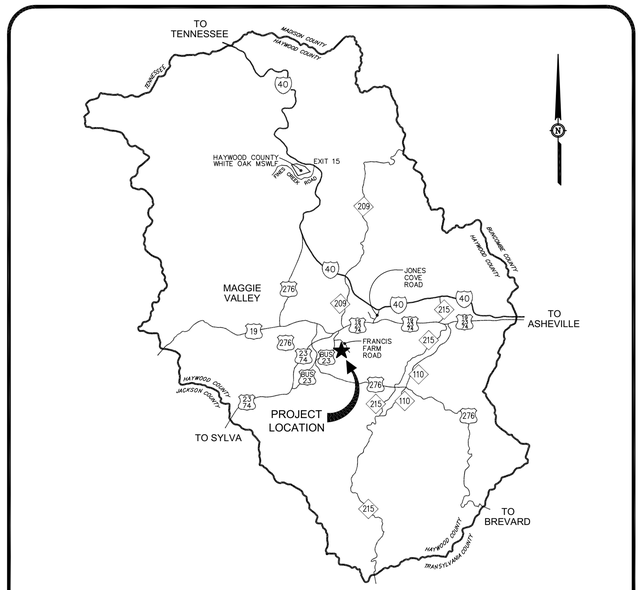
FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY

HAYWOOD COUNTY, NORTH CAROLINA

Permit No.	Date	DIN
44-03	**August 9, 2012**	**17015**

RECEIVED
July 24, 2012
Solid Waste Section
Asheville Regional Office

HAYWOOD COUNTY
COUNTY MANAGER : MR. MARTY STAMEY
SOLID WASTE DIRECTOR : MR. STEPHEN KING



VICINITY MAP NOT TO SCALE

SCHEDULE OF DRAWINGS

RECORD DRAWING

This Drawing has been modified to reflect changes made during construction based upon information provided by the Contractor and construction observations made by the Owner's Authorized Representative.

By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SPERRY

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH. (828) 252-0575 FIRM LICENSE # C-0459

GENERAL NOTES

1. ALL CONSTRUCTION OUTSIDE RIGHTS–OF–WAY SHALL TAKE PLACE WITHIN THE PERMANENT AND TEMPORARY ACCESS EASEMENTS SHOWN.
2. CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAN THE ORIGINAL SITE, OR AS NOTED.
3. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE ONLY. EXACT LOCATIONS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. AT LEAST THREE DAYS PRIOR TO CONSTRUCTION, CONTRACTOR MUST NOTIFY EXISTING UTILITY OWNERS. CALL BEFORE YOU DIG. NORTH CAROLINA ONE CALL (1–800–632–4949).
4. ALL WORK NEAR AND AROUND WATERWAYS MUST CONFORM TO THE RULES OF THE STATE OF NORTH CAROLINA.
5. CONTRACTOR MUST PROVIDE EROSION CONTROL DEVICES TO CONTROL RUNOFF FROM THE CONSTRUCTION SITE. CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES THAT MAY BE LEVIED DUE TO POLLUTION CREATED DURING CONSTRUCTION.
6. CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY REGULATIONS PERTAINING TO CONSTRUCTION OPERATIONS.
7. WATER LINES SHALL HAVE 3'–0" MINIMUM COVER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
8. WATER AND SEWER LINES SHALL HAVE A MINIMUM 10' HORIZONTAL SEPARATION OR A MINIMUM 18" VERTICAL SEPARATION WITH THE WATER OVER SEWER, OR BOTH WATER AND SEWER LINES SHALL BE DUCTILE IRON PIPE 10' EITHER SIDE OF THE CROSSING.
9. WATER AND STORM SEWER LINES SHALL HAVE A MINIMUM 12" VERTICAL SEPARATION.
10. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
11. LEGAL DESCRIPTIONS FOR PROPOSED EASEMENTS BY OTHERS.
12. CONTRACTOR SHALL NOTIFY THE PROPER LOCAL AUTHORITIES 24 HOURS PRIOR TO ANY ROAD BEING CLOSED FOR CONSTRUCTION, INCLUDING BUT NOT LIMITED TO LOCAL NEWSPAPER, RADIO STATION, FIRE DEPARTMENT, COUNTY SHERIFF'S DEPARTMENT, AMBULANCE, AND COUNTY EMERGENCY AGENCY. ALL TRAFFIC CONTROL SHALL CONFORM TO THE REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
13. CONTRACTOR SHALL NOTIFY THE ENGINEER AFTER EXISTING BURIED UTILITIES HAVE BEEN LOCATED AND 24 HOURS PRIOR TO CONSTRUCTION.
14. ALL FENCE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIALS IN A WORKMANLIKE MANNER AND IN ACCORDANCE WITH STANDARD FENCE CONSTRUCTION PRACTICES AT THE CONTRACTOR'S EXPENSE.
15. CONTRACTOR SHALL FIELD LOCATE ALL BURIED TELEPHONE LINE IN CONFLICT WITH CONSTRUCTION. WHERE NECESSARY, EXISTING BURIED TELEPHONE LINE SHALL BE TEMPORARILY MOVED DURING CONSTRUCTION AND RE–LAID AT NO ADDITIONAL COST TO THE OWNER.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS DURING CONSTRUCTION AND SHALL REPAIR ROADS PER REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. NO OPEN CUTS OF EXISTING ROADS SHALL BE ALLOWED EXCEPT WHERE INDICATED ON THE DRAWINGS OR WHERE SPECIFIC PERMISSION IS GRANTED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. SAND OR A SIMILAR MATERIAL APPROVED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SHALL BE PLACED ON THE ROAD TO AID IN THE CLEAN UP AFTER CONSTRUCTION. A MINIMUM OF 2" OF SAND SHALL BE PLACED ON THE ROAD PRIOR TO STOCKPILING SPOIL MATERIAL ON THE ROAD SURFACE TO FACILITATE CLEANUP.

GENERAL CONSTRUCTION NOTES

REVISION DATE - JUNE 16, 2009

1. FINISH GRADE TOLERANCES SHALL BE AS NOTED IN THE SPECIFICATIONS. THE ENGINEER MAY MAKE GRADE CHANGES AS REQUIRED IN THE FIELD WITHOUT EFFECTING THE BID PRICE.
2. UNLESS OTHERWISE STATED, ALL FILL AREAS SHALL BE CONSTRUCTED IN LAYERS OF 8" MAXIMUM THICKNESS, WITH WATER ADDED OR SOIL CONDITIONED TO THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE ENGINEER AND COMPACTED WITH A SHEEP'S FOOT ROLLER TO A COMPACTION EQUAL TO OR GREATER THAN 95% (100% IN THE TOP 2' OF THE SUB GRADE BELOW ROADWAYS AND PARKING LOTS) OF THE DENSITY OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH THE STANDARD PROCTOR METHOD OF MOISTURE–DENSITY RELATIONSHIP TEST, ASTM D698 OR AASHTO–99 UNLESS SPECIFIED IN OTHER SPECIFICATIONS.
3. ENTIRE AREA TO BE GRADED SHALL BE CLEARED AND GRUBBED. NO FILL SHALL BE PLACED ON ANY AREA NOT CLEARED AND GRUBBED.
4. ALL SOIL EROSION CONTROL MEASURES REQUIRED BY THE GRADING PLAN SHALL BE PERFORMED PRIOR TO GRADING, CLEARING OR GRUBBING. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC., SHALL BE MAINTAINED IN WORKABLE CONDITION FOR THE LIFE OF THE PROJECT AND SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY ON THE ENGINEER'S APPROVAL. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO WORK ITEMS LISTED IN BID SCHEDULE AND BID PRICES PROVIDED. LUMP SUM BID PRICE. IF DURING THE LIFE OF THE PROJECT, A STORM CAUSES SOIL EROSION WHICH CHANGES FINISH GRADES OR CREATES "GULLIES" AND "WASHED AREAS", THESE SHALL BE REPAIRED AT NO EXTRA COST, AND ALL SILT WASHED OFF OF THE PROJECT SITE ONTO ADJACENT PROPERTY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AT NO EXTRA COST. THE CONTRACTOR SHALL ADHERE TO ANY APPROVED EROSION CONTROL PLANS WHETHER INDICATED IN THE CONSTRUCTION PLANS OR UNDER SEPARATE COVER.
5. DISPOSABLE MATERIAL
   A. CLEARING AND GRUBBING WASTES SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE, UNLESS SPECIFIED OTHERWISE.
   B. SOLID WASTES TO BE REMOVED, SUCH AS SIDEWALKS, CURBS, PAVEMENT, ETC., MAY BE PLACED IN SPECIFIC DISPOSAL AREAS ONLY WHEN DELINEATED ON THE PLANS OR OTHERWISE REMOVED FROM THE SITE AS REQUIRED BY THE SPECIFICATIONS. THE CONTRACTOR SHALL MAINTAIN SPECIFIED COMPACTION REQUIREMENTS IN THESE AREAS. WHEN DISPOSAL SITES ARE NOT PROVIDED, THE CONTRACTOR SHALL REMOVE THIS WASTE FROM THE SITE AND PROPERLY DISPOSE OF IT AT HIS EXPENSE.
   C. ABANDONED UTILITIES SUCH AS CULVERTS, WATER PIPE, HYDRANTS, CASTINGS, PIPE APPURTENANCES, UTILITY POLES, ETC., SHALL BE THE PROPERTY OF THE SPECIFIC UTILITY AGENCY, OR COMPANY HAVING JURISDICTION. BEFORE THE CONTRACTOR CAN REMOVE, DESTROY, SALVAGE, REUSE, SELL OR STORE FOR HIS OWN USE ANY ABANDONED UTILITY, HE MUST PRESENT TO THE OWNER WRITTEN PERMISSION FROM THE UTILITY INVOLVED.
6. IN THE EVENT EXCESSIVE GROUNDWATER OR SPRINGS ARE ENCOUNTERED WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL NECESSARY UNDER DRAINS AND STONE AS DIRECTED BY THE ENGINEER.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ADJUSTMENT OF ALL UTILITY SURFACE ACCESSES WHETHER HE PERFORMS THE WORK OR A UTILITY COMPANY PERFORMS THE WORK.
8. THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AREA AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE SPECIFICATIONS.
9. ALL AREAS WHERE THERE IS EXPOSED DIRT SHALL BE SEEDED, FERTILIZED AND MULCHED ACCORDING TO THE SPECIFICATIONS. THE FINISHED SURFACE SHALL BE TO GRADE AND SMOOTH, FREE OF ALL ROCKS LARGER THAN 3", EQUIPMENT TRACKS, DIRT CLODS, BUMPS, RIDGES AND GOUGES PRIOR TO SEEDING; THE SURFACE SHALL BE LOOSENED TO A DEPTH OF 4"–6" BEFORE SEED. THE CONTRACTOR SHALL NOT PROCEED WITH SEEDING OPERATIONS WITHOUT FIRST OBTAINING THE ENGINEER'S APPROVAL OF THE GRADED SURFACE. ALL SEEDING SHALL BE PERFORMED BY A MECHANICAL "HYDRO–SEEDER". HAND SEEDING SHALL BE AUTHORIZED ON AN AREA BY AREA APPROVAL BY THE ENGINEER. DISTURBED AREAS SHOULD THEN BE MATTED WITH SHORT–TERM PHOTODEGRADABLE EROSION CONTROL MATTING AS SHOWN ON THE PLANS OR IF REQUIRED TO ESTABLISH VEGETATION.
10. WHERE SPECIFIED, RCP STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) CONFORMING TO AASHTO M–170, AS CONTAINED IN NCDOT STANDARD SPECIFICATION 1032–9 FOR WALL "B" TYPE.

    WHERE SPECIFIED, HDPE STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE). SMOOTH WALL INTERIOR, WITH WATER TIGHT JOINTS, BACKFILLED WITH # 57 WASHED STONE UP TO MIN. 6" OVER THE TOP OF THE PIPE. HDPE PIPE SHALL BE "HANCOR BLUE SEAL" OR APPROVED EQUAL.

    WHERE SPECIFIED, CORRUGATED METAL STORM DRAIN PIPE (CMP) SHALL BE ALUMINIZED TYPE 2 CORRUGATED STEEL MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M–36. THE PIPE SHALL BE MANUFACTURED FROM ALUMINIZED STEEL TYPE 2 MATERIAL CONFORMING TO THE REQUIREMENTS OF AASHTO M–274. ALL PIPE SHALL BE FURNISHED WITH REROLLED ENDS AND SHALL BE JOINED WITH HUGGER BANDS. THE USE OF DIMPLE BANDS WILL NOT BE ALLOWED. PIPE THROUGH 24" DIAMETER SHALL BE 16 GAUGE, PIPE THROUGH 42" DIAMETER SHALL BE 14 GAUGE, PIPE THROUGH 54" DIAMETER SHALL BE 12 GAUGE.
11. CONTRACTOR SHALL VERIFY ALL ELEVATIONS BEFORE INSTALLATION OF FACILITIES.
12. CATCH BASINS CAST–IN–PLACE SHALL CONFORM TO THE REQUIREMENTS OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (LATEST EDITION) ARTICLES 840–1 THROUGH 840–3. CURB INLET CATCH BASIN SHALL CONFORM TO NCDOT STANDARD DETAILS 840.02 THROUGH 840.04. DROP INLETS SHALL CONFORM TO STANDARD DETAIL 840.14. JUNCTION BOXES SHALL CONFORM TO STANDARD DETAIL 840.31.
13. CURB INLET FRAME, GRATE AND HOOD SHALL BE NEENAH R–3233D, PRODUCTS BY DEWEY BROS., U.S. FOUNDRY OR EQUAL. DROP INLET FRAME AND GRATE SHALL BE NEENAH R–3339A OR EQUAL. FIELD INLET COVER SHALL CONFORM TO NCDOT STANDARD DETAIL 840.04, OPENING FACING UPSTREAM.
14. CONCRETE AND MASONRY FOR SITE WORK ELEMENTS SHALL MEET THE REQUIREMENTS OF APPROPRIATE SECTION OF NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES (LATEST EDITION). CONCRETE SHALL BE CLASS A OR B, 4000 PSI MINIMUM, MEETING THE REQUIREMENTS OF SECTION 1000, CONSTRUCTED IN ACCORDANCE WITH SECTION 825. MASONRY SHALL MEET THE REQUIREMENTS OF SECTION 1040, CONSTRUCTED IN ACCORDANCE WITH SECTION 830 AND/OR 834.
15. TOPS OF PROPOSED FRAMES AND GRATES SHALL BE FLUSH WITH FINISHED GRADE.
16. PRE–CAST CONCRETE BOXES ARE ACCEPTABLE ALTERNATIVES FOR PROPOSED CATCH BASINS.

NORTH CAROLINA LAND QUALITY SECTION
EROSION CONTROL NOTES

REVISION DATE - NOVEMBER 24, 2008

GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF LAND RESOURCES, LAND QUALITY SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

1. – THE GRADING WORK ASSOCIATED WITH THE CAP REPAIR OF THE FRANCIS FARM LANDFILL IS COVERED UNDER THE REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, SOLID WASTE SECTION. THE SOURCE OF BORROW MATERIALS FOR THE PROJECT MUST HAVE THE APPROPRIATE EROSION CONTROL PERMITS IN PLACE. IF THE CONTRACTOR CHOOSES TO UTILIZE SOILS FROM THE HAYWOOD COUNTY WHITE OAK LANDFILL, EXISTING EROSION CONTROL PERMITS ARE IN PLACE AND WILL BE PROVIDED TO THE CONTRACTOR.
2. – INSTALL ALL EROSION CONTROL MEASURES AS REQUIRED BY THE PLANS AND THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF LAND RESOURCES, LAND QUALITY SECTION.
3. – NO WORK SHALL BE PERFORMED IN STREAM FROM OCTOBER 15 TO APRIL 15 (TO ACCOMMODATE COE AND DWQ RECOMMENDATIONS CONCERNING WORK IN TROUT WATERS).
4. – CONTRACTOR IS TO PLACE PERMANENT STAKES MARKING CLEARLY THE 25' BUFFER FOR STREAMS WHERE SHOWN ON THE PLANS AND THE MARKERS ARE TO BE VISIBLE AT ALL TIMES DURING CONSTRUCTION.
5. – CONSTRUCTION SHALL BE LIMITED TO 2000' OF CONTIGUOUS ROAD CORRIDOR UNTIL ALL CUTS, FILLS, AND DITCHES ARE STABILIZED FOR THAT 2000' SECTION. UPON STABILIZATION OF THAT SECTION ANOTHER 2000' SECTION CAN BE CONSTRUCTED AND STABILIZED.
6. – PROCEED WITH GRADING, CLEARING AND GRUBBING. NOTE: NO OFF SITE DISPOSAL OF MATERIAL IS ALLOWED UNLESS THE DISPOSAL SITE HAS AN APPROVED EROSION CONTROL PLAN.
7. – SEED AND PLACE EROSION CONTROL MATTING ON ALL CUT AND FILL SLOPES THAT ARE NOT ROCK IMMEDIATELY UPON COMPLETION OF SLOPE STABILIZATION.
8. – ALL TEMPORARY STREAM AND CREEK CROSSINGS FOR EQUIPMENT DURING CONSTRUCTION SHALL BE MADE USING TEMPORARY BRIDGES. NO STREAM BANK OR STREAM BED DISTURBANCE SHALL BE ALLOWED FOR EQUIPMENT CROSSINGS.
9. – SEED AND MULCH DENUDED AREA WITHIN 15 DAYS AFTER FINISHED GRADE IS ESTABLISHED. SEED AND SOIL AMENDMENTS SHALL BE PLACED ON A PREPARED SEEDBED AT THE FOLLOWING RATES PER ACRE. STRAW MULCH SHALL BE TACKED WITH TACKING AGENT APPLIED BY HYDROSEEDER.

LIME	4,000 LBS
FERTILIZER (10–10–10)	1,000 LBS
KY–31 FESCUE	100 LBS
STRAW MULCH	60–80 BALES
FOR SUMMER SEEDING ADD TO THE ABOVE:	
GERMAN MILLET	40 LBS
SMALL–STEMMED SUDAN GRASS	50 LBS
FOR WINTER SEEDING ADD TO THE ABOVE:	
RYE GRAIN	120 LBS

IF HYDROSEEDING, WOOD CELLULOSE MAY BE USED IN ADDITION TO STRAW MULCH AT THE RATE OF 1,000 LBS PER ACRE.

ALL SEEDING SHALL BE MAINTAINED, WATERED ETC.., UNTIL A PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED OVER ALL DISTURBED AREAS.

FOR ALL SLOPES 2:1 OR STEEPER ADD TO THE ABOVE:

PURE LIVE SEED SWITCHGRASS	4 LBS
BROWNTOP MILLET	8 LBS
GRAIN SORGHUM	2 LBS

ALL SLOPES 3:1 OR STEEPER SHALL BE COVERED BY EROSION CONTROL MATTING.

