Permit No.	Date	Document ID No.
44-01	**January 15, 2010**	**9332**

ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL.828.281.3350 FAC.828.281.3351
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Transmitted by email to:
Allen Gaither: allen.gaither@ncdenr.gov

January 12, 2009

Mr. Allen Gaither
Environmental Engineer
North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
Asheville Regional Office
2090 US Highway 70
Swannanoa, NC 28778

Subject: Clarification, Additional Information, and Response to December 23, 2009 Engineering Review / Completeness Letter Haywood County, Permit #44-01, Document ID No. 9091

Dear Mr. Gaither,

On behalf of Mr. Tom Richardson and International Paper Company (IP), Altamont Environmental, Inc. (Altamont), in this letter, will provide clarification, additional information, and response to the items included in your Engineering Review / Completeness Letter dated December 23, 2009 addressed to Mr. Richardson. The following responses are intended to satisfy the requirements of the Solid Waste Section (SWS) such that a modified closure permit for the closed IP Landfill #44-01 in Haywood County may be issued.

Responses to the seven items included in the referenced letter follow quotations from your letter and are listed below.

"1. Sections 3.1.2.5 and 3.2.2 provide a generic discussion on the activities related to methane monitoring exceedances. Due to the significant risk to human health posed by gas known to be present at the Facility; I am requesting development of a detailed procedure for facility operators to follow in case the continual monitoring alarms are triggered. This procedure should include contact information for all persons requiring notification. In addition, I request a more detailed discussion of the engineering controls that are to be implemented under the given circumstance."

Please find attached a detailed procedure for facility operators to follow ("Continuous Methane Monitoring Alarm Procedure") in case the continual methane monitoring alarms are triggered. In advance of preparing the letter and the attached procedure Altamont contacted Mr. Frank M. Page, P.E., Certification and Interpretation Supervisor for the North Carolina Office of the State Fire Marshall. Our plan and procedure was discussed over the phone with Mr. Page and we learned that there is no specific regulation in the North

Carolina State Fire Prevention Code that addresses indoor methane concentrations or methane monitoring.

Continuous Methane Monitoring Equipment (CMME) will be installed in the enclosed portion of the Western North Carolina Regional Livestock Center (WNCRLC) arena building to be constructed on the Landfill 5C Area of the referenced landfill. CMME will consist of gas sensors, controllers, and data loggers. The exact locations of CMME equipment will be located in areas where landfill gas is most likely to accumulate and will be determined by a detailed inspection prior to installation. If the SWS desires to assist with the placement of gas monitors please contact me and this can be arranged. Additionally, CMME equipment will be installed in the concession stand building and large metal storage located on the Landfill 5B area of the referenced landfill. CMME equipment will also not be installed in the Football Storage Building, Little League T-Ball Storage Building, or Maintenance Office because these structures are prefabricated, do not have foundations that penetrate the landfill cap, and have flooring that is suspended above the cap. This flooring is sitting atop disconnected concrete block foundations that allow an eight-inch space for continual passage of fresh air beneath the structures. Furthermore, skirting or other structure that could potentially entrap gas beneath the building will not be allowed on these buildings.

CMME equipment will not be installed in the associated open-air storage building to be constructed southwest of the WNCRLC arena building on the Landfill 5C area.

As discussed in the permit modification request and later in this letter, quarterly ambient methane readings will continue to be collected from within all structures.

CMME equipment and alarms will be linked to Heating, Ventilation, Air Conditioning (HVAC) and exhaust systems in all structures where CMME equipment is installed. CMME equipment will be designed and installed such that two alarms are associated with potential methane detections. An initial alarm (Alarm 1) will be activated when methane is detected at 10% of its Lower Explosive Limit (LEL). Alarm 1 will be designed as a warning alarm that audibly alerts facility operators. Activation of Alarm 1 will automatically trigger HVAC and exhaust systems to run at full capacity in "full outside air" mode until methane concentrations are reduced to less than 1% of the LEL for methane.

CMME equipment will be installed such that when Alarm 1 is activated, the equipment will automatically turn on exhaust and HVAC systems and immediately begin rapid air exchange within structures. HVAC and exhaust systems have been, or will be designed to exchange air, at a minimum rate of one building volume every 15 minutes in the event of an alarm. As an added measure of safety, facility personnel will be trained, if present when Alarm 1 is activated, to activate hand-operated switches, located in accessible and obvious locations that force HVAC and exhaust systems to run at full capacity in "full outside air" mode.

The second alarm (Alarm 2) will activate if methane is detected at 25% of its LEL. Activation of Alarm 2 will trigger both a visual and audible alarm, will be designed to notify personnel that evacuation of the building, facility, and landfill parcel is necessary, and will also automatically alert emergency management services.

If a facility is occupied when an Alarm 2 is activated, facility personnel will calmly and immediately evacuate the building, facility, and the landfill parcel. Personnel will remain and call emergency management services (EMS) from the parcel entrance to ensure that EMS are responding to the situation wait for EMS to arrive. The parcel will remain unoccupied until authorities declare that methane concentrations have been reduced and

that the parcel is safe to re-enter. At that time, CMME systems and associated alarms will be reset. Lastly, within seven days after an Alarm 2 has been triggered, the operating record will be updated to record the methane detections that caused the alarm. The update will include a description of the steps taken to protect human health.

"2. Sheet Number C-3 provides elevation contour lines for grade of the existing facility and fill material required for construction of the livestock market structures. Based on these contours the area between the driveway and parking lot appears to produce an unintended drainage swale on the existing cap of the landfill unit. If this plan increases the possibility for erosion of the landfill cap in this, or any other area, changes should be made for protection of the cap."

Grading plans for the WNCRLC have changed slightly since submittal of the permit modification request. The revised sheet C-3 is attached. Grading is not anticipated to create an increase in the likelihood of erosion on the landfill cap. Areas with slopes that could potentially concentrate flow will be protected through the use of permanent erosion control matting, check dams, wattles, or similar erosion control measures. As required by SWS and Land Quality Section regulations, all graded areas are to be stabilized with vegetation and/or other means and will be observed by the Engineer until satisfactory results are achieved.

"3. Please provide copies of Sheet Numbers C-6 and C-7 which were not complete at the time of the original application submittal."

Sheets C-4 through C-7 have been completed and submitted for DENR approval to Mr. Don Price in the Asheville Regional Office. Current versions of the sheets are attached for your reference.

"4. Is the Yard Inlet detailed on Sheet Number C-10 the same feature as the Concrete Open Throat Catch Basin Called out on Sheet Number C-3."

Yes, both the detail and the reference on Sheet C-3 were revised following receipt of comments during the bidding process for construction of the project. Sheet C-10 is attached.

"5. Please verify no curbing is planned for the paved driveway and parking surfaces."

Curbing is not planned for the paved driveway or parking surfaces.

"6. Please verify landfill gas probe location LFB-A1, A2 and A3 on Figure 1 – Landfill Gas Monitoring Well Locations are the actual locations of the Football Storage Building, Little League T-Ball Storage Building and Maintenance Office.

Locations LFB-A1, A2 and A3 on Figure 1 of the Landfill Gas Monitoring Plan, submitted to the Solid Waste Section on December 10, 2009, are quarterly ambient screening locations and are not landfill gas probes. Samples are obtained from these locations using a Landtec GEM 2000 Gas Analyzer and Extraction Monitor. These screening locations are inside the referenced buildings which are accurately displayed on the attached Figure 1.

"7. The Section would recommend adding gas probes, in addition to those planned at the property boundary, in or very close to the trenches for water and sewer just prior to any structure as these can be conduits for LFG."

Landfill gas probes will be installed in or very close to the trenches for water and sewer, just prior to entrance into the WNCRLC arena building. The WNCRLC storage building is "open air" and therefore probes will not be installed outside this building. The concession

stand building is located over landfill waste and therefore a landfill gas probe at this location would be expected to entrap methane, and therefore landfill gas probes will not be installed near utility trenches at this location. The metal storage building is not supplied with water and sewer and therefore additional probes will not be installed at this location.

Finally, in response to resolving the NOV discussed in the second-to-last paragraph of your December 23, 2009 letter, Altamont and IP are in the process of obtaining cost estimates for installing compliance boundary probes and probes recommended in item number seven of the referenced letter. The submitted Landfill Gas Monitoring Plan and installation of the above referenced probes will be initiated during this first quarter of 2010. Please contact me regarding setting up a site visit with the Field Operations Branch, and we will schedule an appropriate time.

On behalf of International Paper Company and all stakeholders involved in the project, we appreciate your time and consideration. Please feel free to call or respond to me with any questions or comments related to the project.

Sincerely,

ALTAMONT ENVIRONMENTAL, INC.

Joel D. Lenk, PG

Enclosures: Continuous Methane Monitoring Alarm Procedure
Sheets C-3, C-4, C-5, C-6, C-7, and C-10
Figure 1

CC: Tom Richardson, International Paper Company
James Erickson, Western North Carolina Regional Livestock Center

ALTAMONT ENVIRONMENTAL, INC.
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Continuous Methane Monitoring Alarm Procedure
Closed International Paper Company Landfill 5 #44-01
Haywood County, North Carolina
January 12, 2010

Note: Copies of these instructions shall reside in highly visible locations near structure entrances, exits, and near hand-operated ventilation switches installed to reduce concentrations of methane gas, in all existing structures and structures to be built in the future on the landfill parcel in which continuous landfill gas monitoring equipment is installed. This procedure is to be carried out only by facility personnel and those authorized by facility personnel.

If Alarm 1 is activated (audible), methane has been detected at 10% of its Lower Explosive Limit inside this building. The alarm indicates that the HVAC and exhaust systems have been triggered to run at full capacity in "full outside air" mode.

Action→ Locate the manual exhaust switch located near these instructions and turn it ON.

When methane concentrations within this building fall below 1% of the Lower Explosive Limit, the alarm will turn off automatically and the ventilation system will return to normal operation and the manual exhaust switch can be returned to the OFF position.

If Alarm 2 is activated (audible and visual), methane has been detected at 25% of its Lower Explosive Limit inside this building.

Actions → If the facility is occupied at the time Alarm 2 sounds:

1. Calmly make an announcement for all persons to evacuate the building, facility, and the landfill parcel.
2. Keep a copy of these instructions with you until you have completed all six steps.
3. After the landfill has been evacuated, remain at the facility entrance and call 911 to confirm that emergency management services are aware of and are responding to the situation.
4. Once the fire department or emergency responders have arrived at the site, contact Altamont Environmental, Inc. (828-281-3350), International Paper Company's local representative, to notify them of the situation.
5. Do not allow personnel or visitors to re-enter the facility until qualified emergency management personnel determine that methane concentrations have been reduced sufficiently to safely reoccupy the facility and associated structures.
6. Within seven days after Alarm 2 has been triggered, update the operating record to indicate the methane gas levels that were detected that caused the alarm, and include a description of the steps that were taken to protect human health.

NOT FOR CONSTRUCTION

NOTES:

1. A SITE SPECIFIC GEOTECHNICAL REPORT HAS BEEN PREPARED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND, AS A MINIMUM, COMPLYING WITH THE RECOMMENDATIONS OF THE REPORT.

