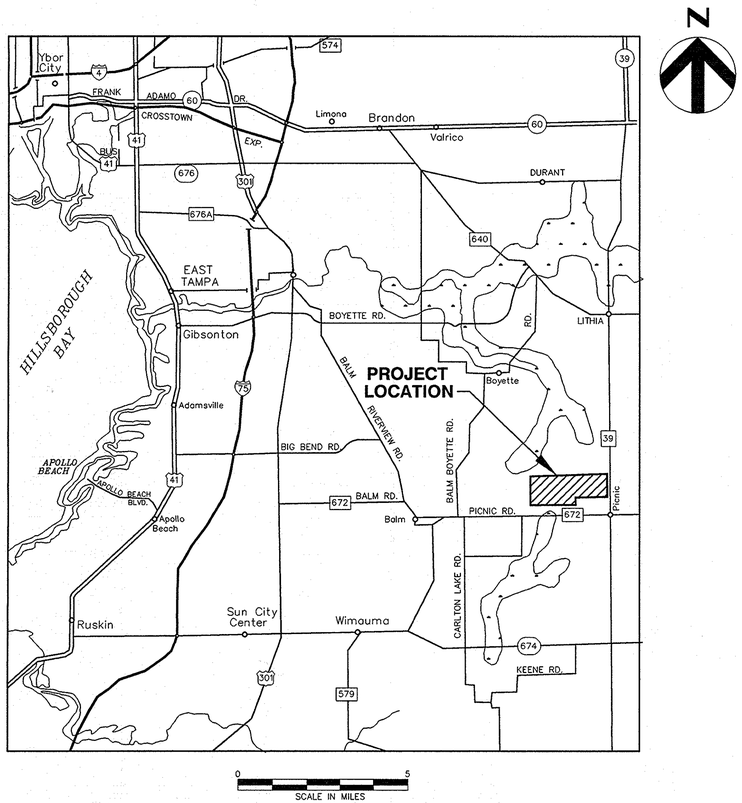
HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR CA# 4213

Hillsborough County
Florida

BOARD OF COUNTY COMMISSIONERS:
KEVIN BECKNER
VICTOR CRIST
KEN HAGAN
AL HIGGINBOTHAM
LES MILLER
SANDRA MURMAN
STACY WHITE



SITE VICINITY MAP

Contract Drawings For

Biosolids Composting Pilot Study

Site Preparation

Southeast County Landfill
Hillsborough County, Florida

Issued For Construction
March 2015

INDEX OF DRAWINGS

ROBERT B. CURTIS
LICENSE
No. 73758
STATE OF FLORIDA
PROFESSIONAL ENGINEER
1/21/15

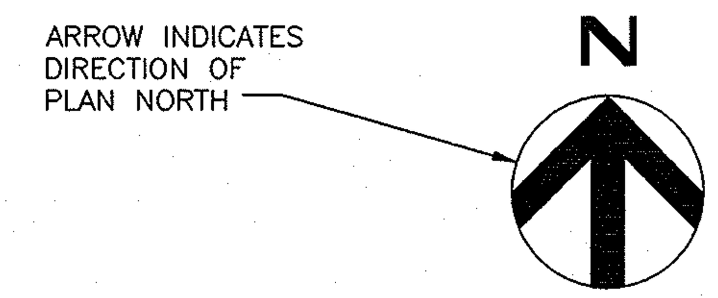
ROBERT B. CURTIS, P.E.
LICENSE NO. 73758
HDR CA# 4213

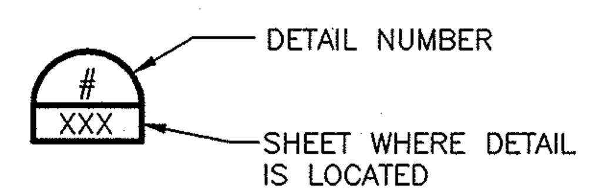
C:\pwworking\tpa\d0547935\G-01.dwg, Plot: 1/22/2015 2:03:37 PM, brandjon

ENGINEERING SYMBOLOGY

Symbol	Description
HC-1A	HORIZONTAL COLLECTOR VERTICAL COMPONENT
EW-10	VERTICAL LFG EXTRACTION WELL
EW-46	EXISTING LFG EXTRACTION WELL
EW-12R	WELLHEAD LOCATION
EW-107	CAISSON LFG EXTRACTION WELL
UT-1	SLOPED CONDENSATE U-TRAP
CS-1	CONDENSATE SUMP WITH PUMP
CT-5	SELF-DRAINING CONDENSATE TRAP
V-8	HEADER ISOLATION VALVE
AR-24	HEADER ACCESS RISER
	BLIND FLANGE FOR FUTURE EXPANSION
AV-2	AIR ISOLATION VALVE/BLOWOFF
CV-3	CONDENSATE DRAIN LINE ISOLATION VALVE
10"	HEADER/LATERAL DIAMETER
HP	HIGH POINT
	HEADER/LATERAL PIPE
AIR	AIR SUPPLY LINE
FM	CONDENSATE DRAIN LINE/LEACHATE DEWATERING LINE
	ROAD CROSSING
CO 4-1	EXISTING LEACHATE COLLECTION SYSTEM CLEANOUT
FM	EXISTING LEACHATE FORCE MAIN
	HORIZONTAL COLLECTOR PERFORATED PIPE
CDW	DIRECTION OF CONDENSATE/DEWATERING LIQUID FLOW
LFG	DIRECTION OF LANDFILL GAS FLOW (LFG)
× 159.5	EXISTING SPOT ELEVATION
100	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	SOLID WASTE BOUNDARY
	PHASE/SECTION LIMIT
200	PROPOSED MAJOR CONTOUR
201	PROPOSED MINOR CONTOUR
	LIMITS OF CONSTRUCTION
	PROPERTY LINE
SF	SILT FENCE
	LIMITS OF CONSTRUCTION
	GROUND SURVEY CONTROL
	STORMWATER FLOW DIRECTION
①	SITE LAYOUT COORDINATE POINT
	TRAFFIC ROUTE TO CAPACITY EXPANSION AREA AND BIOSOLIDS COMPOSTING PILOT STUDY AREA
	ASPHALT MILLINGS

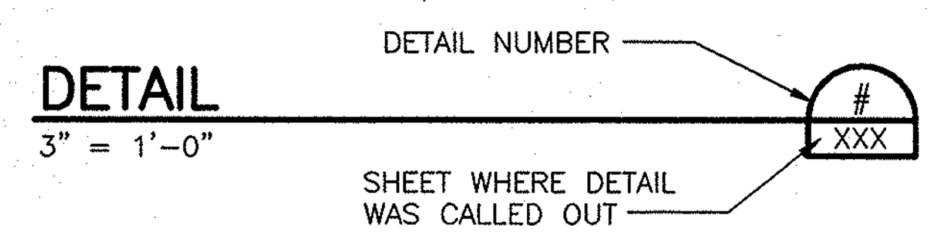
GENERAL SYMBOLOGY





DETAIL MARKER

FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.



DETAIL TITLE

GENERAL NOTES

SURVEY AND MAP REPORT:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 11, 2014. AS WITH ALL SURVEYS COMPLETED IN THIS MANNER, ALL INFORMATION SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
2. COORDINATES REFERENCE FLORIDA STATE PLANE WEST ZONE, NAD83, 1990 ADJUSTMENT. ELEVATIONS ARE TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) OF 1929.

SPECIFIC NOTES:

1. WITHIN 10 DAYS AFTER AWARD OF CONTRACT, THE CONTRACTOR WILL SUBMIT FOR APPROVAL A SCHEDULE TO THE ENGINEER, FOR COMPLETION OF THE PROJECT.
2. ALL EXCAVATED WASTE SHALL BE PLACED IN THE ACTIVE WASTE FILLING AREA. CONTRACTOR SHALL COORDINATE ANY WASTE DISPOSAL WITH THE LANDFILL OPERATOR.
3. HOURS FOR CONSTRUCTION: 7:30 AM TO 5:30 PM MONDAY THRU FRIDAY.

EROSION AND SEDIMENT CONTROL:

1. CONTRACTOR WILL ADD EROSION AND SEDIMENT CONTROL AS NECESSARY TO PREVENT SEDIMENTATION AND DAMAGE TO ADJACENT AREAS AND AS DIRECTED BY THE ENGINEER.
2. CONTRACTOR WILL INSPECT AND REPAIR, AS NECESSARY, ANY EROSION AND SEDIMENT CONTROL DAILY AND FOLLOWING EACH MEASURABLE RAIN EVENT.
3. EROSION AND SEDIMENT CONTROL WILL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
4. CONTRACTOR IS RESPONSIBLE FOR MONITORING DOWNSTREAM CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD AND CLEARING ANY DEBRIS AND SEDIMENT RESULTING FROM CONSTRUCTION.
5. EROSION CONTROL FENCING MUST MEET THE REQUIREMENTS OF THE DEPARTMENT OF TRANSPORTATION, STATE OF FLORIDA STANDARD SPECIFICATIONS. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.

