GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION, AND OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

SIGNATURE ____________ DATE ____________

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL," MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES EXECUTIVE REGULATIONS 5-90, 7-02AM AND 36-90, AND MONTGOMERY COUNTY DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION "STORM DRAIN DESIGN CRITERIA" DATED AUGUST 1988.

DESIGN ENGINEER SIGNATURE ____________ DATE ____________

PRINTED NAME ____________ REGISTRATION NUMBER ____________

CERTIFICATION OF QUANTITIES

I HEREBY CERTIFY THAT THE ESTIMATED TOTAL AMOUNT OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAS BEEN COMPUTED TO ___________ CUBIC YARDS OF EXCAVATION, _______________ CUBIC YARDS OF FILL AND THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE SQUARE FEET.

SIGNATURE ____________ DATE ____________

PRINTED NAME AND TITLE ____________ REGISTRATION NUMBER ____________

MISS UTILITY

CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDER GROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION AND HAVE THOSE FACILITIES LOCATED BY THE UTILITY COMPANIES PRIOR TO COMMENCING EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE. CERTIFICATIONS ON THIS SHEET ARE REQUIRED ON ANY PLAN INVOLVING STORMWATER MANAGEMENT. THE STRUCTURAL CERTIFICATION IS REQUIRED FOR UNDERGROUND STORMWATER MANAGEMENT STRUCTURES WHERE POURED CONCRETE WALLS ARE TO BE UTILIZED, OR ON ANY OTHER STRUCTURE MCDPS DEEMS APPROPRIATE.

STRUCTURAL CERTIFICATION

I HEREBY CERTIFY THAT THE STRUCTURAL DESIGN OF THIS STORMWATER MANAGEMENT FACILITY IS IN ACCORDANCE WITH APPLICABLE CODES AND THAT THE PLAN FOR THIS HAS BEEN DESIGNED FOR SPECIFIED LOADING(S) AS INDICATED HEREON.

DESIGN ENGINEER SIGNATURE ____________ DATE ____________

PRINTED NAME ____________ REGISTRATION NUMBER ____________

DESIGN LOADING ____________

MONTGOMERY COUNTY PUBLIC SCHOOLS MAINTENANCE CERTIFICATION

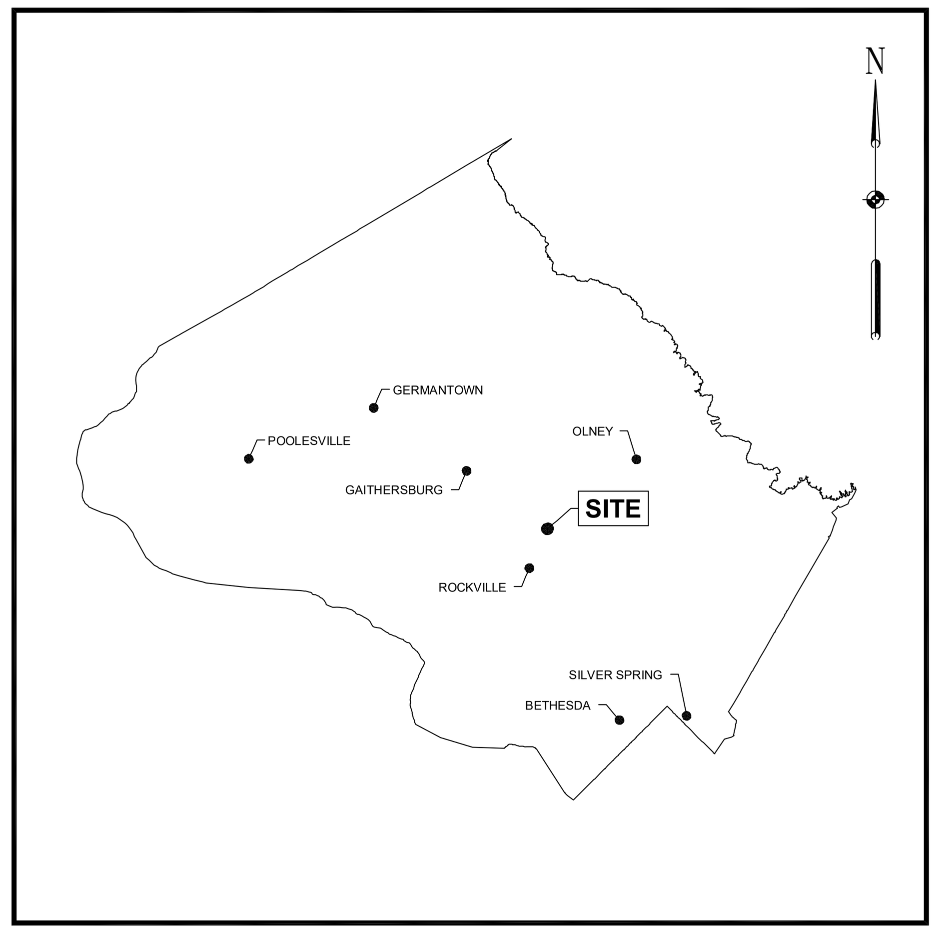
I HEREBY CERTIFY THAT MONTGOMERY COUNTY PUBLIC SCHOOLS (MCPS) WILL ASSUME MAINTENANCE RESPONSIBILITIES FOR ALL STORMWATER MANAGEMENT FACILITIES AS LISTED ON DRAWINGS IN ACCORDANCE WITH THE MEMORANDUM OF UNDERSTANDING BETWEEN MCPS AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, DATED JANUARY 22, 2010. IF FOR ANY REASON, FUTURE IMPROVEMENTS TO THE SITE ARE PLANNED THAT WOULD IMPACT ANY OF THE STORMWATER MANAGEMENT FACILITIES INCLUDED HEREIN, MCPS WILL NOTIFY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION DURING THE PLANNING OR EARLY DESIGN STAGE FOR SUCH IMPROVEMENTS.

DIRECTOR, DIVISION OF CONSTRUCTION ____________ DATE ____________

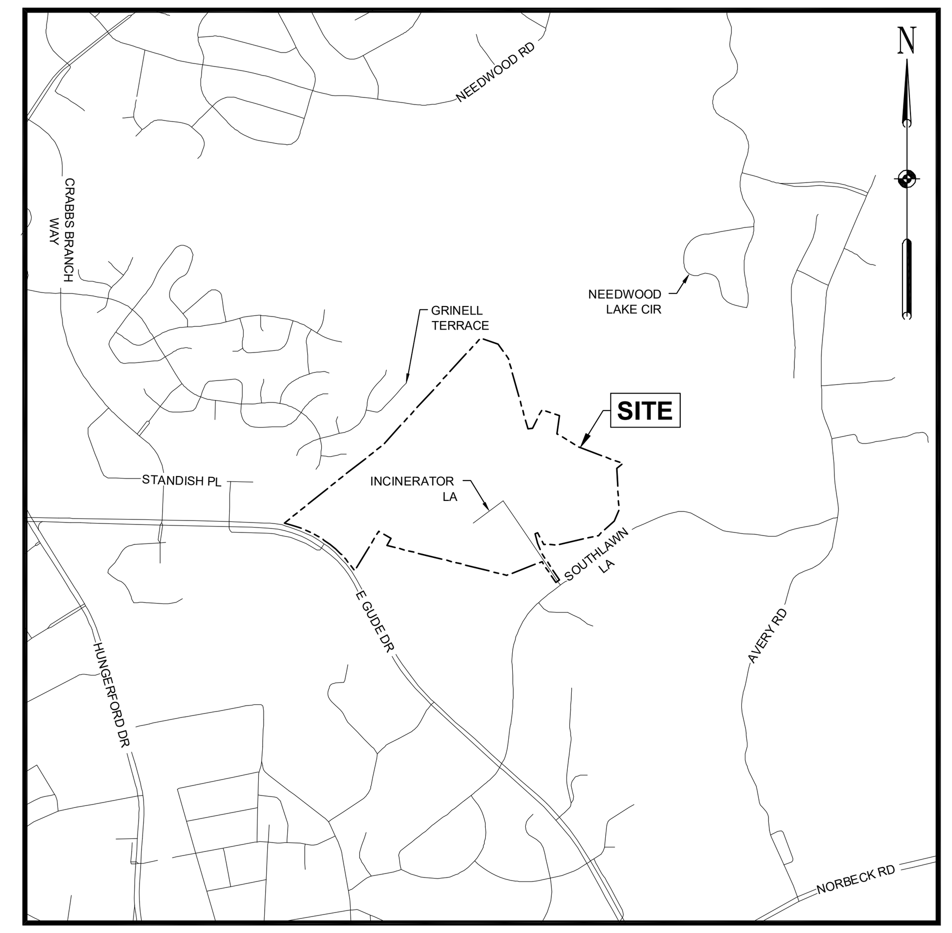
MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION MAINTENANCE CERTIFICATION

I HEREBY CERTIFY THAT THE DEPARTMENT OF TRANSPORTATION WILL ASSUME MAINTENANCE RESPONSIBILITIES FOR ALL STORMWATER MANAGEMENT FACILITIES AS LISTED AND SHOWN, HEREON, IN ACCORDANCE WITH THE MEMORANDUM OF UNDERSTANDING BETWEEN THIS DEPARTMENT AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION DATED SEPTEMBER 1, 1986. IF, FOR ANY REASON, FUTURE IMPROVEMENTS TO THE ROADWAY ARE PLANNED THAT WOULD IMPACT ANY OF THE STORMWATER MANAGEMENT FACILITIES INCLUDED HEREIN, THIS DEPARTMENT WILL NOTIFY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION DURING THE PLANNING OR EARLY DESIGN STAGE FOR SUCH IMPROVEMENTS.

CHIEF, DIVISION OF TRANSPORTATION ENGINEERING ____________ DATE ____________



LOCATION MAP - MONTGOMERY COUNTY, MARYLAND
NOT TO SCALE



VICINITY MAP
SCALE: 1" = 2,000'

RELATED REQUIRED PERMITS

TO BE COMPLETED BY THE CONSULTANT AND PLACED ON THE FIRST SHEET OF THE SEDIMENT CONTROL / STORMWATER MANAGEMENT PLAN SET FOR ALL PROJECTS

IT IS THE RESPONSIBILITY OF THE PERMITTEE / OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ISSUANCE OF THE APPROVED SEDIMENT CONTROL

TYPE OF PERMIT	REQD	NOT REQD	PERMIT #	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS FLOODPLAIN DISTRICT					
WATERWAYS/WETLAND(S):					
A. CORPS OF ENGINEERS					
B. MDE					
C. MDE WATER QUALITY CERTIFICATION					
MDE DAM SAFETY					
* DPS ROADSIDE TREES PROTECTION PLAN				APPROVAL DATE	
N.P.D.E.S. NOTICE OF INTENT					DATE FILED
FEMA LOMR (REQUIRED POST CONSTRUCTION)					
OTHERS (PLEASE LIST):					

* A COPY OF THE APPROVED ROADSIDE TREES PROTECTION PLAN MUST BE DELIVERED TO THE SEDIMENT CONTROL INSPECTOR AT THE PRECONSTRUCTION MEETING.

SHEET LIST

DRAWING NO.	SHEET	DRAWING TITLE	SC/SWM SHEET
G-001	1	TITLE SHEET	1 OF 35
G-002	2	GENERAL NOTES AND LEGEND	2 OF 35
G-003	3	EROSION AND SEDIMENT CONTROL NOTES	3 OF 35
C-101	4	EXISTING CONDITIONS PLAN - KEY SHEET	
C-102	5	EXISTING CONDITIONS PLAN	
C-103	6	EXISTING CONDITIONS PLAN	
C-104	7	EXISTING CONDITIONS PLAN	
C-105	8	EXISTING CONDITIONS PLAN	
C-106	9	EXISTING CONDITIONS PLAN	
C-107	10	EXISTING CONDITIONS PLAN	
C-108	11	EXISTING CONDITIONS PLAN	
C-109	12	EXISTING CONDITIONS PLAN	
C-110	13	EXISTING CONDITIONS PLAN	
C-111	14	EXISTING CONDITIONS PLAN	
C-112	15	INITIAL EROSION AND SEDIMENT CONTROL PLAN - KEY SHEET	4 OF 35
C-113	16	INITIAL EROSION AND SEDIMENT CONTROL PLAN	5 OF 35
C-114	17	INITIAL EROSION AND SEDIMENT CONTROL PLAN	6 OF 35
C-115	18	INITIAL EROSION AND SEDIMENT CONTROL PLAN	7 OF 35
C-116	19	INITIAL EROSION AND SEDIMENT CONTROL PLAN	8 OF 35
C-117	20	INITIAL EROSION AND SEDIMENT CONTROL PLAN	9 OF 35
C-118	21	INITIAL EROSION AND SEDIMENT CONTROL PLAN	10 OF 35
C-119	22	INITIAL EROSION AND SEDIMENT CONTROL PLAN	11 OF 35
C-120	23	INITIAL EROSION AND SEDIMENT CONTROL PLAN	12 OF 35
C-121	24	INITIAL EROSION AND SEDIMENT CONTROL PLAN	13 OF 35
C-122	25	INITIAL EROSION AND SEDIMENT CONTROL PLAN	14 OF 35
C-123	26	DEMOLITION AND EXCAVATION PLAN - KEY SHEET	
C-124	27	DEMOLITION AND EXCAVATION PLAN	
C-125	28	DEMOLITION AND EXCAVATION PLAN	
C-126	29	DEMOLITION AND EXCAVATION PLAN	
C-127	30	DEMOLITION AND EXCAVATION PLAN	
C-128	31	DEMOLITION AND EXCAVATION PLAN	
C-129	32	DEMOLITION AND EXCAVATION PLAN	
C-130	33	DEMOLITION AND EXCAVATION PLAN	
C-131	34	DEMOLITION AND EXCAVATION PLAN	
C-132	35	DEMOLITION AND EXCAVATION PLAN	
C-133	36	DEMOLITION AND EXCAVATION PLAN	
C-134	37	SUBGRADE GRADING PLAN - KEY SHEET	
C-135	38	SUBGRADE GRADING PLAN	
C-136	39	SUBGRADE GRADING PLAN	
C-137	40	SUBGRADE GRADING PLAN	
C-138	41	SUBGRADE GRADING PLAN	
C-139	42	SUBGRADE GRADING PLAN	
C-140	43	SUBGRADE GRADING PLAN	
C-141	44	SUBGRADE GRADING PLAN	
C-142	45	SUBGRADE GRADING PLAN	

SHEET LIST

DRAWING NO.	SHEET	DRAWING TITLE	SC/SWM SHEET
C-143	46	SUBGRADE GRADING PLAN	
C-144	47	SUBGRADE GRADING PLAN	
C-145	48	FINAL EROSION AND SEDIMENT CONTROL PLAN - KEY SHEET	15 OF 35
C-146	49	FINAL EROSION AND SEDIMENT CONTROL PLAN	16 OF 35
C-147	50	FINAL EROSION AND SEDIMENT CONTROL PLAN	17 OF 35
C-148	51	FINAL EROSION AND SEDIMENT CONTROL PLAN	18 OF 35
C-149	52	FINAL EROSION AND SEDIMENT CONTROL PLAN	19 OF 35
C-150	53	FINAL EROSION AND SEDIMENT CONTROL PLAN	20 OF 35
C-151	54	FINAL EROSION AND SEDIMENT CONTROL PLAN	21 OF 35
C-152	55	FINAL EROSION AND SEDIMENT CONTROL PLAN	22 OF 35
C-153	56	FINAL EROSION AND SEDIMENT CONTROL PLAN	23 OF 35
C-154	57	FINAL EROSION AND SEDIMENT CONTROL PLAN	24 OF 35
C-155	58	FINAL EROSION AND SEDIMENT CONTROL PLAN	25 OF 35
C-156	59	FINAL GRADING PLAN - KEY SHEET	
C-157	60	FINAL GRADING PLAN	
C-158	61	FINAL GRADING PLAN	
C-159	62	FINAL GRADING PLAN	
C-160	63	FINAL GRADING PLAN	
C-161	64	FINAL GRADING PLAN	
C-162	65	FINAL GRADING PLAN	
C-163	66	FINAL GRADING PLAN	
C-164	67	FINAL GRADING PLAN	
C-165	68	FINAL GRADING PLAN	
C-166	69	FINAL GRADING PLAN	
C-167	70	DRAINAGE AREA MAP - EXISTING CONDITIONS	26 OF 35
C-168	71	DRAINAGE AREA MAP - PROPOSED CONDITIONS	27 OF 35
C-169	72	STORMWATER MANAGEMENT PLAN - POND 3	28 OF 35
C-170	73	STORMWATER MANAGEMENT PLAN - NORTHWEST SLOPE DISCHARGE FACILITY	29 OF 35
C-171	74	LANDFILL GAS MANAGEMENT PLAN - KEY SHEET	
C-172	75	LANDFILL GAS MANAGEMENT PLAN	
C-173	76	LANDFILL GAS MANAGEMENT PLAN	
C-174	77	LANDFILL GAS MANAGEMENT PLAN	
C-175	78	LANDFILL GAS MANAGEMENT PLAN	
C-176	79	LANDFILL GAS MANAGEMENT PLAN	
C-177	80	LANDFILL GAS MANAGEMENT PLAN	
C-178	81	LANDFILL GAS MANAGEMENT PLAN	
C-179	82	LANDFILL GAS MANAGEMENT PLAN	
C-180	83	LANDFILL GAS MANAGEMENT PLAN	
C-181	84	LANDFILL GAS MANAGEMENT PLAN	
~~C-184~~		~~VEGETATIVE ESTABLISHMENT PLAN~~	
~~C-185~~		~~GEOMETRY PLAN - KEY SHEET~~	
~~C-186~~		~~GEOMETRY PLAN~~	
~~C-187~~		~~GEOMETRY PLAN~~	
~~C-188~~		~~GEOMETRY PLAN~~	
~~C-189~~		~~GEOMETRY PLAN~~	

SHEET LIST

DRAWING NO.	SHEET	DRAWING TITLE	SC/SWM SHEET
~~C-190~~		~~GEOMETRY PLAN~~	
~~C-191~~		~~GEOMETRY PLAN~~	
~~C-192~~		~~GEOMETRY PLAN~~	
~~C-193~~		~~GEOMETRY PLAN~~	
~~C-194~~		~~GEOMETRY PLAN~~	
~~C-195~~		~~GEOMETRY PLAN~~	
~~C-196~~		~~GEOMETRY PLAN - DATA TABLES~~	
~~C-197~~		~~GEOMETRY PLAN - DATA TABLES~~	
~~C-200~~		~~ROAD PROFILES~~	
~~C-201~~		~~SWALE PROFILES~~	
~~C-202~~		~~STORM DRAIN PROFILES~~	
C-301	85	SITE CROSS SECTIONS - KEY SHEET	
C-302	86	SITE CROSS SECTIONS	
C-303	87	SITE CROSS SECTIONS	
~~C-304~~	~~88~~	~~SITE CROSS SECTIONS~~	
C-305	89	STORMWATER MANAGEMENT FACILITY SECTIONS - POND 3	30 OF 35
C-306	90	STORMWATER MANAGEMENT FACILITY SECTIONS - NORTHWEST SLOPE DISCHARGE FACILITY	31 OF 35
C-501	91	DETAIL INDEX SHEET	
C-502	92	SITE DETAILS	
C-503	93	SITE DETAILS	
~~C-504~~	~~94~~	~~DEMOLITION DETAILS~~	
C-505	95	EXCAVATION/GRADING DETAILS	
C-506	96	EXCAVATION/GRADING DETAILS	
C-507	97	EXCAVATION/GRADING DETAILS	
C-508	98	CLOSURE CAP DETAILS	
C-509	99	CLOSURE CAP DETAILS	
C-510	100	DRAINAGE DETAILS	
~~C-511~~	~~101~~	~~DRAINAGE DETAILS~~	
C-512	102	STORMWATER MANAGEMENT DETAILS	32 OF 35
~~C-513~~	~~103~~	~~STORMWATER MANAGEMENT DETAILS~~	~~33 OF 35~~
C-514	104	EROSION AND SEDIMENT CONTROL DETAILS	34 OF 35
C-515	105	EROSION AND SEDIMENT CONTROL DETAILS	35 OF 35
C-516	106	LANDFILL GAS DETAILS	
C-517	107	LANDFILL GAS DETAILS	
C-518	108	LANDFILL GAS DETAILS	
C-519	109	LANDFILL GAS DETAILS	
~~C-701~~		~~PASSIVE LAND USE PLANS (TO BE INCLUDED AT 90% SUBMITTAL)~~	

NOTE: SHEETS THAT ARE STRUCK-THROUGH ARE ANTICIPATED FOR FUTURE SUBMITTALS AND ARE NOT INCLUDED IN THIS SUBMITTAL.

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

TITLE SHEET

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

G-001

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION SC/SWM SHEET 1 OF 35

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 00.00 - TITLE.DWG [G-001] GARDINA, COLLEEN 1/10/2020 2:57 PM

GENERAL NOTES

1. TOPOGRAPHY AND EXISTING CONDITIONS ARE BASED ON AERIAL PHOTOGRAPHY AND PHOTOGRAMMETRIC MAPPING WITH SUPPLEMENTAL FIELD SURVEYED INFORMATION AND WERE PROVIDED BY WALLACE MONGTOMERY AND ASSOCIATES, JULY 2018. THE HORIZONTAL CONTROL FOR THE PROJECT IS RELATIVE TO THE NORTH AMERICAN DATUM OF 1983 AND THE VERTICAL CONTROL IS RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.
2. UTILITY DESIGNATION AND MAPPING USING ELECTROMAGNETIC AND GROUND-PENETRATING RADAR WAS PERFORMED BY MASTER LOCATORS OF BALTIMORE IN JUNE 2018. UTILITY INFORMATION IS FOR INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. PROPERTY BOUNDARIES AND OWNER INFORMATION ARE BASED ON A DRAWING ENTITLED "GUDE LANDFILL - PROPERTY EXCHANGE WITH M-NCPPC" PREPARED BY C.C. JOHNSON & MALHOTRA, P.C., DATED 05/23/2012.
4. EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC PERFORMED A WASTE DELINEATION STUDY IN 2010 TO IDENTIFY THE EXTENT OF WASTE PLACEMENT. THE WASTE DELINEATION STUDY IS INCLUDED IN SPECIFICATION SECTION 00 31 19.
5. THE 100-YEAR FLOODPLAIN WAS OBTAINED FROM THE MONTGOMERY COUNTY PLANNING BOARD IN 2011.
6. EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC PERFORMED A STORMWATER ENGINEERING EVALUATION IN 2016 TO IDENTIFY THE EXISTING STORMDRAINS AND STRUCTURES. THE STORMWATER ENGINEERING EVALUATION IS INCLUDED AS AN ATTACHMENT IN SPECIFICATION SECTION 00 31 19.
7. THE STORMDRAIN BYPASS SYSTEM INFORMATION IS FROM A PLAN BY SCS ENGINEERS IN 2008. THE PLAN IS INCLUDED AS AN ATTACHMENT IN SPECIFICATION SECTION 00 31 19.
8. GEOTECHNICAL TEST PITS WERE PERFORMED BY THE ROBERT B BALTER COMPANY IN JULY 2018 TO IDENTIFY THE THICKNESS AND PROPERTIES OF THE EXISTING COVER SOIL. TEST PIT LOCATIONS AND DEPTH TO SOLID WASTE (DTSW) ARE INDICATED ON DRAWINGS ON C-124 THROUGH C-133. THE GEOTECHNICAL EVALUATION IS INCLUDED AS AN ATTACHMENT IN SPECIFICATION SECTION 31 05 15.
9. EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC PERFORMED A LANDFILL GAS INVESTIGATION OF THE EXISTING LANDFILL GAS INFRASTRUCTURE. THE LANDFILL GAS INVESTIGATION TECHNICAL MEMO IS INCLUDED AS AN ATTACHMENT IN SPECIFICATION SECTION 00 31 19.
10. RESTORATION OR REPAIR OF ANY DAMAGE TO UTILITIES NOT SCHEDULED TO BE REMOVED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT OF WORK, DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS PRIOR TO AND DURING PROPOSED WORK. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGEMENT ENGINEER (CME) OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES NOTED BEFORE COMMENCING OR PROCEEDING WITH WORK.
12. DEVIATIONS OR CHANGES FROM THESE PLANS WILL NOT BE ALLOWED UNLESS APPROVED BY THE CME.
13. AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE SITE THROUGHOUT THE PROJECT. CONTRACTOR SHALL AT ALL TIMES ADHERE TO THE CONDITIONS CONTAINED WITHIN THE PERMITS.
14. CONTRACTOR TO ADHERE TO ALL APPLICABLE OSHA REGULATIONS DURING EXCAVATION ACTIVITIES.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY PERMIT MODIFICATIONS THAT ARE REQUIRED AS A RESULT OF A CONTRACTOR PROPOSED CHANGE IN SEQUENCE, LIMIT OF DISTURBANCE, DESIGN, OR APPROACH TO THE PROJECT.

LANDFILL GAS COLLECTION SEQUENCE OF CONSTRUCTION

GENERAL

1. THE GAS COLLECTION SYSTEM IS TO REMAIN ACTIVE DURING THE LIFE OF THE PROJECT. LANDFILL GAS EXTRACTION WELLS MAY BE MADE TEMPORARILY INACTIVE DURING ACTIVE CONSTRUCTION BY THE CONTRACTOR IN A GIVEN PHASE.
2. PRIOR TO BEGINNING THE WORK, SUBMIT A GAS COLLECTION SYSTEM WORK PLAN TO THE CME AND OWNER FOR REVIEW AND APPROVAL FOR ALL PHASES OF THE PROJECT WHICH SHALL INCLUDE:

   2.1 DETAILED SEQUENCE OF CONSTRUCTION FOR THE LANDFILL GAS COLLECTION SYSTEM, INCLUDING ANY REVISIONS TO THE RECOMMENDED SEQUENCE OF CONSTRUCTION PROVIDED.

   2.2 METHODS TO MINIMIZE ODORS WHEN LANDFILL GAS WELLS ARE TO BE INACTIVE. THESE MAY BE SIMILAR OR THE SAME AS THOSE PROPOSED DURING WASTE EXCAVATION.

   2.3 METHODS TO PROTECT EXTRACTIONS WELLS AND TEMPORARY PIPING DURING CONSTRUCTION.

   2.4 MATERIALS FOR TEMPORARY PIPING AND CONNECTIONS.

SUBGRADE PHASES (S-I THROUGH S-VII)

1. INSTALL TEMPORARY ORANGE FENCING OR MARKERS AND SPRAY PAINT ABOVE GRADE PVC PIPE AROUND EXISTING LANDFILL GAS EXTRACTION WELLS PRIOR TO PERFORMING CLEARING AND GRUBBING ACTIVITIES (REFER TO THE SEQUENCE OF CONSTRUCTION ON DRAWING G-002).
2. UTILIZE EXISTING VALVING AND PROVIDE ADDITIONAL VALVING IF NECESSARY TO TERMINATE LANDFILL GAS FLOW AND DISCONNECT EXISTING LANDFILL GAS EXTRACTION WELLS IN THE ACTIVE SUBGRADE PHASE WHERE WORK IS BEING PERFORMED.
3. DISCONNECT EXISTING ABOVE GRADE PVC PIPE, SUPPORTS, AND STAKES AS NECESSARY TO PERFORM WORK.
4. AS WORK PROGRESSES, SHORTEN, EXTEND, OR ABANDON LANDFILL GAS EXTRACTION WELLS AS SHOWN ON DRAWINGS C-516 AND AS IDENTIFIED ON DRAWINGS C-519.
5. INSTALL BELOW GRADE LANDFILL GAS COLLECTION PIPING OUTSIDE OF THE LIMIT OF LANDFILL CAP FOR EXISTING LANDFILL GAS EXTRACTION WELLS.
6. INSTALL NEW LANDFILL GAS EXTRACTION WELLS AND CONDENSATE DRAINS PER DRAWINGS C-516, C-517 AND C-519, AND RELOCATE WASTE CUTTINGS BELOW THE CLOSURE CAP SUBGRADE.
7. INSTALL WELLHEAD ASSEMBLIES WITH CLOSED VALVES AND LOCKOUT/TAGOUT AND PROVIDE TEMPORARY SUPPORTS AS NECESSARY.
8. FOLLOWING INSTALLATION OF THE CLOSURE CAP SUBGRADE, INSTALL TEMPORARY HDPE PIPE ABOVE GRADE. TO THE MAXIMUM EXTENT ALLOWABLE, TEMPORARY HDPE IS TO BE USED IN THE FINAL INSTALLATION WITHIN THE VEGETATIVE SUPPORT SOIL.
9. ALL VALVES ARE TO REMAIN IN THE CLOSED POSITION UNTIL INSTALLATION OF TEMPORARY PIPING IS COMPLETE AND A PLANNING MEETING IS HELD WITH THE CME AND OWNER. ANY PIPE NOT ACTIVELY BEING USED FOR LANDFILL GAS COLLECTION SHALL BE TEMPORARILY CAPPED AND KEPT CLEAN OF SEDIMENT AND WATER.
10. FOLLOWING COMPLETION OF SUBGRADE PREPARATION IN AN ACTIVE PHASE, HOLD PLANNING MEETING WITH THE CME AND THE OWNER TO REVIEW RE-CONNECTION PROCEDURES OF TEMPORARY ABOVE GRADE PIPING AND LANDFILL GAS EXTRACTION WELLS. OWNER'S LANDFILL GAS CONTRACTOR SHALL ASSIST IN THE PURGING OF LATERALS/HEADERS THROUGH THE FLARE STATION. CONTRACTOR SHALL SAMPLE GAS QUALITY AND PERFORM BALANCING FOR THE TEMPORARY CONDITION WITHIN THE COMPLETED SUBGRADE PHASE. THE RE-CONNECTION AND TESTING OF THE TEMPORARY PIPING WILL REQUIRE CLOSE COORDINATION WITH THE OWNER'S LANDFILL GAS CONTRACTOR.

CAPPING PHASES (F-I THROUGH F-VI)

1. INSTALL GEOSYNTHETIC CLOSURE CAP COMPONENTS IN ACTIVE CAPPING PHASE. REFER TO DRAWINGS C-508 AND C-509.
2. INSTALL VEGETATIVE SUPPORT SOIL AND INSTALL LANDFILL GAS COLLECTION LATERALS, ISOLATION VALVES, AND HEADER PIPING WITHIN THE VEGETATIVE SUPPORT SOIL.
3. CLOSE AND DISCONNECT WELLHEADS AS NECESSARY TO FACILITATE INSTALLATION OF PERMANENT LANDFILL GAS COLLECTION PIPING AND APPURTENANCES.
4. INSTALL GRAVEL PADS AND MARKERS PER THE DETAIL ON DRAWING C-516.
5. FOLLOWING COMPLETION OF THE FINAL CLOSURE CAP IN AN ACTIVE PHASE, HOLD PLANNING MEETING WITH THE CME AND THE COUNTY TO REVIEW RE-CONNECTION PROCEDURES OF THE LANDFILL GAS COLLECTION SYSTEM. COUNTY'S LANDFILL GAS CONTRACTOR SHALL ASSIST IN THE PURGING OF LATERALS/HEADERS THROUGH THE FLARE STATION. CONTRACTOR SHALL SAMPLE GAS QUALITY AND PERFORM START-UP AND BALANCING FOR THE COMPLETED CAPPING PHASE. THE RE-CONNECTION AND TESTING OF THE LANDFILL GAS COLLECTION SYSTEM WILL REQUIRE CLOSE COORDINATION WITH THE COUNTY'S LANDFILL GAS CONTRACTOR.

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL PREPARE, SUBMIT, ADDRESS COMMENTS, AND RECEIVE APPROVAL ON ALL PRE-CONSTRUCTION SUBMITTALS AS DEFINED IN SPECIFICATION SECTION 01 33 00, SUBMITTALS.
2. THE CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY FOR CONSTRUCTION AS DEFINED IN SPECIFICATION SECTION 01 11 00, SUMMARY OF WORK.
3. PRIOR TO CLEARING TREES, INSTALLING SEDIMENT CONTROL MEASURES, OR SITE GRADING, A PRECONSTRUCTION MEETING MUST BE CONDUCTED ON-SITE WITH THE MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES (MCDPS) SEDIMENT CONTROL INSPECTOR (240) 777-0311 (48 HOURS WRITTEN NOTICE) AND THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION (M-NCPPC), PLANNING DEPARTMENT, PLANS ENFORCEMENT INSPECTOR (301) 495-4550 (48 HOURS WRITTEN NOTICE), THE OWNER, AND THE CME. IN ORDER FOR THE MEETING TO BE SCHEDULED, THE CONTRACTOR MUST PROVIDE ONE PAPER SET OF APPROVED SEDIMENT CONTROL PLANS TO THE MCDPS SEDIMENT CONTROL INSPECTOR AT THE PRECONSTRUCTION MEETING. IF NO PLANS ARE PROVIDED, THE MEETING SHALL NOT BE SCHEDULED AND MUST BE RESCHEDULED PRIOR TO COMMENCING ANY WORK.
4. AFTER COMPLETION OF THE ABOVE ITEMS AND PRIOR TO ANY SITE DISTURBANCE, THE CONTRACTOR SHALL OBTAIN WRITTEN NOTICE TO COMMENCE CONSTRUCTION FROM THE CME AS DEFINED IN SPECIFICATION SECTION 01 70 00, EXECUTION AND CLOSEOUT REQUIREMENTS.
5. THE PROJECT HAS BEEN DEFINED IN PHASES SINCE NO MORE THAN 20 ACRES SHALL BE DISTURBED AT A GIVEN TIME. THE CONTRACTOR MAY REQUEST APPROVAL FROM THE CME TO BEGIN WORK IN THE SUBSEQUENT PHASE WHEN WORK HAS BEEN COMPLETED AND MORE THAN 50 PERCENT OF THE CURRENT PHASE IS STABILIZED. IF THE CME CONCURS THAT 50 PERCENT OF THE CURRENT PHASE IS STABILIZED, THE CME WILL REQUEST THAT MCDPS INSPECT THE SITE. IF MCDPS CONCURS WITH THE REQUEST, THE CONTRACTOR WILL BE NOTIFIED IN WRITING AND CAN BEGIN WORK IN UP TO 50 PERCENT OF THE SUBSEQUENT PHASE. THE CONTRACTOR SHALL INCLUDE FIVE (5) WORKING DAYS IN THEIR SCHEDULE FOR EACH REVIEW.
6. ESTABLISH TEMPORARY FACILITIES ONSITE AS DEFINED IN SPECIFICATION SECTION 01 59 00, TEMPORARY FACILITIES AND CONTROLS. IMPLEMENT SECURITY MEASURES AS DEFINED IN SPECIFICATION SECTION 28 13 00, ACCESS CONTROL AND SECTION 28 23 00, VIDEO SURVEILLANCE.
7. PHASE S-I (SUBGRADE PHASE I)

   A. THE LIMITS OF DISTURBANCE MUST BE FIELD-MARKED PRIOR TO CLEARING OF TREES, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION, OR OTHER LAND DISTURBING ACTIVITIES.

   B. ESTABLISH TEMPORARY FACILITIES ONSITE AS DEFINED IN SPECIFICATION SECTION 01 59 00, TEMPORARY FACILITIES AND CONTROLS. IMPLEMENT SECURITY MEASURES AS DEFINED IN SPECIFICATION SECTION 28 13 00, ACCESS CONTROL AND SECTION 28 23 00, VIDEO SURVEILLANCE.

   C. INSTALL PROTECTION FOR EXISTING GROUNDWATER MONITORING WELLS AND LANDFILL GAS MONITORING WELLS IN ACCORDANCE WITH THE MONITORING WELL PROTECTION DETAIL ON DRAWING C-503.

   D. CLEAR THE MINIMUM AREA REQUIRED FOR INSTALLATION OF SEDIMENT CONTROL DEVICES.

   E. INSTALL SEDIMENT CONTROL DEVICES.

   F. ONCE THE SEDIMENT CONTROL DEVICES ARE INSTALLED AND APPROVED BY THE CME, OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR AND PROVIDE A COPY TO THE CME BEFORE PROCEEDING WITH ANY ADDITIONAL CLEARING, GRUBBING, OR GRADING.

   G. STEPS "H" THROUGH "R" BELOW MAY BE PERFORMED CONCURRENTLY IN VARIOUS SUBAREAS WITHIN EACH PHASE PROVIDED THEY OCCUR IN THE ORDER LISTED WITHIN EACH SUBAREA.

   H. CLEAR EXISTING TREES, SHRUBS, AND TALL GRASSES. THE CONTRACTOR SHALL MOW EXISTING GRASS TO A HEIGHT OF 2 INCHES OR LESS. VEGETATIVE DEBRIS MUST BE DISPOSED OFFSITE.

   I. REMOVE AND STOCKPILE EXISTING COVER SOIL IN ACCORDANCE WITH THE EXISTING COVER SOIL REMOVAL DETAIL ON DRAWING C-505 AND SPECIFICATION SECTION 31 05 15, EARTHWORK.

   J. PERFORM WASTE EXCAVATION AND RELOCATION IN ACCORDANCE WITH THE EXISTING WASTE RELOCATION AND SUBGRADE CONSTRUCTION DETAIL ON DRAWING C-505 AND SPECIFICATION SECTION 02 61 13, WASTE EXCAVATION AND HANDLING.

   K. DEMOLISH, REMOVE, AND DISPOSE OF EXISTING STORMDRAINS, STORMDRAIN STRUCTURES, CULVERTS, DEWATERING SUMPS, AND FOUNDATIONS AS WORK PROGRESSES.

   L. MODIFY EXISTING LANDFILL GAS EXTRACTION WELLS, INSTALL NEW LANDFILL GAS EXTRACTION WELLS, INSTALL NEW WELLHEADS, ESTABLISH TEMPORARY LANDFILL GAS PIPING, AND ABANDON EXISTING LANDFILL GAS EXTRACTION WELLS AS WORK PROGRESSES IN ACCORDANCE WITH THE LANDFILL GAS SEQUENCE OF CONSTRUCTION, AS SPECIFIED ON THIS DRAWING.

   M. CONSTRUCT CLOSURE CAP SUBGRADE IN ACCORDANCE WITH SPECIFICATION SECTION 31 05 15, EARTHWORK.

   N. WHEN PERFORMING CONSTRUCTION ACTIVITIES ON THE SIDE SLOPES, FOLLOW THE PROCEDURES AND PROGRESSION OUTLINED IN THE SIDE SLOPE EXCAVATION DETAIL ON DRAWING C-506.

   O. BENCH CONSTRUCTION ON THE SIDE SLOPE MUST BE PERFORMED USING SAME DAY STABILIZATION AS SHOWN ON DRAWING C-506.

   P. CONSTRUCT SWALE AT THE BASE OF THE NORTHWEST SLOPE AND NORTHWEST SLOPE DISCHARGE FACILITY AT BASE OF THE SIDE SLOPE.

   Q. AFTER CLOSURE CAP SUBGRADE HAS BEEN ESTABLISHED, SURVEY AND SUBMIT SURVEY RESULTS TO THE CME FOR SUBMISSION TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) AND COORDINATE WITH CME FOR MDE WALKTHROUGH IN ACCORDANCE WITH SPECIFICATION SECTION 31 05 15, EARTHWORK. MDE APPROVAL IS REQUIRED BEFORE PROCEEDING WITH CONSTRUCTION.

   R. THE CLOSURE CAP CONSTRUCTION (PHASE F-I) MAY BE PERFORMED CONCURRENT WITH THIS PHASE. PROVIDE TEMPORARY STABILIZATION AT THIS TIME IF THE CLOSURE CAP CONSTRUCTION WILL NOT BE PERFORMED COINCIDENT WITH THIS PHASE. THE CONTRACTOR MAY ELECT TO COMPLETE PHASES S-I, S-II, AND S-III BEFORE BEGINNING WORK ON PHASE F-I.

   S. VEGETATION MUST BE ESTABLISHED BEFORE THE PHASE IS CONSIDERED STABILIZED. ONCE THE VEGETATION IS ESTABLISHED AND APPROVED BY THE CME, OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR AND PROVIDE A COPY TO THE CME BEFORE PROCEEDING WITH THE NEXT PHASE.
8. PHASE S-II (SUBGRADE PHASE II)

   A. PERFORM STEPS "A" THROUGH "S" OF PHASE S-I WITH THE EXCEPTION OF STEP "P".
9. PHASE S-III (SUBGRADE PHASE III)

   A. PERFORM STEPS "A" THROUGH "S" OF PHASE S-I WITH THE EXCEPTION OF STEP "P".
10. PHASE F-I (FINAL GRADING PHASE I)

   A. INSTALL GEOTEXTILE IN ACCORDANCE WITH SPECIFICATION SECTION 31 05 19.13, GEOTEXTILES.

   B. INSTALL GEOMEMBRANE AND GEOCOMPOSITE IN ACCORDANCE WITH SPECIFICATION SECTION 31 05 19.16, GEOMEMBRANE AND SECTION 31 05 19.26, GEOCOMPOSITE OR IF SELECTED BY THE COUNTY, INSTALL THE ALTERNATE GEOSYNTHETIC CLOSURE CAP IN ACCORDANCE WITH SPECIFICATION SECTION 31 05 19.29. PERFORM NON-DESTRUCTIVE TESTS ON THE GEOMEMBRANE LINER AND SUBMIT THE RESULTS TO THE CME FOR SUBMISSION TO MDE IN ACCORDANCE WITH SPECIFICATION SECTION 31 05 19.16, GEOMEMBRANE. COORDINATE WITH THE CME FOR A WALKTHROUGH WITH MDE FOR FINAL INSPECTION. MDE APPROVAL IS REQUIRED BEFORE PROCEEDING WITH CONSTRUCTION.

   C. CONSTRUCT VEGETATIVE SUPPORT SOIL AND TOPSOIL IN ACCORDANCE WITH SPECIFICATION SECTION 31 05 15, EARTHWORK.COORDINATE WITH THE CME FOR A WALKTHROUGH WITH MDE FOR FINAL INSPECTION. MDE APPROVAL IS REQUIRED BEFORE PROCEEDING WITH CONSTRUCTION.

   D. CONSTRUCT LANDFILL GAS LATERAL AND HEADER PIPES IN ACCORDANCE WITH SPECIFICATION SECTION 33 51 10, LANDFILL GAS MANAGEMENT SYSTEM PIPE, PIPE FITTINGS, AND VALVES.

   E. CONSTRUCT ACCESS ROADS IN ACCORDANCE WITH THE DETAILS ON DRAWING C-503.

   F. REPLACE THE FENCE AT THE BASE OF THE NORTHWEST SLOPE IN ACCORDANCE WITH THE DETAIL ON DRAWING C-502.

   G. VEGETATION MUST BE ESTABLISHED BEFORE THE PHASE IS CONSIDERED STABILIZED. ONCE THE VEGETATION IS ESTABLISHED AND APPROVED BY THE CME, OBTAIN WRITTEN APPROVAL FROM THE MCDPS INSPECTOR AND PROVIDE A COPY TO THE CME BEFORE PROCEEDING WITH THE NEXT PHASE.
11. PHASE S-IV (SUBGRADE PHASE IV)

   A. CONSTRUCT POND 3 IN ACCORDANCE WITH DRAWING C-305.

   B. PERFORM STEPS "A" THROUGH "S" OF PHASE S-I WITH THE EXCEPTION OF STEPS "N", "O", AND "P".
12. PHASE S-V (SUBGRADE PHASE V)

   A. PERFORM STEPS "A" THROUGH "S" OF PHASE S-I WITH THE EXCEPTION OF STEPS "N", "O", AND "P".
13. PHASE S-VI (SUBGRADE PHASE VI)

   A. PERFORM STEPS "A" THROUGH "S" OF PHASE S-I WITH THE EXCEPTION OF STEPS "N", "O", AND "P".
14. PHASE S-VII (SUBGRADE PHASE VII)

   B. PERFORM STEPS "A" THROUGH "S" OF PHASE S-I WITH THE EXCEPTION OF STEPS "N", "O", AND "P".
15. PHASE F-II (FINAL GRADING PHASE II)

   A. PERFORM STEPS "A" THROUGH "E" OF PHASE F-I.

   B. PERFORM STEP "G" OF PHASE F-I.
16. PHASE F-III (FINAL GRADING PHASE III)

   A. PERFORM STEPS "A" THROUGH "E" OF PHASE F-I.

   B. PERFORM STEP "G" OF PHASE F-I.
17. PHASE F-IV (FINAL GRADING PHASE IV)

   A. PERFORM STEPS "A" THROUGH "E" OF PHASE F-I.

   B. PERFORM STEP "G" OF PHASE F-I.
18. PHASE F-V (FINAL GRADING PHASE V)

   A. PERFORM STEPS "A" THROUGH "E" OF PHASE F-I.

   B. PERFORM STEP "G" OF PHASE F-I.
19. PHASE F-VI (FINAL GRADING PHASE VI)

   A. PERFORM STEPS "A" THROUGH "E" OF PHASE F-I.

   B. PERFORM STEP "G" OF PHASE F-I.
20. CONSTRUCT PASSIVE LAND USES IN ACCORDANCE WITH THE CONTRACT DRAWINGS.
21. AFTER THE ENTIRE SITE IS STABILIZED AND WITH APPROVAL OF THE MCDPS INSPECTOR, REMOVE SEDIMENT CONTROLS.
22. SUBMIT A WRITTEN REQUEST FOR SUBSTANTIAL COMPLETION INSPECTION IN ACCORDANCE WITH SPECIFICATION SECTION 01 70 00, EXECUTION AND CLOSEOUT REQUIREMENTS.

ABBREVIATIONS

AC	ACRES
APPRX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BLDG	BUILDING
CME	CONSTRUCTION MANAGEMENT ENGINEER
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CY	CUBIC YARDS
DA	DRAINAGE AREA
DIA	DIAMETER
DOT	DEPARTMENT OF TRANSPORTATION
DTSW	DEPTH TO SOLID WASTE
EL/ELEV	ELEVATION
ECP	ENVIRONMENTAL CONCEPT PLAN
EPA	ENVIRONMENTAL PROTECTION AGENCY
ESD	ENVIRONMENTAL SITE DESIGN
EX/EXIST	EXISTING
F-#	FINAL GRADING PHASE
FM	FORCEMAIN
FT	FEET
FT BGS	FEET BELOW GROUND SURFACE
GPS	GLOBAL POSITIONING SYSTEM
INV	INVERT
MHW	MEAN HIGH WATER
MSL	MEAN SEA LEVEL
NA	NOT APPLICABLE
NAD 83	NORTH AMERICAN DATUM OF 1983
NAVD 88	NORTH AMERICAN VERICAL DATUM OF 1988
NGS	NATIONAL GEODETIC SURVEY
NO.	NUMBER
NRCS	NATIONAL RESOURCE CONSERVATION SERVICE
PR	PROPOSED
RCP	REINFORCED CONCRETE PIPE
RTK	REAL-TIME KINEMATIC
S-#	SUBGRADE PHASE
SCH	SCHEDULE
SD	STORM DRAIN
SQ FT	SQUARE FEET
SWM	STORMWATER MANAGEMENT
SWPPP	STORMWATER POLLUTION PREVENTION PROPOSAL
TP	TEST PIT
TYP	TYPICAL
U.S.	UNITED STATES
USACE	U.S. ARMY CORPS OF ENGINEERS
USDA	U.S. DEPARTMENT OF AGRICULTURE
USGS	U.S. GEOLOGICAL SURVEY
W/	WITH
WSEL	WATER SURFACE ELEVATION

LEGEND

DESCRIPTION	EXISTING	PROPOSED
BENCHMARK	#	#
PROPERTY BOUNDARY		
PROPERTY MARKER		
LIMIT OF FIELD RUN TOPOGRAPHY		
CONTOUR	#	#
CONCRETE		
FENCE		
FENCE POST		
GATE POST		
SIGN		
BOLLARD		
MANHOLE - UNKNOWN	M	M
MONITORING WELL	MW	MW
SOIL BORING / TEST PIT	SB / TP	SB / TP
SETTLEMENT PLATE	NA	SP
TREE/BRUSH LINE		
TREE		
WETLAND		
WETLAND BUFFER		
EDGE OF WATER		
FEMA FLOODPLAIN		
STEEP SLOPE		
SOIL BOUNDARY		
SOIL CLASSIFICATION	SfB HSG B	
STORM DRAIN STRUCTURE LABEL	I 1	
STORM DRAIN PIPE		
STORM DRAIN UTILITY MARKING	SD	
STORM DRAIN MANHOLE	D	D
STORM DRAIN INLET		
SANITARY SEWER PIPE		
SANITARY SEWER UTILITY MARKING	SS	
SANITARY SEWER MANHOLE	S	S
SANITARY SEWER CLEANOUT	CO	CO
WATER PIPE	NA	W
WATER UTILITY MARKING	W	
WATER MANHOLE	W	W
WATER METER	W	W
WATER VALVE	WV	WV
WELL	W	
FIRE HYDRANT		
ELECTRIC LINE - UNDERGROUND	NA	E
ELECTRIC LINE UTILITY MARKING (UNDERGROUND)	E	
ELECTRIC LINE - OVERHEAD	OHE	
ELECTRIC MANHOLE	E	E
ELECTRIC JUNCTION BOX	J	J
ELECTRIC TRANSFORMER	T	T
LIGHT POLE		
UTILITY POLE	#	#
GUY WIRE		
GUY POLE		
GAS LINE	NA	G
GAS LINE UTILITY MARKING	G	
GAS MANHOLE	G	G
GAS METER	G	G
GAS VALVE	GV	GV
COMMUNICATIONS/CATV - UNDERGROUND	NA	C
COMMUNICATIONS/CATV - UTILITY MARKING	C	C
COMMUNICATIONS/CATV MANHOLE	C	C
COMMUNICATIONS/CATV PEDESTAL	C	C
TELEPHONE - UNDERGROUND	NA	T
TELEPHONE - UTILITY MARKING	T	
TELEPHONE MANHOLE	T	T
TELEPHONE PEDESTAL	T	T
CONDENSATE DRAIN	CD-#	CD-#
LANDFILL GAS EXTRACTION WELL	EW-#	EW-#
LANDFILL GAS HEADER PIPE	NA	LFGH
LANDFILL GAS LATERAL PIPE	NA	LFGL
ISOLATION VALVE	NA	

EROSION AND SEDIMENT CONTROL LEGEND

DESCRIPTION	EXISTING	PROPOSED
LIMIT OF DISTURBANCE	NA	LOD LOD
SUPER SILT FENCE	NA	SSF SSF
LIMIT OF DISTURBANCE - SUPER SILT FENCE	NA	SSF LOD
PHASE LINE - SUPER SILT FENCE	NA	SSF PH
REMOVABLE PUMPING STATION	NA	RPS
TEMPORARY GABION OUTLET STRUCTURE	NA	TGOS
MOUNTABLE BERM	NA	MB
STABILIZED CONSTRUCTION ENTRANCE		SCE

SUMMARY OF WORK:

THE WORK IS DEFINED BY THE CONTRACT DOCUMENTS AND CONSISTS OF THE FOLLOWING GENERAL ELEMENTS:

1. INSTALLING EROSION AND SEDIMENT CONTROLS.
2. CLEARING, GRUBBING, AND STRIPPING VEGETATION FROM THE EXISTING SITE (~100 ACRES).
3. ONSITE WASTE EXCAVATION AND RELOCATION OF WASTE MATERIALS WITHIN THE LANDFILL WITH LEACHATE MANAGEMENT (~220,000 CUBIC YARDS).
4. DEMOLISHING EXISTING STORM DRAINS AND DRAINAGE STRUCTURES.
5. PLACEMENT OF SOIL COVER OVER THE REGRADED WASTE (~151,000 CUBIC YARDS).
6. CONSTRUCTING A GEOSYNTHETIC CLOSURE CAP (~95 ACRES)
7. CONSTRUCTING SURFACE DRAINAGE FEATURES.
8. RECONSTRUCTION OF THE ACTIVE LANDFILL GAS COLLECTION SYSTEM (~90 EXTRACTION WELLS).
9. CONSTRUCTION OF ACCESS ROADS (~15,000 FT).
10. STORMWATER MANAGEMENT CONTROLS AND IMPROVEMENTS.
11. SITE STABILIZATION AND DEVELOPMENT OF PASSIVE LAND USE FEATURES.

NOTE: THE WORK WILL BE PERFORMED USING A PHASED APPROACH. THE PHASES ARE IDENTIFIED ON THE CONTRACT DRAWINGS AND CONFORM TO THE 20-ACRE GRADING UNIT RESTRICTION IMPOSED BY THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. THE PHASES ARE DEFINED UNDER THE SEQUENCE OF CONSTRUCTION AS SHOWN ON THIS SHEET.

REVISIONS | NO. | DATE | BY | DESCRIPTION

DESIGN INFORMATION: DESIGNED BY: KEF / SMB; DRAWN BY: SMB; CHECKED BY: LJO / GAT; PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

GENERAL NOTES AND LEGEND

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

G-002

SC/SWM SHEET 2 OF 35

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 00.00 - TITLE.DWG [G-002] GARDINA, COLLEEN 1/10/2020 2:57 PM

STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE PERMITTEE SHALL NOTIFY THE DEPARTMENT OF PERMITTING SERVICES (DPS) FORTY-EIGHT (48) HOURS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITY AND, UNLESS WAIVED BY THE DEPARTMENT, SHALL BE REQUIRED TO HOLD A PRE-CONSTRUCTION MEETING BETWEEN THEM OR THEIR REPRESENTATIVE, THEIR ENGINEER AND AN AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT.

2. THE PERMITTEE MUST OBTAIN INSPECTION AND APPROVAL BY DPS AT THE FOLLOWING POINTS:

   A. AT THE REQUIRED PRE-CONSTRUCTION MEETING.

   B. FOLLOWING INSTALLATION OF SEDIMENT CONTROL MEASURES AND PRIOR TO ANY OTHER LAND DISTURBING ACTIVITY.

   C. DURING THE INSTALLATION OF A SEDIMENT BASIN OR STORMWATER MANAGEMENT STRUCTURE AT THE REQUIRED INSPECTION POINTS (SEE INSPECTION CHECKLIST ON PLAN). NOTIFICATION PRIOR TO COMMENCING CONSTRUCTION IS MANDATORY.

   D. PRIOR TO REMOVAL OR MODIFICATION OF ANY SEDIMENT CONTROL STRUCTURE(S).

   E. PRIOR TO FINAL ACCEPTANCE.

3. THE PERMITTEE SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE APPROVED PLAN AND CONSTRUCTION SEQUENCE, SHALL HAVE THEM INSPECTED AND APPROVED BY THE DEPARTMENT PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURE WITHOUT PRIOR PERMISSION FROM THE DEPARTMENT.

4. THE PERMITTEE SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S). ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY.