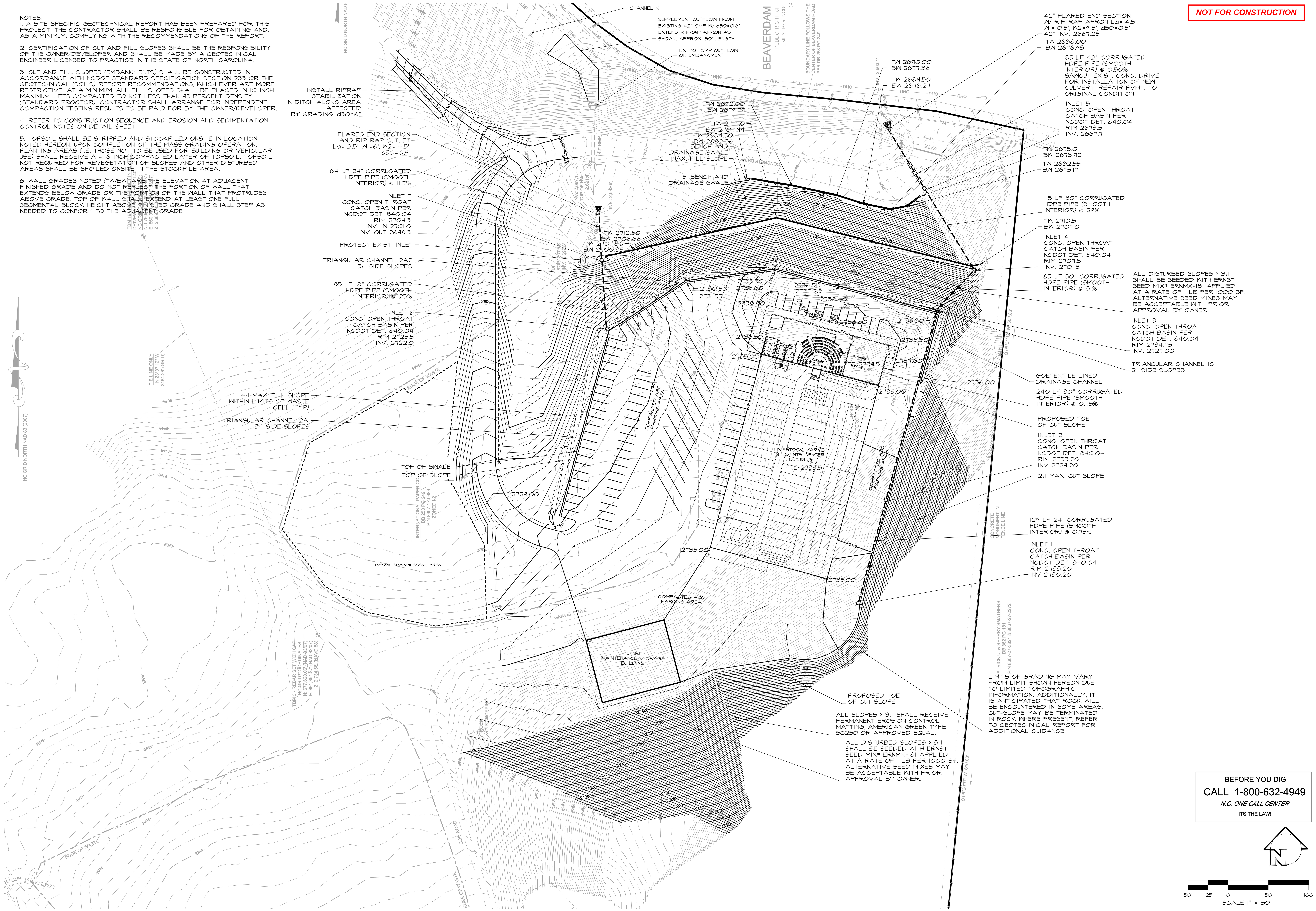
2. CERTIFICATION OF CUT AND FILL SLOPES SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER AND SHALL BE MADE BY A GEOTECHNICAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NORTH CAROLINA.

3. CUT AND FILL SLOPES (EMBANKMENTS) SHALL BE CONSTRUCTED IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATION SECTION 235 OR THE GEOTECHNICAL (SOILS) REPORT RECOMMENDATIONS, WHICH EVER ARE MORE RESTRICTIVE. AT A MINIMUM, ALL FILL SLOPES SHALL BE PLACED IN 10 INCH MAXIMUM LIFTS COMPACTED TO NOT LESS THAN 95 PERCENT DENSITY (STANDARD PROCTOR). CONTRACTOR SHALL ARRANGE FOR INDEPENDENT COMPACTION TESTING RESULTS TO BE PAID FOR BY THE OWNER/DEVELOPER.

4. REFER TO CONSTRUCTION SEQUENCE AND EROSION AND SEDIMENTATION CONTROL NOTES ON DETAIL SHEET.

5. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ONSITE IN LOCATION NOTED HEREON. UPON COMPLETION OF THE MASS GRADING OPERATION, PLANTING AREAS (I.E. THOSE NOT TO BE USED FOR BUILDING OR VEHICULAR USE) SHALL RECEIVE A 4-6 INCH COMPACTED LAYER OF TOPSOIL. TOPSOIL NOT REQUIRED FOR REVEGETATION OF SLOPES AND OTHER DISTURBED AREAS SHALL BE SPOILED ONSITE IN THE STOCKPILE AREA.

6. WALL GRADES NOTED (TW/BW) ARE THE ELEVATION AT ADJACENT FINISHED GRADE AND DO NOT REFLECT THE PORTION OF WALL THAT EXTENDS BELOW GRADE OR THE PORTION OF THE WALL THAT PROTRUDES ABOVE GRADE. TOP OF WALL SHALL EXTEND AT LEAST ONE FULL SEGMENTAL BLOCK HEIGHT ABOVE FINISHED GRADE AND SHALL STEP AS NEEDED TO CONFORM TO THE ADJACENT GRADE.



CHANNEL X
SUPPLEMENT OUTFLOW FROM EXISTING 42" CMP W/ d50=0.6' EXTEND RIPRAP APRON AS SHOWN, APPROX. 50' LENGTH
EX. 42" CMP OUTFLOW ON EMBANKMENT
BEAVERDAM
INSTALL RIPRAP STABILIZATION IN DITCH ALONG AREA AFFECTED BY GRADING, d50=6"
FLARED END SECTION AND RIP RAP OUTLET La=12.5', W1=6', W2=14.5', d50=0.9'
64 LF 24" CORRUGATED HDPE PIPE (SMOOTH INTERIOR) @ 11.7%
INLET 7 CONC. OPEN THROAT CATCH BASIN PER NCDOT DET. 840.04 RIM 2704.5 INV. IN 2701.0 INV. OUT 2696.5
PROTECT EXIST. INLET
TRIANGULAR CHANNEL 2A2 3:1 SIDE SLOPES
85 LF 18" CORRUGATED HDPE PIPE (SMOOTH INTERIOR) @ 25%
INLET 6 CONC. OPEN THROAT CATCH BASIN PER NCDOT DET. 840.04 RIM 2725.5 INV. 2722.0
4:1 MAX. FILL SLOPE WITHIN LIMITS OF WASTE CELL (TYP)
TRIANGULAR CHANNEL 2A1 3:1 SIDE SLOPES
TOP OF SWALE
TOP OF SLOPE
TOPSOIL STOCKPILE/SPOIL AREA
TW 2692.00 BW 2679.79
TW 2714.0 BW 2707.94
TW 2684.50 BW 2682.36
4' BENCH AND DRAINAGE SWALE
2:1 MAX. FILL SLOPE
5' BENCH AND DRAINAGE SWALE
TW 2712.80 BW 2706.66
TW 2707.30 BW 2700.95
TW 2690.00 BW 2677.36
TW 2689.50 BW 2676.27
42" FLARED END SECTION W/ RIP-RAP APRON La=14.5', W1=10.5', W2=9.3', d50=0.5' 42" INV. 2667.25
TW 2688.00 BW 2676.93
85 LF 42" CORRUGATED HDPE PIPE (SMOOTH INTERIOR) @ 0.50% SAWCUT EXIST. CONC. DRIVE FOR INSTALLATION OF NEW CULVERT. REPAIR PVMT. TO ORIGINAL CONDITION
INLET 5 CONC. OPEN THROAT CATCH BASIN PER NCDOT DET. 840.04 RIM 2673.5 INV. 2667.7
TW 2675.0 BW 2673.92
TW 2682.55 BW 2675.17
115 LF 30" CORRUGATED HDPE PIPE (SMOOTH INTERIOR) @ 29%
TW 2710.5 BW 2707.0
INLET 4 CONC. OPEN THROAT CATCH BASIN PER NCDOT DET. 840.04 RIM 2709.3 INV. 2701.3
65 LF 30" CORRUGATED HDPE PIPE (SMOOTH INTERIOR) @ 31%
ALL DISTURBED SLOPES > 3:1 SHALL BE SEEDED WITH ERNST SEED MIX# ERNMX-181 APPLIED AT A RATE OF 1 LB PER 1000 SF. ALTERNATIVE SEED MIXES MAY BE ACCEPTABLE WITH PRIOR APPROVAL BY OWNER.
INLET 3 CONC. OPEN THROAT CATCH BASIN PER NCDOT DET. 840.04 RIM 2734.75 INV. 2727.00
TRIANGULAR CHANNEL 1C 2:1 SIDE SLOPES
GOETEXTILE LINED DRAINAGE CHANNEL
240 LF 30" CORRUGATED HDPE PIPE (SMOOTH INTERIOR) @ 0.75%
PROPOSED TOE OF CUT SLOPE
INLET 2 CONC. OPEN THROAT CATCH BASIN PER NCDOT DET. 840.04 RIM 2733.20 INV 2729.20
2:1 MAX. CUT SLOPE
129 LF 24" CORRUGATED HDPE PIPE (SMOOTH INTERIOR) @ 0.75%
INLET 1 CONC. OPEN THROAT CATCH BASIN PER NCDOT DET. 840.04 RIM 2733.20 INV 2730.20
LIVESTOCK MARKET & EVENTS CENTER BUILDING FFE=2735.5
COMPACTED ABC PARKING AREA
FFE=2739.5
2729.00
2735.00
2736.00
2730.50
2731.55
2735.50
2736.60
2736.50
2737.20
2738.40
2738.80
2737.60
GRAVEL DRIVE
FUTURE MAINTENANCE/STORAGE BUILDING
PROPOSED TOE OF CUT SLOPE
ALL SLOPES > 3:1 SHALL RECEIVE PERMANENT EROSION CONTROL MATTING, AMERICAN GREEN TYPE SC250 OR APPROVED EQUAL.
ALL DISTURBED SLOPES > 3:1 SHALL BE SEEDED WITH ERNST SEED MIX# ERNMX-181 APPLIED AT A RATE OF 1 LB PER 1000 SF. ALTERNATIVE SEED MIXES MAY BE ACCEPTABLE WITH PRIOR APPROVAL BY OWNER.
LIMITS OF GRADING MAY VARY FROM LIMIT SHOWN HEREON DUE TO LIMITED TOPOGRAPHIC INFORMATION. ADDITIONALLY, IT IS ANTICIPATED THAT ROCK WILL BE ENCOUNTERED IN SOME AREAS. CUT-SLOPE MAY BE TERMINATED IN ROCK WHERE PRESENT, REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL GUIDANCE.
EDGE OF WASTE
SCALE 1" = 50'

BEFORE YOU DIG

CALL 1-800-632-4949

N.C. ONE CALL CENTER

ITS THE LAW!

