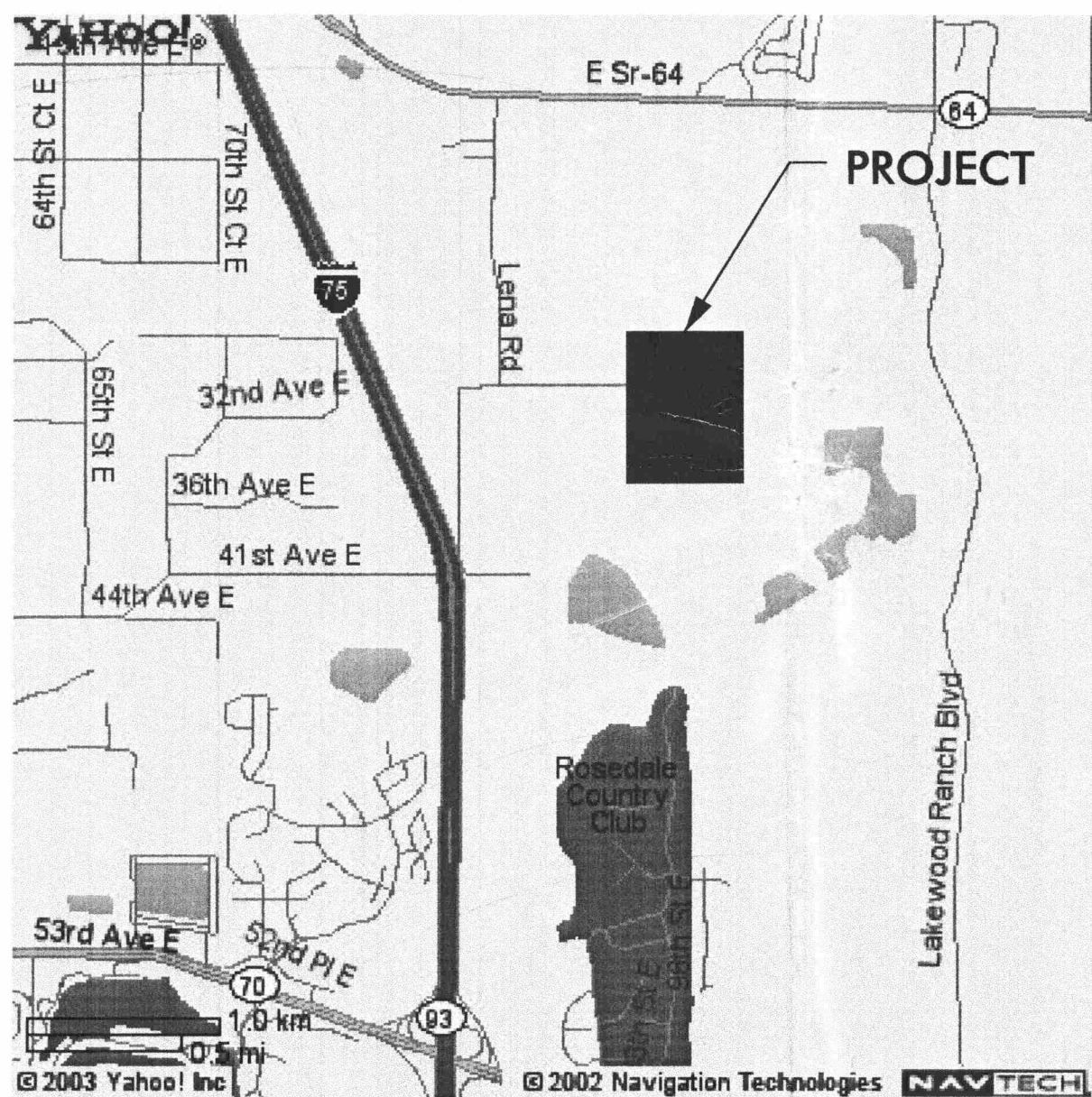


PERMIT DRAWINGS FOR

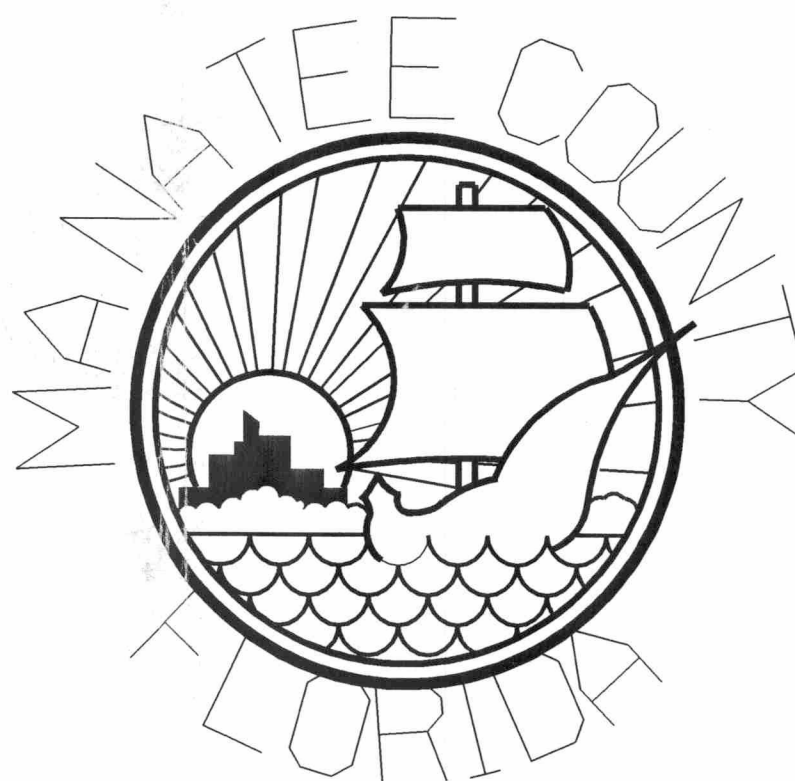
MANATEE COUNTY – LENA ROAD LANDFILL

FINAL CLOSURE



LENA ROAD LANDFILL
3333 LENA ROAD
BRADENTON, FLORIDA 34202

MANATEE COUNTY



MANATEE COUNTY
UTILITY OPERATIONS
DEPARTMENT
4410 66th STREET WEST
BRADENTON, FLORIDA 34210

JANUARY 2005

LIST OF DRAWINGS

- C-1 COVER
- C-2 FINAL GRADING AND DRAINAGE PLAN
- C-3 CROSS SECTIONS
- C-4 DETAILS (1 OF 2)
- C-5 DETAILS (2 OF 2)
- C-6 LANDFILL GAS COLLECTION SYSTEM PLAN (1 OF 2)
- C-7 LANDFILL GAS COLLECTION SYSTEM PLAN (2 OF 2)
- C-8 LANDFILL GAS COLLECTION SYSTEM DETAILS

PBS&

An Employee – Owned Company
Consulting Engineers and Planners
482 South Keller Road
Orlando, Florida 32810
POST BUCKLEY, SCHUH & JERNIGAN, Inc.
466 PIRAJ
2801 N.W. 107th Ave., Miami, FL 33172-2507
FBPR Certificate of Authorization No. 24

