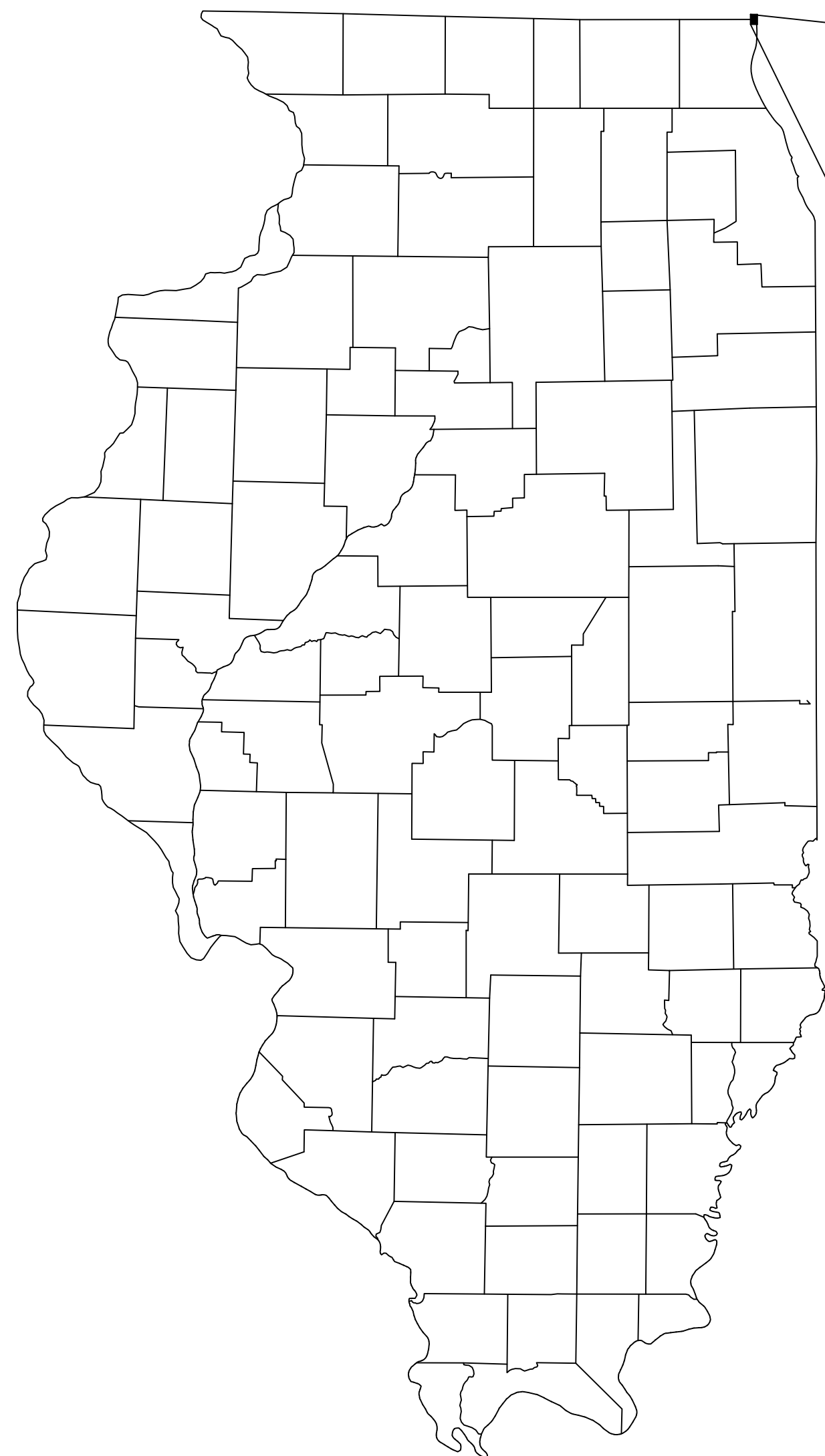
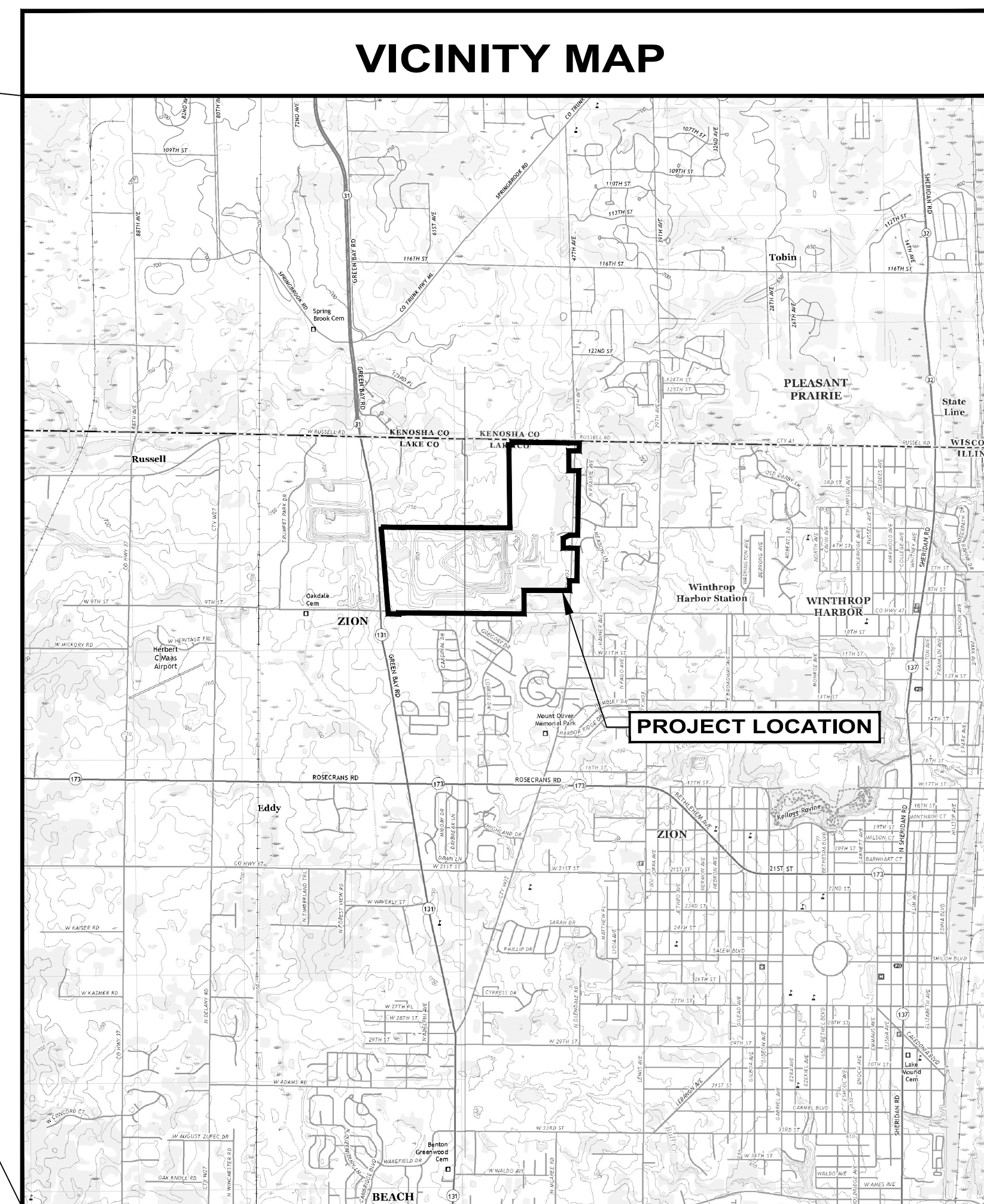


DESIGN DRAWINGS

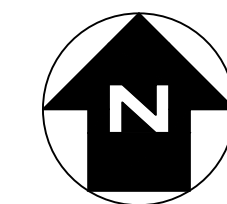
ZION LANDFILL SITE 2 NORTH EXPANSION APPLICATION FOR IEPA PERMIT APPROVAL



STATE OF ILLINOIS



VICINITY MAP
PROJECT LOCATION MAP
SCALE: 1" = 3500'



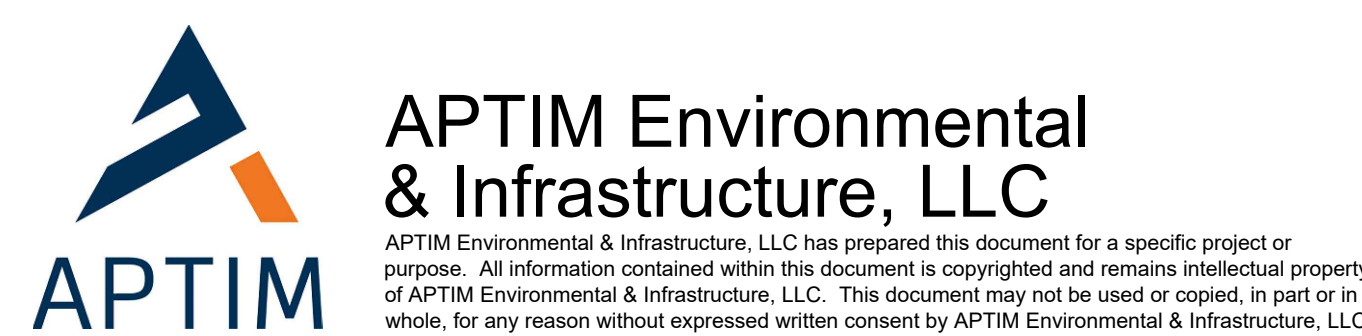
LEGEND	
SYMBOL	DESCRIPTION
—————	APPROXIMATE PROPOSED FACILITY BOUNDARY

DEVIN A. MOOSE, P.E. LICENSE NUMBER 062-044472	_____ DATE
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DRAWING INDEX			
SHEET NUMBER	SHEET TITLE	SHEET NUMBER	SHEET TITLE
D1	TITLE SHEET	D28	CROSS SECTION A-A'
D2	REGIONAL FACILITY LOCATION MAP	D29	CROSS SECTION B-B'
D3	WASTE UNIT BOUNDARIES	D30	LANDFILL PHASING PLAN – PHASE A
D4	FACILITY TOPOGRAPHY	D31	LANDFILL PHASING PLAN – PHASE B
D5	PERMITTED LANDFILL LEACHATE COLLECTION SYSTEM LAYER GRADES	D32	LANDFILL PHASING PLAN – PHASE C
D6	PERMITTED LANDFILL FINAL COVER GRADES	D33	LANDFILL PHASING PLAN – PHASE D
D7	PROPOSED EXCAVATION - BOTTOM OF LINER GRADES	D34	LANDFILL PHASING PLAN – PHASE E
D8	PROPOSED TOP OF LINER GRADES	D35	LANDFILL PHASING PLAN – PHASE F
D9	CONCEPTUAL GEOMEMBRANE PANEL LAYOUT	D36	LANDFILL PHASING PLAN – PHASE G
D10	PROPOSED LEACHATE COLLECTION SYSTEM LAYER GRADES	D37	LANDFILL PHASING PLAN – PHASE H
D11	PROPOSED FINAL LANDFORM GRADES		
D12	PROPOSED GROUNDWATER MONITORING PLAN		
D13	PROPOSED STORMWATER MANAGEMENT SYSTEM		
D14	CONCEPTUAL LANDFILL GAS MANAGEMENT SYSTEM		
D15	LINER - LEACHATE COLLECTION DETAILS - 1		
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D17	LINER - LEACHATE COLLECTION DETAILS - 3		
D18	LINER - LEACHATE COLLECTION DETAILS - 4		
D19	LINER - LEACHATE COLLECTION DETAILS - 5		
D20	COVER AND MONITORING DETAILS		
D21	STORMWATER MANAGEMENT DETAILS - 1		
D22	STORMWATER MANAGEMENT DETAILS - 2		
D23	STORMWATER MANAGEMENT DETAILS - 3		
D24	STORMWATER MANAGEMENT DETAILS - 4		
D25	STORMWATER MANAGEMENT DETAILS - 5		
D26	LANDFILL GAS MANAGEMENT SYSTEM DETAILS - 1		
D27	LANDFILL GAS MANAGEMENT SYSTEM DETAILS - 2		

GENERAL NOTES
1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM ON 10/22/2018.
2. UNLESS OTHERWISE NOTED, DETAILS AND SECTIONS SHOWN IN THIS DRAWING SET REPRESENT THE FEATURES TO BE CONSTRUCTED AS PART OF THE EXPANSION, INCLUDING THE COMPOSITE LINER SYSTEMS IN THE HORIZONTAL EXPANSION AREA AS PART OF THE SITE 2 NORTH EXPANSION AND FINAL COVER SYSTEMS AND ENVIRONMENTAL CONTROLS IN THE HORIZONTAL AND VERTICAL EXPANSION AREAS. DESIGN FEATURES OF THE EXISTING LANDFILL ARE DESCRIBED IN DOCUMENTS ASSOCIATED WITH PERMIT NUMBER 1995-343-LFM.
3. THE NEED FOR FLEXIBILITY TO ACCOMMODATE ADJUSTMENTS AND MODIFICATIONS IS ANTICIPATED CONSIDERING THE SIZE, COMPLEXITY, AND LIFE OF THE PROJECT. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN WITHIN THIS PLANSET.

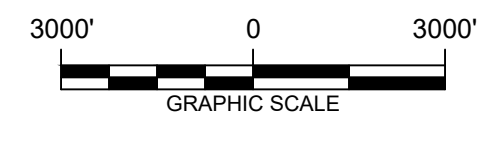
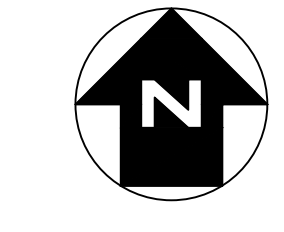
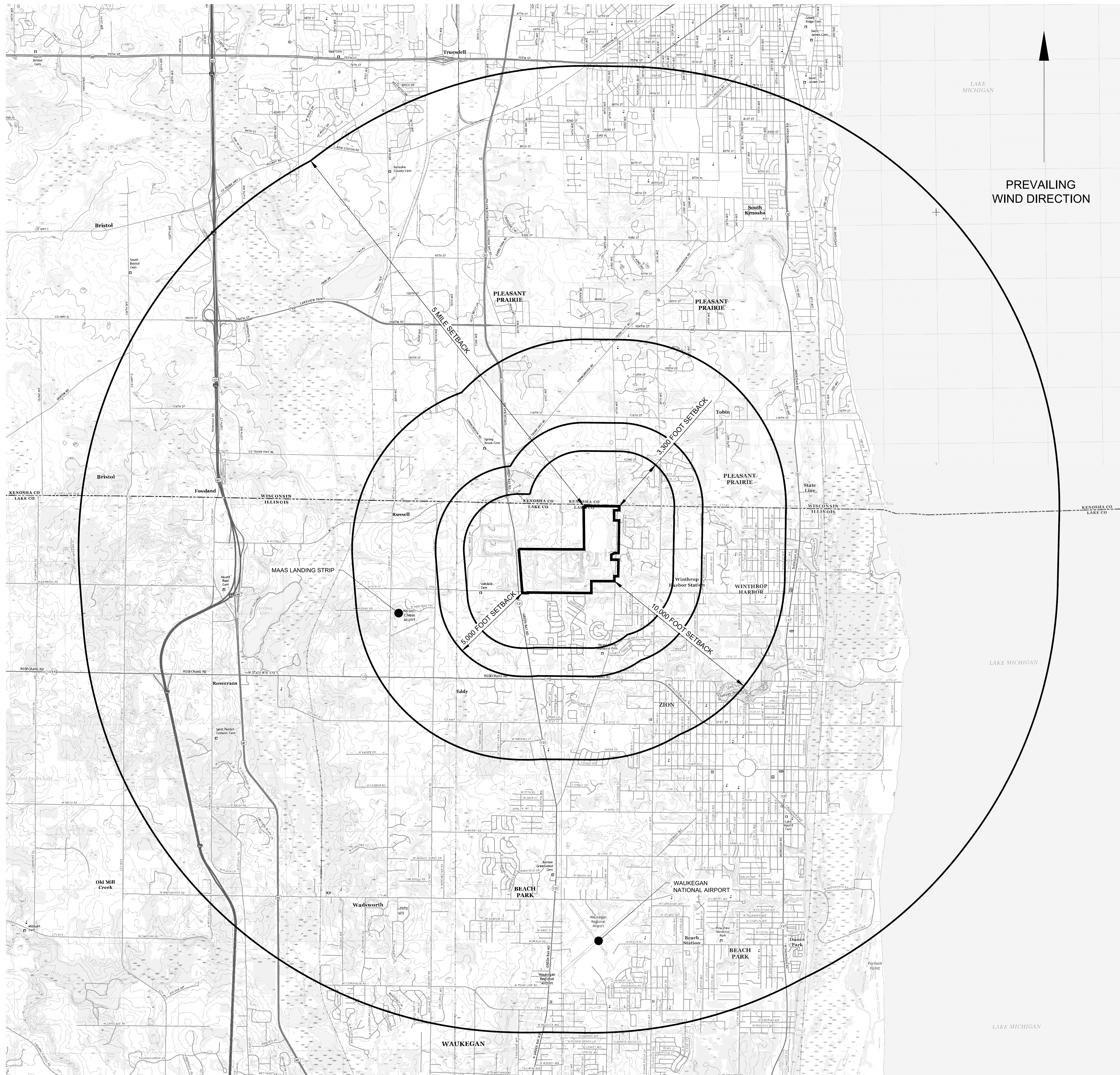
REV. NO.	DATE	DESCRIPTION



**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

TITLE SHEET

PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM	D1
DRAWN BY: BWM/NV/KM	
CHECKED BY: DAM	
APPROVED BY: DAM	
1 OF 37 SHEETS	



LEGEND

— APPROXIMATE PROPOSED FACILITY BOUNDARY

NOTES

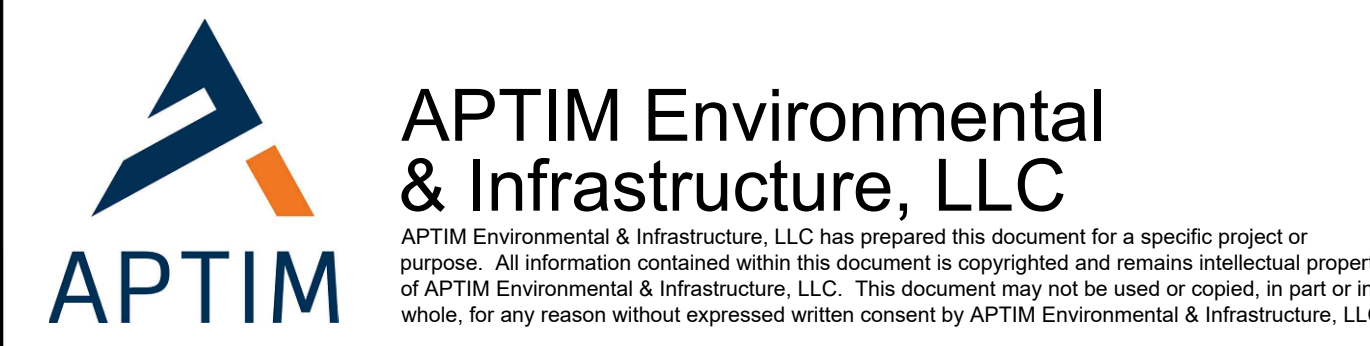
1. THE FOLLOWING RADIAL DISTANCES ARE SHOWN:
 - A. AIRPORT SETBACK ZONES PER 35 ILLINOIS ADMINISTRATIVE CODE 814-302(C):
 - 5,000 FEET
 - 10,000 FEET
 - 5 MILES
 - B. 3,300 FEET (1,000 METERS) PER 35 ILLINOIS ADMINISTRATIVE CODE 812.106(A) AND 811.102(C) DEMONSTRATIONS.
2. THE PROPOSED EXPANSION IS NOT LOCATED WITHIN 5,000 FEET OF ANY RUNWAY USED BY A PISTON AIRCRAFT OR 10,000 FEET OF ANY RUNWAY USED BY TURBOJET AIRCRAFT. THE NEAREST AIRPORT LISTED ON THE 2012 ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) AIRPORT INVENTORY IS THE WAUKEGAN NATIONAL AIRPORT WITH THE NEAREST RUNWAY LOCATED APPROXIMATELY 4.1 MILES SOUTH OF THE SITE 2 NORTH EXPANSION. THE MAAS LANDING STRIP, A PRIVATELY-OWNED LANDING STRIP, IS LOCATED OVER 5,000 FEET FROM THE OVERALL LANDFILL BOUNDARY TO THE SOUTHWEST. THE MAAS LANDING STRIP IS USED ONLY BY PISTON AIRCRAFT.
3. THE PROPOSED EXPANSION IS NOT WITHIN A 100-YEAR FLOODPLAIN, AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) AND AS PROVIDED BY THE FLOOD INSURANCE RATE MAP (FIRM) PANELS 17097C0057K and 17097C0076K, DATED SEPTEMBER 17, 2013.
4. A ROUTINE WETLAND DELINEATION STUDY OF THE PROPOSED EXPANSION AREA WAS PERFORMED BY HAMPTON, LENZINI, AND RENWICK, INC. (HLR) TO IDENTIFY AND DELINEATE WETLANDS. THE STUDY WAS PERFORMED IN ACCORDANCE WITH THE CURRENT US ARMY CORPS OF ENGINEERS (USACE) METHODOLOGY TO IDENTIFY THE LOCATION OF WETLANDS AND WATERS OF THE U.S. THE STUDY FOUND THAT WETLANDS FALLING UNDER THE JURISDICTION OF THE USACE (WATERS OF THE UNITED STATES) AND WETLANDS FALLING UNDER THE JURISDICTION OF THE LAKE COUNTY STORMWATER MANAGEMENT COMMISSION (ISOLATED WATERS OF LAKE COUNTY) ARE PRESENT ON SITE.

ZION LANDFILL INC. WILL ACQUIRE AN INDIVIDUAL PERMIT FROM THE USACE (COMPLYING WITH SECTION 404 OF THE CLEAN WATER ACT) PRIOR TO THE DEVELOPMENT OF THE PROPOSED EXPANSION, WHICH WILL INCLUDE MITIGATING LOSS OF WATERS OF THE U.S. AND/OR JURISDICTIONAL WETLANDS AS REQUIRED BY THE USACE. NO CONSTRUCTION WILL TAKE PLACE WITHIN JURISDICTIONAL WETLANDS OR WATERS OF THE U.S. PRIOR TO RECEIVING THIS PERMIT. SIMILARLY, ZION LANDFILL INC. WILL SECURE A WETLAND DEVELOPMENT PERMIT FROM THE LAKE COUNTY STORMWATER MANAGEMENT COMMISSION PRIOR TO DEVELOPMENT, WHICH WILL INCLUDE MITIGATING LOSS OF ISOLATED WATERS OF LAKE COUNTY.
5. THERE ARE NO FAULTS THAT HAVE DISPLACED DURING THE HOLOCENE EPOCH WITHIN 200 FEET OF THE FACILITY, INCLUDING THE SITE 2 NORTH EXPANSION AREA.
6. THERE ARE NO DOCUMENTED UNSTABLE AREAS BENEATH THE EXCAVATION OF THE EXISTING LANDFILL OR PROPOSED EXPANSION. NO RECORDED COAL MINES ARE LOCATED WITHIN THE VICINITY OF THE EXISTING LANDFILL OR PROPOSED EXPANSION. SITE SPECIFIC STUDIES HAVE NOT IDENTIFIED SITE CHARACTERISTICS CONDUCTIVE TO THE FORMATION OF KARST FEATURES NOR THE PRESENCE OF COAL MINING.
7. THE PROPOSED EXPANSION IS NOT LOCATED WITHIN A SEISMIC IMPACT ZONE THAT HAS A 10% CHANCE OF EXCEEDING 0.10 G IN 250 YEARS.
8. THERE ARE NO RIVERS DESIGNATED FOR PROTECTION UNDER THE WILD AND SCENIC RIVERS ACT WITHIN THE PROPOSED FACILITY WATERSHED.
9. A PHASE 1 ARCHAEOLOGICAL SURVEY OF THE PROPOSED EXPANSION AREA WAS COMPLETED BY THE PUBLIC SERVICE ARCHAEOLOGY AND ARCHITECTURE PROGRAM, UNIVERSITY OF ILLINOIS AT URBANA CHAMPAIGN, IN 2019. PHASE 1 ARCHAEOLOGIC SURVEYS WERE PREVIOUSLY COMPLETED FOR THE EXISTING FACILITY AS PART OF PREVIOUS EXPANSIONS. NO DESIGNATED HISTORIC, ARCHITECTURAL OR ARCHAEOLOGICAL RESOURCES WILL BE THREATENED OR DESTROYED AS PART OF THE PROPOSED EXPANSION DEVELOPMENT.
10. THE DEVELOPMENT AND OPERATIONS OF THE PROPOSED EXPANSION WITHIN THE PROPOSED EXPANDED FACILITY WILL NOT IMPACT ANY POTENTIAL ENDANGERED OR THREATENED SPECIES.
11. NO NATIONAL LANDMARKS WILL BE IMPACTED AS PART OF THIS EXPANSION. THE CLOSEST NATIONAL NATURAL LANDMARK IS ILLINOIS BEACH NATURE PRESERVE IN LAKE COUNTY, ILLINOIS, APPROXIMATELY 6 MILES SOUTHEAST OF THE EXPANSION SITE.
12. NO DESIGNATED NATURAL AREAS WILL BE IMPACTED AS PART OF THE EXPANSION.
13. THE DEVELOPMENT AND OPERATIONS OF THE PROPOSED EXPANSION WILL NOT VIOLATE AN AREA-WIDE OR STATE-WIDE WATER QUALITY MANAGEMENT (WQM) PLAN FOR NON-POINT SOURCE POLLUTION.
14. THERE ARE NO KNOWN WATER SUPPLY WELLS LOCATED WITHIN 200 FEET OF THE PROPOSED WASTE BOUNDARY NOR ARE THERE ANY COMMUNITY WATER SUPPLY WELLS WITHIN 1,000 FEET OF THE WASTE BOUNDARY AS PER THE SETBACK ZONES DEFINED IN SECTIONS 14.2 AND 14.3 OF THE ILLINOIS ENVIRONMENTAL PROTECTION ACT. THE LOCATIONS OF ALL KNOWN AND RECORDED WELLS IN THE SURROUNDING AREA OF THE SITE ARE SHOWN ON DRAWING G2.
15. THE MAHOMET AQUIFER IS THE ONLY SOLE SOURCE AQUIFER LOCATED IN ILLINOIS AND IS MORE THAN 100 MILES SOUTH OF THE PROPOSED EXPANDED LANDFILL.
16. THE ONLY REGULATED RECHARGE AREA IN ILLINOIS IS THE PLEASANT VALLEY PUBLIC WATER DISTRICT OF PEORIA COUNTY, IS LOCATED APPROXIMATELY 150 MILES SOUTHWEST OF THE PROPOSED EXPANSION.
17. THE OPERATIONS OF THE PROPOSED EXPANDED LANDFILL WILL BE VISUALLY SCREENED BY BERMS THAT ARE A MINIMUM 8 FEET IN HEIGHT
18. THERE ARE NO OCCUPIED DWELLINGS, SCHOOLS, RETIREMENT HOMES, HOSPITALS, OR SIMILAR INSTITUTIONS WITHIN 500 FEET OF THE PROPOSED EXPANDED LANDFILL WASTE BOUNDARY.

MAP REFERENCES

1. U.S.G.S. 7.5 MINUTE SERIES (TOPOGRAPHIC) QUADRANGLE MAPS. WADSWORTH (2018), ZION (2018), KENOSHA (2016), PLEASANT PRAIRIE (2016) - LAKE COUNTY, ILLINOIS.

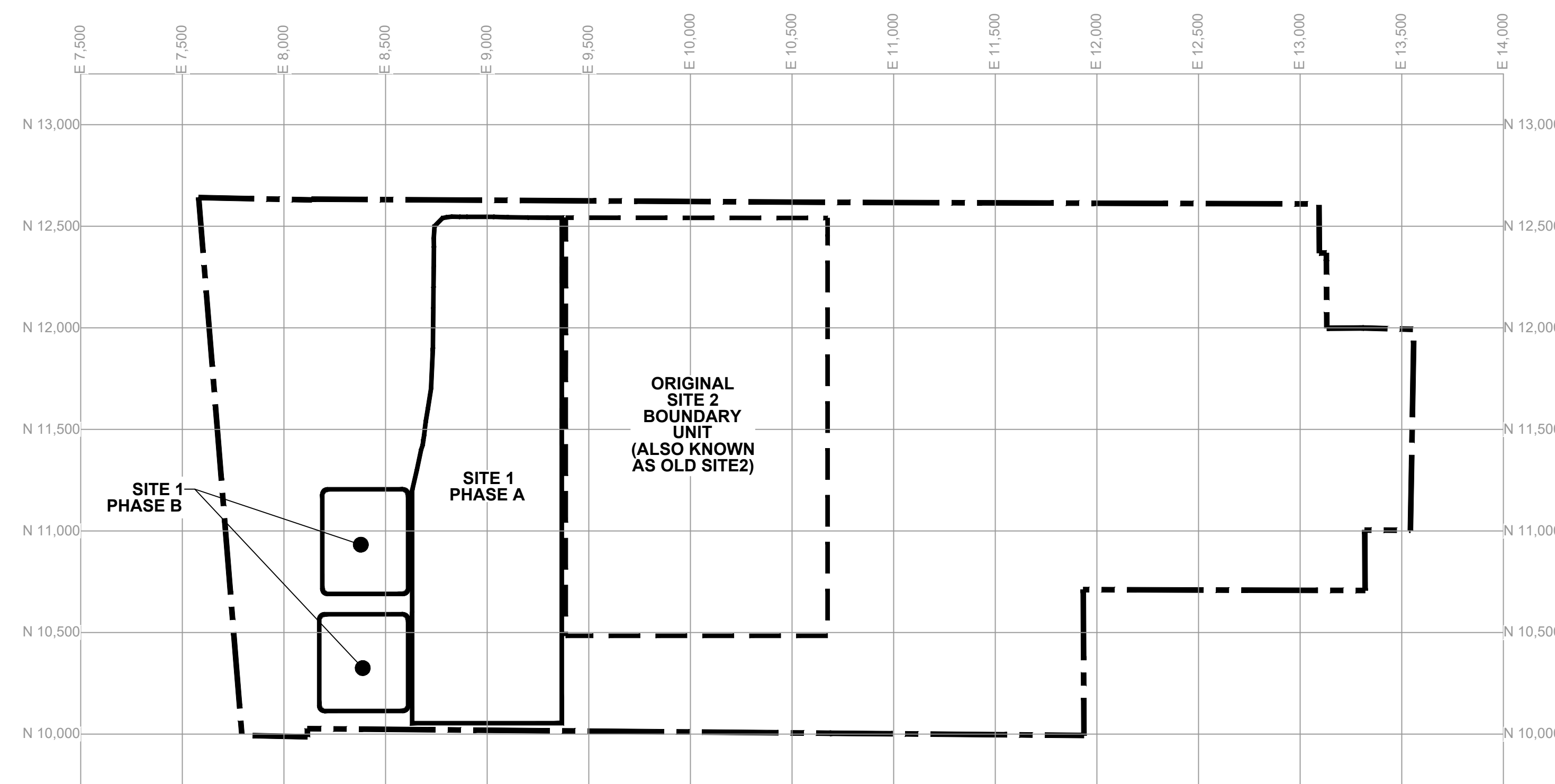
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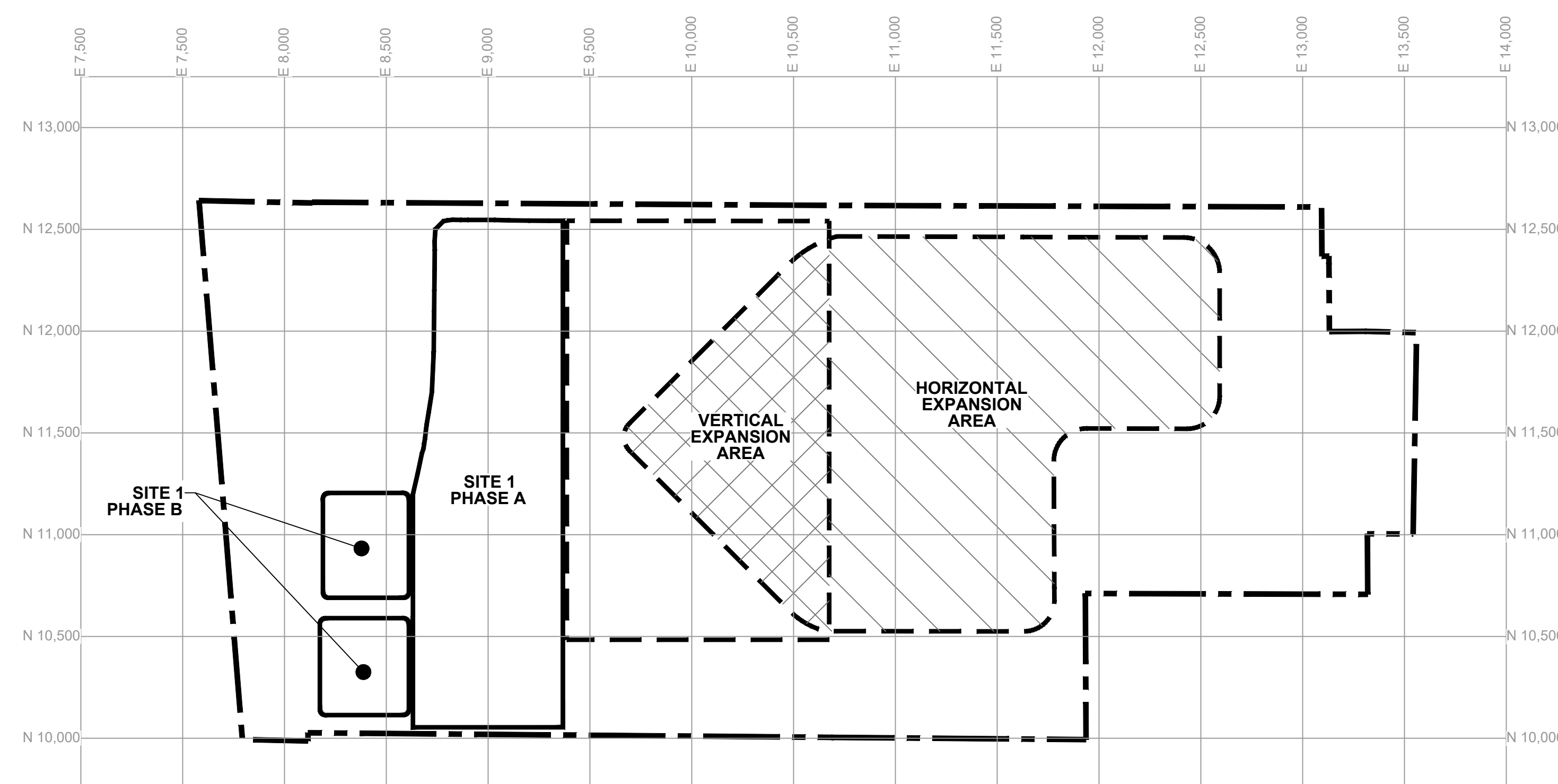
**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

REGIONAL FACILITY LOCATION MAP

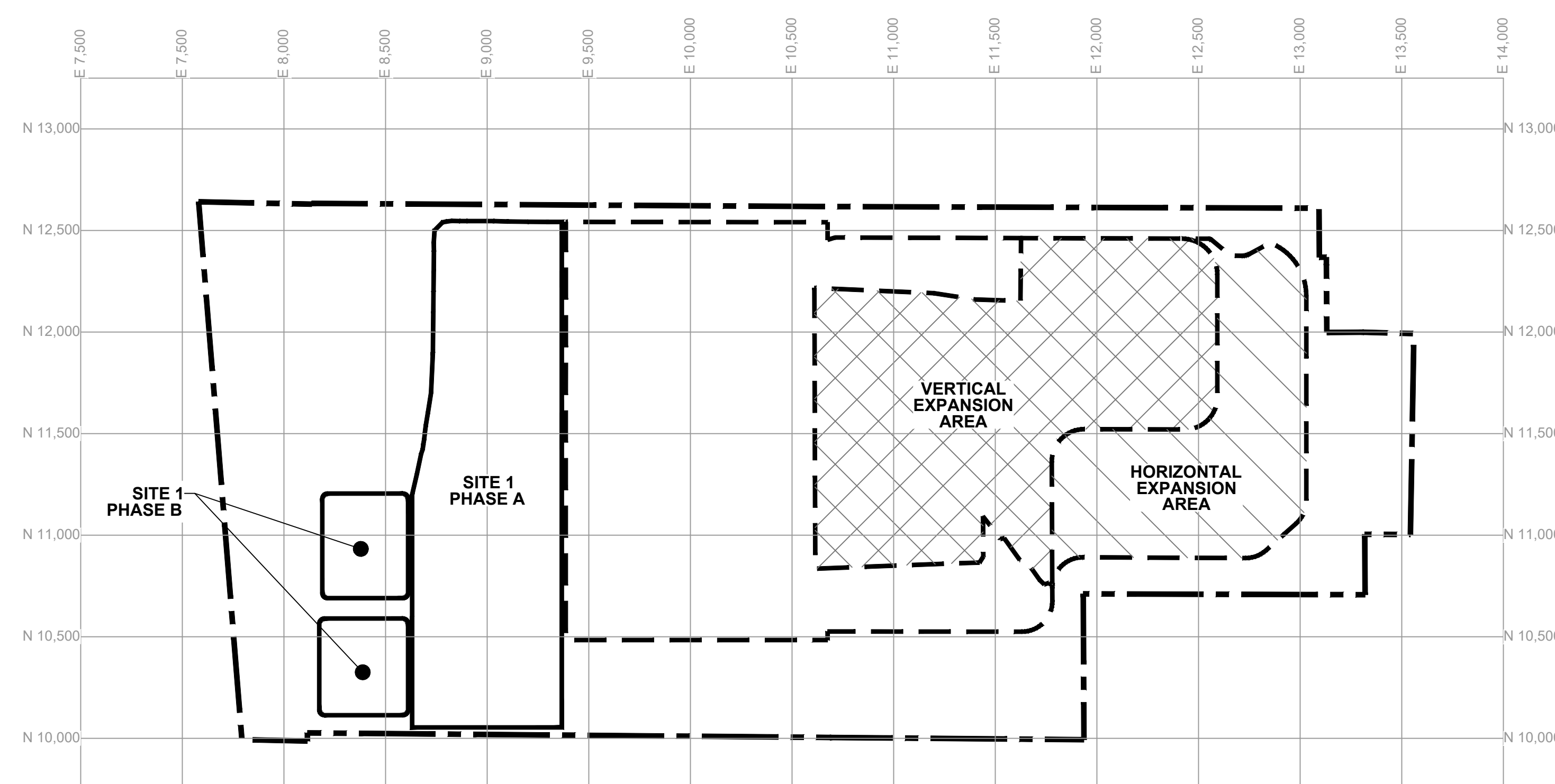
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DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		
			2 OF 37 SHEETS



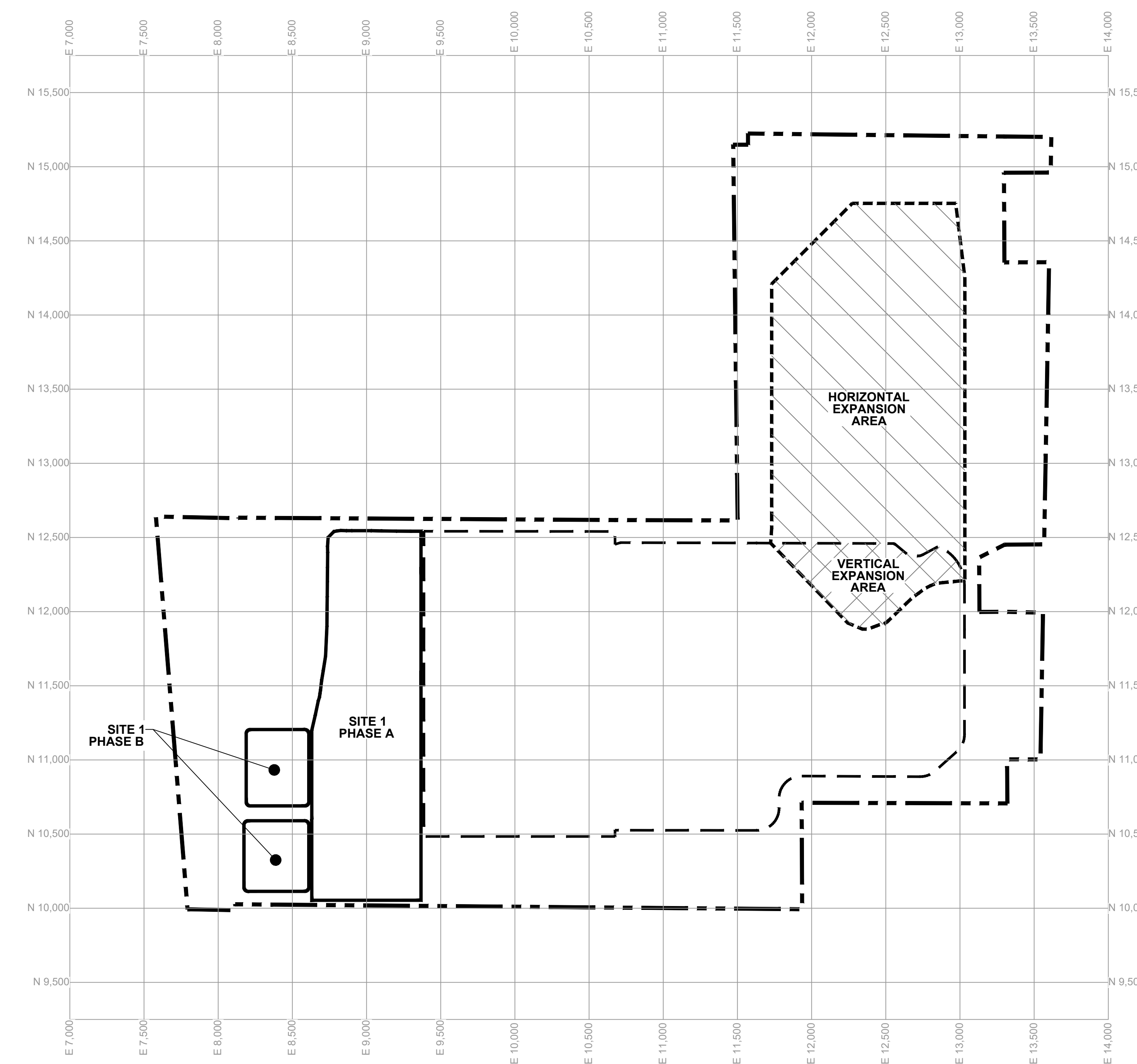
ORIGINAL SITE 2



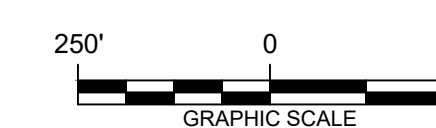
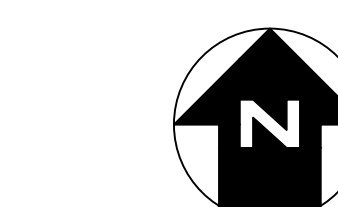
1995 SITE 2 EXPANSION



SITE 2 EAST EXPANSION



PROPOSED SITE 2 NORTH EXPANSION



LEGEND

- APPROXIMATE CURRENT FACILITY BOUNDARY
- APPROXIMATE PROPOSED FACILITY BOUNDARY
- APPROXIMATE PERMITTED SITE 1 WASTE BOUNDARY
- APPROXIMATE PREVIOUSLY PERMITTED SITE 2 WASTE BOUNDARY
- APPROXIMATE PROPOSED SITE 2 EXPANSION WASTE BOUNDARY (SITE 2 NORTH)
- ▨ VERTICAL EXPANSION AREA
- ▨ HORIZONTAL EXPANSION AREA

NOTES

GENERAL

1. THE CURRENT PERMITTED FACILITY BOUNDARY IS 317.9 ACRES.
2. THE PROPOSED FACILITY BOUNDARY IS 441.9 ACRES.
3. SITE 1 PHASE A AND B ARE CLOSED LANDFILLS LOCATED WITHIN THE FACILITY BOUNDARY. THESE LANDFILLS ARE NOT PROPOSED TO BE EXPANDED AS PART OF THE SITE 2 NORTH EXPANSION.

ORIGINAL SITE 2 (OLD SITE 2)

1. SITE 2 COMMENCED OPERATIONS IN 1981 UNDER IEPA PERMIT NO. 1980-24-DE.
2. THE ORIGINAL SITE 2 UNIT LANDFILL IS ALSO REFERRED TO AS OLD SITE 2.
3. OLD SITE 2 WAS REGULATED UNDER 35 IAC, PART 807.
4. FINAL COVER WAS INSTALLED ON OLD SITE 2 IN 1993.

1995 SITE 2 EXPANSION

1. SITE 2 WAS EXPANDED IN 1995 BOTH VERTICALLY AND HORIZONTALLY.
2. THE EXPANSION WAS ORIGINALLY TERMED "SITE 3". THIS TERMINOLOGY IS NO LONGER USED BECAUSE IT WAS CONSIDERED AN EXPANSION OF SITE 2.
3. THE SITE 2 EXPANSION WAS ORIGINALLY PERMITTED UNDER 35 IAC, PART 812, SUBPARTS A AND C, AND IS NOW REGULATED UNDER SUBTITLE D LANDFILL REGULATIONS.

SITE 2 EAST EXPANSION (2011 AND 2014)

1. SITE 2 WAS FURTHER EXPANDED WITH THE SITE 2 EAST EXPANSION, WHICH INCLUDED A VERTICAL AND HORIZONTAL EXPANSION AREA.
2. THE VERTICAL EXPANSION AREA OF SITE 2 NORTH WILL OVERLIE CELL 6 AND 7 FROM THE 1995 EXPANSION AREA AND CELL 9 FROM THE SITE 2 EAST EXPANSION AREA.
3. THE SITE 2 EAST EXPANSION IS REGULATED UNDER SUBTITLE D LANDFILL REGULATIONS.

PROPOSED SITE 2 NORTH EXPANSION

1. THE PROPOSED SITE 2 NORTH EXPANSION WILL EXPAND SITE 2 TO THE NORTH WITH A VERTICAL AND HORIZONTAL EXPANSION AREA.
2. THE VERTICAL EXPANSION AREA OF SITE 2 NORTH WILL OVERLIE CELL 6 AND 7 FROM THE 1995 EXPANSION AREA AND CELL 9 FROM THE SITE 2 EAST EXPANSION AREA.
3. THE VERTICAL EXPANSION AREA IS 9.9 ACRES. THE HORIZONTAL EXPANSION AREA IS 65.6 ACRES.
4. THE SITE 2 NORTH EXPANSION WILL BE REGULATED UNDER SUBTITLE D LANDFILL REGULATIONS.

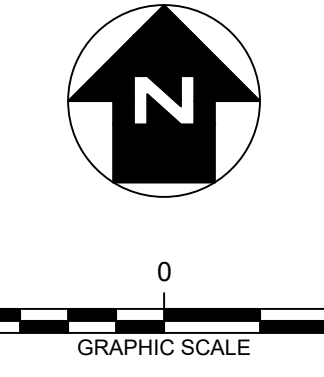
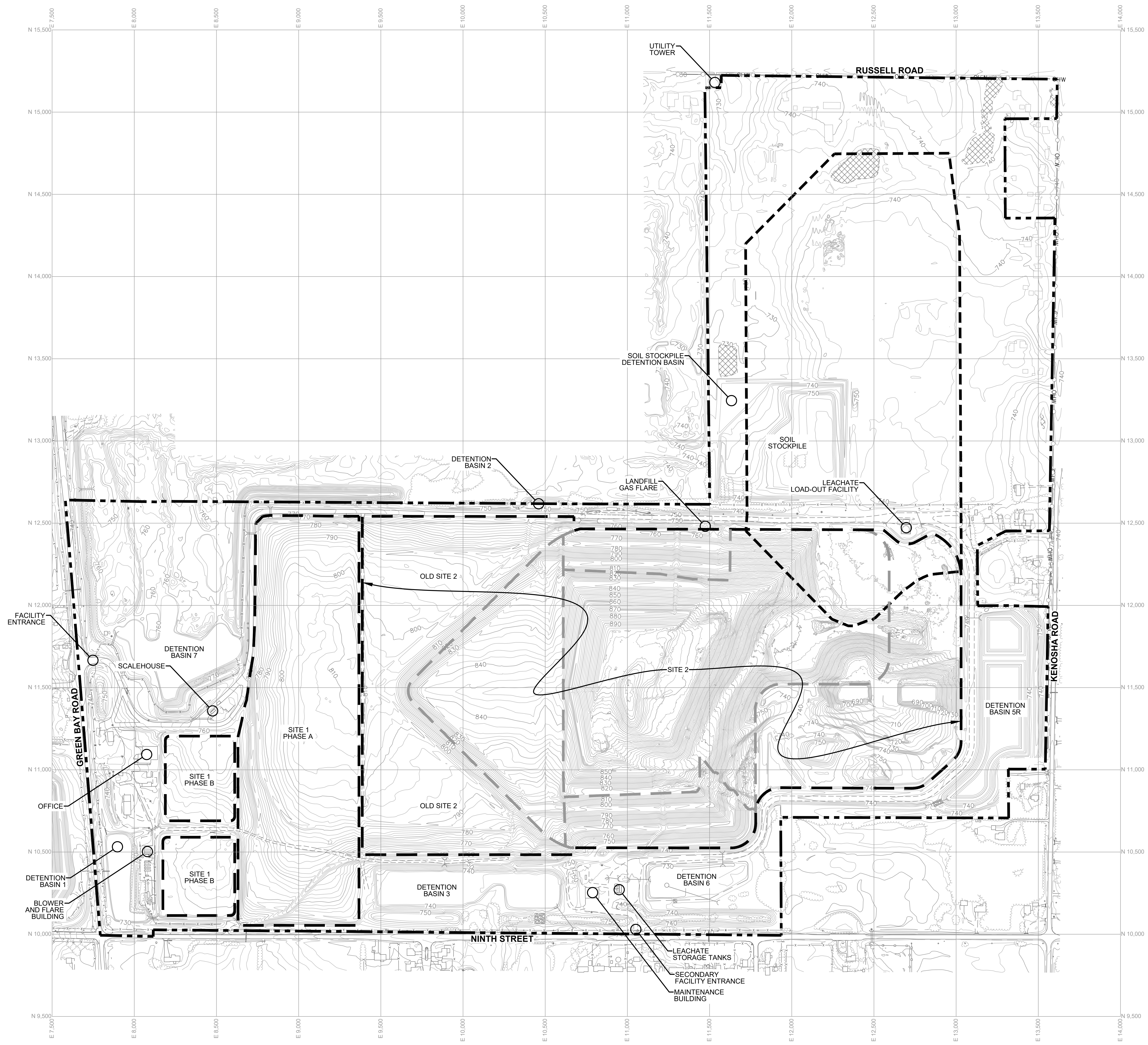
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**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

WASTE UNIT BOUNDARIES

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.	D3
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		
			3 OF 37 SHEETS



LEGEND

- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- APPROXIMATE PREVIOUSLY PERMITTED SITE 2 WASTE BOUNDARY (SEE DRAWING D3)
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING POWER POLE
- EXISTING OVERHEAD WIRE
- EXISTING CULVERT
- WETLANDS

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM, INC. ON 10/22/2018.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. THE PROPOSED FACILITY BOUNDARY IS APPROXIMATELY 441.9 ACRES.
5. THE PROPOSED SITE 2 NORTH EXPANSION WASTE AREA IS APPROXIMATELY 72.2 ACRES. (62.2 ACRES HORIZONTAL EXPANSION AND 9.9 ACRES VERTICAL EXPANSION).