AMBIENT DESIGN GROUP
LANDSCAPE ARCHITECTS & CIVIL ENGINEERS
28 North Ann Street, suite 100 Asheville, NC 28801
Ph: 828-232-4330 Fx: 828-232-4331
Email: Info@AmbientDesignGroup.com
Website: www.AmbientDesignGroup.com

NORTH CAROLINA LANDSCAPE ARCHITECTURAL CORPORATION REG ISTRATION AMBIENT DESIGN GROUP, PLLC C-203

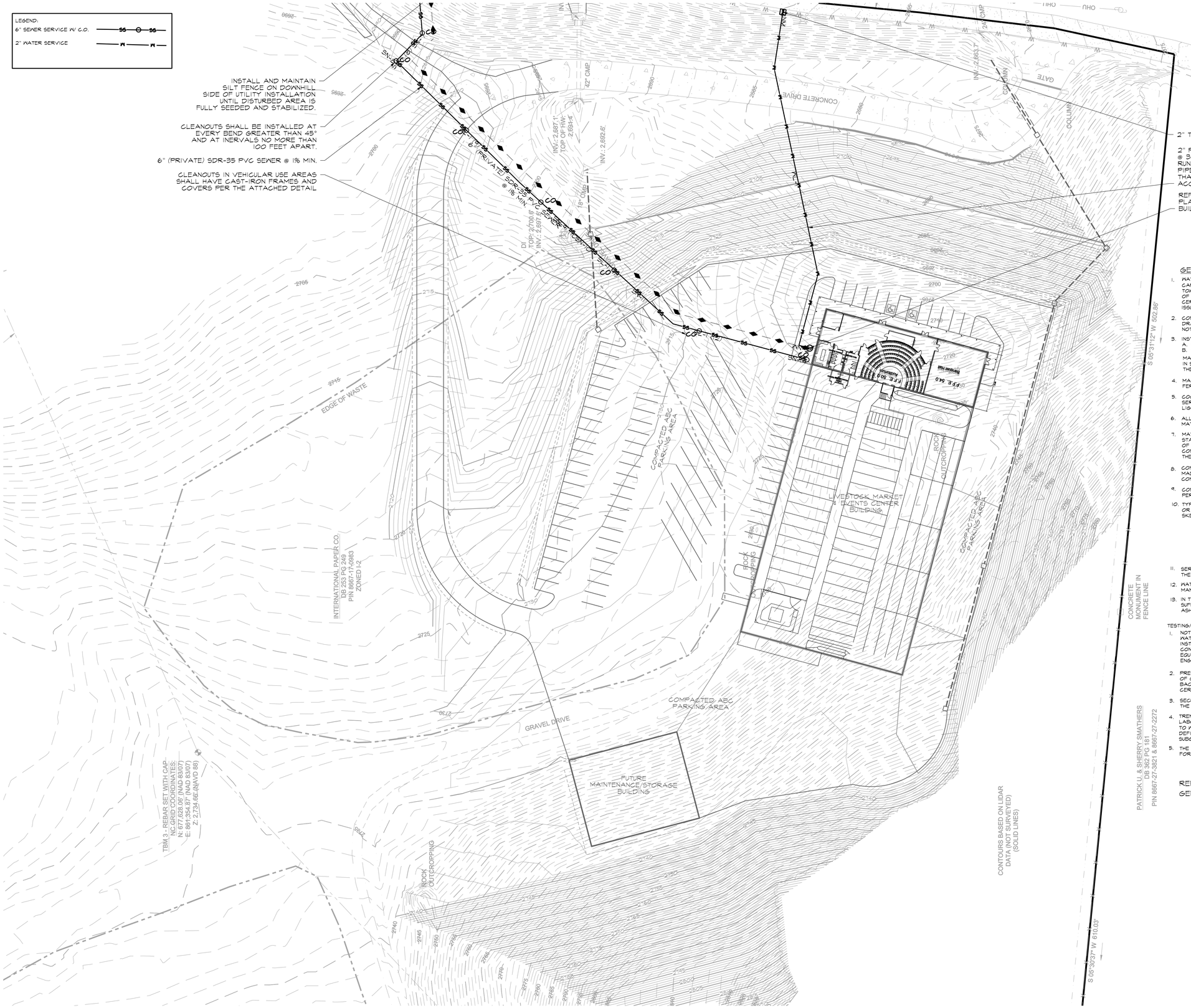
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27261 ANTHONY L. HAUSER

WNC REGIONAL LIVESTOCK CTR.
GRADING & DRAINAGE PLAN

CANTON, HAYWOOD COUNTY, NC
WESTERN NORTH CAROLINA COMMUNITIES

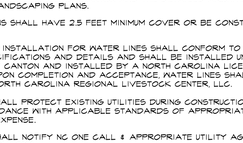
REVISIONS
-

DATE: 11/17/09
DRAWN BY: ALH
CHK'D BY: MCD
PROJECT NO. 0906-002
SHEET NO.
C-3



GENERAL NOTES FOR WATER

1. WATER CONSTRUCTION ON THIS SITE IS AUTHORIZED BY PERMITS ISSUED BY THE NORTH CAROLINA DEPARTMENT OF THE ENVIRONMENT AND NATURAL RESOURCES (NCDENR), AND THE TOWN OF CANTON. THE WORK IS SUBJECT TO INSPECTIONS AT ALL TIMES BY REPRESENTATIVES OF NCDENR, THE TOWN OF CANTON, THE OWNER, OR THE ENGINEER. THE PERMITS REQUIRE CERTIFICATION OF COMPLETION OF THE WATER SYSTEMS BY THE ENGINEER PRIOR TO ISSUANCE OF FINAL OPERATION APPROVAL BY THE TOWN OF CANTON.
2. CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELEVATION FOR ALL UTILITIES, DRAINAGE AND OTHER UNDERGROUND FACILITIES BOTH EXISTING AND PROPOSED, AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION.
3. INSTALL FERROUS PIPING FOR BOTH WATER AND SEWER WITHIN 10 FT. OF A CROSSING IF;
   A. SEWER LINE CROSSES OVER WATER, OR
   B. VERTICAL CLEARANCE BETWEEN WATER AND SEWER IS LESS THAN 18 INCHES.
   MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER MAINS UNLESS LAID IN SEPARATE TRENCHES WITH THE BOTTOM OF THE WATER LINE AT LEAST 18 INCHES ABOVE THE TOP OF SEWER, OR USE FERROUS MATERIAL FOR BOTH WATER AND SEWER.
4. MAINTAIN 12 INCHES VERTICAL SEPARATION BETWEEN STORM DRAIN AND WATER , OR INSTALL FERROUS MATERIAL ON WATER LINE WITHIN 10 FEET EACH SIDE OF CROSSING.
5. COORDINATE EXACT LOCATIONS OF VAULTS, METERS, BACK FLOW PREVENTION DEVICES, AND SERVICE LINES WITH THE TOWN OF CANTON AND THE DETAILED ARCHITECTURAL, PLUMBING, LIGHTING, AND LANDSCAPING PLANS.
6. ALL WATER MAINS SHALL HAVE 2.5 FEET MINIMUM COVER OR BE CONSTRUCTED OF A FERROUS MATERIAL.
7. MATERIALS AND INSTALLATION FOR WATER LINES SHALL CONFORM TO THE TOWN OF CANTON'S STANDARD SPECIFICATIONS AND DETAILS AND SHALL BE INSTALLED UNDER THE INSPECTION OF THE TOWN OF CANTON AND INSTALLED BY A NORTH CAROLINA LICENSED UTILITY CONTRACTOR. UPON COMPLETION AND ACCEPTANCE, WATER LINES SHALL BE MAINTAINED BY THE WESTERN NORTH CAROLINA REGIONAL LIVESTOCK CENTER, LLC.
8. CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION. REPAIRS SHALL BE MADE IN ACCORDANCE WITH APPLICABLE STANDARDS OF APPROPRIATE AGENCIES AT THE CONTRACTORS EXPENSE.
9. CONTRACTOR SHALL NOTIFY NC ONE CALL & APPROPRIATE UTILITY AGENCY PRIOR TO PERFORMING ANY WORK.
10. TYPICAL EASEMENTS FOR WATER LINES LOCATED OUTSIDE ESTABLISHED UTILITY EASEMENTS OR ROAD RIGHT-OF-WAYS SHALL BE A 20 FEET IN WIDTH AND LOCATED IN EASEMENT PER SKETCH.



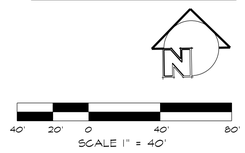
11. SERVICE WILL BE PROVIDED ONCE FINAL CLOSEOUT SUBMITTALS HAVE BEEN APPROVED BY THE TOWN OF CANTON'S PUBLIC WORKS DEPARTMENT.
12. WATER LINES SHALL BE PE 4710 - DR11 INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
13. IN THE EVENT THAT TOWN OF CANTON SPECIFICATIONS AND DETAILS DO NOT PROVIDE SUFFICIENT DETAIL ON ANY ASPECT OF INSTALLATION OR MATERIALS, THE CITY OF ASHEVILLE SPECIFICATIONS AND DETAILS SHALL BE APPLICABLE.

TESTING/INSPECTION

1. NOTIFY THE ENGINEER AT LEAST 48 HOURS BEFORE STARTING CONSTRUCTION OF SEWER AND WATER FACILITIES. THE ENGINEER SHALL PERIODICALLY INSPECT THE PROGRESS OF INSTALLATION AND SHALL COMPLETE A FINAL WATER AND SEWER INSPECTION. THE CONTRACTOR SHALL FURNISH, SECURE, AND PROVIDE ALL NECESSARY TESTING MATERIALS, EQUIPMENT, PROCEDURES, AND CERTIFIED LABORATORY TEST RESULTS FOR USE WITH ENGINEERS FINAL CERTIFICATION OF COMPLETION.
2. PRESSURE TEST WATER MAINS IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND TOWN OF CANTON REQUIREMENTS. DISINFECT WATER LINES AND PROVIDE ACCEPTABLE BACTERIOLOGICAL TEST FROM A CERTIFIED TESTING LABORATORY FOR USE WITH THE ENGINEERS CERTIFICATION OF COMPLETION.
3. SECURE FINAL OPERATIONAL APPROVAL FROM THE TOWN OF CANTON PRIOR TO ACTIVATION OF THE SYSTEM.
4. TRENCH BACKFILL AND COMPACTION TESTING SHALL BE PERFORMED BY A CERTIFIED SOILS LABORATORY UNDER ALL PAVED AREAS. BACKFILL MATERIAL FROM THE BOTTOM OF TRENCH TO WITHIN SIX (6) INCHES OF THE SUBGRADE SHALL HAVE A MINIMUM DRY DENSITY OF 95% AS DEFINED BY THE STANDARD PROCTOR TEST. ALL MATERIAL WITHIN THE TOP 6 INCHES OF THE SUBGRADE LEVEL SHALL HAVE AN IN PLACE DENSITY OF 100%.
5. THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH WATER SERVICE MEASUREMENTS SUITABLE FOR PREPARATION OF FINAL RECORD DRAWINGS.

REFER TO DETAIL SHEET FOR GENERAL NOTES FOR SEWER

BEFORE YOU DIG
CALL 1-800-632-4949
N.C. ONE CALL CENTER
ITS THE LAW!