Name: JOSEPH L. MILLER
Florida P.E. No.: 39177

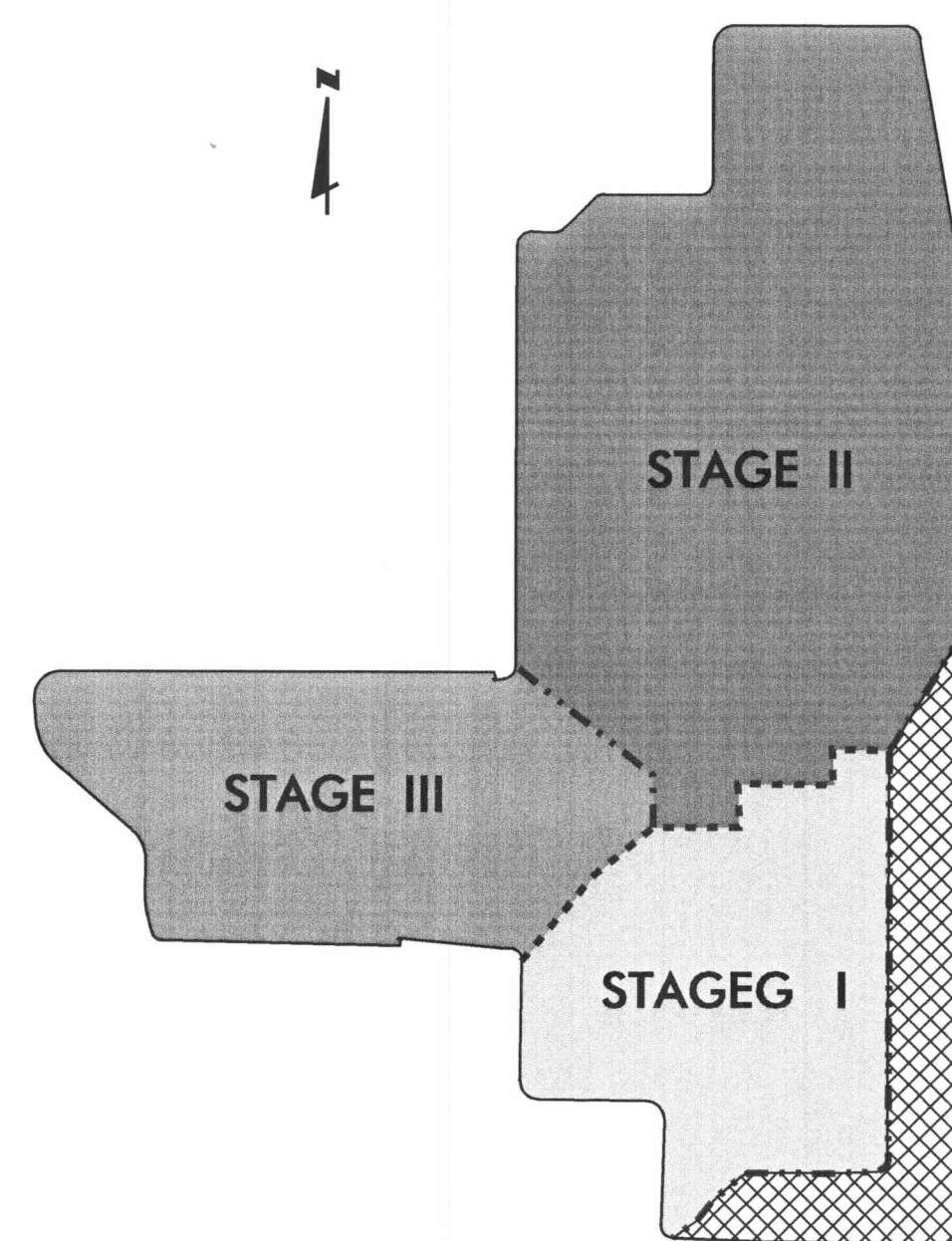
Joseph L. Miller 2/1/05
Signature Date

ENGINEER'S PROJECT NO. 120498



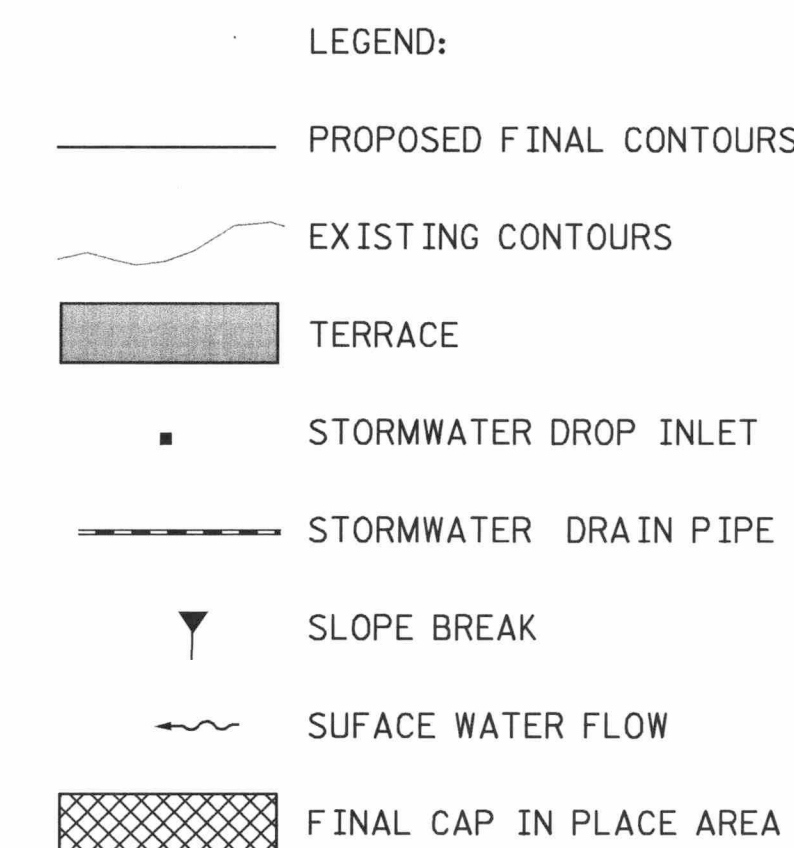
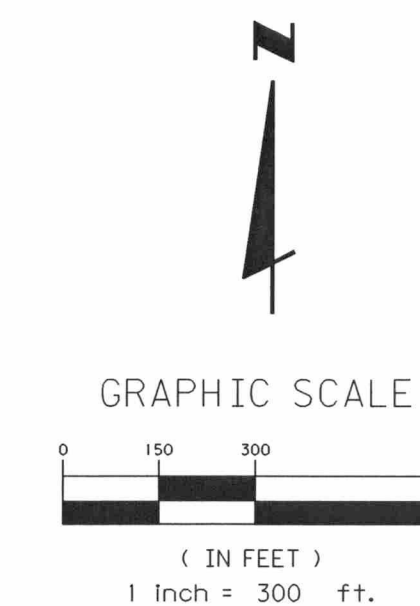
*These plans not
reviewed or approved.
Submitted with Op Renewal
Application 39884-010-50
2/5/05*

MANATEE COUNTY – LENA ROAD LANDFILL– FINAL CLOSURE (JAN. 2005)



LANDFILL CLOSURE PHASING PLAN
N.T.S.

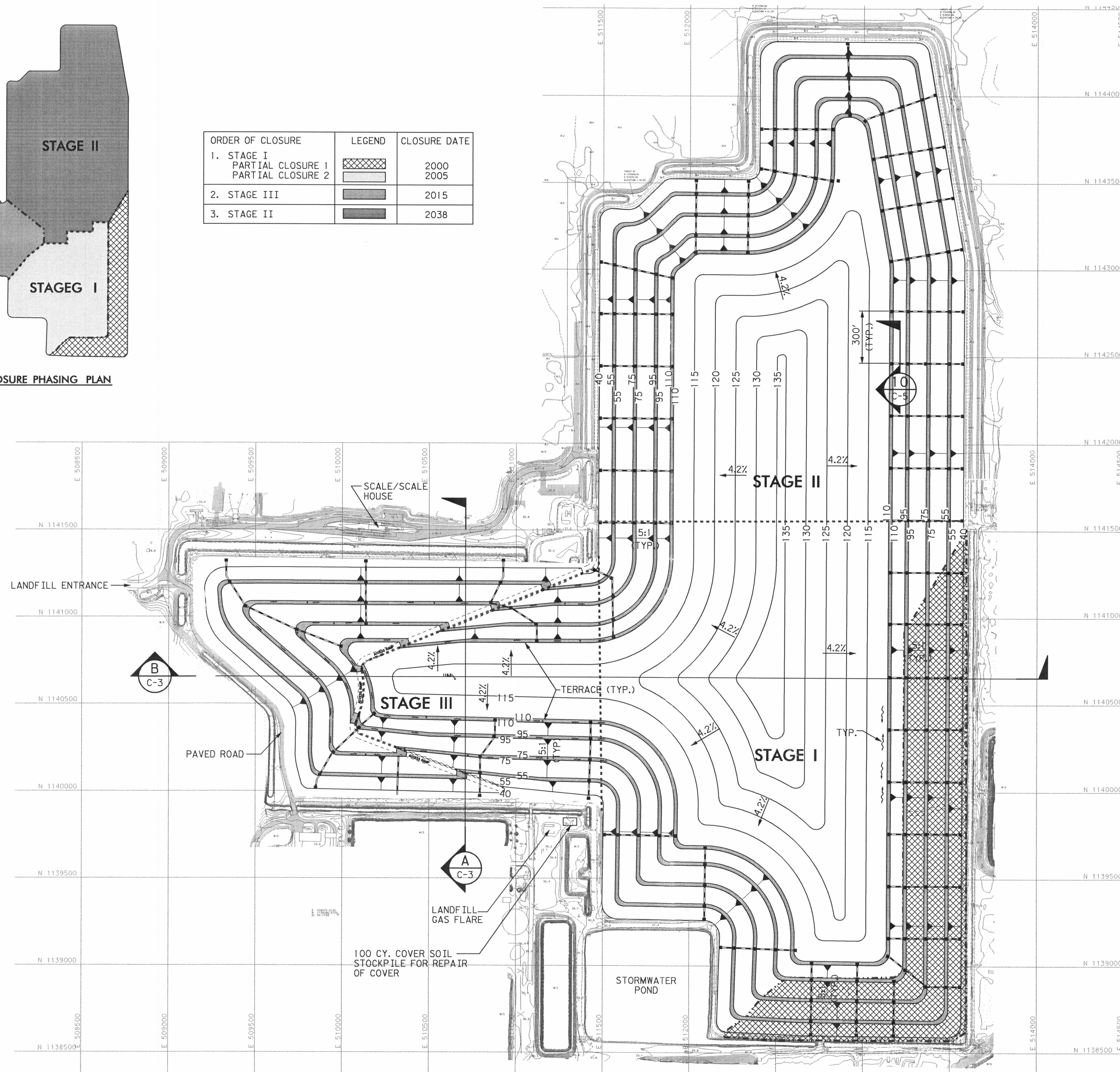
ORDER OF CLOSURE	LEGEND	CLOSURE DATE
1. STAGE I PARTIAL CLOSURE 1 PARTIAL CLOSURE 2	 	2000 2005
2. STAGE III		2015
3. STAGE II		2038



NOTE:

ORDER OF FILLING:

1. STAGE I
2. STAGE III
3. STAGE II



FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
FEB 16 2005
SOUTHWEST DISTRICT
TAMPA

C-2

PBS

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CLIENT

MANATEE COUNTY
BOARD OF COUNTY COMMISSIONERS

PROJECT

LENA ROAD LANDFILL FINAL CLOSURE

	TASK
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FINAL GRADING
AND DRAINAGE PLAN

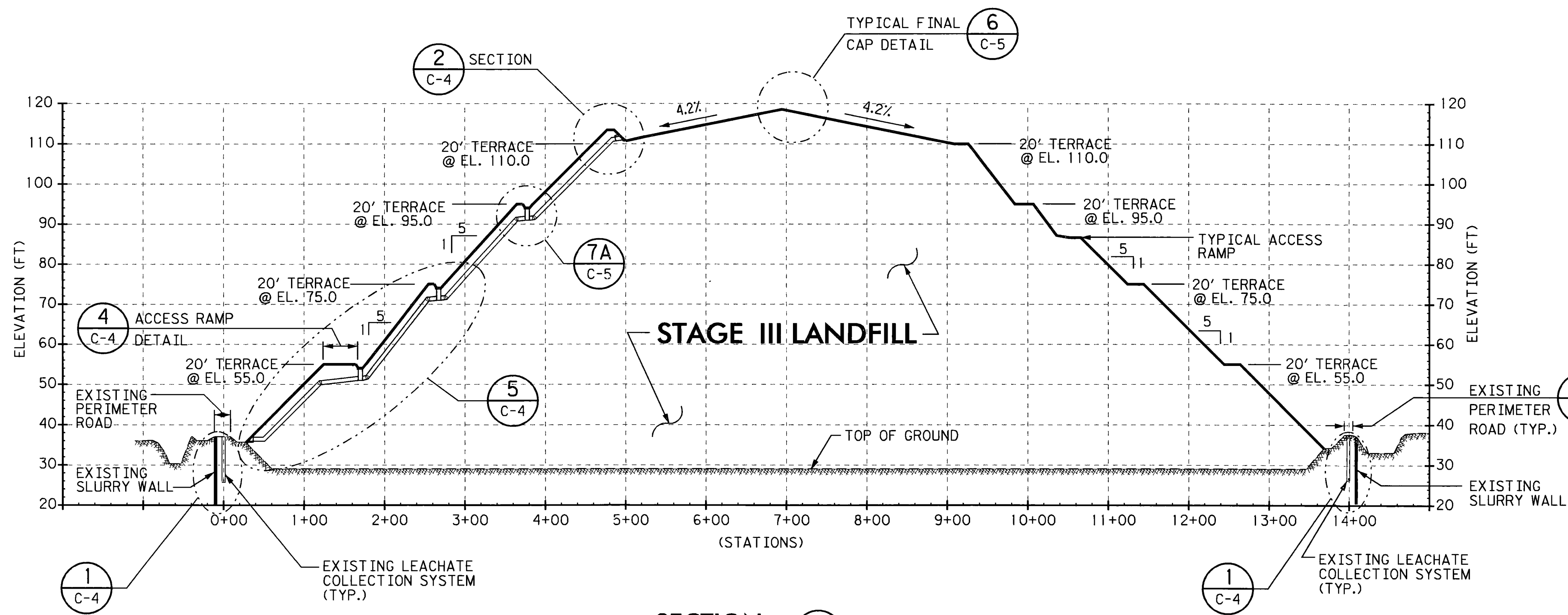
ORIGINAL JAN. 2005
REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____