REV. NO.	DATE	DESCRIPTION



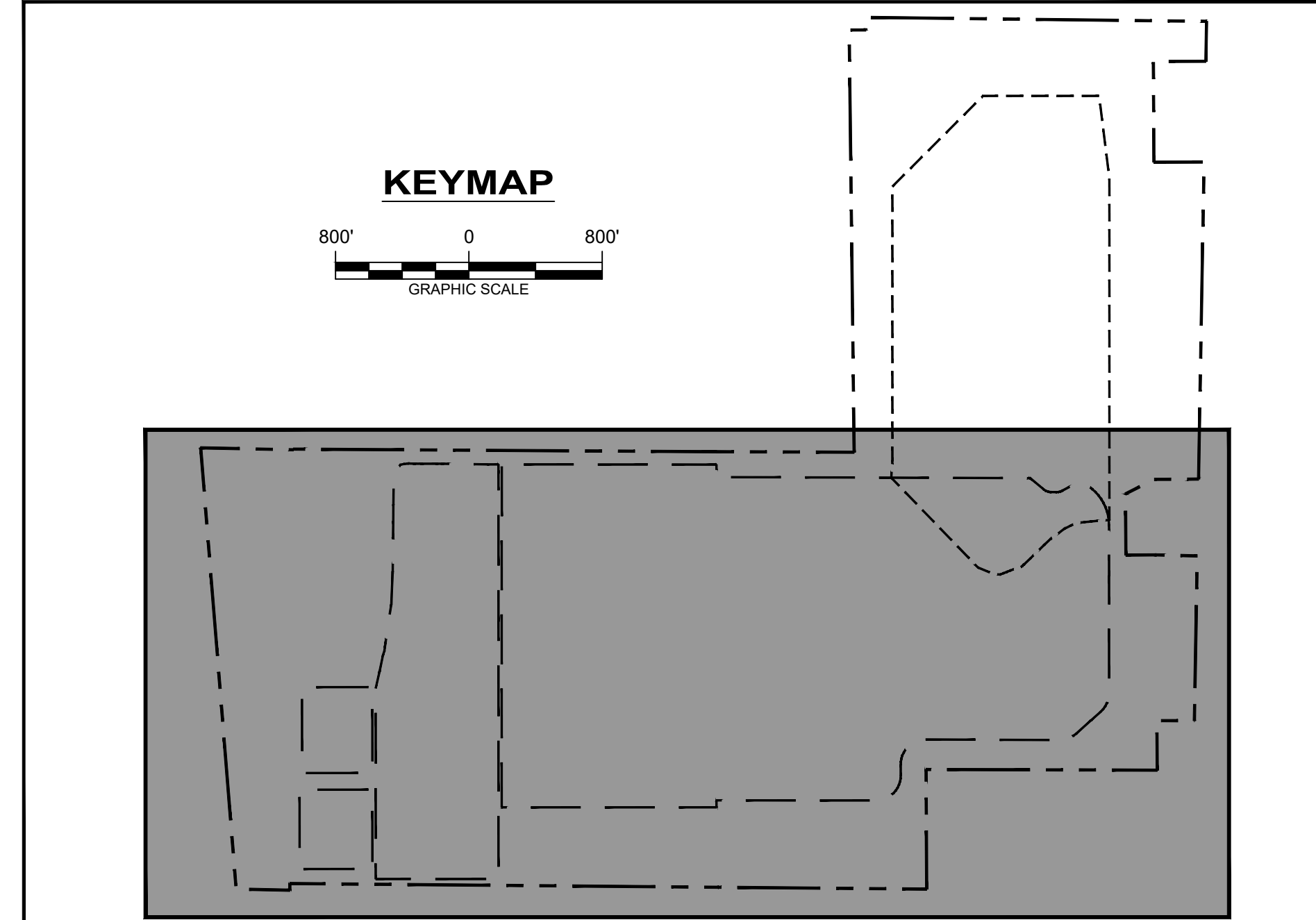
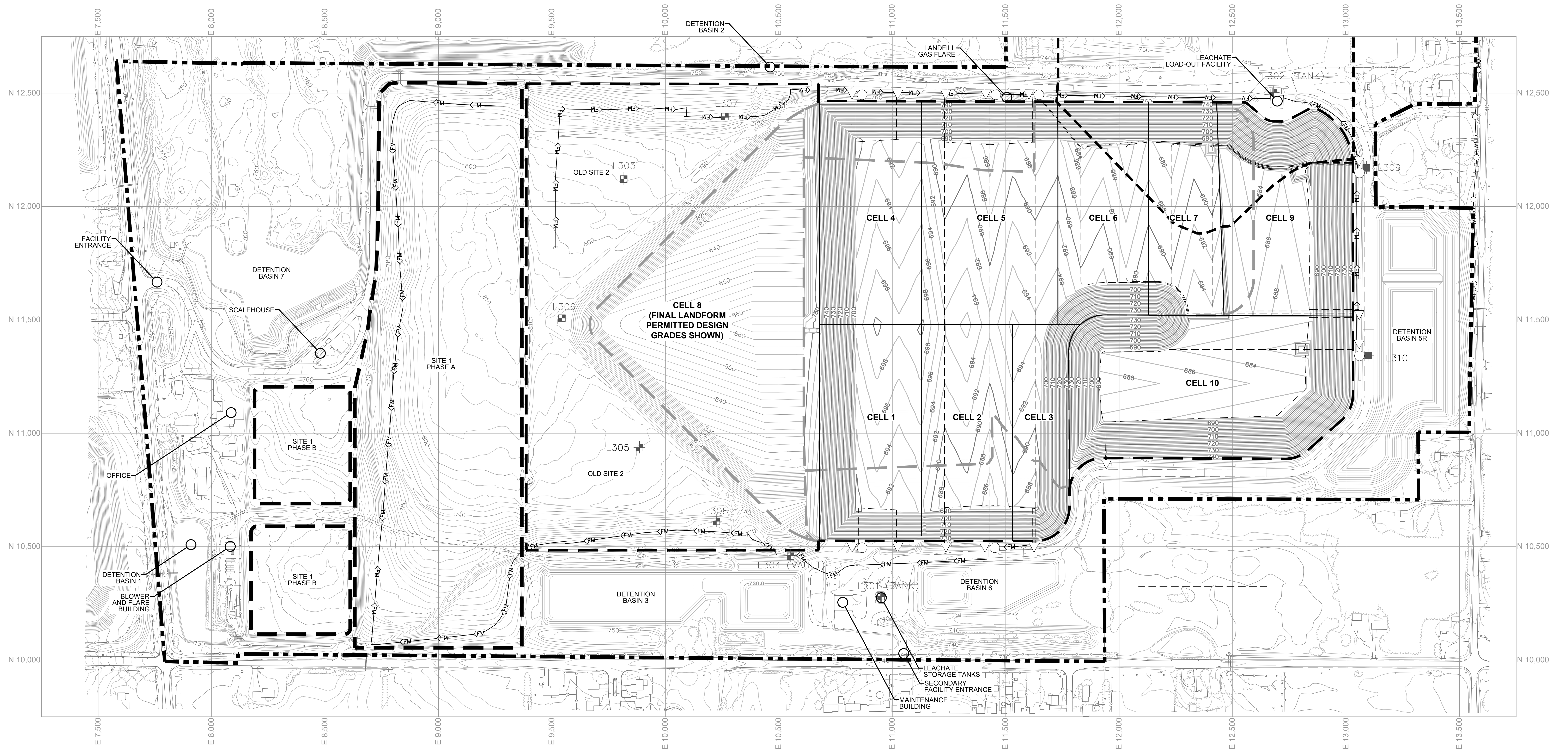
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ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

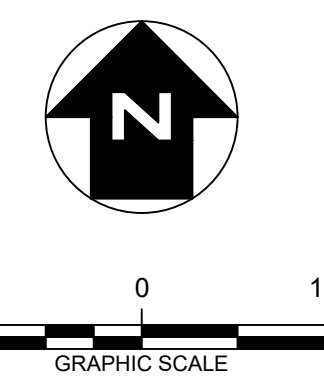
FACILITY TOPOGRAPHY

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.	D4
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		
			4 OF 37 SHEETS



LEGEND

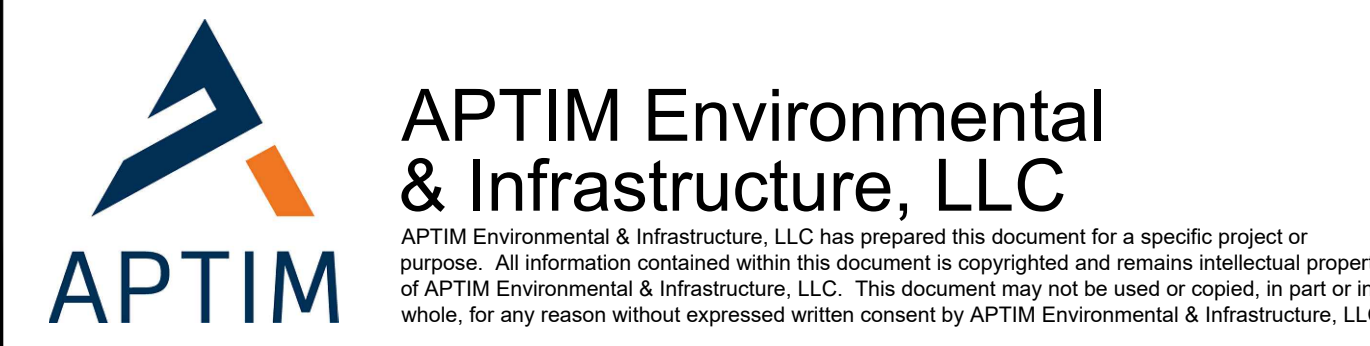
- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- APPROXIMATE PREVIOUSLY PERMITTED SITE 2 WASTE BOUNDARY (SEE DRAWING D3)
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING POWER POLE
- EXISTING OVERHEAD WIRE
- EXISTING CULVERT
- EXISTING FORCEMAIN
- EXISTING LEACHATE CLEANOUT
- EXISTING LEACHATE VAULT LOCATION (COLLECTION POINT)
- PERMITTED LEACHATE SAMPLING LOCATION
- PROPOSED LEACHATE SAMPLING LOCATION
- EXISTING LEACHATE COLLECTION PIPE



NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASINS 3, 5R, AND 6). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. THIS DRAWING PRESENTS THE PERMITTED LEACHATE COLLECTION SYSTEM PIPE NETWORK SHOWN OVER THE TOP OF LINER GRADES PRESENTED IN THE SITE 2 EAST EXPANSION SITING APPLICATION. THE TOP OF LINER GRADES INCLUDE CONSTRUCTED CELL GRADES FOR CELLS 1 THROUGH 6, FINAL PERMITTED COVER DESIGN GRADES FOR CELL 8, AND PERMITTED TOP OF LINER GRADES FOR CELLS 9 AND 10. THE LEACHATE COLLECTION LAYER IS PERMITTED TO BE A MINIMUM ONE FOOT THICK ON TOP OF THE LINER GRADES.
5. CELLS 1-10 ARE DESIGNED WITH PHYSICAL SEPARATION FROM OLD SITE 2 AND DO NOT SHARE A COMMON LEACHATE COLLECTION SYSTEM.
6. CELLS 1 THROUGH 8 WERE PERMITTED AS PART OF THE 1995 SITE EXPANSION.
 - a. CELLS 8 WAS DESIGNED WITH A COMPOSITE BASE LINER SYSTEM INSTALLED ON TOP OF THE FINAL COVER OF OLD SITE 2.
 - b. CELLS 1-7 WERE DESIGNED TO BE DEVELOPED AS NEW CELLS WITH COMPOSITE BASE LINER SYSTEMS.
 - c. THE EASTERN BASE SIDEWALL OF CELL 7 WAS REDESIGNED AS PART OF THE SITE 2 EAST EXPANSION. THE EAST SIDEWALL DESIGN WAS REMOVED TO ALLOW A CONTINUOUS FLOOR TIE-IN TO CELLS 9 AND 10. ONLY THE PERMITTED FLOOR GRADES OF CELL 7 ARE SHOWN (NO EASTERN SIDEWALL).
7. CELLS 9 AND 10 WERE PERMITTED AS PART OF THE SITE 2 EAST EXPANSION.
8. EACH INDIVIDUAL LEACHATE COLLECTION PIPE HAS A CLEANOUT AT THE LOCATIONS SHOWN.

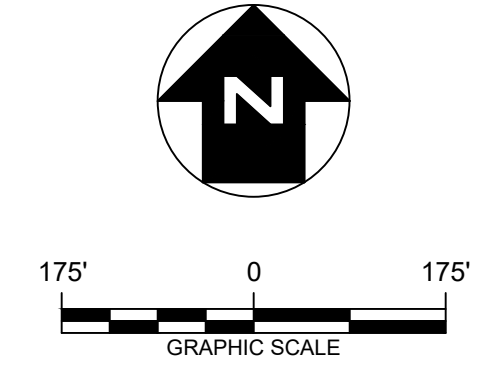
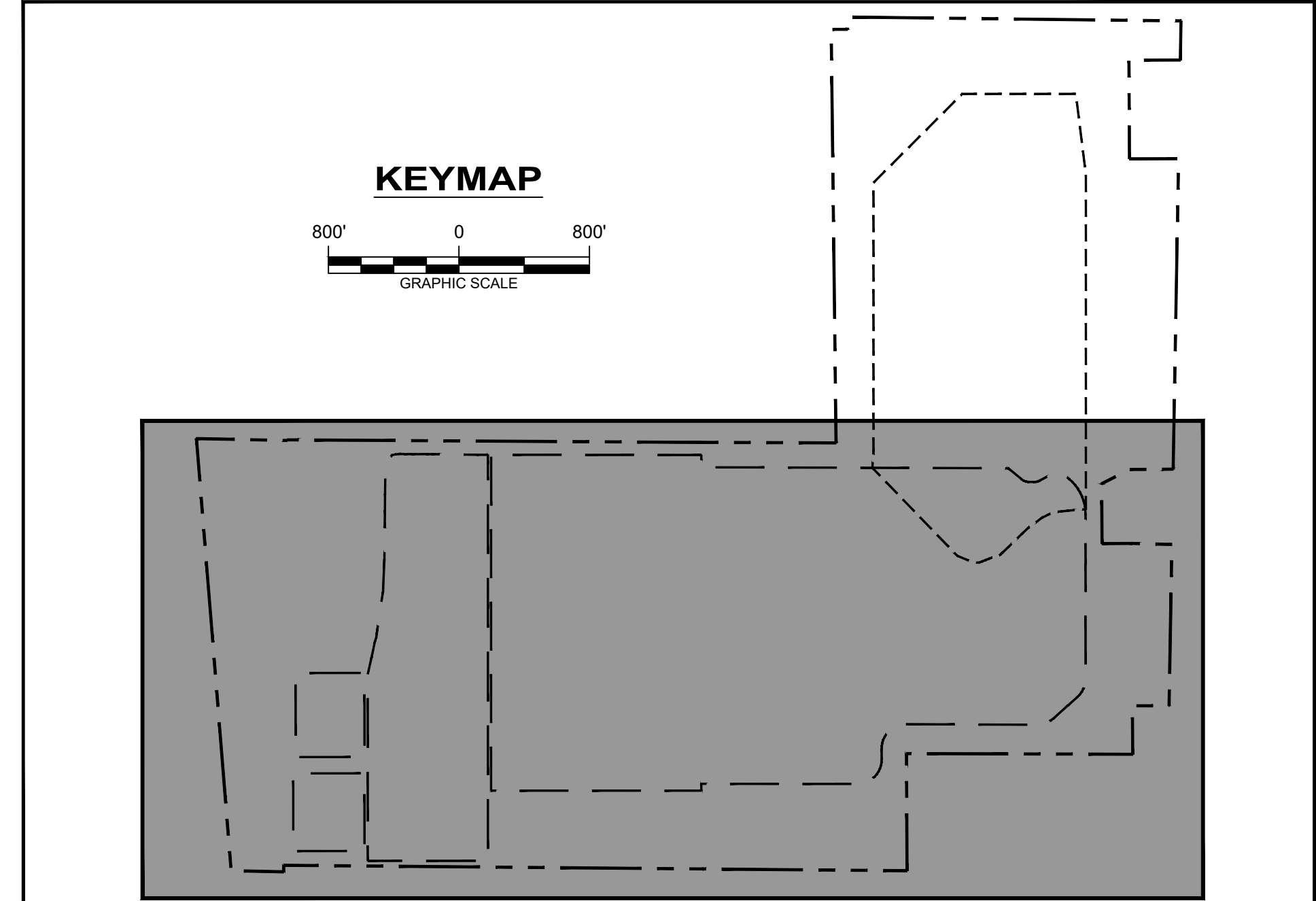
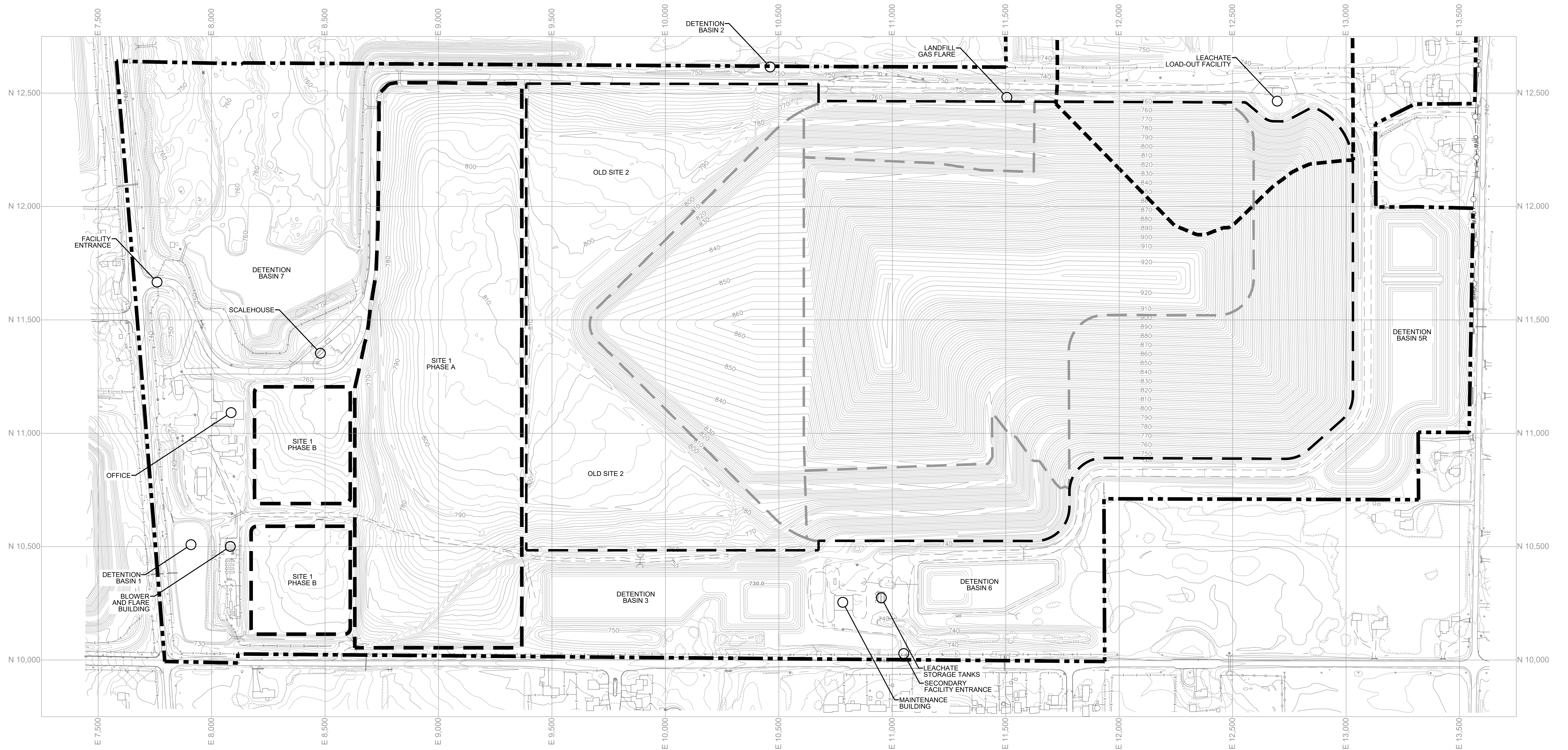
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**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

**PERMITTED LANDFILL LEACHATE
COLLECTION SYSTEM LAYER GRADES**

PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM	DRAWING NO.
DRAWN BY: BWM/NV/KM	D5
CHECKED BY: DAM	5 OF 37 SHEETS
APPROVED BY: DAM	



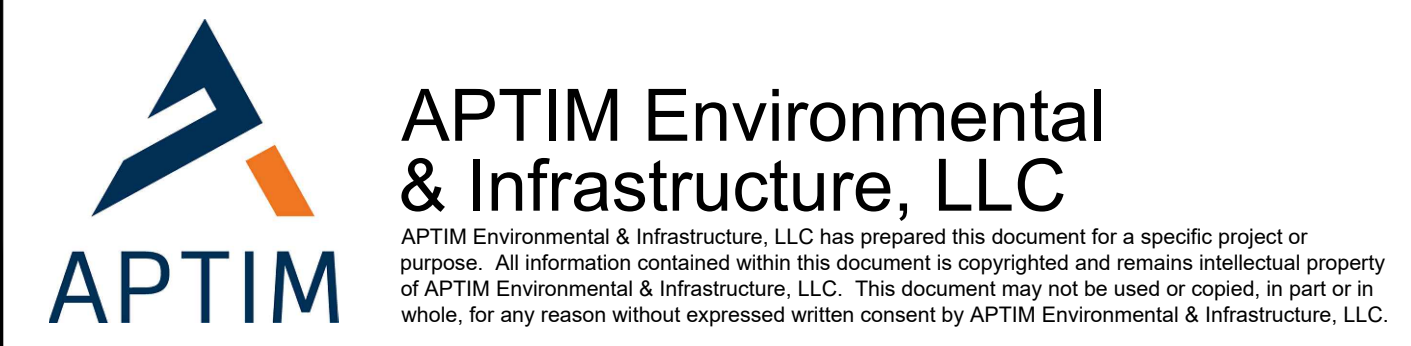
LEGEND

- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- APPROXIMATE PREVIOUSLY PERMITTED SITE 2 WASTE BOUNDARY (SEE DRAWING D3)
- 740 EXISTING CONTOUR
- EXISTING ROAD
- ⊙ EXISTING VEGETATION
- x-x- EXISTING FENCE
- EXISTING POWER POLE
- OH- EXISTING OVERHEAD WIRE
- C- EXISTING CULVERT

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASINS 3, 5R, AND 6). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. TOP OF PERMITTED FINAL COVER GRADES ARE SHOWN WITHIN THE 1995 AND SITE 2 EAST EXPANSION BOUNDARIES. THE CONSTRUCTED FINAL COVER GRADES OF OLD SITE 2 ARE SHOWN IN NON-EXPANDED AREAS.
5. THE PEAK ELEVATION OF THE PERMITTED LANDFILL IS APPROXIMATELY 930 FT MSL.

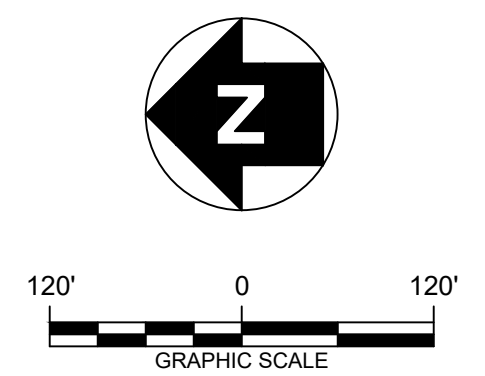
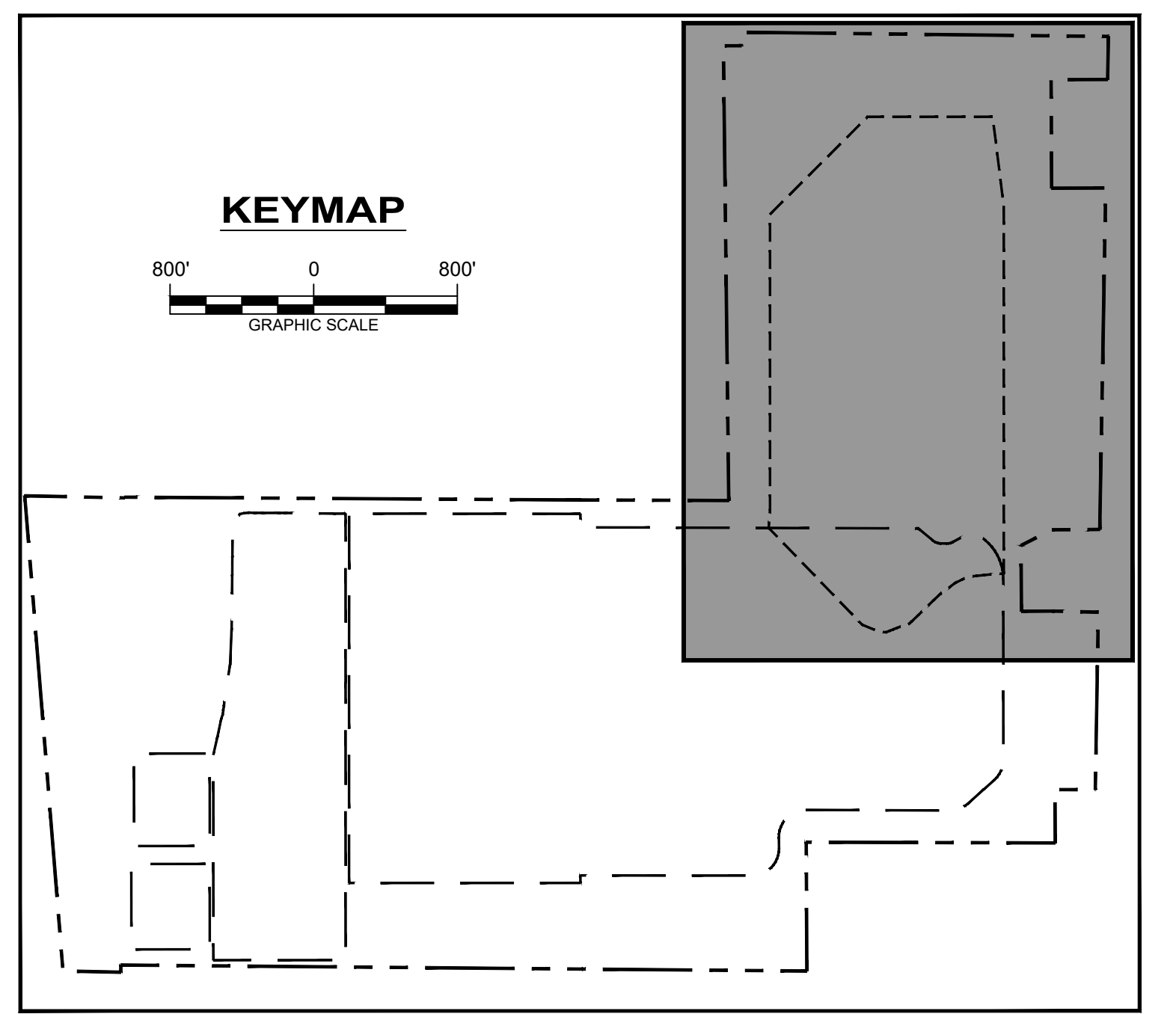
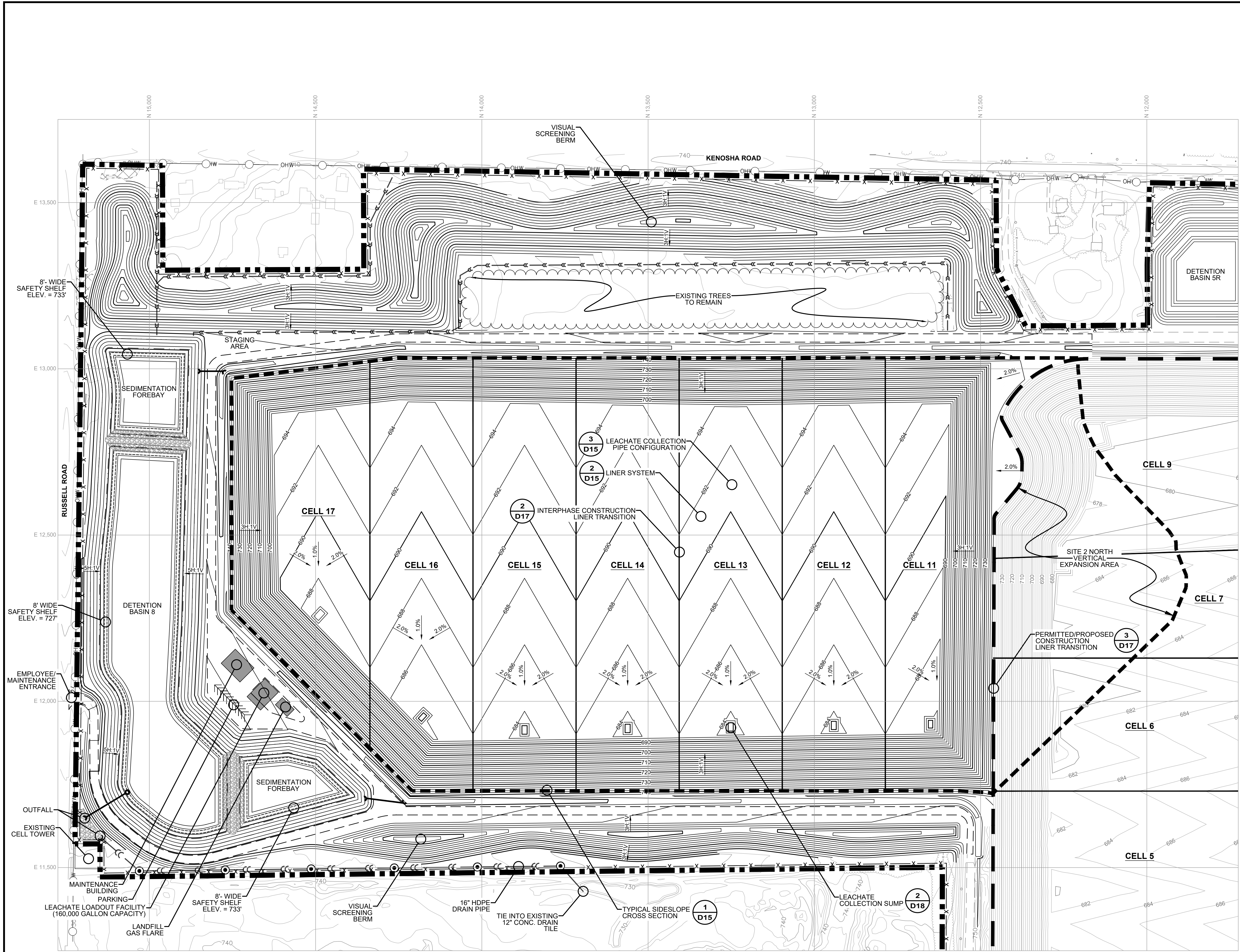
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

PERMITTED LANDFILL FINAL COVER GRADES

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.:	D6
DRAWN BY:	BWM/NV/KM	CHECKED BY:	DAM
APPROVED BY:	DAM		6 OF 37 SHEETS

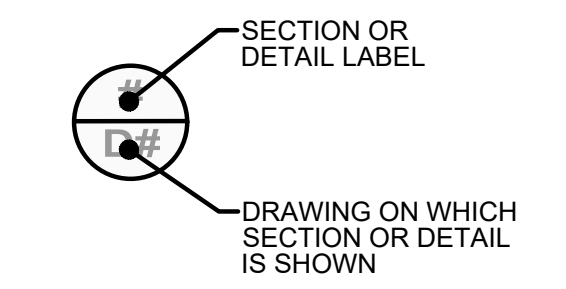


LEGEND

- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING POWER POLE
- EXISTING OVERHEAD WIRE
- EXISTING CULVERT
- PROPOSED CONTOUR
- PROPOSED ROAD
- PROPOSED PERIMETER FENCE
- PROPOSED CULVERT
- PROPOSED DRAIN TILE
- STORMWATER MANHOLE
- STORMWATER HEADWALL

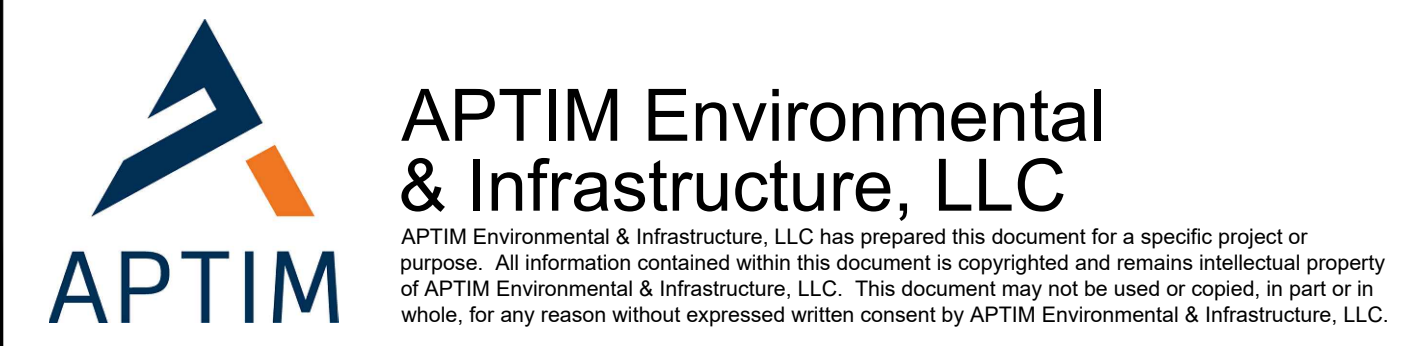
NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY COM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. TOP OF PERMITTED EXCAVATION GRADES ARE SHOWN FOR THE EXISTING LANDFILL (CELLS 5-9). THE SITE 2 NORTH VERTICAL EXPANSION WILL OVERLIE THESE PERMITTED GRADES IN THE AREA SHOWN. IT IS NOTED THAT THE COMPOSITE BASE LINER FOR THESE CELLS HAS BEEN CONSTRUCTED AND THE CELLS HAVE BEEN PARTIALLY FILLED WITH WASTE.
5. THE BOTTOM OF LINER GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL EXPANSION AREA (CELLS 11 THROUGH 17).
6. CELL DEVELOPMENT WILL PROCEED IN NUMERICAL ORDER. VERTICAL EXPANSION WILL PROGRESS CONCURRENT WITH CELL 11 DEVELOPMENT.
7. PROPOSED EXCAVATION GRADING MAY BE REVISED TO ACCOMMODATE ANY CONDITIONS OR DESIGN CHANGES REQUIRED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.



SECTIONS AND DETAIL KEY

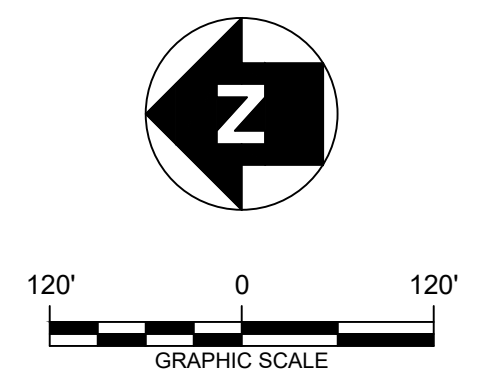
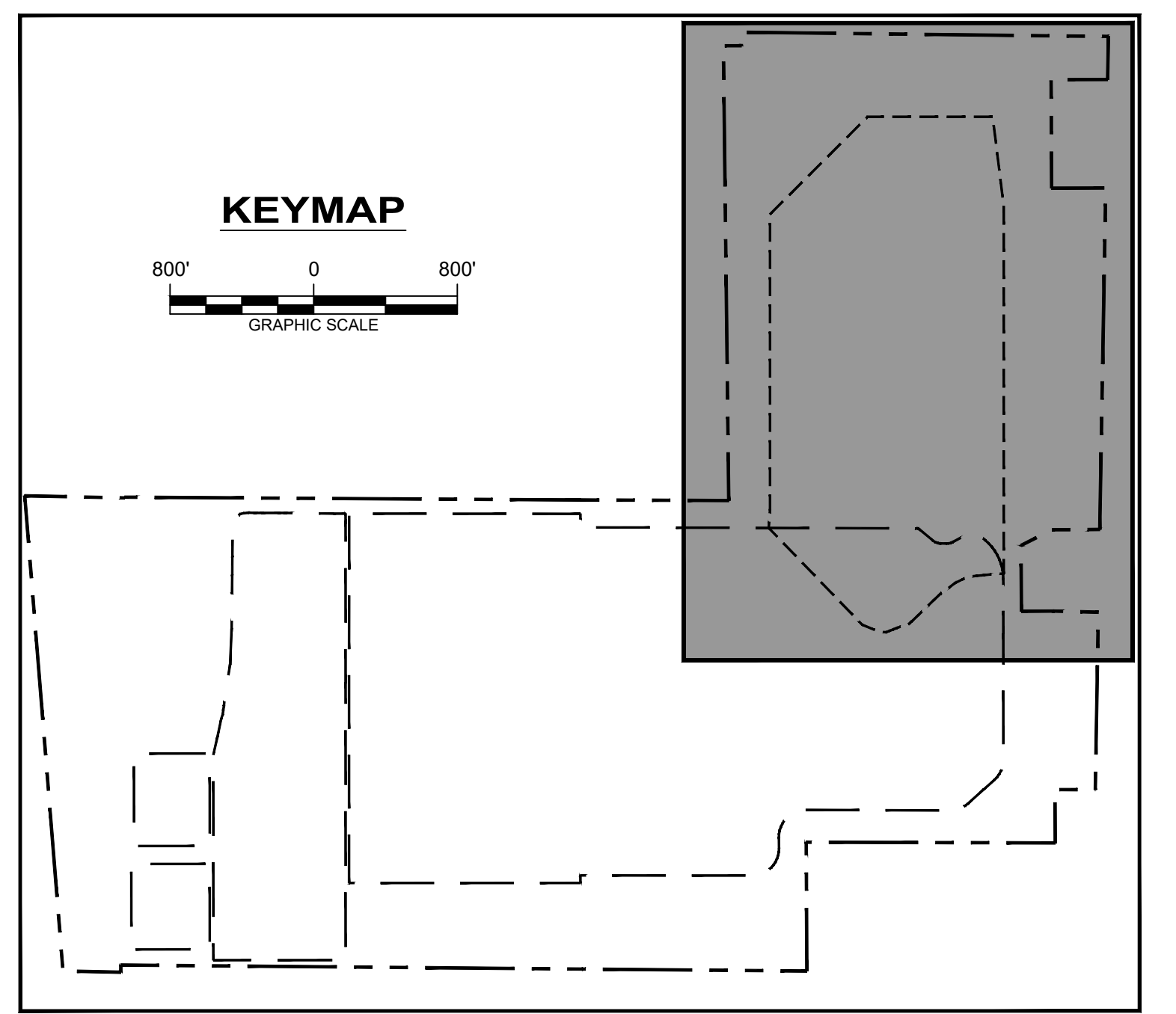
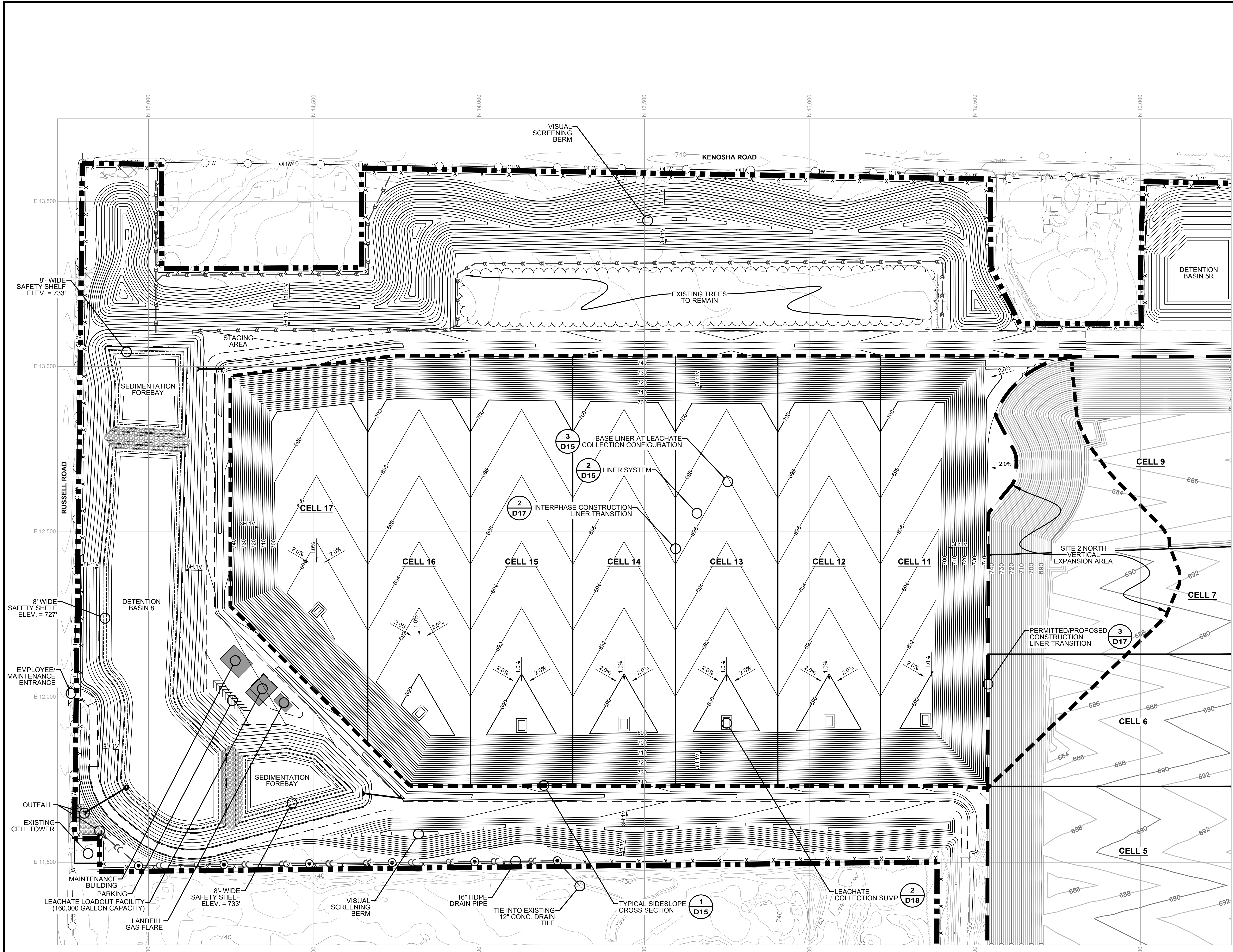
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

PROPOSED EXCAVATION - BOTTOM OF LINER GRADES

PROJ. NO.:	631020105	DATE:	JULY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.	D7
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		
			7 OF 37 SHEETS

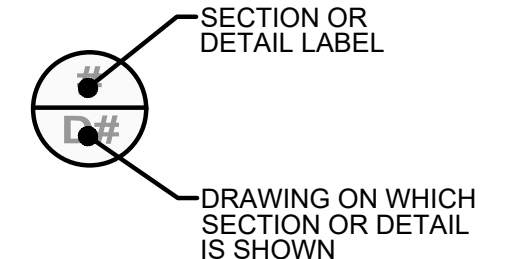


LEGEND

- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING POWER POLE
- EXISTING OVERHEAD WIRE
- EXISTING CULVERT
- PROPOSED CONTOUR
- PROPOSED ROAD
- PROPOSED PERIMETER FENCE
- PROPOSED CULVERT
- PROPOSED DRAIN TILE
- STORMWATER MANHOLE
- STORMWATER HEADWALL

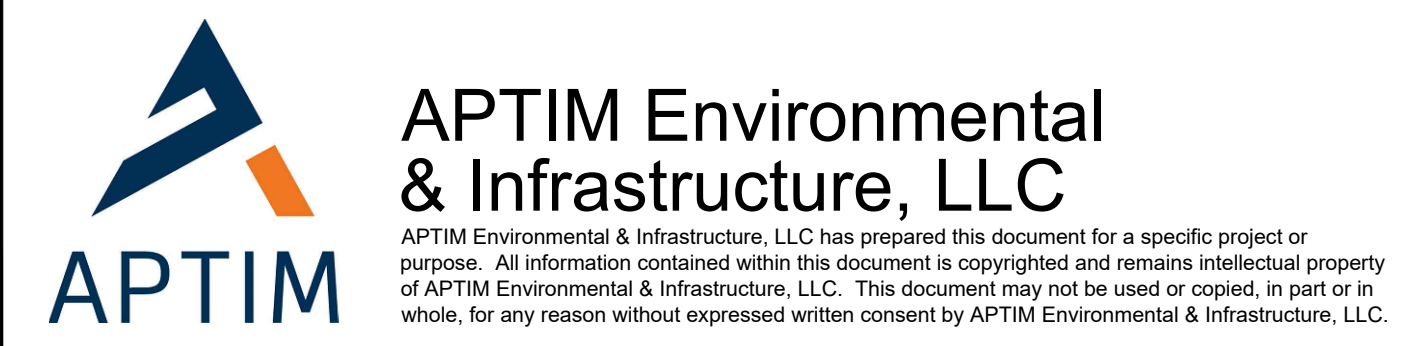
NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY COM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS. AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. TOP OF PERMITTED COMPOSITE BASE LINER GRADES ARE SHOWN FOR THE EXISTING LANDFILL (CELLS 5, 6, 7 AND 9). LEACHATE COLLECTION SUMPS ARE NOT SHOWN FOR EXISTING CELLS 5 AND 6. THE SITE 2 NORTH VERTICAL EXPANSION WILL OVERLIE THESE PERMITTED GRADES IN THE AREA SHOWN. IT IS NOTED THAT THE COMPOSITE BASE LINER FOR THESE CELLS HAS BEEN CONSTRUCTED AND THE CELLS HAVE BEEN PARTIALLY FILLED WITH WASTE.
5. THE PROPOSED TOP OF COMPOSITE BASE LINER GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL EXPANSION AREA (CELLS 11 THROUGH 17).
6. THE COMPOSITE BASE LINER SHALL BE A MINIMUM 5-FOOT THICK ABOVE THE CONSTRUCTED TOP OF EXCAVATION GRADES.
7. CELL DEVELOPMENT WILL PROCEED IN NUMERICAL ORDER. VERTICAL EXPANSION WILL PROGRESS CONCURRENT WITH CELL 11 FILLING.



SECTIONS AND DETAIL KEY

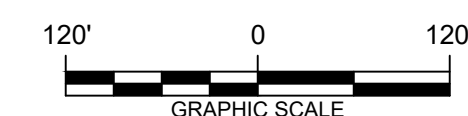
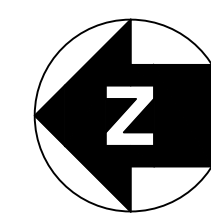
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

PROPOSED TOP OF LINER GRADES

PROJ. NO.:	631020105	DATE:	JULY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.:	D8
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		
			8 OF 37 SHEETS

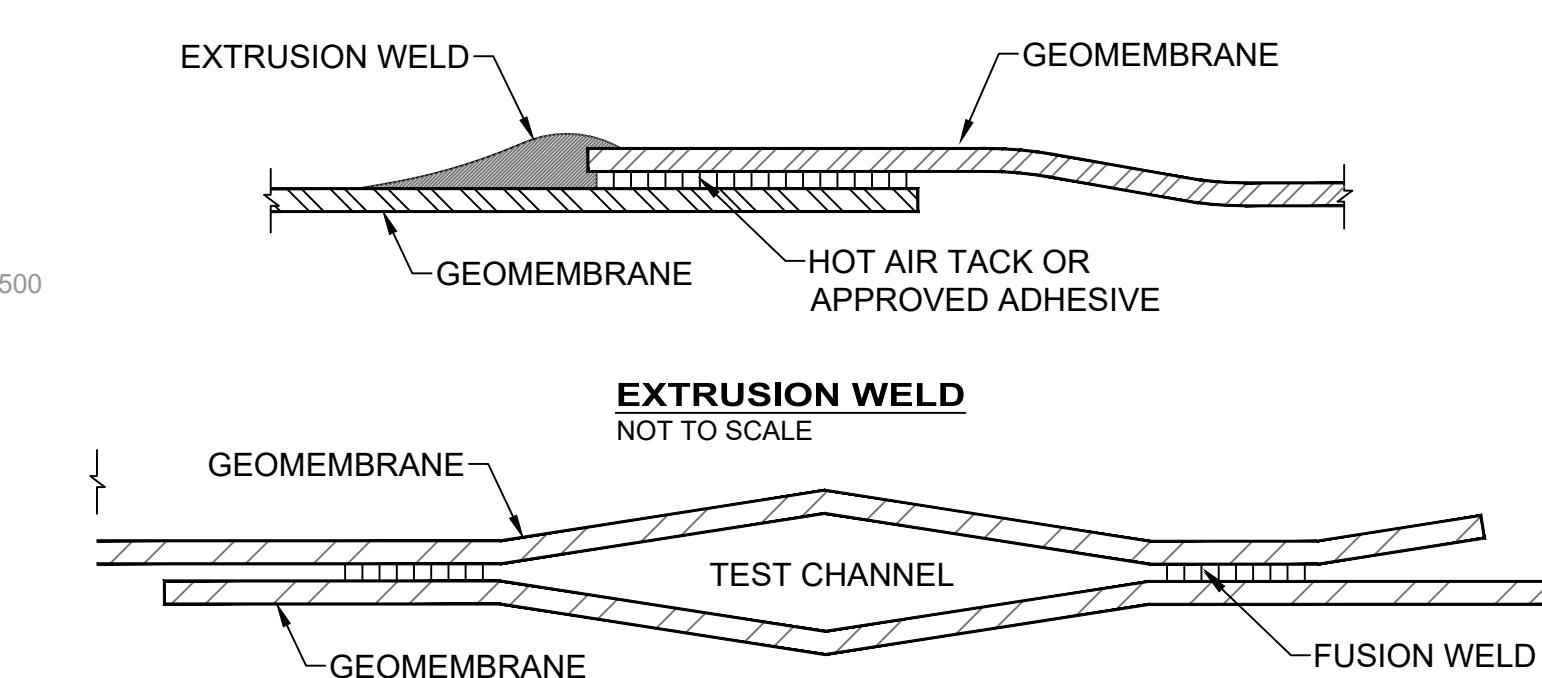


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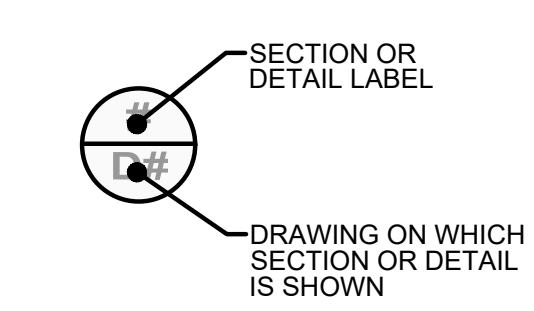
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- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING POWER POLE
- EXISTING OVERHEAD WIRE
- EXISTING CULVERT
- PROPOSED CONTOUR
- PROPOSED ROAD
- PROPOSED CULVERT
- PROPOSED DRAIN TILE
- STORMWATER MANHOLE
- STORMWATER HEADWALL

NOTES

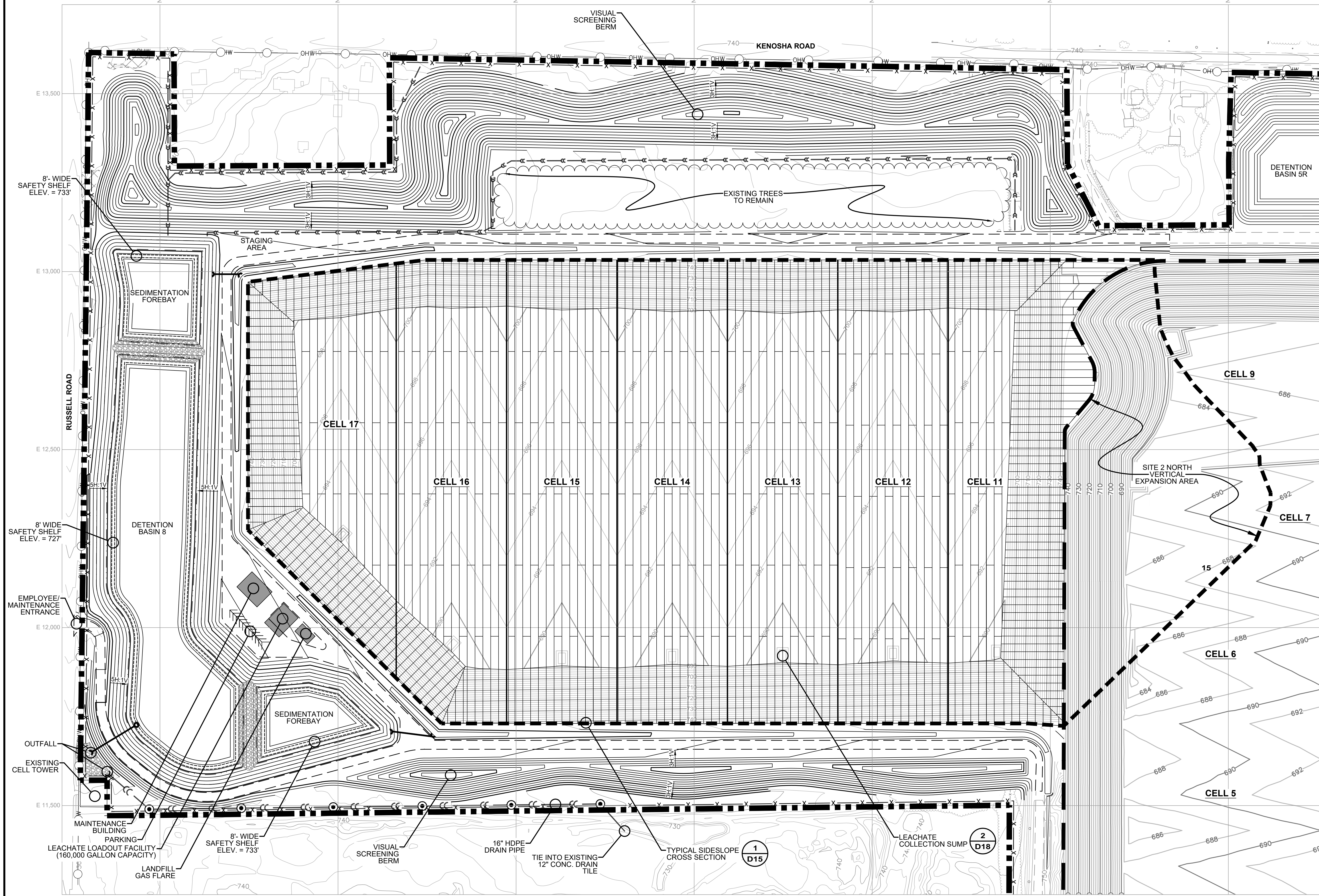
1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY PROVIDED BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. TOP OF PERMITTED COMPOSITE BASE LINER GRADES ARE SHOWN FOR THE EXISTING LANDFILL (CELLS 6, 7, AND 9). THE SITE 2 NORTH VERTICAL EXPANSION WILL OVERLIE THESE PERMITTED GRADES IN THE AREA SHOWN. IT IS NOTED THAT THE COMPOSITE BASE LINER, INCLUDING THE 60-MIL HDPE GEOMEMBRANE BARRIER LAYER, FOR THESE CELLS HAS BEEN CONSTRUCTED AND THE CELLS HAVE BEEN PARTIALLY FILLED WITH WASTE.
3. THE TOP OF PROPOSED COMPOSITE BASE LINER GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL EXPANSION AREA (CELLS 11 THROUGH 17).
4. THE COMPOSITE BASE LINER SHALL BE A MINIMUM 5-FOOT THICK ABOVE THE CONSTRUCTED TOP OF EXCAVATION GRADES.
5. CELL DEVELOPMENT WILL PROCEED IN NUMERICAL ORDER. VERTICAL EXPANSION WILL PROGRESS CONCURRENT WITH CELL 11 DEVELOPMENT.
6. CURRENT TOPOGRAPHY MAY DIFFER FROM SHOWN.
7. GEOMEMBRANE WAS INSTALLED IN VERTICAL EXPANSION AREA AS PART OF SITE 2 EAST DEVELOPMENT. PROPOSED GEOMEMBRANE PANEL LAYOUT FOR THE PROPOSED HORIZONTAL EXPANSION AREA IS CONCEPTUAL. THIS PANEL LAYOUT MAY BE REVISED AT THE TIME OF CONSTRUCTION BY THE GEOMEMBRANE INSTALLER. THE COA OFFICER WILL APPROVE ALL PROPOSED GEOMEMBRANE PANEL LAYOUTS PRIOR TO CONSTRUCTION AND ANY VARIATIONS THAT MAY BE NECESSARY DURING INSTALLATION BASED ON FIELD CONDITIONS.
8. AS-BUILT PLANS OF INSTALLED GEOMEMBRANE PANEL LAYOUT AND THE LOCATIONS OF THE FIELD SEAMS AND REPAIRS WILL BE SUBMITTED TO THE IEPA PRIOR TO WASTE ACCEPTANCE AS PART OF THE CONSTRUCTION ACCEPTANCE REPORT.
9. CONCEPTUAL LAYOUT ASSUMES 60-MIL HDPE PANELS, WHICH ARE TYPICALLY 22.5 FEET WIDE BY 500 FEET LONG. PANEL LENGTHS AND WIDTHS MAY VARY PER MANUFACTURER'S SPECIFICATIONS AT THE TIME OF CONSTRUCTION. PANELS ARE ASSUMED TO OVERLAY APPROXIMATELY THREE (3) INCHES FOR SEAMING.
10. GEOMEMBRANE WILL BE TEXTURED 60-MIL HDPE.
11. THE GEOMEMBRANE WILL EXTEND BEYOND THE WASTE BOUNDARY TO THE ANCHOR TRENCH.
12. GEOMEMBRANE PANEL SEAMING WILL BE PERFORMED USING DUAL FUSION WEDGE WELDS WHEREVER POSSIBLE. EXTRUSION WELDS WILL BE USED AT THE TIE-IN TO THE EXISTING LANDFILL, PANEL T-INTERSECTIONS, AND TO REPAIR DESTRUCTIVE TESTING LOCATIONS, DOUBLE FUSION WEDGE WELDS THAT FAILED NON-DESTRUCTIVE TESTING, AND ANY GEOMEMBRANE LINER DEFECTS.
13. GEOMEMBRANE PANEL CONFIGURATION WILL BE DIFFERENT THAN SHOWN IN SUMP LOCATIONS TO MINIMIZE SEAMS.