NORTH CAROLINA LANDSCAPE ARCHITECTURAL CORPORATION C-203
NOT EXPIRED
AMBIENT DESIGN GROUP

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER

AMBIENT DESIGN GROUP
LANDSCAPE ARCHITECTS & CIVIL ENGINEERS
28 North Ann Street, suite 100 Asheville, NC 28801
Ph: 828-232-4330 Fx: 828-232-4531
E-mail: Info@AmbientDesignGroup.com
Website: www.AmbientDesignGroup.com

WNC REGIONAL LIVESTOCK CTR.
WATER & SEWER PLAN
CANTON, HAYWOOD COUNTY, NC
WESTERN NORTH CAROLINA COMMUNITIES

REVISIONS
1

DATE: 11/14/08
DRAWN BY: ALH
CHK'D BY: MCD
PROJECT NO. 0906-002

SHEET NO. C-4

SMH
TOP: 2,628.4'

SMH
TOP: 2,625.9'
CL INV.: 2,621.3'

SMH
TOP: 2,624.0'
CL INV.: 2,619.65'

SMH
TOP: 2,623.0'
CL INV.: 2,618.3'

SMH
TOP: 2,620.5'
CL INV.: 2,614.25

BEAVERDAM ROAD - S.R. 1613
PUBLIC RIGHT OF WAY IS TO MAINTENANCE LIMITS PER NCDOT RIGHT OF WAY OFFICE (ASPHALT)

BRIDGE

8" PVC

TOP OF CREEK BANK

Z: 2,626.1'

Z: 2,625.7'

Z: 2,625.4'

Z: 2,624.4'

Z: 2,623.1'

Z: 2,622.6'

Z: 2,622.1'

Z: 2,620.4'

Z: 2,621.0'

6" PVC INV: ~2624.00
(~36" DEPTH)

6" (PRIVATE) SDR-35 PVC SEWER @ 36" MIN. BURY DEPTH 36" MIN.

CORE DRILL AND TAP EXISTING MUNICIPAL MANHOLE/SEWER. RECONSTRUCT INVERT AS REQ'D. 6" PVC INV: 2614.45

INSTALL HARCO PVC-DIP/PLAIN-BELL COUPLING #2BST-060 AT TRANSITION TO 6" DIP PIPE.
INSTALL HARCO DIP-PVC/PLAIN-PLAIN COUPLING #334-060 AT TRANSITION TO 6" PVC PIPE. CUT 4 BEVEL PVC BELL END. ALTERNATES ACCEPTABLE WITH PRIOR APPROVAL FROM ENGINEER.

BORE CREEK CROSSING PIPE FOR CROSSING SHALL BE 6" DIP AND EXTEND 10' BEYOND EACH EDGE OF CREEK

INSTALL AND MAINTAIN SILT FENCE ON DOWNHILL SIDE OF UTILITY INSTALLATION UNTIL DISTURBED AREA IS FULLY SEEDED AND STABILIZED.

MONITORING WELL

BURY DEPTH MAY BE REDUCED TO 36" (MIN) 10 FEET BEYOND AND UPON CLEARING EXIST. 24" CMP

INSTALL FIRST 75 LF 6" SEWER AT 0.50%

CL CREEK: 2,616.5'

INV.: 2,617.7'

24" CMP

STA. 1+68
6" PVC INV: 2615.80
PROVIDE 12" CLEARANCE BELOW EXIST. 24" CMP

STA. 0+75
INV: 2614.85

STA. 1+10
6" PVC INV: 2615.20

SEWER SERVICE ACROSS STEEP SLOPE SHALL BE ANCHORED WITH CONCRETE KEY ANCHORS PER DETAIL

SOIL ROAD

NC GRID NORTH NAD 83 (2007)

ND

40' 20' 0 40' 80'
SCALE 1" = 40'

BEFORE YOU DIG
CALL 1-800-632-4949
N.C. ONE CALL CENTER
ITS THE LAW!

NORTH CAROLINA LANDSCAPE ARCHITECTURAL REGISTRATION BOARD C-203 AMBIENT DESIGN GROUP

NORTH CAROLINA PROFESSIONAL SEAL 27261 ENGINEER ANTHONY L. HAUSER

AMBIENT DESIGN GROUP
LANDSCAPE ARCHITECTS & CIVIL ENGINEERS
28 North Ann Street, suite 100 Asheville, NC 28801
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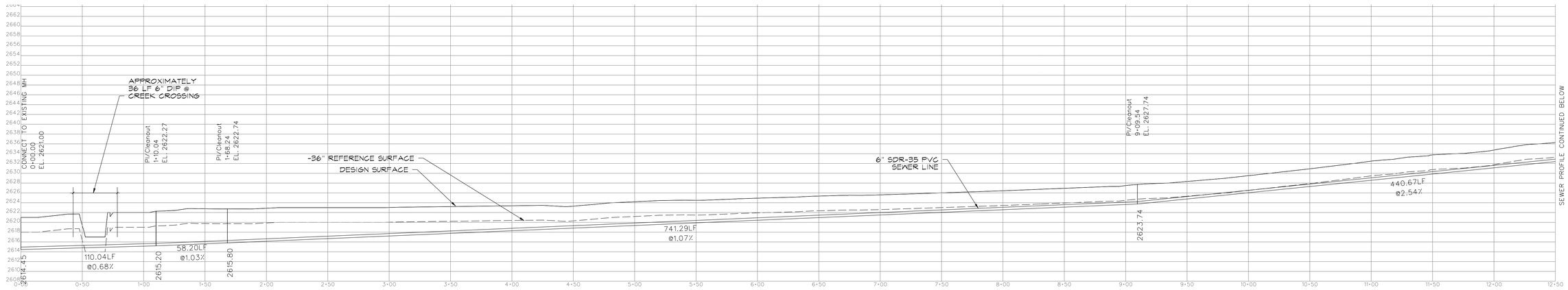
E-mail: Info@AmbientDesignGroup.com
Website: www.AmbientDesignGroup.com

WNC REGIONAL LIVESTOCK CTR.
WATER & SEWER PLAN-B
CANTON, HAYWOOD COUNTY, NC
WESTERN NORTH CAROLINA COMMUNITIES

REVISIONS
1.

DATE: 11/16/09
DRAWN BY: ALH
CHK'D BY: MCD
PROJECT NO. 0904-002
SHEET NO. C-5

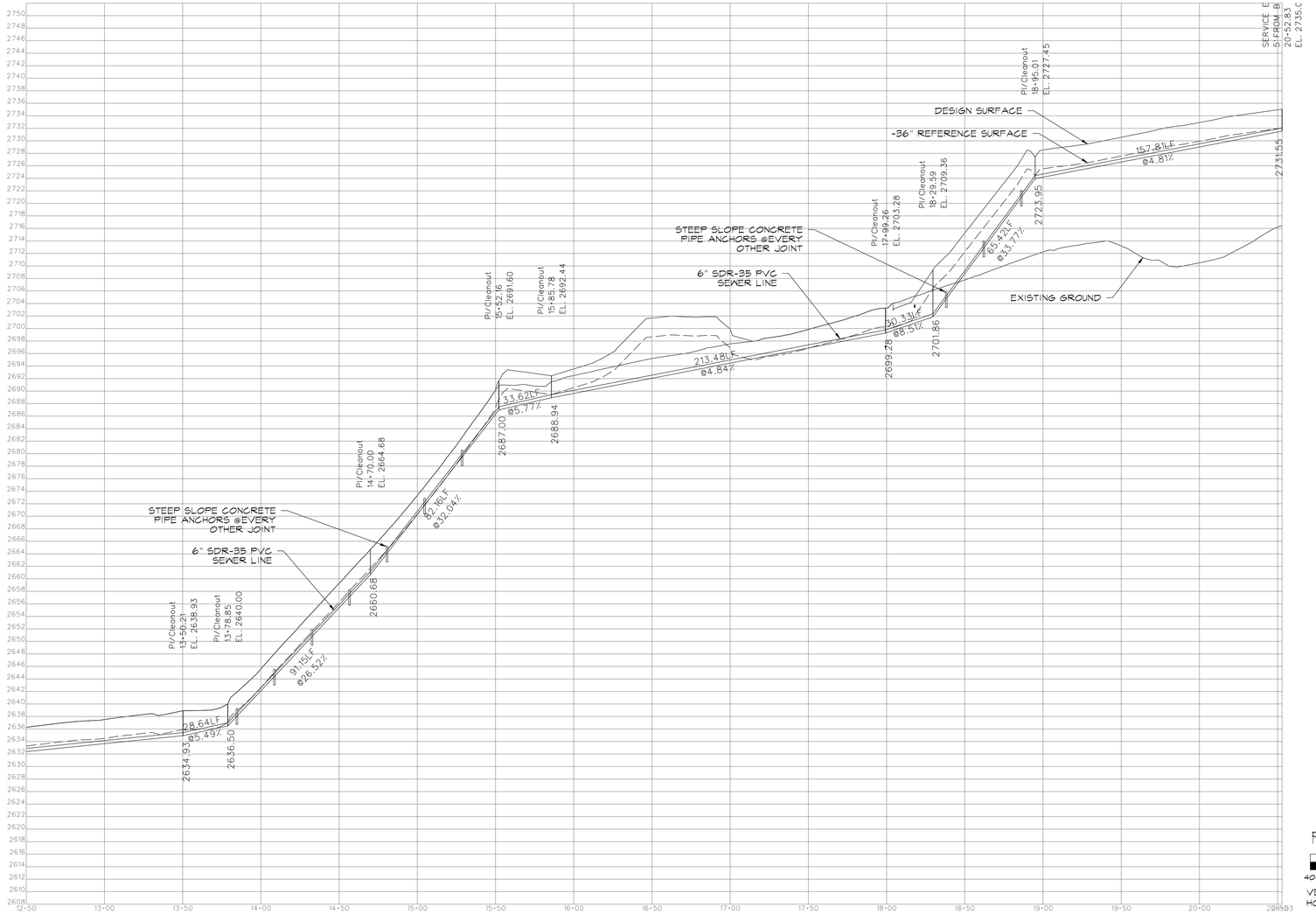


PROFILE - SEWER LINE

40' 20' 0 40' 80' 120'

VERTICAL SCALE: 1"=10'
HORIZ. SCALE: 1"=40'

NOTE:
PI/CLEANOUT REFERS TO A POINT OF INFLECTION OR CLEANOUT LOCATION. CLEANOUTS SHALL BE LOCATED AS NOTED ON THE PLAN SHEET AND IN ACCORDANCE W/ STATE PLUMBING CODE.



PROFILE - SEWER LINE

40' 20' 0 40' 80' 120'

VERTICAL SCALE: 1"=10'
HORIZ. SCALE: 1"=40'

