# NEW HANOVER COUNTY

## DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

### NEW HANOVER SECURE LANDFILL

#### CELLS NO. 2-6E PARTIAL CLOSURE PHASE 4

**BID SET**

NEW HANOVER COUNTY, NORTH CAROLINA

JULY 2020

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ISSUED FOR BID

DATE: JUNE 2020

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**BOARD OF COUNTY COMMISSIONERS**

- Julia Olsen-Boseman - Chair
- Patricia Kusek - Vice Chair
- Jonathan Barfield, Jr. - Commissioner
- Woody White - Commissioner
- Rob Zapple - Commissioner

**COUNTY MANAGER**

Chris Coudriet

**DIRECTOR OF ENVIRONMENTAL MANAGEMENT**

Joe Suleyman

**LANDFILL MANAGER**

Sam Hawes

---

**SCS ENGINEERS, PC**

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NC CORP. LICENSE NO. C-1837

SCS PROJECT NO.08218086.08
DETERMINE EXACT LOCATION OF LINER FOR TIE-IN.

1. REQUIREMENTS FOR VERIFICATION AND DOCUMENTATION OF INTERMEDIATE COVER PREPARATION.

REFER TO THE FIELD ENGINEERING AND SURVEY SPECIFICATION SECTION 1050 FOR DETAILED LOCATED IN THE PLAN SET.

DESIGNATED IN THE LEGEND. THE GRADING ALONG THE TOE OF SLOPE WILL PROVIDE THE ABILITY TO REPAIRED BY THE CONTRACTOR UNLESS SPECIFICALLY WAIVED BY THE COUNTY AND SHALL BE LEFT IN INTERMEDIATE COVER. SEE THE SPECIFICATIONS AND DETAILS FOR THE LINER SYSTEM REQUIREMENTS.

IS PLACED. TOP OF WASTE GRADES SHALL BE LOCATED 1 FOOT (MINIMUM) BELOW THE TOP OF PROPOSED GRADES SHOWN DEPICT THE TOP OF INTERMEDIATE COVER ON WHICH THE LINER SYSTEM

CONTRACTOR SHALL REMOVE MULCH AND STRIP EXISTING VEGETATION WITHIN THE CONTRACTOR TO EXCAVATE AND WELD THE CAP LINER TO THE BOTTOM LINER LOCATED ALONG THE TOP OF BERM. SEE DETAILS AS GOOD A CONDITION AS BEFORE THE START OF WORK.

ANY FENCE OR PART THEREOF OUTSIDE THE PROJECT LIMIT, INCLUDING SEDIMENTATION BARRIER, THAT IS DAMAGED OR REMOVED DURING THE COURSE OF THE WORK SHALL BE REPLACED OR REPAIRS TO THE TOE DRAIN AT TOE OF SLOPE SEE DETAIL TYPICAL CLOSURE GRADING AT TOE OF SLOPE SEE DETAIL LINER TIE-IN TO EXISTING CLOSED AREA SEE DETAIL APPROXIMATE LOCATION OF EXISTING EDGE APPROXIMATE LIMITS OF CLOSURE APPROXIMATE CELL BOUNDARY CURRENT CONSTRUCTION AREA TERRACE DETAIL PROJECT AREA ISSUE NO.

SCALE:

ISSUED FOR BID

NOTE:

PROJECT AREA

EXISTING ELEVATION CONTOURS (03/07/2020 TOPOGRAPHIC SURVEY)

CAPPING SYSTEM (30.0 ACRES)

CLOSURE GRADE ELEVATION CONTOUR

APPROXIMATE CELL BOUNDARY

APPROXIMATE LIMITS OF CLOSURE

CURRENT CONSTRUCTION AREA

EXISTING CONSTRUCTION AREA

APP. BY:

CLIENT

PROJ. NO.

PREPARED BY:

CHECKED BY:

DESIGNED BY:

CONTRACTOR TO COMPUTE SLOPE GRADING AND WASTE MATERIAL QUANTITIES USING TOTAL POINTS.

CONTRACTOR TO EXCAVATE 1 FOOT OF SLAB MATERIALS TO MINIMIZE THE TOP OF INTERMEDIATE COVER ELEVATIONS AND MAY NOT REFLECT ACTUAL ELEVATIONS.

CONDITIONS MAY VARY FROM THOSE SHOWN.