NATIVE SEEDING:

THE CORRECT SEEDBED pH IS 5.5 TO 6.5.

APPLY ZERO NITROGEN AT PLANTING.

INCORPORATE SOIL AMENDMENTS INTO TOPSOIL/ROOT ZONE BEFORE SEEDING.

FIRM SEEDBED BEFORE SEEDING (TRAVEL WITH DOZER CLEATS).

SEEDING DEPTH FOR ALL NATIVE SSP. (EXCEPT E.GAMAGRASS) NEED TO BE 1/4" – 1/2". GREATER DEPTHS CAUSE HIGH SEED MORTALITY.

SPECIALIZED SEEDING IMPLEMENTS ARE REQUIRED. SEED MIXES AND RATES TO MATCH SEEDER USED. A NO–TILL, DROP SEEDER OR BROADCASTER WITH PRECISION METERING TO CONTROL SMALL SEED FLOW AND PICKER WHEEL AGITATORS TO HANDLE FLUFFY SEED ARE BEST SUITED FOR NATIVE SEED.

NATIVE PLANT SEEDING MIX FOR STREAM OR RIVERBANK STABILIZATION

SEEDING FOR STREAM OR RIVERBANK STABILIZATION SHALL BE A MIXTURE OF NATIVE GRASSES, PLANTS AND TREES. NATIVE PLANT MIX SHALL INCLUDE THE FOLLOWING:

GRASSES – BIG BLUESTEM, INDIAN GRASS, LITTLE BLUESTEM, SWITCHGRASS	5 LBS/ACRE EACH
AUGUST THRU MAY – GREENRYE	25 LBS/ACRE EACH
MAY 1 THRU AUGUST – MILLET	25 LBS/ACRE EACH

TREES – SILKY DOGWOOD (CORNUS AMONUM), SILKY WILLOW (SALIX SERICEA), HAZEL ALDER (ALMUS SERRULATA) AND ELDERBERRY (SAMBUEUS CANADENSIS)

NATIVE PLANT MIX VARIATIONS SHALL BE APPROVED BY ENGINEER.

NOTE: NO FERTILIZER SHALL BE USED WITHIN 10' OF TOP OF STREAM OR RIVER BANK.

10. – MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
11. – REMOVE SOIL EROSION CONTROL MEASURES AND STABILIZE THESE AREAS.

EXISTING CONDITIONS LEGEND

TEL PED	TELEPHONE PEDESTAL
ELEC PED	ELECTRIC PEDESTAL
CATV PED	CABLE TV PEDESTAL
SIGN	SIGN
UGCATV	UNDERGROUND CABLE TV SIGN
UGFO	UNDERGROUND FIBER OPTIC CABLE SIGN
UGTEL	UNDERGROUND TELEPHONE CABLE SIGN
UGGAS	UNDERGROUND GAS LINE SIGN
UGELEC	UNDERGROUND ELECTRIC LINE SIGN
LP	LIGHT POLE
PP	UTILITY POLE
	GUY WIRE ANCHOR
MH	MANHOLE
SSMH	SANITARY SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
COMMH	COMMUNICATION MANHOLE
ELMH	ELECTRICAL MANHOLE
J.B.	JUNCTION BOX
SPIGOT	SPIGOT/YARD HYDRANT
C.O.	SEWER CLEAN–OUT
E.SS	ELECTRIC SERVICE STUB–OUT
G.SS	GAS SERVICE STUB–OUT
CB	CATCH BASIN
	CURB INLET
WM	WATER METER
FH	FIRE HYDRANT
WV	WATER VALVE
BLOW OFF VALVE	BLOW OFF VALVE
G/M	GAS METER
G/V	GAS VALVE
ICV	IRRIGATION CONTROL VALVE
PIV	POST INDICATOR VALVE
E.JUNC	ELECTRIC JUNCTION BOX OR OUTLET
	CALCULATED POINT
IPS	1/2" REBAR SET WITH CAP
	CONCRETE MONUMENT
CM–R/W	RIGHT–OF–WAY MONUMENT
DOT MON	D.O.T. CONTROL POINT
RBF	REBAR FOUND
PK NL	PK NAIL FOUND / SET
SPINDLE	SPINDLE FOUND / SET
CPHUB	HUB & TACK SET
CP/NL	CONTROL POINT NAIL SET / FOUND
CP/NL GPS	CONTROL POINT/NAIL SET GPS
CP/TEMP	CONTROL POINT TEMPORARY MARK
STAKE	STAKE FOUND
40	INTERSTATE HIGHWAY
66	U.S. HIGHWAY
FFE ELEVATION	FINISHED FLOOR ELEVATION
MW	MONITORING WELL
PZ	PIEZOMETER
	LANDFILL GAS MONITORING PROBE
	SURFACE WATER SAMPLING LOCATION
	LANDFILL GAS VENT
	LANDFILL GAS COLLECTION WELLHEAD
W	POTABLE WATER WELL
MB	MAILBOX OR PAPER BOX
PB	POSTAL DROP BOX
SAT DISH	SATELLITE DISH
YARD ORNAMENT	STATUE, BIRD BATHS, ETC.
	TREES
	SHURBS / BUSHES
	CULVERT
	FENCE
	SILT FENCE
	GUARD RAIL
	APPROXIMATE LOCATION OF EXISTING SEWER LINES
	APPROXIMATE LOCATION OF EXISTING WATER LINES
	APPROXIMATE LOCATION OF EXISTING GAS LINES
	TOP & TOE LINES
	DITCH LINES
	APPROXIMATE LOCATION OF UNDERGROUND CABLE TV LINE
	APPROXIMATE LOCATION OF OVERHEAD CABLE TV LINE
	APPROXIMATE LOCATION OF UNDERGROUND FIBER OPTIC CABLE LINE
	APPROXIMATE LOCATION OF UNDERGROUND ELECTRIC LINE
	APPROXIMATE LOCATION OF OVERHEAD ELECTRIC LINE
	APPROXIMATE LOCATION OF UNDERGROUND TELEPHONE LINES
	APPROXIMATE LOCATION OF OVERHEAD TELEPHONE LINES
	RIGHT–OF–WAY
	TREELINE
	SHRUBLINE
	PROPERTY LINE NOT SURVEYED
	ROCKLINE
	STREAM LINE
	CENTERLINE ROADS
	CENTERLINE OTHER THAN ROADS
	SWAMPLINE/WETLANDS

IPS	IRON PIN SET
RBF	REBAR FOUND
OTIPF	OPEN TOP IRON PIN FOUND
CTIPF	CRIMPED TOP IRON PIN FOUND
CMU	CONCRETE MASONRY UNIT
R/W	RIGHT OF WAY
℄	CENTERLINE
C	CURVE (SEE CURVE TABLE)
POB	POINT OF BEGINNING
CP	CALCULATED POINT
PB	PLAT BOOK
DB	DEED BOOK
L	LINE (SEE LINE TABLE)
BLDG	BUILDING
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CPP	CORRUGATED PLASTIC PIPE
DIP	DUCTILE IRON PIPE
E&T	ELECTRIC & TELEPHONE
FOC	FIBER OPTIC CABLE
GIP	GALVANIZED IRON PIPE
O/H	OVERHEAD
RCP	REINFORCED CONCRETE PIPE
U/G	UNDERGROUND
VCP	VITRIFIED CLAY PIPE
PVC	POLYVINYL CHLORIDE PIPE
FFE	FINISHED FLOOR ELEVATION
PG	PAGE
REF	REFERENCE
DOT	DEPARTMENT OF TRANSPORTATION
NGS	NATIONAL GEODETIC SYRVEY
NCSP	NORTH CAROLINA STATE PLANE

811 Know what's **below.** **Call** before you dig.
N.C. One-Call Center
Dial 811 or 1-800-632-4949

RECORD DRAWING

This Drawing has been modified to reflect changes made during construction based upon information provided by the Contractor and construction observations made by the Owner's Authorized Representative.

By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SPERRY

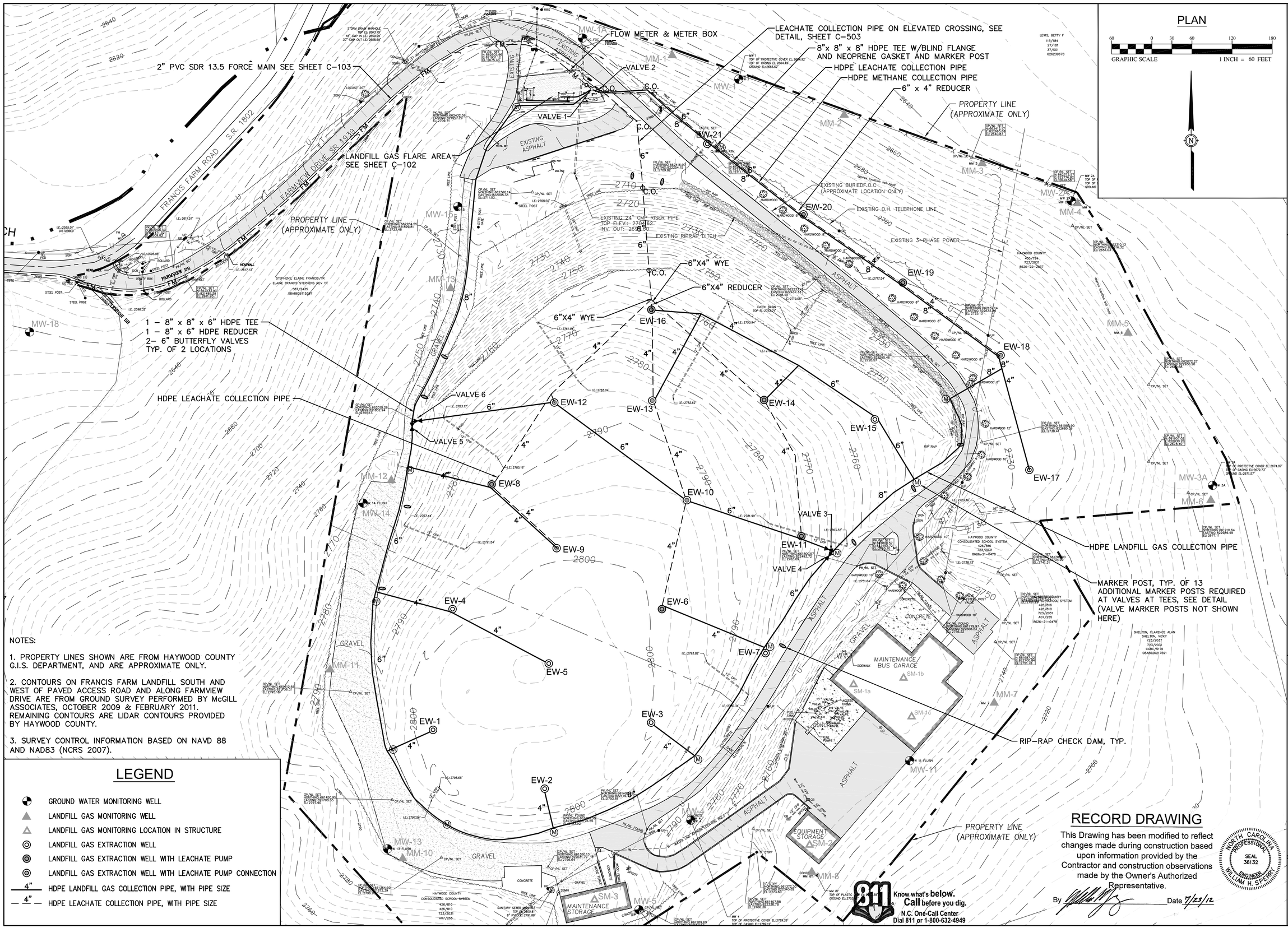
McGill Associates
ENGINEERING·PLANNING·FINANCE
55 BROADWAY STREET ASHEVILLE, NC 28801 PH (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: APRIL, 2012
DESIGNED BY: WHS
CADD BY: KS
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: RD 09.00721-G-001-Cover-Sheet.dwg

GENERAL NOTES AND LEGENDS

SHEET
G-002



NOTES:

1. PROPERTY LINES SHOWN ARE FROM HAYWOOD COUNTY G.I.S. DEPARTMENT, AND ARE APPROXIMATE ONLY.

2. CONTOURS ON FRANCIS FARM LANDFILL SOUTH AND WEST OF PAVED ACCESS ROAD AND ALONG FARMVIEW DRIVE ARE FROM GROUND SURVEY PERFORMED BY McGILL ASSOCIATES, OCTOBER 2009 & FEBRUARY 2011. REMAINING CONTOURS ARE LIDAR CONTOURS PROVIDED BY HAYWOOD COUNTY.

3. SURVEY CONTROL INFORMATION BASED ON NAVD 88 AND NAD83 (NCRS 2007).

LEGEND

- GROUND WATER MONITORING WELL
- LANDFILL GAS MONITORING WELL
- LANDFILL GAS MONITORING LOCATION IN STRUCTURE
- LANDFILL GAS EXTRACTION WELL
- LANDFILL GAS EXTRACTION WELL WITH LEACHATE PUMP
- LANDFILL GAS EXTRACTION WELL WITH LEACHATE PUMP CONNECTION
- 4" — HDPE LANDFILL GAS COLLECTION PIPE, WITH PIPE SIZE
- 4" — HDPE LEACHATE COLLECTION PIPE, WITH PIPE SIZE

Know what's below. Call before you dig. N.C. One-Call Center Dial 811 or 1-800-632-4949

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By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 36132 WILLIAM H. SPEER

McGill ASSOCIATES
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FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1-3

HAYWOOD COUNTY

HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: APRIL, 2012
DESIGNED BY: WHS
CADD BY: KS
DESIGN REVIEW#: ____
CONST. REVIEW: ____
FILE NAME: RD-09.00721-C-101-Landfill Gas Collection System.dwg

LANDFILL GAS COLLECTION SYSTEM

SHEET C-101

Q:\2009\09.00721\Design\Solid Waste\Drawings\Record Drawings\RD-09.00721-C-101-Landfill Gas Collection System.dwg 7/23/2012 1:28 PM KELLY

PLAN

GRAPHIC SCALE 10 0 5 10 20 30 — 1 INCH = 10 FEET

N

STORM DRAIN MANHOLE
TOP EL: 2675.41'
24" CMP IN I.E.: 2668.52'
24" CMP OUT I.E.: 2668.45'

OVERHEAD ELECTRICAL SERVICE

PROPERTY LINE (APPROXIMATE ONLY)

2" PVC SDR 13.5 FORCE MAIN SEE SHEET C-103 FOR ADDITIONAL INFORMATION

UNDERGROUND FIBER OPTIC LINE (APPROXIMATE ONLY)
CONTRACTOR MUST CONFIRM LOCATION

FLOW METER & METER BOX

MW-1A

CATCH BASIN
TOP EL: 2680.03
10" CPP I.E. IN: 2678.51'
10" DIP I.E. OUT: 2678.02'

10" DIP

CB

EXISTING ASPHALT

STORM DRAIN MANHOLE
TOP EL: 2688.18'
24" CMP IN I.E.: 2681.24'
24" CMP OUT I.E.: 2681.12'

SDMH

20' DBL-SWING GATE

4' DIAMETER DUPLEX PUMP STATION
SEE SHEET C-504 FOR DETAILS

JUNCTION BOX

CONDENSATE PUMP CONTROL PANEL

4' DIAMETER KNOCKOUT POT, WITH PUMP AND F.M.,
2-8" BUTTERFLY VALVES AT INLETS TO K.O. POT

8" x 8" WYE WITH 2-8" x 6" REDUCERS

UTILITY POLE

UNDERGROUND ELECTRICAL SERVICE TO
GENERATOR SET PANEL
SEE ELECTRICAL DRAWINGS FOR DETAILS

EXISTING GRASS

10" CPP

L.P.

GRAVEL SURFACING

6' CHAIN LINK FENCE
INSTALL 1 - 20' DBL-SWING GATE
INSTALL 1 - 4' SNGL-SWING GATE

4' SINGLE-SWING GATE

FLARE CONTROLS

FLANGE
TYP. OF 2

FF EL.: 2693.7

G

GENERATOR ELECTRICAL CONTROL PANEL

14' x 17' CONCRETE GENERATOR PAD WITH GENERATOR PLATFORM
2" BALL VALVE AND BLIND FLANGE

FFE: 2693.2

4" ELBOW, 4" x 2" REDUCER
W/1 - 2" BALL VALVE AND BLIND FLANGE
W/BACKUP RING

BOLLARD, TYP.

22' x 10' CONCRETE LFG FLARE PAD

ELECTRICAL EQUIPMENT RACK

UNDERGROUND ELECTRICAL SERVICE TO
FLARE AND PUMPS

HDPE LANDFILL GAS COLLECTION PIPE

HDPE LEACHATE COLLECTION PIPE

HDPE LANDFILL GAS COLLECTION PIPE

4" HDPE TEE W/BLIND FLANGE W/NEOPRENE GASKET,
TAPPED 1" (AT INVERT OF 4")W/1" BALL VALVE
SLOPE 4" HDPE AT 1% MIN. SLOPE TO 1" VALVE

SKID-MOUNTED LANDFILL GAS FLARE PACKAGE

24" CMP

BRICK WALL

TREE LINE

Know what's below. Call before you dig.
N.C. One-Call Center
Dial 811 or 1-800-632-4949

RECORD DRAWING

This Drawing has been modified to reflect changes made during construction based upon information provided by the Contractor and construction observations made by the Owner's Authorized Representative.

By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SPEARY

McGill ASSOCIATES
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1-3

HAYWOOD COUNTY

HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: APRIL, 2011
DESIGNED BY: WHS
CADD BY: KS
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: RD-09.00721-C-102-Flare Area Site Plan.dwg

FLARE AREA SITE PLAN

SHEET
C-102

Q:\2009\09.00721\Design\Solid Waste\Drawings\Record Drawings\RD-09.00721-C-102-Flare Area Site Plan.dwg 7/23/2012 11:45 AM KELLY

PLAN

GRAPHIC SCALE 50 0 25 50 100 150 — 1 INCH = 50 FEET

LEACHATE LINES. SEE OTHER SHEETS.

LANDFILL GAS FLARE AND GENERATOR SYSTEM. SEE SHEET C-102

LEACHATE PUMP STATION. SEE DETAILS.

2" SDR 13.5 PVC FORCE MAIN

CULVERT INLET PROTECTION (TYP)

RIP RAP CHECK DAMS, TYP.

