

LEGEND

- 560 — EX. GRADES INDEX (SEE NOTE 1)
- - - EX. GRADES INTERMEDIATE (SEE NOTE 1)
- PROPOSED LIMIT OF CAP SYSTEM
- PROPERTY LINE
- LIMIT OF DISTURBANCE
- TREE LINE
- LANDFILL GAS EXTRACTION WELL SEE DETAIL
- ⊙ BLOWER/FLARE STACK SEE DETAIL
- ▲ SLOTTED COLLECTOR TRENCH WELLHEAD — SEE NOTE 9
- T-5 — 6" SLOTTED SCH 80 PVC LANDFILL GAS COLLECTOR PIPE & TRENCH ID
- 6" SOLID SCH 80 PVC LANDFILL GAS HEADER PIPE
- ▨ AREA INCORPORATING GEOCOMPOSITE GAS TRANSMISSION LAYER
- ▨ AREA INCORPORATING 12-OZ. NON-WOVEN GEOTEXTILE GAS TRANSMISSION LAYER

NOTES:

1. CONTOURS INSIDE THE LIMIT OF CAP CONSTRUCTION REPRESENT THE TOP OF FINAL GRADE CONTOURS. IN ORDER TO AVOID OFF-SITE DISPOSAL OF WASTE, THE CONTRACTOR SHALL INSTALL THE GAS EXTRACTION WELLS DURING SUBGRADE PREPARATION OR THE CONTRACTOR SHALL LEAVE AN AREA OF SUBGRADE FILL TEMPORARILY LOW DURING SUBGRADE FILLING TO ENABLE ON-SITE DISPOSAL OF WASTE EXHUMED DURING GAS WELL INSTALLATION.
2. IF EXISTING GAS WELLS CANNOT BE LOCATED OR CANNOT BE INCORPORATED INTO DESIGN AS SHOWN IN DETAIL #5 ON SHEET C-12, A NEW WELL MUST BE CONSTRUCTED WITHIN 5' OF EXPECTED LOCATION OF EXISTING WELL.
3. REFER TO THE CHART ON C-15 FOR WELL DEPTHS AND LOCATIONS.
4. ALL EXISTING TOPOGRAPHIC ELEVATIONS AND CONTOURS SHOWN ON THE CONTRACT DRAWINGS ARE BASED UPON A COMBINATION OF AERIAL TOPOGRAPHY OBTAINED IN 2002 AND FIELD-RUN TOPOGRAPHY OBTAINED IN MARCH 2007. THERE IS AN INHERENT VARIATION WITH FIELD RUN TOPOGRAPHY AND AERIAL TOPOGRAPHY, AS WELL AS POTENTIAL VARIATIONS CAUSED BY SETTLEMENT AT THIS SITE. AS A RESULT, ALL INDICATED ELEVATIONS AND CONTOURS ARE APPROXIMATE. ACCORDINGLY, ELEVATIONS SHOWN ON THESE PLANS ARE TO BE ADJUSTED TO REFLECT FIELD CONDITIONS, RELATIVE DIMENSIONING, AND MINIMUM OR MAXIMUM GRADES ARE THE CRITICAL ELEMENTS. IF THERE IS ANY DOUBT AS TO THE INTENT OF THE DESIGN, THE CONTRACTOR IS TO CONTACT THE ENGINEER FOR HIS DIRECTION AND/OR APPROVAL.
5. THE LIMIT OF WASTE SHOWN ON THESE PLANS IS APPROXIMATE AND BASED ON GEOPHYSICAL SURVEYS CONDUCTED BY URS, MARCH 20-26, 2007.
6. CONTRACTOR IS TO FOLLOW THE SEQUENCE OF CONSTRUCTION AND APPLICABLE GENERAL NOTES AS SHOWN ON DRAWING ES-10.
7. LIMIT OF DISTURBANCE IS IDENTIFIED FOR ACCESS ONLY. NO CLEARING SHALL TAKE PLACE OUTSIDE THE LIMIT OF CLEARING AND GRUBBING AS SHOWN ON THIS SHEET.
8. THE GEOCOMPOSITE OR GEOTEXTILE GAS TRANSMISSION LAYER MUST BE TERMINATED A MINIMUM OF 10 FEET FROM THE EDGE OF CAP TO PREVENT INFILTRATION OF OUTSIDE AIR INTO THE GAS COLLECTION SYSTEM.
9. ONE WELLHEAD INSTALLED PER TRENCH, EXCEPT TRENCH 10, AT WHICH ONE WELLHEAD INSTALLED AT EACH END OF TRENCH AS SHOWN. WELLHEADS DISPLAYED ONLY FOR TRENCHES, WELLHEADS ALSO TO BE INSTALLED AT EACH FLARE AND WELL AS SHOWN ON DRAWING C-12.

Note for potential conversion to active system:
W-46 appears to slope towards the
valve assembly at the main header pipe.

RESH ROAD LANDFILL PHASE II
CLOSURE CAP DESIGN
LANDFILL GAS SYSTEM PLAN

URS

SCALE
AS SHOWN

SHEET NO.
C-11 REV.