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECTURAL CORPORATION
C-203

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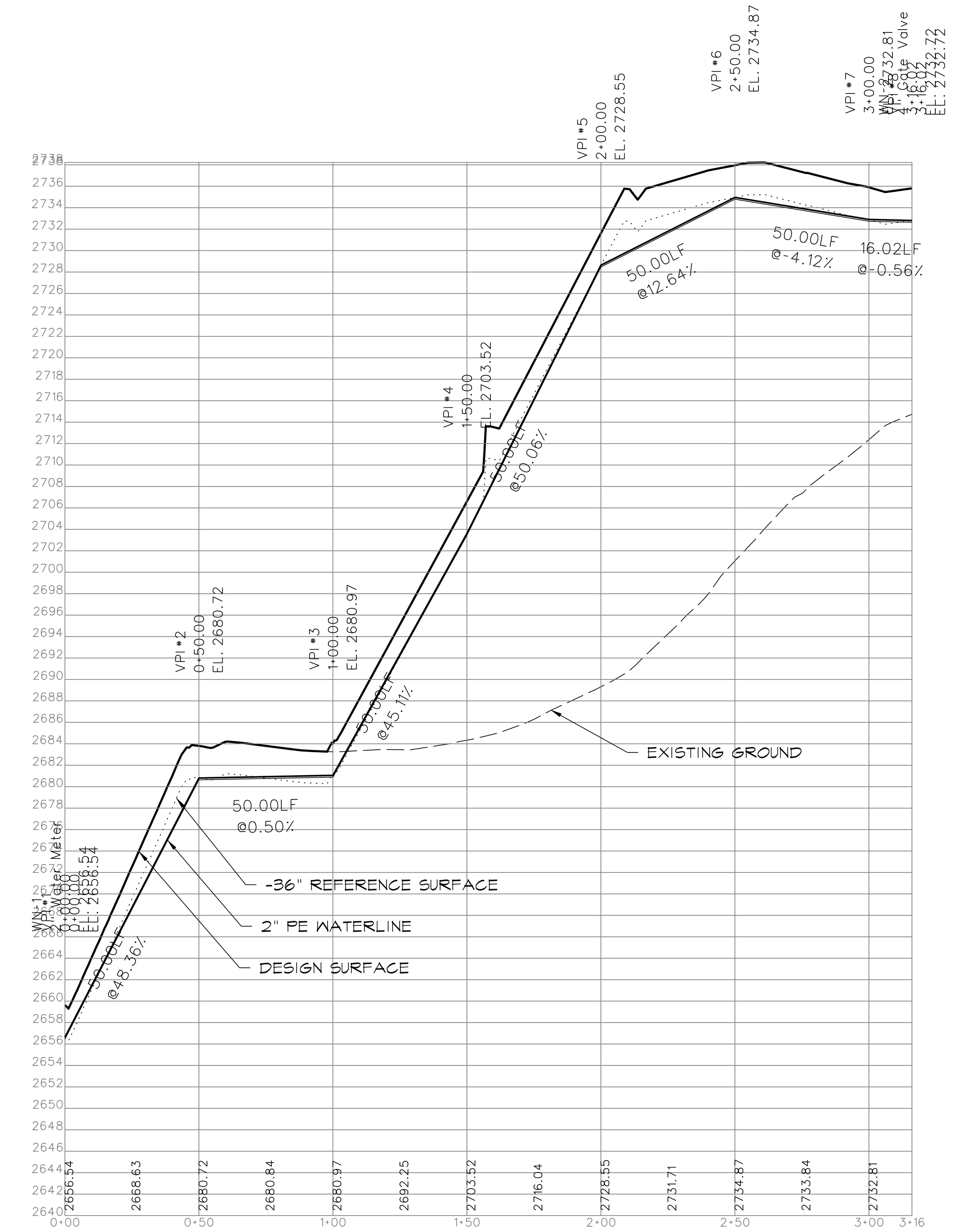
WNC REGIONAL LIVESTOCK CTR.
WATER & SEWER PROFILES
CANTON, HAYWOOD COUNTY, NC
WESTERN NORTH CAROLINA COMMUNITIES

REVISIONS
1. -

DATE: 11/29/18
DRAWN BY: ALH
CHK'D BY: MCD
PROJECT NO. 0906-002

SHEET NO. C-6



PROFILE - WATER LINE

40' 20' 0 40' 80' 120'

VERTICAL SCALE: 1"=10'
HORIZ. SCALE: 1"=40'

BEFORE YOU DIG
CALL 1-800-632-4949
N.C. ONE CALL CENTER
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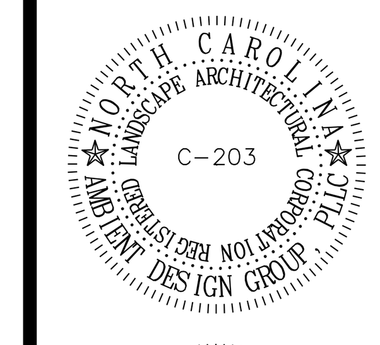

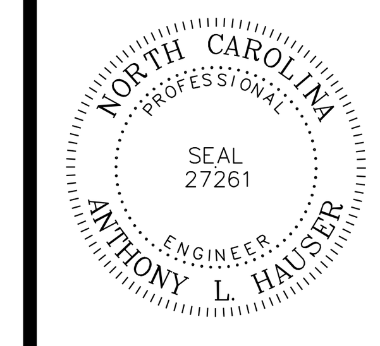

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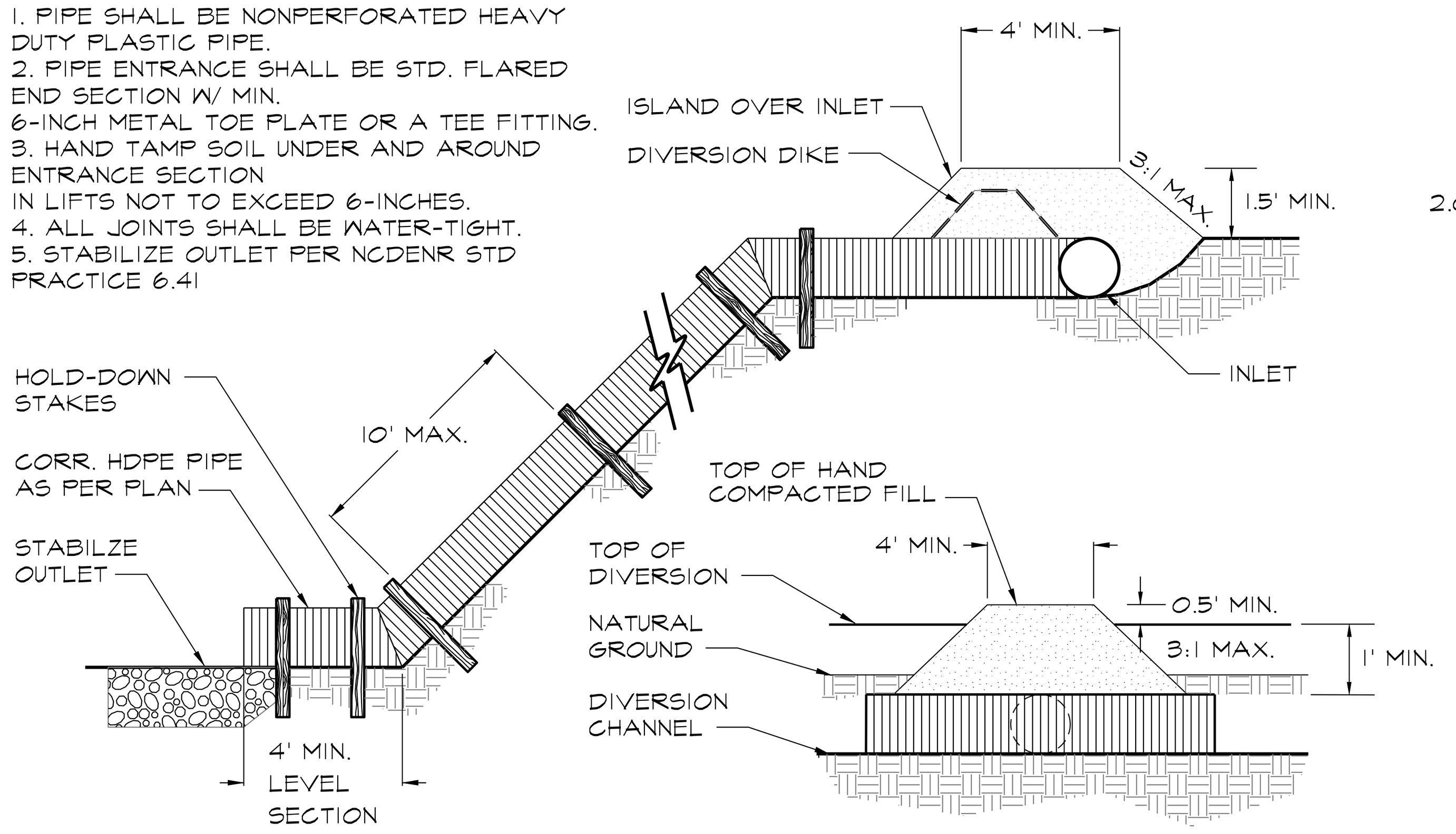
WNC REGIONAL LIVESTOCK CTR.
SEWER PROFILE
CANTON, HAYWOOD COUNTY, NC
WESTERN NORTH CAROLINA COMMUNITIES

REVISIONS
-

DATE: 11/19/09
DRAWN BY: ALH
CHK BY: MCD
PROJECT NO. 0906-002
SHEET NO.
C-7

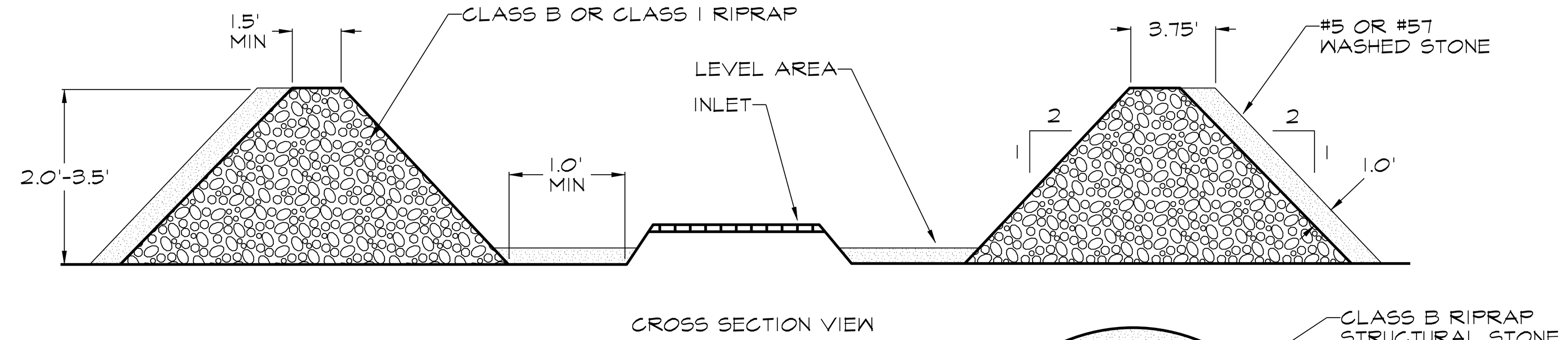
NOTES:
1. PIPE SHALL BE NONPERFORATED HEAVY DUTY PLASTIC PIPE.
2. PIPE ENTRANCE SHALL BE STD. FLARED END SECTION W/ MIN. 6-INCH METAL TOE PLATE OR A TEE FITTING.
3. HAND TAMP SOIL UNDER AND AROUND ENTRANCE SECTION IN LIFTS NOT TO EXCEED 6-INCHES.
4. ALL JOINTS SHALL BE WATER-TIGHT.
5. STABILIZE OUTLET PER NCDENR STD PRACTICE 6.41.

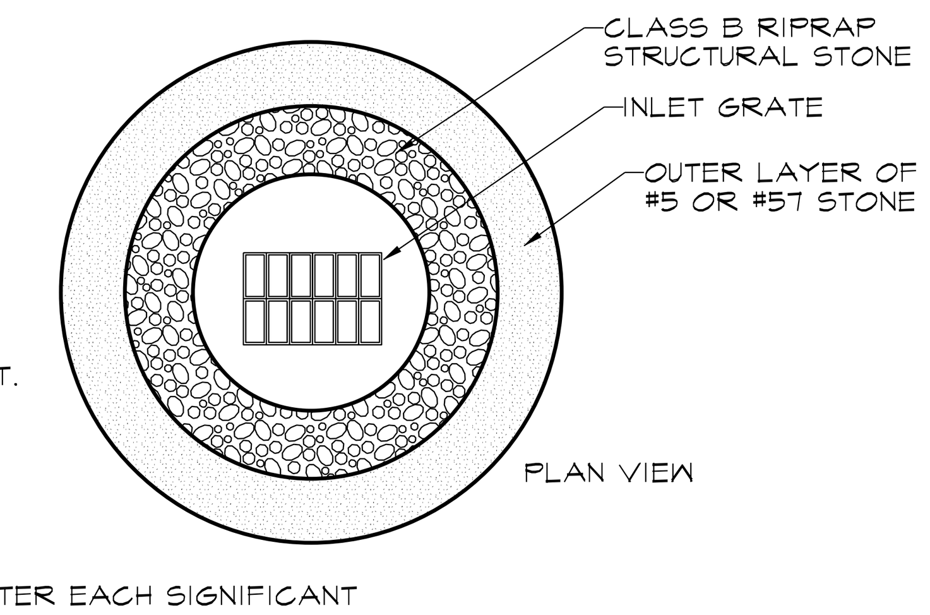


MAINTENANCE:
INSPECT THE SLOPE DRAIN AND SUPPORTING DIVERSION AFTER EVERY RAINFALL, AND PROMPTLY MAKE NECESSARY REPAIRS. WHEN THE PROTECTED AREA HAS BEEN PERMANENTLY STABILIZED, TEMPORARY MEASURES MAY BE REMOVED, MATERIALS DISPOSED OF PROPERLY, AND ALL DISTURBED AREAS STABILIZED APPROPRIATELY.