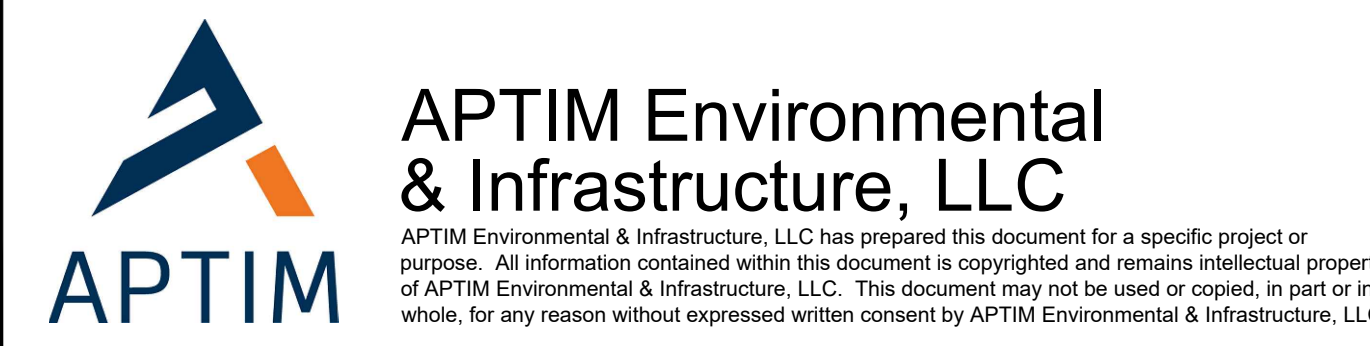
DUAL FUSION WEDGE WELD
NOT TO SCALE



SECTIONS AND DETAIL KEY



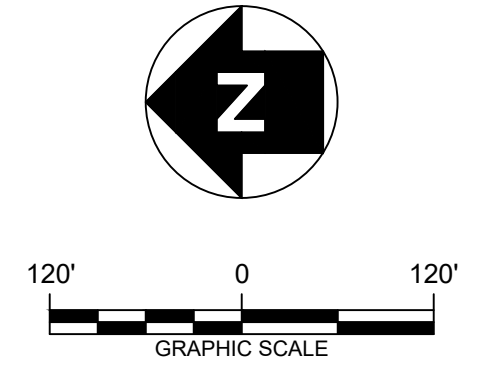
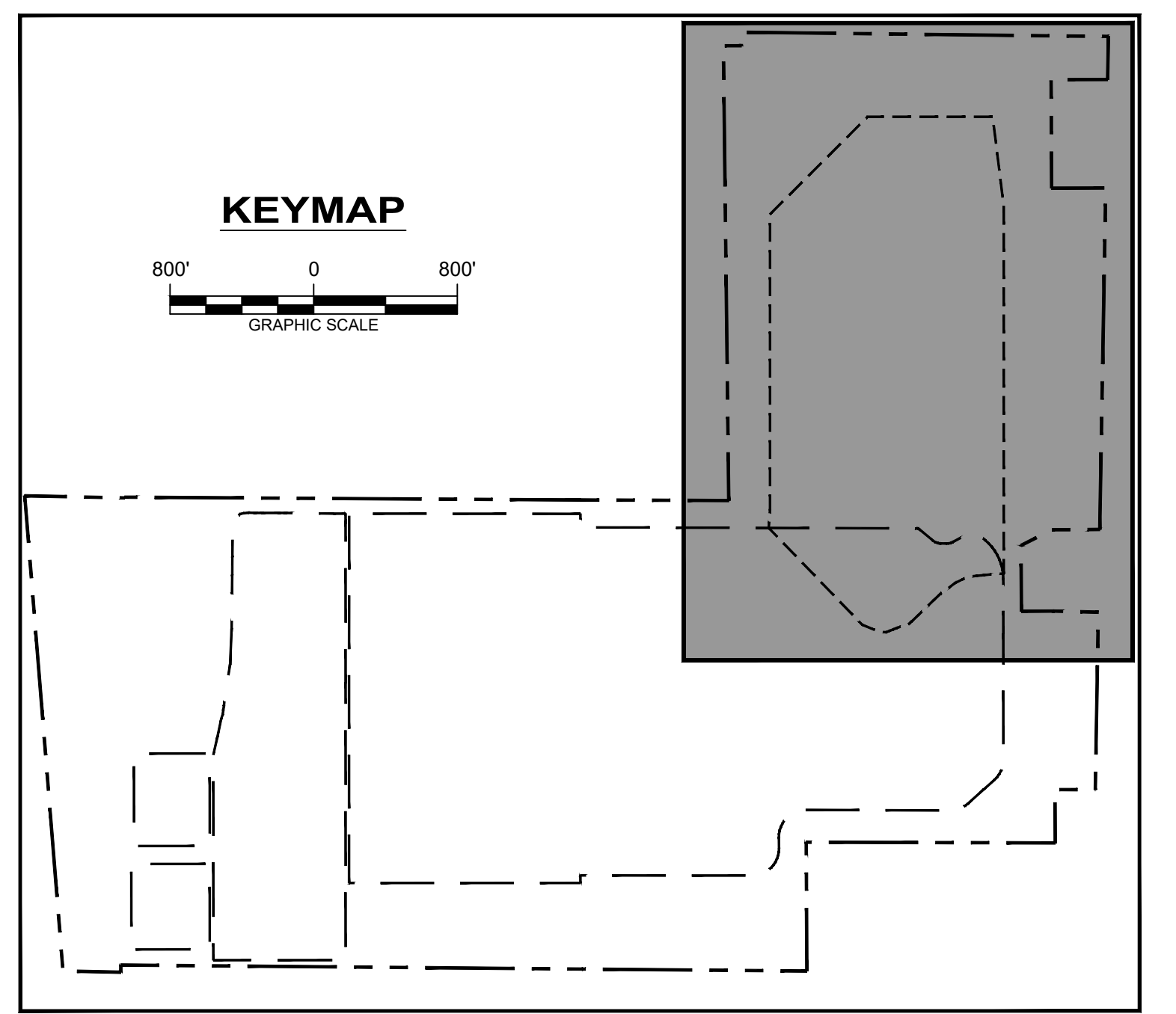
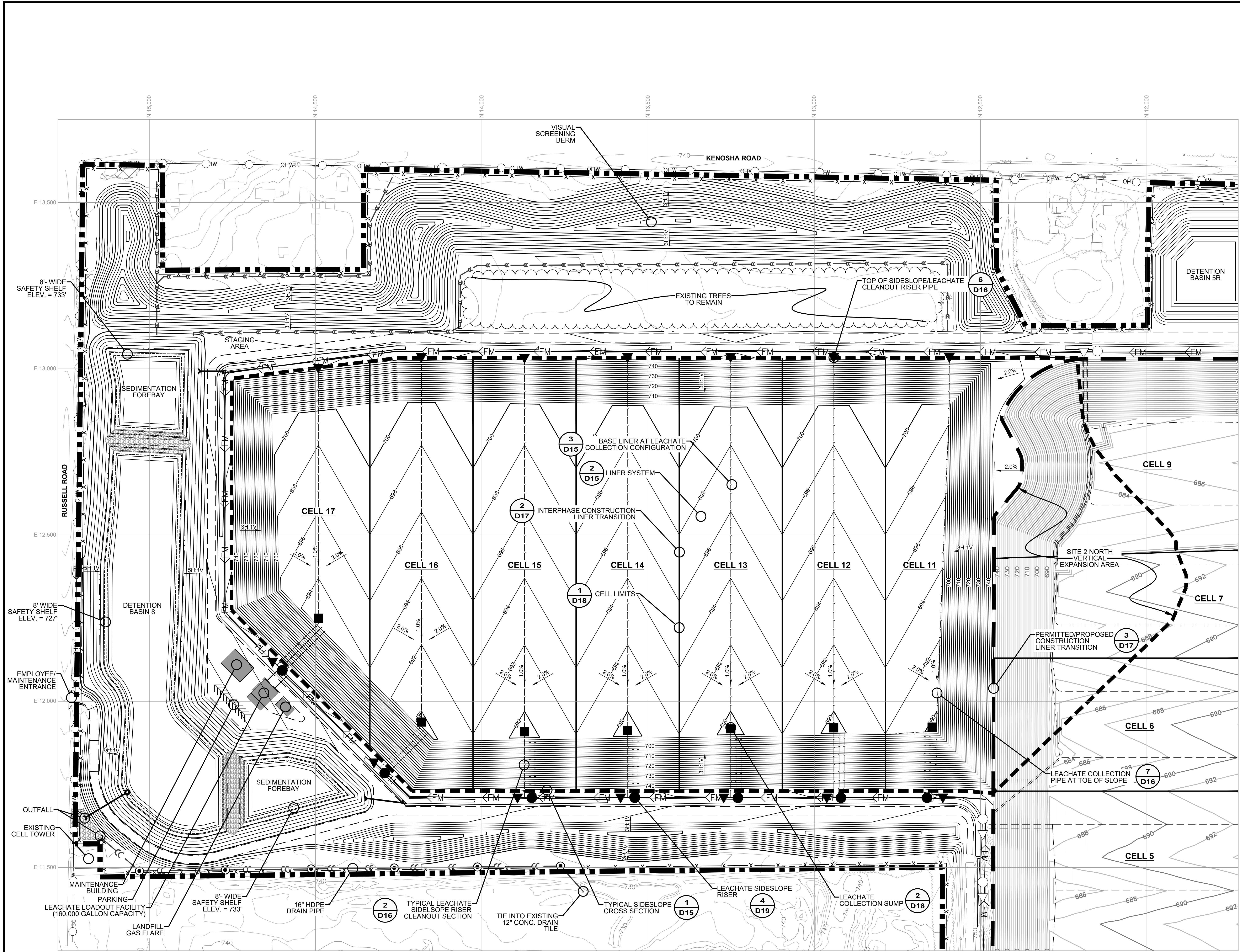
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

CONCEPTUAL GEOMEMBRANE PANEL LAYOUT

PROJ. NO.: 631020105	DATE: JULY 2022
DESIGNED BY: DAM/BWM	DRAWING NO. D9
DRAWN BY: BWM/NV/KM	9 OF 37 SHEETS
CHECKED BY: DAM	
APPROVED BY: DAM	

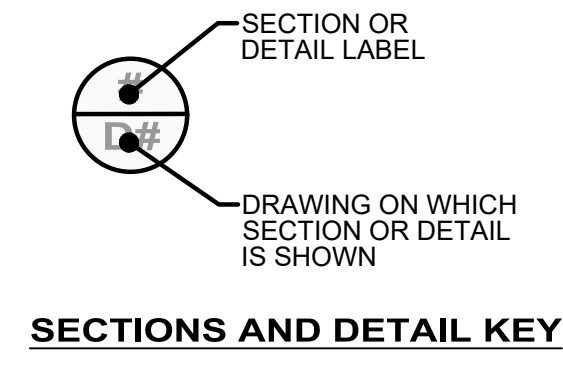


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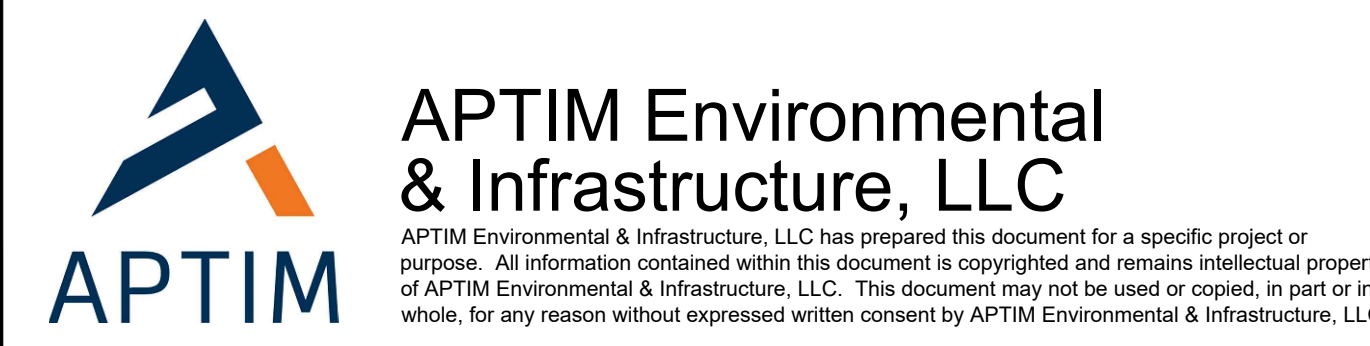
- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING CULVERT
- PROPOSED GROUND SURFACE ELEVATION CONTOUR (FEET-MSL)
- PROPOSED ROAD
- PROPOSED CULVERT
- EXISTING FORCEMAIN
- EXISTING LEACHATE COLLECTION PIPE
- EXISTING LEACHATE CLEANOUT LOCATION
- EXISTING LEACHATE VAULT LOCATION
- EXISTING LEACHATE COLLECTION SUMP LOCATION
- PROPOSED FORCEMAIN
- PROPOSED LEACHATE COLLECTION PIPE
- PROPOSED LEACHATE CLEANOUT LOCATION
- PROPOSED LEACHATE VAULT/MANHOLE LOCATION
- PROPOSED LEACHATE COLLECTION SUMP LOCATION
- PROPOSED DRAIN TILE
- STORMWATER MANHOLE
- STORMWATER HEADWALL

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. THE LEACHATE COLLECTION PIPING SHOWN FOR THE EXISTING LANDFILL (CELLS 6, 7, AND 9) HAS BEEN OVERLAIN ON THE TOP OF PERMITTED COMPOSITE BASE LINER GRADES. THE LEACHATE COLLECTION LAYER WITHIN THESE CELLS WAS CONSTRUCTED TO BE A MINIMUM ONE-FOOT THICK ABOVE THE CONSTRUCTED TOP OF PERMITTED COMPOSITE BASE LINER GRADES SHOWN.
5. THE TOP OF PROPOSED LEACHATE COLLECTION GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL EXPANSION AREA (CELLS 11 THROUGH 17).
6. THE LEACHATE COLLECTION LAYER SHALL BE A MINIMUM 1-FOOT THICK ABOVE THE CONSTRUCTED TOP OF EXCAVATION GRADES.
7. THE EXISTING AND PROPOSED LEACHATE FORCEMAIN MAY BE LOCATED INSIDE THE LIMITS OF WASTE AT THE CREST OF SLOPE IN LIEU OF OUTSIDE AS DEPICTED ON THIS DRAWING.
8. CELL DEVELOPMENT WILL PROCEED IN NUMERICAL ORDER. VERTICAL EXPANSION WILL PROGRESS CONCURRENT WITH CELL 11 DEVELOPMENT.
9. EXISTING LEACHATE FORCEMAIN AND LOADOUT FACILITY IN VERTICAL EXPANSION AREA WILL BE ABANDONED AND REMOVED AS PART OF PROPOSED EXPANSION DURING CELL 11 DEVELOPMENT.
10. PROPOSED LEACHATE VAULTS AND MANHOLES WILL BE CO-LOCATED. SEE DETAIL 3/D19. LEACHATE WILL BE SAMPLED AT EACH MANHOLE LOCATION.



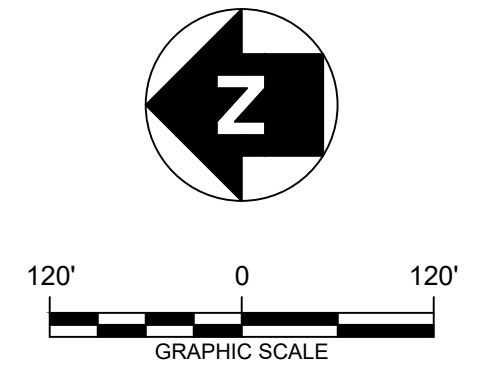
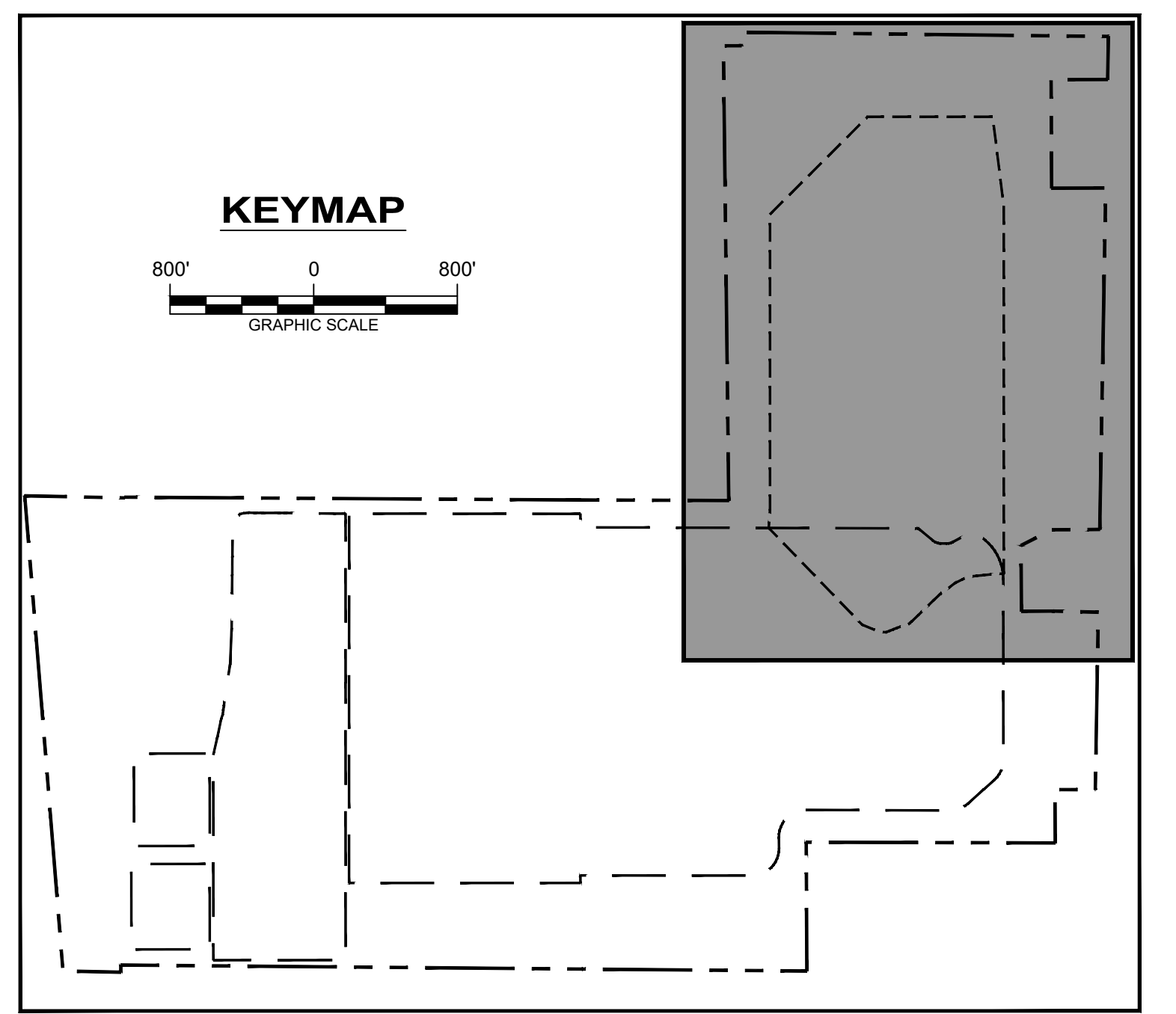
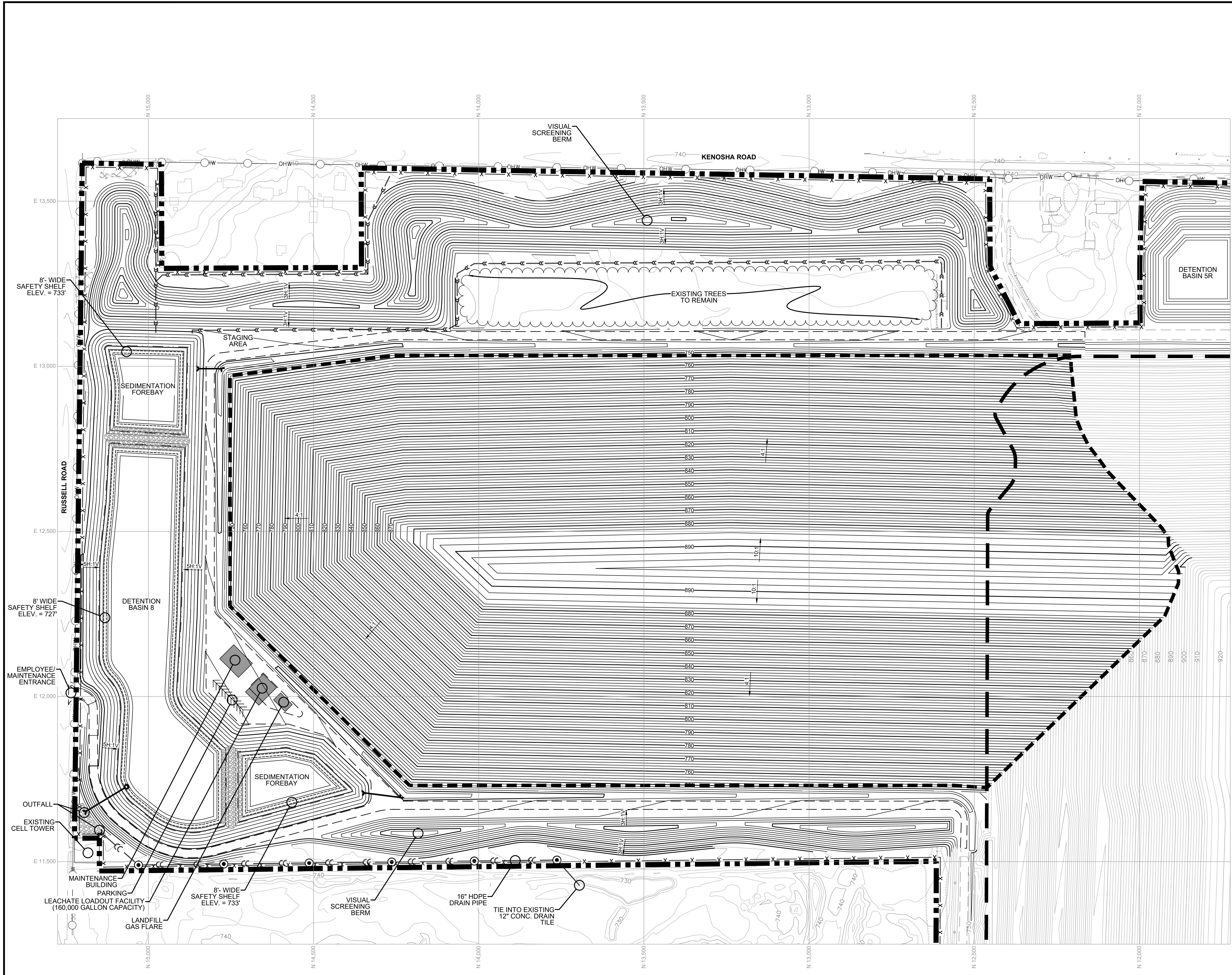
REV. NO.	DATE	DESCRIPTION



**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

**PROPOSED LEACHATE COLLECTION
SYSTEM LAYER GRADES**

PROJ. NO.:	631020105	DATE:	JULY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.:	D10
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		
			10 OF 37 SHEETS

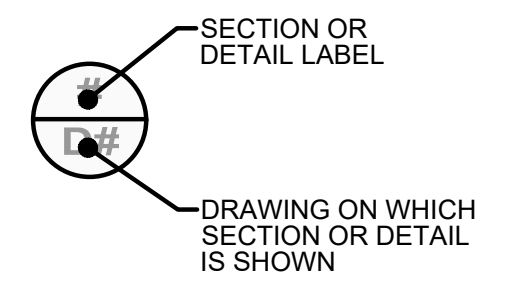


LEGEND

- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING POWER POLE
- EXISTING OVERHEAD WIRE
- EXISTING CULVERT
- PROPOSED CONTOUR
- PROPOSED ROAD
- PROPOSED PERIMETER FENCE
- PROPOSED CULVERT
- PROPOSED DRAIN TILE
- STORMWATER MANHOLE
- STORMWATER HEADWALL

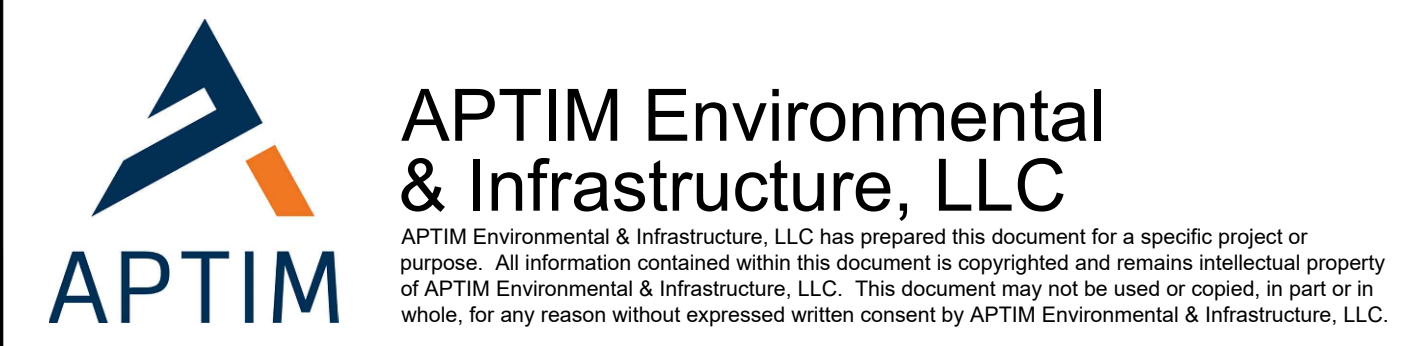
NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY PROVIDED BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. TOP OF PERMITTED FINAL COVER GRADES ARE SHOWN FOR THE EXISTING LANDFILL (CELLS 6,7, AND 9), WITH THE EXCEPTION OF THE SITE 2 NORTH VERTICAL EXPANSION AREA.
5. THE TOP OF PROPOSED FINAL COVER GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL AND VERTICAL EXPANSION. THE PROPOSED VERTICAL EXPANSION AREA FINAL COVER GRADES WILL TIE INTO THE PERMITTED FINAL COVER GRADES OF THE EXISTING LANDFILL AS SHOWN.
6. THE FINAL COVER WILL BE CONSTRUCTED TO BE A MINIMUM FIVE-FOOT THICK.



SECTIONS AND DETAIL KEY

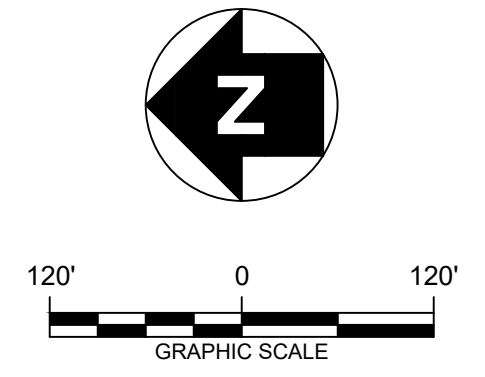
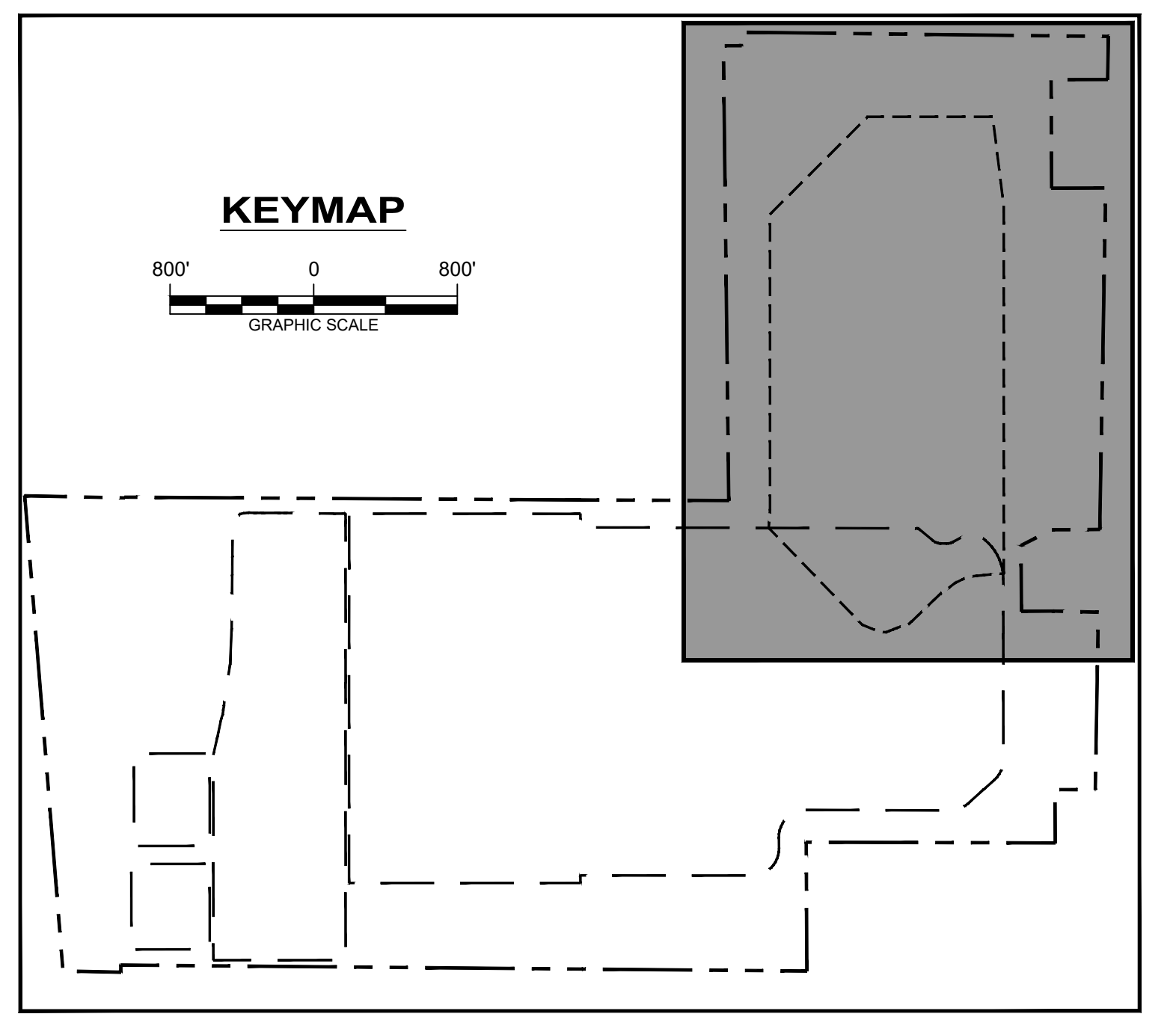
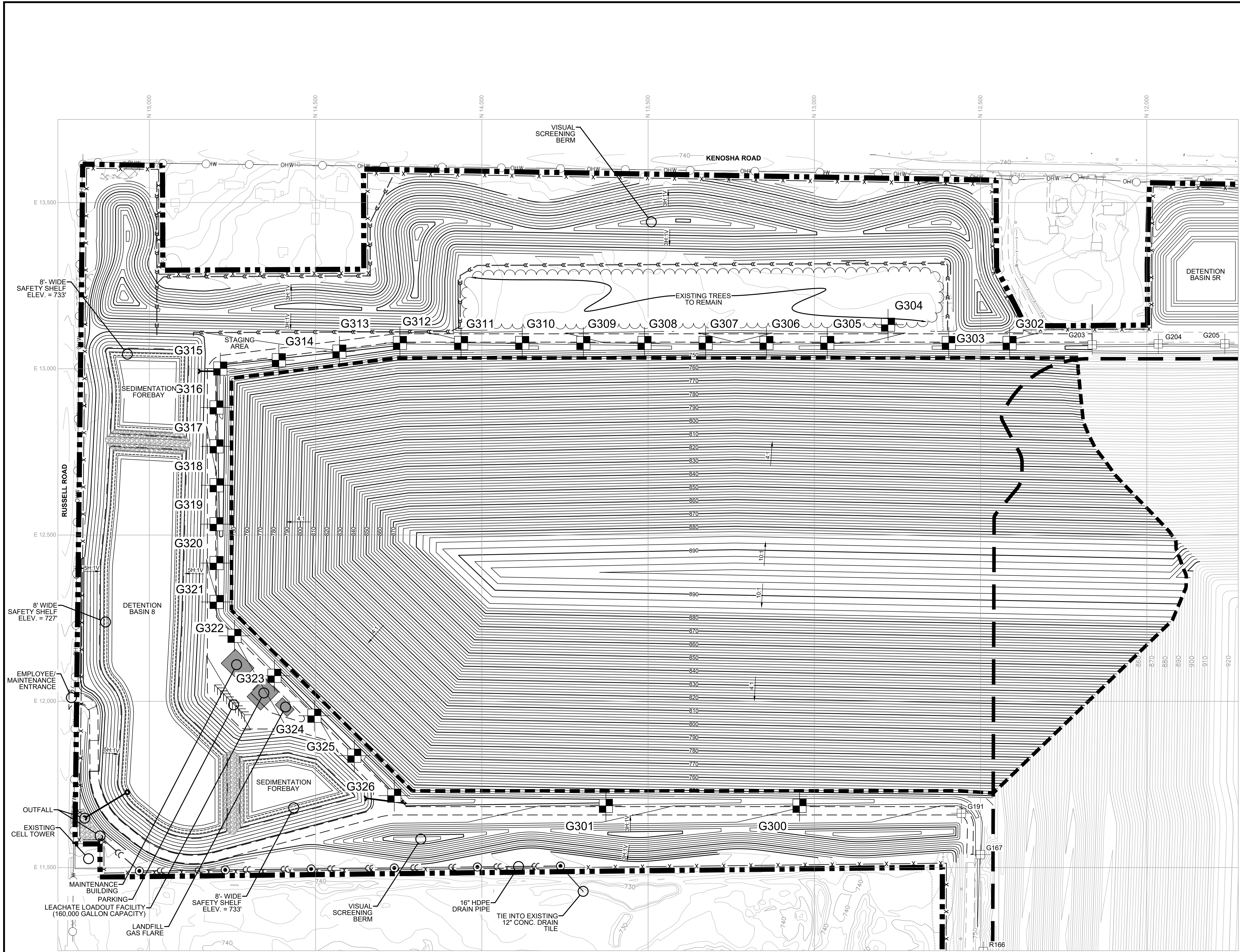
REV. NO.	DATE	DESCRIPTION



**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

PROPOSED FINAL LANDFORM GRADES

PROJ. NO.:	631020105	DATE:	JULY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.:	D11
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		

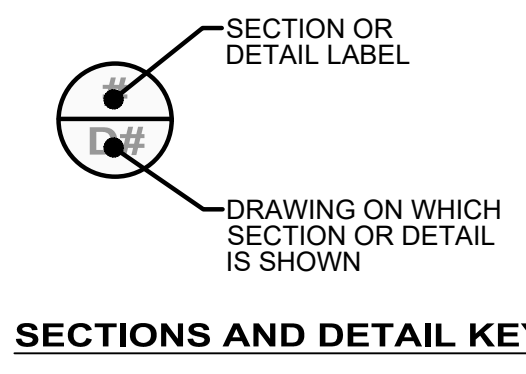


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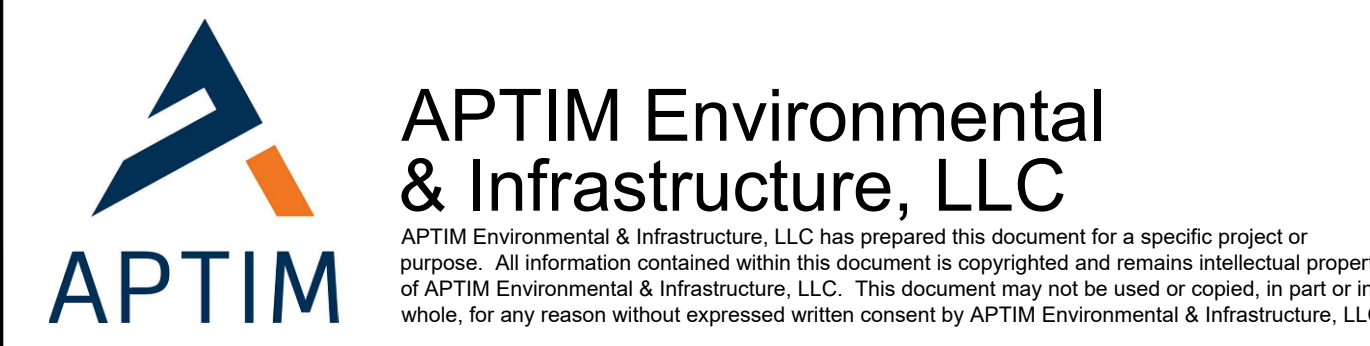
- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING PERIMETER FENCE
- EXISTING POWER POLE
- EXISTING OVERHEAD WIRE
- EXISTING CULVERT
- PROPOSED CONTOUR
- PROPOSED ROAD
- PROPOSED FENCE
- PROPOSED CULVERT
- PROPOSED DRAIN TILE
- EXISTING MONITORING WELL
- PROPOSED MONITORING WELL
- STORMWATER MANHOLE
- STORMWATER HEADWALL

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY PROVIDED BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
4. TOP OF PERMITTED FINAL COVER GRADES ARE SHOWN FOR THE EXISTING LANDFILL (CELLS 6, 7, AND 9), WITH THE EXCEPTION OF THE SITE 2 NORTH VERTICAL EXPANSION AREA.
5. THE TOP OF PROPOSED FINAL COVER GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL AND VERTICAL EXPANSION. THE PROPOSED VERTICAL EXPANSION AREA FINAL COVER GRADES WILL TIE INTO THE PERMITTED FINAL COVER GRADES OF THE EXISTING LANDFILL AS SHOWN.
6. A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER PERMIT SHALL BE OBTAINED FOR THE PROPOSED LANDFILL EXPANSION. STORMWATER EFFLUENT IS ANTICIPATED TO BE SAMPLED AT THE OUTFALL LOCATIONS OF THE STORMWATER DETENTION BASINS IN ACCORDANCE WITH NPDES SAMPLING REQUIREMENTS.
7. EXISTING GROUNDWATER MONITORING WELLS LOCATED WITHIN THE PROPOSED WASTE FOOTPRINT WILL BE ABANDONED FOLLOWING SITE WELL ABANDONMENT PROCEDURES AS PART OF EXPANSION CONSTRUCTION. THESE WELL LOCATIONS ARE OMITTED FROM THE DRAWING.



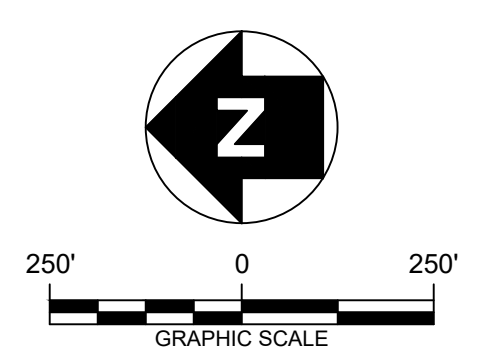
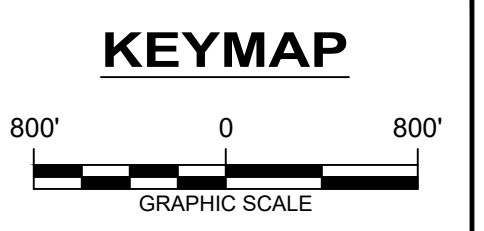
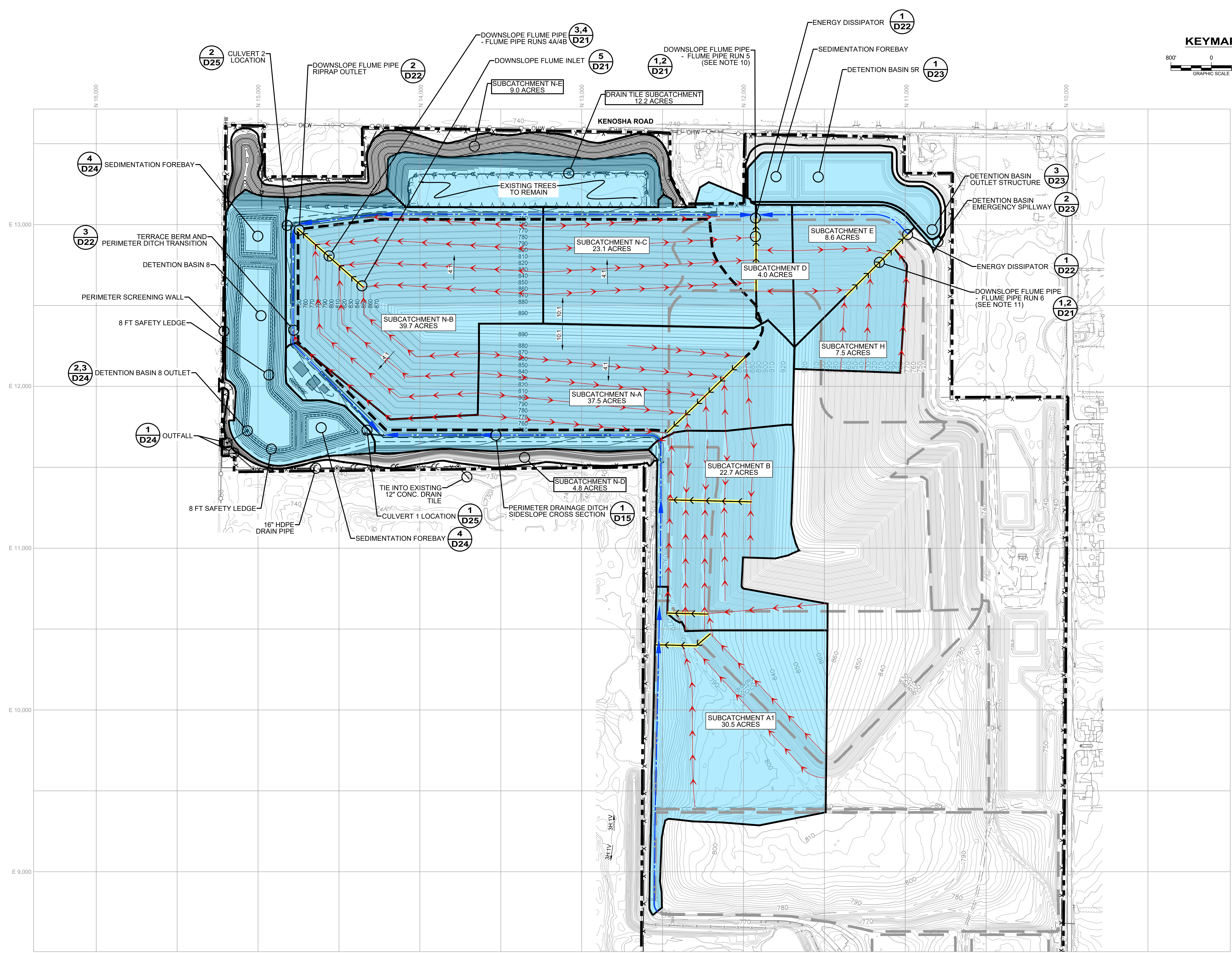
REV. NO.	DATE	DESCRIPTION



**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

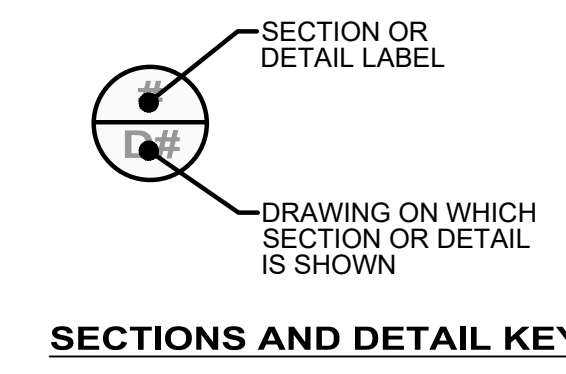
PROPOSED GROUNDWATER MONITORING PLAN

PROJ. NO.: 631020105	DATE: JULY 2022
DESIGNED BY: DAM/BWM	DRAWING NO.
DRAWN BY: BWM/NV/KM	D12
CHECKED BY: DAM	12 OF 37 SHEETS
APPROVED BY: DAM	

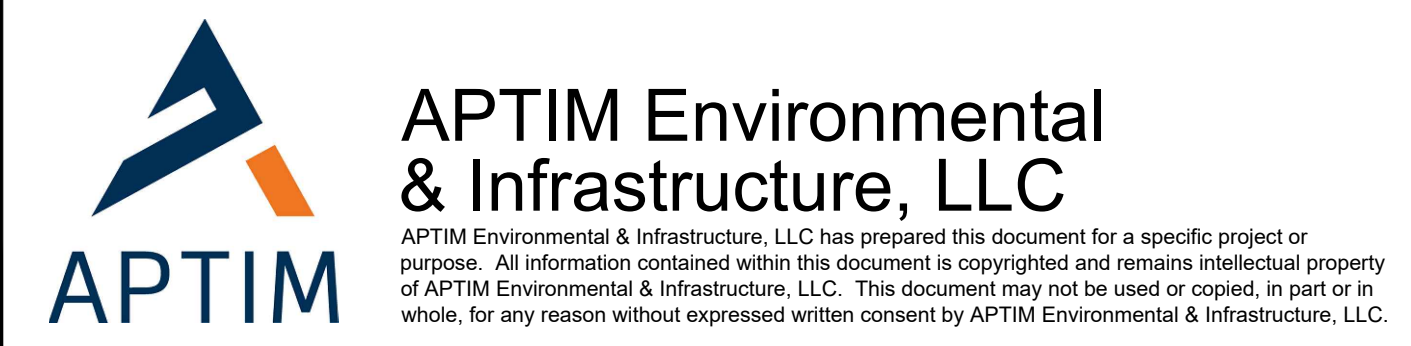


- LEGEND**
- APPROXIMATE FACILITY BOUNDARY
 - APPROXIMATE EXISTING WASTE BOUNDARY
 - APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
 - - - EXISTING CONTOUR
 - - - EXISTING ROAD
 - EXISTING VEGETATION
 - x-x-x EXISTING FENCE
 - EXISTING POWER POLE
 - OHW — EXISTING OVERHEAD WIRE
 - - - EXISTING CULVERT
 - - - PROPOSED CONTOUR
 - - - PROPOSED ROAD
 - x-x-x PROPOSED PERIMETER FENCE
 - PROPOSED CULVERT
 - PROPOSED DRAIN TILE
 - PROPOSED WATERSHED BOUNDARY
 - PROPOSED TERRACE BERM / BENCH LOCATION
 - PROPOSED STORMWATER DITCH LOCATION
 - PROPOSED DOWNSLOPE FLUME LOCATION
 - SUBCATCHMENT AREAS MANAGED BY THE PROPOSED EXPANSION

- NOTES**
1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM ON 10/22/2018.
 2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
 3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
 4. TOP OF PERMITTED FINAL COVER GRADES ARE SHOWN FOR THE EXISTING LANDFILL (CELLS 6, 7, AND 9), WITH THE EXCEPTION OF THE SITE 2 NORTH VERTICAL EXPANSION AREA.
 5. THE TOP OF PROPOSED FINAL COVER GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL AND VERTICAL EXPANSION. THE PROPOSED VERTICAL EXPANSION AREA FINAL COVER GRADES WILL TIE INTO THE PERMITTED FINAL COVER GRADES OF THE EXISTING LANDFILL AS SHOWN.
 6. THE WEST LEG OF THE PERIMETER DITCH AND DETENTION BASIN 8 WILL BE OPERATIONAL PRIOR TO WASTE ACCEPTANCE WITHIN THE SITE 2 NORTH EXPANSION. THE REMAINING PROPOSED PERIMETER DITCH SEGMENTS WILL BE CONSTRUCTED IN PHASES AS NECESSARY OVER THE OPERATING LIFE OF THE LANDFILL, IN ACCORDANCE WITH THE DESIGNED STORMWATER MANAGEMENT SYSTEM.
 7. TERRACE BERMS AND DOWNSLOPE DITCHES WILL BE INSTALLED IN THE APPROXIMATE LOCATIONS SHOWN. GRADING OF THESE FEATURES IS NOT SHOWN. SEE DRAWINGS D21 AND D22 FOR DETAILS.
 8. TERRACE BERM AND DOWNSLOPE DITCH LOCATIONS ARE SUBJECT TO CHANGE WITH ILLINOIS EPA APPROVAL.
 9. SEE FIGURES IN THE STORMWATER CALCULATIONS WITHIN APPENDIX M FOR THE DELINEATION AND NAMING OF INDIVIDUAL STORMWATER FEATURES AS THEY RELATE TO THE STORMWATER MODEL.
 10. A 12-INCH LETDOWN FLUME PIPE IS PERMITTED IN THIS LOCATION AS PART OF THE PERMITTED SITE 2 EAST DESIGN. THE FLUME PIPE HAS NOT BEEN INSTALLED. THE SITE 2 NORTH DESIGN SPECIFIES INCREASING THE PIPE DIAMETER TO 24-INCHES FOR THE ENTIRE FLUME PIPE RUN. SEE APPENDIX M.6 FOR ADDITIONAL INFORMATION.
 11. A 18-INCH LETDOWN FLUME PIPE IS PERMITTED IN THIS LOCATION AS PART OF THE PERMITTED SITE 2 EAST DESIGN. THE FLUME PIPE HAS NOT BEEN INSTALLED. THE SITE 2 NORTH DESIGN SPECIFIES INCREASING THE PIPE DIAMETER TO 18-INCHES FOR THE ENTIRE FLUME PIPE RUN. SEE APPENDIX M.6 FOR ADDITIONAL INFORMATION.



