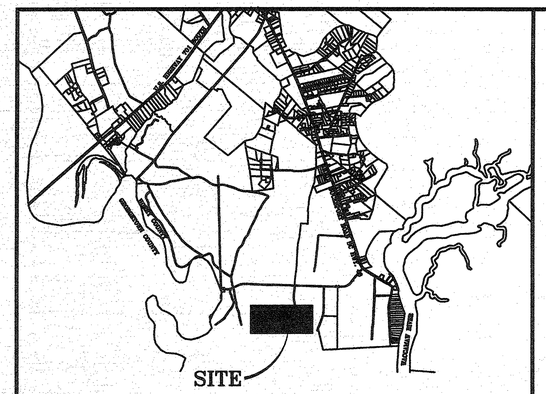

LOCATION MAP
N.T.S.

SITE CONSTRUCTION PLANS FOR:

GSWSA BUCKSPORT COMPOSTING FACILITY

Includes: Stormwater, Grading, PAVING, Erosion Control, and Water.

PERMIT NUMBERS
SCDHEC-OCRM PERMIT No.: SCR10M921
SCDHEC WATER PERMIT No.: No. 36375-WW
SCDHEC SEWER PERMIT No.: N/A
SCDOT PERMIT No.: N/A
USACOE PERMIT No.: SAC81-2005-1174-3 DATED JULY 19, 2005
HORRY COUNTY STORMWATER APPROVAL DATED JULY 21, 2010

SPECIFICATIONS LIST

1.) WATER AND SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF *GRAND STRAND WATER & SEWER AUTHORITY AND SCDHEC*.

2.) ROAD AND DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH *THE CURRENT HORRY COUNTY LAND DEVELOPMENT REGULATIONS, THE STORMWATER ORDINANCE OF HORRY COUNTY AND SCDHEC-OCRM REGULATIONS.*

3.) ADDITIONAL SPECIFICATIONS SHALL BE AS NOTED ON THESE PLANS.

FLOOD ZONE INFORMATION

THIS PROPERTY IS LOCATED IN FLOOD ZONE "X" AS SCALED FROM F.I.R.M. No. 45051C0665 H DATED AUGUST 23, 1999.

GEOTECHNICAL CONSULTANT

S&ME, INC.
1330 HWY 501 BUSINESS
CONWAY, SC 29526
(843) 347-7800

LAND SURVEYOR

ASSOCIATED LAND SURVEYORS
2411 OAK STREET, SUITE 304
MYRTLE BEACH, SC 29577
(843) 626-7393

OWNER / DEVELOPER

GSWSA
P.O. BOX 2368
CONWAY, SC 29528
(843) 443-8200

CONTRACTOR

TBD

PROJECT SUMMARY:
COMPOSTING FACILITY LOCATED IN BUCKSPORT, HORRY COUNTY, SC
TAX PARCEL: PORTION OF TMS#183-00-04-055
CURRENT ZONING: LFA
TOTAL PROJECT AREA = 14.59 ACRES
PROPOSED LAND DISTURBANCE AREA = 9.19 ACRES
PROPOSED USE: COMPOST FACILTY
DRAINAGE: PRIVATE
WATER AND SEWER: PRIVATE SERVICES

HORIZONTAL DATUM: NAD 83
VERTICAL DATUM: NAVD 88
BENCHMARK: AS SHOWN ON PLANS

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 1-800-922-0983
PALMETTO UTILITY PROTECTION SERVICE

SHEET INDEX

DESCRIPTION	SHEET
COVER SHEET	C1
GENERAL NOTES	C2
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GRADING & EROSION CONTROL PLAN	C5
DRAINAGE PLAN	C6
UTILITY PLAN	C7
DRAINAGE PROFILES	C8
DETAIL SHEET#1	C9
DETAIL SHEET#2	C10

REFERENCES:

1) WETLAND SURVEY OF SITE DATED FEB. 23, 1999 FOR GRAND STRAND WATER & SEWER BY ASSOCIATED LAND SURVEYORS.

2) TOPOGRAPHIC SURVEY OF SITE DATED NOV. 16, 2009 BY ASSOCIATED LAND SURVEYORS.

DRY UTILITIES:

DRY UTILITIES IF SHOWN ON THESE PLANS ARE APPROXIMATE OR CONCEPTUAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ALL EXISTING UTILITIES LOCATED AND TO OBTAIN COPIES OF THE PROPOSED DESIGN.

NO.	DATE	DESCRIPTION	SHEETS AFFECTED	BY
1	07/02/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10	ALL SHEETS	TEH

PURPOSE OF ISSUE:
BID SET
08-30-10

Castles Engineering
ENGINEERING / PLANNING
LAND SURVEYING
2411 Oak Street, Suite 304
Myrtle Beach, SC 29577
Telephone: 843-448-0910
Fax: 843-448-0969
www.castlesengineering.com

COVER SHEET
BUCKSPORT COMPOSTING FACILITY
for
GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE: NTS
DESIGNED BY: TEH
DRAWN BY: TEH
CHECKED BY: JRP
DATE ISSUED: 05/21/10

Number	Date	Revisions
1	07/02/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10

CASTLES CONSULTING ENGINEERS, INC. No. 000350 — SOUTH CAROLINA — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 20964 — JOHN R. POSTON — 08-30-10

SHEET NUMBER:
C1

PROJECT#: 09.030

REPRODUCTION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN PERMISSION IS STRICTLY FORBIDDEN

DWG NAME:

WATER

1. ALL MATERIALS AND WORKMANSHIP ARE TO CONFORM TO THE REQUIREMENTS SET FORTH BY GSWSA AND SC DHEC.
2. IN THE EVENT AN ITEM IS NOT COVERED BY THESE PLANS, THEN GSWSA AND SC DEPT. OF HEALTH AND ENVIRONMENTAL CONTROLS GENERAL SPECIFICATIONS COVERING SUCH ITEMS SHALL APPLY.
3. WATER MAINS SHALL BE C-900, CL 100 PVC PIPE, BLUE IN COLOR AS SHOWN ON PLANS.
4. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY EXACT LOCATIONS OF EXISTING PUBLIC AND PRIVATE UTILITIES AND SERVICES PRIOR TO COMMENCING CONSTRUCTION.
5. LOCATIONS AND SIZES OF EXISTING PUBLIC AND PRIVATE UTILITIES SHOWN ON THESE PLANS ARE FROM "AS-BUILT" RECORDS ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING ALL UTILITIES AND FOR DAMAGES RESULTING FROM FAILURE TO DO SO.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING "AS-BUILT" PLANS TO THE ENGINEER SHOWING THE LOCATION OF WATER AND SEWER INFRASTRUCTURE IN STATE PLANE COORDINATES AND ANY DEVIATIONS FROM PLANS MADE DURING CONSTRUCTION. THE ENGINEER WILL PROVIDE RECORD PLANS TO GSWSA.
7. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE UTILITIES. ALL PUBLIC PIPE, STRUCTURES, AND FITTINGS SHALL BE INSPECTED BY GSWSA INSPECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING DISINFECTION AND PRESSURE TESTING OF ALL MAINS. THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL INSPECTION FEES.
8. WATER MAINS SHALL HAVE A MINIMUM COVER OF 36" BELOW PROPOSED FINISHED GRADE.

GRADING

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, SCDOT STANDARD SPECIFICATIONS EDITED 2007, AND HORRY COUNTY STANDARD SPECIFICATIONS AND GENERAL DESIGN STANDARDS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
3. ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT HIS EXPENSE.
4. BEFORE ANY EARTHWORK IS DONE, THE CONTRACTOR SHALL STAKE OUT AND FLAG THE CLEARING LIMITS AND OTHER ITEMS ESTABLISHED BY THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
5. EXISTING CONTOURS AS SHOWN ON THIS PLAN WERE TAKEN FROM A FIELD TOPOGRAPHIC SURVEY PREPARED BY OTHERS. BASED ON THE BENCHMARK SHOWN, CONTRACTOR SHALL REFERENCE SAME BENCHMARK.
6. THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE AND PLACE, COMPACT, AND FILL PER THE PROJECT GEOTECHNICAL ENGINEER'S SPECIFICATIONS. THE FILL MATERIAL TO BE USED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
7. GRADING CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS. CONTRACTOR IS RESPONSIBLE FOR CLEARING PROPOSED PUBLIC UTILITY EASEMENTS.
8. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND APPROVALS PRIOR TO CONSTRUCTION.
9. REFER TO PLAN AND PROFILE SHEETS FOR EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
10. NO TREE SHALL BE REMOVED OR DAMAGED WITHOUT PRIOR AUTHORIZATION OF THE OWNER OR OWNER'S REPRESENTATIVE. EXISTING TREES SHALL BE PRESERVED WHENEVER POSSIBLE.
11. CONTRACTOR IS RESPONSIBLE FOR PROPERLY DISPOSING OF EXCESS MATERIAL OFF-SITE.
12. CONTRACTOR SHALL CONTACT ASSOCIATED LAND SURVEYING TO ESTABLISH BENCHMARK AND HORIZONTAL CONTROL.

ELECTRICAL RECEPTACLES FOR BLOWERS

1. CONTACTOR TO PROVIDE (1) 120 VOLT RECEPTACLE AT LOCATIONS SPECIFIED TO EACH PILE.
2. RECEPTACLE SHALL BE STANDARD OUTDOOR WATERPROOF HOUSING SET AT 2' ABOVE GRADE.

SIGHT LIGHTING

1. SITE LIGHTING SHALL BE DESIGNED AND PROVIDED BY OTHERS.

EROSION CONTROL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR PROPERLY DISPOSING OF EXCESS MATERIAL OFF-SITE.
2. CONTRACTOR SHALL INSTALL AND MAINTAIN THROUGHOUT THE CONSTRUCTION PROJECT ALL EROSION CONTROL COUNTER MEASURES SHOWN ON THIS SHEET IN ACCORDANCE WITH APPLICABLE STANDARDS FROM THE SOUTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS.
3. CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 14 WORKING DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING, PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 14 WORKING DAYS FOLLOWING COMPLETION OF CONSTRUCTION.
4. GROUND COVER SHALL BE ESTABLISHED PER "SEEDBED PREPARATION NOTES" PROVIDED ON THIS SHEET.
5. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
6. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
7. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
8. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
9. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
   - a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
   - b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
   - c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
   - d. MATERIAL USED FOR BACK FILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.
   - e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
   - f. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.
10. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FORM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
11. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURE SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
12. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SOUTH CAROLINA EROSION AND SEDIMENT CONTROL REGULATIONS, U.S. DEPT. OF AGRICULTURE, AND U.S. SOIL CONSERVATION SERVICE.
13. THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION. THE CONTRACTOR SHALL MAINTAIN CLOSE CONTACT WITH THE COUNTY EROSION CONTROL INSPECTOR SO THAT PERIODIC INSPECTIONS CAN BE PERFORMED AT APPROPRIATE STAGES OF CONSTRUCTION.(ex: rainfall event, major disturbance, planned inspections, etc.)
14. THE CONTRACTOR SHALL PROVIDE ON-SITE BOX FOR ALL PLANS & EROSION CONTROL REPORTS (SWPPP) DURING CONSTRUCTION. UPON COMPLETION OF CONSTRUCTION REPORTS WILL BE KEEP BY DEVELOPER.

SHEDS

1. CONTACTOR SHALL PROVIDE STEEL-FRAMED, TIN-ROOFED SHEDS OF SIZE SPECIFIED ON THESE PLANS.
2. SHEDS SHALL A MINIMUM OF 16' CLEARANCE HEIGHT FROM GRADE TO LOWEST CROSS MEMBER.
3. ROOF PITCH FOR SHEDS SHALL BE MINIMUM 1:12.
4. GUTTERS AND DOWN SPOUTS SHALL BE PROVIDED AS SHOWN ON THESE PLANS. DOWN SPOUTS SHALL BE TIED TO COLLECTION SYSTEM FOR ROUTING TO DETENTION POND.
5. SHED DESIGN, ENGINEERING, AND PERMITTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. SHOP DRAWINGS SHALL BE PROVIDED TO ENGINEER PRIOR TO FABRICATION.
7. LIGHTING FOR SHEDS SHALL BE DESIGNED AND PROVIDED BY CONTRACTOR.
8. SHEDS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS, HORRY COUNTY GENERAL AND DESIGN STANDARDS, AND THE IBC STANDARD SPECIFICATIONS LATEST EDITION.