5. THE PERMITTEE SHALL INSPECT PERIODICALLY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION, ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED WITH PRIOR PERMISSION FROM THE DEPARTMENT. THE PERMITTEE IS RESPONSIBLE FOR IMMEDIATELY REPAIRING OR REPLACING ANY SEDIMENT CONTROL MEASURES WHICH HAVE BEEN DAMAGED OR REMOVED BY THE PERMITTEE OR ANY OTHER PERSON.

6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

   A. THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND

   B. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

ALL AREAS DISTURBED OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM MUST BE MINIMIZED AND STABILIZED IMMEDIATELY. MAINTENANCE MUST BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION.

7. THE PERMITTEE SHALL APPLY SOD, SEED, AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN SEVEN (7) CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN FIFTY (50) FEET OF A BUILDING UNDER CONSTRUCTION MAY BE EXEMPT FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.

8. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS WITH REQUIRED SOIL AMENDMENTS AND TOPSOIL, USING SOD OR AN APPROVED PERMANENT SEED MIXTURE AND AN APPROVED ANCHORED MULCH. WOOD FIBER MULCH MAY ONLY BE USED IN SEEDING SEASON WHEN THE SLOPE DOES NOT EXCEED 10% AND GRADING HAS BEEN DONE TO PROMOTE SHEET FLOW DRAINAGE. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS OF NOVEMBER THROUGH FEBRUARY, AND PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH SHALL BE APPLIED TO DISTURBED AREAS. THE FINAL PERMANENT STABILIZATION OF SUCH PROPERTY SHALL BE COMPLETED PRIOR TO THE FOLLOWING APRIL 15.

9. THE SITE PERMIT, WORK, MATERIALS, APPROVED SC/SM PLANS, AND TEST REPORTS SHALL BE AVAILABLE AT THE SITE FOR INSPECTION BY DULY AUTHORIZED OFFICIALS OF MONTGOMERY COUNTY.

10. SURFACE DRAINAGE FLOWS OVER UNSTABILIZED CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER PREVENTING DRAINAGE FLOWS FROM TRAVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO LOWER THE WATER DOWN SLOPE WITHOUT CAUSING EROSION. DIKES SHALL BE INSTALLED AND MAINTAINED AT THE TOP OF CUT OR FILL SLOPES UNTIL THE SLOPE AND DRAINAGE AREA TO IT ARE FULLY STABILIZED, AT WHICH TIME THEY MUST BE REMOVED AND FINAL GRADING DONE TO PROMOTE SHEET FLOW DRAINAGE. MECHANICAL DEVICES MUST BE PROVIDED AT POINTS OF CONCENTRATED FLOW WHERE EROSION IS LIKELY TO OCCUR.

11. PERMANENT SWALES OR OTHER POINTS OF CONCENTRATED WATER FLOW SHALL BE STABILIZED WITHIN 3 CALENDAR DAYS OF ESTABLISHMENT WITH SOD OR SEED WITH AN APPROVED EROSION CONTROL MATTING OR BY OTHER APPROVED STABILIZATION MEASURES.

12. SEDIMENT CONTROL DEVICES SHALL BE REMOVED, WITH PERMISSION OF THE DEPARTMENT, WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CONVERTED TO THE PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL.

13. NO PERMANENT CUT OR FILL SLOPE WITH A GRADIENT STEEPER THAN 3:1 WILL BE PERMITTED IN LAWN MAINTENANCE AREAS OR ON RESIDENTIAL LOTS. A SLOPE GRADIENT OF UP TO 2:1 WILL BE PERMITTED IN NON-MAINTENANCE AREAS PROVIDED THAT THOSE AREAS ARE INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN WITH A LOW-MAINTENANCE GROUND COVER SPECIFIED FOR PERMANENT STABILIZATION. SLOPE GRADIENT STEEPER THAN 2:1 WILL NOT BE PERMITTED WITH VEGETATIVE STABILIZATION.

14. THE PERMITTEE SHALL INSTALL A SPLASHBLOCK AT THE BOTTOM OF EACH DOWNSPOUT UNLESS THE DOWNSPOUT IS CONNECTED BY A DRAIN LINE TO AN ACCEPTABLE OUTLET.

15. FOR FINISHED GRADING, THE PERMITTEE SHALL PROVIDE ADEQUATE GRADIENTS SO AS TO PREVENT WATER FROM STANDING ON THE SURFACE OF LAWNS MORE THAN TWENTY-FOUR (24) HOURS AFTER THE END OF A RAINFALL, EXCEPT IN DESIGNATED DRAINAGE COURSES AND SWALE FLOW AREAS, WHICH MAY DRAIN AS LONG AS FORTY-EIGHT (48) HOURS AFTER THE END OF A RAINFALL.

16. SEDIMENT TRAPS OR BASINS ARE NOT PERMITTED WITHIN 20 FEET OF A BUILDING WHICH IS EXISTING OR UNDER CONSTRUCTION. NO BUILDING MAY BE CONSTRUCTED WITHIN 20 FEET OF A SEDIMENT TRAP OR BASIN.

17. ALL INLETS IN NON-SUMP AREAS SHALL HAVE ASPHALT BERMS INSTALLED AT THE TIME OF BASE PAVING ESTABLISHMENT.

18. THE SEDIMENT CONTROL INSPECTOR HAS THE OPTION OF REQUIRING ADDITIONAL SEDIMENT CONTROL MEASURES, AS DEEMED NECESSARY.

19. ALL TRAP ELEVATIONS ARE RELATIVE TO THE OUTLET ELEVATION, WHICH MUST BE ON EXISTING UNDISTURBED GROUND.

20. VEGETATIVE STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

21. SEDIMENT TRAP(S)/BASIN(S) SHALL BE CLEANED OUT AND RESTORED TO THE ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO THE POINT OF ONE-HALF (1/2) THE WET STORAGE DEPTH OF THE TRAP/BASIN (1/4 THE WET STORAGE DEPTH FOR ST-III) OR WHEN REQUIRED BY THE SEDIMENT CONTROL INSPECTOR.

22. SEDIMENT REMOVED FROM TRAPS/BASINS SHALL BE PLACED AND STABILIZED IN APPROVED AREAS, BUT NOT WITHIN A FLOODPLAIN.

23. ALL SEDIMENT BASINS AND TRAPS MUST BE SURROUNDED WITH A WELDED WIRE SAFETY FENCE. THE FENCE MUST BE AT LEAST 42 INCHES HIGH, HAVE POSTS SPACED NO FARTHER APART THAN 8 FEET, HAVE MESH OPENINGS NO GREATER THE TWO INCHES IN WIDTH AND FOUR INCHES IN HEIGHT, WITH A MINIMUM OF 14 GAUGE WIRE. SAFETY FENCE MUST BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.

24. NO EXCAVATION IN THE AREAS OF EXISTING UTILITIES IS PERMITTED UNLESS THEIR LOCATION HAS BEEN DETERMINED. CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK.

25. OFF-SITE SPOIL OR BORROW AREAS MUST HAVE PRIOR APPROVAL BY DPS.

26. SEDIMENT TRAP/BASIN DEWATERING FOR CLEANOUT OR REPAIR MAY ONLY BE DONE WITH THE DPS INSPECTOR'S PERMISSION. THE INSPECTOR MUST APPROVE THE DEWATERING METHOD FOR EACH APPLICATION. THE FOLLOWING METHODS MAY BE CONSIDERED:

   A. PUMP DISCHARGE MAY BE DIRECTED TO ANOTHER ON-SITE SEDIMENT TRAP OR BASIN, PROVIDED IT IS OF SUFFICIENT VOLUME AND THE PUMP INTAKE IS FLOATED TO PREVENT AGITATION OR SUCTION OF DEPOSITED SEDIMENTS; OR

   B. THE PUMP INTAKE MAY UTILIZE A REMOVABLE PUMPING STATION AND MUST DISCHARGE INTO AN UNDISTURBED AREA THROUGH A NON-EROSIVE OUTLET; OR

   C. THE PUMP INTAKE MAY BE FLOATED AND DISCHARGE INTO A DIRT BAG (12 OZ. NON-WOVEN FABRIC), OR APPROVED EQUIVALENT, LOCATED IN AN UNDISTURBED BUFFER AREA.

REMEMBER: DEWATERING OPERATION AND METHOD MUST HAVE PRIOR APPROVAL BY THE DPS INSPECTOR.

27. THE PERMITTEE MUST NOTIFY THE DEPARTMENT OF ALL UTILITY CONSTRUCTION ACTIVITIES WITHIN THE PERMITTED LIMITS OF DISTURBANCE PRIOR TO THE COMMENCEMENT OF THOSE ACTIVITIES.

28. TOPSOIL MUST BE APPLIED TO ALL PERVIOUS AREAS WITHIN THE LIMITS OF DISTURBANCE PRIOR TO PERMANENT STABILIZATION IN ACCORDANCE WITH MDE "STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS".

MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS - REVISED JANUARY 2009

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM, MSHA, AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

A. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEER

THE CONSTRUCTION OF THE POND AND EMBANKMENT SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. THE ENGINEER MUST SUBMIT WRITTEN CERTIFICATION THAT THE POND AND EMBANKMENT HAVE BEEN BUILT IN ACCORDANCE WITH THE APPROVED PLANS TO THE DEPARTMENT OF PERMITTING SERVICES (DPS) ALONG WITH A RECORD DRAWING, SOIL COMPACTION TESTS, CONCRETE TESTS, AND OTHER REQUIRED CONSTRUCTION DOCUMENTATION. THIS SHOULD BE DONE IMMEDIATELY FOLLOWING THE COMPLETION OF THE PROJECT, UNLESS OTHERWISE DESIGNATED ON THE PLANS. THE ENGINEER SHALL HAVE THE RESPONSIBILITY AND AUTHORITY TO MAKE MINOR CHANGES IN THE PLANS IN ORDER TO COMPENSATE FOR UNUSUAL SOIL CONDITIONS ENCOUNTERED DURING CONSTRUCTION AS LONG AS CHANGES DO NOT ADVERSELY AFFECT THE INTEGRITY OF THE DAM. MAJOR CHANGES TO THE DESIGN, WHICH MAY RESULT FROM SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION, MUST BE REVIEWED AND APPROVED BY THE DESIGN ENGINEER, DPS, AND THE MONTGOMERY SOIL CONSERVATION DISTRICT PRIOR TO INITIATION OF CONSTRUCTION.

B. SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH, AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

C. EARTH FILL

MATERIAL - THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 4 INCHES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE ABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTION OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL, IT WILL NOT CRUMBLE; YET, NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

THE DENSITY OF EACH LIFT SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH - THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE ONE TO ONE OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10-YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHALL OF THE EMBANKMENT.

D. STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL MUST FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24 INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF SIX INCHES (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7 INCHES TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACK FILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24 INCHES OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

E. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.
CORRUGATED METAL PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

   MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

   MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFIRM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTIONS TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

   ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH. PIPE ENDS MUST BE MATCHED AND NUMBERED BY THE MANUFACTURER. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER; FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH WIDE BY 3/8 INCH THICK, CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF ½-INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24-INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END, PER CURRENT DPS BAND DETAIL. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8-INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

   HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO " STRUCTURE BACKFILL."

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS - RCP SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL MEET ASTM DESIGNATION C-361. PIPES MUST BE LABELED IN FULL ACCORDANCE WITH ASTM C-361, INCLUDING THE ASTM C-361 DESIGNATION ON THE INSIDE OF EACH SECTION OF PIPE, AND ALL PIPES MUST BE CLEARLY MARKED BY THE MANUFACTURER PRIOR TO DELIVERY TO THE JOB SITE. PIPES WITH MULTIPLE DESIGNATIONS WILL BE REJECTED.

2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6-INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN FOUR FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIALS - PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4 - 10 INCH PIPE SHALL MEET THE REQUIREMENT OF AASHTO M252 TYPE S, AND 12 THROUGH 24 INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

F. DRAINAGE DIAPHRAGMS

WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

G. CONCRETE

CONCRETE DESIGN SHALL MEET THE REQUIREMENTS OF ACI 350, ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES, WITH FREEZING AND THAWING EXPOSURES. CONCRETE SHALL BE A TYPE II OR IIA CEMENT, WITH A 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI FOR CAST IN PLACE AND 5000 PSI FOR PRE-CAST STRUCTURES. CONCRETE SHALL ALSO MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 420, MIX NO. 6.

H. ROCK RIP-RAP

ROCK RIP-RAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIP-RAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

I. CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED, AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS, AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

J. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

K. EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL NOTES

SC/SWM SHEET 3 OF 35

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

G-003

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 00.00 - TITLE.DWG [G-003] GARDINA, COLLEEN 1/10/2020 2:57 PM

GENERAL NOTES

1. FOR LEGEND AND GENERAL NOTES, SEE DRAWING G-002.
2. FOR EXISTING STORM DRAIN STRUCTURE TABLES, SEE DRAWING C-111.
3. FOR SEQUENCE OF CONSTRUCTION, SEE DRAWING G-002.
4. FOR EROSION AND SEDIMENT CONTROL NOTES, SEE DRAWING G-003.
5. DETAILS ARE LISTED BY TYPE AND INDEXED TO THE APPROPRIATE DETAIL SHEETS ON DRAWING C-501.
6. FOR SITE DETAILS (SITE IMPROVEMENTS, FENCE, ROADS, ETC.) SEE DRAWINGS C-502 AND C-503.
7. FOR DEMOLITION DETAILS SEE DRAWING C-504.
8. FOR EXCAVATION AND GRADING DETAILS SEE DRAWINGS C-505, C-506, AND C-507.
9. FOR CLOSURE CAP DETAILS SEE DRAWINGS C-508 AND C-509.
10. FOR DRAINAGE DETAILS SEE DRAWINGS C-510 AND C-511.
11. FOR STORMWATER MANAGEMENT DETAILS SEE DRAWINGS C-512 AND C-513.
12. FOR EROSION AND SEDIMENT CONTROL DETAILS, SEE DRAWINGS C-514 AND C-515.
13. FOR LANDFILL GAS DETAILS SEE DRAWINGS C-516, C-517, C-518, AND C-519.

N

C-102 C-103 C-104 C-105 C-106 C-107 C-108 C-109 C-110 C-111

POND 2
GRINELL TERRACE
GRINELL DRIVE
GAZEBOS
SOIL STOCKPILE
ASPHALT PADS
M-NCPPC POND
APPRX. PURPLE LINE STOCKPILE
WEATHER STATION
CONCRETE PAD
POND 3
LANDFILL GAS FLARES
MEN'S SHELTER
POND 1
E GUDE DRIVE
WSSC FACILITY
POND 4
INCINERATOR LANE
SOUTHLAWN LANE

0 100 200 400
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN - KEY SHEET

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

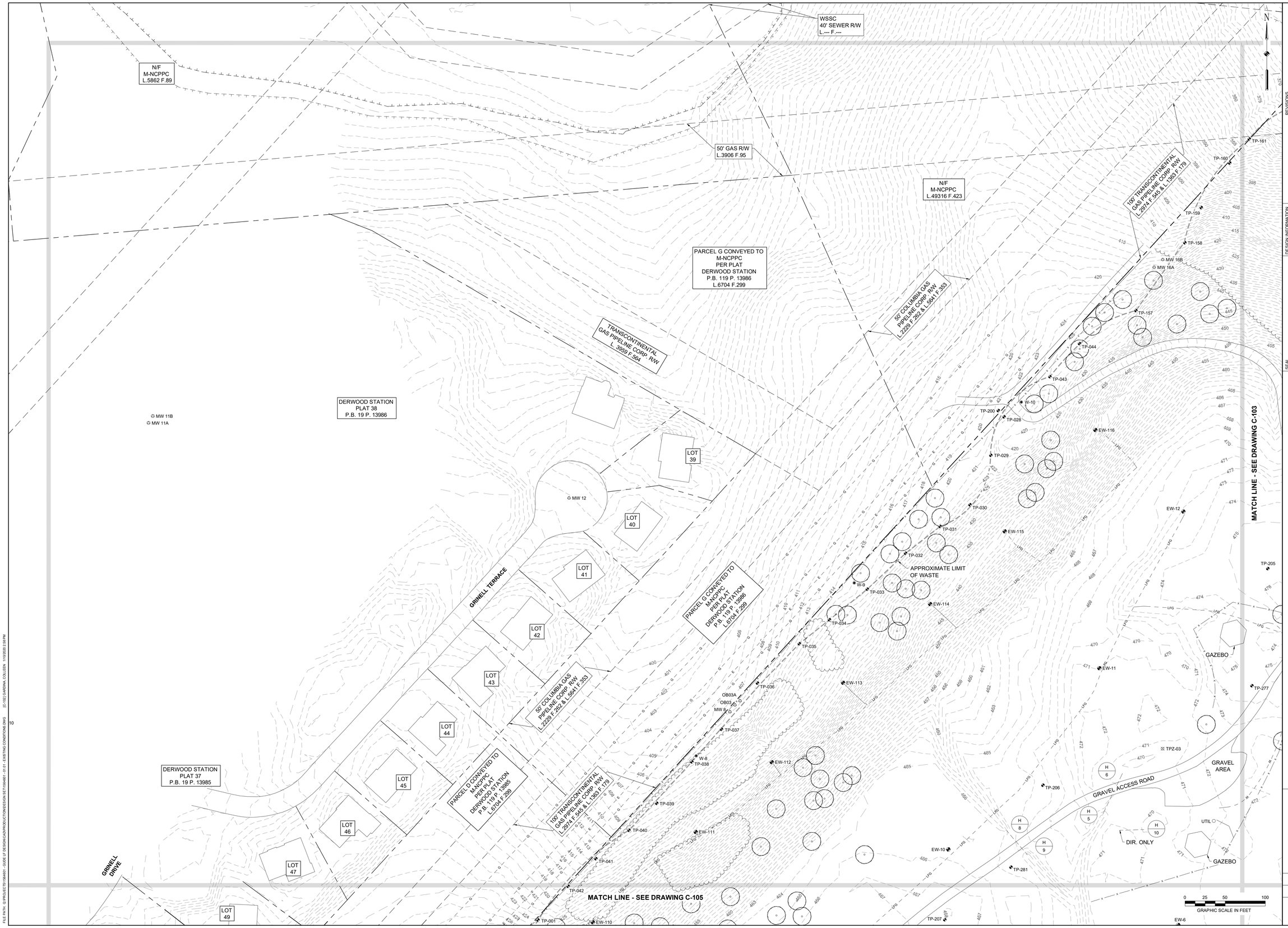
PROJECT NUMBER: 1564601

C-101

SHEET: 4 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH= Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 01 (5) EXISTING CONDITIONS - KEY SHEET.DWG [C-101] GARDINA, COLLEEN 10/9/2020 2:57 PM



NO.	DATE	BY	DESCRIPTION
			REVISIONS

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-102

SHEET: 5 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 01-01 - EXISTING CONDITIONS.DWG [C-102] CLARDNA, COLLEEN 1/10/2020 2:58 PM

WSSC
50' WATER R/W
L.2562 F.94

CRABBS BRANCH

50' GAS R/W
L.3906 F.95

8" CIP
INV.: 370.55

POND 2

10" HDPE
INV.: 371.67
10" HDPE
INV.: 373.95

8" CIP
INV.: 372.97

10" HDPE
INV.: 373.43

10" HDPE
INV.: 375.34

APPROXIMATE LIMIT
OF WASTE

N/F
M-NCPPC
L.3113 F.639

GRAVEL ACCESS ROAD

GAZEBO

GRAVEL
AREA

ASPHALT
PAD

GRAVEL ACCESS ROAD

GAZEBO

M-NCPPC
POND

60" CMP
INV.: 359.81

60" CMP
INV.: 361.50

MATCH LINE - SEE DRAWING C-102

MATCH LINE - SEE DRAWING C-106

OB102
OB04
OB04A
TP-045
W-11
TP-001 A
TP-161
TP-160
TP-046
TP-003 A
TP-004 A
W-12
TP-047
TP-005 A
TP-048
TP-049
TP-050
TP-008 A
TP-051
TP-204
TP-052
EW-14
TP-205
TP-053
TP-276
EW-13
TP-054
TP-277
TP-055
TP-275
TP-056
TP-278
EW-7
TP-057
TP-274
TP-058
W-13
MW 1
TP-011 A
TP-014 A
TP-015 A
W-15
OB105
OB07A
OB07
OB06

FILE PATH: O:\PROJECTS\1564601 - GUDE LF REMEDIATION\PRODUCTION\DESIGN SET\1564601 - 07.01 - EXISTING CONDITIONS.DWG JC-101) GARDINA, COLLEEN 1/10/2020 2:58 PM

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION				
DESIGNED BY: KEF / SMB	DRAWN BY: SMB	CHECKED BY: LJO / GAT	PROJECT MANAGER: MJG	

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

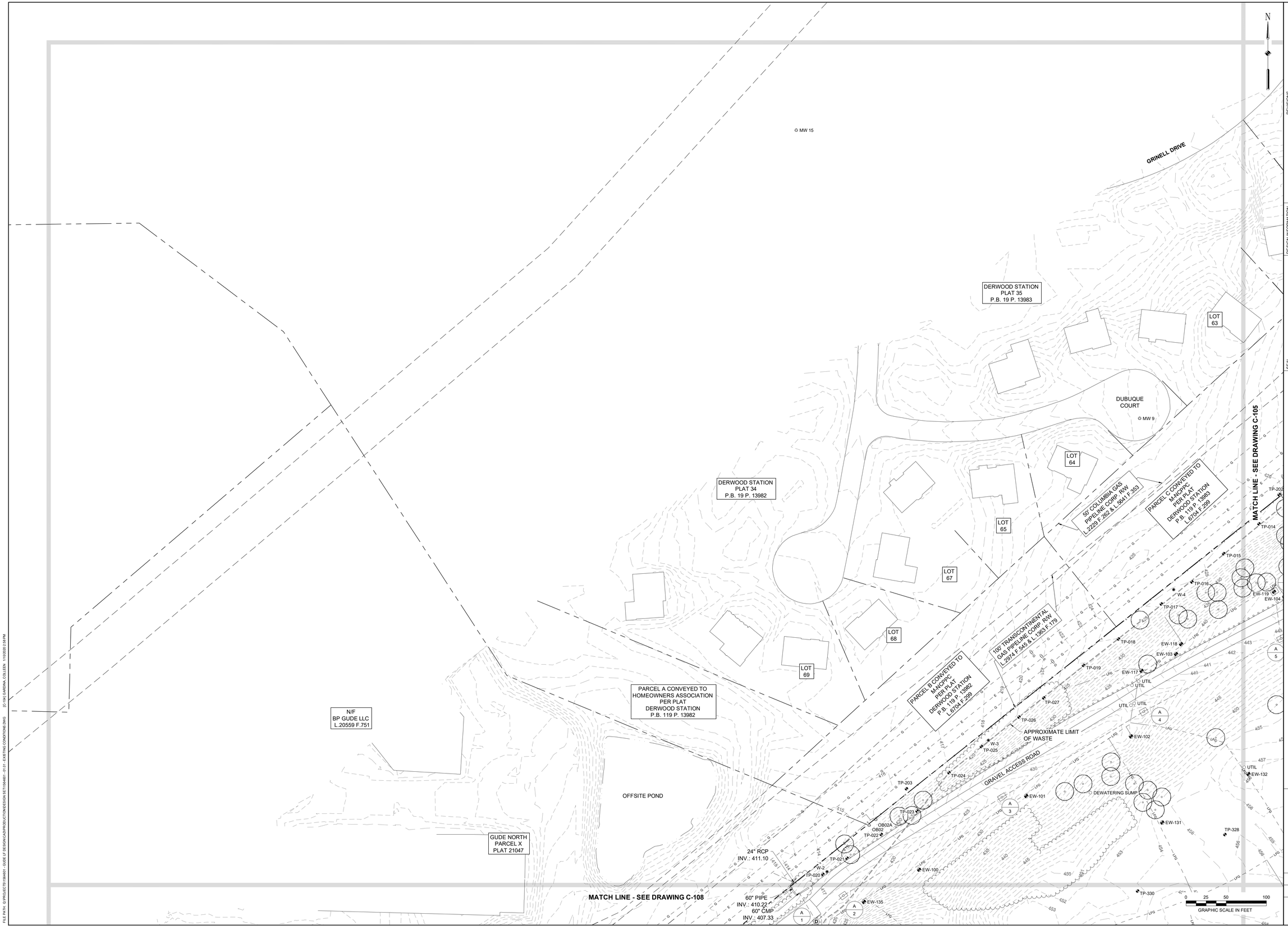
PROJECT NUMBER: 1564601

C-103

SHEET: 6 OF 109

0 25 50 100
GRAPHIC SCALE IN FEET

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-104

SHEET: 7 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\15646\1 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\15646\1 - (0 0) - EXISTING CONDITIONS.DWG [C-104] DARDINA, COLLEEN 10/2/2020 2:58 PM

MATCH LINE - SEE DRAWING C-102

GRINELL DRIVE

LOT 47

LOT 49

LOT 50

LOT 52

LOT 53

LOT 63

60' COLUMBIA GAS PIPELINE CORP. R/W L.2229 F.492 & L.5641 F.353

PARCEL D CONVEYED TO M-NCPPC PER PLAT DERWOOD STATION P.B. 119 P. 13985 L.6704 F.299

100' TRANSCONTINENTAL GAS PIPELINE CORP. R/W L.2974 F.545 & L.1393 F.179

GUDE LANDFILL MONTGOMERY COUNTY L.4501 F.453

APPROXIMATE LIMIT OF WASTE

SOIL STOCKPILE

GRAVEL ACCESS ROAD

DEWATERING SUMP

UTIL

GAZEBO

MATCH LINE - SEE DRAWING C-104

MATCH LINE - SEE DRAWING C-106

MATCH LINE - SEE DRAWING C-109

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-105

SHEET: 8 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF REMEDIATION\CAD\PRODUCTION\DESIGN SET\1564601 - 01.01 - EXISTING CONDITIONS.DWG [C-105] GARDINAL, COLLEEN 11/20/2020 2:38 PM

MATCH LINE - SEE DRAWING C-103

MATCH LINE - SEE DRAWING C-105

MATCH LINE - SEE DRAWING C-107

MATCH LINE - SEE DRAWING C-110

GAZEBO

ASPHALT PAD

ASPHALT PAD

ASPHALT PAD

M-NCPPC POND

60" CMP INV.: 359.81

60" CMP INV.: 361.50

GUDE LANDFILL MONTGOMERY COUNTY L.49316 F.416

GUDE LANDFILL MONTGOMERY COUNTY L.2975 F.213

APPROXIMATE LIMIT OF WASTE

SOIL STOCKPILE

GRAVEL ACCESS ROAD

GRAVEL ACCESS ROAD

GRAVEL ACCESS ROAD

APPROXIMATE LIMITS OF PURPLE LINE SOIL STOCKPILE. ADDITIONAL MATERIAL VOLUME SINCE DATE OF EXISTING CONDITIONS SURVEY, TO BE DETERMINED.

WEATHER STATION

TP-058 TP-059 TP-060 TP-061 TP-062 TP-063 TP-064 TP-065 TP-066 TP-067 TP-068 TP-069 TP-070 TP-071 TP-072 TP-073 TP-074 TP-075 TP-076 TP-077 TP-078 TP-079 TP-080 TP-081

TP-015 A TP-016 A TP-017 A TP-018 A TP-024 A TP-034 A

TP-250 TP-251 TP-252 TP-253 TP-254 TP-255 TP-256 TP-257 TP-258 TP-259 TP-260 TP-261 TP-262 TP-263 TP-264 TP-265 TP-266 TP-267 TP-268 TP-269 TP-270 TP-273 TP-274 TP-279 TP-280 TP-285 TP-289 TP-292 TP-293 TP-294 TP-295 TP-296 TP-297 TP-298 TP-301 TP-302 TP-303 TP-304 TP-305 TP-309 TP-310 TP-334

EW-15 EW-16 EW-17 EW-18 EW-19 EW-20 EW-34 EW-35 EW-37 EW-38 EW-40 EW-41 EW-43 EW-44 EW-59

W-14 W-15 W-16

TPZ-04 TPZ-06

UTIL

LFG

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

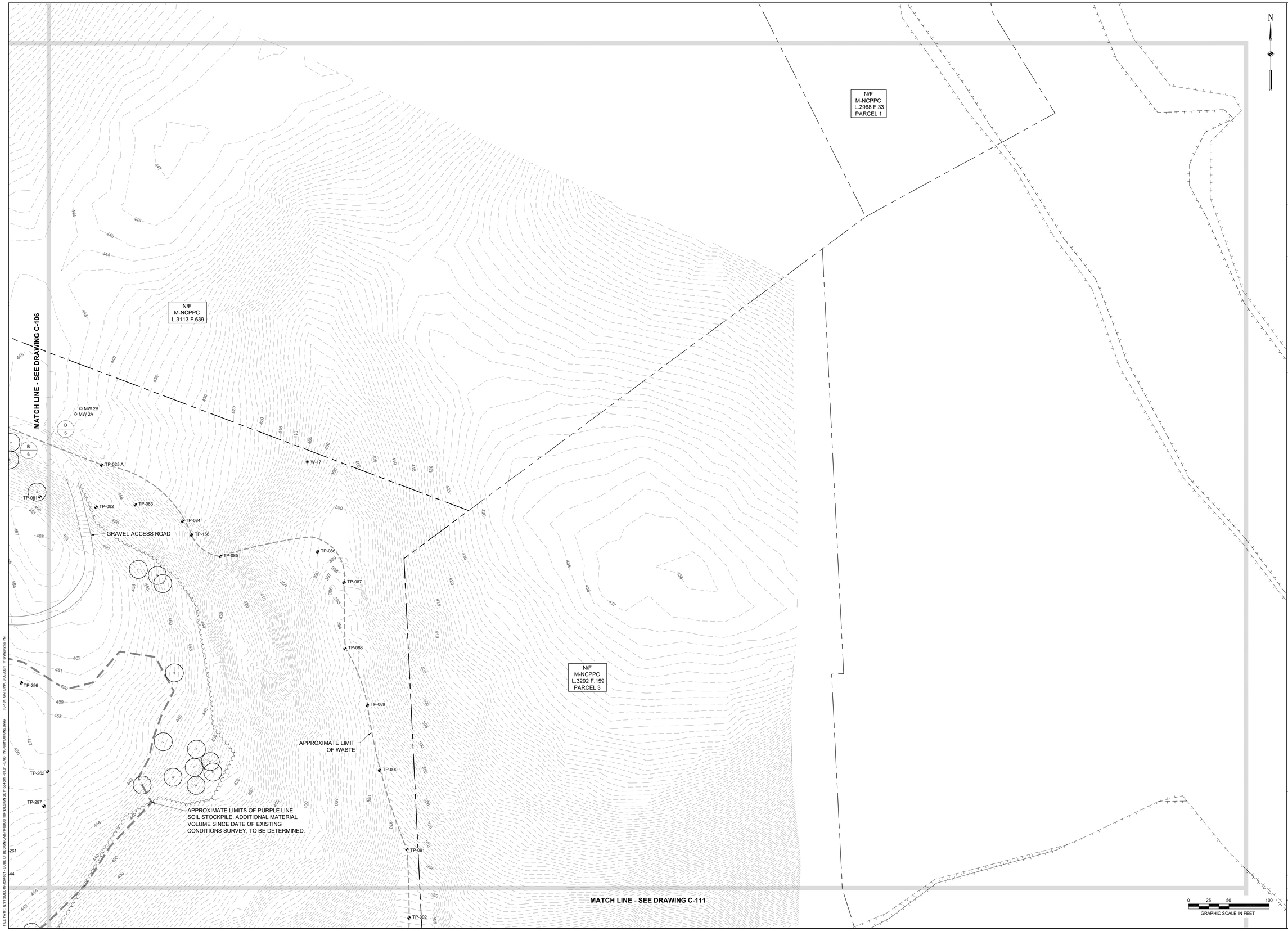
PROJECT NUMBER: 1564601

C-106

SHEET: 9 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 01.01 - EXISTING CONDITIONS.DWG [C:\WS] GABRINA, COLLEEN 11/2/2020 2:39 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-107

SHEET: 10 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

PLAT 21047

MATCH LINE - SEE DRAWING C-104

MATCH LINE - SEE DRAWING C-109

24" RCP
INV.: 411.10

60" PIPE
INV.: 410.22

60" CMP
INV.: 407.33

50' COLUMBIA GAS
PIPELINE CORP R/W
L 2229 F 262 & L 5641 F 353

100' TRANSCONTINENTAL GAS
PIPELINE CORP R/W
L 2974 F 545 & L 5363 F 179

20' WSSC R/W

10' P.U.E.

LANDFILL
GAS FLARES

MEN'S SHELTER

MEN'S SHELTER

LID: 415.12

APPROXIMATE LIMIT
OF WASTE

60" CMP
INV.: 402.40

POND 1

E GUDE DRIVE

66" RCP
INV.: 394.06

66" RCP
INV.: 394.33

MW 19A
MW 19B

UTIL

TP-021 TP-020 TP-330 TP-228 TP-229 TP-155 TP-154 TP-153 TP-152 TP-151

W-1 W-2 W-28 W-29 W-30

EW-100 EW-135 EW-136 EW-137 EW-138 EW-139 EW-140 EW-21 EW-22

TPZ-01

OB01 MW 6

0 25 50 100
GRAPHIC SCALE IN FEET

NO.	DATE	BY	REVISIONS DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-108

SHEET: 11 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 05 01 - EXISTING CONDITIONS.DWG [C-108] GARDINA, COLLEEN 1/10/2020 2:59 PM

MATCH LINE - SEE DRAWING C-105

MATCH LINE - SEE DRAWING C-108

MATCH LINE - SEE DRAWING C-110

GRAVEL ACCESS ROAD

GUDE LANDFILL
MONTGOMERY COUNTY
L.5174 F.309

N/F
JEANNETTE COTLER
ET AL
L.14323 F.117

N/F
WASHINGTON SUBURBAN SANITARY COMMISSION
L.5365 F.632

APPROXIMATE LIMIT
OF WASTE

SOUTHLAWN
BRANCH

WSSC
FORCE MAIN R/W
L.--- F.---

WSSC FACILITY

POND 1

POND 4

66" RCP
INV.: 394.06

66" RCP
INV.: 394.33

GRAVEL ACCESS ROAD

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION	
DESIGNED BY:	KEF / SMB
DRAWN BY:	SMB
CHECKED BY:	LJO / GAT
PROJECT MANAGER:	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-109

SHEET: 12 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601, GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601_10 01 - EXISTING CONDITIONS.DWG [C-109] DARDNA, COLLEEN 1/10/2020 3:59 PM

MATCH LINE - SEE DRAWING C-106

MATCH LINE - SEE DRAWING C-109

MATCH LINE - SEE DRAWING C-111

WEATHER STATION

36" DIA. BYPASS PIPING (SCS ENGINEERS, 2008)

POND 3

36" HDPE INV: 398.56

RETAINING WALL

CONCRETE AND ASPHALT PAD

APPROXIMATE LIMITS OF PURPLE LINE SOIL STOCKPILE. ADDITIONAL MATERIAL VOLUME SINCE DATE OF EXISTING CONDITIONS SURVEY, TO BE DETERMINED.

GRAVEL ACCESS ROAD

APPROXIMATE LIMIT OF WASTE

POND 4

SOUTHLAWN BRANCH

WSSC FORCE MAIN R/W L.--- F.---

WSSC 20' SEWER R/W L.--- F.---

INCINERATOR LANE

SOUTHLAWN LANE

N/F MONTGOMERY CONCRETE LAND, LLC L.31096 F.582

N/F JAMES W WILCOXON L.5825 F.606

L.3974 F.586

TP-240 TP-241 TP-242 TP-243 TP-244 TP-305 TP-306 TP-123 TP-124 TP-125 TP-126 TP-127 TP-256 TP-257 TP-298 TP-299 TP-300 TP-301 TP-302 TP-102 TP-103 TP-104 TP-105 TP-106 TP-107 TP-108 TP-109 TP-110 TP-111 TP-112 TP-113 TP-114 TP-115 TP-116 TP-117 TP-118 TP-119 TP-120 TP-121 TP-122 TP-261

EW-25 EW-32 EW-35 EW-43 EW-44 EW-59 EW-151 EW-159

OB11A OB11 OB025 OB10 MW 4 MW 22A MW 22B MW 23A MW 23B MW 24A MW 24B

GRAPHIC SCALE IN FEET 0 25 50 100

N

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

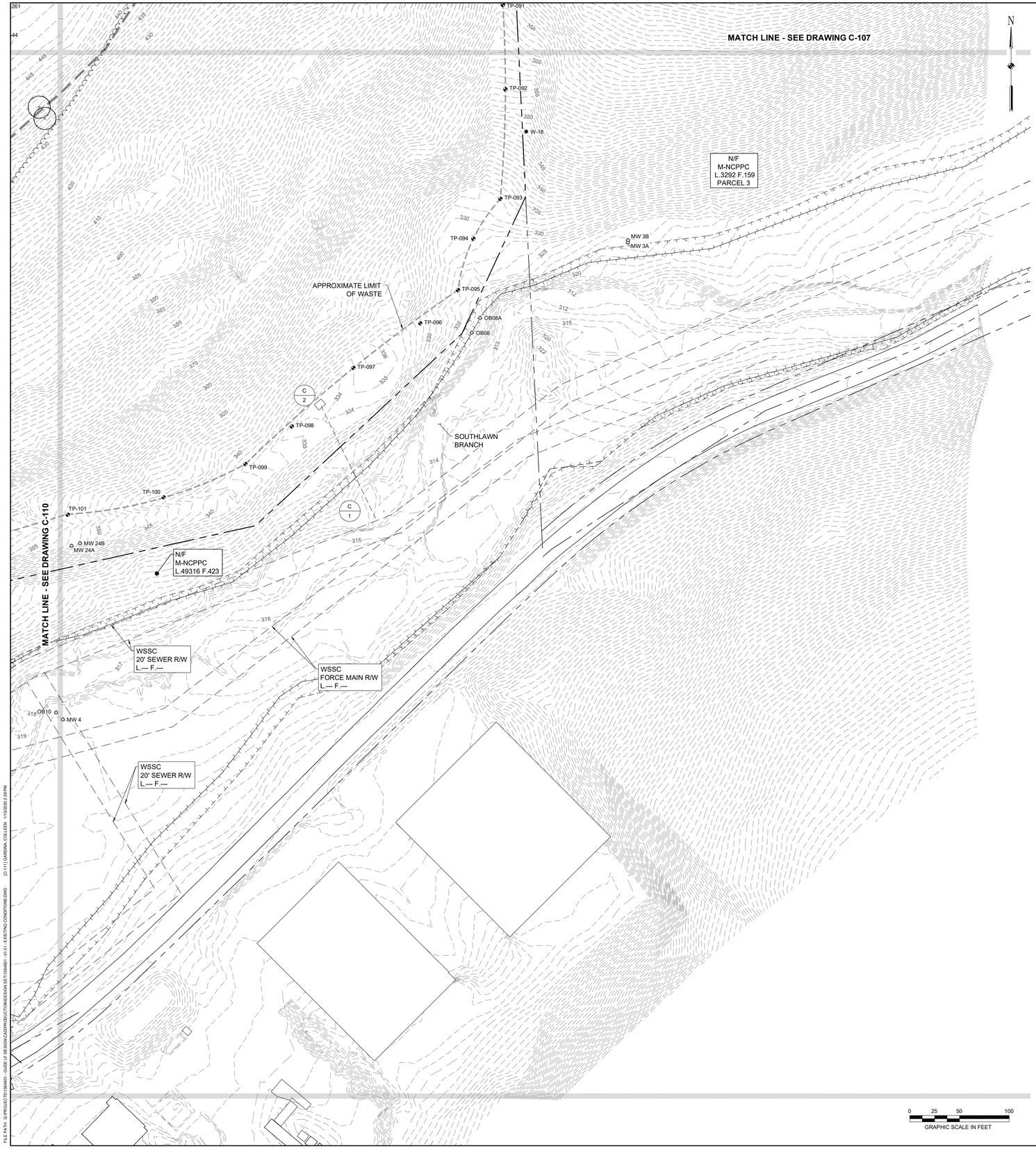
PROJECT NUMBER: 1564601

C-110

SHEET: 13 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 001 01 - EXISTING CONDITIONS.DWG [C-110] GARDINA, COLLEEN 1/10/2020 2:59 PM



EXISTING STORMDRAIN STRUCTURE TABLE

STRUCTURE NAME	RIM ELEVATION	PIPE SIZE AND MATERIAL	INVERT IN	FROM STRUCTURE	INVERT OUT	TO STRUCTURE	ALSO KNOWN AS
A1	415.78	24" STEEL	410.19	A2			A1A (EA)
		60" CMP	407.82	FROM NW	407.78	TO SE	
A2	415.66	18"/24" STEEL	412.17	A3	411.39	A1	A1 (EA)
A3	426.16	18" STEEL	422.12	A4	421.19	A2	A2 (EA)
A4	433.49	21"/18" STEEL	429.64	A5	428.56	A3	A3 (EA)
A5	442.50	18" CPP	438.90	A6			A4 (EA)
		21" CPP/21" STEEL	439.16	A7	438.07	A4	
A6	442.40	18" CPP			437.84	A5	A6 (EA)
A7	451.57	21" CPP	447.82	A8?	447.15	A5	A5 (EA)
A8		21" HDPE			450.84	A7	
A9		15" HDPE		A10	451.76		
A10		15" HDPE	452.10			A9	
B5		12" RCP		B6	443.96		C5 (EA)
B6		12" RCP	445.28			B5	C6 (EA)
C1		18" HDPE		C2	275.52		
C2		18" HDPE	327.54			C1	
D1		42" RCP		D2	348.20		
D2	356.54	42" RCP	349.03	D4	348.50	D1	
D4	369.58	18" HDPE	363.82	D5			
		42" RCP	363.70	D7			
		42" RCP			359.38	D2	
D5	369.47	18" HDPE	364.73	D6	364.35	D4	
D6	390.05	18" HDPE			385.61	D5	
D7	378.62	36" RCP	372.68	D8			
		42" RCP			369.35	D4	
D8	392.12	30" RCP	385.66	D9			
		36" RCP			380.62	D7	
D9		30" RCP	388.52			D8	
E1		18" HDPE		E2	375.79		
E2	391.73	18" HDPE			386.56	E1	
F1		15" CMP		F2	436.41		
F2		15" CMP	437.13			F1	
H1		24" HDPE		H2	399.71		
H2	418.35	24" HDPE	413.50	H3	413.04	H1	
H3	433.49	18" RCP	429.85	H7			
		24" RCP	429.57	H4	429.17	H2	
H4	447.49	24" RCP			443.53	H3	
H5		15" RCP		H6	468.24		H8 (EA)
H6		15" RCP	469.03			H5	H9 (EA)
H7	432.35	18" RCP			432.35	H3	H5 (EA)
H8		12" CMP		H9	464.01		H7 (EA)
H9		12" CMP	464.86			H8	H6 (EA)
H10		15" CMP	469.69			TO SW	
I1		24" HDPE		I2	399.74		
I2	428.85	24" HDPE	422.69	I3	422.33	I1	
I3	436.69	24" HDPE	429.33	I4	429.07	I2	
I4	436.82	24" HDPE			431.04	I3	
I5		24" HDPE		I6	446.04		
I6		24" HDPE	447.31			I5	
I7		24" HDPE		I8	449.53		I9 (EA)
I8		24" HDPE	456.31			I7	I10 (EA)
J1		24" HDPE		J2	399.45		
J2	413.42	24" HDPE	410.10	J3	408.59	J1	
J3	439.38	24" HDPE			433.87	J2	
J4		24" HDPE		J5	446.97		J7 (EA)
J5		24" HDPE	448.26			J4	J8 (EA)
J6		24" HDPE		J7	441.62		J4 (EA)
J7		24" HDPE	443.33			J6	J5 (EA)
J8		24" HDPE		J9	441.74		J9 (EA)
J9		24" HDPE	442.57			J8	J10 (EA)
K1		30" HDPE		K2	400.25		
K2	414.84	18" HDPE	410.39	P1			
		30" HDPE	409.10	K3	408.65	K1	
K3	428.72	30" HDPE	424.51	K4	422.06	K2	
K4	448.31	30" HDPE			444.48	K3	
L1		24" HDPE		L2	449.83		
L2		24" HDPE	452.30			L1	
P1	436.04	18" HDPE	433.30	P2	432.34	K2	
P2	446.63	18" HDPE			443.31	P1	
R1		8" HDPE		R2	466.23		R2 (EA)
R2		8" HDPE	466.74			R1	R1 (EA)
W1		18" CMP		W2	353.74		
W2		18" CMP	363.48			W1	
X1		12" CMP		X2	356.30		SED BASIN B OUTLET (EA)
X2		12" CMP	358.30			X1	SED BASIN B RISER (EA)
Z1		24" HDPE		Z2	397.77		S1 (EA)
Z2	405.23	24" HDPE	398.63	Z3	398.49	Z1	Z4B (EA)
		24" HDPE	398.68	Z5			
Z3	413.19	18" HDPE	409.05	Z4			Z4 (EA)
		24" HDPE			406.20	Z2	
Z4	413.49	18" HDPE			409.23	Z3	Z3 (EA)
Z5	403.98	18" HDPE	400.54	Z6			Z1 (EA)
		24" HDPE			400.08	Z2	
Z6	405.26	18" HDPE			402.73	Z5	Z2 (EA)

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXISTING CONDITIONS PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-111

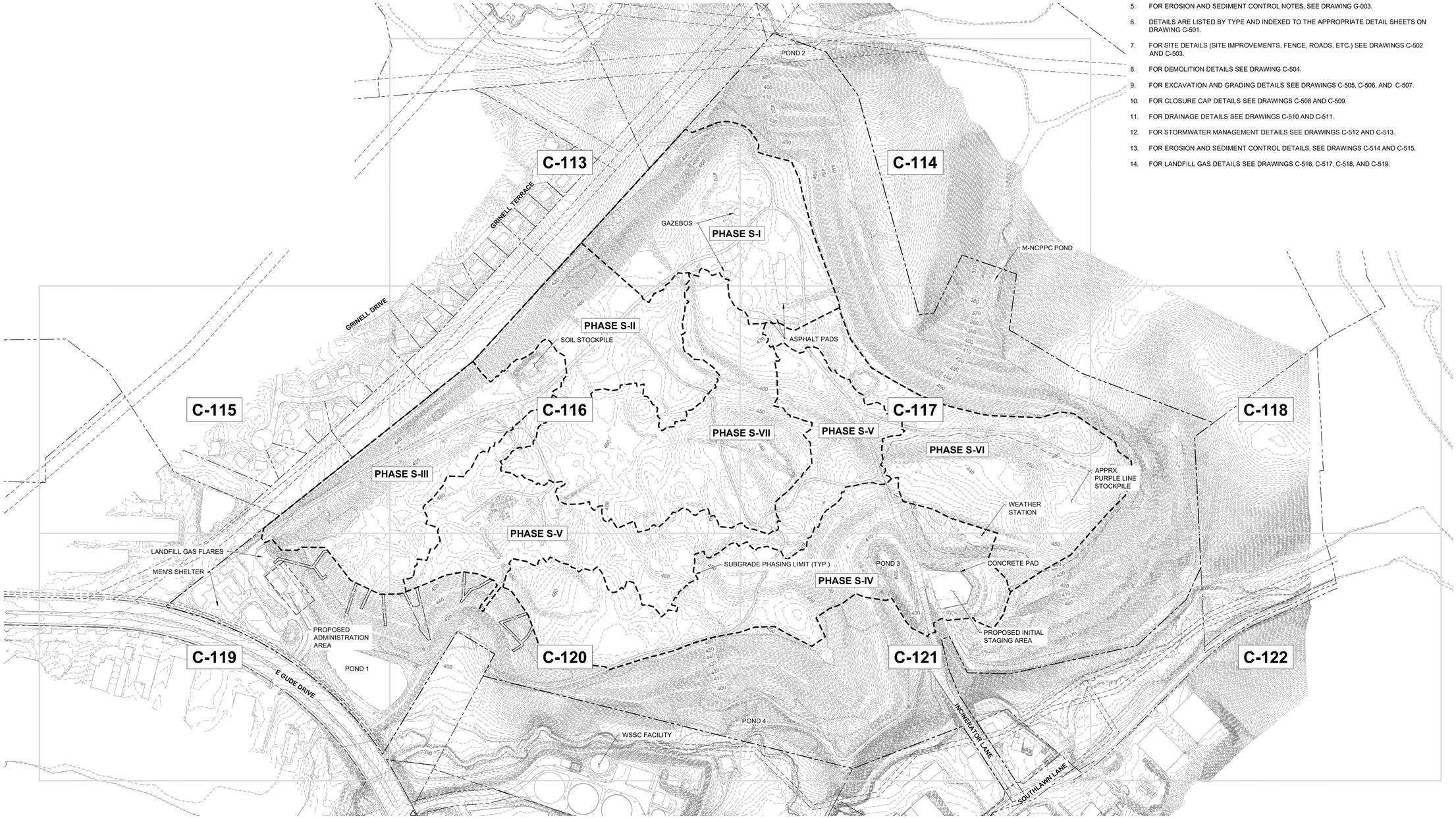
SHEET: 14 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\15640\1 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\15640101 - 05 01 - EXISTING CONDITIONS.DWG [C-111] GARDINA, COLLEEN 1/10/2020 2:59 PM

GENERAL NOTES

1. FOR LEGEND AND GENERAL NOTES, SEE DRAWING G-002.
2. FOR EXISTING STORM DRAIN STRUCTURE TABLES, SEE DRAWING C-111.
3. ALL SUBGRADE PHASING LIMITS (S-#) ARE TO BE SUPER SILT FENCE.
4. FOR SEQUENCE OF CONSTRUCTION, SEE DRAWING G-002.
5. FOR EROSION AND SEDIMENT CONTROL NOTES, SEE DRAWING G-003.
6. DETAILS ARE LISTED BY TYPE AND INDEXED TO THE APPROPRIATE DETAIL SHEETS ON DRAWING C-501.
7. FOR SITE DETAILS (SITE IMPROVEMENTS, FENCE, ROADS, ETC.) SEE DRAWINGS C-502 AND C-503.
8. FOR DEMOLITION DETAILS SEE DRAWING C-504.
9. FOR EXCAVATION AND GRADING DETAILS SEE DRAWINGS C-505, C-506, AND C-507.
10. FOR CLOSURE CAP DETAILS SEE DRAWINGS C-508 AND C-509.
11. FOR DRAINAGE DETAILS SEE DRAWINGS C-510 AND C-511.
12. FOR STORMWATER MANAGEMENT DETAILS SEE DRAWINGS C-512 AND C-513.
13. FOR EROSION AND SEDIMENT CONTROL DETAILS, SEE DRAWINGS C-514 AND C-515.
14. FOR LANDFILL GAS DETAILS SEE DRAWINGS C-516, C-517, C-518, AND C-519.