MANHOLE

S.R. 1939 FARMVIEW DR

S.R. 1602 FRANCIS FARM ROAD

RATCLIFFE COVE BRANCH

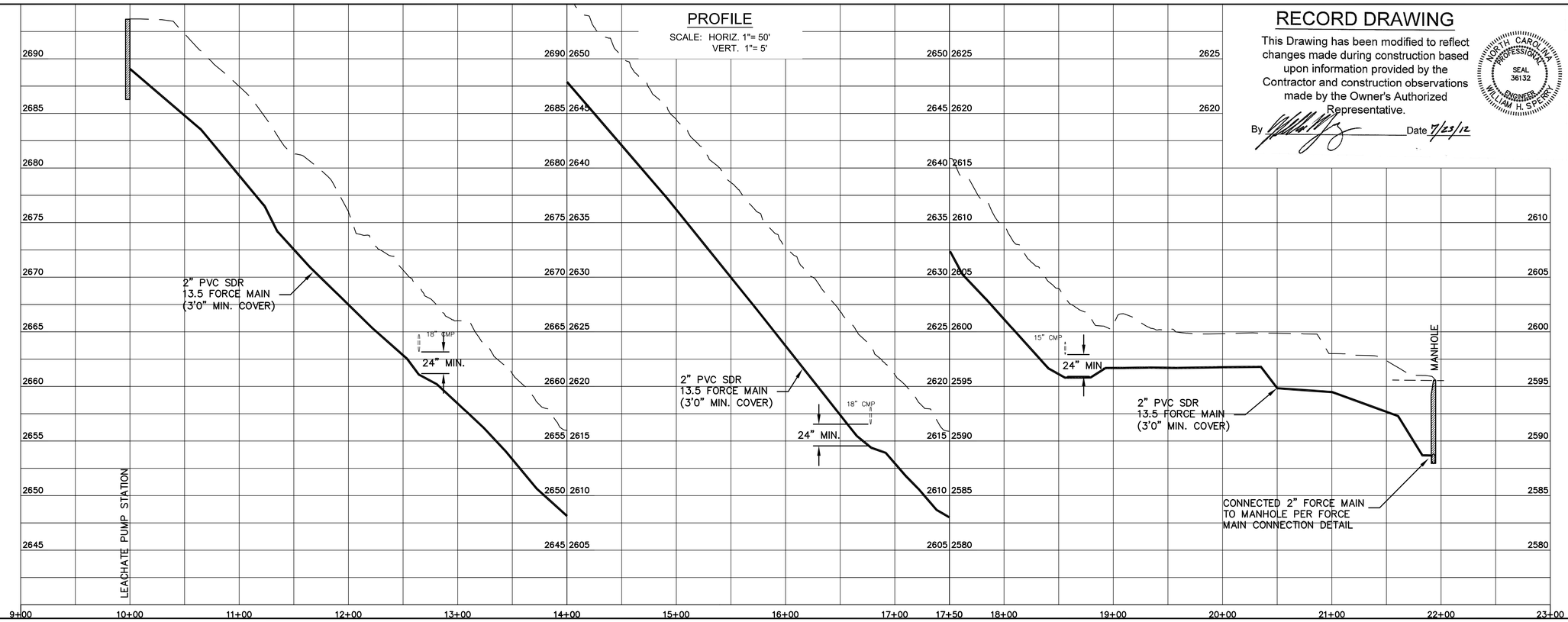
HAYWOOD COUNTY CONSOLIDATED SCHOOL SYSTEM 432/1116 555/1895

811 Know what's below. Call before you dig. N.C. One-Call Center Dial 811 or 1-800-632-4949

NOTES:
1. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE ONLY. EXACT LOCATIONS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
2. CONTRACTOR SHALL REMOVE AND REPLACE ROADWAY SIGNS AND MAILBOXES AS NECESSARY TO INSTALL PROPOSED UTILITY LINE. CONTRACTOR SHALL COORDINATE SIGN REMOVAL AND REPLACEMENT WITH THE NCDOT.
3. CONTRACTOR SHALL COORDINATE WORK IN THE PROXIMITY OF UTILITY POLES WITH APPROPRIATE UTILITY COMPANIES.
4. CONTRACTOR SHALL PLACE A 2" LAYER OF SAND ON ALL ASPHALT OR CONCRETE SURFACES PRIOR TO PLACING EXCAVATED MATERIAL.
5. CONTRACTOR SHALL CONTACT ALL UTILITY PROVIDERS CONCERNING EXACT LOCATION OF EXISTING LINES PRIOR TO CONSTRUCTION. IF EXISTING UTILITY CABLES ARE ENCOUNTERED IN CONFLICT WITH PROPOSED UTILITY LINE, CONTRACTOR SHALL STRIP OUT EXISTING CABLES, INSTALL PROPOSED UTILITY LINE, & RE-INSTALL EXISTING UTILITY CABLES.
6. ALL RIGHT OF WAY INFORMATION PROVIDED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
7. ALL UTILITY LINE INSTALLATIONS SHALL BE A MINIMUM OF 3' OFF THE EDGE OF PAVEMENT UNLESS SHORING MEASURES APPROVED BY NCDOT AND THE ENGINEER ARE UTILIZED.

PROFILE

SCALE: HORIZ. 1"= 50'
VERT. 1"= 5'



RECORD DRAWING

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By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SPERRY

McGill Associates — Engineering · Planning · Finance
55 BROAD STREET ASHEVILLE, NC 28801 PH (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1-3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: APRIL, 2012
DESIGNED BY: VW
CADD BY: VW
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: RD-09.00721-C-103-Leachate Pump Station And Force Main.dwg

LEACHATE PUMP STATION AND FORCE MAIN

SHEET C-103

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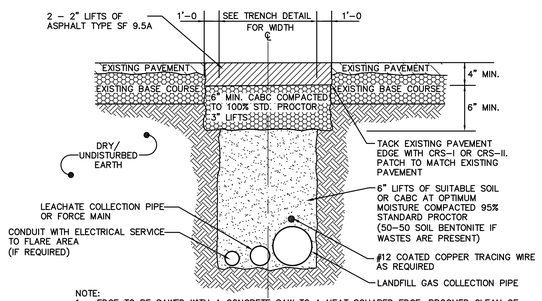
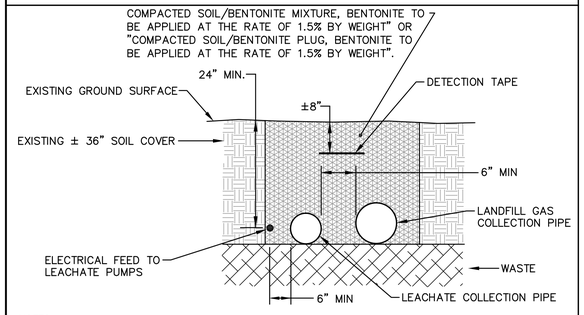


NOTE:
1. EDGE TO BE SAWED WITH A CONCRETE SAW TO A NEAT SQUARED EDGE. BROOMED CLEAN OF DUST BEFORE TACK COAT IS APPLIED.
2. EDGES TO BE TACKED WITH EMULSIFIED ASPHALT TACK CRS–I OR CRS–II.

ASPHALT DRIVE REPAIR

NOT TO SCALE

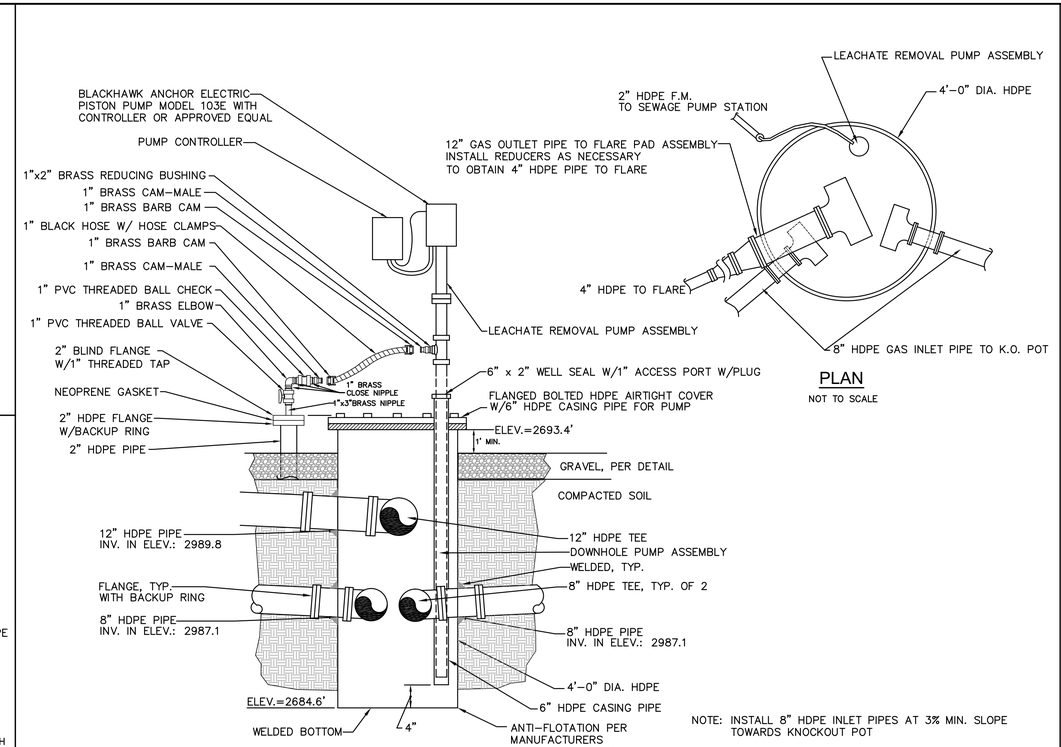
REVISION DATE - NOVEMBER 3, 2008



NOTES:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.

LANDFILL GAS COLLECTION PIPE / LEACHATE COLLECTION PIPE TRENCH DETAIL

NOT TO SCALE



PREFABRICATED HDPE KNOCKOUT POT

NOT TO SCALE

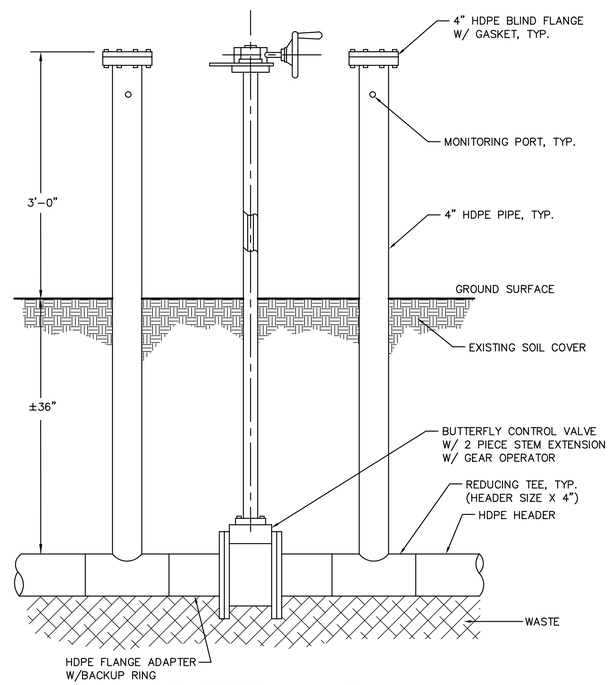
PLAN

NOT TO SCALE

NOTE: INSTALL 8" HDPE INLET PIPES AT 3% MIN. SLOPE TOWARDS KNOCKOUT POT

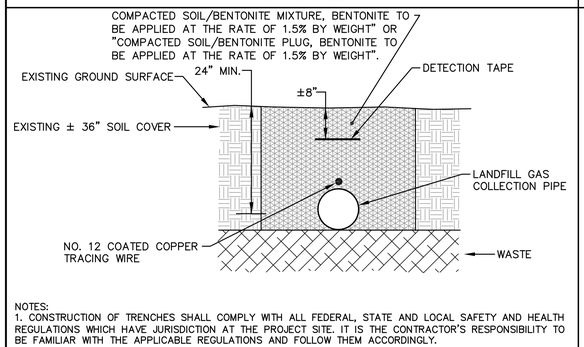
NOTE: INSTALL 12" HDPE PIPE (AND REDUCED PIPING) AT 1.5% MIN. SLOPE TOWARDS KNOCKOUT POT

NOTE: MAINTAIN 2' MIN. COVER OVER INLET AND OUTLET PIPING IN FLARE SITE AREA



BUTTERFLY VALVE WITH 2-PIECE STEM EXTENSION AND MONITORING PORTS

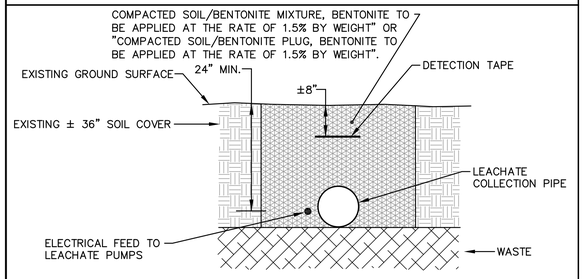
NOT TO SCALE



NOTES:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.

LANDFILL GAS COLLECTION PIPE TRENCH DETAIL

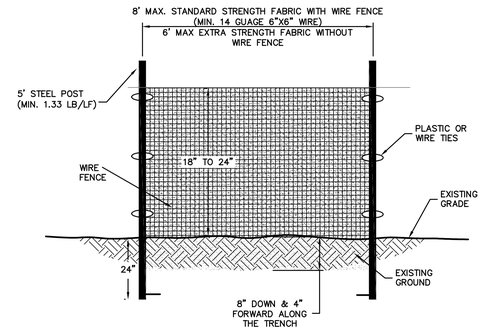
NOT TO SCALE



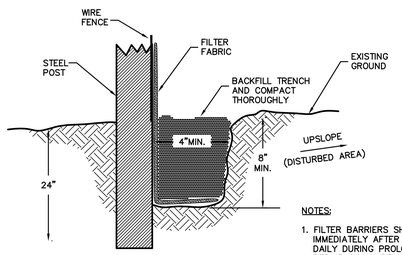
NOTES:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.

LEACHATE COLLECTION PIPE TRENCH DETAIL

NOT TO SCALE



SECTION VIEW

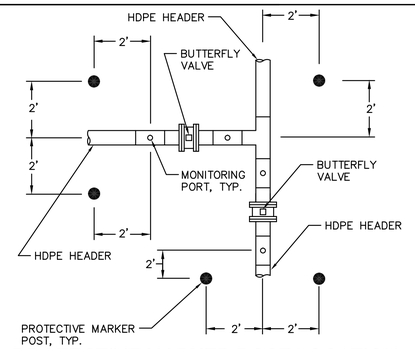


NOTES:
1. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. REPAIR SHALL BE MADE AS NECESSARY.
2. FABRIC SHALL BE REPLACED PROMPTLY IF FOUND TO BE IN DISREPAIR.
3. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT AND WHEN DEPOSITS REACH APPROXIMATELY 1/3 HEIGHT OF BARRIER.
4. REFERENCE NCDENR LAND QUALITY SECTION DESIGN MANUAL: 6.62.

SLOPE	SLOPE LENGTH(FT)	MAXIMUM AREA(SQFT)
<2%	100	10,000
2 TO 5%	75	7,500
5 TO 10%	50	5,000
10 TO 20%	25	2,500
>20%	15	1,500

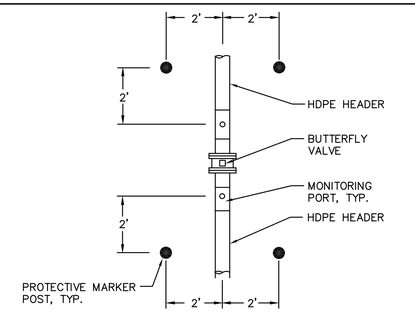
SEDIMENTATION/SILT FENCE

REVISION DATE - NOVEMBER 3, 2008



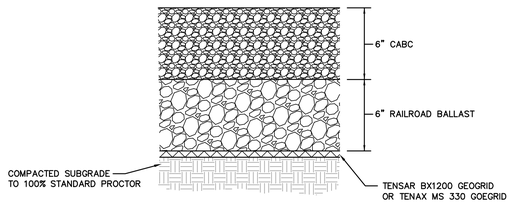
PROTECTIVE MARKER POST LOCATION AT TYPICAL TEES

NOT TO SCALE



PROTECTIVE MARKER POST LOCATION IN LINE

NOT TO SCALE



GRAVEL SURFACING SECTION DETAIL

NOT TO SCALE

RECORD DRAWING

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By _____ Date 11/23/12

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 36132 WILLIAM H. SEGRAY

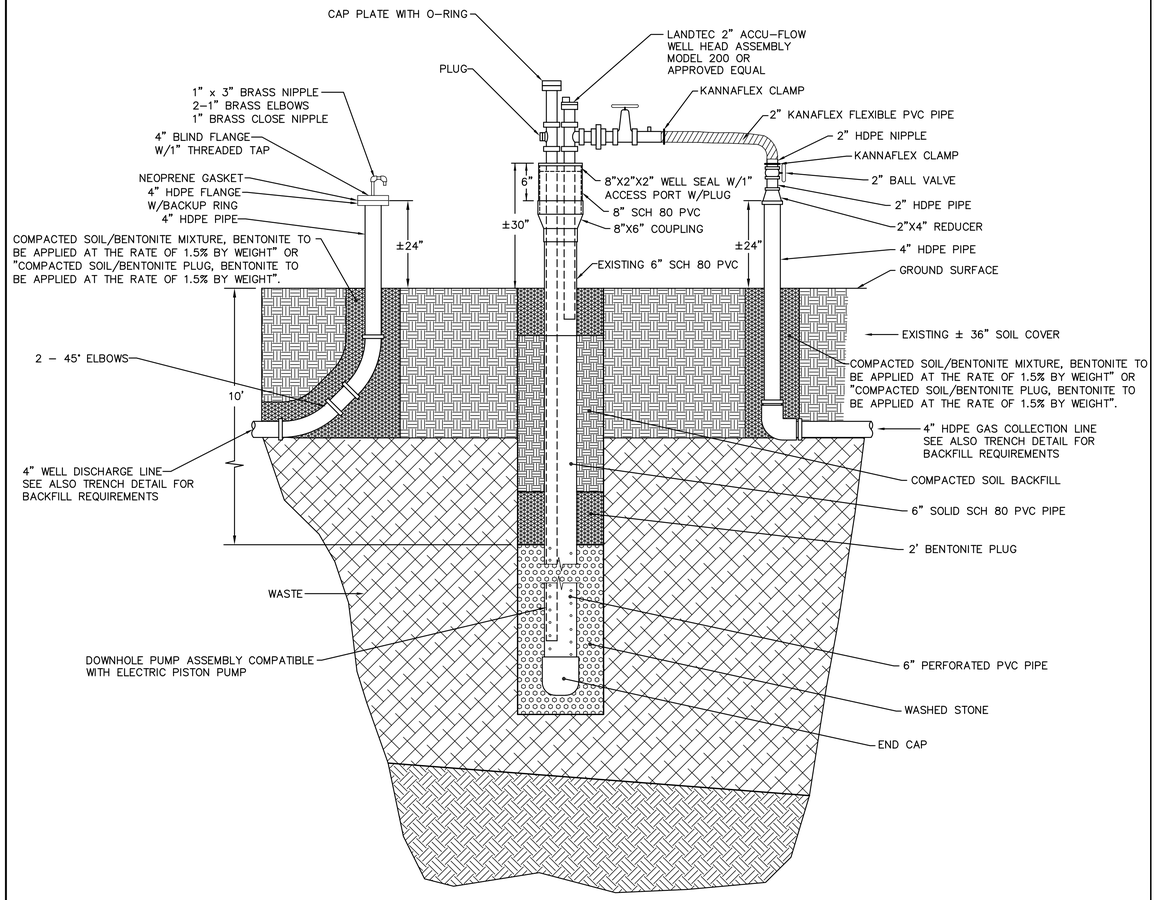
McGill Associates
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: APRIL, 2012
DESIGNED BY: WHS
CADD BY: KS
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: R:\09\2009.00721\Design\Solid Waste\Drawings\Record Drawings\RD 09.00721-C-501-C-505-Miscellaneous-Details.dwg