EARTHWORK:

1. EXCAVATION IS UNCLASSIFIED AND INCLUDES REMOVAL OF EARTH FILLS, RUBBLE, TRASH, AND OTHER MATERIALS ENCOUNTERED IN EXCAVATION AND GRADING OPERATIONS TO DEPTH AND EXTENT SHOWN ON DRAWINGS OR SPECIFIED. THE ENGINEER SHALL BE THE FINAL AUTHORITY AND SHALL MAKE THE FINAL DECISION DURING CONSTRUCTION AS TO THE DEPTH AND EXTENT TO WHICH MATERIALS MUST BE REMOVED AND REPLACED.
2. SURVEY BENCHMARKS, MONUMENTS AND OTHER REFERENCE POINTS WILL BE PROTECTED FROM DAMAGE AND DISPLACEMENT. IF DISTURBED OR DESTROYED, THEY WILL BE REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
3. CONTRACTOR SHALL LIMIT DIRT, DUST, NOISE AND OTHER OBJECTIONABLE NUISANCES PER PERMIT REQUIREMENTS.
4. CUT AND FILL SLOPES FOR STRUCTURAL EMBANKMENTS SHALL NOT EXCEED 2 HORIZONTAL TO 1 VERTICAL. THE CONTRACTOR IS RESPONSIBLE FOR ALL SHORING AND BRACING DURING CONSTRUCTION.

UTILITIES:

1. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR LOCATIONS SHOWN AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK PRIOR TO CONSTRUCTION. ALL DAMAGE MADE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ALL COORDINATION AND REQUIRED UTILITY COMPANY TEMPORARY PROTECTION SHALL BE AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE UNINTERRUPTION OF SERVICE AND REPLACEMENT OF DAMAGED UTILITIES.

AS-BUILT SURVEY DATA:

1. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING SURVEY DATA:
   - EXISTING CONDITIONS
   - SUBGRADE (COVER SOIL)
   - FINAL GRADES (TOP OF ASPHALT)
2. ALL REQUESTED SURVEY DATA MUST BE PROVIDED TO THE ENGINEER IN FLORIDA STATE PLANE COORDINATES AND BE SIGNED AND SEALED BY A STATE OF FLORIDA LICENSED SURVEYOR.

ADDITIONAL NOTES:

1. THE CONTRACTOR IS ADVISED THAT NO ACTIVITIES MAY INTERFERE, DISRUPT, BLOCK, OR OTHERWISE CONFLICT WITH LANDFILL OPERATIONS. IF CONFLICTS ARE ANTICIPATED, THEY SHALL BE COORDINATED AND APPROVED BY THE OWNER AND ENGINEER PRIOR TO DISRUPTION.
2. THE PROJECT SITE IS A SOLID WASTE CLASS I LANDFILL, AS SUCH, CONDITIONS ARE SUBJECT TO CHANGE WITH TIME. CONTROLS, IN PARTICULAR VERTICAL GROUND ELEVATION, SHOULD BE EXPECTED (AND ANTICIPATED) TO VARY FROM THOSE SHOWN ON THESE DRAWINGS DUE TO ONGOING SUBSIDENCE RESULTING FROM REFUSE DECOMPOSITION WITHIN THE PROJECT LIMITS. RELATIVE ELEVATION DIFFERENCES IN EXISTING AND PROPOSED ELEVATIONS SHOWN ON THE DRAWINGS SHALL BE ADJUSTED ACCORDINGLY AND THE ENGINEER NOTIFIED. LOCATION OF STRUCTURES SHALL BE PLACED IN ACCORDANCE WITH HORIZONTAL CONTROLS. VERTICAL PLACEMENT OF STRUCTURES SHALL BE IN ACCORDANCE WITH CONSTRUCTION DOCUMENTS, OR AS APPROVED BY THE ENGINEER.
3. ANY AND ALL FINES IMPOSED ON THE OWNER BY ANY REGULATORY AGENCY DUE TO ACTIONS OF THE CONTRACTOR SHALL BE PAID BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
4. INSPECTION: EXAMINE AREAS FOR CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. REPORT IN WRITING TO THE ENGINEER ALL CONDITIONS CONTRARY TO THOSE SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN AND ALL OTHER CONDITIONS THAT WILL AFFECT SATISFACTORY EXECUTION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. STARTING WORK CONSTITUTES ACCEPTANCE OF THE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. AFTER SUCH ACCEPTANCE, THE CONTRACTOR SHALL, AT CONTRACTORS EXPENSE, BE RESPONSIBLE FOR CORRECTING ALL UNSATISFACTORY AND DEFECTIVE WORK RESULTING FROM SUCH UNSATISFACTORY CONDITIONS.
5. PROTECTIONS: INSTALL TEMPORARY BARRIERS, FENCES, BARRICADES, LIGHTS, WARNING SIGNS AND OTHER DEVICES NECESSARY TO PROTECT STRUCTURES, UTILITIES, LANDSCAPING, EXCAVATIONS, AND OTHER ITEMS AS NECESSARY. PROTECT SURVEY BENCHMARKS AND MONUMENTS FROM DISPLACEMENT.
6. ALL WORK SHALL BE PERFORMED IN A QUALITY WORKMANLIKE MANNER.
7. DEVIATIONS FROM THESE PLANS AND SPECIFICATIONS WITHOUT PRIOR WRITTEN CONSENT OF THE ENGINEER OR OWNER MAY CAUSE THE WORK TO BE UNACCEPTABLE AND WILL BE ADJUSTED OR REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY LICENSES AND PERMITS ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT UNLESS NOTIFIED OTHERWISE IN WRITING BY THE OWNER.
9. THE EXISTING LANDFILL GAS SYSTEM LOCATION AND ELEVATIONS ARE BASED UPON AS-BUILT SURVEY DATA PROVIDED BY OTHERS, NOTIFY THE ENGINEER IF DIFFERENT.
10. PRIOR TO COMMENCEMENT OF ALL WORK, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A SURVEY TO CONFIRM EXISTING CONDITION.
11. ALL WORK, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, SHALL HAVE A ONE YEAR WARRANTY. ONE YEAR WARRANTY WILL BECOME EFFECTIVE WHEN THE PROJECT IS SUBSTANTIALLY COMPLETE, AS DETERMINED BY ENGINEER.
12. ACTUAL DIMENSIONS AND LOCATIONS MAY VARY BASED ON FIELD LOCATIONS AND WITH APPROVAL OF THE ENGINEER.
13. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING THE COST FOR ALL INSPECTION FEES AND ENGINEERING HOURS OVER THE 50 HOURS PER WEEK WORK SCHEDULE AT ACTUAL BILLING RATES. CONTRACTOR SHALL SUBMIT IN WRITING TO THE ENGINEER WITHIN FIVE CALENDAR DAYS NOTICE TO JUSTIFY THE EXTENSION OF TIME.
15. AREAS DISTURBED BEYOND THE LIMITS OF CONSTRUCTION SHALL BE RE-SODDED AT NO COST TO THE OWNER OR ENGINEER.

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400

Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	MARCH 2015	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	C. RESTREPO
CIVIL DESIGN BY	R. CURTIS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0100-243250-001