STORM DRAINAGE

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, AND HORRY COUNTY STANDARD SPECIFICATIONS AND GENERAL DESIGN STANDARDS.
2. THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
3. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE SILT FENCES (OR OTHER METHODS APPROVED BY THE ENGINEER AND OCRM) AS REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, OR LOCAL EROSION, CONSERVATION, AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS OR OTHER GROWTH TO PREVENT EROSION.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE TRENCH SAFETY DURING ALL PHASES OF CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
6. ONLY TYPE S OR M MORTAR IS TO BE USED IN STORMWATER SYSTEM CONSTRUCTION AND ALL BRICKWORK AND BRICK MUST MEET SC-DOT STANDARD SPECIFICATIONS.

GENERAL NOTES

1. CONTRACTOR IS FULLY RESPONSIBLE FOR THE COORDINATION OF THE DIFFERENT PARTS OF THE PROJECT AND HOW THEY FIT TOGETHER. FAILURE TO COORDINATE BY THE GENERAL CONTRACTOR WILL NOT BE REASON FOR CHANGE ORDER FOR WORK THAT HAS TO BE REDONE.
2. THE CONTRACTOR SHALL COORDINATE PLAN SHEETS WITH DETAILS SHEETS. THERE ARE ITEMS SHOWN ON THE DETAIL SHEETS THAT ARE REQUIRED BUT NOT NECESSARILY SHOWN ON THE PLAN SHEETS AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THESE ITEMS AND MAKE SURE THEY GET INSTALLED.
3. CONTRACTOR WILL BE FULLY RESPONSIBLE FOR KEEPING EXISTING FACILITIES IN FULL SERVICE WHILE HE COMPLETES HIS WORK. SHOULD WORK NEED TO BE DONE THAT WOULD REQUIRE THE SHUTDOWN OF SUCH FACILITIES, THEN IT SHALL BE DONE AFTER HOURS, AT NIGHT, OR ON WEEKENDS AT NO ADDITIONAL COST TO THE OWNER.
4. THE SOILS REPORT PERFORMED FOR THIS PROJECT BY AND THROUGH THE OWNER IS AN INTEGRAL PART OF THE DESIGN AND THE CONTRACTOR SHALL READ AND FOLLOW ITS RECOMMENDATIONS TO THE FULLEST EXTENT AS IF THEY WERE PART OF THESE PLANS.
5. THERE ARE SEVERAL COMPONENTS THAT COMPRISE THIS PROJECT AND EACH ARE RELATIVE TO HOW THE PROJECT IS TO BE BUILT. THESE ARE THE CONSTRUCTION PLANS, THE CONSTRUCTION DETAILS, SPECIFICATIONS, AND SOILS REPORT. FAILURE BY THE CONTRACTOR TO COORDINATE ALL OF THESE ITEMS MAY RESULT IN WORK THAT HAS TO BE REMOVED AND REDONE.
6. THE MATERIALS SPECIFIED SHALL BE NEW AND OF THE QUALITY CALLED OUT IN THE DRAWINGS, SPECIFICATIONS, AND SOILS REPORT. THE CONTRACTOR SHALL PROVIDE THE EXACT MATERIALS AND PLACE THEM IN ACCORDANCE WITH THE DOCUMENTS AND REGULATORY AGENCY REQUIREMENTS.
7. REFERENCE TO REGULATORY REQUIREMENTS AND SPECIFICATIONS SHALL MEAN THEY ARE AS MUCH A PART OF THIS DESIGN AS THOSE THAT ARE IN THE PLANS AND SPECS AND SHALL BE FOLLOWED AS IF THEY WERE FULLY ENUMERATED IN THOSE DOCUMENTS. IF THERE IS A CONFLICT BETWEEN THESE DOCUMENTS AND THOSE OF THE REGULATORY AGENCY, THEN THE MORE RESTRICTIVE OF THE TWO SHALL GOVERN THE CONSTRUCTION UNLESS THE REQUIREMENTS ARE WAIVED BY THE OWNER BY PROVIDING A LETTER FROM THE OWNER EXCEPTING DEVIATION FROM THE PLANS AND ASSUMING ALL RISKS ASSOCIATED THERE WITH THE USE OF SUCH DEVIATIONS.
8. ALL DIMENSIONS SHOWN ON HORIZONTAL CONTROL PLAN ARE FROM EDGE OF PAVEMENT.

CONSTRUCTION SEQUENCE

- OBTAIN GRADING PERMIT
- SET UP PRE-CONSTRUCTION CONFERENCE WITH HORRY COUNTY STORMWATER DEPARTMENT TO DISCUSS EROSION CONTROL MEASURES.
- MOBILIZATION ON-SITE
- INSTALL SILT FENCING AND TREE PROTECTION, CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES.
- CLEAR / GRUB / ROUGH GRADING AND INSTALLATION OF CONSTRUCTION ENTRANCE PADS.
- CALL FOR ON-SITE INSPECTION BY ENGINEERING INSPECTOR. WHEN APPROVED, BEGIN CLEARING AND GRUBBING.
- INSTALL NEW STORMWATER DRAINAGE SYSTEM INCLUDING INLET PROTECTION.
- MAINTAIN EROSION CONTROL DEVICES AS NEEDED.
- INSTALLATION OF UTILITIES.
- STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE.
- FINISH GRADING / PAVING.
- SHED INSTALLATION
- SITE CLEANUP / DEMOBILIZATION.

EQUIPMENT LIST

1. SEPARATOR SHALL BE A SM 720 TROMMEL SCREEN OR APPROVED EQUAL. DRUM SIZE SHALL BE 7' DIAMETER X 20' LONG AND SHALL HAVE A 24 VOLT ELECTRICAL SYSTEM.
2. MIXER SHALL BE A ROTOMIX 3410 OR APPROVED EQUAL. MIXER SHALL HAVE A MAXIMUM MIXING CAPACITY OF 34.1 CUBIC YARDS.
3. PORTABLE ELECTRIC BLOWERS SHALL BE DAYTON HIGH PRESSURE BELT DRIVE RADIAL BLADE BLOWERS. BLOWERS SHALL BE PROVIDED AT EACH PILE AND SHALL BE CAPABLE OF PROVIDING 3.33 CFM OF POSITIVE AND NEGATIVE AIR FLOW AT 6" OF WATER. BLOWERS SHALL HAVE 4" SUCTION AND DISCHARGE FITTINGS.
4. TRUCK SCALES SHALL BE 50'x10', 120 TON CAPACITY, WITH 12 VDC 1A ELECTRICAL REQUIREMENTS.

PAVING

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS SCDOT AND HORRY COUNTY STANDARDS.
2. ALL CONCRETE MIXES AND BASE MATERIALS AS SPECIFIED HEREIN SHALL BE IN ACCORDANCE WITH SCDOT STANDARD SPECIFICATIONS, ED. 2000.
3. THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.
4. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES ON PUBLIC STREETS SHALL CONFORM TO THE SCDOT STANDARDS/FOR ROADWAY CONSTRUCTION AND THE SCMUTCD.
5. GRADATION OF GABC SHALL BE IN ACCORDANCE WITH SCDOT STANDARD SPECIFICATIONS LATEST EDITION.
6. CONTRACTOR SHALL PROVIDE SLUMP AND STRENGTH TESTING INFORMATION AS DETERMINED BY GSWSA OR THE ENGINEER.

GRASSING/SODDING

1.) CONTRACTOR TO COORDINATE WITH GSWSA ON PERIMETER GRASSING/SODDING.

AS-BUILTS

1.) FINAL AS-BUILTS SHALL BE PROVIDED TO HORRY COUNTY PRIOR TO FINAL INSPECTION.

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Fax: 843-448-0969
www.castlesengineering.com
Castles Engineering

GENERAL NOTES

BUCKSPORT COMPOSTING FACILITY

for

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	NTS
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/02/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/10/10
2		
3		
4		
5		
6		

SOUTH CAROLINA CASTLES CONSULTING ENGINEERS, INC. No. 000350 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER JOHN R. POSTON NO. 20984

SHEET NUMBER:

C2

PROJECT#: 09.030

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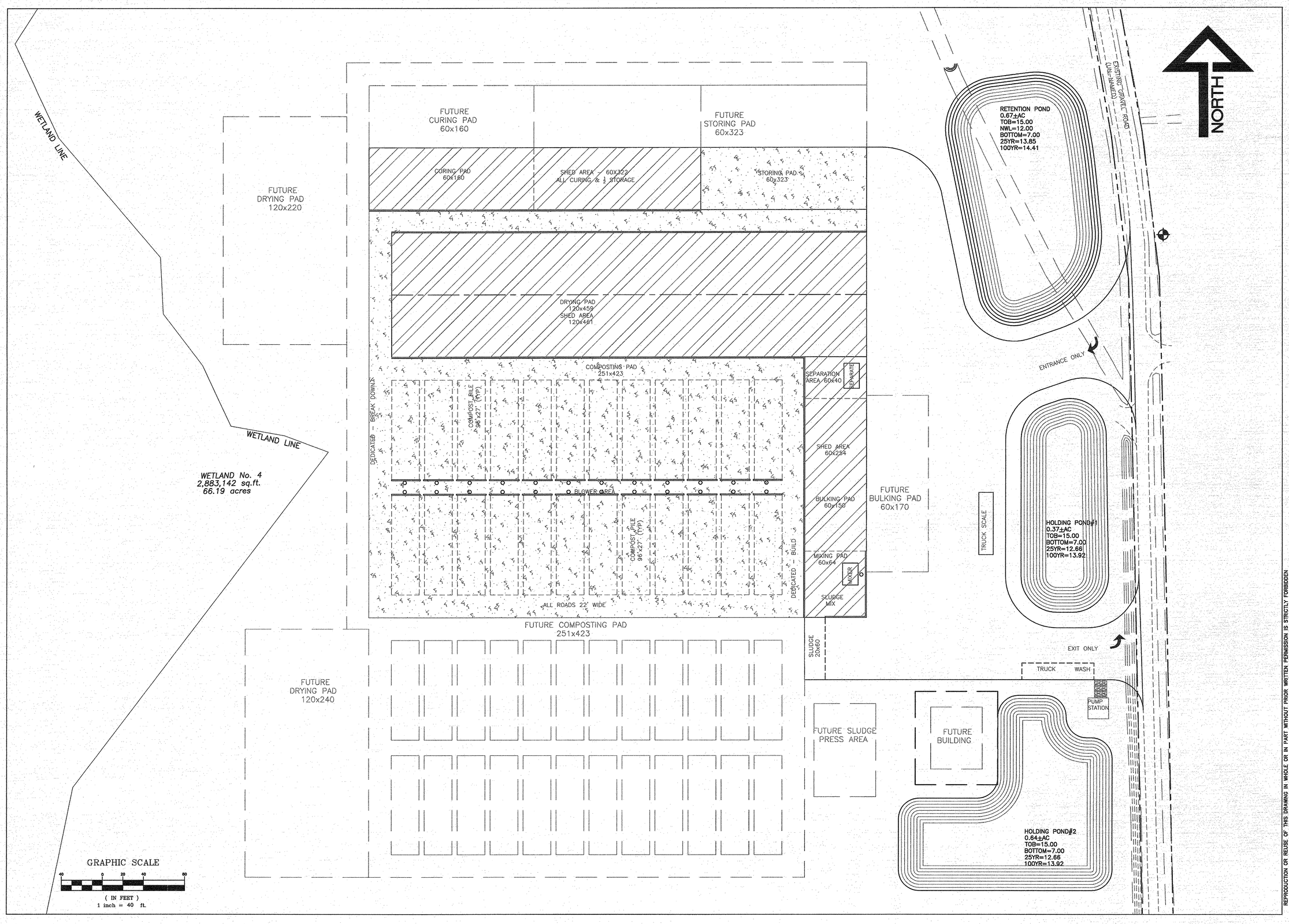
DWG NAME: NOTES



DWG NAME: 09.030_OVERALL

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2411 Oak Street, Suite 304
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Fax: 843-448-0969
www.castlesengineering.com
Castles Engineering

OVERALL SITEPLAN

BUCKSPORT COMPOSTING FACILITY

for

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	1"=40'
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/08/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10
2		
3		
4		
5		
6		
7		

SOUTH CAROLINA BOARD OF ENGINEERING EXAMINERS
CERTIFICATE OF AUTHORIZATION
CASTLES CONSULTING ENGINEERS, INC.
No. 000350

SOUTH CAROLINA
PROFESSIONAL ENGINEER
NO. 20864
JOHN R. POSTON

SHEET NUMBER:

C3

PROJECT#: 09.030

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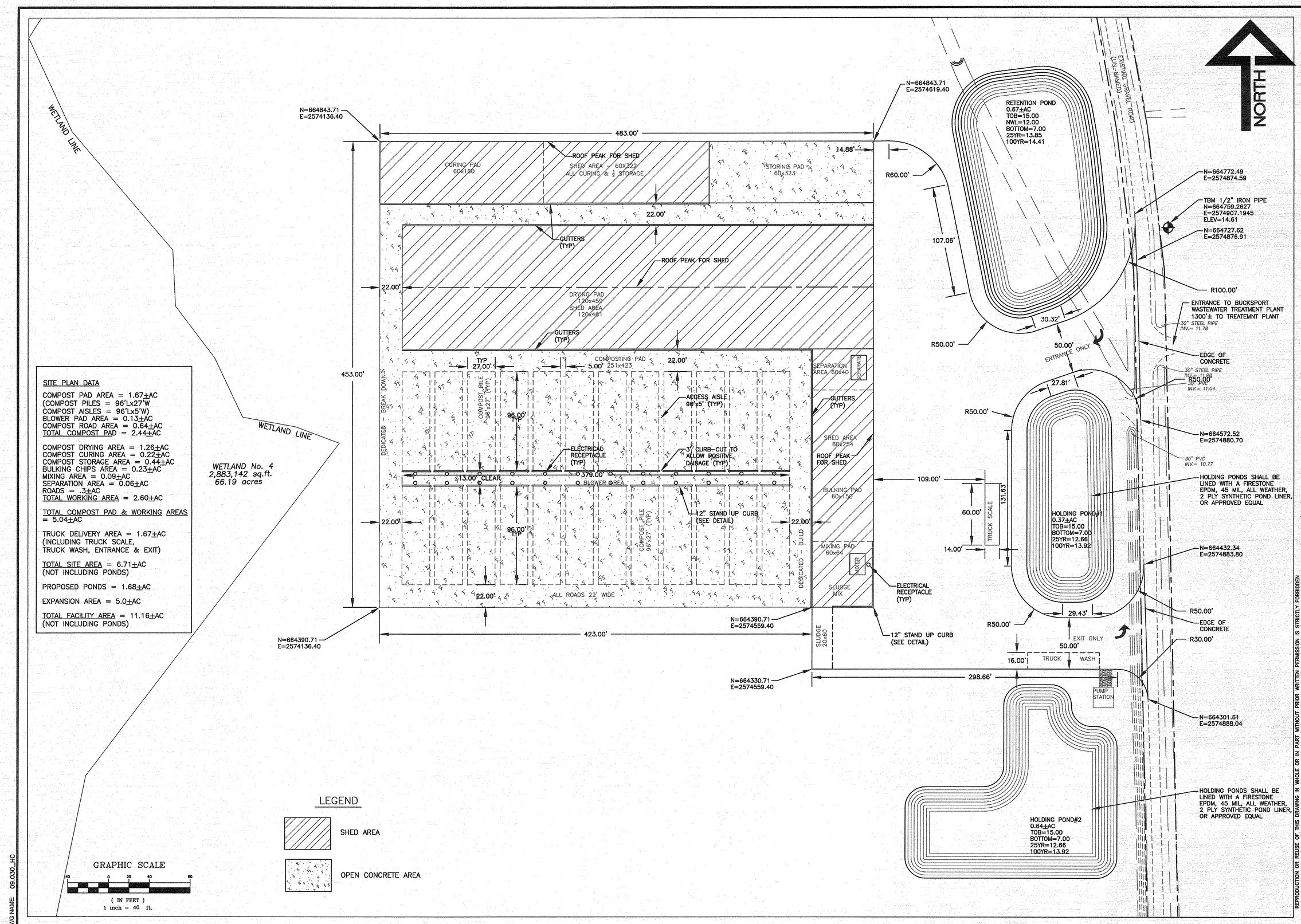


SITE PLAN DATA

COMPOST PAD AREA = 1.67±AC
(COMPOST PILES = 96'Lx27'W
COMPOST AISLES = 96'Lx5'W)
BLOWER PAD AREA = 0.13±AC
COMPOST ROAD AREA = 0.64±AC
TOTAL COMPOST PAD = 2.44±AC

COMPOST DRYING AREA = 1.26±AC
COMPOST CURING AREA = 0.22±AC
COMPOST STORAGE AREA = 0.44±AC
BULKING CHIPS AREA = 0.23±AC
MIXING AREA = 0.09±AC
SEPARATION AREA = 0.06±AC
ROADS = .3±AC
TOTAL WORKING AREA = 2.60±AC

TOTAL COMPOST PAD & WORKING AREAS = 5.04±AC

TRUCK DELIVERY AREA = 1.67±AC
(INCLUDING TRUCK SCALE,
TRUCK WASH, ENTRANCE & EXIT)

TOTAL SITE AREA = 6.71±AC
(NOT INCLUDING PONDS)

PROPOSED PONDS = 1.68±AC

EXPANSION AREA = 5.0±AC

TOTAL FACILITY AREA = 11.16±AC
(NOT INCLUDING PONDS)

ENGINEERING / PLANNING
LAND SURVEYING
2411 Oak Street, Suite 304
Myrtle Beach, SC 29577
Telephone: 843-448-0917
Fax: 843-448-0969
www.castlesengineering.com
Castles Engineering

HORIZONTAL CONTROL PLAN
for
BUCKSPORT COMPOSTING FACILITY

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	1"=40'
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/06/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10

REPRODUCTION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN PERMISSION IS STRICTLY FORBIDDEN

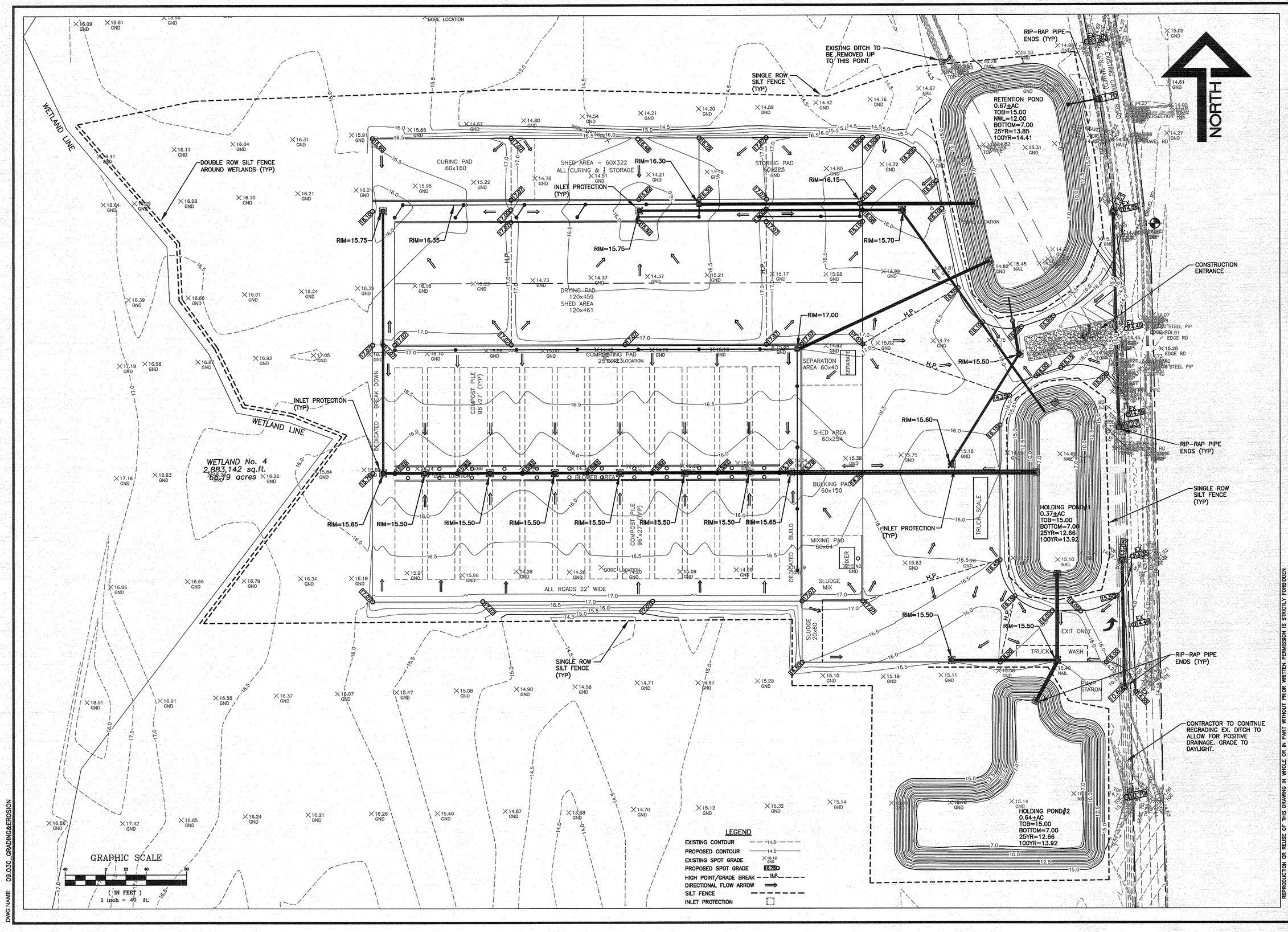
SOUTH CAROLINA
CASTLES CONSULTING ENGINEERS, INC.
No. 000350
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
NO. 20984
JOHN R. POSTON

SHEET NUMBER:
C4

PROJECT#: 09.030

DWG NAME: 09.030_HC



DWG NAME: 09.030_GRADING&EROSION

ENGINEERING / PLANNING
LAND SURVEYING
2411 Oak Street, Suite 304
Myrtle Beach, SC 29577
Telephone: 843-448-0910
Fax: 843-448-0969
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GRADING & EROSION CONTROL PLAN

BUCKSPORT COMPOSTING FACILITY

for

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	1"=60'
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	06/21/10

Number	Date	Revisions
1	07/02/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/18/10

SOUTH CAROLINA
CASTLES CONSULTING ENGINEERS, INC.
No. 000350
CERTIFICATE OF AUTHORIZATION

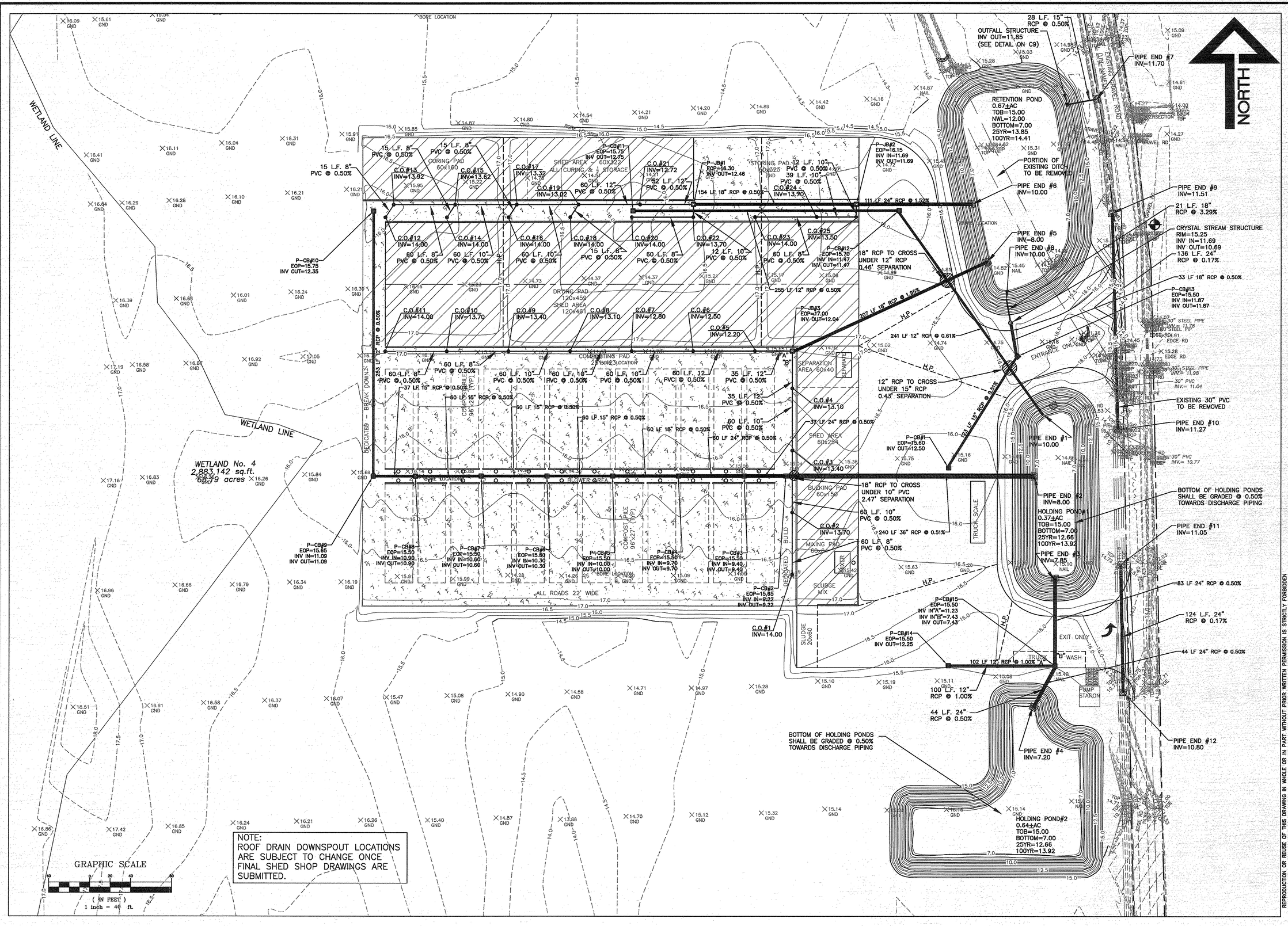
SOUTH CAROLINA
NO. 20984
JOHN R. POSTON
PROFESSIONAL ENGINEER

SHEET NUMBER:

C5

PROJECT#: 09.030

REPRODUCTION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN PERMISSION IS STRICTLY FORBIDDEN



NOTE:
ROOF DRAIN DOWNSPOUT LOCATIONS ARE SUBJECT TO CHANGE ONCE FINAL SHED SHOP DRAWINGS ARE SUBMITTED.

ENGINEERING / PLANNING
LAND SURVEYING
Castles Engineering
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Myrtle Beach, SC 29577
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Fax: 843-448-0969
www.castlesengineering.com

DRAINAGE PLAN
BUCKSPORT COMPOSTING FACILITY
for
GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	1"=40'
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/02/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/18/10
2		
3		
4		
5		
6		
7		

CASTLES CONSULTING ENGINEERS, INC. No. 000350 — SOUTH CAROLINA — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER SEAL — NO. 20984 — JOHN R. POSTON

SHEET NUMBER:
C6

PROJECT#: 09.030

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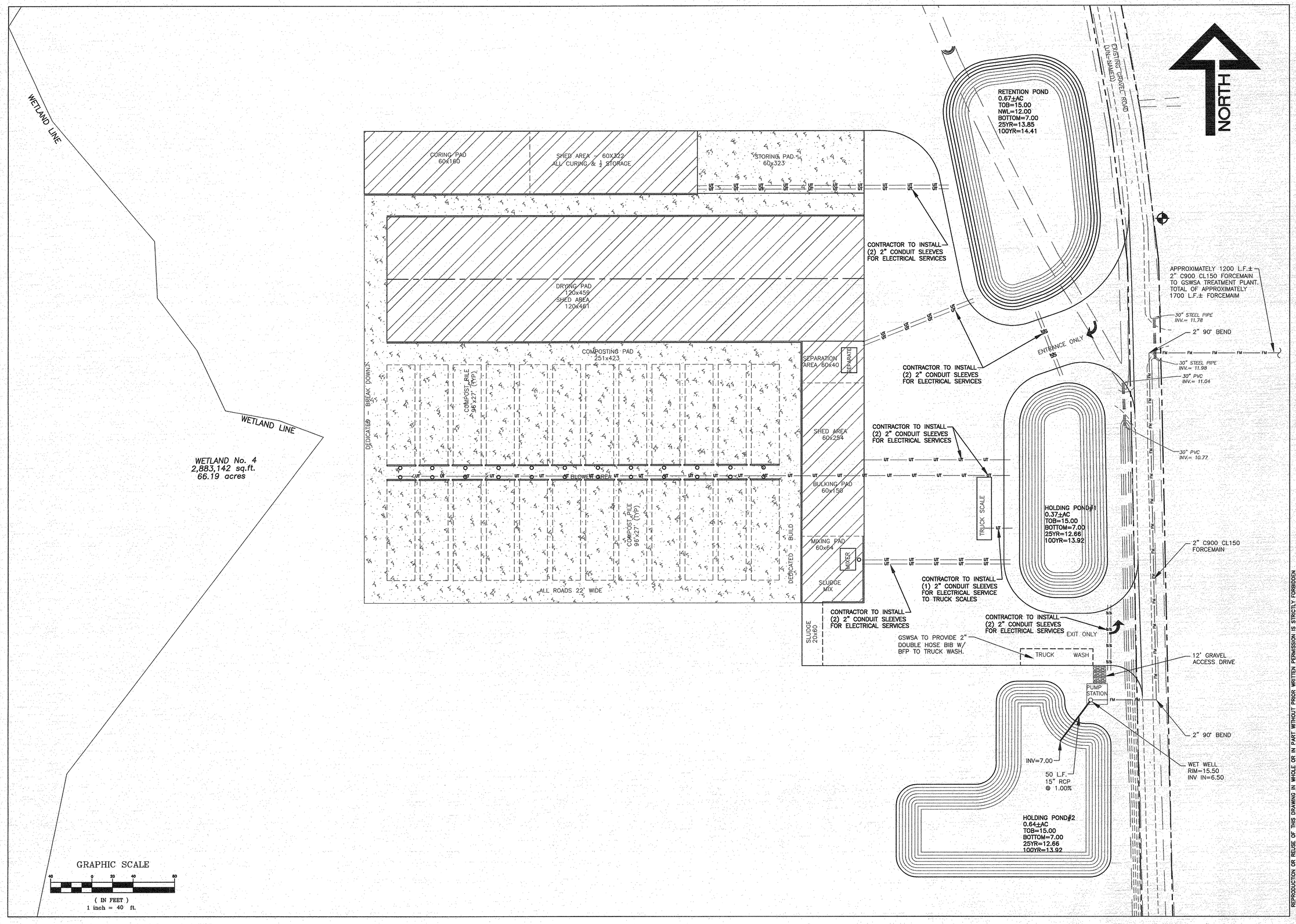
DWG NAME: 09.030_DRAINAGE & EROSION CONTROL



DWG NAME: 09.030_UTILITIES

ENGINEERING / PLANNING
LAND SURVEYING
2411 Oak Street, Suite 304
Myrtle Beach, SC 29577
Telephone: 843-448-0910
Fax: 843-448-0969
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Castles Engineering

UTILITY PLAN

BUCKSPORT COMPOSTING FACILITY

for

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	1"=40'
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/06/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10
2		
3		
4		
5		
6		
7		

SOUTH CAROLINA
CASTLES CONSULTING ENGINEERS, INC.
No. 000350
CERTIFICATE OF AUTHORITY

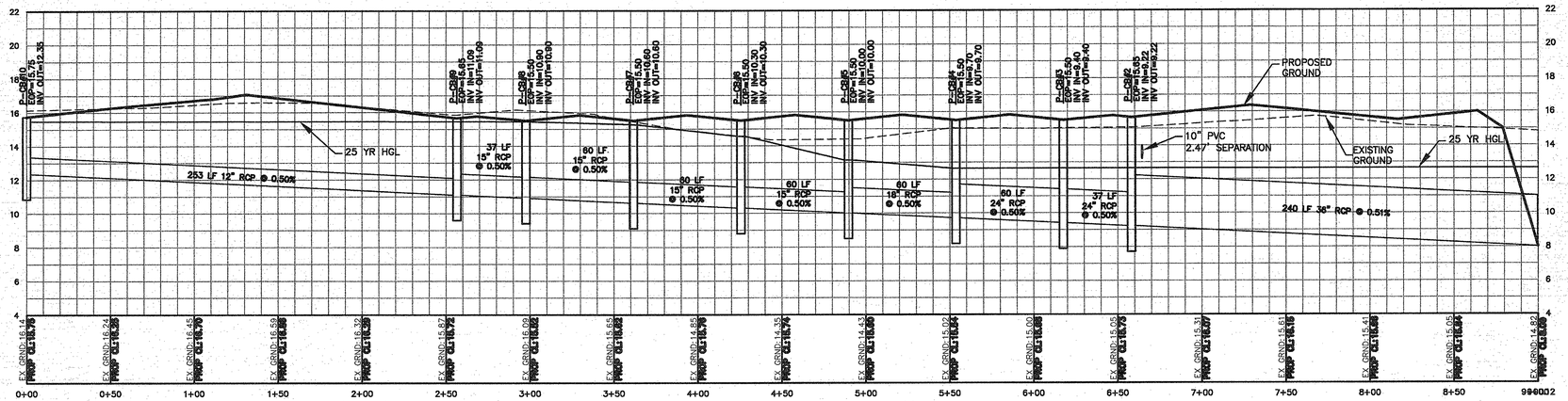
SOUTH CAROLINA
NO. 20964
PROFESSIONAL ENGINEER REGISTRATION
JOHN R. PORTOS

SHEET NUMBER:

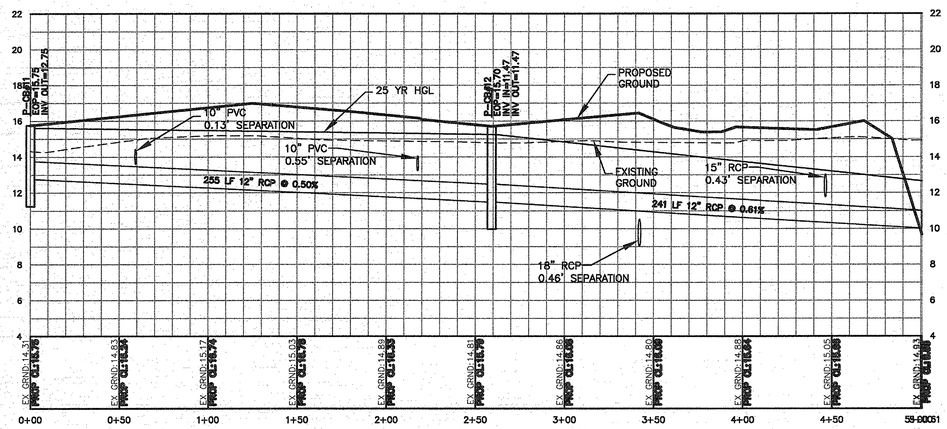
C7

PROJECT#: 09.030

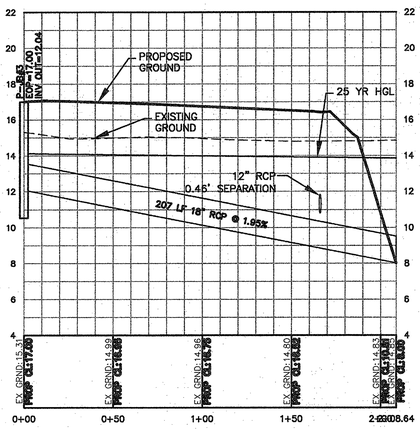
REPRODUCTION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN PERMISSION IS STRICTLY FORBIDDEN



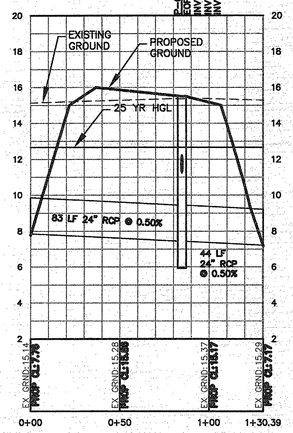
P-CB #10 TO PIPE END #2



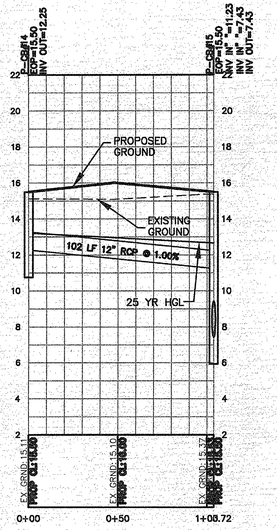
P-CB #11 TO PIPE END #1



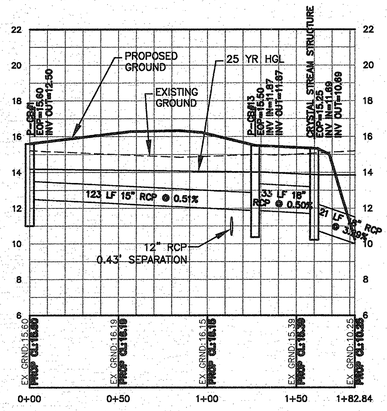
P-JB #3 TO PIPE END #5



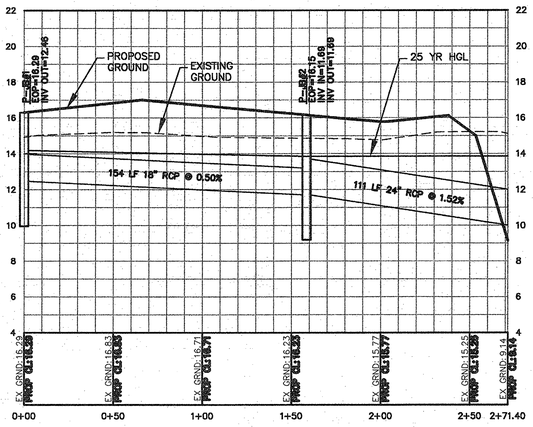
PIPE END #3 TO PIPE END #4



P-CB #14 TO P-CB #15



P-CB #1 TO PIPE END #8



P-JB #1 TO PIPE END #6

VERTICAL SCALE

(IN FEET)
1 inch = 4 ft.

