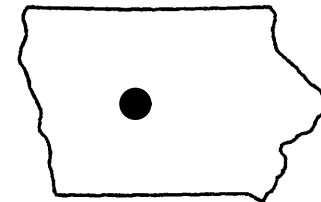


Metro Waste Authority



METRO PARK WEST LANDFILL LOCATION MAP
SCALE: 1" = 1500'

Contract Drawings For

MWA Project P-64

Metro Park West Landfill Cell D Liner Construction and Greene Co. Landfill Improvements

Project No.
10359069

Perry, Iowa

Issued for Bid

January 2023

INDEX OF DRAWINGS

GENERAL

00G000	COVER SHEET
00G001	CIVIL LEGEND AND GENERAL NOTES

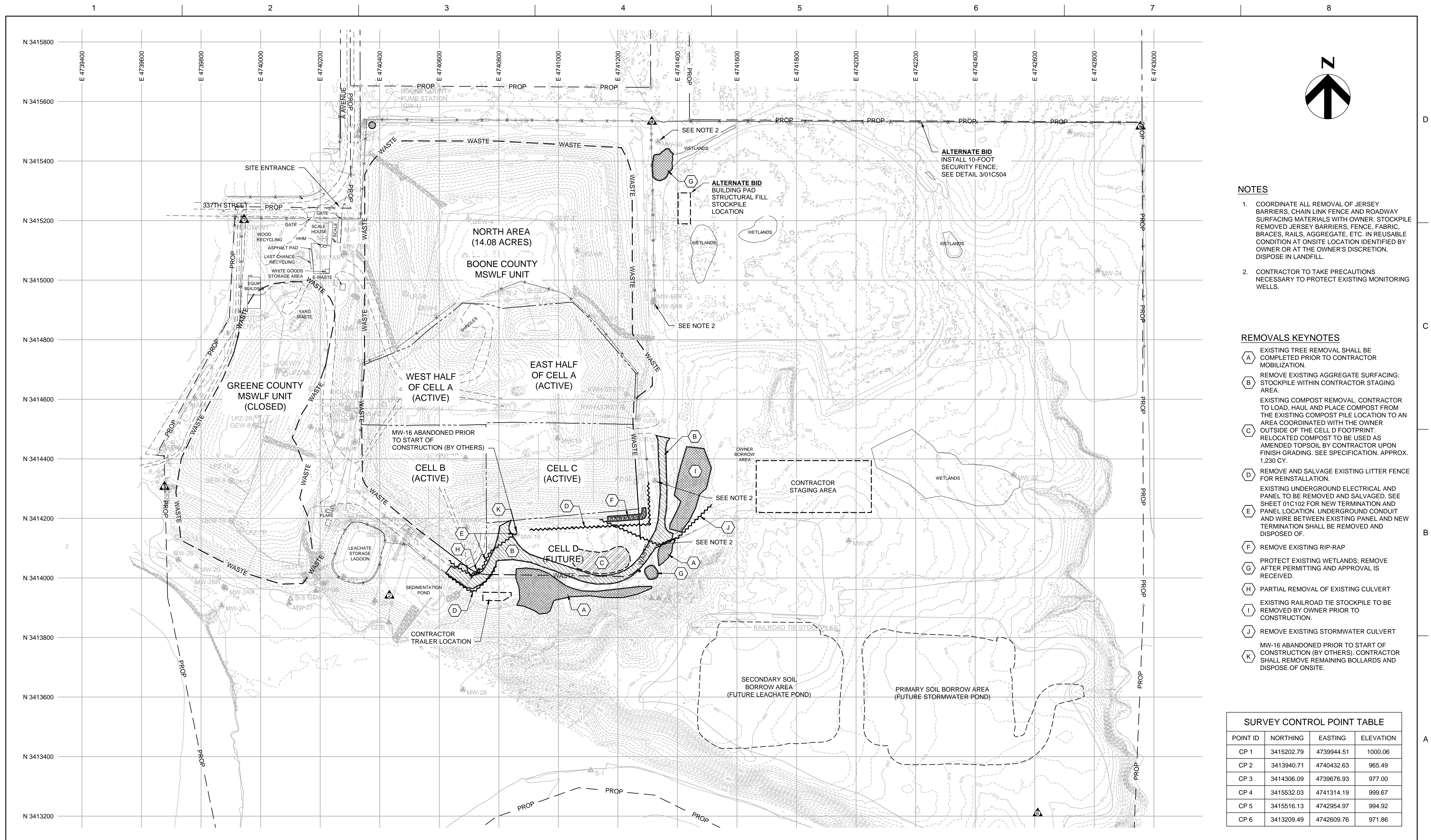
CIVIL

CELL D LINER CONSTRUCTION	
01C101	EXISTING CONDITIONS AND REMOVALS PLAN
01C102	BASE GRADING AND EXCAVATION GRADING PLAN
01C103	TOP OF CLAY GRADING PLAN
01C104	DRAINAGE LAYER GRADING PLAN
01C105	CERTIFICATION POINT TABLES
01C301	PHASE 2 ACCESS ROAD PLAN AND PROFILE
01C302	PHASE 2 ACCESS ROAD PLAN AND PROFILE
01C501	DETAILS
01C502	DETAILS
01C503	DETAILS
01C504	DETAILS

GREENE COUNTY LANDFILL IMPROVEMENTS

02C101	TOE-DRAIN IMPROVEMENTS
02C501	TOE-DRAIN DETAILS

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
	Katie Kinley	1.30.23
	KATIE KINLEY, P.E.	(date)
	My license renewal date is December 31, 2023	
Pages or sheets covered by this seal:		
All General (G) Sheets; All Civil (C) Sheets		



SURVEY CONTROL POINT TABLE			
POINT ID	NORTHING	EASTING	ELEVATION
CP 1	3415202.79	4739944.51	1000.06
CP 2	3413940.71	4740432.63	965.49
CP 3	3414306.09	4739676.93	977.00
CP 4	3415532.03	4741314.19	999.67
CP 5	34155616.13	4742954.97	994.92
CP 6	3413209.49	4742609.76	971.86

NOTES

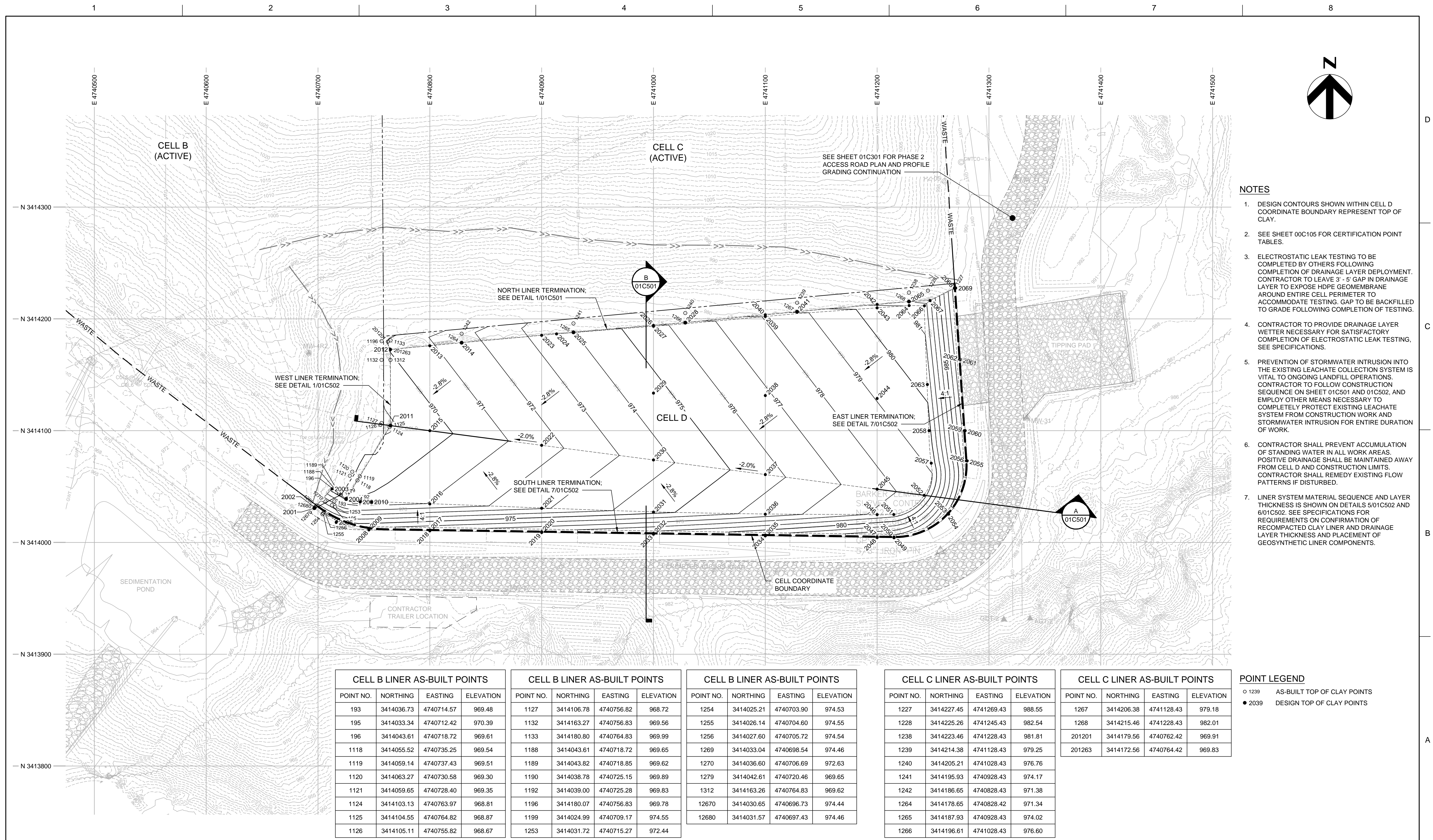
1. COORDINATE ALL REMOVAL OF JERSEY BARRIERS, CHAIN LINK FENCE AND ROADWAY SURFACING MATERIALS WITH OWNER. STOCKPILE REMOVED JERSEY BARRIERS, FENCE, FABRIC, BRACES, RAILS, AGGREGATE, ETC. IN REUSABLE CONDITION AT ONSITE LOCATION IDENTIFIED BY OWNER OR AT THE OWNER'S DISCRETION, DISPOSE IN LANDFILL.
2. CONTRACTOR TO TAKE PRECAUTIONS NECESSARY TO PROTECT EXISTING MONITORING WELLS.