PROJECT NO.
20-120

DIVISION OF ENVIRONMENTAL
MANAGEMENT
10232 ELLIOTT PARKWAY
WILLIAMSPORT, MD 21795-4083
WASHINGTON COUNTY, MARYLAND

| | | | | | |
|--|--------------|-----|----------------------|----|------|
| | DESIGNED BY: | NO. | REVISION DESCRIPTION | BY | DATE |
| | PDW | | | | |
| | DRAWN BY: | | | | |
| | PDW | | | | |
| | CHECKED BY: | | | | |
| | JDM/RLH | | | | |
| | DATE: | | | | |
| | FEB. 2008 | | | | |



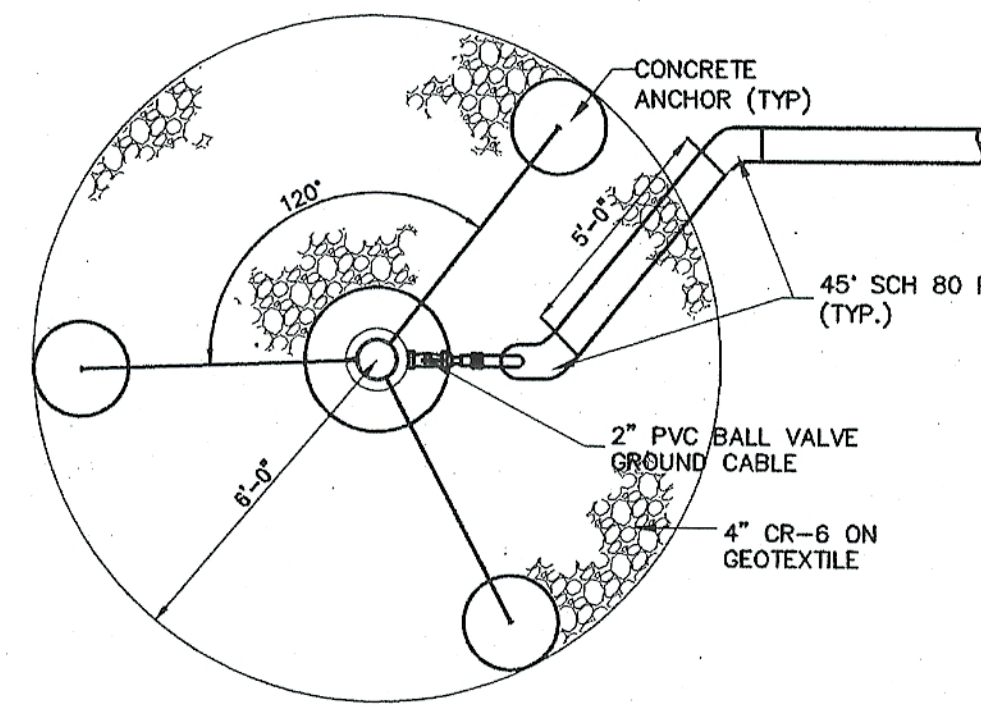
Note for potential conversion to active system:
W-46 appears to slope towards the
valve assembly at the main header pipe.

- LEGEND**
- 560 — EX. GRADES INDEX (SEE NOTE 1)
 - - - EX. GRADES INTERMEDIATE (SEE NOTE 1)
 - PROPOSED LIMIT OF CAP SYSTEM
 - PROPERTY LINE
 - LIMIT OF DISTURBANCE
 - TREE LINE
 - LANDFILL GAS EXTRACTION WELL SEE DETAIL
 - ⊙ BLOWER/FLARE STACK SEE DETAIL
 - ▲ SLOTTED COLLECTOR TRENCH WELLHEAD — SEE NOTE 9
 - T-5 — 6" SLOTTED SCH 80 PVC LANDFILL GAS COLLECTOR PIPE & TRENCH ID
 - 6" SOLID SCH 80 PVC LANDFILL GAS HEADER PIPE
 - ▨ AREA INCORPORATING GEOCOMPOSITE GAS TRANSMISSION LAYER
 - ▨ AREA INCORPORATING 12-OZ. NON-WOVEN GEOTEXTILE GAS TRANSMISSION LAYER