HORIZONTAL SCALE

(IN FEET)
1 inch = 40 ft.

DWG NAME: 09.030_PROFILES

ENGINEERING / PLANNING
LAND SURVEYING
2411 Oak Street, Suite 304
Myrtle Beach, SC 29577
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Fax: 843-448-0969
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Castles Engineering

DRAINAGE PROFILES

BUCKSPORT COMPOSTING FACILITY

for

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	1"=40'
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/02/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CASTLES CONSULTING ENGINEERS, INC.
No. 000350

SOUTH CAROLINA PROFESSIONAL ENGINEER AND LAND SURVEYOR
NO. 20984
JOHN R. POSTON

SHEET NUMBER:

C8

PROJECT#: 09.030

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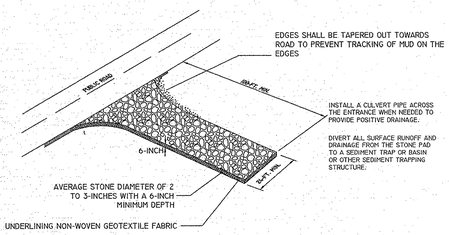
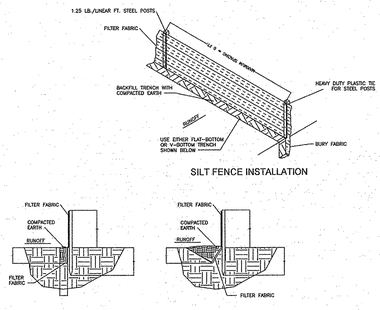


South Carolina Department of Health and Environmental Control

STABILIZED CONSTRUCTION ENTRANCE

STANDARD DRAWING NO. SC-06 Page 1 of 3

APPROVED BY: DESIGNED AUGUST, 2006 DATE



SILT FENCE INSTALLATION

FLAT-BOTTOM TRENCH DETAIL

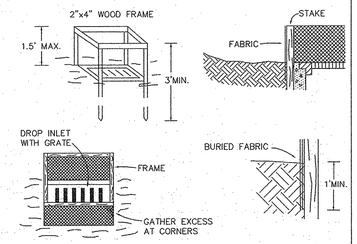
V-SHAPED TRENCH DETAIL

South Carolina Department of Health and Environmental Control

SILT FENCE

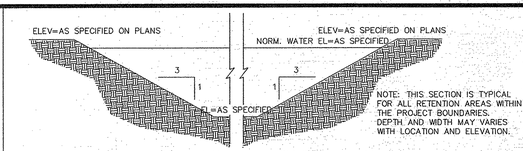
STANDARD DRAWING NO. SC-03 Page 1 of 2

APPROVED BY: STAFF AUGUST, 2006 DATE

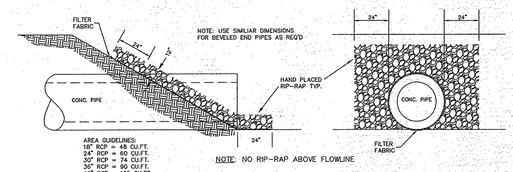


INLET PROTECTION

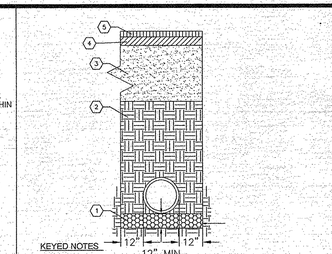
N.T.S.



RETENTION POND SECTION



PIPE END RIP-RAP



KEYED NOTES

1. BEDDING SHALL BE COMPACTED CRUSHED STONE (CLASS 1 MATERIAL) SHAPED TO THE BOTTOM OF THE PIPE.
2. MINIMUM 18" STABLE COMPACTED FILL
3. 10" GRADED AGGREGATE BASE (SCDOT SECTON 305) COMPACTED TO 100% OF THE SOILS' MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557)
4. 1.5" TYPE 1C BINDER
5. 1.5" TYPE 1 HOT MIX ASPHALT SURFACE COURSE (SCDOT SECTION 403)

REINFORCED CONCRETE PIPE BEDDING IN PAVEMENT AREAS

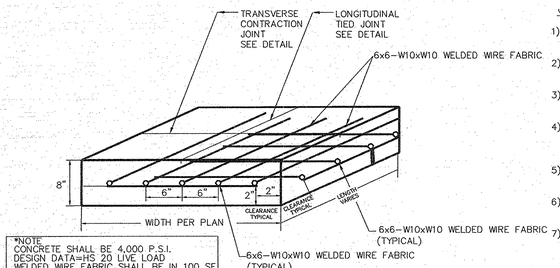
ENGINEERING / PLANNING
LAND SURVEYING
2411 Oak Street, Suite 304
Myrtle Beach, SC 29577
Telephone: 843-448-0010
Fax: 843-448-0069
www.castlesengineering.com
Castles Engineering

DETAIL SHEET #1

BUCKSPORT COMPOSTING FACILITY

for

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA



*NOTE:
CONCRETE SHALL BE 4,000 P.S.I.
DESIGN DATA=HS 20 LIVE LOAD
WELDED WIRE FABRIC SHALL BE IN 100 SF SHEETS, NO ROLLS SHALL BE ALLOWED
WELDED WIRE FABRIC SHALL BE INSTALLED USING STAIRS, NO PULL ALONG ALLOWED

HEAVY DUTY CONCRETE SECTION ISOMETRIC VIEW

N.T.S.

JOINTING DETAILS

1). JOINTS SHALL BE INSTALLED IN BOTH LONGITUDINAL AND TRANSVERSE DIRECTIONS.

2). LONGITUDINAL JOINTS SHALL BE INSTALLED AT 12 FEET MAXIMUM SPACING.

3). TRANSVERSE JOINTS SHALL NOT EXCEED 20 FEET APART AND ARE RECOMMENDED EVERY 15 FEET.

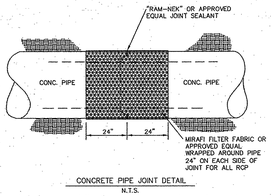
4). TRANSVERSE CONSTRUCTION JOINTS SHALL BE INSTALLED AT THE END OF EACH DAY'S RUN OR WHERE PAVING OPERATIONS ARE SUSPENDED FOR 30 MINUTES OR MORE.

5). ISOLATION JOINTS SHALL BE INSTALLED WHERE SLAB ABUTS AGAINST MANHOLES, DRAINAGE STRUCTURES, ETC.

6). ISOLATION JOINTS SHALL NOT BE LESS THAN 1 FOOT FROM ANY LONGITUDINAL JOINT.

7). SUBGRADE MATERIAL SHALL BE IN ACCORDANCE WITH GEOTECHNICAL REPORT AND IN NO CASE SHALL BE LESS THAN 6" GABC PER SCDOT STANDARD SPECIFICATIONS.

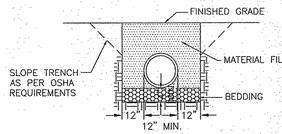
8). REINFORCING STEEL SHALL CONFORM TO AASHTO M-31, GRADE 60.



CONCRETE PIPE JOINT DETAIL

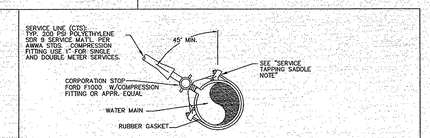
N.T.S.

CONCRETE PIPE JOINT



NOTES:
1. BEDDING SHALL BE COMPACTED AND CRUSHED STONE (CLASS 1 MATERIAL) SHAPED TO THE BOTTOM OF THE PIPE.
2. SELECT FILL SHALL BE NATIVE MATERIAL FREE OF LARGE ROCKS, DEBRIS OR ORGANICS AND PLACED IN 6" OR 8" LOOSE LIFTS AND COMPACTED TO MIN. 90% OF THE SOILS STANDARD PROCTOR.

REINFORCED CONCRETE PIPE & CORRUGATED PLASTIC PIPE BEDDING IN UNPAVED AREAS

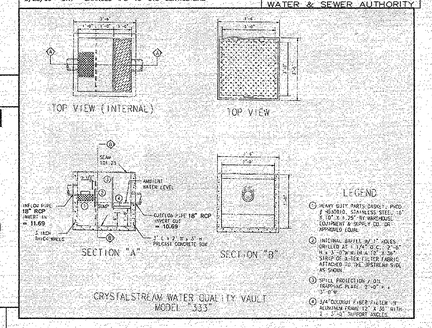


TYPICAL SERVICE TAP

W7

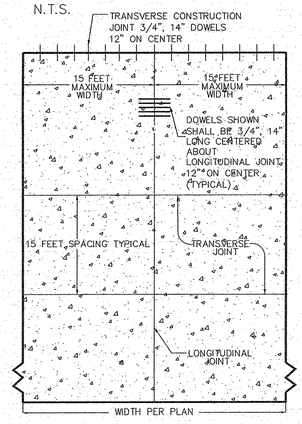
TYPICAL SERVICE TAP
WATER ONLY
UPDATED: 08/28/06 W7
GRAND STRAND WATER & SEWER AUTHORITY

LATEST REVISION:
8/28/06 DRT CHANGED "PS" TO "CTS" SERVICE LINE.



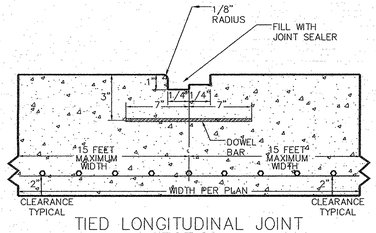
CRYSTAL STREAMS STRUTURE

N.T.S.



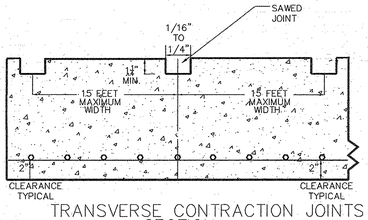
PLAN VIEW

N.T.S.



TIED LONGITUDINAL JOINT SECTION

N.T.S.

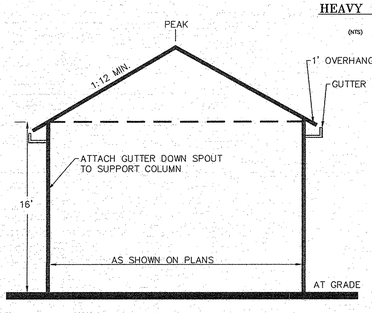


TRANSVERSE CONTRACTION JOINTS SECTION

N.T.S.

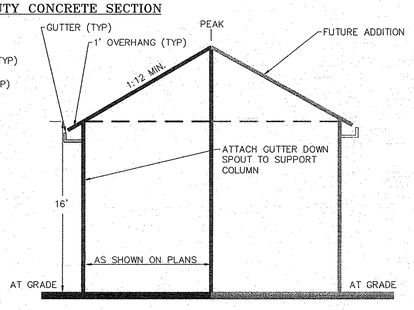
HEAVY DUTY CONCRETE SECTION

(NTS)



SHED DETAIL

N.T.S.

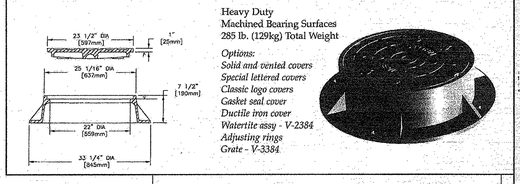


1/2 SHED DETAIL

N.T.S.