ROBERT B. CURTIS LICENSE No. 73758 STATE OF FLORIDA PROFESSIONAL ENGINEER

1/21/15

ROBERT B. CURTIS, P.E.
LICENSE NO. 73758

Hillsborough County Florida

BIOSOLIDS COMPOSTING PILOT STUDY SITE PREPARATION

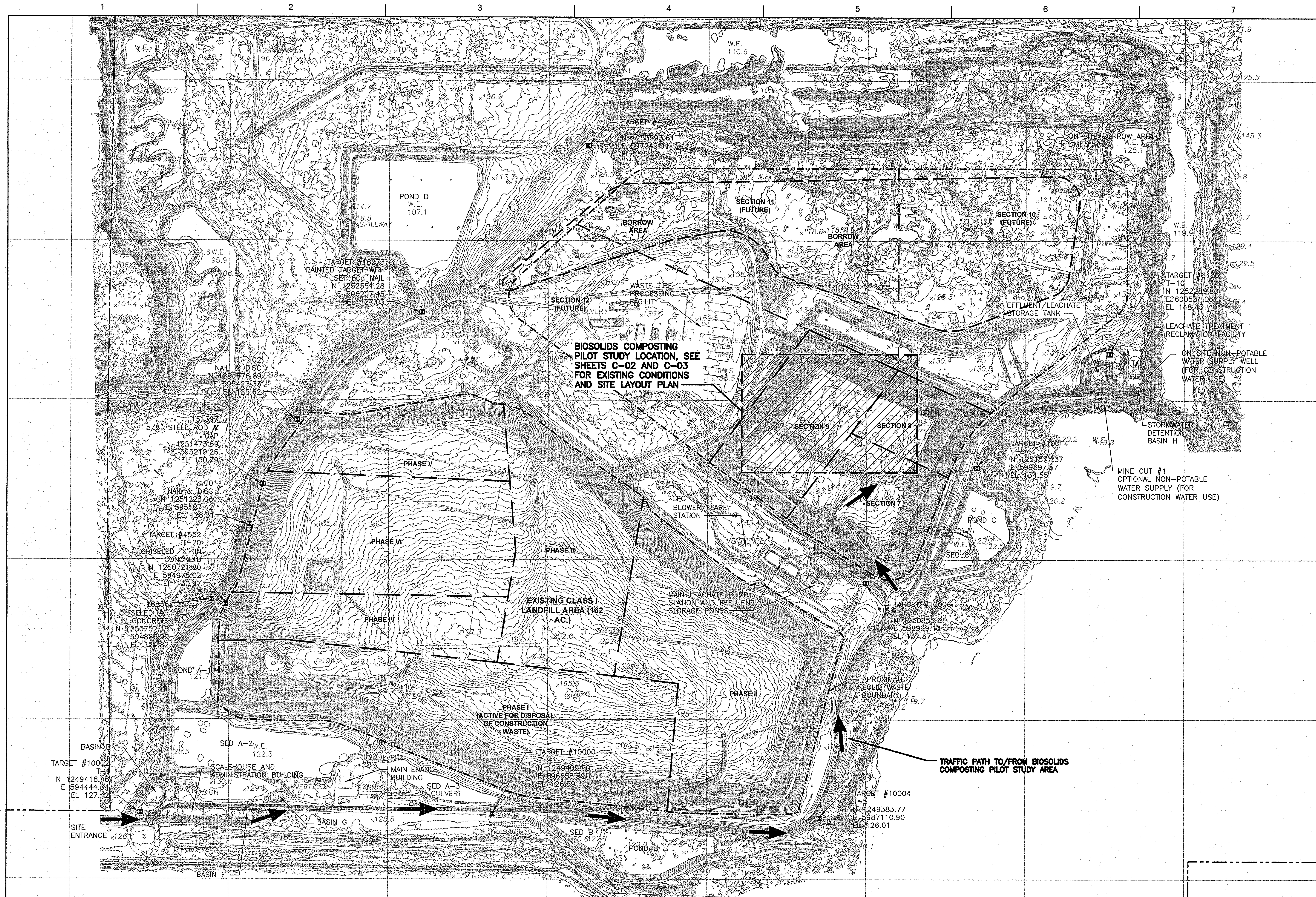
GENERAL NOTES AND LEGEND

0 1" 2"

FILENAME	G-02.DWG
SCALE	NOT TO SCALE

SHEET **G-02**

C:\pwworking\tpa\d0647955\G-02.dwg, Plot, 1/20/2015 2:03:43 PM, bradjohn



NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 11, 2014.
2. GROUND CONTROL INFORMATION PROVIDED BY PICKETT AND ASSOCIATES INC.
3. CONSTRUCTION ACTIVITIES SHALL NOT IMPACT LANDFILL OPERATIONS.
4. NO OFF ROAD VEHICLES SHALL BE ALLOWED ON PAVED ROADS UNLESS APPROVED BY OWNER OR ENGINEER.

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400

Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	MARCH 2015	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	C. RESTREPO
CIVIL DESIGN BY	R. CURTIS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0100-243250-001

ROBERT B. CURTIS LICENSE No. 73758 STATE OF FLORIDA PROFESSIONAL ENGINEER

1/21/15

ROBERT B. CURTIS, P.E.
LICENSE NO. 73758

Hillsborough County
Florida

BIOSOLIDS COMPOSTING PILOT STUDY SITE PREPARATION

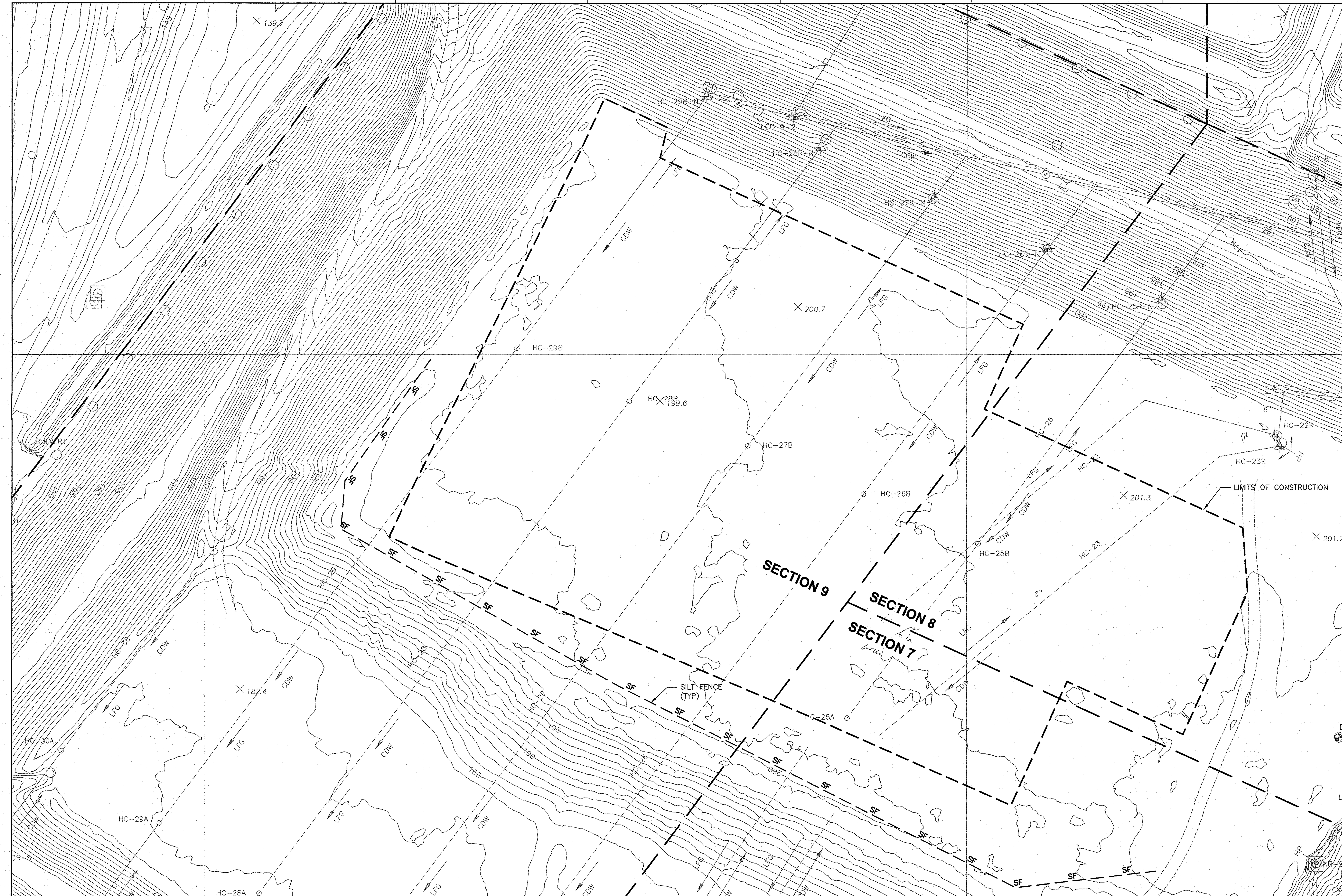
OVERALL SITE PLAN

0 1" 2"

FILENAME	C-02.DWG
SCALE	1"=500'

SHEET
C-01

C:\pwworking\tpa\d0647955\C-01.dwg, Plot, 1/20/2015 2:03:50 PM, bradjohn



N

NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 11, 2014.
2. GROUND CONTROL INFORMATION PROVIDED BY PICKETT AND ASSOCIATES INC.
3. CONSTRUCTION ACTIVITIES SHALL NOT IMPACT LANDFILL OPERATIONS.
4. NO OFF ROAD VEHICLES SHALL BE ALLOWED ON PAVED ROADS UNLESS APPROVED BY OWNER OR ENGINEER.
5. LFG PIPING SHOWN FOR REFERENCE. PIPING AND VAVLES DEPTH GREATER THAN 5 FEET BELOW GRADES SHOWN.

HDR

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400

Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	MARCH 2015	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	C. RESTREPO
CIVIL DESIGN BY	R. CURTIS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0100-243250-001