TEMPORARY SLOPE DRAIN

NOT TO SCALE



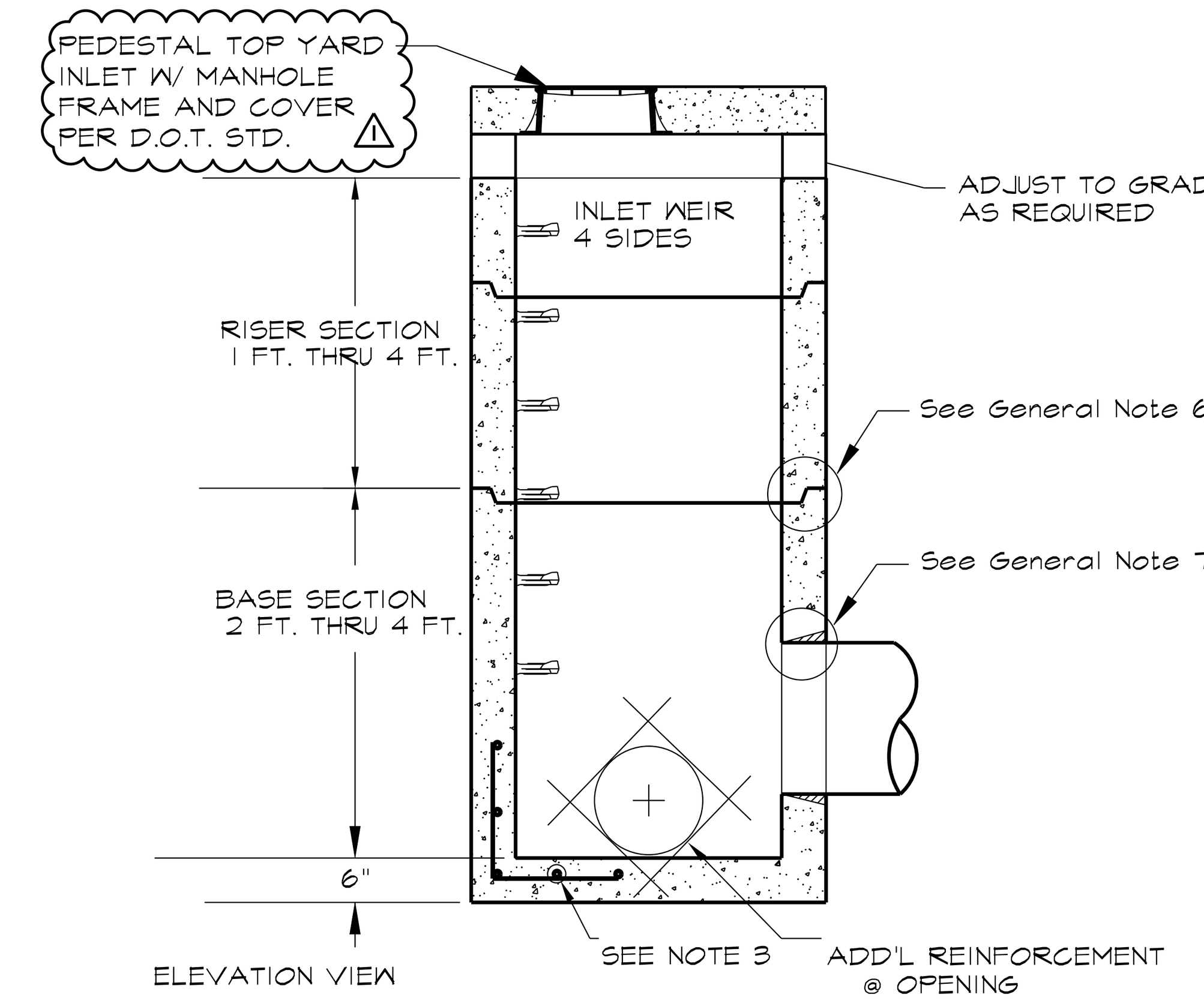


NOTES.
1. CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER EXCAVATION AND DISPOSAL OF SPOIL
2. GRADE SHALLOW DEPRESSION UNIFORMLY TOWARD THE INLET WITH SIDE SLOPES NOT GREATER THAN 2:1.
GRADE A 1.0' WIDE LEVEL AREA (MIN.) SET 0.25' BELOW THE AREA ADJACENT TO THE INLET.
3. INSTALL CLASS B OR CLASS I RIPRAP IN A CIRCLE AROUND THE INLET. THE MINIMUM CREATE WIDTH OF THE RIPRAP SHALL BE 1.5', WITH A MINIMUM BOTTOM WIDTH OF 7.5'.
THE MINIMUM HEIGHT OF THE STONE SHALL BE 2.0'.
4. THE OUTSIDE FACE OF THE RIPRAP SHALL BE LINED WITH 1.0' OF NCDOT #5 OF #57 WASHED STONE.

MAINTENANCE:
INSPECT ROCK DOUGHNUT INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (? INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY.
TO PROVIDE SATISFACTORY INLET PROTECTION EFFICIENCY, REMOVE SEDIMENT FROM THE SEDIMENT POOL AREA WHEN THE VOLUME IS DECREASED BY HALF. THIS WILL HELP PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN. STABILIZE EXCAVATED MATERIAL APPROPRIATELY. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE STRUCTURE DURING SEDIMENT REMOVAL. REMOVE DEBRIS FROM THE INLET AND REPLACE STONE AS NEEDED. IF THE INLET WAS COVERED WITH WIRE MESH THE MESH SHOULD BE CLEANED OF DEBRIS. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND DISPOSE OF SEDIMENT PROPERLY. BRING THE DISTURBED AREA TO THE GRADE OF THE DROP INLET. SMOOTH AND COMPACT IT AS NEEDED. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET WITH GROUND COVER.

ROCK DOUGHNUT INLET PROTECTION

NOT TO SCALE



General Notes: Precast Catch Basins
1. Precast Concrete Structures Shall Be In Accordance With NCDOT Section 1077 For "Precast Concrete Units" Of The Most Recent "Standards Specifications For Roads And Structures" And ASTM-C-913 For "Reinforced Concrete Water And Wastewater Structures".

2. Concrete Compressive Strength Shall Be 4000 PSI Minimum And Shall Meet The Requirements As Specified In NCDOT Section 1077.

3. Reinforcing Steel Shall Be Of Deformed Steel Bars Conforming To The Requirments Of ASTM-A-615, Grade 60, Or Welded Wire Fabric Conforming To The Requirement Of ASTM-A-82 Or Both.

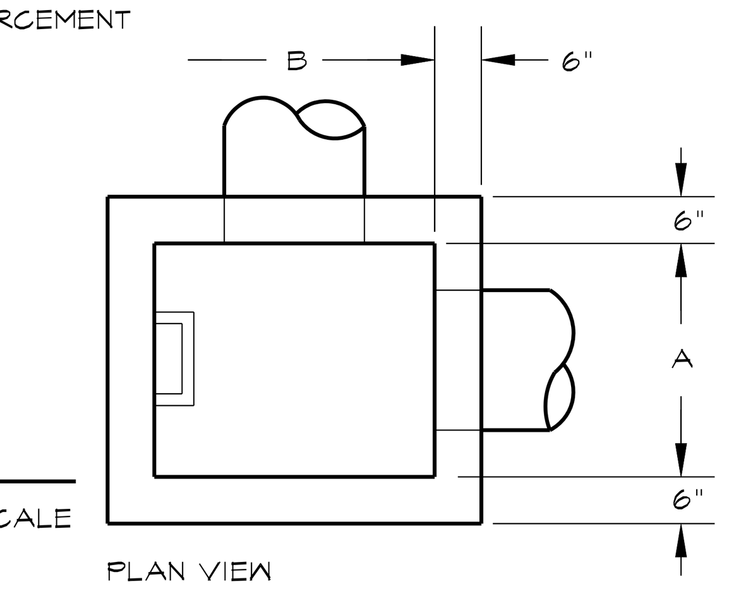
4. Reinforcing Steel Design Shall Be According To C-890-78 For H-20-44 Loading.

5. Steps Required On Structures Over 42" Deep Shall Be Of Steel Reinforced Copolymer Polypropylene Plastic.

6. Section Joints Shall Be Sealed With Butyl Rubber Sealant Or NCDOT Approved Mortar At The Option Of The Contractor.

7. Pipe Connections Shall Be Sealed With Approved Mortar. NCDOT Approved Brick May Be Used In Conjuction With Mortar At The Contractors Option.

