ENGINEER. ALL PARTIAL ESTIMATES AND PAYMENTS ARE SUBJECT TO CORRECTION IN SUBSEQUENT ESTIMATES AND PAYMENT. THE UNIT PRICE ALSO INCLUDES ALL COSTS FOR REMOVAL OF EXISTING FENCES AND RELOCATION OR REPLACEMENT WITH NEW FENCE OR WITH THE FENCING MATERIAL THAT WAS REMOVED IF IT IS UNDAMAGED, AND FOR THE RELOCATION OR REPLACEMENT OF MAILBOXES.

120-1 AND 120-6: REGULAR EXCAVATION AND EMBANKMENT
FINAL PAY QUANTITY WILL BE PLAN QUANTITY WITH NO CONSIDERATION FOR SPECIFICATION TOLERANCES. THE UNIT PRICE ALSO INCLUDES ALL COSTS FOR TURBIDITY MONITORING IN COMPLIANCE WITH THE ENVIRONMENTAL PERMITS.

121-70: FLOWABLE FILL
FINAL PAY QUANTITY WILL BE PLAN QUANTITY WITH NO CONSIDERATION FOR SPECIFICATION TOLERANCES.

334-1-13: SUPERPAVE ASPHALTIC CONCRETE
THE UNIT PRICE ALSO INCLUDES ALL PAVEMENT MARKINGS INCLUDING TEMPORARY STRIPING DURING ASPHALT CURING PERIOD, REPLACEMENT OF TRAFFIC SIGNAL LOOP DETECTORS IF DISTURBED BY CONSTRUCTION, AND ADJUSTMENT OF ALL EXISTING UTILITY FRAMES AND COVERS AND ALL WATER AND GAS VALVE BOXES WITHIN THE LIMITS OF CONSTRUCTION TO BE FLUSH WITH FINISHED PAVEMENT. THE CONTRACTOR SHALL INSTALL THE PAVEMENT IN LAYERS AS SHOWN IN THE TYPICAL PAVEMENT RECONSTRUCTION SECTION(S).

400-4-11: CONC. CLASS IV, RETAINING WALLS
THE UNIT PRICE ALSO INCLUDES FORM MATERIAL AND CONSTRUCTION, FALSEWORK, BRACING, SUBSURFACE DRAINAGE MATTING, FRENCH DRAIN, CLEANOUTS, PVC AND STEEL WATERSTOPS, PREMOLDED JOINT MATERIAL, INSTALLATION AND REMOVAL OF FORMLINER PATTERN ON BOTH SIDES OF WALL, EXTENSION OF FORMLINER A MINIMUM OF 12" BELOW FINISHED GRADE, AND ALL ITEMS RELATED TO CONSTRUCTION OF RETAINING WALLS THAT ARE NOT INCLUDED IN OTHER PAY ITEMS.

425-1-390: CURB INLET, TYPE SP-HC:
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS REQUIRED TO CONSTRUCT A TYPE SP-HC CURB INLET AS SHOWN ON THE PLANS, INCLUDING EXCAVATION, SHEETING AND/OR SHORING, DEWATERING, CONCRETE, REINFORCING STEEL, CAST IRON RING(S) AND COVER(S), INCLUDING TWO-PIECE COVERS AND FRAMES WITH 3'-0" OPENINGS WHEN SHOWN ON THE PLANS, NOSE REINFORCING, GROUT, AND RISER AND/OR STRUCTURE BOTTOM WHEN CALLED FOR ON THE PLANS. NO ADJUSTMENT IN THE CONTRACT UNIT COST WILL BE MADE FOR PRECAST CONSTRUCTION.

425-2-61: MANHOLES AND JUNCTION BOXES
UNLESS OTHERWISE NOTED IN THE PLANS, THE UNIT PRICES ALSO INCLUDE ALL COSTS FOR FURNISHING AND INSTALLING TWO-PIECE COVERS AND FRAMES WITH 3'-0" OPENINGS WHEN THE DEPTH OF THE STRUCTURE EXCEEDS 5'-0".

430-175-112: PIPE CULVERT, PVC DR-18
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS REQUIRED TO FURNISH AND INSTALL DR-18 PVC PIPE ROUND, WATERSTOP, CUTTING, GROUT, PLACING AND COMPACTING SELECT BEDDING MATERIAL, AND FURNISHING SELECT MATERIAL FOR BACKFILL WHEN SUITABLE MATERIAL IS NOT AVAILABLE ON SITE.

430-175-118: PIPE CULVERT, CONCRETE
THE UNIT PRICES ALSO INCLUDE PAYMENT FOR SHEETING AND/OR SHORING, DEWATERING, FILTER FABRIC, FURNISHING, PLACING AND COMPACTING SELECT BEDDING MATERIAL, AND FURNISHING SELECT MATERIAL FOR BACKFILL WHEN SUITABLE MATERIAL IS NOT AVAILABLE ON SITE.

520-1-10: CONCRETE CURB & GUTTER
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED FOR INSTALLATION OF THE CONCRETE CURB & GUTTER TYPE F (MODIFIED) AND TRANSITIONS.

524-1-49: CONCRETE DITCH PAVEMENT, 6", REINFORCED
THE UNIT PRICE SHALL CONSTITUTE FULL COMPENSATION FOR ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, SUPPLIES AND INCIDENTAL COSTS FOR THE CONSTRUCTION OF CONCRETE SLAB PAVEMENT, INCLUDING EXCAVATION, DEWATERING, REMOVAL AND DISPOSAL OFF SITE OF UNSUITABLE MATERIAL. INCLUDING COST FOR WEEP HOLES, CRUSHED ROCK, REINFORCING, FILTER GEOTEXTILE FABRIC, AND TOE-IN.

570-1-10: PERFORMANCE TURF, SOD, CENTIPEDE
THE UNIT PRICES CONSTITUTE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED FOR ESTABLISHING A STAND OF GRASS BY SODDING IN ACCORDANCE WITH SECTION 570 OF THE STANDARD SPECIFICATIONS, INCLUDING FURNISHING AND PLACING SOD, PEGGING WHEN SPECIFIED IN THE PLANS, AND FURNISHING AND APPLYING FERTILIZER AND WATER. THE UNIT PRICES ALSO INCLUDE AND MAINTENANCE, INCLUDING LITTER REMOVAL AND MOWING UNTIL FINAL ACCEPTANCE.

571-1-13: TURF REINFORCEMENT MAT
THE UNIT PRICE CONSTITUTES FULL COMPENSATION FOR ALL LABOR AND MATERIALS REQUIRED TO FURNISH AND INSTALL TURF REINFORCEMENT MAT (NORTH AMERICAN GREEN VMX3 P-550 OR APPROVED EQUAL). PRICE INCLUDES ALL INCIDENTALS TO INSTALL TRM IN ACCORDANCE WITH MANUFACTURER'S DETAILS, REQUIREMENTS, AND PER THE CONSTRUCTION PLANS.

UTILITY PAY ITEM NOTES:

GSM-04-16: STEEL CASING PIPE, ROUND, 16"
STEEL CASING PIPE FOR UTILITY CARRIER PIPE SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT (LF) OF LAYING LENGTH FOR EACH DIAMETER CARRIER PIPE, COMPLETE IN PLACE. THE CONTRACT UNIT PRICE SHALL BE THE TOTAL COMPENSATION FOR FURNISHING CASING PIPE, RESTRAINTS; INSTALLING CASING SPACERS AND SKIDS; AND SEALING CASING ENDS.

GSM-01-0810 PVC GRAVITY SEWER MAIN (PVC) (8") (8' - 10')
THIS ITEM CONSISTS OF FURNISHING AND PLACING APPROXIMATELY POLYVINYL CHLORIDE WASTEWATER PIPE IN ACCORDANCE WITH SECTION 9.2.5 POLYVINYL CHLORIDE (PVC) PIPE OF THE CITY STANDARD SPECIFICATIONS AND ADDENDA THERETO.

THIS ITEM IS COMPLETE AND THE MEASUREMENT AND PAYMENT SHALL BE IN ACCORDANCE WITH SECTION 2 MEASUREMENT AND PAYMENT OF THE CITY PAY ITEM MANUAL FOR WATER AND SEWER CONSTRUCTION. IN ADDITION TO THE ITEMS DESCRIBED IN THE PAY ITEM MANUAL, THIS ITEM INCLUDES ALL FITTINGS, EQUIPMENT, LABOR, AND ALL TEMPORARY PAVING, COSTS FOR BARRICADING, TRENCH SAFETY AND SUPPORT, AND ALL OTHER WORK ASSOCIATED WITH THIS ITEM. THE BID PRICE FOR THIS ITEM WILL NOT BE SUBJECT TO RENEGOTIATION DUE TO QUANTITY OVERRUN OR UNDER-RUN LIMITATIONS AS SET FORTH IN THE SPECIFICATIONS.

GSM-01-0810 DIP GRAVITY SEWER MAIN (DIP) (8") (8' - 10')
THIS ITEM CONSISTS OF FURNISHING AND PLACING LINEAL FEET OF DUCTILE IRON WASTEWATER PIPE IN ACCORDANCE WITH THE SECTION 9.2.2 DUCTILE IRON PIPE AND FITTINGS OF THE CITY STANDARD SPECIFICATIONS AND ADDEND THERETO.

THIS ITEM IS COMPLETE AND THE MEASUREMENT AND PAYMENT SHALL BE IN ACCORDANCE WITH SECTION 2 MEASUREMENT AND PAYMENT OF THE CITY PAY ITEM MANUAL FOR WATER AND SEWER CONSTRUCTION. IN ADDITION TO THE ITEMS DESCRIBED IN THE PAY ITEM MANUAL, THIS ITEM INCLUDES ALL FITTINGS, EQUIPMENT, LABOR, CROSSING DIAGONAL UTILITIES, COSTS FOR BARRICADING, TRENCH SAFETY AND SUPPORT, PIPE ENVELOPES, AND ALL TEMPORARY PAVING, AND OTHER WORK ASSOCIATED WITH THIS ITEM. THIS ITEM ALSO INCLUDES ALL CERAMIC EPOXY-LINED FITTINGS. THE DUCTILE IRON WASTEWATER PIPE SHALL HAVE CERAMIC EPOXY LINING AS PER SECTIONS 9.2.4 LINING FOR INSIDE OF ALL DUCTILE IRON PIPE & FITTINGS.

ADS - 05 REMOVAL & DISPOSAL OF EXISTING PIPING (SANITARY SEWER)
THIS ITEM CONSISTS OF COMPLETELY REMOVING AND DISPOSING OF EXISTING WATER OR WASTEWATER PIPING AT LOCATIONS DESIGNATED ON THE PLANS. THIS WORK IS INTENDED FOR THE REPLACEMENT OF DETERIORATING PIPE, OR REMOVAL OF ABANDONED PIPING. THE WORK INCLUDED IN THIS ITEM IS COMPLETE AND INCLUDES ALL EQUIPMENT, MATERIALS AND LABOR, PIPE ENVELOPE MATERIALS, ALL EXCAVATION, BACKFILL, COMPACTION, DISPOSAL OF EXCESS MATERIAL, ALL TEMPORARY PAVING, COSTS FOR BARRICADING, TRENCH SAFETY AND SUPPORT, EROSION CONTROL DEVICES SUCH AS SILT FENCE AND HAY BALES, AND ALL OTHER WORK ASSOCIATED WITH THIS ITEM. INCLUDES ALL COST ASSOCIATED WITH ISOLATING, CLEANING, AND DISPOSING OF ALL SEWER WASTE PRIOR TO REMOVING SANITARY PIPE AND STRUCTURES. ALSO, INCLUDES MEETING LOCAL AND FEDERAL REQUIREMENT FOR REMOVAL OF HAZARDOUS WATER PIPE (ACP). PAYMENT INCLUDES ALL COST AND FEES FOR DISPOSAL OF PIPE AND STRUCTURES.

MEASUREMENT AND PAYMENT WILL BE BY THE HORIZONTAL LINEAL FOOT OF WATER / WASTEWATER PIPE REMOVED AND DISPOSED OF.

SMH - 0410 SANITARY MANHOLE (4' DIA.) (8' - 10')
THIS ITEM CONSISTS OF FURNISHING, PLACING, AND PROTECTING FROM CORROSION BY EPOXY COATING OR OTHER APPROVED METHOD FOR EACH DIAMETER WASTEWATER MANHOLE IN ACCORDANCE WITH SECTION 9.3.2 MANHOLE INSTALLATION OF CITY STANDARD SPECIFICATIONS.

THIS ITEM IS COMPLETE AND THE MEASUREMENT AND PAYMENT SHALL BE IN ACCORDANCE WITH SECTION 2 MEASUREMENT AND PAYMENT OF THE CITY PAY ITEM MANUAL FOR WATER AND SEWER CONSTRUCTION. IN ADDITION TO THE ITEMS DESCRIBED IN THE PAY ITEM MANUAL, THIS ITEM INCLUDES ALL EQUIPMENT, MATERIALS, AND LABOR, ALL EXCAVATION, BACKFILL, COMPACTION, DISPOSAL OF EXCESS MATERIAL, ALL TEMPORARY PAVING, COSTS FOR BARRICADING, TRENCH SAFETY AND SUPPORT, AND ALL OTHER WORK ASSOCIATED WITH THIS ITEM.

SUMMARY OF EARTHWORK		
DESCRIPTION	EXCAVATION ITEM 120-1 (CY)	EMBANKMENT ITEM 120-6 (CY)
Project Site	2,770	0
TOTALS =	2,770	0
Notes:		
1. CALCULATED QUANTITIES ARE IN PLACE WITH NO FILL OR TRUCK ADJUSTMENTS APPLIED.		
2. FINAL PAY QUANTITIES WILL BE PLAN QUANTITIES WITH NO CONSIDERATION FOR SPECIFICATION TOLERANCES.		

ENGINEER OF RECORD

DATE _____

SIGNATURE _____

REVISIONS:

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SUMMARY OF QUANTITIES AND PAY ITEM NOTES

BRANDON HILL DRAINAGE IMPROVEMENTS

SINGHOFEN & ASSOCIATES, INC.

STORMWATER MANAGEMENT AND CIVIL ENGINEERING

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JOB NO. 2017-007.20

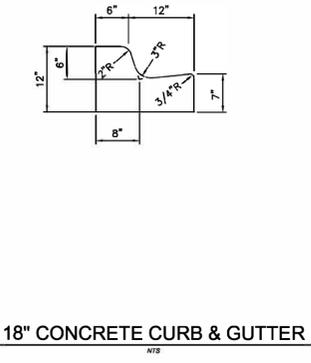
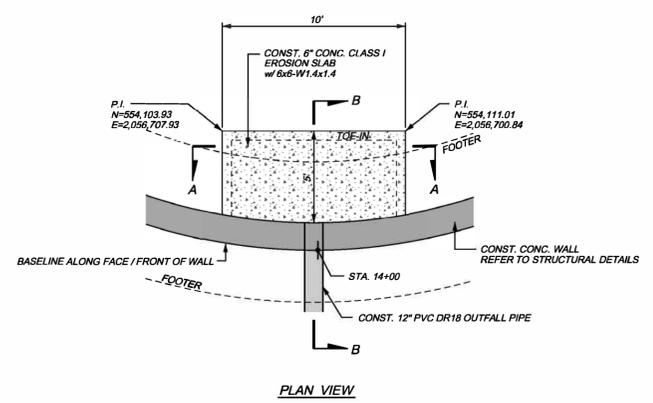
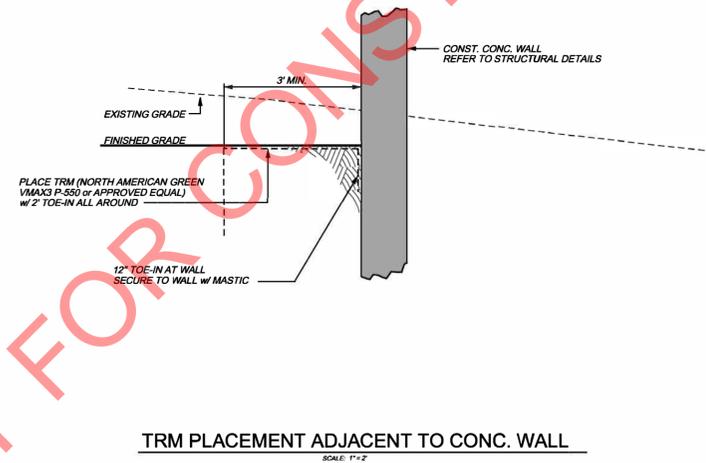
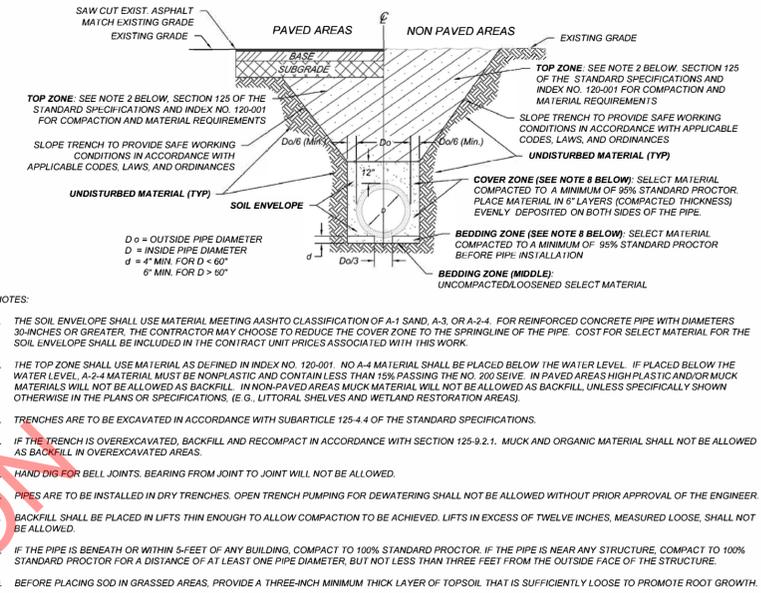
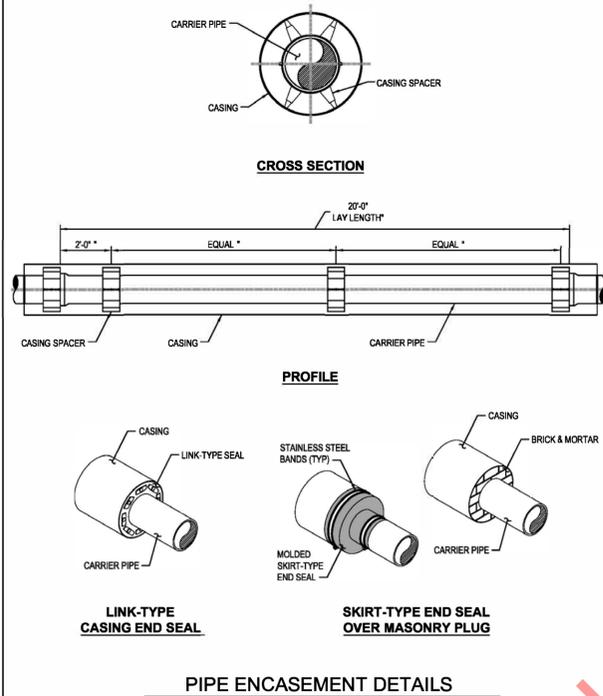
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DESIGNED _____ RBG _____