REMOVALS KEYNOTES

A	EXISTING TREE REMOVAL SHALL BE COMPLETED PRIOR TO CONTRACTOR MOBILIZATION.
B	REMOVE EXISTING AGGREGATE SURFACING; STOCKPILE WITHIN CONTRACTOR STAGING AREA.
C	EXISTING COMPOST REMOVAL. CONTRACTOR TO LOAD, HAUL, AND PLACE COMPOST FROM THE EXISTING COMPOST PILE LOCATION TO AN AREA COORDINATED WITH THE OWNER OUTSIDE OF THE CELL D FOOTPRINT. RELOCATED COMPOST TO BE USED AS AMENDED TOPSOIL BY CONTRACTOR UPON FINISH GRADING. SEE SPECIFICATION. APPROX. 1,230 CY.
D	REMOVE AND SALVAGE EXISTING LITTER FENCE FOR REINSTALLATION.
E	EXISTING UNDERGROUND ELECTRICAL AND PANEL TO BE REMOVED AND SALVAGED. SEE SHEET 01C102 FOR NEW TERMINATION AND PANEL LOCATION. UNDERGROUND CONDUIT AND WIRE BETWEEN EXISTING PANEL AND NEW TERMINATION SHALL BE REMOVED AND DISPOSED OF.
F	REMOVE EXISTING RIP-RAP
G	PROTECT EXISTING WETLANDS; REMOVE AFTER PERMITTING AND APPROVAL IS RECEIVED.
H	PARTIAL REMOVAL OF EXISTING CULVERT
I	EXISTING RAILROAD TIE STOCKPILE TO BE REMOVED BY OWNER PRIOR TO CONSTRUCTION.
J	REMOVE EXISTING STORMWATER CULVERT
K	MW-16 ABANDONED PRIOR TO START OF CONSTRUCTION (BY OTHERS). CONTRACTOR SHALL REMOVE REMAINING BOLLARDS AND DISPOSE OF ONSITE.

SURVEY CONTROL POINT TABLE			
POINT ID	NORTHING	EASTING	ELEVATION
CP 1	3415202.79	4739944.51	1000.06
CP 2	3413940.71	4740432.63	965.49
CP 3	3414306.09	4739676.93	977.00
CP 4	3415532.03	4741314.19	999.67
CP 5	34155616.13	4742954.97	994.92
CP 6	3413209.49	4742609.76	971.86

			CIVIL	A. BROSHAR
			CIVIL	K. KINLEY
			DRAWN BY	M. BICKFORD
A	01/30/2023	ISSUED FOR BID		
ISSUE	DATE	DESCRIPTION	PROJECT NUMBER	10359069



CELL B LINER AS-BUILT POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
193	3414036.73	4740714.57	969.48
195	3414033.34	4740712.42	970.39
196	3414043.61	4740718.72	969.61
1118	3414055.52	4740735.25	969.54
1119	3414059.14	4740737.43	969.51
1120	3414063.27	4740730.58	969.30
1121	3414059.65	4740728.40	969.35
1124	3414103.13	4740763.97	968.81
1125	3414104.55	4740764.82	968.87
1126	3414105.11	4740755.82	968.67

CELL B LINER AS-BUILT POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1127	3414106.78	4740756.82	968.72
1132	3414163.27	4740756.83	969.56
1133	3414180.80	4740764.83	969.99
1188	3414043.61	4740718.72	969.65
1189	3414043.82	4740718.85	969.62
1190	3414038.78	4740725.15	969.89
1192	3414039.00	4740725.28	969.83
1196	3414180.07	4740756.83	969.78
1199	3414024.99	4740709.17	974.55
1253	3414031.72	4740715.27	972.44

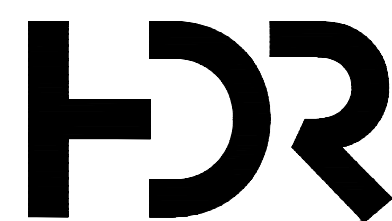
CELL B LINER AS-BUILT POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1254	3414025.21	4740703.90	974.53
1255	3414026.14	4740704.60	974.55
1256	3414027.60	4740705.72	974.54
1269	3414033.04	4740698.54	974.46
1270	3414036.60	4740706.69	972.63
1279	3414042.61	4740720.46	969.65
1312	3414163.26	4740764.83	969.62
12670	3414030.65	4740696.73	974.44
12680	3414031.57	4740697.43	974.46

CELL C LINER AS-BUILT POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1227	3414227.45	4741269.43	988.55
1228	3414225.26	4741245.43	982.54
1238	3414223.46	4741228.43	981.81
1239	3414214.38	4741128.43	979.25
1240	3414205.21	4741028.43	976.76
1241	3414195.93	4740928.43	974.17
1242	3414186.65	4740828.43	971.38
1264	3414178.65	4740828.42	971.34
1265	3414187.93	4740928.43	974.02
1266	3414196.61	4741028.43	976.60

CELL C LINER AS-BUILT POINTS			
POINT NO.	NORTHING	EASTING	ELEVATION
1267	3414206.38	4741128.43	979.18
1268	3414215.46	4741228.43	982.01
201201	3414179.56	4740762.42	969.91
201263	3414172.56	4740764.42	969.83

POINT LEGEND

- | | |
|--------|-----------------------------|
| ○ 1239 | AS-BUILT TOP OF CLAY POINTS |
| ● 2039 | DESIGN TOP OF CLAY POINTS |



A	01/30/2023	ISSUED FOR BID
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	A. BROSHAR
CIVIL	A. BROSHAR
CIVIL	K. KINLEY
DRAWN BY	M. BICKFORD
PROJECT NUMBER	10359069



Metro Waste Authority

**METRO PARK WEST
MWA PROJECT P-64
CELL D LINER CONSTRUCTION AND
GREENE CO. LANDFILL IMPROVEMENTS**

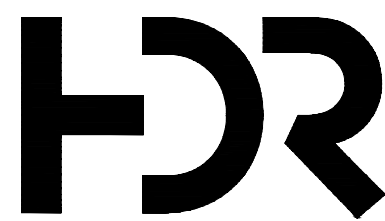
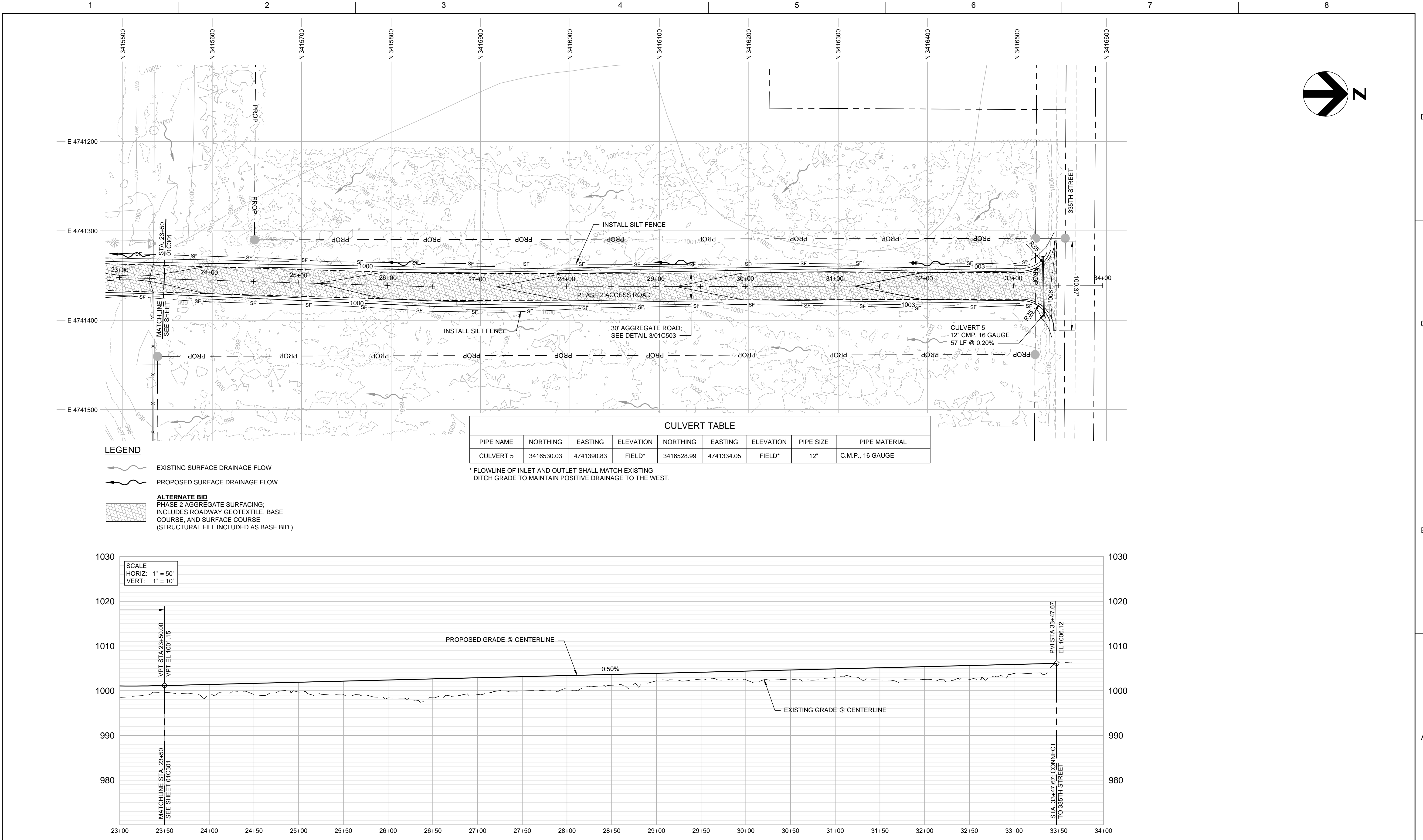
TOP OF CLAY GRADING PLAN