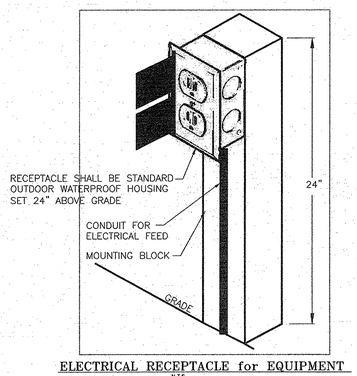
EAST JORDON IRON WORKS

V-1384 Frame & Cover



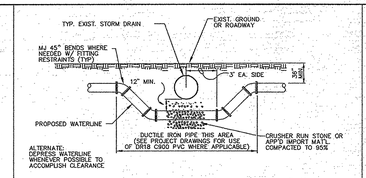
Heavy Duty
Machined Bearing Surfaces
285 lb. (129kg) Total Weight

Options:
Solid and vented covers
Special lettered covers
Classic logo covers
Gasket seal cover
Ductile iron cover
Waterlite assy - V-2384
Adjusting rings
Grate - V-3384



ELECTRICAL RECEPTACLE for EQUIPMENT

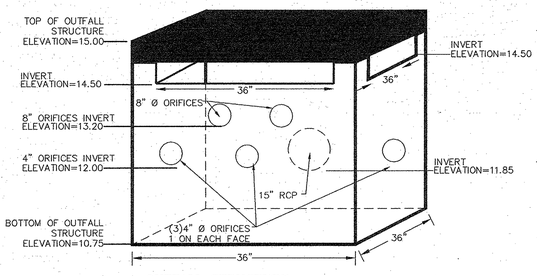
N.T.S.



TYPICAL STORM DRAIN CROSSING

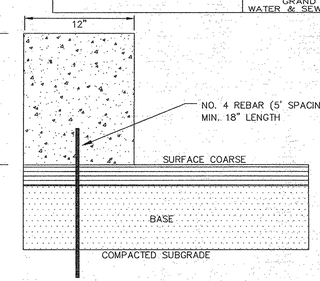
W8

TYPICAL STORM DRAIN CROSSING
WATER ONLY
UPDATED: 5/13/02 W8
GRAND STRAND WATER & SEWER AUTHORITY



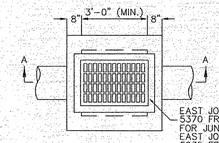
OUTFALL STRUCTURE

N.T.S.



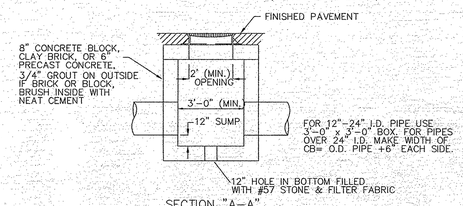
STAND UP CONCRETE CURB

N.T.S.



PLAN

EAST JORDON IRON WORKS 5370 FRAME & GRATE FOR JUNCTION BOX USE
EAST JORDON IRON WORKS 2935 FRAME & COVER (OR APPROVED EQUAL).



SECTION "A-A"

CATCH BASIN

N.T.S.

SCALE:	NTS
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/06/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10
2		
3		
4		
5		
6		
7		

REPRODUCTION OR REUSE OF THIS DRAWING IN WHOLE OR IN PART WITHOUT PRIOR WRITTEN PERMISSION IS STRICTLY FORBIDDEN

SOUTH CAROLINA PROFESSIONAL ENGINEER CERTIFICATE OF AUTHORIZATION
CASTLES CONSULTING ENGINEERS, INC.
No. 000864

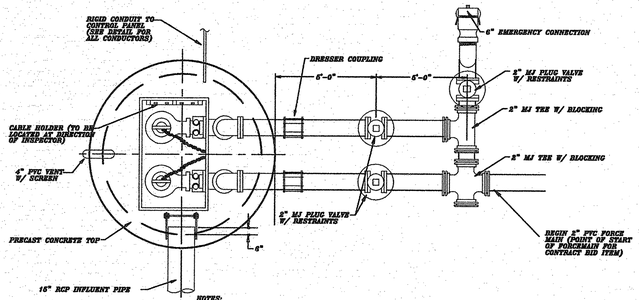
SOUTH CAROLINA PROFESSIONAL ENGINEER SEAL
NO. 20984
JOHN R. POSTON

SHEET NUMBER:

C9

PROJECT#: 09.030

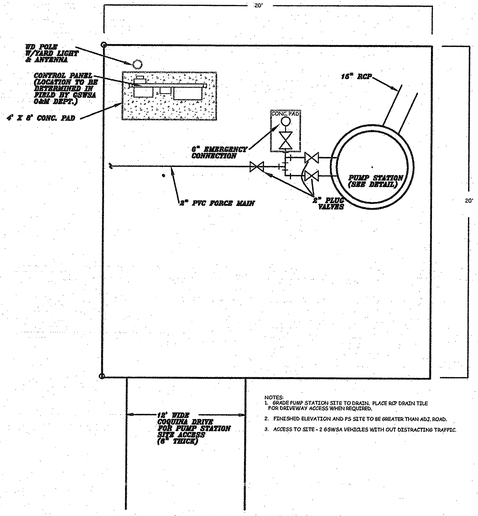
DWG NAME:



NOTES:
1. ALL VALVES, BENDS AND FITTINGS TO BE MJ WITH RESTRAINTS.
2. DIRECTION OF DISCHARGE FROM WET WELL WILL DEPEND ON PORCHCT PUMP STATION ORIENTATION.

TYPICAL PLAN - DUPLEX PUMP STATION

N.T.S.



NOTES:
1. GRADE PUMP STATION SITE TO DRAIN. PLACE RCP DRAIN TILE FOR OVERWAY ACCESS WHEN REQUIRED.
2. FINISHED ELEVATION AND FS SITE TO BE GREATER THAN ADJ. ROAD.
3. ACCESS TO SITE - 2 GSWSA VEHICLES WITH OUT DISTRACTING TRAFFIC.

PUMP STATION SITE PLAN

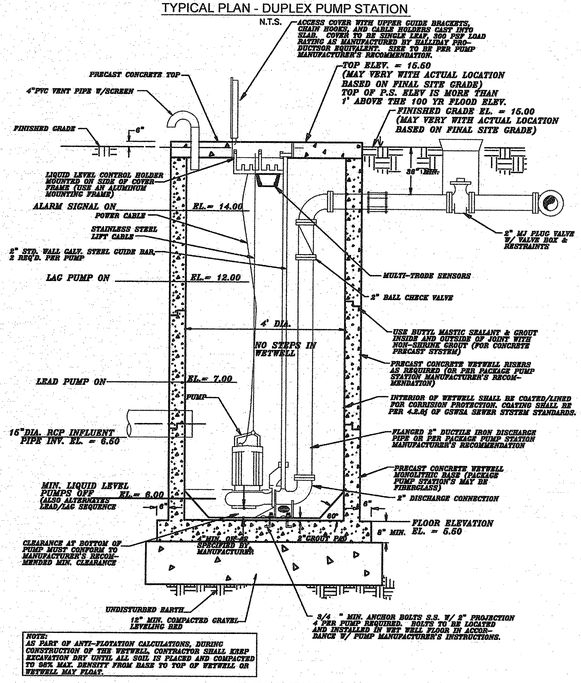
NTS

PUMP STATION NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO REQUIREMENTS OF GRAND STRAND WATER & SEWER AUTHORITY SEWER SYSTEM STANDARDS & SPECIFICATIONS.
2. ALL EIPWER, GUIDE HOLDERS, CABLE HOLDERS, ALL NUTS, BOLTS, WASHERS AND OTHER FASTENERS SHALL BE 304 STAINLESS STEEL.
3. THE NEMA 4X ENCLOSURES SHALL BE STAINLESS STEEL OR FIBERGLASS, AND RAIN TIGHT.
4. ALL WETWELL HARDWARE SHALL BE MOUNTED SUCH THAT ANY COMPONENT CAN BE REMOVED.
5. THE POWER CABLE IS TO BE WIRED NON-STOP FROM THE PUMP TO THE BOTTOM OF THE STARTER WITH NO JUNCTION BOXES OR SPLICES IN BETWEEN.
6. WETWELL SECTIONS SHALL CONFORM TO ASTM C-478.
7. ALL PIPING WITHIN THE WETWELL SHALL BE CLASS 50 DUCTILE IRON PIPE.
8. PUMPS AND MOTORS SHALL HAVE A STAINLESS STEEL CABLE FOR LIFTING. THE LENGTH SHALL REACH TO THE TOP OF THE STATION PLUS AN ADDITIONAL SIX FEET.
9. LOCATION OF THE CONTROL PANEL WILL BE DETERMINED IN THE FIELD BY GSWSA INSPECTIONS DEPT.
10. INFLUENT PIPING TO PUMP STATION SHALL BE 16" RCP.
11. PUMPS ARE TO BE MYERS WG50H WITH 4.3 HP, 230 VOLTS, 1 PH MOTOR. 3PHP DRAWINGS WILL BE REQUIRED.
12. CONTROL PANEL IS TO CONTAIN AN AUDIO AND VISUAL HIGH LEVEL ALARM VISUAL ALARM MUST HAVE 360° VISIBILITY.
13. PROVIDE ALUMINUM LADDER, LENGTH ADEQUATE TO EXTEND FROM BOTTOM OF WETWELL TO 4' BEYOND HATCH AND TO BE RATED AT 375 POUNDS. LADDER TO BE PROVIDED TO GSWSA O&M DEPT. AT TIME OF FINAL INSPECTION.
14. PUMP SPARE PARTS TO BE PROVIDED PER GSWSA SPECIAL CONTRACT PROVISIONS.
15. THE LIQUID LEVEL CONTROLS SHALL BE MULTI-TRODE. WITH THE PUMP ON/OFF & ALARM LEVELS TO BE DETERMINED BY THE ENGINEER OF WORK AND APPROVED BY GSWSA. THE TRANSMITTER-RECEIVER IS TO BE MOUNTED IN THE PUMP CONTROL PANEL.
16. INTERIOR COATING FOR WET WELL TO COMPLY WITH 4.2.8 J.GSWSA SPECIFICATIONS
17. PUMP STATION WETWELL WILL BE EQUIPPED WILL FALL PROTECTION AS PER 4.2.15 OF GRAND STRAND WATER & SEWER AUTHORITY SEWER SYSTEM STANDARDS & SPECIFICATIONS.

PUMP STATION SCHEDULE

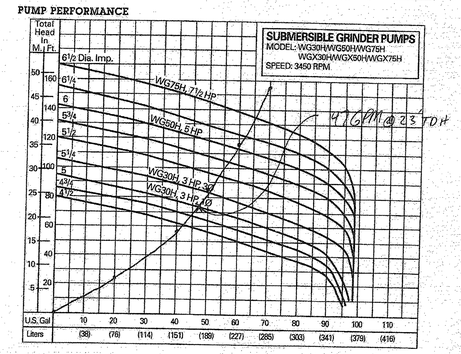
INFLUENT	PIPE I.D.	16" RCP
	ELEVATION	6.50
WET WELL	INSIDE DIAMETER	4'
	TOP ELEVATION	15.50
	HIGH WATER LEVEL	14.00
	LOW WATER LEVEL	6.00
	FLOOR ELEVATION	5.50
SENSOR ELEV.	ALARM SIGNAL ON	14.00
	LAG PUMP ON	12.00
	LEAD PUMP ON	7.00
	PUMPS OFF	6.00
PUMPS	MODEL (PUMP/MANUF.)	WG50H/MYERS
	IMPELLER (SELECTION)	MYERS RECESSED ENGINEER
	DISCHARGE PIPING	2"
	CHECK VALVE SIZE	2"
	PLUG VALVE SIZE	2"
	DESIGN FLOW*	47 GPM
	DESIGN HEAD* (TDH)	23
	VOLTAGE	230
	PHASE	1
	HORSEPOWER	3 HP
	RPM (PUMP/MOTOR)	3450



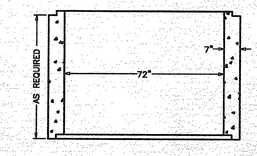
NOTE:
AS PART OF ANTI-FLOTATION CALCULATIONS, DURING CONSTRUCTION OF THE WETWELL, CONTRACTOR SHALL KEEP EXCAVATION DRY UNTIL ALL SOIL IS PLACED AND COMPACTED TO 90% MAX. DENSITY FROM BASE TO TOP OF WETWELL OR WETWELL MAY FLOAT.