8. Lift Holes Shall Be Located As Required For Handling And Sealed After Installation With NCDOT Approved Mortar.

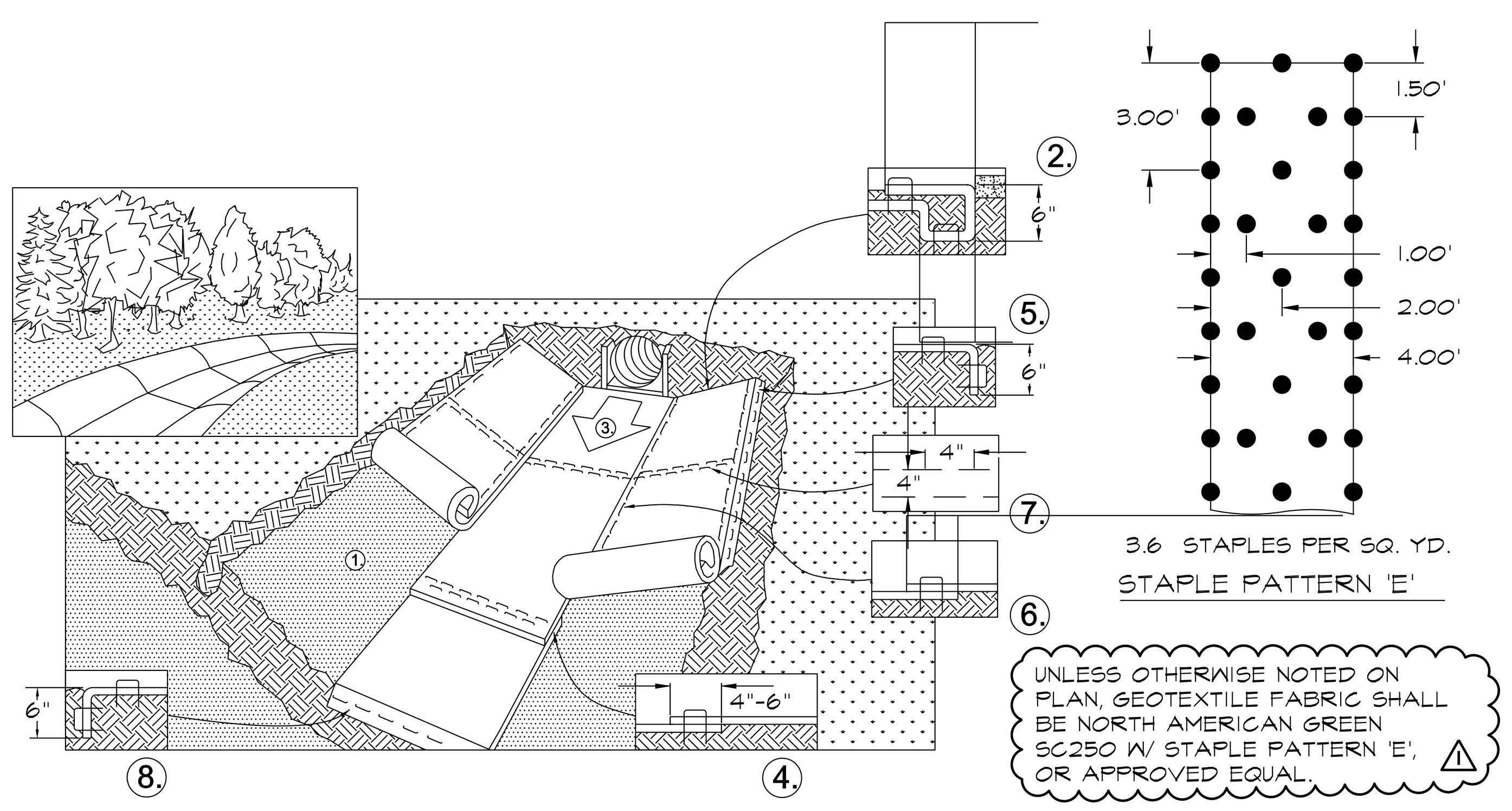


D	A x B	H
12"	2'-2" x 3'	2'-4"
15"	2'-2" x 3'	2'-8"
18"	2'-2" x 3'	2'-8"
24"	3' x 3'	4'-0"
30"	4' x 4'	4'-4"
36"	4' x 4'	5'-0"
42"	5' x 5'	5'-4"
48"	5' x 5'	6'-0"

REINFORCEMENT: #4 @ 6" OCEW (Min)
CONCRETE: 4000 PSI @ 28 DAYS
MANUFACTURER: STAYRIGHT PRECAST INC.
OR APPROVED EQUAL.

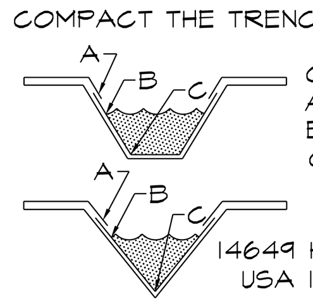
YARD INLET

NOT TO SCALE



UNLESS OTHERWISE NOTED ON PLAN, GEOTEXTILE FABRIC SHALL BE NORTH AMERICAN GREEN SC250 W/ STAPLE PATTERN 'E', OR APPROVED EQUAL.

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" (10cm-15cm) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5cm-12.5cm) (DEPENDING ON BLANKET TYPE) AND STAPLED. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9m-12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



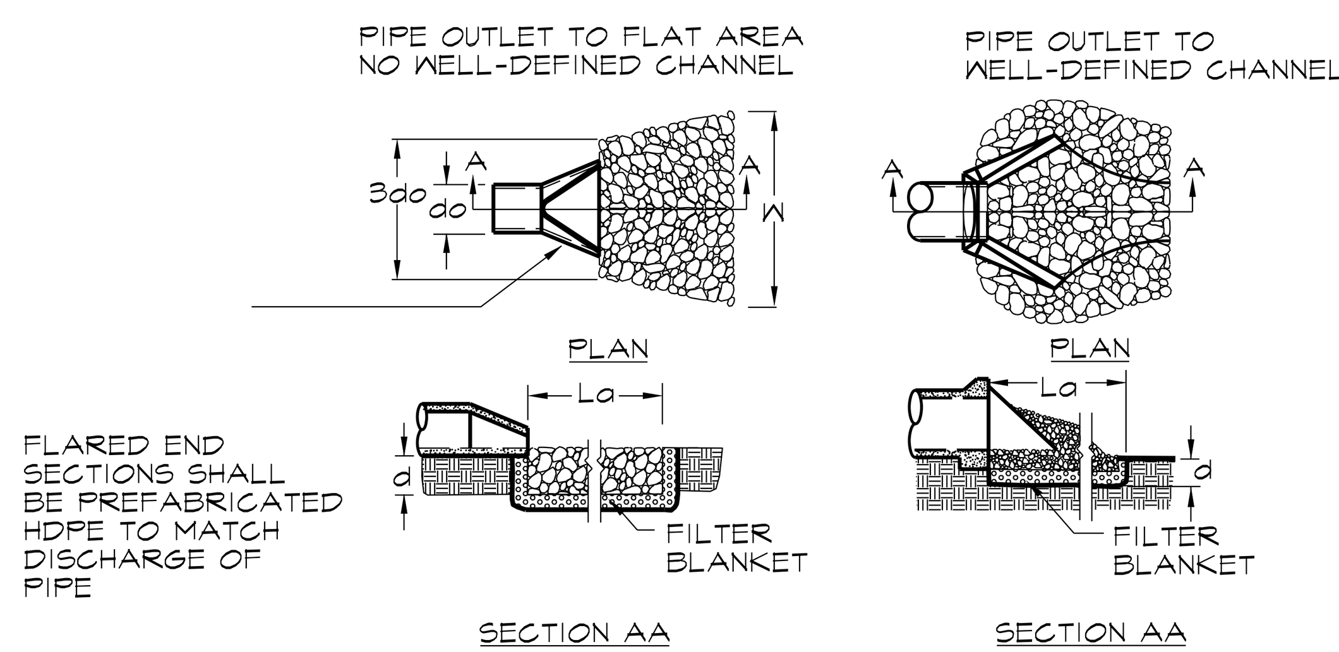
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1-800-772-2040 CANADA 1-800-448-2040
www.nagreen.com

CHANNEL MATTING

NOT TO SCALE



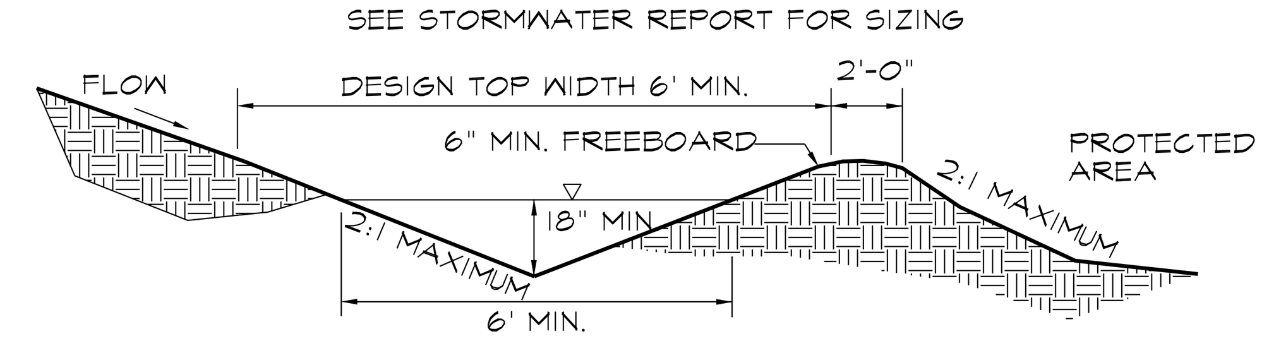
FLARED END SECTIONS SHALL BE PREFABRICATED HDPE TO MATCH DISCHARGE OF PIPE

GENERAL NOTES:
1. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
2. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIP RAP AND SOIL FOUNDATION.
3. COMPACT ANY REQUIRED FILL TO DENSITY OF SURROUNDING UNDISTURBED MATERIAL.
4. RIP RAP MAY BE FIELDSTONE OR ROUGH QUARRY STONE AND SHALL BE HARD, ANGULAR AND WELL-GRADED.
5. CONSTRUCT APRON AT ZERO GRADE. TOP OF RIP RAP SHALL BE LEVEL WITH THE RECEIVING CHANNEL OR SLIGHTLY LOWER.
6. ALIGN APRON WITH RECEIVING CHANNEL OR STREAM. ASSURE APRON IS STRAIGHT THROUGHOUT ITS LENGTH.
MAINTENANCE:
INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

RIP RAP APRON

NOT TO SCALE

SEE STORMWATER REPORT FOR SIZING

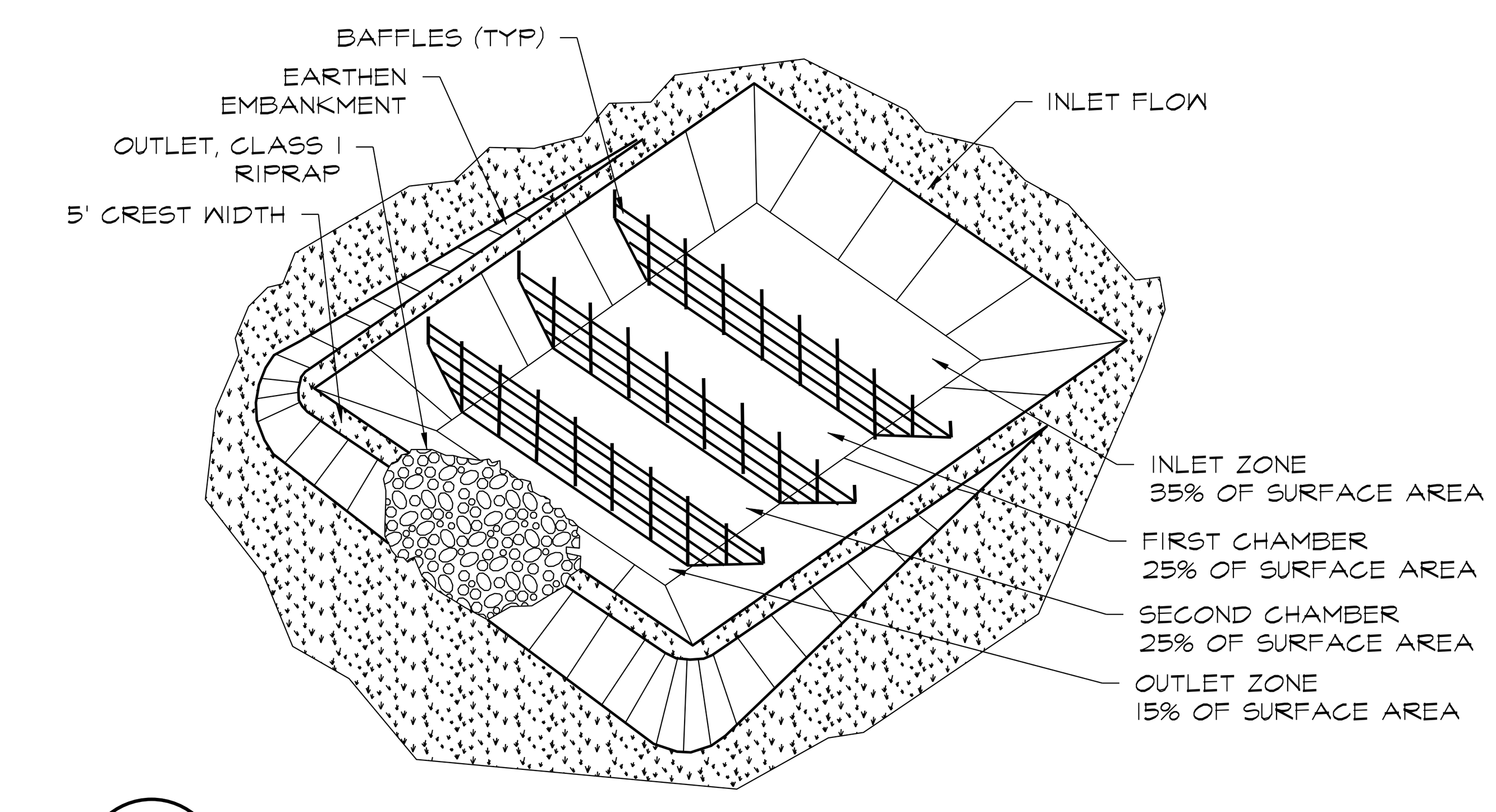


NOTES:
BUILD RIDGE HIGHER THAN DESIGN AND COMPACT WITH WHEELS OF CONSTRUCTION EQUIPMENT. COMPACTED RIDGE MUST AT OR ABOVE DESIGN GRADE AT ALL POINTS.
CHANNEL MUST BE CONSTRUCTED ON DESIGN GRADE.
LEAVE SUFFICIENT AREA ALONG DIVERSION TO PERMIT CLEANOUT AND REGRADING.