FILENAME	01C103.dwg
SCALE	1" = 40'

SHEET

01C103

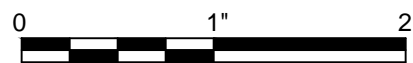


A	01/30/2023	ISSUED FOR BID
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	A. BROSHAR
CIVIL	A. BROSHAR
CIVIL	K. KINLEY
DRAWN BY	M. BICKFORD
PROJECT NUMBER	10359069



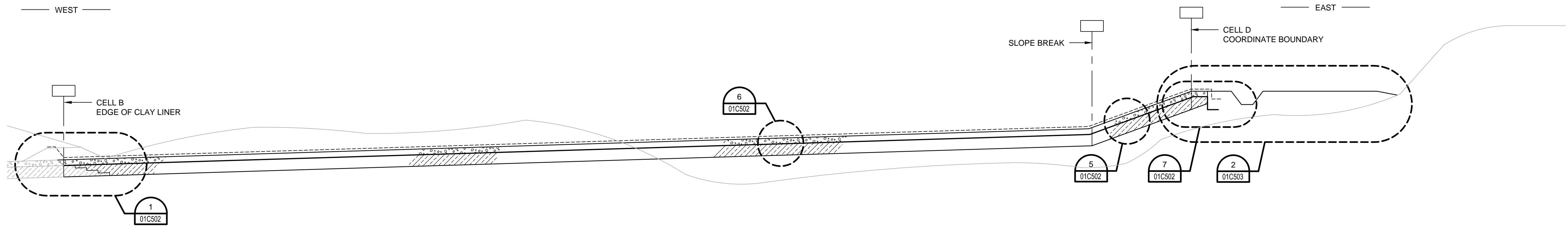
Metro Waste Authority
METRO PARK WEST
MWA PROJECT P-64
CELL D LINER CONSTRUCTION AND
GREENE CO. LANDFILL IMPROVEMENTS



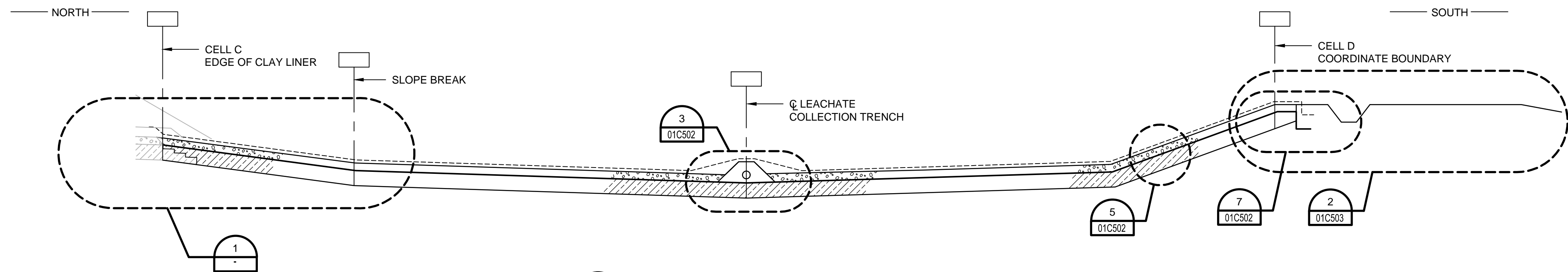
PHASE 2 ACCESS ROAD
PLAN AND PROFILE

FILENAME | 01C302.dwg
SCALE | 1" = 50'

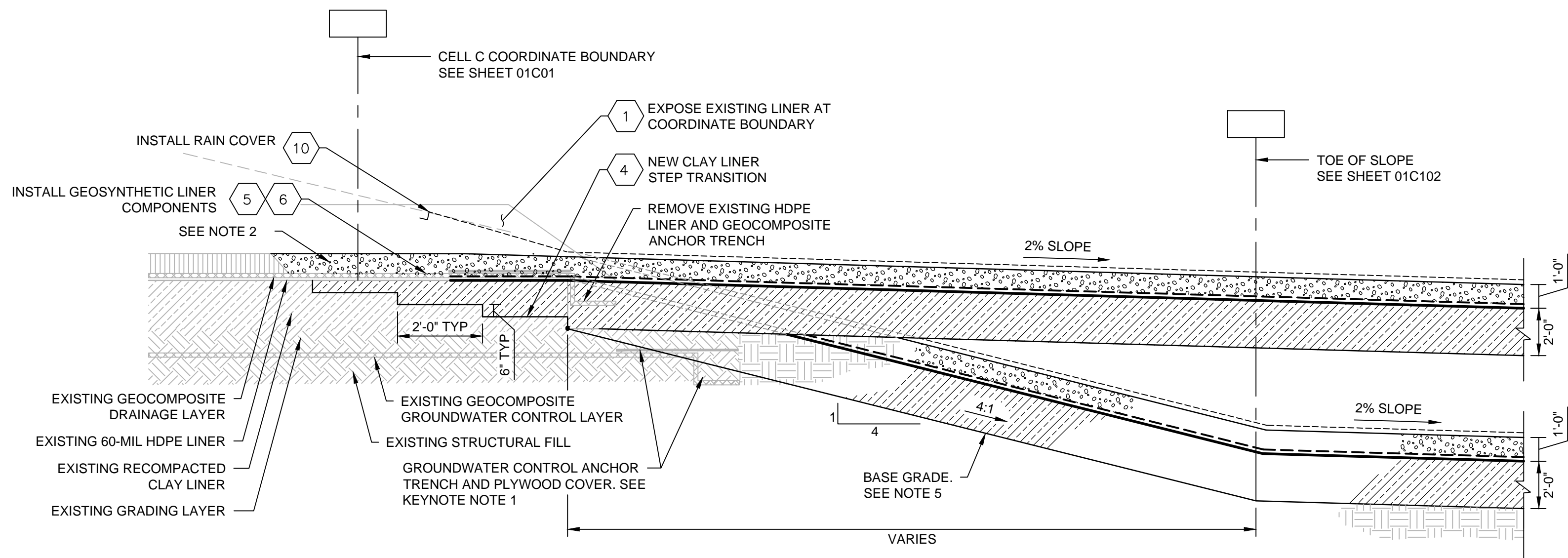
SHEET
01C302



A WEST-EAST LINER CROSS SECTION
NO SCALE



B NORTH-SOUTH LINER CROSS SECTION
NO SCALE



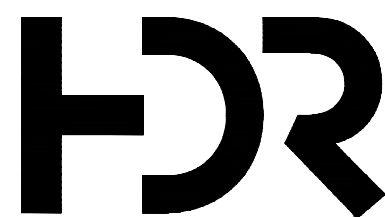
1 NORTH LINER TRANSITION
01C102 NO SCALE

NOTES

1. LOCATION OF EXISTING GROUNDWATER CONTROL ANCHOR TRENCH IS BELOW TOP OF BASE GRADE DESIGN COORDINATES AT NORTH CELL D COORDINATE BOUNDARY AT AN UNKNOWN DEPTH. IF ENCOUNTERED DURING EXCAVATION TO BASE GRADE, NOTIFY ENGINEER.
2. EXISTING DRAINAGE LAYER CONSISTS OF GEOCOMPOSITE WITH OVERLYING PROTECTIVE COVER OF AN UNKNOWN THICKNESS. CONTRACTOR TO EXPOSE MIN 4' FT OF CLEAN AND UNDamaged GEOCOMPOSITE BEYOND THE EXISTING COORDINATE BOUNDARY AND OVERLAP EXPOSED GEOCOMPOSITE WITH NEW GEOTEXTILE AND NEW DRAINAGE LAYER AGGREGATE.
3. FOR EARTHWORK NECESSARY BEYOND THE PLYWOOD COVER CAREFULLY EXCAVATE AND AVOID DAMAGE TO IN-PLACE LINER SYSTEM COMPONENTS.
4. A SACRIFICIAL 40-MIL HDPE RAIN FLAP IS NOT USED ALONG THE NORTH LINER TRANSITION.
5. THE WEST PORTION CELL D LINER CONSTRUCTION WILL ALIGN APPROXIMATELY AT THE EDGE OF EXISTING CELL C LINER. AS CONSTRUCTION PROGRESSES EAST, A PORTION OF CELL D LINER WILL CONSIST OF A 4V:1H TIE-IN FROM THE EXISTING EDGE OF CELL C TO THE 2% SLOPE PORTION OF CELL D FLOOR.