TYPICAL SECTION THRU PUMP STATION

N.T.S.



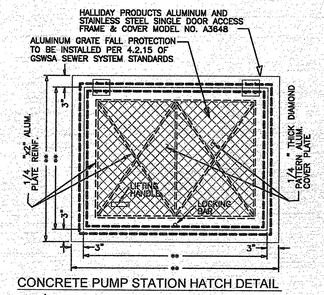
PUMP PERFORMANCE CURVE



NOTES:
1. ALL STANDARD SEWER MANHOLE SECTIONS TO MEET OR EXCEED THE REQUIREMENTS OF ASTM C478.
2. BUTYL RUBBER SEALANT IS RECOMMENDED FOR SEALING JOINTS. O-RING GASKETS MAY BE USED.

CONCRETE PUMP STATION RISER SECTION

N.T.S.



CONCRETE PUMP STATION HATCH DETAIL

(**SIZE AND LOCATION WITHIN TOP SLAB OF PUMP STATION TO BE PER MANUFACTURER'S RECOMMENDATION)

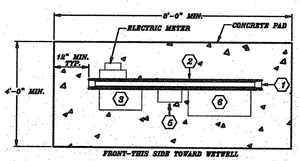
N.T.S.

ELECTRICAL KEY NOTES

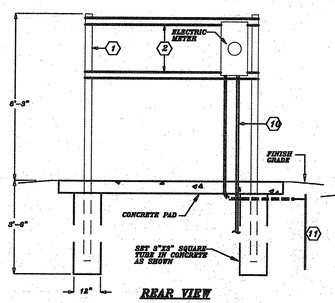
1. ALUMINUM SQUARE TUBE 3"x 3"x 1/8 "x 9'-3" LONG WITH ALUMINUM 3"x 3"x 1/2 " TOP CAP. SET SQUARE TUBE IN CONCRETE.
2. ALUMINUM FLAT BAR 3"x 1/2 "x 6'-6". ALL BOLTS, NUTS, WASHERS, ETC. NECESSARY TO FABRICATE RACK AND INSTALL EQUIPMENT SHALL BE STAINLESS STEEL.
3. SQUARE D NEMA 3R DOUBLE THROW SWITCH.
4. CROUSE HINDS &APQ 1047 RECEPTACLE.
5. NEMA TYPE 4 GALVANIZED ENCLOSURE. SQUARE D QO OR QI CIRCUIT BREAKERS.
6. PUMP CONTROLLER MOUNT TOP SIX FEET ABOVE SLAB. NEMA 4X STAINLESS STEEL. TYPE 2 POINT LATCH AND DRIP SHIELD. PAD LOCKABLE
7. HUB SEALOFF FITTINGS WITH DUKSEAL.
8. 2-1 1/4 " PVC CONDUITS TO WETWELL FOR PUMP POWER CABLES. 1-1 1/2 " PVC CONDUIT TO WETWELL FOR FLOAT CABLES.
9. 1 1/2 " PVC CONDUIT WITH 4-#8THHN CONDUCTORS TO UTILITY COMPANY TRANSFORMER OR HAND HOLE AS DIRECTED BY UTILITY COMPANY.
10. GROUND ROD AND CLAMP.

GENERAL ELECTRICAL NOTES

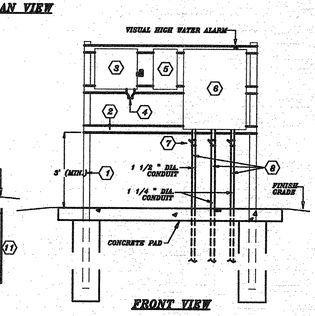
1. ELECTRICAL WORK SHALL BE PERFORMED BY AN ELECTRICAL CONTRACTOR WITH AN APPROPRIATE BUSINESS LICENSE.
2. ELECTRICAL PERMITS SHALL BE APPLIED FOR AT HORRY COUNTY BUILDING INSPECTION OFFICE.
3. SEE PUMP STATION SPECIFICATIONS FOR ALL PLC/RADIO CONTROL REQUIREMENTS AND ALL ELECTRIC AND CONTROL REQUIREMENTS. PLC/RADIO PACKAGE NOT SHOWN.



PLAN VIEW



REAR VIEW



FRONT VIEW

ENGINEERING / PLANNING
LAND SURVEYING
2411 Oak Street, Suite 304
Myrtle Beach, SC 29577
Telephone: 843-448-0910
Fax: 843-448-0969
www.castlesengineering.com
Castles Engineering

DETAIL SHEET #2

BUCKSPORT COMPOSTING FACILITY

for

GRAND STRAND WATER & SEWER AUTHORITY
HORRY COUNTY, SOUTH CAROLINA

SCALE:	NTS
DESIGNED BY:	TEH
DRAWN BY:	TEH
CHECKED BY:	JRP
DATE ISSUED:	05/21/10

Number	Date	Revisions
1	07/02/10	REVISIONS PER HORRY COUNTY COMMENTS DATED 06/16/10

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CASTLES CONSULTING ENGINEERS, INC.
No. 000350

SOUTH CAROLINA PROFESSIONAL ENGINEER SEAL
NO. 20964
JOHN R. POSTON

SHEET NUMBER:

C10

PROJECT#: 09.030

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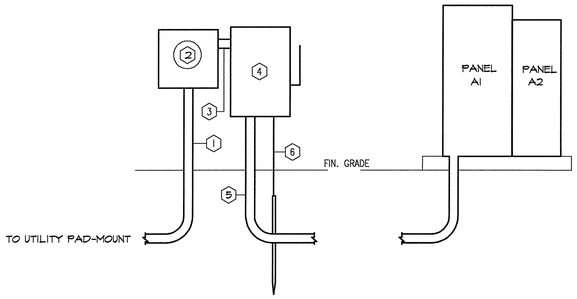
DWG NAME:



ELECTRICAL RISER DIAGRAM

NTS

ELECTRICAL RISER NOTES

1. NEW SERVICE; UNDERGROUND FEEDER FROM UTILITY; COORDINATE WITH UTILITY
2. 400 AMP METER BASE, 240D/120V, 3 PHASE, 4 WIRE
3. 3#500, 1#2 NEUTRAL, 3"C
4. 400 AMP SERVICE DISCONNECT, NEMA 3R RATED, 400AMP CB, SE RATED
5. 3#500, 1#2 NEUTRAL, 1 #2 GND, 3"C
6. 1#1/0 TO 10' GROUND ROD

ELECTRICAL SYMBOLS

- SAFETY DISCONNECT, RATINGS AS INDICATED
- 120V RECEPTACLE
  G=GROUND FAULT TYPE
  WP=WEATHERPROOF COVER
  C=COUNTERWEIGHT
  WC = ELECTRIC WATER COOLER; COORD. LOC. WITH PLUMBING
- CONDUIT END CAP; FLUSH WITH FINISH GRADE
- $ SWITCH, 120V
- $3 SWITCH, THREE-WAY, 120V
- REBAR TO #2 CU GROUND CABLE TO 10' GROUND ROD VIA EXOTHERMIC WELD CONNECTION WITH 3' PIGTAIL STUB-UP WITH EXOTERMIC WELD CONNECTION TO STEEL COLUMN VIA 3/4" PVC.

GENERAL NOTES

1. ALL ELECTRICAL EQUIPMENT AND FEEDERS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE LOCAL AND STATE CODES AND WITH THE 2008 EDITION OF THE NATIONAL ELECTRICAL CODE, 2009 EDITION OF THE IECC.
2. PROVIDE ADDITIONAL SUPPORT FOR SWITCHES, STARTERS, RACEWAYS AND OTHER ELECTRICAL EQUIPMENT WHEREVER THE BUILDING STRUCTURE IS NOT SUITABLE FOR DIRECT MOUNTING.
3. DO NOT INSTALL MATERIALS OTHER THAN SPECIFIED EXCEPT FOR ALTERNATES ACCEPTED BY OWNER.
4. ALL 600V WIRE SHALL BE STRANDED COPPER (#8 AND LARGER) AND SOLID COPPER (#10 AND SMALLER), SINGLE CONDUCTOR TYPE THAN INSULATION. CONDUIT SIZE SHALL NOT BE LESS THAN 1/2".
5. SYMBOLS IN THE LEGENDS ARE APPLICABLE GENERALLY. FOR EXACT REQUIREMENTS REFER TO THE SCHEDULES, LAYOUTS AND DETAILS.
6. EXCEPT WHERE NOTED OTHERWISE, LIMIT LIGHTING AND RECEPTACLE BRANCH CIRCUIT HOMERUNS TO 3 CONDUCTORS. 3 PHASE WIRES, 1 NEUTRAL AND 1 GROUND. INSTALL A COMMON NEUTRAL IN A HOMERUN FOR 2 OR 3 BRANCH CIRCUITS PROVIDED THE PHASE CONDUCTORS ARE OF DIFFERENT PHASE.
7. ALL ELECTRICAL DEVICES SHALL BE NEMA 1 INDOORS, NEMA 3R OUTDOORS UNLESS NOTED OTHERWISE.
8. ALL CONDUIT EXPOSED TO PHYSICAL DAMAGE SHALL BE RIGID GALVANIZED STEEL, ALL OTHER TO BE EMT, ALL UNDERGROUND CONDUIT TO BE PVC.
9. PHASE IDENTIFICATION FOR INCOMING FEEDERS TO PANELBOARDS SHALL BE ACCOMPLISHED BY COLOR CODE TAPING AS FOLLOWS:

   FEEDERS RATED (240V).... PHASE "A" = BLACK
   PHASE "B" = RED
   PHASE "C" = BLUE
   NEUTRAL = WHITE
   GROUND = GREEN
10. ALL POWER CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR (BARE OR GREEN COLOR INSULATION) ROUTED IN CONDUIT AND SIZED AS INDICATED ON DRAWINGS.

NEMA 3R PANEL

PANELBOARD SCHEDULE A1
240D/120V VOLTS 3 ø 4 W
400 AMP MAINS:

☒ BREAKER 400 AMPS. BOTTOM
☒ FEED THRU LUGS AT TOP
B PHASE HI LEG DELTA

BRANCH BREAKERS

ITEM	WIRE SIZE	AMP RATING	POLE	CIR. NO.	PHASE LOADING (KVA) A.	B.	C.	CIR. NO.	POLE	AMP RATING	WIRE SIZE	ITEM
TRUCK SCALE	2#12,#12G	20	1	1	0.5 0.5			2				
RECEPT	2#12,#12G	20	1	3		0.5 0.5		4	3	15	3#12,#12G	JB/RECEPT BLOWER 18
RECEPT	2#12,#12G	20	1	5			0.5 0.5	6				
JB-RECPT BLOWER 15	3#12,#12G	15	3	7	0.5 0.5			8				
				9		0.5 0.5		10	3	15	3#12,#12G	JB/RECEPT BLOWER 16
				11			0.5 0.5	12				
JB-RECPT BLOWER 13	3#12,#12G	15	3	13	0.5 0.5			14				
				15		0.5 0.5		16	3	15	3#12,#12G	JB/RECEPT BLOWER 14
				17			0.5 0.5	18				
JB-RECPT BLOWER 11	3#12,#12G	15	3	19	0.5 0.5			20				
				21		0.5 0.5		22	3	15	3#12,#12G	JB/RECEPT BLOWER 12
				23			0.5 0.5	24				
JB-RECPT BLOWER 9	3#12,#12G	15	3	25	0.5 0.5			26				
				27		0.5 0.5		28	3	15	3#12,#12G	JB/RECEPT BLOWER 10
				29			0.5 0.5	30				
JB-RECPT BLOWER 7	3#12,#12G	15	3	31	0.5 0.5			32				
				33		0.5 0.5		34	3	15	3#12,#12G	JB/RECEPT BLOWER 8
				35			0.5 0.5	36				
JB-RECPT BLOWER 5	3#12,#12G	15	3	37	0.5 0.5			38				
				39		0.5 0.5		40	3	15	3#12,#12G	JB/RECEPT BLOWER 6
				41			0.5 0.5	42				
JB-RECPT BLOWER 3	3#12,#12G	15	3	43	0.5 0.5			44				
				45		0.5 0.5		46	3	15	3#12,#12G	JB/RECEPT BLOWER 4
				47			0.5 0.5	48				
JB-RECPT BLOWER 1	3#12,#12G	15	3	49	0.5 0.5			50				
				51		0.5 0.5		52	3	15	3#12,#12G	JB/RECEPT BLOWER 2
				53			0.5 0.5	54				
PUMP STATION	3#6,#10G,1"C	50	3	55	3.0			56				
				57		3.0		58	3	20	3#12,#12G	-
				59			3.0	60				
					7.5 4.5	7.5 4.5	7.5 4.5					
SUB-PANEL LOAD					3.5	3.5	4.0					
					15.5	15.5	16.0					

TOTAL CONN. LOAD 47.0 KVA

INTEGRATED EQUIPMENT RATING 22,000 AMPS RMS. SYM.