MISCELLANEOUS DETAILS

SHEET
C-501

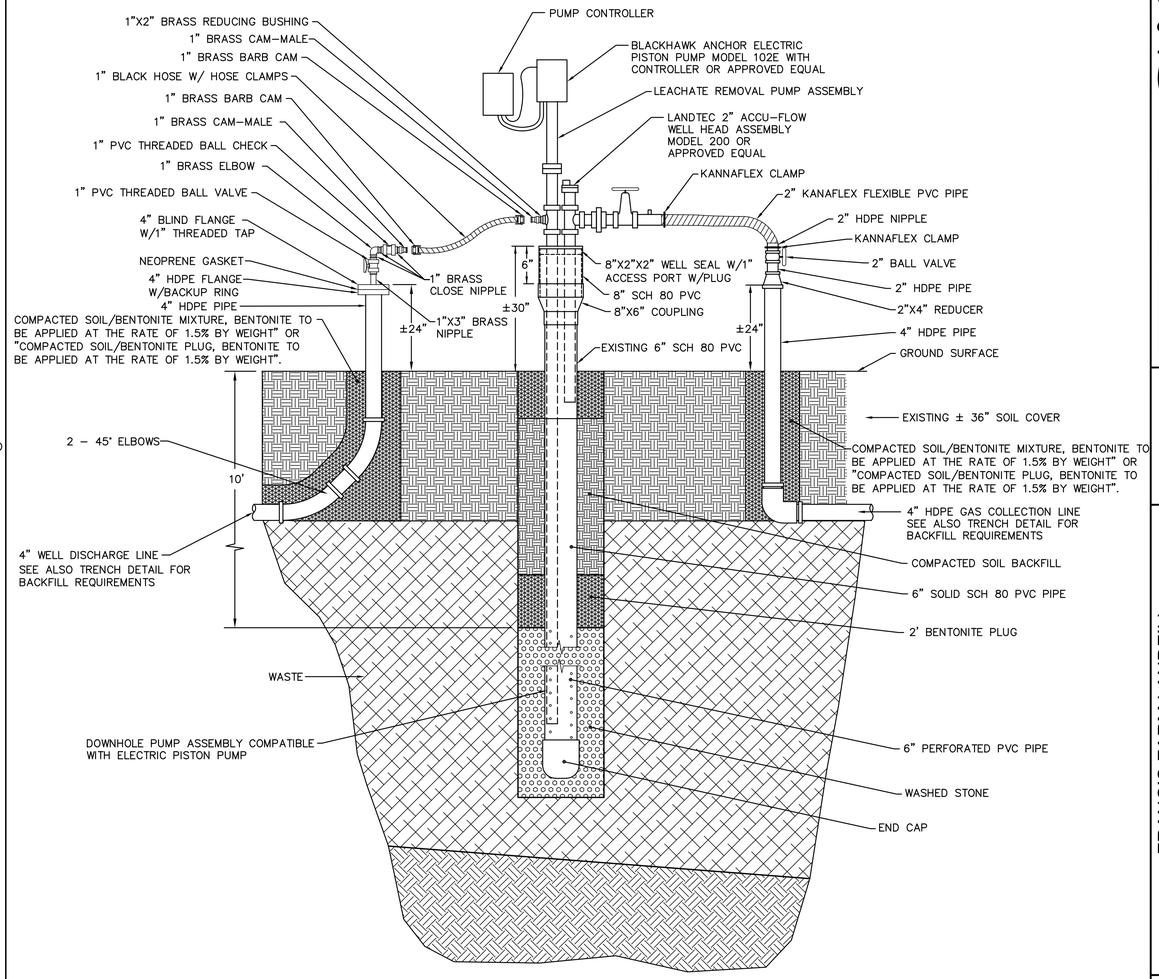


NOTE: SEE EXISTING EXTRACTION WELL INFORMATION ON SHEET C-503 TO DETERMINE DEPTHS OF DE-WATERING EQUIPMENT

LANDFILL GAS EXTRACTION WELL W/ CONNECTION FOR FUTURE LEACHATE PUMP

EW WELL NUMBERS: 9,10,12,13,18&20

NOT TO SCALE

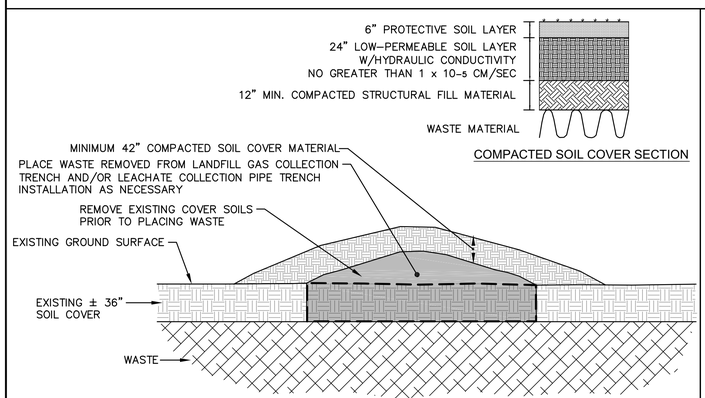


NOTE: SEE EXISTING EXTRACTION WELL INFORMATION ON SHEET C-503 TO DETERMINE DEPTHS OF DE-WATERING EQUIPMENT

LANDFILL GAS EXTRACTION WELL W/ LEACHATE PUMP

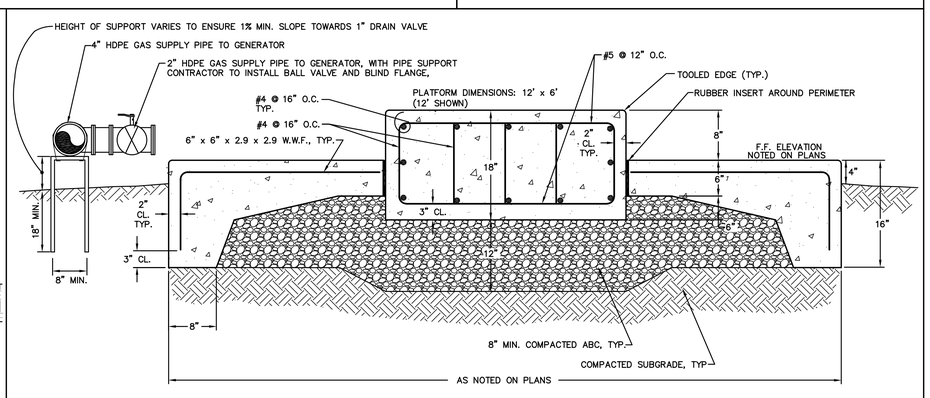
EW WELL NUMBERS: 6,8,11,14,16&19

NOT TO SCALE



CAP REPAIR AND WASTE FILL COVER DETAIL

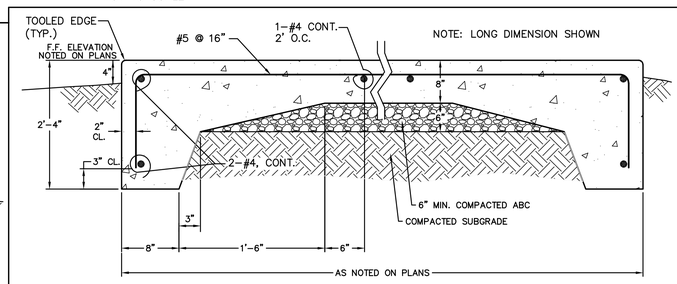
NOT TO SCALE



PIPE SUPPORT NOTES:
1. SUPPORTS AT 4' MAX. SPACING AND AT TEES, BENDS AND ENDS OF PIPE.
2. SUPPORT MATERIAL MUST BE APPROVED BY ENGINEER.
3. SECURELY INSTALL PIPE STRAP AT SUPPORTS, STRAP MATERIAL SHALL BE NON-CORRODABLE MATERIAL.

GENERATOR PAD DETAIL

NOT TO SCALE



CONCRETE LFG FLARE PAD DETAIL

NOT TO SCALE

RECORD DRAWING

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By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SPERRY

McGill Associates
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3

HAYWOOD COUNTY

HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: APRIL, 2012
DESIGNED BY: WHS
CADD BY: KS
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: R:\2009\09.00721\C-500\Miscellaneous Details.dwg

MISCELLANEOUS DETAILS

SHEET
C-502

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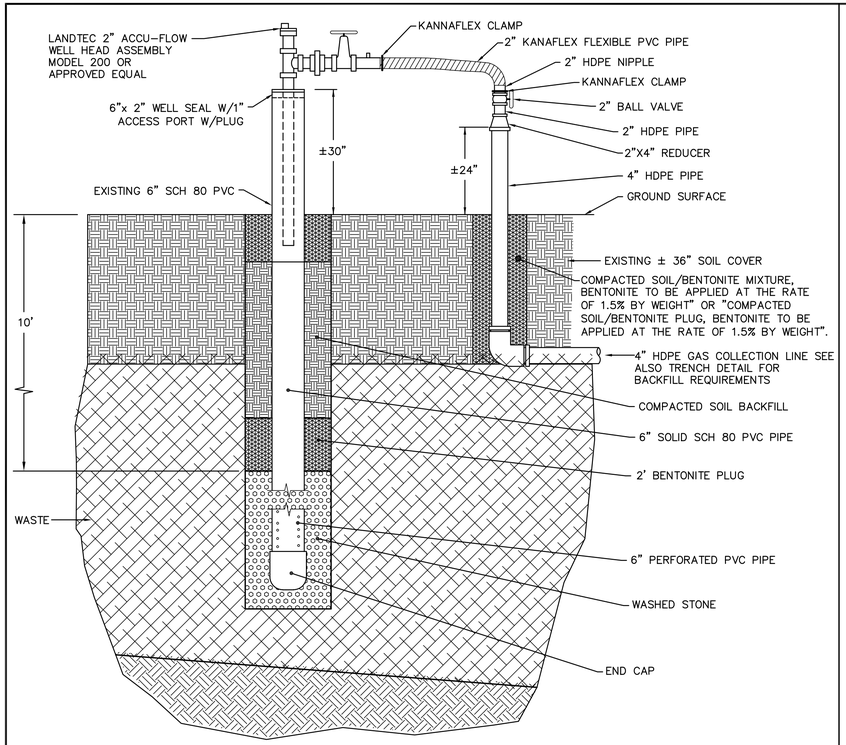
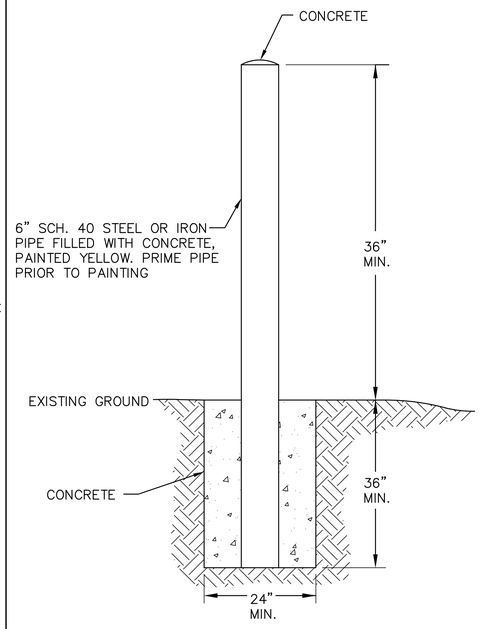


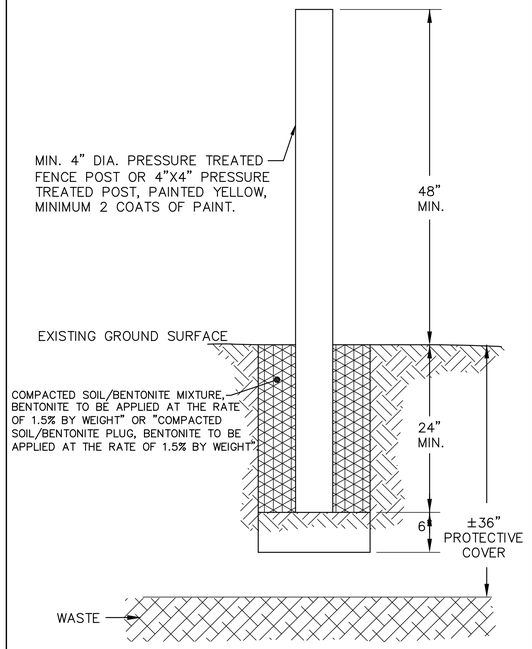
LANDFILL GAS EXTRACTION WELL

EW WELL NUMBERS: 1,2,3,4,5,7,15,17&21
NOT TO SCALE



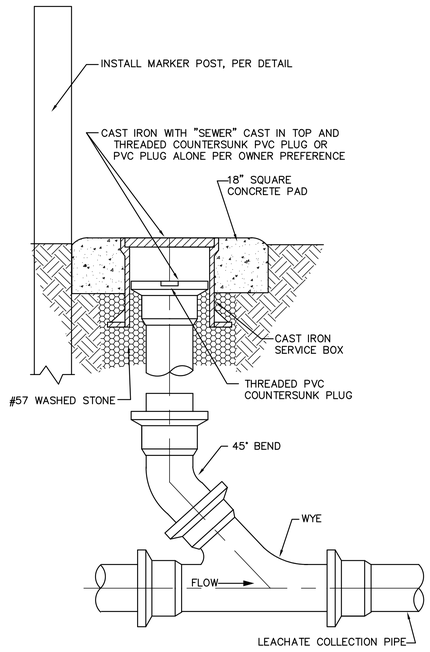
BOLLARD DETAIL

NOT TO SCALE



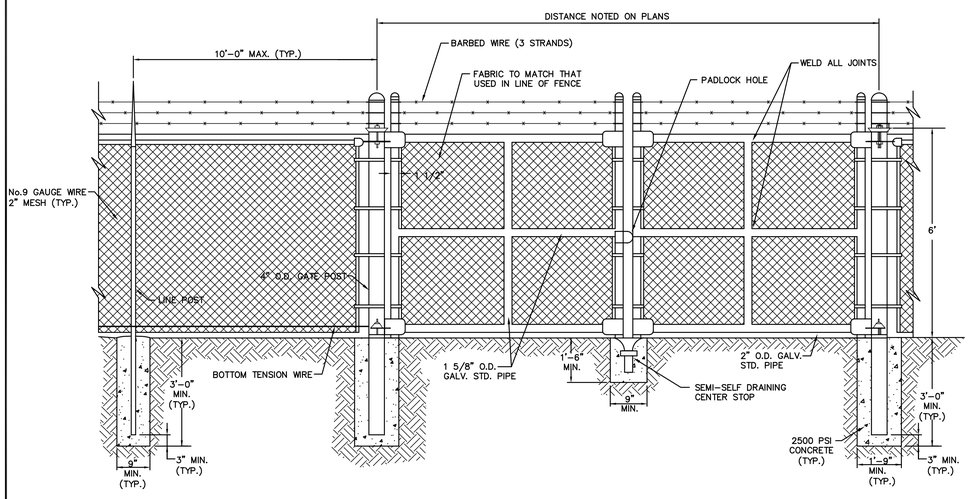
PROTECTIVE MARKER POST DETAIL

NOT TO SCALE



CLEANOUT DETAIL

REVISION DATE – NOVEMBER 3, 2008



NOTE: THE LOCATION OF THE CHAIN LINK FENCING SHALL BE VERIFIED IN THE FIELD AND MUST BE APPROVED BY THE OWNER.

CHAIN LINK FENCE AND DOUBLE GATE DETAIL

NOT TO SCALE

LANDFILL GAS EXTRACTION WELLS

FITTED WITH LEACHATE REMOVAL PUMPS AND DOWN-HOLE PUMP ASSEMBLY

Well No.	Northing	Easting	Top of Casing Elevation	Approximate Ground Surface Elevation	Drilled Well Depth (From Gr. Surface) (Vert Ft)	Bottom of Well Elevation	Screen Depth (BGS - Ft)	Screen Elevation
EW-6	661,736.17	822,202.22	2801.41	2799.33	56	2743	10 – 56	2789 – 2743
EW-8	661,922.84	821,947.50	2791.01	2789.07	50	2739	10 – 50	2779 – 2739
EW-11	661,845.22	822,410.81	2777.83	2775.81	50	2726	10 – 50	2766 – 2726
EW-14	662,049.11	822,354.97	2771.01	2769.05	49	2720	10 – 49	2759 – 2720
EW-16	662,184.21	822,186.41	2766.32	2764.27	50	2714	10 – 50	2754 – 2714
EW-19	662,224.72	822,562.62	2723.86	2721.92	45	2677	10 – 45	2712 – 2677

LANDFILL GAS EXTRACTION WELLS

FITTED FOR FUTURE LEACHATE REMOVAL PUMPS

Well No.	Northing	Easting	Top of Casing Elevation	Approximate Ground Surface Elevation	Drilled Well Depth (From Gr. Surface) (Vert Ft)	Bottom of Well Elevation	Screen Depth (Below Ground Surface) (Vert Ft)	Screen Elevation
EW-9	661,827.34	822,044.64	2801.52	2799.37	52	2747	10 – 52	2789 – 2747
EW-10	661,899.24	822,239.54	2796.45	2794.41	66	2728	10 – 66	2784 – 2728
EW-12	662,045.34	822,041.19	2787.56	2785.66	45	2741	10 – 45	2776 – 2741
EW-13	662,048.23	822,187.69	2787.65	2785.99	60	2726	10 – 60	2776 – 2726
EW-18	662,116.02	822,708.85	2728.07	2726.18	45	2681	10 – 45	2716 – 2681
EW-20	662,326.82	822,413.92	2718.25	2716.33	35	2681	10 – 35	2706 – 2681

LANDFILL GAS EXTRACTION WELLS

LANDFILL GAS EXTRACTION ONLY

Well No.	Northing	Easting	Top of Casing Elevation	Approximate Ground Surface Elevation	Drilled Well Depth (From Gr. Surface) (Vert Ft)	Bottom of Well Elevation	Screen Depth (Below Ground Surface) (Vert Ft)	Screen Elevation
EW-1	661,555.49	821,859.83	2803.72	2801.56	30	2772	10 – 30	2792 – 2772
EW-2	661,467.47	822,026.74	2805.52	2803.23	30	2773	10 – 30	2793 – 2773
EW-3	661,566.28	822,186.05	2802.37	2800.45	40	2760	10 – 40	2790 – 2760
EW-4	661,736.12	821,889.02	2799.96	2798.07	40	2758	10 – 40	2788 – 2758
EW-5	661,654.72	822,032.92	2807.22	2805.08	40	2765	10 – 40	2795 – 2765
EW-7	661,670.35	822,357.16	2782.66	2780.55	30	2751	10 – 30	2771 – 2751
EW-15	662,020.00	822,520.81	2756.87	2755.11	31	2724	10 – 31	2745 – 2724
EW-17	661,944.57	822,751.82	2731.57	2729.67	25	2705	10 – 25	2720 – 2705
EW-21	662,432.43	822,270.03	2713.00	2710.32	30	2680	10 – 30	2700 – 2680

NOTE: EXISTING INFORMATION FOR LFG EXTRACTION WELLS PROVIDED TO ASSIST WITH DETERMINING DEPTHS OF DE-WATERING SYSTEM, PER THE DETAILS ON SHEET C-502

EXISTING EXTRACTION WELL INFORMATION

RECORD DRAWING

This Drawing has been modified to reflect changes made during construction based upon information provided by the Contractor and construction observations made by the Owner's Authorized Representative.