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN - KEY SHEET

SC/SWM SHEET 4 OF 35

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

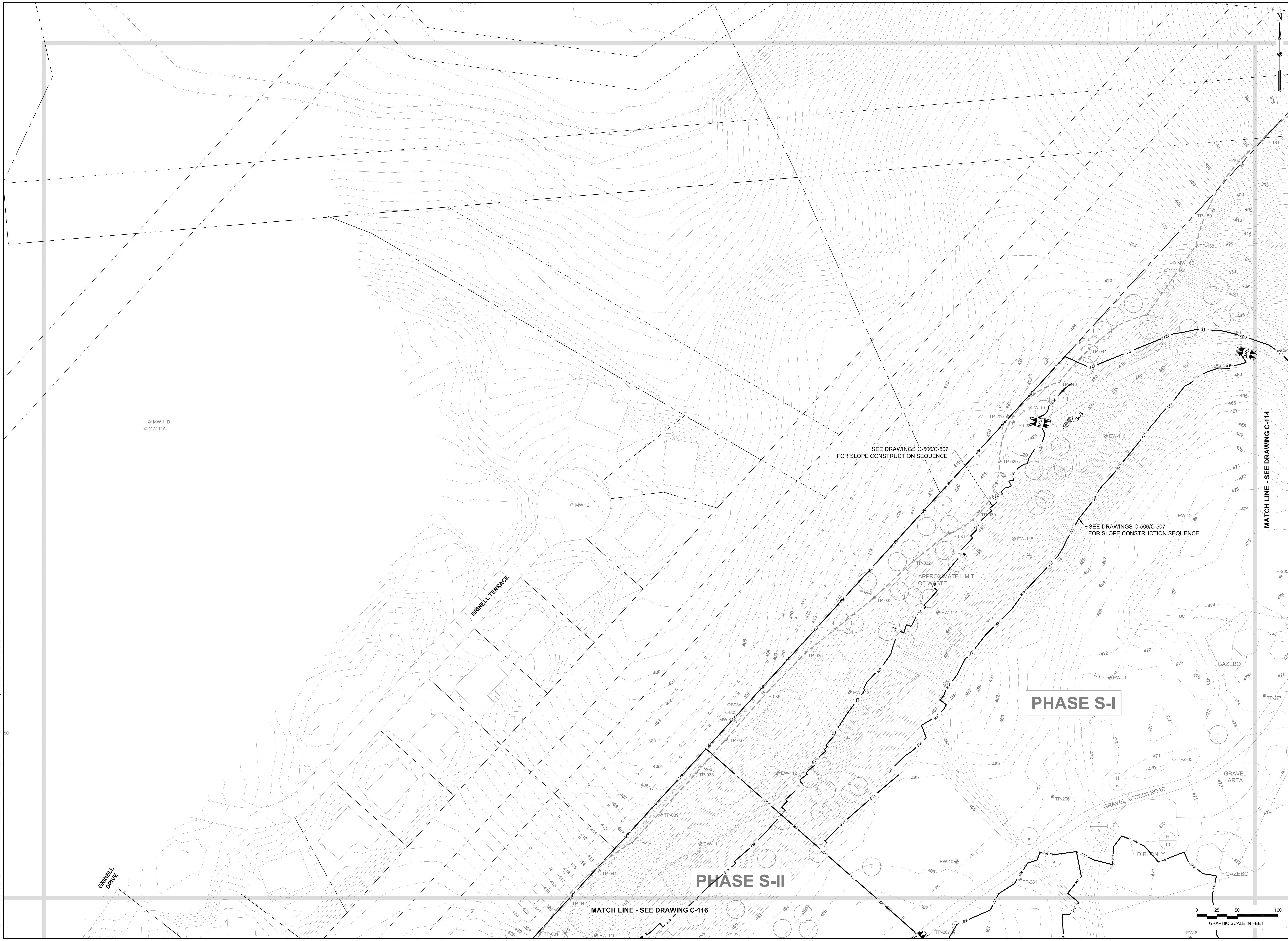
DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-112

SHEET: 15 OF 109

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 01.10 - INITIAL ESC - EXISTING CONDITIONS - KEY SHEET.DWG [C-112] GARDINA, COLLEEN 1/10/2020 3:00 PM



REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

SC/SWM SHEET 5 OF 35

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

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Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

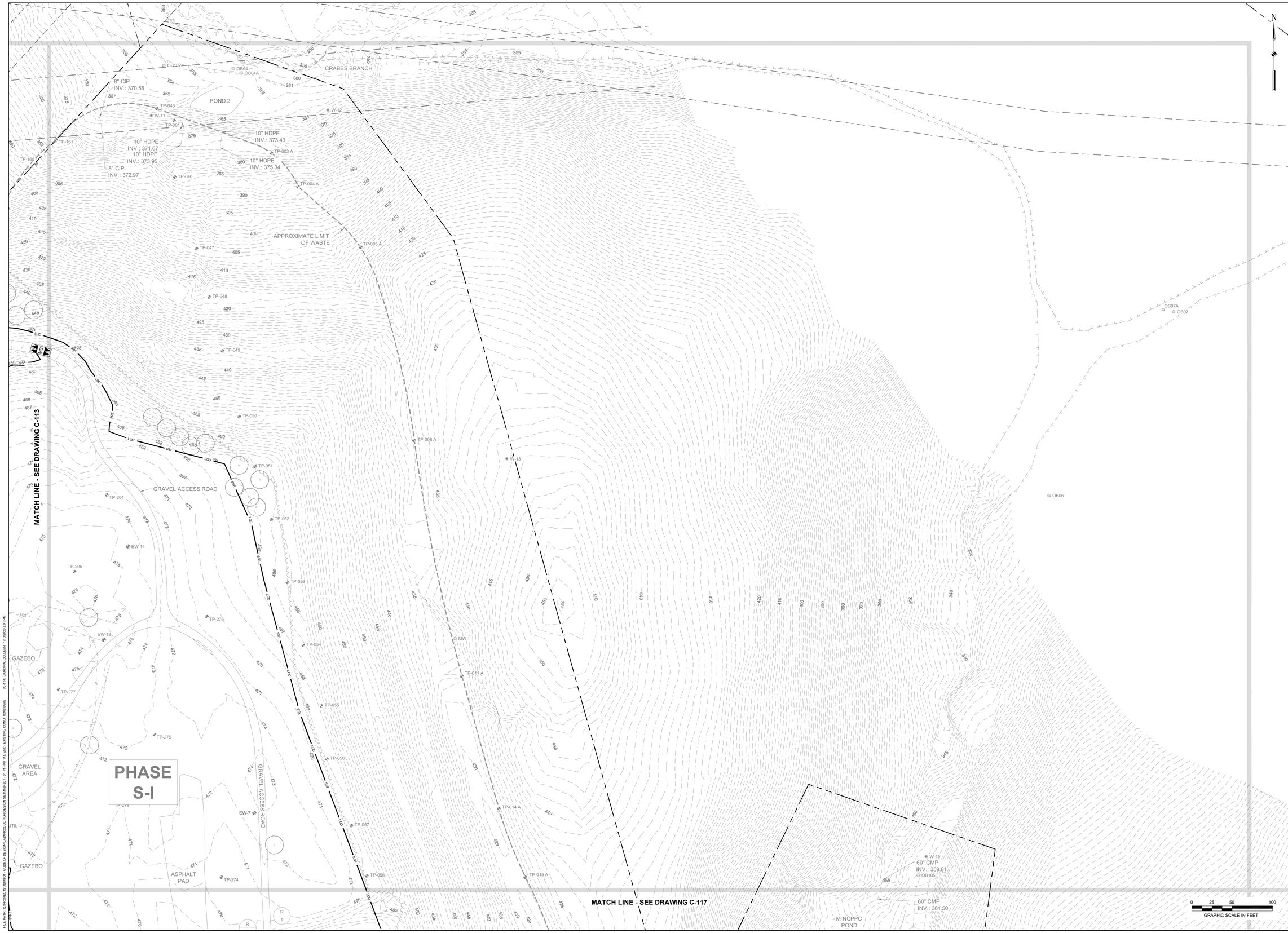
DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-113

SHEET: 16 OF 109

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 01.11 - INITIAL ESC - EXISTING CONDITIONS.DWG [C-113] GARDINA, COLLEEN 1/10/2020 3:01 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-114

SHEET: 17 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 6 OF 35

FILE PATH: O:\PROJECTS\1564001_GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564001_05-11_INITIAL ESC - EXISTING CONDITIONS.DWG [C-114] GARDNA, COLLEEN - 11/02/2020 3:01 PM

REVISIONS		
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

SC/SWM SHEET 7 OF 35

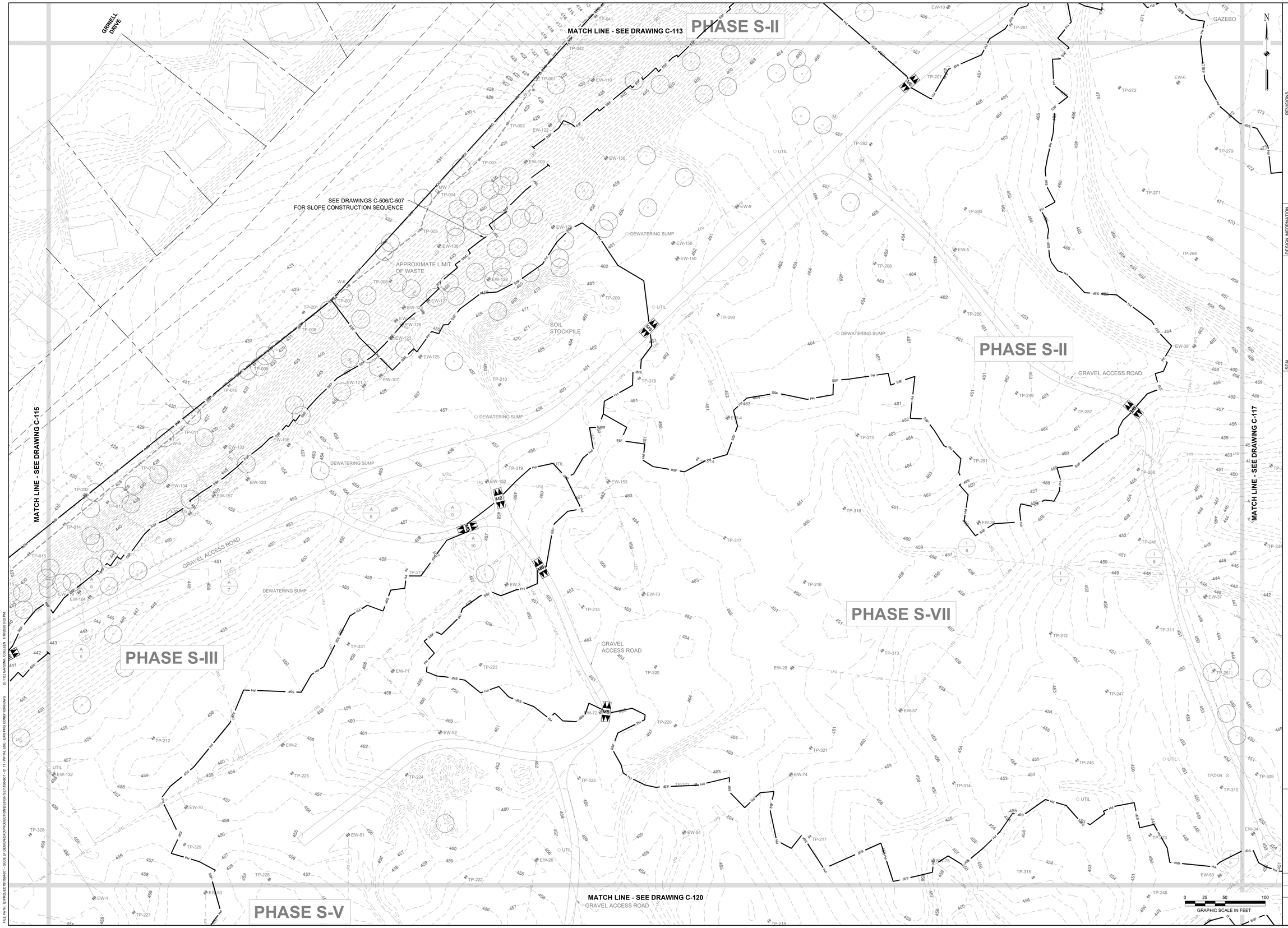
EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020
PROJECT NUMBER: 1564601

C-115
SHEET: 18 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 01.11 - INITIAL ESC - EXISTING CONDITIONS.DWG [C-115] GARDINA, COLLEEN 1/10/2020 3:02 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-116

SHEET: 19 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 8 OF 35

FILE PATH: G:\PROJECTS\1564601 - GUDE LF REMOVAL\PRODUCTION\DESIGN SET\1564601 - 20-11 - INITIAL ESC - EXISTING CONDITIONS.DWG

MATCH LINE - SEE DRAWING C-114

MATCH LINE - SEE DRAWING C-116

MATCH LINE - SEE DRAWING C-118

MATCH LINE - SEE DRAWING C-121

PHASE S-I

PHASE S-V

PHASE S-VI

PHASE S-VII

PHASE S-IV

APPROXIMATE LIMITS OF PURPLE LINE SOIL STOCKPILE. ADDITIONAL MATERIAL VOLUME SINCE DATE OF EXISTING CONDITIONS SURVEY, TO BE DETERMINED.

APPROXIMATE LIMIT OF WASTE

SOIL STOCKPILE

M-NCPPC POND

60" CMP INV.: 359.81

60" CMP INV.: 361.50

GRAVEL ACCESS ROAD

ASPHALT PAD

GAZEBO

WEATHER STATION

N

0 25 50 100

GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-117

SHEET: 20 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 9 OF 35

FILE PATH: Z:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601_01-11 - INITIAL ESC - EXISTING CONDITIONS.DWG [C-117] GARDNA, COLLEEN 1/10/2020 3:02 PM

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-118

SHEET: 21 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 10 OF 35

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

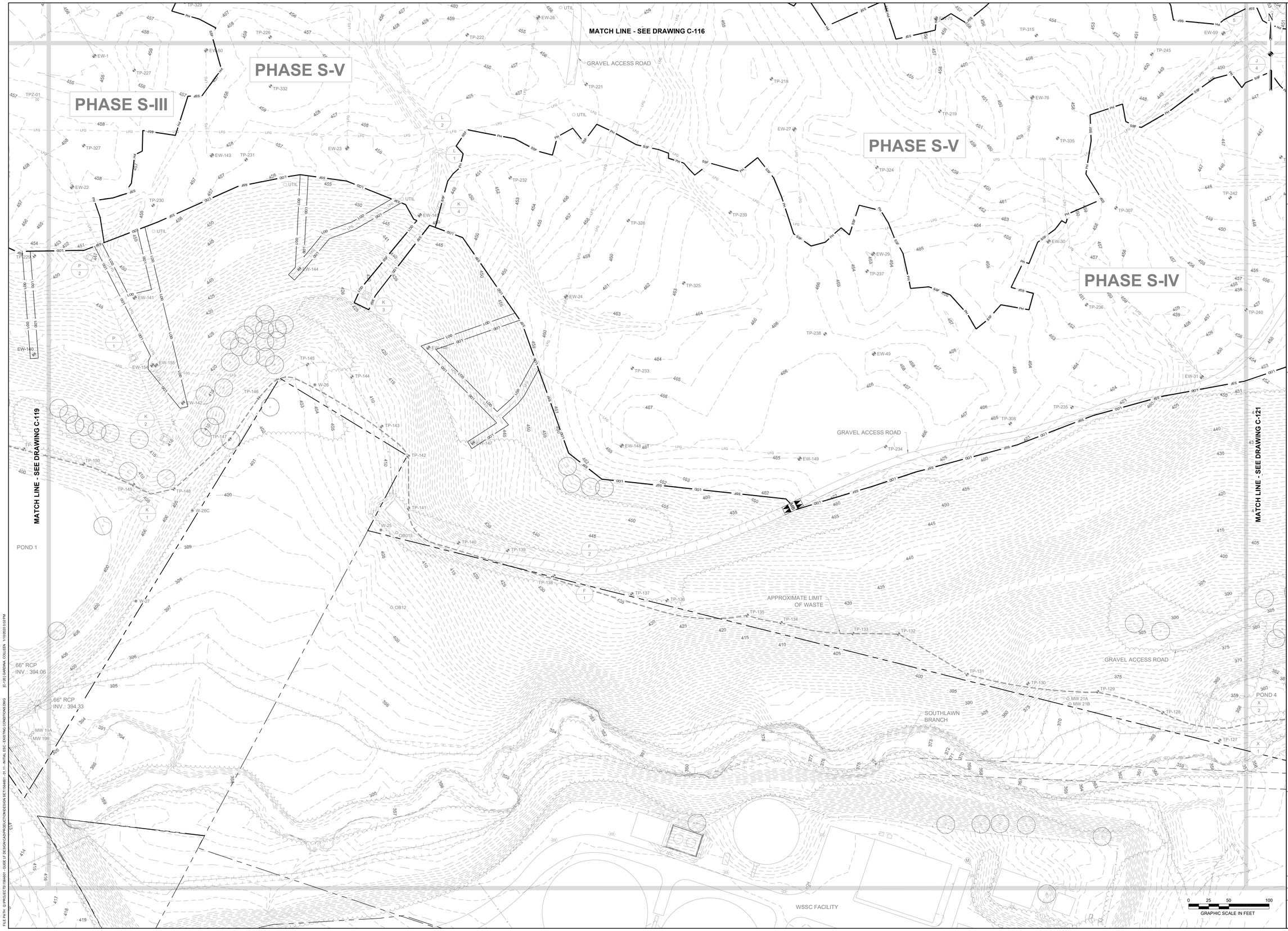
C-119

SHEET: 22 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 11 OF 35

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 01.11 - INITIAL ESC - EXISTING CONDITIONS.DWG [C-119] GARDINA, COLLEEN 1/10/2020 3:02 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

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MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-120

SHEET: 23 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 12 OF 35

PHASE S-IV

MATCH LINE - SEE DRAWING C-117

PHASE S-V

PHASE S-IV

PHASE S-VI

WEATHER STATION

36" DIA. BYPASS PIPING (SCS ENGINEERS, 2008)

POND 3

RETAINING WALL

CONCRETE AND ASPHALT PAD

PROPOSED INITIAL STAGING AREA

APPROXIMATE LIMITS OF PURPLE LINE SOIL STOCKPILE. ADDITIONAL MATERIAL VOLUME SINCE DATE OF EXISTING CONDITIONS SURVEY, TO BE DETERMINED.

36" HDPE INV. 398.56

GRAVEL ACCESS ROAD

GRAVEL ACCESS ROAD

APPROXIMATE LIMIT OF WASTE

APPROXIMATE LIMIT OF WASTE

POND 4

SOUTHLAWN BRANCH

SOUTHLAWN BRANCH

SOUTHLAWN BRANCH

INCINERATOR LANE

SOUTHLAWN LANE

MATCH LINE - SEE DRAWING C-120

MATCH LINE - SEE DRAWING C-122

TP-240 TP-241 TP-242 TP-243 TP-244 TP-245 TP-246 TP-247 TP-248 TP-249 TP-250 TP-251 TP-252 TP-253 TP-254 TP-255 TP-256 TP-257 TP-258 TP-259 TP-260 TP-261 TP-262 TP-263 TP-264 TP-265 TP-266 TP-267 TP-268 TP-269 TP-270 TP-271 TP-272 TP-273 TP-274 TP-275 TP-276 TP-277 TP-278 TP-279 TP-280 TP-281 TP-282 TP-283 TP-284 TP-285 TP-286 TP-287 TP-288 TP-289 TP-290 TP-291 TP-292 TP-293 TP-294 TP-295 TP-296 TP-297 TP-298 TP-299 TP-300 TP-301 TP-302 TP-303 TP-304 TP-305 TP-306 TP-307 TP-308 TP-309 TP-310 TP-311 TP-312 TP-313 TP-314 TP-315 TP-316 TP-317 TP-318 TP-319 TP-320 TP-321 TP-322 TP-323 TP-324 TP-325 TP-326 TP-327 TP-328 TP-329 TP-330 TP-331 TP-332 TP-333 TP-334 TP-335 TP-336 TP-337 TP-338 TP-339 TP-340 TP-341 TP-342 TP-343 TP-344 TP-345 TP-346 TP-347 TP-348 TP-349 TP-350 TP-351 TP-352 TP-353 TP-354 TP-355 TP-356 TP-357 TP-358 TP-359 TP-360 TP-361 TP-362 TP-363 TP-364 TP-365 TP-366 TP-367 TP-368 TP-369 TP-370 TP-371 TP-372 TP-373 TP-374 TP-375 TP-376 TP-377 TP-378 TP-379 TP-380 TP-381 TP-382 TP-383 TP-384 TP-385 TP-386 TP-387 TP-388 TP-389 TP-390 TP-391 TP-392 TP-393 TP-394 TP-395 TP-396 TP-397 TP-398 TP-399 TP-400 TP-401 TP-402 TP-403 TP-404 TP-405 TP-406 TP-407 TP-408 TP-409 TP-410 TP-411 TP-412 TP-413 TP-414 TP-415 TP-416 TP-417 TP-418 TP-419 TP-420 TP-421 TP-422 TP-423 TP-424 TP-425 TP-426 TP-427 TP-428 TP-429 TP-430 TP-431 TP-432 TP-433 TP-434 TP-435 TP-436 TP-437 TP-438 TP-439 TP-440 TP-441 TP-442 TP-443 TP-444 TP-445 TP-446 TP-447 TP-448 TP-449 TP-450 TP-451 TP-452 TP-453 TP-454 TP-455 TP-456 TP-457 TP-458 TP-459 TP-460 TP-461 TP-462 TP-463 TP-464 TP-465 TP-466 TP-467 TP-468 TP-469 TP-470 TP-471 TP-472 TP-473 TP-474 TP-475 TP-476 TP-477 TP-478 TP-479 TP-480 TP-481 TP-482 TP-483 TP-484 TP-485 TP-486 TP-487 TP-488 TP-489 TP-490 TP-491 TP-492 TP-493 TP-494 TP-495 TP-496 TP-497 TP-498 TP-499 TP-500 TP-501 TP-502 TP-503 TP-504 TP-505 TP-506 TP-507 TP-508 TP-509 TP-510 TP-511 TP-512 TP-513 TP-514 TP-515 TP-516 TP-517 TP-518 TP-519 TP-520 TP-521 TP-522 TP-523 TP-524 TP-525 TP-526 TP-527 TP-528 TP-529 TP-530 TP-531 TP-532 TP-533 TP-534 TP-535 TP-536 TP-537 TP-538 TP-539 TP-540 TP-541 TP-542 TP-543 TP-544 TP-545 TP-546 TP-547 TP-548 TP-549 TP-550 TP-551 TP-552 TP-553 TP-554 TP-555 TP-556 TP-557 TP-558 TP-559 TP-560 TP-561 TP-562 TP-563 TP-564 TP-565 TP-566 TP-567 TP-568 TP-569 TP-570 TP-571 TP-572 TP-573 TP-574 TP-575 TP-576 TP-577 TP-578 TP-579 TP-580 TP-581 TP-582 TP-583 TP-584 TP-585 TP-586 TP-587 TP-588 TP-589 TP-590 TP-591 TP-592 TP-593 TP-594 TP-595 TP-596 TP-597 TP-598 TP-599 TP-600 TP-601 TP-602 TP-603 TP-604 TP-605 TP-606 TP-607 TP-608 TP-609 TP-610 TP-611 TP-612 TP-613 TP-614 TP-615 TP-616 TP-617 TP-618 TP-619 TP-620 TP-621 TP-622 TP-623 TP-624 TP-625 TP-626 TP-627 TP-628 TP-629 TP-630 TP-631 TP-632 TP-633 TP-634 TP-635 TP-636 TP-637 TP-638 TP-639 TP-640 TP-641 TP-642 TP-643 TP-644 TP-645 TP-646 TP-647 TP-648 TP-649 TP-650 TP-651 TP-652 TP-653 TP-654 TP-655 TP-656 TP-657 TP-658 TP-659 TP-660 TP-661 TP-662 TP-663 TP-664 TP-665 TP-666 TP-667 TP-668 TP-669 TP-670 TP-671 TP-672 TP-673 TP-674 TP-675 TP-676 TP-677 TP-678 TP-679 TP-680 TP-681 TP-682 TP-683 TP-684 TP-685 TP-686 TP-687 TP-688 TP-689 TP-690 TP-691 TP-692 TP-693 TP-694 TP-695 TP-696 TP-697 TP-698 TP-699 TP-700 TP-701 TP-702 TP-703 TP-704 TP-705 TP-706 TP-707 TP-708 TP-709 TP-710 TP-711 TP-712 TP-713 TP-714 TP-715 TP-716 TP-717 TP-718 TP-719 TP-720 TP-721 TP-722 TP-723 TP-724 TP-725 TP-726 TP-727 TP-728 TP-729 TP-730 TP-731 TP-732 TP-733 TP-734 TP-735 TP-736 TP-737 TP-738 TP-739 TP-740 TP-741 TP-742 TP-743 TP-744 TP-745 TP-746 TP-747 TP-748 TP-749 TP-750 TP-751 TP-752 TP-753 TP-754 TP-755 TP-756 TP-757 TP-758 TP-759 TP-760 TP-761 TP-762 TP-763 TP-764 TP-765 TP-766 TP-767 TP-768 TP-769 TP-770 TP-771 TP-772 TP-773 TP-774 TP-775 TP-776 TP-777 TP-778 TP-779 TP-780 TP-781 TP-782 TP-783 TP-784 TP-785 TP-786 TP-787 TP-788 TP-789 TP-790 TP-791 TP-792 TP-793 TP-794 TP-795 TP-796 TP-797 TP-798 TP-799 TP-800 TP-801 TP-802 TP-803 TP-804 TP-805 TP-806 TP-807 TP-808 TP-809 TP-810 TP-811 TP-812 TP-813 TP-814 TP-815 TP-816 TP-817 TP-818 TP-819 TP-820 TP-821 TP-822 TP-823 TP-824 TP-825 TP-826 TP-827 TP-828 TP-829 TP-830 TP-831 TP-832 TP-833 TP-834 TP-835 TP-836 TP-837 TP-838 TP-839 TP-840 TP-841 TP-842 TP-843 TP-844 TP-845 TP-846 TP-847 TP-848 TP-849 TP-850 TP-851 TP-852 TP-853 TP-854 TP-855 TP-856 TP-857 TP-858 TP-859 TP-860 TP-861 TP-862 TP-863 TP-864 TP-865 TP-866 TP-867 TP-868 TP-869 TP-870 TP-871 TP-872 TP-873 TP-874 TP-875 TP-876 TP-877 TP-878 TP-879 TP-880 TP-881 TP-882 TP-883 TP-884 TP-885 TP-886 TP-887 TP-888 TP-889 TP-890 TP-891 TP-892 TP-893 TP-894 TP-895 TP-896 TP-897 TP-898 TP-899 TP-900 TP-901 TP-902 TP-903 TP-904 TP-905 TP-906 TP-907 TP-908 TP-909 TP-910 TP-911 TP-912 TP-913 TP-914 TP-915 TP-916 TP-917 TP-918 TP-919 TP-920 TP-921 TP-922 TP-923 TP-924 TP-925 TP-926 TP-927 TP-928 TP-929 TP-930 TP-931 TP-932 TP-933 TP-934 TP-935 TP-936 TP-937 TP-938 TP-939 TP-940 TP-941 TP-942 TP-943 TP-944 TP-945 TP-946 TP-947 TP-948 TP-949 TP-950 TP-951 TP-952 TP-953 TP-954 TP-955 TP-956 TP-957 TP-958 TP-959 TP-960 TP-961 TP-962 TP-963 TP-964 TP-965 TP-966 TP-967 TP-968 TP-969 TP-970 TP-971 TP-972 TP-973 TP-974 TP-975 TP-976 TP-977 TP-978 TP-979 TP-980 TP-981 TP-982 TP-983 TP-984 TP-985 TP-986 TP-987 TP-988 TP-989 TP-990 TP-991 TP-992 TP-993 TP-994 TP-995 TP-996 TP-997 TP-998 TP-999 TP-1000

EW-25 EW-32 EW-35 EW-43 EW-44 EW-151 EW-159

OB11 OB11A OB025 OB10 MW 4 MW 23A MW 23B MW 22A MW 22B MW 24A MW 24B

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

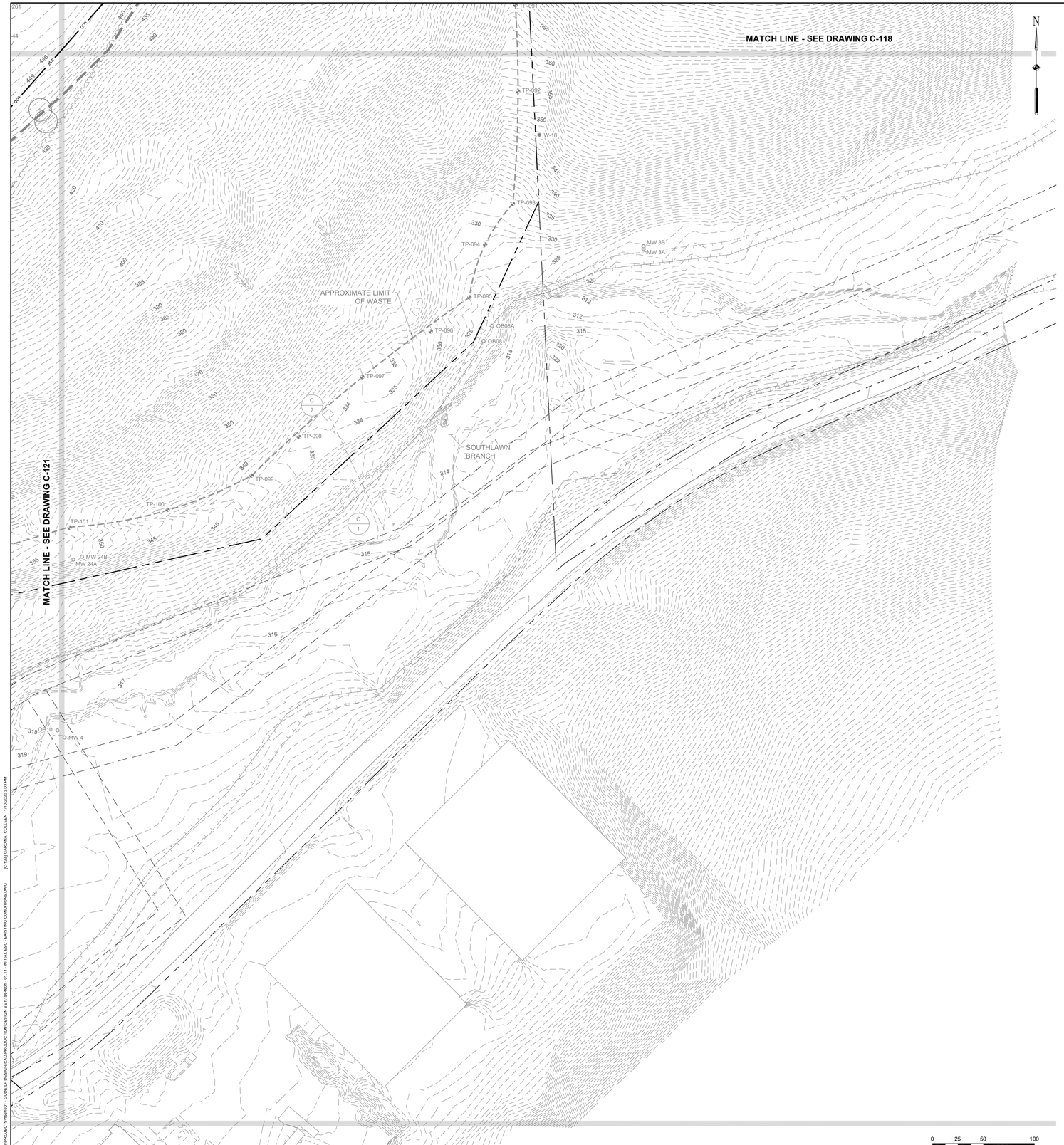
C-121

SHEET: 24 OF 109

SC/SWM SHEET 13 OF 35

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIATION\CAD\PRODUCTION\DESIGN SET\1564601 - 00 11 - INITIAL ERO - EXISTING CONDITIONS.DWG 10/2/2020 3:03:24 PM LOGIN: GARDINA, COLLEEN



EXISTING STORMDRAIN STRUCTURE TABLE

STRUCTURE NAME	RIM ELEVATION	PIPE SIZE AND MATERIAL	INVERT IN	FROM STRUCTURE	INVERT OUT	TO STRUCTURE	ALSO KNOWN AS
A1	415.78	24" STEEL	410.19	A2			A1A (EA)
		60" CMP	407.82	FROM NW	407.78	TO SE	
A2	415.66	18"/24" STEEL	412.17	A3	411.39	A1	A1 (EA)
A3	426.16	18" STEEL	422.12	A4	421.19	A2	A2 (EA)
A4	433.49	21"/18" STEEL	429.64	A5	428.56	A3	A3 (EA)
A5	442.50	18" CPP	438.90	A6			A4 (EA)
		21" CPP/21" STEEL	439.16	A7	438.07	A4	
A6	442.40	18" CPP			437.84	A5	A6 (EA)
A7	451.57	21" CPP	447.82	A8?	447.15	A5	A5 (EA)
A8		21" HDPE			450.84	A7	
A9		15" HDPE		A10	451.76		
A10		15" HDPE	452.10			A9	
B5		12" RCP		B6	443.96		C5 (EA)
B6		12" RCP	445.28			B5	C6 (EA)
C1		18" HDPE		C2	275.52		
C2		18" HDPE	327.54			C1	
D1		42" RCP		D2	348.20		
D2	356.54	42" RCP	349.03	D4	348.50	D1	
D4	369.58	18" HDPE	363.82	D5			
		42" RCP	363.70	D7			
		42" RCP			359.38	D2	
D5	369.47	18" HDPE	364.73	D6	364.35	D4	
D6	390.05	18" HDPE			385.61	D5	
D7	378.62	36" RCP	372.68	D8			
		42" RCP			369.35	D4	
D8	392.12	30" RCP	385.66	D9			
		36" RCP			380.62	D7	
D9		30" RCP	388.52			D8	
E1		18" HDPE		E2	375.79		
E2	391.73	18" HDPE			386.56	E1	
F1		15" CMP		F2	436.41		
F2		15" CMP	437.13			F1	
H1		24" HDPE		H2	399.71		
H2	418.35	24" HDPE	413.50	H3	413.04	H1	
H3	433.49	18" RCP	429.85	H7			
		24" RCP	429.57	H4	429.17	H2	
H4	447.49	24" RCP			443.53	H3	
H5		15" RCP		H6	468.24		H8 (EA)
H6		15" RCP	469.03			H5	H9 (EA)
H7	432.35	18" RCP			432.35	H3	H5 (EA)
H8		12" CMP		H9	464.01		H7 (EA)
H9		12" CMP	464.86			H8	H6 (EA)
H10		15" CMP	469.69			TO SW	
I1		24" HDPE		I2	399.74		
I2	428.85	24" HDPE	422.69	I3	422.33	I1	
I3	436.69	24" HDPE	429.33	I4	429.07	I2	
I4	436.82	24" HDPE			431.04	I3	
I5		24" HDPE		I6	446.04		
I6		24" HDPE	447.31			I5	
I7		24" HDPE		I8	449.53		I9 (EA)
I8		24" HDPE	456.31			I7	I10 (EA)
J1		24" HDPE		J2	399.45		
J2	413.42	24" HDPE	410.10	J3	408.59	J1	
J3	439.38	24" HDPE			433.87	J2	
J4		24" HDPE		J5	446.97		J7 (EA)
J5		24" HDPE	448.26			J4	J8 (EA)
J6		24" HDPE		J7	441.62		J4 (EA)
J7		24" HDPE	443.33			J6	J5 (EA)
J8		24" HDPE		J9	441.74		J9 (EA)
J9		24" HDPE	442.57			J8	J10 (EA)
K1		30" HDPE		K2	400.25		
K2	414.84	18" HDPE	410.39	P1			
		30" HDPE	409.10	K3	408.65	K1	
K3	428.72	30" HDPE	424.51	K4	422.06	K2	
K4	448.31	30" HDPE			444.48	K3	
L1		24" HDPE		L2	449.83		
L2		24" HDPE	452.30			L1	
P1	436.04	18" HDPE	433.30	P2	432.34	K2	
P2	446.63	18" HDPE			443.31	P1	
R1		8" HDPE		R2	466.23		R2 (EA)
R2		8" HDPE	466.74			R1	R1 (EA)
W1		18" CMP		W2	353.74		
W2		18" CMP	363.48			W1	
X1		12" CMP		X2	356.30		SED BASIN B OUTLET (EA)
X2		12" CMP	358.30			X1	SED BASIN B RISER (EA)
Z1		24" HDPE		Z2	397.77		S1 (EA)
Z2	405.23	24" HDPE	398.63	Z3	398.49	Z1	Z4B (EA)
		24" HDPE	398.68	Z5			
Z3	413.19	18" HDPE	409.05	Z4			Z4 (EA)
		24" HDPE			406.20	Z2	
Z4	413.49	18" HDPE			409.23	Z3	Z3 (EA)
Z5	403.98	18" HDPE	400.54	Z6			Z1 (EA)
		24" HDPE			400.08	Z2	
Z6	405.26	18" HDPE			402.73	Z5	Z2 (EA)

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

INITIAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
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Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-122

SHEET: 25 OF 109

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SC/SWM SHEET 14 OF 35

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMOVAL\CAD\PRODUCTION\DESIGN SET\1564601 - 01 11 - INITIAL ESC - EXISTING CONDITIONS.DWG JC-122 | GARDNA, COLLEEN 1/10/2020 3:03 PM

DEMOLITION AND EXCAVATION NOTES

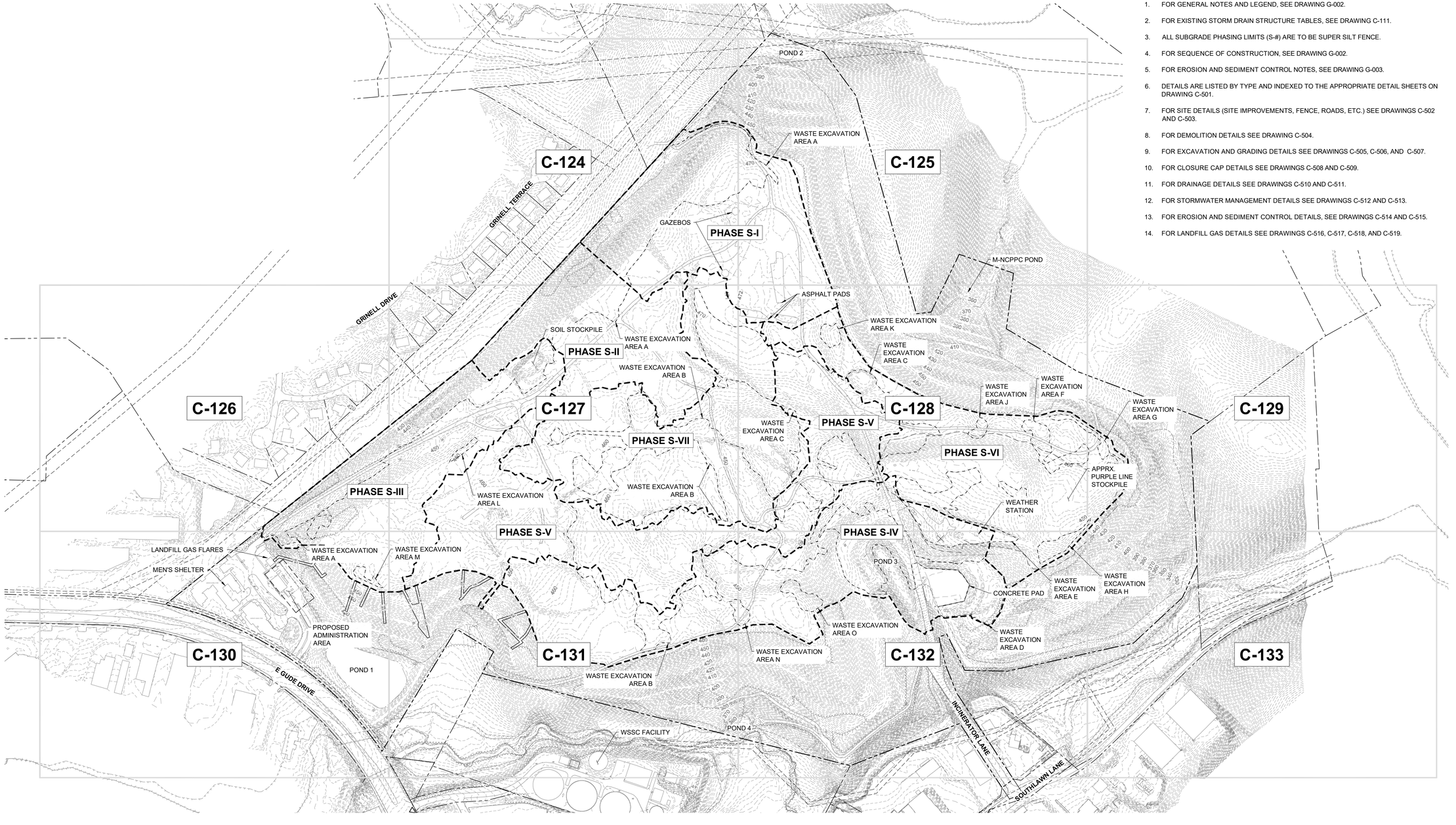
UNLESS OTHERWISE NOTED IN THE KEYNOTES BELOW, ITEMS WITHIN THE LOD SHOWN HEREON ARE INTENDED TO BE REMOVED OR DEMOLISHED. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO: ACCESS ROADS, BUILDINGS, PAVEMENT, CONCRETE, STORM DRAIN STRUCTURES AND PIPING, UTILITIES, TREES, AND FENCING.

LETTERED WASTE EXCAVATION AREAS DENOTE THE APPROXIMATE LIMITS OF WASTE TO BE EXCAVATED. FOR EXCAVATION AND GRADING DETAILS, SEE DRAWINGS C-505, C-506, AND C-507.

1 ITEM TO REMAIN

GENERAL NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING G-002.
2. FOR EXISTING STORM DRAIN STRUCTURE TABLES, SEE DRAWING C-111.
3. ALL SUBGRADE PHASING LIMITS (S-#) ARE TO BE SUPER SILT FENCE.
4. FOR SEQUENCE OF CONSTRUCTION, SEE DRAWING G-002.
5. FOR EROSION AND SEDIMENT CONTROL NOTES, SEE DRAWING G-003.
6. DETAILS ARE LISTED BY TYPE AND INDEXED TO THE APPROPRIATE DETAIL SHEETS ON DRAWING C-501.
7. FOR SITE DETAILS (SITE IMPROVEMENTS, FENCE, ROADS, ETC.) SEE DRAWINGS C-502 AND C-503.
8. FOR DEMOLITION DETAILS SEE DRAWING C-504.
9. FOR EXCAVATION AND GRADING DETAILS SEE DRAWINGS C-505, C-506, AND C-507.
10. FOR CLOSURE CAP DETAILS SEE DRAWINGS C-508 AND C-509.
11. FOR DRAINAGE DETAILS SEE DRAWINGS C-510 AND C-511.
12. FOR STORMWATER MANAGEMENT DETAILS SEE DRAWINGS C-512 AND C-513.
13. FOR EROSION AND SEDIMENT CONTROL DETAILS, SEE DRAWINGS C-514 AND C-515.
14. FOR LANDFILL GAS DETAILS SEE DRAWINGS C-516, C-517, C-518, AND C-519.



REVISIONS

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DESIGN INFORMATION

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CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

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DEMOLITION AND EXCAVATION PLAN - KEY SHEET

EA Engineering, Science, and Technology, Inc., PBC
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(410) 584-7000

DATE: JANUARY 2020

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C-123

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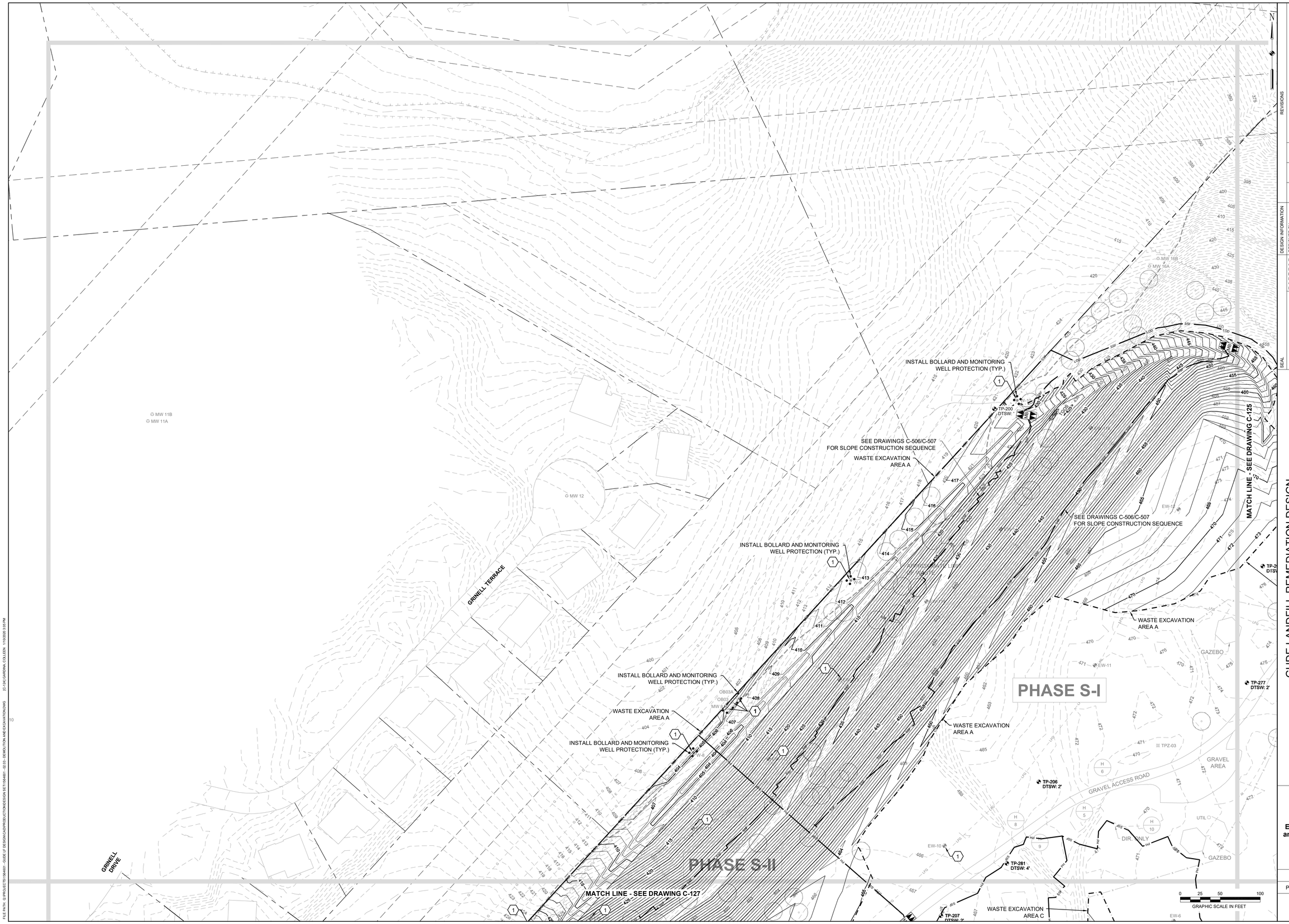

REVISIONS

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DESIGN INFORMATION

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CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

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DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-124

SHEET: 27 OF 109

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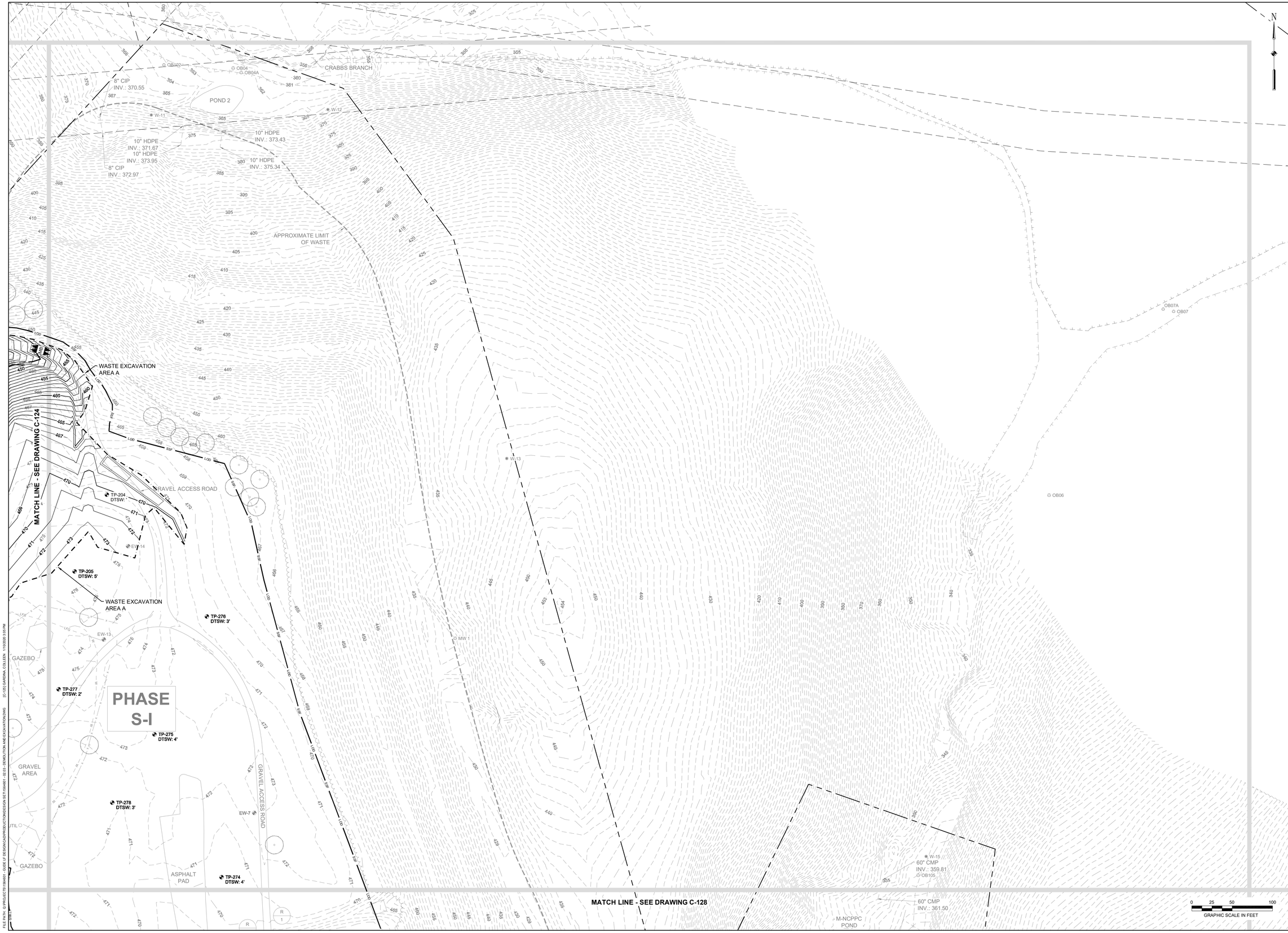

REVISIONS

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DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

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MONTGOMERY COUNTY, MARYLAND

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(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-125

SHEET: 28 OF 109

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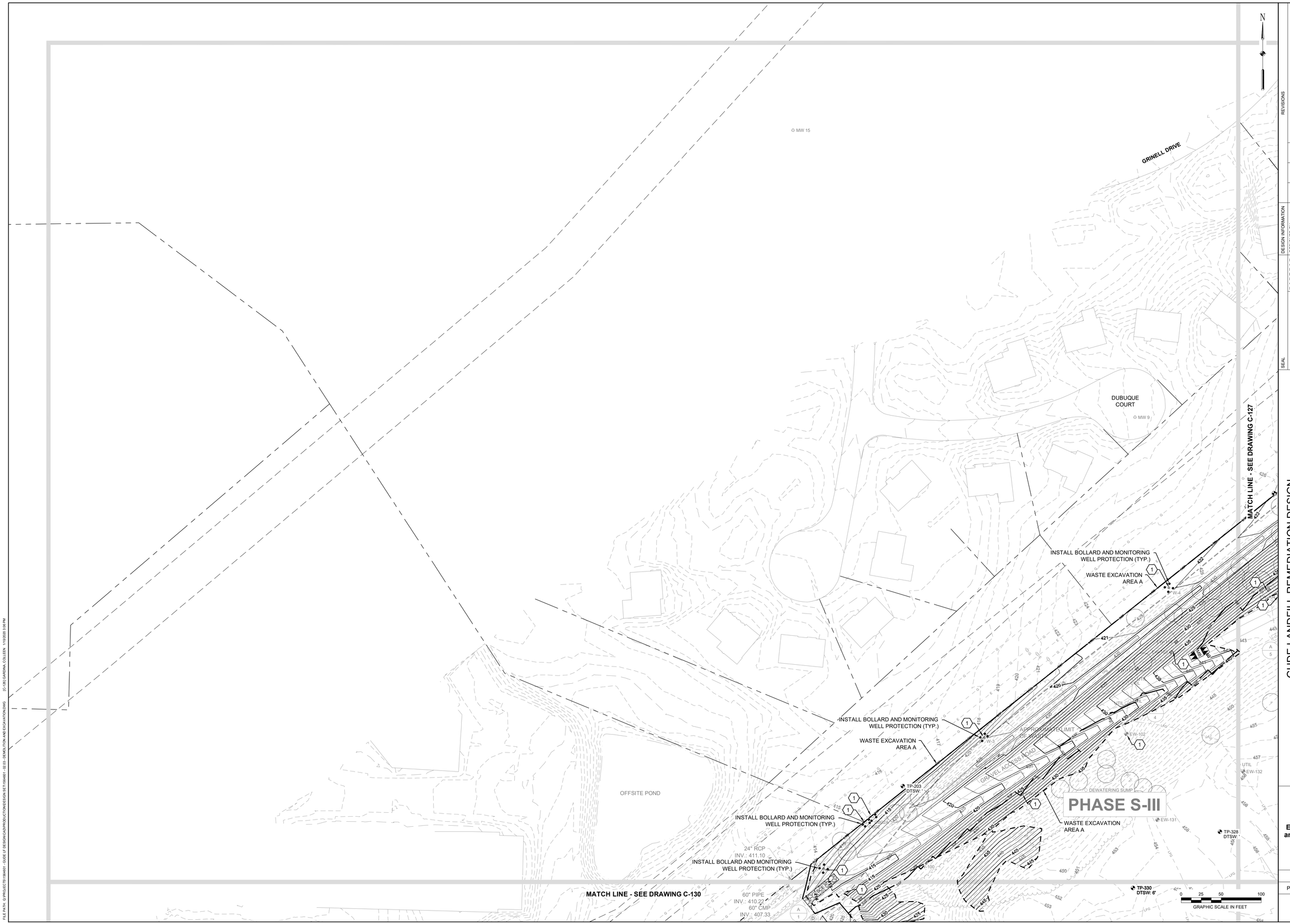

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CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

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C-126

SHEET: 29 OF 109

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MATCH LINE - SEE DRAWING C-124

MATCH LINE - SEE DRAWING C-126

MATCH LINE - SEE DRAWING C-128

MATCH LINE - SEE DRAWING C-131

GRINNELL DRIVE

GRAVEL ACCESS ROAD

PHASE S-II

PHASE S-III

PHASE S-V

PHASE S-VII

INSTALL BOLLARD AND MONITORING WELL PROTECTION (TYP.)