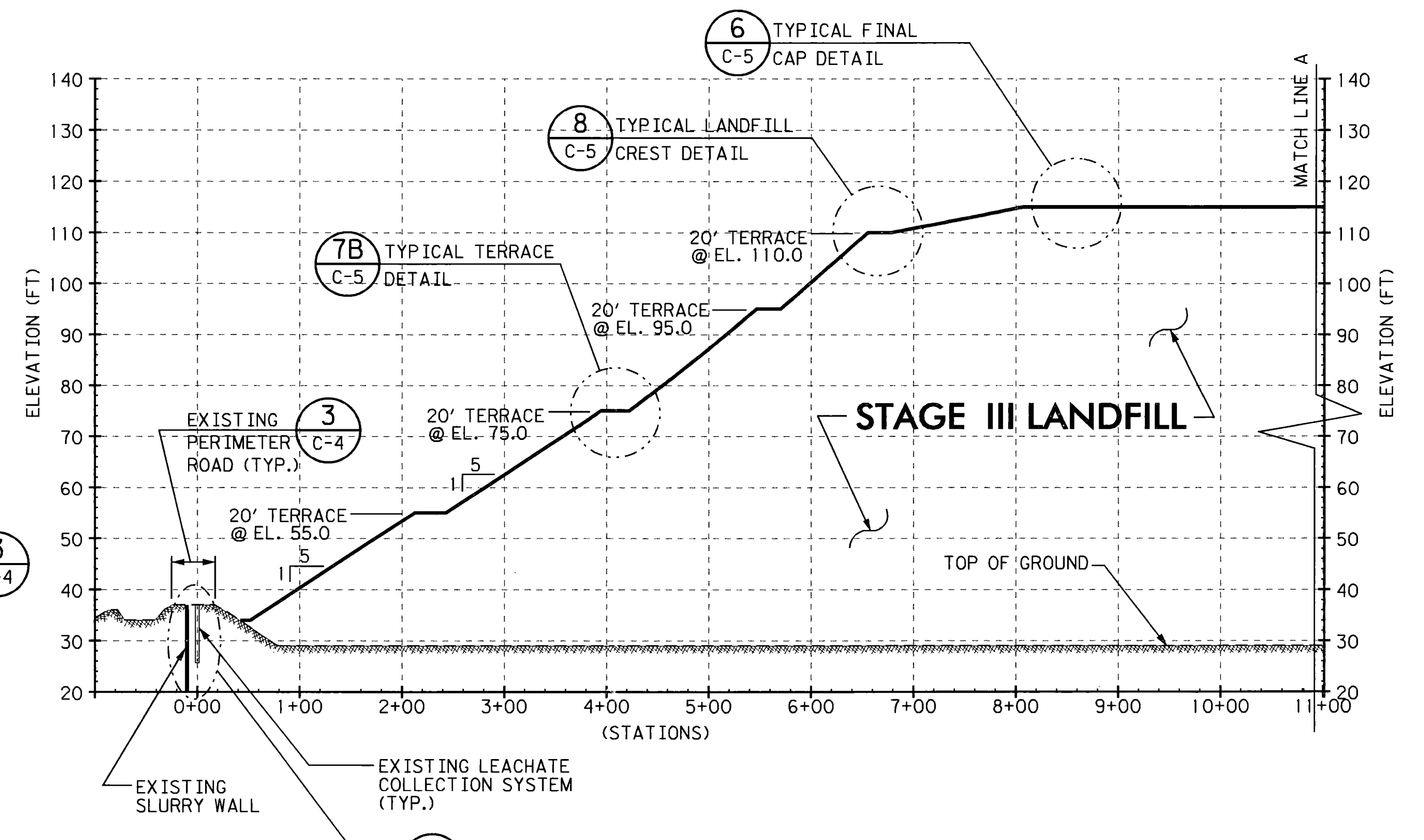
Name: JOSEPH L. MILLER
Florida P.E. No.: 39177
Address: PBS&J 10. 39177
482 S. Keller Road
Orlando, FL 32810-6111
Signature

JOB NO. 120498.33
DRAWN RCG
DESIGN JLM/RCG
CHECKED JLM
Q.C. DED

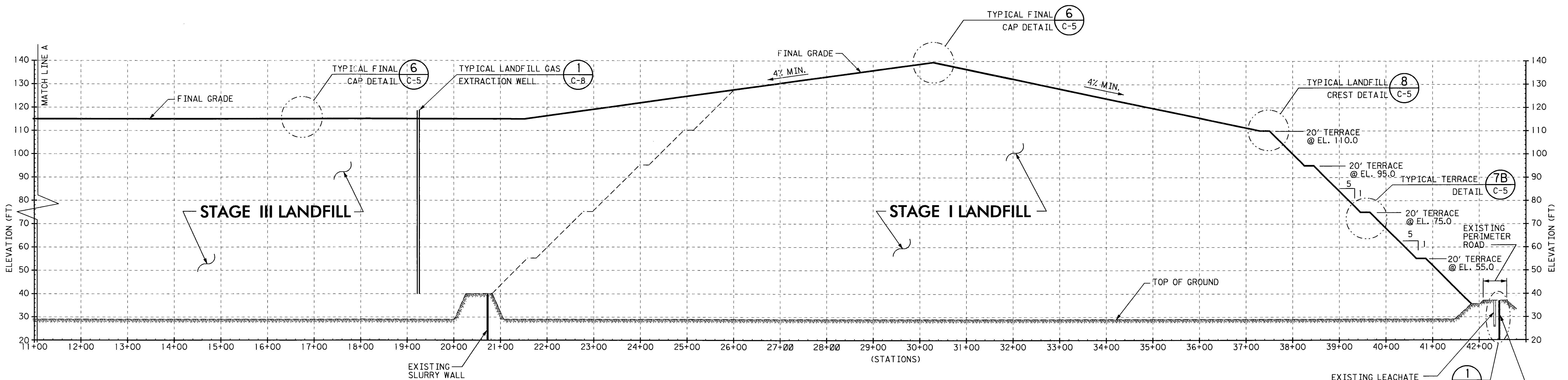
SHEET 2/8



SECTION A
SCALE: N.T.S. C-2



SECTION B
SCALE: N.T.S. C-2



SECTION (CONT.) B
SCALE: N.T.S. C-2

FLORIDA DEPARTMENT OF
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MANATEE COUNTY
BOARD OF COUNTY COMMISSIONERS

PROJECT
LENA ROAD LANDFILL
FINAL CLOSURE

TASK
CROSS SECTIONS

ORIGINAL JAN. 2005
REVISIONS:
1.
2.
3.
4.
5.

Signature: J. Miller
Date: 1/11/05
Title: Project Engineer

JOB NO. 120498.33
DRAWN RGC
DESIGN JLM/RGC
CHECKED JLM
O.C. DED
SHEET 3/8



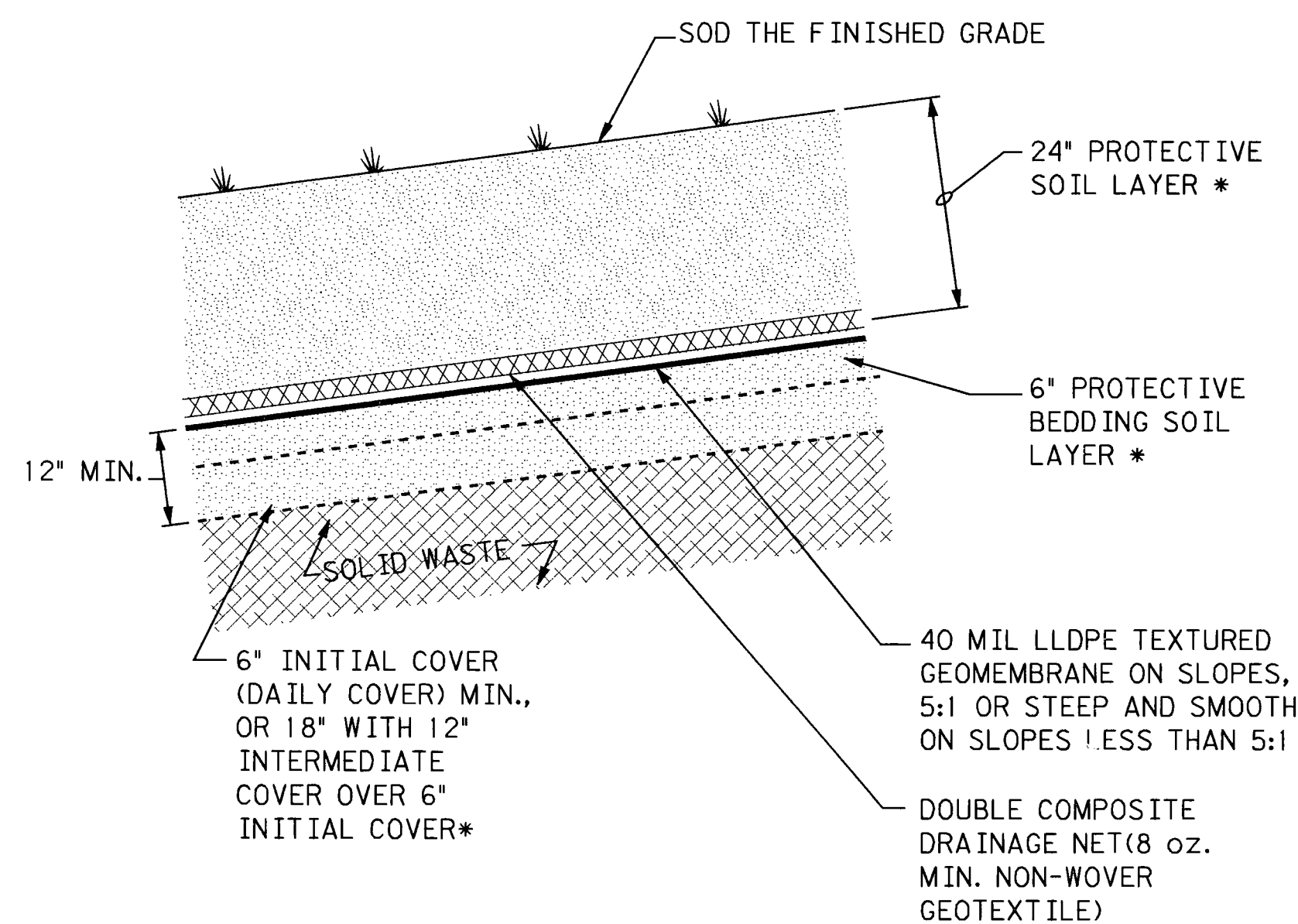
C-4

JOB NO. 120498.33
DRAWN RGC
DESIGN JLM/RGC
CHECKED JLM
Q.C. DED

SHEET 4/8

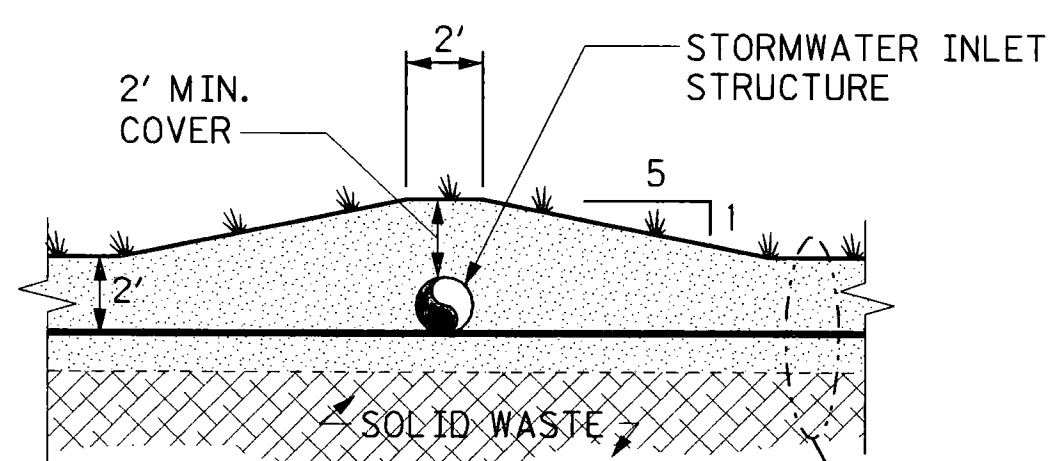
PROTECTIVE SOIL LAYER AND
BEDDING SOIL SHALL BE 100%
PASSING 1/2" SIEVE.