By _____ Date 11/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SEGRAY

McGill Associates
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH (828) 252-0575 FIRM LICENSE # C-0459

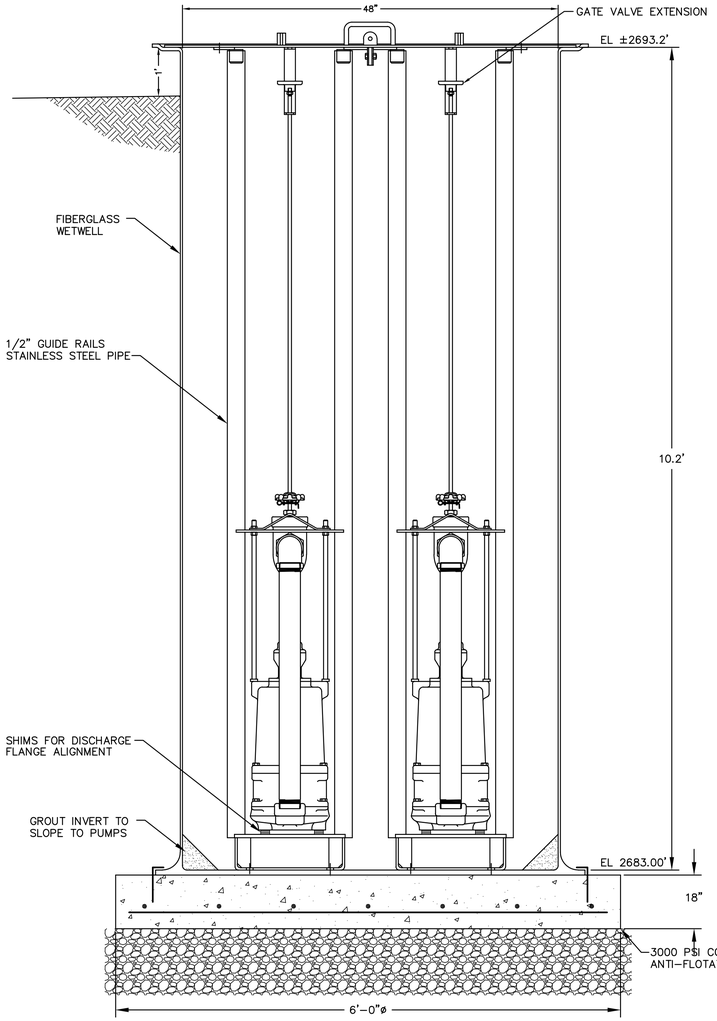
FRANCIS FARMS LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

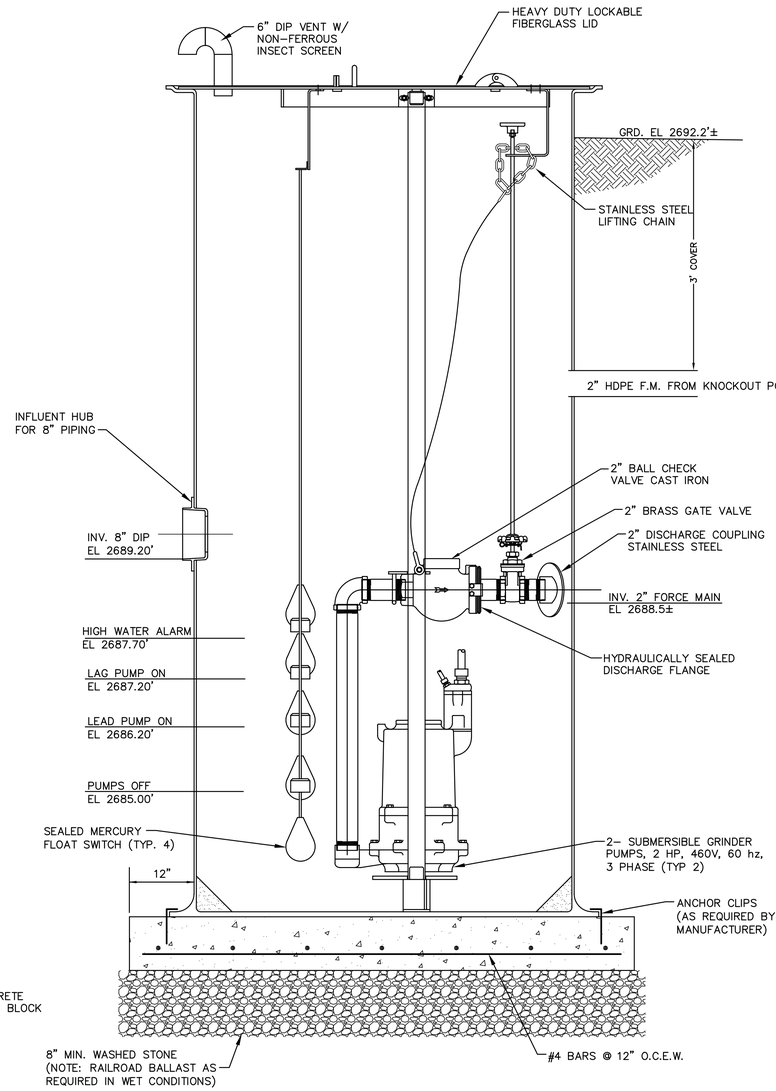
JOB NO.: 09.00721
DATE: APRIL, 2012
DESIGNED BY: WHS
CADD BY: KS
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: R:\09\09.00721-C-505\Miscellaneous Details.dwg

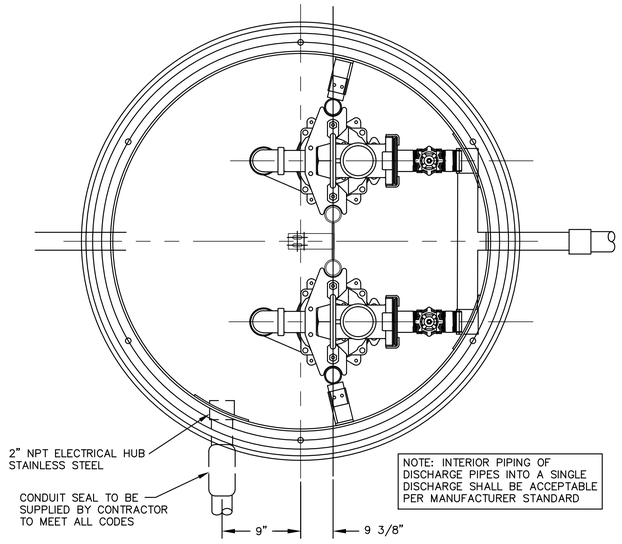
MISCELLANEOUS DETAILS

SHEET
C-503

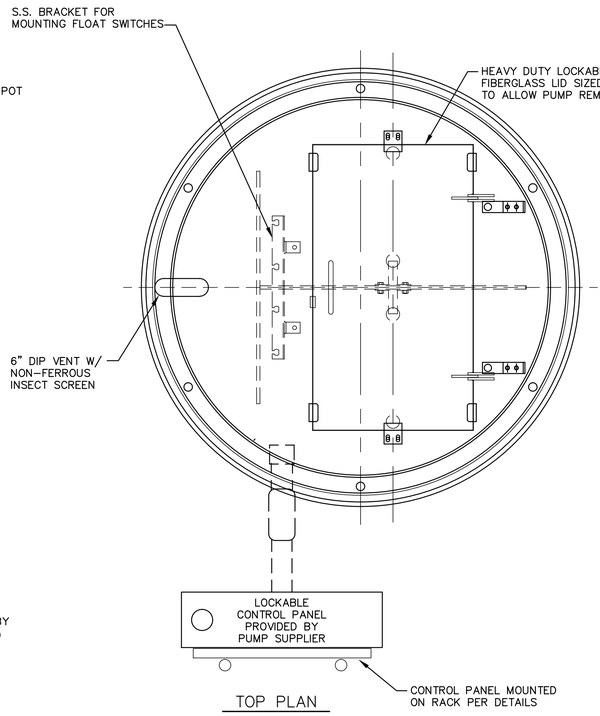
NOTE: PUMP CONTROL PANEL WITH WARNING LIGHT FURNISHED BY PUMP STATION SUPPLIER.
PUMP CONTROL PANEL INCLUDES CONNECTION FOR EMERGENCY PORTABLE GENERATOR.
SEE ELECTRICAL DRAWINGS FOR DETAILS.







PLAN



TOP PLAN

PACKAGE LEACHAGE PUMP STATION

REVISION DATE - MARCH, 2011

RECORD DRAWING

This Drawing has been modified to reflect changes made during construction based upon information provided by the Contractor and construction observations made by the Owner's Authorized Representative.

By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SPERRY

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ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: APRIL, 2012
DESIGNED BY: WHS
CADD BY: KS
DESIGN REVIEW: ____
CONST. REVIEW: ____
FILE NAME: RD\2009\09.00721\Design\Solid Waste\Drawings\Record Drawings\RD 09.00721-C-501-C-505-Miscellaneous-Details.dwg

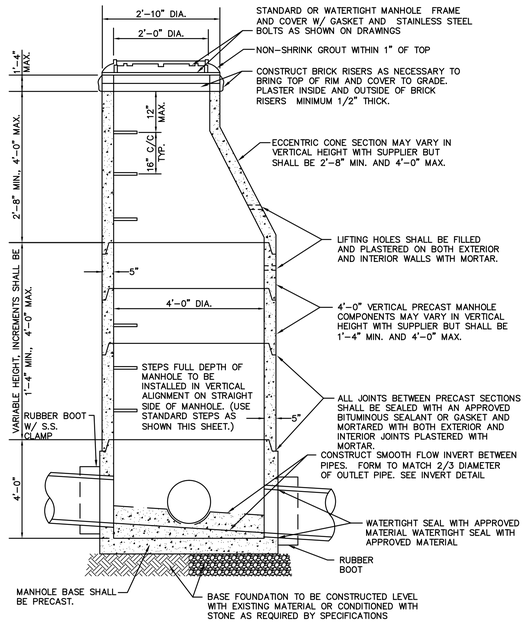
MISCELLANEOUS DETAILS

SHEET
C-504

GENERAL SEWER NOTES

REVISION DATE - NOVEMBER 19, 2010

1. ALL CONSTRUCTION OUTSIDE RIGHTS-OF-WAY SHALL TAKE PLACE WITHIN THE PERMANENT AND TEMPORARY ACCESS EASEMENTS SHOWN.
2. CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAN THE ORIGINAL SITE, OR AS NOTED.
3. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE ONLY. EXACT LOCATIONS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. AT LEAST THREE DAYS PRIOR TO CONSTRUCTION, CONTRACTOR MUST NOTIFY EXISTING UTILITY OWNERS. CALL 811 BEFORE YOU DIG.
4. ALL WORK NEAR AND AROUND WATERWAYS MUST CONFORM TO THE RULES OF THE STATE OF NORTH CAROLINA.
5. CONTRACTOR MUST PROVIDE EROSION CONTROL DEVICES TO CONTROL RUNOFF FROM THE CONSTRUCTION SITE. CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES THAT MAY BE LEVIED DUE TO POLLUTION CREATED DURING CONSTRUCTION.
6. CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY REGULATIONS PERTAINING TO CONSTRUCTION OPERATIONS.
7. SEWER FORCE MAINS AND WATER LINES SHALL HAVE 3'-0" MINIMUM COVER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
8. WATER AND SEWER LINES SHALL HAVE A MINIMUM 10' HORIZONTAL SEPARATION OR A MINIMUM 18" VERTICAL SEPARATION WITH THE WATER OVER SEWER, OR BOTH WATER AND SEWER LINES SHALL BE DUCTILE IRON PIPE 10' EITHER SIDE OF THE CROSSING.
9. SEWER AND STORM SEWER LINES SHALL HAVE A MINIMUM 12" VERTICAL SEPARATION.
10. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
11. UNLESS OTHERWISE NOTED, ALL BURIED PIPE SHALL BE INSTALLED WITH PUSH-ON JOINTS AND EXPOSED PIPING SHALL BE FLANGED JOINT.
12. LEGAL DESCRIPTIONS FOR PROPOSED EASEMENTS BY OTHERS.
13. SITE TOPOGRAPHIC AND BOUNDARY SURVEY PROVIDED BY SURVEYOR NOTED ON PLANS.
14. CONTRACTOR SHALL NOTIFY THE PROPER LOCAL AUTHORITIES 24 HOURS PRIOR TO ANY ROAD BEING CLOSED FOR CONSTRUCTION, INCLUDING BUT NOT LIMITED TO LOCAL NEWSPAPER, RADIO STATION, FIRE DEPARTMENT, COUNTY SHERIFF'S DEPARTMENT, AMBULANCE, AND COUNTY EMERGENCY AGENCY. ALL TRAFFIC CONTROL SHALL CONFORM TO THE REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.
15. CONTRACTOR SHALL NOTIFY THE ENGINEER AFTER EXISTING BURIED UTILITIES HAVE BEEN LOCATED AND 24 HOURS PRIOR TO CONSTRUCTION.
16. LOCATIONS SHOWN FOR SANITARY SEWER SERVICES ARE ASSUMED. COORDINATE LOCATIONS OF ALL PROPOSED SEWER SERVICE CONNECTIONS WITH PROPERTY OWNER PRIOR TO CONSTRUCTION.
17. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED MANHOLE TOP ELEVATIONS AND EXISTING MANHOLE INVERTS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL ADJUST ALL PROPOSED SEWER STRUCTURES TO MATCH FINISHED PAVEMENT ELEVATIONS. COSTS OF RAISING STRUCTURES SHALL BE CONSIDERED INCIDENTAL TO OTHER WORK ON THE PROJECT.
18. MANHOLES AND CASTINGS SHALL MEET THE REQUIREMENTS OF OWNER AS WELL AS THE PROJECT SPECIFICATIONS.
19. 4" SANITARY SEWER SERVICE LINES SHALL BE INSTALLED AT 2.0% MINIMUM SLOPE AND SHALL BE DUCTILE IRON IN PAVED AREAS.
20. ALL FENCE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIALS IN A WORKMANLIKE MANNER AND IN ACCORDANCE WITH STANDARD FENCE CONSTRUCTION PRACTICES AT THE CONTRACTOR'S EXPENSE.
21. CONTRACTOR SHALL FIELD LOCATE ALL BURIED TELEPHONE LINE IN CONFLICT WITH THE PROPOSED UTILITY LINE. WHERE NECESSARY, EXISTING BURIED TELEPHONE LINE SHALL BE TEMPORARILY MOVED DURING CONSTRUCTION OF THE PROPOSED UTILITY LINE AND RE-LAID AT NO ADDITIONAL COST TO THE OWNER.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS DURING CONSTRUCTION AND SHALL REPAIR ROADS PER REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. NO OPEN CUTS OF EXISTING ROADS SHALL BE ALLOWED EXCEPT WHERE INDICATED ON THE DRAWINGS OR WHERE SPECIFIC PERMISSION IS GRANTED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. SAND OR A SIMILAR MATERIAL APPROVED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SHALL BE PLACED ON THE ROAD TO AID IN THE CLEAN UP AFTER CONSTRUCTION. A MINIMUM OF 2" OF SAND SHALL BE PLACED ON THE ROAD PRIOR TO STOCKPILING SPOIL MATERIAL ON THE ROAD SURFACE TO FACILITATE CLEANUP.



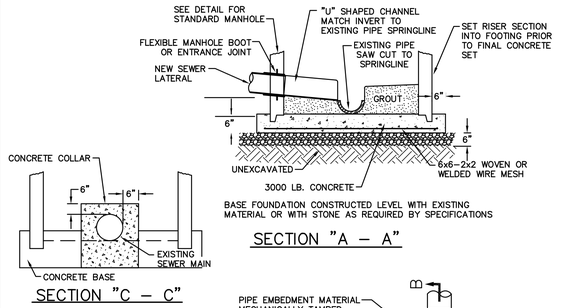
ELEVATION VIEW

PRECAST MANHOLE NOTES:

1. ALL PRECAST MANHOLE COMPONENTS SHALL MEET REQUIREMENTS OF ASTM C-478, LATEST REVISION.
2. ALL MANHOLES SHALL BE CONSTRUCTED PLUMB
3. ALL MANHOLE GRADES SHOWN ON THE PLANS ARE FOR THE INVERT OF THE MANHOLE CENTER.
4. IF MANHOLE IS SET IN LOCATION OF HIGH WATER TABLE OR UNDERGROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL INSTALL UNDERDRAINS AND STONE AS DIRECTED IN THE FIELD BY THE ENGINEER.
5. STEPS SHALL BE INSTALLED ON STRAIGHT SIDE OF MANHOLE.