CHECKED _____ AGH _____

QC _____ RBG _____

SHEET 4



ENGINEER OF RECORD _____

DATE _____

REVISIONS:

1	MM/YY
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TYPICAL SECTIONS AND DETAILS

PROJECT: BRANDON HILL DRAINAGE IMPROVEMENTS

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JOB NO. 2017-007.20
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 DESIGNED: RBG
 CHECKED: AGH
 QC: RBG

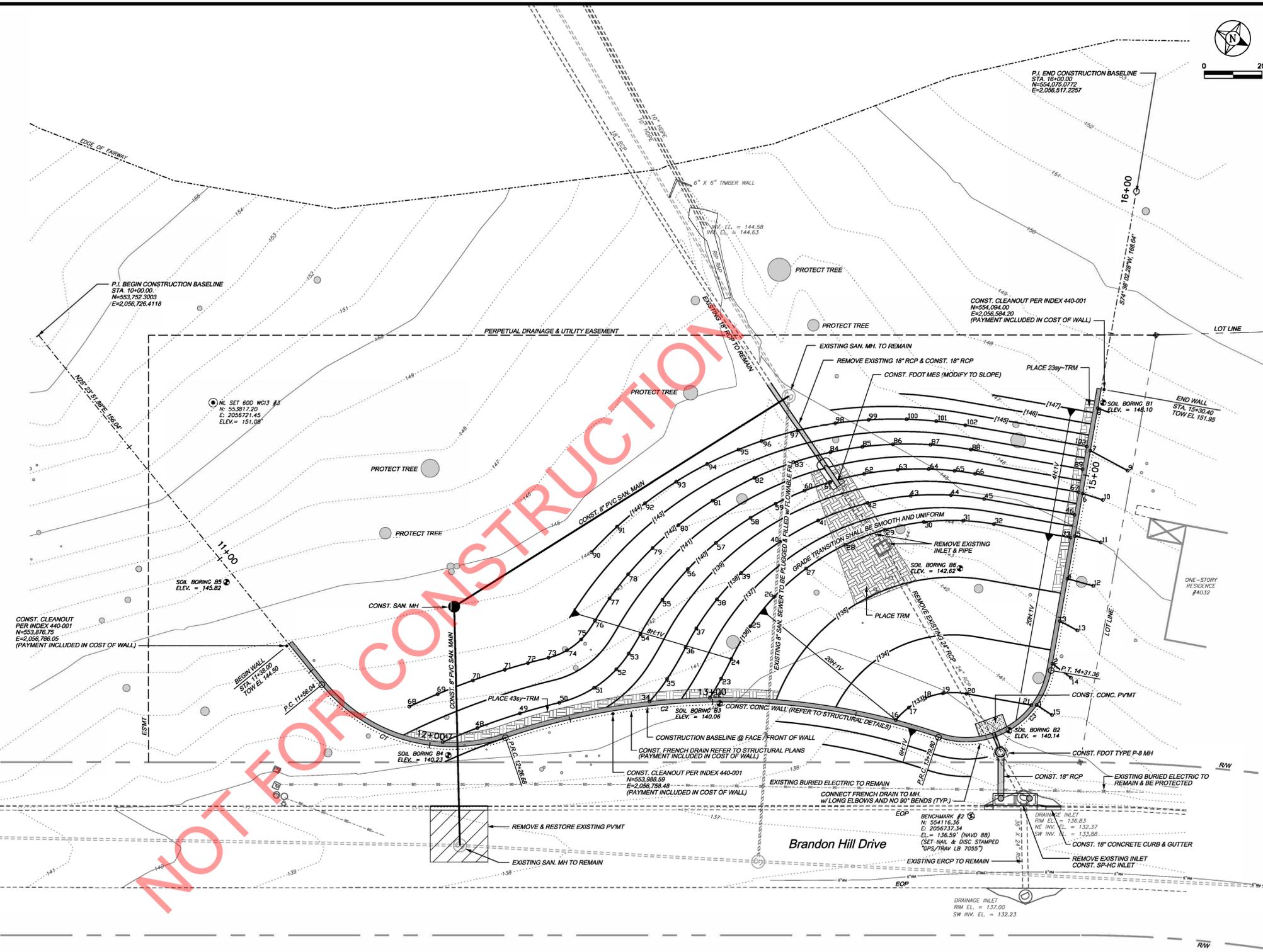
SHEET 5

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COORDINATE TABLE

Point ID	Northing	Easting
1	554,120.4158	2,056,692.7957
2	554,119.1212	2,056,677.4975
3	554,115.1625	2,056,663.0925
4	554,111.2055	2,056,648.6933
5	554,107.2335	2,056,634.2396
6	554,103.2571	2,056,619.7696
7	554,099.2798	2,056,605.2968
8	554,095.3104	2,056,590.8526
9	554,113.9553	2,056,605.9573
10	554,110.5341	2,056,618.7818
11	554,116.1932	2,056,632.3636
12	554,120.3505	2,056,647.0875
13	554,121.9917	2,056,663.3970
14	554,127.0862	2,056,679.1651
15	554,126.7067	2,056,693.6525
16	554,078.4705	2,056,718.5350
17	554,080.6827	2,056,712.6835
18	554,084.3670	2,056,707.3879
19	554,089.2699	2,056,703.1551
20	554,096.6479	2,056,699.7805
21	554,118.7301	2,056,693.6370
22	554,016.8616	2,056,739.3543
23	554,017.5350	2,056,731.7133
24	554,017.7872	2,056,724.0468
25	554,018.8639	2,056,711.0100
26	554,021.9641	2,056,698.1822
27	554,027.7413	2,056,684.5876
28	554,036.5442	2,056,671.2399
29	554,046.7140	2,056,660.6214
30	554,057.7308	2,056,652.4270
31	554,069.8474	2,056,646.1451
32	554,080.0034	2,056,642.6136
33	554,105.9922	2,056,635.3833
34	553,998.4567	2,056,749.6097
35	554,000.6663	2,056,739.9089
36	554,001.7266	2,056,727.2312
37	554,002.2514	2,056,719.7652
38	554,004.3689	2,056,707.5668
39	554,008.0186	2,056,695.7163
40	554,015.5918	2,056,680.0874
41	554,024.3605	2,056,667.7459
42	554,037.2811	2,056,654.9081
43	554,049.6824	2,056,646.2169
44	554,062.2235	2,056,639.9724
45	554,073.2050	2,056,636.2012
46	554,103.8723	2,056,627.6693
47	553,939.7330	2,056,793.2000
48	553,948.4763	2,056,783.5913
49	553,959.6554	2,056,772.6801
50	553,970.3957	2,056,763.4194
51	553,979.0791	2,056,753.5984
52	553,983.2898	2,056,744.5094
53	553,984.8119	2,056,737.7554
54	553,985.5879	2,056,729.8721
55	553,987.3522	2,056,715.8333

Point ID	Northing	Easting
56	553,990.7731	2,056,702.4864
57	553,995.6548	2,056,690.0237
58	554,002.7625	2,056,677.0267
59	554,008.5150	2,056,668.8366
60	554,015.6595	2,056,660.4736
61	554,022.3647	2,056,653.9446
62	554,031.8389	2,056,646.3580
63	554,041.7553	2,056,640.0366
64	554,051.3606	2,056,635.2049
65	554,059.7296	2,056,631.8908
66	554,066.6284	2,056,629.7271
67	554,101.7525	2,056,619.9552
68	553,923.9457	2,056,787.1057
69	553,930.9717	2,056,778.9348
70	553,939.9860	2,056,769.3863
71	553,948.3808	2,056,761.3103
72	553,954.6492	2,056,755.7328
73	553,960.3077	2,056,751.0003
74	553,964.9730	2,056,745.9390
75	553,967.7863	2,056,740.4195
76	553,969.3301	2,056,732.4484
77	553,970.5849	2,056,723.3171
78	553,972.8240	2,056,713.0299
79	553,976.5648	2,056,701.1420
80	553,981.2248	2,056,690.1498
81	553,988.3157	2,056,677.3429
82	553,997.9677	2,056,664.0504
83	554,008.0039	2,056,653.2926
84	554,018.0234	2,056,644.6792
85	554,027.2442	2,056,638.1848
86	554,036.4482	2,056,632.8258
87	554,048.3214	2,056,627.3261
88	554,061.6524	2,056,622.8076
89	554,099.6326	2,056,612.2412
90	553,958.0056	2,056,711.6128
91	553,962.2298	2,056,699.7861
92	553,967.5214	2,056,688.2862
93	553,974.1030	2,056,676.8370
94	553,981.1577	2,056,666.7632
95	553,988.8592	2,056,657.5443
96	553,994.7725	2,056,651.4185
97	554,004.5275	2,056,642.7308
98	554,015.2709	2,056,634.8116
99	554,025.1920	2,056,628.7578
100	554,037.0041	2,056,622.8894
101	554,046.6072	2,056,619.0669
102	554,056.3272	2,056,615.9853
103	554,097.5127	2,056,604.5271



ENGINEER OF RECORD
 ORIGINAL: M/M/M/YYYY
 REVISIONS:
 1
 2
 3
 4
 5

SHEET
**RETENTION / DETENTION
 POND LAYOUT PLAN**

PROJECT
**BRANDON HILL
 DRAINAGE
 IMPROVEMENTS**

SINGHOFEN & ASSOCIATES, INC.
 STORMWATER MANAGEMENT AND CIVIL ENGINEERING
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 Dr. Catawba, F.C. 29211
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 DBPR No. 5112

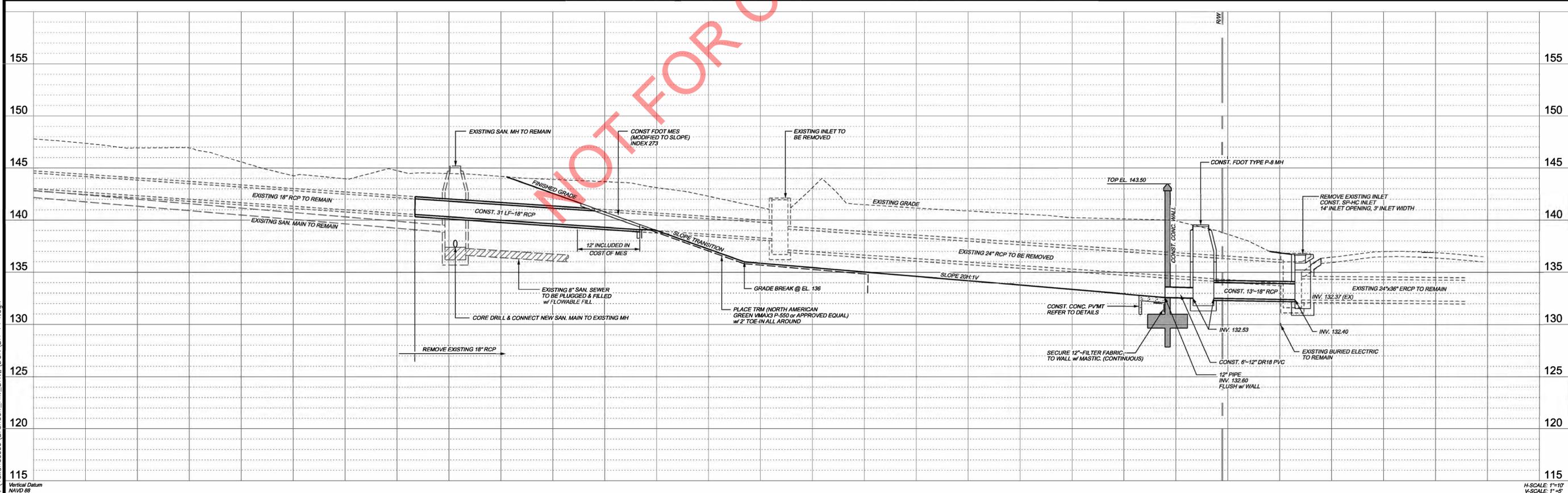
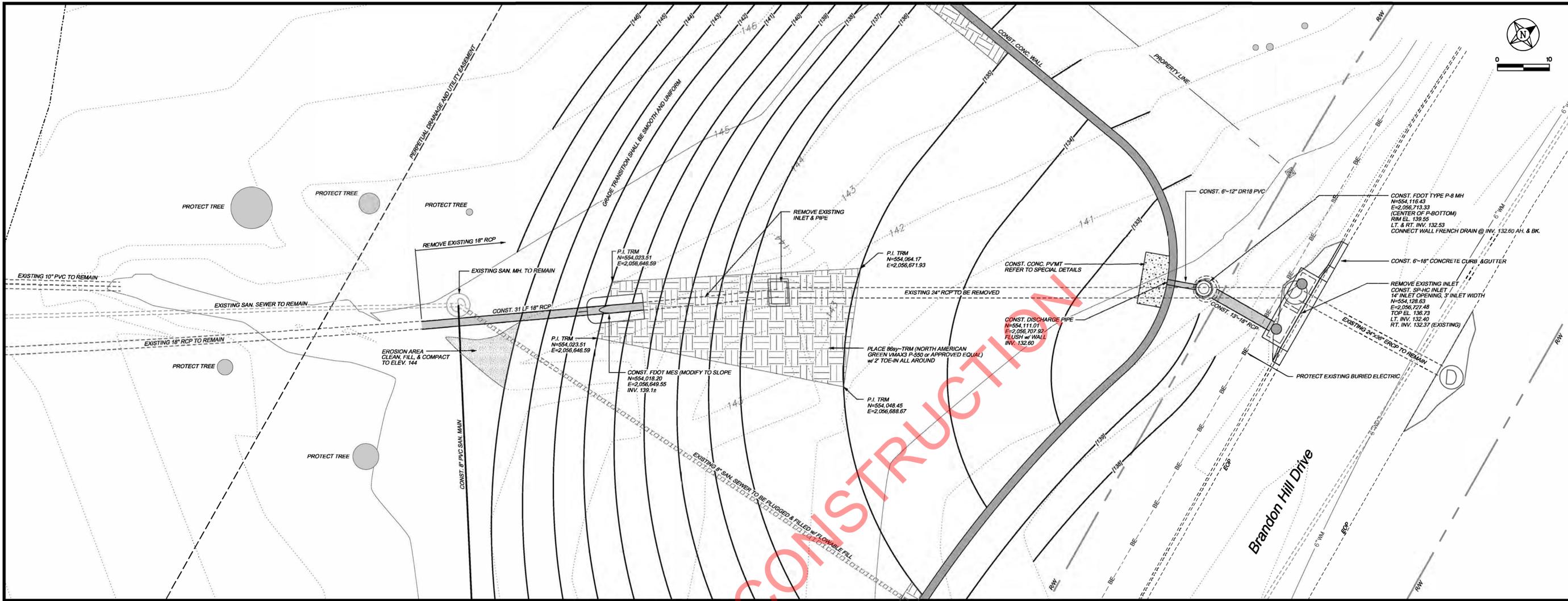
JOB NO. 2017-007.20
 DRAWN: BJC
 DESIGNED: RBG
 CHECKED: AGH
 QC: RBG

SHEET 6

Curve #	Radius	Length	Chord Direction	Delta	Tangent Length
C1	58.13	70.64	N9° 24' 56.87"W	69° 37' 37.49"	40.42
C2	235.00	153.12	N25° 33' 47.86"W	37° 19' 55.49"	79.39
C3	30.00	51.56	N56° 07' 53.92"W	98° 28' 07.61"	34.80

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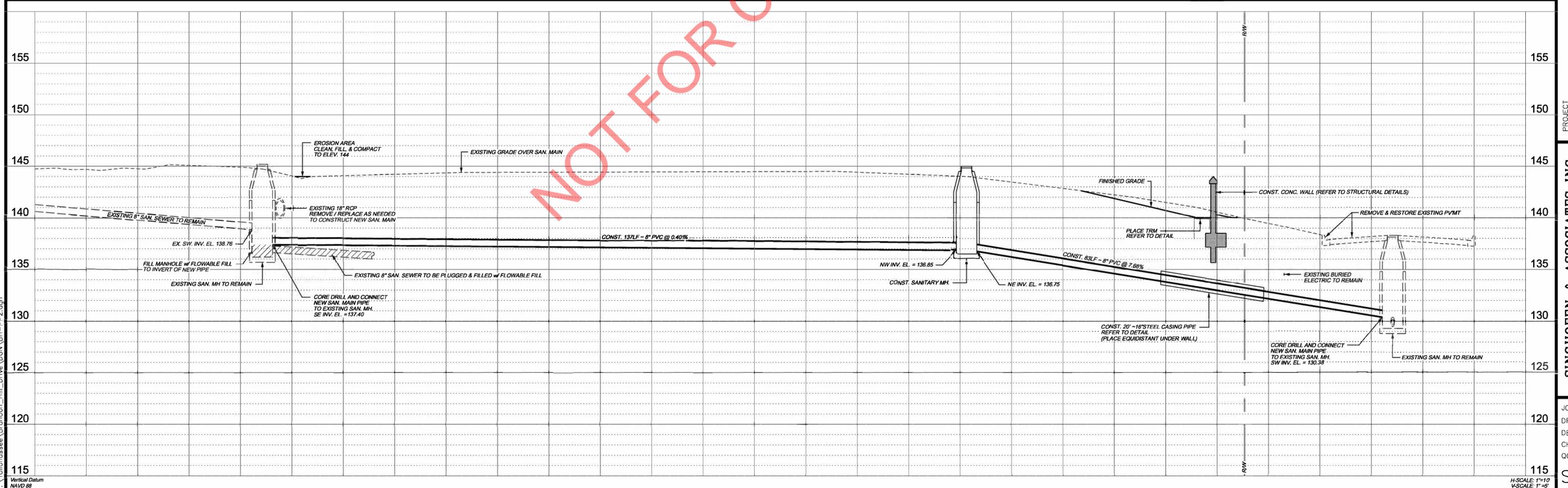
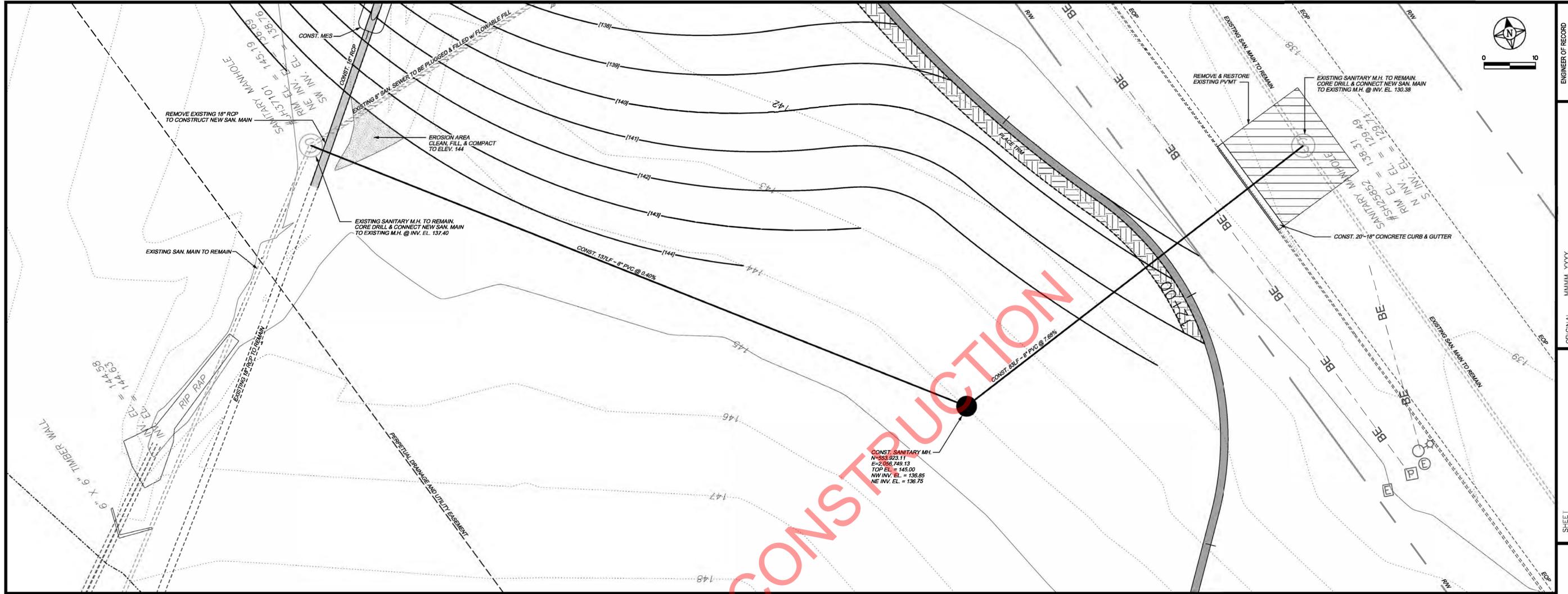
Vertical Datum
NAVD 88