CONSTRUCTION SEQUENCE FOR LINER TO LINER TRANSITION

1. REMOVE TERMINATION BERM/PROTECTIVE COVER, SAND, PLYWOOD, AND TOP SEPARATION GEOTEXTILE TO EXPOSE EXISTING DRAINAGE LAYER, 12 OZ CUSHION GEOTEXTILE, AND 60-MIL HDPE GEOMEMBRANE. AT ALL TIMES CONTRACTOR WILL TAKE NECESSARY MEASURES TO PROTECT EXISTING DRAINAGE LAYER FROM FINE SOIL INTRUSION AND STORM WATER INFILTRATION.
2. IMMEDIATELY FOLLOWING EXPOSURE OF EXISTING DRAINAGE LAYER, REMOVE SOLID WALL LEACHATE CLEANOUT RISER PIPE AND EXPOSE END OF PERFORATED LEACHATE COLLECTION PIPE AT EDGE OF EXISTING DRAINAGE LAYER.
3. IMMEDIATELY ROLL BACK EXISTING 12 OZ CUSHION GEOTEXTILE TO EXPOSE EXISTING 60-MIL HDPE GEOMEMBRANE. EXTRUSION WELD SACRIFICIAL 40-MIL HDPE RAIN FLAP TO EXPOSED 60-MIL HDPE GEOMEMBRANE ALONG ENTIRE LENGTH OF LINER TRANSITION. EXTEND HDPE RAIN FLAP A MINIMUM OF 12-FT UP EXISTING SIDESLOPE AND ANCHOR IN PLACE SO AS TO COMPLETELY COVER AND PROTECT EXISTING DRAINAGE LAYER AND LEACHATE TRENCH.
4. INSTALL NEW RECOMPACTED CLAY LINER USING STEP TRANSITION TO EXISTING CLAY LINER. SEE SPECIFICATIONS.
5. INSTALL NEW 60-MIL HDPE GEOMEMBRANE AND CONTINUOUSLY WELD TO EXISTING GEOMEMBRANE.
6. INSTALL NEW 12 OZ GEOTEXTILE TO CELL C COORDINATE BOUNDARY AND LEAVE END LOOSE UNTIL FINAL REMOVAL OF HDPE RAIN FLAP. WHERE NO RAIN FLAP IS USED, SEW NEW GEOTEXTILE TO EXISTING GEOTEXTILE.
7. INSTALL 8" SCH 80 PVC PERFORATED LEACHATE COLLECTION PIPE. LEAVE APPROX 2' GAP BETWEEN NEW AND EXISTING LEACHATE PIPES.
8. FOLLOWING SATISFACTORY COMPLETION OF LINER ELECTROSTATIC LEAK TESTING, REMOVE SACRIFICIAL HDPE RAIN FLAP.
9. IMMEDIATELY AFTER REMOVING SACRIFICIAL RAIN FLAP, REDEPLOY EXISTING GEOTEXTILE AND SEW TO NEW GEOTEXTILE LAYER; CONNECT EXISTING AND NEW LEACHATE PIPE ENDS WITH FERNCO SHEAR RING COUPLING; INSTALL COARSE AGGREGATE, DRAINAGE LAYER AND GEOTEXTILE, WHERE REQUIRED.
10. INSTALL 12-MIL SCRIM REINFORCED HDPE RAIN COVER AND ANCHOR RAIN COVER INTO EXISTING SOIL COVER APPROXIMATELY 12 FEET UP THE SLOPE.



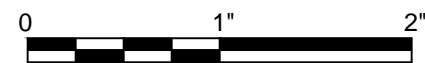
ISSUE	DATE	DESCRIPTION
A	01/30/2023	ISSUED FOR BID

PROJECT MANAGER	A. BROSHAR
CIVIL	A. BROSHAR
CIVIL	K. KINLEY
DRAWN BY	M. BICKFORD
PROJECT NUMBER	10359069



Metro Waste Authority
METRO PARK WEST
MWA PROJECT P-64
CELL D LINER CONSTRUCTION AND
GREENE CO. LANDFILL IMPROVEMENTS

DETAILS

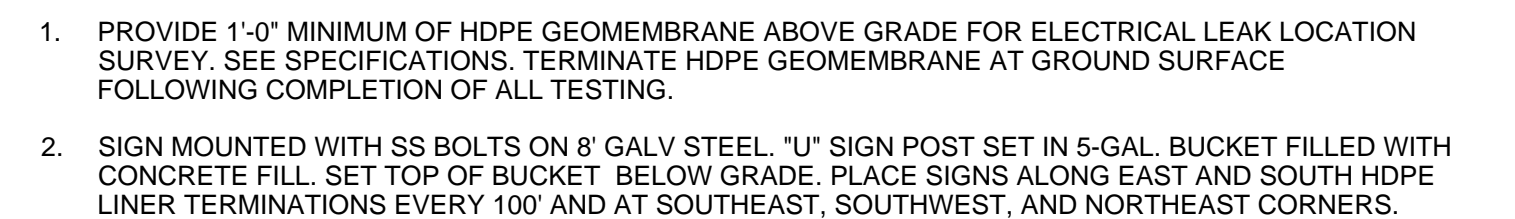


FILENAME | 01C501.dwg
SCALE | AS NOTED

SHEET
01C501



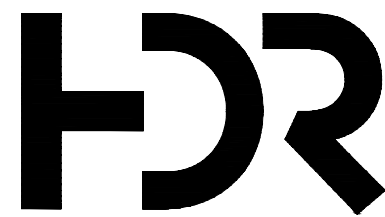
- 5 SIDE SLOPE LINER
01C102 NO SCALE



- 7 EAST & SOUTH LINER TERMINATION
01C102 NO SCALE



c:\pwworking\central\01\03338652\01C503.dwg, Layout1, 1/30/2023 1:10:48 AM, MBICKFORD

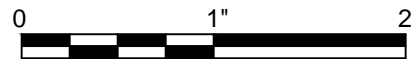


A	01/30/2023	ISSUED FOR BID
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	A. BROSHAR
CIVIL	A. BROSHAR
CIVIL	K. KINLEY
DRAWN BY	M. BICKFORD
PROJECT NUMBER	10359069



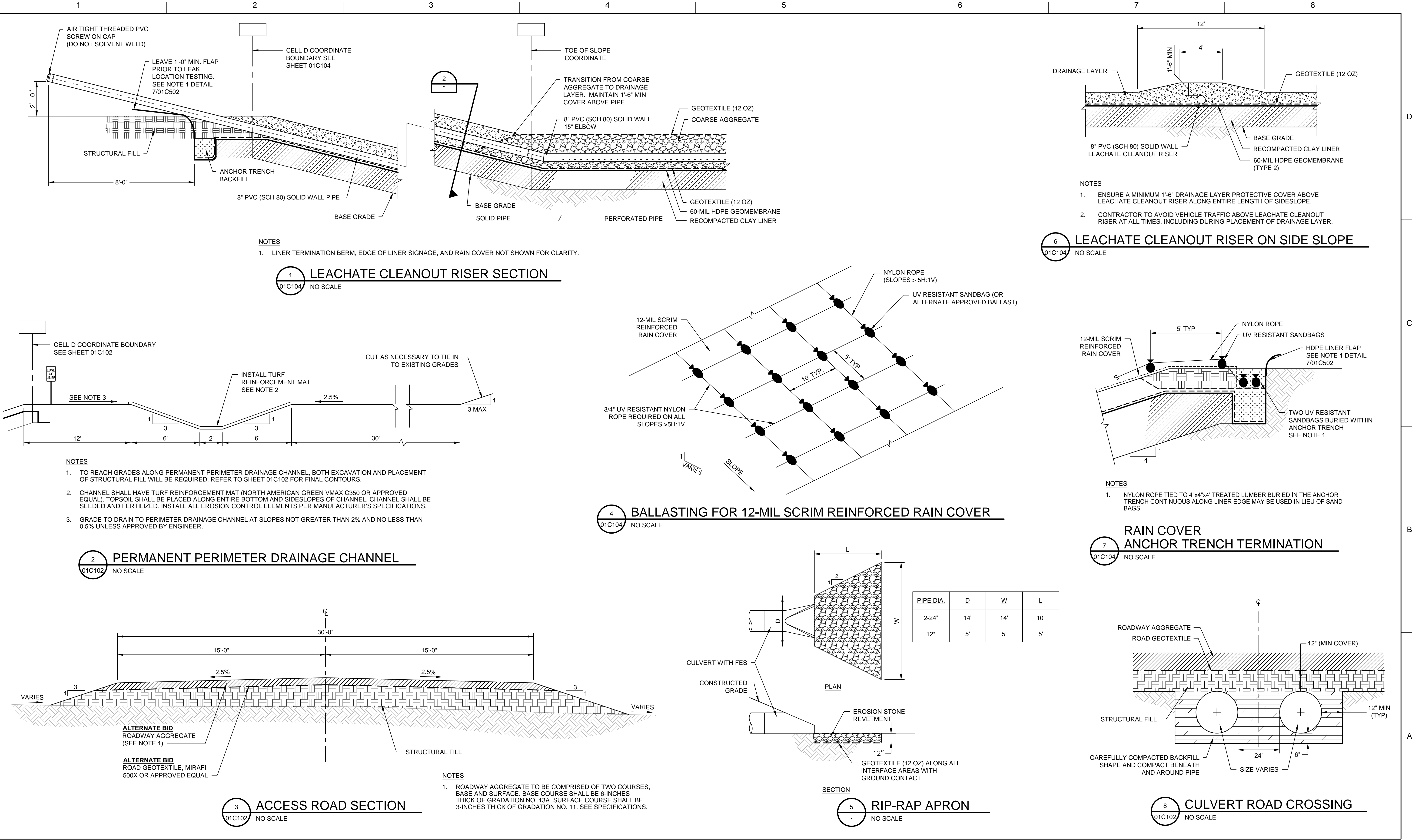
Metro Waste Authority
METRO PARK WEST
MWA PROJECT P-64
CELL D LINER CONSTRUCTION AND
GREENE CO. LANDFILL IMPROVEMENTS