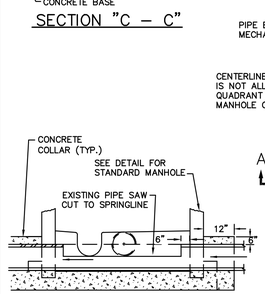
PRECAST CONCRETE MANHOLE

REVISION DATE - NOVEMBER 3, 2008



SECTION "A – A"

SECTION "C – C"



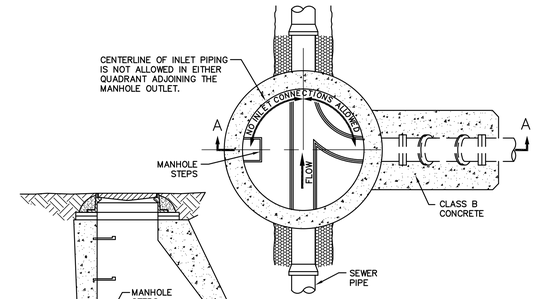
SECTION "B – B"

SECTIONAL PLAN

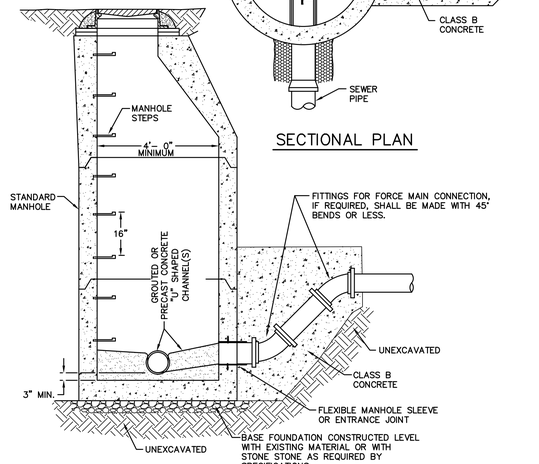
NOTES:
1. THIS DETAIL MUST BE USED FOR CONSTRUCTION OF ALL MANHOLES OVER EXISTING SEWER MAINS.
2. LATERALS 6" AND LARGER SHALL BE CONNECTED AT MANHOLES ONLY.
3. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
4. MANHOLE BASE SHALL BE CAST IN PLACE.

NEW MANHOLE CONSTRUCTED OVER EXISTING SEWER PIPE

REVISION DATE - NOVEMBER 3, 2008



SECTIONAL PLAN

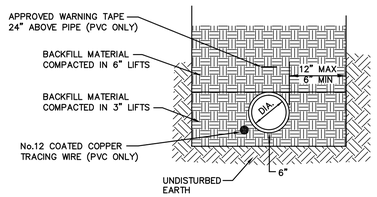


NOTE: IF FORCE MAIN CONNECTION IS MADE TO EXISTING MANHOLE, INVERT FOR FORCE MAIN SHALL BE CONSTRUCTED ON TOP OF EXISTING INVERT BENCH

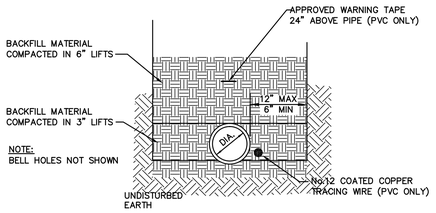
SECTION A-A

FORCE MAIN CONNECTION

REVISION DATE - NOVEMBER 3, 2008



OVERCUT EXCAVATION



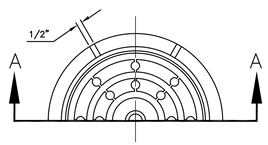
STANDARD EXCAVATION

NOTES:
1. CONSTRUCTION OF TRENCHES SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS WHICH HAVE JURISDICTION AT THE PROJECT SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE APPLICABLE REGULATIONS AND FOLLOW THEM ACCORDINGLY.

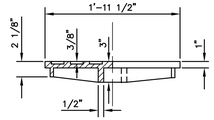
TYPICAL TRENCHING DETAILS

SEWER FORCE MAIN

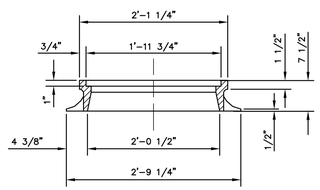
REVISION DATE - NOVEMBER 3, 2008



HALF PLAN OF MANHOLE RING & COVER



SECTION A-A MANHOLE COVER

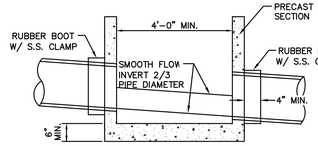


SECTION A-A MANHOLE RING

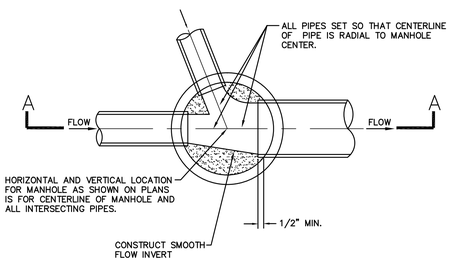
NOTE: TRAFFIC BEARING RING AND COVER. MINIMUM WEIGHT 315 POUNDS

MANHOLE RING & COVER

REVISION DATE - NOVEMBER 3, 2008



SECTION A-A

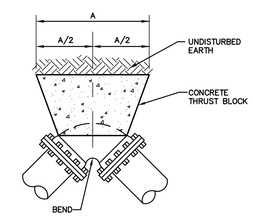


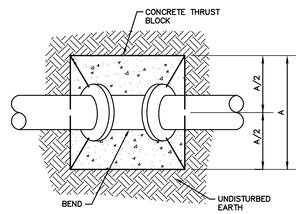
PLAN

NOTE: MANHOLES ON PLANS NOTED AS HIGH VELOCITY MANHOLES SHALL RECEIVE TWO COATS OF SIKAGARD 62, HIGH-BUILD, EPOXY RESIN COATING OR APPROVED EQUAL ON INVERT CHANNEL.

MANHOLE INVERTS

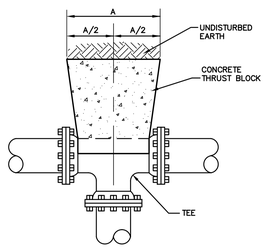
REVISION DATE - NOVEMBER 3, 2008

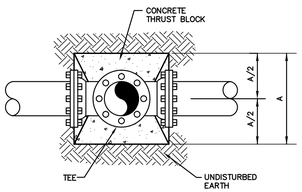




TYPICAL THRUST BLOCKS FOR BENDS

REVISION DATE - NOVEMBER 3, 2008





TYPICAL THRUST BLOCKS FOR TEES

REVISION DATE - NOVEMBER 3, 2008

NOTES:
1. FITTING JOINTS SHALL NOT BE POURED IN CONCRETE OR HAVE CONCRETE SPILLED ON THE BOLTS OR NUTS. THE FITTING SHALL BE WRAPPED IN A LAYER OF POLYETHYLENE PLASTIC PRIOR TO POURING THE THRUST BLOCK.
2. ROD AND EYE BOLT DIAMETER SHALL BE A MINIMUM OF 3/4" AND SHALL MATCH THE SIZE OF THE BOLT PROVIDED WITH THE FITTING.
3. CONTRACTOR SHALL REPLACE FITTING BOLTS WITH THREADED ROD FOR 1/2 OF THE BOLTS SUPPLIED WITH EACH FITTING. RODS SHALL BE EQUALLY SPACED.

SIZE	TYPE					
	11-1/4° BEND	22-1/2° BEND	45° BEND	90° BEND	TEE	PLUG
2-6	12	12	12	16	16	14

THRUST BLOCK DIMENSION "A"

REVISION DATE -NOVEMBER 3, 2008

RECORD DRAWING

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By _____ Date 7/23/12

NORTH CAROLINA PROFESSIONAL SEAL 36132 ENGINEER WILLIAM H. SPERRY

McGill Associates
ENGINEERING·PLANNING·FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH. (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
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FILE NAME: RD\2009\09.00721\Design\Solid Waste\Drawings\Record Drawings\RD 09.00721-C-505-Miscellaneous-Details.dwg

MISCELLANEOUS DETAILS

SHEET
C-505

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LIGHTING MOUNTING AS NOTED

SYMBOL	DESCRIPTION
	CEILING MOUNTED FLUORESCENT FIXTURE; LETTER INSIDE OR BESIDE DENOTES FIXTURE TYPE
	CEILING MOUNTED FLUORESCENT LIGHTING FIXTURE, WIRED FOR NORMAL/STANDBY POWER OPERATION; LETTER INSIDE OR BESIDE FIXTURE DENOTES FIXTURE TYPE
	WALL MOUNTED FLUORESCENT FIXTURE
	CEILING MOUNTED INCANDESCENT OR H.I.D. FIXTURE
	WALL MOUNTED INCANDESCENT OR H.I.D. FIXTURE
	POLE STANDARD LIGHT FIXTURE UNIT – SINGLE ARM
	POLE STANDARD LIGHT FIXTURE UNIT – DOUBLE ARM
	POLE LANTERN TYPE LIGHT FIXTURE UNIT
	EXIT SIGN
	EXIT SIGN (DOUBLE FACE)
	EXIT SIGN WITH DIRECTIONAL ARROW
	EMERGENCY BATTERY PACK UNIT
	REMOTE HEAD FOR EMERGENCY BATTERY PACK UNIT

SWITCHING

SYMBOL	MOUNTING	DESCRIPTION
S	48"AFF	SWITCH, SINGLE POLE
S_2	48"AFF	SWITCH, DPDT
S_3	48"AFF	SWITCH, 3–WAY
S_4	48"AFF	SWITCH, 4–WAY
S_{DM}	48"AFF	SWITCH, DIMMER
S_P	48"AFF	SWITCH WITH PILOT LIGHT
S_M	48"AFF	SWITCH, MANUAL MOTOR STARTER, RATING AND THERMAL OVERLOADS TO MATCH MOTOR NAME PLATE DATA
S_{MI}	48"AFF	SWITCH, MANUAL MOTOR STARTER WITH IVORY, ILLUMINATED HANDLE
S_{MP}	48"AFF	SWITCH, MANUAL MOTOR STARTER WITH PILOT LIGHT
S_F	48"AFF	MANUAL MOTOR STARTER SWITCH FRACTIONAL HORSEPOWER
	AS NOTED	PHOTOELECTRIC CONTROL
R1	48"AFF	LIGHTING CONTACTOR (R1 – DESIGNATION)
LC–1		LIGHTING CONTACTOR REMOTE PUSH–BUTTON "ON–OFF" CONTROL (LC–1 – REPRESENTS LIGHTING CONTACTOR BEING CONTROLLED)
DS	AS NOTED	DOOR SWITCH
MC	AS NOTED	MOTION CONTROL
M	CEILING	MOTION SENSOR
OS	CEILING	OCCUPATION SENSOR

INTRUSION ALARM SYSTEM

SYMBOL	MOUNTING	DESCRIPTION
D	AS NOTED	INTRUSION ALARM MAGNETIC DOOR CONTACTS
K	48"AFF	INTRUSION ALARM KEY PAD
M	AS NOTED	INTRUSION ALARM MOTION DETECTOR
D EXP	AS NOTED	INTRUSION ALARM MAGNETIC DOOR CONTACTS, EXPLOSION PROOF
	AS NOTED	INTRUSION ALARM BELL
IACP	48"AFF	INTRUSION ALARM CONTROL PANEL

TELECOMMUNICATION

SYMBOL	MOUNTING	DESCRIPTION
AD	AS NOTED	AUTO DIALER
#	36"AFF	PHONE PORT (# = NUMBER OF VOICE PORTS)
#	36"AFF	DATA PORT (# = NUMBER OF DATA PORTS)
# #	36"AFF	COMBINATION DATA/PHONE PORT (# = NUMBER OF DATA PORTS/VOICE PORTS)
#	FLOOR	PHONE PORT– FLOOR BOX–FLUSH (# = NUMBER OF DATA PORTS/VOICE PORTS)

HVAC

SYMBOL	MOUNTING	DESCRIPTION
M	AS NOTED	MOTOR OPERATED DAMPER
	AS NOTED	UNIT HEATER
T	48"AFF	THERMOSTAT; FURNISHED AND INSTALLED UNDER DIVISION 15 WIRED UNDER DIVISION 16

POWER

SYMBOL	MOUNTING	DESCRIPTION
WP C	36"AFF	DUPLEX RECEPTACLE, 20A RATED FOOTNOTE DELINEATES SPECIFIC DEVICE (C – DENOTES MOUNTED 6" ABOVE COUNTERTOP REQUIREMENT – SEE ABBREVIATIONS)
	36"AFF	SPECIAL PURPOSE OUTLET (SIZE INDICATED ON PLANS)
	36"AFF	SINGLE RECEPTACLE, 20A RATED
	36"AFF	DUPLEX RECEPTACLE–FLUSH–WITH GROUND FAULT CIRCUIT INTERRUPTER
	36"AFF	DOUBLE DUPLEX RECEPTACLE, 20A RATED
	18"AFF	DUPLEX RECEPTACLE–FLUSH – SURGE–PROTECTIVE DEVICE (SPD)
	FLOOR	DUPLEX RECEPTACLE– FLOOR BOX–FLUSH
SPD	FLOOR	DUPLEX RECEPTACLE– FLOOR BOX–FLUSH – SURGE–PROTECTIVE DEVICE (SPD)
SPD	FLOOR	COMBINATION DUPLEX RECEPTACLE (SPD)/VOICE OUTLET PORT– (# DESIGNATES NUMBER OF VOICE PORTS) – FLOOR BOX–FLUSH
MSE	48"AFF	COMBINATION DISCONNECT SWITCH/MOTOR STARTER (MSE – DESIGNATION)
	AS NOTED	MOTOR (HORSEPOWER INDICATED ON PLANS)
	AS NOTED	JUNCTION BOX
T T–1		TRANSFORMER (T–1 – DESIGNATION)
CM	AS NOTED	CIRCUIT MONITOR
VR 2	AS NOTED	VOLTAGE REGULATOR
SPD	AS NOTED	SURGE–PROTECTIVE DEVICE
	48"AFF	EMERGENCY POWER SHUT–OFF SWITCH
H	48"AFF	LOCKABLE ON–OFF–AUTO SELECTOR SWITCH W/RED INDICATOR LIGHT
DSA	48"AFF	DISCONNECT SWITCH (DSA – DESIGNATION)
480V 50KVA 120V		TRANSFORMER (50KVA – SIZE; 480V 120V – VOLTAGES)
		SHIELDED ISOLATION TYPE TRANSFORMER

PANELBOARDS

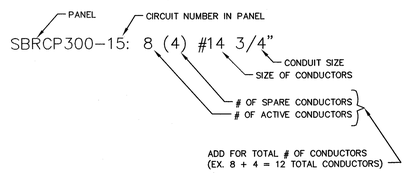
SYMBOL	MOUNTING	DESCRIPTION
	TOP BREAKER 6'–0"AFF	NEW PANELBOARD – SURFACE MOUNTED
	TOP BREAKER 6'–0"AFF	NEW PANELBOARD – FLUSH MOUNTED
	---	EXISTING PANELBOARD – SURFACE MOUNTED
	---	EXISTING PANELBOARD – FLUSH MOUNTED

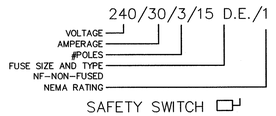
TYPICAL ANNOTATION

1	DRAWING KEYNOTE
1	DEMOLITION KEYNOTE
1	REVISION TAG
	REVISION CLOUD
AAA ###	INSTRUMENTATION TAG
CGMDP–701	PROCESS EQUIPMENT TAG
SF HW1	HVAC EQUIPMENT TAG
4X	AREA NEMA DESIGNATION TAG

PROCESS & INSTRUMENTATION LEGEND

CIRCUIT TAG DESCRIPTIONS:





NOTES:
1. INSTALL ALL FUSES SO THAT LABELS ARE RIGHT–SIDE UP AND FACING OUTWARD.
2. INSTALL OXIDATION INHIBITING COMPOUND SUCH AS PENETROX IN ALL FUSE CLIPS OF SAFETY SWITCHES LOCATED OUTDOORS OR IN WET ENVIRONMENTS.

SAFETY SWITCH DESIGNATOR

NOT TO SCALE

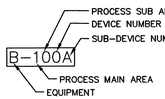
CONDUIT FEEDERS AND BRANCH CIRCUITS

SYMBOL	DESCRIPTION
E E	OVERHEAD ELECTRIC SERVICE
PE PE	OVERHEAD PRIMARY ELECTRIC SERVICE
SE SE	OVERHEAD SECONDARY ELECTRIC SERVICE
T T	OVERHEAD TELEPHONE SERVICE
FO FO	OVERHEAD FIBER OPTIC
CTV CTV	OVERHEAD TELEVISION SERVICE
	CONDUIT – EMBEDDED IN FLOOR OR EARTH
EU	UNDERGROUND ELECTRIC SERVICE
PEU	UNDERGROUND PRIMARY ELECTRIC SERVICE
SEU	UNDERGROUND SECONDARY ELECTRIC SERVICE
TU	UNDERGROUND TELEPHONE SERVICE
FOU	UNDERGROUND FIBER OPTIC
CTVU	UNDERGROUND TELEVISION SERVICE
	CONDUIT – IN WALL, CEILING OR EXPOSED
XX XX	CONDUIT WITH IDENTIFIER
	CONDUIT TURNED UP
	CONDUIT TURNED DOWN
	CONDUIT CAPPED
	BRANCH CIRCUIT WIRING
	CIRCUIT HOME RUN
1	IN–LINE HOME RUN (1 – CIRCUIT NUMBER)
E E	EMERGENCY ONLY CIRCUIT
NE NE	NORMAL EMERGENCY CIRCUIT
	DEVICES ON SAME CIRCUIT, SEPARATELY CONTROLLED
F2	ELECTRIC FEEDER LEGEND INDICATION

FIRE ALARM SYSTEM

SYMBOL	MOUNTING U.O.N.	DESCRIPTION
FACP	48"AFF	FIRE ALARM CONTROL PANEL
FAA	AS NOTED	FIRE ALARM ANNUNCIATOR
A	AS NOTED	FIRE ALARM AUDIBLE/VISIBLE SIGNAL WALL MOUNTED AT 6'–8" A.F.F. OR 6" BELOW CEILING; WHICHEVER IS LOWER
F	48"AFF	FIRE ALARM MANUAL PULL STATION
S	CEILING	FIRE ALARM SMOKE DETECTOR
H	CEILING	FIRE ALARM HEAT DETECTOR, FIXED TYPE
A EXP	AS NOTED	FIRE ALARM AUDIBLE ALARM, EXPLOSION PROOF WALL MOUNTED AT 6'–8" A.F.F. OR 6" BELOW CEILING; WHICHEVER IS LOWER
V EXP	AS NOTED	FIRE ALARM VISIBLE ALARM, EXPLOSION PROOF, WALL MOUNTED AT 6'–8" A.F.F. OR 6" BELOW CEILING; WHICHEVER IS LOWER
F EXP	48"AFF	FIRE ALARM MANUAL PULL STATION, EXPLOSION PROOF
H EXP	CEILING	FIRE ALARM HEAT DETECTOR, FIXED TYPE, EXPLOSION PROOF
TS	48"AFF	FIRE SUPPRESSION SYSTEM TAMPER SWITCH
FS	48"AFF	FIRE SUPPRESSION SYSTEM FLOW SWITCH
PS	48"AFF	FIRE SUPPRESSION SYSTEM PRESSURE SWITCH