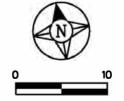
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Vertical Datum
 NAVD 88

ENGINEER OF RECORD _____ M M M M Y Y Y Y	PLAN & PROFILE STORM SEWER
ORIGINAL _____ REVISIONS: 1 _____ 2 _____ 3 _____ 4 _____ 5 _____	BRANDON HILL DRAINAGE IMPROVEMENTS
SHEET _____	SINGHOFEN & ASSOCIATES, INC. STORMWATER MANAGEMENT AND CIVIL ENGINEERING 11723 Oranjestad Street, Suite 100 Orlando, FL 32817 Ph: (407) 679-3001 Fax: (407) 679-2691 DBPR No. 5112
PROJECT _____	SAI JOB NO. 2017-007.20 DRAWN: BUG DESIGNED: RBG CHECKED: AGH QC: RBG
DATE _____	SHEET 7



NOT FOR CONSTRUCTION



ENGINEER OF RECORD
 ORIGINAL: _____
 REVISIONS:
 1 _____
 2 _____
 3 _____
 4 _____
 5 _____

SHEET
 PROJECT
**BRANDON HILL
 DRAINAGE
 IMPROVEMENTS**

**PLAN & PROFILE
 SANITARY SEWER**

PROJECT
SINGHOFEN & ASSOCIATES, INC.
 STORMWATER MANAGEMENT AND CIVIL ENGINEERING
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JOB NO. 2017-007.20
 DRAWN: BUG
 DESIGNED: RBG
 CHECKED: AGH
 QC: RBG

11/19/2019
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 Vertical Datum
 NAVD 88
 HSCALE: 1"=10'
 VSCALE: 1"=5'
SHEET 8

Report of Tests

Soil Survey - Brandon Hill Drive Drainage Improvements

Submitted by: S. Shanley, PE

Stratum No.	No. of Tests	Sieve Analysis Results Percent Passing						Atterberg Limits, %			Classification		Color	Description
		#4 Mesh	#10 Mesh	#40 Mesh	#60 Mesh	#140 Mesh	#200 Mesh	No. of Tests	Liquid Limit	Plastic Index	USCS Group	AASHTO Group		
2	4	-	-	-	-	-	23 - 27	-	-	-	SC	A-2-4	Brownish red	Slightly clayey Sand
3	5	100	100	83 - 87	69 - 73	36 - 50	20 - 44	1	30	12	SC	A-2-6 to A-6	Red to reddish orange	Clayey Sand
4	1	-	-	-	-	-	48	1	40	17	SC	A-2-6 to A-6	Orange to reddish orange	Clayey Sand
4A	3	100	99	48	28	21	20	-	-	-	SP-SC to SC	A-3 to A-2-6	Orange to tan orange	Sand w/ clay to slightly clayey Sand

THE DATA SHOWN ON THIS SHEET ARE FROM THE SUBSURFACE EXPLORATION DEVELOPED AND PRODUCED BY ALPHA GEOTECHNICAL AND TESTING SERVICES AND IS REQUIRED FOR USE IN THE CONSTRUCTION OF THIS PROJECT. THE DATA WAS NOT DEVELOPED AND PRODUCED BY SINGHOFFEN & ASSOCIATES, INC. (SAI). SIGNING AND SEALING OF THIS SHEET BY A PROFESSIONAL LICENSED ENGINEER IS SOLELY AN ATTESTATION THAT THE DATA SHOWN ARE THOSE SPECIFICALLY PROVIDED BY ALPHA GEOTECHNICAL AND TESTING SERVICES.



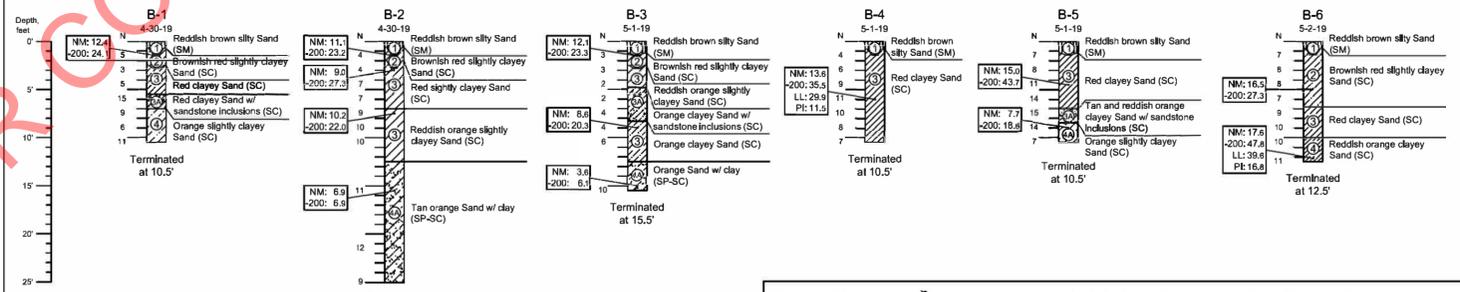
Stephen P. Shanley
 Digitally signed by Stephen P. Shanley
 DN: c=US, o=Alpha Geotechnical and Testing Services, ou=Alpha Geotechnical and Testing Services, email=S.P.Shanley@alpha-geotech.com, cn=Stephen P. Shanley
 Date: 2019.07.17 10:45:44 -0400

Stephen P. Shanley, PE
 FL #40653
 This item has been digitally signed and sealed by Stephen P. Shanley, PE on the date below. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.
 July 17, 2019

Alpha Geotechnical and Testing Services, Inc.
 Certificate of Authorization 00007967
 4778-B Woodlane Circle
 Tallahassee, FL 32303
 (850) 514-4171 Fax: 514-4173 www.alpha-geotech.com

Subsurface Exploration and Geotechnical Evaluation for Brandon Hill Drive Drainage Improvements, Tallahassee, FL

Soil Boring Profiles and Locations



Penetration Resistance and Soil Properties on Basis of Standard Penetration Test

Sands (Fairly Reliable)		Clays (Rather Unreliable)	
Number of Blows per foot, N	Relative Density	Number of Blows per foot, N	Consistency
0-4	Very loose	Below 2	Very soft
4-10	Loose	2-4	Soft
10-30	Medium	4-6	Medium stiff
30-50	Dense	6-15	Stiff
Over 50	Very dense	15-30	Very stiff
		Over 30	Hard

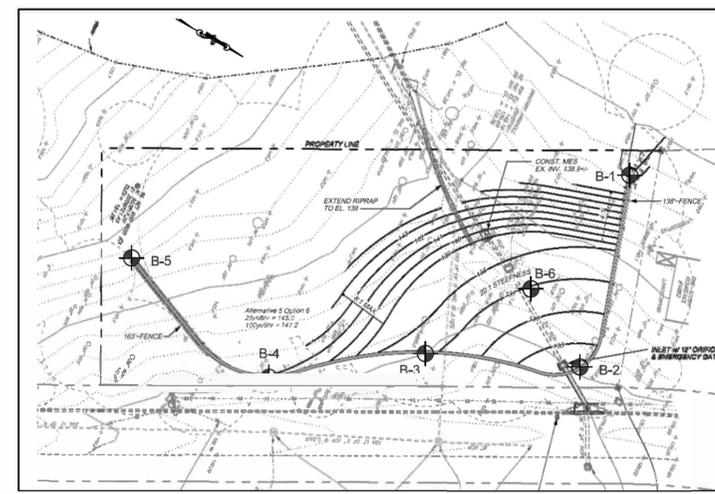
1- Table 5.3 from Peck, Hanson, Thornburn, Foundation Engineering, 2nd Edition, 1973

LEGEND

- N - Standard Penetration Test "N-value". Number of blows from 140-pound hammer to advance sampler last 12" of 18" drive.
- P - Dynamic Cone Penetrometer "P-value". Number of blows required to advance cone tip 1.75".
- NM - Natural Moisture Content, %.
- 200 - Finer than # 200 sieve, %.
- OC - Organic Content (weight basis), %.
- LL - Liquid Limit, %.
- PI - Plastic Index (LL - Plastic Limit), %.
- (SC) - Unified Soil Classification System, clayey sand (typical).
- ☒ - Groundwater level, if present.

NOTES

- 1) Although the borings represent the subsurface conditions at their respective locations, it should be understood that significant differences could exist between borings and these may not be discovered until later.
- 2) Borings were performed with a Simco model 2800 drill rig in accordance with the ASTM D 1586 (the Standard Penetration Test).

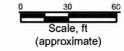


Alpha Geotechnical and Testing Services, Inc.
 Certificate of Authorization No. 00007967
 4778-B Woodlane Circle
 Tallahassee, FL 32303
 (850) 514-4171 Fax: 514-4173

Stephen P. Shanley, PE
 FL #40653
 Digitally signed by Stephen P. Shanley
 DN: c=US, o=Alpha Geotechnical and Testing Services, ou=Alpha Geotechnical and Testing Services, email=S.P.Shanley@alpha-geotech.com, cn=Stephen P. Shanley
 Date: 2019.07.17 10:45:44 -0400



Subsurface Exploration and Geotechnical Evaluation for Brandon Hill Drive Drainage Improvements, Tallahassee, FL



Drawing Source: Singhoffen & Associates

ENGINEER OF RECORD
 ORIGINAL: _____
 REVISIONS:
 1 _____
 2 _____
 3 _____
 4 _____
 5 _____

SOIL SURVEY

BRANDON HILL DRAINAGE IMPROVEMENTS

SINGHOFFEN & ASSOCIATES, INC.
 STORMWATER MANAGEMENT AND CIVIL ENGINEERING
 11723 Oriington Street, Suite 100
 Orlando, FL 32817
 P: (407) 679-3001
 F: (407) 679-2691
 DBPR No. 5112

JOB NO. 2017-00720
 DRAWN: B.J.G.
 DESIGNED: R.B.G.
 CHECKED: A.G.H.
 QC: R.B.G.

SHEET 9

11/19/2019 C:\Users\jshand\Documents\Brandon_Hill_Drainage\Drawings\SOILBORINGS.DGN

Vertical Datum NAVD 88

THE FOLLOWING NARRATIVE IS THE STORMWATER POLLUTION PREVENTION PLAN AND CONTAINS REFERENCES TO THE FDOT STANDARD SPECIFICATIONS, STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, AND OTHER SHEETS OF THESE CONSTRUCTION DOCUMENTS. THE FIRST SHEET OF THE CONSTRUCTION PLANS (CALLED THE KEY SHEET) CONTAINS AN INDEX TO THE OTHER SHEETS. THE COMPLETE STORMWATER POLLUTION PREVENTION PLAN INCLUDES SEVERAL ITEMS:

- * THIS NARRATIVE DESCRIPTION,
- * THE DOCUMENTS REFERENCED IN THIS NARRATIVE,
- * THE CONTRACTOR'S APPROVED EROSION CONTROL PLAN
- * REPORTS OF INSPECTION MADE DURING CONSTRUCTION.

1. SITE DESCRIPTION

1.A NATURE OF CONSTRUCTION ACTIVITY

THE SUBJECT SITE IS LOCATED IN SECTION 34, TOWNSHIP 2 NORTH, RANGE 1 WEST WITHIN LEON COUNTY, FLORIDA. THE PROJECT INCLUDES EXCAVATION, GRADING, AND CONCRETE WALL, STORMWATER AND SANITARY SEWER CONSTRUCTION.

1.B SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES

- * SITE PREPARATION
 - INSTALL TEMPORARY BARRICADE FENCE.
 - INSTALL MATERIALS FOR PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION (INCLUDES SEDIMENT BARRIERS AND SEDIMENT BASIN(S)).
- * TEMPORARY SEDIMENT BARRIERS
 - CONSTRUCT SEDIMENT BARRIERS AT LOCATION(S) DETERMINED BY THE CONTRACTOR.
 - REMOVAL AND DISPOSAL OF SEDIMENT CAPTURED BY THE SEDIMENT BARRIERS SHALL BE PERFORMED PERIODICALLY OR AS DIRECTED BY THE ENGINEER TO PREVENT SEDIMENT FROM BEING TRANSPORTED DOWNSTREAM.
 - REMOVAL OF THE SEDIMENT BARRIERS IS THE LAST PHASE OF CONSTRUCTION.
- * PROGRESSION OF WORK
 - EACH WORK AREA SHALL BE ISOLATED AND COMPLETED PRIOR TO PROCEEDING TO THE NEXT WORK AREA.
- * FINAL SITE WORK:
 - CLEAN ALL WORK AREAS.
 - SOD ALL AREAS NOT PREVIOUSLY SODDED.
 - REMOVE SEDIMENT CAPTURED BY SEDIMENT BARRIERS.
 - REMOVE SEDIMENT BARRIERS.
 - REMOVE MATERIALS FOR PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION.

1.C AREA ESTIMATES

ALL ESTIMATES ARE BASED ON AREAS LIKELY TO BE IMPACTED BY CONSTRUCTION ACTIVITY. THE CITY CANNOT DICTATE MEANS AND METHODS OF THE CONTRACTOR. THEREFORE, AREAS OF DISTURBANCE ARE DIFFICULT TO DETERMINE PRIOR TO SELECTION OF THE CONTRACTOR AND ESTABLISHMENT OF THE SEQUENCE AND SCHEDULE FOR CONSTRUCTION. THE TOTAL ESTIMATED IMPACTS COVER 1.1 ACRES.

1.D STORMWATER DATA

THIS IS A STORMWATER RETROFIT PROJECT. NO CHANGES TO THE EXISTING DRAINAGE ARE PROPOSED.

1.E SITE MAP

THE CONSTRUCTION PLANS ARE BEING USED AS THE SITE MAP. THE LOCATION OF THE REQUIRED INFORMATION IS DESCRIBED BELOW. THE SHEET NUMBERS FOR THE PLAN SHEETS REFERENCED ARE IDENTIFIED ON THE KEY SHEET OF THESE CONSTRUCTION PLANS.

1.F RECEIVING WATERS/WETLAND AREAS

RUNOFF FROM THE PROJECT AREA FLOWS EAST AND NORTH TO THE KILLEARN COUNTRY CLUB GOLF COURSE PONDS, BEFORE CONTINUING NORTH THROUGH THE BAY SHORE DRAINAGE SYSTEM TO TIMBER LAKE AND, ULTIMATELY, LAKE KILLARNEY. THE DRAINAGE OUTFALL INTO TIMBER LAKE OCCURS AT LATITUDE 30°31'47" N, LONGITUDE 84°12'57" W.

2. CONTROLS

2.A EROSION AND SEDIMENT CONTROLS

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION AS WELL AS THE TRANSPORTATION OF ERODED MATERIALS OFF SITE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ANY AND ALL SEDIMENT CONTROL DEVICES THROUGHOUT THE DURATION OF CONSTRUCTION. THE CONTRACT DRAWINGS ONLY INDICATE EROSION, SEDIMENT, AND TURBIDITY CONTROLS AT LOCATIONS DETERMINED IN THE DESIGN PROCESS AND USED FOR ESTIMATING BID QUANTITIES AND IS PROVIDED FOR GUIDANCE IN PREPARATION OF A SEQUENCE OF CONSTRUCTION/EROSION CONTROL PLAN. THE LOCATIONS AND TYPES OF ENVIRONMENTAL CONTROL FEATURES SHOWN MAY NOT ADEQUATELY PREVENT EROSION OR THE TRANSPORTATION OF ERODED MATERIAL OFF-SITE DURING EACH PHASE OF CONSTRUCTION. SUPPLEMENTARY SEDIMENT AND EROSION CONTROL DEVICES MAY BE REQUIRED TO ACCOMMODATE THE CONTRACTOR'S PHASING OF CONSTRUCTION ACTIVITIES.

PRIOR TO THE PRECONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL SUBMIT A DETAILED EROSION CONTROL PLAN WHICH WILL BE CONSIDERED THE FIRST FORMAL UPDATE OF THE SWPPP. TO SPECIFICALLY ADDRESS THE CONTRACTOR'S MEANS, METHODS, AND PHASING OF CONSTRUCTION ACTIVITIES. THE EROSION CONTROL PLAN WILL PROVIDE THE NAME AND PHONE NUMBER OF THE CONTRACTOR'S REPRESENTATIVE RESPONSIBLE ON A 24-HOUR BASIS FOR EROSION AND SEDIMENT CONTROL INSTALLATION AND MAINTENANCE. THE CONTRACTOR IS REQUIRED TO UPDATE THE SWPPP AS REQUIRED TO REFLECT ANY ADDITIONAL CONTROLS NECESSARY TO PREVENT THE POSSIBILITY OF SILTING ANY ADJACENT LOWLAND PARCEL OR RECEIVING WATER, OR OTHERWISE VIOLATING ANY LOCAL, STATE, OR FEDERAL PERMIT REQUIREMENTS.