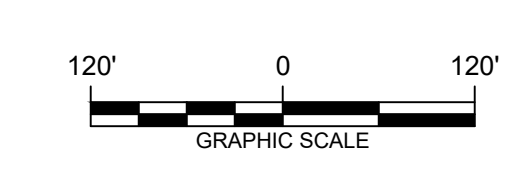
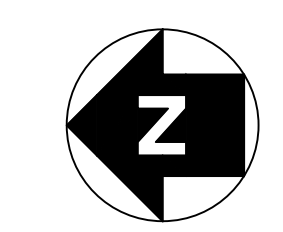
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

PROPOSED STORMWATER MANAGEMENT SYSTEM

PROJ. NO.: 631020105	DATE: JULY 2022
DESIGNED BY: DAM/BWM	DRAWING NO.
DRAWN BY: BWM/NV/KM	D13
CHECKED BY: DAM	13 OF 37 SHEETS
APPROVED BY: DAM	

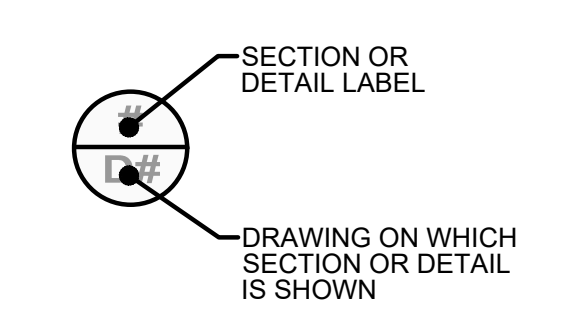


LEGEND

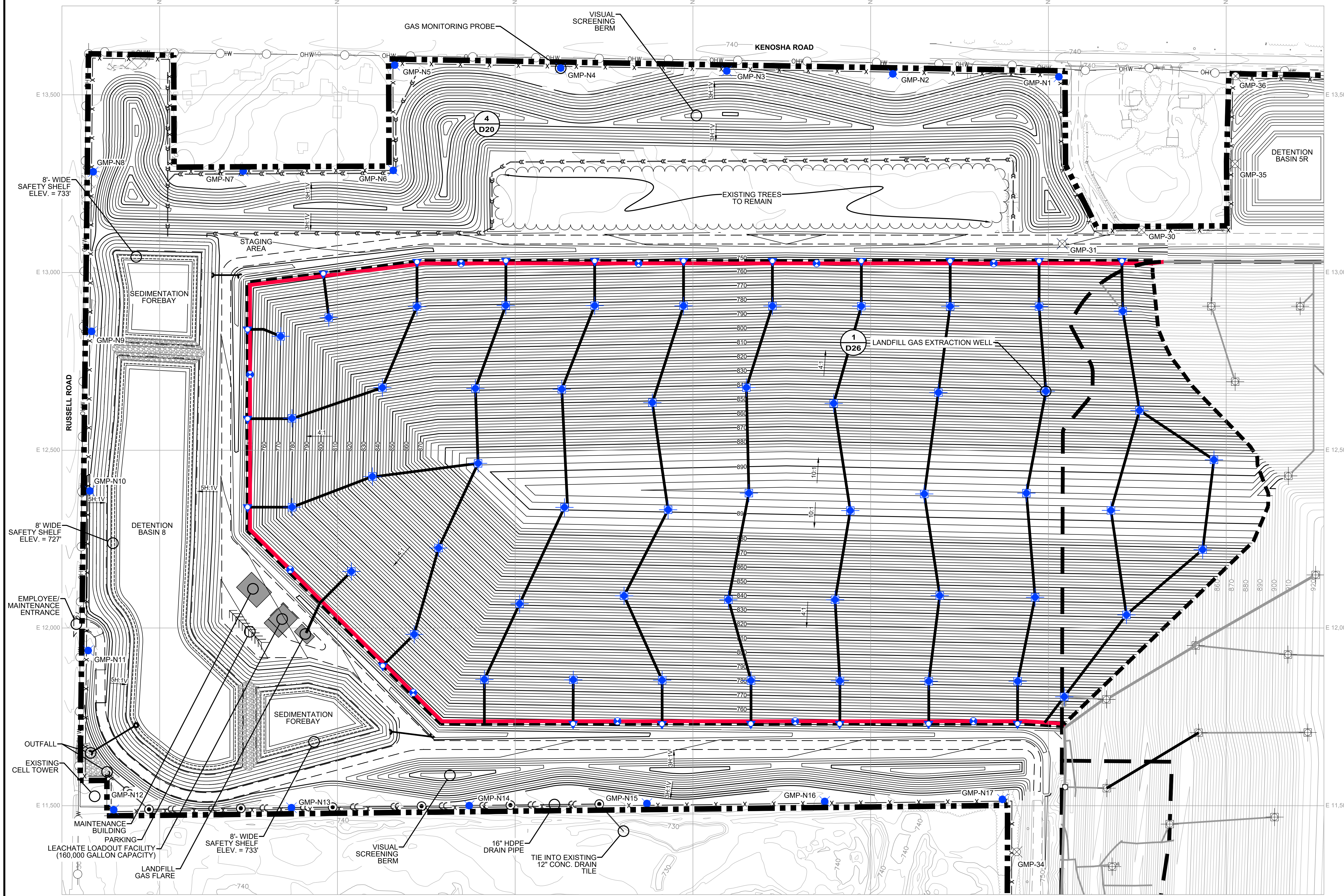
- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING LANDFILL GAS PIPE
- EXISTING LANDFILL GAS EXTRACTION WELL
- EXISTING PERIMETER LANDFILL GAS PROBE
- EXISTING INTERIOR LANDFILL GAS MONITORING DEVICE
- EXISTING LANDFILL GAS HEADER CONTROL VALVE
- PROPOSED LANDFILL GAS HEADER
- PROPOSED LANDFILL GAS EXTRACTION WELL
- PROPOSED CONDENSATE DRIP LEG
- PROPOSED LANDFILL GAS HEADER CONTROL VALVE
- PROPOSED PERIMETER LANDFILL GAS PROBE
- PROPOSED DRAIN TILE
- STORMWATER MANHOLE
- STORMWATER HEADWALL

NOTES

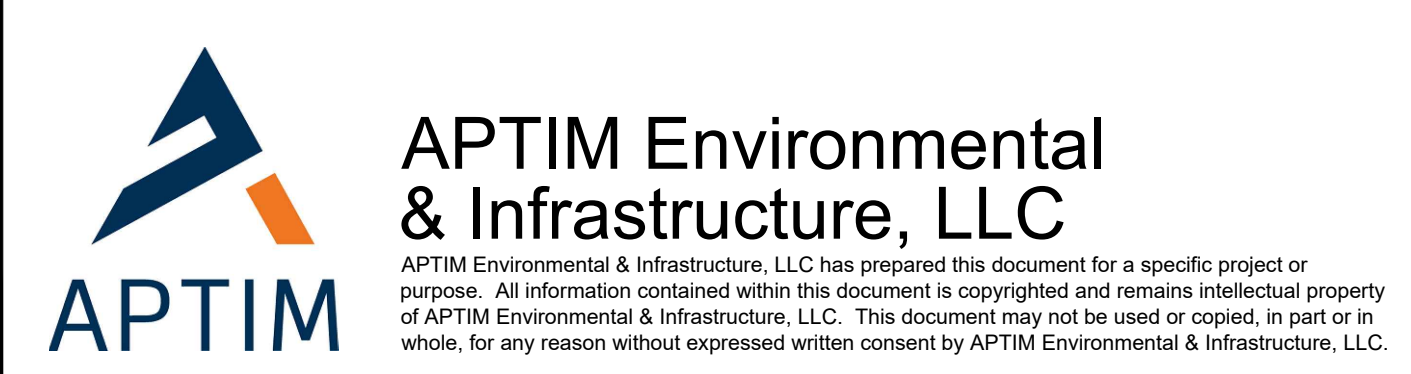
1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY PROVIDED BY CDM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES. FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. CURRENT TOPOGRAPHY MAY DIFFER FROM SHOWN.
4. TOP OF PERMITTED FINAL COVER GRADES ARE SHOWN FOR THE EXISTING LANDFILL (CELLS 6, 7, AND 9), WITH THE EXCEPTION OF THE SITE 2 NORTH VERTICAL EXPANSION AREA. THE TOP OF PROPOSED FINAL COVER GRADES ARE SHOWN FOR THE SITE 2 NORTH HORIZONTAL AND VERTICAL EXPANSION. THE PROPOSED VERTICAL EXPANSION AREA FINAL COVER GRADES WILL TIE INTO THE PERMITTED FINAL COVER GRADES OF THE EXISTING LANDFILL AS SHOWN.
5. THE CONTOURS OF THE EXISTING AND PROPOSED LANDFILL REPRESENT THE APPROXIMATE TOP OF FINAL COVER GRADES. STORMWATER CONTROL FEATURE GRADES, INCLUDING TERRACE BERMS, LETDOWN PIPES, AND DOWNSLOPE DITCHES ARE NOT SHOWN ON THIS DRAWING. PLEASE REFER TO DRAWING D13 FOR THE ANTICIPATED LOCATION OF THESE FEATURES AND ASSOCIATED DETAILS WITHIN THIS PLANSET.
6. LANDFILL GAS MONITORING PROBES WILL BE PHASED IN AROUND THE PERIMETER OF THE FILLED ACTIVE AREA AS APPROVED BY THE IEPA.
7. LANDFILL GAS MANAGEMENT WELLS WILL BE CONSTRUCTED IN PHASES AS THE LANDFILL IS DEVELOPED.
8. THE LOCATION AND SPACING OF THE LANDFILL GAS EXTRACTION SYSTEM IS CONCEPTUAL AND SUBJECT TO CHANGE BASED ON THE DISCRETION OF THE ENGINEER AND FIELD CONDITIONS, AS APPROVED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.
9. ALL PENETRATIONS THROUGH THE FINAL COVER GEOMEMBRANE WILL BE BOOTED TO MINIMIZE THE POTENTIAL FOR FUGITIVE EMISSIONS.
10. LANDFILL GAS CONDENSATE WILL BE COMBINED WITH LEACHATE AND MANAGED AS PART OF THE LEACHATE COLLECTION SYSTEM.
11. THIS DRAWING ILLUSTRATES VERTICAL GAS COLLECTION WELLS, LANDFILL GAS MAY ALSO BE EXTRACTED FROM FLOOR LATERAL GAS COLLECTORS, PERIMETER GAS COLLECTORS, SELECTED LEACHATE CLEANOUT RISERS, AND SELECTED LEACHATE EXTRACTION WELLS.
12. THE LANDFILL GAS EXTRACTION WELLS SHOWN IN THE VERTICAL EXPANSION AREA REFLECT THE CURRENTLY PERMITTED GAS EXTRACTION SYSTEM. IT IS ASSUMED THAT THESE WELLS WILL BE RAISED OR REPLACED AT A SIMILAR SPACING DURING VERTICAL EXPANSION WASTE PLACEMENT AND HEADERS MAY BE MOVED OR ADDED AS NECESSARY.



SECTIONS AND DETAIL KEY



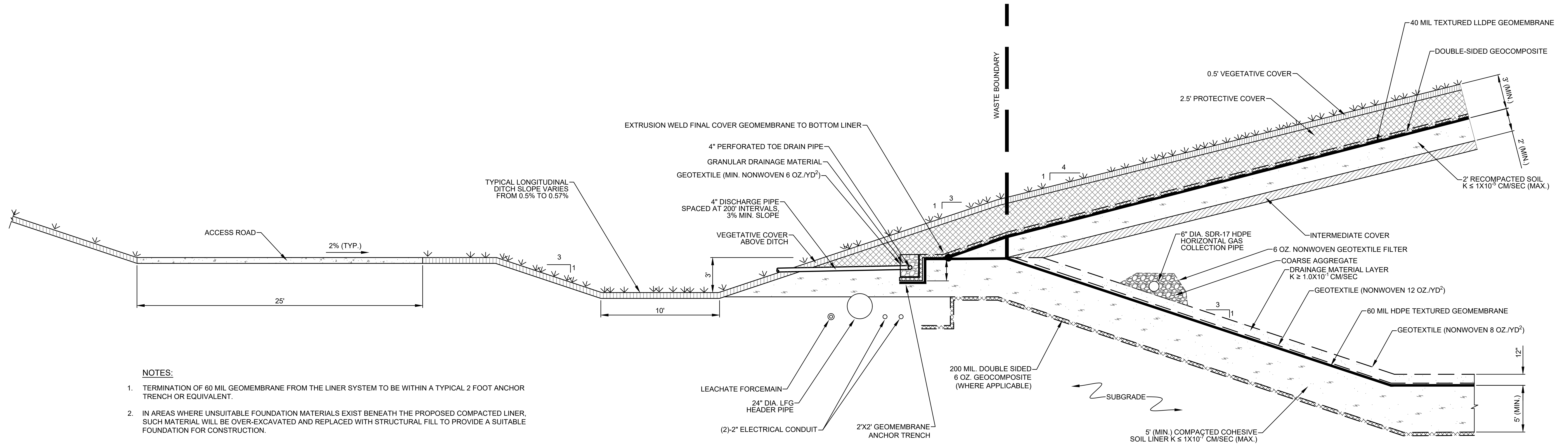
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

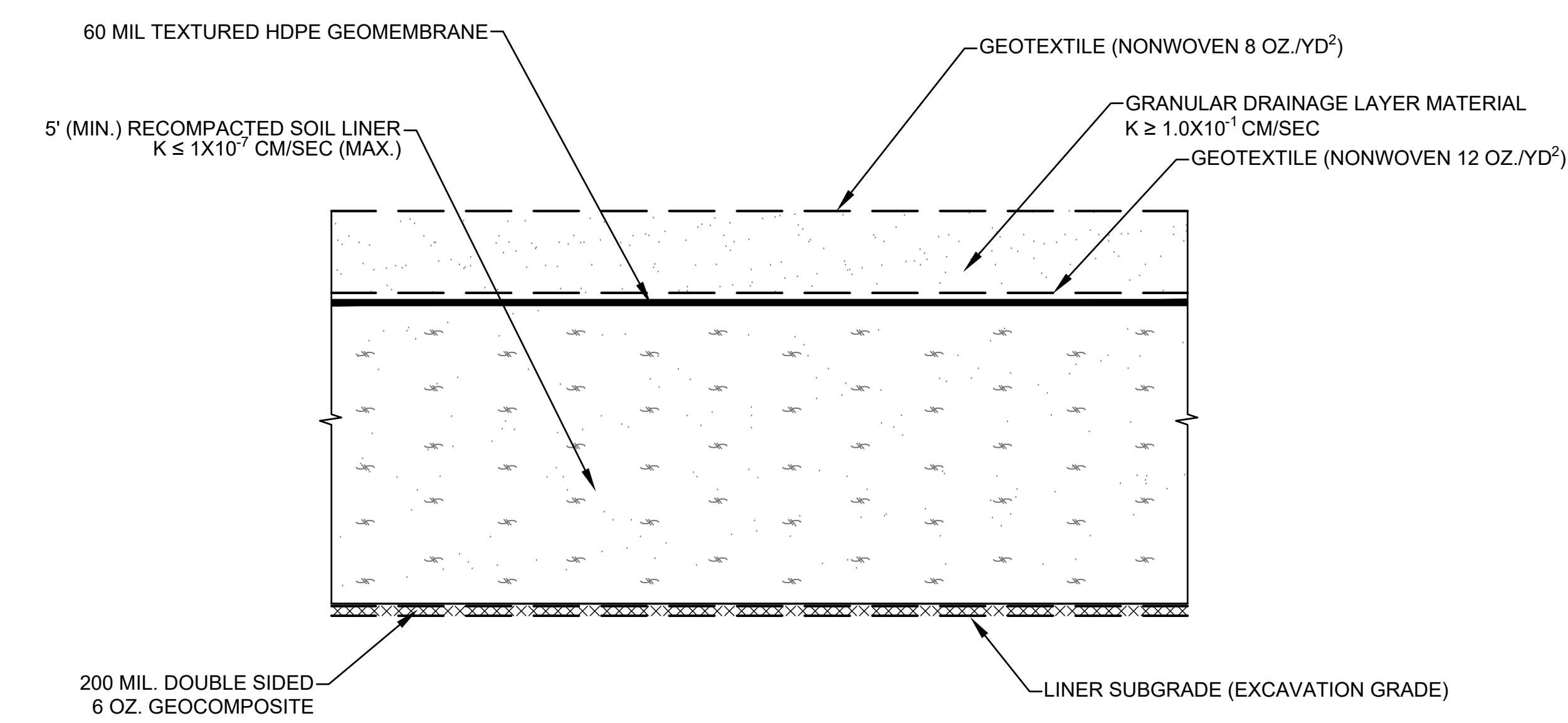
CONCEPTUAL LANDFILL GAS MANAGEMENT SYSTEM

PROJ. NO.: 631020105	DATE: JULY 2022
DESIGNED BY: DAM/BWM	DRAWING NO.
DRAWN BY: BWM/NV/KM	D14
CHECKED BY: DAM	14 OF 37 SHEETS
APPROVED BY: DAM	



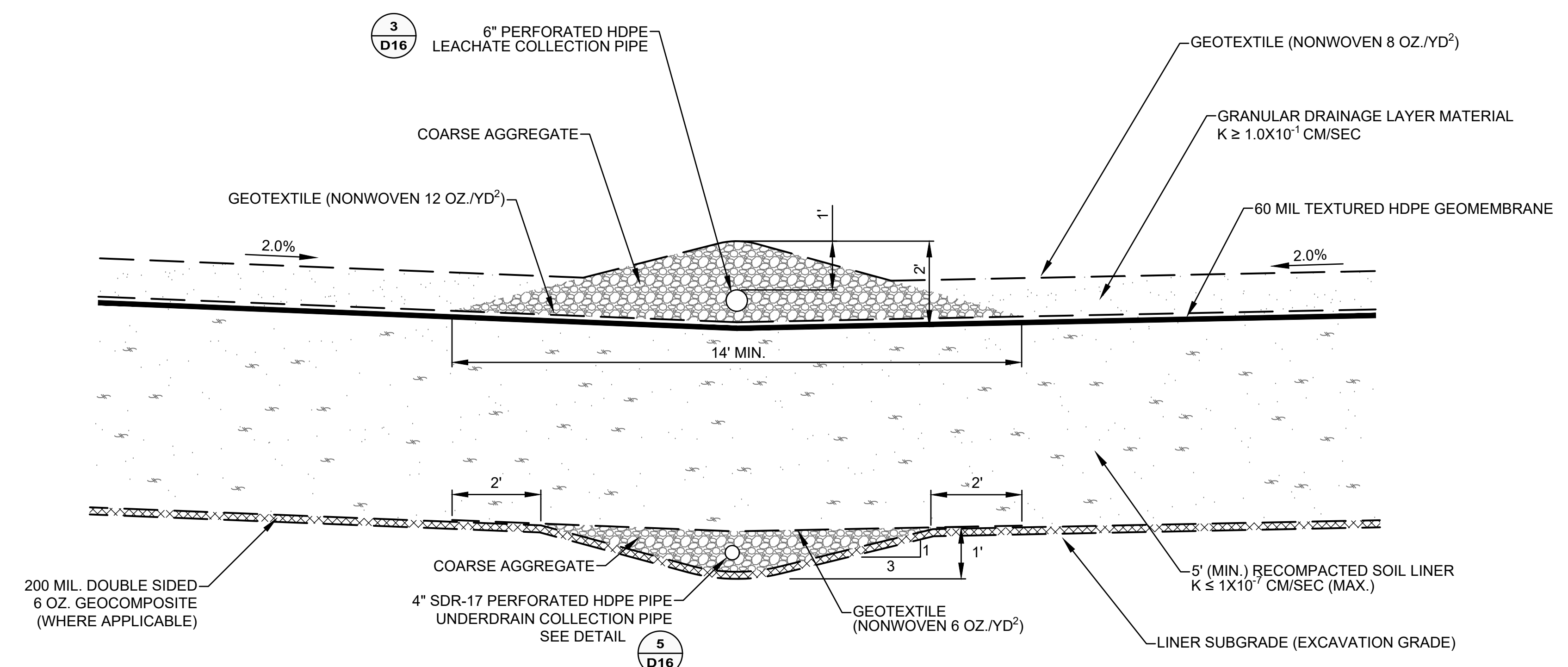
- NOTES:**
1. TERMINATION OF 60 MIL GEOMEMBRANE FROM THE LINER SYSTEM TO BE WITHIN A TYPICAL 2 FOOT ANCHOR TRENCH OR EQUIVALENT.
 2. IN AREAS WHERE UNSUITABLE FOUNDATION MATERIALS EXIST BENEATH THE PROPOSED COMPACTED LINER, SUCH MATERIAL WILL BE OVER-EXCAVATED AND REPLACED WITH STRUCTURAL FILL TO PROVIDE A SUITABLE FOUNDATION FOR CONSTRUCTION.

1
D15 TYPICAL SIDESLOPE CROSS SECTION FOR HORIZONTAL EXPANSION AREA
NOT TO SCALE



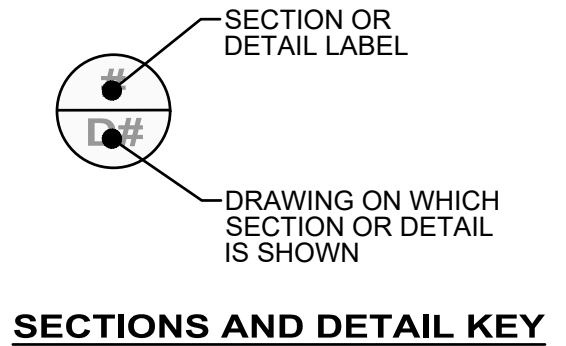
- NOTES:**
1. THE MINIMUM HYDRAULIC CONDUCTIVITY SPECIFIED FOR THE DRAINAGE MATERIAL LAYER IS $K \geq 1.0 \times 10^{-1}$ CM/SEC (MIN.). THIS HYDRAULIC CONDUCTIVITY IS SHOWN TO MEET PERFORMANCE REQUIREMENTS, BASED ON LEACHATE CALCULATIONS WITHIN THE APPLICATION.

2
D15 LINER SYSTEM COMPONENTS (FLOOR)
NOT TO SCALE



- NOTES:**
1. GRANULAR DRAINAGE LAYER MATERIAL AND COARSE AGGREGATE SHALL MEET FILTER CALCULATION CRITERIA OR BE SEPARATED BY AN INTERMEDIATE AGGREGATE TO MEET FILTER CRITERIA.
 2. 6" OF COARSE AGGREGATE BEDDING PLACED DIRECTLY BELOW UNDERDRAIN COLLECTION PIPE AND LEACHATE COLLECTION PIPE.

3
D15 TYPICAL LEACHATE COLLECTION PIPE CONFIGURATION
NOT TO SCALE



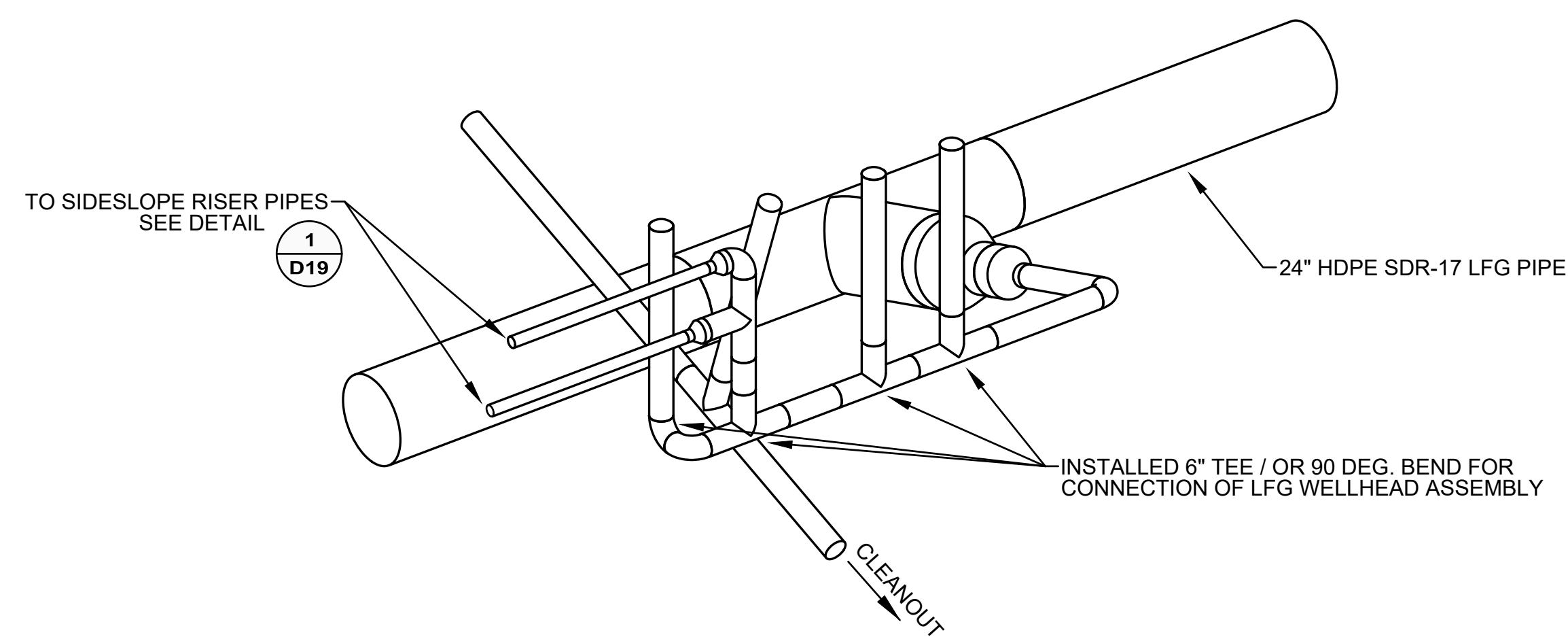
REV. NO.	DATE	DESCRIPTION



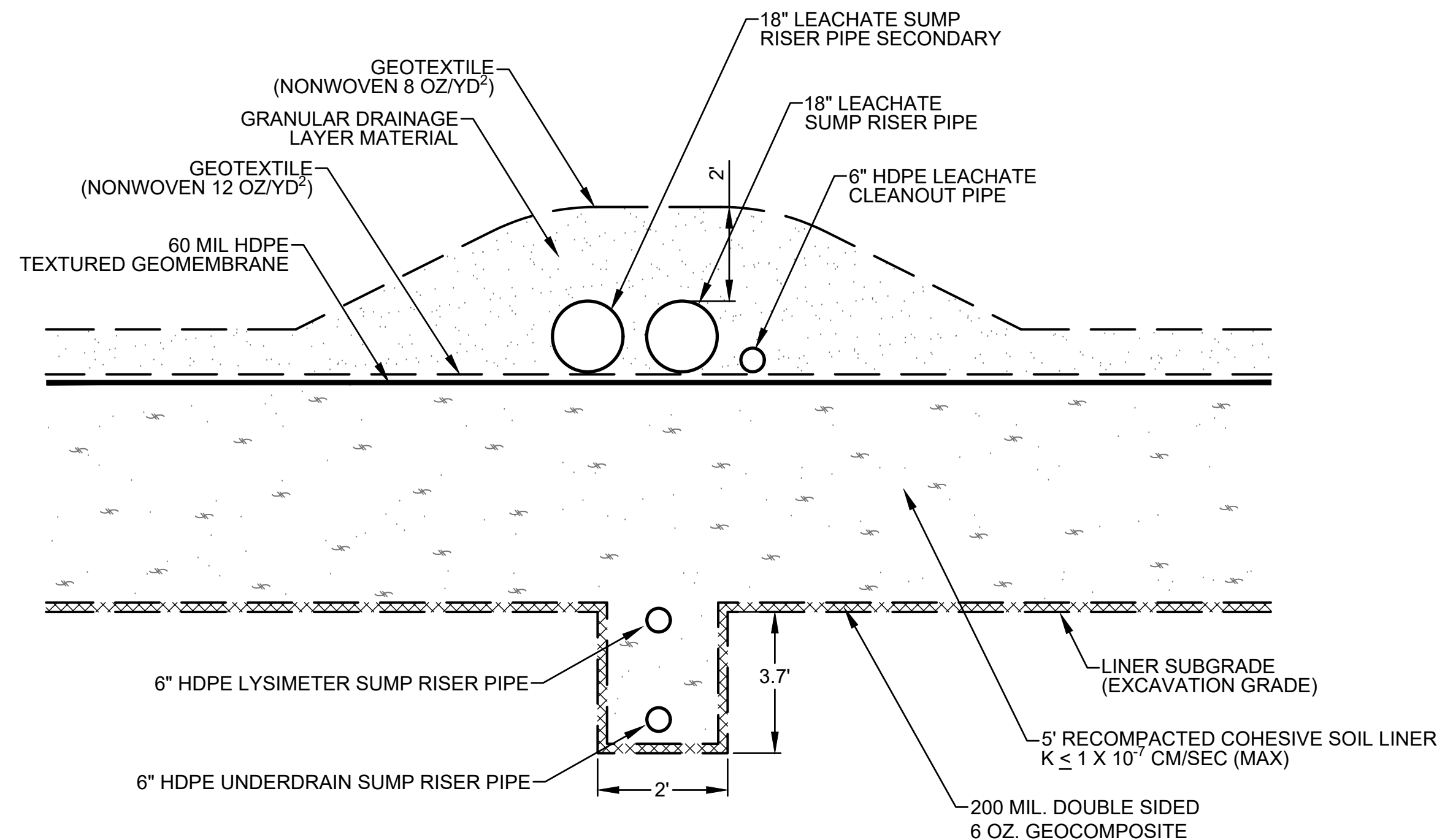
ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

LINER - LEACHATE COLLECTION DETAILS - 1

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D15
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		

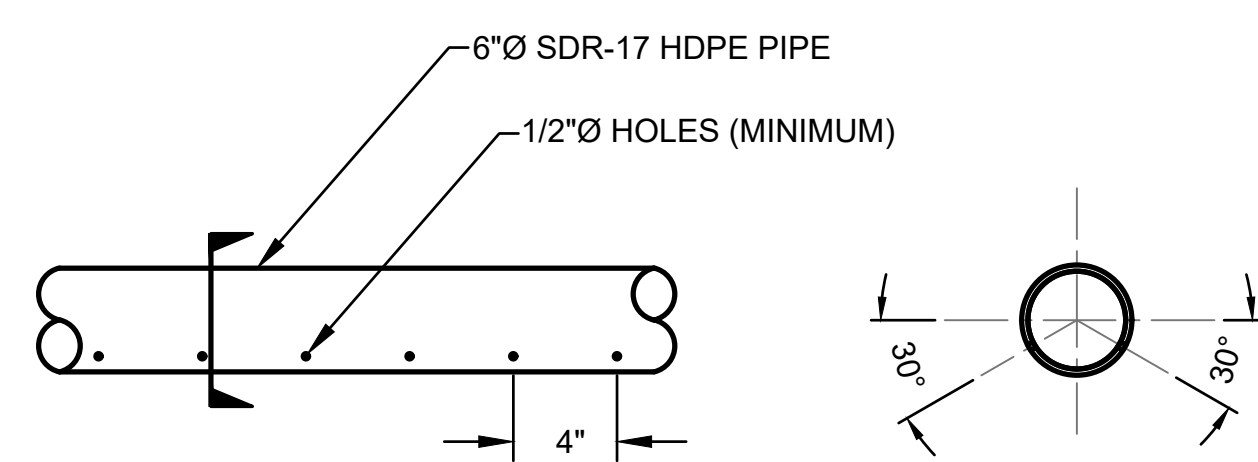


1
D16 **CLEANOUT / HORIZONTAL LFG WELLHEAD ASSEMBLY**
NOT TO SCALE

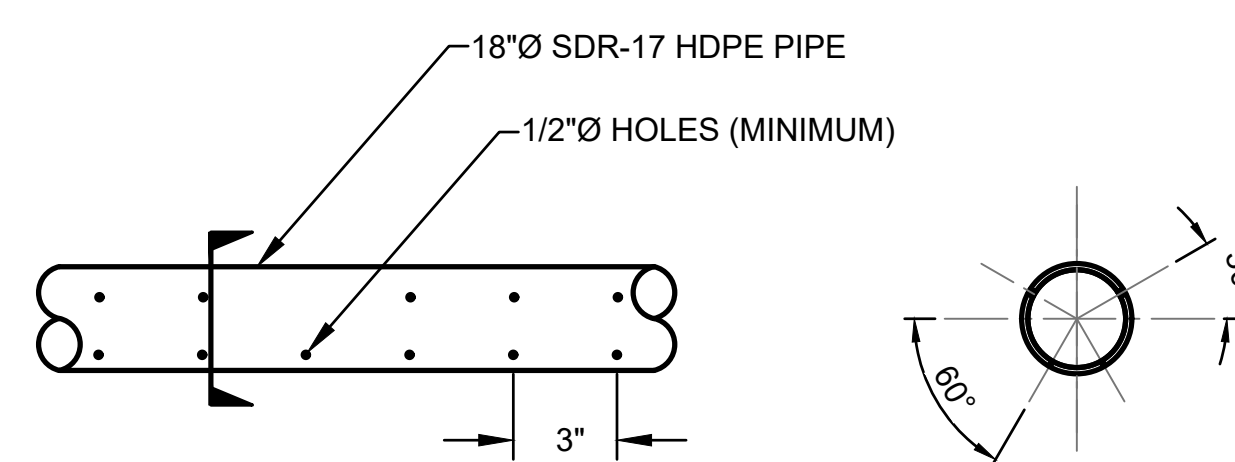


2
D16 **TYPICAL LEACHATE SIDESLOPE RISER CLEANOUT SECTION**
NOT TO SCALE

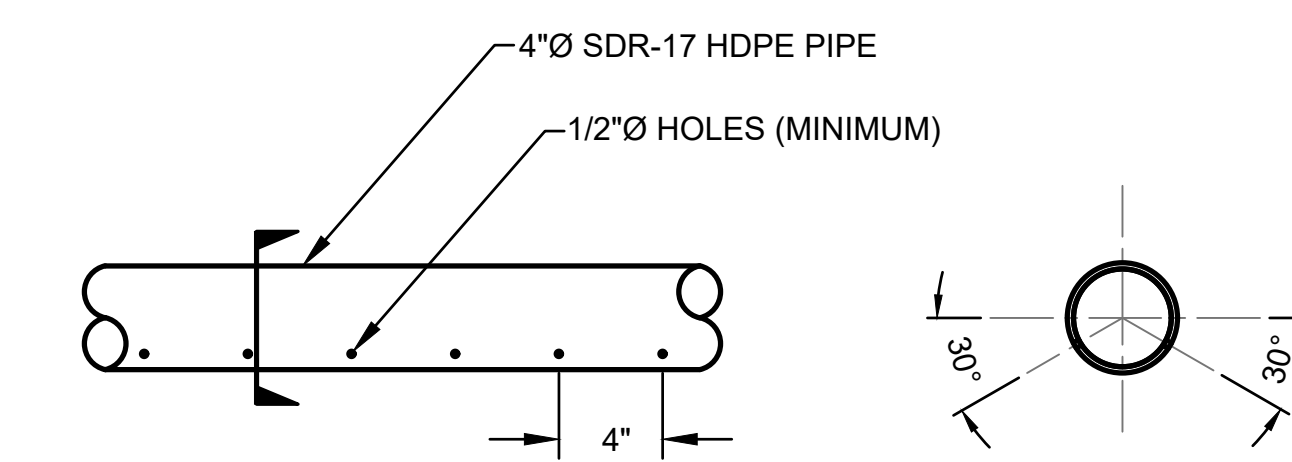
- NOTES:**
1. THE MINIMUM HYDRAULIC CONDUCTIVITY SPECIFIED FOR THE DRAINAGE MATERIAL LAYER IS $K \geq 1.0 \times 10^{-11}$ CM/SEC (MIN.). THIS HYDRAULIC CONDUCTIVITY IS SHOWN TO MEET PERFORMANCE REQUIREMENTS, BASED ON LEACHATE CALCULATIONS WITHIN THE APPLICATION.
 2. ALTERNATE LEACHATE COLLECTION RISERS MAY BE PROVIDED IN ACCORDANCE WITH IEPA PERMIT CONDITIONS.



3
D16 **TYPICAL LEACHATE COLLECTION PIPE DETAIL**
NOT TO SCALE

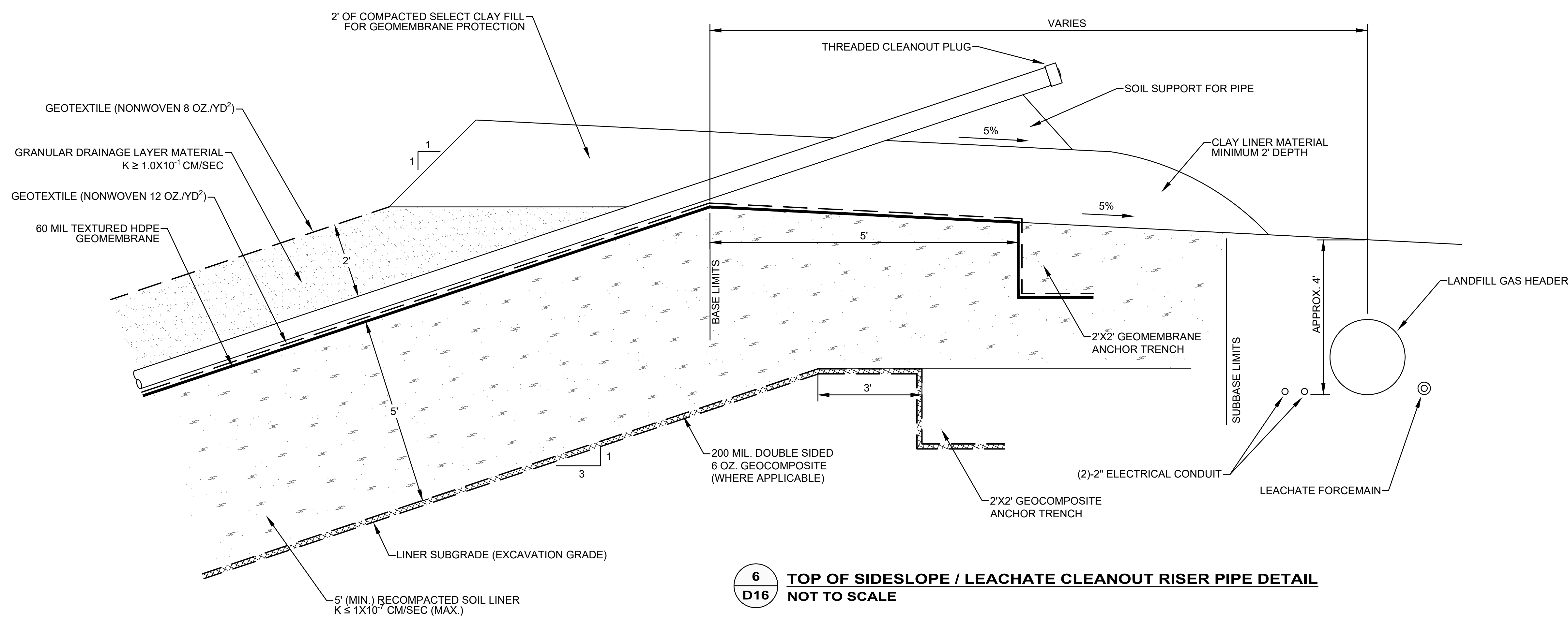


4
D16 **TYPICAL SIDESLOPE RISER PIPE DETAIL**
NOT TO SCALE

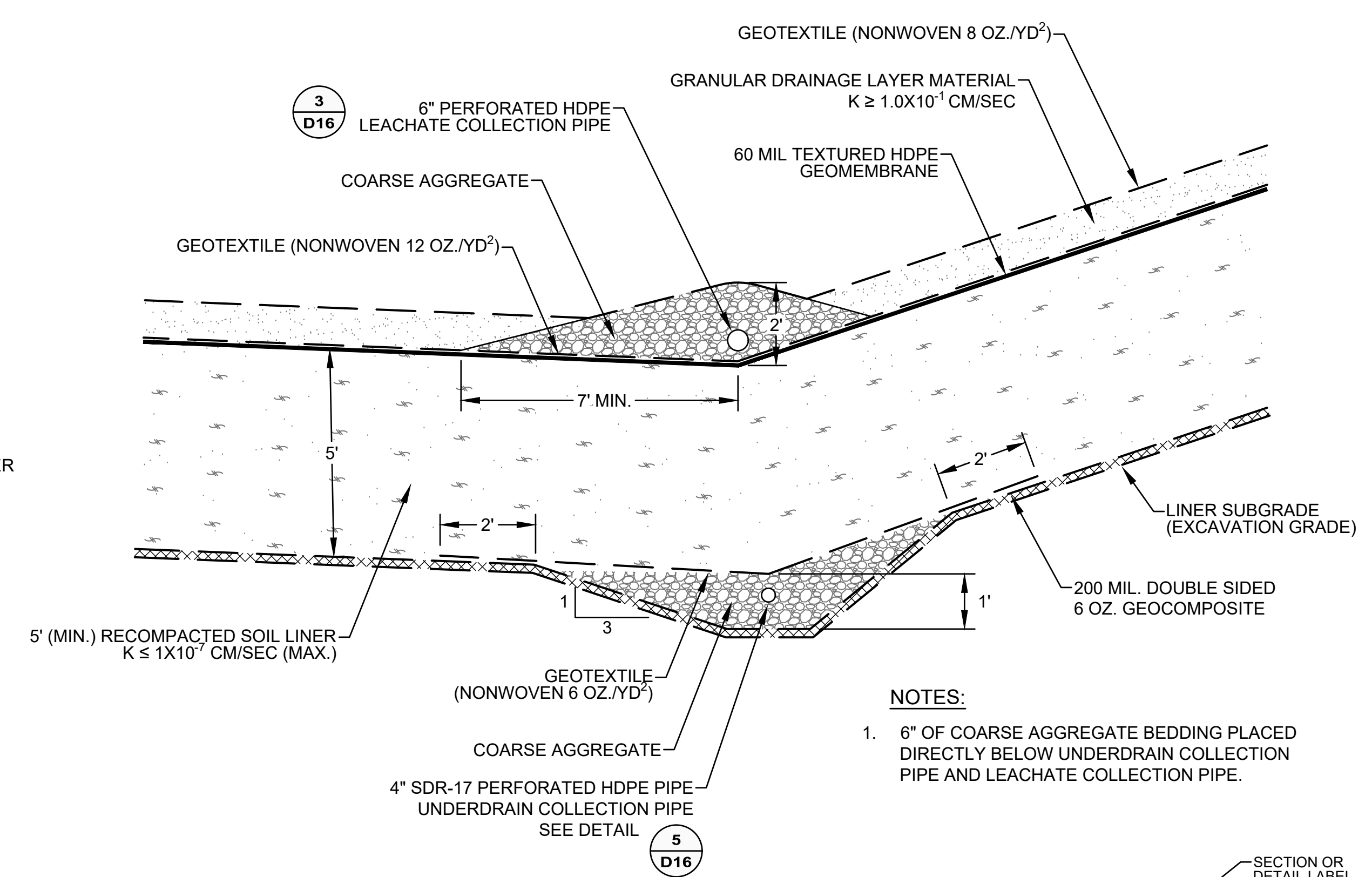


5
D16 **TYPICAL UNDERDRAIN COLLECTION PIPE DETAIL**
NOT TO SCALE

- NOTE:**
1. PERFORATION PATTERN REFLECTS THE BOTTOM SECTION OF PIPE ONLY. THE UPPER SECTION OF PIPE IS NON-PERFORATED. SEE DETAIL 2/D18.

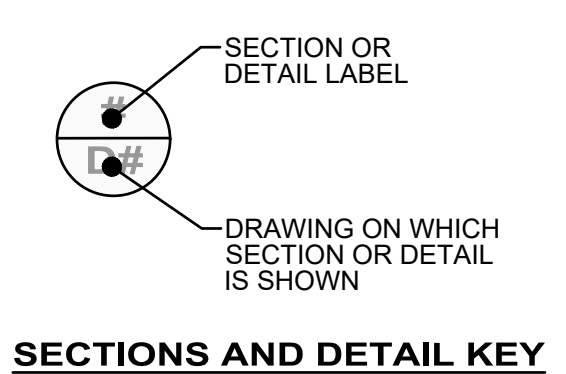


6
D16 **TOP OF SIDESLOPE / LEACHATE CLEANOUT RISER PIPE DETAIL**
NOT TO SCALE



7
D16 **LEACHATE COLLECTION PIPE AT TOE OF SLOPE DETAIL**
NOT TO SCALE

- NOTES:**
1. 6" OF COARSE AGGREGATE BEDDING PLACED DIRECTLY BELOW UNDERDRAIN COLLECTION PIPE AND LEACHATE COLLECTION PIPE.



SECTIONS AND DETAIL KEY

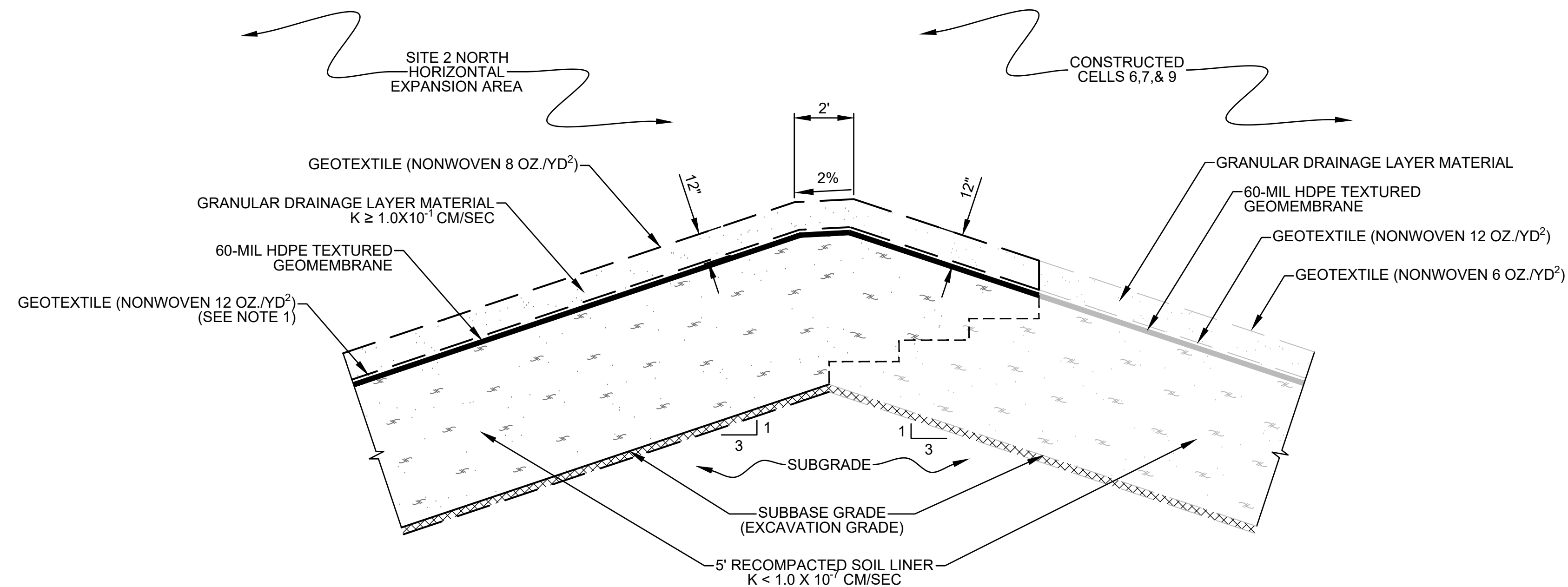
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

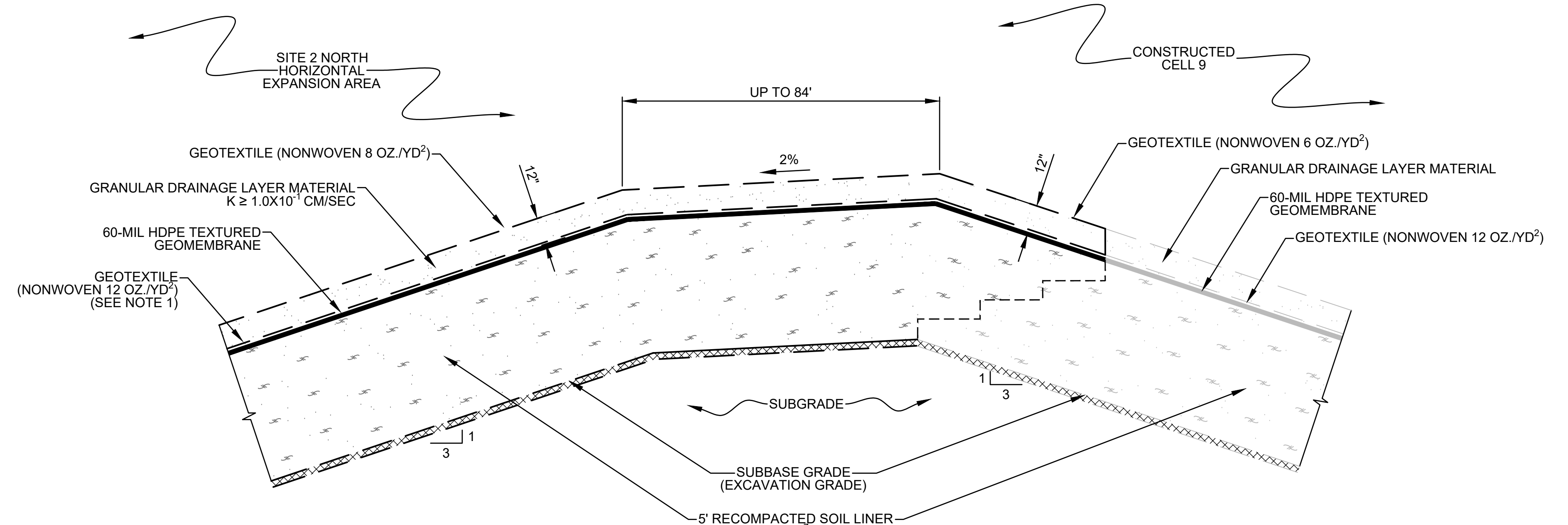
LINER - LEACHATE COLLECTION DETAILS - 2

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D16
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		



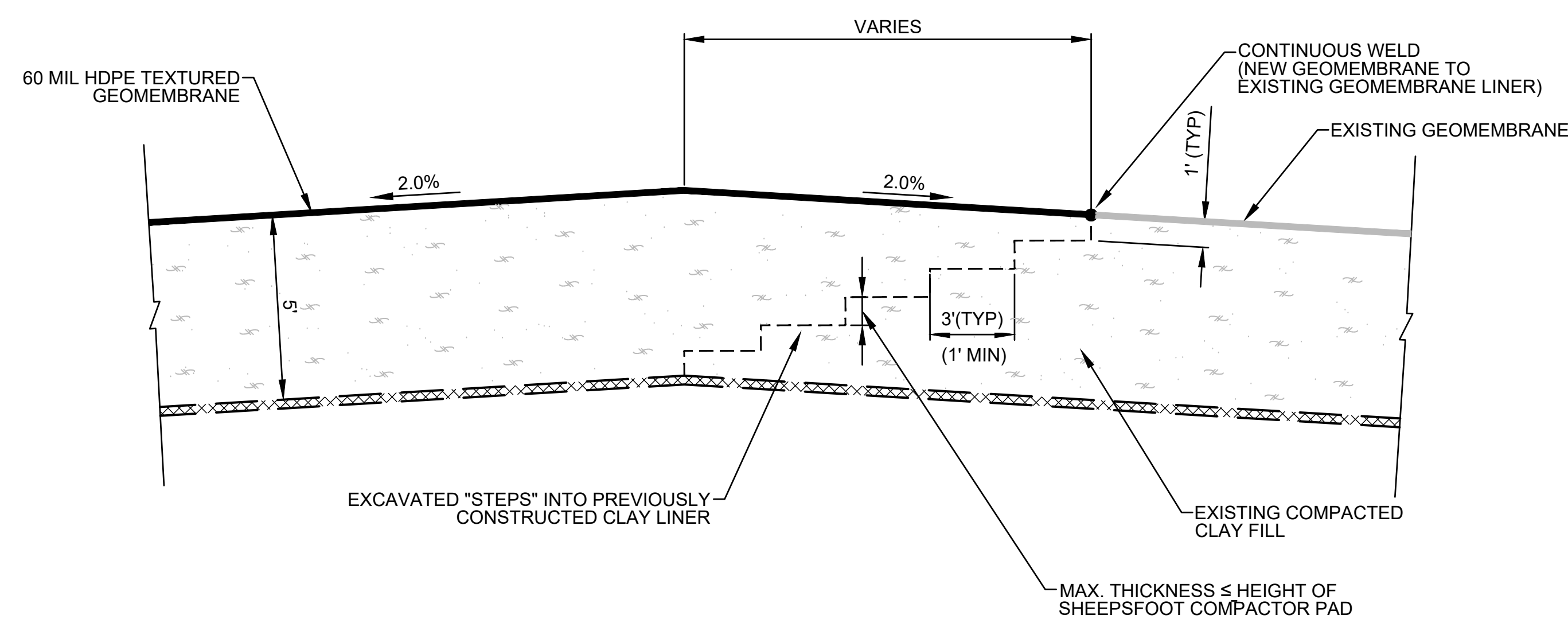
NOTES:
 1. RECOMPACTED SOIL LINER WILL BE STEPPED TOGETHER/KEYED TO THE EXISTING SOIL LINER AT TRANSITION.