SEE DRAWINGS C-506/C-507 FOR SLOPE CONSTRUCTION SEQUENCE

WASTE EXCAVATION AREA A

WASTE EXCAVATION AREA B

WASTE EXCAVATION AREA C

WASTE EXCAVATION AREA L

APPROXIMATE LIMIT OF WASTE

SOIL STOCKPILE

DEWATERING SUMP

GAZEBO

TP-201 DTSW: '

TP-202 DTSW: '

TP-207 DTSW: 2'

TP-208 DTSW: 5'

TP-209 DTSW: 1'

TP-210 DTSW: 2'

TP-211 DTSW: 2'

TP-212 DTSW: 2'

TP-213 DTSW: 2'

TP-214 DTSW: 3'

TP-215 DTSW: 5'

TP-216 DTSW: 2'

TP-217 DTSW: 4'

TP-218 DTSW: 4'

TP-220 DTSW: 3'

TP-222 DTSW: 2'

TP-223 DTSW: 1'

TP-224 DTSW: 2'

TP-225 DTSW: 0'

TP-226 DTSW: 2'

TP-227 DTSW: 2'

TP-245 DTSW: 1'

TP-246 DTSW: 4'

TP-247 DTSW: 3'

TP-248 DTSW: 2'

TP-249 DTSW: 3'

TP-251 DTSW: 1'

TP-272 DTSW: 4'

TP-279 DTSW: 8'

TP-281 DTSW: 4'

TP-282 DTSW: 4'

TP-283 DTSW: 6'

TP-284 DTSW: 4'

TP-286 DTSW: 3'

TP-287 DTSW: 6'

TP-288 DTSW: 2'

TP-290 DTSW: 3'

TP-291 DTSW: 4'

TP-309 DTSW: 3'

TP-310 DTSW: 1'

TP-311 DTSW: 2'

TP-312 DTSW: 4'

TP-313 DTSW: '

TP-314 DTSW: 4'

TP-315 DTSW: 1'

TP-316 DTSW: '

TP-317 DTSW: 3'

TP-318 DTSW: 2'

TP-319 DTSW: 2'

TP-320 DTSW: 4'

TP-321 DTSW: 2'

TP-322 DTSW: 2'

TP-323 DTSW: 4'

TP-328 DTSW: '

TP-329 DTSW: 2'

TP-331 DTSW: 4'

TP-333 DTSW: 2'

EW-1 EW-2 EW-3 EW-4 EW-5 EW-6 EW-9 EW-10 EW-26 EW-28 EW-34 EW-37 EW-51 EW-52 EW-54 EW-57 EW-59 EW-70 EW-71 EW-72 EW-73 EW-74 EW-120 EW-124 EW-128 EW-150 EW-152 EW-153 EW-158

TP-2W-44

UTIL

LFG

SSF

PH

Hd

MB

N

GRAPHIC SCALE IN FEET 0 25 50 100

REVISIONS			
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DESIGN INFORMATION	
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PROJECT MANAGER:	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

DEMOLITION AND EXCAVATION PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

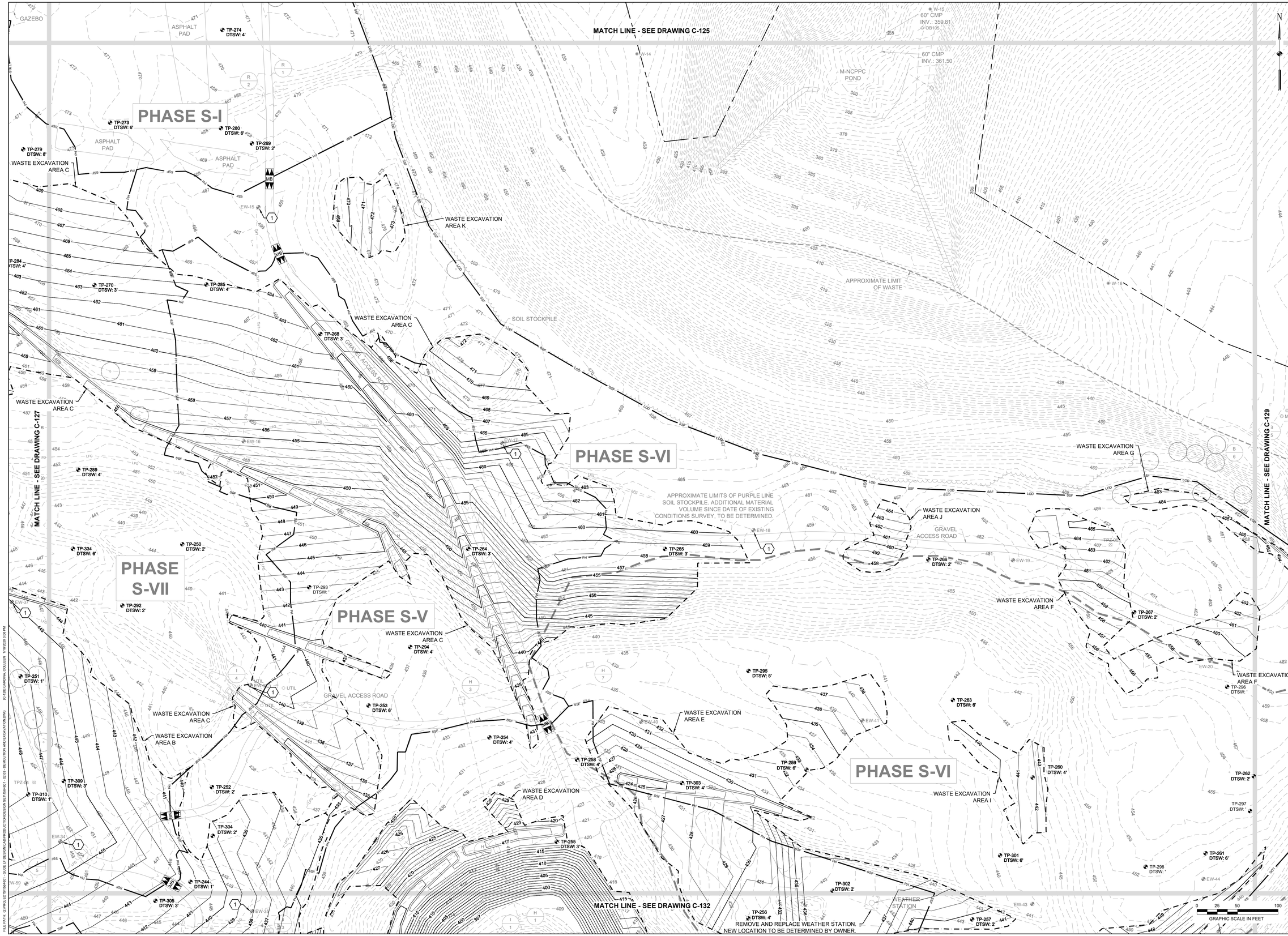
PROJECT NUMBER: 1564601

C-127

SHEET: 30 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 02 (3) - DEMOLITION AND EXCAVATION.DWG [JC-127] CAROLINA, COLLEEN - 1/10/2020 3:06 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

DEMOLITION AND EXCAVATION PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-128

SHEET: 31 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

DEMOLITION AND EXCAVATION PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-129

SHEET: 32 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: P:\PROJECTS\1564601 - GUDE LF REMEDIATION\CAD\PRODUCTION\DESIGN SET\1564601 - 02.03 - DEMOLITION AND EXCAVATION.DWG [C-129] GARDINA, COLLEEN 11/5/2020 3:08 PM

MATCH LINE - SEE DRAWING C-126

24" RCP
INV.: 411.10

INSTALL BOLLARD AND MONITORING WELL PROTECTION (TYP.)

60" PIPE
INV.: 410.22
60" CMP
INV.: 407.33

SEE DRAWINGS C-506 & C-507 FOR SLOPE CONSTRUCTION SEQUENCE

WASTE EXCAVATION AREA A

PHASE S-III

WASTE EXCAVATION AREA M

TP-330
DTSW: 6'

TP-228
DTSW: 4'

TP-229
DTSW: 5'

LANDFILL GAS FLARES

MEN'S SHELTER

LID: 415.12

MEN'S SHELTER

APPROXIMATE LIMIT OF WASTE

60" CMP
INV.: 402.40

POND 1

66" RCP
INV.: 394.06

66" RCP
INV.: 394.33

E GUDE DRIVE

MATCH LINE - SEE DRAWING C-131

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

DEMOLITION AND EXCAVATION PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-130

SHEET: 33 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 02.01 - DEMOLITION AND EXCAVATION.DWG [C:\XR] GARDINA, COLLEEN 11/20/2020 3:06 PM

MATCH LINE - SEE DRAWING C-127

MATCH LINE - SEE DRAWING C-130

MATCH LINE - SEE DRAWING C-132

PHASE S-V

PHASE S-IV

PHASE S-IV

WASTE EXCAVATION AREA M

WASTE EXCAVATION AREA B

WASTE EXCAVATION AREA B

WASTE EXCAVATION AREA N

GRAVEL ACCESS ROAD

GRAVEL ACCESS ROAD

GRAVEL ACCESS ROAD

APPROXIMATE LIMIT OF WASTE

SOUTHLAWN BRANCH

POND 1

POND 4

WSSC FACILITY

66" RCP INV.: 394.06

66" RCP INV.: 394.33

TP-326 DTSW: 3'
TP-325 DTSW: 2'
TP-324 DTSW: 2'
TP-315 DTSW: 1'
TP-245 DTSW: 1'
TP-242 DTSW: 3'
TP-240 DTSW: 2'
TP-239 DTSW: 4'
TP-238 DTSW: 2'
TP-237 DTSW: 4'
TP-236 DTSW: 3'
TP-235 DTSW: 2'
TP-234 DTSW: 3'
TP-233 DTSW: 2'
TP-232 DTSW: 3'
TP-231 DTSW: 5'
TP-230 DTSW: 3'
TP-229 DTSW: 5'
TP-227 DTSW: 2'
TP-226 DTSW: 2'
TP-222 DTSW: 2'
TP-221 DTSW: 1'
TP-219 DTSW: 4'
TP-218 DTSW: 4'
TP-335 DTSW: 2'
TP-307 DTSW: 4'
TP-308 DTSW: 4'
TP-332 DTSW: 4'
TP-327 DTSW: 3'

EW-1 EW-22 EW-23 EW-24 EW-26 EW-27 EW-30 EW-31 EW-50 EW-59 EW-76 EW-140 EW-141 EW-142 EW-143 EW-144 EW-145 EW-147 EW-148 EW-149 EW-154 EW-155

W-25 W-26 W-26C W-27 OB012 OB015 MW 1 MW 19 MW 21A MW 21B

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

DEMOLITION AND EXCAVATION PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-131

SHEET: 34 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601_GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601_-02 D - DEMOLITION AND EXCAVATION.DWG [C-131] GARDINA, COLLEEN 11/20/2020 3:06 PM

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

DEMOLITION AND EXCAVATION PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-132

SHEET: 35 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

MATCH LINE - SEE DRAWING C-129

MATCH LINE - SEE DRAWING C-132

WASTE EXCAVATION AREA H

APPROXIMATE LIMIT OF WASTE

SOUTHLAWN BRANCH

MW 3B
MW 3A
W-18
OB08A
OB08
MW 24B
MW 24A
OB10
MW 4
C 1
C 2

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

DEMOLITION AND EXCAVATION PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-133

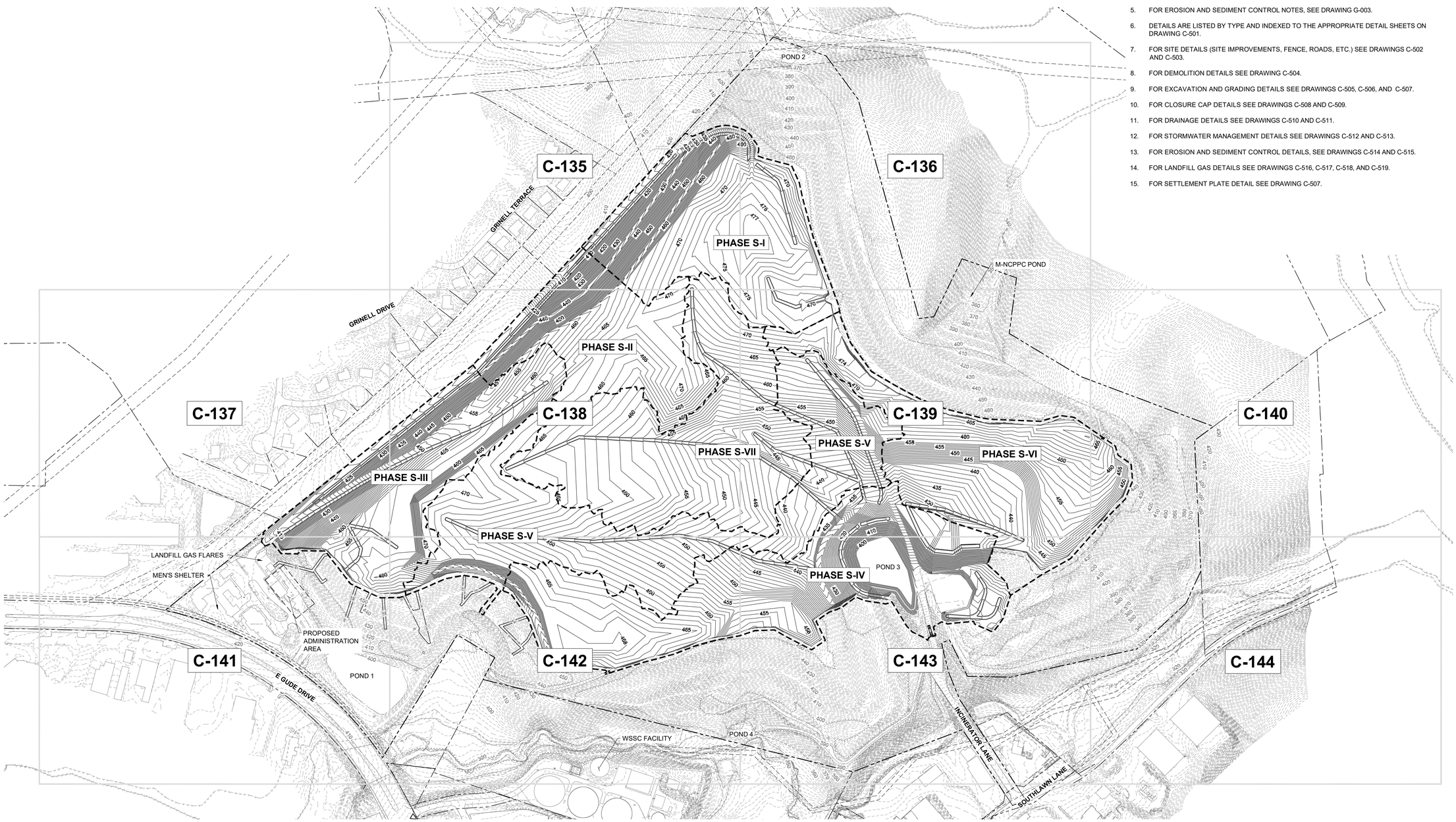
SHEET: 36 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 02-03 - DEMOLITION AND EXCAVATION.DWG [C-133] GARDINA, COLLEEN 1/3/2020 3:07 PM

GENERAL NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING G-002.
2. FOR EXISTING STORM DRAIN STRUCTURE TABLES, SEE DRAWING C-111.
3. ALL SUBGRADE PHASING LIMITS (S-#) ARE TO BE SUPER SILT FENCE.
4. FOR SEQUENCE OF CONSTRUCTION, SEE DRAWING G-002.
5. FOR EROSION AND SEDIMENT CONTROL NOTES, SEE DRAWING G-003.
6. DETAILS ARE LISTED BY TYPE AND INDEXED TO THE APPROPRIATE DETAIL SHEETS ON DRAWING C-501.
7. FOR SITE DETAILS (SITE IMPROVEMENTS, FENCE, ROADS, ETC.) SEE DRAWINGS C-502 AND C-503.
8. FOR DEMOLITION DETAILS SEE DRAWING C-504.
9. FOR EXCAVATION AND GRADING DETAILS SEE DRAWINGS C-505, C-506, AND C-507.
10. FOR CLOSURE CAP DETAILS SEE DRAWINGS C-508 AND C-509.
11. FOR DRAINAGE DETAILS SEE DRAWINGS C-510 AND C-511.
12. FOR STORMWATER MANAGEMENT DETAILS SEE DRAWINGS C-512 AND C-513.
13. FOR EROSION AND SEDIMENT CONTROL DETAILS, SEE DRAWINGS C-514 AND C-515.
14. FOR LANDFILL GAS DETAILS SEE DRAWINGS C-516, C-517, C-518, AND C-519.
15. FOR SETTLEMENT PLATE DETAIL SEE DRAWING C-507.



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN - KEY SHEET

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

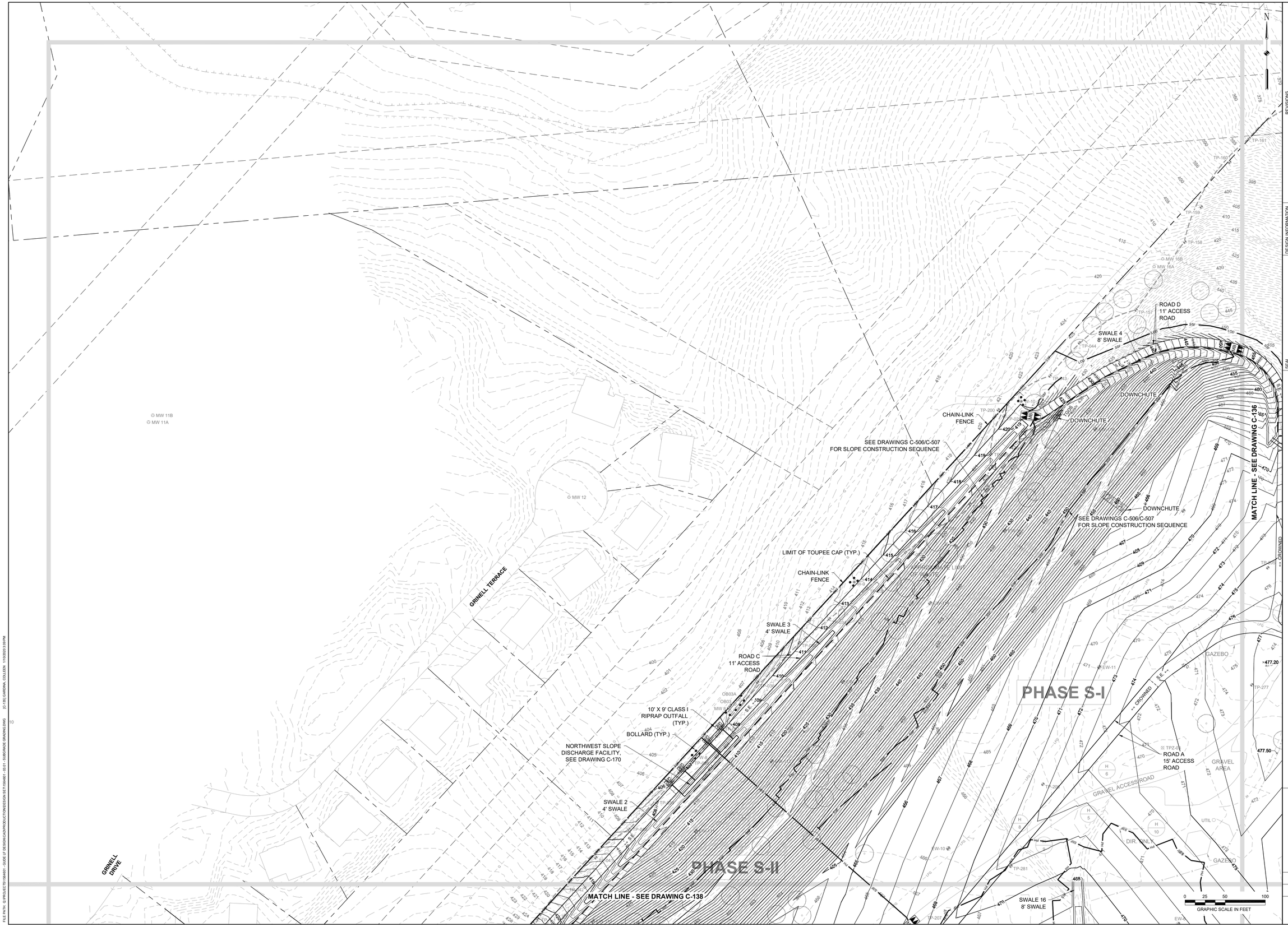
PROJECT NUMBER: 1564601

C-134

SHEET: 37 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03.00 - SUBGRADE GRADING - KEY SHEET.DWG [C-134] GARDINA, COLLEEN 1/10/2020 3:08 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

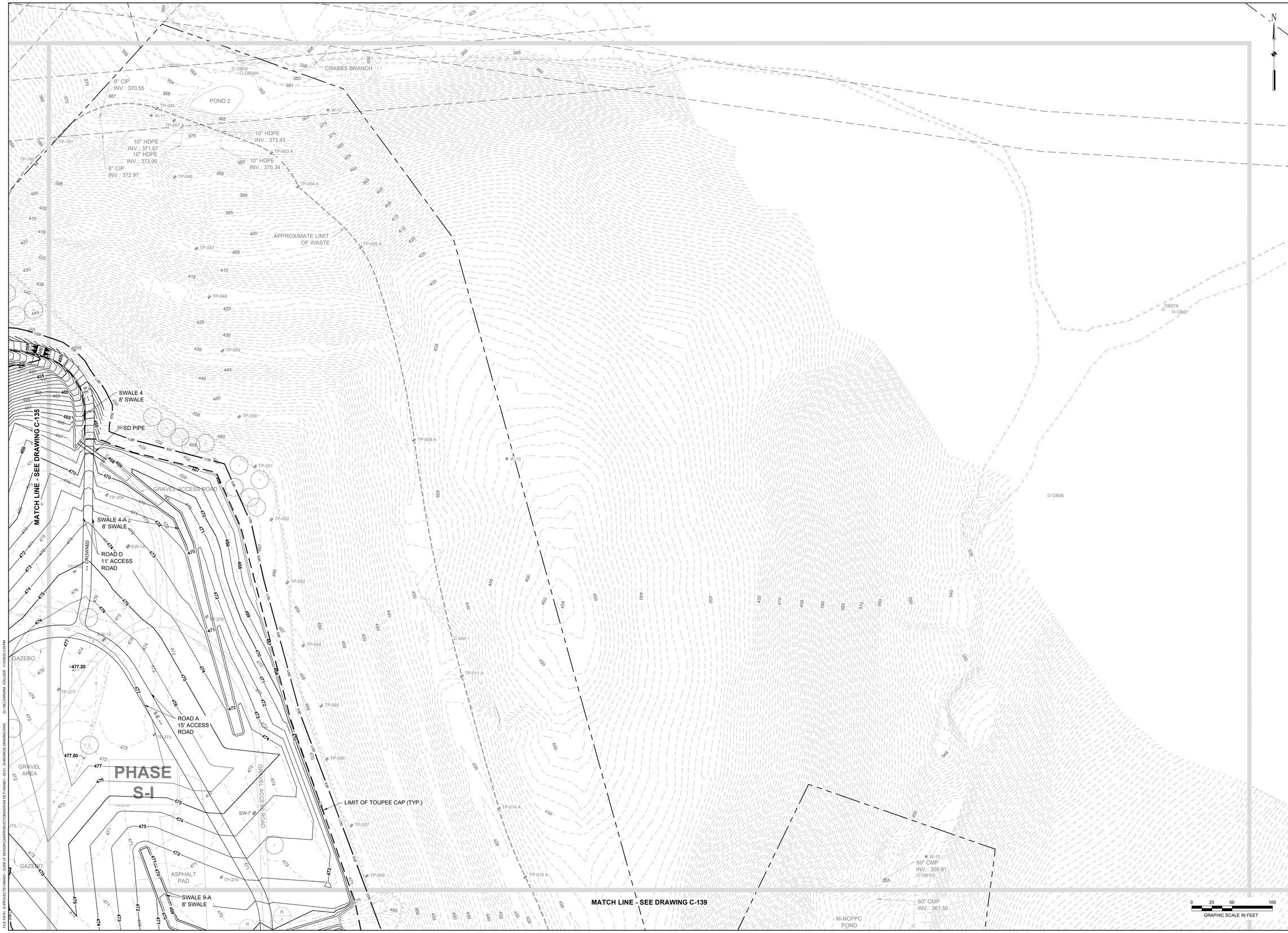
PROJECT NUMBER: 1564601

C-135

SHEET: 38 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03-01 - SUBGRADE GRADING.DWG JC (M) (CAROINA, COLLEEN 1/10/2020 3:09 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

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MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

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Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

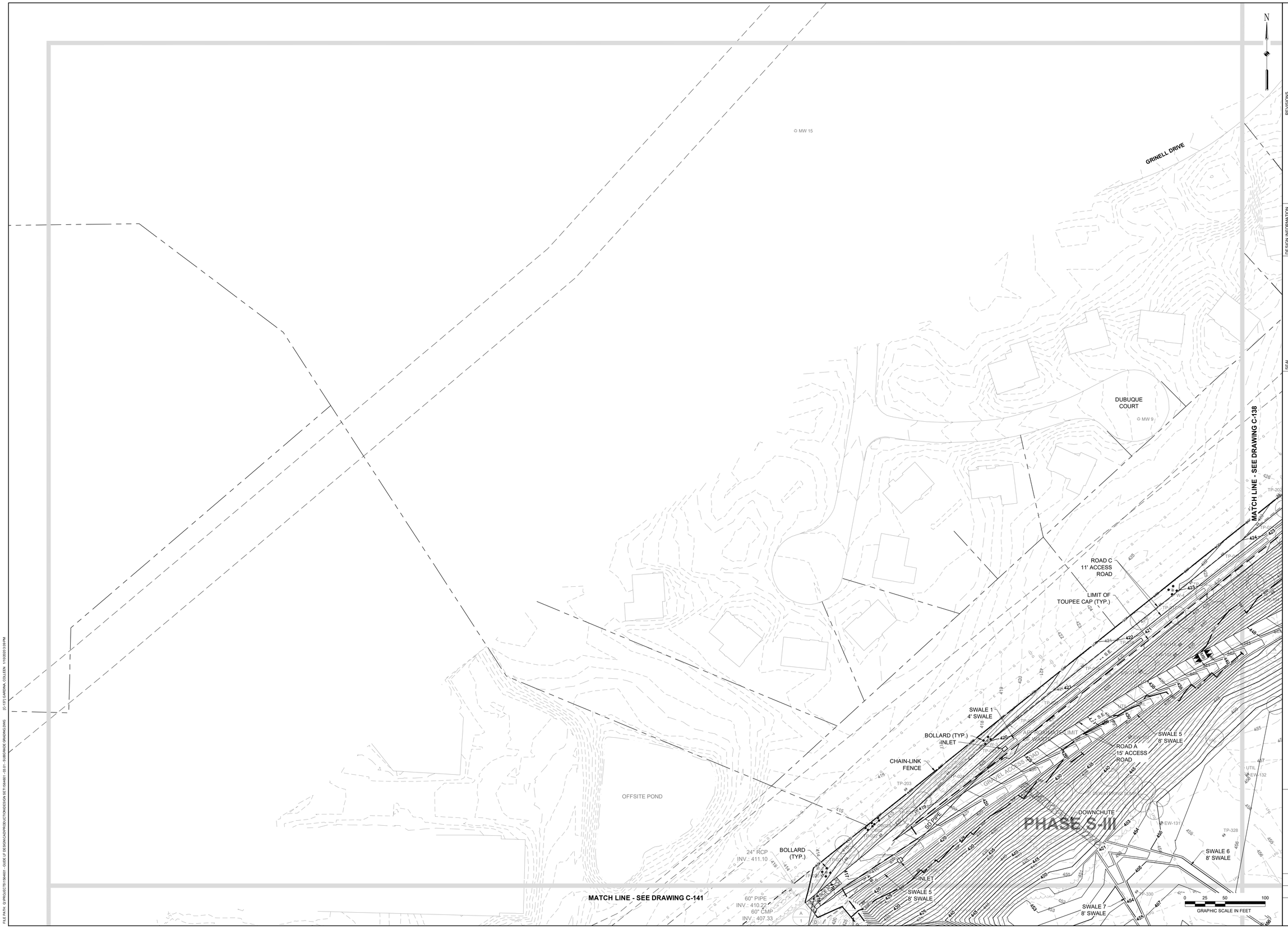
DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-136

SHEET: 39 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

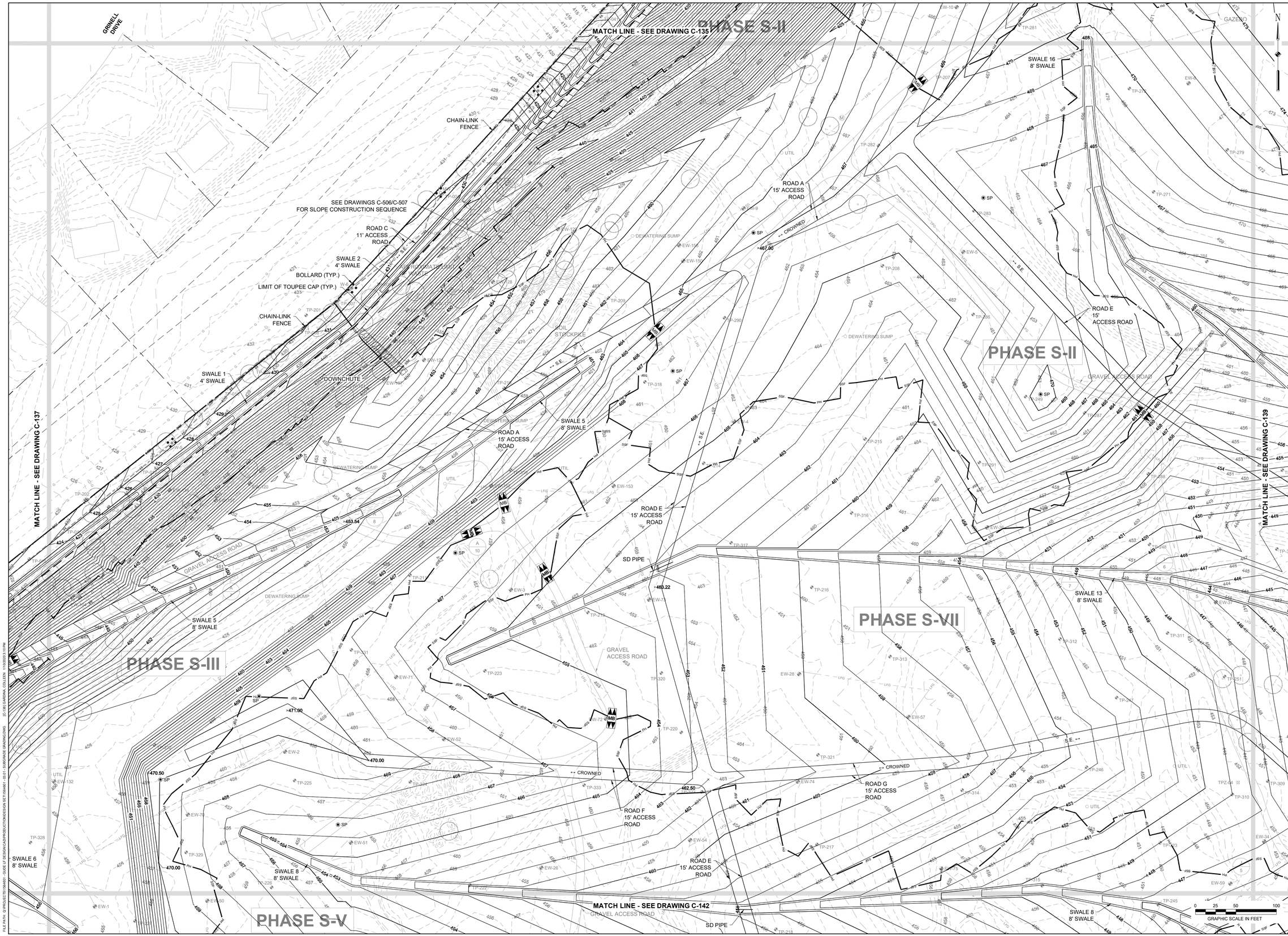
PROJECT NUMBER: 1564601

C-137

SHEET: 40 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 60.01 - SUBGRADE GRADING.DWG [C-137] GARDINA, COLLEEN 11/20/2019 3:39 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-138

SHEET: 41 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

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SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-139

SHEET: 42 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

MATCH LINE - SEE DRAWING C-139

MATCH LINE - SEE DRAWING C-144

PHASE S-VI

LIMIT OF TOUPEE CAP (TYP.)

APPROXIMATE LIMIT OF WASTE

APPROXIMATE LIMITS OF PURPLE LINE SOIL STOCKPILE. ADDITIONAL MATERIAL VOLUME SINCE DATE OF EXISTING CONDITIONS SURVEY, TO BE DETERMINED.

GRAVEL ACCESS ROAD

ROAD J
15' ACCESS ROAD

MW 2B
MW 2A
W-17
TP-025 A
TP-082
TP-083
TP-084
TP-156
TP-085
TP-086
TP-087
TP-088
TP-089
TP-090
TP-091
TP-092
TP-296
TP-297
TP-298

468.19

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

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EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
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MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-140

SHEET: 43 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: J:\PROJECTS\1564601 - GUDE LF RESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - GSU1 - SUBGRADE GRADING.DWG (C-140) GARDINA, COLLEEN 1/10/2020 3:19 PM

MATCH LINE - SEE DRAWING C-137

MATCH LINE - SEE DRAWING C-142

PHASE S-III

ROAD A
15' ACCESS ROAD
SEE DRAWINGS C-506 & C-507 FOR SLOPE CONSTRUCTION SEQUENCE

ADMINISTRATIVE AREA

LIMIT OF TOUPEE CAP (TYP.)

APPROXIMATE LIMIT OF WASTE

LANDFILL GAS FLARES

MEN'S SHELTER

MEN'S SHELTER

LID: 415.12

POND 1

E GUDE DRIVE

24" RCP
INV.: 411.10

60" PIPE
INV.: 410.22

60" CMP
INV.: 407.33

BOLLARD (TYP.)

INLET

SWALE 5
8' SWALE

SWALE 6
8' SWALE

SWALE 7
8' SWALE

60" CMP
INV.: 402.40

66" RCP
INV.: 394.06

66" RCP
INV.: 394.33

456.00

>459.40

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

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Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-141

SHEET: 44 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03-01 - SUBGRADE GRADING.DWG JC-141 GARDINA, COLLEEN 1/10/2020 3:10 PM

PHASE S-III

PHASE S-V

PHASE S-V

PHASE S-IV

SWALE 6
8' SWALE

SWALE 8
8' SWALE

SWALE 8
8' SWALE

ROAD E
15' ACCESS
ROAD

MATCH LINE - SEE DRAWING C-138

GRAVEL ACCESS ROAD

SD PIPE

SD PIPE

ROAD E
15' ACCESS
ROAD

CROWNED

ROAD I
15' ACCESS
ROAD

ROAD H
15' ACCESS
ROAD

GRAVEL ACCESS ROAD

MATCH LINE - SEE DRAWING C-141

MATCH LINE - SEE DRAWING C-143

POND 1

66" RCP
INV.: 394.06

66" RCP
INV.: 394.33

APPROXIMATE LIMIT
OF WASTE

GRAVEL ACCESS ROAD

SOUTHLAWN
BRANCH

POND 4

WSSC FACILITY

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-142

SHEET: 45 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIATION\DESIGN SET\1564601 - 03.01 - SUBGRADE GRADING.DWG [C-142] GARDINA, COLLEEN 11/5/2020 3:19 PM

PHASE S-V

PHASE S-IV

PHASE S-VI

ROAD E
15' ACCESS
ROAD

SWALE 8
8' SWALE

SD PIPE

SWALE 10
8' SWALE

HEADWALL

MATCH LINE - SEE DRAWING C-139

SWALE 18
8' SWALE

WEATHER
STATION

SWALE 10
8' SWALE

36" DIA. CMP
(S&S BROWNFIELD, 2008)

POND 3

DOWNCHUTE

RISER STRUCTURE
SEE DRAWING C-512

30" RCP

INLET

INV. 398.00

GRAVEL ACCESS ROAD

RETAINING
WALL

CONCRETE AND
ASPHALT PAD

PROPOSED INITIAL
STAGING AREA

SWALE 14-B
8' SWALE

SWALE 14-A
8' SWALE

SWALE 14
8' SWALE

LIMIT OF TOUPEE CAP (TYP.)

APPROXIMATE LIMITS OF PURPLE LINE
SOIL STOCKPILE. ADDITIONAL MATERIAL
VOLUME SINCE DATE OF EXISTING
CONDITIONS SURVEY, TO BE DETERMINED.

ROAD I
15' ACCESS
ROAD

↔ CROWNED

458.43

LIMIT OF TOUPEE
CAP (TYP.)

MATCH LINE - SEE DRAWING C-142

MATCH LINE - SEE DRAWING C-144

POND 4

APPROXIMATE LIMIT
OF WASTE

SOUTHLAWN
BRANCH

INCINERATOR LANE

SOUTHLAWN LANE

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-143

SHEET: 46 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET-V5\1564601 - 03 01 - SUBGRADE GRADING.DWG [JC-143] DARDINA, COLLEEN 11/5/2020 3:10 PM

MATCH LINE - SEE DRAWING C-140

MATCH LINE - SEE DRAWING C-143

APPROXIMATE LIMIT OF WASTE

SOUTHLAWN BRANCH

TP-091 TP-092 TP-093 TP-094 TP-095 TP-096 TP-097 TP-098 TP-099 TP-100 TP-101

W-18

MW 3B MW 3A

OB08A OB08

MW 24B MW 24A

OB10 MW 4

C 1 C 2

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SUBGRADE GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-144

SHEET: 47 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03-01 - SUBGRADE GRADING.DWG JC-144 | GARDINA, COLLEEN 1/10/2020 3:11 PM

GENERAL NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING G-002.
2. FOR EXISTING STORM DRAIN STRUCTURE TABLES, SEE DRAWING C-111.
3. ALL FINAL GRADE PHASING LIMITS (F-#) ARE TO BE SUPER SILT FENCE.
4. FOR SEQUENCE OF CONSTRUCTION, SEE DRAWING G-002.
5. FOR EROSION AND SEDIMENT CONTROL NOTES, SEE DRAWING G-003.
6. DETAILS ARE LISTED BY TYPE AND INDEXED TO THE APPROPRIATE DETAIL SHEETS ON DRAWING C-501.
7. FOR SITE DETAILS (SITE IMPROVEMENTS, FENCE, ROADS, ETC.) SEE DRAWINGS C-502 AND C-503.
8. FOR DEMOLITION DETAILS SEE DRAWING C-504.
9. FOR EXCAVATION AND GRADING DETAILS SEE DRAWINGS C-505, C-506, AND C-507.
10. FOR CLOSURE CAP DETAILS SEE DRAWINGS C-508 AND C-509.
11. FOR DRAINAGE DETAILS SEE DRAWINGS C-510 AND C-511.
12. FOR STORMWATER MANAGEMENT DETAILS SEE DRAWINGS C-512 AND C-513.
13. FOR EROSION AND SEDIMENT CONTROL DETAILS, SEE DRAWINGS C-514 AND C-515.
14. FOR LANDFILL GAS DETAILS SEE DRAWINGS C-516, C-517, C-518, AND C-519.
15. FOR SETTLEMENT PLATE DETAIL SEE DRAWING C-507.

N

C-146 C-147 C-148 C-149 C-150 C-151 C-152 C-153 C-154 C-155

POND 2
M-NCPPC POND
POND 1
POND 3
POND 4
WSSC FACILITY
PROPOSED ADMINISTRATION AREA
LANDFILL GAS FLARES
MEN'S SHELTER
LIMIT OF TOUPEE CAP (TYP.)

PHASE F-I
PHASE F-II
PHASE F-III
PHASE F-IV
PHASE F-V
PHASE F-VI

GRINELL TERRACE
GRINELL DRIVE
E GUDE DRIVE
INCINERATOR LANE
SOUTHLAWN LANE

0 100 200 400
GRAPHIC SCALE IN FEET

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN - KEY SHEET

SC/SWM SHEET 15 OF 35

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

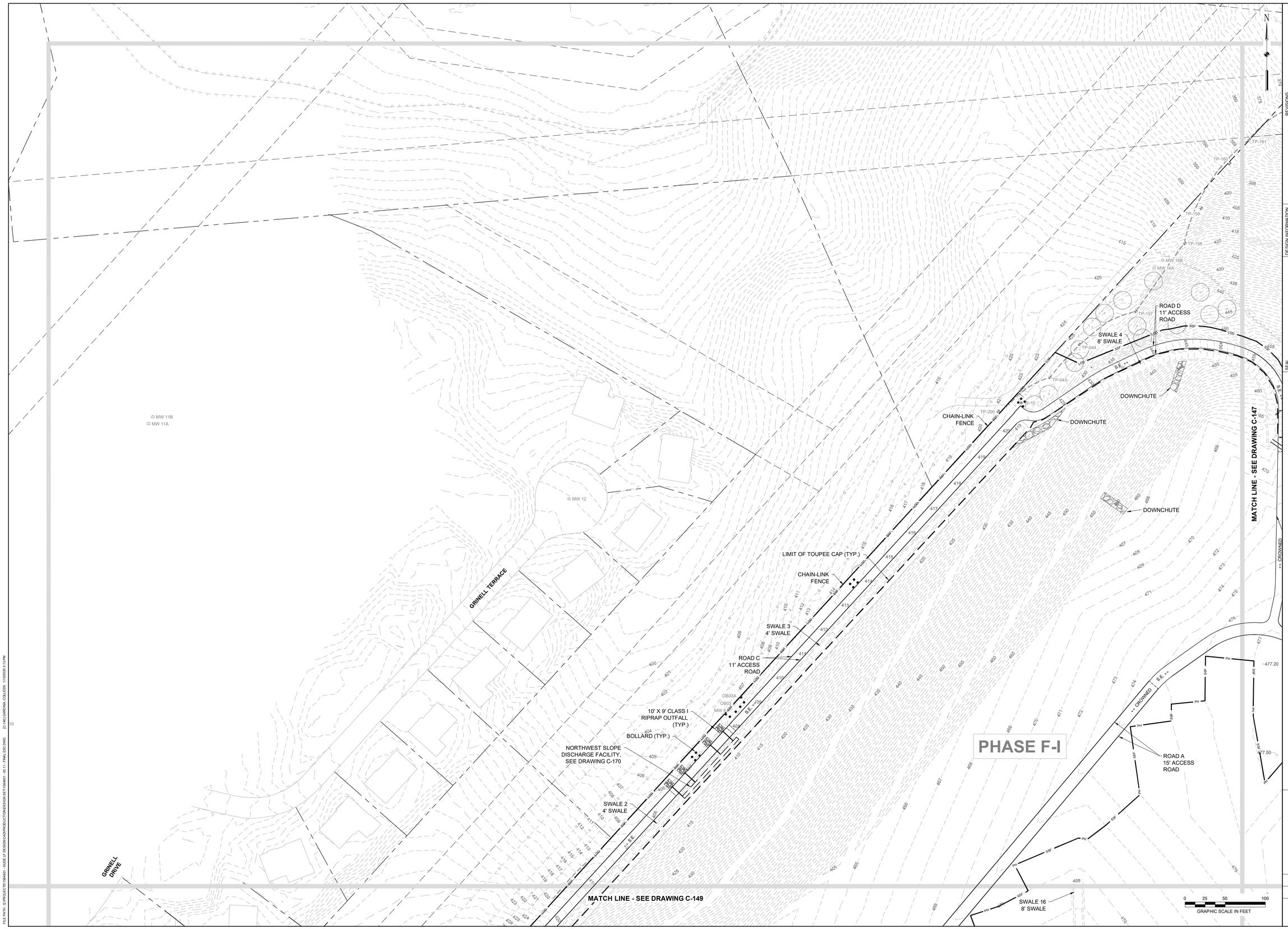
DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-145

SHEET: 48 OF 109

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03.10 - FINAL ESC - KEY SHEET.DWG [C-145] CAROLINA COLLIEN 1/3/2020 3:12 PM



REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	KEF / SMB
DRAWN BY:	SMB
CHECKED BY:	LJO / GAT
PROJECT MANAGER:	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

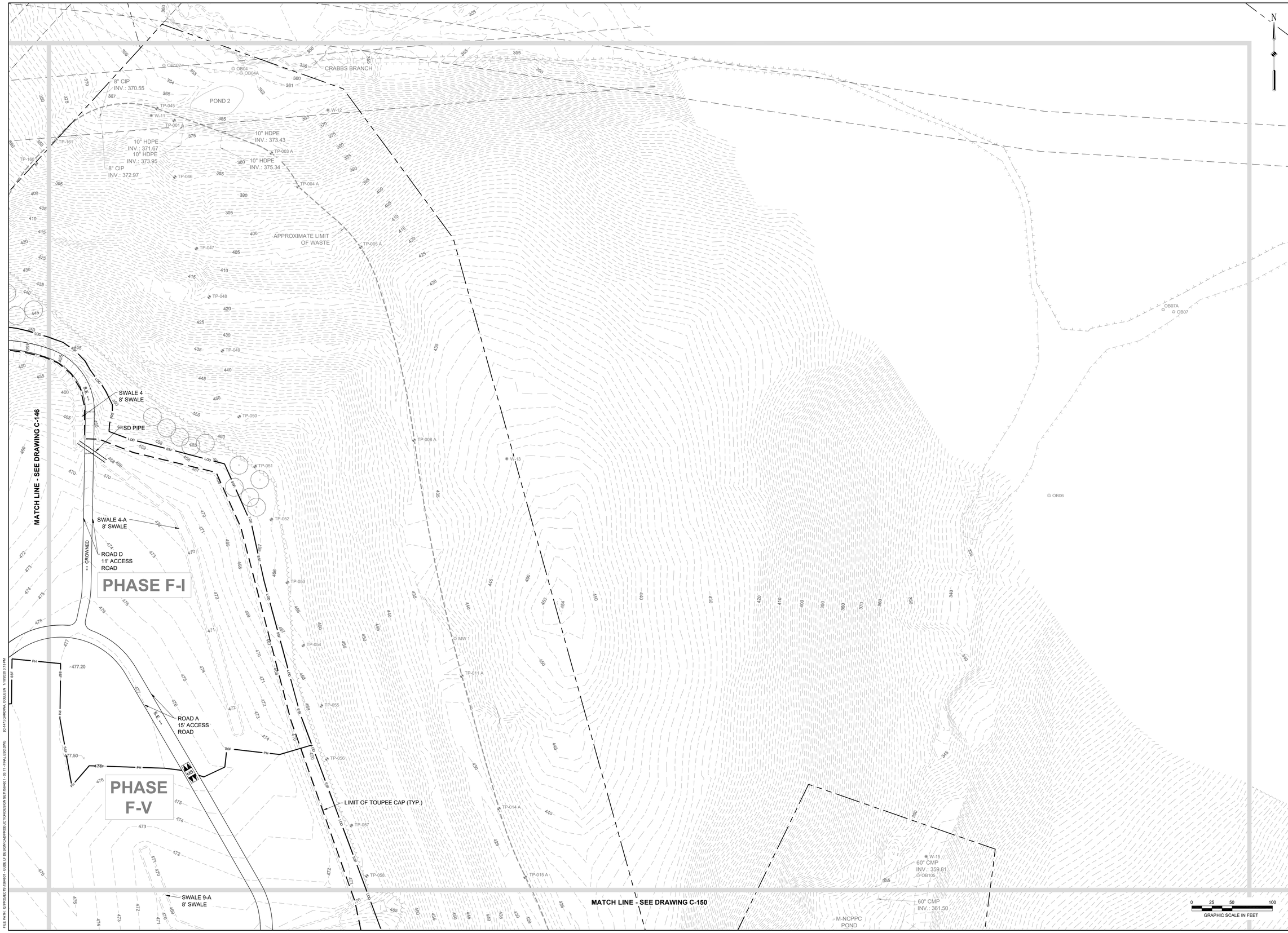
C-146

SHEET: 49 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 16 OF 35

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - GS.11 - FINAL ESC.DWG [C-146] CARDINA, COLLEEN 1/6/2020 3:13 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

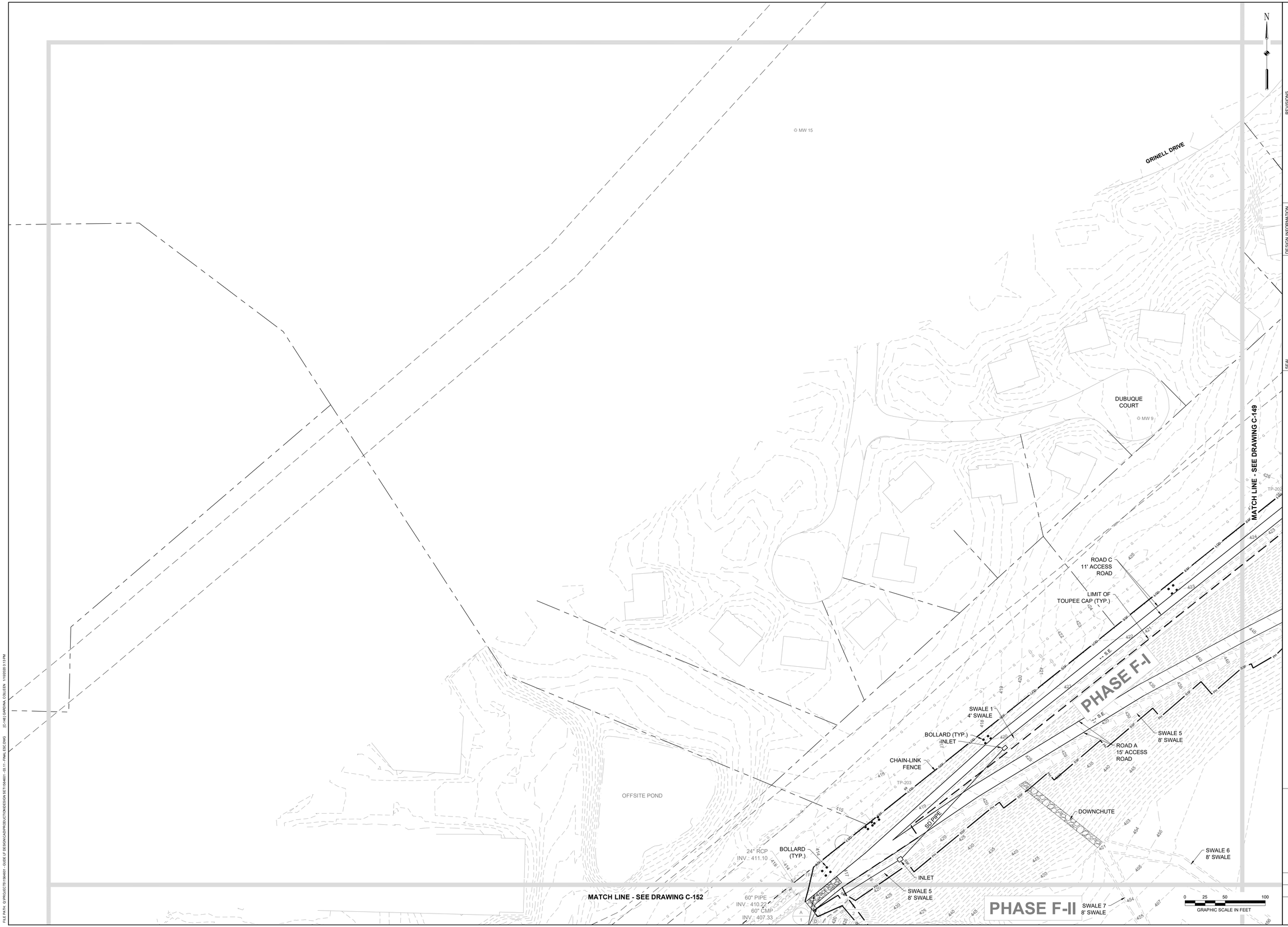
C-147

SHEET: 50 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 17 OF 35

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 09-11 - FINAL ESC.DWG [C-147] CAROLINA, COLLEEN 11/20/2020 3:13 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-148

SHEET: 51 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 18 OF 35

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03.11 - FINAL ESC.DWG [C-148] CARDONA, COLLEEN 1/10/2020 3:13 PM

GRINNELL DRIVE

MATCH LINE - SEE DRAWING C-146

MATCH LINE - SEE DRAWING C-148

MATCH LINE - SEE DRAWING C-150

MATCH LINE - SEE DRAWING C-153

PHASE F-I

PHASE F-II

PHASE F-IV

PHASE F-V

PHASE F-VI

CHAIN-LINK FENCE

ROAD C 11' ACCESS ROAD

SWALE 2 4' SWALE

BOLLARD (TYP.)

LIMIT OF TOUPEE CAP (TYP.)

TP-201

TP-202

DOWNCHUTE

SWALE 1 4' SWALE

SWALE 5 8' SWALE

ROAD A 15' ACCESS ROAD

ROAD E 15' ACCESS ROAD

SD PIPE

SWALE 16 8' SWALE

SWALE 13 8' SWALE

SWALE 6 8' SWALE

SWALE 8 8' SWALE

ROAD F 15' ACCESS ROAD

ROAD G 15' ACCESS ROAD

↔ CROWNED

↔ S.E.

S.E. ↔

SP

MB

N

0 25 50 100

GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-149

SHEET: 52 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 19 OF 35

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03.11 - FINAL ESC.DWG [C-149] GARDINA, COLLEEN 11/20/2020 3:11 PM

MATCH LINE - SEE DRAWING C-147

MATCH LINE - SEE DRAWING C-149

MATCH LINE - SEE DRAWING C-151

MATCH LINE - SEE DRAWING C-154

PHASE F-V

PHASE F-VI

PHASE F-III

SWALE 9-A
8' SWALE

SD PIPE

SWALE 9
8' SWALE

ROAD J
15' ACCESS
ROAD

ROAD A
15' ACCESS
ROAD

SOIL STOCKPILE

SWALE 11
8' SWALE

LIMIT OF TOUPEE CAP (TYP.)

M-NCPPC
POND

60" CMP
INV.: 359.81

60" CMP
INV.: 361.50

APPROXIMATE LIMIT
OF WASTE

SWALE 16
8' SWALE

SWALE 12
8' SWALE

SWALE 13
8' SWALE

SD PIPE

ROAD A
15' ACCESS
ROAD

DOWNCHUTE

SWALE 11
8' SWALE

SWALE 16
8' SWALE

SD PIPE

ROAD G
15' ACCESS
ROAD

ROAD E
15' ACCESS
ROAD

DOWNCHUTE

INLET

INLET

SD PIPE

SWALE 13
8' SWALE

DOWNCHUTE

SWALE 17
8' SWALE

SWALE 15
8' SWALE

SD MANHOLE

HEADWALL

SWALE 10
8' SWALE

SWALE 18
8' SWALE

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-150

SHEET: 53 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 20 OF 35

FILE PATH: G:\PROJECTS\1564601 - GUDE LF REMEDIA\DESIGN\CONSTRUCTION\DESIGN SET\1564601 - C0.11 - FINAL ESC.DWG (C-150) GARDNA, COLLEEN 1/10/2020 3:13 PM

MATCH LINE - SEE DRAWING C-150

MATCH LINE - SEE DRAWING C-155

PHASE F-III

LIMIT OF TOUPEE CAP (TYP.)

APPROXIMATE LIMIT OF WASTE

APPROXIMATE LIMITS OF PURPLE LINE SOIL STOCKPILE. ADDITIONAL MATERIAL VOLUME SINCE DATE OF EXISTING CONDITIONS SURVEY, TO BE DETERMINED.

GRAVEL ACCESS ROAD

ROAD J
15' ACCESS ROAD

MW 2B
MW 2A
W-17
TP-025 A
TP-082
TP-083
TP-084
TP-156
TP-085
TP-086
TP-087
TP-088
TP-089
TP-090
TP-091
TP-092

SP 468.19

0 25 50 100
GRAPHIC SCALE IN FEET

N

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402
EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-151

SHEET: 54 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 21 OF 35

FILE PATH: P:\PROJECTS\1564601 - GUDE LF REMEDIATION\CAD\PRODUCTION\DESIGN SET\1564601 - 03-11 - FINAL ESC.DWG [JC-151] GARDINA, COLLEEN 1/30/2020 3:13 PM

MATCH LINE - SEE DRAWING C-148

MATCH LINE - SEE DRAWING C-153

PHASE F-II

24" RCP
INV.: 411.10

BOLLARD
(TYP.)

INLET

SWALE 5
8' SWALE

SWALE 6
8' SWALE

SWALE 7
8' SWALE

60" PIPE
INV.: 410.22
60" CMP
INV.: 407.33

ROAD A
15' ACCESS
ROAD

LANDFILL
GAS FLARES

W-1

LID: 415.12

MEN'S SHELTER

MEN'S SHELTER

ADMINISTRATIVE AREA

LIMIT OF TOUPEE CAP (TYP.)