2.A.1 STABILIZATION PRACTICES

- THE CONTRACTOR WILL FURNISH, INSTALL, MAINTAIN, AND, WHEN APPROPRIATE, REMOVE ALL NECESSARY EROSION AND SEDIMENT CONTROLS.
- EROSION AND SEDIMENT CONTROLS WILL BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION. SEDIMENT CONTROL DEVICES WILL BE EMPLOYED AS A PERIMETER OF DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF SITE.
- THE AMOUNT OF AREA DISTURBED AT ONE TIME WILL BE LIMITED TO THE MINIMUM NECESSARY TO ADEQUATELY IMPLEMENT THE WORK. CONSTRUCTION OPERATIONS WILL BE CONTROLLED TO MINIMIZE UNPROTECTED ERODIBLE AREAS EXPOSED TO WEATHER, AND AREAS OUTSIDE THE LIMITS OF CONSTRUCTION WILL NOT BE DISTURBED.
- EXCAVATED MATERIAL WILL NOT BE DEPOSITED IN LOCATIONS WHERE IT COULD BE WASHED AWAY BY HIGH WATER OR STORMWATER RUNOFF, AND STOCKPILES WILL BE COVERED OR ENCRUSTED WITH SEDIMENT CONTAINMENT DEVICES. NEW AND EXISTING STRUCTURES WILL BE PROTECTED FROM SILTATION DURING CONSTRUCTION.
- STABILIZATION MEASURES WILL BE INITIATED FOR EROSION AND SEDIMENTATION CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THE PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- PERMANENT EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREAS WILL BE COMPLETED IMMEDIATELY AFTER FINAL GRADING. WHEN IT IS NOT POSSIBLE TO PERMANENTLY PROTECT A DISTURBED AREA IMMEDIATELY AFTER GRADING OPERATIONS, TEMPORARY EROSION CONTROL MEASURES WILL BE INSTALLED. ALL TEMPORARY PROTECTION WILL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE AND ESTABLISHED.

2.A.2 STRUCTURAL PRACTICES

SEDIMENT CONTROLS SHALL BE IN PLACE BEFORE DISTURBING SOIL UPSTREAM OF THE CONTROL. THE CONTRACTOR WILL MAINTAIN EXISTING FLOW CAPACITY DURING HEAVY STORM EVENTS. THE STRUCTURAL PRACTICES SHALL INCLUDE AT LEAST THE FOLLOWING, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

- * SEDIMENT BARRIERS AND SEDIMENT BASIN(S).
- * INLET PROTECTION IN ACCORDANCE WITH EROSION AND SEDIMENT CONTROL MANUAL.

2.B STORMWATER MANAGEMENT

REFER TO CONSTRUCTION PLANS FOR CONVEYANCE OF STORMWATER RUNOFF.

2.C OTHER CONTROLS

2.C.1 WASTE DISPOSAL

TO BE DEVELOPED AS PART OF THE CONTRACTOR'S EROSION CONTROL PLAN.

2.C.2 OFF-SITE VEHICLE TRACKING AND DUST CONTROL

TO BE DEVELOPED AS PART OF THE CONTRACTOR'S EROSION CONTROL PLAN. ALL PAVED AREAS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE SWEEPED AND KEPT CLEAN DAILY.

2.C.3 STATE AND LOCAL REGULATIONS FOR WASTE DISPOSAL, SANITARY SEWER, OR SEPTIC TANKS

TO BE DEVELOPED AS PART OF THE CONTRACTOR'S EROSION CONTROL PLAN.

2.C.4 FERTILIZERS AND PESTICIDES

TO BE DEVELOPED AS PART OF THE CONTRACTOR'S EROSION CONTROL PLAN.

2.C.5 NON STORMWATER DISCHARGES AND HAZARDOUS WASTE

IF THE CONTRACTOR ENCOUNTERS A SPILL, CONSTRUCTION WILL STOP AND WORK WILL NOT RESUME UNTIL DIRECTED BY THE ENGINEER. DISPOSITION OF HAZARDOUS WASTE WILL BE MADE IN ACCORDANCE WITH THE REQUIREMENTS AND REGULATIONS OF ANY LOCAL, STATE, OR FEDERAL AGENCY WITH JURISDICTION.

3.0 CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

REFER TO PERMITS.

4.0 INSPECTION AND MAINTENANCE PROCEDURES

- ALL EROSION AND SEDIMENT CONTROLS WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND AFTER EACH RAINFALL EVENT OF ONE INCH OR GREATER.
- EROSION AND SEDIMENT CONTROLS IN ACTIVE WORK ZONES WILL BE INSPECTED AT THE END OF EACH WORKDAY TO ASSURE THAT THEY HAVE NOT BEEN DISTURBED BY CONSTRUCTION ACTIVITIES.
- ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF IDENTIFYING THE NEED FOR REPAIR.
- SYNTHETIC HAY OR STRAW BALE BARRIERS WILL BE INSPECTED TO IDENTIFY DAMAGED BALES AND EROSION UNDER OR AROUND THE BALES. SEDIMENT WILL BE REMOVED AFTER EACH RAINFALL AND WILL NOT EXCEED A DEPTH OF ONE-HALF THE HEIGHT OF THE BARRIER.
- SILT FENCE WILL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL FOR DEPTH OF SEDIMENT, TEARS, AND ATTACHMENT TO POSTS, AND TO SEE THAT THE POSTS ARE FIRMLY EMBEDDED. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
- SEDIMENT BASINS WILL BE INSPECTED FOR DEPTH OF SEDIMENT. BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REDUCES STORAGE VOLUME OF THE BASIN BY 10 PERCENT.
- THE CONTRACTOR WILL USE A MAINTENANCE INSPECTION REPORT FORM ACCEPTABLE TO THE ENGINEER TO REPORT ALL INSPECTION FINDINGS AND CORRECTIVE ACTIONS TAKEN AS A RESULT OF THE INSPECTION. THE CONTRACTOR WILL SIGN EACH REPORT AND SUBMIT A COPY TO THE ENGINEER.
- THE CONTRACTOR IS REQUIRED TO SWEEP THE STREETS WITHIN EACH ACTIVE WORK ZONE AT THE END OF EACH WORK DAY AND AFTER RAINFALL EVENTS.

5.0 NON-STORMWATER DISCHARGES

THE FOLLOWING NON-STORMWATER DISCHARGES ARE ANTICIPATED TO OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:

- A. UNCONTAMINATED GROUNDWATER FROM DEWATERING OPERATIONS.

ALL NON-STORMWATER DISCHARGES WILL BE DIRECTED TO SEDIMENT BASINS PRIOR TO DISCHARGE.

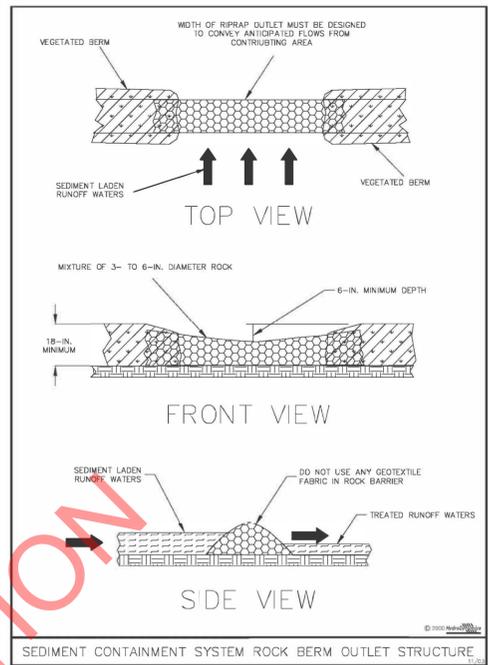


Figure IV-34: Illustration of a SCS Rock Berm Outlet Structure

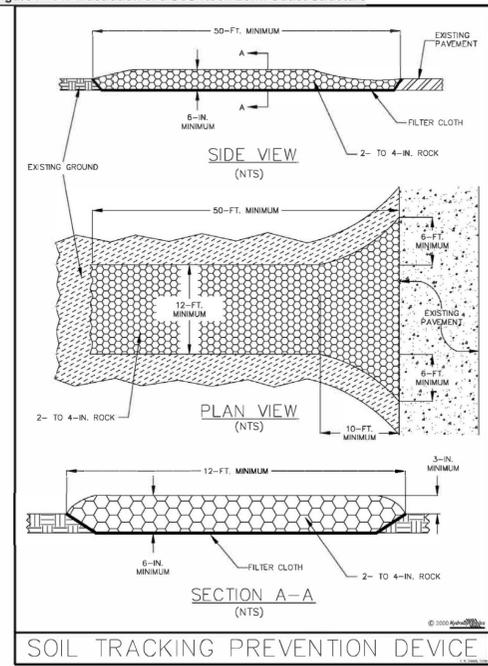


Figure V-19: Illustration of a Soil Tracking Prevention Device

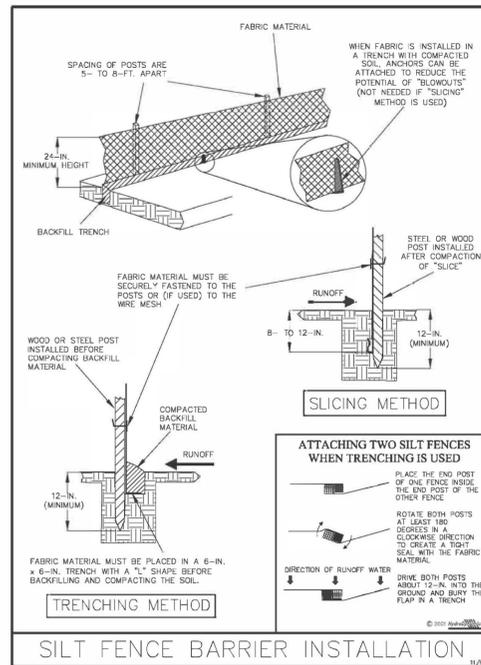


Figure V-40: Illustration of a Silt Fence Barrier

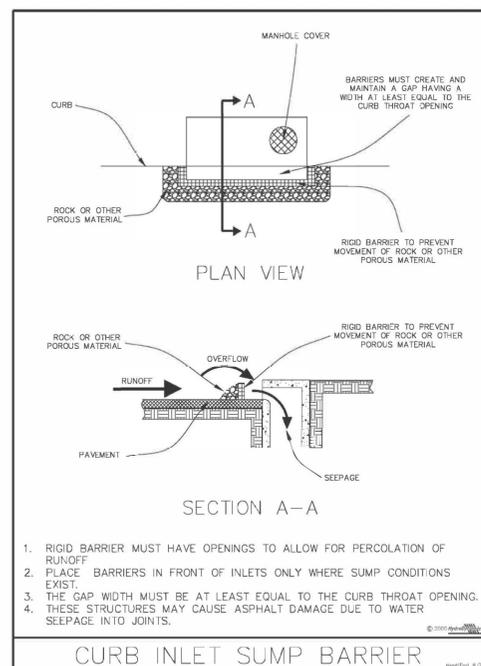


Figure V-48: Illustration of a Curb Inlet "Sump" Barrier

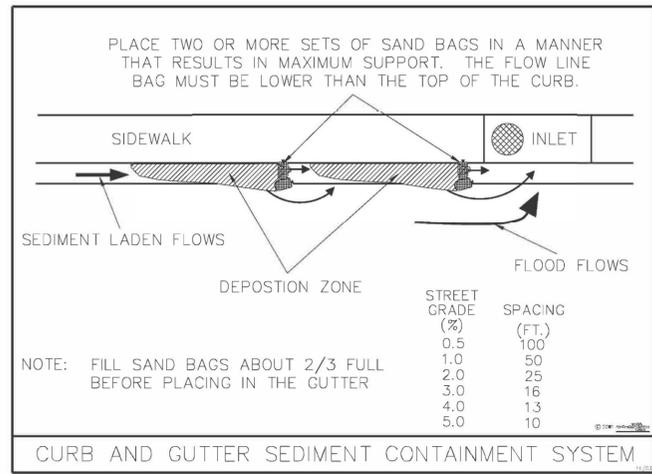


Figure V-50: Illustration of a Curb and Gutter Sediment Containment System

11/19/2019 Vertical Datum NAVD 88 N:\1\04\03\0000\Brandon_Hill_Drive\DCN\BH-SWPPP.dgn

ENGINEER OF RECORD

ORIGINAL: MM/YY/YY

REVISIONS:

1	
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SHEET

PROJECT

STORMWATER POLLUTION PREVENTION PLAN

BRANDON HILL DRAINAGE IMPROVEMENTS

SINGHOFEN & ASSOCIATES, INC.

STORMWATER MANAGEMENT AND CIVIL ENGINEERING

11723 Oriolestone Street, Suite 100
Orlando, Florida 32817
Ph: (407) 679-3001
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DBPR No. 5112

SAI

JOB NO. 2017-007.20

DRAWN: BJC

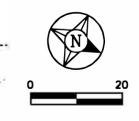
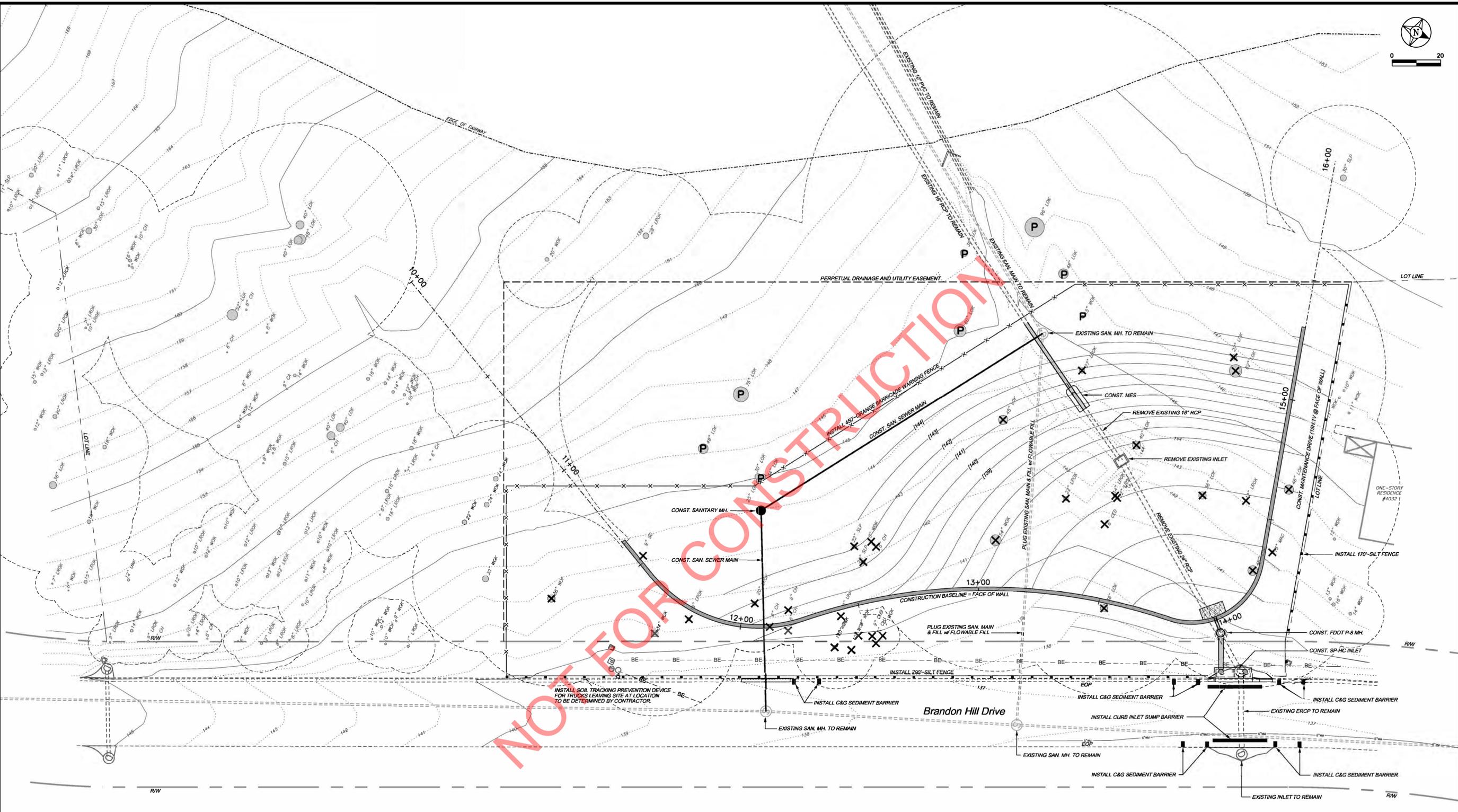
DESIGNED: RBG

CHECKED: AGH

QC: RBG

SHEET 10

11/19/2019
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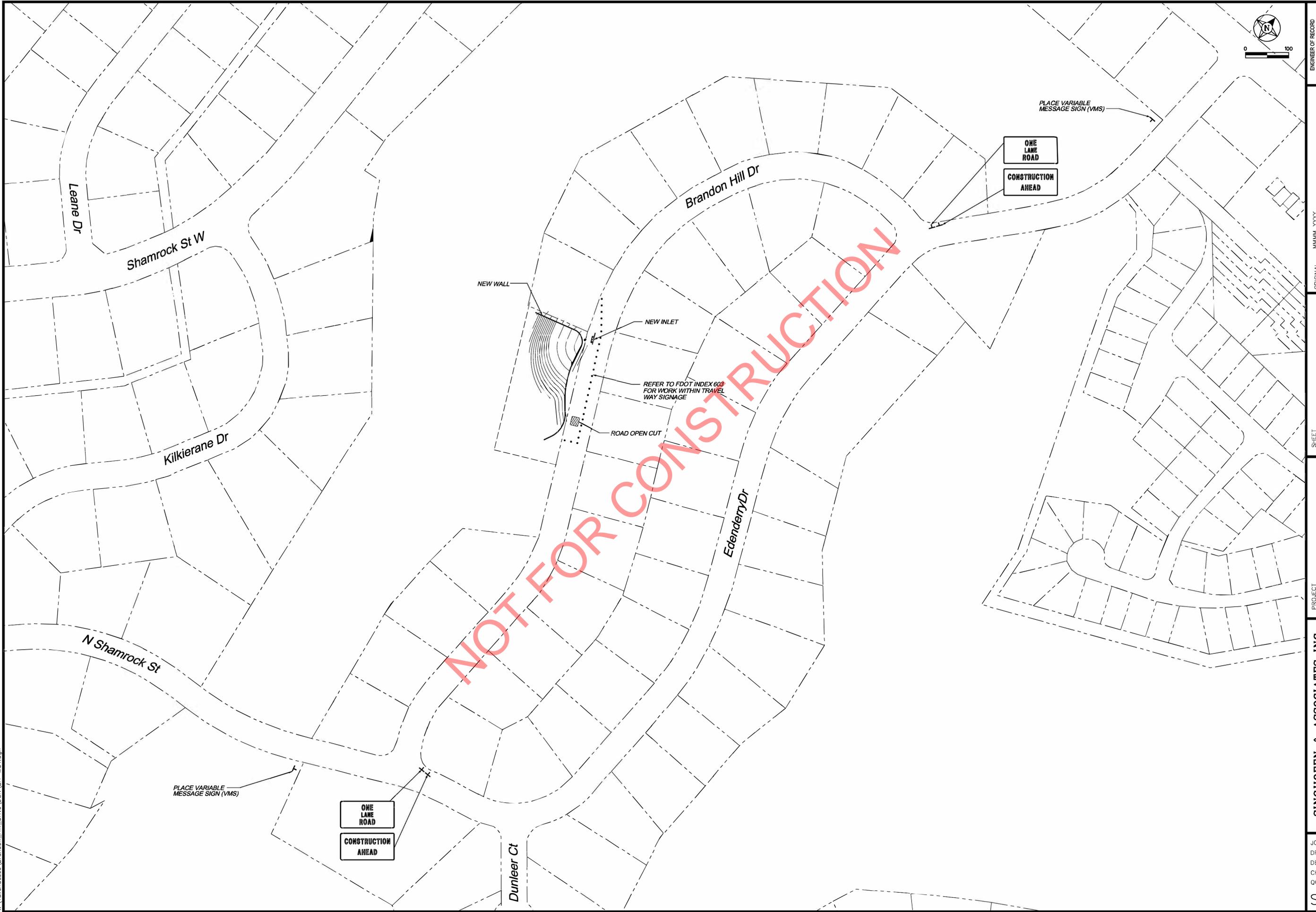


NOTE:
 REFER TO GENERAL NOTES REGARDING TREE PROTECTION.