5

NEMA 3R PANEL

☒ FEED THRU LUGS AT TOP
B PHASE HI LEG DELTA

PANELBOARD SCHEDULE A2
240D/120V VOLTS 3 ø 4 W
400 AMP MAINS:

BRANCH BREAKERS

ITEM	WIRE SIZE	AMP RATING	POLE	CIR. NO.	PHASE LOADING (KVA) A.	B.	C.	CIR. NO.	POLE	AMP RATING	WIRE SIZE	ITEM
SPARE - FUTURE MIXER		225	3	1				2				
				3				4	3	225		SPARE
				5				6				
JB-RECPT BLOWER 17	3#12,#12G	15	3	7	0.5 0.5			8				
				9		0.5 0.5		10	3	15	3#12,#12G	JB-RECPT BLOWER 20
				11			0.5 0.5	12				
JB-RECPT BLOWER 19	3#12,#12G	15	3	13	0.5 0.5			14				
				15		0.5 0.5		16	3	15	3#12,#12G	JB-RECPT BLOWER 22
				17			0.5 0.5	18				
JB-RECPT BLOWER 21	3#12,#12G	15	3	19	0.5 0.5			20				
				21		0.5 0.5		22	3	15	3#12,#12G	JB-RECPT BLOWER 24
				23			0.5 0.5	24				
JB-RECPT BLOWER 23	3#12,#12G	15	3	25	0.5			26				
				27		0.5		28				
				29			0.5	30				
			1	31				32				
			1	33				34				
			1	35				36				
			1	37				38				
			1	39				40				
			1	41				42				
					2.0 1.5	2.0 1.5	2.0 2.0					
					3.5	3.5	4.0					

TOTAL CONN. LOAD 11.0 KVA

INTEGRATED EQUIPMENT RATING 22,000 AMPS RMS. SYM.

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18298 REGISTERED RANDALL KYLE BIRCH

SOUTH CAROLINA BIRCH CONSULTING SERVICES, LLC NO. 3823 CERTIFICATE OF AUTHORIZATION

BIRCH Consulting Services, LLC
408 Ashley Oaks Drive, Moore, SC 29369
864-621-5668

GSWSA BUCKSPORT COMPOSTING FACILITY

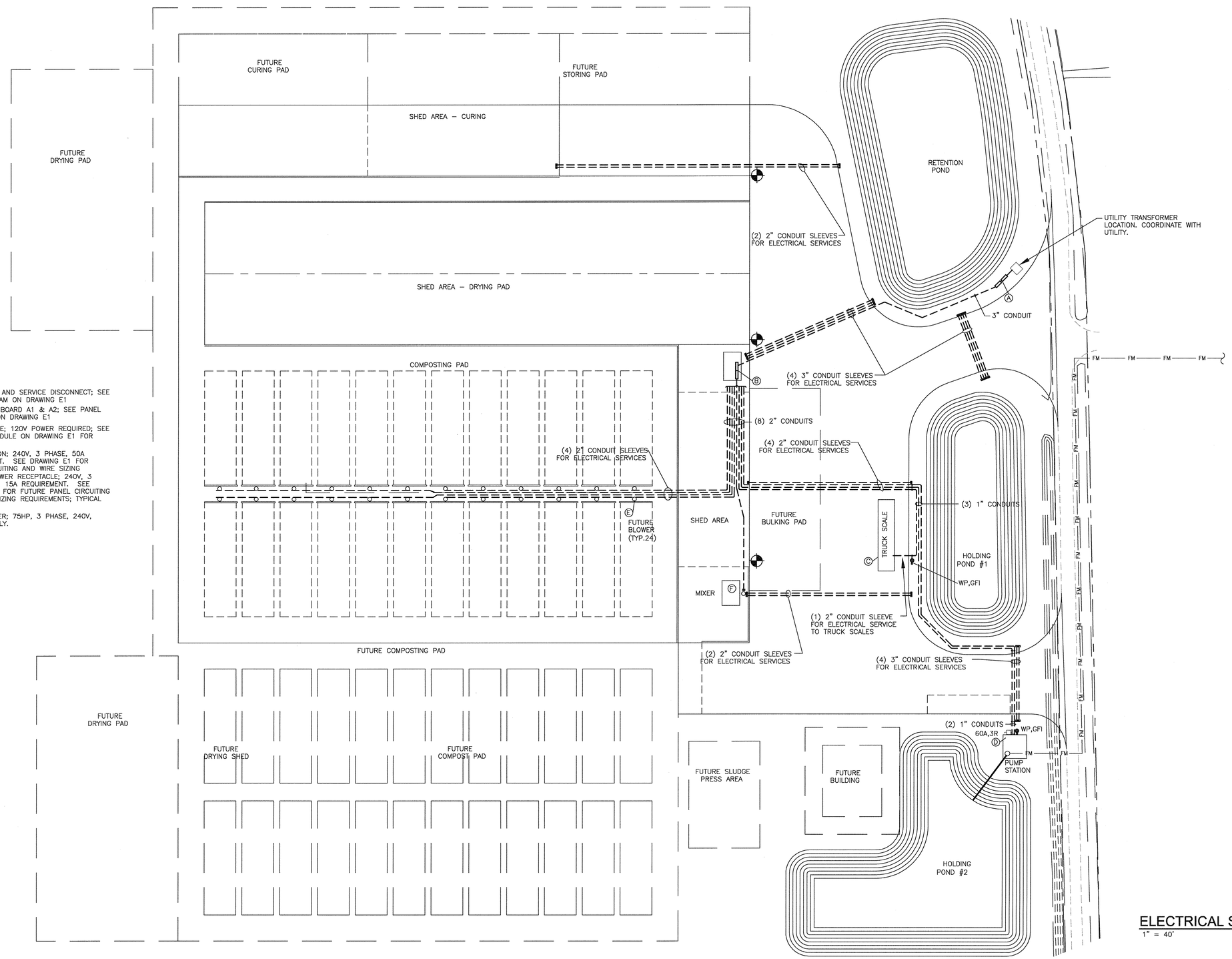
HORRY COUNTY, SOUTH CAROLINA

NO.	DATE	REVISION

JOB NO. - DATE 8/1/2011 DRAWN BY RKB

ELECTRICAL NOTES, RISER, & PANEL SCHEDULE

E1



LEGEND:

- (A) MAIN METER AND SERVICE DISCONNECT; SEE RISER DIAGRAM ON DRAWING E1
- (B) MAIN SWITCHBOARD A1 & A2; SEE PANEL SCHEDULE ON DRAWING E1
- (C) TRUCK SCALE; 120V POWER REQUIRED; SEE PANEL SCHEDULE ON DRAWING E1 FOR CIRCUITING
- (D) PUMP STATION; 240V, 3 PHASE, 50A REQUIREMENT. SEE DRAWING E1 FOR PANEL CIRCUITING AND WIRE SIZING
- (E) FUTURE BLOWER RECEPTACLE; 240V, 3 PHASE, 1HP, 15A REQUIREMENT. SEE DRAWING E1 FOR FUTURE PANEL CIRCUITING AND WIRE SIZING REQUIREMENTS; TYPICAL OF 24.
- (F) FUTURE MIXER; 75HP, 3 PHASE, 240V, CONDUIT ONLY.

ELECTRICAL SITE PLAN
1" = 40'

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 18298 RANDALL KYLE BIRCH

BIRCH CONSULTING SERVICES, LLC NO. 3823 STATE OF AUTHORIZATION

BIRCH Consulting Services, LLC
406 Ashley Oaks Drive, Moore, SC 29369
864-621-5668

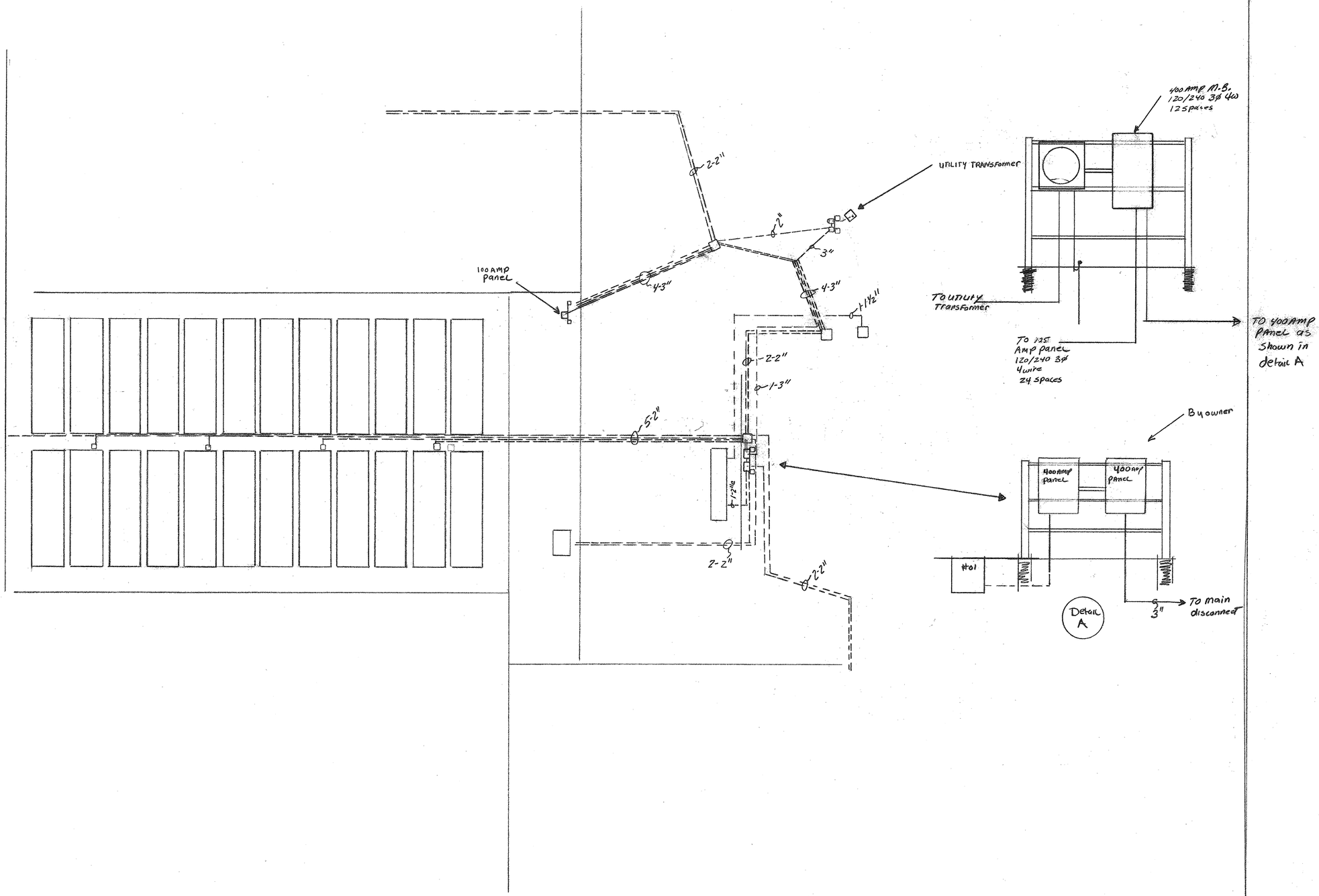
GSWSA
BUCKSPORT COMPOSTING FACILITY
HORRY COUNTY, SOUTH CAROLINA

NO.	DATE	REVISION

JOB NO. - DATE 8/1/2011 DRAWN BY REB

ELECTRICAL SITE PLAN

E2


400 AMP M.B.
120/240 3ϕ 4w
125 spaces
UTILITY TRANSformer
2-2"
2"
3"
100 AMP
panel
4-3"
4-3"
1-1½"
To utility
Transformer
To 125
Amp panel
120/240 3ϕ
4 wire
24 spaces
TO 400 AMP
PANEL as
Shown in
detail A
2-2"
1-3"
5-2"
By owner
400 AMP
panel
400 AMP
panel
1-2½"
2-2"
2-2"
#01
Detail
A
3"
To main
disconnect