- NOTES:**
1. CONTOURS INSIDE THE LIMIT OF CAP CONSTRUCTION REPRESENT THE TOP OF FINAL GRADE CONTOURS. IN ORDER TO AVOID OFF SITE DISPOSAL OF WASTE, THE CONTRACTOR SHALL INSTALL THE GAS EXTRACTION WELLS DURING SUBGRADE PREPARATION OR THE CONTRACTOR SHALL LEAVE AN AREA OF SUBGRADE FILL TEMPORARILY LOW DURING SUBGRADE FILLING TO ENABLE ON SITE DISPOSAL OF WASTE EXHUMED DURING GAS WELL INSTALLATION.
 2. IF EXISTING GAS WELLS CANNOT BE LOCATED OR CANNOT BE INCORPORATED INTO DESIGN AS SHOWN IN DETAIL #5 ON SHEET C-12, A NEW WELL MUST BE CONSTRUCTED WITHIN 5' OF EXPECTED LOCATION OF EXISTING WELL.
 3. REFER TO THE CHART ON C-15 FOR WELL DEPTHS AND LOCATIONS.
 4. ALL EXISTING TOPOGRAPHIC ELEVATIONS AND CONTOURS SHOWN ON THE CONTRACT DRAWINGS ARE BASED UPON A COMBINATION OF AERIAL TOPOGRAPHY OBTAINED IN 2002 AND FIELD-RUN TOPOGRAPHY OBTAINED IN MARCH 2007. THERE IS AN INHERENT VARIATION WITH FIELD RUN TOPOGRAPHY AND AERIAL TOPOGRAPHY, AS WELL AS POTENTIAL VARIATIONS CAUSED BY SETTLEMENT AT THIS SITE. AS A RESULT, ALL INDICATED ELEVATIONS AND CONTOURS ARE APPROXIMATE. ACCORDINGLY, ELEVATIONS SHOWN ON THESE PLANS ARE TO BE ADJUSTED TO REFLECT FIELD CONDITIONS, RELATIVE DIMENSIONING, AND MINIMUM OR MAXIMUM GRADES ARE THE CRITICAL ELEMENTS. IF THERE IS ANY DOUBT AS TO THE INTENT OF THE DESIGN, THE CONTRACTOR IS TO CONTACT THE ENGINEER FOR HIS DIRECTION AND/OR APPROVAL.
 5. THE LIMIT OF WASTE SHOWN ON THESE PLANS IS APPROXIMATE AND BASED ON GEOPHYSICAL SURVEYS CONDUCTED BY URS, MARCH 20-26, 2007.
 6. CONTRACTOR IS TO FOLLOW THE SEQUENCE OF CONSTRUCTION AND APPLICABLE GENERAL NOTES AS SHOWN ON DRAWING ES-10.
 7. LIMIT OF DISTURBANCE IS IDENTIFIED FOR ACCESS ONLY. NO CLEARING SHALL TAKE PLACE OUTSIDE THE LIMIT OF CLEARING AND GRUBBING AS SHOWN ON THIS SHEET.
 8. THE GEOCOMPOSITE OR GEOTEXTILE GAS TRANSMISSION LAYER MUST BE TERMINATED A MINIMUM OF 10 FEET FROM THE EDGE OF CAP TO PREVENT INFILTRATION OF OUTSIDE AIR INTO THE GAS COLLECTION SYSTEM.
 9. ONE WELLHEAD INSTALLED PER TRENCH, EXCEPT TRENCH 10, AT WHICH ONE WELLHEAD INSTALLED AT EACH END OF TRENCH AS SHOWN. WELLHEADS DISPLAYED ONLY FOR TRENCHES, WELLHEADS ALSO TO BE INSTALLED AT EACH FLARE AND WELL AS SHOWN ON DRAWING C-12.

DRAWING NO: 12 OF 43

| | | | | |
|--|----|---------------------|--|----------------|
| DESIGNED BY: PDW | | CHECKED BY: JDM/RLH | | DATE: FEB 2008 |
| REVISION DESCRIPTION | | | | |
| NO. | BY | DATE | | |
| | | | | |
| DIVISION OF ENVIRONMENTAL MANAGEMENT 10232 ELLIOTT PARKWAY WILLIAMSPORT, MD 21795-4083 | | | | |
| WASHINGTON COUNTY, MARYLAND | | | | |
| RESH ROAD LANDFILL PHASE II CLOSURE CAP DESIGN LANDFILL GAS SYSTEM PLAN | | | | |
| URS | | | | |
| SCALE AS SHOWN | | | | |
| SHEET NO. C-11 REV. * | | | | |
| PROJECT NO. 20-120 | | | | |



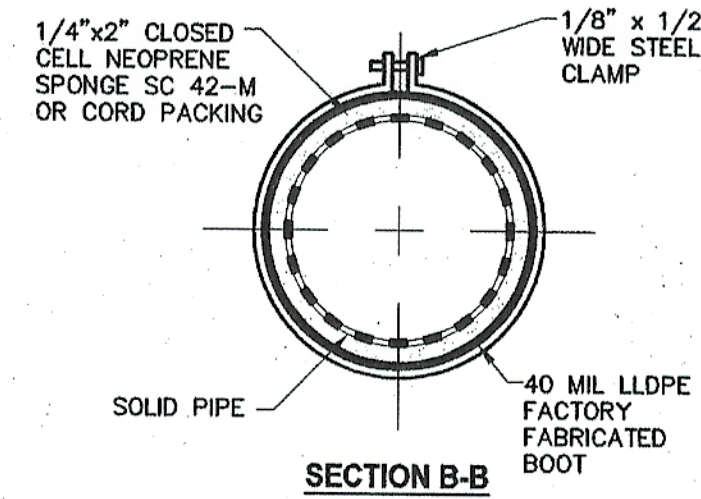
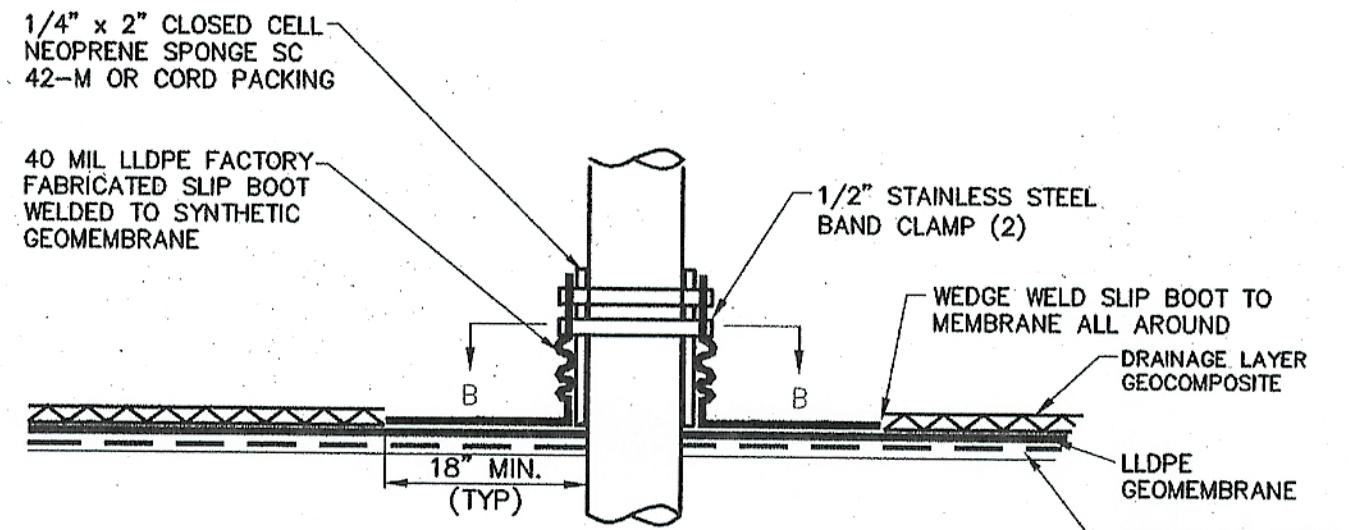
FLARE STACK SUPPORT PLAN
SCALE: NTS