APPROXIMATE LIMIT
OF WASTE

EW-136

EW-137

EW-139

EW-140

W-30

W-29

W-28

OB01

MW 6

MW 1

MW 19

TP-155

TP-154

TP-153

TP-152

TP-151

TP-22

60" CMP
INV.: 402.40

POND 1

66" RCP
INV.: 394.06

66" RCP
INV.: 394.33

456.00

459.40

E GUDE DRIVE

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

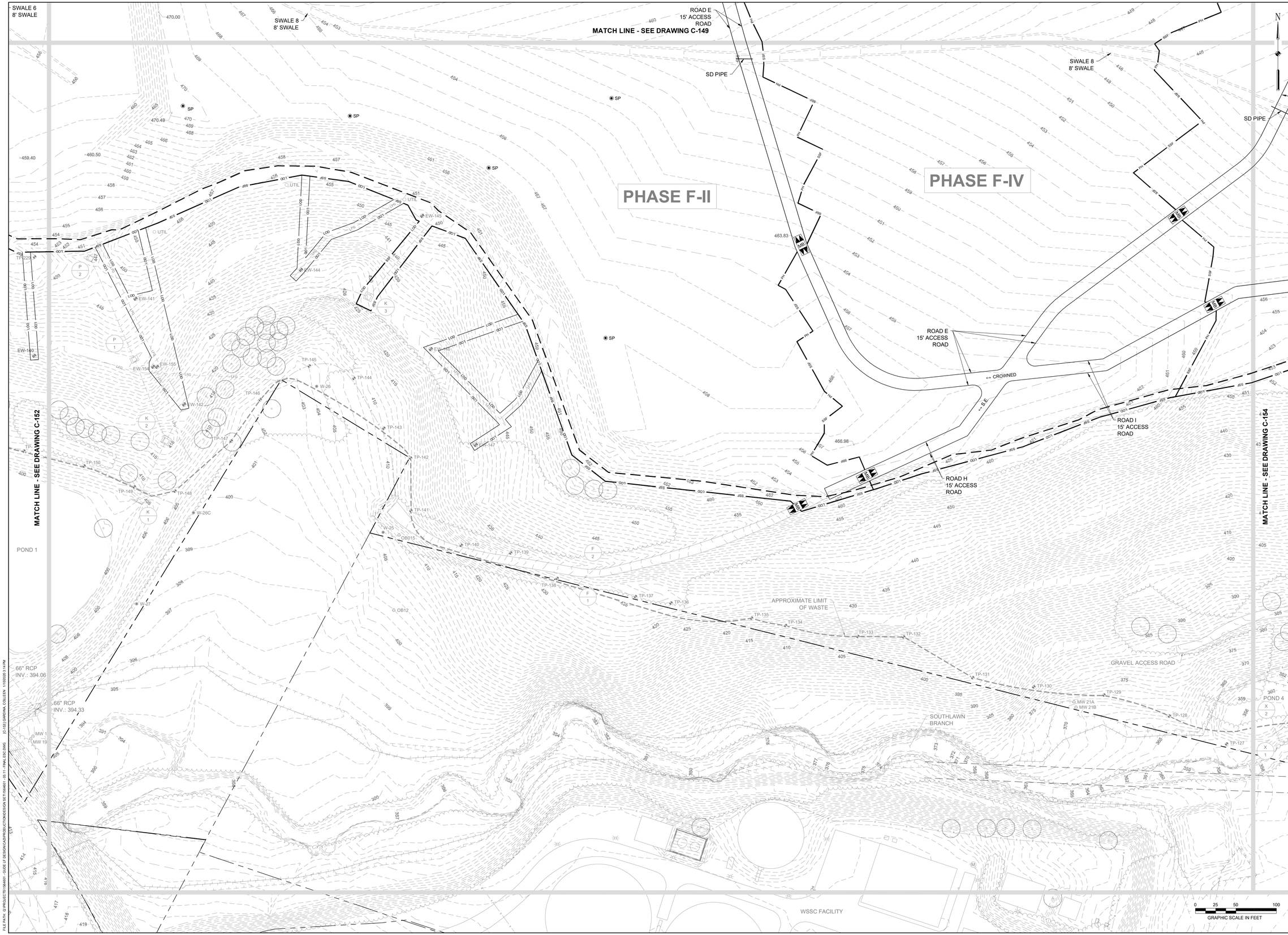
C-152

SHEET: 55 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 22 OF 35

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 03.11 - FINAL ESC.DWG [C-152] CARDINA, COLLEEN 11/5/2020 3:14 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

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SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

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Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

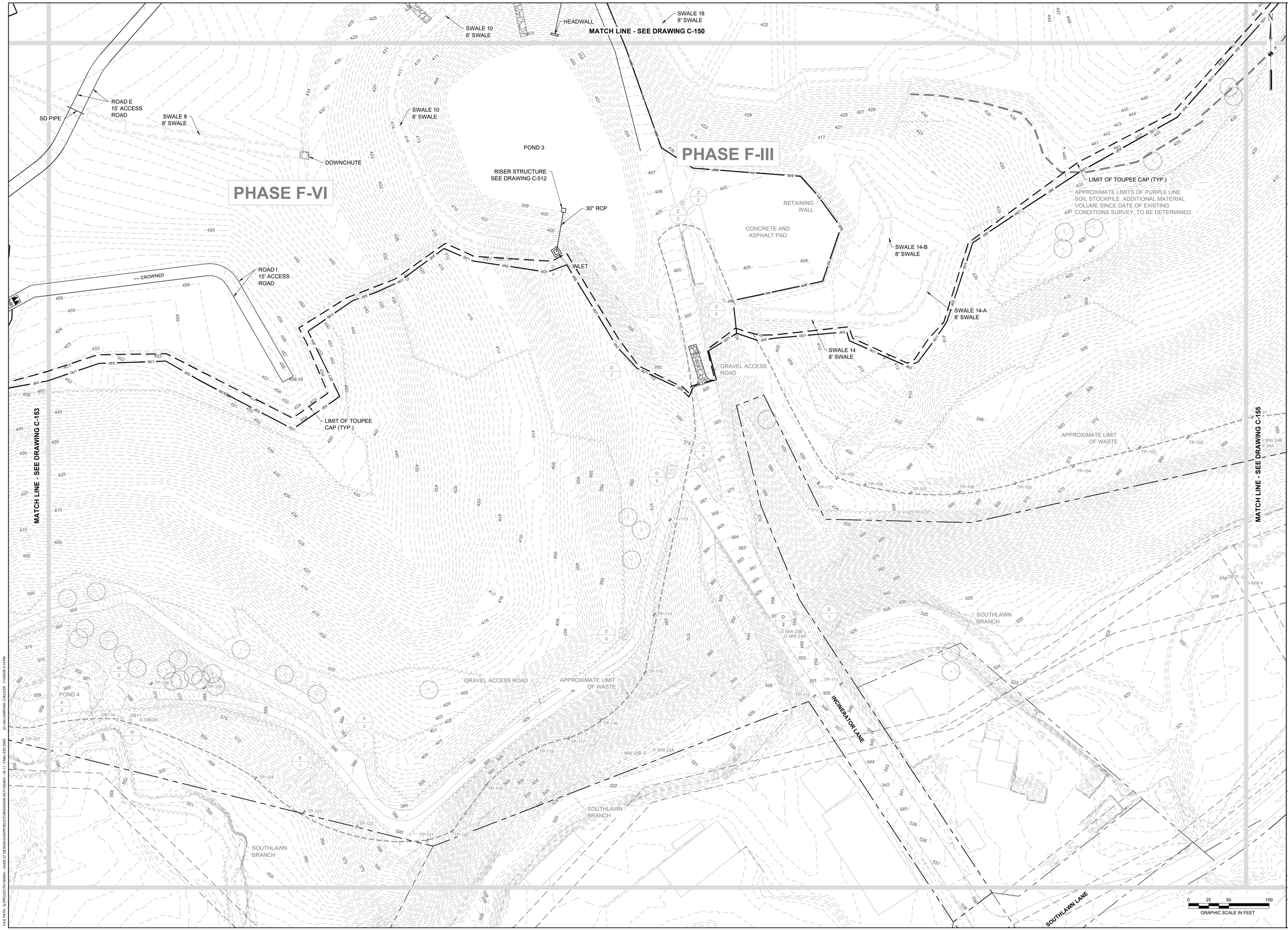
PROJECT NUMBER: 1564601

C-153

SHEET: 56 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 23 OF 35



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-154

SHEET: 57 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 24 OF 35

FILE PATH: Q:\PROJECTS\1564601_GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601_09-11 - FINAL ESC.DWG [C-154] CARDONA, COLLEEN 11/20/2020 3:14 PM

MATCH LINE - SEE DRAWING C-151

MATCH LINE - SEE DRAWING C-154

APPROXIMATE LIMIT OF WASTE

SOUTHLAWN BRANCH

TP-091 TP-092 TP-093 TP-094 TP-095 TP-096 TP-097 TP-098 TP-099 TP-100 TP-101

W-18

MW 3B MW 3A

OB08A OB08

MW 24B MW 24A

OB10 MW 4

C 1 C 2

N

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL EROSION AND SEDIMENT CONTROL PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-155

SHEET: 58 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 25 OF 35

FILE PATH: G:\PROJECTS\1564601 - GUDE LF (NEW)\CAD\PRODUCTION\DESIGN SET\1564601 - GS 11 - FINAL ESC.DWG [C-155] CARDONA, COLLEEN 11/20/2020, 3:14 PM

GENERAL NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING G-002.
2. FOR EXISTING STORM DRAIN STRUCTURE TABLES, SEE DRAWING C-111.
3. ALL FINAL GRADE PHASING LIMITS (F-#) ARE TO BE SUPER SILT FENCE.
4. FOR SEQUENCE OF CONSTRUCTION, SEE DRAWING G-002.
5. FOR EROSION AND SEDIMENT CONTROL NOTES, SEE DRAWING G-003.
6. DETAILS ARE LISTED BY TYPE AND INDEXED TO THE APPROPRIATE DETAIL SHEETS ON DRAWING C-501.
7. FOR SITE DETAILS (SITE IMPROVEMENTS, FENCE, ROADS, ETC.) SEE DRAWINGS C-502 AND C-503.
8. FOR DEMOLITION DETAILS SEE DRAWING C-504.
9. FOR EXCAVATION AND GRADING DETAILS SEE DRAWINGS C-505, C-506, AND C-507.
10. FOR CLOSURE CAP DETAILS SEE DRAWINGS C-508 AND C-509.
11. FOR DRAINAGE DETAILS SEE DRAWINGS C-510 AND C-511.
12. FOR STORMWATER MANAGEMENT DETAILS SEE DRAWINGS C-512 AND C-513.
13. FOR EROSION AND SEDIMENT CONTROL DETAILS, SEE DRAWINGS C-514 AND C-515.
14. FOR LANDFILL GAS DETAILS SEE DRAWINGS C-516, C-517, C-518, AND C-519.
15. FOR SETTLEMENT PLATE DETAIL SEE DRAWING C-507.

N

C-157 C-158 C-159 C-160 C-161 C-162 C-163 C-164 C-165 C-166

POND 2
GRINELL TERRACE
GRINELL DRIVE
PHASE F-I
PHASE F-V
ACCESS ROAD
LIMIT OF TOUPEE CAP (TYP.)
M-NCPPC POND
ACCESS ROAD (TYP.)
PHASE F-IV
PHASE F-II
PHASE F-III
PHASE F-VI
ACCESS ROAD
POND 3
LANDFILL GAS FLARES
MEN'S SHELTER
PROPOSED ADMINISTRATION AREA
POND 1
LIMIT OF TOUPEE CAP (TYP.)
E GUDE DRIVE
WSSC FACILITY
POND 4
INCINERATOR LANE
SOUTHLAWN LANE

0 100 200 400
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN - KEY SHEET

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

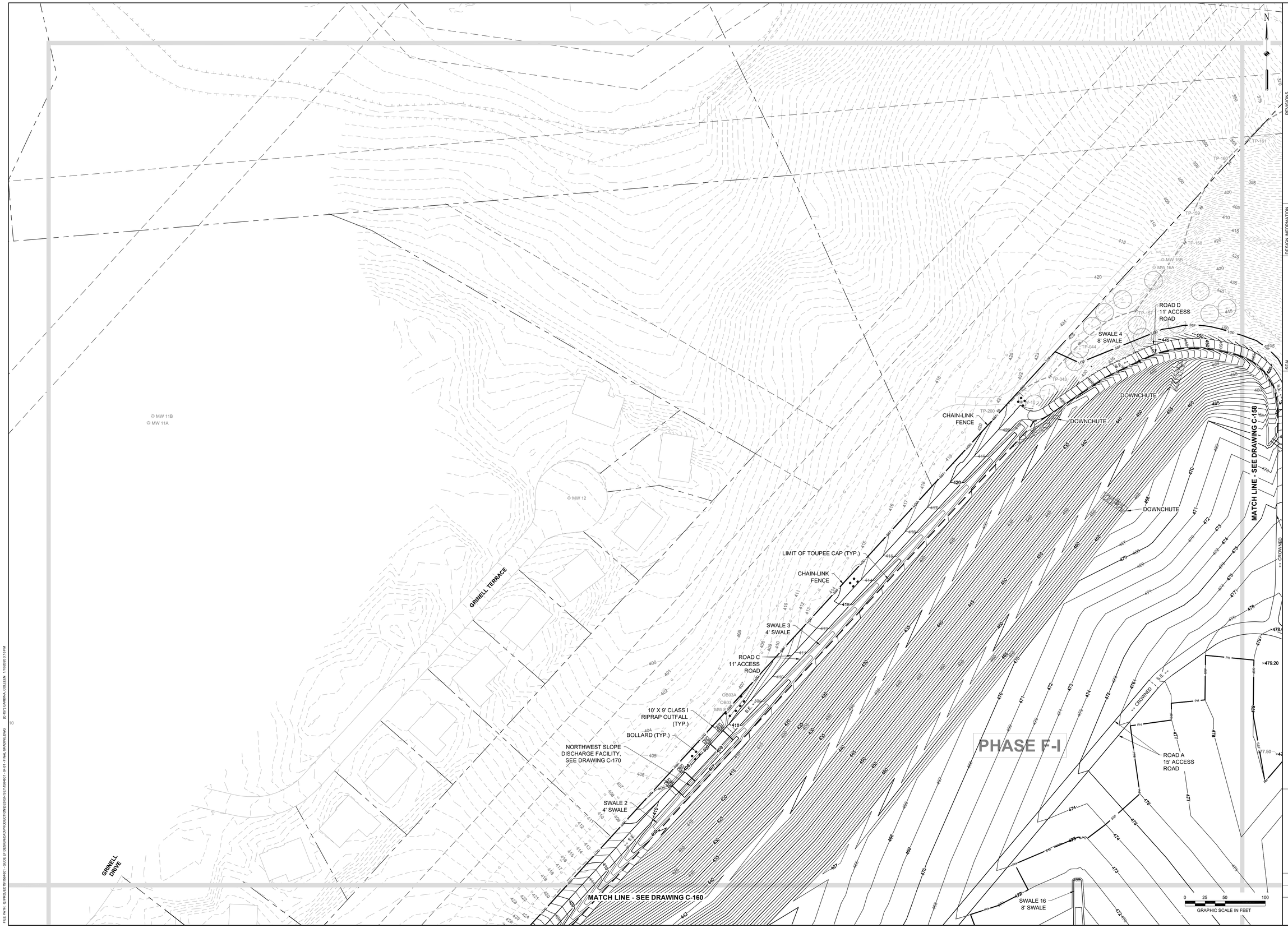
PROJECT NUMBER: 1564601

C-156

SHEET: 59 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 04-00- FINAL GRADING - KEY SHEET.DWG [C-156] GARDINA, COLLEEN - 1/15/2020 3:16 PM



NO.	DATE	BY	DESCRIPTION
			REVISIONS

DESIGN INFORMATION

DESIGNED BY:	KEF / SMB
DRAWN BY:	SMB
CHECKED BY:	LJO / GAT
PROJECT MANAGER:	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402
EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

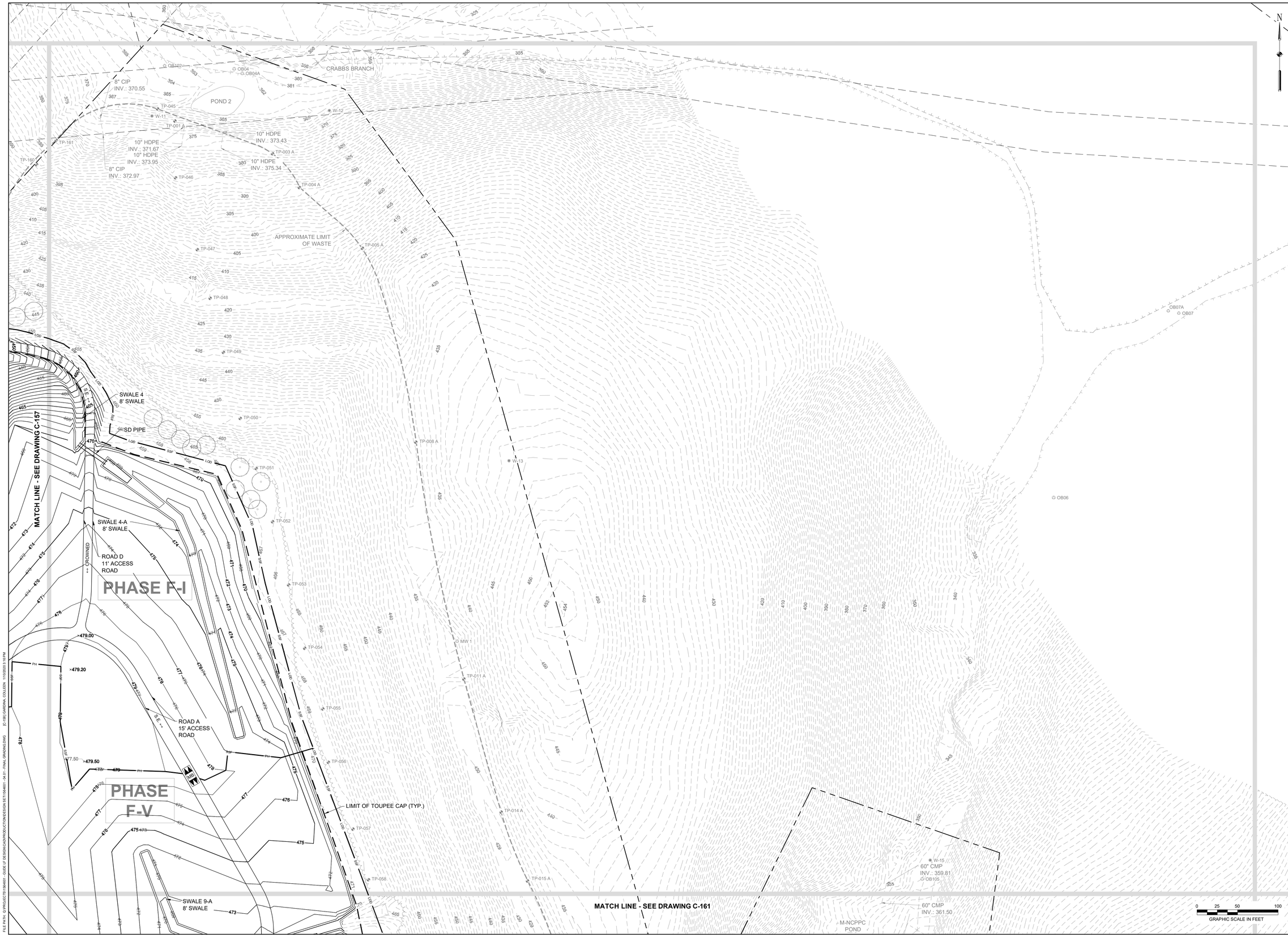
PROJECT NUMBER: 1564601

C-157

SHEET: 60 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET 1\564601 - 04-01 - FINAL GRADING.DWG [C-157] CARDINA, COLLEEN 1/15/2020 3:18 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

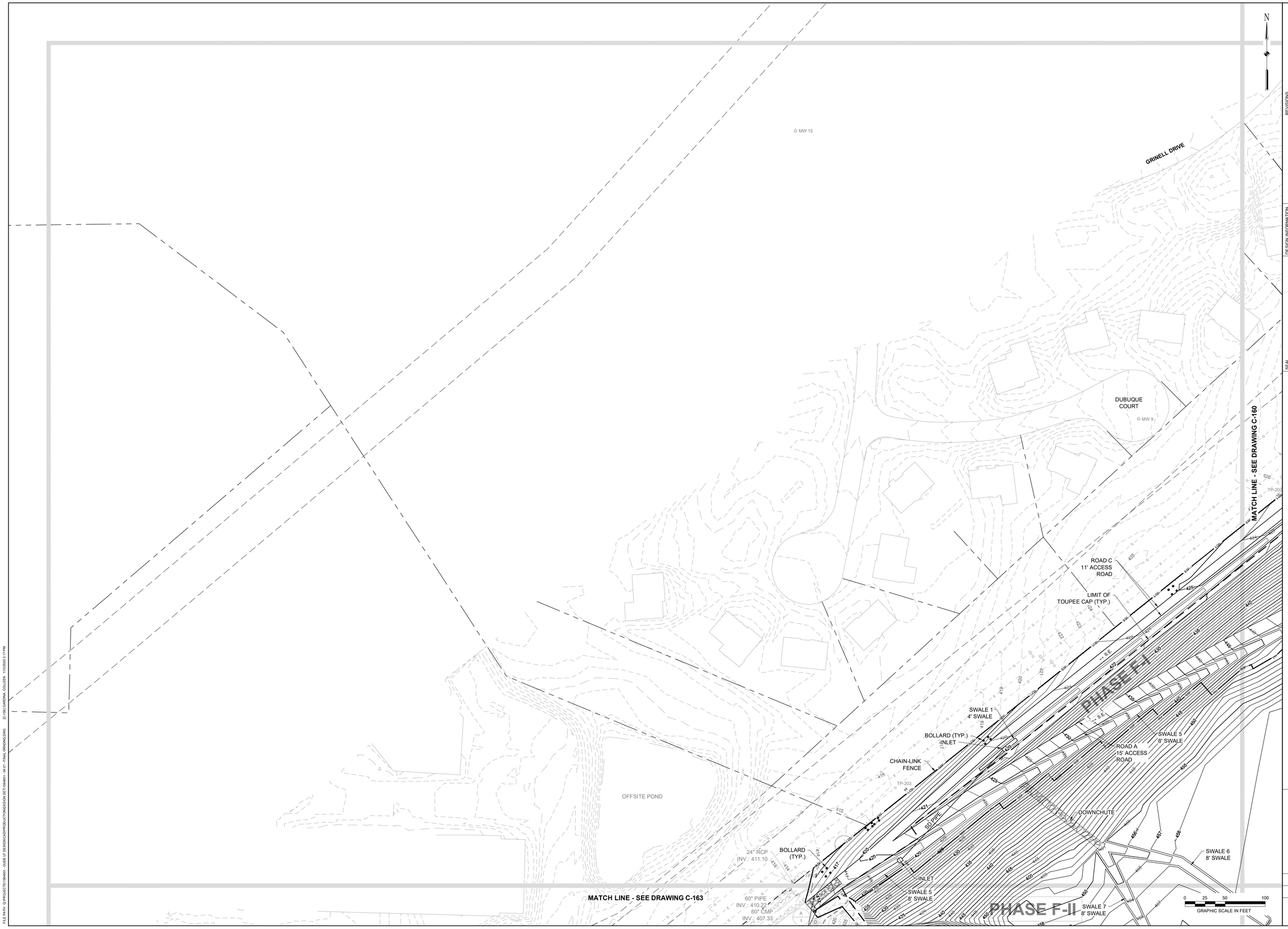
DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-158

SHEET: 61 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-159

SHEET: 62 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 4A.01 - FINAL GRADING.DWG [C-159] GARDINA, COLLEEN 1/15/2020 3:17 PM

MATCH LINE - SEE DRAWING C-157

GRINELL DRIVE

PHASE F-I

PHASE F-V

PHASE F-II

PHASE F-IV

PHASE F-VI

CHAIN-LINK FENCE

ROAD C 11' ACCESS ROAD

SWALE 2 4' SWALE

BOLLARD (TYP.)

LIMIT OF TOUPEE CAP (TYP.)

TP-201

TP-202

SWALE 1 4' SWALE

DOWNCHUTE

ROAD A 15' ACCESS ROAD

SWALE 5 8' SWALE

SWALE 16 8' SWALE

ROAD E 15' ACCESS ROAD

SWALE 13 8' SWALE

SWALE 6 8' SWALE

SWALE 8 8' SWALE

ROAD F 15' ACCESS ROAD

ROAD G 15' ACCESS ROAD

SD PIPE

MB

SP

CROWNED

S.E.

MATCH LINE - SEE DRAWING C-159

MATCH LINE - SEE DRAWING C-161

MATCH LINE - SEE DRAWING C-164

N

0 25 50 100

GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-160

SHEET: 63 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - (A)-01 - FINAL GRADING.DWG (C-160) GABRIAL, COLLEEN 1/10/2020 3:17 PM

MATCH LINE - SEE DRAWING C-158

MATCH LINE - SEE DRAWING C-160

MATCH LINE - SEE DRAWING C-162

MATCH LINE - SEE DRAWING C-165

PHASE F-V

PHASE F-VI

PHASE F-III

SWALE 9-A
8' SWALE

SWALE 9
8' SWALE

SD PIPE

ROAD J
15' ACCESS
ROAD

ROAD A
15' ACCESS
ROAD

SOIL STOCKPILE

LIMIT OF TOUPEE CAP (TYP.)

M-NCPPC
POND

60" CMP
INV.: 359.81

60" CMP
INV.: 361.50

APPROXIMATE LIMIT
OF WASTE

SWALE 11
8' SWALE

SWALE 16
8' SWALE

SWALE 12
8' SWALE

SWALE 13
8' SWALE

ROAD G
15' ACCESS
ROAD

ROAD E
15' ACCESS
ROAD

SWALE 17
8' SWALE

SWALE 10
8' SWALE

SWALE 18
8' SWALE

SWALE 15
8' SWALE

DOWNCHUTE

INLET

SD MANHOLE

HEADWALL

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-161

SHEET: 64 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF REMOVAL\CAD\PRODUCTION\DESIGN SET-1564601 - 04.01 - FINAL GRADING.DWG JC-161 | DARIANA.COLLEEN 1/10/2020 3:17 PM

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-162

SHEET: 65 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION				
DESIGNED BY: KEF / SMB	DRAWN BY: SMB	CHECKED BY: LJO / GAT	PROJECT MANAGER: MJG	SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-163

SHEET: 66 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 04-01 - FINAL GRADING.DWG [C-163] GARDINA, COLLEEN 1/10/2020 5:17 PM

PHASE F-II

PHASE F-IV

MATCH LINE - SEE DRAWING C-160

MATCH LINE - SEE DRAWING C-163

MATCH LINE - SEE DRAWING C-165

SWALE 6
8' SWALE

SWALE 8
8' SWALE

ROAD E
15' ACCESS
ROAD

ROAD H
15' ACCESS
ROAD

ROAD I
15' ACCESS
ROAD

SD PIPE

POND 1

POND 4

APPROXIMATE LIMIT
OF WASTE

SOUTHLAWN
BRANCH

GRAVEL ACCESS ROAD

WSSC FACILITY

.66" RCP
INV.: 394.06

.66" RCP
INV.: 394.33

MW 1
MW 19

MW 21A
MW 21B

OB012

OB015

W-25

W-26C

W-27

TP-135

TP-136

TP-137

TP-138

TP-139

TP-140

TP-141

TP-142

TP-143

TP-144

TP-145

TP-146

TP-147

TP-148

TP-149

TP-150

TP-127

TP-128

TP-129

TP-130

TP-131

TP-132

TP-133

TP-134

EW-140

EW-141

EW-142

EW-143

EW-144

EW-145

EW-147

EW-154

EW-155

UTIL

SP

CROWNED

S.E.

N

0 25 50 100
GRAPHIC SCALE IN FEET

NO.	DATE	BY	DESCRIPTION
REVISIONS			

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

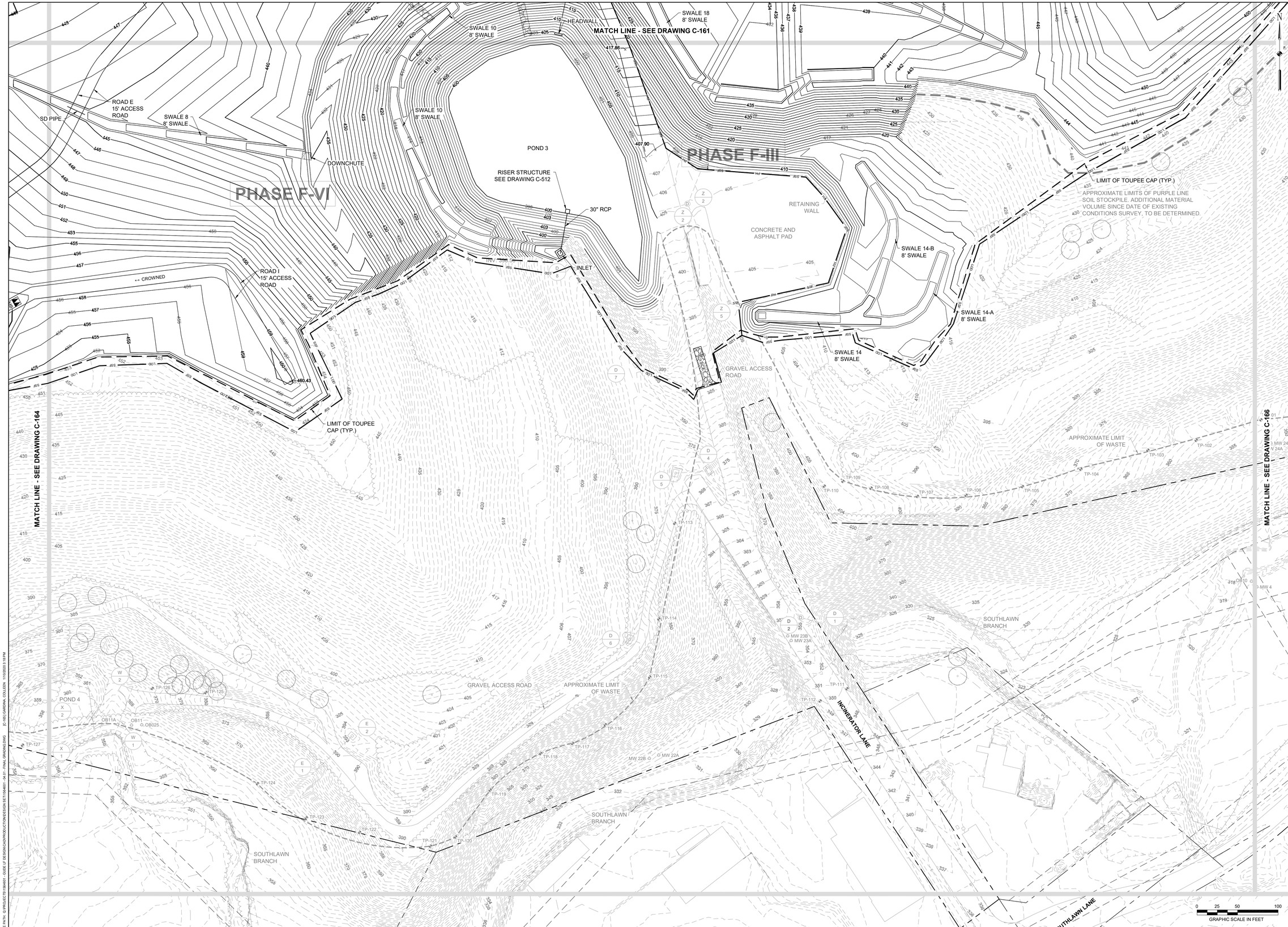
PROJECT NUMBER: 1564601

C-164

SHEET: 67 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - MJG1 - FINAL GRADING.DWG [C-164] GARDNA, COLLEEN, 1/15/2020 3:17 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-165

SHEET: 68 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

FINAL GRADING PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-166

SHEET: 69 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 04-01 - FINAL GRADING.DWG [C-166] GARDINA, COLLEEN 1/10/2020 5:18 PM

DRAINAGE AREA	PATH	FLOW TYPE	N	LENGTH (FT)	SLOPE (FT/FT)	Tc (HR)
1A	A TO B	SHEET FLOW	0.24	100	0.020	0.240
	B TO C	SHALLOW CONCENTRATED	UNPAVED	760	0.022	0.088
	C TO D	CHANNEL		1000	0.050	0.013
1B	A TO B	SHEET	0.24	100	0.062	0.153
	B TO C	SHALLOW CONCENTRATED	UNPAVED	1150	0.062	0.080
2	A TO B	SHEET FLOW	0.24	100	0.015	0.269
	B TO C	SHALLOW CONCENTRATED	UNPAVED	600	0.023	0.068
	C TO D	CHANNEL		540	0.082	0.006
3	A TO B	SHEET FLOW	0.24	100	0.011	0.311
	B TO C	SHALLOW CONCENTRATED	UNPAVED	420	0.101	0.023
4	A TO B	SHEET FLOW	0.24	100	0.010	0.317
	B TO C	SHALLOW CONCENTRATED	UNPAVED	1020	0.113	0.052
5	A TO B	SHEET FLOW	0.24	100	0.027	0.213
	B TO C	SHALLOW CONCENTRATED	UNPAVED	330	0.015	0.046
	C TO D	CHANNEL		1200	0.098	0.032
6	A TO B	SHEET FLOW	0.24	100	0.045	0.174
	B TO C	SHALLOW CONCENTRATED	UNPAVED	660	0.190	0.026
7	A TO B	SHEET FLOW	0.24	100	0.050	0.166
	B TO C	SHALLOW CONCENTRATED	UNPAVED	580	0.198	0.022
	C TO D	CHANNEL		120	0.420	0.002
8	A TO B	SHEET FLOW	0.24	100	0.029	0.207
	B TO C	SHALLOW CONCENTRATED	UNPAVED	400	0.215	0.015
	C TO D	CHANNEL		40	0.071	0.002
9	A TO B	SHEET FLOW	0.24	100	0.028	0.210
	B TO C	SHALLOW CONCENTRATED	UNPAVED	590	0.164	0.025
10	A TO B	SHEET FLOW	0.24	100	0.020	0.240
	B TO C	SHALLOW CONCENTRATED	UNPAVED	360	0.076	0.022
11	A TO B	SHEET FLOW	0.24	100	0.050	0.166
	B TO C	SHALLOW CONCENTRATED	UNPAVED	600	0.098	0.033

DRAINAGE AREA	PEAK FLOW (CFS)		
ID	2-YR STORM	10-YR STORM	100-YR STORM
1A	42.2	86.1	182.8
1B	22.6	45.0	93.9
2	31.8	64.9	137.9
3	14.8	30.2	64.1
4	9.1	19.3	42.5
5	18.7	40.5	90.2
6	9.2	26.8	72.1
7	7.8	16.4	35.7
8	5.4	10.9	23.2
9	5.4	11.2	24.0
10	1.3	2.6	5.6
11	4.1	8.7	19.0

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

DRAINAGE AREA MAP - EXISTING CONDITIONS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-167

SHEET: 70 OF 109

SC/SWM SHEET 26 OF 35

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: C:\PROJECTS\1564601 - GUDE LF DESIGN\CADD\PRODUCTION\DESIGN SET-VM\601 - 05.01 - DRAINAGE AREA MAP.DWG [C-167] DARDINA, COLLEEN 1/31/2020 3:19 PM

DRAINAGE AREA	PATH	FLOW TYPE	N	LENGTH (FT)	SLOPE (FT/FT)	Tc (HR)
1A	A TO B	SHEET FLOW	0.24	100	0.009	0.330
	B TO C	SHALLOW CONCENTRATED	UNPAVED	391	0.036	0.035
	C TO D	CHANNEL		1153	0.024	0.033
	E TO F			485	0.060	0.009
1B	A TO B	SHEET	0.24	100	0.013	0.285
	B TO C	SHALLOW CONCENTRATED	UNPAVED	339	0.021	0.040
	C TO D	CHANNEL		1331	0.034	0.028
2	A TO B	SHEET	0.24	100	0.040	0.182
	B TO C	SHALLOW CONCENTRATED	UNPAVED	78	0.056	0.006
	C TO D	CHANNEL		771	0.130	0.007
	E TO F			1680	0.016	0.044
3	A TO B	SHEET FLOW	0.24	100	0.035	0.192
	B TO C	SHALLOW CONCENTRATED	UNPAVED	68	0.035	0.006
	C TO D	CHANNEL		817	0.028	0.016
	D TO E			716	0.038	0.014
4	A TO B	SHEET FLOW	0.24	100	0.030	0.204
	B TO C	SHALLOW CONCENTRATED	UNPAVED	894	0.112	0.046
5	A TO B	SHEET FLOW	0.24	100	0.020	0.240
	B TO C	SHALLOW CONCENTRATED	UNPAVED	75	0.053	0.006
	C TO D	CHANNEL		1265	0.090	0.035
6	A TO B	SHEET FLOW	0.24	100	0.040	0.182
	B TO C	SHALLOW CONCENTRATED	UNPAVED	660	0.190	0.026
7	A TO B	SHEET FLOW	0.24	100	0.050	0.166
	B TO C	SHALLOW CONCENTRATED	UNPAVED	540	0.194	0.021
	C TO D	CHANNEL		120	0.420	0.002
8	A TO B	SHEET FLOW	0.24	100	0.030	0.204
	B TO C	SHALLOW CONCENTRATED	UNPAVED	500	0.215	0.019
	C TO D	CHANNEL		40	0.071	0.002
9	A TO B	SHEET FLOW	0.24	100	0.020	0.240
	B TO C	SHALLOW CONCENTRATED	UNPAVED	590	0.164	0.025
10	A TO B	SHEET FLOW	0.24	100	0.045	0.174
	B TO C	SHALLOW CONCENTRATED	UNPAVED	281	0.091	0.016
11	A TO B	SHEET FLOW	0.24	100	0.042	0.178
	B TO C	SHALLOW CONCENTRATED	UNPAVED	621	0.100	0.034

DRAINAGE AREA	PEAK FLOW (CFS)		
ID	2-YR STORM	10-YR STORM	100-YR STORM
1A	36.8	75.3	160.3
1B	32.8	66.8	142.3
2	29.1	59.1	125.1
3	13.7	27.3	56.8
4	9.6	20.3	44.3
5	17.1	38.7	89.2
6	9.0	26.3	70.7
7	7.8	16.4	35.7
8	4.6	9.4	20.0
9	5.2	10.8	23.3
10	1.3	2.5	5.3
11	4.1	8.6	18.8

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

DRAINAGE AREA MAP - PROPOSED CONDITIONS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-168

SHEET: 71 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 27 OF 35

FILE PATH: O:\PROJECTS\1564601 - GUDE LF REDESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 05.01 - DRAINAGE AREA MAP.DWG [C-168] GARDINA, COLLEEN 11/3/2020 3:19 PM

NOTES:

1. FOR SECTIONS, SEE DRAWING C-305.
2. POND 3 TO BE LINED WITH EARTH CLOSURE CAP. REFER TO THE DRAWING ON C-508.

STORMWATER MANAGEMENT NOTES:

(1) RISER STRUCTURE. SEE DETAIL, DRAWING C-512

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

STORMWATER MANAGEMENT PLAN - POND 3

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-169

SHEET: 72 OF 109

0 25 50 100
GRAPHIC SCALE IN FEET

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 28 OF 35

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN\SET1\1564601 - 05-03 - STORMWATER MANAGEMENT.DWG [C-169] DARDINA, COLLEEN 1/10/2020 3:20 PM

0 5 10 20
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402
EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

STORMWATER MANAGEMENT PLAN - NORTHWEST SLOPE DISCHARGE FACILITY

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-170

SHEET: 73 OF 109

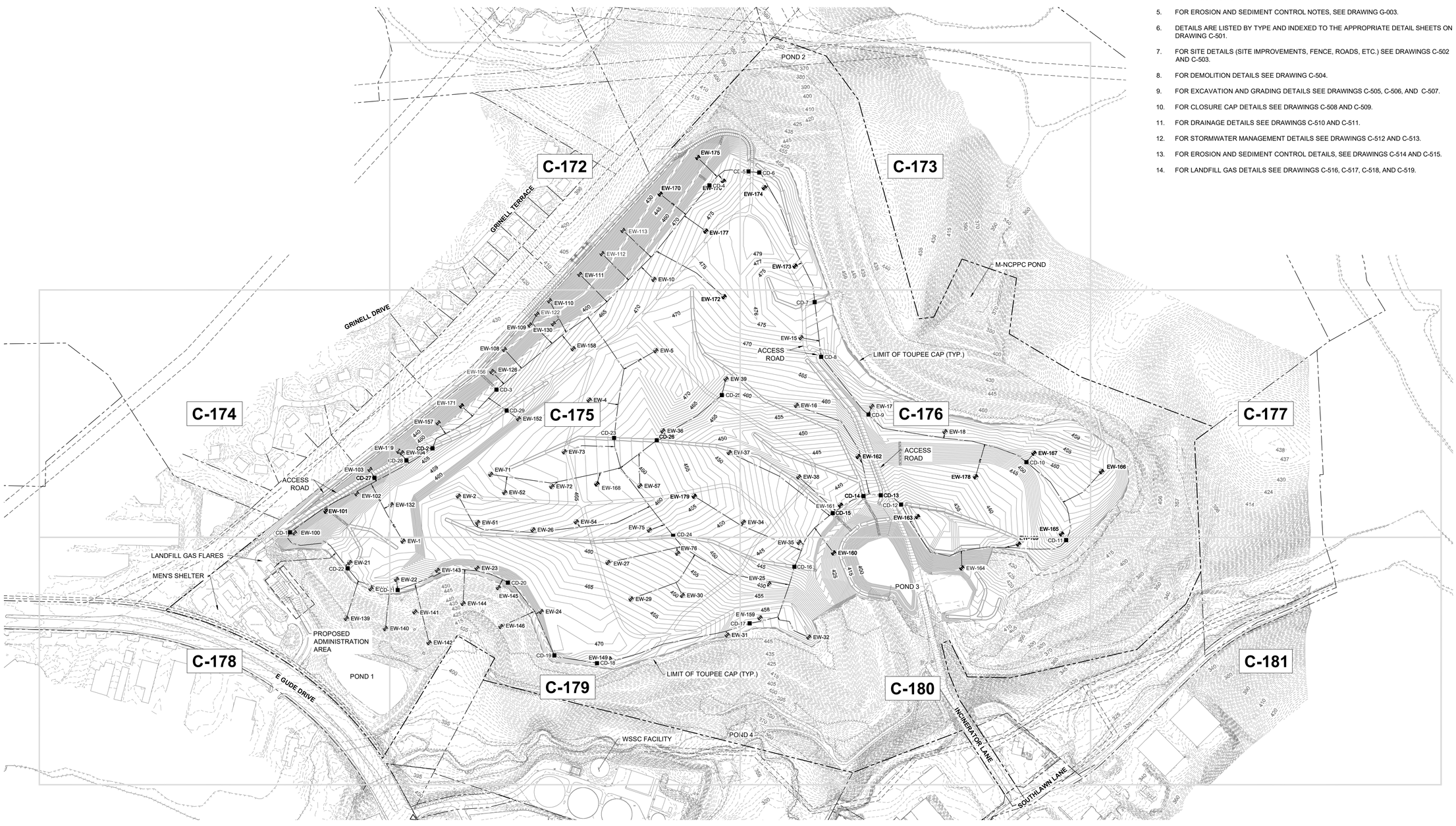
60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 29 OF 35

FILE PATH: G:\PROJECTS\1564601 - GUDE LF REMEDIACIAL\PRODUCTION\DESIGN SET\1564601 - 05-02 - STORMWATER MANAGEMENT.DWG [C-170] GARDNA, COLLEEN, 1/10/2020 3:24 PM

GENERAL NOTES

1. FOR GENERAL NOTES AND LEGEND, SEE DRAWING G-002.
2. FOR EXISTING STORM DRAIN STRUCTURE TABLES, SEE DRAWING C-111.
3. ALL FINAL GRADE PHASING LIMITS (F-#) ARE TO BE SUPER SILT FENCE.
4. FOR SEQUENCE OF CONSTRUCTION, SEE DRAWING G-002.
5. FOR EROSION AND SEDIMENT CONTROL NOTES, SEE DRAWING G-003.
6. DETAILS ARE LISTED BY TYPE AND INDEXED TO THE APPROPRIATE DETAIL SHEETS ON DRAWING C-501.
7. FOR SITE DETAILS (SITE IMPROVEMENTS, FENCE, ROADS, ETC.) SEE DRAWINGS C-502 AND C-503.
8. FOR DEMOLITION DETAILS SEE DRAWING C-504.
9. FOR EXCAVATION AND GRADING DETAILS SEE DRAWINGS C-505, C-506, AND C-507.
10. FOR CLOSURE CAP DETAILS SEE DRAWINGS C-508 AND C-509.
11. FOR DRAINAGE DETAILS SEE DRAWINGS C-510 AND C-511.
12. FOR STORMWATER MANAGEMENT DETAILS SEE DRAWINGS C-512 AND C-513.
13. FOR EROSION AND SEDIMENT CONTROL DETAILS, SEE DRAWINGS C-514 AND C-515.
14. FOR LANDFILL GAS DETAILS SEE DRAWINGS C-516, C-517, C-518, AND C-519.



0 100 200 400
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN - KEY SHEET

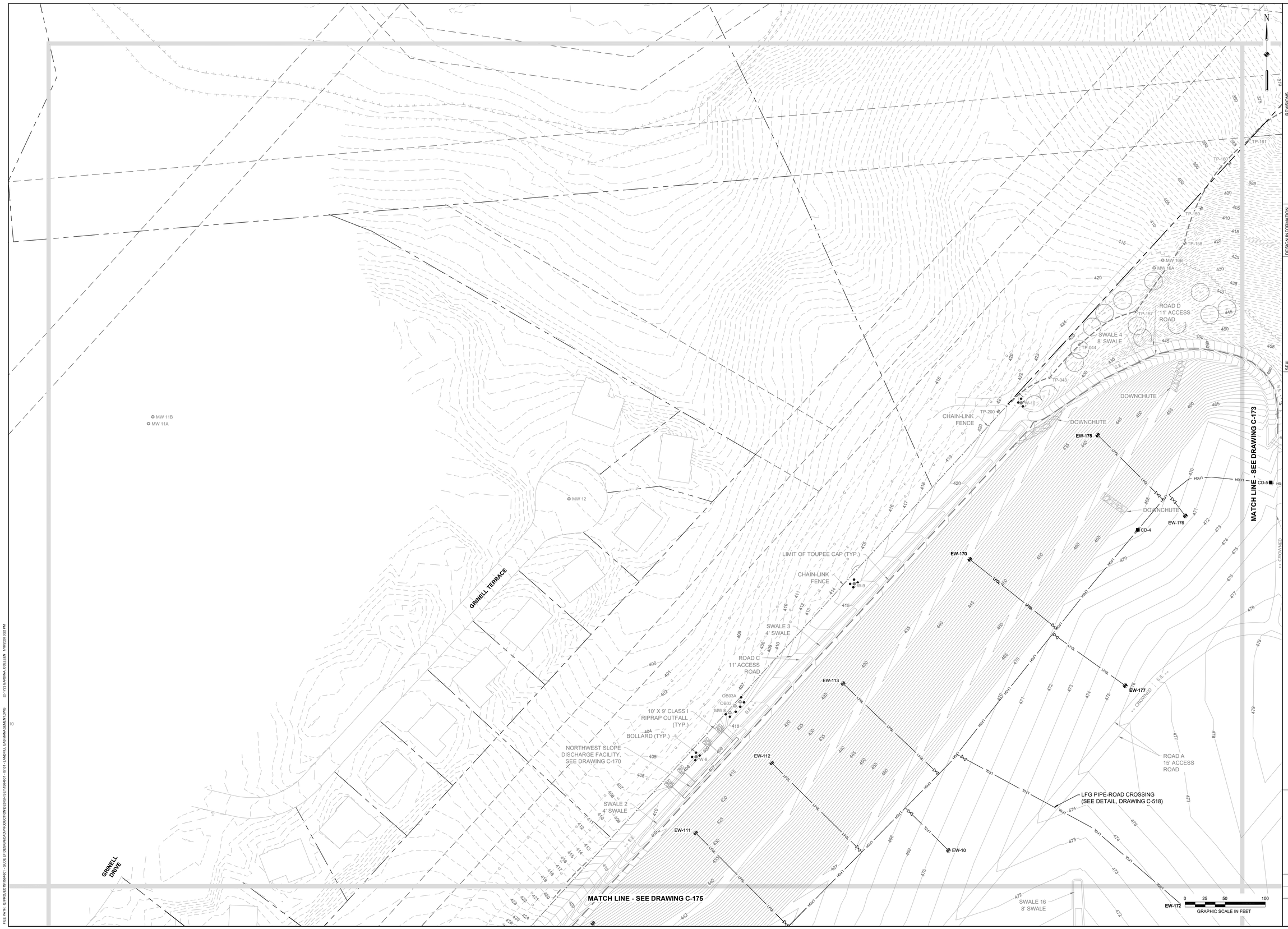
EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-171

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION



NO.	DATE	BY	REVISIONS DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402
EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-172

SHEET: 75 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET 1\564601 - 07 01 - LANDFILL GAS MANAGEMENT.DWG (C-172) GARDINA, COLLEEN 10/9/2020 3:02 PM

N

CRABBS BRANCH

POND 2

8" CIP
INV.: 370.55

10" HDPE
INV.: 371.67
10" HDPE
INV.: 373.95

8" CIP
INV.: 372.97

10" HDPE
INV.: 373.43

10" HDPE
INV.: 375.34

APPROXIMATE LIMIT
OF WASTE

SWALE 4
8' SWALE

SD PIPE

LFG PIPE-ROAD CROSSING
(SEE DETAIL, DRAWING C-518)

SWALE 4-A
8' SWALE

ROAD D
11' ACCESS
ROAD

CROWNED

ROAD A
15' ACCESS
ROAD

LIMIT OF TOUPEE CAP (TYP.)