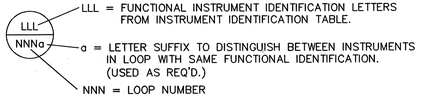
PROCESS EQUIPMENT TAGGING



EQUIPMENT:

AC	AIR COMPRESSOR	MX	MIXER
B	BLOWER	P	PUMP
C	COMMINUTOR	S	SAMPLER
CFD	CHEMICAL FEEDER	SC	SCREEN
CP	CONTROL PANEL	SV	SOLENOID VALVE
D	DECANTER	T	TANK
DPC	DEFINITE PURPOSE CONTACTOR	V	VALVE
G	GRINDER	ZS	POSITION SWITCH

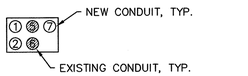
INSTRUMENT & FUNCTION TAGGING



ABBREVIATIONS

A OR AMP	AMPERE	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NPT	NOMINAL PIPE THREADS
A.C.	ALTERNATING CURRENT	GND. or GRD.	GROUND	OE	OVERHEAD ELECTRIC
AF	FRAME AMPERE	H.I.D.	HIGH INTENSITY DISCHARGE	P	# OF POLES IN CIRCUIT BREAKER
A.F.F.	ABOVE FINISHED FLOOR	HP	HORSEPOWER	PH or Ø	PHASE
A.F.G.	ABOVE FINISHED GRADE	H.P.S.	HIGH PRESSURE SODIUM	PM	POWER MONITOR
A.I.C.	AMPERE INTERRUPTING CURRENT	HSPS	HIGH SERVICE PUMP STATION	PMT	PAD MOUNTED TRANSFORMER
AS	AMMETER SELECTOR SWITCH	HVAC	HEAT–VENT–AIR CONDITIONING	PNL	PANEL
AT	TRIP AMPERE	I.G.	ISOLATED GROUND	PSI	POUNDS PER SQUARE INCH
A.T.S.	AUTOMATIC TRANSFER SWITCH	I.D.	INNER DIAMETER	PT	POTENTIAL TRANSFORMER
AUTO	AUTOMATIC	IMC	INTERMEDIATE METAL CONDUIT	PVC	POLYVINYL CHLORIDE
AWG	AMERICAN WIRE GAUGE	IND.	INDUSTRIAL	QTY.	QUANTITY
B.F.G.	BELOW FINISHED GRADE	JB	JUNCTION BOX	RGS	RIGID GALVANIZED STEEL
BLDG.	BUILDING	J.I.C.	JOINT INDUSTRIAL COUNCIL	RVSS	REDUCED VOLTAGE SOLID STATE
C	COUNTERTOP RECEPTACLE	KA	KILOAMPERE	SC	SURGE CAPACITOR
C. or COND.	CONDUIT	KCMIL	1000 CIRCULAR MILS	SCC	SYSTEM CONTROL CENTER
CB	CIRCUIT BREAKER	KV	KILOVOLT	SER	SERVICE ENTRANCE RATED
CKT	CIRCUIT	KVA	KILOVOLT AMPERE	SM	SUB–METER
CP	CONTROL PANEL	KW	KILOWATT	SP	SPARE
CPT	CONTROL PANEL TRANSFORMER	LA	LIGHTNING ARRESTOR	SPD	SURGE–PROTECTIVE DEVICE
CR	CONTROL RELAY	LC	LIGHTING CONTACTOR	S.S.	STAINLESS STEEL
DESIG	DESIGNATION	LTG	LIGHTING	SWBD	SWITCHBOARD
DIA.	DIAMETER	MAX	MAXIMUM	TBA	TO BE ABANDONED
DIV.	DIVISION	MCB	MAIN CIRCUIT BREAKER	TBR	TO BE REMOVED
DPDT	DOUBLE POLE, DOUBLE THROW	mA	MILI–AMP	TCC	TELECOMMUNICATIONS CLOSET
DS	DISCONNECT SWITCH	MC	MANUFACTURER'S CABLE	TDC	TELECOMMUNICATIONS DISTRIBUTION CLOSET
E.C.	ELECTRICAL CONTRACTOR	MCC	MOTOR CONTROL CENTER	TYP.	TYPICAL
EHH	ELECTRIC HANDHOLE	MFR	MANUFACTURER	UE	UNDERGROUND ELECTRIC
EMH	ELECTRIC MANHOLE	MIN.	MINIMUM	UH	UNIT HEATER
EP	EXPLOSION PROOF	M.L.O.	MAIN LUG ONLY	UL	UNDERWRITERS LABORATORY
E.T.R.	EXISTING TO REMAIN	M.O.D.	MOTOR OPERATED DAMPER	U.O.N.	UNLESS OTHERWISE NOTED
EUH	ELECTRIC UNIT HEATER	MS	MOTOR STARTER	UE	UNDERGROUND ELECTRIC
E.W.	EACH WAY	MTD.	MOUNTED	UT	UNDERGROUND TELEPHONE
EX	EXAMPLE	N/A	NOT APPLICABLE	UV	ULTRAVIOLET
EXH	EXHAUST FAN	N.C.	NORMALLY CLOSED	V	VOLT
FU	FUSE	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION	VAC	VOLTS ALTERNATING CIRCUIT
FRE	FIBERGLASS REINFORCED EPOXY			VS	VOLTMETER SELECTOR SWITCH
G.C.	GENERAL CONTRACTOR	NID	NETWORK INTERFACE DEVICE (4 POSITION)	W	WIRE
GEN	GENERATOR	N.O.	NORMALLY OPEN	WP	WEATHERPROOF
		No.	NUMBER	XFMR	TRANSFORMER

DUCTBANK SYMBOL KEY



NOTE: REFER TO DUCTBANK SCHEDULE & PLANS FOR EXACT NUMBER & SIZE OF CONDUITS.

GENERAL NOTES:

A. DRAWINGS ARE DIAGRAMMATIC IN NATURE, CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO INSTALLATION CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DIVISION TRADES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. LOCATE FIXTURES, DEVICES, ETC. IN ORDER TO AVOID INTERFERENCES.
B. ALL WORK SHALL BE PERFORMED AS REQUIRED BY APPLICABLE SECTION OF THE NATIONAL ELECTRICAL CODE, LATEST EDITION, AND ALL GOVERNING LOCAL CODES, LAWS, AND/OR REGULATIONS.
C. SYSTEM AND EQUIPMENT GROUNDING CONTINUITY SHALL BE ASSURED AS REQUIRED BY APPLICABLE SECTIONS OF THE NATIONAL ELECTRICAL CODE.
D. ALL WIRING SHALL BE TYPE "THHN–THWN" U.O.N.; MINIMUM WIRING SHALL BE #12 (POWER WIRE). ALL WIRE SHALL BE COPPER. MINIMUM CONDUIT SIZE FOR METALLIC CONDUIT TO BE 3/4" AND 1" FOR PVC.
E. ALL CIRCUIT PROTECTIVE DEVICES SHALL HAVE THE REQUIRED RATING INTERRUPTING CAPACITY EQUAL TO OR GREATER THAN THE AVAILABLE SHORT–CIRCUIT CURRENT AT ITS SUPPLY TERMINAL; MINIMUM INTERRUPTING CAPACITY. SHALL BE 10,000 AMPS, SYMMETRICAL A.I.C. FOR 120/208V SYSTEMS AND 14,000 AMPS, SYMMETRICAL A.I.C. FOR 277/480V SYSTEMS. REFER TO PANEL SCHEDULES FOR A.I.C. RATINGS.
F. ALL OUTDOOR EXPOSED CONDUIT TO BE PVC COATED RGS. TRANSITION FROM UNDERGROUND TO EXPOSED SHALL BE PVC COATED RGS.
G. ALL UNDERGROUND CONDUITS TO BE SCHEDULE 40 PVC UNLESS OTHERWISE INDICATED. ALL CONDUITS SHALL INCLUDE A NYLON PULL CORD.

INSTRUMENT IDENTIFICATION TABLE

ISA–S5.1–1984

LETTER	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (2)		ALARM		
B	BURNER, COMBUSTION			CLOSE, STOP, DECREASE (1)	OFF (1)
C				CONTROL	
D		DIFFERENTIAL		OPEN, START, INCREASE (1)	
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		ENABLED (1)
F	FLOW RATE	RATIO (FRACTION)			FAIL (1)
G			GLASS, VIEWING DEVICE		
H	HAND				HIGH (OPENED)
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW (CLOSED)
M	MOTOR, MOTION (1)	MOMENTARY		MOTOR (1)	MIDDLE OR INTERMEDIATE
N					ON OR OPERATE (1)
O			ORIFICE, RESTRICTION		OVERLOAD (1)
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION	PUMP (1)	
Q	QUANTITY (2)	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY OR SOLENOID		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (2)		MULTIFUNCTION (2)	MULTIFUNCTION (2)	MULTIFUNCTION (2)
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED, (2)		UNCLASSIFIED (2)	UNCLASSIFIED (2)	UNCLASSIFIED (2)
Y	EVENT, STATE, PRESENCE			RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION			DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

(1) USER'S CHOICE
(2) WHEN USED, SYMBOL OR SIGNAL LINE IS INDICATED.

RECORD DRAWING

This Drawing has been modified to reflect changes made during construction based upon information provided by the Contractor and construction observations made by the Owner's Authorized Representative.

By Phillip A. Fisher Date 7.23.12

NORTH CAROLINA PROFESSIONAL SEAL 18684 ENGINEER PHILLIP A. FISHER

McGill Associates
Engineering·Planning·Finance
55 Broad Street Asheville, NC 28801 PH. (828) 252-0575 Firm License # C-0459

FRANCIS FARM LANDFILL
GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

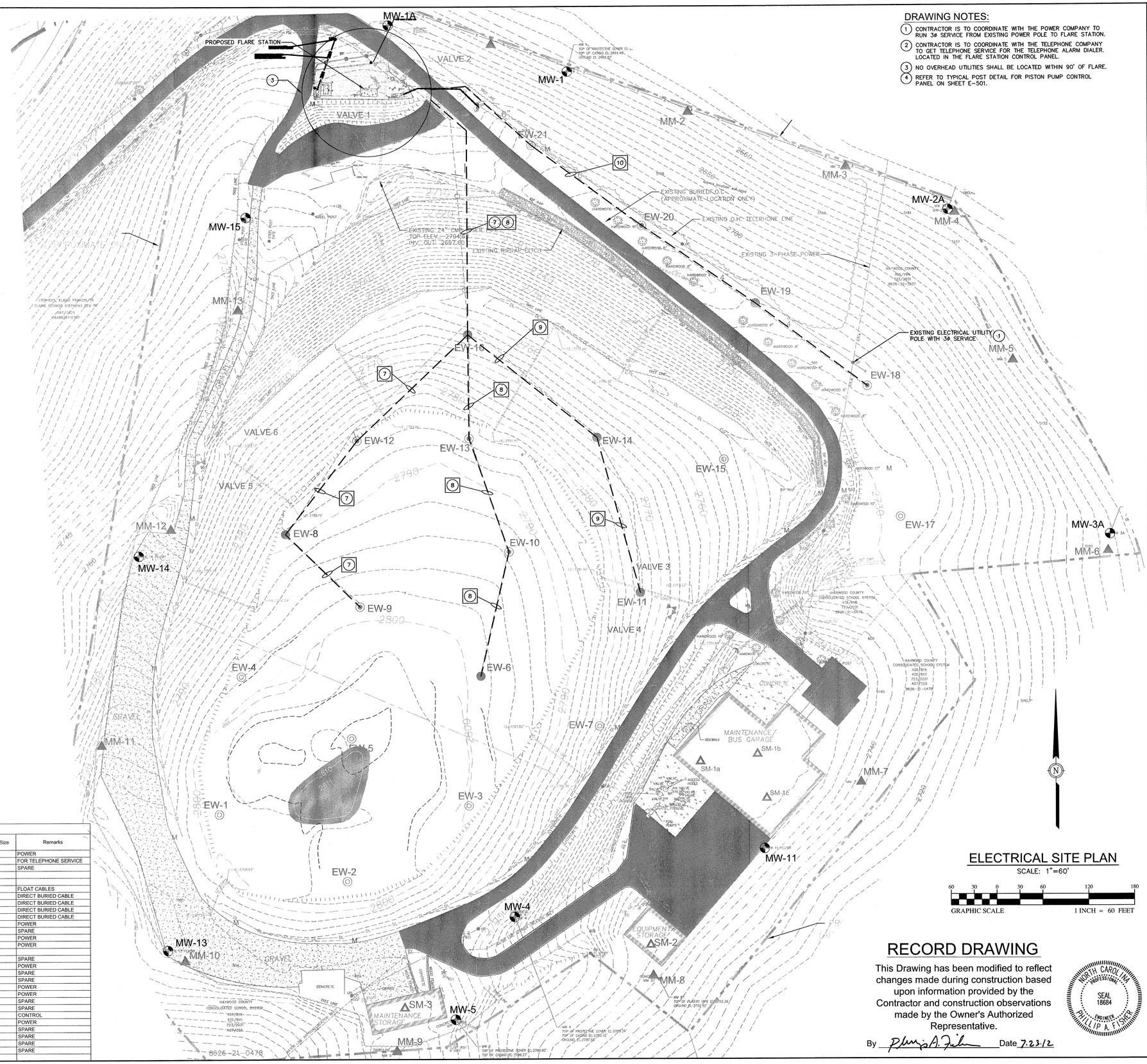
JOB NO.: 09.00721
DATE: NOVEMBER 2009
DESIGNED BY: DLG
CADD BY: SAR
DESIGN REVIEW: PAF
CONST. REVIEW: ____
FILE NAME:
RD - 09.00721-E-001.dwg

ELECTRICAL LEGEND, NOTES, SCHEDULES, AND ABBREVIATIONS

SHEET
E-001

DRAWING NOTES:

1. CONTRACTOR IS TO COORDINATE WITH THE POWER COMPANY TO RUN 3ø SERVICE FROM EXISTING POWER POLE TO FLARE STATION.
2. CONTRACTOR IS TO COORDINATE WITH THE TELEPHONE COMPANY TO GET TELEPHONE SERVICE FOR THE TELEPHONE ALARM DIALER. LOCATED IN THE FLARE STATION CONTROL PANEL.
3. NO OVERHEAD UTILITIES SHALL BE LOCATED WITHIN 90' OF FLARE.
4. REFER TO TYPICAL POST DETAIL FOR PISTON PUMP CONTROL PANEL ON SHEET E-501.



ELECTRICAL SITE PLAN

SCALE: 1"=60'

60 30 0 30 60 120 180

GRAPHIC SCALE 1 INCH = 60 FEET

RECORD DRAWING

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By _____ Date 7.23.12

NORTH CAROLINA PROFESSIONAL SEAL 18684 ENGINEER PHILIP A. FISHER

Ductbank Conduit Schedule

Conduit Tag No.	From	To	Conduit/Wiring Legend No.	Conduit Size	Remarks
1	SERVICE POLE	METERBASE	REFER TO ONE-LINE	2"	POWER
2	SERVICE POLE	METERBASE	CONDUIT ONLY	2"	FOR TELEPHONE SERVICE
3	SERVICE POLE	TELEPHONE INTERFACE	CONDUIT ONLY	2"	SPARE
4	PSCP	PUMP #1	PSCP-1	2"	
5	PSCP	PUMP #2	PSCP-2	2"	
6	PSCP	WETWELL	PSCP-3,4,5,6	4-1"	FLOAT CABLES
7	PANEL M	EW-12, EW-9, EW-8	M-7, 9, 11	N/A	DIRECT BURIED CABLE
8	PANEL M	EW-16, EW-13, EW-10, EW-6	M-8, 10 ,12	N/A	DIRECT BURIED CABLE
9	EW-16	EW-14, EW-11	M-8, 10 ,12	N/A	DIRECT BURIED CABLE
10	PANEL M	EW-21, EW-20, EW-19, EW-18	M-13, 15, 17	N/A	DIRECT BURIED CABLE
11	PANEL LP	FUTURE GENERATOR NO. 1	LP-1,3	1"	POWER
12	PANEL LP	FUTURE GENERATOR NO. 1	CONDUIT ONLY	1"	SPARE
13	CONDENSATE PUMP CONTROL PANEL	KNOCKOUT POT	3-#10&1-#10 GND	1"	POWER
14	PANEL M	FLARE STATION CONTROL PANEL	M-1,3,5	1"	POWER
15	TELEPHONE INTERFACE	FLARE STATION CONTROL PANEL	CAT 3	1"	
16	EQUIPMENT RACK	FLARE STATION CONTROL PANEL	CONDUIT ONLY	1"	SPARE
17	UTILITY POLE FOR GENERATORS	GENERATOR EQUIPMENT RACK	SEE ONE LINE	3"	POWER
18	UTILITY POLE FOR GENERATORS	GENERATOR EQUIPMENT RACK	CONDUIT ONLY	3"	SPARE
19	FLARE STATION CONTROL PANEL	GENERATOR EQUIPMENT RACK	CONDUIT ONLY	2"	SPARE
20	PANEL LP	AREA LUMINAIRE	LP-4	3/4"	POWER
21	PANEL LP	AREA LUMINAIRE	LP-4	3/4"	POWER
22	GENERATOR EQUIPMENT RACK	FUTURE GENERATOR NO. 1	CONDUIT ONLY	3"	SPARE
23	GENERATOR EQUIPMENT RACK	FUTURE GENERATOR NO. 1	CONDUIT ONLY	3-1"	SPARE
24	PUMP STATION CONTROL PANEL	FLOW METER	PSCP-7	3/4"	CONTROL
25	PANEL LP	FLOW METER	LP-6	3/4"	POWER
26	ELECTRICAL EQUIPMENT RACK	FUTURE GENERATOR NO. 2	CONDUIT ONLY	3"	SPARE
27	GENERATOR EQUIPMENT RACK	FUTURE GENERATOR NO. 2	CONDUIT ONLY	3"	SPARE
28	GENERATOR EQUIPMENT RACK	FUTURE GENERATOR NO. 2	CONDUIT ONLY	3-1"	SPARE
29	ELECTRICAL EQUIPMENT RACK	FUTURE GENERATOR NO. 2	CONDUIT ONLY	3-1"	SPARE

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FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3

HAYWOOD COUNTY

HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: NOVEMBER 2009
DESIGNED BY: DLG
CADD BY: SAR
DESIGN REVIEW: PAF
CONST. REVIEW: _____
FILE NAME: RD - 09.00721-E-101.dwg