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CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY SEALED BY IAN SPURLOCK, P.E. ON THE DATE THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEAL.
1. PROPOSED CONTOURS WERE DEVELOPED BASED ON THE ACTUAL EXISTING GRADE AS SHOWN ON THE COVER SHEET.

2. REFER TO THE FIELD ENGINEERING AND SURVEY SPECIFICATION SECTION 1050 FOR DETAILED REQUIREMENTS FOR VERIFICATION AND DOCUMENTATION OF FINAL COVER PREPARATION.

3. CONTRACTOR SHALL MEASURE AND USED STORMWATER BASIN AT TOP OF SLOPE. DRAINAGE ALONG SCANTY DRAINAGE CONSTRUCTION NAVIGATION IF POSSIBLE. SEE DRAWING FOR LOCATION OF EXISTING STRUCTURES. SOD DAMAGE BY CONTRACTOR DETERMINED TO THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

4. IF CONTRACTOR DAMAGES EXISTING ASPHALT PAVEMENT, REPAIRS WILL BE MADE AT NO ADDITIONAL COST TO THE OWNER. REPAIRS TO INschliee EQUALLY OR SUPERIOR MATERIAL.

5. REFER TO STORMWATER PLAN FOR ADDITIONAL STORMWATER FEATURES AND STRUCTURES TO MANAGE SURFACE AND SUBSURFACE FLOW THAT ARE NOT SHOWN ON THIS SHEET.

NOTES:

1. PROPOSED CONTOURS REFERENCE CONCEPT FINAL COVER ELEVATIONS. THE ACTUAL FINISHED ELEVATIONS WILL DEPEND ON THE INITIAL TOP OF INTERMEDIATE COVER.

2. REFER TO THE FIELD ENGINEERING AND SURVEY SPECIFICATION SECTION 1050 FOR DETAILED REQUIREMENTS FOR VERIFICATION AND DOCUMENTATION OF FINAL COVER PREPARATION.

3. CONTRACTOR SHALL MEASURE AND USE STORMWATER BASIN AT TOP OF SLOPE. DRAINAGE ALONG SCANTY DRAINAGE CONSTRUCTION NAVIGATION IF POSSIBLE. SEE DRAWING FOR LOCATION OF EXISTING STRUCTURES. SOD DAMAGE BY CONTRACTOR DETERMINED TO THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

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5. REFER TO STORMWATER PLAN FOR ADDITIONAL STORMWATER FEATURES AND STRUCTURES TO MANAGE SURFACE AND SUBSURFACE FLOW THAT ARE NOT SHOWN ON THIS SHEET.
NOTES:
1. TOE DRAIN OUTLETS SHALL BE PLACED AT 200' INTERVALS ALONG THE TOE OF SLOPE. SEE DETAIL 11. SILO DRAIN AND TOE DRAIN TO BE INSTALLED TO DISCONNECT INTO THE OPPA. SEE DETAIL 9 AND DETAIL 11.
2. PREPARED CENTERS REFERENCE FABRIC MATERIAL LOCATION - PREPARED CENTERS WILL VARY BASED ON THE FINAL TOP OF INTERMEDIATE COVER.
3. FINAL LOCATION FOR THE ENERGY DISSIPATORS IN THE SWALE SHALL BE BASED ON THE FINAL ELEVATIONS OF THE GRADED SWALE.

SEDIMENT AND EROSION CONTROL:
1. PREPARED CENTERS REFERENCE FABRIC MATERIAL LOCATION - PREPARED CENTERS WILL VARY BASED ON THE FINAL ELEVATIONS OF THE GRADED SWALE.
2. PREPARED CENTERS REFERENCE FABRIC MATERIAL LOCATION - PREPARED CENTERS WILL VARY BASED ON THE FINAL ELEVATIONS OF THE GRADED SWALE.
3. PREPARED CENTERS REFERENCE FABRIC MATERIAL LOCATION - PREPARED CENTERS WILL VARY BASED ON THE FINAL ELEVATIONS OF THE GRADED SWALE.