ROBERT B. CURTIS LICENSE No. 73758 STATE OF FLORIDA PROFESSIONAL ENGINEER

1/21/15

ROBERT B. CURTIS, P.E.
LICENSE NO. 73758

Hillsborough County
Florida

BIOSOLIDS COMPOSTING PILOT STUDY SITE PREPARATION

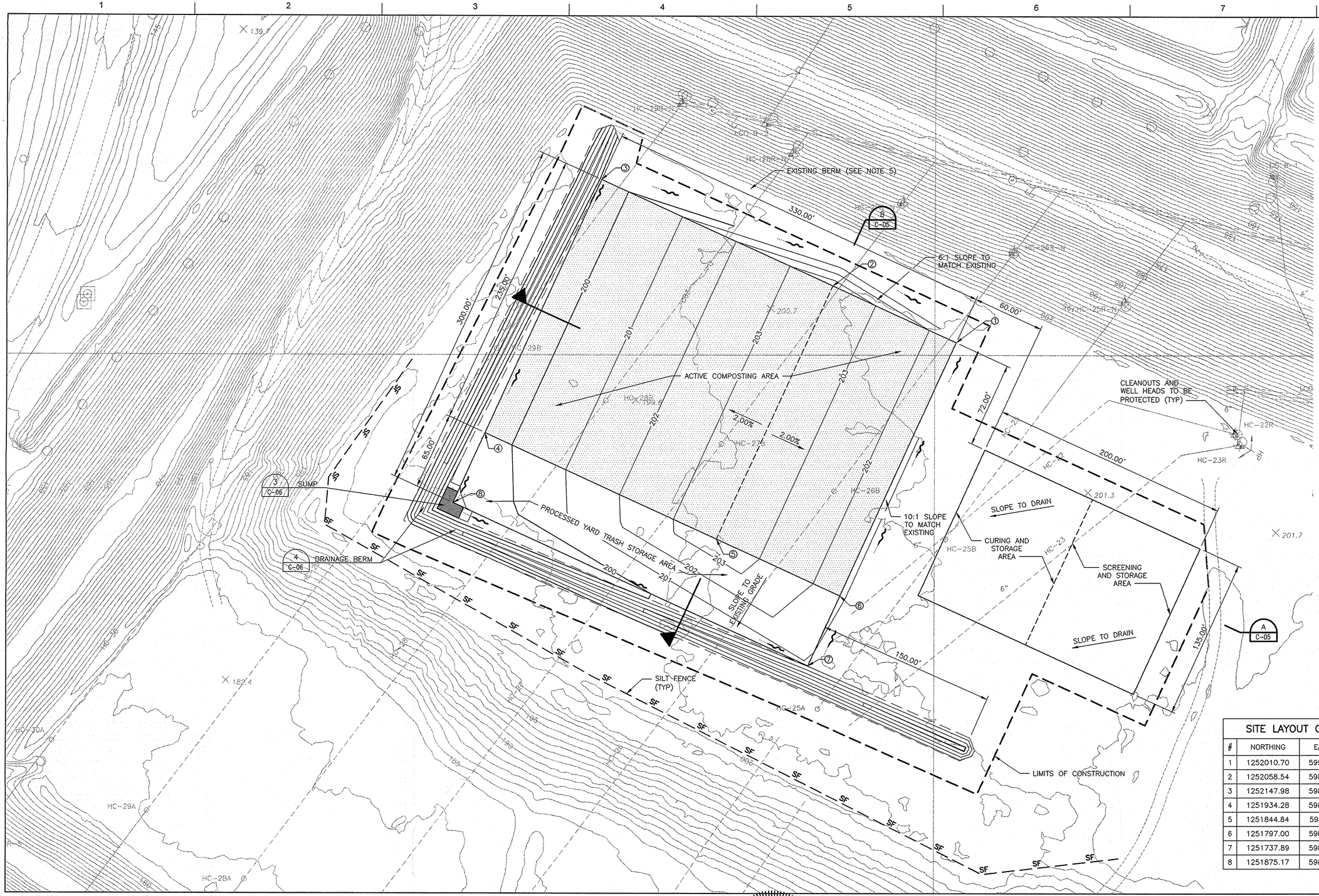
EXISTING CONDITIONS

0 1" 2"

FILENAME C-02.DWG
SCALE 1"=40'

SHEET **C-02**

C:\pwworking\tpa\d0847955\C-02.dwg, Plot, 1/20/2015 2:04:05 PM, bradjohn



NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 11, 2014.
2. GROUND CONTROL INFORMATION PROVIDED BY PICKETT AND ASSOCIATES INC.
3. CONSTRUCTION ACTIVITIES SHALL NOT IMPACT LANDFILL OPERATIONS.
4. NO OFF ROAD VEHICLES SHALL BE ALLOWED ON PAVED ROADS UNLESS APPROVED BY OWNER OR ENGINEER.
5. ENHANCE EXISTING BERM NORTH OF WORK AREA WITH SOIL AS NEEDED TO MAINTAIN A MINIMUM TOP OF BERM ELEVATION OF 201.0 (FT).

SITE LAYOUT COORDINATE POINTS TABLE

#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1252010.70	599018.05	201.54	GRADE
2	1252058.54	598913.47	203.80	GRADE HP
3	1252147.98	598717.96	199.50	GRADE
4	1251934.28	598620.20	199.50	GRADE
5	1251844.84	598815.71	203.80	GRADE HP
6	1251797.00	598920.29	201.50	GRADE
7	1251737.89	598893.25	200.88	GRADE
8	1251875.17	598593.16	198.95	GRADE

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400

Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	MARCH 2015	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	C. RESTREPO
CIVIL DESIGN BY	R. CURTIS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0100-243250-001

ROBERT B. CURTIS, P.E.
LICENSE NO. 73758
1/22/15

Hillsborough County Florida

BIOSOLIDS COMPOSTING PILOT STUDY SITE PREPARATION

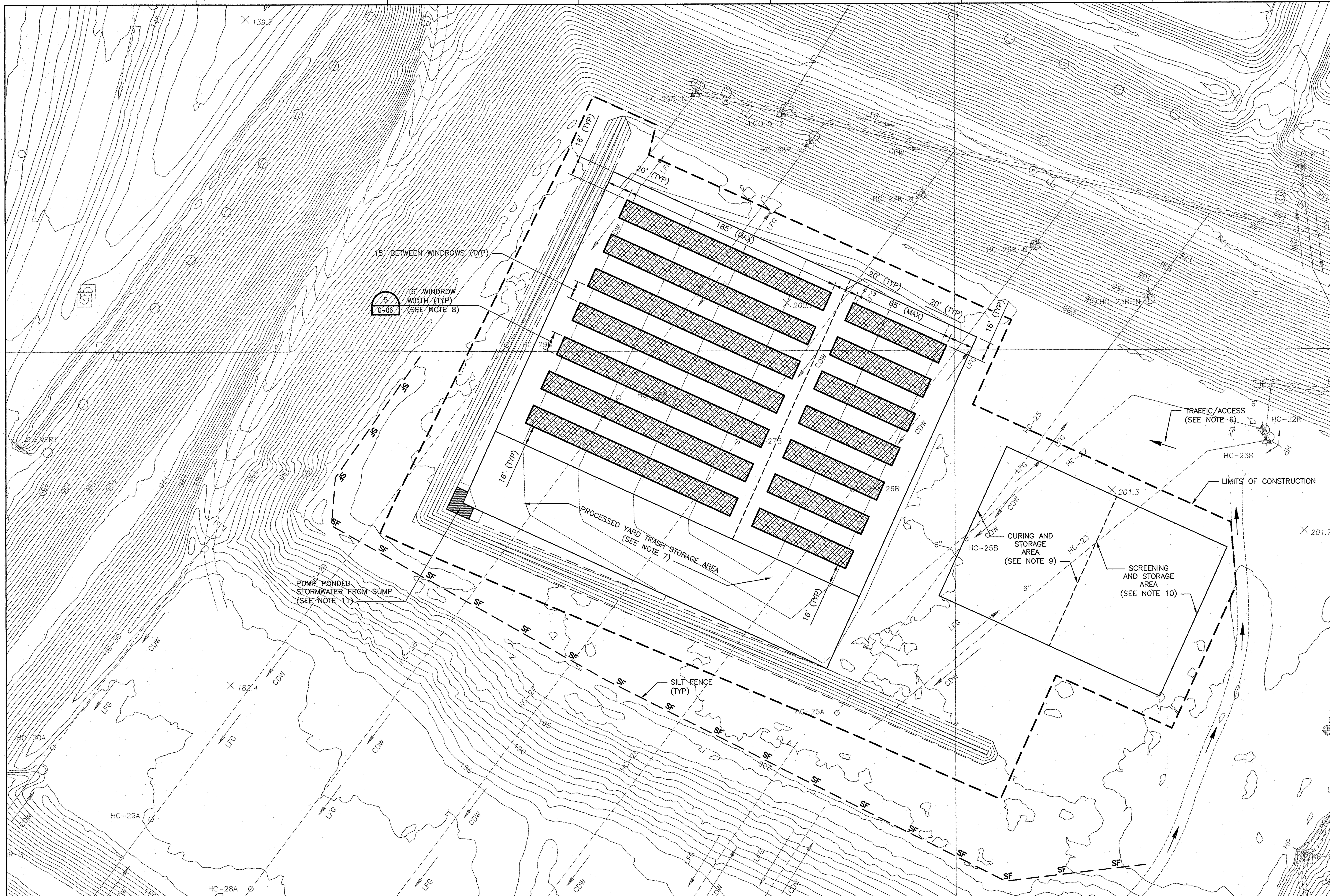
SITE LAYOUT PLAN

0 1" 2"

FILENAME C-03.DWG
SCALE 1"=40'