INTERMEDIATE COVER MAY BE
USED AS BEDDING SOIL IF 100%
PASSING 1/2" SIEVE.



TYPICAL FINAL CAP DETAIL

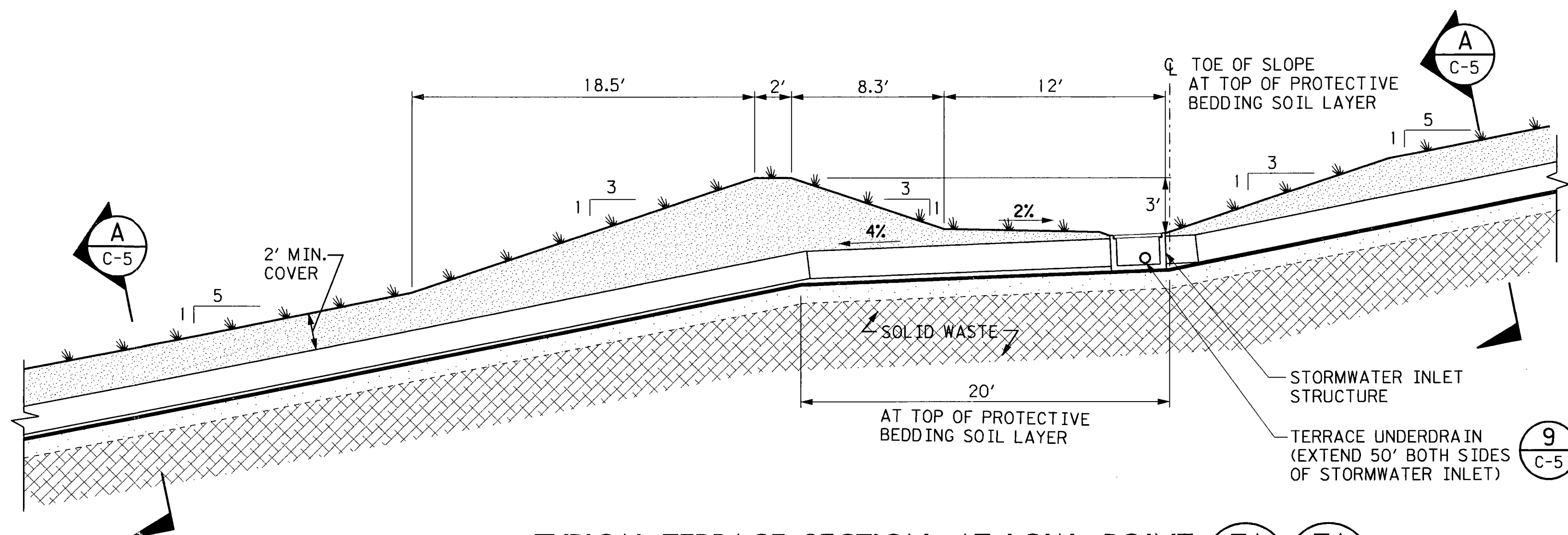
NTS



6 TYPICAL FINAL
C-5 CAP DETAIL

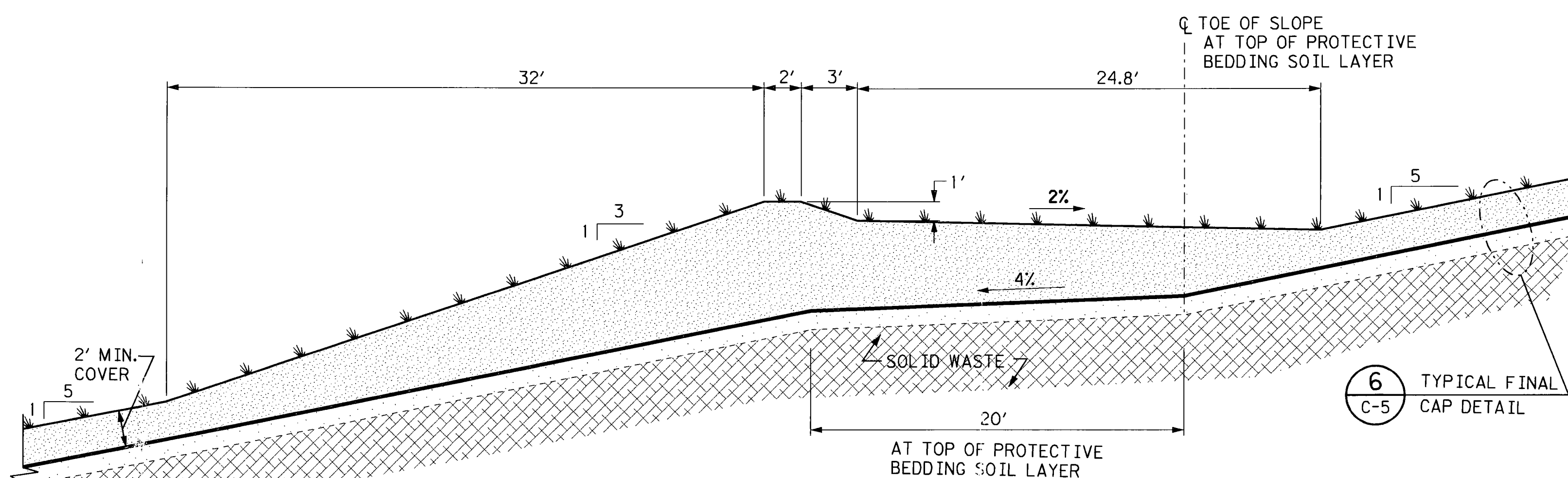
SECTION

NTS



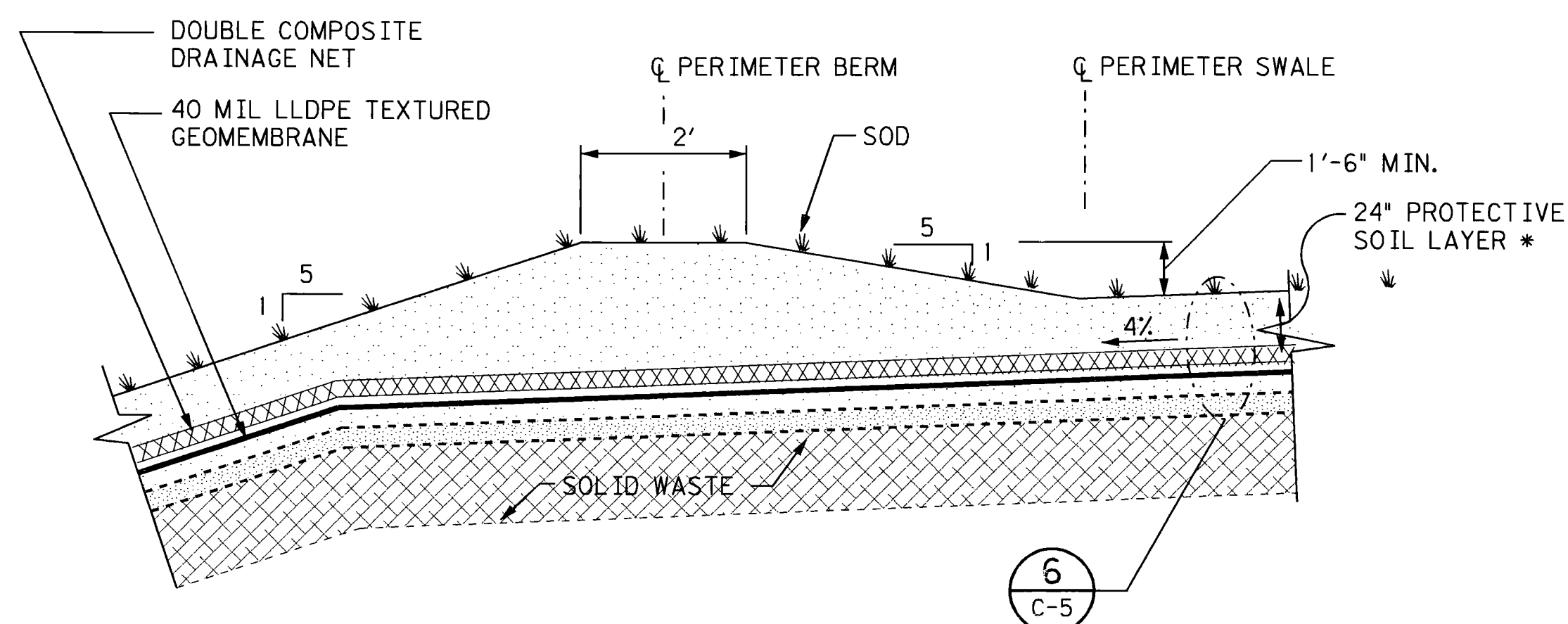
TYPICAL TERRACE SECTION AT LOW POINT

NTS



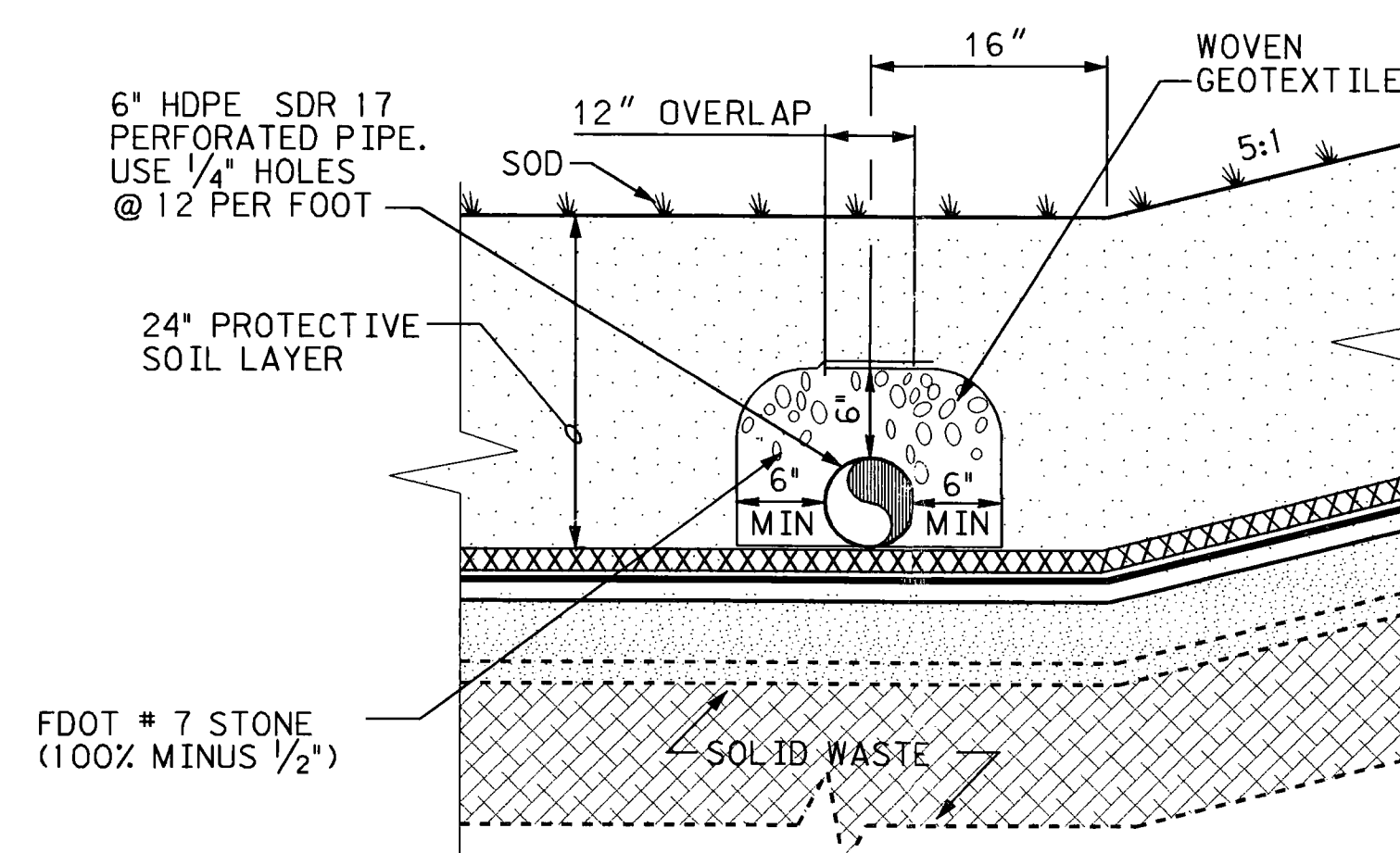
TYPICAL TERRACE SECTION AT HIGH POINT

NTS



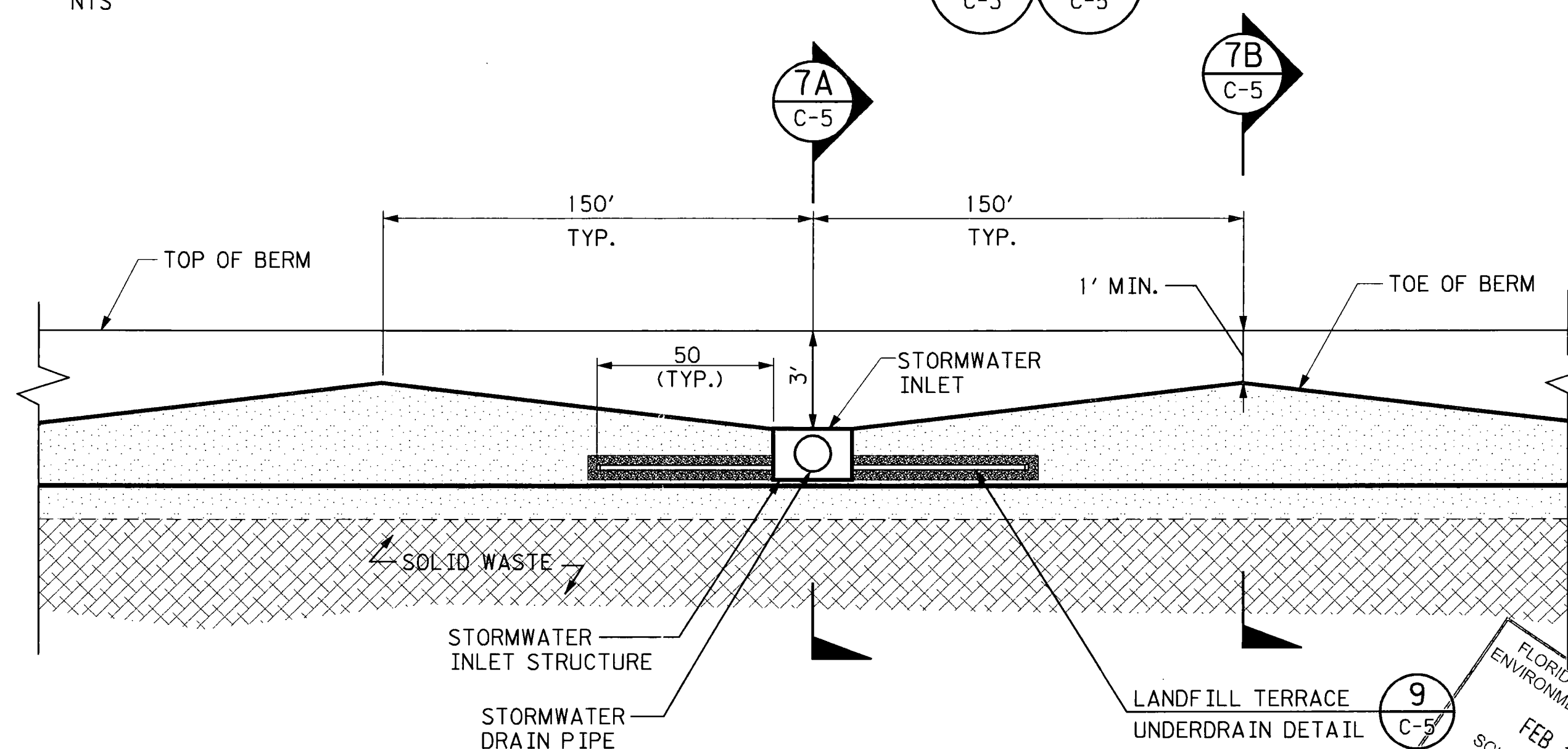
TYPICAL LANDFILL CREST DETAIL

NTS



LANDFILL TERRACE UNDERDRAIN DETAIL

NTS



TYPICAL TERRACE PROFILE

NTS

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MANATEE COUNTY

BOARD OF COUNTY COMMISSIONERS

PROJECT

LENA ROAD LANDFILL FINAL CLOSURE

TASK

DETAILS

SHEET 2 OF 2

ORIGINAL JAN. 2005

REVISIONS:

1. _____
2. _____
3. _____
4. _____
5. _____

Name: JOSEPH L. MILLER
Florida P.E. No. 29177
Address: PBSE
482 S. Keller Road
Orlando, FL 32810-6101
Signature: *J. Miller*

JOB NO. 120498.33

DRAWN _____ RGC

DESIGN JLM/RGC

CHECKED JLM
C.C. DEF

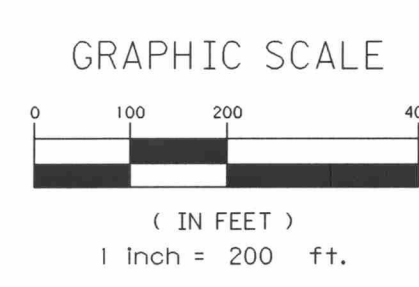