DETAILS

FILENAME	01C503.dwg
SCALE	AS NOTED

SHEET
01C503



2 PERMANENT PERIMETER DRAINAGE CHANNEL

01C102 NO SCALE

1 LEACHATE CLEANOUT RISER SECTION

01C104 NO SCALE

4 BALLASTING FOR 12-MIL SCRIM REINFORCED RAIN COVER

01C104 NO SCALE

5 RIP-RAP APRON

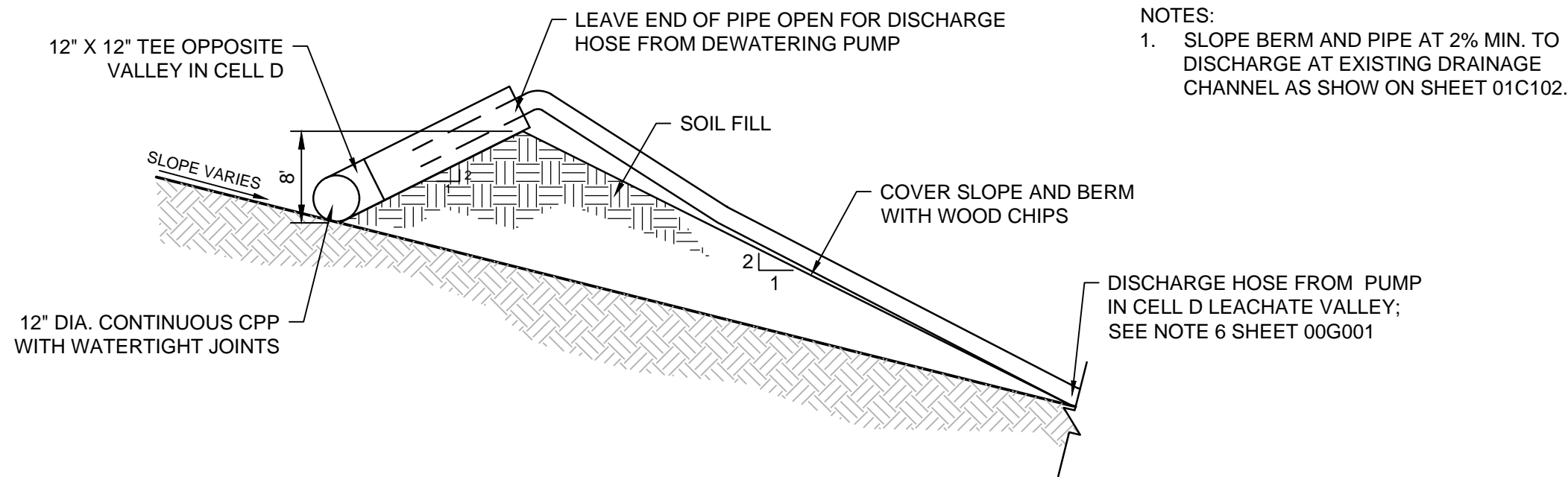
NO SCALE

7 RAIN COVER ANCHOR TRENCH TERMINATION

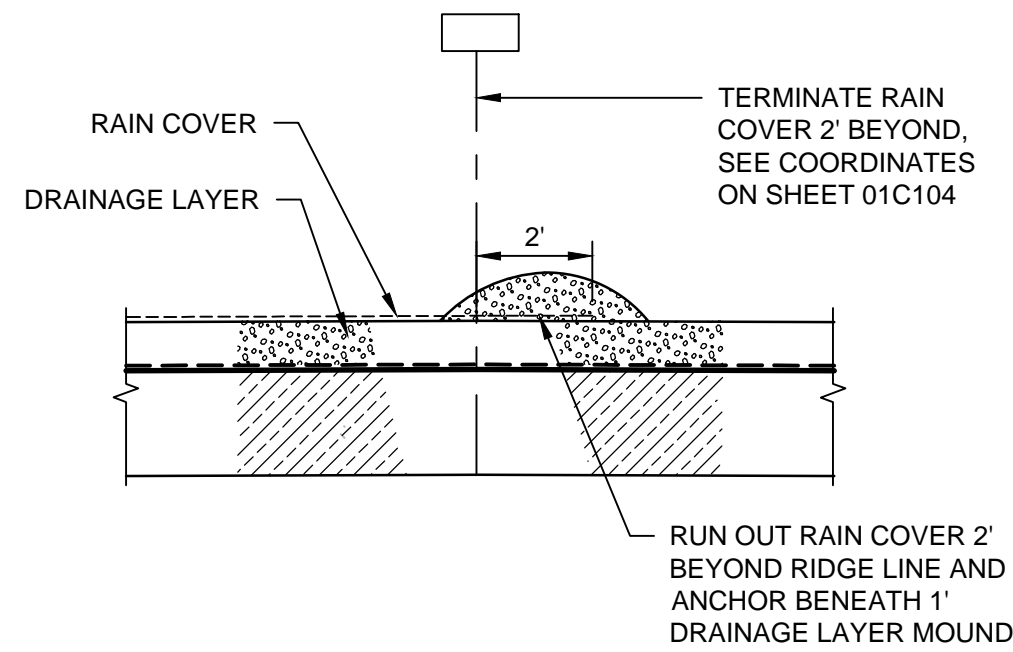
01C104 NO SCALE

8 CULVERT ROAD CROSSING

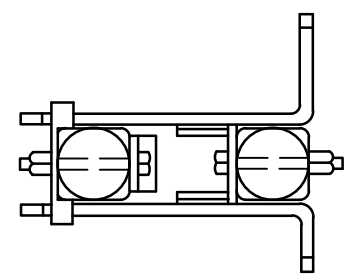
01C102 NO SCALE



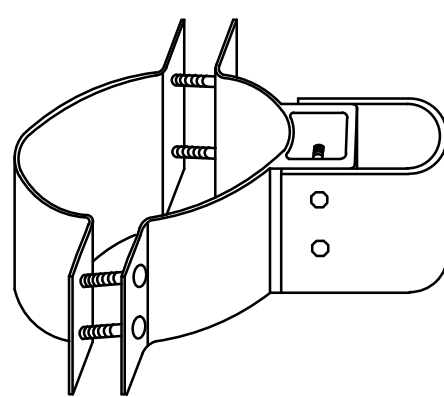
1 STORM WATER DIVERSION BERM
01C102 NO SCALE