SHEET C-03

C:\pwworking\jbradd\d0475550\C-03.dwg, Plot, 1/22/2015 9:16:02 AM, bradjdon



NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 11, 2014.
2. GROUND CONTROL INFORMATION PROVIDED BY PICKETT AND ASSOCIATES INC.
3. CONSTRUCTION ACTIVITIES SHALL NOT IMPACT LANDFILL OPERATIONS.
4. NO OFF ROAD VEHICLES SHALL BE ALLOWED ON PAVED ROADS UNLESS APPROVED BY OWNER OR ENGINEER.
5. DIMENSIONS SHOWN ARE TYPICAL. ACTUAL FIELD DIMENSIONS MAY DIFFER WITH CHANGES DURING PILOT STUDY.
6. PROPOSED ACCESS. ACTUAL TRAFFIC FLOW MAY VARY DEPENDING ON STORAGE PILE LAYOUT AND WEATHER CONDITIONS.
7. AREA TO BE USED FOR TEMPORARY STORAGE OF YARD TRASH BEFORE PLACEMENT IN WINDROWS.
8. LENGTH, WIDTH AND HEIGHT OF WINDROWS BASED ON KESSLER CONSULTING, INC. (KESSLER) PLAN DATED JANUARY 2015, AND MAY VARY. COMPOSTION (RATIO OF BIOSOLIDS TO YARD TRASH) OF WINDROWS DISCUSSED IN KESSLER PLAN.
9. CURING AND STORAGE AREA USED TO STOCKPILE COMPOSTED MATERIAL WHILE AWAITING ANALYTICAL TEST RESULTS.
10. TROMMEL SCREEN TO BE SET UP AND OPERATED IN SCREENING AND STORAGE AREA. SCREENED MATERIAL TO BE STOCKPILED OR TRUCKED DIRECTLY TO COUNTY OWNED PROPERTY.
11. PUMP STORMWATER RUNOFF FROM THE BIOSOLIDS COMPOSTING AREA AND COLLECTED IN SUMP AREA AS NEEDED IN ORDER TO KEEP THE WATER LEVEL IN THE SUMP BELOW THE ACTIVE COMPOST PAD. RUNOFF COLLECTED IN THE SUMP AREA WILL INFILTRATE INTO THE LEACHATE COLLECTION SYSTEM OR BE PUMPED/TRUCKED, AND DISPOSED OF IN THE LANDFILL LEACHATE COLLECTION SYSTEM OR TAKEN TO THE ON-SITE LEACHATE TREATMENT RECLAMATION FACILITY (LTRF). THE LTRF PROVIDES TREATMENT OF THE FACILITY'S LEACHATE TO MEET SPRAY IRRIGATION STANDARDS OR THE LEACHATE IS TAKEN TO THE COUNTY'S WWTP FOR DISPOSAL.

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	MARCH 2015	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	C. RESTREPO
CIVIL DESIGN BY	R. CURTIS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0100-243250-001

ROBERT B. CURTIS LICENSE No. 73758 STATE OF FLORIDA PROFESSIONAL ENGINEER

1/21/15

ROBERT B. CURTIS, P.E.
LICENSE NO. 73758

Hillsborough County Florida

BIOSOLIDS COMPOSTING PILOT STUDY SITE PREPARATION

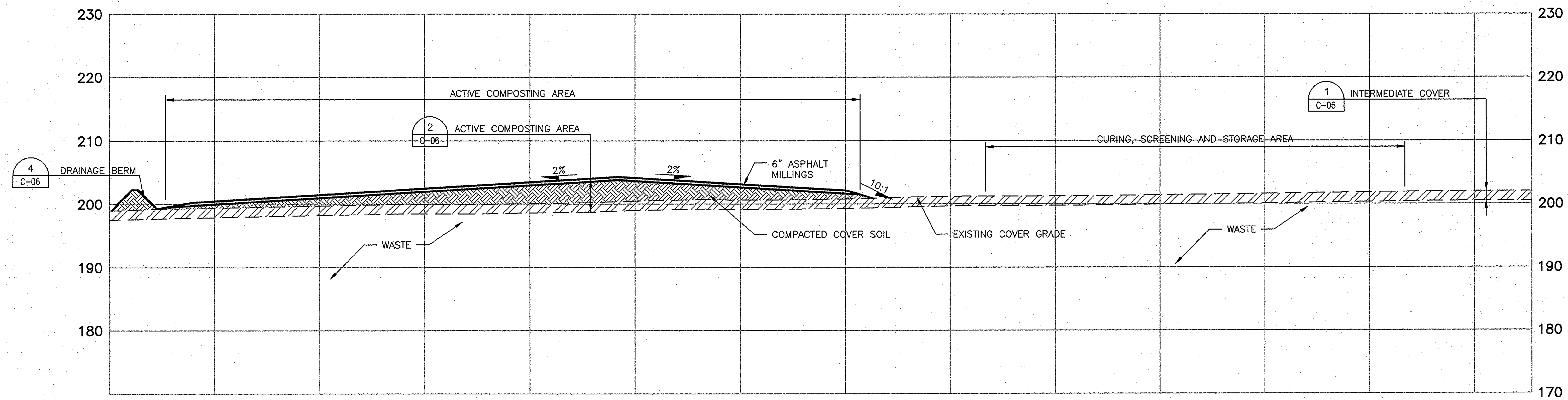
OPERATIONS SITE PLAN

0 1" 2"

FILENAME C-04.DWG
SCALE 1"=40'

SHEET **C-04**

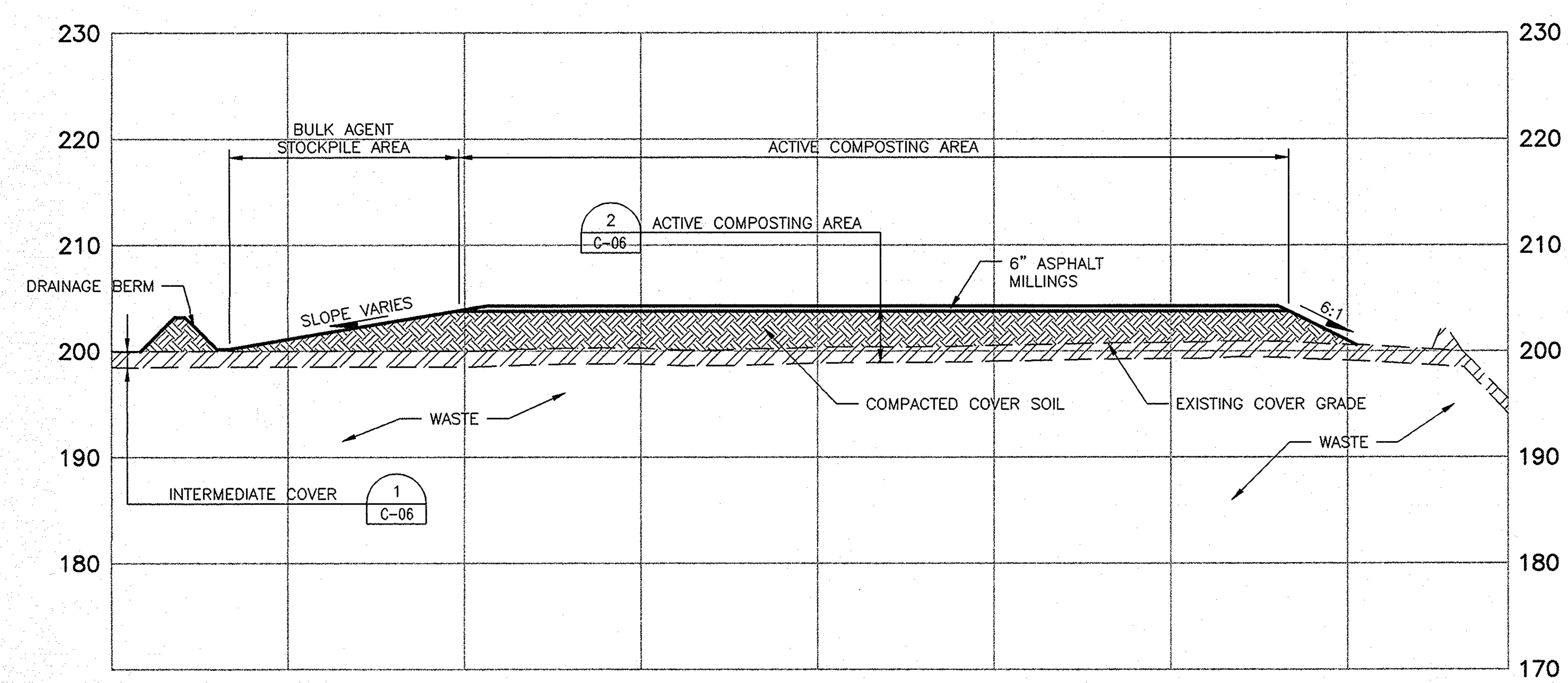
C:\pwworking\tpa\d0647955\C-04.dwg, Plot, 1/20/2015 2:17:37 PM, bredjohn



SECTION A / C-03
1"=30' HORIZ, 1"=10' VERT.

NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY PICKETT AND ASSOCIATES, INC. FROM AERIAL PHOTOGRAPHY DATED JULY 11, 2014.



SECTION B / C-03
1"=30' HORIZ, 1"=10' VERT.

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400

Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	MARCH 2015	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	C. RESTREPO
CIVIL DESIGN BY	R. CURTIS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0100-243250-001

ROBERT B. CURTIS, P.E.
LICENSE NO. 73758
1/21/15

Hillsborough County
Florida

BIOSOLIDS COMPOSTING PILOT STUDY SITE PREPARATION

SECTIONS

0 1" 2"

FILENAME C-05.DWG
SCALE AS SHOWN

SHEET **C-05**

C:\pwworking\tpa\d0647955\C-05.dwg, Plot, 1/20/2015 2:04:35 PM, bradjohn

CONSTRUCTION SPECIFICATIONS

1.1 SOILS/GEOTECHNICAL

A. THE OWNER WILL PROVIDE FOR THE ON-SITE SERVICES OF A CQA INSPECTOR TO SELECTIVELY TEST MATERIALS AND MONITOR COMPLIANCE WITH THE REQUIREMENTS OF THESE SPECIFICATIONS.