1
C-11 C-12
C-12

SLOTTED PIPE DETAIL

SCALE: NTS

2
C-11 C-12
C-12

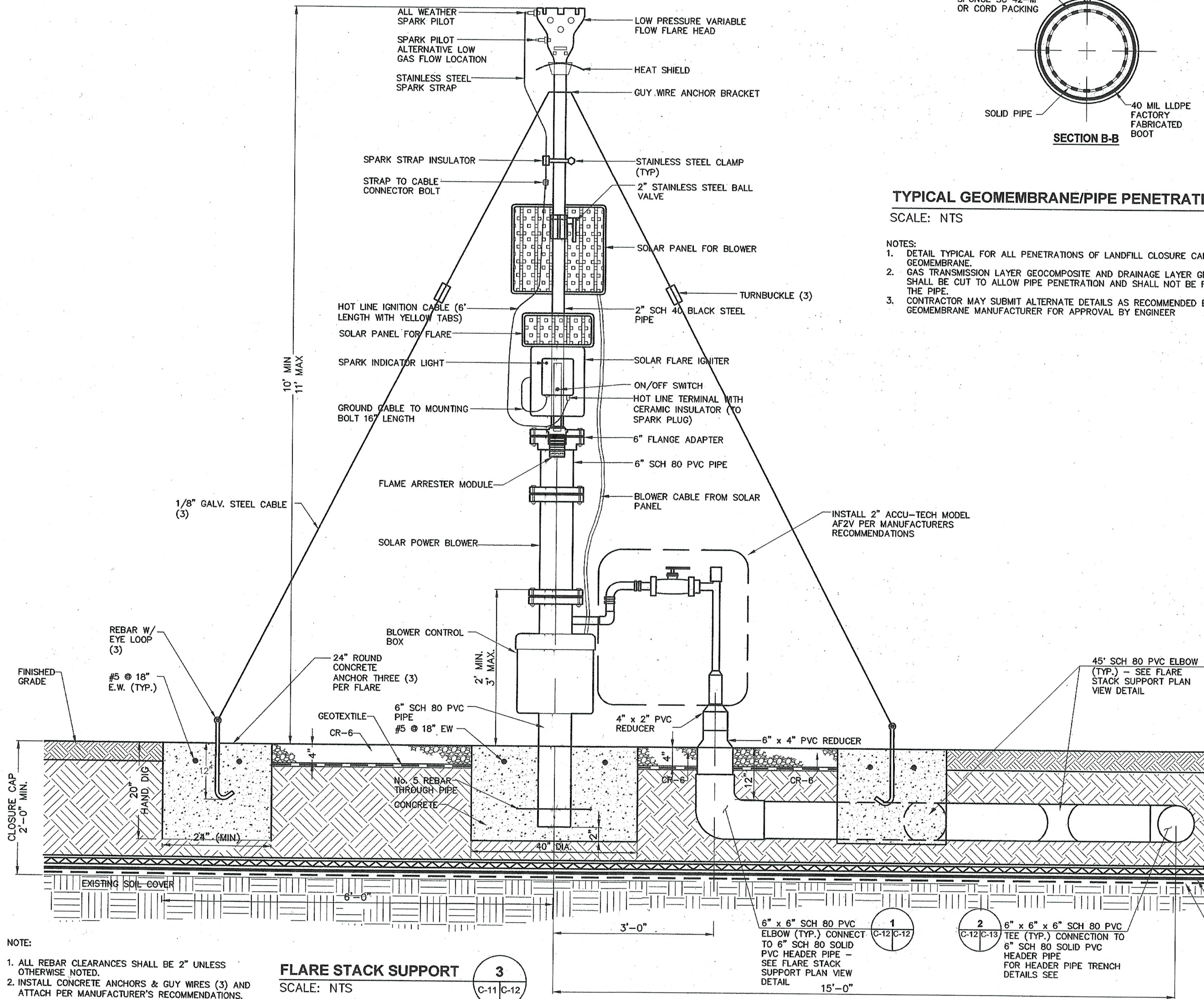


TYPICAL GEOMEMBRANE/PIPE PENETRATION

SCALE: NTS

4
C-11 C-12
C-13

- NOTES:
1. DETAIL TYPICAL FOR ALL PENETRATIONS OF LANDFILL CLOSURE CAP GEOMEMBRANE.
 2. GAS TRANSMISSION LAYER GEOCOMPOSITE AND DRAINAGE LAYER GEOCOMPOSITE SHALL BE CUT TO ALLOW PIPE PENETRATION AND SHALL NOT BE FASTENED TO THE PIPE.
 3. CONTRACTOR MAY SUBMIT ALTERNATE DETAILS AS RECOMMENDED BY THE GEOMEMBRANE MANUFACTURER FOR APPROVAL BY ENGINEER.