5 RAIN COVER TERMINATION
01C104 NO SCALE

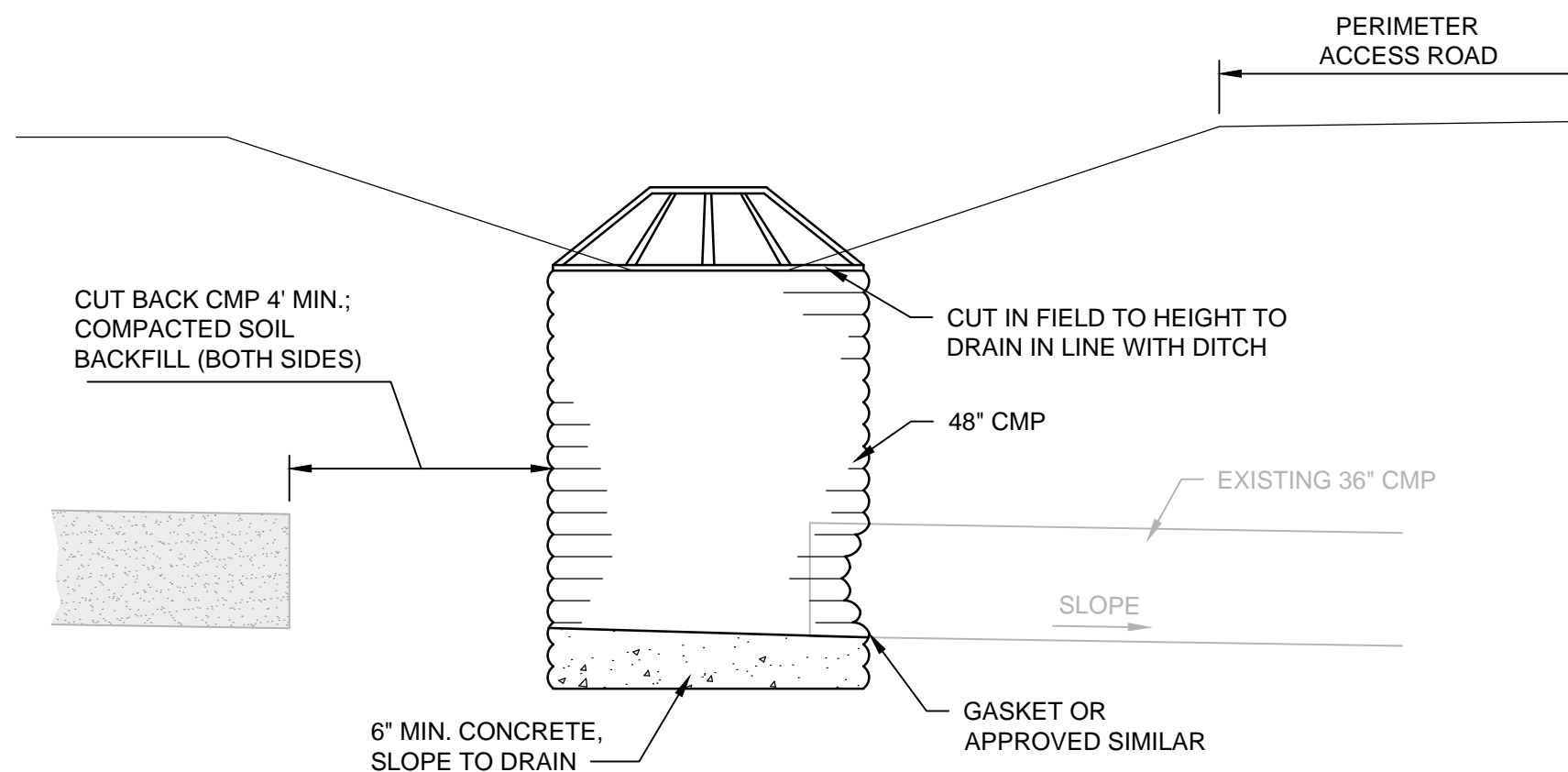


LATCH ASSEMBLY

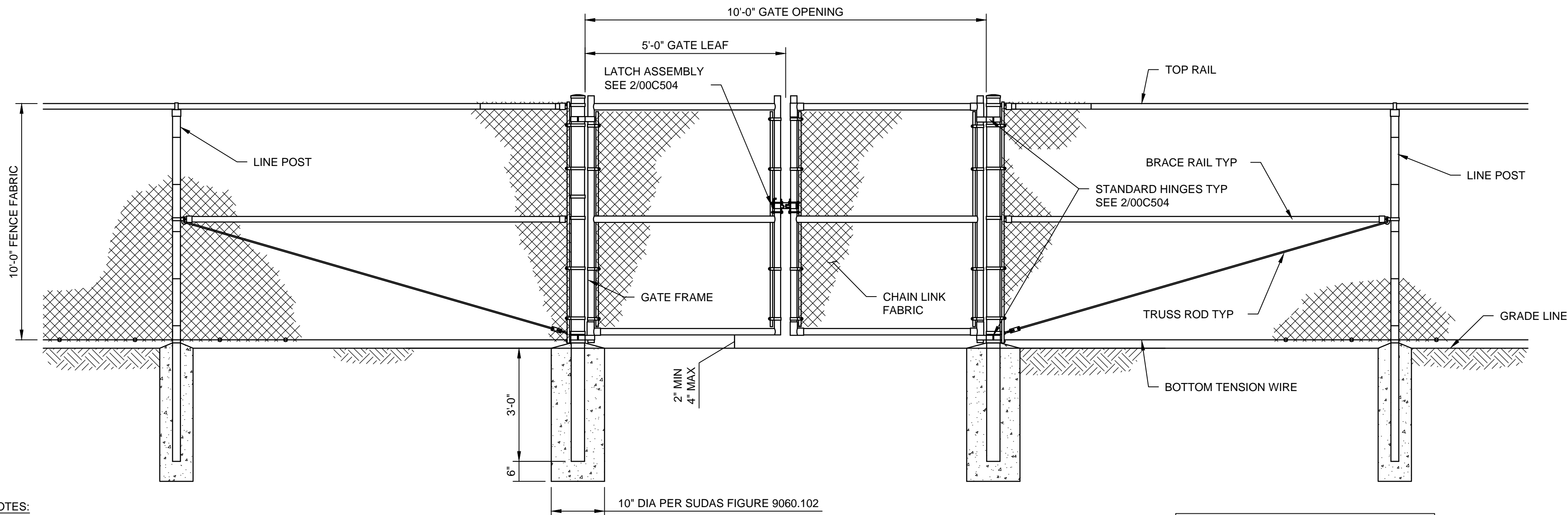


STANDARD HINGE

2 FENCE DETAILS
NO SCALE



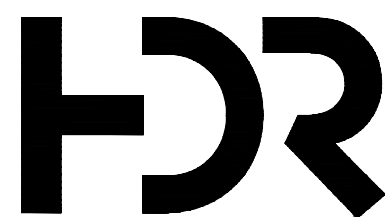
4 DROP STRUCTURE
01C102 NO SCALE



- NOTES:
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION.
 2. SWING GATES SHALL BE CONSTRUCTED WITH PADLOCKS, AND LATCH ASSEMBLY.
 3. ALL GATE FRAMES SHALL BE A MINIMUM 1.90" NOMINAL (ROUND) OR 2.00" NOMINAL (SQUARE). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR ASSEMBLED USING HEAVY FITTINGS.

3 DOUBLE SWING GATE
01C101 NO SCALE

GATE POST SCHEDULE	
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
5'	2.875" OD 2.5" SQ



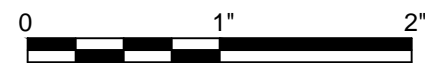
ISSUE	DATE	DESCRIPTION
A	01/30/2023	ISSUED FOR BID