B. THE CONTRACTOR WILL AFFORD THESE REPRESENTATIVES ACCESS TO THE JOB SITE FOR THE PERFORMANCE OF THEIR DUTIES.

C. THE CONTRACTOR SHALL GIVE MINIMUM OF 24-HOUR ADVANCE NOTICE TO ENGINEER WHEN READY FOR COMPACTION OR SUBGRADE TESTING AND INSPECTION.

1.2 MATERIALS

A. COVER SOIL: MATERIALS (ONLY) PROVIDED BY OWNER AND SHOULD BE FREE OF DELETERIOUS MATERIAL (STICKS, ROOTS, WASTE, ETC.) AND ROCK FRAGMENTS, BOULDERS, OR COBBLES GREATER THAN 1/2 INCHES IN SIZE. SOILS SHALL BE OBTAINED FROM THE EXCAVATION OF CLEAN SOILS FROM THE DESIGNATED ON-SITE BORROW AREA.

B. MILLINGS: PROVIDED BY OTHERS SHOULD BE RECYCLED ASPHALT PAVEMENT (RAP) MILLED OR CRUSHED WITH AT LEAST 97% PASSING THE 3-1/2" SIEVE AND GRADED UNIFORMLY DOWN TO DUST. TO BE PROVIDED BY OWNER.

C. TIRE CHIPS: MATERIALS (ONLY) SHALL BE PROVIDED BY OWNER.

D. ALL HANDLING (EXCAVATION, HAULING, STOCKPILING, ETC.) WILL BE COMPLETED BY THE CONTRACTOR.

1.3 SITE EXCAVATION, STOCKPILING, BACKFILLING, COMPACTION, AND GRADING

A. THE WORK INCLUDES ALL OPERATIONS IN CONNECTION WITH EXCAVATION, BORROW, BACKFILLING, CONSTRUCTION OF COVER SOIL AND MILLING LAYERS, ROUGH GRADING, AND DISPOSAL OF EXCESS MATERIALS IN CONNECTION WITH THE PREPARATION OF THE SITE(S) FOR CONSTRUCTION OF THE WORK.

B. EXCAVATION AND GRADING: PERFORM AS REQUIRED BY THE CONTRACT DRAWINGS.

1. CONTRACT DRAWINGS MAY INDICATE BOTH EXISTING GRADE AND FINISHED GRADE REQUIRED FOR CONSTRUCTION OF PROJECT.
   a. STAKE ALL UNITS, STRUCTURES, PIPING, ROADS, AND ESTABLISH THEIR ELEVATIONS.
   b. PERFORM OTHER LAYOUT WORK REQUIRED.
   c. REPLACE PERMANENT SURVEY MARKERS TO ORIGINAL LOCATION IF DISTURBED OR DESTROYED.
2. PREPARATION OF GROUND SURFACE FOR COVER SOIL LAYER:
   a. BEFORE COVER SOIL LAYER IS PLACED, REMOVE VEGETATION AND UNSUITABLE SOILS.
   b. EXISTING VEGETATION AND CLEAN SOIL STRIPPED FROM THE EXISTING INTERMEDIATE COVER WILL BE STOCKPILED FOR REUSE. IF THE SOD/SOIL CONTAINS CLASS I WASTE OR APPEARS TO CONTAIN LEACHATE, THE MATERIAL MUST BE HANDLED AS EXCAVATED WASTE MATERIAL AND TAKEN TO THE ACTIVE WASTE FILLING AREA.
   c. STOCKPILED CLEAN SOD/SOIL MAY BE TESTED AND IF IT IS APPROVED BY THE ENGINEER AND MEETS THE REQUIREMENTS FOR COVER SOIL, THE MATERIAL MAY BE USED BY THE CONTRACTOR.

C. INSTALLATION OF COVER SOIL AS REQUIRED BY THE CONTRACT DRAWINGS:

1. INSTALL COVER SOIL TO MINIMUM THICKNESSES AND GRADES SHOWN ON THE CONTRACT DRAWINGS. GRADE TO SMOOTH TRUE LINES APPROVED BY ENGINEER WITH NO SOFT SPOTS OR UNCOMPACTED AREAS. TOP OF FINAL COVER ELEVATIONS SHALL NOT EXCEED THE DESIGN ELEVATIONS SHOWN ON THE CONTRACT DRAWINGS.
2. PROVIDE APPROVED FILL MATERIAL:
   a. DO NOT PLACE MATERIAL IN LAYERS GREATER THAN A 12-INCH LOOSE THICKNESS.
   b. LIFT THICKNESS SHALL BE AT THE DISCRETION OF THE ENGINEER.
3. COMPACT BY SHEEPSFOOT, DOZER, PNEUMATIC ROLLERS, VIBRATORS, OR BY OTHER EQUIPMENT AS REQUIRED TO OBTAIN SPECIFIED DENSITY.
   a. CONTROL MOISTURE FOR EACH LAYER NECESSARY TO MEET REQUIREMENTS OF COMPACTION.
4. UPON REACHING THE REQUIRED COMPACTED THICKNESS OF COVER SOIL LAYER, PROOF ROLL AND OBTAIN THE ENGINEER'S REVIEW/RECOMMENDATION AND APPROVAL. IF UNSUITABLE MATERIALS ARE ENCOUNTERED, REPAIR AS DIRECTED AND APPROVED BY THE ENGINEER TO REMOVE UNSUITABLE MATERIALS.
5. PROOF ROLLING SHALL BE CONDUCTED WITH A 10-TON DRUM ROLLER APPROVED BY THE ENGINEER. AN ALTERNATE APPROVED BY THE ENGINEER MAY BE USED IN CONSTRICTED AREAS.
6. WHERE COVER SOIL LAYER MATERIALS ARE DETERMINED TO BE UNSUITABLE, SUCH MATERIALS SHALL BE REMOVED TO THE LENGTHS, WIDTHS, AND DEPTHS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH SUITABLE MATERIAL UNLESS FURTHER EXCAVATION OR EARTHWORK IS REQUIRED. ADDITIONAL PAYMENT WILL BE MADE FOR EXCAVATION AND REPLACEMENT OF COVER SOIL LAYER EXCEPT FOR MATERIAL PREVIOUSLY PLACED BY CONTRACTOR THAT DID NOT MEET PROJECT SPECIFICATIONS.

D. DEWATERING (AS REQUIRED): PROVIDE AND MAINTAIN DEWATERING OF ALL SURFACE WATER AND/OR GROUNDWATER AS REQUIRED FOR EXCAVATION. WHERE GROUNDWATER IS EXPECTED TO BE ENCOUNTERED DURING BORROW AREA EXCAVATION, INSTALL A DEWATERING SYSTEM TO PREVENT SOFTENING AND DISTURBANCE OF EXCAVATION, ALLOW BORROW MATERIAL TO BE EXCAVATED DRY, AND MAINTAIN A STABLE EXCAVATION.

E. DO NOT PLACE FILL WHEN THE UNDERLYING MATERIAL IS FROZEN, WET, LOOSE, OR SOFT.

F. MOISTURE CONTROL:

1. MOISTURE CONTENT OF MATERIALS PRIOR TO, AND DURING COMPACTION, SHALL BE UNIFORM THROUGHOUT EACH LAYER OF MATERIAL.
2. GRANULAR MATERIALS SHALL BE THOROUGHLY WETTED DURING OR IMMEDIATELY PRIOR TO COMPACTION.
3. SUPPLEMENTARY WATER SHALL BE ADDED AS REQUIRED TO MATERIALS BY SPRINKLING AND MIXING UNIFORMLY THROUGHOUT LAYER.
4. MATERIALS TOO WET FOR PLACING SHALL BE TEMPORARILY SPREAD OR AERATED UNTIL MOISTURE CONTENT IS ACCEPTABLE. IF THESE MATERIALS CANNOT BE PROCESSED IN TIME TO USE, THE CONTRACTOR SHALL FIND ALTERNATIVES ACCEPTABLE TO THE ENGINEER.

G. INSTALLATION OF MILLINGS AS REQUIRED BY THE CONTRACT DRAWINGS:

1. INSTALL ASPHALT MILLINGS TO MINIMUM THICKNESSES AND GRADES SHOWN ON THE CONTRACT DRAWINGS. GRADE TO SMOOTH TRUE LINES APPROVED BY ENGINEER WITH NO SOFT SPOTS OR UNCOMPACTED AREAS.
2. LIFT THICKNESS SHALL BE AT THE DISCRETION OF THE ENGINEER.
3. COMPACT BY DOZER, PNEUMATIC ROLLERS, VIBRATORS, OR BY OTHER EQUIPMENT AS REQUIRED TO OBTAIN SPECIFIED DENSITY.
4. UPON REACHING THE REQUIRED COMPACTED THICKNESS OF ASPHALT MILLINGS, PROOF ROLL AND OBTAIN THE ENGINEER'S REVIEW/RECOMMENDATION AND APPROVAL. IF UNSUITABLE MATERIALS ARE ENCOUNTERED, REPAIR AS DIRECTED AND APPROVED BY THE ENGINEER TO REMOVE UNSUITABLE MATERIALS.
5. PROOF ROLLING SHALL BE CONDUCTED WITH A 10-TON DRUM ROLLER APPROVED BY THE ENGINEER. AN ALTERNATE APPROVED BY THE ENGINEER MAY BE USED IN CONSTRICTED AREAS.