LEGEND	
P	PROTECT EXISTING TREE
X	REMOVE EXISTING TREE
●	EXISTING TREE SIZE & TYPE
○	EXISTING TREE CRITICAL PROTECTION ZONE
- - -	EASEMENT
- - - -	R/W
- - - - -	SILT FENCE
- X - X -	ORANGE BARRICADE WARNING FENCE

<p>PROJECT BRANDON HILL DRAINAGE IMPROVEMENTS</p> <p>ENGINEER OF RECORD SINGHOFEN & ASSOCIATES, INC. STORMWATER MANAGEMENT AND CIVIL ENGINEERING 11723 Orangeridge Street, Suite 100 Dr. Concord, CA 94520 Phone: (407) 679-3001 Fax: (407) 679-2691 DBPR No. 5112</p>	<p>SHEET BRANDON HILL DRAINAGE IMPROVEMENTS AND EROSION CONTROL PLAN</p> <p>REVISIONS: 1 2 3 4 5</p> <p>DATE _____</p> <p>SIGNATURE _____</p>
<p>JOB NO. 2017-007.20</p> <p>DRAWN <u>BUG</u></p> <p>DESIGNED <u>RBG</u></p> <p>CHECKED <u>AGH</u></p> <p>QC <u>RBG</u></p>	
<p>SHEET 11</p>	

11/19/2019
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ENGINEER OF RECORD
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 DATE _____

ORIGINAL: _____ MM/YY YYYY

REVISIONS:	1	2	3	4	5

SHEET

TRAFFIC CONTROL PLAN

PROJECT

BRANDON HILL DRAINAGE IMPROVEMENTS

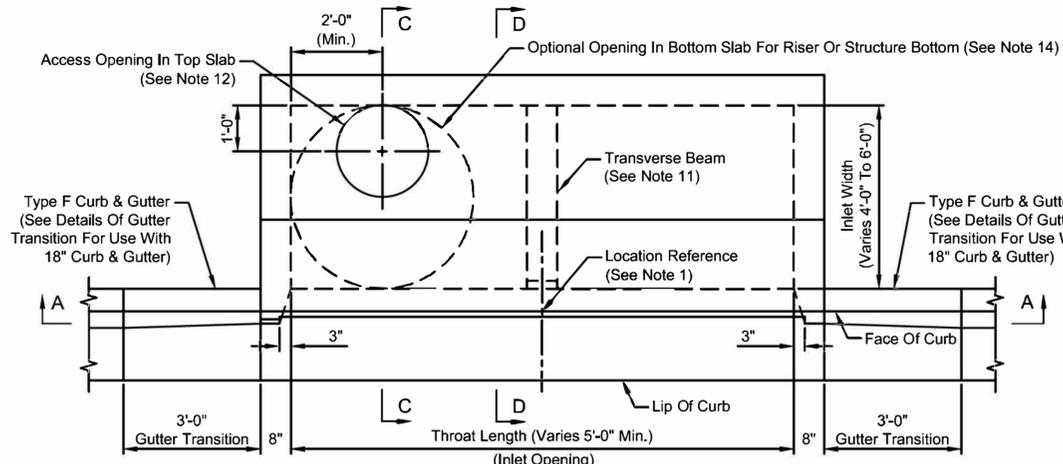
SINGHOFEN & ASSOCIATES, INC.
 STORMWATER MANAGEMENT AND CIVIL ENGINEERING
 11723 Orpington Street, Suite 100
 Dr. Phillips, FL 32817
 Ph: (407) 679-3001
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 DBPR No. 5112



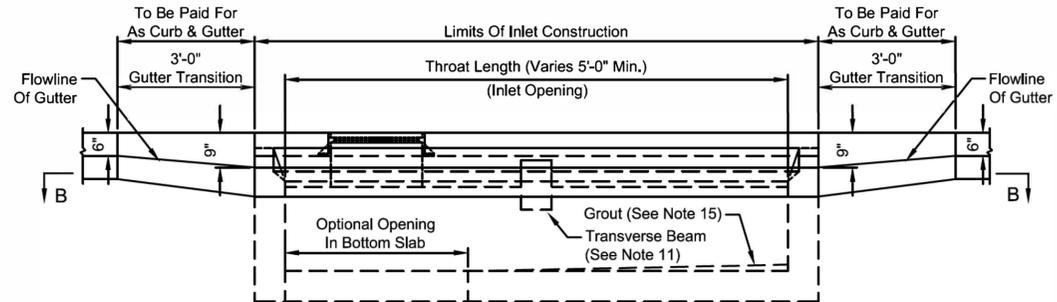
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 DRAWN: _____ BJB
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 CHECKED: _____ AGH
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SHEET 12

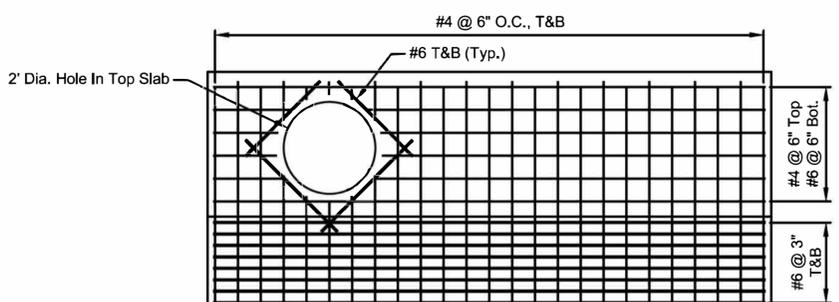
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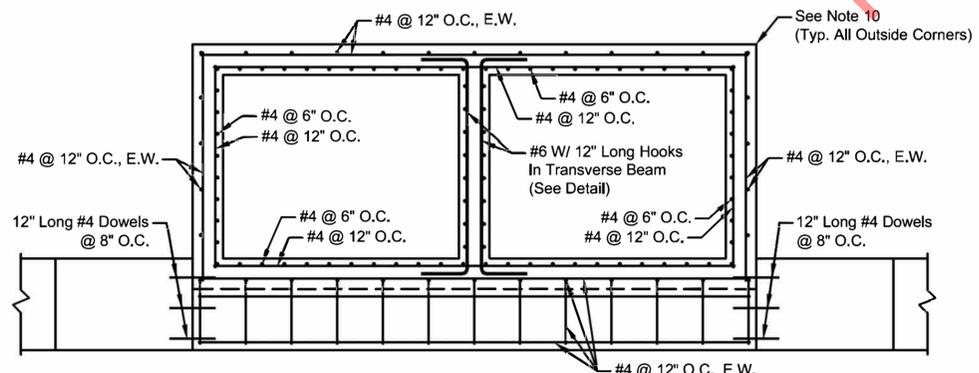
TOP VIEW



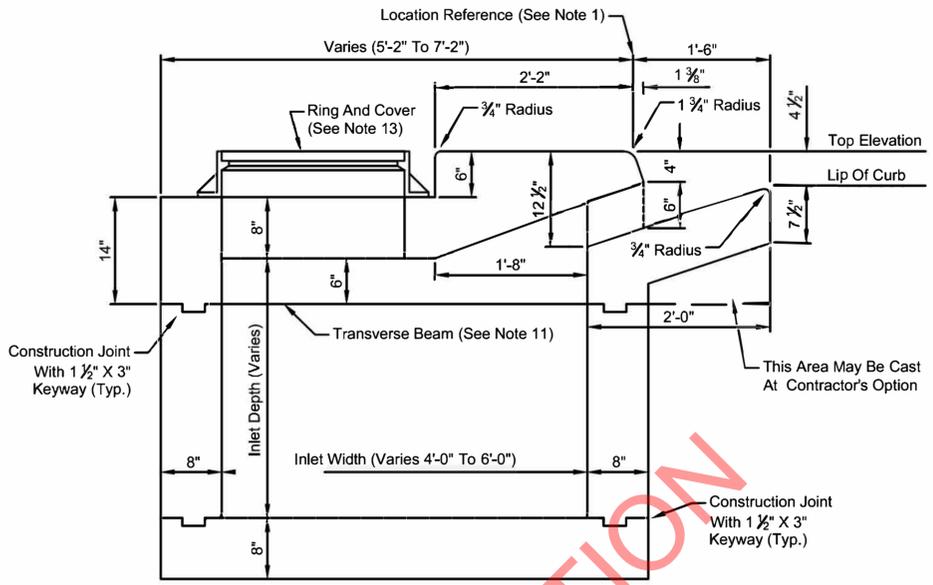
SECTION AA



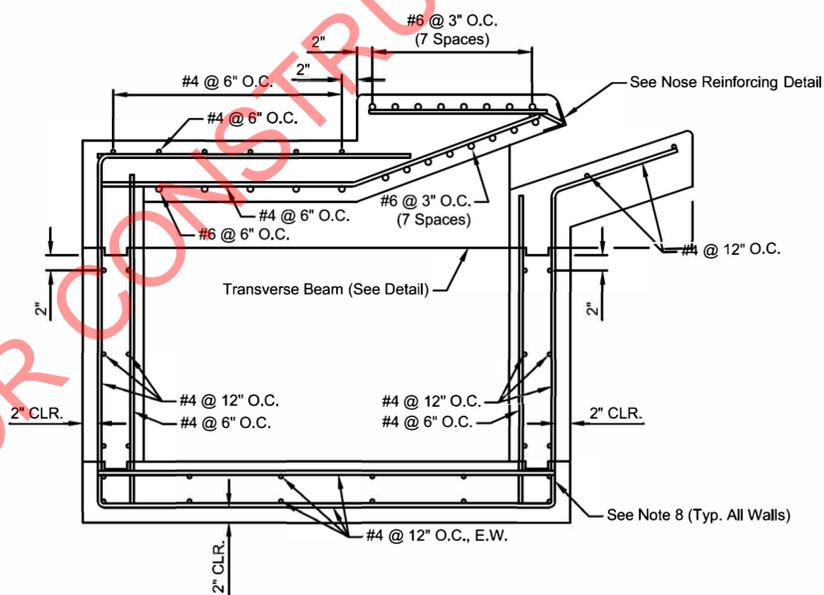
TOP SLAB REINFORCEMENT PLAN



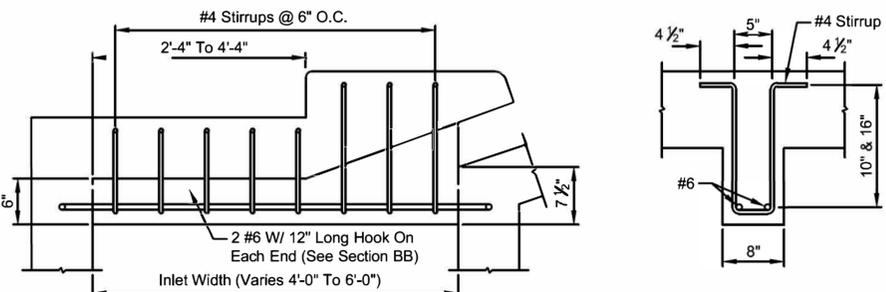
SECTION BB
(Optional Opening In Bottom Slab Not Shown)



SECTION CC
(Optional Opening In Bottom Slab Not Shown)



SECTION DD
(Optional Opening In Bottom Slab Not Shown)



TRANSVERSE BEAM DETAIL

GENERAL NOTES

- The SP-HC inlet "location reference" in the plans is at the mid point of the inlet opening at the face of curb (See TOP VIEW).
- The top of the inlet is to be parallel to the vertical alignment of the lip of curb. Bend the reinforcing steel and the nose reinforcing angle as required. The bottom slab is to be level. When an inlet is constructed on a roadway with existing curb and gutter, the lip of curb elevation and location shall match the existing lip of curb unless shown otherwise. The Contractor shall provide surveyed control points as needed to re-establish the horizontal location and vertical alignment of the lip of curb and to set the elevations of the top of the inlet.
- The exposed portion of the inlet top shall slope toward the roadway at a 1.0% grade unless otherwise shown.
- For inlets constructed on curves, determine the radii and modify the inlet details accordingly. Bend the steel as required. The front and back edges of exposed concrete surfaces are to be parallel.
- All concrete shall be FDOT Class III, $f'c = 5,000$ psi.
- Chamfer all exposed edges and corners $3/4"$ or tool to a $1/4"$ radius unless otherwise shown.
- All reinforcing steel is to be ASTM A-615 Grade 60 bars with $1/4"$ minimum cover unless otherwise shown. Lap splices shall be a minimum of 16" in length for #4 bars and a minimum of 24" in length for #6 bars, except as noted.
- Vertical reinforcement in the outside mats in the walls shall be a continuation of the reinforcement in the bottom mat in the floor slab. These bars may be spliced only if a minimum splice length of 16" is provided.
- The outside row of vertical bars in the back and side walls shall be bent and shall extend a minimum of 16" into the top mat of the top slab.
- Horizontal reinforcement at outside corners of wall sections shall continue around corners with lap splice, or corner bars shall be used to lap splice with horizontal wall reinforcement of each adjoining wall.
- Transverse beams are required for all inlets with throat lengths greater than 10'-0". Transverse beams are to be equally spaced with center to center spacing not to exceed 10'-0".
- A single access opening shall be cast in the top slabs of inlets from 5'-0" to 10'-0" in length. Additional access openings may be required for inlets greater than 10'-0" in length. An access opening shall be provided for each cell of an inlet greater than 10'-0" in length when the distance from the floor of the inlet to the bottom of the transverse beam(s) is less than 24". All access openings shall be placed adjacent to the rear wall of the inlet. Only one access opening is allowed in each segment of inlet top between an outside wall and a transverse beam or between two transverse beams. Access openings shall be placed near discharge pipes to the extent practicable. When inlets are placed on risers or structure bottoms, access openings shall be placed over the risers or structure bottoms. Reinforcing bars may be adjusted slightly to avoid interruption of the bars for the opening(s).
- A ring and cover shall be provided for each access opening. A 3'-0" ring and 2-piece cover shall be installed for inlets 5' or greater in width when the distance from top of the ring and cover to invert of the discharge pipe is 5'-0" or greater. Slab type rings shall be cast into top slabs of inlets 3' in width and inlets 4' or greater in width with slots. A USF T J (No. 8017195) or EJ Group No. 3062A2 cover shall be provided for each ring.
- When an inlet is placed on a riser or structure bottom, the inlet shall be cast with a round opening in the bottom slab at the location of the riser or the opening in the top slab of the structure bottom. The diameter of the opening shall be a minimum of 4'-0" for an inlet 4' or greater in width, and shall be 3'-0" for a 3' wide inlet. The inlet shall be joined to the riser or structure bottom with 12" long #4 dowels evenly spaced at 12" maximum spacing around the opening. Dowels may be adhesive-bonded in accordance with FDOT Specification Section 416, or may be placed approximately 6" into fresh concrete, leaving the remainder to extend into the secondary cast.
- Grout is to be placed at the bottom of the inlet as shown on FDOT Index No. 425-001 and sloped to the invert elevation of the outflow pipe or to the optional opening in the bottom slab.
- See FDOT Index No. 425-001 for supplemental details.
- The inlet bottom and walls may be precast in accordance with the requirements listed on Sheet 3.
- SP-HC Inlets are to be paid for by the contract unit price for each inlet as identified by structure number. Payment shall include cost of concrete, reinforcing steel, cast iron ring(s) and cover(s), nose reinforcing, grout, and riser and/or structure bottom when called for in the plans. No adjustment in the contract unit cost will be made for precast construction.