ELECTRICAL SITE PLAN

SHEET
E-101

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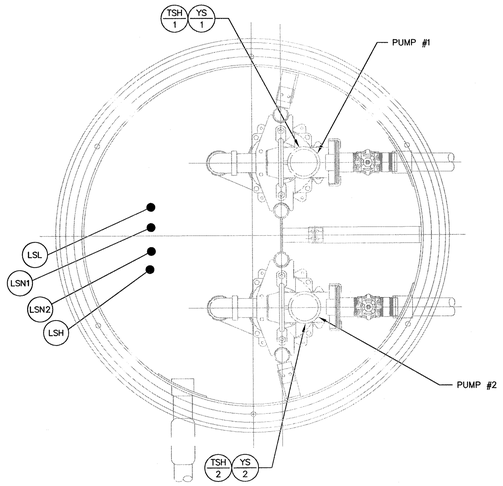
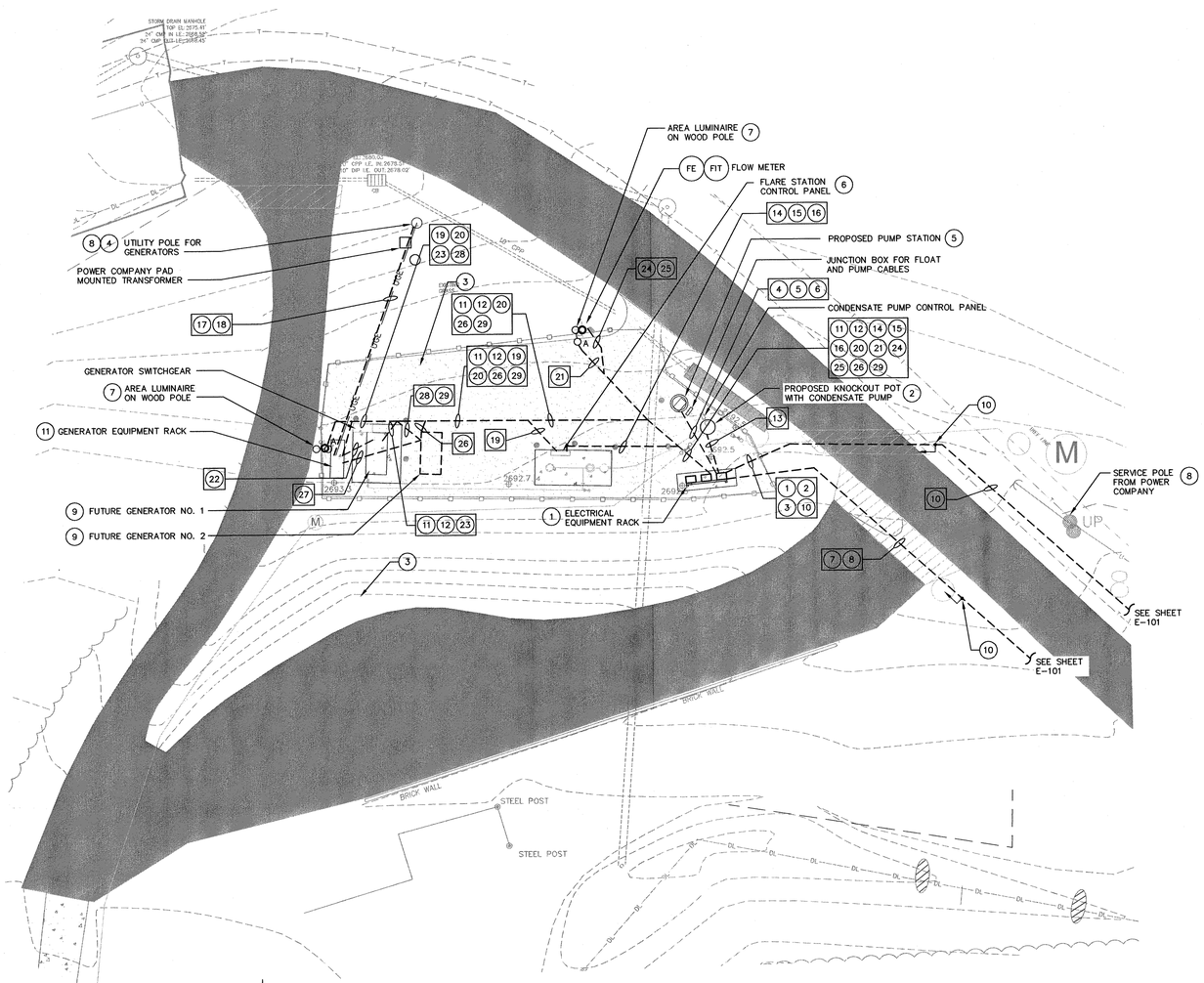


PUMP STATION PLAN VIEW

NOT TO SCALE

DRAWING NOTES:

1. FOR EQUIPMENT ORIENTATION REFER TO ELECTRICAL EQUIPMENT RACK DETAIL ON SHEET E-501.
2. REFER TO TYPICAL POST DETAIL FOR PISTON PUMP CONTROL PANEL ON SHEET E-501.
3. CONTRACTOR TO COORDINATE THE REMOVAL OF EXISTING UTILITY POLES.
4. CONTRACTOR TO COORDINATE WITH THE POWER COMPANY FOR THE INSTALLATION OF THE UTILITY POLE FOR THE GENERATORS, AS WELL AS, CONNECTING THE GENERATOR CONDUCTORS WITH THE POWER COMPANY CONDUCTORS.
5. SEE PUMP STATION PLAN VIEW ON THIS SHEET.
6. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL THE NECESSARY FIELD WIRING AND RACEWAYS FOR PROPER INSTALLATION OF THE PACKAGED FLARE SYSTEM.
7. SEE LIGHTING POLE DETAIL ON SHEET E-501.
8. CONTRACTOR TO STUB CONDUIT ABOVE THE GROUND AT THE SERVICE POLE AND UTILITY POLE FOR GENERATORS. CONTRACTOR TO PROVIDE AN ADEQUATE AMOUNT OF EXCESS WIRE FOR POWER COMPANY TO RUN THE WIRE UP EACH POLES AND CONNECT THE WIRE WITH THE SERVICE DROP.
9. THE EXACT LOCATIONS OF CONDUIT AND CABLE TERMINATIONS FOR RACEWAYS TERMINATING AT FUTURE GENERATOR WILL BE PROVIDED TO THE CONTRACTOR DURING CONSTRUCTION.
10. PROVIDE 2" CONDUIT SLEEVE FROM POINT INDICATED TO PANEL "M" FOR WELL PUMP CABLES.
11. PROVIDE RACK CONSTRUCTION SIMILAR TO THAT INDICATED FOR THE ELECTRICAL EQUIPMENT RACK. REFER TO DETAIL ON SHEET E-501. IN ADDITION TO EQUIPMENT INDICATED ON THE LANDFILL GAS GENERATOR POWER ONE-LINE, PROVIDE 72" OF CONTINUOUS HORIZONTAL SPACE ON RACK FOR FUTURE EQUIPMENT.
12. PROVIDE #2 COPPER WIRE TO BOND BETWEEN THE GROUNDING ELECTRODE CONDUCTORS FOR THE ELECTRICAL SERVICES FOR THE FLARE STATION AND THE LANDFILL GAS GENERATOR, AS WELL AS, THE STRUCTURAL METAL IN THE FLARE STATION PAD, ALL ELECTRICAL EQUIPMENT RACKS AND CONCRETE PADS, AND THE GENERATOR PAD.



FLARE PAD SITE PLAN

SCALE: 1"=20'

20 10 0 10 20 40 60

GRAPHIC SCALE 1 INCH = 20 FEET

RECORD DRAWING

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By Phillip A. Fisher Date 7.23.12

NORTH CAROLINA PROFESSIONAL SEAL 18684 ENGINEER PHILLIP A FISHER

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DESIGN REVIEW: PAF
CONST. REVIEW: ____
FILE NAME: RD - 09.00721-E-102.dwg

FLARE PAD PLANS

SHEET
E-102

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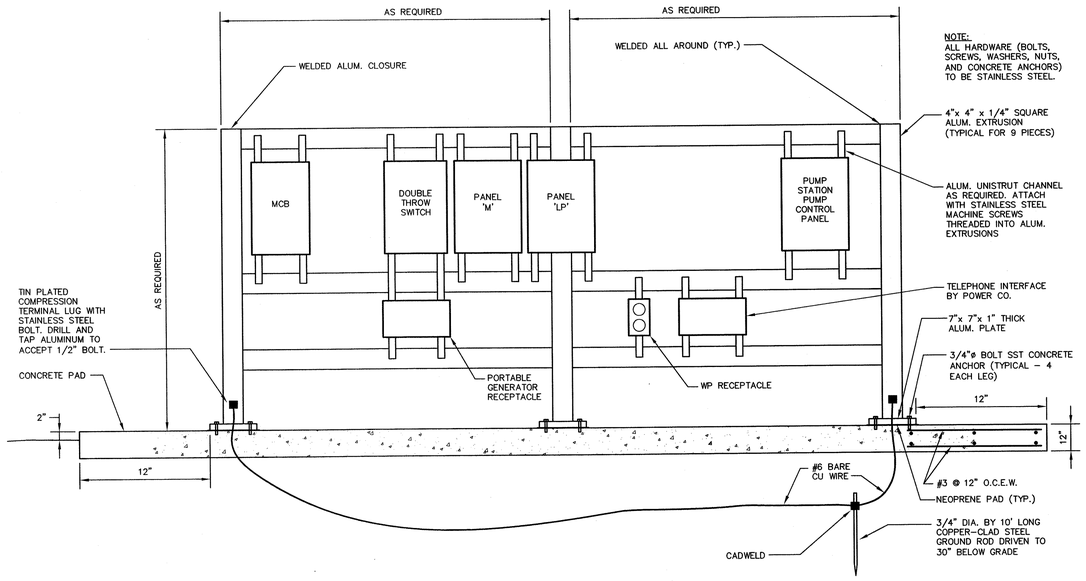
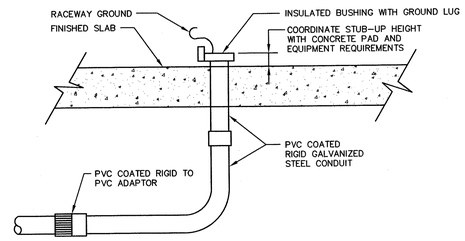
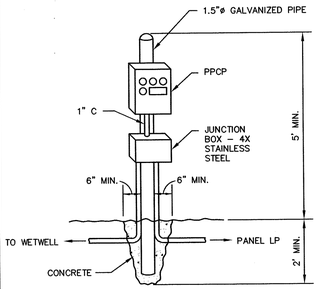


ELECTRICAL EQUIPMENT RACK DETAIL
NOT TO SCALE

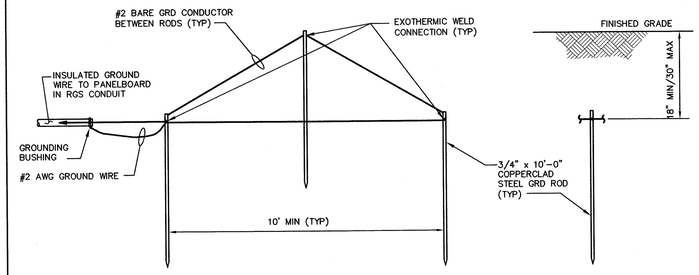


NOTES TO SPECIFIER:
1. THIS DETAIL APPLIES TO ALL UNDERGROUND CONDUITS WHERE PVC IS UTILIZED. PVC SHALL NOT BE EXTENDED ABOVE GRADE UNLESS SPECIFICALLY APPROVED.

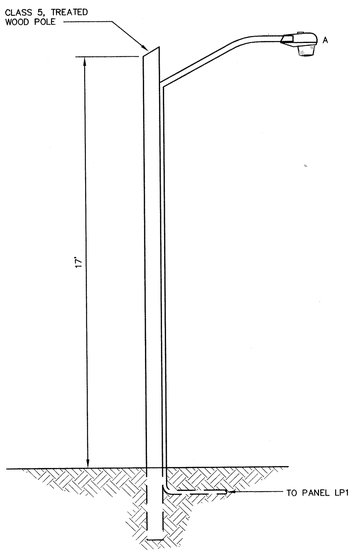
TYPICAL CONDUIT STUB-UP
NOT TO SCALE



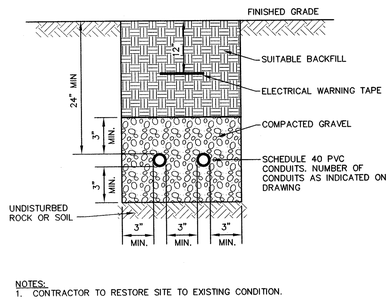
TYPICAL POST DETAIL FOR PISTION PUMP CONTROL PANEL
NOT TO SCALE



GROUNDING COUNTERPOISE DETAIL
NOT TO SCALE



LIGHTING POLE DETAIL
NOT TO SCALE



NOTES:
1. CONTRACTOR TO RESTORE SITE TO EXISTING CONDITION.

TYPICAL SITE ELECTRICAL TRENCH DETAIL
NOT TO SCALE

RECORD DRAWING

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By _____ Date 7.23.12

NORTH CAROLINA PROFESSIONAL SEAL 18684 ENGINEER PHILLIP A. FISHER

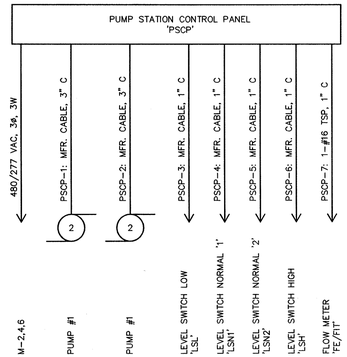
McGill ASSOCIATES
ENGINEERING-PLANNING-FINANCE
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C-0459

FRANCIS FARM LANDFILL
LANDFILL GAS COLLECTION & COMBUSTION SYSTEM
PHASES 1 - 3
HAYWOOD COUNTY
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 09.00721
DATE: NOVEMBER 2009
DESIGNED BY: DLG
CADD BY: SAR
DESIGN REVIEW: PAF
CONST. REVIEW: ____
FILE NAME: RD - 09.00721-E-501.dwg

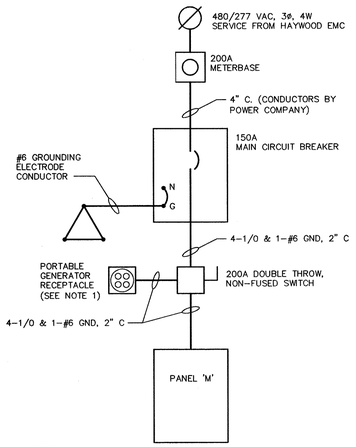
ELECTRICAL DETAILS

SHEET
E-501



PUMP STATION CONTROL PANEL ONE-LINE

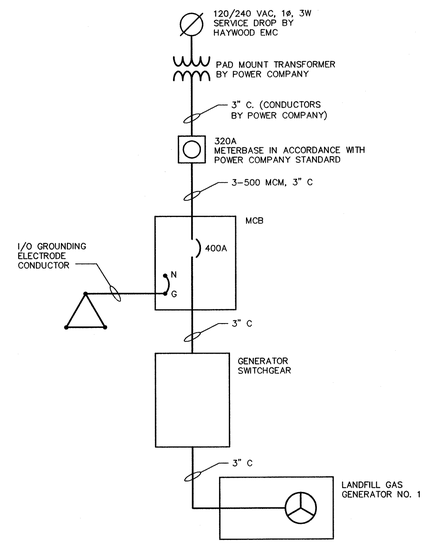
NOT TO SCALE



NOTES:
1. PROVIDE A 200A, 480 VAC, 3ø, 4W, PIN AND SLEEVE PORTABLE GENERATOR RECEPTACLE WITH REVERSE POLARITY.

POWER ONE-LINE

NOT TO SCALE



LANDFILL GAS GENERATOR POWER ONE-LINE

NOT TO SCALE

PANEL LP — MOUNTING SURFACE — LOCATION ELECTRICAL RACK
BUS AMP 100A — PHASE 1 — NEMA TYPE 4X
MIN. A.I.C. 10,000 — WIRE 3
MAIN BREAKER 60A — VOLTAGE 120/240

NOTE PROVIDE WITH INTEGRAL 10 KVA TRANSFORMER

CKT	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT
1	GENERATOR HEATER	20	1	1.2		2	12	12	3/4	3/4	12	12	2	0.18		1	20	RACK RECPTACLES	2
3	GEN. BATTERY CHARGER	20	1		0.6	2	12	12	3/4	3/4	12	12	2		0.37	1	20	AREA LIGHTING	4
5	SPARE	20	1	-						3/4	12	12	2	0.2		1	20	FE/FIT	6
7	SPARE	20	1		-										-	1	20	SPARE	8
9	SPARE	20	1	-											-	1	20	SPARE	10
	SUB-TOTAL LOAD KW			1.2	0.6									SUB-TOTAL LOAD KW					
														TOTAL LOAD KW					
														0.38	0.37				
														1.58	0.97				

PANEL M — MOUNTING SURFACE — LOCATION FLARE STATION SITE
BUS AMP 225A — PHASE 3 — NEMA TYPE 3R
MIN. A.I.C. 10,000 — WIRE 4
MAIN BREAKER 150A — VOLTAGE 480V

NOTE PROVIDE PANELBOARD WITH INTEGRAL SPD.

CKT	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	LOAD (KW) C	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT
1	FLARE STATION CONTROL PANEL	60	3	8.87			3	4	8	1	1	10	10	3	1.77			3	30	PUMP STATION CONTROL PANEL	2
3					8.87											1.77					4
5						8.87											1.77				6
7	WELL PUMPS 8, 9, 12	30	3	1.4			3	6	6	2	2	6	6		-			3	30	SPARE	8
9					1.4											-					10
11						1.4											-				12
13	WELL PUMPS 18,19,20,21	30	3	2.44			3	10	10	1	1	10	10	3	0.55			3	20	CONDENSATE REMOVAL PUMP	14
15					2.44											0.55					16
17						2.44											0.55				18
19	WELL PUMPS 6,10,11,13,14,16	30	3	2.44			3	10	10	3/4	3/4	10	10	3	1			2	30	PANEL LP	20
21					2.44											1					22
23						2.44															24
25																					26
27																					28
29																					30
	SUB-TOTAL LOAD KW			15.1	15.1	15.1					SUB-TOTAL LOAD KW				3.32	3.32	2.33				
											TOTAL LOAD KW				18.5	18.5	17.5				

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER AND CATALOG NO.	MOUNTING	VOLTAGE	LAMPS	BALLASTS/ FIXTURE	WATTS/ FIXTURE
A	AREA LUMINAIRE WITH CUTOFF OPTICS UL LISTED FOR USE IN WET LOCATIONS IES DISTRIBUTION TYPE III	GE M2AC 15 S COOPER HPRC FL 3 150 HUBBELL RM SERIES	WOOD POLE (SEE DETAIL ON E-501)	120V	(1) 150W HPS	1	185

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SCHEDULES AND ONE-LINES

SHEET
E-601