1.4 FIELD QUALITY CONTROL

A. MOISTURE DENSITY RELATIONS, TO BE ESTABLISHED BY THE OWNER ARE REQUIRED FOR ALL MATERIALS TO BE COMPACTED.

B. EXTENT OF COMPACTION TESTING WILL BE AS NECESSARY TO ASSURE COMPLIANCE WITH SPECIFICATIONS.

C. GIVE MINIMUM OF 24-HOUR ADVANCE NOTICE TO ENGINEER WHEN READY FOR COMPACTION OR SUBGRADE TESTING AND INSPECTION.

D. SHOULD ANY COMPACTION DENSITY TEST, SUBGRADE INSPECTION, OR OTHER QA/QC PROBLEM BE IDENTIFIED, THE AFFECTED AREA SHALL BE DELINEATED AND REWORKED BY CONTRACTOR AS NECESSARY TO ACHIEVE PASSING CRITERIA.

E. CONTRACTOR SHALL PAY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE WORK AND RETESTING RESULTING FROM FAILED TESTS.

1.5 COMPACTION DENSITY REQUIREMENTS

A. OBTAIN APPROVAL FROM ENGINEER WITH REGARD TO SUITABILITY OF SOILS AND ACCEPTABLE SUBGRADE PRIOR TO SUBSEQUENT OPERATIONS.

B. PROVIDE DEWATERING SYSTEM NECESSARY TO SUCCESSFULLY COMPLETE COMPACTION AND CONSTRUCTION REQUIREMENTS.

C. REMOVE FROZEN, LOOSE, WET, OR SOFT MATERIAL AND REPLACE WITH APPROVED MATERIAL AS DIRECTED BY ENGINEER.

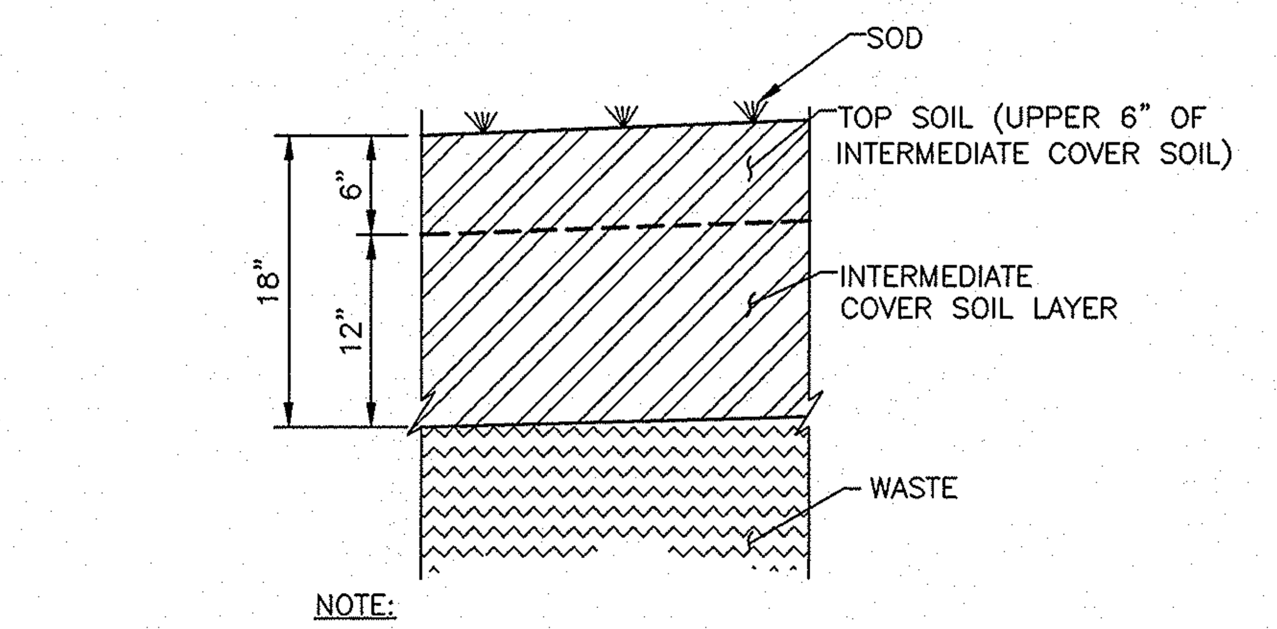
D. STABILIZE SUBGRADE WITH APPROVED MATERIALS AS DIRECTED BY ENGINEER.

E. COVER SOIL SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR MAXIMUM DRY DENSITY. ASPHALT MILLINGS SHALL BE COMPACTED TO 92% MODIFIED PROCTOR. THE SOILS SHALL BE WETTED OR DRIED AS NECESSARY SO THAT THE MOISTURE CONTENT DURING COMPACTION IS NEAR THE OPTIMUM MOISTURE CONTENT TO CONSISTENTLY ACHIEVE TARGET COMPACTION, OR AS OTHERWISE DETERMINED BY ENGINEER.

F. PERFORM TESTING AT A MINIMUM FREQUENCY AS SHOWN BELOW:

TEST DESCRPTION	TEST FREQUENCY
1. COVER SOIL	
DENSITY, NUCLEAR METHOD	1 PER 2,000 YD^3, ASTM D6938
MOISTURE CONTENT, NUCLEAR METHOD	1 PER 2,000 YD^3, ASTM D6938
SAND CONE OR DRIVE CYLINDER METHOD	1 PER 2 NUCLEAR TESTS, ASTM D2937
OVEN MOISTURE CONTENT VERIFICATION	1 PER 2 NUCLEAR TESTS, ASTM D2216
MOISTURE DENSITY RELATIONS	1 PER 2,000 YD^3, ASTM D698*
SIEVE ANALYSIS	1 PER 2,000 YD^3, ASTM D421*
2. RECYCLED ASPHALT PAVEMENT	
DENSITY, NUCLEAR METHOD	1 PER 1,000 YD^3, ASTM D6938
MOISTURE CONTENT, NUCLEAR METHOD	1 PER 1,000 YD^3, ASTM D6938
MOISTURE DENSITY RELATIONS	1 PER SOURCE, ASTM D1557*
SIEVE ANALYSIS	1 PER SOURCE, ASTM D421*

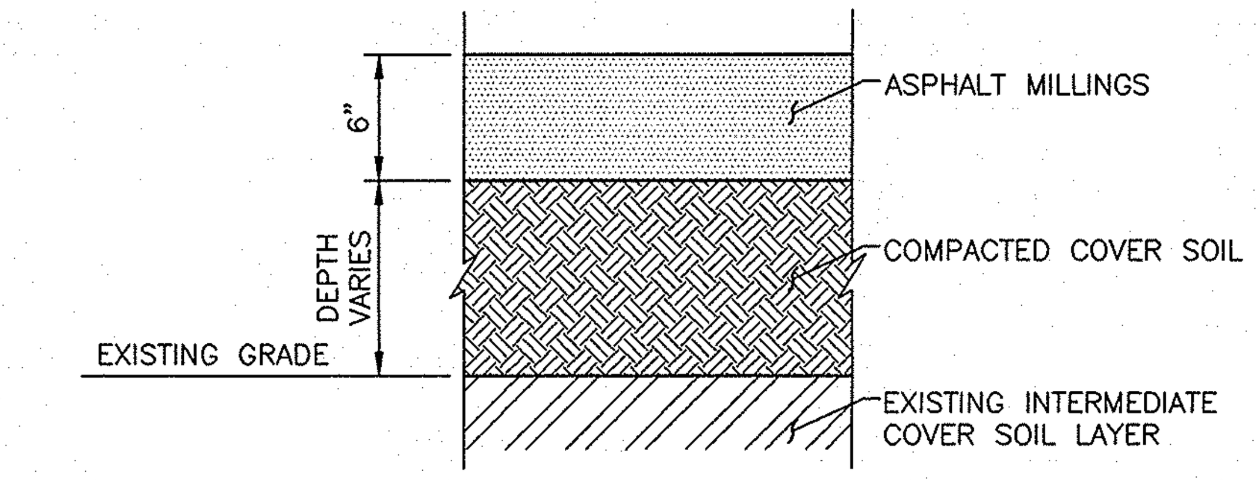
* INCREASE FREQUENCY AS NEEDED TO ENSURE EACH SOIL TYPE IS TESTED.