LEGEND

- O.C. = On Center CLR. = Clear
E.W. = Each Way T&B = Top And Bottom

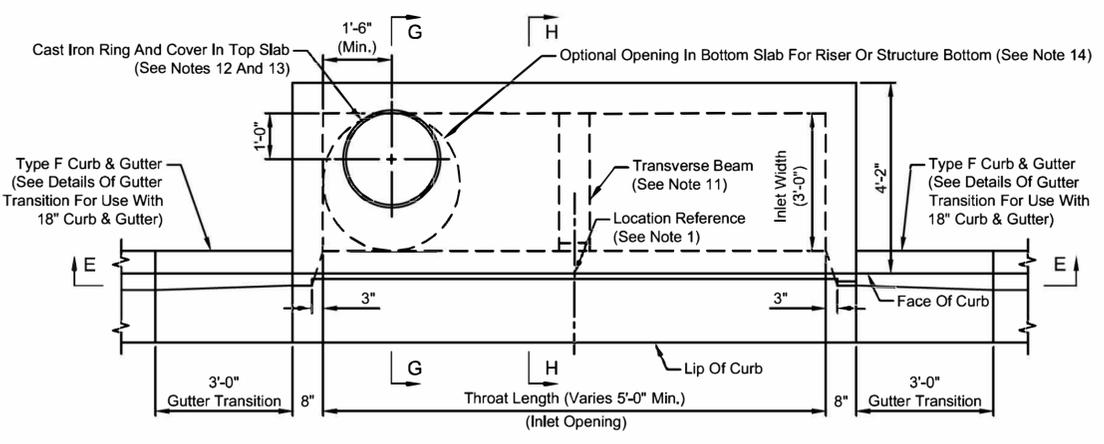
REVISIONS		DESCRIPTION
DATE	BY	Update Index References To FDOT Standard Plans
03/13/18	RJM	

STRUCTURAL DESIGN BY
Stephen A. Nichols, P.E.
P.E. License No. 27463
Inovia Consulting Group
1983 Center Point Blvd., Suite 103
Tallahassee, Florida 32308

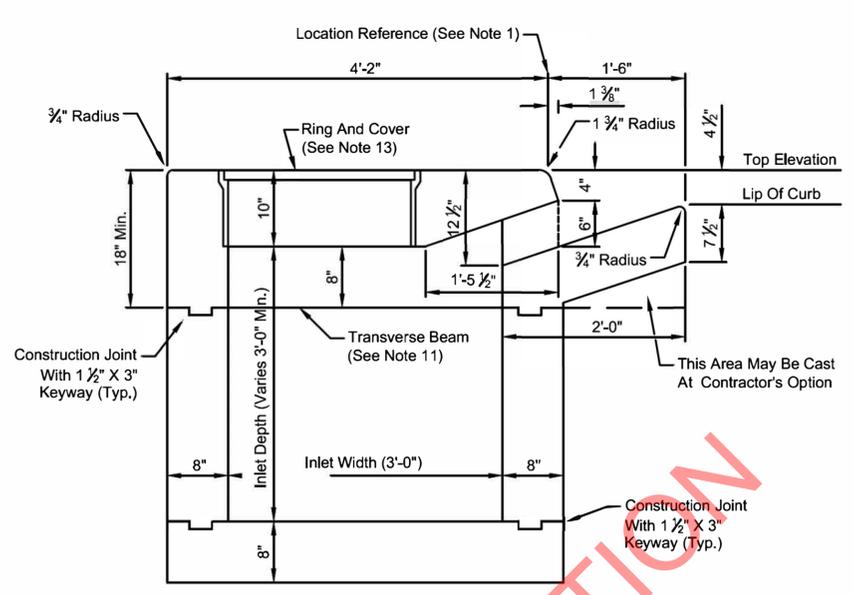
STANDARD DETAILS
CURB INLET TYPE SP-HC



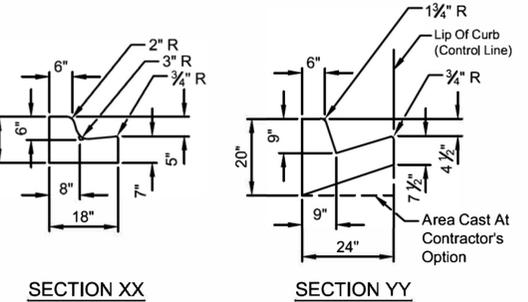
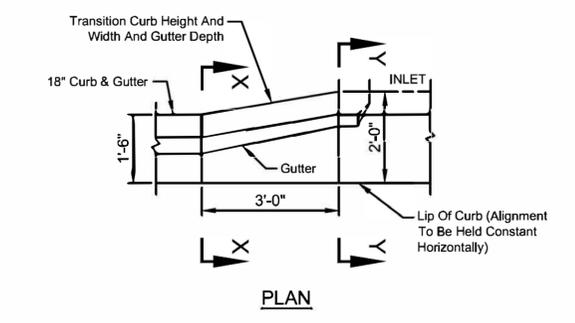
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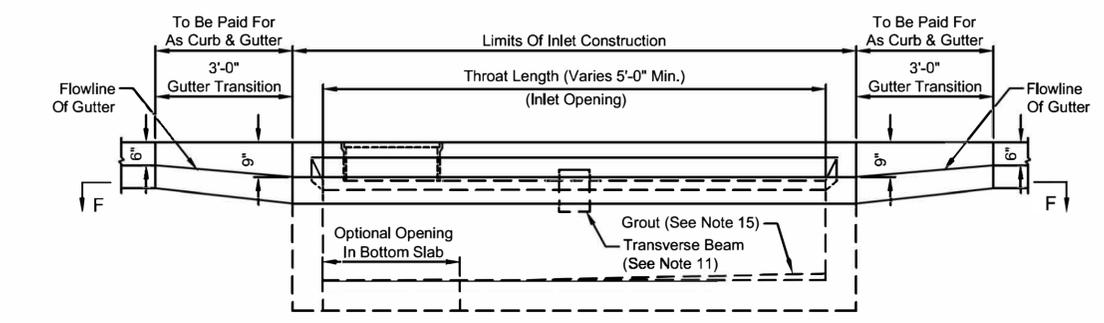
TOP VIEW - 3' WIDE INLET



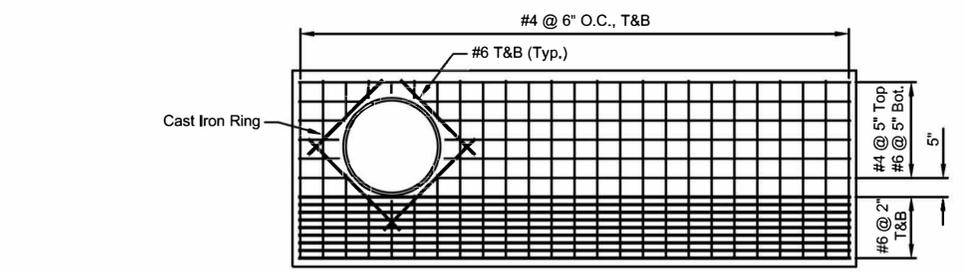
SECTION GG - 3' WIDE INLET
(Optional Opening In Bottom Slab Not Shown)



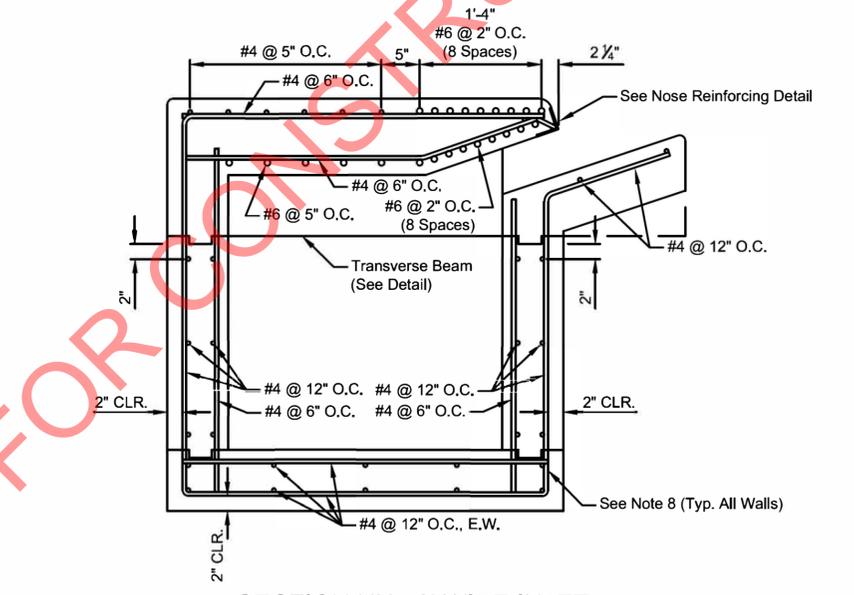
GUTTER TRANSITION FOR USE WITH 18\"/>



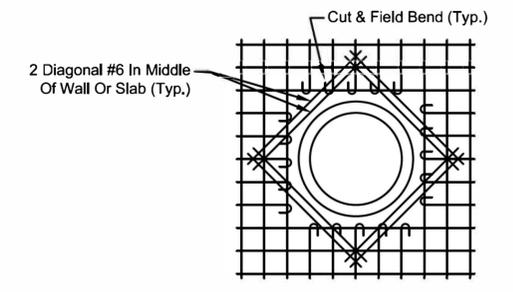
SECTION EE - 3' WIDE INLET



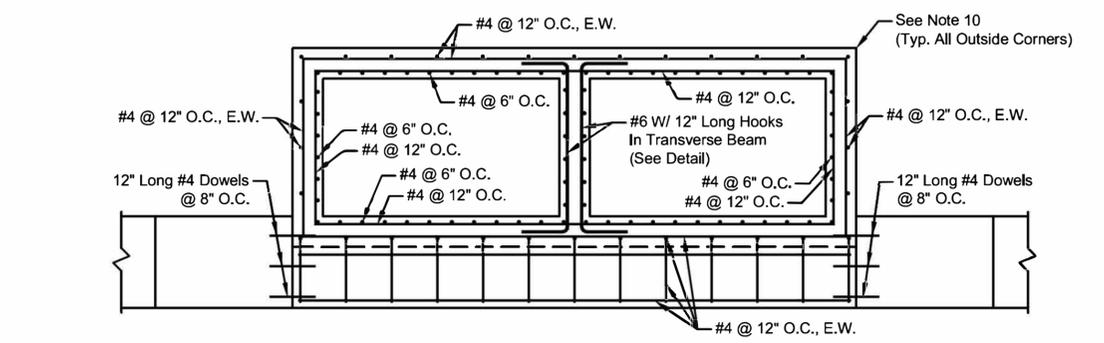
TOP SLAB REINFORCEMENT PLAN - 3' WIDE INLET



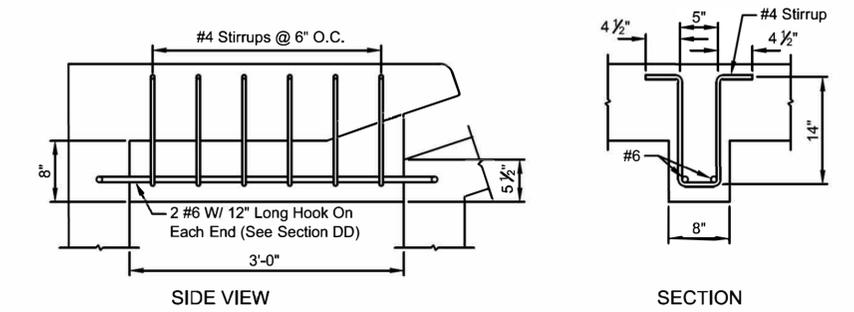
SECTION HH - 3' WIDE INLET
(Optional Opening In Bottom Slab Not Shown)



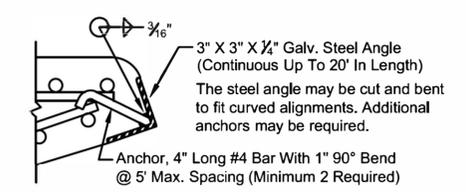
REINFORCEMENT AT WALL OPENINGS



SECTION FF - 3' WIDE INLET
(Optional Opening In Bottom Slab Not Shown)



TRANSVERSE BEAM DETAIL - 3' WIDE INLET

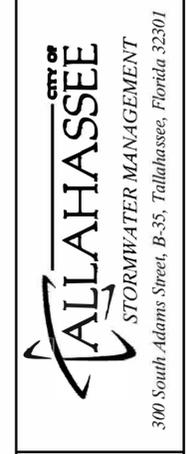


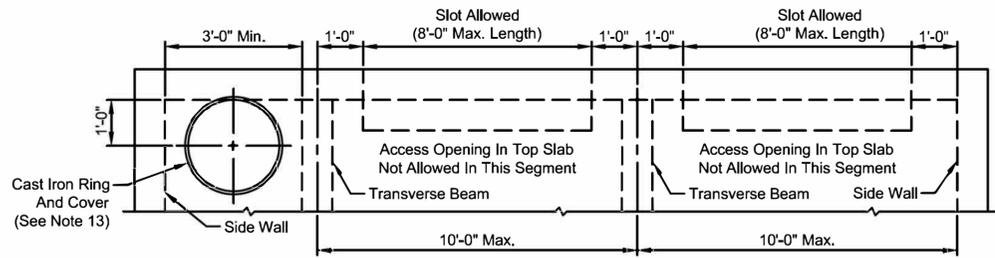
NOSE REINFORCING DETAIL

REVISIONS		DESCRIPTION
DATE	BY	Update Index References To FDOT Standard Plans
03/13/18	RJM	

STRUCTURAL DESIGN BY
Stephen A. Nichols, P.E.
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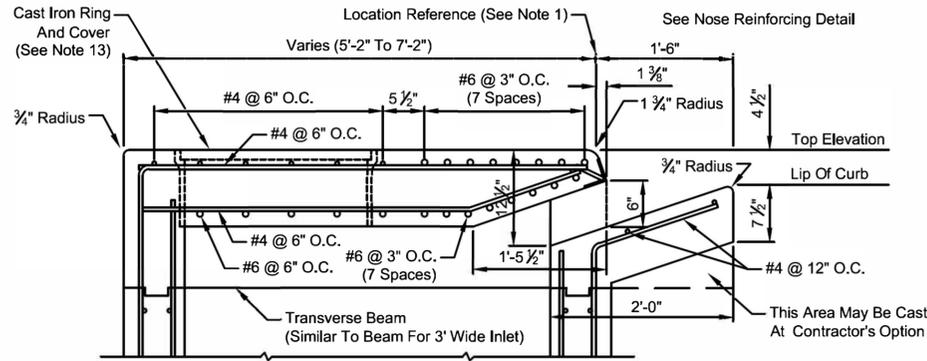
STANDARD DETAILS
CURB INLET TYPE SP-HC



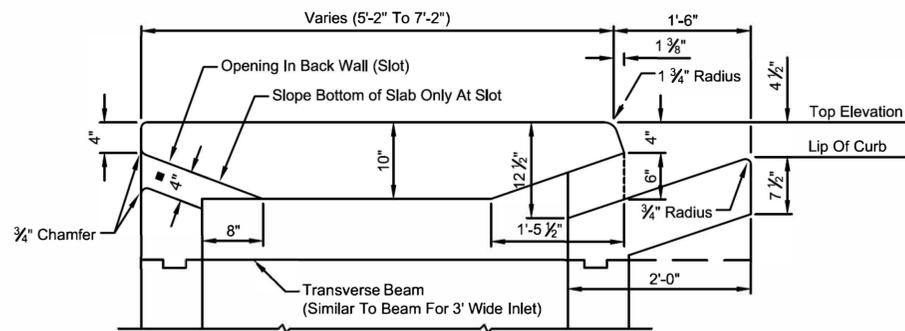


Note:
4'-0" through 6'-0" wide inlets with slots must be constructed with a 10" thick top slab for the entire length of the inlet as shown in the Partial Sections below.

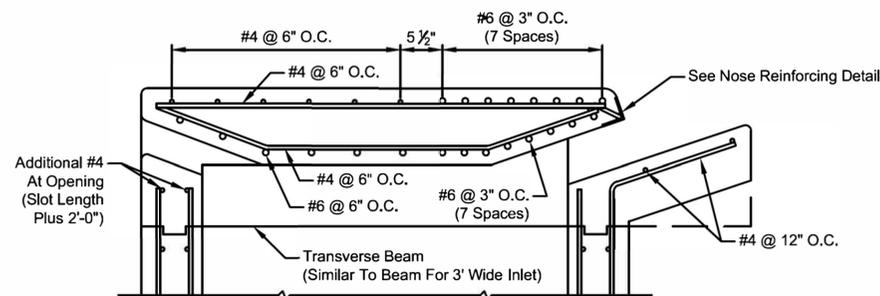
PARTIAL PLAN VIEW - SLOT LOCATIONS



PARTIAL SECTION - 4'-0" THROUGH 6'-0" INLET WIDTH
(Section Of Inlet Without Slot)



PARTIAL SECTION - 4'-0" THROUGH 6'-0" INLET WIDTH
(Section Of Inlet With Slot)



PARTIAL SECTION - 4'-0" THROUGH 6'-0" INLET WIDTH
(Section Of Inlet With Slot)