Q.C. _____ DED

SHEET 5 / 8

\\hul\hul\cnn\wasteman\monateen\enroben\mip\c-s\cdetails\den

14-FEB-2005 11:16 --- EMP. NO. 932

6



SCALE/SCALE HOUSE

MATCH LINE SEE SHEET C-7

LANDFILL ENTRANCE

PAVED ROAD

GAS FLARE

STORMWATER POND

- LEGEND:
- PROPOSED CONTOURS
 - EXISTING CONTOURS
 - TERRACE
 - PAVED ROAD
 - EXISTING WELL HEAD (GW-1 TO GW-75)
 - PROPOSED WELL HEAD (GW-90 TO GW-198)
 - EXISTING GAS MANIFOLD (10")
 - EXISTING CONDENSATE KNOCKOUT
 - EXISTING LATERAL (8" DIA.)
 - EXISTING 18" HEADER
 - PROPOSED 8" LATERAL
 - PROPOSED 18" HEADER
 - HV-1 (40') HORIZONTAL GAS COLLECTION TRENCH (4") (LENGTH OF SOLID PIPE)
 - WELL AND RADIUS OF INFLUENCE

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FEB 16 2005
SOUTHWEST DISTRICT
TAMPA

C-6



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BOARD OF COUNTY COMMISSIONERS

PROJECT

LENA ROAD LANDFILL
FINAL CLOSURE

TASK

LANDFILL GAS COLLECTION
SYSTEM PLAN
SHEET 1 OF 2

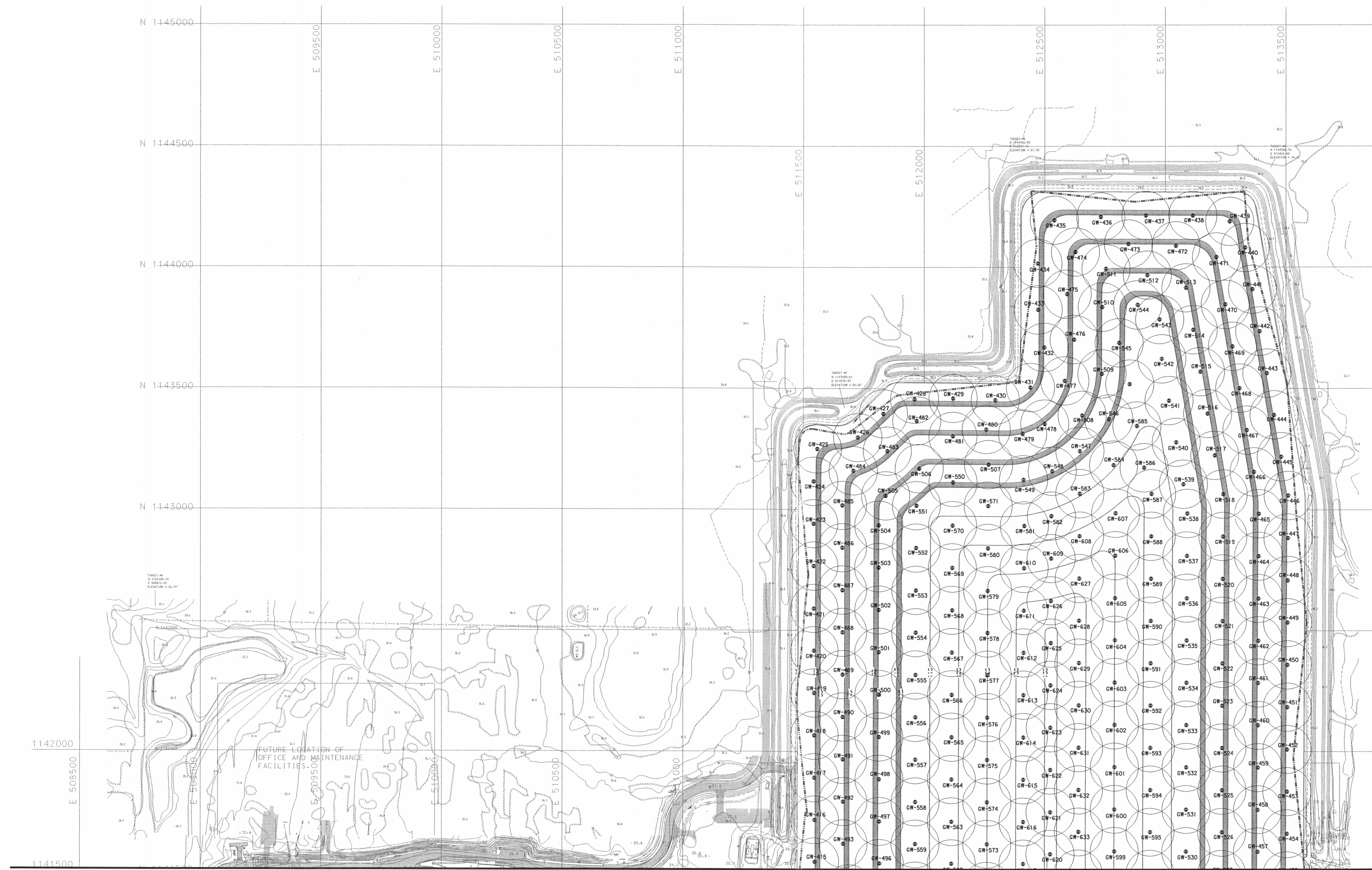
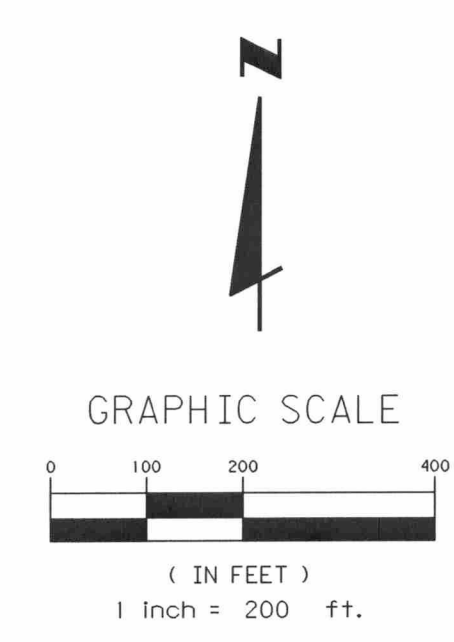
ORIGINAL JAN. 2005
REV ISIONS:
1.
2.
3.
4.
5.