SECTION A-A'
 NOT TO SCALE

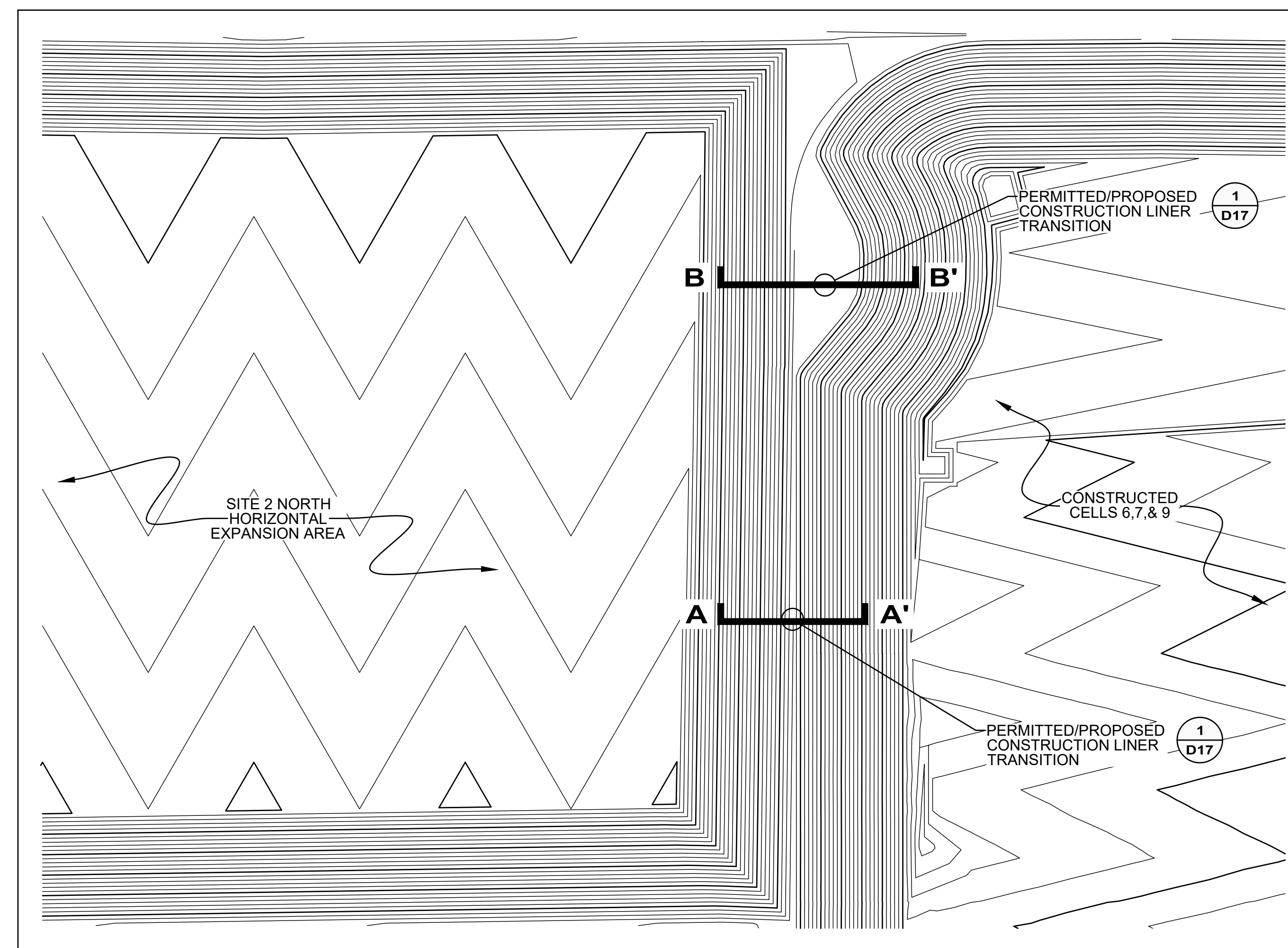


NOTES:
 1. RECOMPACTED SOIL LINER WILL BE STEPPED TOGETHER/KEYED TO THE EXISTING SOIL LINER AT TRANSITION.

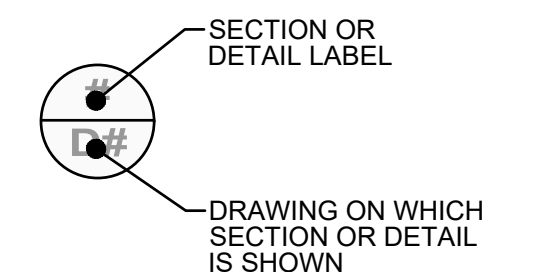
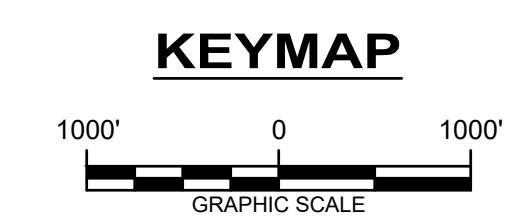
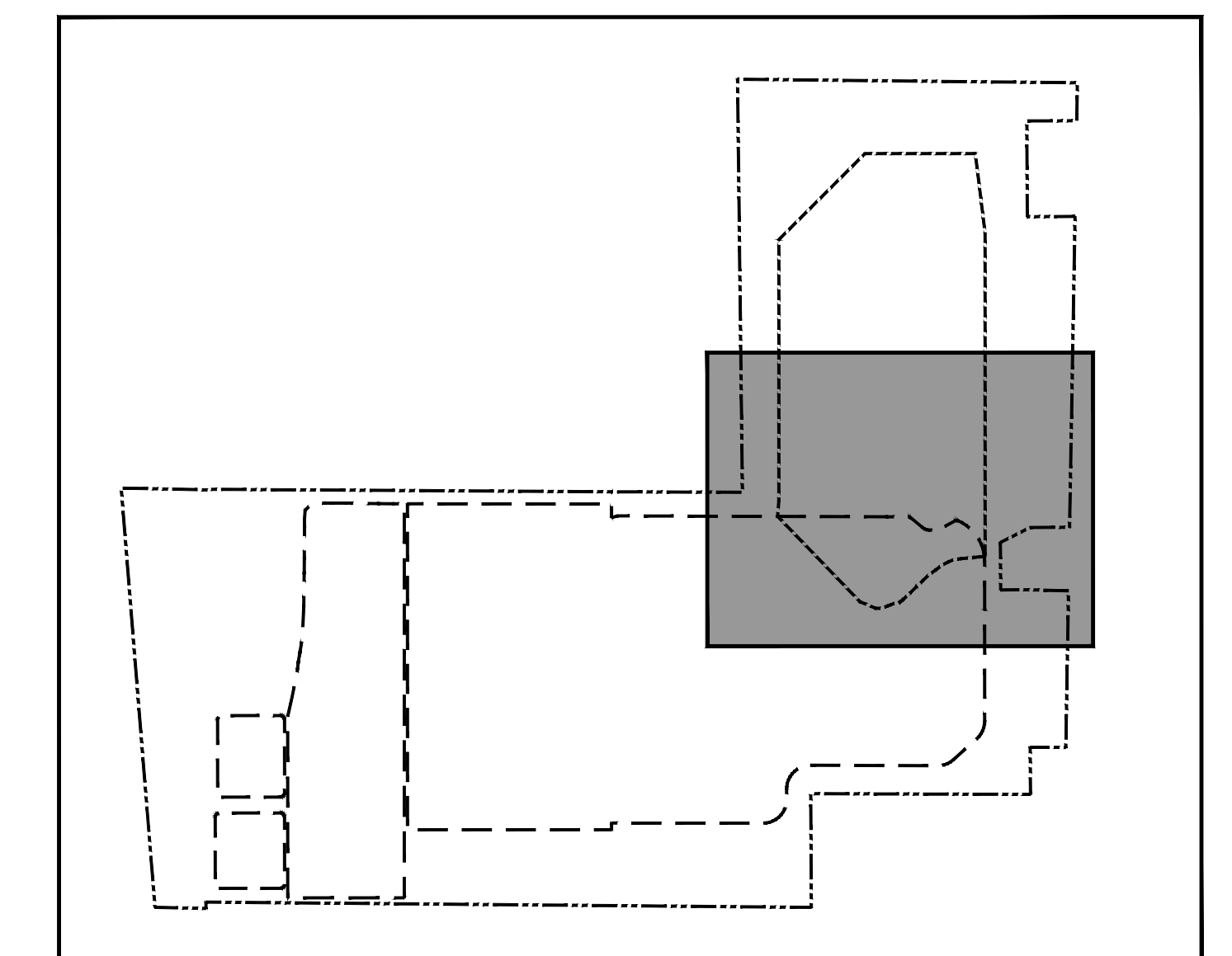
SECTION B-B'
 NOT TO SCALE



2
D17 INTERPHASE CONSTRUCTION LINER TRANSITION
 NOT TO SCALE



1
D17 PERMITTED / PROPOSED CONSTRUCTION LINER TRANSITION LOCATION
 NOT TO SCALE



SECTIONS AND DETAIL KEY

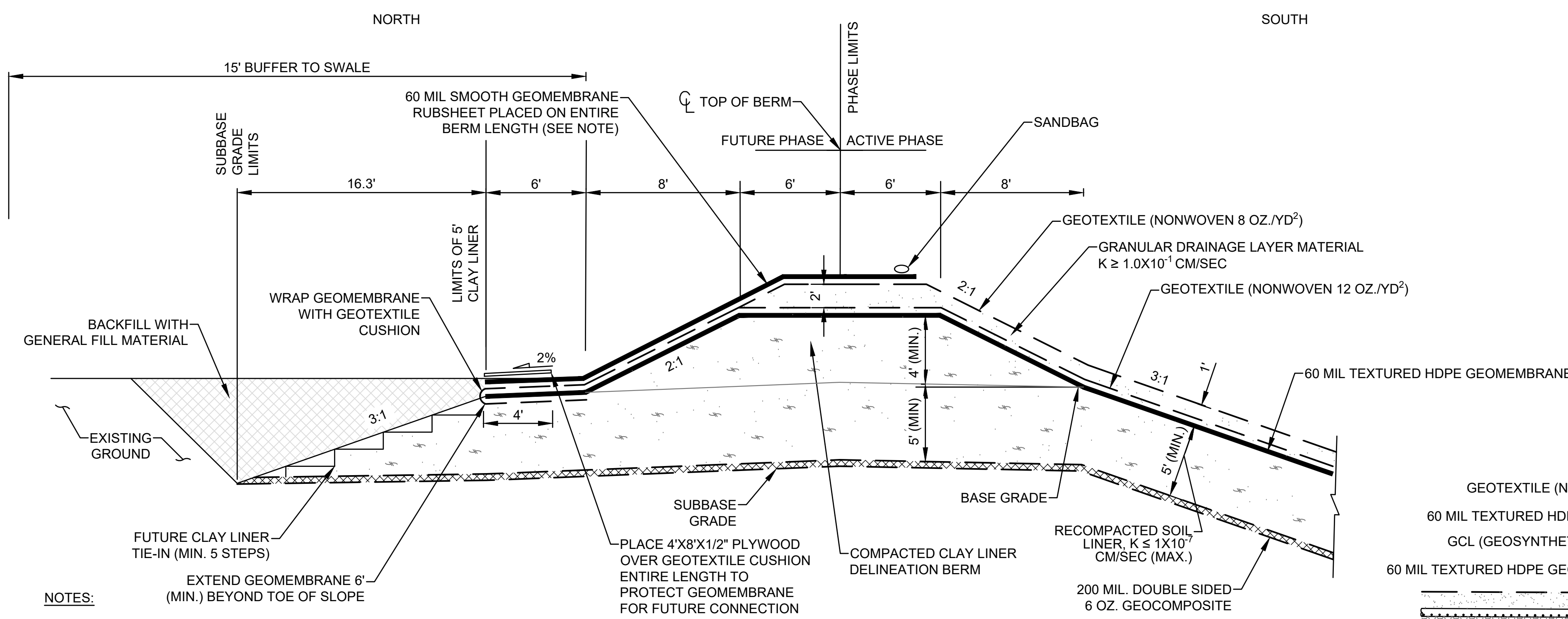
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

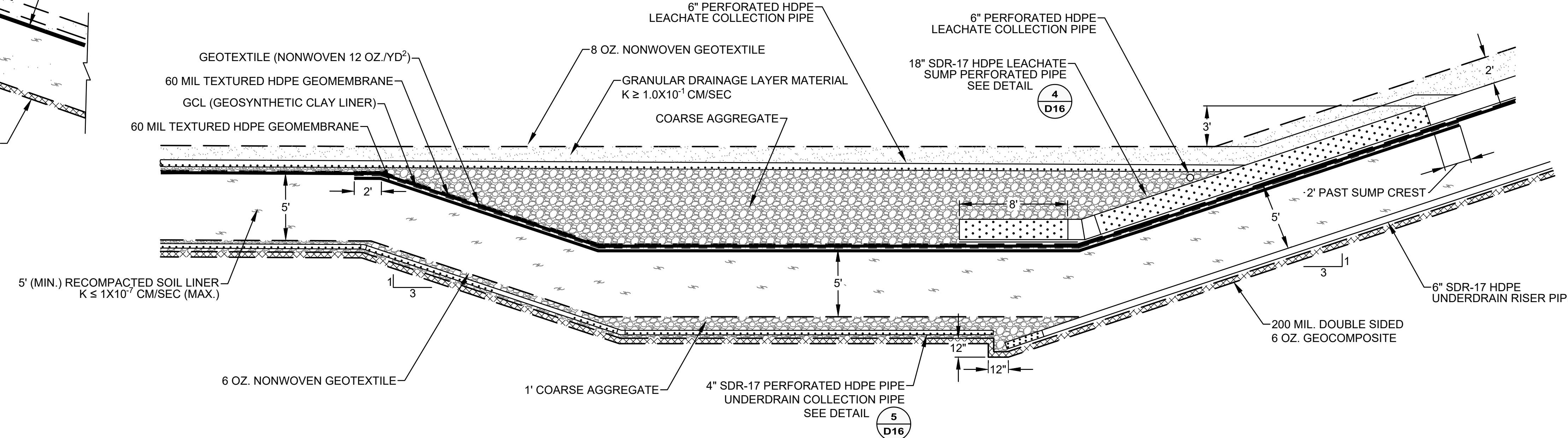
LINER - LEACHATE COLLECTION DETAILS - 3

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D17
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		

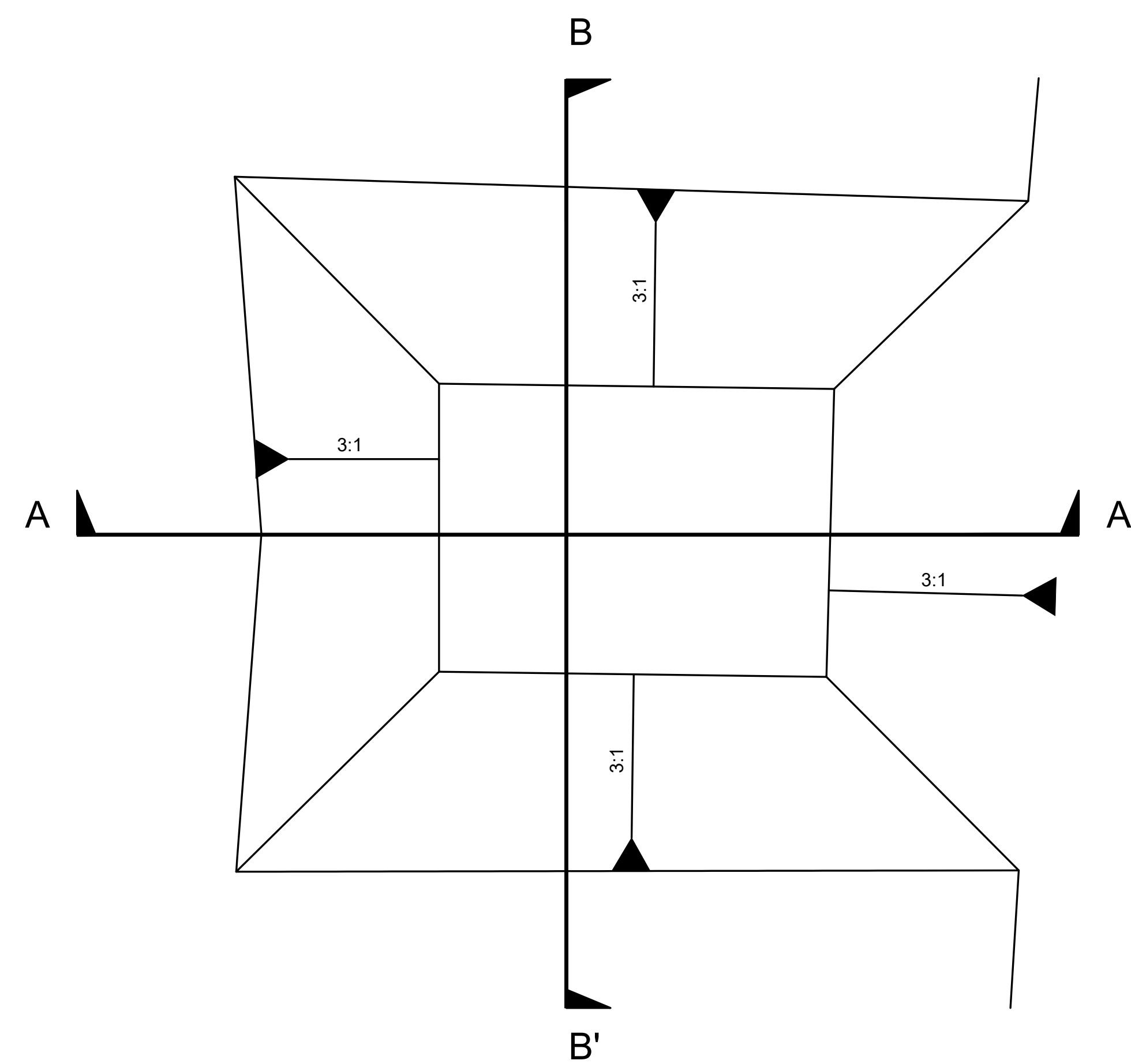


- NOTES:**
- CONTRACTOR TO BALLAST SOUTH EDGE OF RUBSHEET WITH SANDBAGS AND PLACE A MINIMUM OF 2 FEET OF SOIL OVER PLYWOOD AND RUBSHEET ALONG NORTH TOE OF SLOPE.

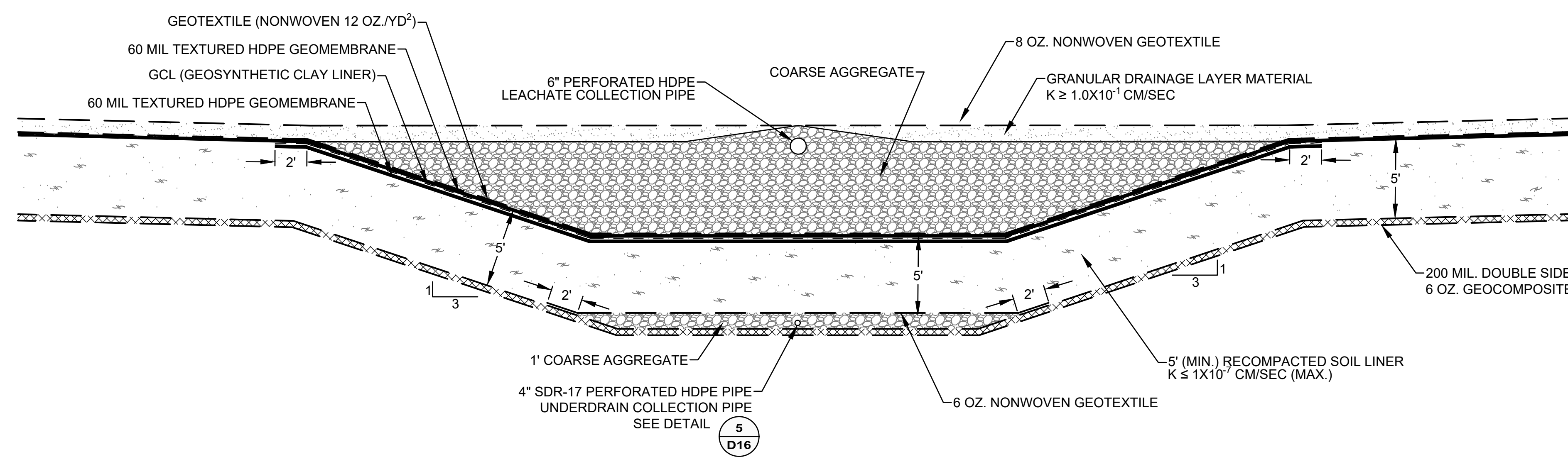
1 PHASE DELINEATION BERM DETAIL
D18 NOT TO SCALE



CROSS SECTION A-A'



PLAN VIEW



CROSS SECTION B-B'

2 TYPICAL LEACHATE COLLECTION SUMP DETAIL
D18 NOT TO SCALE

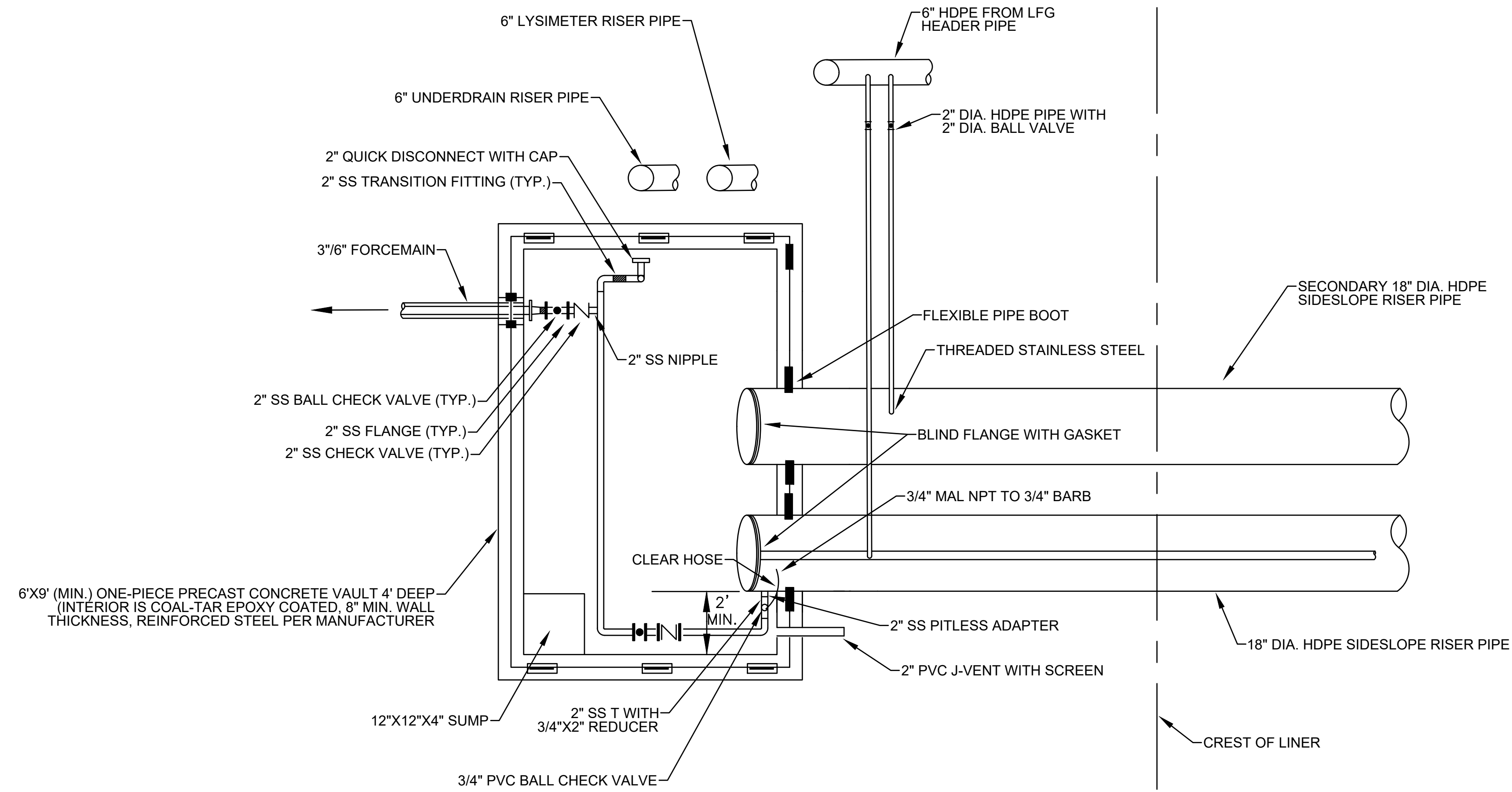
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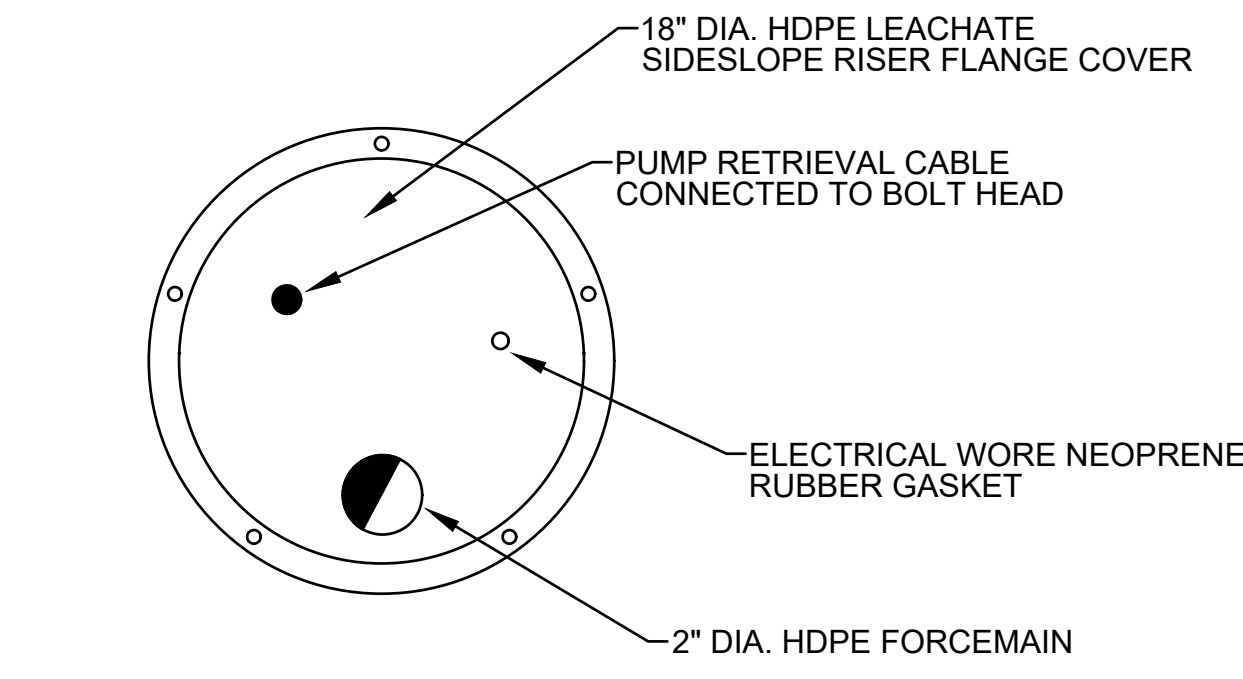
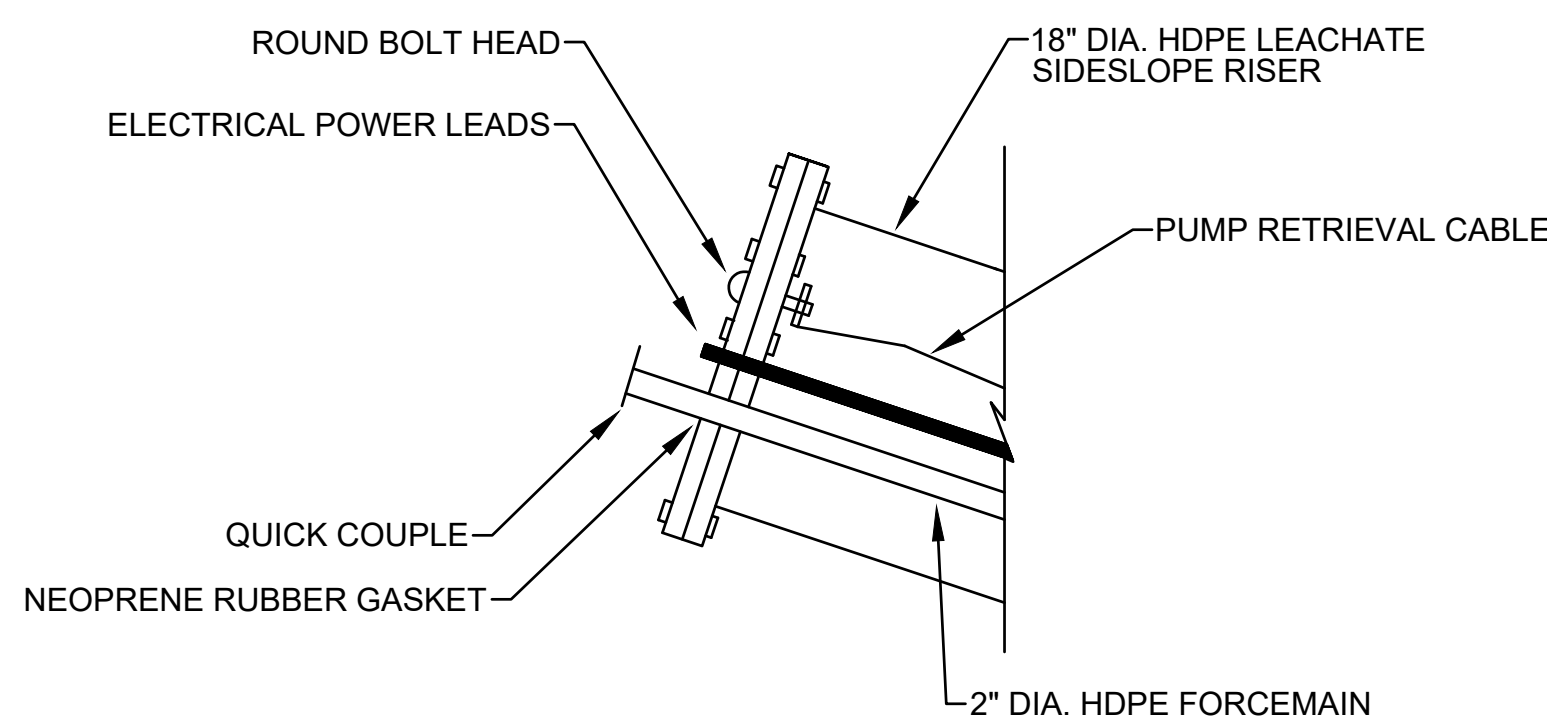
ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

LINER - LEACHATE COLLECTION DETAILS - 4

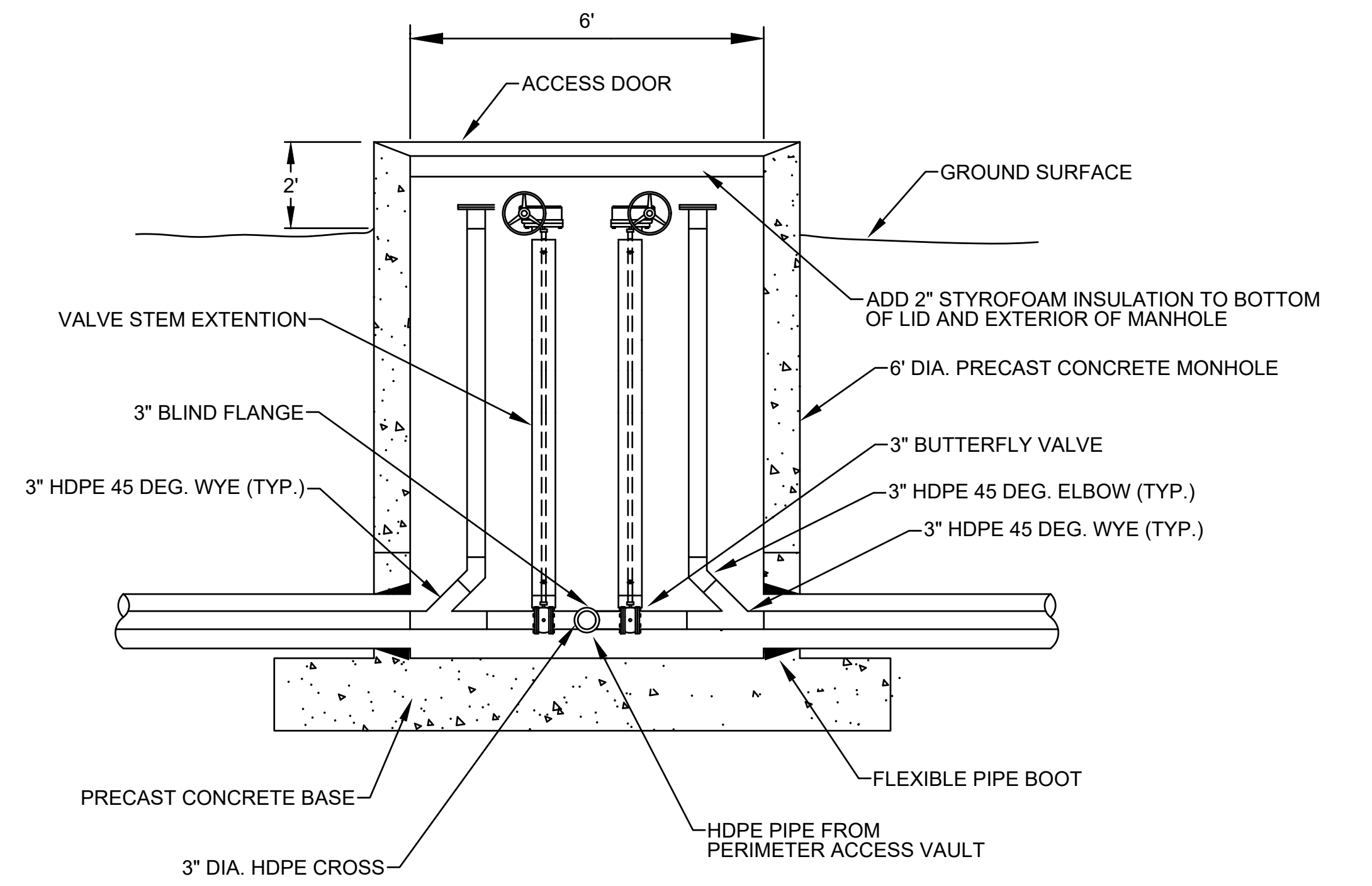
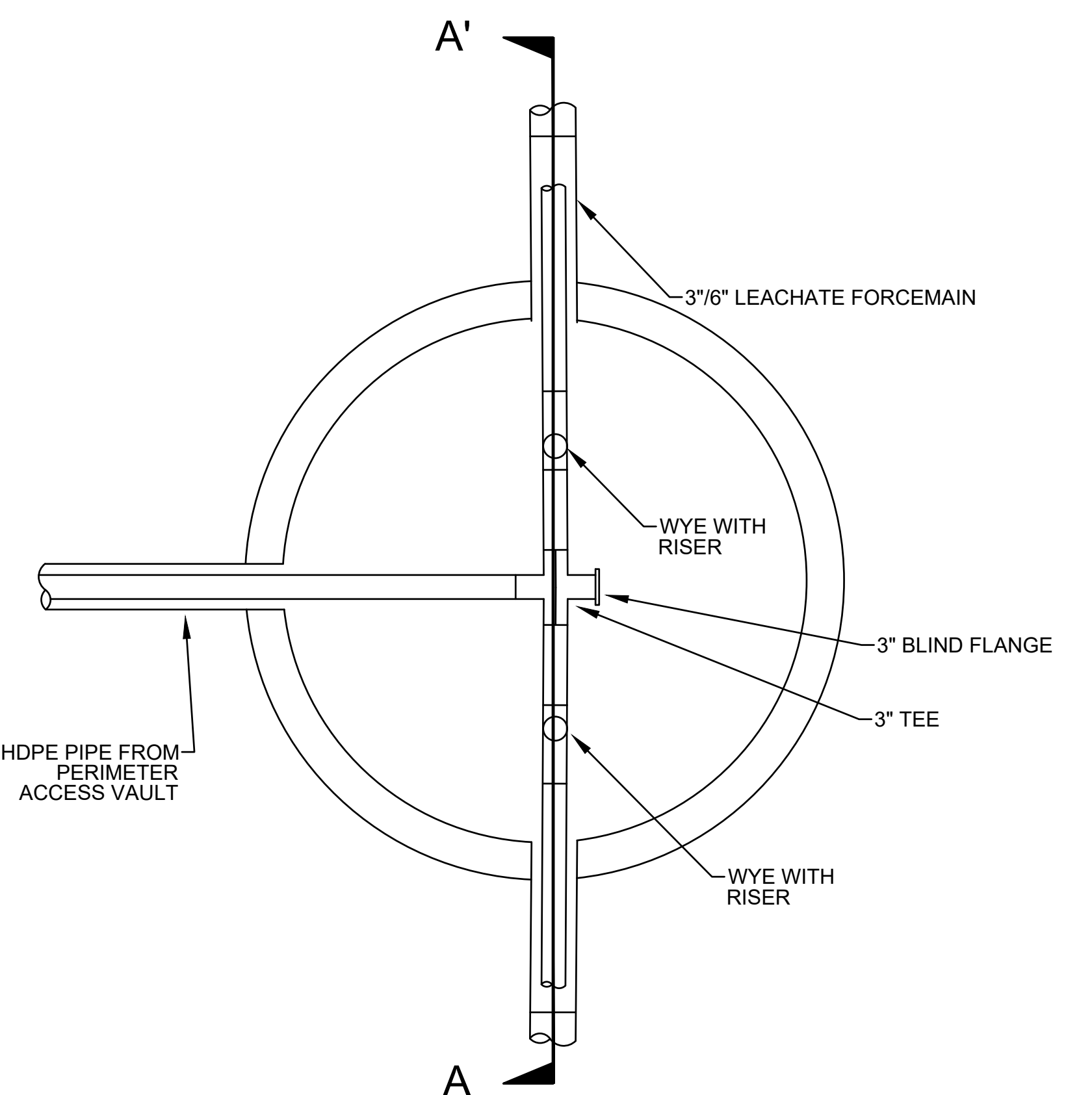
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D18
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		



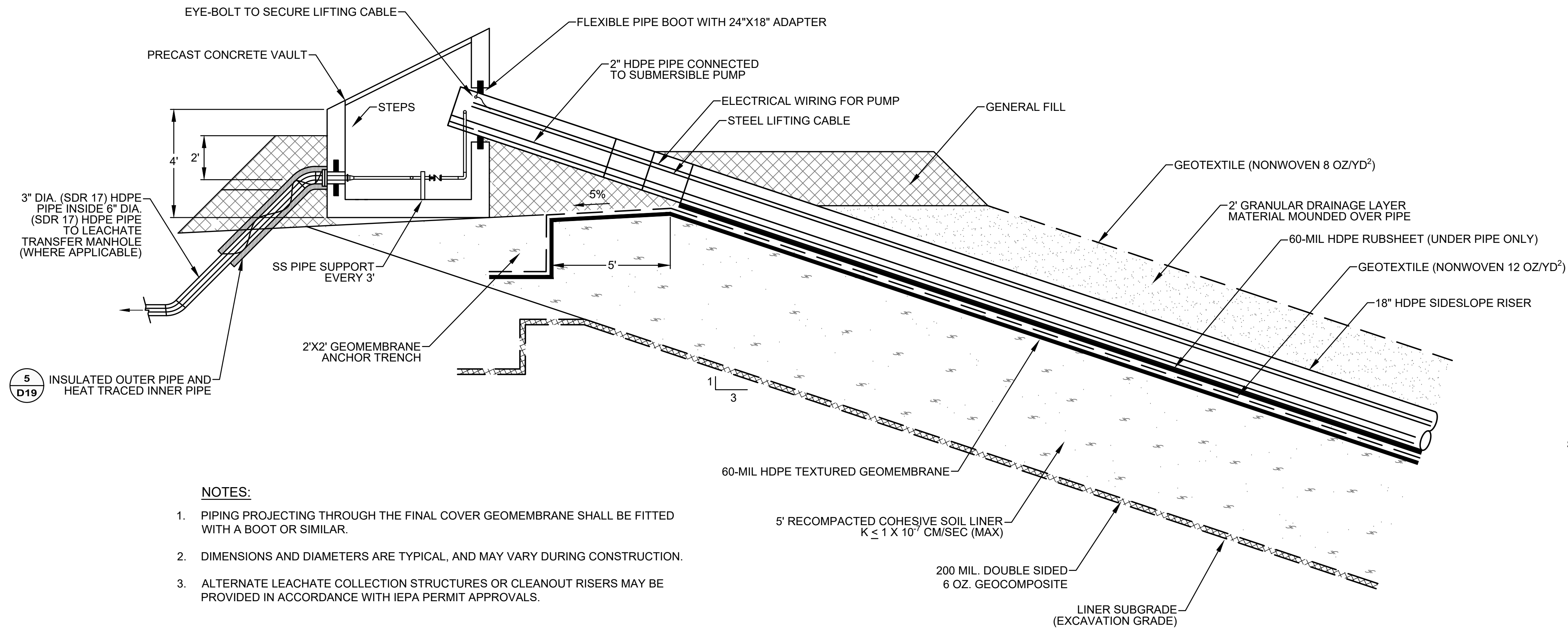
1
D19 **TYPICAL PERIMETER ACCESS VAULT - PLAN VIEW**
NOT TO SCALE



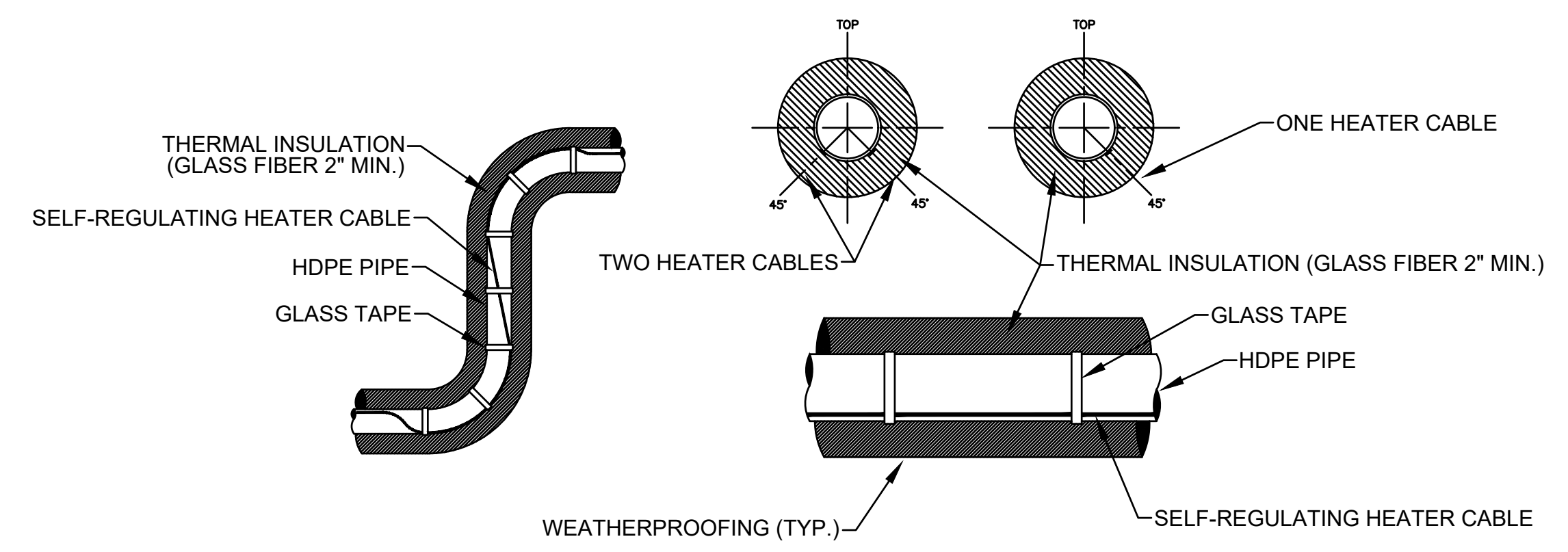
2
D19 **RISER FLANGE DETAIL**
NOT TO SCALE



3
D19 **TYPICAL LEACHATE TRANSFER MANHOLE DETAIL**
NOT TO SCALE



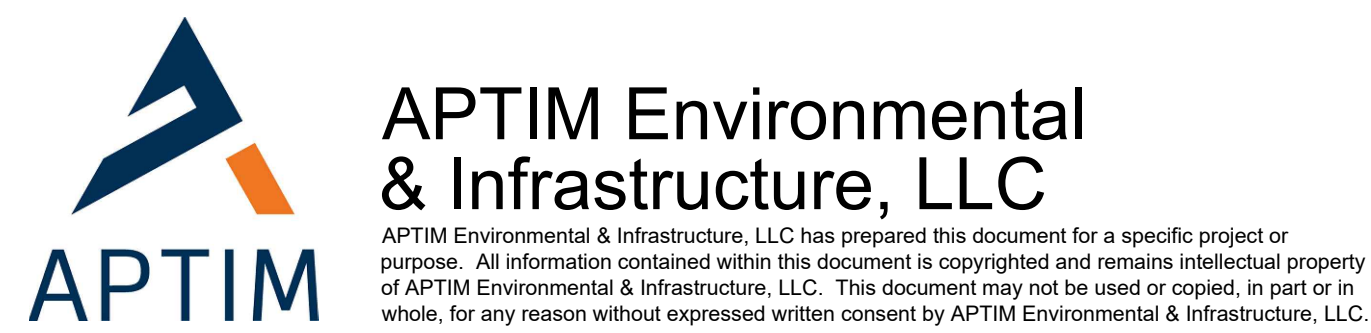
4
D19 **TYPICAL LEACHATE SIDESLOPE RISER PROFILE**
NOT TO SCALE



5
D19 **TYPICAL PIPE INSULATION / HEAT TRACING DETAIL**
NOT TO SCALE

- NOTES:**
1. PIPING PROJECTING THROUGH THE FINAL COVER GEOMEMBRANE SHALL BE FITTED WITH A BOOT OR SIMILAR.
 2. DIMENSIONS AND DIAMETERS ARE TYPICAL, AND MAY VARY DURING CONSTRUCTION.
 3. ALTERNATE LEACHATE COLLECTION STRUCTURES OR CLEANOUT RISERS MAY BE PROVIDED IN ACCORDANCE WITH IEPA PERMIT APPROVALS.

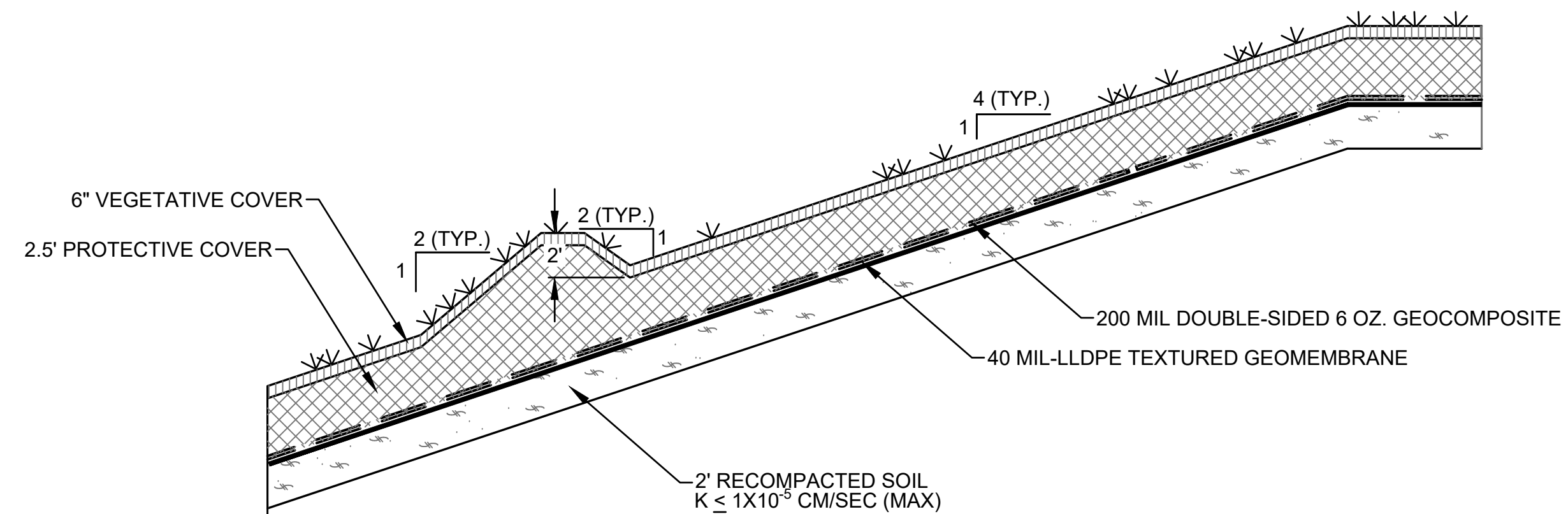
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

LINER - LEACHATE COLLECTION DETAILS - 5

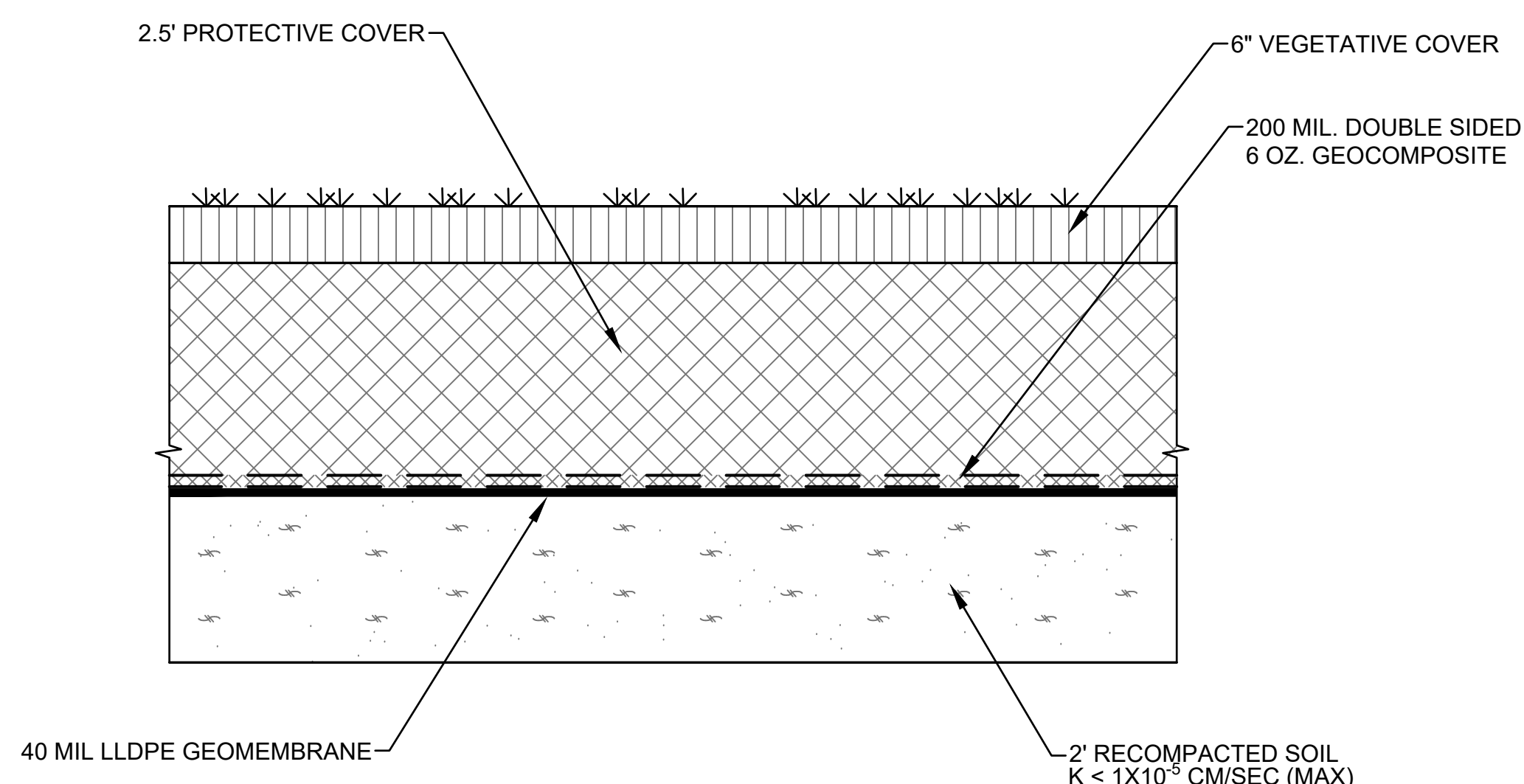
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D19
DRAWN BY:	BWM/NV/KM	CHECKED BY:	DAM
APPROVED BY:	DAM		19 OF 37 SHEETS



NOTES:

1. GEOCOMPOSITE WILL DRAIN TO STORMWATER MANAGEMENT SYSTEM.
2. MINIMUM 3" PROTECTIVE COVER THICKNESS MAY BE INCREASED AS A RESULT OF LANDSCAPING AND CONTOURING OF THE FINAL LANDFORM.