SWALE 9-A
8' SWALE

60" CMP
INV.: 359.81

60" CMP
INV.: 361.50

M-NCPPC
POND

MATCH LINE - SEE DRAWING C-172

MATCH LINE - SEE DRAWING C-176

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION				
DESIGNED BY: KEF / SMB	DRAWN BY: SMB	CHECKED BY: LJO / GAT	PROJECT MANAGER: MJG	

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

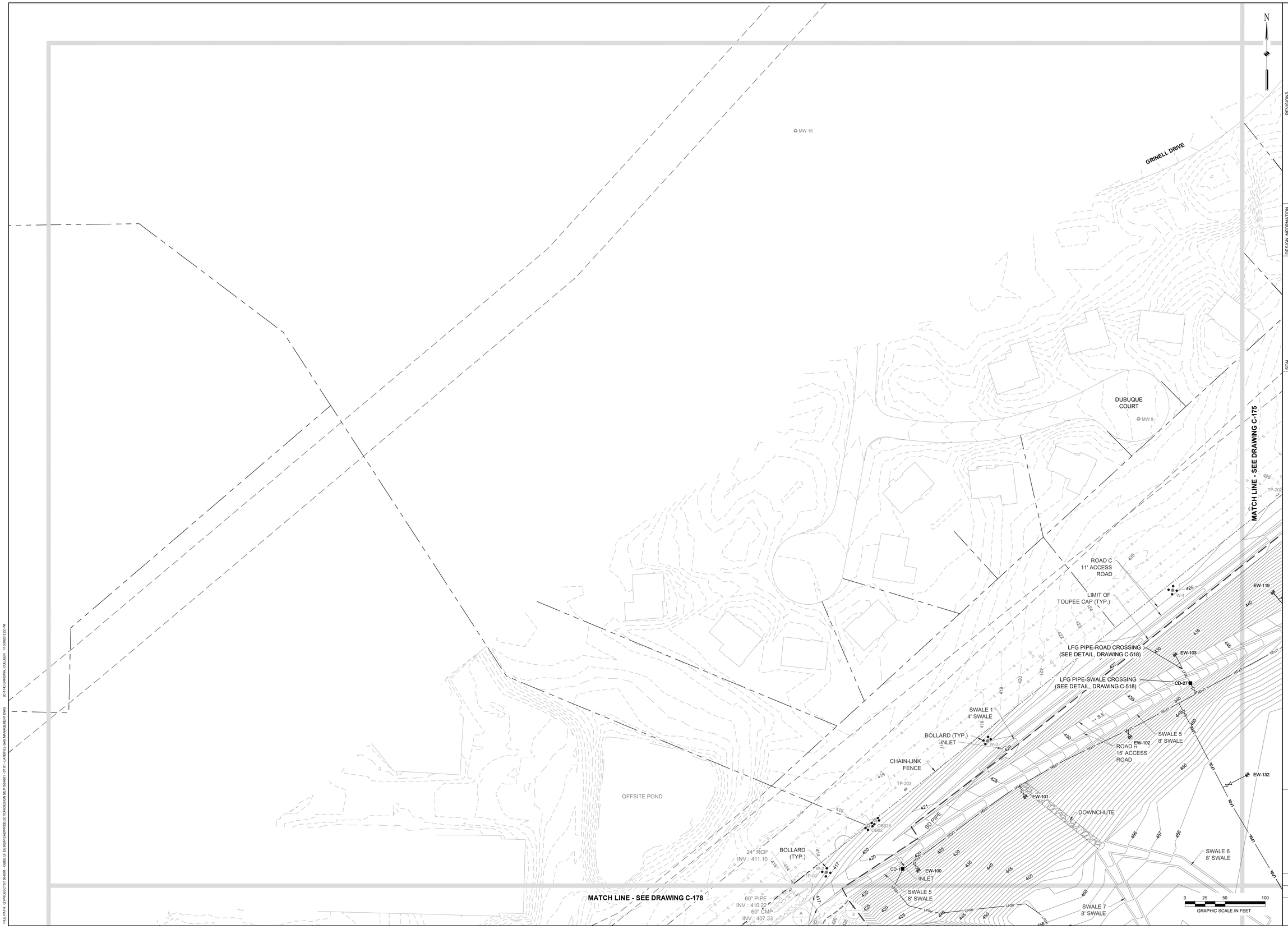
PROJECT NUMBER: 1564601

C-173

SHEET: 76 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - GT 01 - LANDFILL GAS MANAGEMENT.DWG [C-173] GARDINA, COLLEEN - 1/10/2020 3:03 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402
EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

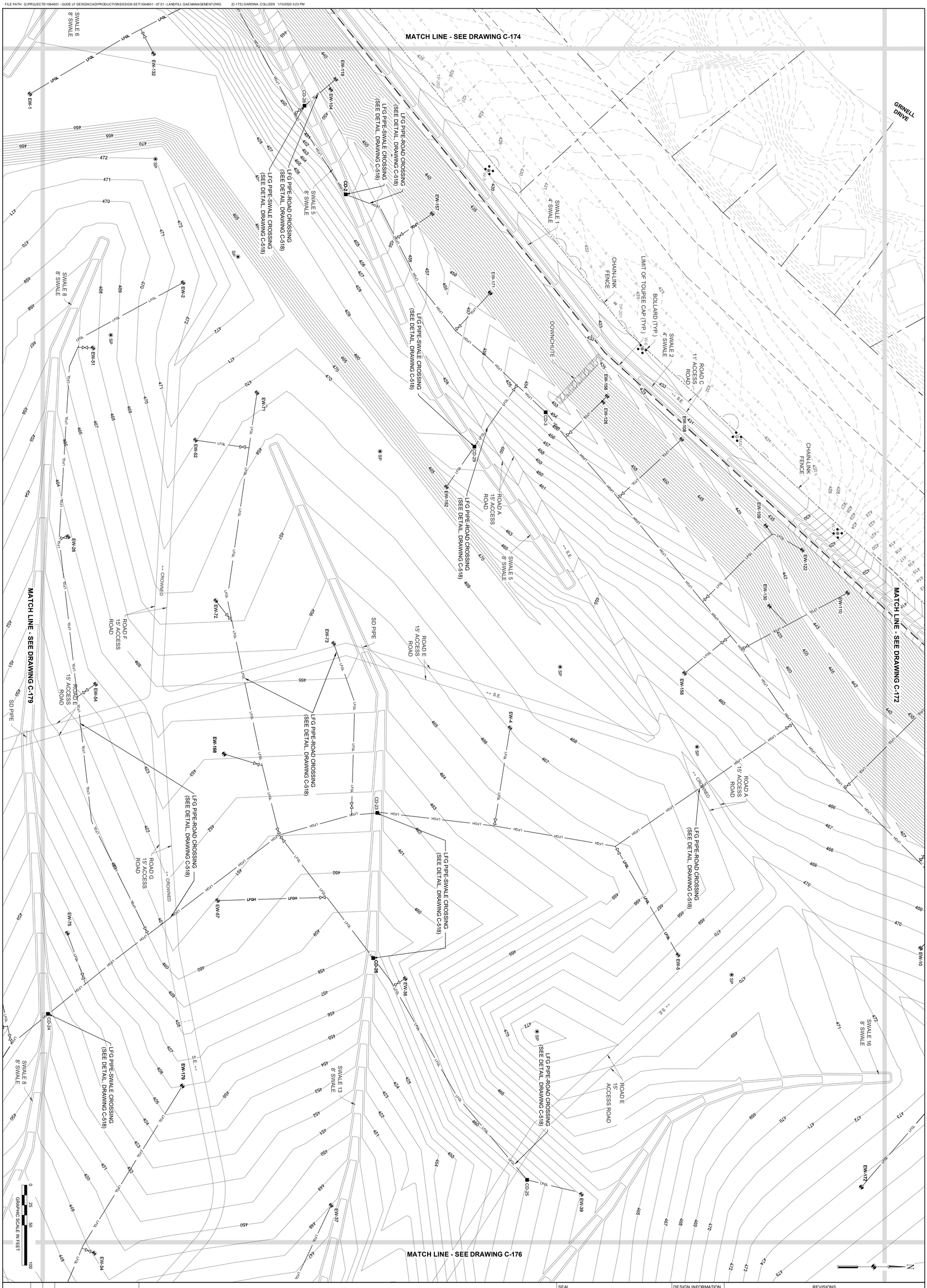
C-174

SHEET: 77 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 07.01 - LANDFILL GAS MANAGEMENT.DWG (C-174) GARDINA, COLLEEN 1/3/2020 3:22 PM

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 07.01 - LANDFILL GAS MANAGEMENT.DWG [C-175] GARDINA, COLLEEN 1/10/2020 3:23 PM



EA Engineering, Science, and Technology, Inc., PBC Hunt Valley Center 225 Schilling Circle, Suite 400 Hunt Valley, Maryland 21031 (410) 584-7000	GUDE LANDFILL REMEDIATION DESIGN NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION MONTGOMERY COUNTY, MARYLAND LANDFILL GAS MANAGEMENT PLAN	SEAL	DESIGN INFORMATION DESIGNED BY: KEF / SMB DRAWN BY: SMB CHECKED BY: LJO / GAT PROJECT MANAGER: MJG
DATE: JANUARY 2020 PROJECT NUMBER: 1564601 C-175 SHEET: 78 OF 109			

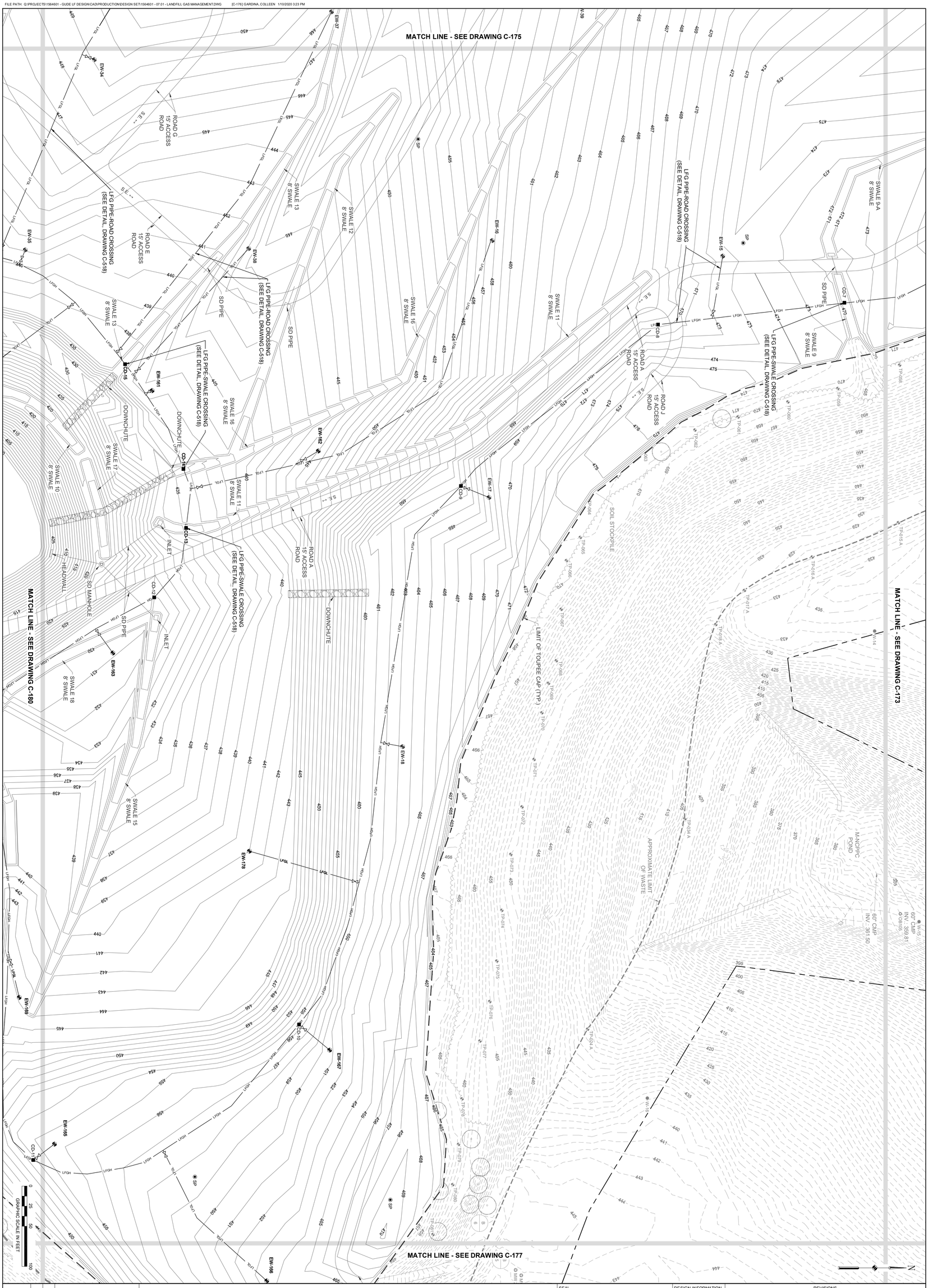
PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

REVISIONS

NO.	DATE	BY	DESCRIPTION

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 07.01 - LANDFILL GAS MANAGEMENT.DWG [C-176] GARDINA, COLLEEN 1/10/2020 3:23 PM



GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-176

SHEET: 79 OF 109

SEAL

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

REVISIONS

NO.	DATE	BY	DESCRIPTION

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402
EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

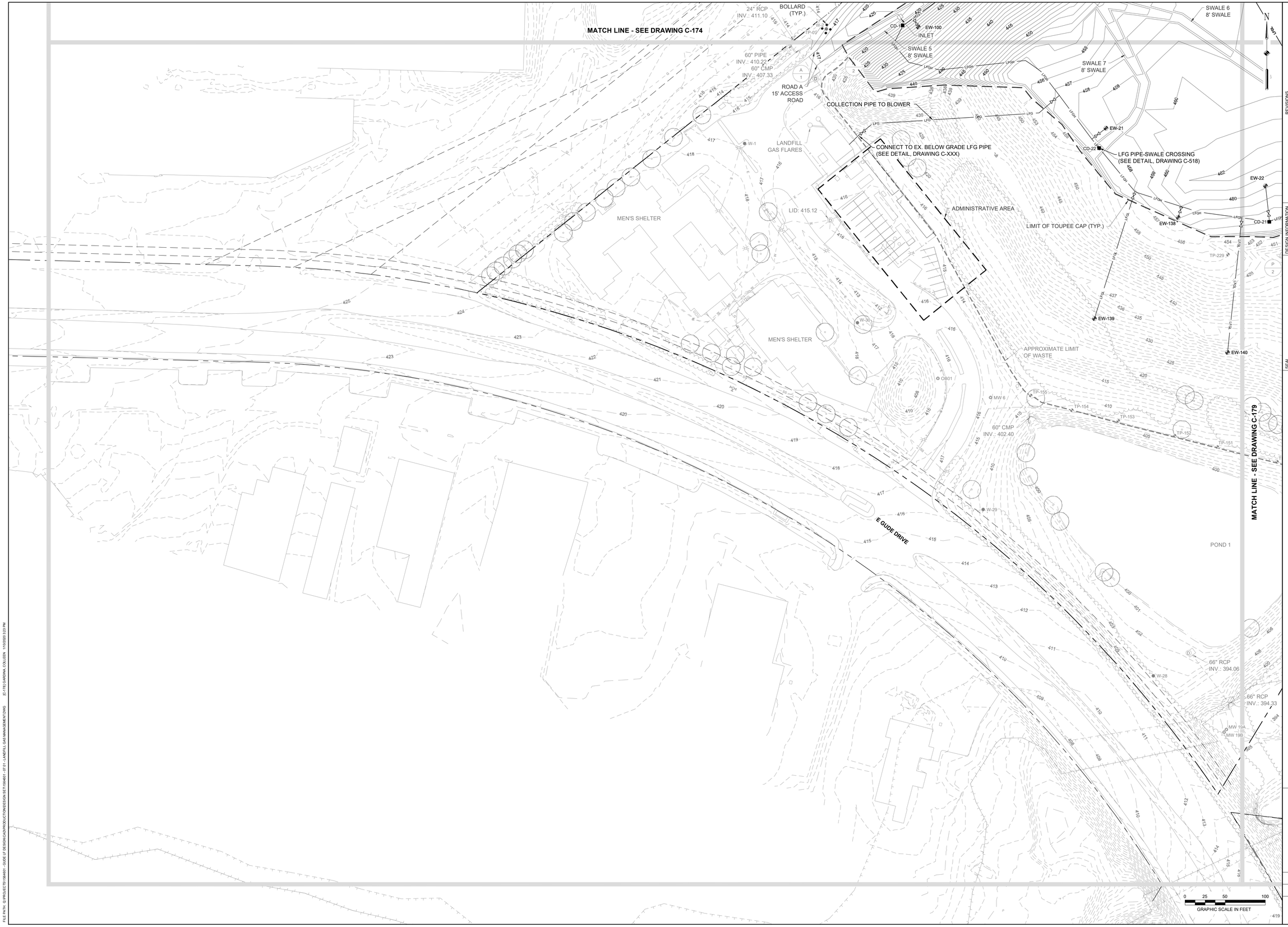
PROJECT NUMBER: 1564601

C-177

SHEET: 80 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIATION\DESIGN SET\1564601 - 07-01 - LANDFILL GAS MANAGEMENT.DWG JC-177 | SABRINA COLLIER 10/2/2020 3:23 PM



REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-178

SHEET: 81 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SWALE 6
8' SWALE

SWALE 8
8' SWALE

MATCH LINE - SEE DRAWING C-175

ROAD E
15' ACCESS
ROAD

SD PIPE

SWALE 8
8' SWALE

SD PIPE

LFG PIPE-ROAD CROSSING
(SEE DETAIL, DRAWING C-518)

ROAD E
15' ACCESS
ROAD

↔ CROWNED

ROAD I
15' ACCESS
ROAD

LFG PIPE-ROAD CROSSING
(SEE DETAIL, DRAWING C-518)

ROAD H
15' ACCESS
ROAD

MATCH LINE - SEE DRAWING C-178

MATCH LINE - SEE DRAWING C-180

POND 1

66" RCP
INV.: 394.06

66" RCP
INV.: 394.33

APPROXIMATE LIMIT
OF WASTE

GRAVEL ACCESS ROAD

SOUTHLAWN
BRANCH

POND 4

WSSC FACILITY

EW-1 EW-22 EW-23 EW-24 EW-26 EW-27 EW-29 EW-30 EW-31 EW-75 EW-76 EW-140 EW-141 EW-142 EW-143 EW-144 EW-145 EW-146 EW-149

CD-17 CD-18 CD-19 CD-20 CD-21 CD-24

TP-127 TP-128 TP-129 TP-130 TP-131 TP-132 TP-133 TP-134 TP-135 TP-136 TP-137 TP-138 TP-139 TP-140 TP-141 TP-142 TP-143 TP-144 TP-145 TP-146 TP-147 TP-148 TP-149 TP-150 TP-229

W-25 W-26 W-26C W-27 OB012 OB015 MW 19A MW 19B MW 21A MW 21B

0 25 50 100
GRAPHIC SCALE IN FEET

NO.	DATE	BY	DESCRIPTION
			REVISIONS

DESIGN INFORMATION

DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

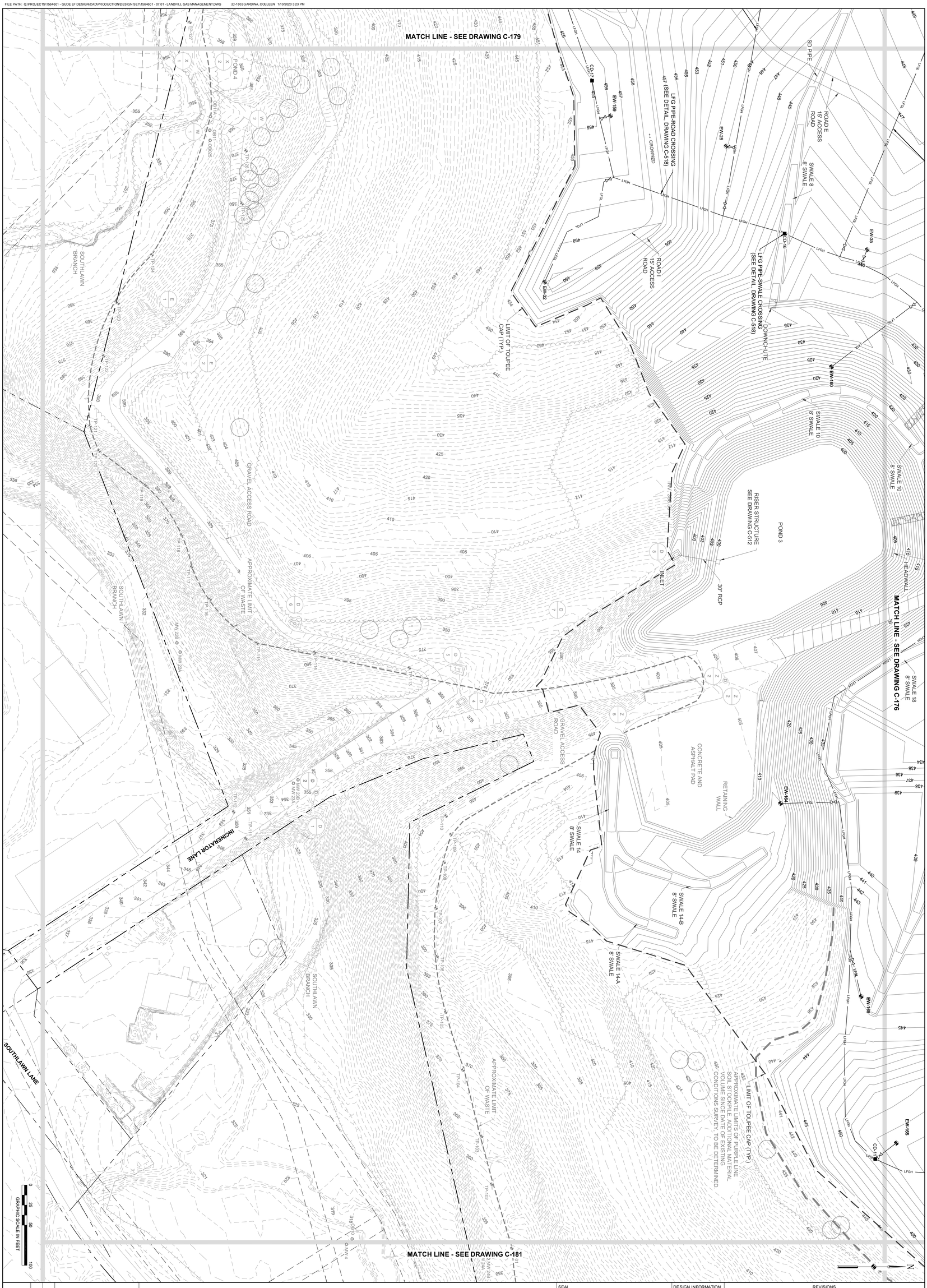
C-179

SHEET: 84 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIATION\DESIGN SET-1564601 - 07-01 - LANDFILL GAS MANAGEMENT.DWG [C-179] CARDINA, COLLEEN 1/10/2020 3:23 PM

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 07.01 - LANDFILL GAS MANAGEMENT.DWG [C-180] GARDINA, COLLEEN 1/10/2020 3:23 PM



GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

PROJECT NUMBER: 1564601

DATE: JANUARY 2020

C-180

SHEET: 83 OF 109

SEAL

PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

DESIGN INFORMATION

DESIGNED BY: KEF / SMB

DRAWN BY: SMB

CHECKED BY: LJO / GAT

PROJECT MANAGER: MJG

REVISIONS

NO.	DATE	BY	DESCRIPTION

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

MATCH LINE - SEE DRAWING C-177

MATCH LINE - SEE DRAWING C-180

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS MANAGEMENT PLAN

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-181

SHEET: 84 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 07-21 - LANDFILL GAS MANAGEMENT.DWG [C-181] GARDINA, COLLEEN - 1/15/2020 3:24 PM

0 100 200 400
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

MONTGOMERY COUNTY, MARYLAND

SITE CROSS SECTIONS - KEY SHEET

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

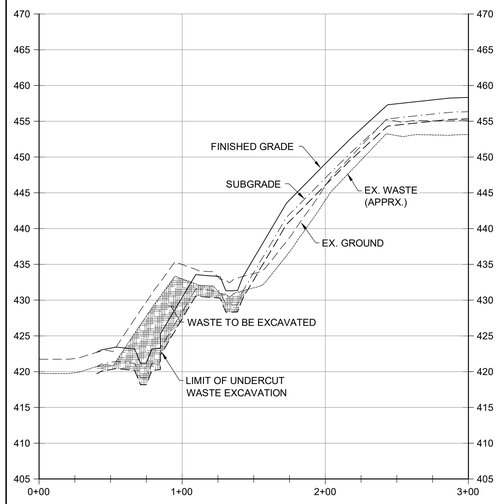
PROJECT NUMBER: 1564601

C-301

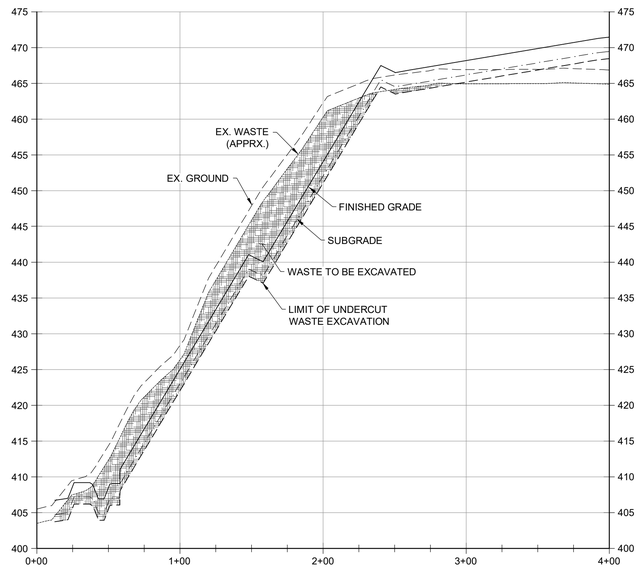
SHEET: 85 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

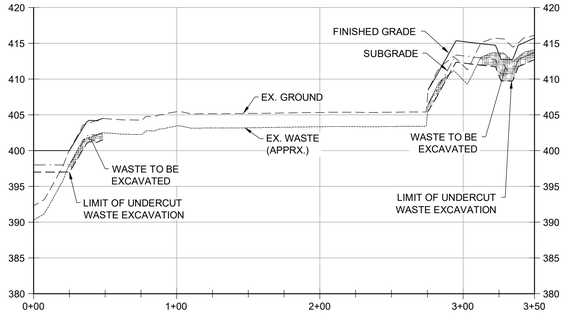
FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET-1\1564601 - 09 00 - SITE CROSS SECTIONS.DWG [CJN1] GARDINA, COLLEEN 1/10/2020 3:34 PM



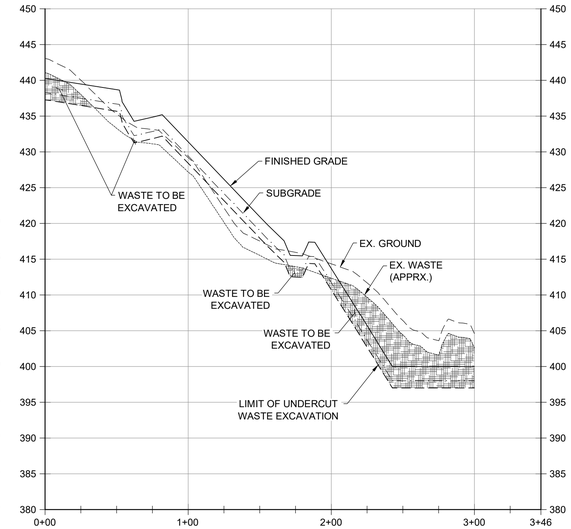
NORTHWEST SLOPE SECTION A-A'
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



NORTHWEST SLOPE SECTION B-B'
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



ENTRANCE ROAD SECTION C-C'
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



ENTRANCE ROAD SECTION D-D'
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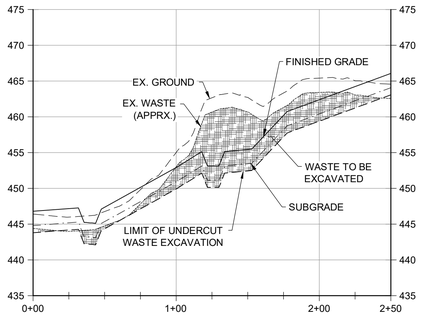
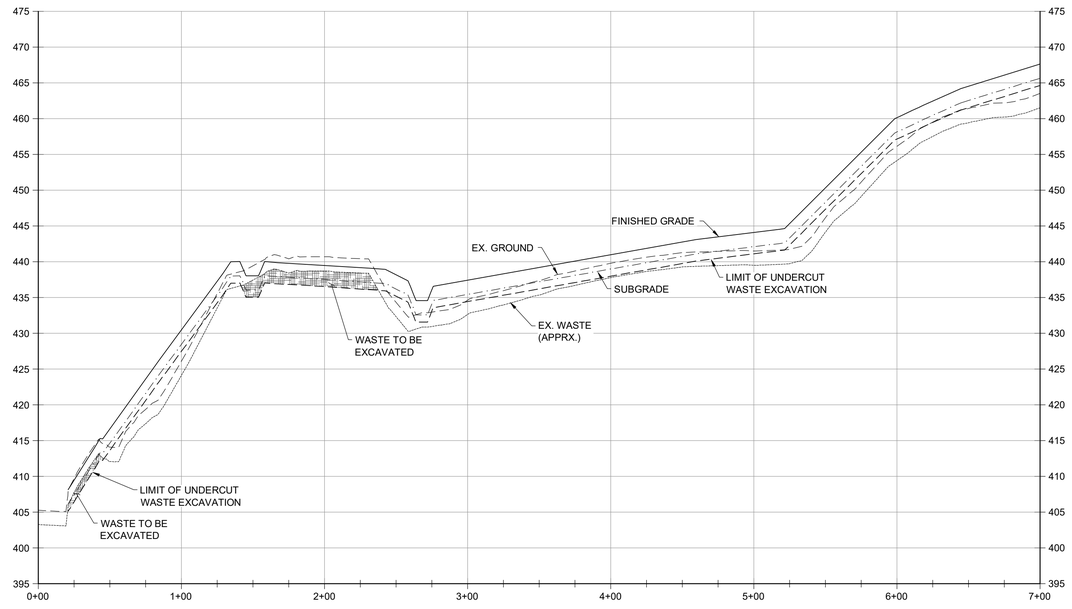
VERTICAL SCALE: 1" = 10'



ACCESS ROAD SECTION E-E'
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



EASTERN AREA SECTION F-F'
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

0 25 50 100
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

SITE CROSS SECTIONS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

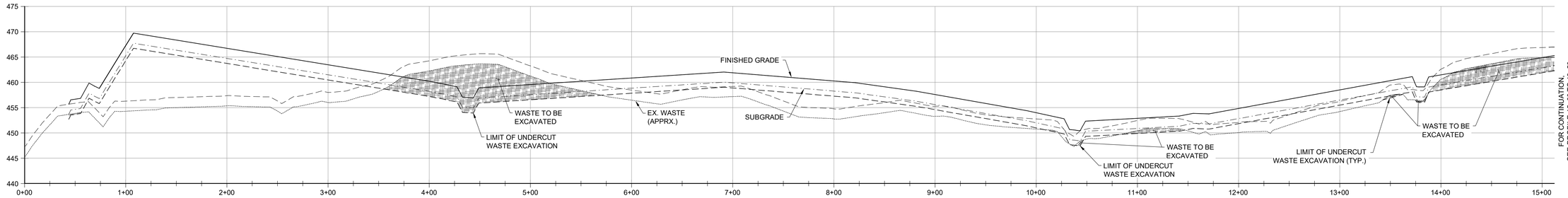
PROJECT NUMBER: 1564601

C-302

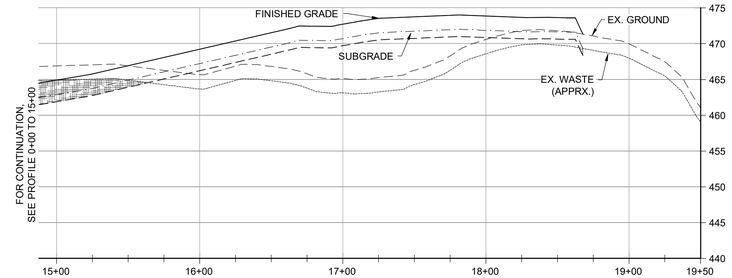
SHEET: 86 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 -09-09 - SITE CROSS SECTIONS.DWG [C-302] CARDINA COLLEEN 1/13/2020 3:24 PM



SITE SECTION G-G' (0+00 - 15+00)
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



SITE SECTION G-G' (15+00 - 19+50)
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

0 25 50 100
GRAPHIC SCALE IN FEET

NO.	DATE	BY	REVISIONS DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

SITE CROSS SECTIONS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

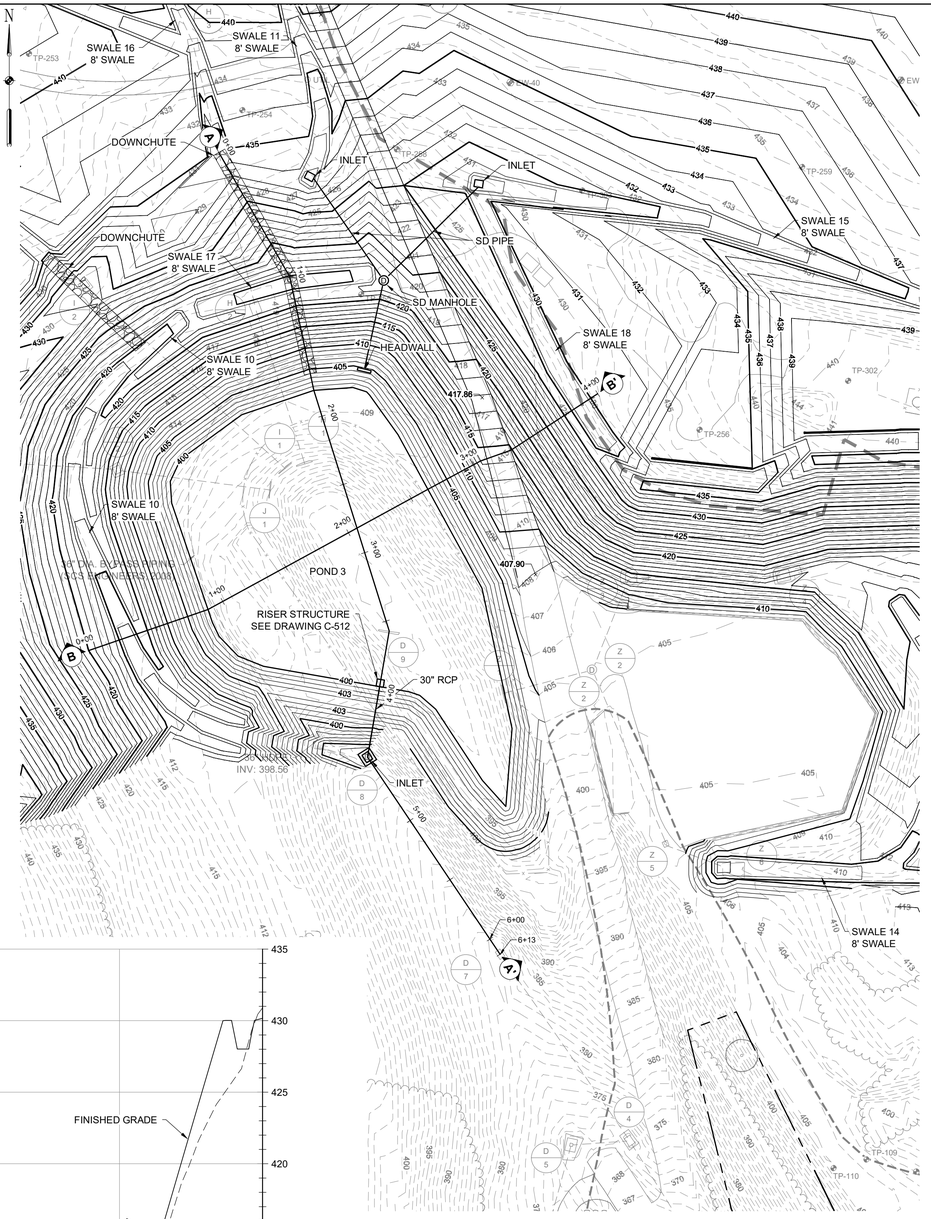
PROJECT NUMBER: 1564601

C-303

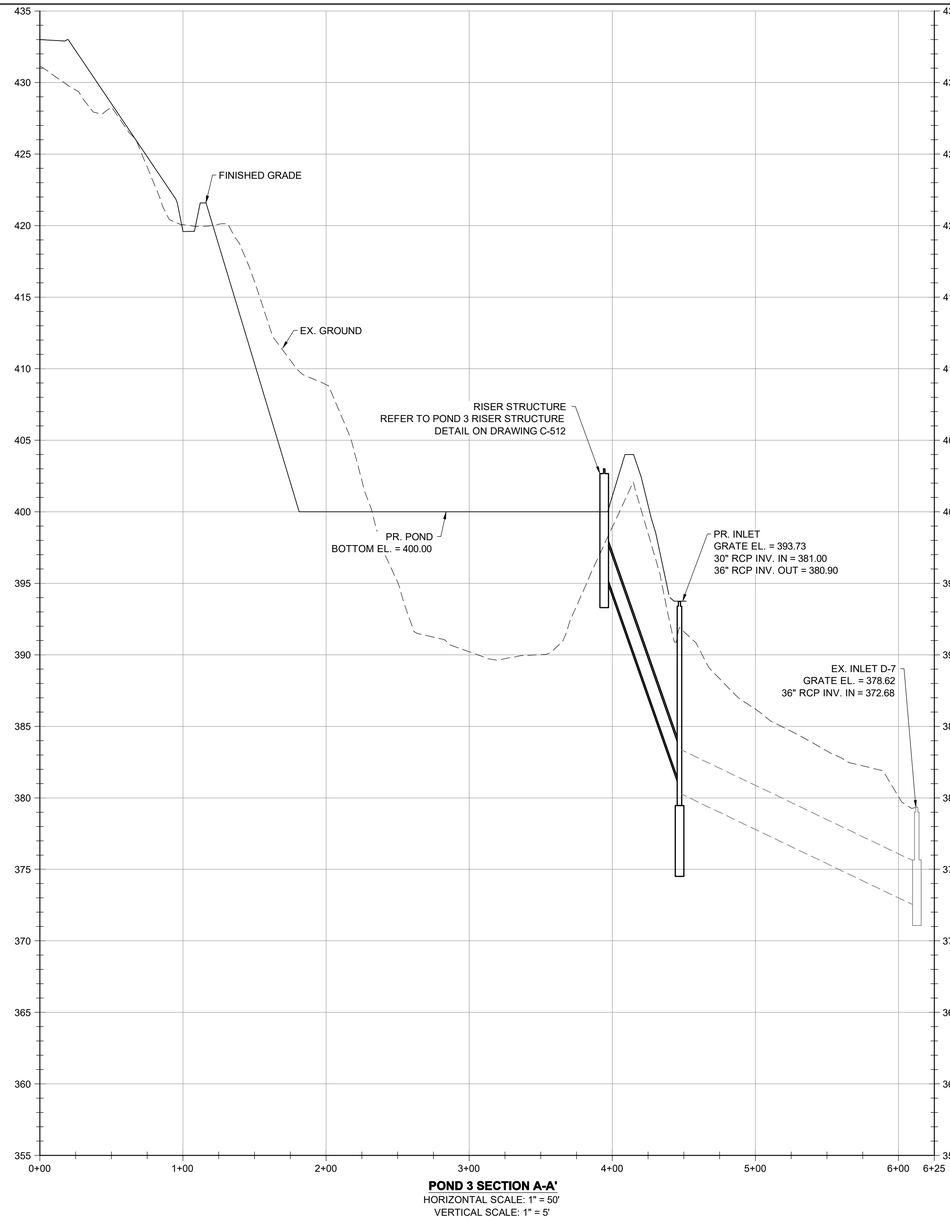
SHEET: 87 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

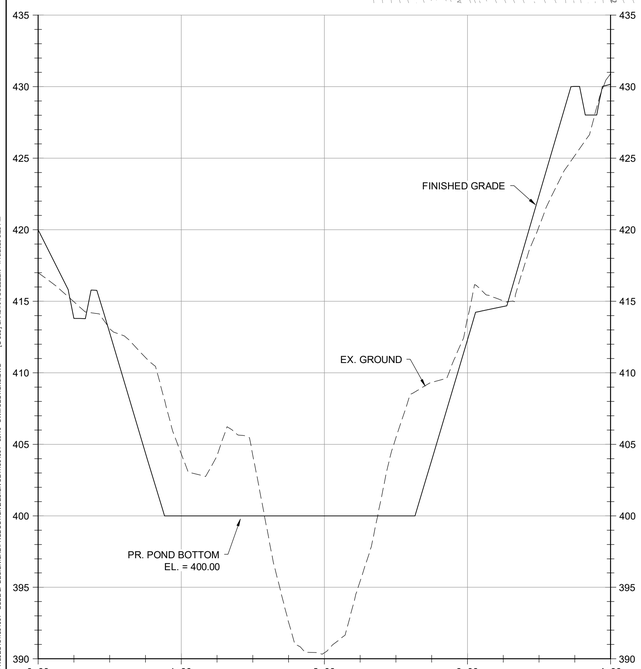
FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 09-09 - SITE CROSS SECTIONS.DWG [C-303] GARDINA, COLLEEN 11/3/2020 3:23 PM



POND 3
SCALE : 1" = 50'



POND 3 SECTION A-A'
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



POND 3 SECTION B-B'
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

GRAPHIC SCALE IN FEET
0 2.5 5 10

GRAPHIC SCALE IN FEET
0 25 50 100

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

STORMWATER MANAGEMENT FACILITY SECTIONS - POND 3

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

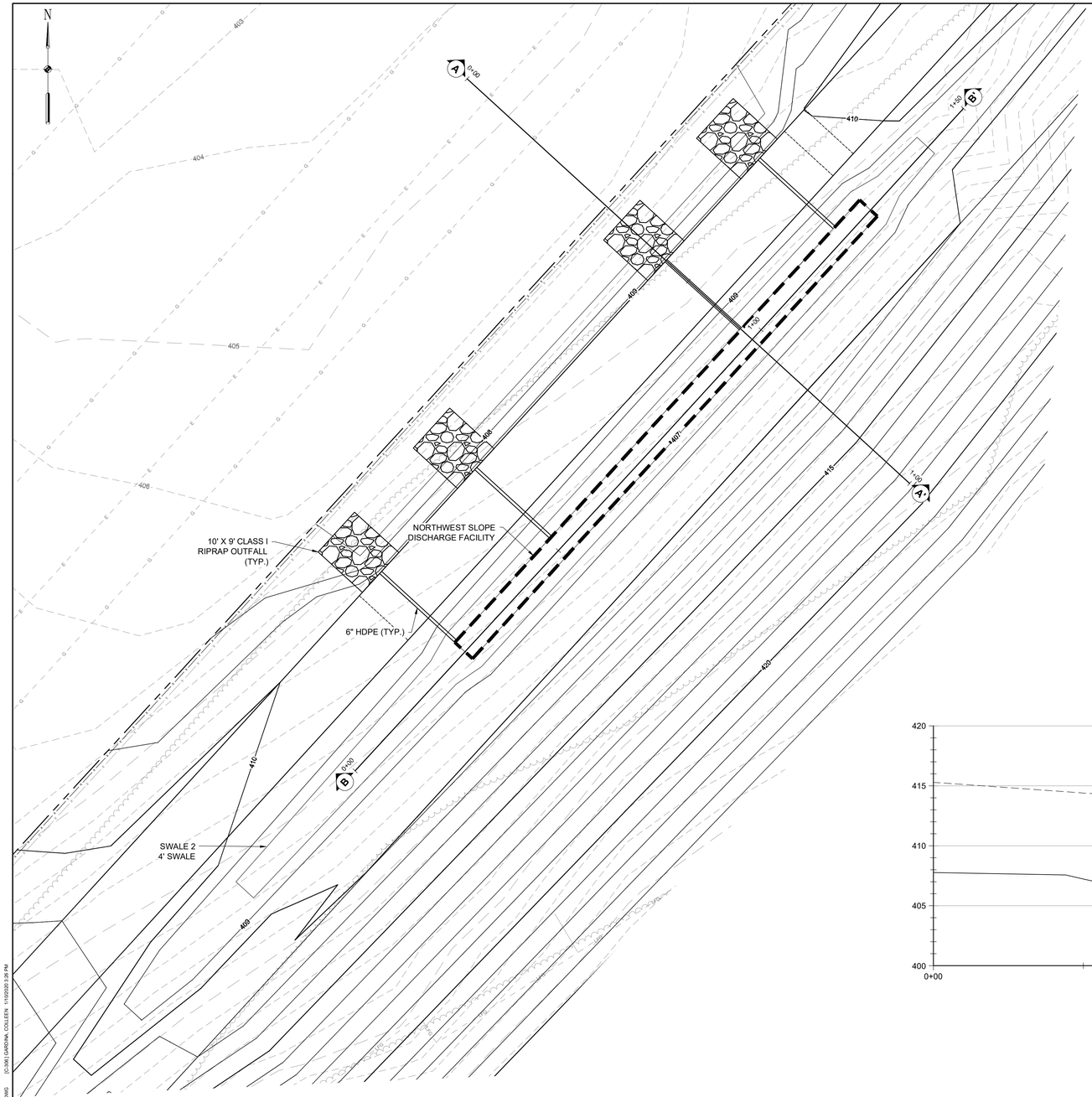
C-305

SHEET: 89 OF 109

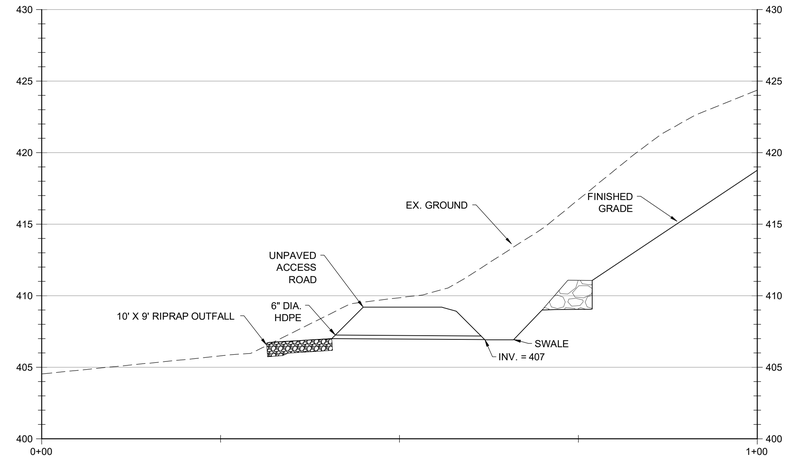
60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 30 OF 35

FILE PATH: O:\PROJECTS\15648\01 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN\SET1\15648101 - 09-10 - SWM SECTIONS.DWG [CJOO] GARDINA, COLLEEN 1/10/2020 3:26 PM



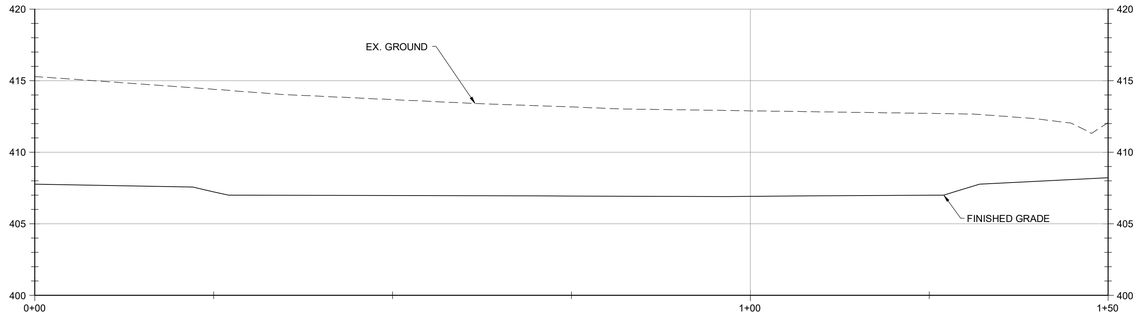
NORTHWEST SLOPE DISCHARGE FACILITY
SCALE: 1" = 10'



NORTHWEST SLOPE DISCHARGE FACILITY SECTION A-A'
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'

NOTE:

1. REFER TO THE NORTHWEST SLOPE DISCHARGE FACILITY DETAIL ON DRAWING C-508 FOR CLOSURE CAP DETAILS. CLOSURE CAP IS NOT SHOWN IN THIS SECTION FOR CLARITY.



NORTHWEST SLOPE DISCHARGE FACILITY SECTION B-B'
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'

0 2.5 5 10
GRAPHIC SCALE IN FEET

0 5 10 20
GRAPHIC SCALE IN FEET

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

STORMWATER MANAGEMENT FACILITY SECTIONS - NORTHWEST SLOPE DISCHARGE FACILITY

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-306

SHEET: 90 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 31 OF 35

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 08-10 - SWM SECTIONS.DWG (C-306) GARDINA, COLLEEN 1/10/2020 3:36 PM

SITE DETAILS INDEX

DRAWING NO.	DETAIL
C-502	CHAIN-LINK FENCE BRACE & ROD DETAIL
C-502	CHAIN-LINK FENCE DETAIL
C-502	DOUBLE SWING GATE DETAIL
C-502	EXTENSION ARM DETAILS
C-502	PERSONNEL GATE DETAIL
C-503	BASE OF NORTHWEST SLOPE ACCESS ROAD DETAIL
C-503	GRAVEL ROAD SECTION - CROWNED
C-503	GRAVEL ROAD SECTION - SUPERELEVATED
C-503	MONITORING WELL PROTECTION DETAIL
C-503	TYPICAL BOLLARD DETAIL

DEMOLITION DETAILS INDEX

DRAWING NO.	DETAIL
	THIS DRAWING NOT INCLUDED IN 60% SUBMITTAL

EXCAVATION/GRADING DETAILS INDEX

DRAWING NO.	DETAIL
C-505	EXISTING COVER SOIL REMOVAL DETAIL
C-505	EXISTING WASTE RELOCATION AND SUBGRADE CONSTRUCTION DETAIL
C-506	SIDE SLOPE EXCAVATION DETAIL
C-506	SIDE SLOPE EXCAVATION DETAIL - PLAN VIEW
C-507	EXCAVATION/GRADING DETAILS
C-507	SETTLEMENT PLATE

CLOSURE CAP DETAILS INDEX

DRAWING NO.	DETAIL
C-508	EARTH CLOSURE CAP SECTION
C-508	GEOSYNTHETIC CLOSURE CAP SECTION - ALTERNATE
C-508	GEOSYNTHETIC CLOSURE CAP SECTION - BASE BID
C-508	NORTHWEST SLOPE DETAIL
C-508	NORTHWEST SLOPE DISCHARGE FACILITY DETAIL
C-509	GABION DOWNCHUTE
C-509	GABION DOWNCHUTE SECTION
C-509	GEOSYNTHETIC CLOSURE CAP SECTION THROUGH BENCH
C-509	GEOSYNTHETIC CLOSURE CAP SECTION TIE-IN TO SWALE

DRAINAGE DETAILS INDEX

DRAWING NO.	DETAIL
C-510	"A" MANHOLE DETAIL
C-510	"E" INLET DETAIL
C-510	MANHOLE AND INLET STEPS DETAIL

STORMWATER MANAGEMENT DETAILS INDEX

DRAWING NO.	DETAIL
C-512	POND 3 - RISER STRUCTURE DETAIL
C-512	TYPICAL REINFORCING AROUND CIRCULAR OPENING
C-512	TYPICAL REINFORCING AROUND ORIFICE OPENING

EROSION AND SEDIMENT CONTROLS DETAILS INDEX

DRAWING NO.	DETAIL
C-514	MOUNTABLE BERM
C-514	REMOVAL PUMPING STATION
C-514	RIPRAP INFLOW PROTECTION
C-514	STABILIZED CONSTRUCTION ENTRANCE
C-514	SUPER SILT FENCE
C-514	TEMPORARY GABION OUTLET STRUCTURE

LANDFILL GAS DETAILS INDEX

DRAWING NO.	DETAIL
C-516	EXISTING LANDFILL GAS EXTRACTION WELL ABANDONMENT
C-516	EXISTING LANDFILL GAS EXTRACTION WELL MODIFICATION - EXTEND
C-516	EXISTING LANDFILL GAS EXTRACTION WELL MODIFICATION - SHORTEN
C-516	EXISTING REMOTE LANDFILL GAS EXTRACTION WELL ABANDONMENT
C-516	GRAVEL PAD
C-516	LANDFILL GAS WELLHEAD
C-516	PROPOSED LANDFILL GAS EXTRACTION WELL
C-516	REMOTE LANDFILL GAS WELLHEAD
C-517	CONDENSATE DRAIN
C-517	EXTRACTION WELL LOCATIONS AT BENCHES
C-517	GAS COLLECTION PIPING FLANGE CONNECTION DETAIL
C-517	LANDFILL GAS HEADER ISOLATION VALVE
C-517	LATERAL CONNECTION
C-517	LLDPE CLOSURE LINER PENETRATION DETAIL
C-517	PIPING TRENCH DETAIL (OUTSIDE LANDFILL CAP)
C-517	PIPING TRENCH DETAIL (WITHIN LANDFILL)
C-518	LANDFILL GAS PIPE SWALE CROSSING
C-518	LANDFILL GAS PIPE ROAD CROSSING
C-519	EXISTING LANDFILL GAS EXTRACTION WELLS TO BE ABANDONED
C-519	EXISTING LANDFILL GAS EXTRACTION WELLS TO BE MODIFIED
C-519	EXISTING REMOTE LANDFILL GAS EXTRACTION WELLS TO BE MODIFIED
C-519	PROPOSED LANDFILL GAS EXTRACTION WELLS
C-519	PROPOSED REMOTE LANDFILL GAS EXTRACTION WELLS

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

DETAIL INDEX SHEET

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

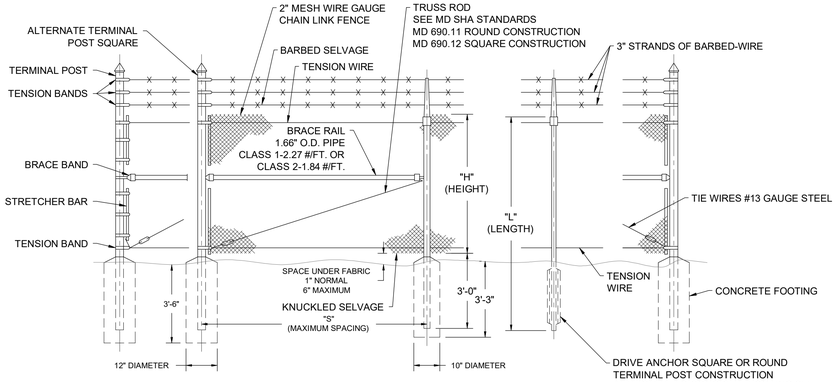
PROJECT NUMBER: 1564601

C-501

SHEET: 91 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN\SET1\564601 - 10-00_DETAILS.DWG [C-501] GARDUNA, COLLEEN 1/10/2020 3:24 PM

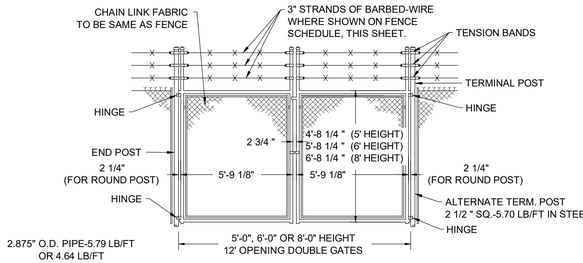


"H" HEIGHT OF FENCE		5' - 0" RURAL	6' - 0"	8' - 0"
"S" POST SPACING-MAX.		12' - 0"	10' - 0"	10' - 0"
"L" LENGTH INCL. CAP		7' - 8" MIN.	8' - 8" MIN.	10' - 8"
LINE POSTS	ROUND-CLASS 1 ROUND-CLASS 2	1.90" O.D.@2.72 #/FT 1.90" O.D.@2.28 #/FT	2.375" O.D.@3.65 #/FT 2.375" O.D.@3.12 #/FT	2.375" O.D.@3.65 #/FT 2.375" O.D.@3.12 #/FT
	H-BEAM-STEEL	2.25"x1.17"@3.26 #/FT	2.25"x1.17"@3.26 #/FT	2.25"x1.17"@3.26 #/FT
	H-BEAM-ALUM.	2.25"x1.95"@1.25 #/FT	2.25"x1.95"@1.25 #/FT	2.25"x1.95"@1.25 #/FT
	C-POST-STEEL	2.25"x1.70"@2.73 #/FT	2.25"x1.70"@2.73 #/FT	2.25"x1.70"@2.73 #/FT
TERM. POSTS	ROUND-CLASS 1 ROUND-CLASS 2	2.375" O.D.@3.65 #/FT 2.375" O.D.@3.12 #/FT	2.875" O.D.@5.79 #/FT 2.875" O.D.@4.64 #/FT	2.875" O.D.@5.79 #/FT 2.875" O.D.@4.64 #/FT
	SQUARE-ALT.	2.00" SQ.@3.60 #/FT	2.50" SQ.@5.70 #/FT	2.50" SQ.@5.70 #/FT

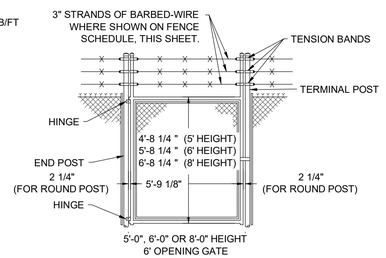
CHAIN-LINK FENCE DETAIL
NOT TO SCALE

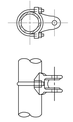
NOTES:

1. BASED ON MD SHA STANDARD DETAIL NO. MD 690.01.
2. ALL ROUND LINE POSTS TO BE CAPPED WITH LOOP CAPS. TENSION WIRE TO RUN THROUGH LOOPS. CAPS TO BE FASTENED TO ALL TERMINAL POSTS WITH TENSION BANDS.
3. FASTEN FABRIC TO TENSION WIRE WITH HOG RINGS @18"+ C/C. HOG RINGS TO BE 12 1/2 GAUGE GALVANIZED STEEL WIRE.
4. MATERIALS TO MEET REQUIREMENTS OF AASHTO M 181.
5. REFER TO MD SHA STANDARD SPECIFICATION 914.01 WHEN VINYL IS SPECIFIED.
6. THE COLOR OF THE COATING SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.



GATE FRAME
1.90" O.D. PIPE-2.72 LB/FT
OR 2.28 LB/FT



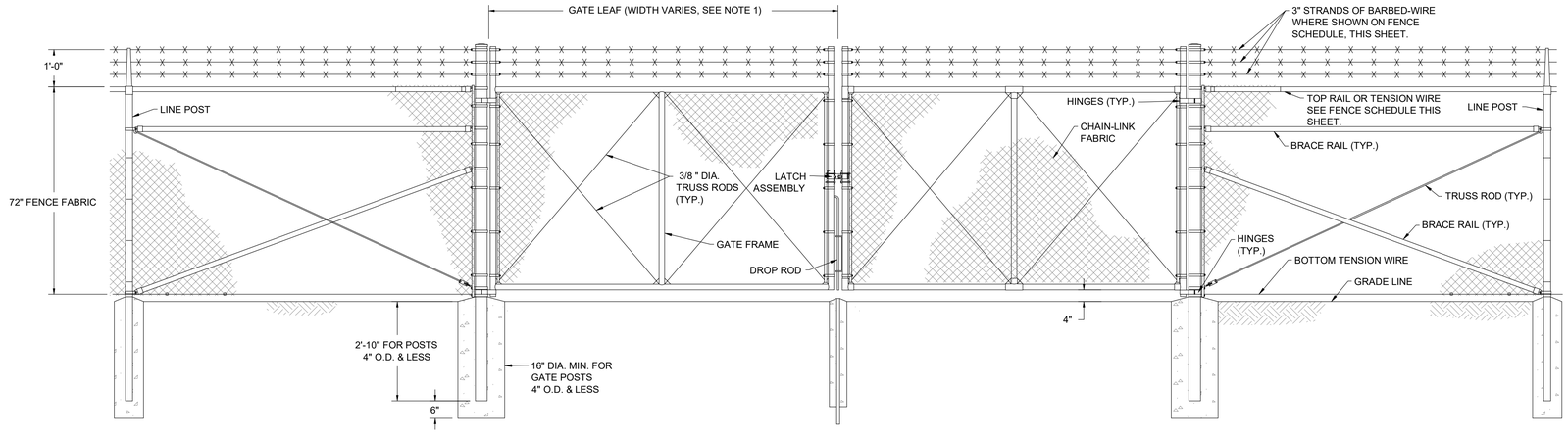


ROUND POST HINGE

PERSONNEL GATE DETAIL
NOT TO SCALE

NOTE:

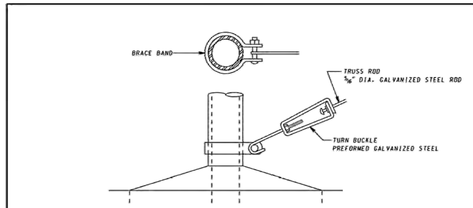
1. BASED ON MD SHA STANDARD DETAIL NO. MD 692.01.