Name: JOSEPH L. MILLER
Florida P.E. No. 89177
Address: PBS&J
482 S. Keller Road
Orlando, FL 32810-6101
Signature: [Signature]
Date: [Date]

JOB NO. 120498.33
DRAWN RGC
DESIGN JLM/RGC
CHECKED JLM
Q.C. DED
SHEET 6/8

UNCLAS. SENSITIVE INFORMATION. CLOSURE M.L.C. & F.C. GAS COLLECTION PLAN

7



- LEGEND:
- PROPOSED CONTOURS
 - EXISTING CONTOURS
 - TERRACE
 - PAVED ROAD
 - EXISTING WELL HEAD (GW-1 TO GW-75)
 - PROPOSED WELL HEAD (GW-90 TO GW-198)
 - EXISTING GAS MANIFOLD (10")
 - EXISTING CONDENSATE KNOCKOUT
 - EXISTING LATERAL (8" DIA.)
 - EXISTING 18" HEADER
 - PROPOSED 8" LATERAL
 - PROPOSED 18" HEADER
 - HV-1 (40') HORIZONTAL GAS COLLECTION TRENCH (4") (LENGTH OF SOLID PIPE)
 - WELL AND RADIUS OF INFLUENCE

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FEB 16 2005
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TAMPA

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CLIENT
MANATEE COUNTY
BOARD OF COUNTY COMMISSIONERS

PROJECT
LENA ROAD LANDFILL
FINAL CLOSURE

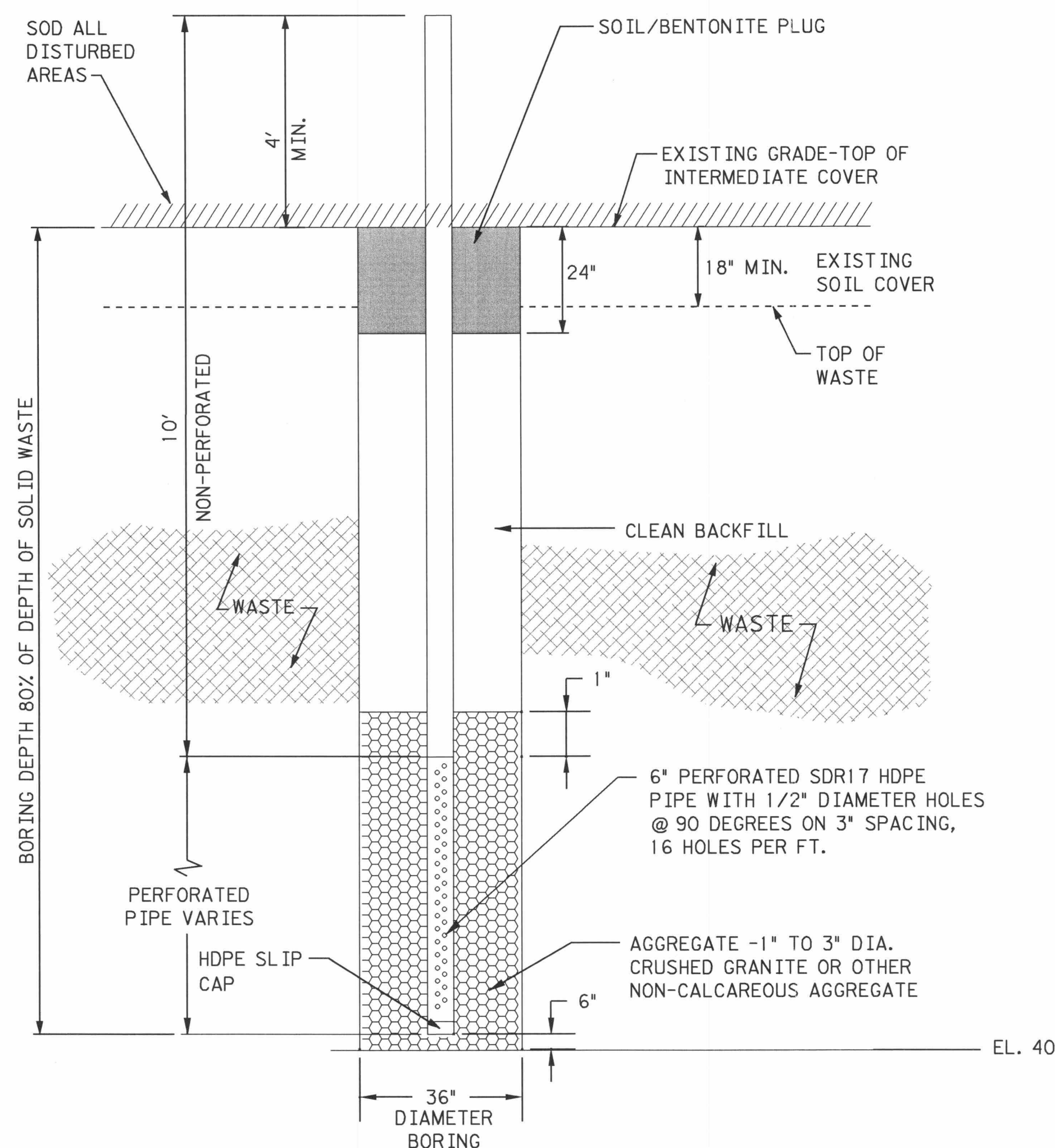
TASK
LANDFILL GAS COLLECTION
SYSTEM PLAN
SHEET 2 OF 2

ORIGINAL JAN. 2005
REVISIONS:
1.
2.
3.
4.
5.

Name: JOSEPH L. MILLER
Florida P.E. No. 38177
Address: PBS&J
482 S. Keller Road
Orlando, FL 32810-6101
Signature: [Signature]
Date: 2/16/05