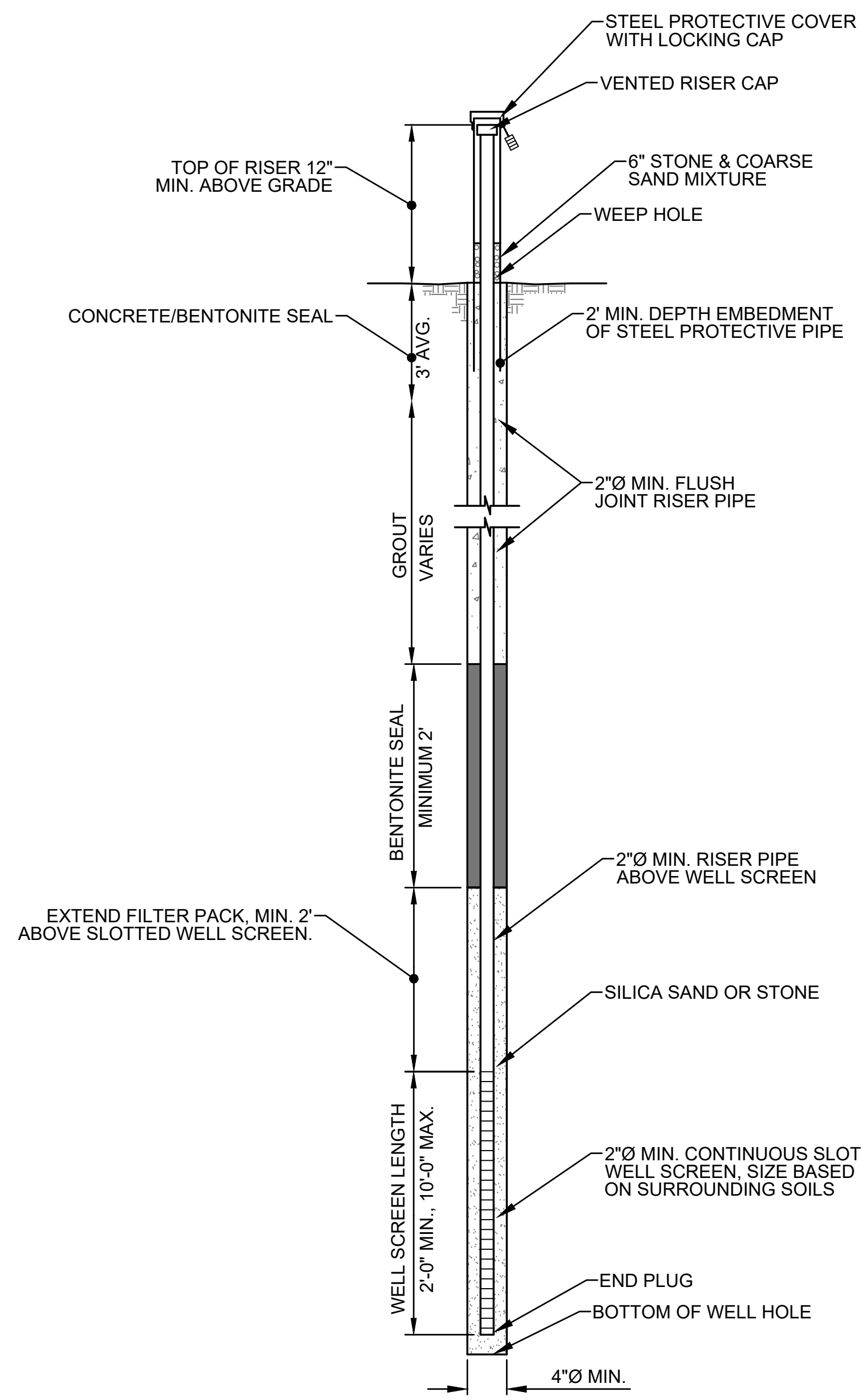
1 TYPICAL TERRACE BERM DETAIL
D20 NOT TO SCALE



NOTES:

1. 40 MIL LLDPE GEOMEMBRANE WILL BE TEXTURED ON SLOPES GREATER THAN 10:1.

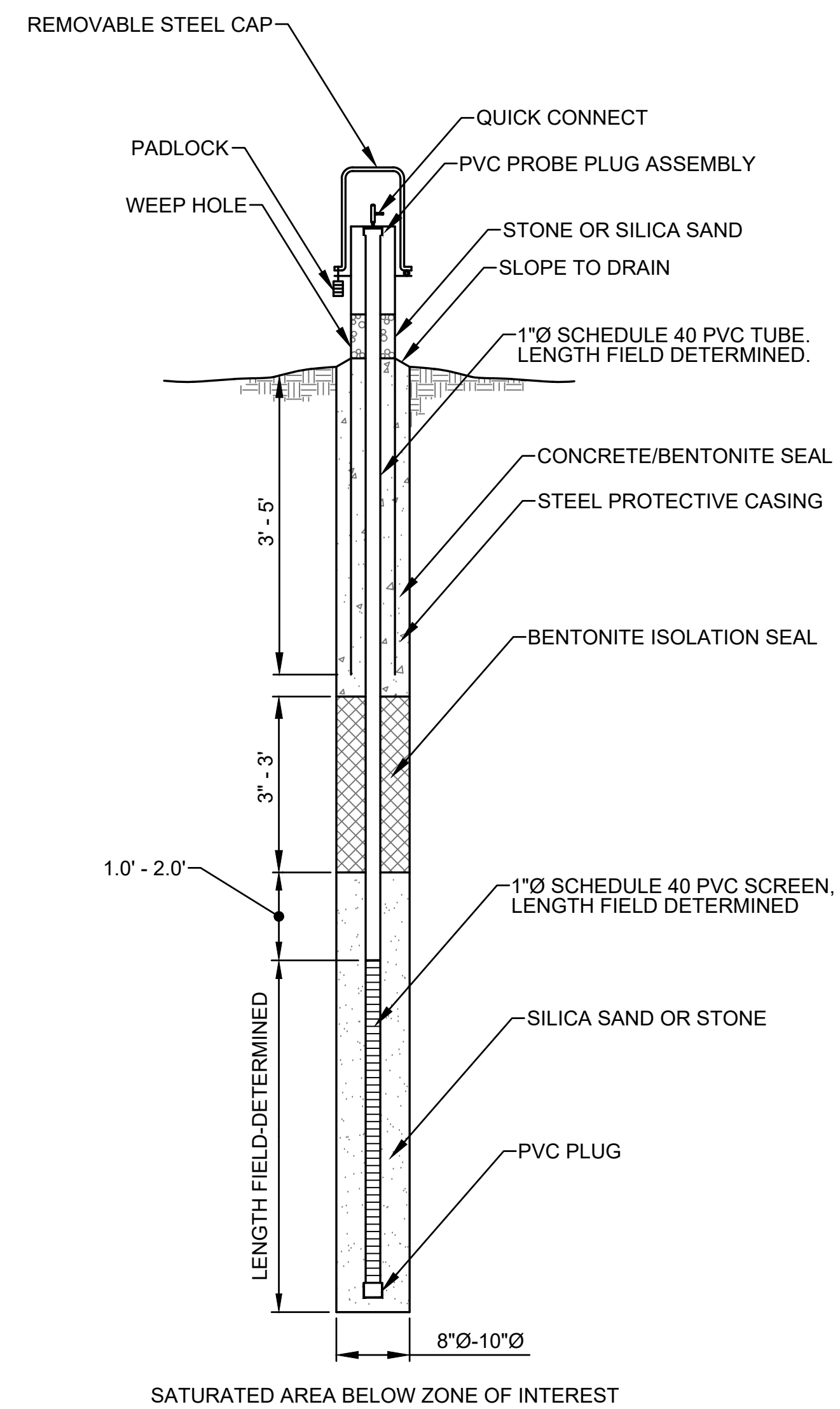
2 LINER SYSTEM COMPONENTS (COVER)
D20 NOT TO SCALE



NOTES:

1. WELL CONSTRUCTION MAY CHANGE DEPENDING ON TECHNOLOGY CHANGES AND MODIFICATIONS IN REGULATIONS.

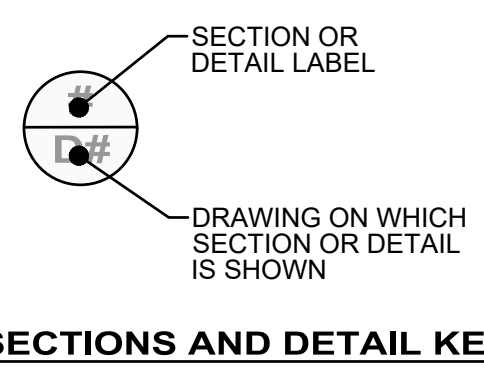
3 TYPICAL GROUNDWATER MONITORING WELL
D20 NOT TO SCALE



NOTES:

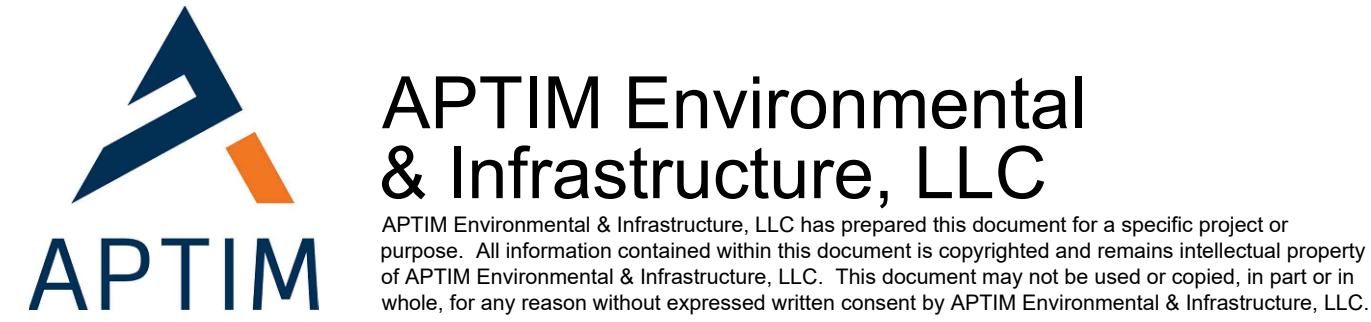
1. HYDROGEOLOGIC CONDITIONS MAY REQUIRE FIELD ADJUSTMENT OF BENTONITE SEAL AND CONCRETE THICKNESS.
2. PROBE CONSTRUCTION MAY CHANGE DEPENDING ON TECHNOLOGY CHANGES AND MODIFICATIONS IN REGULATIONS.

4 TYPICAL GAS MONITORING PROBE
D20 NOT TO SCALE



SECTIONS AND DETAIL KEY

REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

COVER AND MONITORING DETAILS

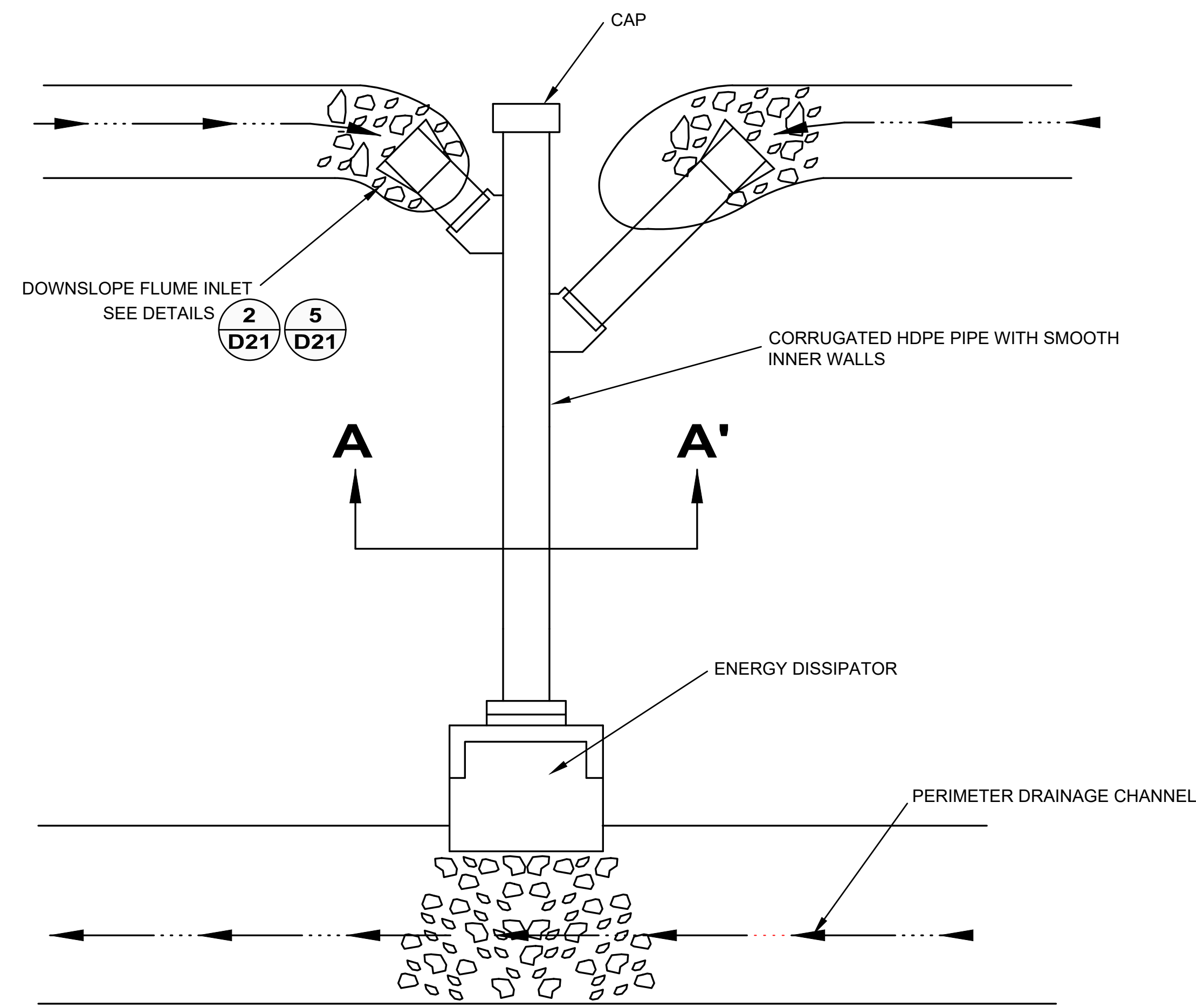
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D20
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		

TABLE 1 - DOWNSLOPE FLUME PIPE DESIGN SUMMARY

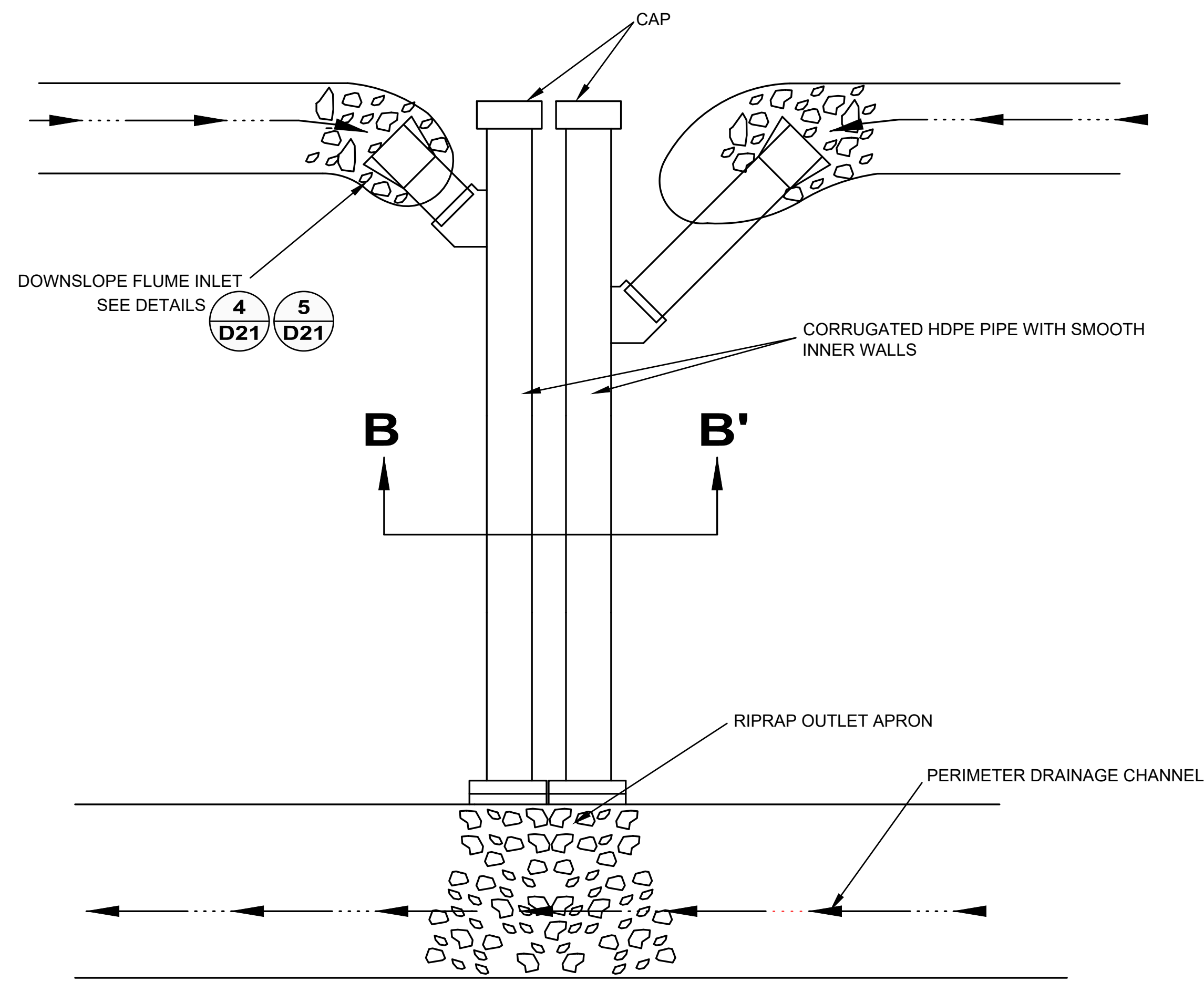
Letdown Flume Pipe Runs (To Be Constructed)	Terrace Berm Collected in Flume Pipe Run	Discharge Outlet	Flume Pipe Diameter
			(in)
Flume Pipe Run 3A	TB-N-A1 TB-N-A3 TB-N-A5 TB-N-A7 TB-N-A9	Rip Rap Apron	24.0
Flume Pipe Run 3B	TB-N-A2 TB-N-A4 TB-N-A6 TB-N-A8 TB-N-A10	Rip Rap Apron	30.0
Flume Pipe Run 4A	TB-N-B1 TB-N-B3 TB-N-B5	Rip Rap Apron	18.0
Flume Pipe Run 4B	TB-N-B2 TB-N-B4 TB-N-B6	Rip Rap Apron	24.0
Flume Pipe Run 5	TB-D1 TB-N-C1 TB-N-C2 TB-D3 TB-N-C3	Energy Dissipator 5 ⁽¹⁾	24.0 ⁽¹⁾
Flume Pipe Run 6	TB-H1 TB-E1 TB-H2 TB-E2 TB-H3	Energy Dissipator 6 ⁽¹⁾	18.0 ⁽¹⁾

NOTES

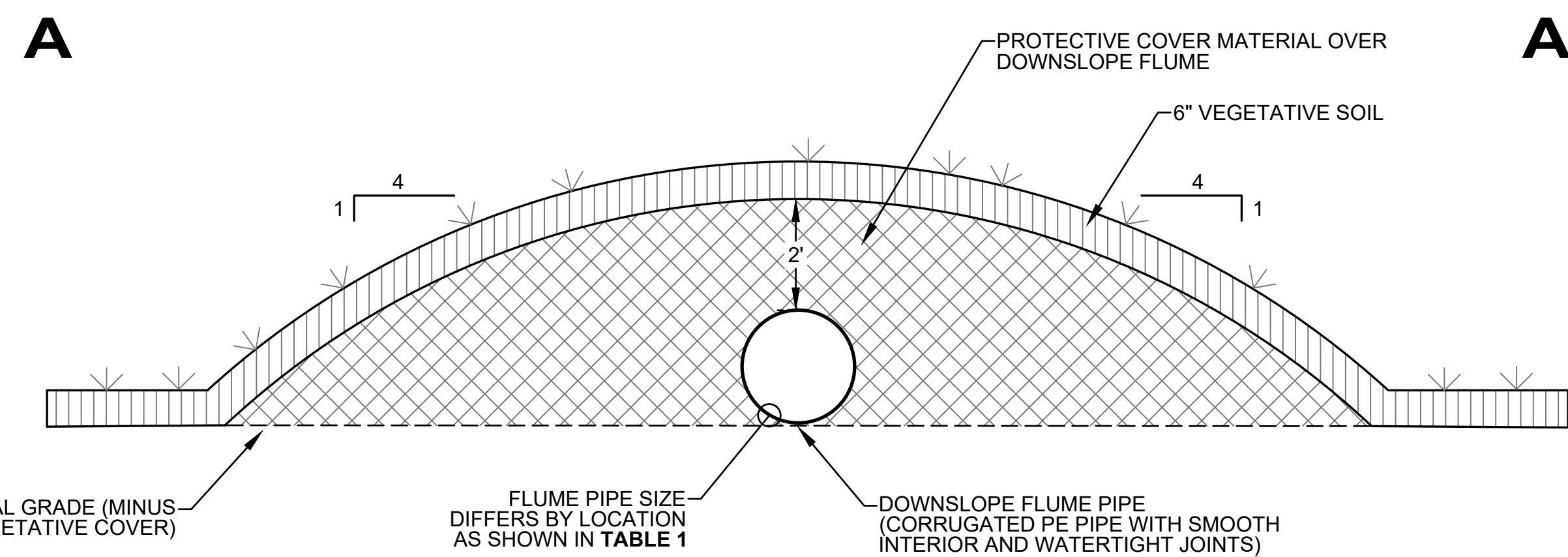
1. THE DIAMETER OF PERMITTED FLUME PIPE RUN 5 IS PROPOSED TO INCREASE FROM A 12-IN. PIPE TO A 24-IN. PIPE TO ACCOMMODATE PROPOSED FLOW VOLUMES.
2. ENERGY DISSIPATOR 5 WILL REQUIRE MODIFICATIONS FROM THE PREVIOUSLY PERMITTED DESIGN IN ORDER TO ACCOMMODATE PROPOSED FLOW VOLUMES AND VELOCITIES. REFER TO DETAIL 1 ON DRAWING NO. D22 FOR REVISED DETAILS.
3. THE DIAMETER OF PERMITTED FLUME PIPE RUN 6 IS PROPOSED TO INCREASE FROM A 16-IN. PIPE TO A 18-IN. PIPE TO ACCOMMODATE PROPOSED FLOW VOLUMES.
4. ENERGY DISSIPATOR 6 WILL REQUIRE MODIFICATIONS FROM THE PREVIOUSLY PERMITTED DESIGN IN ORDER TO ACCOMMODATE PROPOSED FLOW VOLUMES AND VELOCITIES. REFER TO DETAIL 1 ON DRAWING NO. D22 FOR REVISED DETAILS.



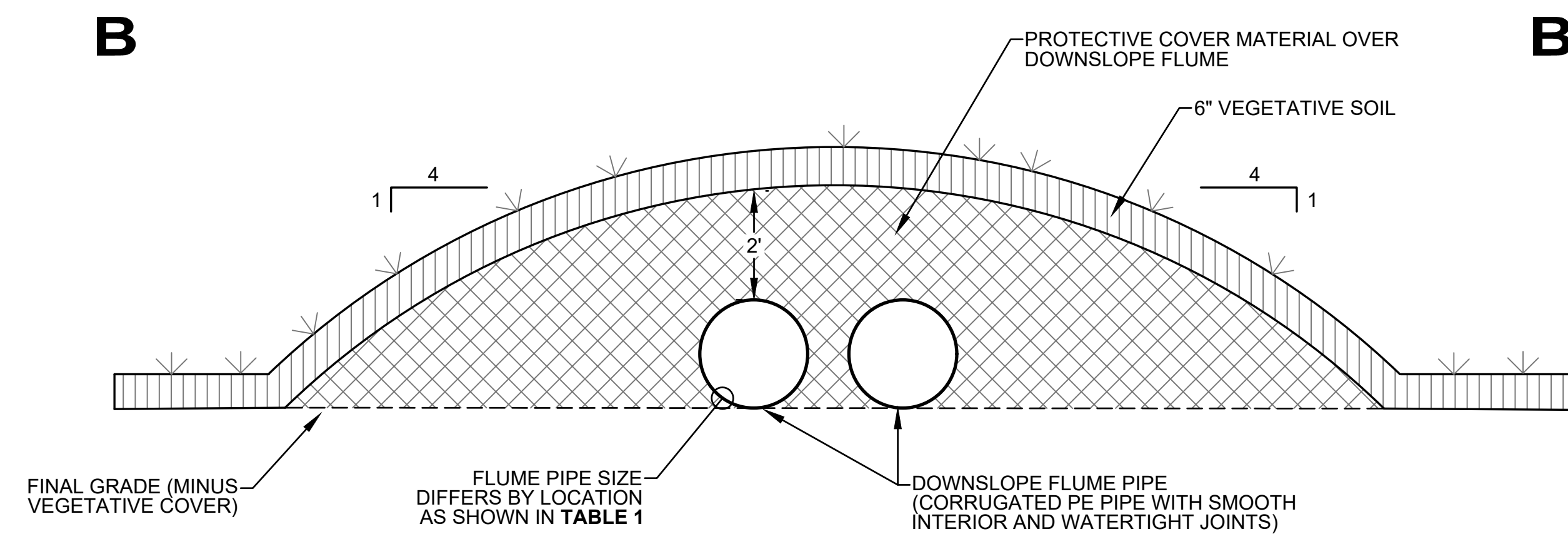
1 TYPICAL DOWNSLOPE FLUME PIPE PLAN VIEW (FLUME PIPE RUNS 5 & 6) NOT TO SCALE



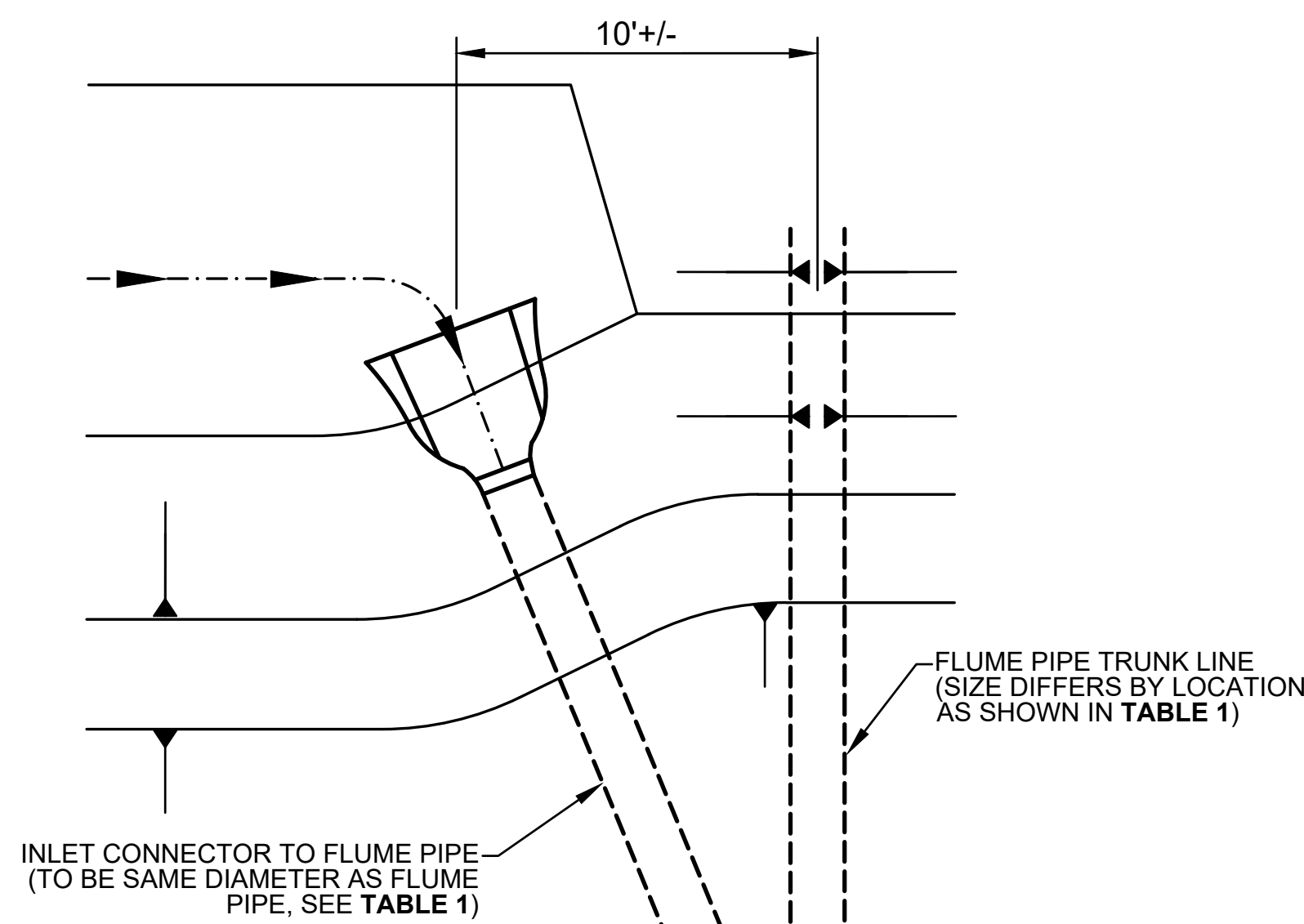
3 TYPICAL DOWNSLOPE FLUME PIPE PLAN VIEW (FLUME PIPE RUNS 3A/3B & 4A/4B) NOT TO SCALE



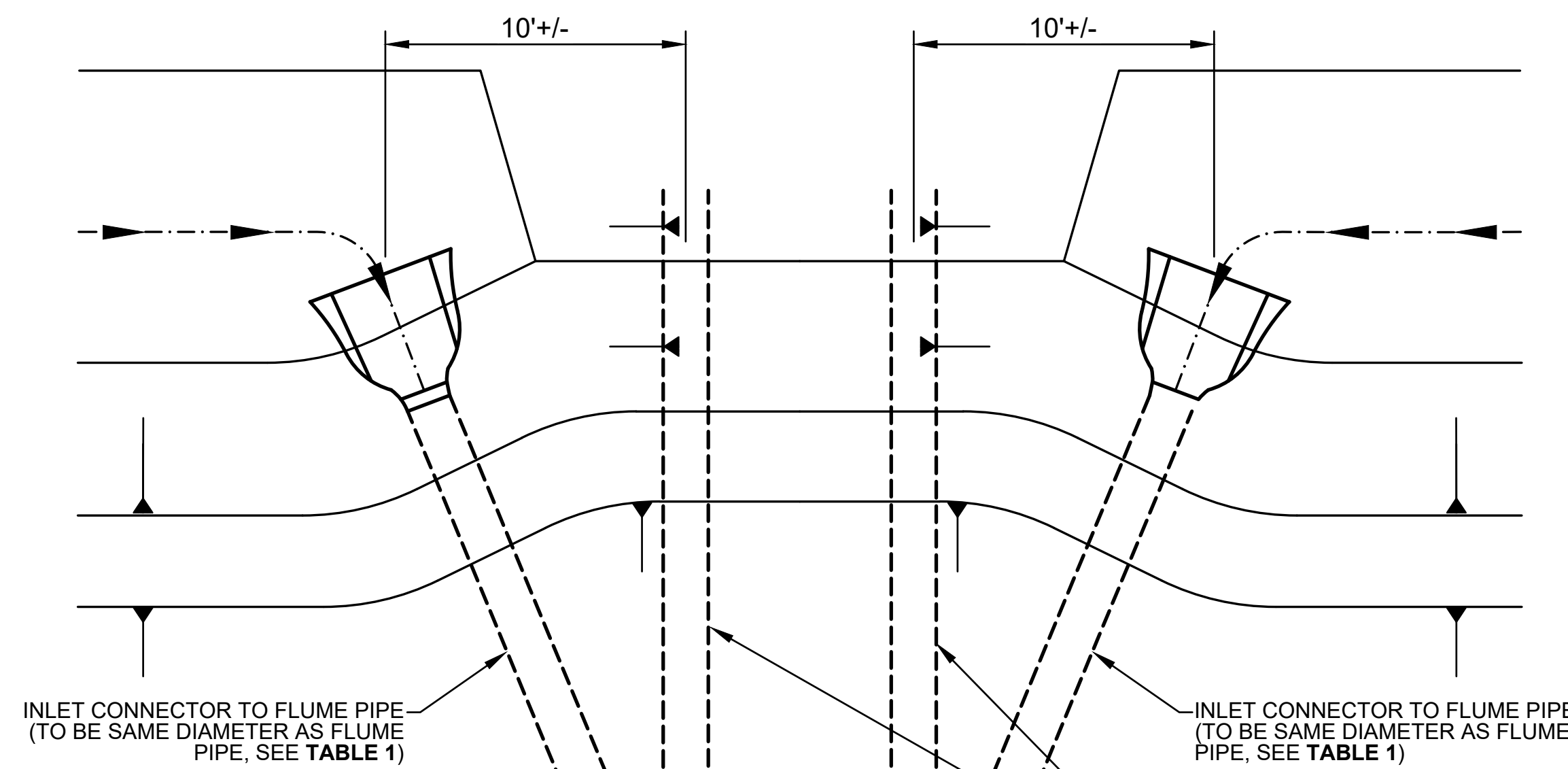
SECTION A-A'



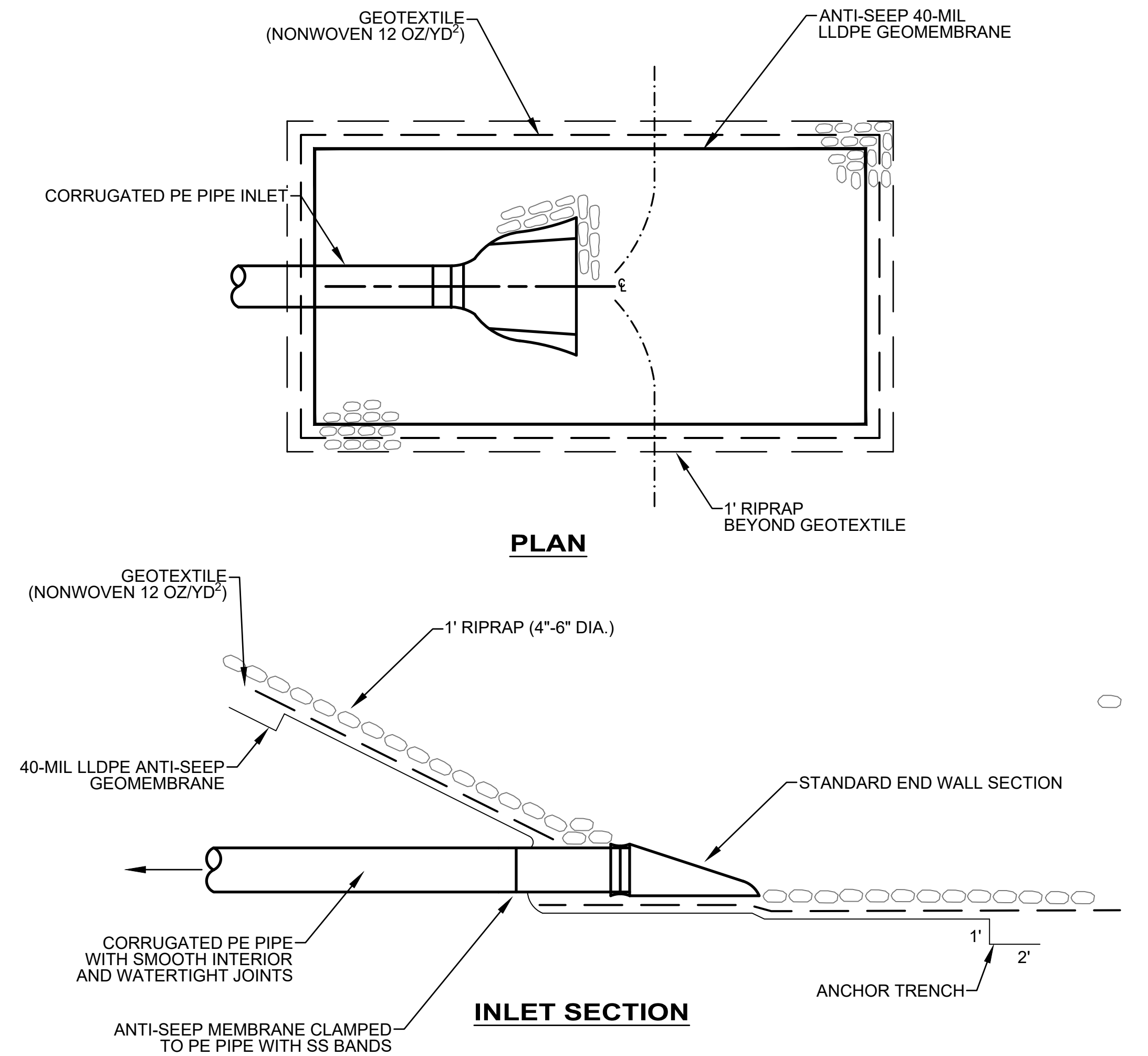
SECTION B-B'



2 INTERMEDIATE FLUME PIPE INLET PLAN VIEW (FLUME PIPE RUNS 5 & 6) NOT TO SCALE



4 INTERMEDIATE FLUME PIPE INLET PLAN VIEW (FLUME PIPE RUNS 3A/3B & 4A/4B) NOT TO SCALE



5 TYPICAL DOWNSLOPE FLUME-INLET NOT TO SCALE

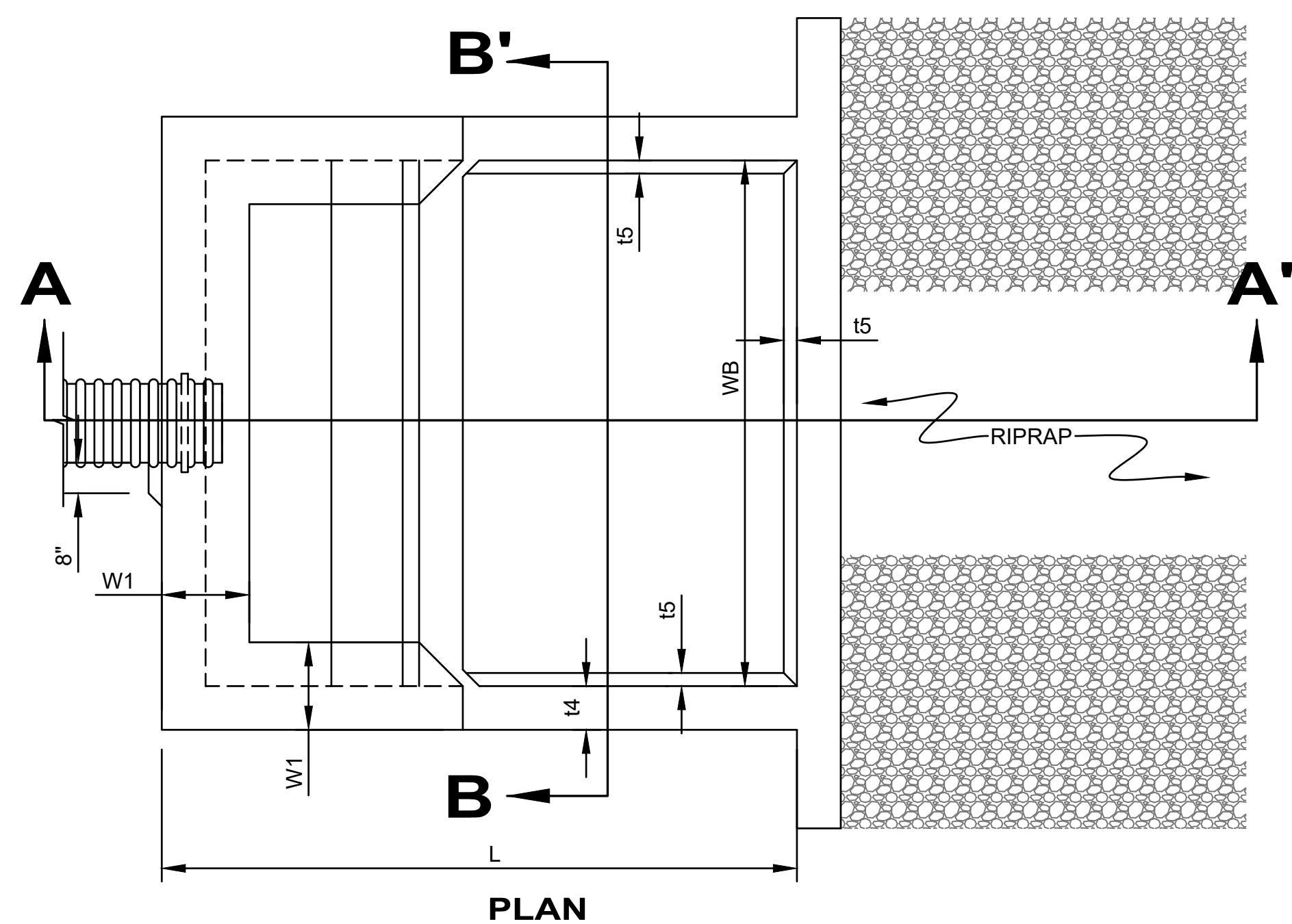
REV. NO.	DATE	DESCRIPTION



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CITY OF ZION, ILLINOIS**

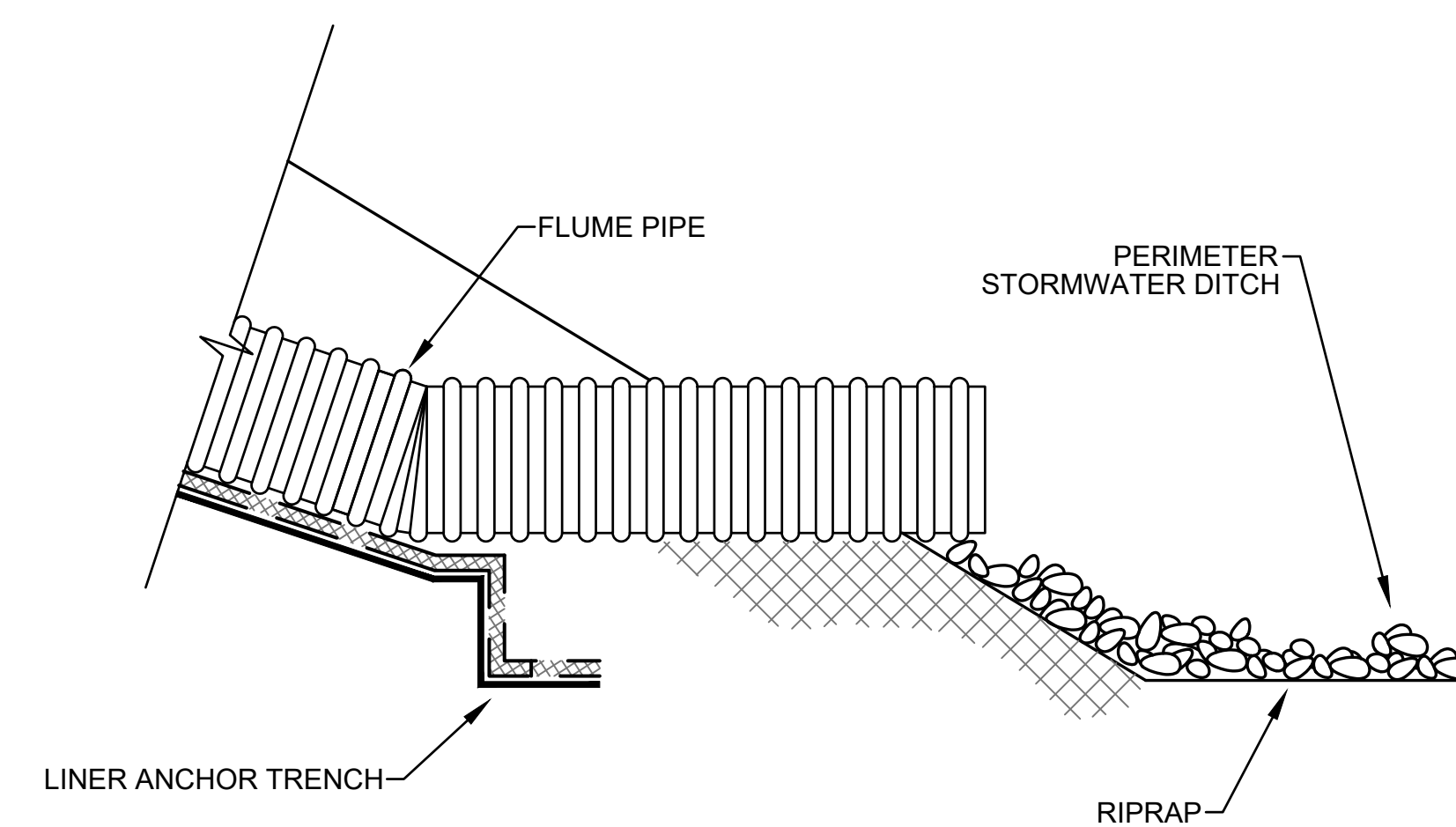
STORMWATER MANAGEMENT DETAILS - 1

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D21
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		



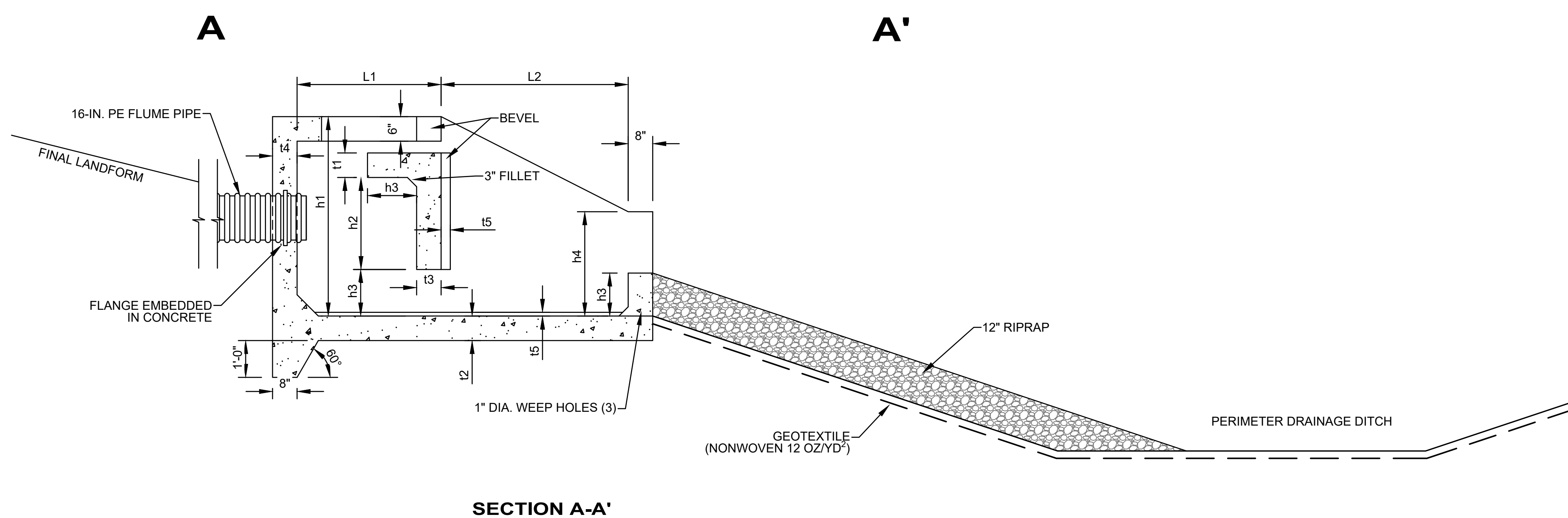
1
D22 **MODIFIED ENERGY DISSIPATOR 5 DETAIL**
NOT TO SCALE

- NOTES**
- ENERGY DISSIPATOR 5 WILL REQUIRE MODIFICATIONS FROM THE PREVIOUSLY PERMITTED DESIGN IN ORDER TO ACCOMMODATE PROPOSED FLOW VOLUMES AND VELOCITIES. REFER TO THIS DETAIL AND THE ASSOCIATED TABLE FOR UPDATED DESIGN DIMENSIONS.
 - ENERGY DISSIPATOR 6 WILL REQUIRE MODIFICATIONS FROM THE PREVIOUSLY PERMITTED DESIGN IN ORDER TO ACCOMMODATE PROPOSED FLOW VOLUMES AND VELOCITIES. REFER TO THIS DETAIL AND THE ASSOCIATED TABLE FOR UPDATED DESIGN DIMENSIONS.