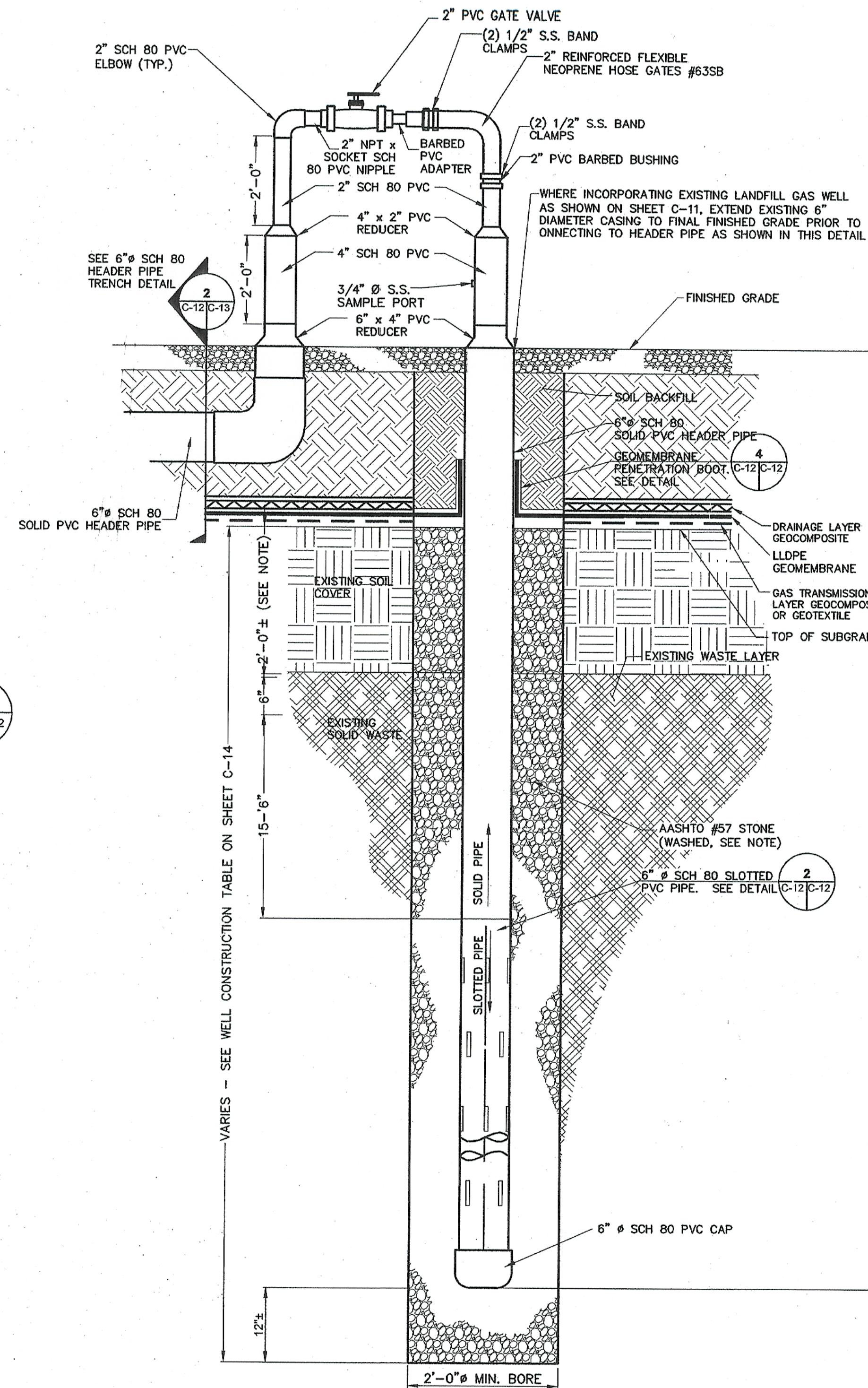


FLARE STACK SUPPORT

SCALE: NTS

3
C-11 C-12

- NOTE:
1. ALL REBAR CLEARANCES SHALL BE 2\"/>
 2. INSTALL CONCRETE ANCHORS & GUY WIRES (3) AND ATTACH PER MANUFACTURER'S RECOMMENDATIONS.



LANDFILL GAS WELL DETAIL

SCALE: NTS

5
C-11 C-12

NOTE: DEPTH TO WASTE TYPICALLY 2' BUT MAY BE AS DEEP AS 8' AT CERTAIN LOCATIONS.

NOTE: DETAILS PROVIDED BY WASHINGTON COUNTY DIVISION OF PUBLIC WORKS BASED ON CLOSURE OF PHASE I OF RESH ROAD LANDFILL. DETAILS MODIFIED TO MATCH URS PHASE 2 CLOSURE DESIGN.