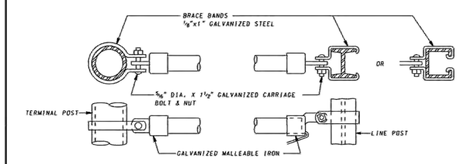
DOUBLE SWING GATE DETAIL
NOT TO SCALE

NOTE:

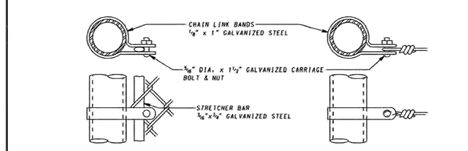
1. A GATE LEAF SCHEDULE WILL BE INCLUDED IN FUTURE DESIGN SUBMITTALS.



TRUSS BRACE ATTACHMENT FOR ROUND CONSTRUCTION



BRACE RAIL ATTACHMENT FOR ROUND CONSTRUCTION



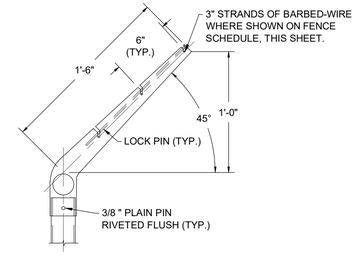
STRETCHER ROD ATTACHMENT | **ATTACHMENT FOR BARB WIRE OR TENSION WIRE**

SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT

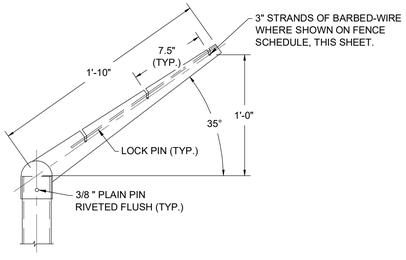
APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVED	12-1-70	APPROVED 9-14-71
REVISED	10-1-01	REVISED 8-1-94
REVISED		REVISED
REVISED		REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
CHAIN LINK FENCE
BRACE & ROD ATTACHMENTS–
ROUND CONSTRUCTION
STANDARD NO. MD 690.11

CHAIN-LINK FENCE BRACE & ROD DETAIL
NOT TO SCALE



LINE POST



CORNER POST

EXTENSION ARM DETAILS
NOT TO SCALE

REVISIONS | NO. | DATE | BY | DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

SITE DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

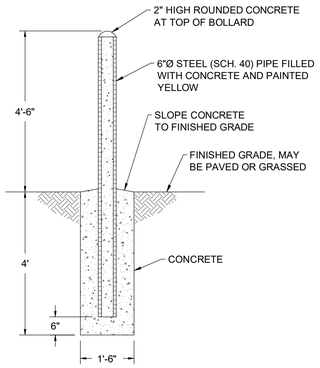
PROJECT NUMBER: 1564601

C-502

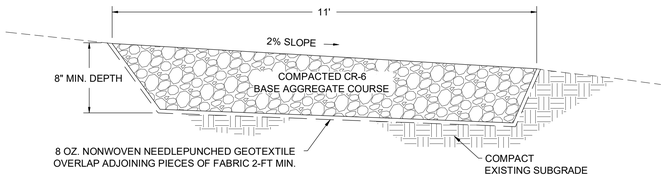
SHEET: 92 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10-00 - DETAILS.DWG [C-502] DARDINA, COLLEEN 10/2/2020 3:24 PM



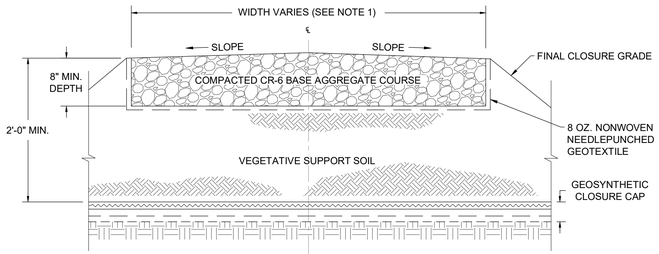
TYPICAL BOLLARD DETAIL
NOT TO SCALE



BASE OF NORTHWEST SLOPE ACCESS ROAD DETAIL
NOT TO SCALE

NOTE:

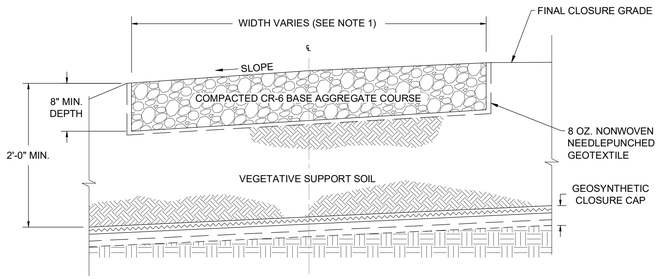
1. PROVIDE POSITIVE DRAINAGE ACROSS ROAD SURFACE TO DOWN GRADIENT AREAS.



GRAVEL ROAD SECTION - CROWNED
NOT TO SCALE

NOTE:

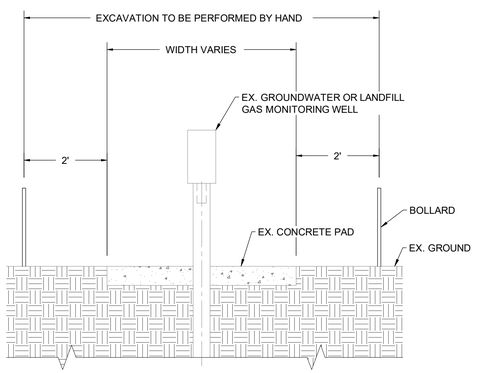
1. ROAD WIDTH SHALL MATCH GRADING PROVIDED ON PLANS.



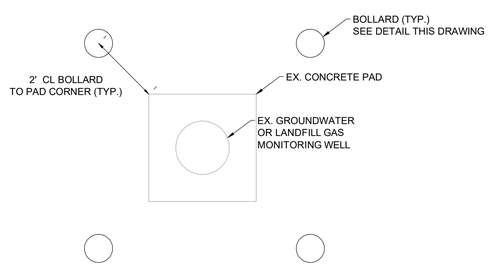
GRAVEL ROAD SECTION - SUPERELEVATED
NOT TO SCALE

NOTE:

1. ROAD WIDTH SHALL MATCH GRADING PROVIDED ON PLANS.



SECTION
NOT TO SCALE



PLAN
NOT TO SCALE

MONITORING WELL PROTECTION DETAIL
NOT TO SCALE

NOTE:

1. INSTALL BOLLARDS AROUND THE EXISTING MONITORING WELL AT A DISTANCE OF 2-FT FROM THE EXISTING CONCRETE PAD. HAND DIG TO PERFORM EXCAVATION IN THIS AREA.

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

SITE DETAILS

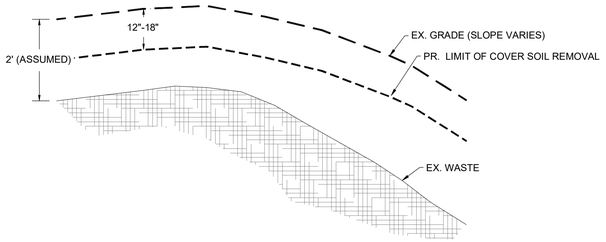
EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020
PROJECT NUMBER: 1564601

C-503
SHEET: 93 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

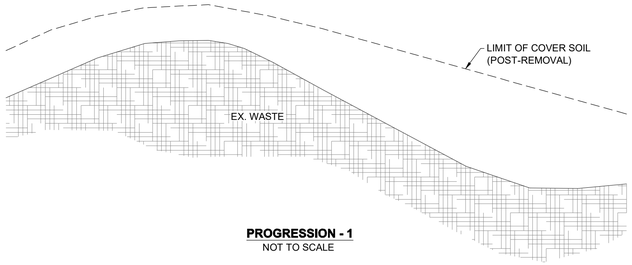
FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10.00 - DETAILS.DWG [C-503] GARDINA, COLLEEN 1/10/2020 3:27 PM



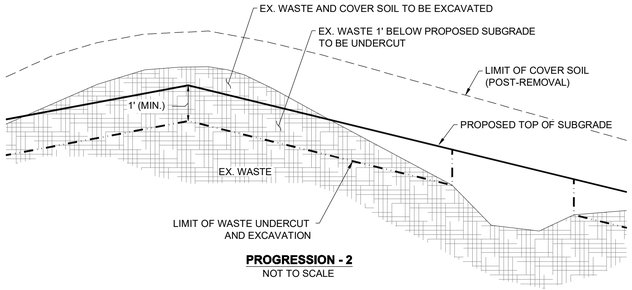
EXISTING COVER SOIL REMOVAL DETAIL
NOT TO SCALE

NOTES:

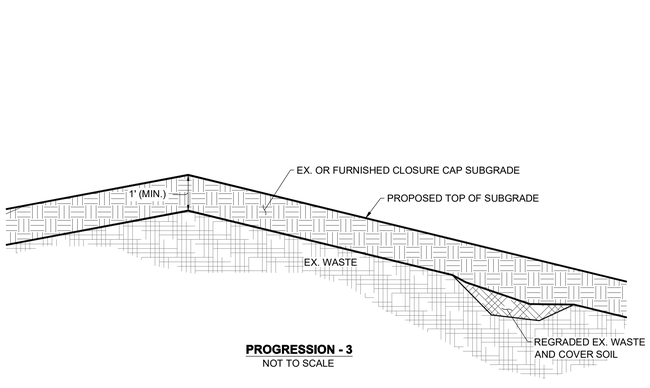
1. EXISTING COVER SOIL THICKNESS IS GENERALLY 2 FEET. TEST PIT INFORMATION CAN BE FOUND IN APPENDIX A OF SPECIFICATION 31-05-15.
2. REMOVE 12"-18" OF EXISTING COVER SOIL AND STOCKPILE FOR FUTURE USE AS SUBGRADE MATERIAL.
3. NO WASTE MAY BE PRESENT IN STOCKPILED MATERIAL. WOODY VEGETATION/ROOTS MUST BE REMOVED.
4. IF NO WASTE IS ENCOUNTERED AT A DEPTH OF 18" CONTRACTOR MAY DIG DEEPER UNTIL WASTE IS OBSERVED. VISUAL INSPECTION WILL BE REQUIRED TO DETERMINE PRESENCE OF WASTE.



PROGRESSION - 1
NOT TO SCALE

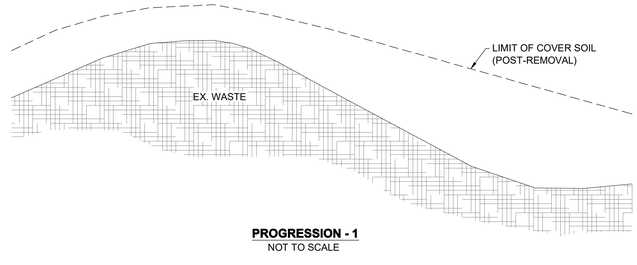


PROGRESSION - 2
NOT TO SCALE

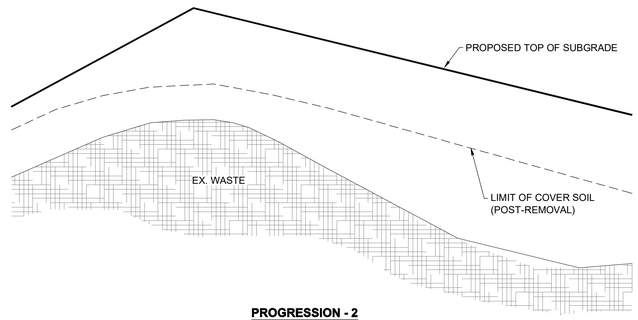


PROGRESSION - 3
NOT TO SCALE

EXISTING WASTE EXCAVATION AND RELOCATION, AND SUBGRADE CONSTRUCTION DETAIL
NOT TO SCALE



PROGRESSION - 1
NOT TO SCALE



PROGRESSION - 2
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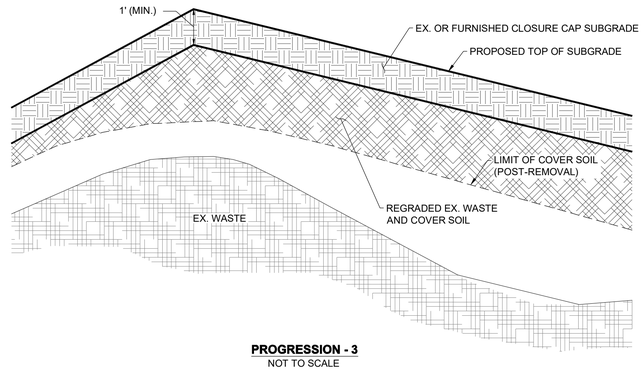


PROGRESSION - 3
NOT TO SCALE

EXISTING WASTE PLACEMENT AND SUBGRADE CONSTRUCTION DETAIL
NOT TO SCALE

NOTES:

1. WASTE MUST REMAIN ON PROPERTY DURING ALL CONSTRUCTION ACTIVITIES.
2. WASTE MUST BE COVERED WITH A TARP OR 6" SOIL EACH DAY. REFER TO SPECIFICATION SECTION 31 05 15.
3. A MINIMUM OF 1 FT CLOSURE CAP SUBGRADE IS REQUIRED OVER THE WASTE. CLOSURE CAP SUBGRADE SOIL SHALL BE PLACED IN MAXIMUM 12-INCH LIFTS.
4. THE CLOSURE CAP SUBGRADE SHALL BE COMPACTED BY 4 PASSES OF A D6 DOZER OR EQUIVALENT.
5. HAZARDOUS OR UNUSUAL WASTE MAY BE ENCOUNTERED. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGEMENT ENGINEER AND REFER TO SPECIFICATION SECTION 02 61 13.
6. THE CONTRACTOR SHALL MONITOR METHANE DURING CONSTRUCTION AND STOP WORK IF LEVELS REACH ACTION LEVELS DOCUMENTED IN THE CONTRACTOR'S AIR MONITORING PROGRAM (SPECIFICATION SECTION 01 45 00).
7. LEACHATE MAY BE ENCOUNTERED DURING WASTE EXCAVATION. CONTRACTOR SHALL DIRECT LEACHATE DRAINAGE BACK INTO THE LANDFILL.
8. NO WASTE MAY BE PLACED OR TRANSPORTED OVER FINISHED SUBGRADE.
9. SOIL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS, TO PROVIDE A STABLE BASE FOR THE GEOSYNTHETICS. THE SURFACE SHALL PROVIDE A SMOOTH, FIRM, UNYIELDING FOUNDATION FOR THE GEOSYNTHETICS, WITH NO SUDDEN, SHARP, OR ABRUPT CHANGES OR BREAKS IN GRADE. NO STANDING WATER OR EXCESSIVE MOISTURE SHALL BE ALLOWED.
10. NO PROTRUDING STONES OR OTHER DEBRIS SHALL BE ON THE SUBGRADE SURFACE. CONSTRUCTION EQUIPMENT TIRE OR TRACK DEFORMATION BENEATH THE PROPOSED LINER SYSTEM SHALL NOT EXCEED 1 INCH IN DEPTH.

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXCAVATION/GRADING DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

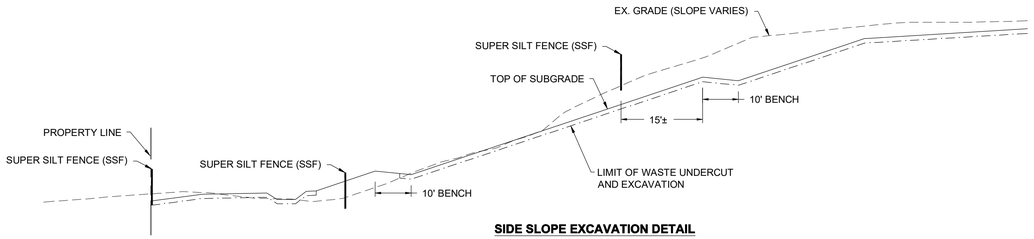
PROJECT NUMBER: 1564601

C-505

SHEET: 95 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

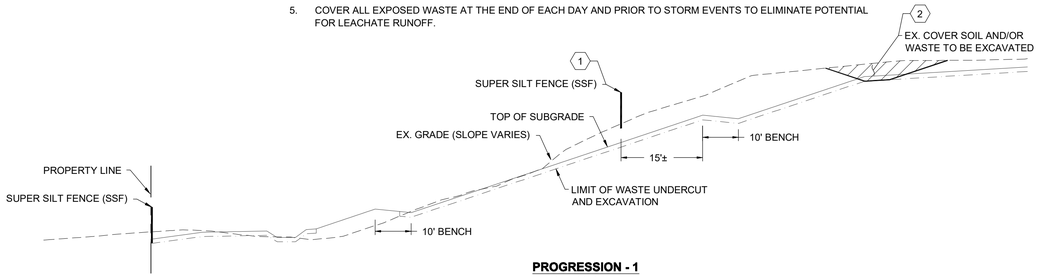
FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10-00_DETAILS.DWG [C-505] LAMONNA, COLLEEN 1/3/2020 3:27 PM



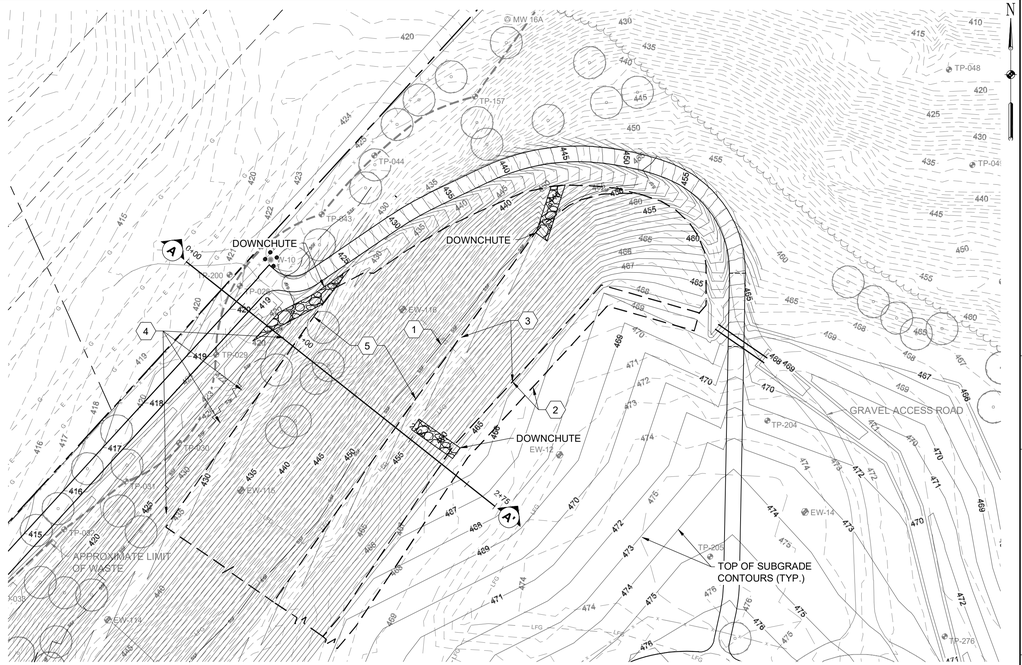
SIDE SLOPE EXCAVATION DETAIL
NOT TO SCALE

NOTE:

1. INSTALL SUPER SILT FENCE BEFORE EXCAVATION BEGINS.
2. BEGIN EXCAVATION AT THE TOP OF THE SLOPE AND PROGRESS DOWN THE SLOPE, BASED ON THE SEQUENCE SHOWN ON DRAWING C-507.
3. MAINTAIN SUMP CONDITIONS TO PROMOTE LEACHATE DRAINAGE BACK INTO THE LANDFILL.
4. PLACE CLOSURE CAP SUBGRADE OVER THE REGRADED EX. WASTE AND COVER SOIL AS EXCAVATION PROGRESSES. REFER TO EXISTING WASTE RELOCATION AND SUBGRADE CONSTRUCTION DETAIL ON DRAWING C-505.
5. COVER ALL EXPOSED WASTE AT THE END OF EACH DAY AND PRIOR TO STORM EVENTS TO ELIMINATE POTENTIAL FOR LEACHATE RUNOFF.

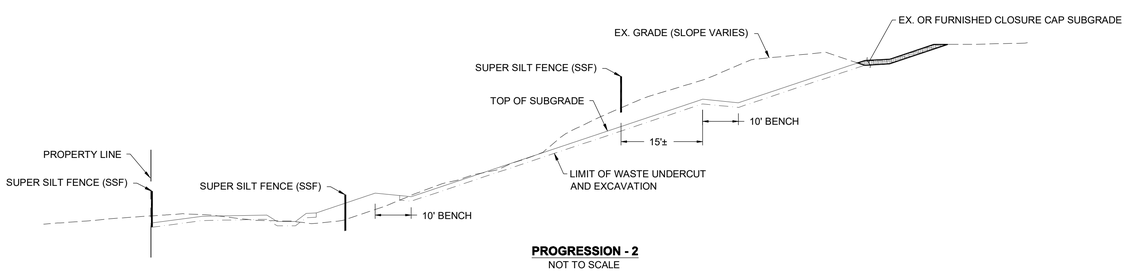


PROGRESSION - 1
NOT TO SCALE



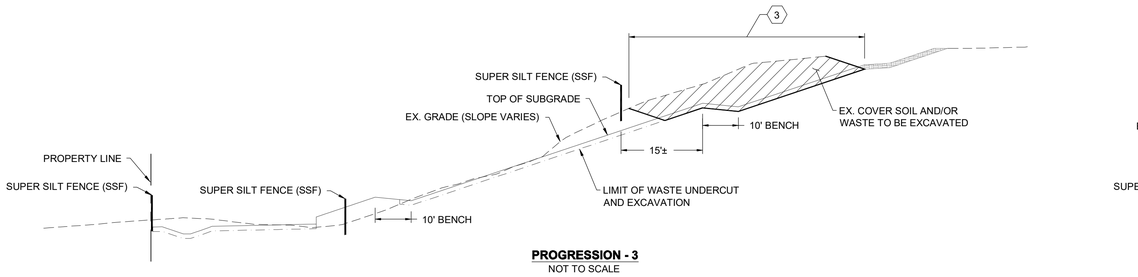
SIDE SLOPE EXCAVATION DETAIL - PLAN VIEW
SCALE: 1" = 50'

0 25 50 100
GRAPHIC SCALE IN FEET

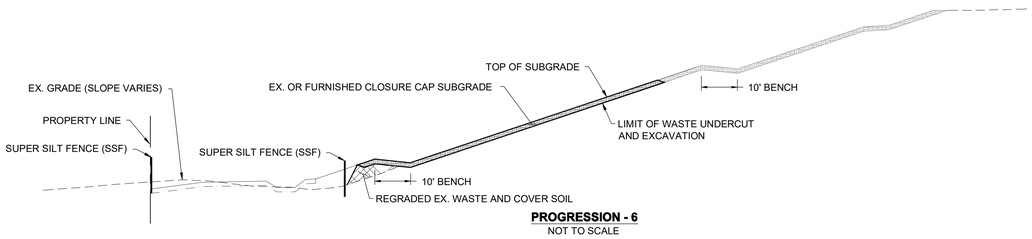


PROGRESSION - 2
NOT TO SCALE

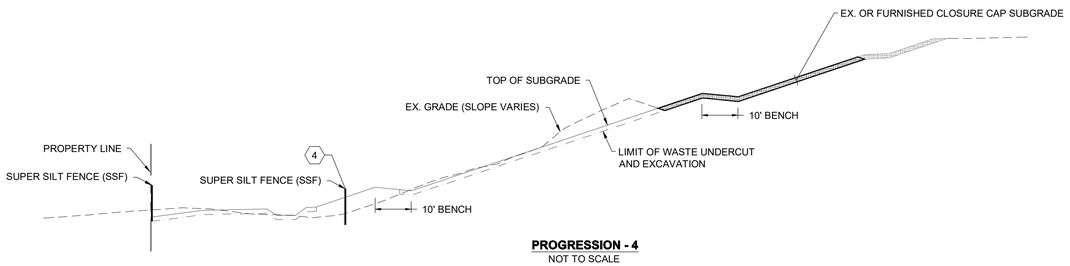
PROGRESSION - 5
NOT TO SCALE



PROGRESSION - 3
NOT TO SCALE



PROGRESSION - 6
NOT TO SCALE



PROGRESSION - 4
NOT TO SCALE

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXCAVATION/GRADING DETAILS

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225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

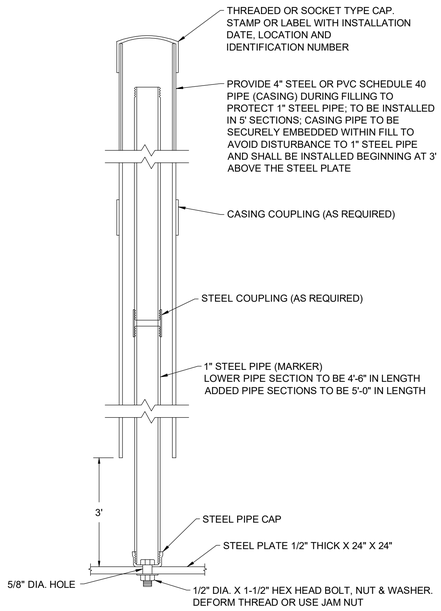
PROJECT NUMBER: 1564601

C-506

SHEET: 96 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

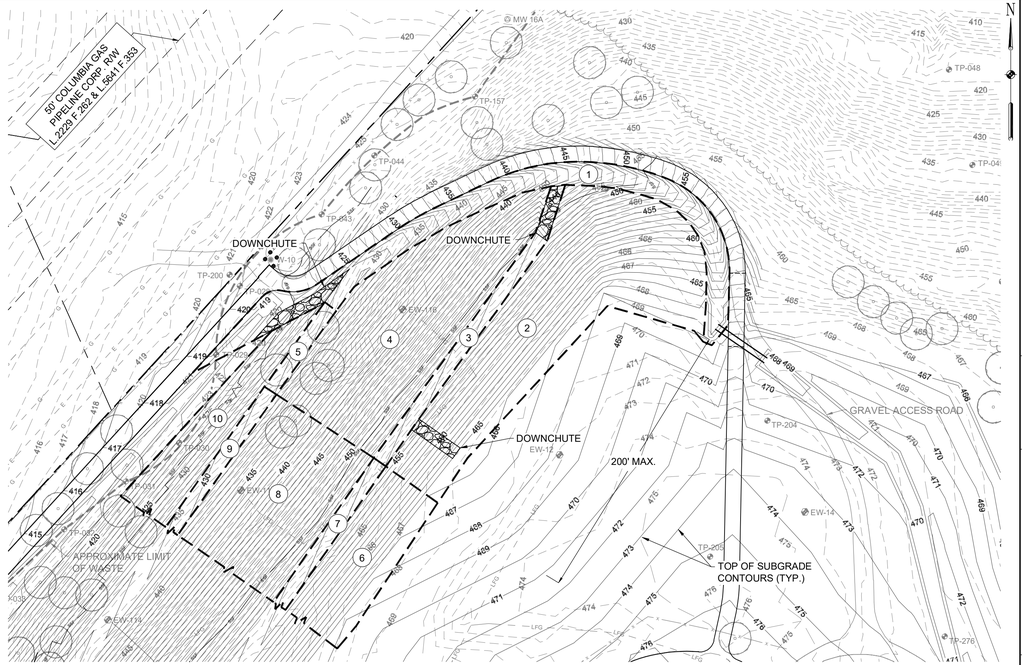
FILE PATH: O:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10-50- DETAILS.DWG (C-506) DARIONA COLLEEN 1/10/2020 3:27 PM



SETTLEMENT PLATE DETAIL
NOT TO SCALE

NOTES:

1. INSTALL SETTLEMENT PLATES AT THE LOCATIONS SHOWN ON DRAWINGS C-135 TO C-144.
2. REFER TO SPECIFICATION SECTION 31 09 13 FOR SETTLEMENT PLATE INSTALLATION AND MONITORING INSTRUCTIONS.
3. A DETAIL FOR LINER PENETRATION WILL BE ADDED IN FUTURE DESIGN SUBMITTALS.



SIDE SLOPE SUGGESTED SEQUENCE OF CONSTRUCTION - PLAN VIEW
SCALE: 1" = 50"

0 25 50 100
GRAPHIC SCALE IN FEET

NOTES:

1. CONSTRUCT SWALE USING SAME-DAY STABILIZATION IN ACCORDANCE WITH SPECIFICATION SECTION 31 25 00, EROSION AND SEDIMENT CONTROL.
2. EXCAVATE TOP OF SLOPE AS SHOWN IN PROGRESSION 1, 2, AND 3 ON DRAWING C-506.
3. CONSTRUCT BENCH USING SAME-DAY STABILIZATION IN ACCORDANCE WITH SPECIFICATION SECTION 31 25 00, EROSION AND SEDIMENT CONTROL.
4. CONTINUE EXCAVATION DOWN THE SLOPE AS SHOWN IN PROGRESSION 5 AND 6 ON DRAWING C-506.
5. CONSTRUCT BENCH USING SAME-DAY STABILIZATION IN ACCORDANCE WITH SPECIFICATION SECTION 31 25 00, EROSION AND SEDIMENT CONTROL.
6. EXCAVATE TOP OF SLOPE AS SHOWN IN PROGRESSION 1, 2, AND 3 ON DRAWING C-506.
7. CONSTRUCT BENCH USING SAME-DAY STABILIZATION IN ACCORDANCE WITH SPECIFICATION SECTION 31 25 00, EROSION AND SEDIMENT CONTROL.
8. CONTINUE EXCAVATION DOWN THE SLOPE AS SHOWN IN PROGRESSION 5 AND 5 ON DRAWING C-506.
9. CONSTRUCT BENCH USING SAME-DAY STABILIZATION IN ACCORDANCE WITH SPECIFICATION SECTION 31 25 00, EROSION AND SEDIMENT CONTROL.
10. CONTINUE EXCAVATION DOWN THE SLOPE AS SHOWN IN PROGRESSION 5 AND 6 ON DRAWING C-506.

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EXCAVATION/GRADING DETAILS

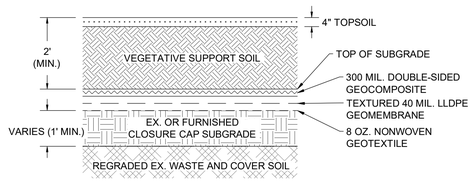
EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020
PROJECT NUMBER: 1564601

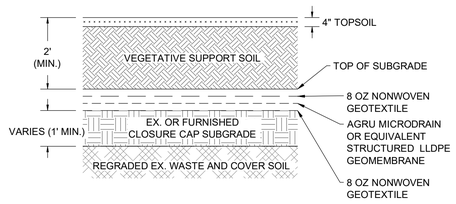
C-507
SHEET: 97 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

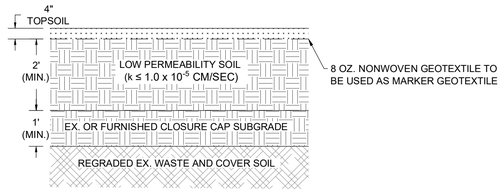
FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10.00 - DETAILS.DWG [C-507] GARDINA, COLLEEN 1/10/2020 3:27 PM



GEOSYNTHETIC CLOSURE CAP SECTION - BASE BID
NOT TO SCALE



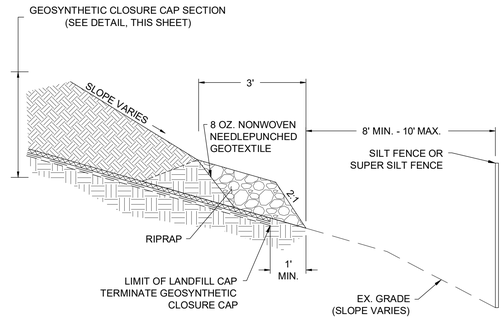
GEOSYNTHETIC CLOSURE CAP SECTION - ALTERNATE
NOT TO SCALE



EARTH CLOSURE CAP SECTION
NOT TO SCALE

NOTE:

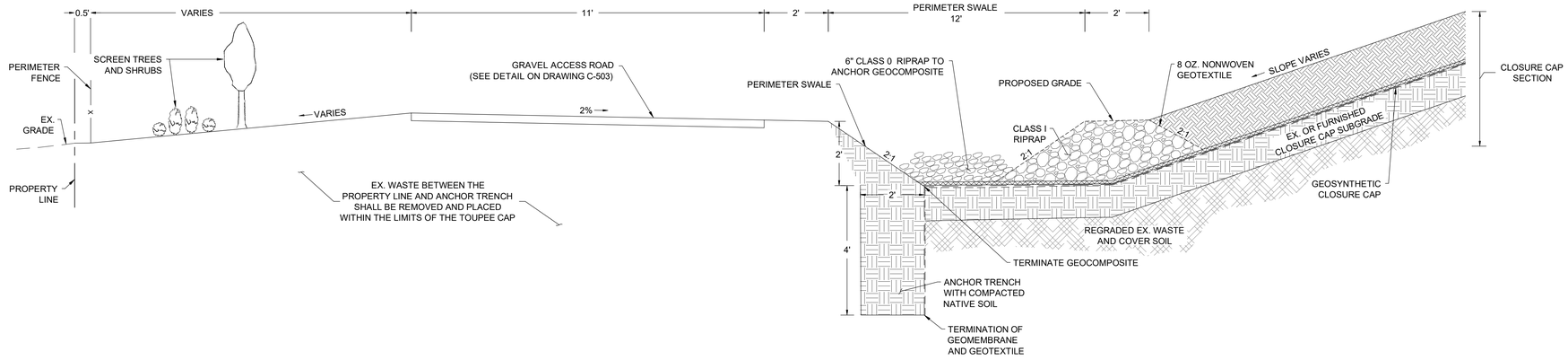
1. THIS DETAIL APPLIES TO POND 3.



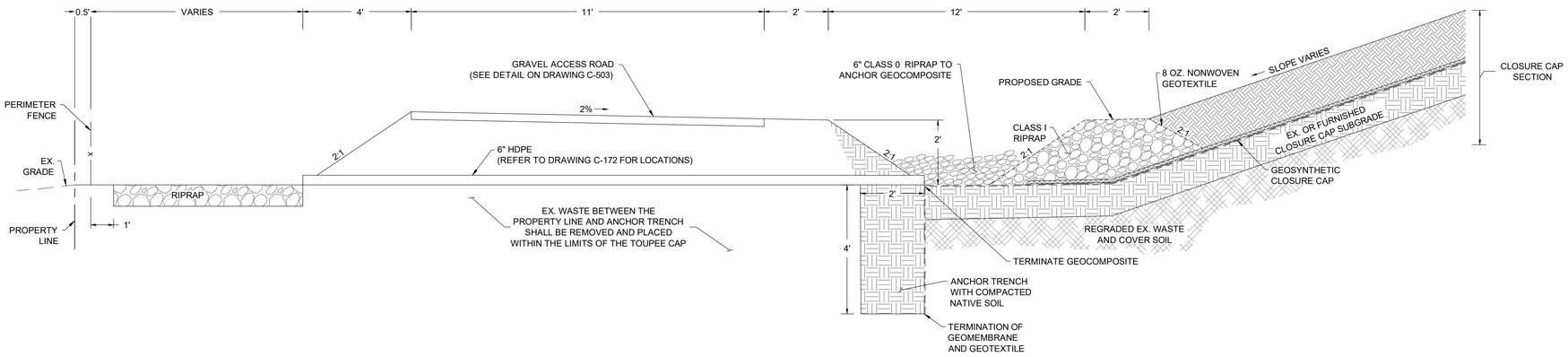
GEOSYNTHETIC CLOSURE CAP TERMINATION DETAIL
NOT TO SCALE

NOTE:

1. THIS DETAIL APPLIES IN ALL AREAS EXCEPT THE NORTHWEST SLOPE.



NORTHWEST SLOPE DETAIL
NOT TO SCALE



NORTHWEST SLOPE DISCHARGE FACILITY DETAIL
NOT TO SCALE

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

CLOSURE CAP DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

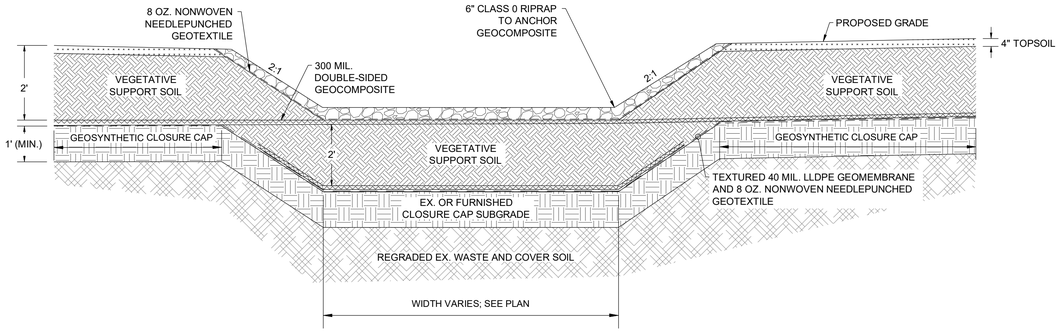
PROJECT NUMBER: 1564601

C-508

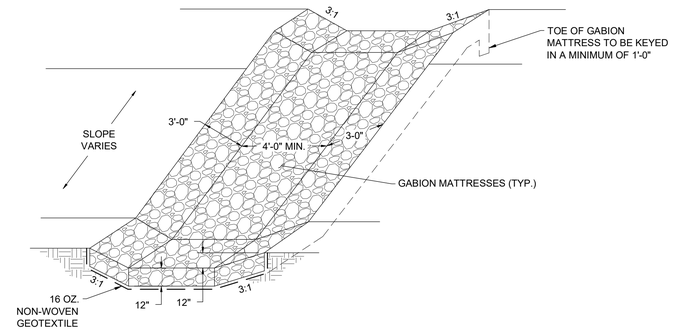
SHEET: 98 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

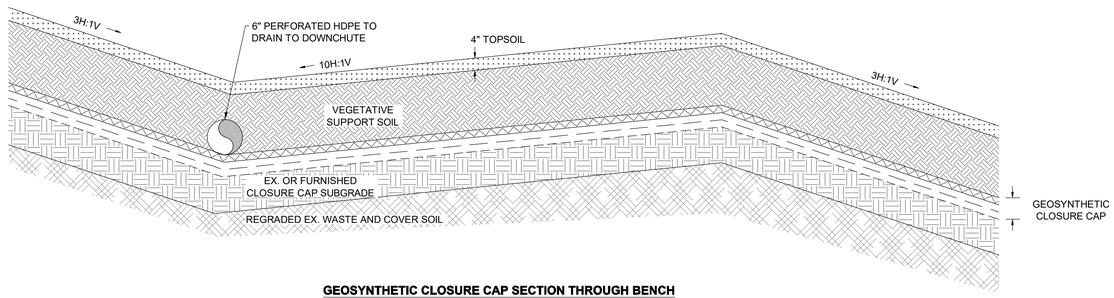
FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIATION\CADD\PRODUCTION\DESIGN SET\1564601 - 50-00 - DETAILS.DWG [C-508] GARDNA, COLLEEN 11/20/2020 3:37 PM



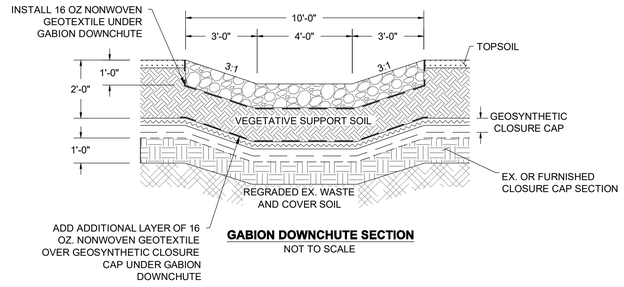
GEOSYNTHETIC CLOSURE CAP SECTION TIE-IN TO SWALE
NOT TO SCALE



GABION DOWNCHUTE
NOT TO SCALE



GEOSYNTHETIC CLOSURE CAP SECTION THROUGH BENCH
NOT TO SCALE



GABION DOWNCHUTE SECTION
NOT TO SCALE

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

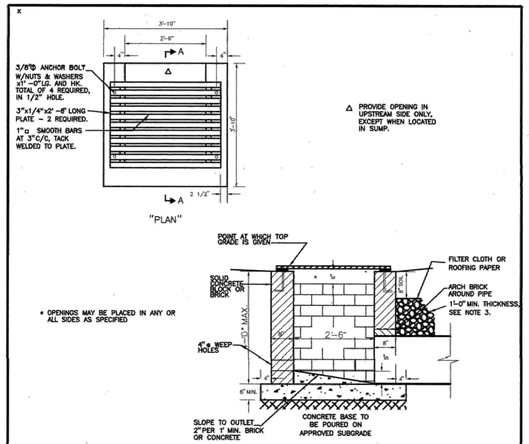
CLOSURE CAP DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020
PROJECT NUMBER: 1564601

C-509
SHEET: 99 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION



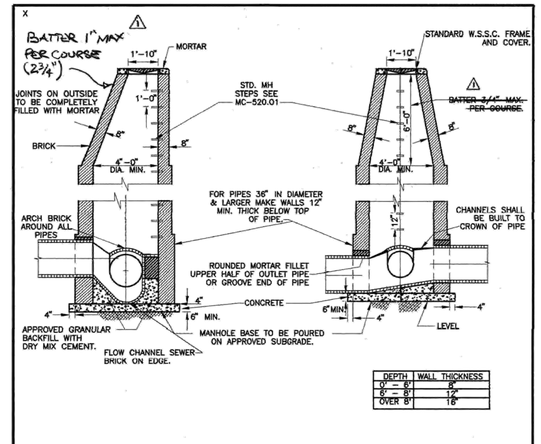
GENERAL NOTES

1. E INLET TO BE USED AS TERMINAL INLETS ONLY.
2. USE SOLID MASONRY (BRICK OR CONCRETE BLOCK) OR POURED CONCRETE FOR WALLS.
3. INSTALL FOUNDATION DRAINAGE MATERIAL AROUND STRUCTURE FROM BOTTOM OF WEEP HOLES TO WITHIN 8" OF SURFACE. MIN 1' FROM WALL.
4. WEEP HOLES TO BE PLACED IN WALL OPPOSITE OUTLET PIPE 5" ABOVE PIPE INVERT. COVER OPENING WITH 1/2" HARDWARE CLOTH.
5. MORTAR SHALL CONFORM TO ASTM SPECIFICATION C 270 TYPE M.
6. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION FOR MATERIALS AND METHODS OF CONSTRUCTION.
7. f'c=3,500 PSI AT 28 DAYS.

APPROVED JAN 5/96 DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
DIRECTOR, DEPT. OF TRANS.		"E" INLET
CHIEF, DIV. OF ENG. SERVICES		STANDARD NO. MC-504.01

P:\MCDTSTD\STDSEED 7-1-94 10&09 am EST

"E" INLET DETAIL
NOT TO SCALE



DEPTH	WALL THICKNESS
0' - 6'	8"
6' - 8'	12"
OVER 8'	16"

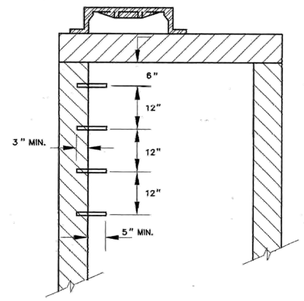
GENERAL NOTES

1. REFER TO MARYLAND STATE HIGHWAY ADMINISTRATION FOR MATERIALS AND METHODS OF CONSTRUCTION.
2. USE SOLID MASONRY (BRICK OR CONCRETE BLOCK) OR POURED CONCRETE FOR WALLS.
3. PARGE OUTSIDE WALLS.
4. MORTAR SHALL CONFORM TO ASTM SPECIFICATION C270 TYPE M.
5. f'c =3,500 P.S.I. at 28 DAYS.
6. FOR PIPES LARGER THAN 30" PROVIDE STEPS IN CHANNELS OF STRUCTURES. SEE STANDARD DETAIL STANDARD MC-520.02.

APPROVED JAN 5/96 DATE	REVISED Δ CORRECTED MAX BATTER 10/25/12	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
DIRECTOR, DEPT. OF TRANS.		"A" MANHOLE
CHIEF, DIV. OF ENG. SERVICES		STANDARD NO. MC-510.01

P:\MCDTSTD\MC510A 7-18-94 8&10 am EST

"A" MANHOLE DETAIL
NOT TO SCALE



GENERAL NOTES

1. STEPS ARE TO BE MADE OF: (1) CAST IRON, 1 INCH SQUARE ; (2) 3/8 INCH STEEL ROD EMBEDDED IN POLYPROPYLENE PLASTIC ; OR (3) ALUMINUM ALLOY, 7/8 INCH BY 13/16 INCH WITH A MINIMUM EMBEDMENT OF 3 INCHES, A MINIMUM PROJECTION OF 5 INCHES, AND A MINIMUM WIDTH OF 10 INCHES.
2. STEPS SHALL BE PLACED IN VERTICAL ALIGNMENT, 12 INCHES APART, AND SHALL ALIGN WITH THE COVER OPENING.
3. STEPS ARE NOT REQUIRED IN STRUCTURES LESS THAN 4 FEET IN DEPTH.

APPROVED JAN 5/96 DATE	REVISED	MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION
DIRECTOR, DEPT. OF TRANS.		MANHOLE AND INLET STEPS
CHIEF, DIV. OF ENG. SERVICES		STANDARD NO. MC-520.01

P:\MCDTSTD\STDS5A 6-24-94 10&07 pm EST

MANHOLE AND INLET STEPS DETAIL
NOT TO SCALE

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

STORMDRAIN DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

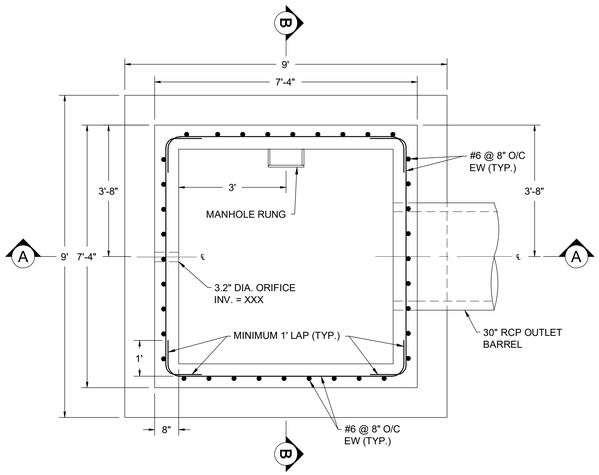
PROJECT NUMBER: 1564601

C-510

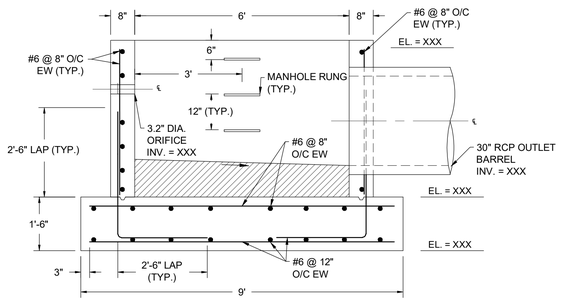
SHEET: 100 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

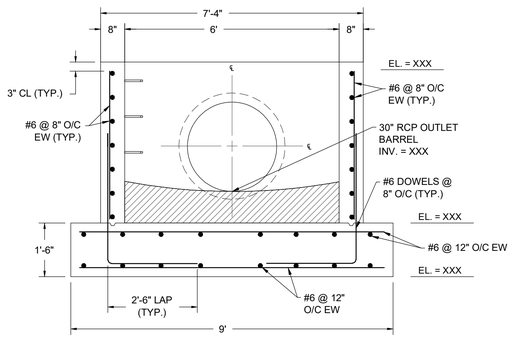
FILE PATH: O:\PROJECTS\1564601 -GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10-00_DETAILS.DWG (C-510) GARDUNA, COLLEEN 11/2/2020 3:27 PM



PLAN VIEW



SECTION A-A

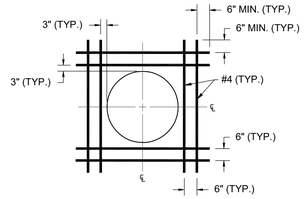


SECTION B-B

POND 3 - RISER STRUCTURE DETAIL
SCALE 1" = 2'

NOTES:

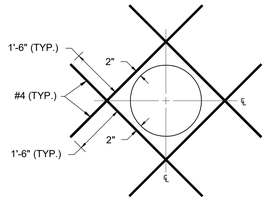
1. RISER STRUCTURE SHALL BE CAST-IN-PLACE CONCRETE AND SHALL ADHERE TO SECTION 305 OF MD SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS. STRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
2. LADDER RUNGS TO BE IN ACCORDANCE WITH MONTGOMERY COUNTY STANDARD DETAIL MC-520.01.
3. ALL REINFORCING SHALL BE ASTM A-615 GRADE 60.
4. PROVIDE 3/4" CHAMFER TO ALL EXPOSED EDGES OF CONCRETE.
5. DIAGONAL REINFORCEMENT AROUND ORIFICE OPENING SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL 4 - TYPICAL REINFORCING AROUND CIRCULAR OPENING ON DRAWING C-512.
6. ELEVATIONS AND OPENING SIZES WILL BE DETERMINED FOR FUTURE DESIGN SUBMITTALS.



TYPICAL REINFORCING AROUND CIRCULAR OPENING
NOT TO SCALE

NOTES:

1. ANY REINFORCING INTERRUPTED BY OPENINGS SHALL BE CARRIED TO WITHIN 3" OF THE OPENING. REINFORCING SO INTERRUPTED SHALL BE PLACED ON EITHER SIDE OF THE OPENING.
2. PLACE SUPPLEMENTAL HORIZONTAL AND VERTICAL REINFORCEMENT TO FRAME EACH OPENING. MAINTAIN A MINIMUM 3 INCH COVER OF CONCRETE BETWEEN OPENINGS AND REINFORCEMENT.
3. REDUCE LENGTH OF REINFORCEMENT PROJECTION AS NECESSARY TO MAINTAIN A MINIMUM 2 INCHES OF CONCRETE COVER OVER REINFORCEMENT.



TYPICAL REINFORCING AROUND ORIFICE OPENING
NOT TO SCALE

NOTES:

1. MAINTAIN A MINIMUM OF 3" OF CONCRETE COVER FOR SURFACES IN CONTACT WITH EARTH, AND A MINIMUM OF 2" CONCRETE COVER ELSEWHERE.
2. REDUCE LENGTH OF REINFORCEMENT PROJECTION AS NECESSARY TO MAINTAIN A MINIMUM 2 INCHES OF CONCRETE COVER OVER REINFORCEMENT.

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

STORMWATER MANAGEMENT DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-512

SHEET: 102 OF 109

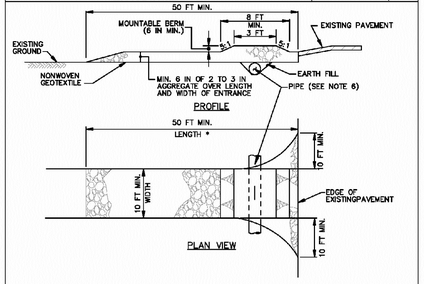
60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 32 OF 35

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIATION\PRODUCTION\DESIGN SET\1564601 - 10-05 - DETAILS.DWG (JC-12) CARDONA, COLLEEN 11/2/2020 3:27 PM

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

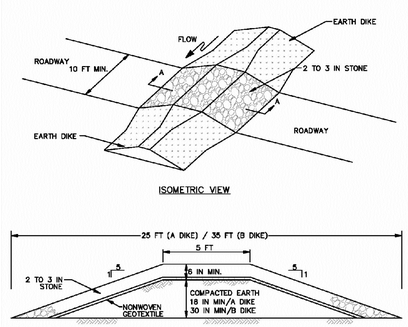
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-8 MOUNTABLE BERM

STANDARD SYMBOL: MB



CONSTRUCTION SPECIFICATIONS

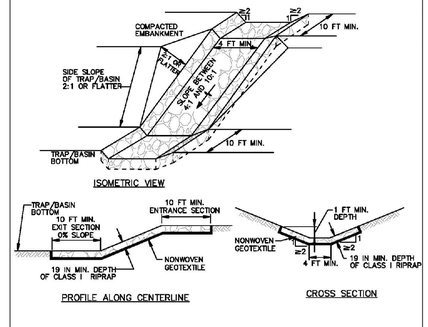
1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE EARTH MOUND PRIOR TO PLACING STONE.
3. PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRP



CONSTRUCTION SPECIFICATIONS

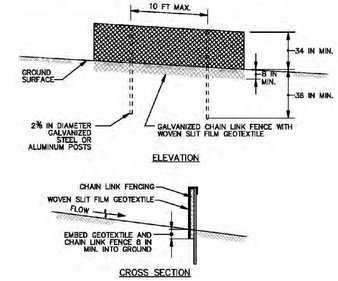
1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D_{50}) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
3. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 38 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HOG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

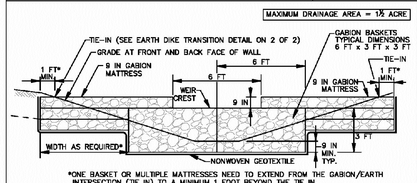
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

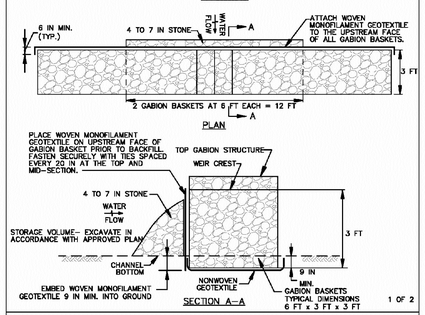
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS

MAXIMUM DRAINAGE AREA = 1½ ACRE





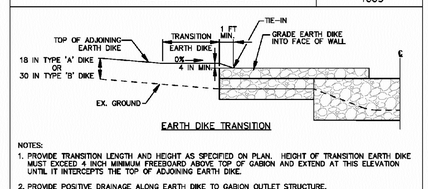
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS



NOTES:

1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

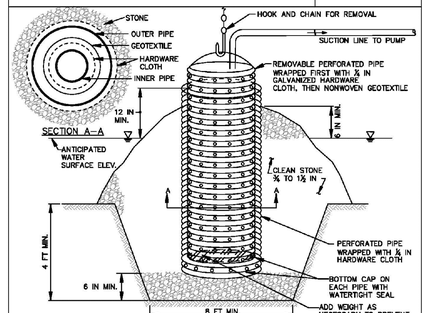
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL: RPS



CONSTRUCTION SPECIFICATIONS

1. USE CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS 6 INCHES ON CENTER.
2. USE A MINIMUM 12 INCH DIAMETER INNER PIPE WITH AN OUTER PIPE A MINIMUM 6 INCHES LARGER IN DIAMETER. BOTTOM OF EACH PIPE MUST BE CAPPED WITH WATERTIGHT SEAL.
3. WRAP EACH PIPE WITH ½ INCH GALVANIZED HARDWARE CLOTH. ON INNER PIPE WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
4. EXCAVATE 8 FEET X 8 FEET X 4 FEET DEEP PIT FOR PIPE PLACEMENT. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
5. SET TOP OF INNER AND OUTER PIPES MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION (OR RISER CREST ELEVATION WHEN DEWATERING A BASIN).
6. BACKFILL PIT AROUND THE OUTER PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
7. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A REMOVABLE PUMPING STATION REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, PULL OUT INNER PIPE AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-514

SHEET: 104 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

SC/SWM SHEET 34 OF 35

FILE PATH: O:\PROJECTS\15A601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\15A601 - 10-00_DETAILS.DWG (C-514) DARIONA COLLEN 1/30/2020 3:27 PM

B-4 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
USING VEGETATION AS COVER TO PROTECT EXPOSED SOIL FROM EROSION.