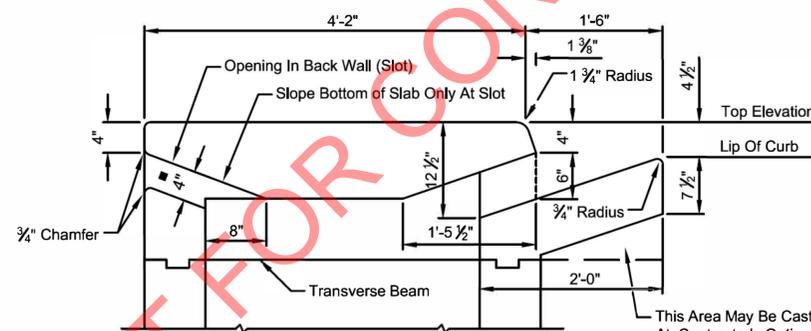
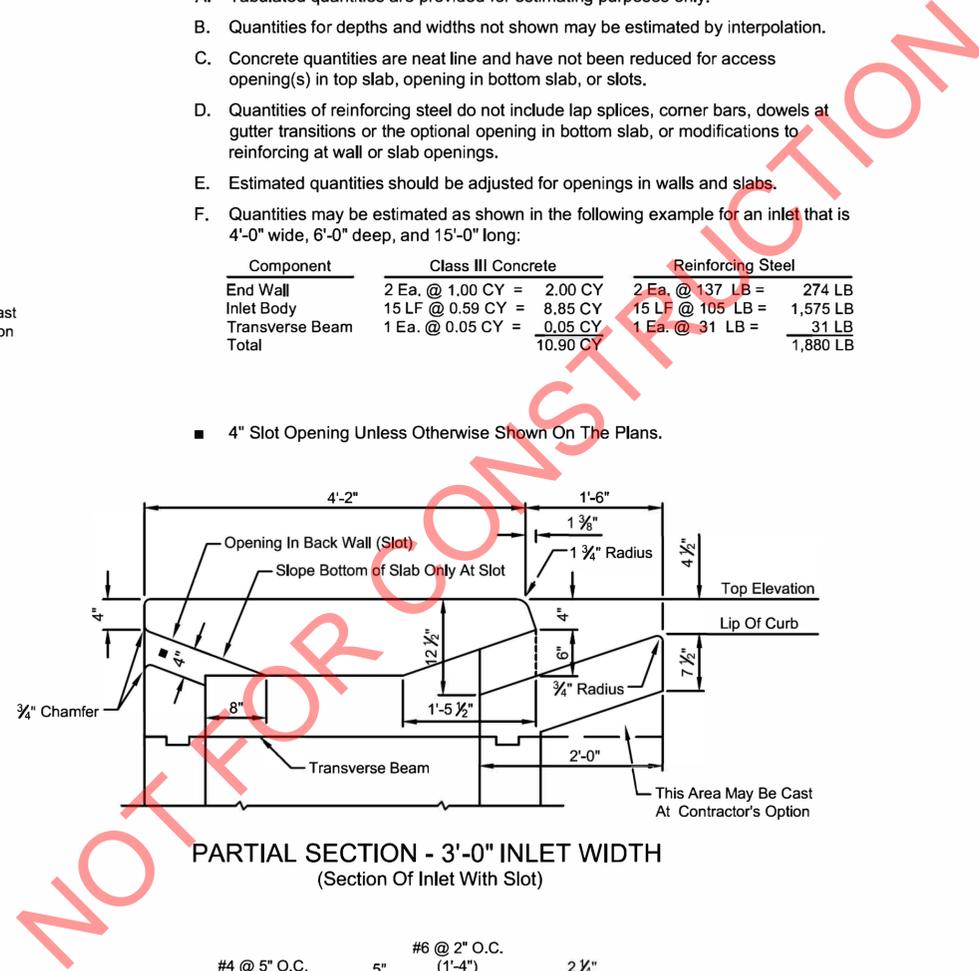
Inlet Depth	ESTIMATED QUANTITIES																							
	Inlet Width = 3'-0"						Inlet Width = 4'-0"						Inlet Width = 5'-0"						Inlet Width = 6'-0"					
	End Wall (Each)		Inlet Body (Per Linear Foot)		Transverse Beam (Each)		End Wall (Each)		Inlet Body (Per Linear Foot)		Transverse Beam (Each)		End Wall (Each)		Inlet Body (Per Linear Foot)		Transverse Beam (Each)		End Wall (Each)		Inlet Body (Per Linear Foot)		Transverse Beam (Each)	
Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	Class III Conc. CY	Reinf. Steel LB	
3' - 0"	0.50	80	0.40	82	0.05	31	0.60	83	0.44	82	0.05	31	0.70	99	0.49	87	0.05	48	0.81	114	0.54	100	0.06	65
4' - 0"	0.61	95	0.45	89	0.05	31	0.73	101	0.49	91	0.05	31	0.86	120	0.54	93	0.05	48	0.99	139	0.59	107	0.06	65
5' - 0"	0.72	109	0.50	96	0.05	31	0.86	119	0.54	98	0.05	31	1.02	141	0.59	100	0.05	48	1.17	163	0.64	114	0.06	65
6' - 0"	0.83	123	0.55	103	0.05	31	1.00	137	0.59	105	0.05	31	1.17	162	0.64	107	0.05	48	1.35	188	0.69	121	0.06	65
7' - 0"	0.93	138	0.60	110	0.05	31	1.13	154	0.64	112	0.05	31	1.33	183	0.69	114	0.05	48	1.53	212	0.74	128	0.06	65
8' - 0"	1.04	152	0.65	117	0.05	31	1.26	172	0.69	119	0.05	31	1.49	204	0.74	121	0.05	48	1.72	236	0.79	135	0.06	65
9' - 0"	1.15	167	0.70	124	0.05	31	1.39	190	0.74	126	0.05	31	1.64	226	0.79	128	0.05	48	1.90	281	0.84	142	0.06	65
10' - 0"	1.26	181	0.75	131	0.05	31	1.52	208	0.79	133	0.05	31	1.80	247	0.84	139	0.05	48	2.08	285	0.89	149	0.06	65

QUANTITY NOTES

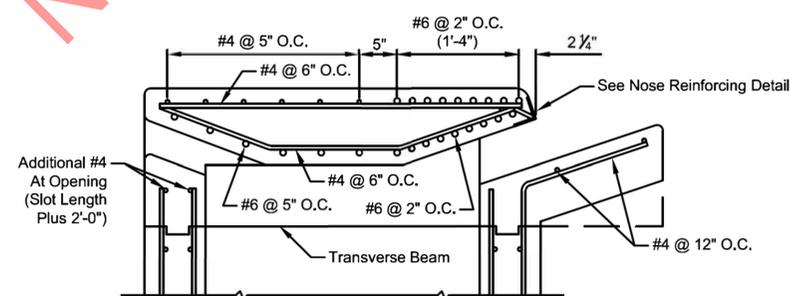
- A. Tabulated quantities are provided for estimating purposes only.
- B. Quantities for depths and widths not shown may be estimated by interpolation.
- C. Concrete quantities are neat line and have not been reduced for access opening(s) in top slab, opening in bottom slab, or slots.
- D. Quantities of reinforcing steel do not include lap splices, corner bars, dowels at gutter transitions or the optional opening in bottom slab, or modifications to reinforcing at wall or slab openings.
- E. Estimated quantities should be adjusted for openings in walls and slabs.
- F. Quantities may be estimated as shown in the following example for an inlet that is 4'-0" wide, 6'-0" deep, and 15'-0" long:

Component	Class III Concrete	Reinforcing Steel
End Wall	2 Ea. @ 1.00 CY = 2.00 CY	2 Ea. @ 137 LB = 274 LB
Inlet Body	15 LF @ 0.59 CY = 8.85 CY	15 LF @ 105 LB = 1,575 LB
Transverse Beam	1 Ea. @ 0.05 CY = 0.05 CY	1 Ea. @ 31 LB = 31 LB
Total	10.90 CY	1,880 LB

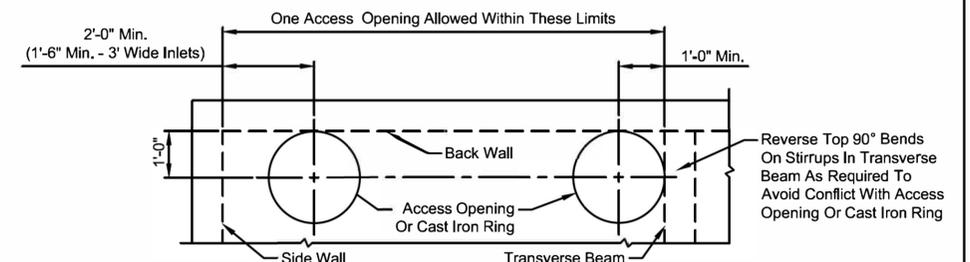
- 4" Slot Opening Unless Otherwise Shown On The Plans.



PARTIAL SECTION - 3'-0" INLET WIDTH
(Section Of Inlet With Slot)



PARTIAL SECTION - 3'-0" INLET WIDTH
(Section Of Inlet With Slot)



Note:
Only one access opening is allowed in each segment of inlet top between an outside wall and a transverse beam or between two transverse beams.

ACCESS OPENING LOCATION DETAIL
(Left Side Shown - Right Side Similar)

REQUIREMENTS FOR PRECAST CONSTRUCTION

1. Shop drawings for all precast construction must be submitted for approval in accordance with Article 7.0 of the General Provisions.
2. Precast construction shall not extend above the upper construction joint in the walls as shown on the drawings.
3. Concrete shall meet the requirements specified in the General Notes on Sheet 1 for cast-in-place construction.
4. All reinforcing steel shall meet the requirements specified in the General Notes on Sheet 1 for cast-in-place construction and shall be the same size and configuration as shown on the drawings for cast-in-place construction.
5. Vertical reinforcement in the walls of precast structures must extend above the top of the structure to the projections shown on the drawings for cast-in-place construction or of sufficient length to provide a minimum splice length of 17".
6. Precast sections may be fabricated in segments under the following conditions:
 - 1) Open ends of segments must be X-braced to support construction loads.
 - 2) Cast-in-place closures between segments must be a minimum of 24" wide.
 - 3) All reinforcing steel within closure areas must be the same size and configuration as shown on the drawings for cast-in-place construction.
 - 4) Reinforcing bars in the floors and walls of precast sections must project into closure areas a minimum of 20" and be placed to form lap splices with bars in the opposing sections.
 - 5) Bonding adhesive (Sikadur 31, or approved equal) must be applied to mating surfaces of the closures immediately prior to placing concrete.
7. The excavated surface upon which a precast section is to be placed shall be level, firm and unyielding. Any unsuitable material encountered shall be removed and replaced with compacted A-3 material. A 3-inch minimum thick bedding layer of sand or granular material shall be placed in the footprint of the unit so that it extends at least 6 inches beyond the perimeter of the precast component.
8. Backfill shall not be placed against the walls of a precast section until the cast-in-place top has been poured and cured for a minimum of 5 days unless bracing that prevents wall deflection has been installed inside the precast section.

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REVISIONS	
DATE	DESCRIPTION
03/13/18	RJM Update Index References To FDOT Standard Plans

STRUCTURAL DESIGN BY
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STANDARD DETAILS
CURB INLET TYPE SP-HC

CITY OF TALLAHASSEE
STORMWATER MANAGEMENT
300 South Adams Street, B-35, Tallahassee, Florida 32301

STRUCTURAL GENERAL NOTES

1. GENERAL NOTES

- 1.1. THE GOVERNING CODE FOR THIS PROJECT IS THE FLORIDA BUILDING CODE 6th EDITION (2017). THIS CODE PRESCRIBES WHICH EDITION OF EACH REFERENCE STANDARD APPLIES TO THIS PROJECT.
- 1.2. THE GOVERNING CODE FOR DESIGN OF TRAFFIC BARRIERS IN OPEN ACCESS AREAS IS AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 6th EDITION (2012).
- 1.3. CONSTRUCTION IS TO COMPLY WITH THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES, STANDARDS, REGULATIONS AND LAWS.
- 1.4. DETAILS LABELED "TYPICAL" APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED, WHETHER OR NOT THEY ARE KEVED IN AT EACH LOCATION.
- 1.5. THE GENERAL CONTRACTOR SHALL COORDINATE ALL CONTRACT DOCUMENTS WITH FIELD CONDITIONS AND DIMENSIONS AND PROJECT SHOP DRAWINGS PRIOR TO CONSTRUCTION. DO NOT SCALE DRAWINGS. USE ONLY PRINTED DIMENSIONS. REPORT ANY DISCREPANCIES IN WRITING TO THE ENGINEER PRIOR TO PROCEEDING WITH WORK. DO NOT CHANGE SIZE OR LOCATION OF STRUCTURAL MEMBERS WITHOUT WRITTEN INSTRUCTIONS FROM THE ENGINEER OF RECORD.
- 1.6. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY, HIS OWN WORK, AND THE GENERAL PUBLIC FROM HARM. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, AND JOBSITE SAFETY INCLUDING ALL OSHA REQUIREMENTS.
- 1.7. THE STRUCTURE IS DESIGNED TO BE STRUCTURALLY SOUND WHEN COMPLETED. PRIOR TO COMPLETION, THE CONTRACTOR IS RESPONSIBLE FOR STABILITY AND TEMPORARY BRACING. WHEREVER THE CONTRACTOR IS UNSURE OF THESE REQUIREMENTS, THE CONTRACTOR SHALL RETAIN A FLORIDA LICENSED ENGINEER TO DESIGN AND INSPECT THE TEMPORARY BRACING AND STABILITY OF THE STRUCTURE.

2. DESIGN LOADS

- 2.1. GRASSED AREAS = 100 PSF
- 2.2. GUARDRAILS / RAILING
 - 2.2.1. PEDESTRIAN = 200 LBS. OR 50 PLF

3. WIND LOAD DESIGN CRITERIA (PER ASCE 7-10)

- 3.1. WIND SPEED (ULT/ASD) = 120 MPH / 93 MPH
- 3.2. RISK CATEGORY = II
- 3.3. WIND EXPOSURE CATEGORY = B
- 3.4. ENCLOSURE CLASSIFICATION = FREE STANDING WALL

4. GEOTECHNICAL MATERIALS & CONSTRUCTION NOTES

- 4.1. THE FOUNDATION DESIGN, SOIL PREPARATION, AND COMPACTION ARE BASED ON GEOTECHNICAL INVESTIGATION, DATA, AND RECOMMENDATIONS PRESENTED IN FILE NUMBER 19-3973 BY ALPHA GEOTECHNICAL AND TESTING SERVICES, INC. DATED AUGUST 20, 2019.
- 4.2. THE RETAINING WALL DESIGN CRITERIA PRESENTED IN THE GEOTECHNICAL REPORT IS PROVIDED BELOW ALONG WITH ANY ASSUMED VALUES WHICH ARE MARKED WITH AN *
 - 4.2.1. ALLOWABLE BEARING CAPACITY = 2,250 PSF
 - 4.2.2. MOIST SOIL DENSITY = 115 PCF
 - 4.2.3. ACTIVE PRESSURE COEFFICIENT = 0.36
 - 4.2.4. AT-REST PRESSURE COEFFICIENT = 0.50
 - 4.2.5. PASSIVE PRESSURE COEFFICIENT = 2.8
 - 4.2.6. COEFFICIENT OF FRICTION = 0.40
 - 4.2.7. UNDRAINED COHESION = 0 PSF
 - 4.2.8. SURCHARGE = SEE DESIGN LOADS ABOVE
- 4.3. THE BEARING CAPACITIES SHOWN SHALL BE VERIFIED IN THE FIELD THROUGH COMPACTION TESTS AND/OR PROOF ROLLING OF THE SITE IN THE VICINITY OF THE PROPOSED WALL FOOTINGS.
- 4.4. OVER EXCAVATE TO A DEPTH OF 12 INCHES BELOW THE BOTTOM OF ALL FOOTINGS AND COMPACT TO A DEPTH OF 12 INCHES AT OPTIMUM MOISTURE CONTENT TO 95% MODIFIED PROCTOR, ASTM D1557.
- 4.5. BACKFILL WITH A SELECT SAND (SM/A-2-4) PLACED IN LIFTS OF NO MORE THAN 12 INCHES OF LOOSE SOIL AND COMPACT TO 95% MODIFIED PROCTOR, ASTM D1557.
- 4.6. SUBGRADE PREPARATION SHALL BE FIELD CONTROLLED AND TESTED BY A LICENSED GEOTECHNICAL ENGINEER IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. AT COMPLETION, THAT ENGINEER SHALL PREPARE AND SUBMIT TO THE OWNER, CIVIL ENGINEER, CONTRACTOR, AND STRUCTURAL ENGINEER A SIGNED AND SEALED LETTER INDICATING THAT THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT HAVE BEEN FOLLOWED.
- 4.7. REFER TO GEO-TECHNICAL REPORT FOR SUB-GRADE PREPARATION MORE THAN 12" BELOW BOTTOM OF SLAB.
- 4.8. ABOVE SUB-GRADE, USE FILL CONTAINING NOT MORE THAN 12% PASSING #200 SIEVE AND MAXIMUM 1% COMPACT TO A DENSITY OF 95% OF THE MAXIMUM DRY DENSITY THROUGHOUT ITS FULL DEPTH AS DETERMINED BY MODIFIED PROCTOR ASTM D-1557.
- 4.9. SOILS ARE CLASSIFIED AS SLIGHTLY AGGRESSIVE FOR BOTH STEEL AND CONCRETE SUB-STRUCTURES.

5. REINFORCED CONCRETE

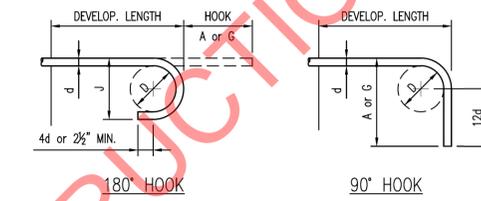
- 5.1. ALL REINFORCED CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI 301 AND 318.
- 5.2. PROVIDE STRUCTURAL CONCRETE WITH A MINIMUM ULTIMATE COMPRESSIVE DESIGN STRENGTH IN 28 DAYS OF:
 - 5.2.1. FOOTINGS 5,500 PSI NW FOOT CLASS V
 - 5.2.2. CAST IN PLACE WALLS 5,500 PSI NW FOOT CLASS V
- 5.3. USE NORMAL WEIGHT CONCRETE FOR ALL STRUCTURAL MEMBERS. U.O.N.
- 5.4. PROVIDE ASTM A-615 GRADE 60 REINFORCING STEEL. REINFORCING SHALL BE ACCURATELY PLACED, RIGIDLY SUPPORTED AND FIRMLY TIED IN PLACE, WITH APPROPRIATE BAR SUPPORTS AND SPACERS. LAP CONTINUOUS REINFORCING AS SHOWN IN THE PROVIDED REBAR LAP SPLICE LENGTHS TABLE.
- 5.5. PROVIDE COVER OVER REINFORCING AS FOLLOWS:
 - 5.5.1. CAST AGAINST & EXPOSED TO EARTH/WEATHER 3"
 - 5.5.2. EXPOSED TO EARTH/WEATHER
 - #6 THROUGH #18 REBAR 2"
 - #5 REBAR, W31/D31 WIRE OR SMALLER 1-1/2"
 - 5.5.3. NOT EXPOSED TO EARTH/WEATHER
 - SLABS, WALLS, JOISTS #14 AND #18 REBAR 1-1/2"
 - #11 REBAR AND SMALLER BEAMS AND COLUMNS 3/4"
 - REINF, TIES, STIRRUPS, SPIRALS 1-1/2"
- 5.6. WHERE OPENINGS OTHER THAN DRAIN HOLES PENETRATE WALLS, CUT REINFORCING AND REPLACE A LONG SIDE OPENING WITH SPLICE BARS OF EQUIVALENT AREA WITH FULL LAP SPLICES AND ADD (1) #5 X 6" MID DEPTH & DIAGONAL AT ALL 4 CORNERS.
- 5.7. WHERE OPENINGS OTHER THAN DRAIN HOLES PENETRATE WALLS, PROVIDE CONTINUOUS SIKA SWELLSTOP SC, OR APPROVED ALTERNATE, WATERSTOP AT JOINT. WATERSTOP SHALL BE INSTALLED AT THE CENTERLINE OF WALL.
- 5.8. WHERE REINFORCING STEEL CONGESTION PERMITS, CONDUIT AND PIPES UP TO 1"Ø MAY BE EMBEDDED IN CONCRETE PER ACI 318, SECTION 6.3. SPACE AT 3Ø O.C. PLACE BETWEEN OUTER LAYERS OF REINFORCING IF CONDUITS ARE SIGNIFICANTLY CONGESTED, ADDITIONAL REINFORCING PERPENDICULAR TO PIPING MAY BE REQUIRED. REQUESTS TO EMBED LARGER PIPES SHOULD BE ACCOMPANIED BY A DETAILED DESCRIPTION AND BE SUBMITTED TO THE ENGINEER FOR EVALUATION.
- 5.9. PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI 318, SECTION 6.4. PROVIDE KEYWAYS AND ADEQUATE DOWELS. SUBMIT DRAWINGS SHOWING LOCATION OF CONSTRUCTION JOINTS AND DIRECTION OF POUR FOR REVIEW.
- 5.10. PROVIDE REINFORCING STEEL PLACER WITH A SET OF STRUCTURAL DRAWINGS FOR FIELD REFERENCE. INSPECT REINFORCING STEEL PLACING FROM STRUCTURAL DRAWINGS.
- 5.11. PROVIDE CONTROL JOINTS (SEE DETAIL E/S-1) AT A MAXIMUM SPACING OF 25'-0". PROVIDE EXPANSION JOINTS (SEE DETAIL F/S-1) AT A MAXIMUM SPACING OF 100'-0".