LEGEND
EXISTING ELEVATION CONTURS - PREPARED CENTERS (ELEVATIONS)
TOP OF FINAL COVER (SEE NOTE 2)
APPROXIMATE LIMITS OF CLOSURE (CLOSING SYSTEM 3 DEEPEST)
PROJECT LIMITS
SOIL ASBESTO
LIMIT OF SIDE
GFFR CONNECTION
SEE DETAIL 6
11
4
3
1

MID SLOPE BERM DETAIL
SEE DETAIL 6
11
4
3
2

ENERGY DISSIPATOR IN SEDIMENTATION BASIN
SEE DETAIL 6
12
1

GFFR SPILLWAY
SEE DETAIL 6
11
3

STORMWATER SPILLWAY DETAIL
SEE DETAIL 6
10
3

STORMWATER INTERCEPTOR SPILLWAY
SEE DETAIL 6
10
4

TOE DRAIN AT TOE OF SLOPE
SEE DETAIL 6
9
1

TOE DRAIN AT MIDSLOPE
SEE DETAIL 6
9
2

GRAVEL ROAD REPAIR
SEE DETAIL 6
8
4

GFFR CONNECTION
SEE DETAIL 6
11
1

NOTE: SOD BEING CONSIDERED TO BE PLACED AT ELEVATIONS SHOWN IN RED. TOE DRAIN OUTLETS TO BE PLACED AT 200' INTERVALS ALONG THE TOE OF SLOPE. SEE DETAIL 11. SILO DRAIN AND TOE DRAIN TO BE INSTALLED TO DISCONNECT INTO THE OPPA. SEE DETAIL 9 AND DETAIL 11.

PALLETS

STORMWATER MANAGEMENT PLAN

06 - STORMWATER PLAN

TOE DRAIN OUTLET SHALL DRAIN ONTO EXISTING GFFR PER FIELD CONDITIONS

EXISTING GFFR TO BE REPLACED

EXISTING ELEVATION CONTURS (05/06/2016 TOPOGRAPHIC SURVEY)

TOP OF FINAL COVER (SEE NOTE 2)

APPROXIMATE LIMITS OF CLOSURE (CLOSING SYSTEM 3 DEEPEST)

PROJECT LIMITS

SOIL ASBESTO

LIMIT OF SIDE

GFFR CONNECTION

SEE DETAIL 6

11

4

3

1

STORMWATER SPILLWAY DETAIL

SEE DETAIL 6

10

3

STORMWATER INTERCEPTOR SPILLWAY

SEE DETAIL 6

10

4

TOE DRAIN AT TOE OF SLOPE

SEE DETAIL 6

9

1

TOE DRAIN AT MIDSLOPE

SEE DETAIL 6

9

2

GRAVEL ROAD REPAIR

SEE DETAIL 6

8

4

GFFR CONNECTION

SEE DETAIL 6

11

1

NOTE: SOD BEING CONSIDERED TO BE PLACED AT ELEVATIONS SHOWN IN RED. TOE DRAIN OUTLETS TO BE PLACED AT 200' INTERVALS ALONG THE TOE OF SLOPE. SEE DETAIL 11. SILO DRAIN AND TOE DRAIN TO BE INSTALLED TO DISCONNECT INTO THE OPPA. SEE DETAIL 9 AND DETAIL 11.
1. NOTES

2. INTENT OF DIRECTING FLOW TO EXISTING GFFR, CULVERTS, SWALE SHALL PROVIDE FOR STORMWATER TO FLOW STORMWATER SWALE AT THE TOE OF SLOPE, WITH THE WITHOUT OBSTRUCTION. WHERE GFFR IS TO BE PLACED AROUND DROP INLET THE AND STORMWATER STRUCTURES. TOE DRAINS NOT SHOWN FOR CLARITY.

3. THE CONTRACTOR SHALL REGRADE AND SOD THE EXISTING:

4. GRAVEL ROAD REPAIR DETAIL

5. CLOSURE CAPPING SYSTEM DETAIL

6. ROADWAY REPLACEMENT AND PIPE TRENCH DETAIL

7. ACCESS COVER PLATE

8. TOE DRAIN PERFORATION PATTERN

9. BOLLARD DETAIL

10. TYPICAL CLOSURE GRADING AT TOE OF SLOPE DETAIL

11. DAMAGED PAVEMENT REPLACEMENT DETAIL

12. ROADWAY REPLACEMENT DETAIL

13. ACCESS COVER PLATE CONNECTION DETAIL

14. INTERMEDIATE COVER, PROTECTIVE COVER, AND TOP SOIL FROM BOTH SIDES.

15. OFF-SITE SOURCE.

16. 40 MIL LLDPE LINER SHALL BE TEXTURED ON BOTH SIDES.