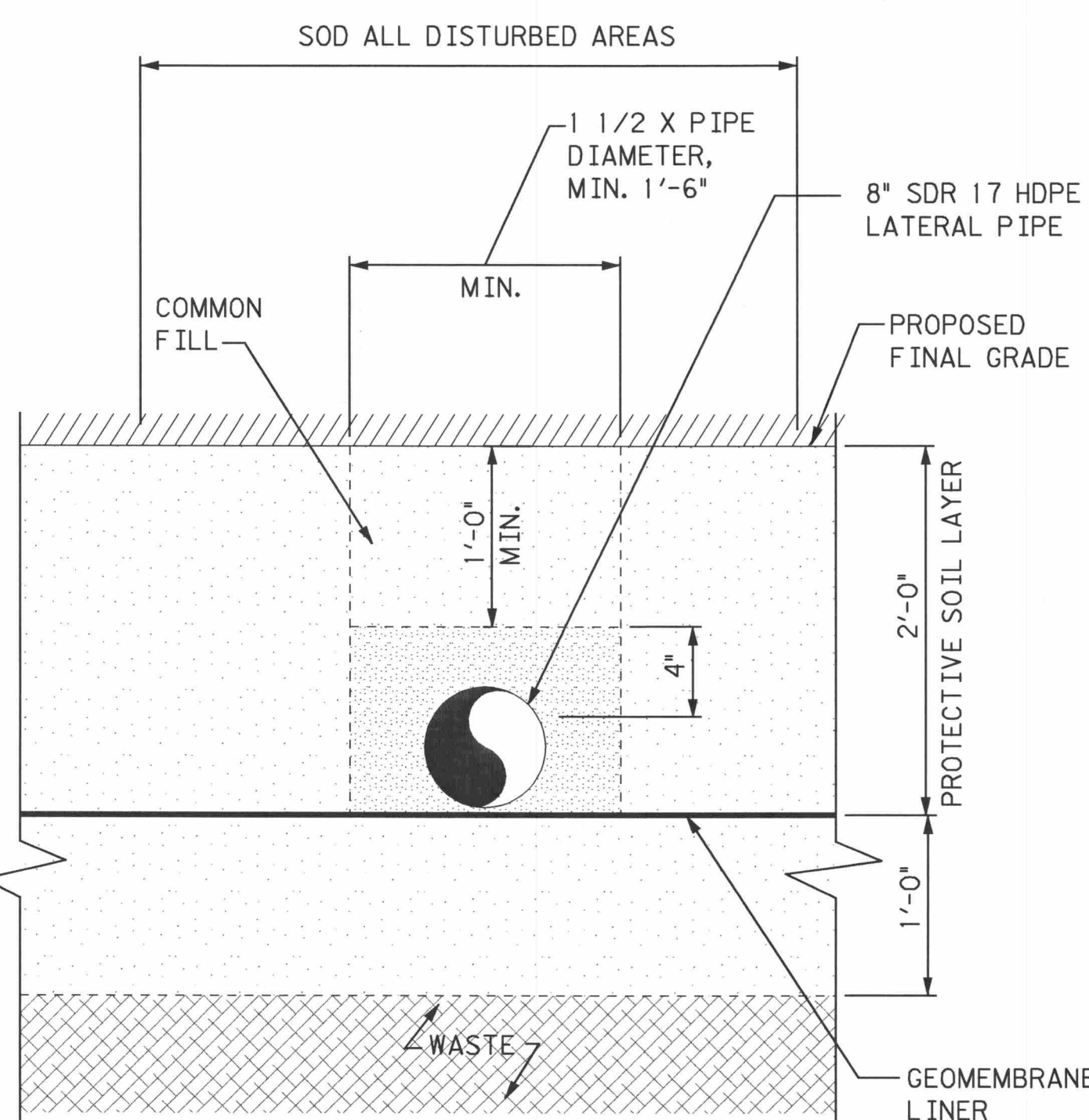
JOB NO. 120498.33
DRAWN RGC
DESIGN JLM/RGC
CHECKED JLM
Q.C. DED
SHEET 7/8

UN/04.DWG/ENVIRONMENTAL/PROTECTION/FLA_CLOSURE/MLC-7.FG/050505.DWG



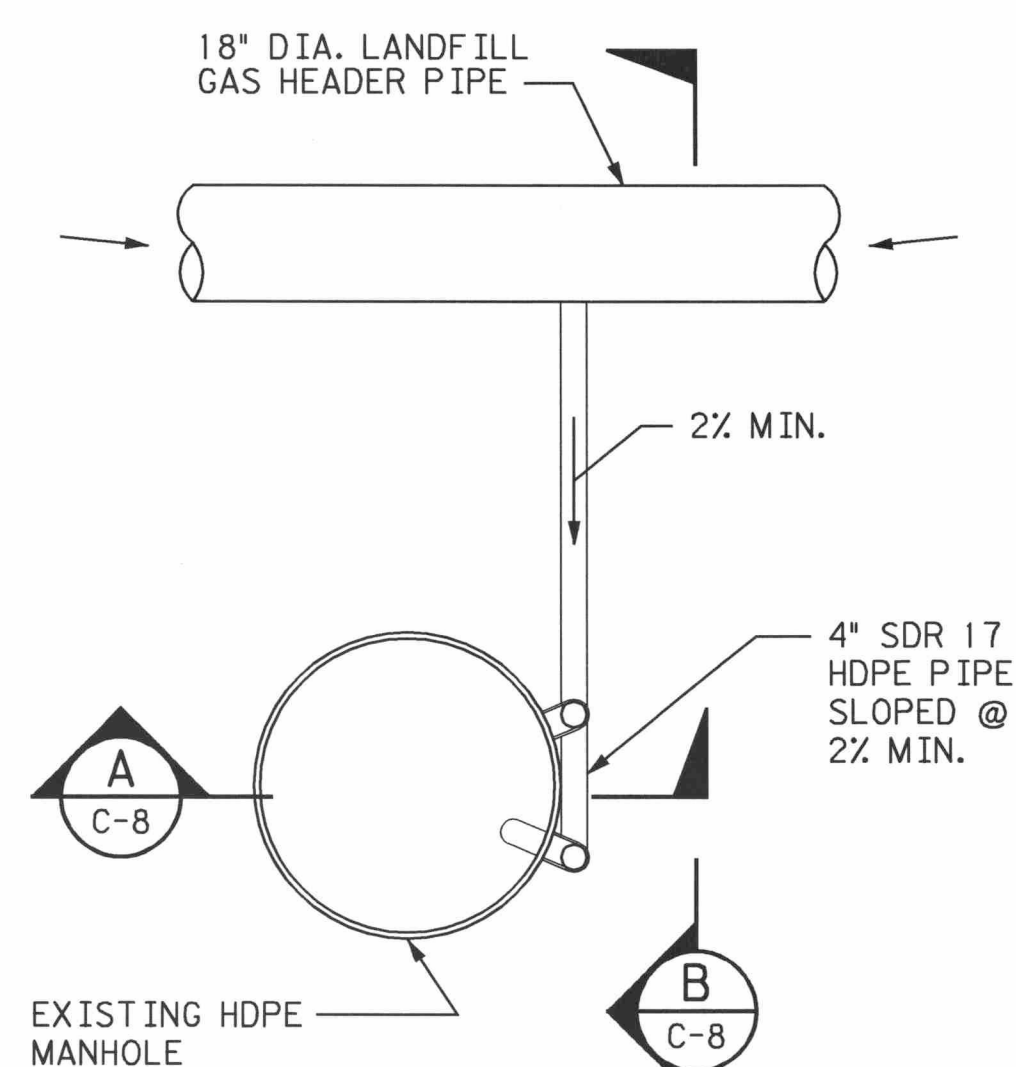
TYPICAL LANDFILL GAS EXTRACTION WELL

NTS



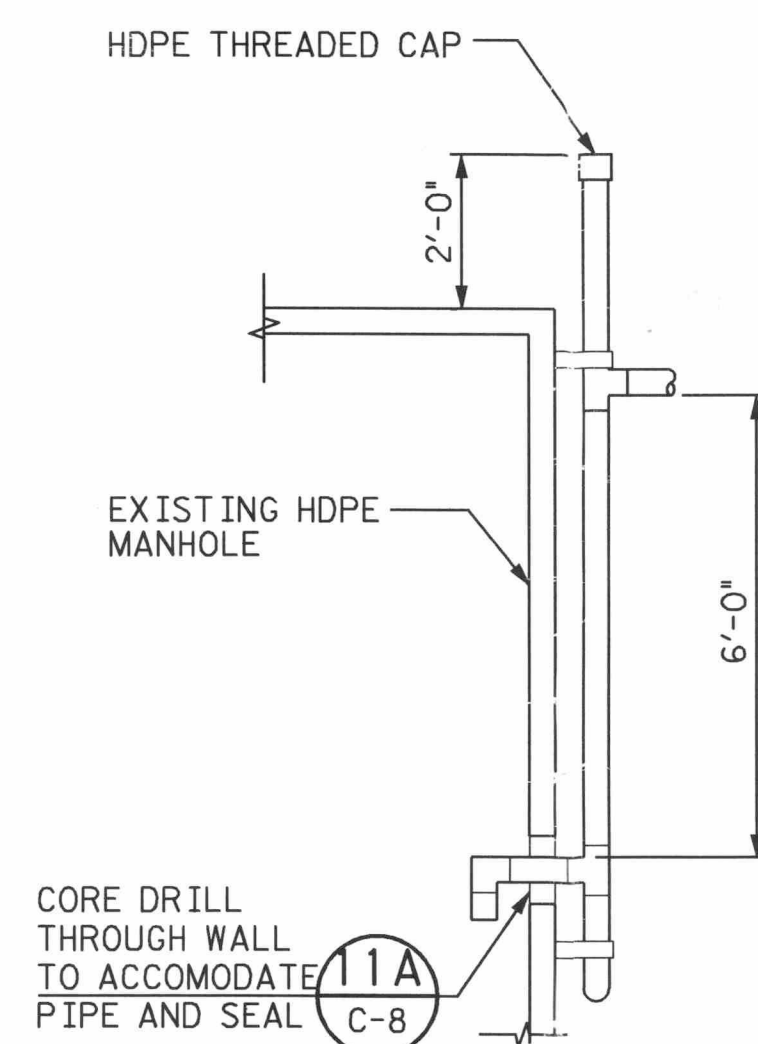
TYPICAL PIPE SECTION

NTS



PLAN

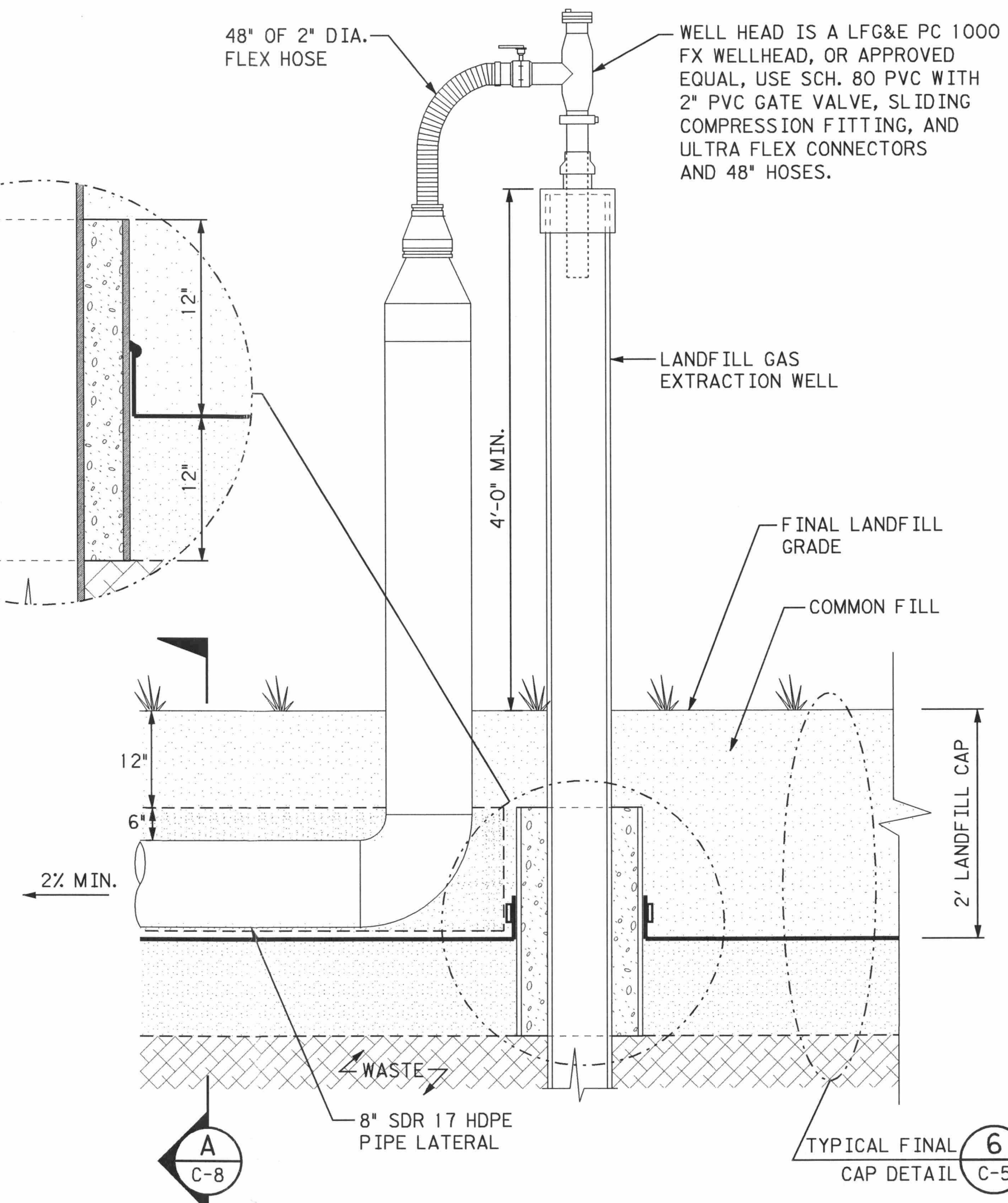
NOTE:
HEADER AND LATERAL
MAY BE INSTALLED BELOW
GEOMEMBRANE



SECTION

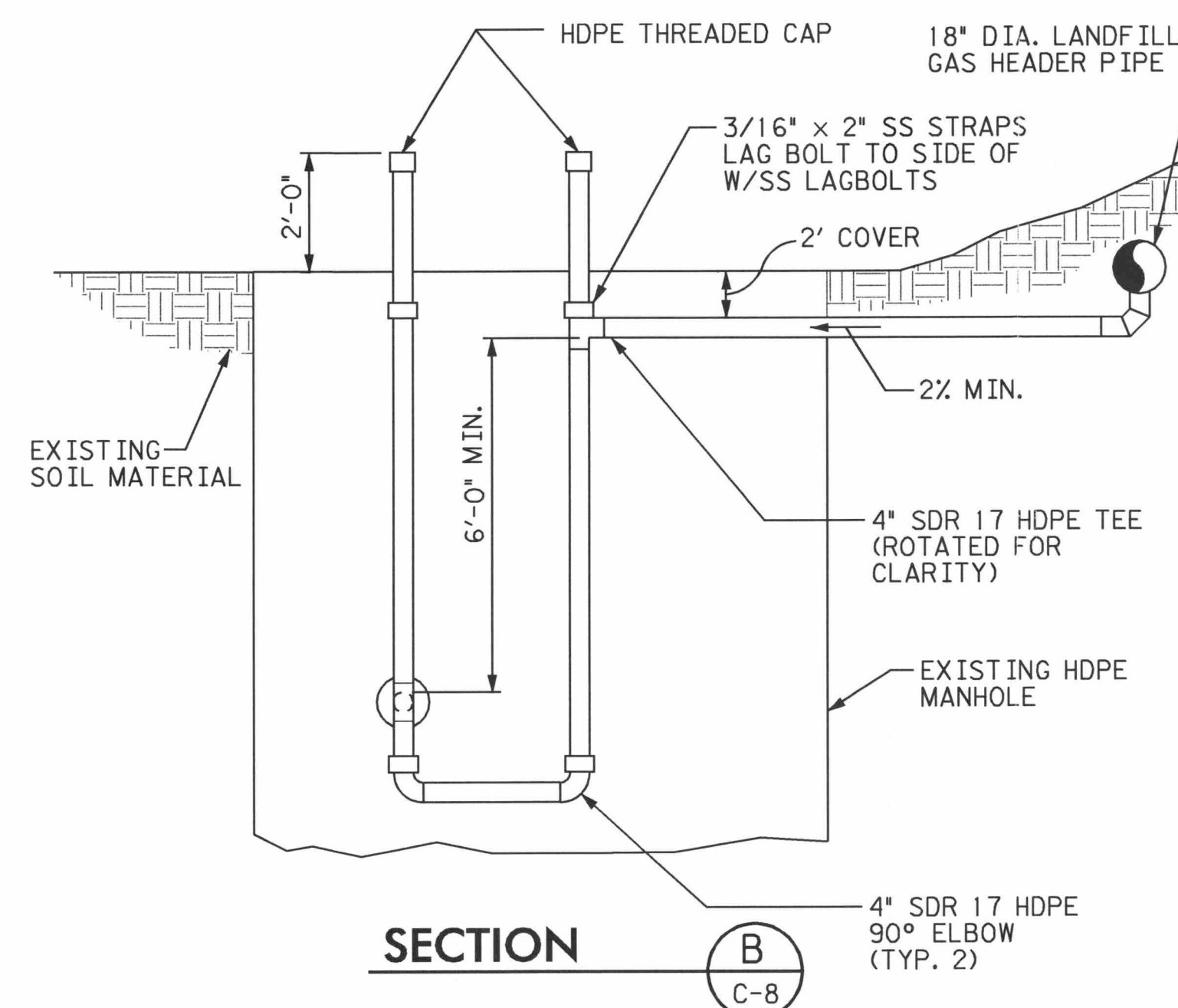
CONDENSATE LINE CONNECTION TO EXISTING MANHOLES DETAIL

NTS

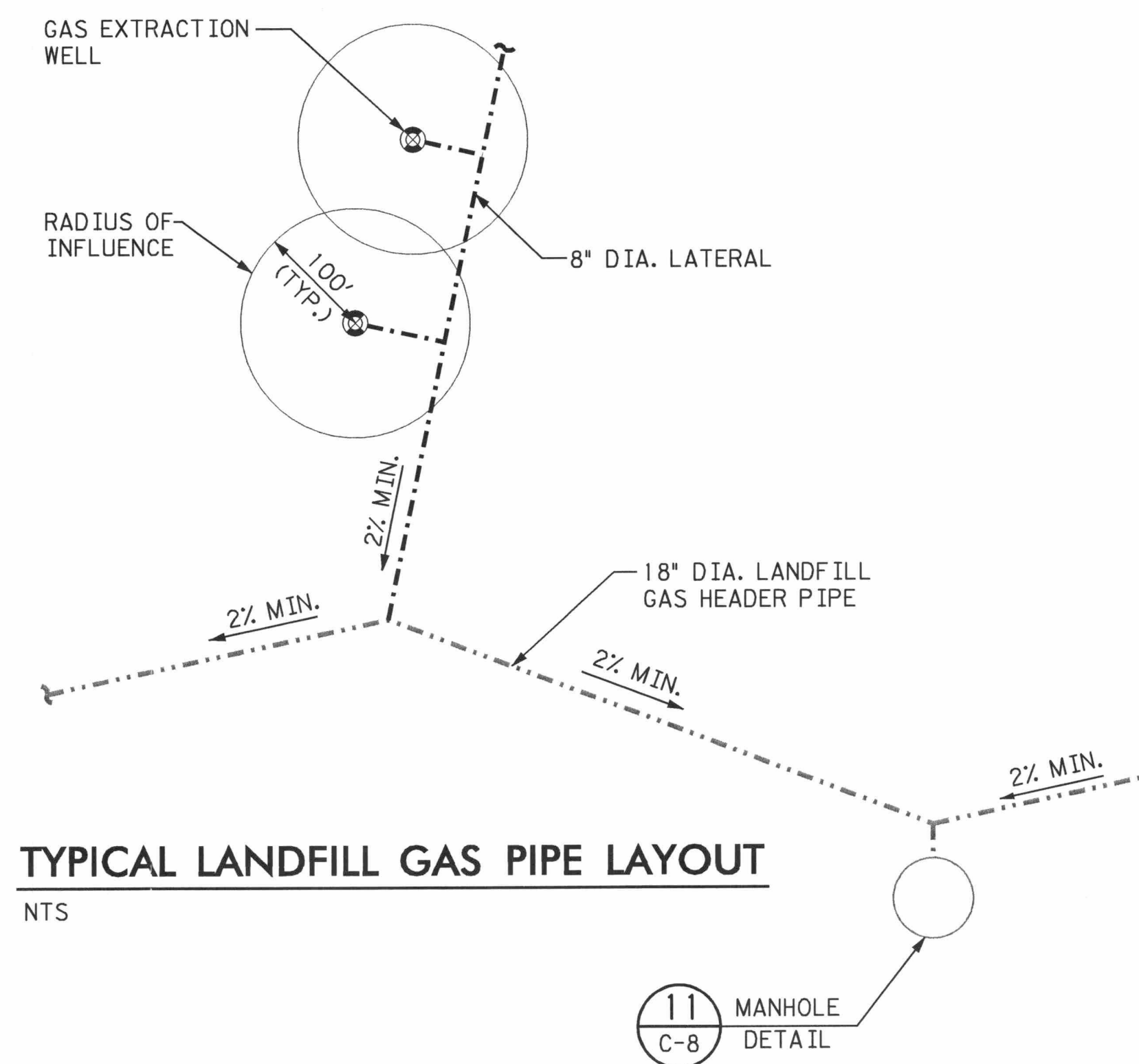


TYPICAL WELLHEAD

NTS

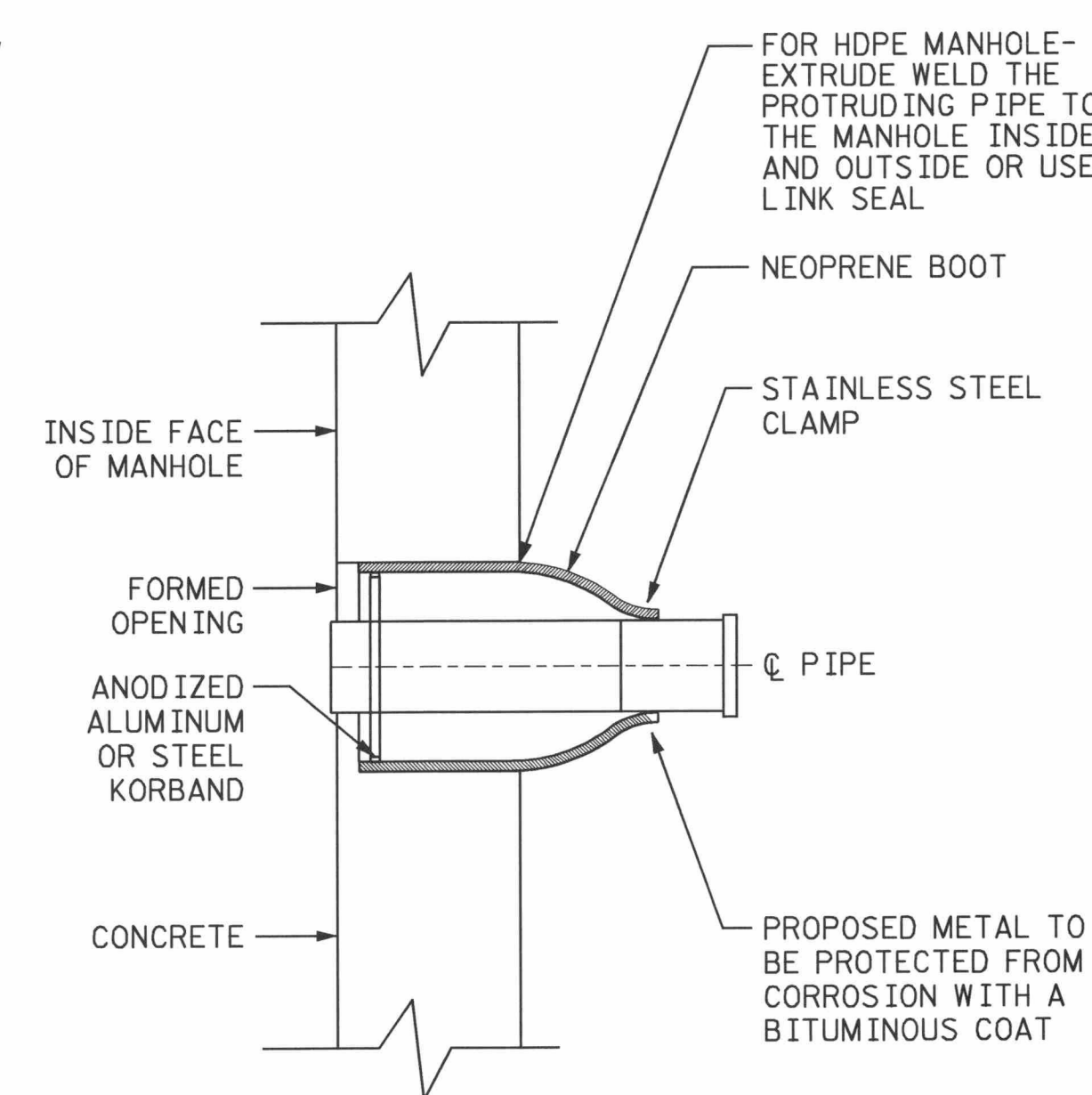


SECTION



TYPICAL LANDFILL GAS PIPE LAYOUT

NTS



DETAIL

NTS

FLORIDA DEPARTMENT OF
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FEB 16 2005
SOUTHWEST DISTRICT
TAMPA

C-8



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BOARD OF COUNTY COMMISSIONERS

PROJECT
LENA ROAD LANDFILL
FINAL CLOSURE

TASK
LANDFILL GAS COLLECTION
SYSTEM DETAILS

ORIGINAL JAN. 2005
REVISIONS:
1.
2.
3.
4.
5.

Name: JOSEPH L. MILLER
Florida P.E. No. 38771
Address: PBS&J
482 S. Keller Road
Orlando, FL 32810-6101
STATE OF FLORIDA
Professional Engineer
Date

JOB NO. 120498.33
DRAWN RGC
DESIGN JLM/RGC
CHECKED JLM
O.C. DED

SHEET 8 / 8

UNL001-15, ENVIRONMENTAL ENGINEERING, LENA ROAD LANDFILL, CLOSURE, V.B., C-8, FC, GAS, DETAILS, CON

14-FEB-2005 11:18 --- ENP, HD 9327