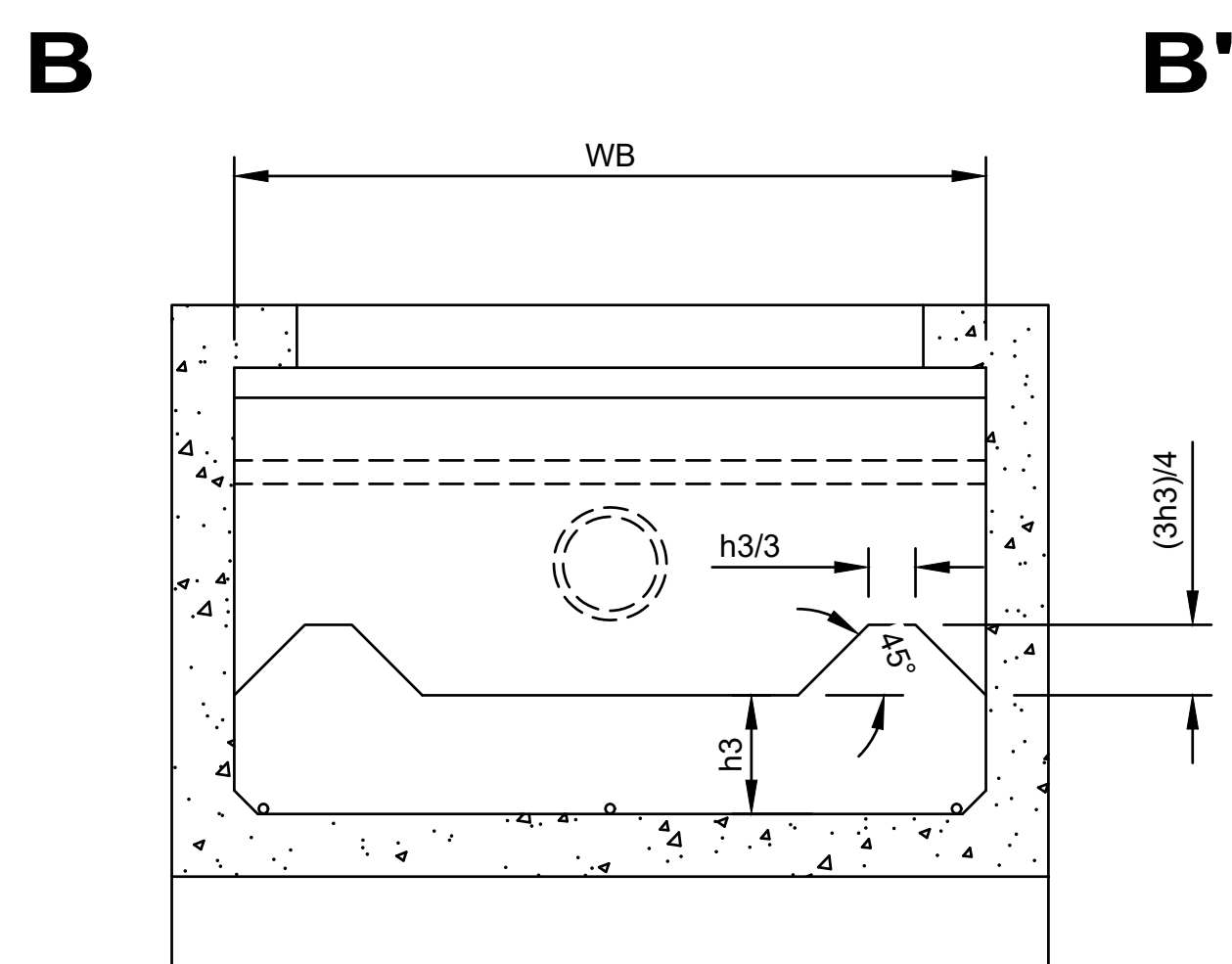


- NOTES**
- RIPRAP IS USED AT THE PROPOSED DOWNSLOPE FLUME PIPE OUTLET STRUCTURE TO REDUCE THE VELOCITY OF STORMWATER AT THE TRANSITION BETWEEN THE FLUME PIPE AND THE PERIMETER DITCH.

2
D22 **DOWNSLOPE FLUME PIPE RIPRAP OUTLET SECTION**
(FLUME PIPE RUNS 3A/3B & 4A/4B)
NOT TO SCALE



SECTION A-A'

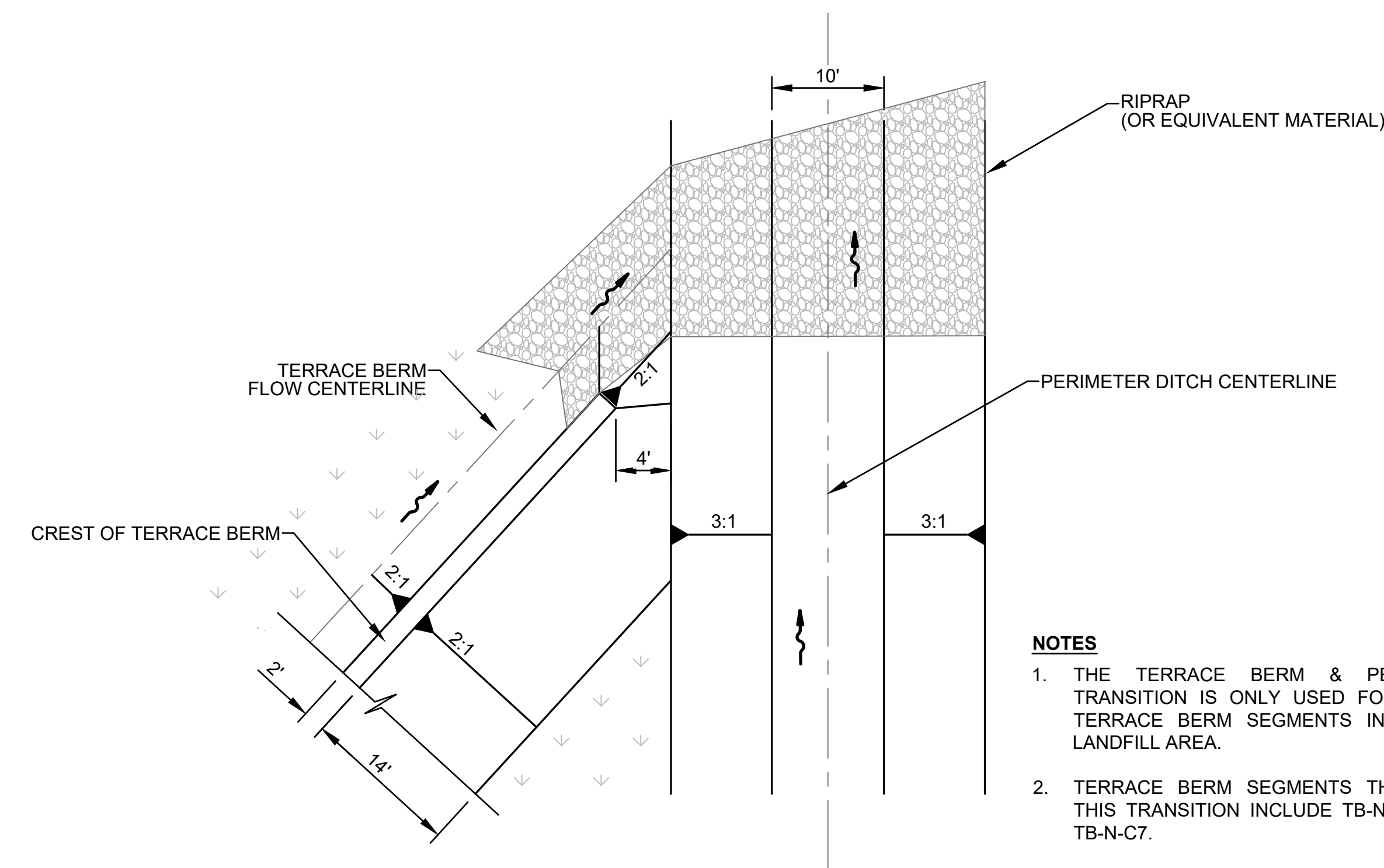


SECTION B-B'

MODIFIED ENERGY DISSIPATOR SIZING TABLE

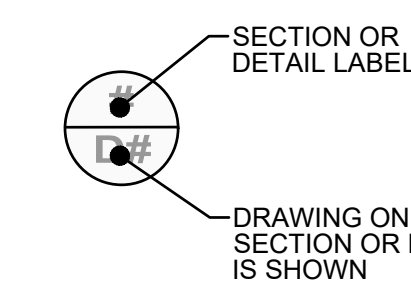
Energy Dissipator	Ho / WB	Required Dissipator Width (WB)	h1	h2	h3	h4	L	L1	L2	W1	W2	t1	t2	t3	t4	t5
	(cfs)	(ft)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)
5	2.7	8.8	76	37	17	41	131	56	76	7	27	6	7	7	6	3
6	2.0	9.2	91	44	20	49	158	68	91	9	33	8	8	9	8	3

- NOTES**
- ENERGY DISSIPATOR 5 AND 6 WILL REQUIRE MODIFICATIONS FROM THE PREVIOUSLY PERMITTED DESIGN IN ORDER TO ACCOMMODATE PROPOSED FLOW VOLUMES AND VELOCITIES.



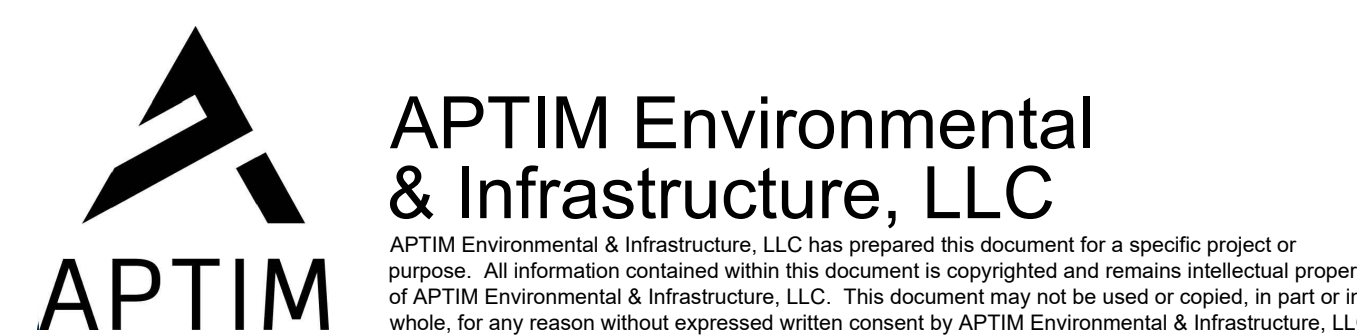
- NOTES**
- THE TERRACE BERM & PERIMETER DITCH TRANSITION IS ONLY USED FOR THE SPECIFIED TERRACE BERM SEGMENTS IN THE PROPOSED LANDFILL AREA.
 - TERRACE BERM SEGMENTS THAT WILL UTILIZE THIS TRANSITION INCLUDE TB-N-B7, TB-N-B8, AND TB-N-C7.

3
D22 **TERRACE BERM & PERIMETER DITCH TRANSITION DETAIL**
NOT TO SCALE



SECTIONS AND DETAIL KEY

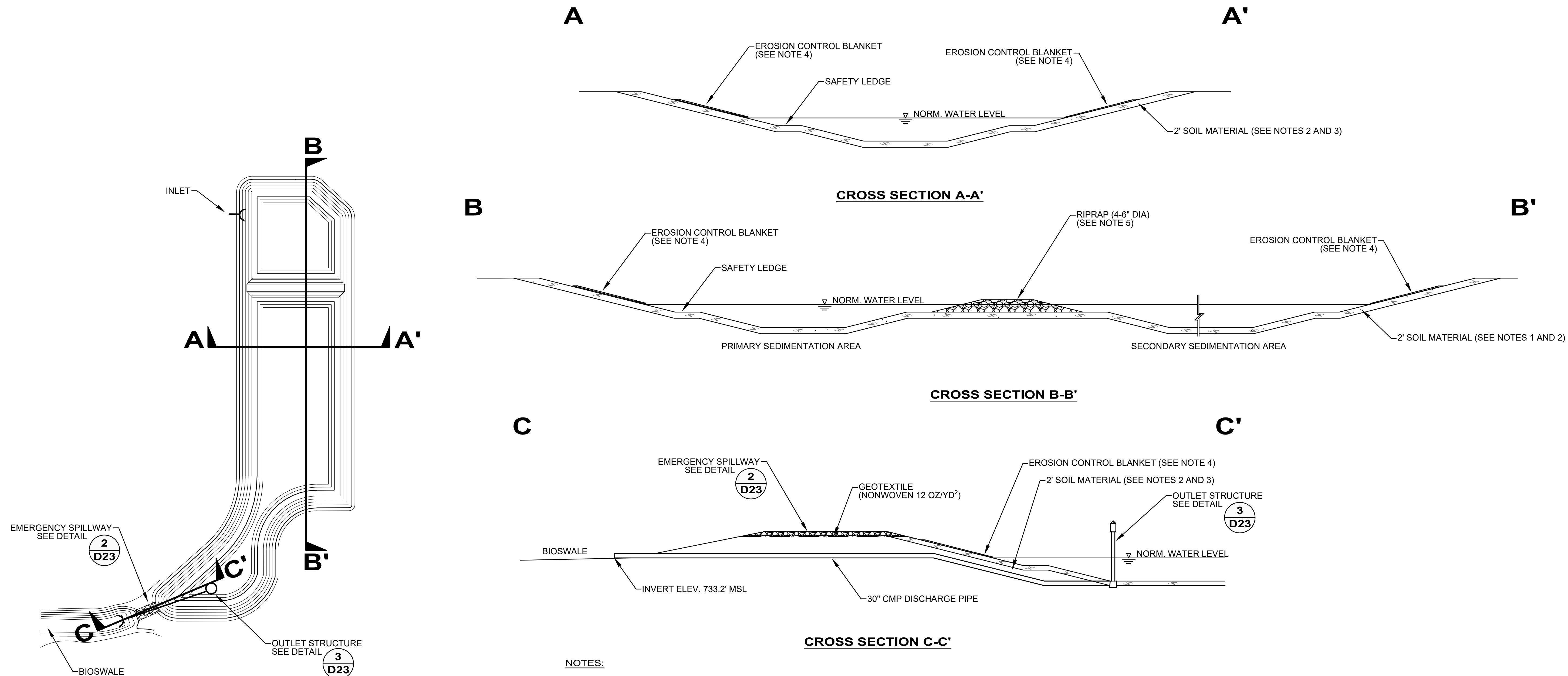
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

STORMWATER MANAGEMENT DETAILS - 2

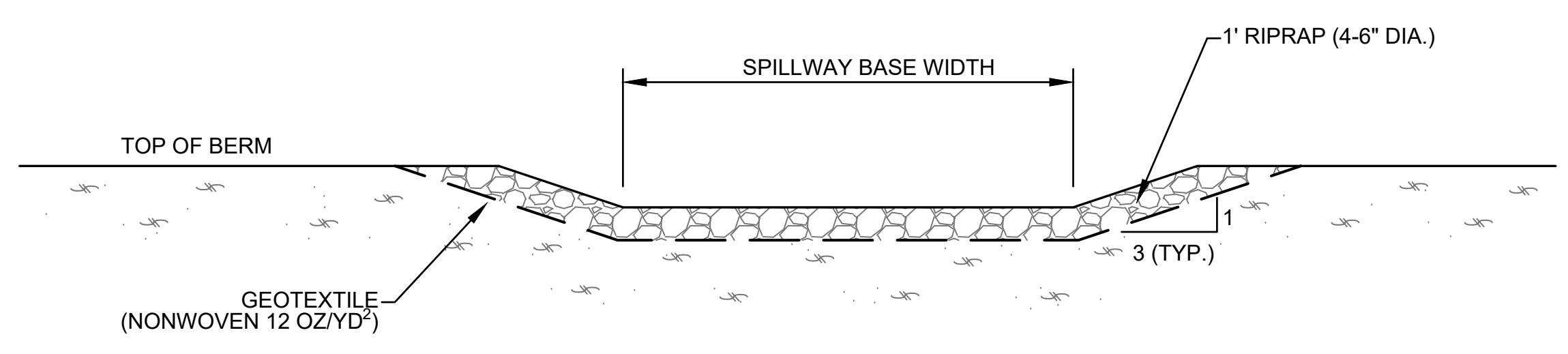
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D22
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		



EXISTING BASIN DESIGN PARAMETERS	
Existing Basin Characteristic	Basin 5R
Top of Berm Elevation (feet MSL)	742.00
Emergency Spillway Elevation (feet MSL)	740.00
Inlet Culvert Elevation (feet MSL)	738.00
Low Orifice Invert Elevation (feet MSL)	733.50
Middle Orifice Invert Elevation (feet MSL)	737.50
High Orifice Invert Elevation (feet MSL)	738.50
Ledge Elevation (feet MSL)	731.00
Normal Water Level (feet MSL)	733.50
2-Year, 24-Hour High Water Level (feet MSL)	734.57
100-Year, 24-Hour High Water Level (feet MSL)	737.47
Spillway Base Width (Feet)	20.00
Spillway Slope (Ft/Ft)	0.015
Spillway Sideslopes (H:V)	3H:1V
Spillway Depth (Ft)	2.00

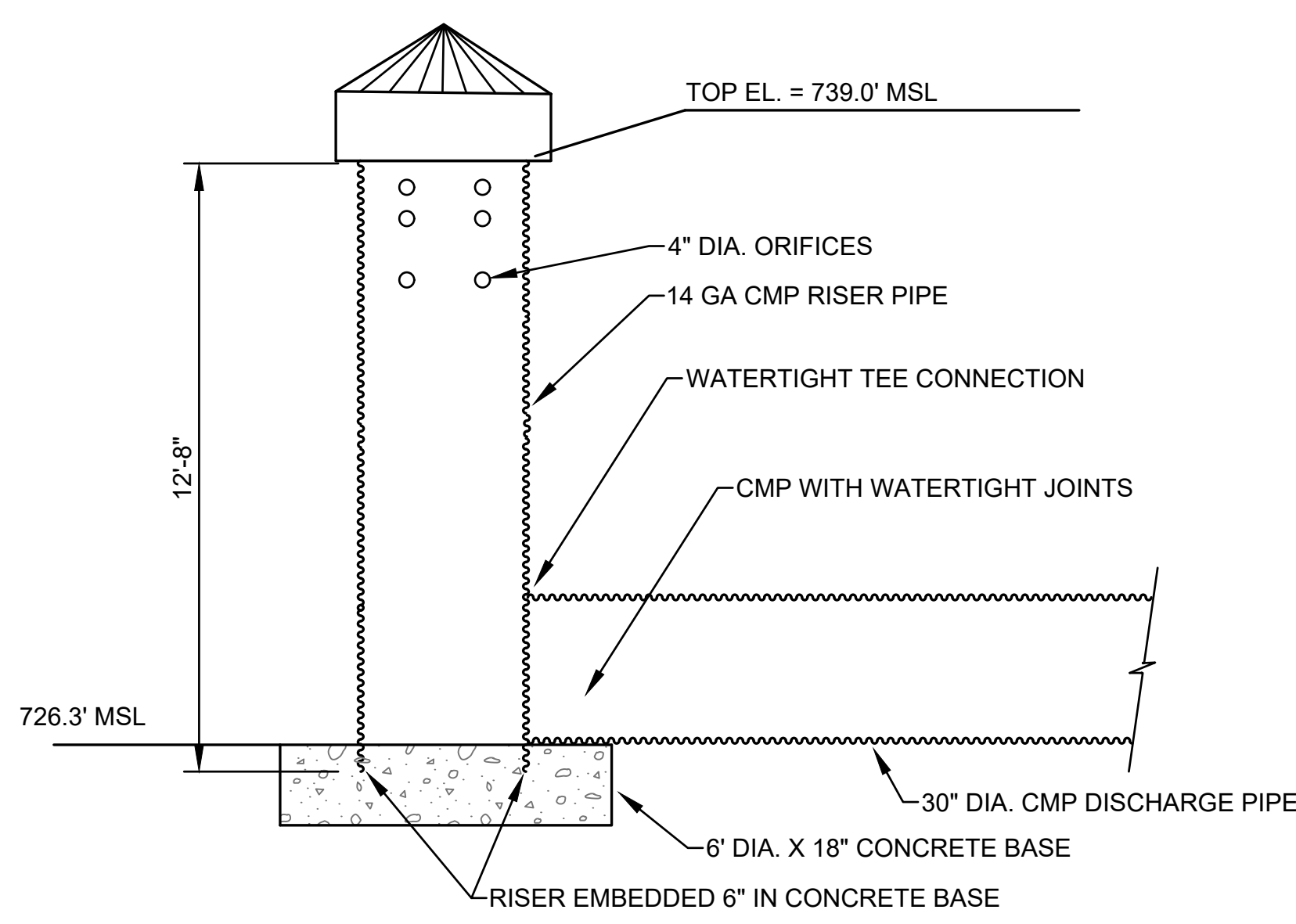
- NOTES:**
- EXISTING DETENTION BASIN 5R WAS CONSTRUCTED AS PART OF THE SITE 2 EAST EXPANSION.
 - ACCEPTABLE SOILS USED FOR FORMING BASIN SIDEWALLS AND BASE WERE CLASSIFIED AS CH, CL, CL-ML, SC, OR SM/SC UNDER THE USCS SOIL CLASSIFICATION SYSTEM.
 - SOILS USED FOR FORMING BASIN SIDEWALLS ABOVE SURROUNDING GRADE WERE COMPACTED TO 90% STANDARD PROCTOR OR 95% MODIFIED PROCTOR AND PROVIDED A HYDRAULIC CONDUCTIVITY OF LESS THAN OR EQUAL TO 10⁻⁶ CM/SEC.
 - AN EROSION CONTROL BLANKET WAS USED ON THE INTERIOR SIDE-SLOPE OF STORMWATER BASIN 5R BETWEEN NORMAL AND HIGH WATER LEVELS. VEGETATION PLANTING BETWEEN NORMAL WATER LEVEL AND HIGH WATER LEVEL USED THE NATIVE PLANT GUIDE FOR STREAMS AND STORMWATER FACILITIES IN NORTHEAST ILLINOIS AS A MINIMUM STANDARD.
 - AN OPTIONAL RIPRAP BERM WAS PLACED AT THE DISCRETION OF ADVANCED TO PROVIDE ADDITIONAL SEDIMENTATION SCREENING. THE OPTIONAL RIPRAP WAS NOT REQUIRED TO MEET LAKE COUNTY WATERSHED DEVELOPMENT ORDINANCE REQUIREMENTS.

1
D23 EXISTING DETENTION BASIN 5R CROSS SECTIONS
NOT TO SCALE



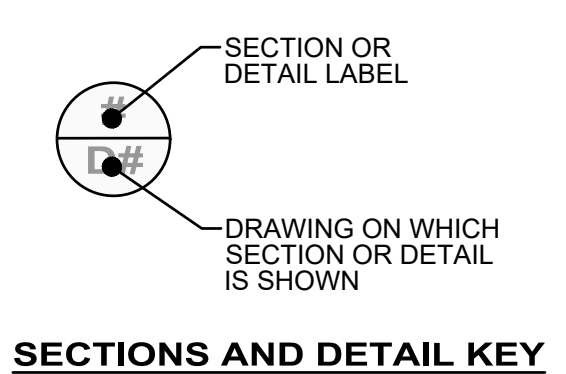
- NOTES:**
- THE BASIN AND SPILLWAY ARE DESIGNED SUCH THAT ONE FOOT OF FREEBOARD SHALL EXIST BETWEEN THE 100-YEAR, 1-HOUR HIGH WATER LEVEL AND THE BASIN CREST.

2
D23 EXISTING DETENTION BASIN 5R EMERGENCY SPILLWAY SECTION
NOT TO SCALE

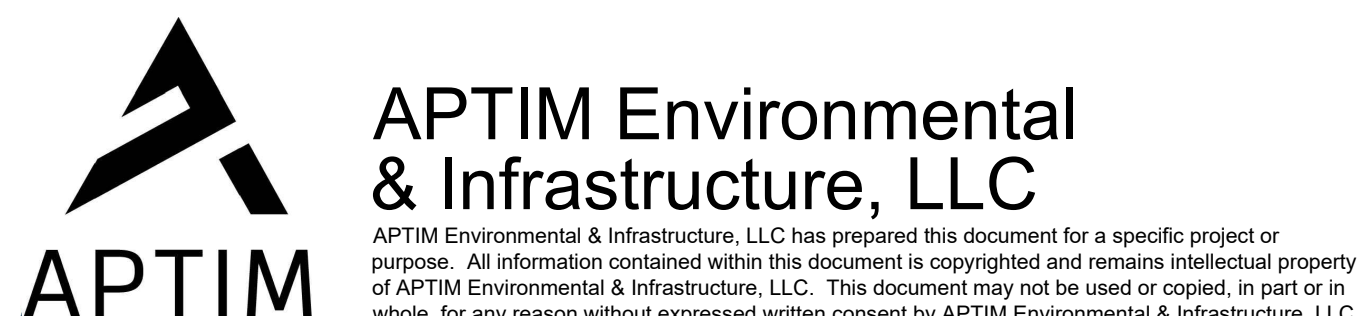


3
D23 EXISTING DETENTION BASIN 5R OUTLET STRUCTURE
NOT TO SCALE

EXISTING OUTLET STRUCTURE ORIFICE SUMMARY				
Basin	Number of Orifices	Invert Elevation Orifices	Orifice Diameter (Inches)	Outlet Structure Diameter (Inches)
5R	4	733.50	4	30
	4	737.50	4	
	4	738.50	4	



REV. NO.	DATE	DESCRIPTION

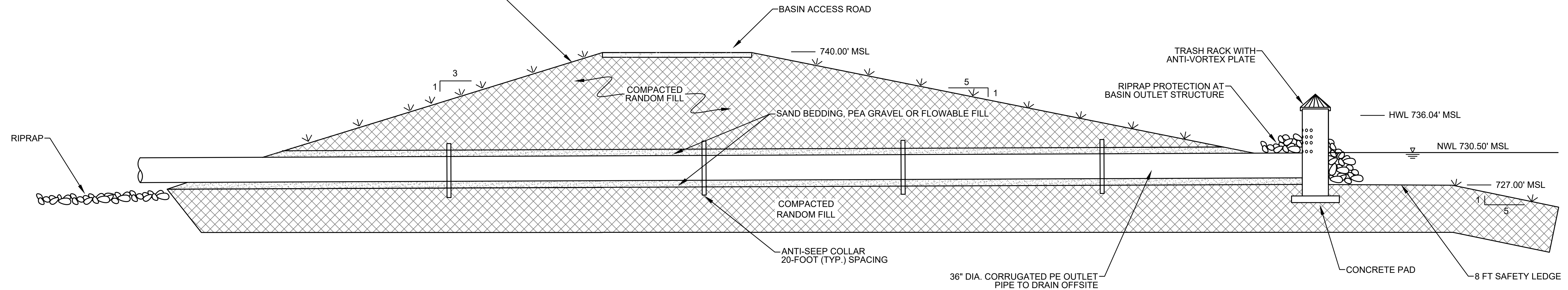


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CITY OF ZION, ILLINOIS

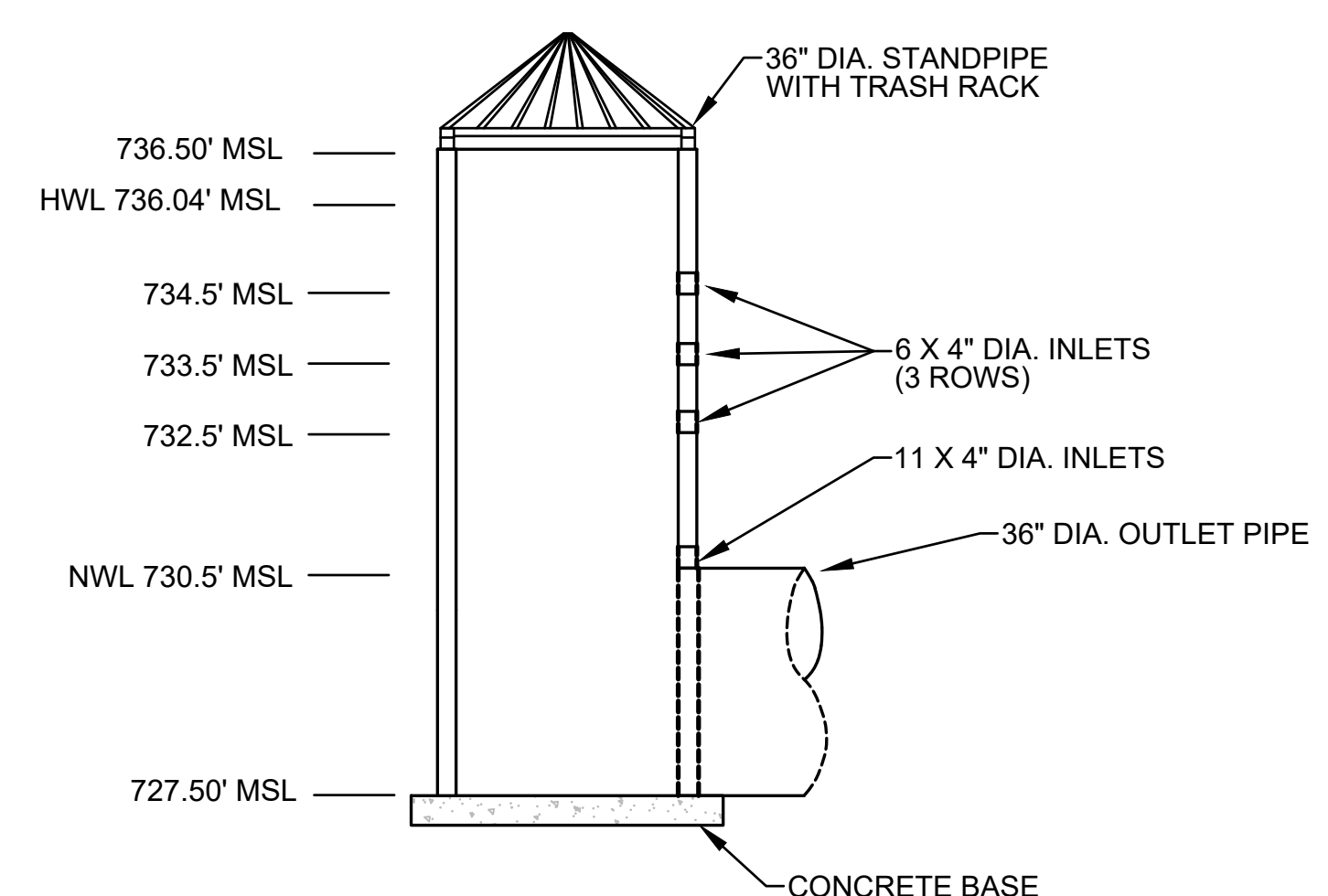
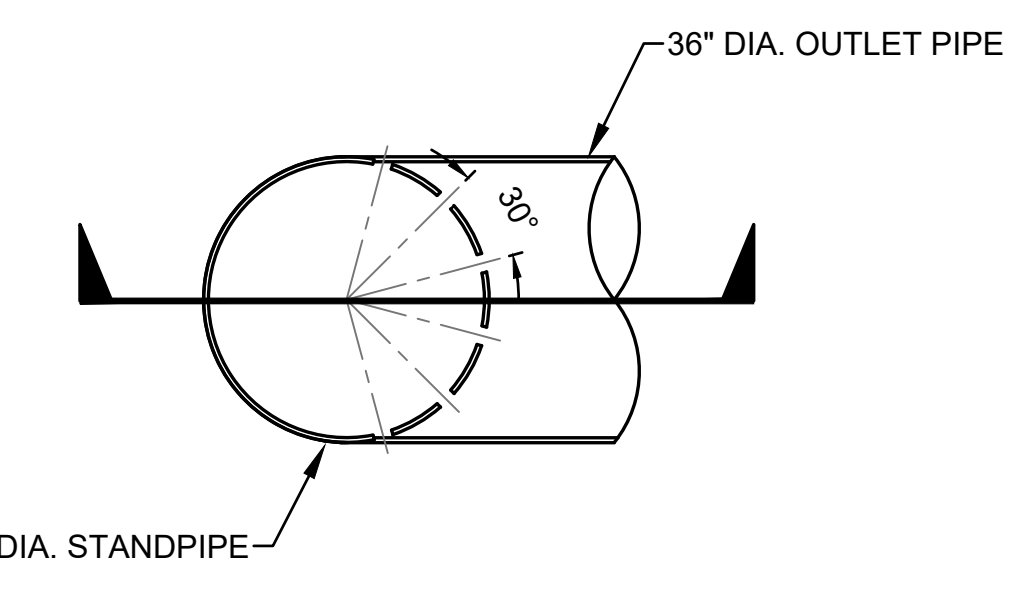
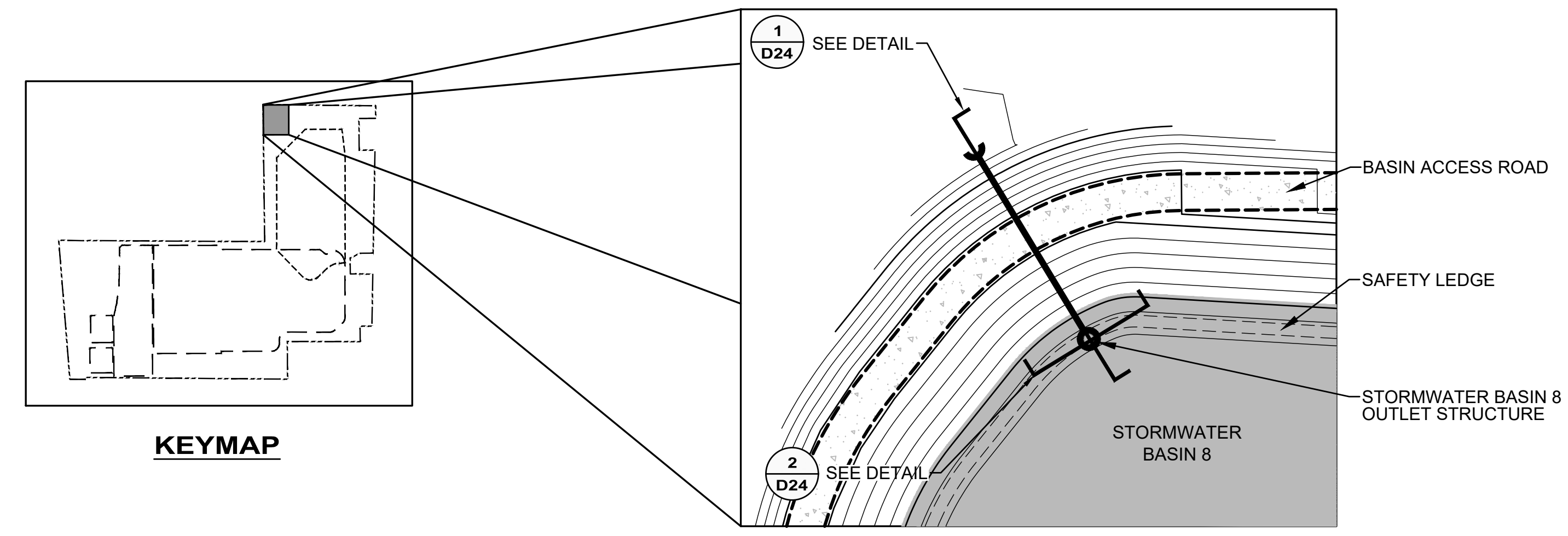
STORMWATER MANAGEMENT DETAILS - 3

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D23
DRAWN BY:	BWM/NV/KM	CHECKED BY:	DAM
APPROVED BY:	DAM		23 OF 37 SHEETS

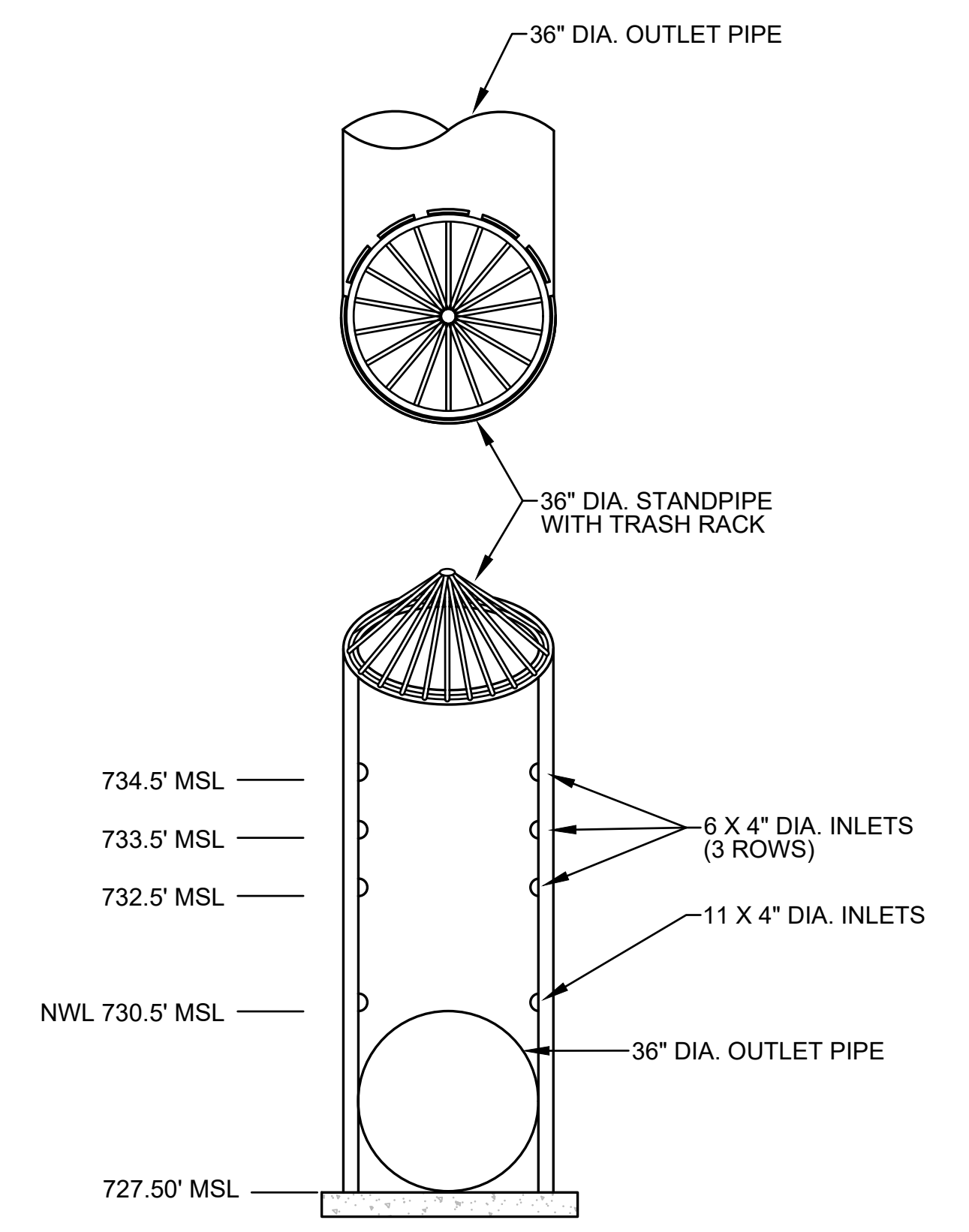
PERIMETER SCREENING BUFFER NOT SHOWN ON THIS DRAWING. REFER TO LANDSCAPE PLAN FOR PERIMETER SCREENING BUFFER DETAILS.



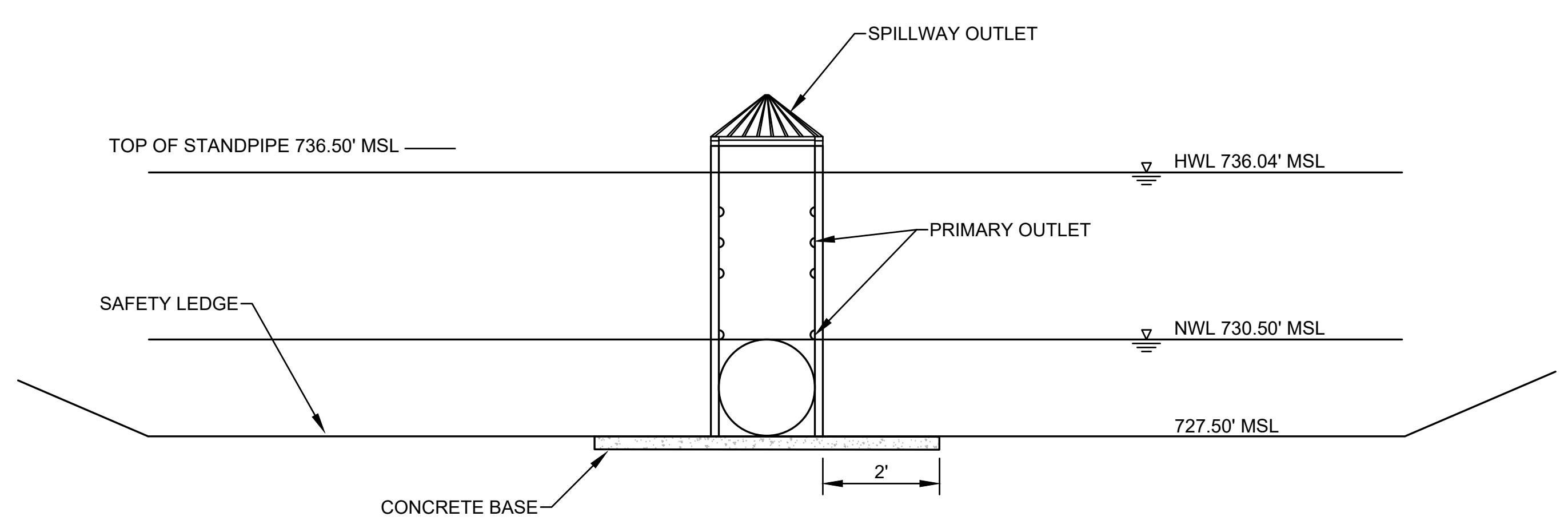
1
D24 **STORMWATER BASIN 8 OUTLET**
NOT TO SCALE



OUTLET STRUCTURE - SECTION VIEW

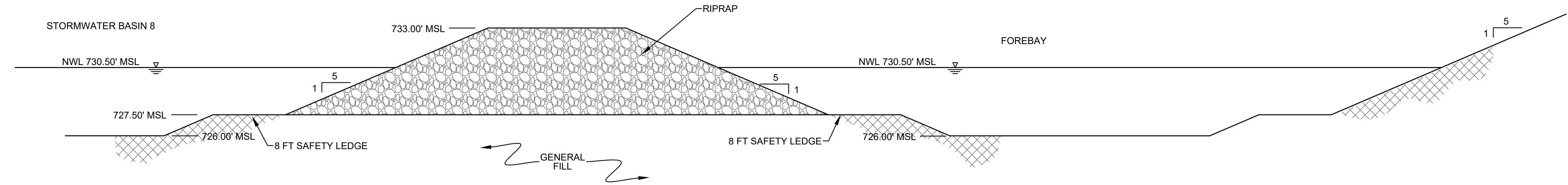


OUTLET STRUCTURE - EXTERNAL VIEW



2
D24 **PROPOSED STORMWATER BASIN 8 OUTLET STRUCTURE**
NOT TO SCALE

3
D24 **PROPOSED STORMWATER BASIN 8 OUTLET STRUCTURE DETAILS**
NOT TO SCALE



4
D24 **PROPOSED STORMWATER BASIN 8 FOREBAYS**
NOT TO SCALE

NOTES:
1. THIS DETAIL DEPICTS THE STORMWATER BASIN 8 FOREBAY DESIGN FOR BOTH PROPOSED FOREBAYS.

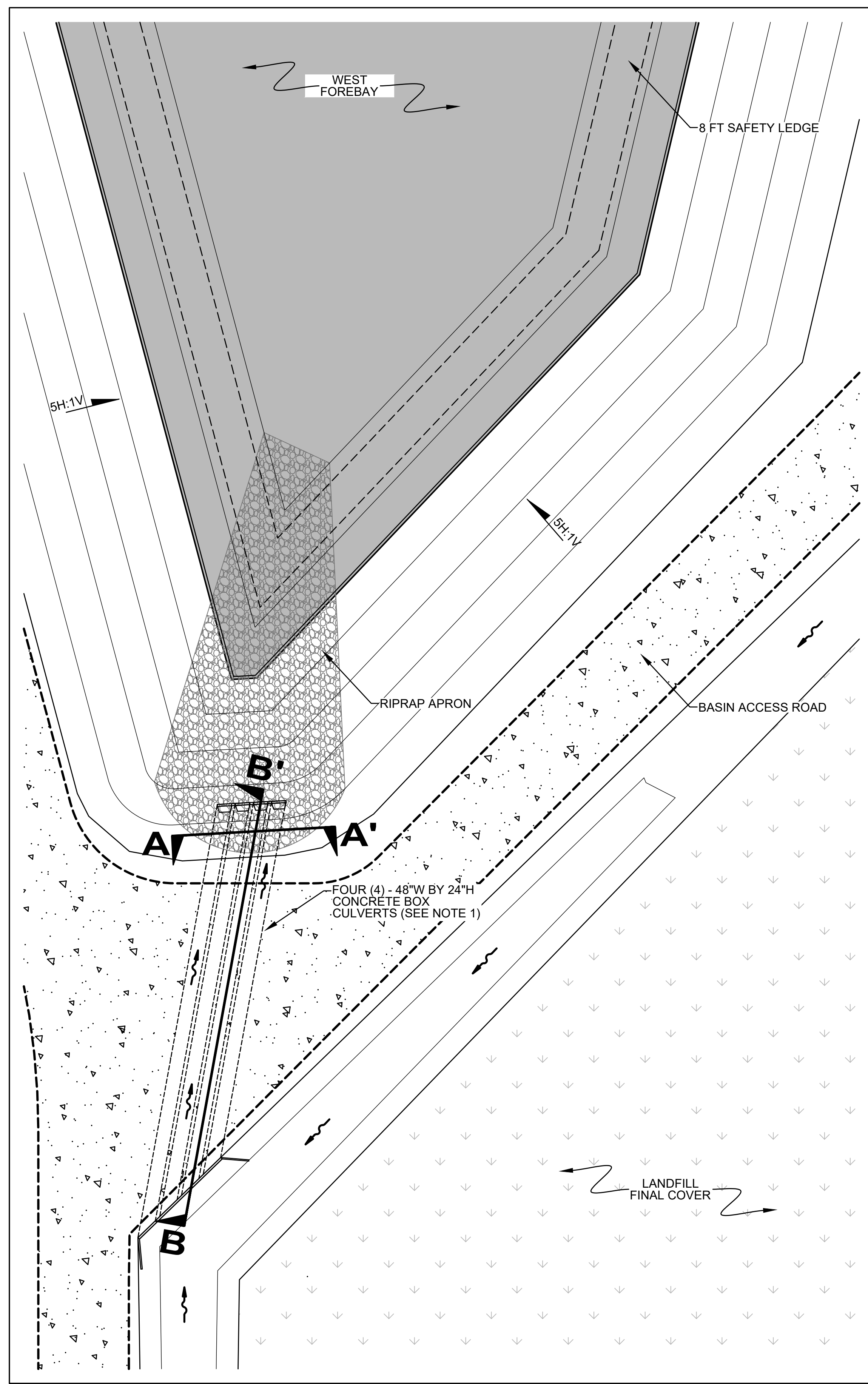
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ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

STORMWATER MANAGEMENT DETAILS - 4

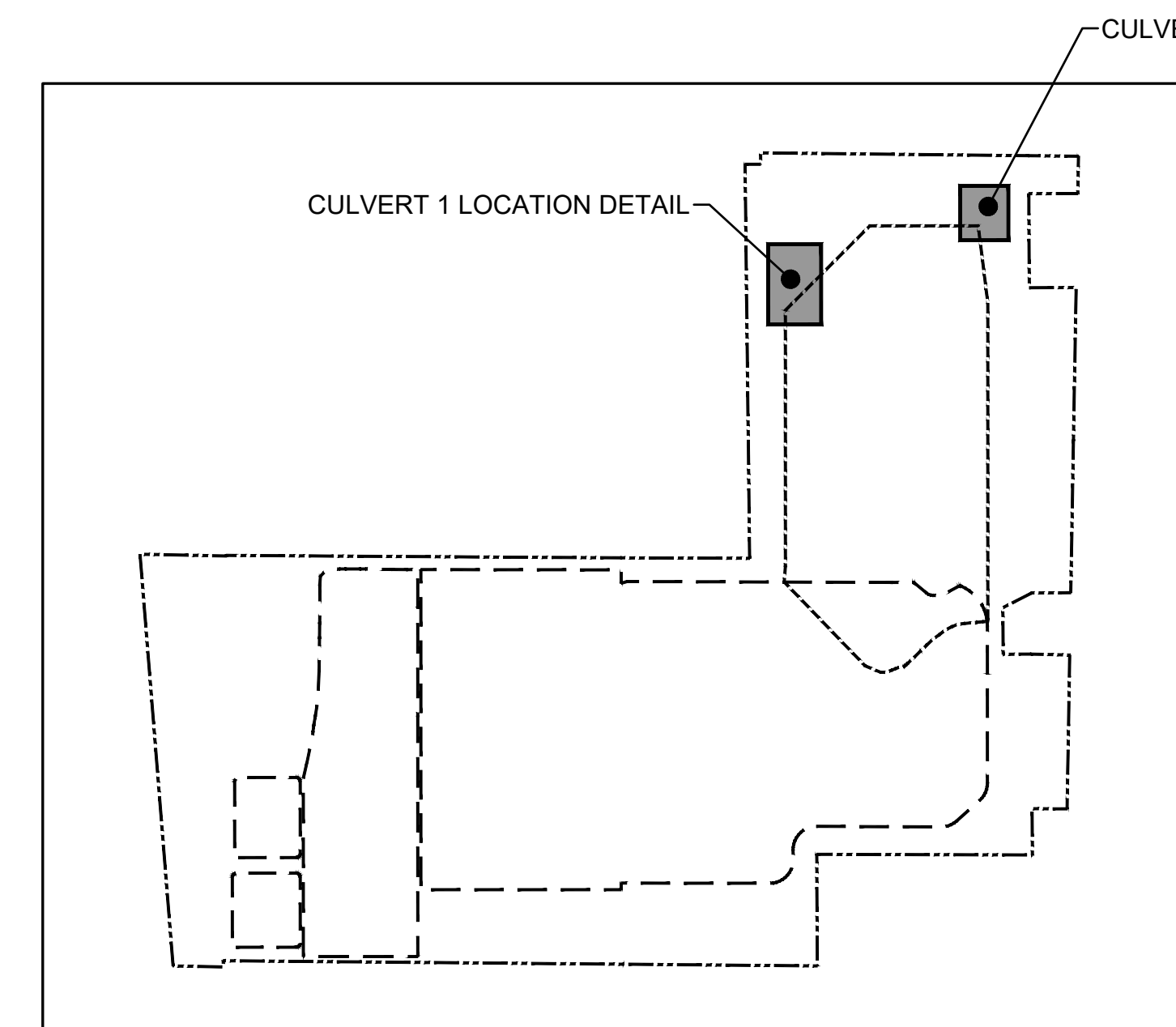
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D24
DRAWN BY:	BWM/NV/KM	CHECKED BY:	DAM
APPROVED BY:	DAM		24 OF 37 SHEETS



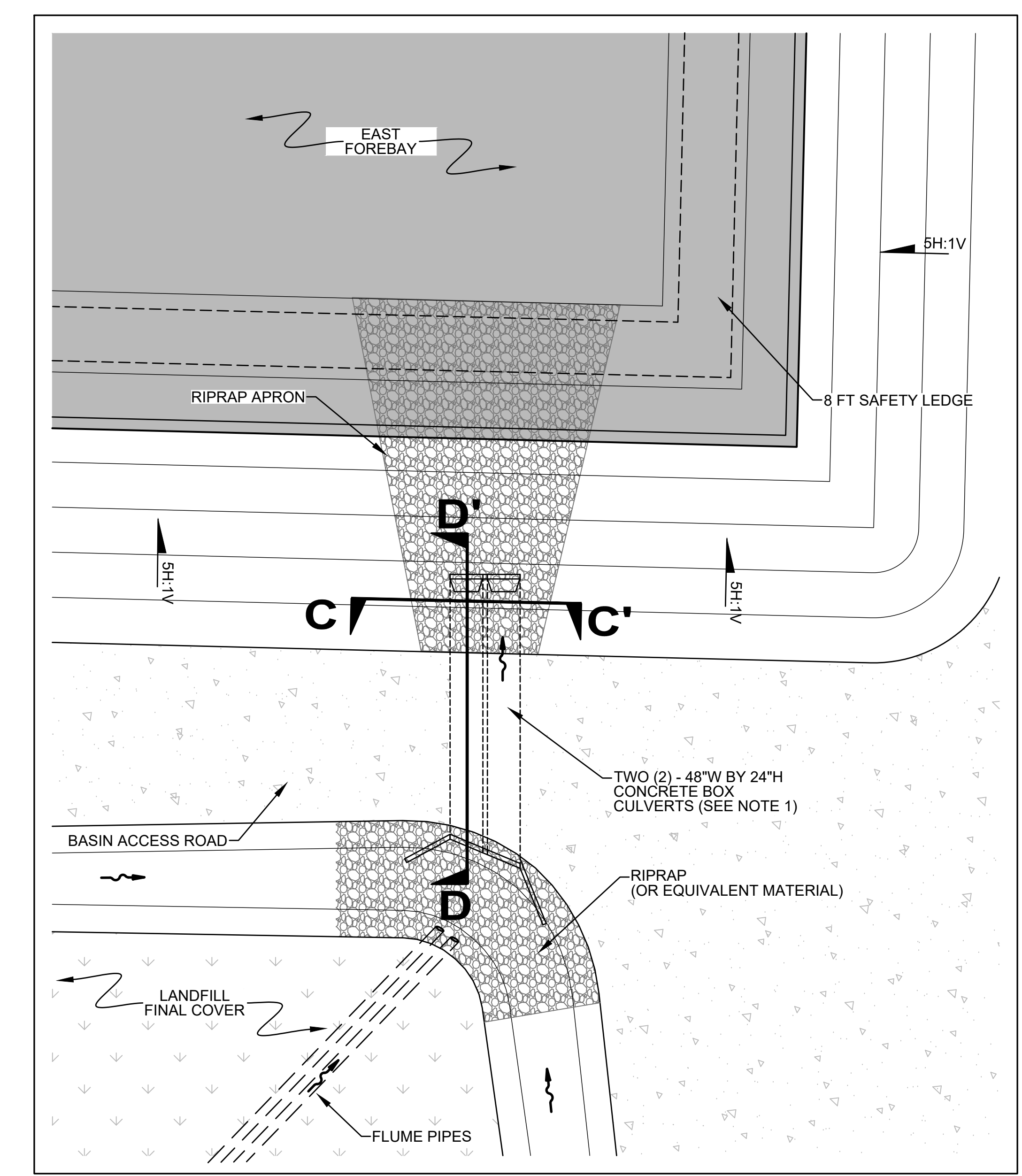
PLAN VIEW

1
D25
PROPOSED CULVERT 1 LOCATION DETAIL
NOT TO SCALE

NOTES
1. PROPOSED CONCRETE BOX CULVERTS AT CULVERT LOCATION 1 AND CULVERT LOCATION 2 MAY BE REPLACED WITH CIRCULAR CONCRETE PIPES AT THE DISCRETION OF THE OWNER CONSIDERING THAT THE ALLOWABLE DISCHARGE RATE THROUGH THE CIRCULAR CONCRETE PIPES ARE AT LEAST EQUIVALENT TO THE PROPOSED CONCRETE BOX CULVERT DISCHARGE RATE.