- Add Revised Detail 5
- Note the elimination of flare systems

| DESIGNED BY: | ECJ |
|--------------|-----------|
| DRAWN BY: | NSG |
| CHECKED BY: | JDM |
| DATE: | FEB. 2008 |

DIVISION OF ENVIRONMENTAL MANAGEMENT
16232 ELLIOTT PARKWAY
WILLIAMSPORT, MD 21795-4083

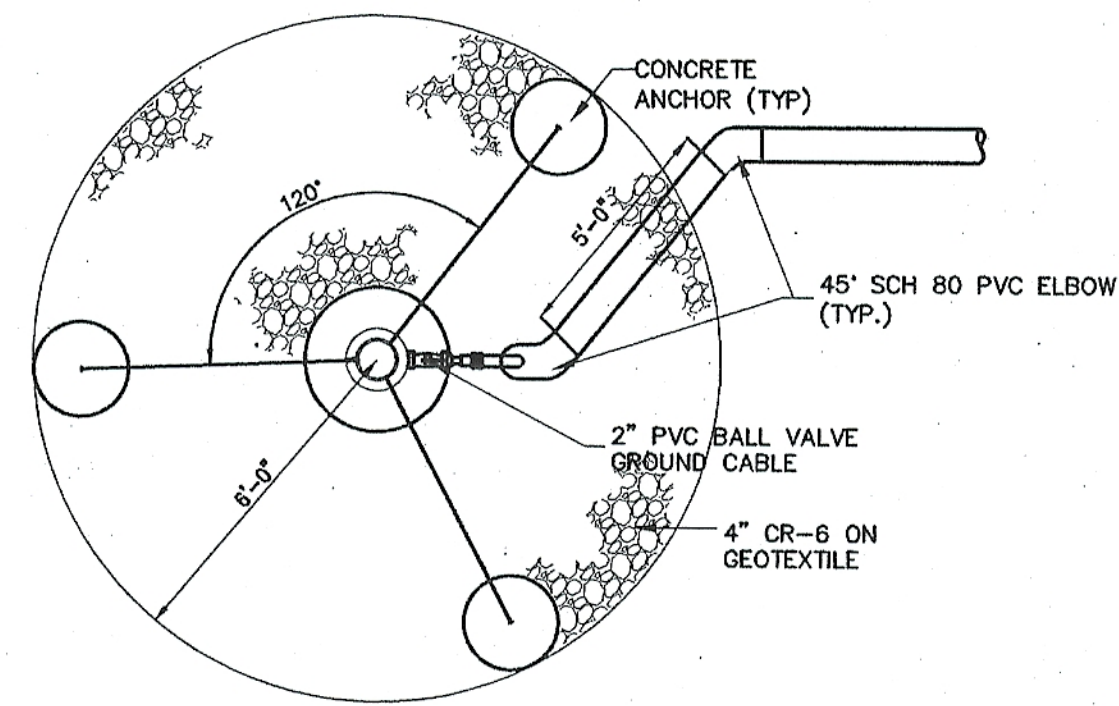
RESH ROAD LANDFILL PHASE II CLOSURE CAP DESIGN
LANDFILL GAS SYSTEM DETAILS I

URS

SCALE
AS SHOWN

SHEET NO.
C-12

PROJECT NO.
20-120

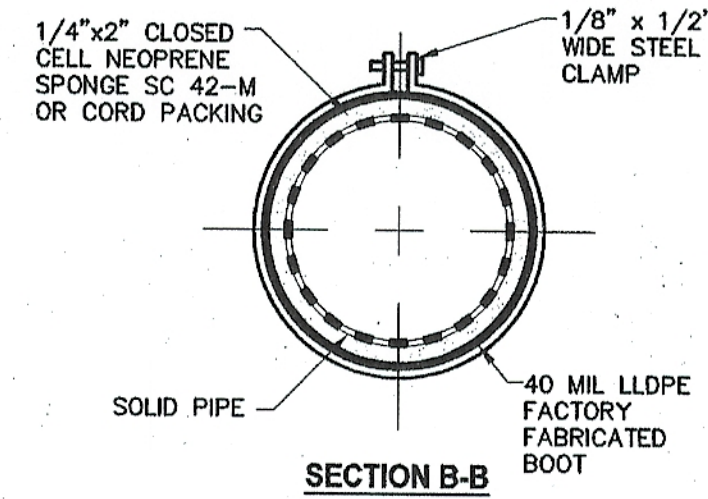
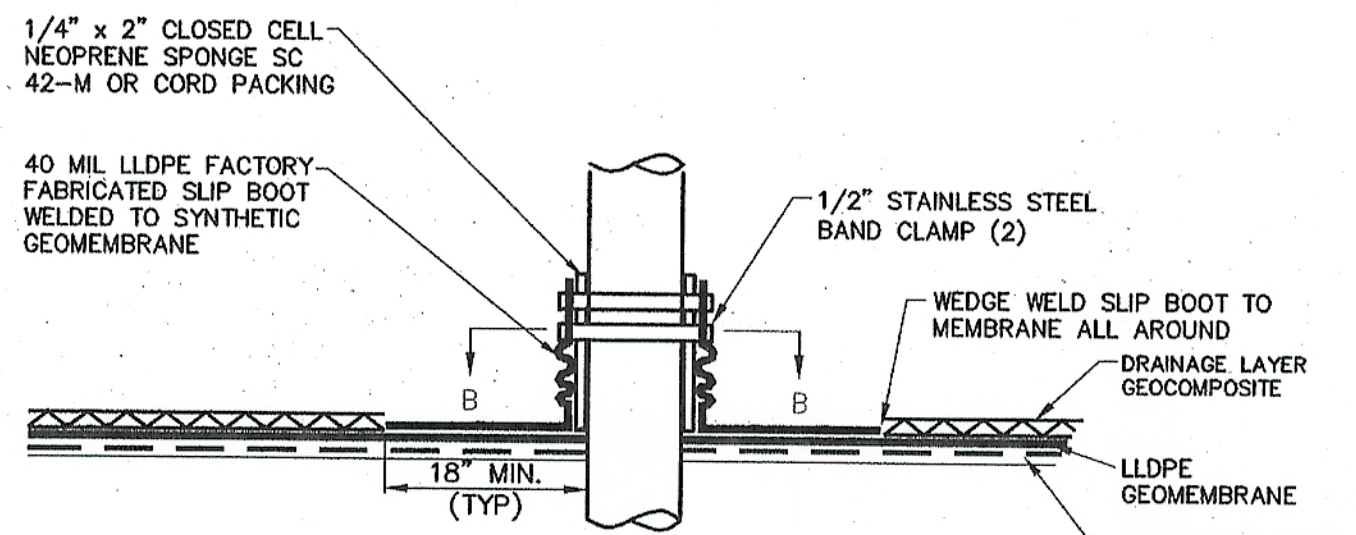