6. CHEMICAL ADHESIVES FOR ANCHOR BOLTS AND RODS

- 6.1. USE AN EPOXY, ACRYLIC OR POLYESTER RESIN ADHESIVE SYSTEM SUCH AS THE POWERS RAWL POWER-FAST SYSTEM, HILTI HIT HY150, ITW RAMSET/RED HEAD EPCON A7 OR CG INJECTION SYSTEM, ALLIED FASTENER ALLIED GOLD A-1000, OR ACCEPTED EQUIVALENT. FOLLOW MANUFACTURER'S SPECIFICATIONS FOR USE AND INSTALLATION.
- 6.2. CONFIRM THE ABSENCE OF REINFORCING STEEL BY DRILLING A 1/4"Ø PILOT HOLE FOR EACH ANCHOR. DO NOT CUT REINFORCING STEEL WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
- 6.3. DRILL 1/16" LARGER Ø HOLE THAN ANCHOR BOLT AND 1/8" LARGER HOLE THAN REINFORCING BAR. THOROUGHLY CLEAN HOLE INCLUDING REMOVAL OF DUST PRIOR TO FILLING WITH EPOXY.
- 6.4. PROVIDE ANCHOR EMBEDMENT, SPACING AND EDGE DISTANCE AS SHOWN ON THE DRAWINGS.
- 6.5. THREADED RODS ARE A-36 GALVANIZED STEEL, U.O.N.

BAR SIZE	f _c = 3,000 PSI		f _c = 4,000 PSI		f _c = 5,000 PSI	
	CLASS A	CLASS B	CLASS A	CLASS B	CLASS A	CLASS B
#3	16"	21"	14"	18"	13"	17"
#4	22"	28"	19"	25"	17"	22"
#5	27"	36"	24"	31"	21"	28"
#6	33"	43"	28"	37"	25"	33"
#7	48"	62"	42"	54"	37"	48"
#8	55"	71"	47"	62"	42"	55"
#9	62"	80"	54"	70"	48"	62"
#10	70"	90"	60"	78"	54"	70"
#11	77"	100"	67"	87"	60"	78"

- REBAR LAP SPLICE NOTES:
1. CLASS B SPLICES SHALL BE PROVIDED FOR ALL VERTICAL REINFORCING STEEL.
 2. CLASS A SPLICES ARE ALLOWED FOR CONTINUOUS HORIZONTAL REINFORCING STEEL IF NO MORE THAN 50% OF THE STEEL IS LAPPED AT THE SAME LOCATION.

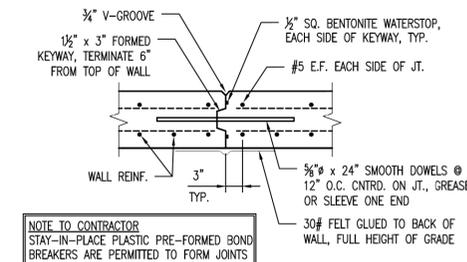


BAR SIZE	PIN. DIAM. D	180° HOOK		90° HOOK		CONC. COMPRESSIVE STRENGTH		
		A or G	J	A or G	J	3,000 PSI	4,000 PSI	4,000 PSI
#3	2 1/4"	0'-5"	0'-3"	0'-6"	6"	6"	6"	6"
#4	3"	0'-6"	0'-4"	0'-8"	8"	7"	6"	6"
#5	3 1/2"	0'-7"	0'-5"	0'-10"	10"	9"	8"	8"
#6	4 1/2"	0'-8"	0'-6"	1'-0"	12"	10"	9"	9"
#7	5 1/2"	0'-10"	0'-7"	1'-2"	14"	12"	11"	11"
#8	6"	0'-11"	0'-8"	1'-4"	16"	14"	12"	12"
#9	9 1/2"	1'-3"	0'-11 1/2"	1'-8"	18"	15"	14"	14"
#10	10 1/2"	1'-5"	1'-10 1/2"	1'-10"	20"	17"	15"	15"
#11	12"	1'-7"	1'-23 1/2"	2'-1"	22"	19"	17"	17"

- REBAR STANDARD HOOK NOTES:
1. D = FINISHED BEND DIAMETERS.
 2. REFER TO ACI 315 FOR ALTERNATE BEND PATTERN DIMENSIONS AND REQUIREMENTS.
 3. ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 INCHES FOR #7 BAR AND 8 INCHES FOR #8 BAR.

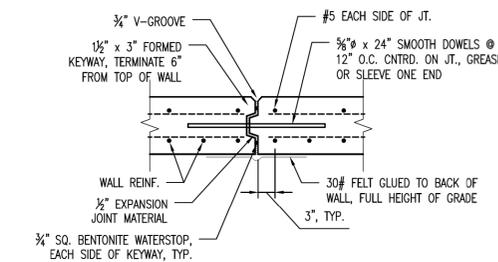
CONC. LAP SPLICE TABLES

SCALE: N/A



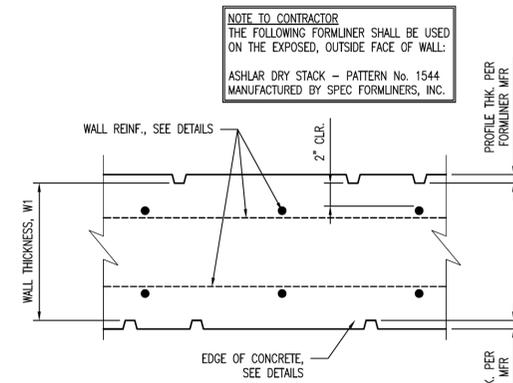
WALL CONTROL JT. (CJ)

SCALE: 3/4" = 1'-0"



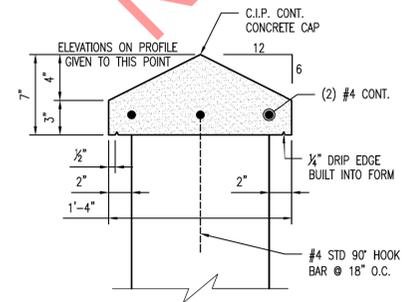
WALL EXPANSION JT. (EJ)

SCALE: 3/4" = 1'-0"



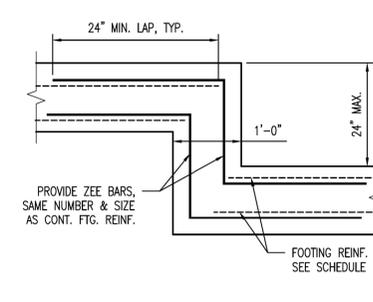
TYP. FORMLINER DETAIL

SCALE: 1/2" = 1'-0"



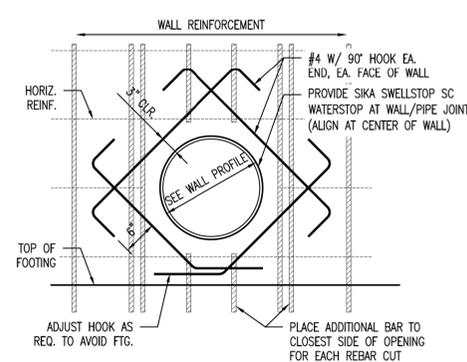
TYP. CONC. CAP DETAIL

SCALE: 1/2" = 1'-0"



TYP. FOOTING STEP DETAIL

SCALE: 3/4" = 1'-0"



WALL PENETRATION DETAIL

SCALE: 3/4" = 1'-0"



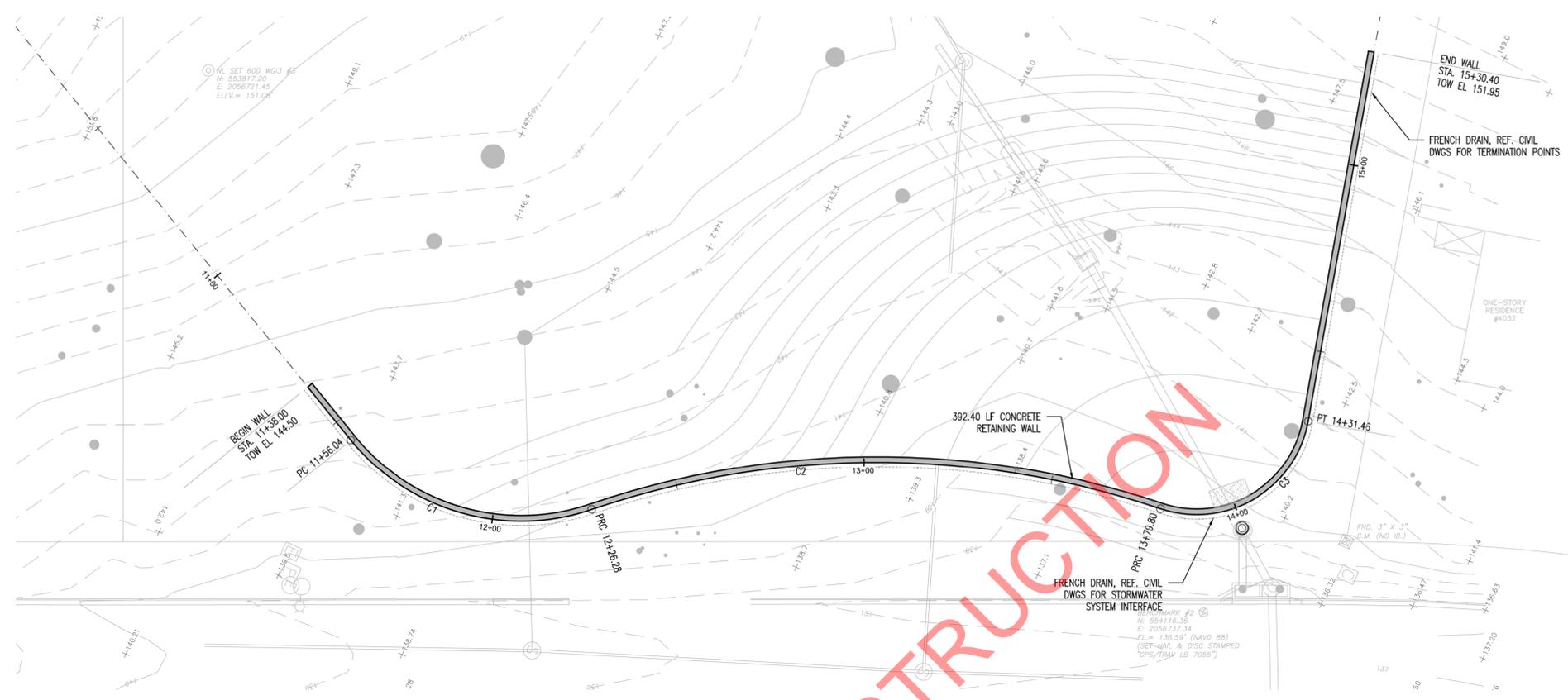
Brandon Hill Drainage Improvements
Retaining Wall Design Drawings
Tallahassee, Florida

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Brian E. Kever, P.E.
Florida PE No. 65627
Digitally signed by Brian E. Kever
Date: 2019-10-24 16:54:28

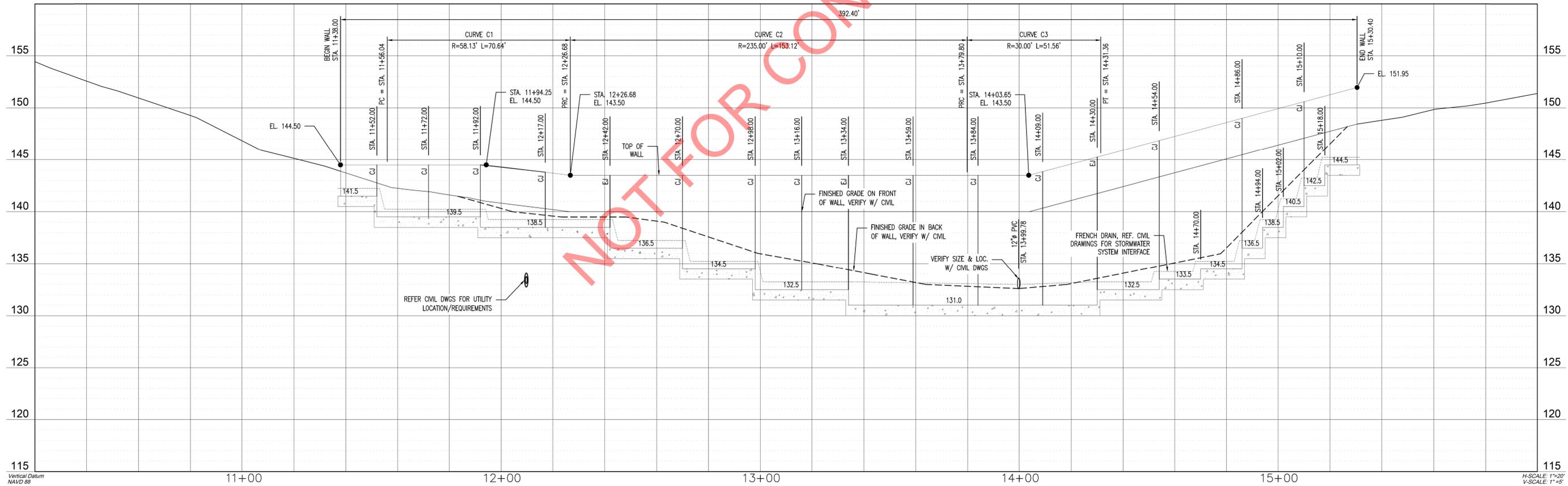
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Checked	B. Kever	Rev. 2
Job Number	19141	Rev. 3
Date	10/21/2019	Rev. 4

General Notes and Typical Details



RETAINING WALL PLAN
SCALE - 1"=20'



RETAINING WALL PROFILE
SCALE: AS NOTED

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Wall Plan and Wall Profile



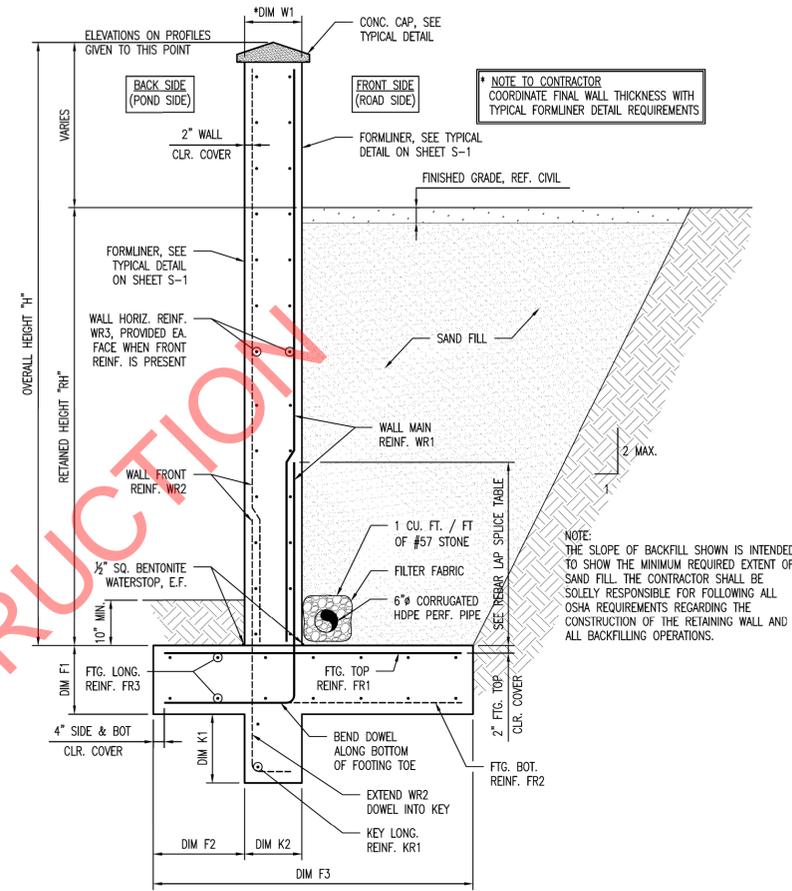
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by Brian E.
Kever
Date: 2019-10-24 16:
58:05

Brandon Hill Drainage Improvements
Retaining Wall Design Drawings
Tallahassee, Florida



RETAINING WALL SECTION
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

MAX. OVERALL HEIGHT "H"	MAX. RETAINED HEIGHT "RH"	WALL DIMENSIONS & REINFORCEMENT					FOOTING DIMENSIONS & REINFORCEMENT							
		DIM. W1	REINF. WR1	REINF. WR2	REINF. WR3	DIM. F1	DIM. F2	DIM. F3	DIM. K1	DIM. K2	REINF. FR1	REINF. FR2	REINF. FR3	REINF. KR1
7'-6"	4'-0"	12"	#4 @ 12"	#4 @ 12"	#4 @ 12"	18"	1'-0"	4'-0"	1'-6"	1'-0"	#4 @ 12"	#4 @ 12"	(4) #4 T&B	(2) #4
9'-6"	6'-0"	12"	#4 @ 6"	#4 @ 12"	#4 @ 12"	18"	1'-6"	5'-0"	1'-6"	1'-0"	#4 @ 6"	#4 @ 6"	(5) #4 T&B	(2) #4
12'-6"	9'-0"	12"	#5 @ 6"	#4 @ 12"	#4 @ 12"	18"	3'-0"	8'-0"	1'-6"	1'-0"	#5 @ 6"	#5 @ 6"	(8) #4 T&B	(2) #4
14'-6"	11'-0"	12"	#5 @ 6"	#4 @ 12"	#4 @ 12"	18"	4'-0"	9'-0"	2'-6"	1'-0"	#5 @ 6"	#5 @ 6"	(9) #4 T&B	(3) #4

MATERIAL QUANTITY ESTIMATE					
STATION		MATERIAL			
START	END	WALL CONC.	WALL REINF.	FOOTING CONC.	FOOTING REINF.
11+38.00	12+42.00	21.2 CY	1700 LBS	34.7 CY	2870 LBS
12+42.00	13+34.00	35.2 CY	3360 LBS	43.5 CY	4260 LBS
13+34.00	14+30.00	50.9 CY	6240 LBS	64.0 CY	8510 LBS
14+30.00	15+30.40	49.9 CY	6120 LBS	69.0 CY	8260 LBS

NOTE:
THIS TABLE PROVIDES ESTIMATED QUANTITIES FOR BID PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING QUANTITIES PER REQUIREMENTS DETAILED IN THESE CONSTRUCTION DOCUMENTS. A 1.125 MULTIPLIER HAS BEEN APPLIED TO THESE TABULATED VALUES FOR CONSTRUCTION CONTINGENCY.

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Date: 10/21/2019 Rev. 4

Wall Section