PURPOSE
TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL.

CONDITIONS WHERE PRACTICE APPLIES
ON ALL DISTURBED AREAS NOT STABILIZED BY OTHER METHODS. THIS SPECIFICATION IS DIVIDED INTO SECTIONS ON INCREMENTAL STABILIZATION; SOIL PREPARATION, SOIL AMENDMENTS AND TOPSOILING; SEEDING AND MULCHING; TEMPORARY STABILIZATION; AND PERMANENT STABILIZATION.

EFFECTS ON WATER QUALITY AND QUANTITY
STABILIZATION PRACTICES ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION, THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUNOFF TO DOWNSTREAM AREAS.

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION, EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. OVER TIME, VEGETATION WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH.

VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICAL CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITHIN THE ROOT ZONE.

SEDIMENT CONTROL PRACTICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING, AND VEGETATIVE ESTABLISHMENT.

ADEQUATE VEGETATIVE ESTABLISHMENT
INSPECT SEEDED AREAS FOR VEGETATIVE ESTABLISHMENT AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

1. ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95 PERCENT GROUNDCOVER .
2. IF AN AREA HAS LESS THAN 40 PERCENT GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING.
3. IF AN AREA HAS BETWEEN 40 AND 94 PERCENT GROUNDCOVER, OVER-SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.
4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDING ARE SHOWN IN TABLE B.6.

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

DEFINITION
ESTABLISHMENT OF VEGETATIVE COVER ON CUT AND FILL SLOPES.

PURPOSE
TO PROVIDE TIMELY VEGETATIVE COVER ON CUT AND FILL SLOPES AS WORK PROGRESSES.

CONDITIONS WHERE PRACTICE APPLIES
ANY CUT OR FILL SLOPE GREATER THAN 15 FEET IN HEIGHT. THIS PRACTICE ALSO APPLIES TO STOCKPILES.

CRITERIA

A. INCREMENTAL STABILIZATION - CUT SLOPES
1. EXCAVATE AND STABILIZE CUT SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL CUT SLOPES AS THE WORK PROGRESSES.
2. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.1):
 a. CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO CONVEY RUNOFF AROUND THE EXCAVATION.
 b. PERFORM PHASE I EXCAVATION, PREPARE SEEDBED, AND STABILIZE.
 c. PERFORM PHASE 2 EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY.
 d. PERFORM FINAL PHASE EXCAVATION, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE EXCAVATION HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

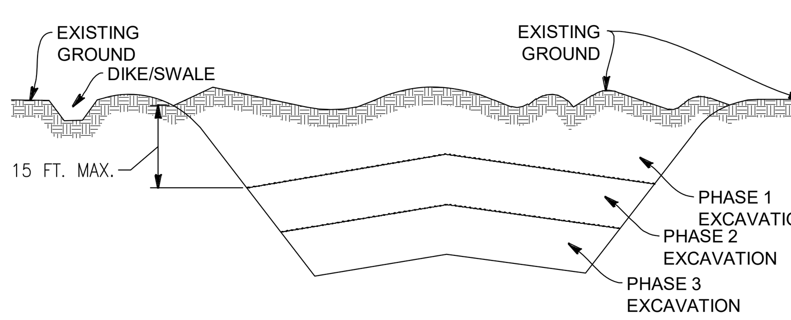


FIGURE B.1: INCREMENTAL STABILIZATION - CUT

B. INCREMENTAL STABILIZATION - FILL SLOPES
1. CONSTRUCT AND STABILIZE FILL SLOPES IN INCREMENTS NOT TO EXCEED 15 FEET IN HEIGHT. PREPARE SEEDBED AND APPLY SEED AND MULCH ON ALL SLOPES AS THE WORK PROGRESSES.
2. STABILIZE SLOPES IMMEDIATELY WHEN THE VERTICAL HEIGHT OF A LIFT REACHES 15 FEET OR WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS.
3. AT THE END OF EACH DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
4. CONSTRUCTION SEQUENCE EXAMPLE (REFER TO FIGURE B.2):
 a CONSTRUCT AND STABILIZE ALL TEMPORARY SWALES OR DIKES THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SILT FENCE ON LOW SIDE OF FILL UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA.
 b. AT THE END OF THE DAY, INSTALL TEMPORARY WATER CONVEYANCE PRACTICE(S), AS NECESSARY, TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER.
 c. PLACE PHASE 1 FILL, PREPARE SEEDBED, AND STABILIZE.
 d. PLACE PHASE 2 FILL, PREPARE SEEDBED, AND STABILIZE.
 e. PLACE FINAL PHASE FILL, PREPARE SEEDBED, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECESSARY.

NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN, THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

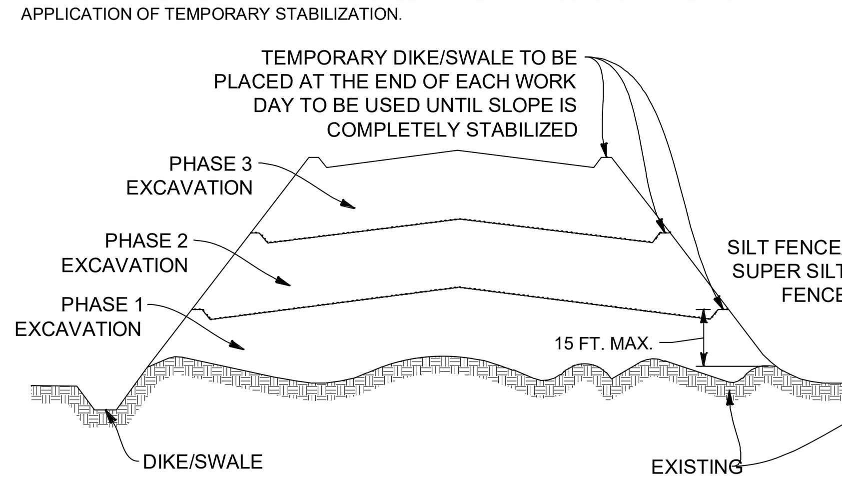


FIGURE B.2: INCREMENTAL STABILIZATION - FILL

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION
THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES
WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
 a. SEED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS,
2. PERMANENT STABILIZATION
 a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 i. SOIL PH BETWEEN 6.0 TO 7.0.
 ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE
 iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION
 b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
 d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT MATERIAL.
 c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN $1\frac{1}{2}$ INCHES IN DIAMETER.
 b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
 a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

A. SEEDING
1. SPECIFICATIONS
 a. ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
 b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
 c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
 d. SOD AND SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
2. APPLICATION
 a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
 i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
 ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
 b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST $\frac{1}{4}$ INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
 ii. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
 i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD BE EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL SOLUBLE NITROGEN; P_2O_5 (PHOSPHOROUS), 200 POUNDS PER ACRE; K_2O (POTASSIUM), 200 POUNDS PER ACRE.
 ii. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
 iv. WHEN HYDROSEEDING, DO NOT INCORPORATE INTO THE SOIL.

B. MULCHING
1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
 a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLE BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEE LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 i. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 iii. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 iv. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BY PHYTO-TOXIC.
 v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.
2. APPLICATION
 a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
 b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
 c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 100 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
3. ANCHORING
 a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
 i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
 ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 iii. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. **USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.**
 iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THE SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOILS TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONG AS PRESCRIBED IN SECTION B-4-3.A.1.1B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE: 6b
SEED MIXTURE: Mixture: 3, 6

NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
1	ANNUAL RYEGRASS (Lolium perenne ssp. multiflorum)	40 LB/AC (1.0 LB/1000 SF)	MAR 1 - MAY 15; AUG 1 - SEPT 30	0.5 IN	436 LB/AC (10 LB/ 1000SF)	2 TONS/AC (90 LB/ 1000SF)
2	CEREAL RYE	112 LB/AC (2.8 LB/1000 SF)	MAY 1 - MAY 15; AUG 1 - SEPT 30	1.0 IN		
3	FOXTAIL MILLET (Setaria italica)	30 LB/AC (0.7 LB/1000 SF)	MAY 16 - JUL 31	0.5 IN		
4	PEARL MILLET	20 LB/AC (0.5 LB/1000 SF)	MAY 16 - JUL 31	0.5 IN		

APPLY STRAW MULCH AT 2 TONS PER ACRE (90 LB/1000 SF) OR WOOD CELLULOSE FIBER AT 1500 LB/ACRE (35 LBS/1000 SF) IMMEDIATELY AFTER SEEDING, ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR APPROVED SYNTHETIC BINDER AT RATE SPECIFIED BY MANUFACTURER.

FOR PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW, MULCH, AND SEED AS SOON AS POSSIBLE IN THE SPRING OR USE SOD.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION
TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE..

CRITERIA

A. SEED MIXTURES

1. GENERAL USE

 a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
 b. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
 c. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
 d. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 $\frac{1}{2}$ POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

 a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
 b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN:
 i. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF TOTAL MIXTURE BY WEIGHT.
 ii. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
 iii. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
 iv. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE 60 TO 70 PERCENT. SEEDING RATE: $1\frac{1}{2}$ TO 3 POUNDS PER 1000 SQUARE FEET.

 NOTES:
 SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

 CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

 c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES
 WESTERN MARYLAND: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)

 CENTRAL MARYLAND: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)

 SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 7A, 7B)

 d. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER $1\frac{1}{2}$ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
 e. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH ($\frac{1}{2}$ TO 1 INCH EVER 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS
 a. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
 b. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF $\frac{3}{4}$ INCHES, PLUS OR MINUS $\frac{1}{4}$ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
 c. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
 d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
 e. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION

PERMANENT SEEDING SUMMARY

HARDINESS ZONE: 6b
SEED MIXTURE: Mixture: 3, 6

SPECIES	APPLICATION (LB/AC - LB/1000 SF)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)			LIME RATE
TALL FESCUE PERENNIAL RYEGRASS WHITE CLOVER	40 - 0.93 25 - 0.57 5 - 0.11	MAR 1 - MAY 15; AUG 1 - SEPT 30	0.25 - 0.5 IN	45 LB/AC (1 LB/ 1000 SF)	90 LB/AC (1 LB/ 1000 SF)	90 LB/AC (1 LB/ 1000 SF)	2 TONS/AC (90 LB/ 1000SF)
DEERTONGUE SHEEP FESCUE COMMON LESPEDEZA	20 - 0.46 20 - 0.46 10 - 0.23	MAY 1 - MAY 15; MAY 16 - JUNE 15	0.25 - 0.5 IN				

APPLY UREA FORM FERTILIZER (46-0-0) AT 150 LB/AC (3.5 LB/1000 SF) AT THE TIME OF SEEDING IN ADDITION TO SOIL AMENDMENTS SHOW ABOVE.

APPLY STRAW MULCH AT 2 TONS PER ACRE (90 LB/1000 SF) OR WOOD CELLULOSE FIBER AT 1500 LB/ACRE (35 LBS/1000 SF) IMMEDIATELY AFTER SEEDING, ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR APPROVED SYNTHETIC BINDER AT RATE SPECIFIED BY MANUFACTURER.

FOR PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW, MULCH, AND SEED AS SOON AS POSSIBLE IN THE SPRING OR USE SOD.

2. SOD INSTALLATION
 a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACE PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
 c. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
 d. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATION OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
 a. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
 b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
 c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN $\frac{1}{3}$ OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

DEFINITION
A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.
PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
4. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
5. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
6. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
7. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION FENCE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
8. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
9. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
10. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

SEAL

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

EROSION AND SEDIMENT CONTROL DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

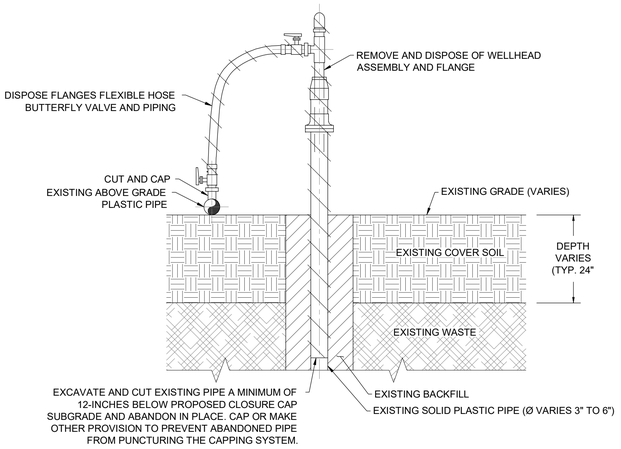
C-515

SHEET: 105 OF 109

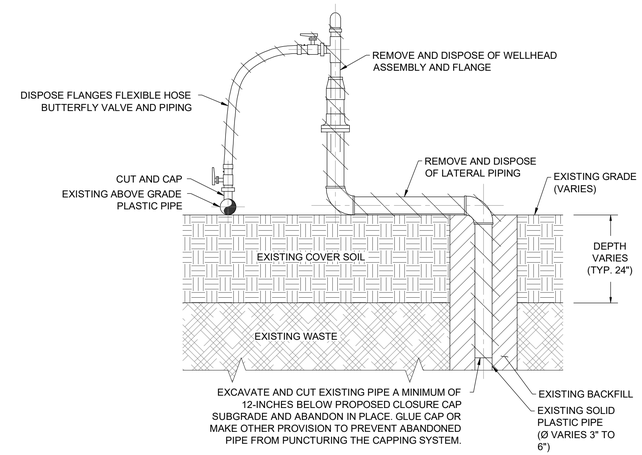
SC/SWM SHEET 35 OF 35

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10.00 - DETAILS.DWG [C-515] GARDINA, COLLEEN 1/10/2020 3:28 PM



EXISTING LANDFILL GAS EXTRACTION WELL ABANDONMENT
NOT TO SCALE



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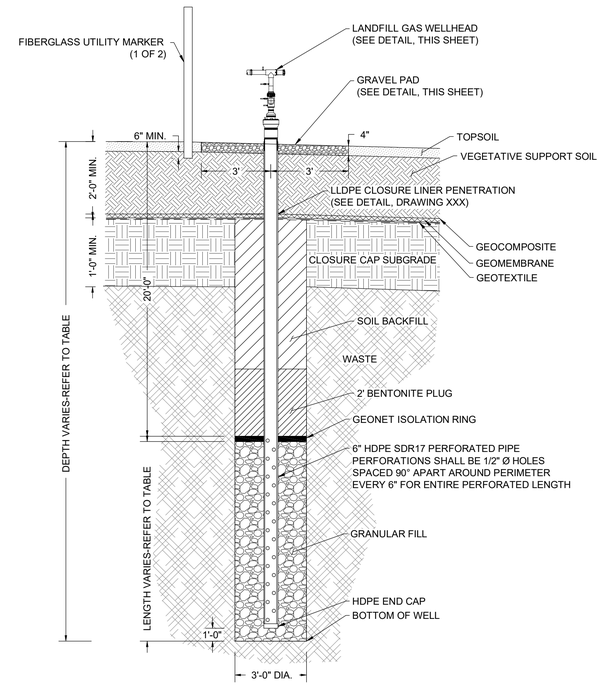
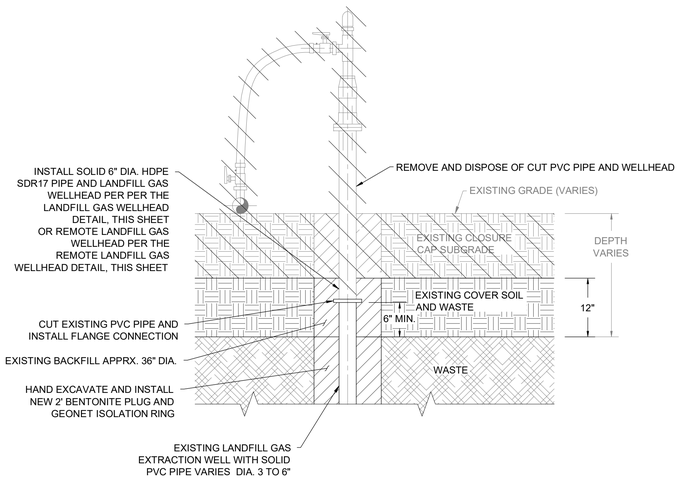
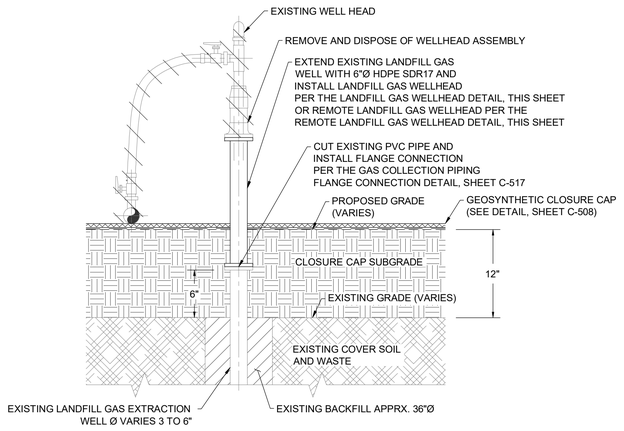


PROPOSED LANDFILL GAS EXTRACTION WELL
NOT TO SCALE



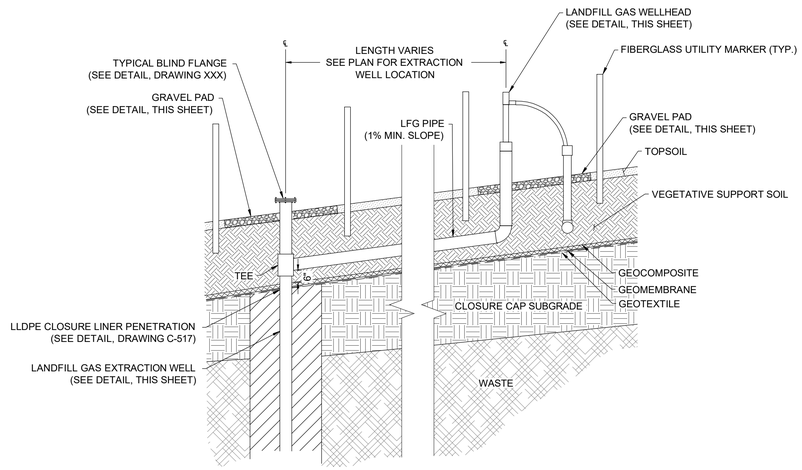
EXISTING LANDFILL GAS EXTRACTION WELL MODIFICATION - SHORTEN
NOT TO SCALE



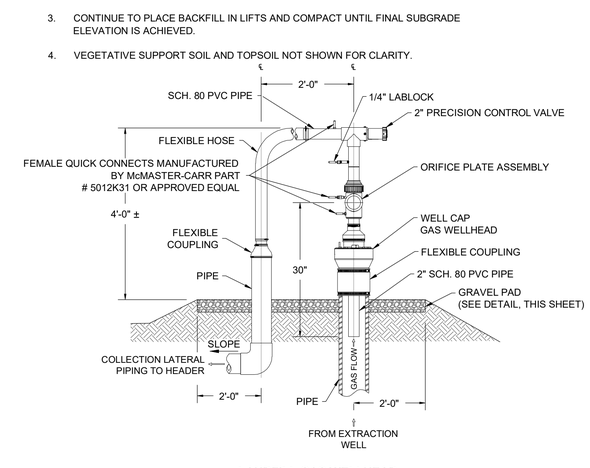
EXISTING LANDFILL GAS EXTRACTION WELL MODIFICATION - EXTEND
NOT TO SCALE

NOTES:

1. BACKFILL WITHIN 5-FT OF LANDFILL GAS EXTRACTION WELL TO BE PERFORMED BY HAND.
2. PLACE SOIL BY HAND POE BACKFILLED IN MAXIMUM 8-IN LIFTS AND MECHANICALLY TAMP.
3. CONTINUE TO PLACE BACKFILL IN LIFTS AND COMPACT UNTIL FINAL SUBGRADE ELEVATION IS ACHIEVED.
4. VEGETATIVE SUPPORT SOIL AND TOPSOIL NOT SHOWN FOR CLARITY.



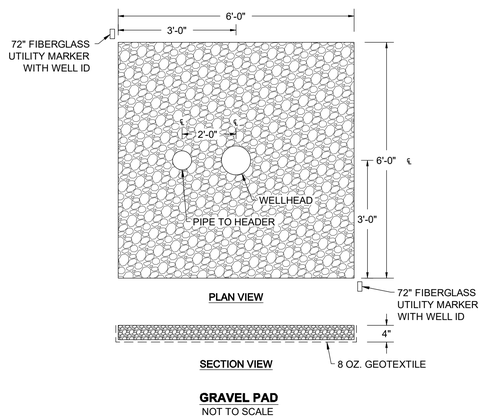
REMOTE LANDFILL GAS WELLHEAD
NOT TO SCALE



LANDFILL GAS WELLHEAD
NOT TO SCALE

INSTALLATION NOTES:

1. REFER TO WELLHEAD MANUFACTURER'S INSTALLATION AND OPERATION MANUAL. READ INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING ASSEMBLY AND INSTALLATION OF WELLHEAD ON WELL CASING.
2. WELLHEAD CASING DRILLING DEPTH TO BE DETERMINED BASED ON LFG EXTRACTION WELL SCHEDULE, FIELD CONDITIONS AND THE CONSTRUCTION MANAGEMENT ENGINEER'S DIRECTION.
3. WELLHEAD AND FLOW MEASUREMENT TUBE ASSEMBLY SHALL BE COMPATIBLE WITH CES-LANDTEC GEM-500, GEM-2000, AND GEM-5000 (LANDFILL GAS INSTRUMENTS).
4. WELLHEAD SHALL BE RATED FOR A FLOW RANGE OF 0-50 SCFM.
5. LATERAL PIPING MAY BE SUPPORTED BY GROUND SURFACE, BERMED EARTH, OR AS SPECIFIED IN PLANS.
6. FOR FLEXIBLE CONNECTIONS TO PIPE USE ONLY STAINLESS STEEL V-BAND CLAMPS.
7. DRAWING SHOWS TYPICAL CONNECTION TO A 90° ELBOW. ACTUAL CONNECTION MAY BE TO A TEE OR COUPLING.
8. WARNING: DO NOT CUT THE FLOW MEASUREMENT TUBE ASSEMBLY. FAILURE TO HEED THIS WARNING WILL RESULT IN A DAMAGED OR INOPERATIVE WELLHEAD AND VOID THE WARRANTY.
9. ALLOW SUFFICIENT SLACK IN FLEX. HOSE FOR PIPING EXPANSION AND CONTRACTION. AN EXTRA 12" IS RECOMMENDED.
10. SUPPLY BRASS ID TAG WITH NUMBER AS DESIGNATED ON CONTRACT DRAWINGS.
11. GEONET ISOLATION RING SHALL FIT SNUG TO EXTRACTION WELL TO PROVIDE SEPARATION BETWEEN STONE AND BENTONITE PLUG.
12. 72" MARKER POST SHALL HAVE WELL ID. TWO PLACED AT EACH WELL AT OPPOSITE CORNERS.



GRAVEL PAD
NOT TO SCALE

NOTE:

1. GRAVEL PAD TO BE CENTERED ON SINGLE PENETRATIONS.

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

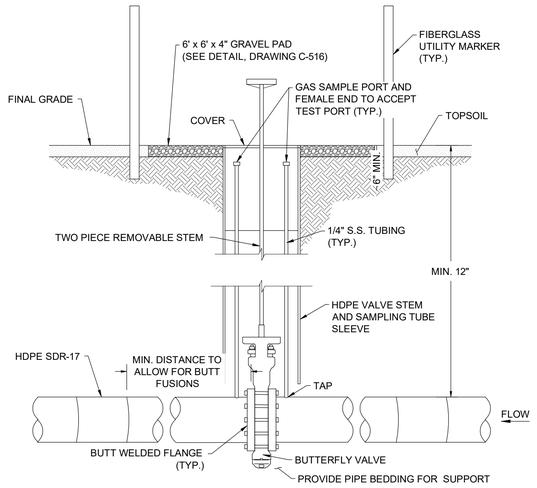
PROJECT NUMBER: 1564601

C-516

SHEET: 106 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

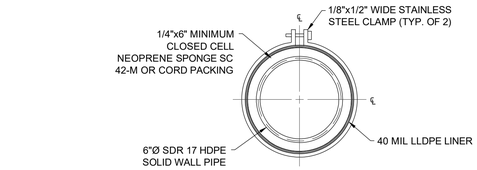
FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIATION\CAD\PRODUCTION\DESIGN SET\1564601 - 10-05 - DETAILS.DWG [JC-KS] GARDNA, COLLEEN 11/2/2020 3:28 PM



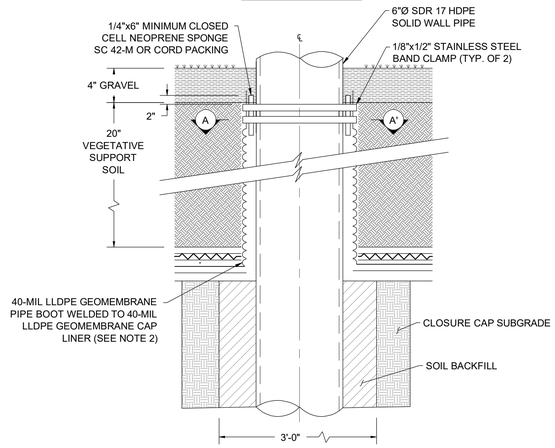
LANDFILL GAS HEADER ISOLATION VALVE
NOT TO SCALE

NOTES:

1. BURIED VALVES SHALL USE STAINLESS STEEL HARDWARE WITH ANTISEIZE COMPOUND AND BE WRAPPED IN POLYETHYLENE SHEETING PRIOR TO BACKFILLING.
2. VALVES SHALL HAVE PERMANENT (NOT PAINTED) OPEN/CLOSE POSITION INDICATOR ON VALVE HANDLE.



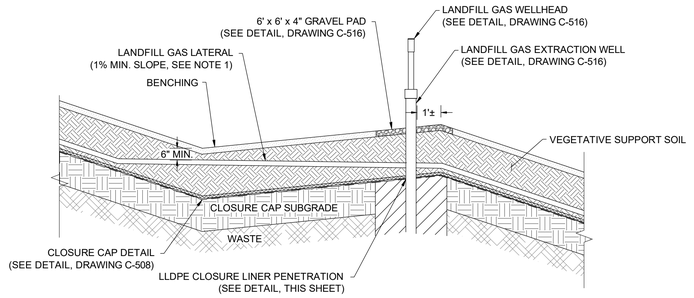
SECTION VIEW - A-A'



LLDPE CLOSURE LINER PENETRATION DETAIL
NOT TO SCALE

NOTE:

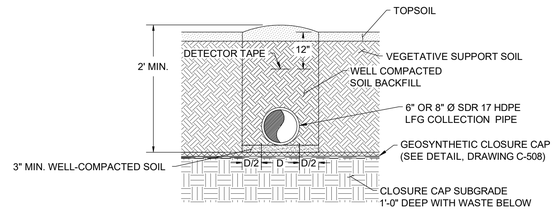
1. THIS DETAIL IS TYPICAL FOR ALL 6"Ø SDR 17 HDPE PIPE PENETRATIONS.
2. A MINIMUM 1'-0" OF EXCESS SLACK BETWEEN CLAMPS AND WELD SHALL BE PROVIDED.



EXTRACTION WELL LOCATIONS AT BENCHES
NOT TO SCALE

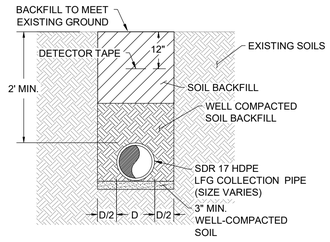
NOTE:

1. CONTRACTOR SHALL ADJUST BURIAL DEPTH ACROSS BENCHES TO MAINTAIN 1.0% MINIMUM SLOPE WITHIN LANDFILL GAS COLLECTION SYSTEM.



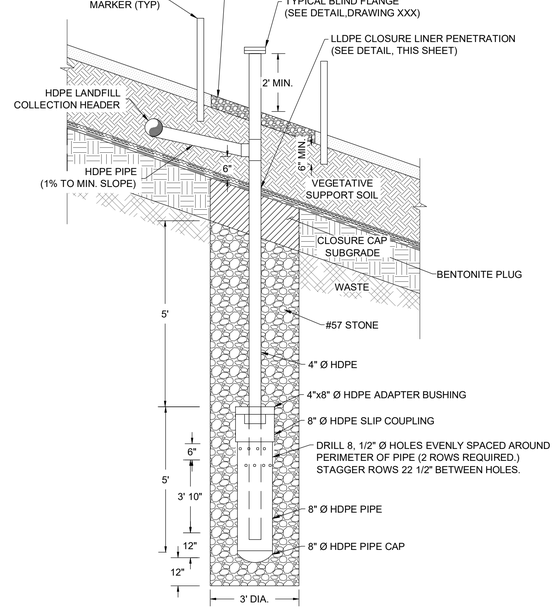
PIPING TRENCH DETAIL (WITHIN LANDFILL CLOSURE CAP)
NOT TO SCALE

NOTE:
1. PLACE MINIMUM 12" LIFT OVER PIPE PRIOR TO COMPACTION



PIPING TRENCH DETAIL (OUTSIDE LANDFILL CLOSURE CAP)
NOT TO SCALE

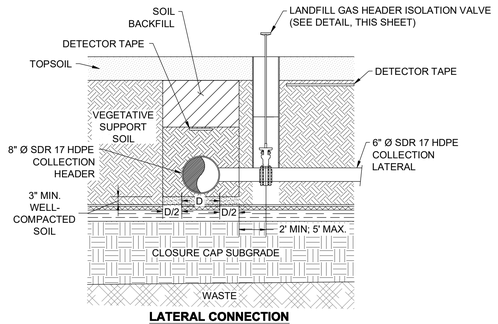
1. SOIL BACKFILL SHALL BE PLACED IN 12-INCH LIFTS AND COMPACTED TO A MINIMUM OF 90% PROCTOR OUTSIDE OF LANDFILL CAP.



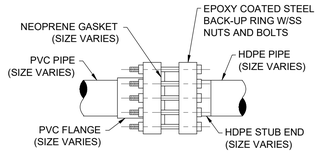
CONDENSATE DRAIN
NOT TO SCALE

NOTE:

1. CONTRACTOR SHALL FILL 8" HDPE PIPE WITH WATER.



LATERAL CONNECTION
NOT TO SCALE



GAS COLLECTION PIPING FLANGE CONNECTION DETAIL
NOT TO SCALE

NOTE:

1. CONNECTION DETAIL IS TYPICAL OF ALL GAS PIPELINE CONNECTIONS WHERE INDICATED.

PROPOSED CONDENSATE DRAIN SCHEDULE

CONDENSATE DRAIN ID	FINAL ELEVATION (FT)	NORTHING	EASTING
CONDENSATE DRAIN 1	421.10	524721.58	1271259.45
CONDENSATE DRAIN 2	450.01	525078.99	1271863.97
CONDENSATE DRAIN 3	454.38	525328.24	1272135.55
CONDENSATE DRAIN 4	468.57	526195.06	1273039.81
CONDENSATE DRAIN 5	472.87	526253.66	1273205.41
CONDENSATE DRAIN 6	472.68	526249.33	1273250.82
CONDENSATE DRAIN 7	469.69	525699.62	1273486.26
CONDENSATE DRAIN 8	469.69	525467.45	1273513.55
CONDENSATE DRAIN 9	462.00	525221.98	1273714.48
CONDENSATE DRAIN 10	455.56	525020.16	1274384.94
CONDENSATE DRAIN 11	452.91	524690.42	1274550.38
CONDENSATE DRAIN 12	429.00	524839.73	1273853.06
CONDENSATE DRAIN 13	433.17	524879.60	1273766.76
CONDENSATE DRAIN 14	433.7	524876.25	1273693.21
CONDENSATE DRAIN 15	435.35	524803.65	1273562.81
CONDENSATE DRAIN 16	439.26	524576.33	1273400.40
CONDENSATE DRAIN 17	455.00	524336.09	1273209.92
CONDENSATE DRAIN 18	464.74	524166.56	1272561.86
CONDENSATE DRAIN 19	466.91	524199.97	1272382.44
CONDENSATE DRAIN 20	456.25	524508.76	1272183.71
CONDENSATE DRAIN 21	456.98	524477.59	1271716.31
CONDENSATE DRAIN 22	455.84	524569.08	1271504.15
CONDENSATE DRAIN 23	459.46	525305.07	1273092.20
CONDENSATE DRAIN 24	449.98	524707.61	1272885.29
CONDENSATE DRAIN 25	459.00	525305.07	1273092.20
CONDENSATE DRAIN 26	455.71	525113.03	1272815.76
CONDENSATE DRAIN 27	437.98	524953.44	1271617.74
CONDENSATE DRAIN 28	446.94	525027.48	1271753.53
CONDENSATE DRAIN 29	458.41	525239.38	1272178.38

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT MANAGER:
KEF / SMB	SMB	LJO / GAT	MJG

SEAL

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GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

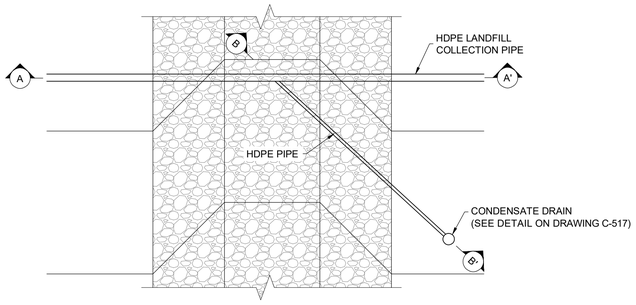
PROJECT NUMBER: 1564601

C-517

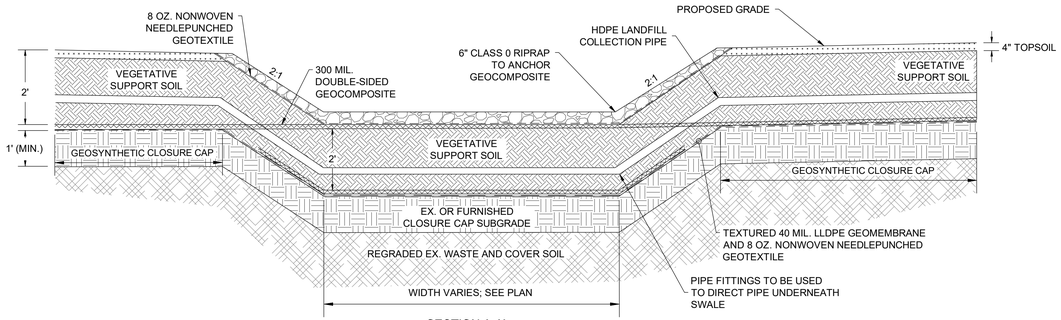
SHEET: 107 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

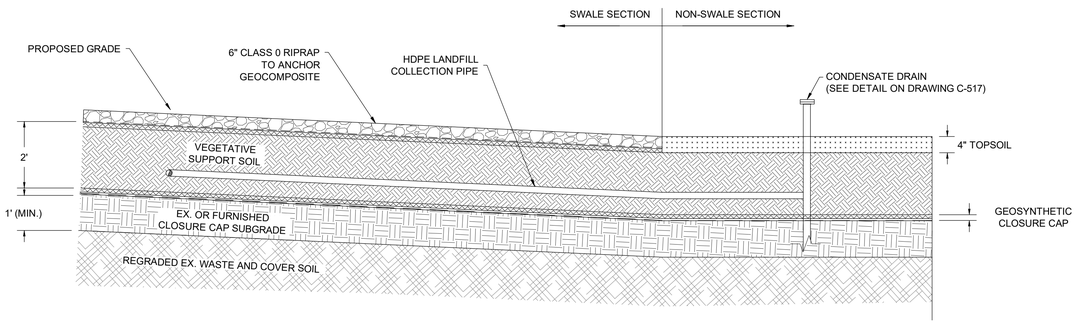
FILE PATH: Q:\PROJECTS\1564601 - GUDE LF REMEDIAL\PRODUCTION\DESIGN SET\1564601 - 10-DETAILS.DWG [JC-517] CAMDINA, COLLEEN 1/10/2020 3:28 PM



PLAN VIEW

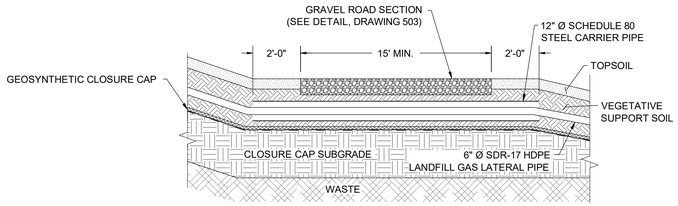


SECTION A-A'



SECTION B-B'

LANDFILL GAS PIPE SWALE CROSSING
NOT TO SCALE



LANDFILL GAS PIPE ROAD CROSSING
NOT TO SCALE

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

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(410) 584-7000

DATE: JANUARY 2020
PROJECT NUMBER: 1564601

C-518
SHEET: 108 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: Q:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10.00 - DETAILS.DWG [C-518] GARDINA, COLLEEN 1/10/2020 3:28 PM

EXISTING LANDFILL GAS EXTRACTION WELLS TO BE MODIFIED

SERIAL	WELL ID	NORTHING	EASTING	EXISTING ELEVATION (FT)	FINAL ELEVATION (FT)	Δ (FINSHED-EXISTING)	SHORTEN / EXTEND	TOTAL DEPTH FROM EG (FT)
1	EW-1	524685.00	1271739.00	455.47	459.60	4.13	EXTEND	30.0
2	EW-2	524876.02	1271974.08	457.82	471.47	13.65	EXTEND	38.0
3	EW-4	525283.77	1272528.88	461.67	467.04	5.37	EXTEND	33.0
4	EW-5	525493.34	1272811.88	460.75	469.39	8.64	EXTEND	38.0
5	EW-10	525795.74	1272803.67	465.64	470.67	5.03	EXTEND	28.3
6	EW-15	525548.12	1273428.12	465.30	472.54	7.24	EXTEND	34.9
7	EW-16	525260.87	1273408.83	457.96	457.68	-0.27	SHORTEN	46.0
8	EW-17	525256.92	1273728.72	467.30	466.96	-0.34	SHORTEN	48.0
9	EW-18	525149.25	1274038.96	461.07	463.30	6.05	EXTEND	35.0
10	EW-21	524593.90	1271512.61	454.82	458.62	3.80	EXTEND	29.3
11	EW-22	524521.95	1271711.42	458.16	460.19	2.03	EXTEND	28.0
12	EW-23	524570.40	1272053.18	454.08	459.31	5.23	EXTEND	26.0
13	EW-24	524386.03	1272325.10	460.87	467.80	6.93	EXTEND	52.0
14	EW-25	524503.28	1273291.42	445.77	449.11	3.34	EXTEND	28.0
15	EW-26	524732.78	1272290.61	455.15	463.80	8.65	EXTEND	27.1
16	EW-27	524593.89	1272608.79	461.67	460.61	-1.06	SHORTEN	30.4
17	EW-29	524439.03	1272706.65	463.06	464.49	1.43	EXTEND	21.2
18	EW-30	524454.54	1272924.70	460.76	459.66	-1.10	SHORTEN	48.2
19	EW-32	524277.02	1273460.89	455.18	459.36	4.18	EXTEND	38.1
20	EW-34	524765.29	1273183.56	452.38	449.06	-3.32	SHORTEN	29.7
21	EW-35	524679.16	1273420.41	443.82	441.08	-2.74	SHORTEN	35.0
22	EW-36	525153.10	1272841.37	458.61	459.99	1.38	EXTEND	34.9
23	EW-37	525060.72	1273123.93	447.57	447.99	0.42	EXTEND	31.3
24	EW-38	524957.57	1273418.77	442.25	443.16	0.91	EXTEND	30.4
25	EW-39	525372.84	1273110.22	462.70	462.16	-0.54	SHORTEN	44.0
26	EW-51	524763.79	1272055.46	454.86	467.74	12.88	EXTEND	21.2
27	EW-52	524891.63	1272170.36	461.15	470.05	8.91	EXTEND	22.7
28	EW-54*	524766.93	1272474.42	460.66	462.82	2.16	EXTEND	35.7
29	EW-57	524919.03	1272744.09	456.69	460.96	4.27	EXTEND	16.0
30	EW-71	524968.25	1272111.23	457.76	469.56	3.88	EXTEND	54.0
31	EW-72	524916.85	1272370.37	461.81	467.58	11.80	EXTEND	58.0
32	EW-73*	525063.91	1272423.74	462.79	465.45	5.77	EXTEND	60.0
33	EW-75	524731.77	1272784.69	457.69	455.25	2.66	EXTEND	24.9
34	EW-76	524633.45	1272904.48	458.72	453.80	-2.44	SHORTEN	41.1
35	EW-100*	524720.11	1271278.73	424.58	425.39	-4.92	SHORTEN	31.0
36	EW-101	524811.95	1271412.16	431.04	429.38	-1.66	SHORTEN	46.0
37	EW-102	524886.23	1271542.61	434.55	438.80	0.81	EXTEND	39.0
38	EW-104*	525060.49	1271733.51	443.68	445.27	-1.66	SHORTEN	47.0
39	EW-109	525603.00	1272277.00	436.01	438.88	4.25	EXTEND	29.0
40	EW-126	525400.00	1272123.00	449.98	444.13	-5.85	SHORTEN	35.6
41	EW-130	525607.48	1272377.21	452.40	452.40	NA	EXTEND	45.0
42	EW-132*	524839.30	1271688.74	458.22	458.82	2.51	EXTEND	58.0
43	EW-141	524384.66	1271789.23	445.03	445.03	NA	EXTEND	48.6
44	EW-143	524561.48	1271885.04	457.73	464.55	2.83	EXTEND	58.4
45	EW-149	524184.59	1272615.25	464.96	467.39	3.61	EXTEND	48.1
46	EW-152	525204.40	1272228.67	457.95	464.51	1.79	EXTEND	44.9
47	EW-158	525501.48	1272460.86	462.78	465.14	2.41	EXTEND	41.0
48	EW-159	524359.07	1273253.66	453.43	456.10	2.67	EXTEND	41.0
EXISTING REMOTE LANDFILL GAS EXTRACTION WELLS TO BE MODIFIED								
49	EW-31	524286.07	1273115.03	453.50	455.10	1.59	EXTEND	7.0
50	EW-103	524988.85	1271598.64	439.04	436.27	-2.77	SHORTEN	42.0
51	EW-108	525497.90	1272169.22	440.68	437.20	-3.48	SHORTEN	34.5
52	EW-110	525704.87	1272360.68	430.49	425.18	8.39	EXTEND	39.0
53	EW-111	525817.47	1272488.84	427.42	421.23	-2.24	SHORTEN	45.0
54	EW-112	525904.52	1272583.62	427.20	425.03	-2.17	SHORTEN	46.0
55	EW-113	526003.53	1272672.42	426.82	427.86	1.04	EXTEND	47.0
56	EW-119	525066.49	1271720.56	442.48	441.66	-0.82	SHORTEN	27.0
57	EW-122	525648.32	1272307.35	431.75	432.33	0.58	EXTEND	20.0
58	EW-138*	524482.57	1271602.48	458.05	459.11	1.11	EXTEND	55.2
59	EW-139	524356.49	1271498.22	430.49	430.49	NA	SHORTEN	NA
60	EW-140	524314.20	1271664.08	432.57	432.57	NA	SHORTEN	36.6
61	EW-142	524254.14	1271849.23	420.46	420.46	NA	SHORTEN	25.8
62	EW-144	524420.34	1271993.64	432.37	432.37	NA	SHORTEN	36.5
63	EW-145	524487.09	1272143.46	450.58	450.58	NA	SHORTEN	57.1
64	EW-146	524322.43	1272154.10	428.57	428.57	NA	EXTEND	36.5
65	EW-156	525404.89	1272115.48	447.92	441.19	-6.73	SHORTEN	43.0
66	EW-157	525186.72	1271888.13	450.94	449.15	-1.79	SHORTEN	40.5

NOTES:
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2. EXISTING EXTRACTION WELL INFORMATION IS FROM AVAILABLE DOCUMENTATION AND MAY NOT MATCH ACTUAL CONDITION.
3. ELEVATIONS ARE ESTIMATED BASED ON AERIAL SURVEY AND SHALL BE VERIFIED BY THE CONTRACTOR.
4. EXISTING LANDFILL GAS WELLS OUTSIDE OF THE LANDFILL CAP WILL BE MODIFIED.
5. LANDFILL GAS EXTRACTION WELLS WITH AN *** SHALL BE MODIFIED TO INCLUDE AN INTERIOR PUMP FOR DEWATERING.

EXISTING LANDFILL GAS EXTRACTION WELLS TO BE ABANDONED

SERIAL	WELL ID	NORTHING	EASTING	EXISTING ELEVATION (FT)	FINAL ELEVATION (FT)	Δ (FINAL-EXISTING)	SHORTEN / EXTEND	TOTAL DEPTH FROM EG (FT)
1	EW-3	525075.99	1272253.00	458.93	467.68	1.77	EXTEND	46.0
2	EW-6	525701.57	1273090.18	470.64	473.63	3.18	EXTEND	36.0
3	EW-7	525846.59	1273424.41	472.73	476.09	3.36	EXTEND	NA
4	EW-9	525547.12	1272540.42	461.07	466.78	5.41	EXTEND	36.0
5	EW-11	526021.70	1272991.79	471.01	474.03	3.02	EXTEND	41.0
6	EW-12	526216.87	1273096.54	472.11	470.33	-1.78	SHORTEN	49.5
7	EW-13	526061.43	1273237.95	474.53	478.89	4.36	EXTEND	50.0
8	EW-14	526177.00	1273268.00	474.67	475.50	0.83	EXTEND	NA
9	EW-19	--	--	--	--	--	--	--
11	EW-20	--	--	--	--	--	--	--
10	EW-28	524972.00	1272609.00	461.43	462.12	5.58	EXTEND	30.5
11	EW-40	--	--	--	--	--	--	--
12	EW-41	--	--	--	--	--	--	--
13	EW-43	--	--	--	--	--	--	--
14	EW-44	--	--	--	--	--	--	--
15	EW-49	524314.94	1272707.70	467.31	469.36	3.94	EXTEND	NA
16	EW-50	524691.93	1271877.94	456.62	470.61	7.85	EXTEND	22.5
17	EW-59	524713.10	1273141.80	450.43	448.23	2.67	SHORTEN	NA
18	EW-62	525373.34	1272925.64	463.41	471.41	2.61	EXTEND	37.0
19	EW-70	524798.39	1271853.88	456.13	470.7	7.94	EXTEND	44.0
20	EW-74	524839.17	1272607.41	460.22	469.25	9.03	EXTEND	51.1
21	EW-105	525164.44	1271858.58	451.04	447.96	-3.08	SHORTEN	53.0
22	EW-106	525249.97	1271981.61	451.52	453.38	1.86	EXTEND	52.0
23	EW-107	525336.35	1272096.28	455.13	453.57	-1.56	SHORTEN	53.0
24	EW-114	526101.61	1272780.92	437.77	434.39	-3.38	SHORTEN	39.0
25	EW-115	526192.18	1272873.96	440.42	437.35	-3.07	SHORTEN	38.6
26	EW-116	526318.49	1272986.92	442.64	439.84	-2.80	SHORTEN	35.0
27	EW-117	524967.94	1271555.75	437.14	432.13	-5.01	SHORTEN	25.0
28	EW-118	525001.19	1271605.01	438.65	434.53	-4.12	SHORTEN	25.0
29	EW-120	525207.25	1271930.45	452.75	453.65	0.90	EXTEND	20.0
30	EW-121	525323.59	1272075.20	455.49	452.69	-2.80	SHORTEN	20.0
31	EW-123	525383.41	1272110.40	450.33	444.89	-5.44	SHORTEN	25.0
32	EW-124	525421.31	1272125.05	446.61	439.74	-6.87	SHORTEN	25.0
33	EW-125	525359.90	1272145.69	456.56	453.45	-0.28	SHORTEN	50.0
34	EW-127	525429.53	1272155.44	449.34	445.20	-4.14	SHORTEN	45.0
35	EW-128	525456.40	1272230.71	456.26	457.93	0.46	EXTEND	43.0
36	EW-129	525521.55	1272311.17	456.07	458.68	2.61	EXTEND	41.1
37	EW-131	524778.92	1271581.48	454.36	457.12	2.76	EXTEND	52.0
38	EW-133	525247.40	1271902.41	437.85	437.44	-0.41	SHORTEN	37.2
39	EW-134	525198.95	1271831.40	439.08	433.57	-5.51	SHORTEN	27.0
40	EW-148	524200.75	1272394.25	466.10	467.84	-0.09	EXTEND	46.9
41	EW-150	525482.26	1272466.00	462.59	466.04	3.45	EXTEND	47.2
42	EW-151	524360.16	1273265.13	453.65	456.09	2.44	EXTEND	45.8
43	EW-153	525204.17	1272380.01	461.85	467.89	3.39	EXTEND	34.5
EXISTING REMOTE LANDFILL GAS EXTRACTION WELLS TO BE ABANDONED								
44	EW-135	524680.07	1271210.08	422.10	422.34	0.24	EXTEND	25.3
45	EW-136	524635.50	1271288.94	438.17	438.17	0.00	SHORTEN	NA
46	EW-137	524517.92	1271409.51	438.07	438.07	0.00	SHORTEN	41.8
47	EW-147	524204.05	1272209.54	437.68	437.68	0.00	UNCHANGED	42.7
48	EW-154	524300.58	1271811.07	435.53	435.53	0.00	SHORTEN	NA
49	EW-155	524300.57	1271815.80	434.88	434.88	0.00	SHORTEN	NA

NOTES:
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PROPOSED LANDFILL GAS EXTRACTION WELLS

SERIAL	WELL ID	NORTHING	EASTING	EXISTING GRADE (FT)	FINAL GRADE (FT)	APPRX. WELL DEPTH (FT) FROM FINAL GRADE	APPRX. PERFORATED PIPE LENGTH (FT)	APPRX. WELL BOTTOM ELEVATION (FT)
1	EW-161	524837.26	1273595.71	438.45	438.45	50	30	391.10
2	EW-162	525044.31	1273670.85	453.56	445.00	50	30	393.54
3	EW-165	524715.52	1274533.85	451.49	454.64	50	30	404.64
4	EW-163	524788.39	1273922.41	424.20	429.87	50	30	376.00
5	EW-166	524980.08	1274704.14	461.21	463.56	50	30	413.25
6	EW-167	525058.39	1274416.80	456.29	460.70	50	30	413.37
7	EW-168	524927.29	1272561.50	462.15	463.12	50	30	419.16
8	EW-169	524671.71	1274351.25	443.18	443.89	50	30	383.69
9	EW-172	525721.93	1273101.25	470.64	474.35	50	30	423.82
10	EW-173	525851.88	1273403.12	472.73	476.73	50	30	426.09
11	EW-174	526184.88	1273272.68	474.35	475.22	50	30	425.22
12	EW-176	526212.45	1273098.98	472.22	470.54	40	20	401.73
13	EW-177	526000.98	1273024.07	471.18	475.63	50	30	420.54
14	EW-179	524875.06	1272975.23	441.81	462.37	50	30	415.19
PROPOSED REMOTE LANDFILL GAS EXTRACTION WELLS								
15	EW-160	524634.68	1273566.45	411.71	423.63	40	20	362.00
16	EW-164	524571.05	1274110.57	410.49	416.10	50	30	353.04
17	EW-170	526158.21	1272830.47	438.30	433.00	35	15	398.00
18	EW-171	525259.10	1271986.88	451.77	452.00	40	20	412.00
19	EW-175	526313.17	1272989.82	443.60	441.73	40	20	401.73
20	EW-178	524958.50	1274169.12	460.89	441.00	50	30	424.21

REVISIONS

NO.	DATE	BY	DESCRIPTION

DESIGN INFORMATION
DESIGNED BY: KEF / SMB
DRAWN BY: SMB
CHECKED BY: LJO / GAT
PROJECT MANAGER: MJG

SEAL

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 23402 EXPIRATION DATE: 8/25/2020

GUDE LANDFILL REMEDIATION DESIGN
NORTHEAST MARYLAND WASTE DISPOSAL AUTHORITY
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY, MARYLAND

LANDFILL GAS DETAILS

EA Engineering, Science, and Technology, Inc., PBC
Hunt Valley Center
225 Schilling Circle, Suite 400
Hunt Valley, Maryland 21031
(410) 584-7000

DATE: JANUARY 2020

PROJECT NUMBER: 1564601

C-519

SHEET: 109 OF 109

60% REVISED DESIGN PLANS - NOT FOR CONSTRUCTION

FILE PATH: G:\PROJECTS\1564601 - GUDE LF DESIGN\CAD\PRODUCTION\DESIGN SET\1564601 - 10.00 - DETAILS.DWG [C-519] GIARDINA, COLLEEN 1/10/2020 3:28 PM