MAINTENANCE:
INSPECT PERMANENT DIVERSIONS AFTER EVERY RAINFALL DURING THE CONSTRUCTION OPERATION. IMMEDIATELY REMOVE ANY OBSTRUCTIONS FROM THE FLOW AREA, AND REPAIR THE DIVERSION RIDGE, CHECK OUTLETS, AND MAKE TIMELY REPAIRS AS NEEDED. MAINTAIN THE VEGETATION IN A VIGOROUS, HEALTHY CONDITION AT ALL TIMES.

PERMANENT DIVERSION DITCH

NOT TO SCALE

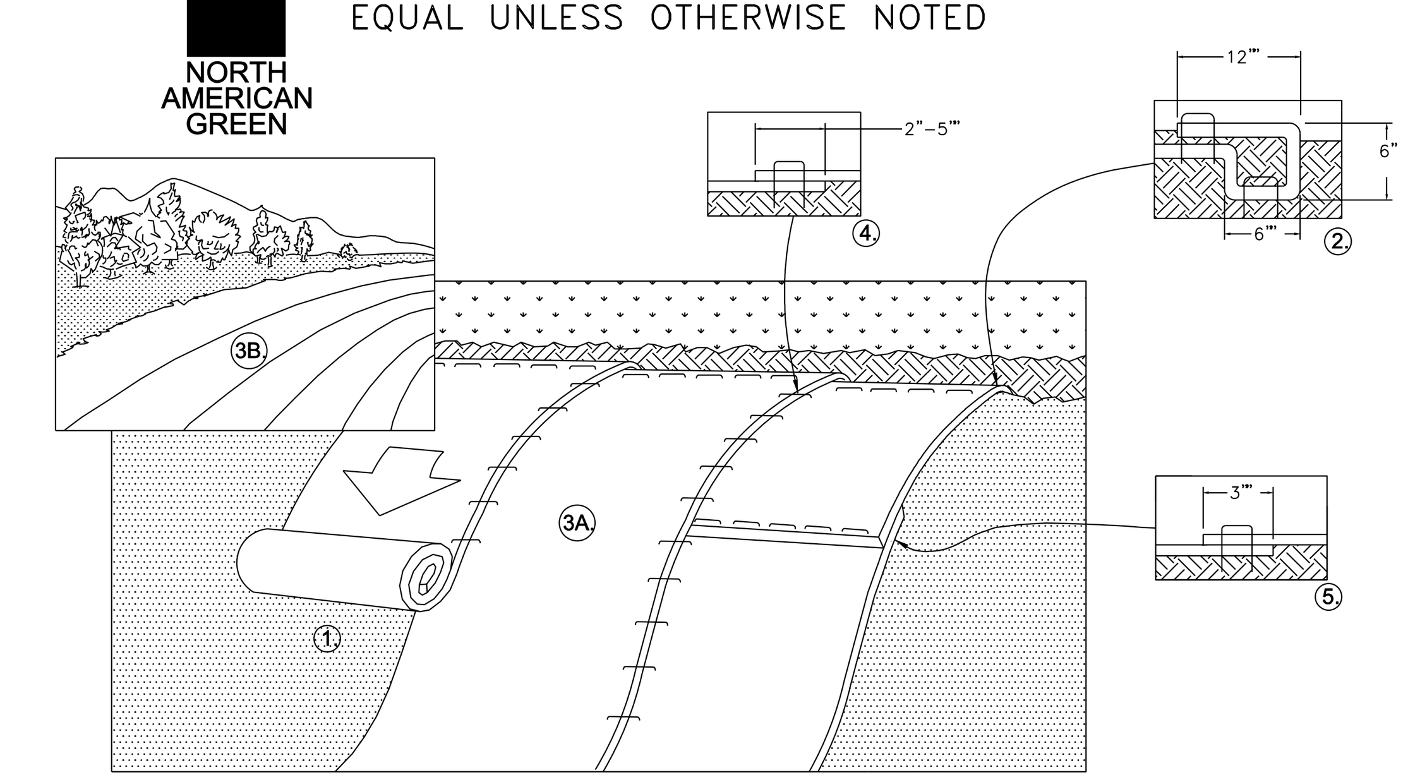


POROUS BAFFLES

NOT TO SCALE

SLOPE INSTALLATION
USE TYPE SC150 OR APPROVED EQUAL UNLESS OTHERWISE NOTED

NORTH AMERICAN GREEN



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™ , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.
NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

SLOPE MATTING

NOT TO SCALE

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Call before you dig.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27261 ANTHONY L. HAUSER

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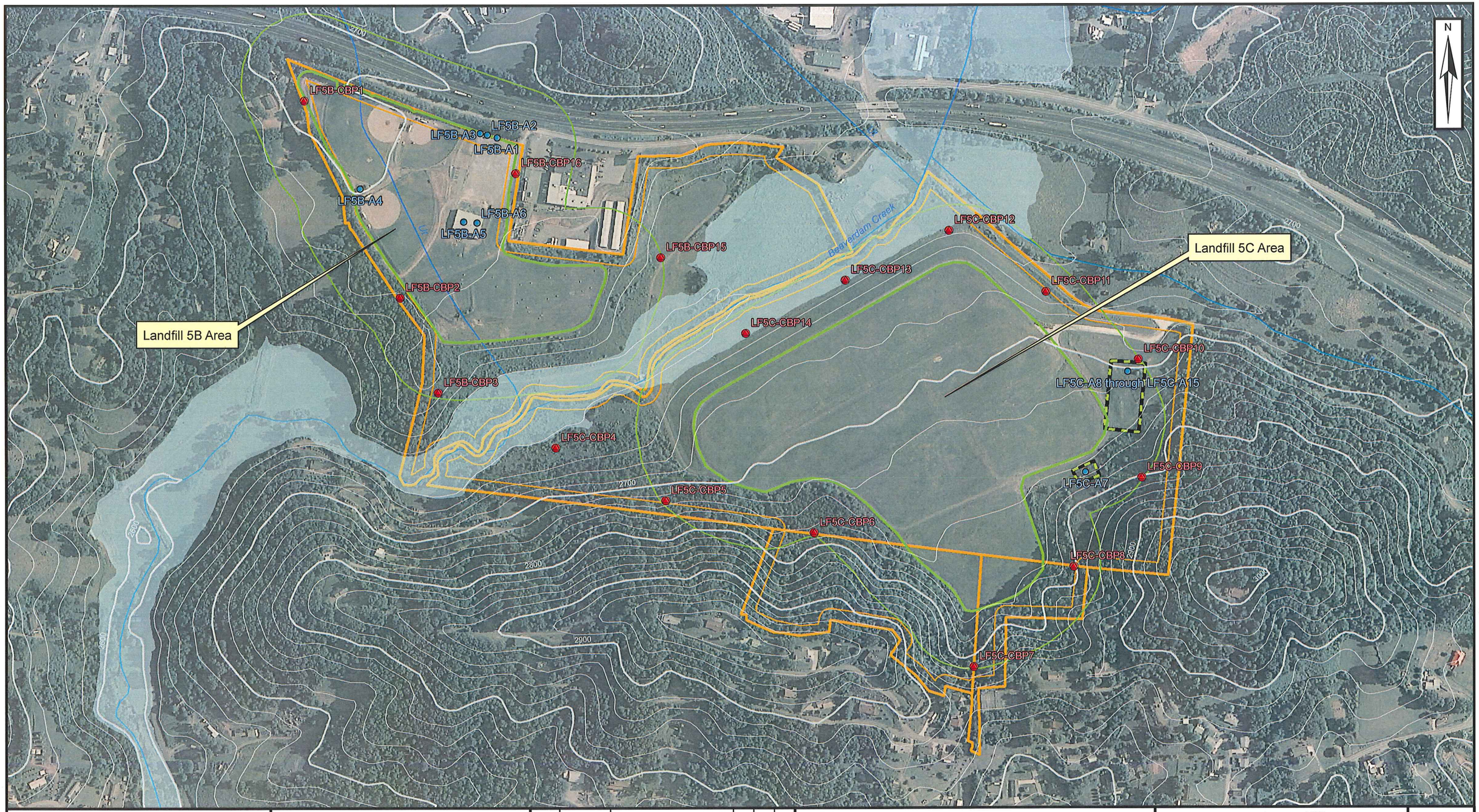
WNC REGIONAL LIVESTOCK CTR.
DRAINAGE & EROSION DETAILS
CANTON, HAYWOOD COUNTY, NC
WESTERN NORTH CAROLINA COMMUNITIES

REVISIONS
12/09/09 - Rev. 1 - As noted ALH

DATE: 11/17/09
DRAWN BY: TH
CHK'D BY: MD
PROJECT NO. 0906-002
SHEET NO.
C-10



Legend

- Proposed Ambient Landfill Gas Monitoring Locations
- Proposed Landfill Gas Compliance Boundary Probe Locations
- 100-Foot Interval Contours
- 20-Foot Interval Contours
- 250-foot Buffer from Approximate Waste Boundary
- Approximate Waste Boundary
- 50-foot Buffer from Property Boundary
- Property Boundary
- Approximate Locations of Proposed WNCRLC Buildings
- 100-Year Floodplain
- Haywood County Hydrology

SOURCE:

Color Orthophotograph - NCDA Haywood County 2008
Property Boundary - Haywood County GIS 2009
Hydrology - Haywood County GIS
100-Year Floodplain - NC Floodplain Mapping Program
Contour Lines - NCDOT, 2007 LIDAR

REV	DATE	DESCRIPTION	BY	CHK	APV

ALTAMONT ENVIRONMENTAL, INC.
ENGINEERING & HYDROGEOLOGY
231 HAYWOOD STREET, ASHEVILLE, NC 28801
TEL.828.281.3350 FAC.828.281.3351
WWW.ALTAMONTENVIRONMENTAL.COM

DRAWN BY: Anna Saylor
PROJECT MANAGER: Joel Lenk
CLIENT: International Paper Co.
DATE: 12/10/2009

SCALE
0 100 200 400 Feet

Proposed Landfill Gas Compliance Boundary Probes and Ambient Monitoring Locations

Landfill 5 (44-01)
Closed International Paper Landfill
Canton, North Carolina

FIGURE 1

P:\IP\LF 5\Landfill Gas Investigation\Figures\Fig 1-Existing and Proposed LFG locations.mxd