PROJECT MANAGER	A. BROSHAR
CIVIL	A. BROSHAR
CIVIL	K. KINLEY
DRAWN BY	M. BICKFORD
PROJECT NUMBER	10359069



Metro Waste Authority
METRO PARK WEST
MWA PROJECT P-64
CELL D LINER CONSTRUCTION AND
GREENE CO. LANDFILL IMPROVEMENTS

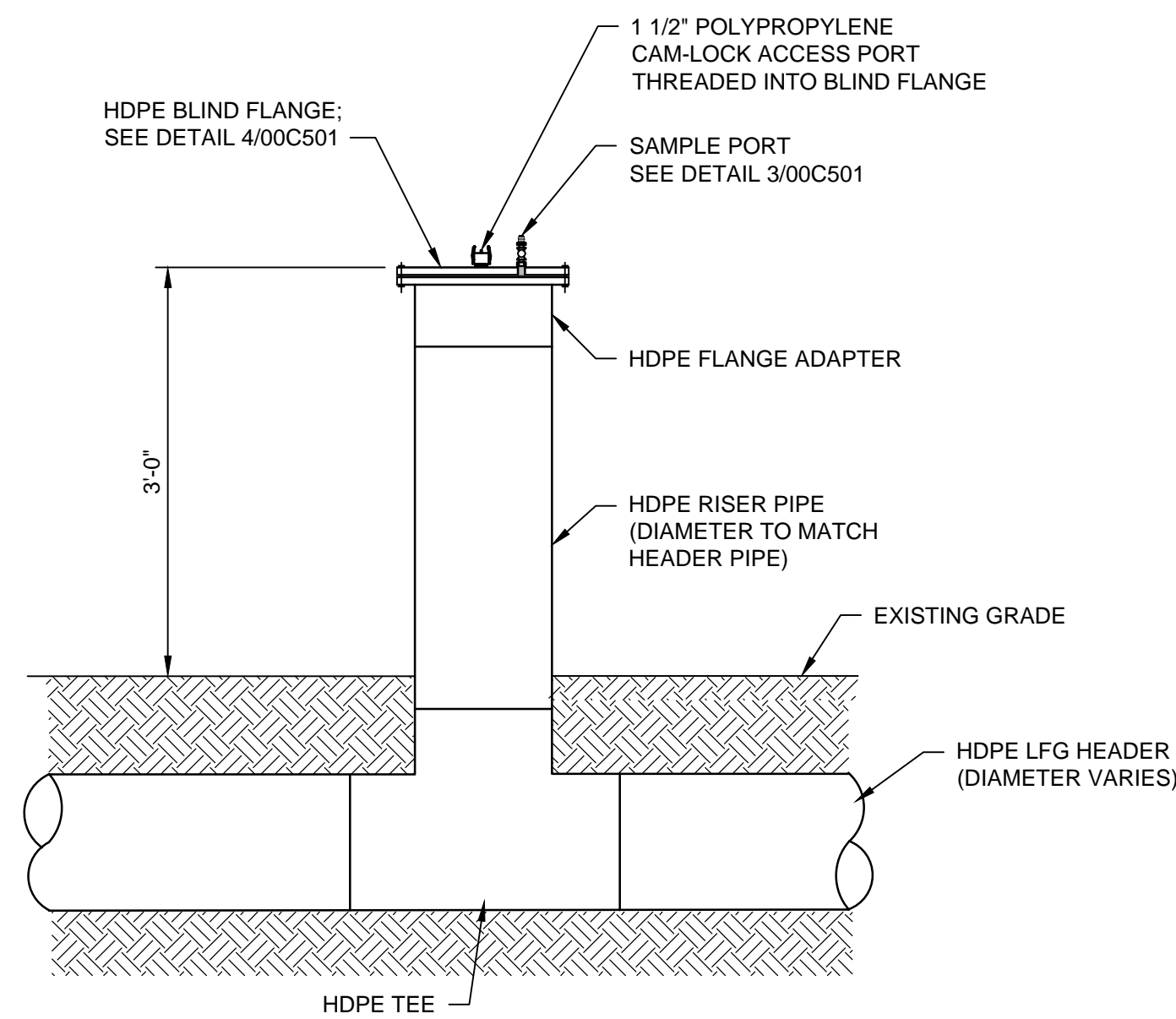
DETAILS



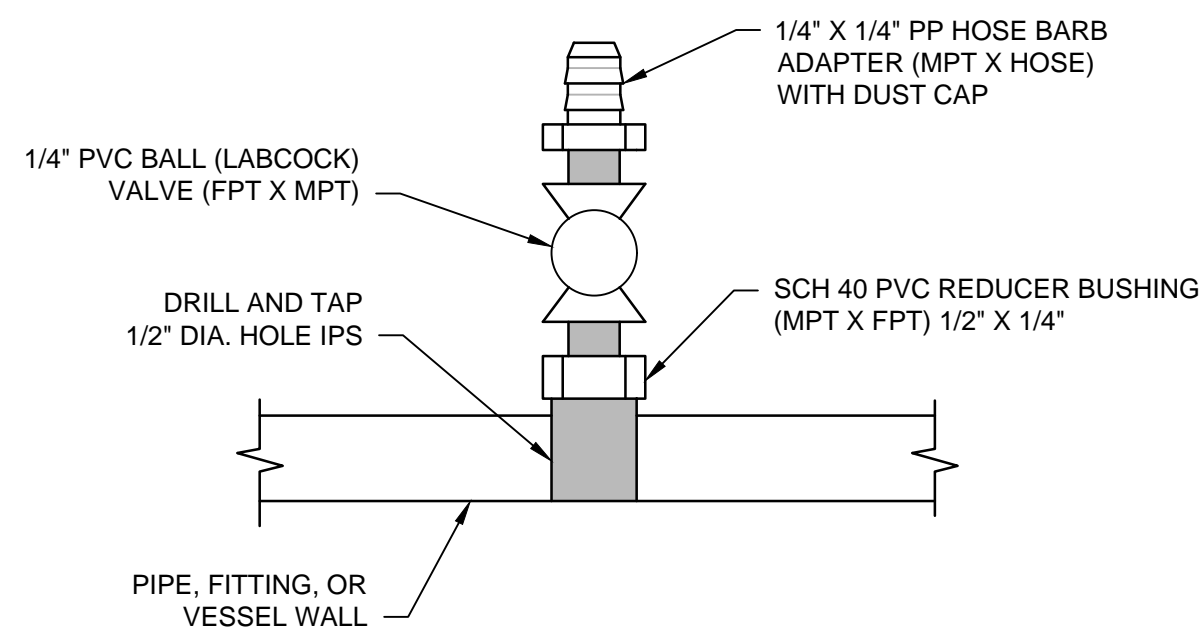
FILENAME	01C504.dwg
SCALE	AS NOTED

SHEET
01C504

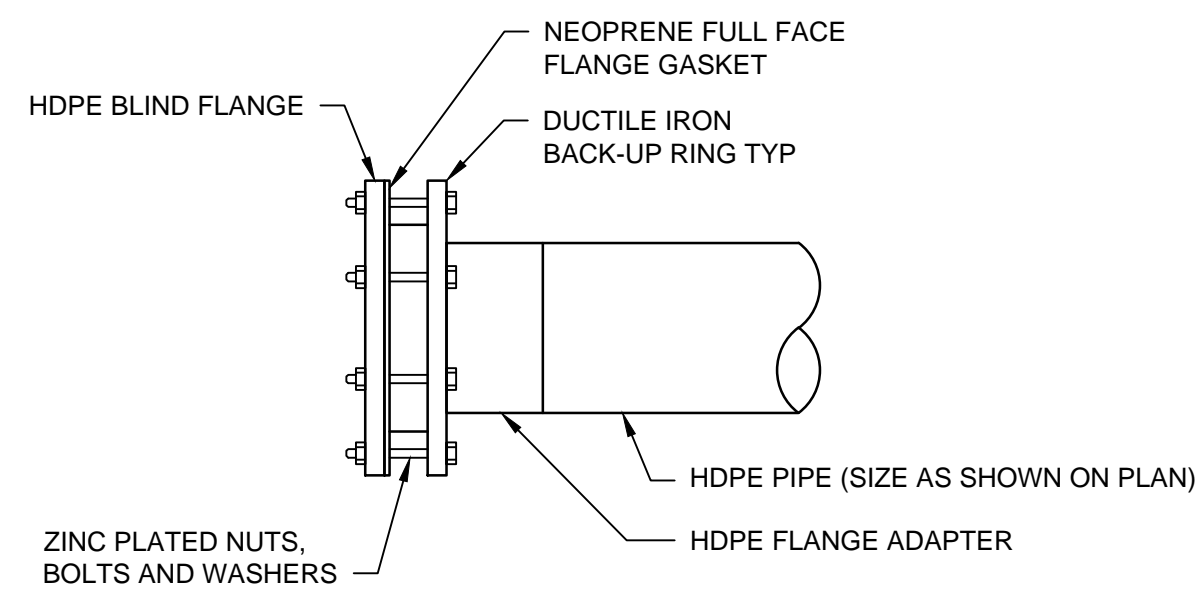
c:\pwworking\central\01\03338652\02C501.dwg, Layout1, 1/30/2023 2:10:40 PM, MBICKFORD