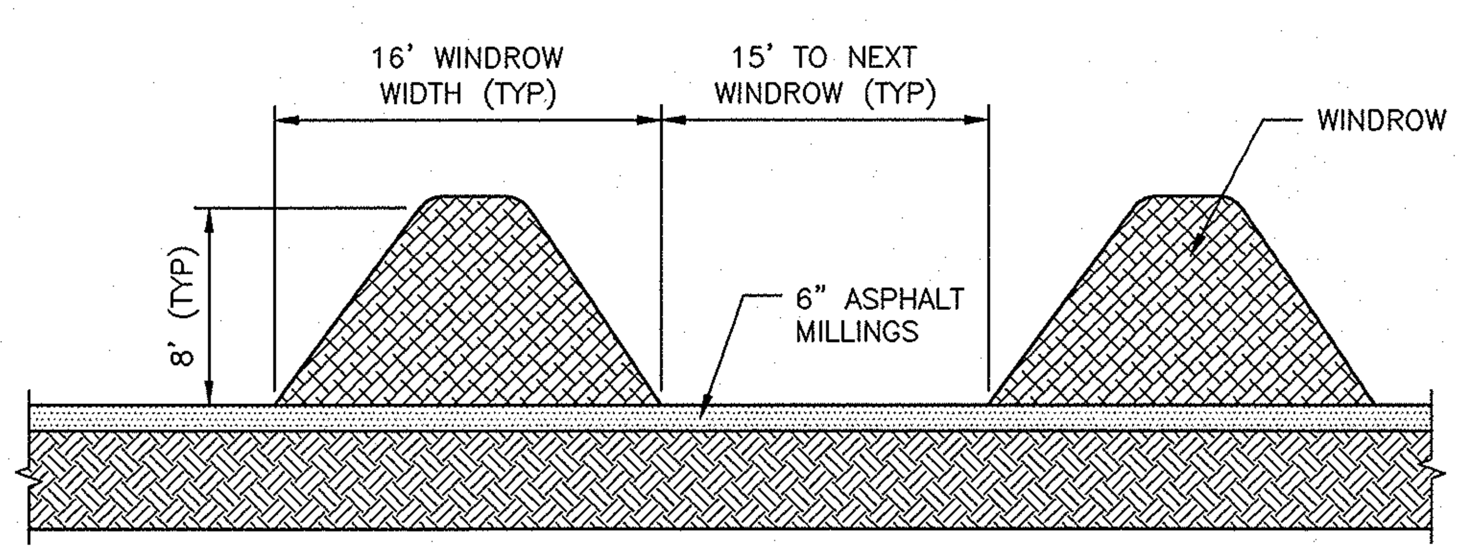
NOTE:

SOIL AVAILABLE ON SITE.

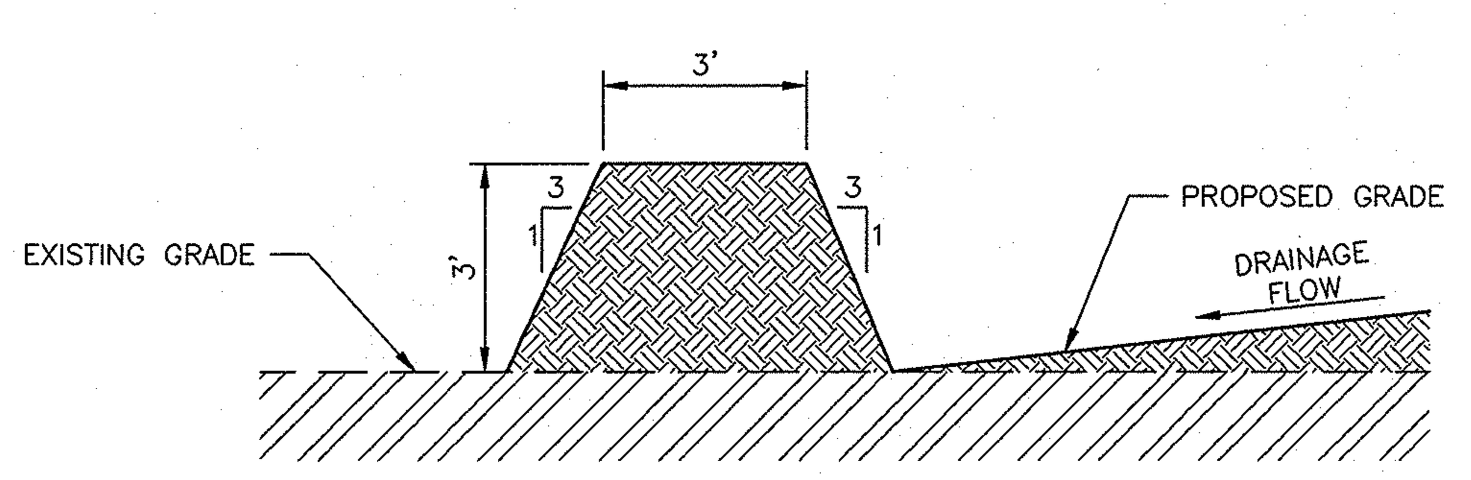
INTERMEDIATE COVER DETAIL (1 / C-05)
NOT TO SCALE



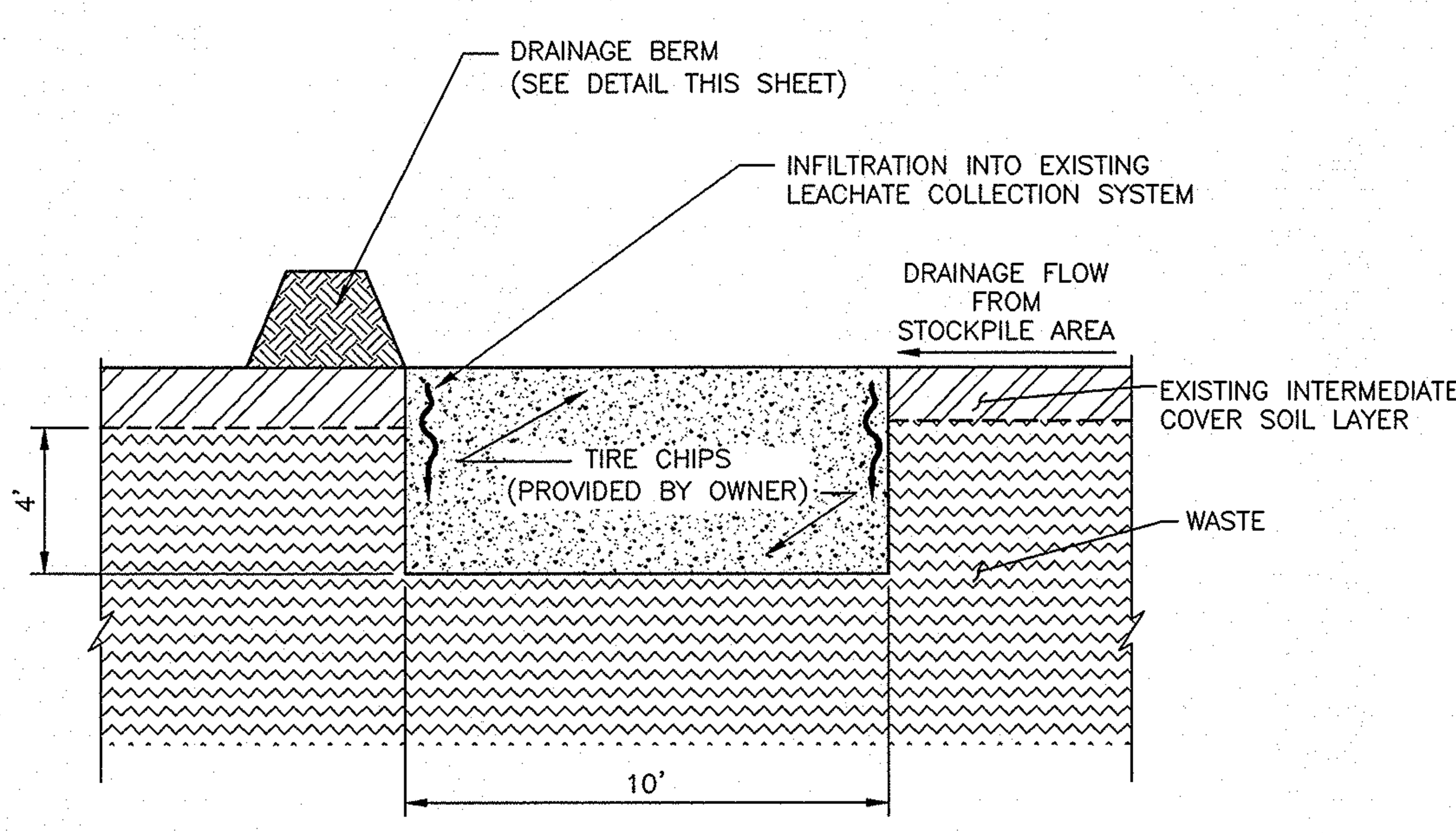
ACTIVE COMPOSTING AREA TYPICAL SECTION (2 / C-05)
NOT TO SCALE



TYPICAL WINDROW (5 / C-04)
NOT TO SCALE



DRAINAGE BERM (4 / C-03)
NOT TO SCALE



SUMP (3 / C-03)
NOT TO SCALE

HDR Engineering, Inc.
5426 Bay Center Drive
Suite 400
Tampa, FL 33609-3444
HDR CA# 4213

ISSUE	DATE	DESCRIPTION
A	MARCH 2015	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	C. RESTREPO
CIVIL DESIGN BY	R. CURTIS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0100-243250-001

ROBERT B. CURTIS LICENSE No. 73758 STATE OF FLORIDA PROFESSIONAL ENGINEER

1/21/15

ROBERT B. CURTIS, P.E.
LICENSE NO. 73758

Hillsborough County Florida

BIOSOLIDS COMPOSTING PILOT STUDY SITE PREPARATION

DETAILS

0 1" 2"

FILENAME C-06.DWG
SCALE AS SHOWN

SHEET **C-06**

c:\pwworking\tpa\d0647955\C-06.dwg, Plot, 1/20/2015 2:04:38 PM, bradjohn