17. 3.0' LIMITS OF WASTE

18. 6.0' LIMITS OF TOP OF WASTE

19. 8.0' LIMITS OF TOP OF WASTE
1. Location and elevation of existing edge of closure to be verified by the contractor.
2. The contractor shall regrade and sod the stormwater swale at the toe of slope.
3. Toe drain in anchor trench is existing in some locations. See sheet 8 for more information.

NOTE:
1. SRF shown for informational purposes only. Limits of SRF in accordance with details is shown. Move toe drain to sketch 8 for final cover grades.

NOTE:
1. GFFR shown for informational purposes only. Limits of GFFR in accordance with detail 4 sheet 10. Refer to sheet 5 for final cover grades.

WRAP GEOTEXTILE AROUND 24"X24" ROUNDED RIVER ROCK

TOE DRAIN AT TOE OF SLOPE DETAIL

TOE DRAIN AT MID-SLOPE DETAIL

TOE DRAIN CONNECTION TO GFFR DETAIL

TERrace DETAIL

MID-SLOPE BERM DETAIL

GFFR TERRACE GRADING DETAIL
NOTES:

1. REMOVE EXISTING COVER SOIL OVER ANCHOR TRENCH AND CAREFULLY EXPOSE LINER AND GEOCOMPOSITE. ROLL BACK GEOCOMPOSITE AND EXTRUSION WELD NEW LINER TO EXISTING LINER. CONNECT NEW AND EXISTING GEOCOMPOSITES PER SPECIFICATIONS.

2. CONTRACTOR SHALL DETERMINE AMOUNT OF EXISTING PROTECTIVE COVER MATERIAL TO REMOVE FOR PROPER GEOSYNTHETICS CONNECTION PER SPECIFICATIONS.

NOTES:

1. LOCATION AND ELEVATION OF EXISTING TOE TO BE VERIFIED BY THE CONTRACTOR.

2. THE CONTRACTOR SHALL REGRADE AND SOD THE STORMWATER CANAL AT THE TOE OF SLOPE.

3. TOE OF SLOPE GRADING MAY VARY FROM 4:1 TO 3:1 AS NECESSARY TO MEET DESIGNED INTERMEDIATE COVER ELEVATIONS AND AVOID WASTE RELOCATIONS.
GFFR CONNECTION DETAIL

ENERGY DISSIPATOR SWALE DETAIL

ENERGY DISSIPATOR SECTION

GFFR SPILLWAY DETAIL

RECTIFY INSTALLATION OF TEE" AND "OF DUGS WILL INCLUDE TYPICAL 2' FOOT WEIRS.

NOTE:
1. USE GEOTEXTILE A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE POSTS AND WIRE AS DIRECTED.
2. USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 5 LINE WIRES WITH 12" VERTICAL SPACING.
3. PROVIDE 5.0' STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.
4. FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18" ABOVE GROUND SURFACE TOP AND BOTTOM STRANDS SHALL BE 10 GAUGE MINIMUM

SIET FENCE DETAIL

NOTES:
1. USE GEOTEXTILE A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE POSTS AND WIRE AS DIRECTED.
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4. FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18" ABOVE GROUND SURFACE TOP AND BOTTOM STRANDS SHALL BE 10 GAUGE MINIMUM
ENERGY DISSIPATOR IN SEDIMENTATION BASIN DETAIL

SLOPE OF FINAL CLOSURE OUTSIDE THE EDGE OF LINER:

- ELEVATION = 28
- ELEVATION = 26
- ELEVATION = 32

SECTION

HEIGHT OF SEDIMENTATION BASIN:

- ELEVATION = 12.00'
- ELEVATION = 5.00'
- ELEVATION = 12.00'

TERRACE GFFR TRANSITION TO EXISTING

NOTES:
1. CLEANOUTS ARE EXPECTED EVERY 50' ALONG THE EAST AND NORTH EDGE OF LINER.

CLOSURE CAPPING AT EXISTING HEADER/LATERAL CLEANOUT DETAIL

DETAIL-5

NOT TO SCALE

TERRACE GRADING DETAIL

SECTION