FLARE STACK SUPPORT PLAN

SCALE: NTS



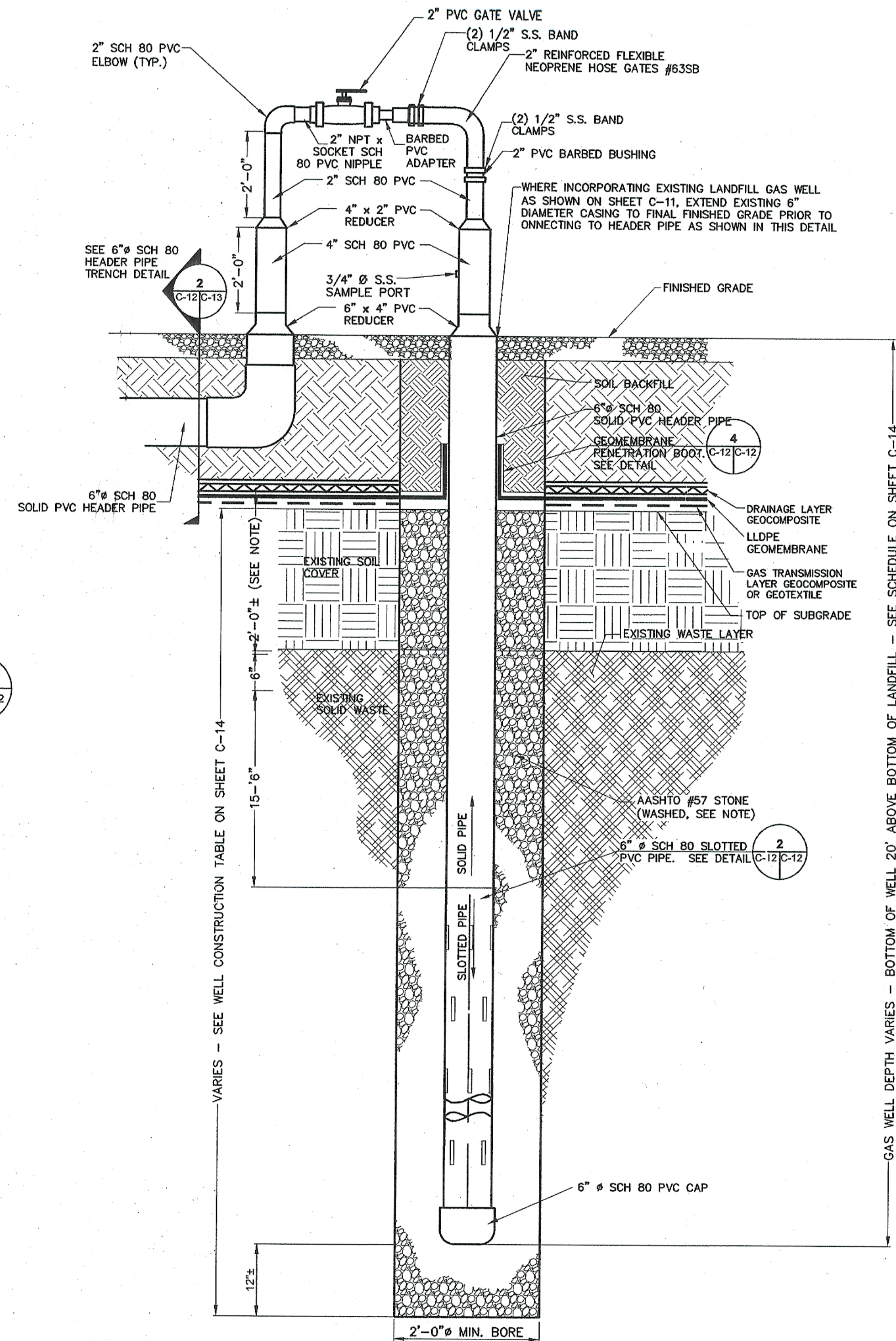
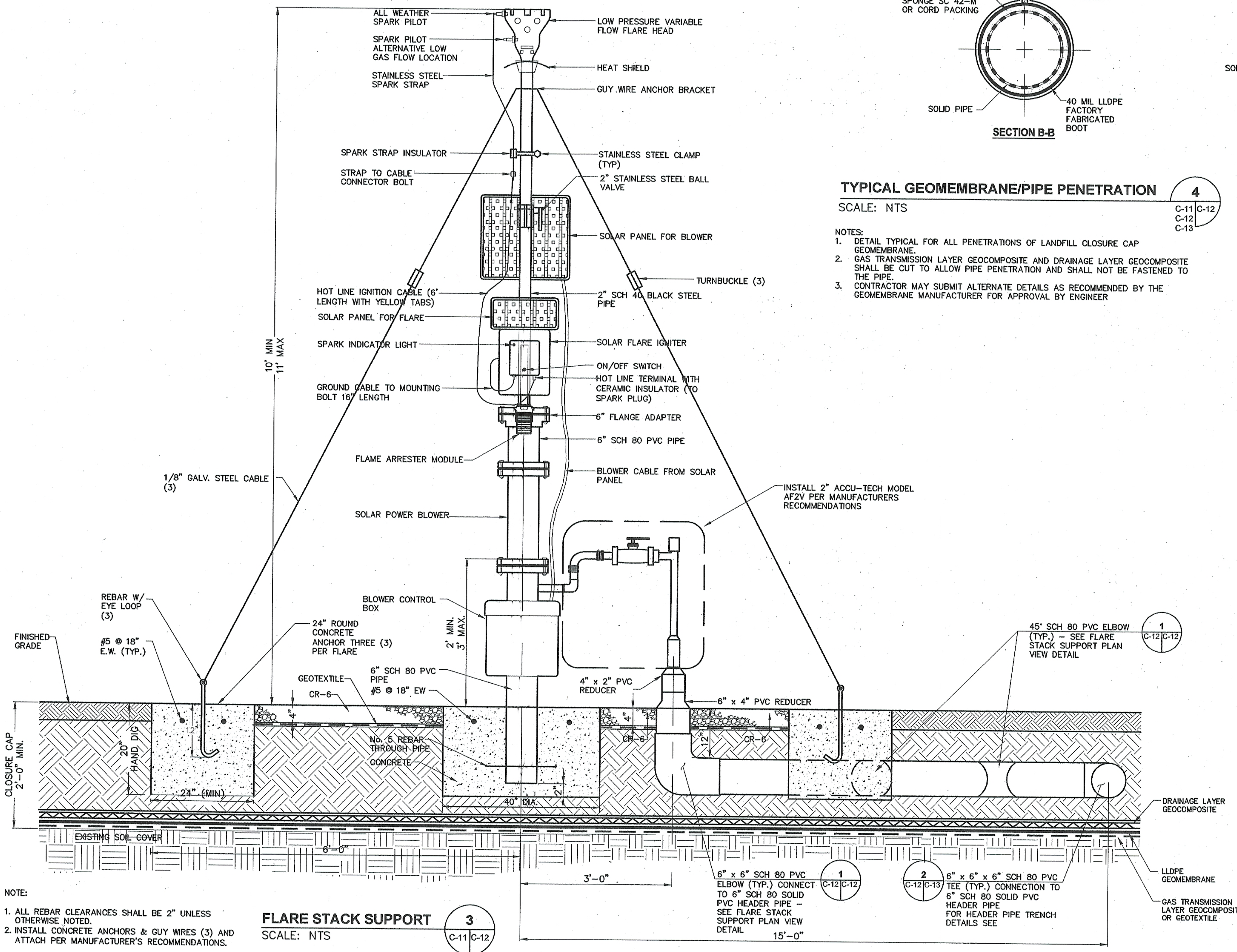
SCALE: NTS