1 ACCESS RISER POINT
02C101 NO SCALE



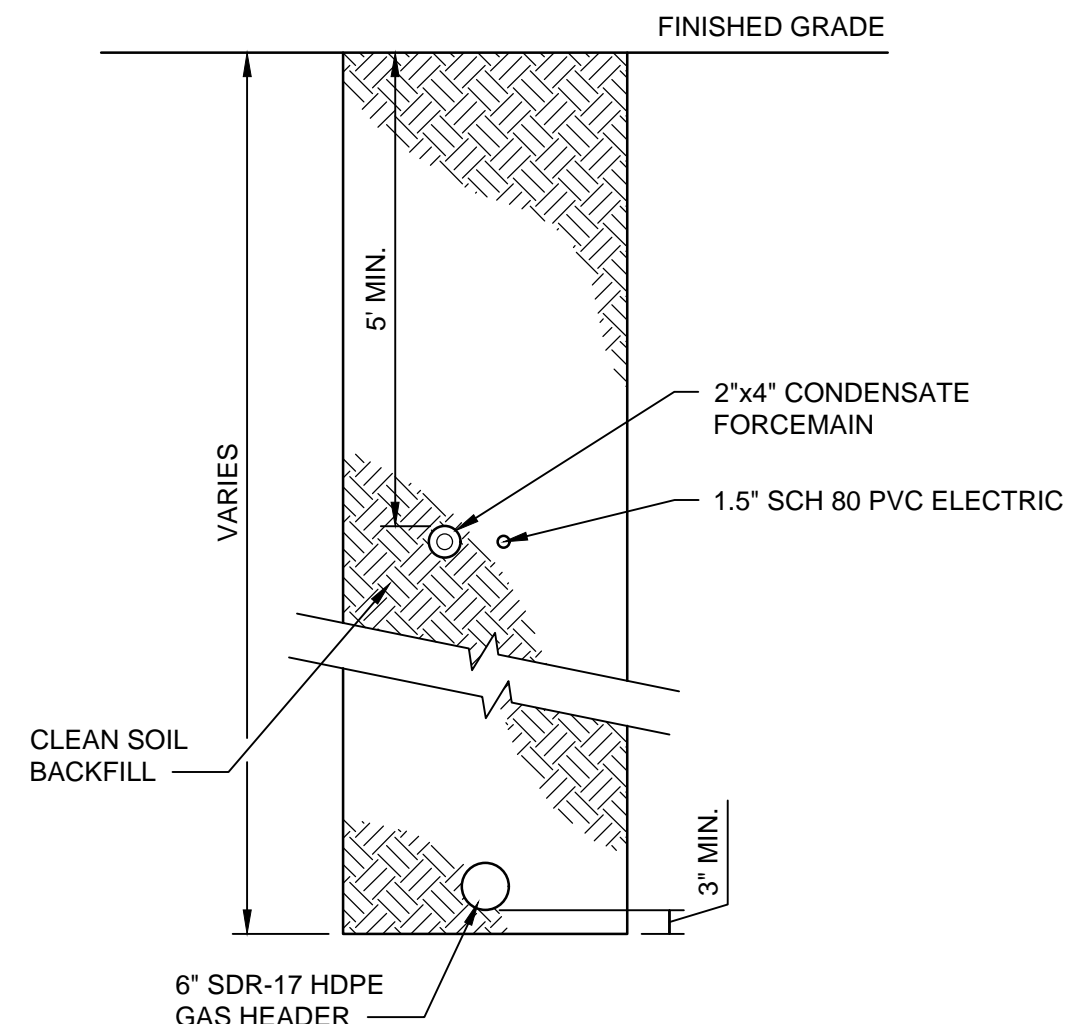
2 SAMPLE PORT
- NO SCALE



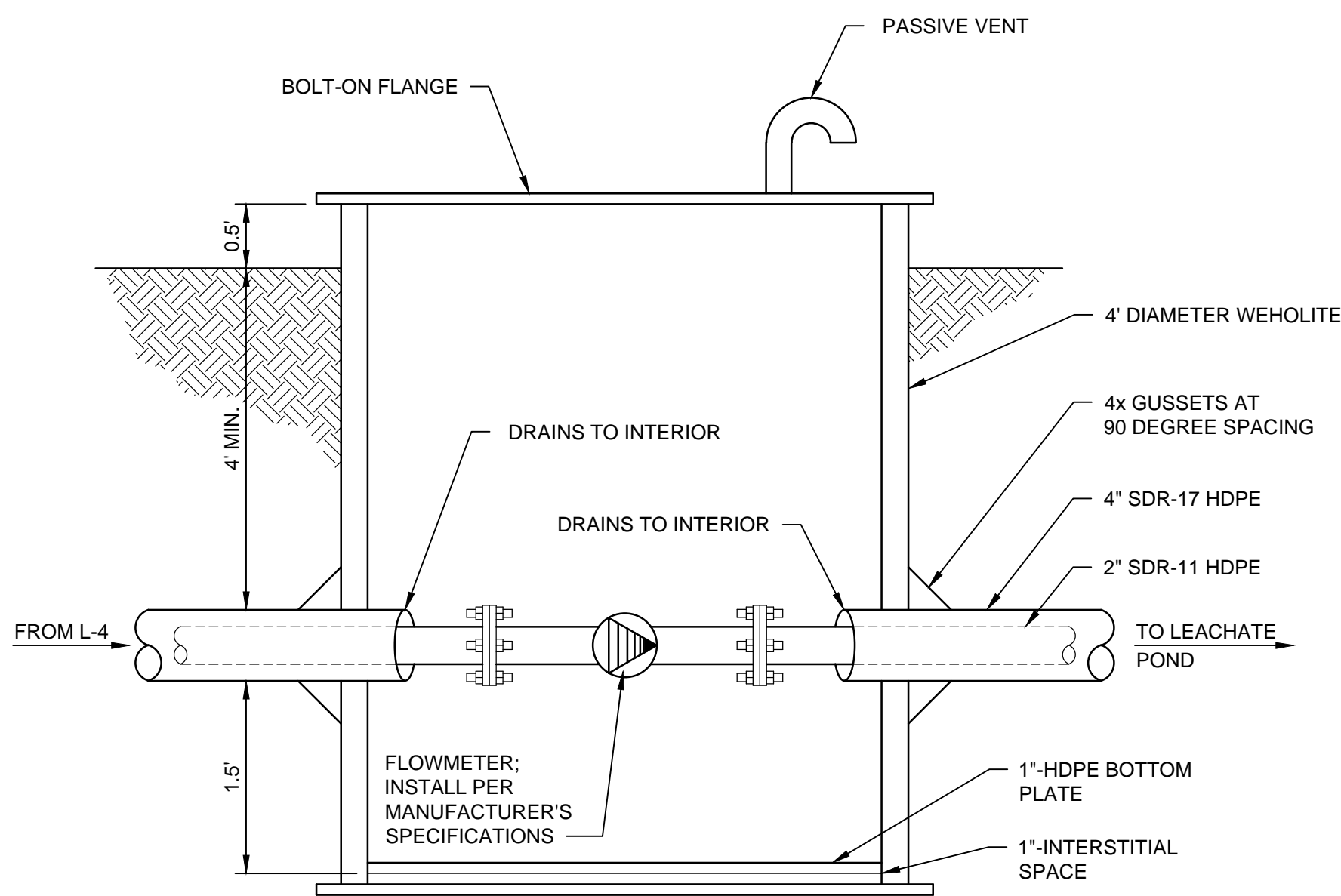
3 BLIND FLANGE
- NO SCALE

NOTES

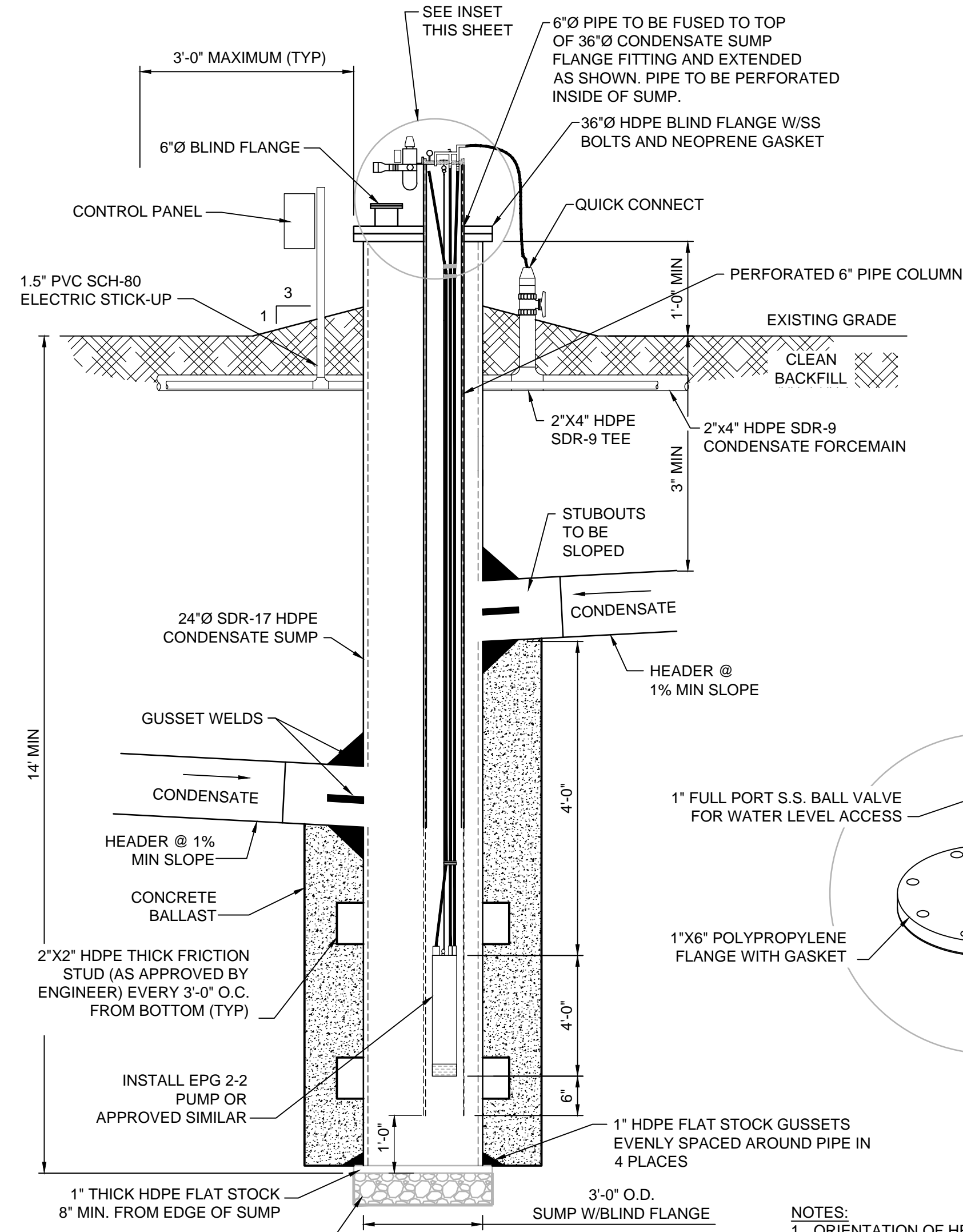
- BASIS OF DESIGN IS A DEWIND ONE PASS SYSTEM OR APPROVED EQUIVALENT.
- TOE DRAIN BASE BID ITEM INCLUDES ALL MATERIALS, LABOR AND EQUIPMENT TO INSTALL TOE DRAIN, SUMP, FORCEMAIN TO L-4, ELECTRIC, PUMP, AND APPURTENANCES TO RENDER THE TOE DRAIN OPERATIONAL.
- ALTERNATE GAS ITEM INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT TO INSTALL GAS HEADER LINE, HEADER ACCESS RISERS, CONDENSATE SUMP WITH PUMP, EXTENDING ELECTRICAL AND FORCEMAIN FROM THE TOE DRAIN SUMP TO THE CONDENSATE SUMP AND RENDERING OPERATIONAL, AND EXTENDING FORCEMAIN AND ELECTRICAL CONDUIT FOR THE FULL LENGTH OF THE TRENCH, WITH ACCESS RISERS.



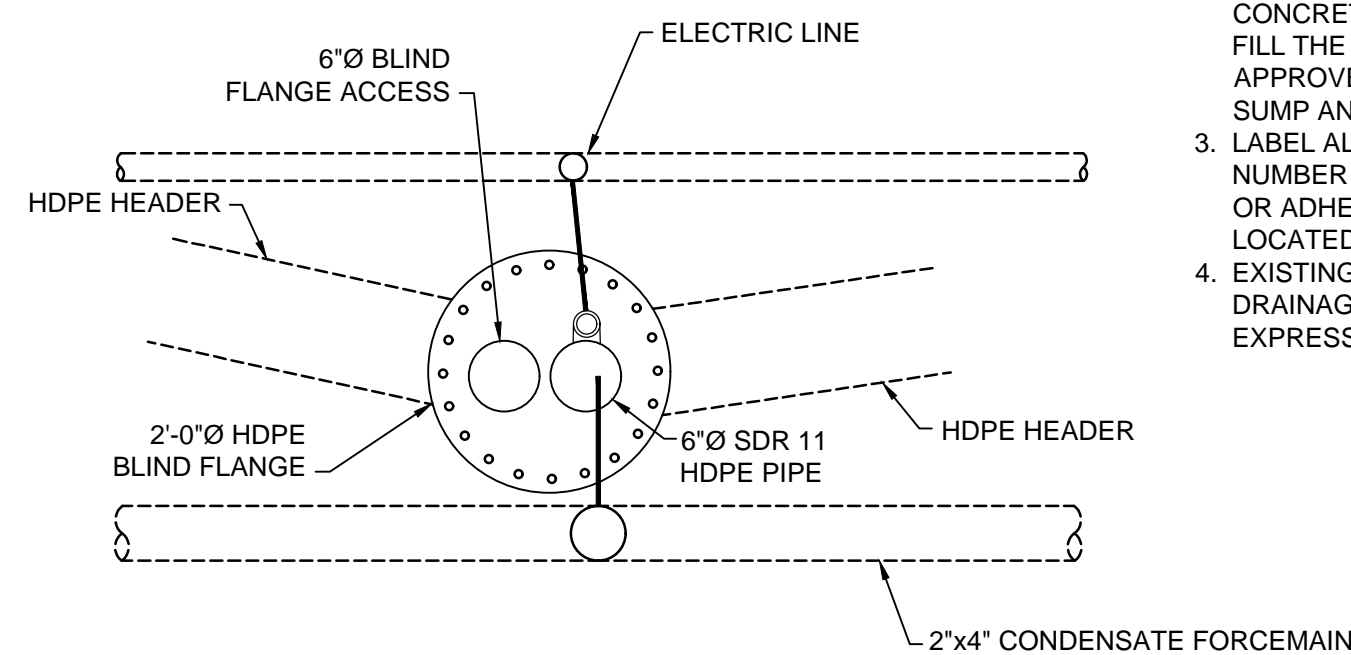
4 UTILITY TRENCH
02C101 NO SCALE



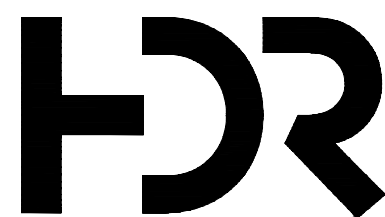
5 FLOWMETER MANHOLE
02C101 NO SCALE



- NOTES:
- ORIENTATION OF HEADER LINES ENTERING CONDENSATE SUMP VARIES BASED ON FIELD CONDITIONS.
 - FIBERFOAM SONOTUBE FORM OR EQUAL AROUND SUMP FOR CONCRETE BALLAST. CONCRETE SHALL BE POURED AS BALLAST. CONCRETE CAN FILL THE ENTIRE EXCAVATION, OR A SONOTUBE (OR APPROVED EQUAL) CAN BE PLACED AROUND THE SUMP AND FILLED WITH CONCRETE AS SHOWN.
 - LABEL ALL CONDENSATE SUMPS WITH IDENTIFICATION NUMBER WITH YELLOW OR WHITE PAINT AND STENCILS OR ADHESIVE LABEL AT 2' MINIMUM HEIGHT AND LOCATED IMMEDIATELY BELOW HIGH VISIBILITY TAPE.
 - EXISTING GRADE TO BE SLOPED FOR POSITIVE DRAINAGE IN A 1' SURROUNDING SURFACE EXPRESSION.



6 CONDENSATE SUMP
02C101 NO SCALE



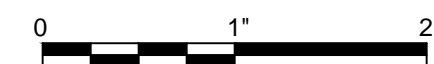
A	01/30/2023	ISSUED FOR BID
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	A. BROSHAR
CIVIL	A. BROSHAR
CIVIL	K. KINLEY
DRAWN BY	M. BICKFORD
PROJECT NUMBER	10359069



Metro Waste Authority
METRO PARK WEST
MWA PROJECT P-64
CELL D LINER CONSTRUCTION AND
GREENE CO. LANDFILL IMPROVEMENTS

TOE-DRAIN DETAILS



FILENAME | 02C501.dwg
SCALE | AS NOTED

SHEET
02C501