TYPICAL GEOMEMBRANE/PIPE PENETRATION

SCALE: NTS

- NOTES:
1. DETAIL TYPICAL FOR ALL PENETRATIONS OF LANDFILL CLOSURE CAP GEOMEMBRANE.
 2. GAS TRANSMISSION LAYER GEOCOMPOSITE AND DRAINAGE LAYER GEOCOMPOSITE SHALL BE CUT TO ALLOW PIPE PENETRATION AND SHALL NOT BE FASTENED TO THE PIPE.
 3. CONTRACTOR MAY SUBMIT ALTERNATE DETAILS AS RECOMMENDED BY THE GEOMEMBRANE MANUFACTURER FOR APPROVAL BY ENGINEER






WASHED STONE
THE AASHTO #57 STONE USED IN THE LANDFILL GAS WELLS AND LATERAL TRENCHES SHALL BE WASHED PER AASHTO T11 AND CONTAIN LESS THAN 1.50% MATERIALS FINER THAN THE NO. 200 SIEVE.

LANDFILL GAS WELL DETAIL

SCALE: NTS

NOTE: DEPTH TO WASTE
TYPICALLY 2' BUT MAY BE AS
DEEP AS 8' AT CERTAIN
LOCATIONS.

NOTE:
DETAILS PROVIDED BY WASHINGTON COUNTY DIVISION OF PUBLIC
WORKS BASED ON CLOSURE OF PHASE 1 OF RESH ROAD LANDFILL.
DETAILS MODIFIED TO MATCH URS PHASE 2 CLOSURE DESIGN.

| | | | | | | | |
|---|--|-----------------------------|---|-------------------|-----|---------------|---------------|
|  | RESH ROAD LANDFILL PHASE II CLOSURE CAP DESIGN LANDFILL GAS SYSTEM DETAILS I | |  <div>DIVISION OF ENVIRONMENTAL MANAGEMENT 16232 ELLIOTT PARKWAY WILLIAMSPORT, MD 21795-4083</div>  | DESIGNED BY: | NO. | REVISION DES. | |
| | SCALE AS SHOWN | | | SHEET NO. C-12 | | BY: R/JH | DRAWN BY: NSG |
| PROJECT NO. 20-120 | | WASHINGTON COUNTY, MARYLAND | | | | | |

- Add Revised Detail 5
- Note the elimination of Flore systems