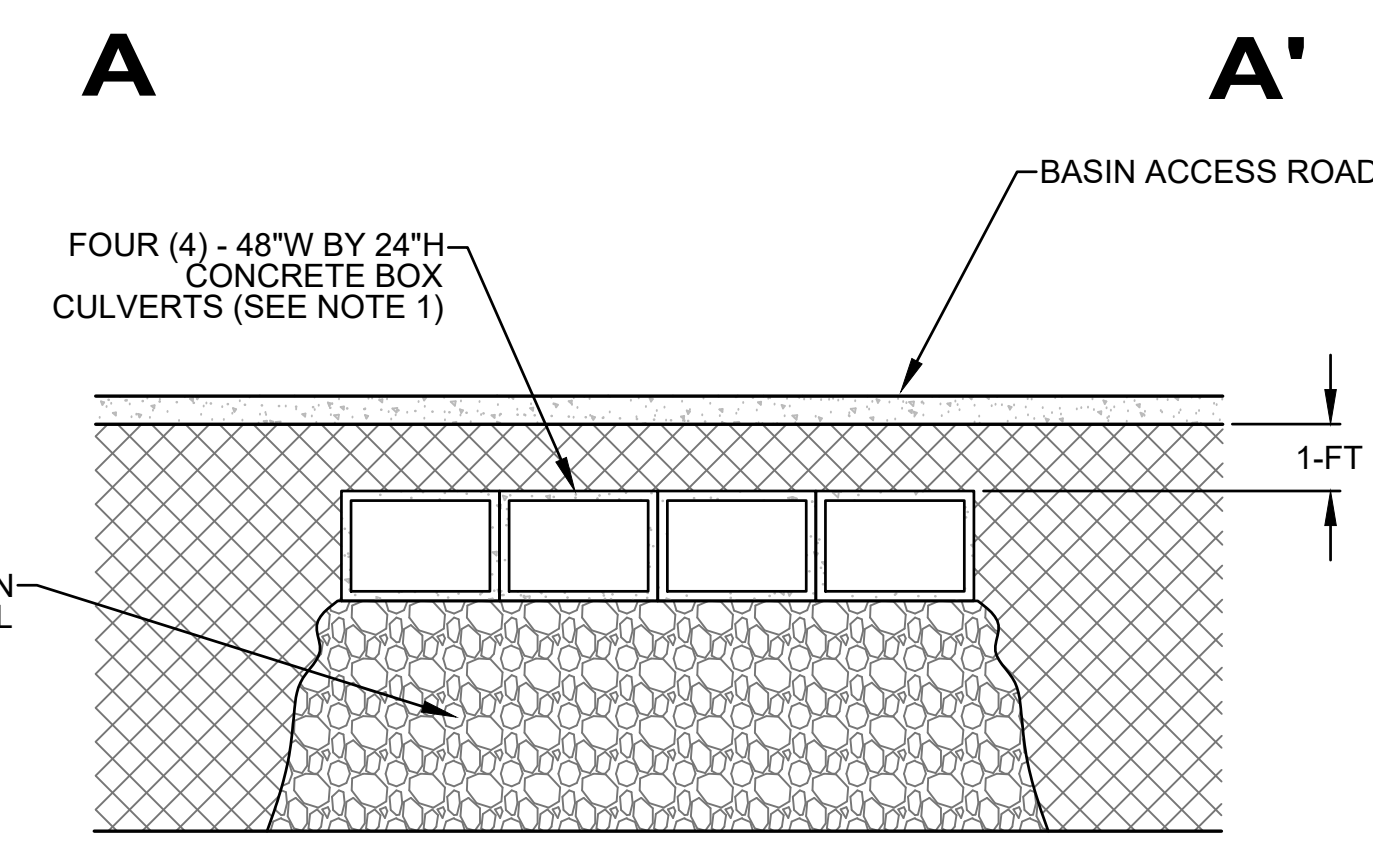


KEYMAP
1000' 0 1000'
GRAPHIC SCALE

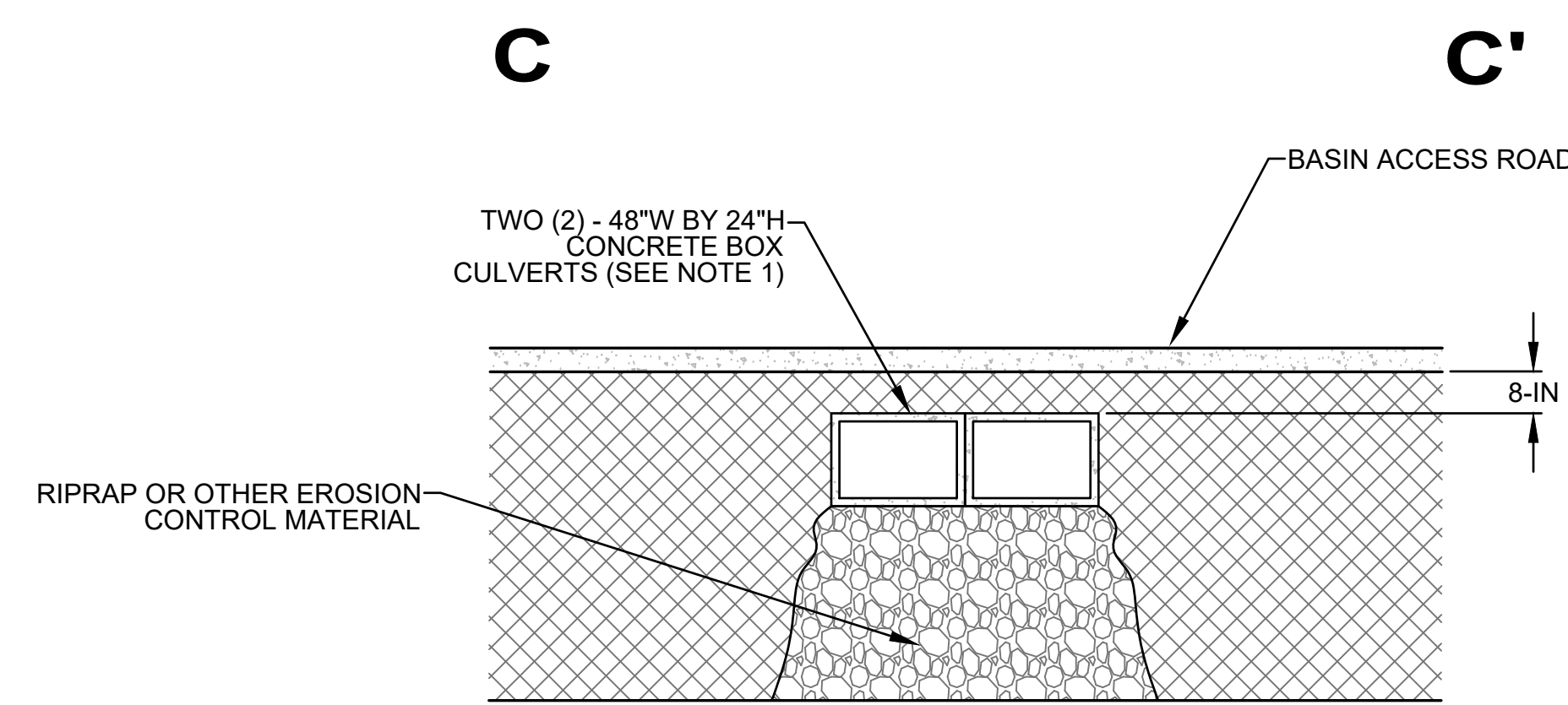


PLAN VIEW

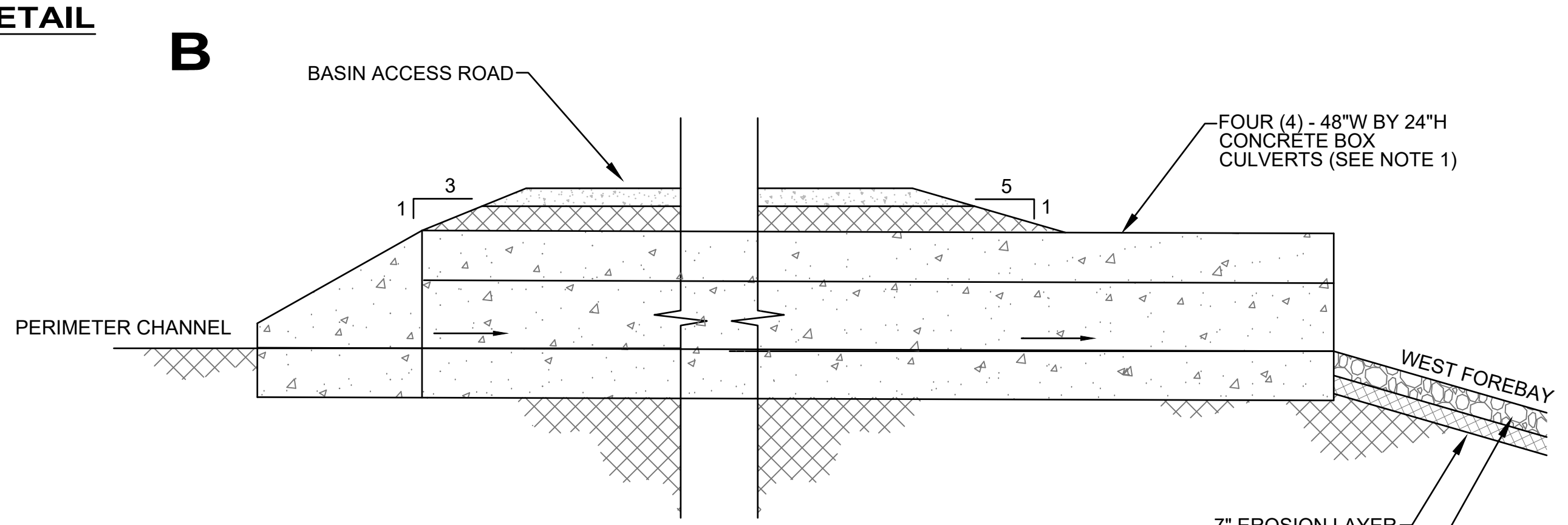
2
D25
PROPOSED CULVERT 2 LOCATION DETAIL
NOT TO SCALE



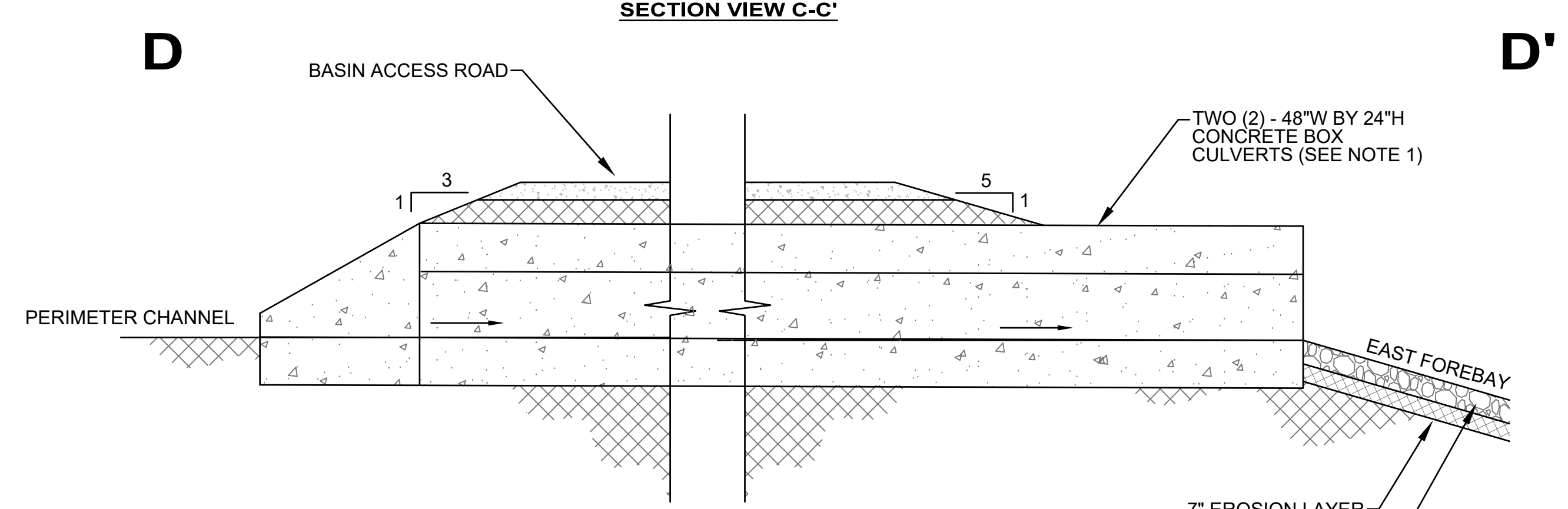
SECTION VIEW A-A'



SECTION VIEW C-C'



SECTION VIEW B-B'



SECTION VIEW D-D'

REV. NO.	DATE	DESCRIPTION

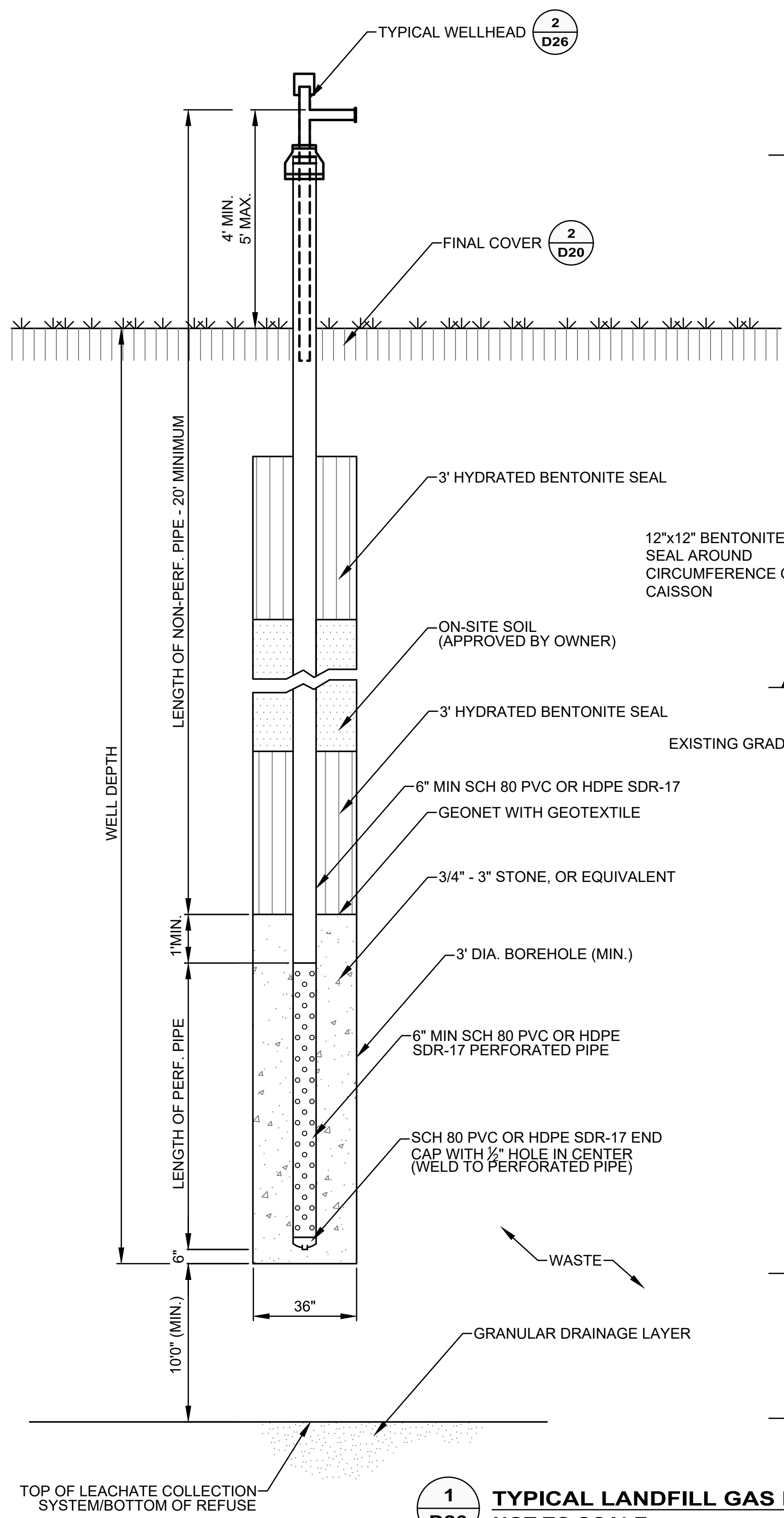


ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

STORMWATER MANAGEMENT DETAILS - 5

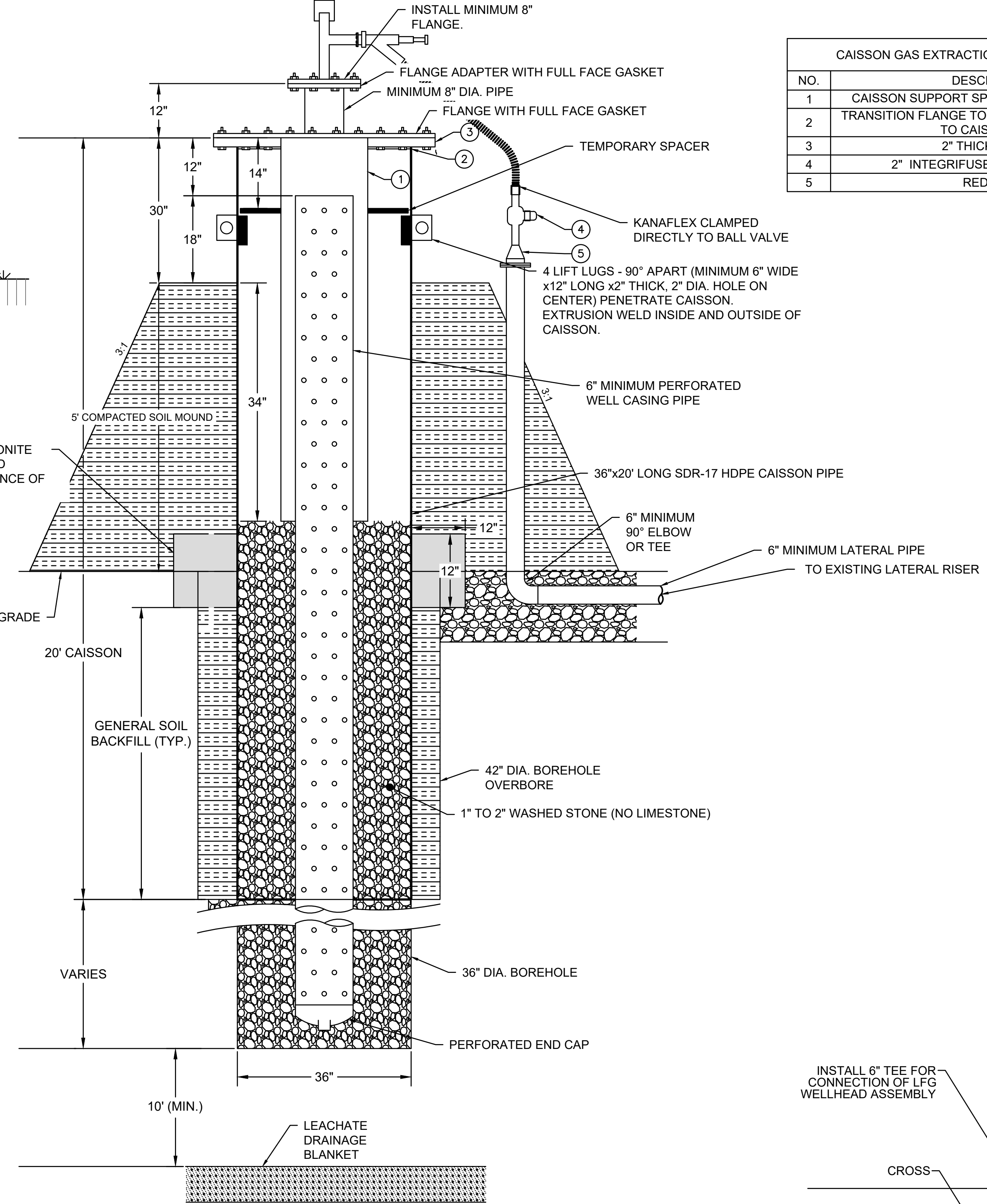
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D25
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		

TYPICAL VERTICAL GAS WELL

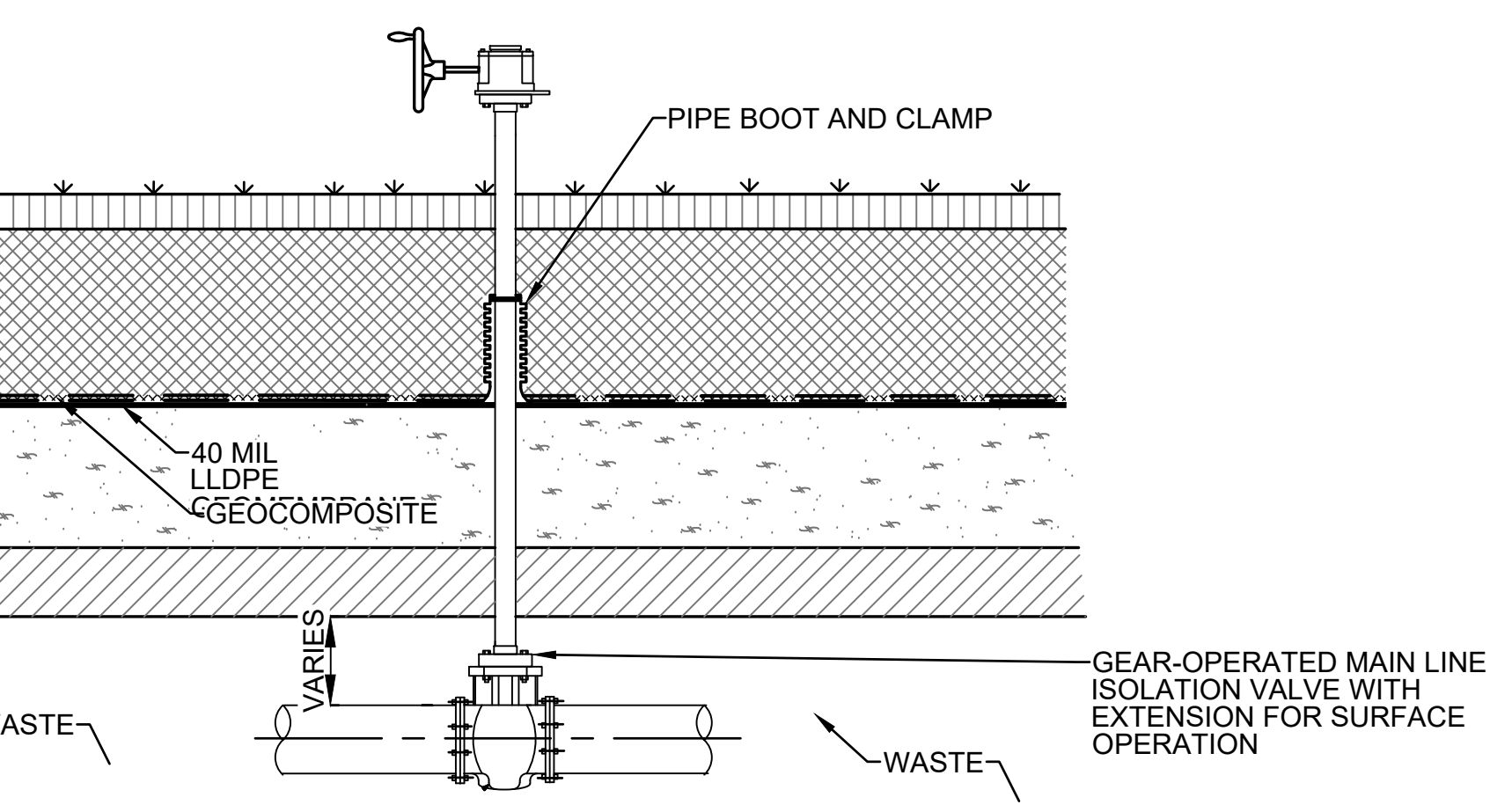


1 TYPICAL LANDFILL GAS EXTRACTION WELLS
D26 NOT TO SCALE

TYPICAL CAISSON GAS WELL

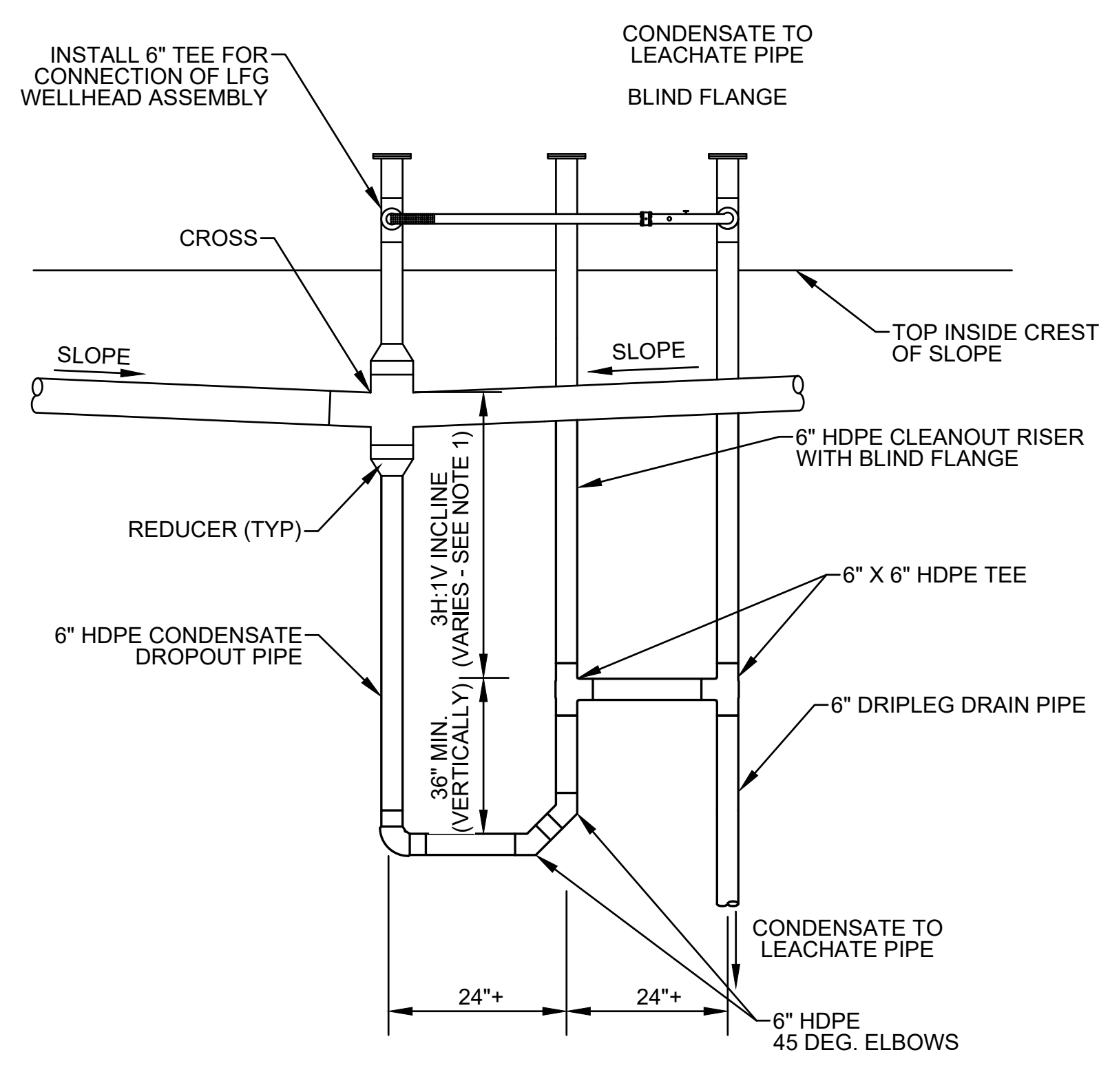


CAISSON GAS EXTRACTION WELL SCHEDULE	
NO.	DESCRIPTION
1	CAISSON SUPPORT SPOOL PIECE (SEE DETAIL)
2	TRANSITION FLANGE TO BE BUTT FUSION WELDED TO CAISSON PIPE
3	2" THICK FLANGE
4	2" INTEGRIFUSE NBR BALL VALVE
5	REDUCER



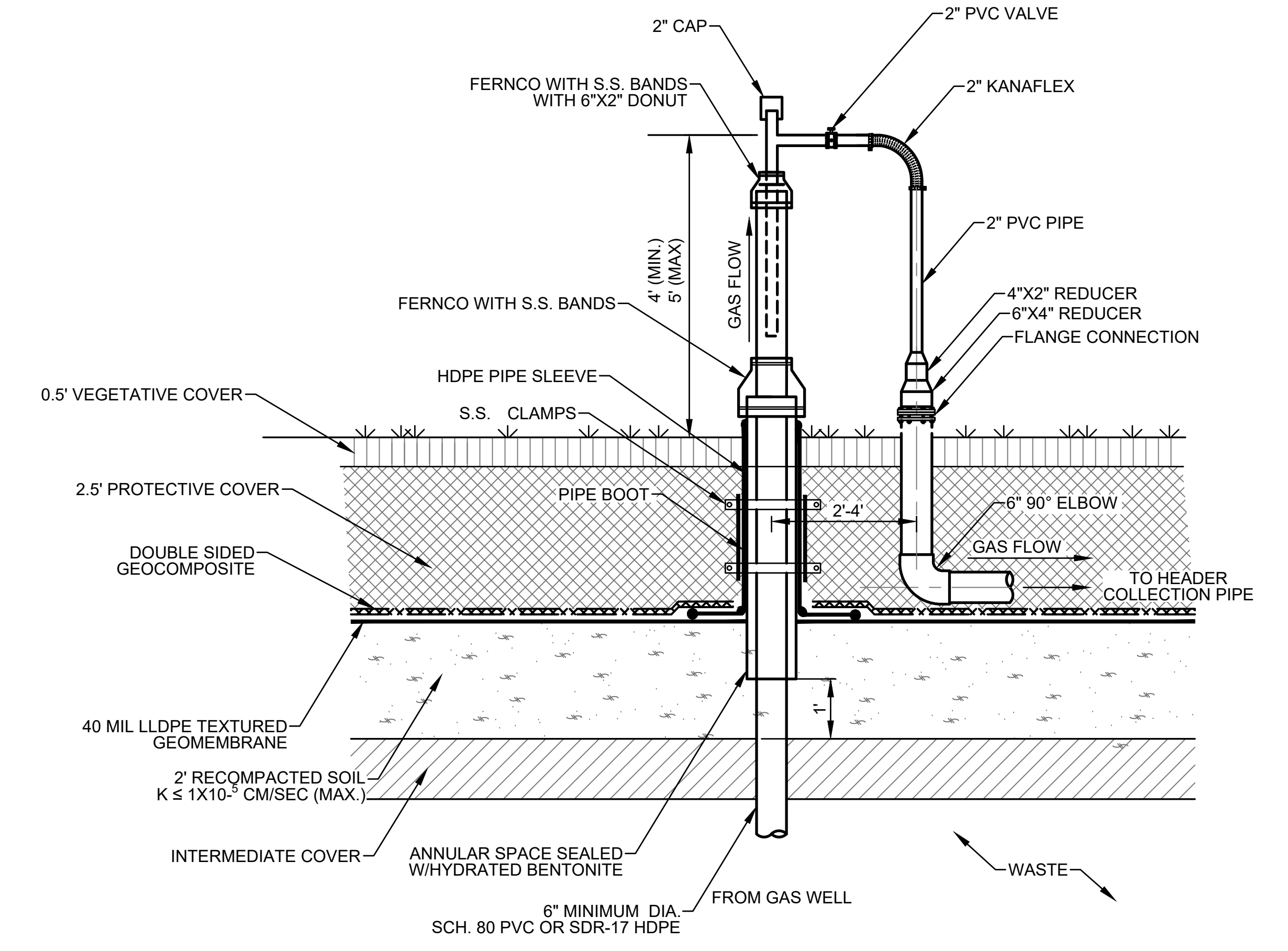
3 TYPICAL VALVE
D26 NOT TO SCALE

NOTES:
1. LANDFILL GAS PIPING MAY BE INSTALLED ABOVE OR BELOW THE FINAL COVER GEOMEMBRANE.



4 TYPICAL INCLINED CONDENSATE DRIPLEG
D26 NOT TO SCALE

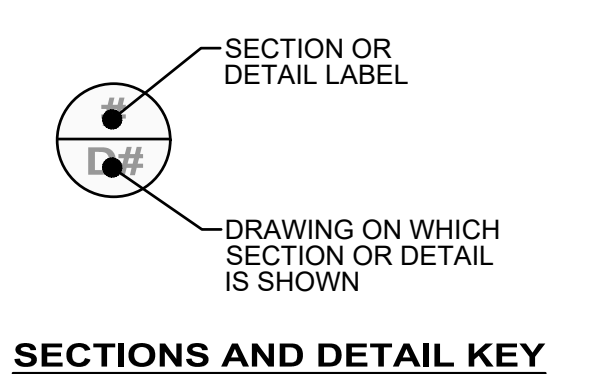
NOTES:
1. DIMENSIONS MAY VARY BASED ON AVAILABLE VACUUM.



2 TYPICAL WELLHEAD
D26 NOT TO SCALE

5 CAISSON SUPPORT SPOOL PIECE
D26 NOT TO SCALE

NOTES:
1. WELLHEAD MAY BE SUBSTITUTED WITH AN APPROVED EQUAL.
2. LANDFILL GAS PIPING MAY BE INSTALLED ABOVE OR BELOW THE FINAL COVER GEOMEMBRANE.



SECTIONS AND DETAIL KEY

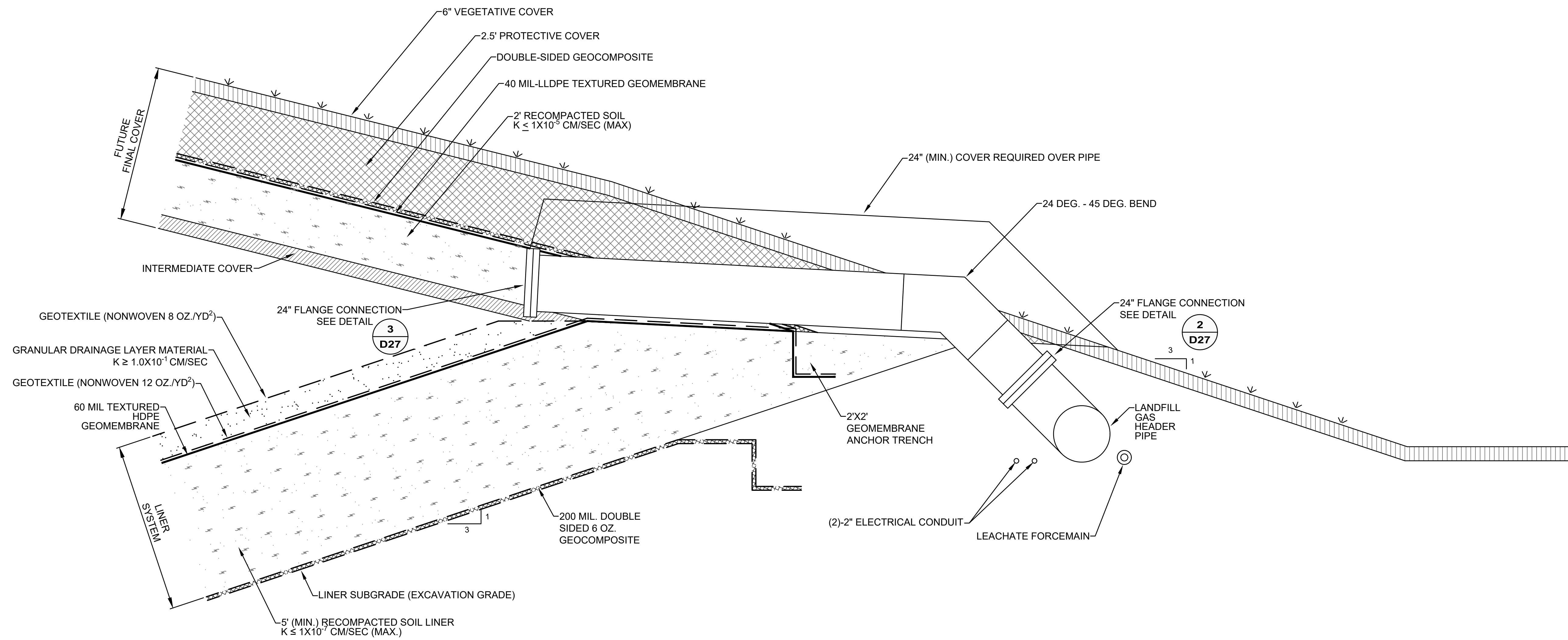
REV. NO.	DATE	DESCRIPTION



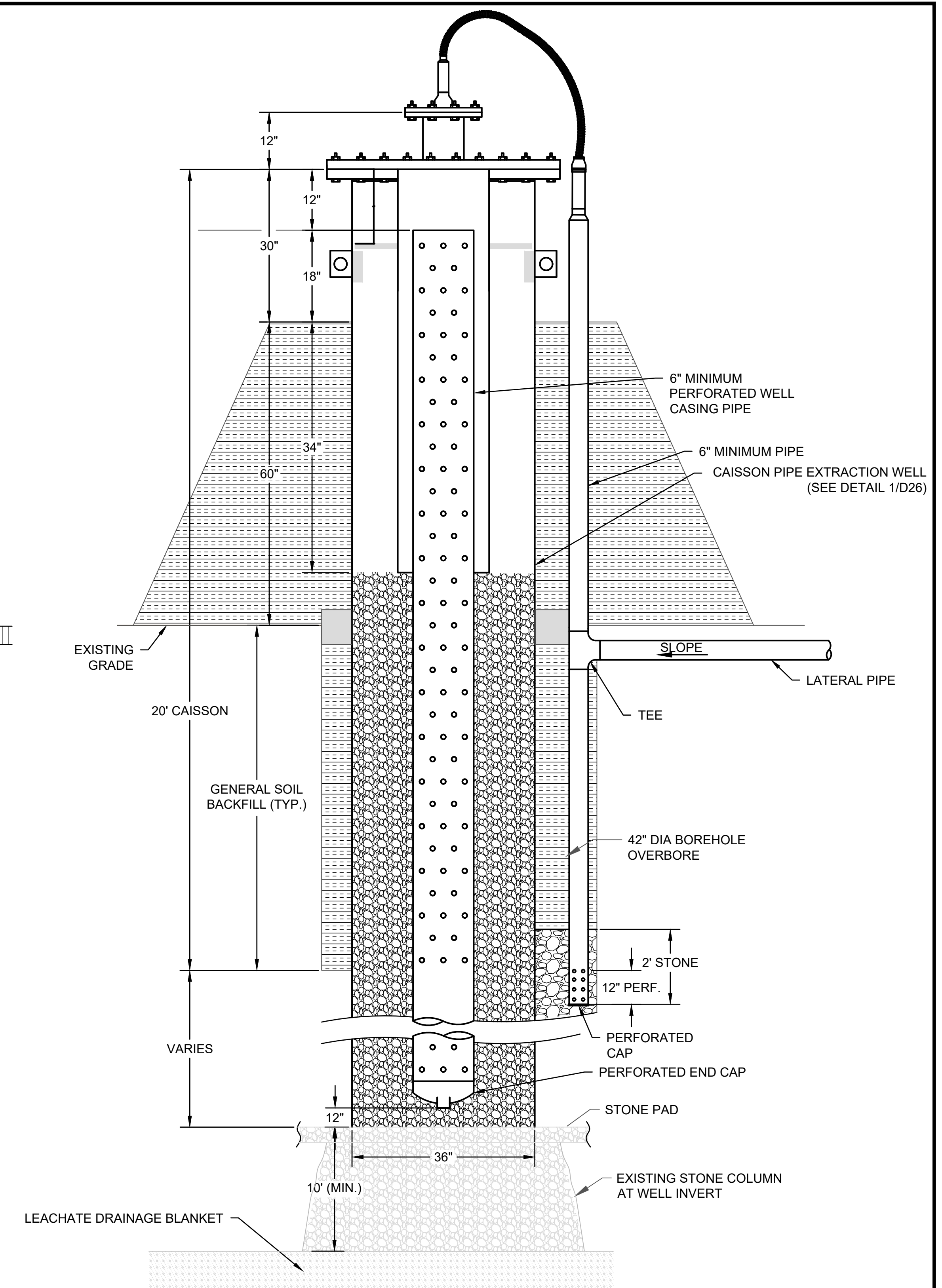
ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

LANDFILL GAS MANAGEMENT SYSTEM DETAILS - 1

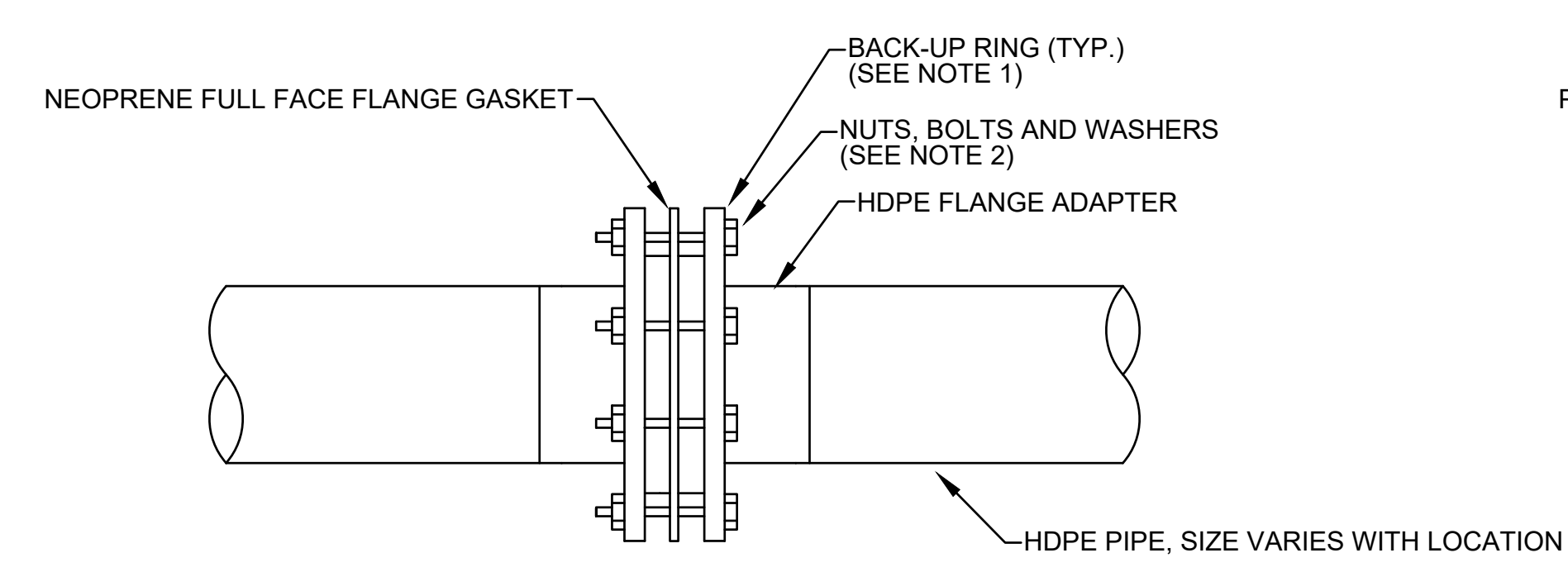
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DESIGNED BY:	DAM/BWM	DRAWING NO.:	D26
DRAWN BY:	BWM/NV/KM	CHECKED BY:	DAM
APPROVED BY:	DAM		26 OF 37 SHEETS



1
D27 **TYPICAL LFG HEADER LATERAL**
NOT TO SCALE

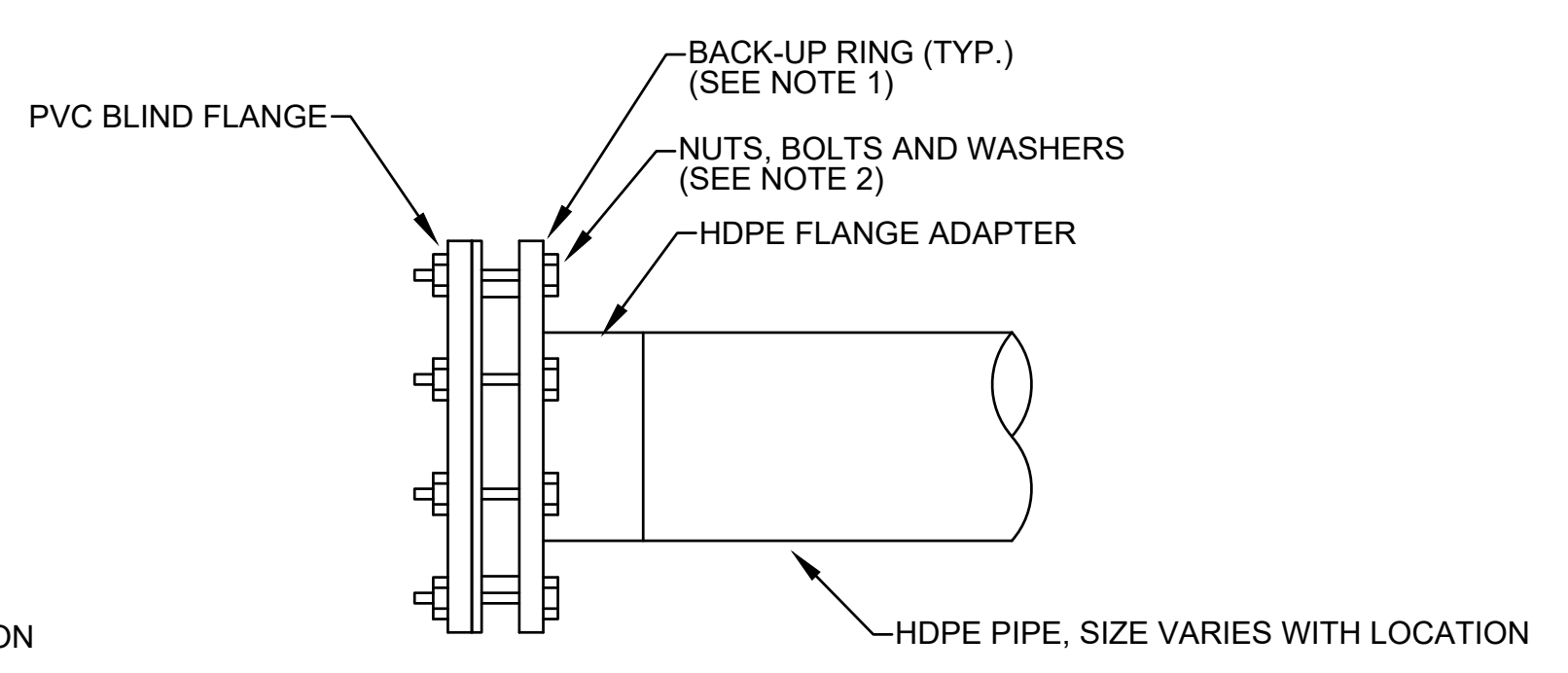


5
D27 **CONDENSATE DRAIN FOR REMOTE WELLHEAD**
NOT TO SCALE



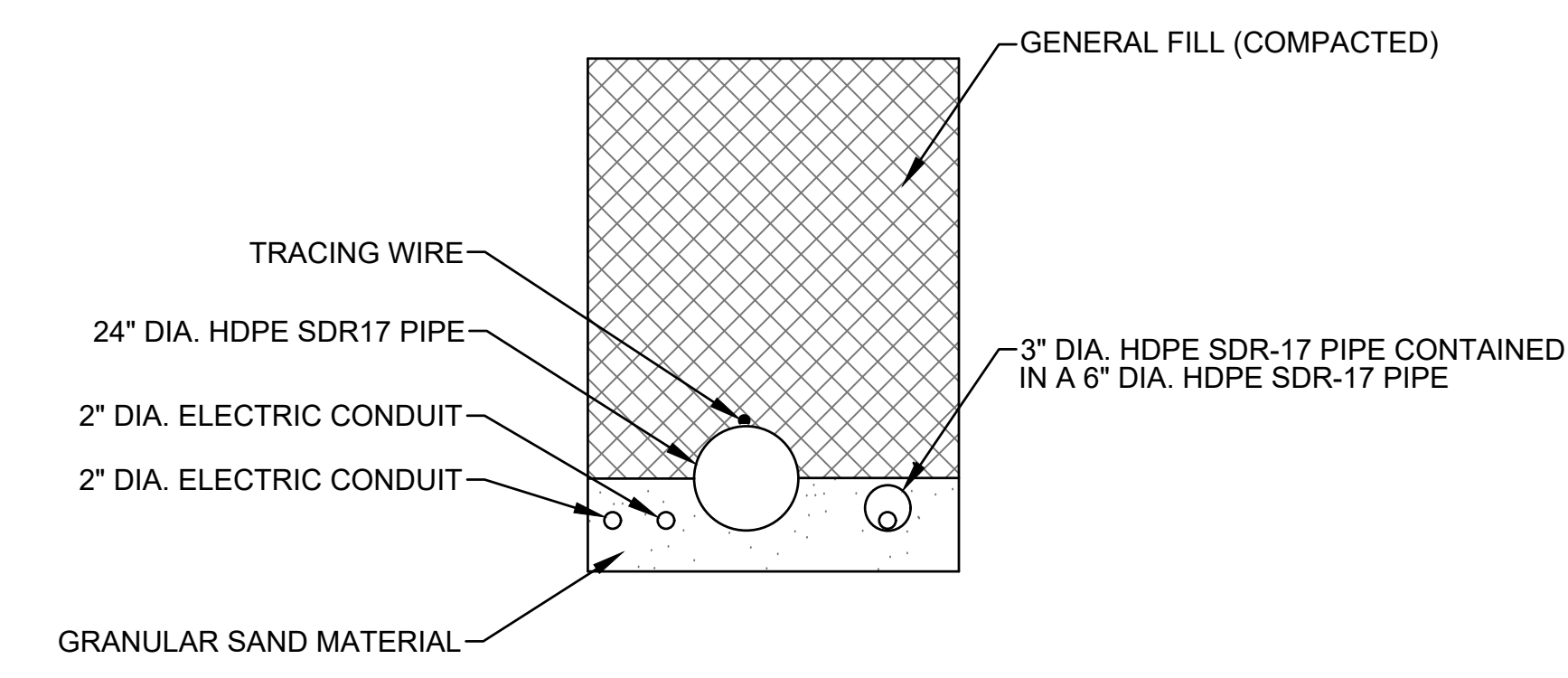
2
D27 **TYPICAL FLANGE CONNECTION**
NOT TO SCALE

- NOTES:**
1. BACKUP RINGS ARE DUCTILE IRON ABOVE GRADE, AND STAINLESS STEEL BELOW GRADE WILL BE IN DIRECT CONTACT WITH WASTE.
 2. NUTS, BOLTS AND WASHERS ARE ZINC PLATED ABOVE GRADE, AND STAINLESS STEEL BELOW INTERMEDIATE COVER GRADE.

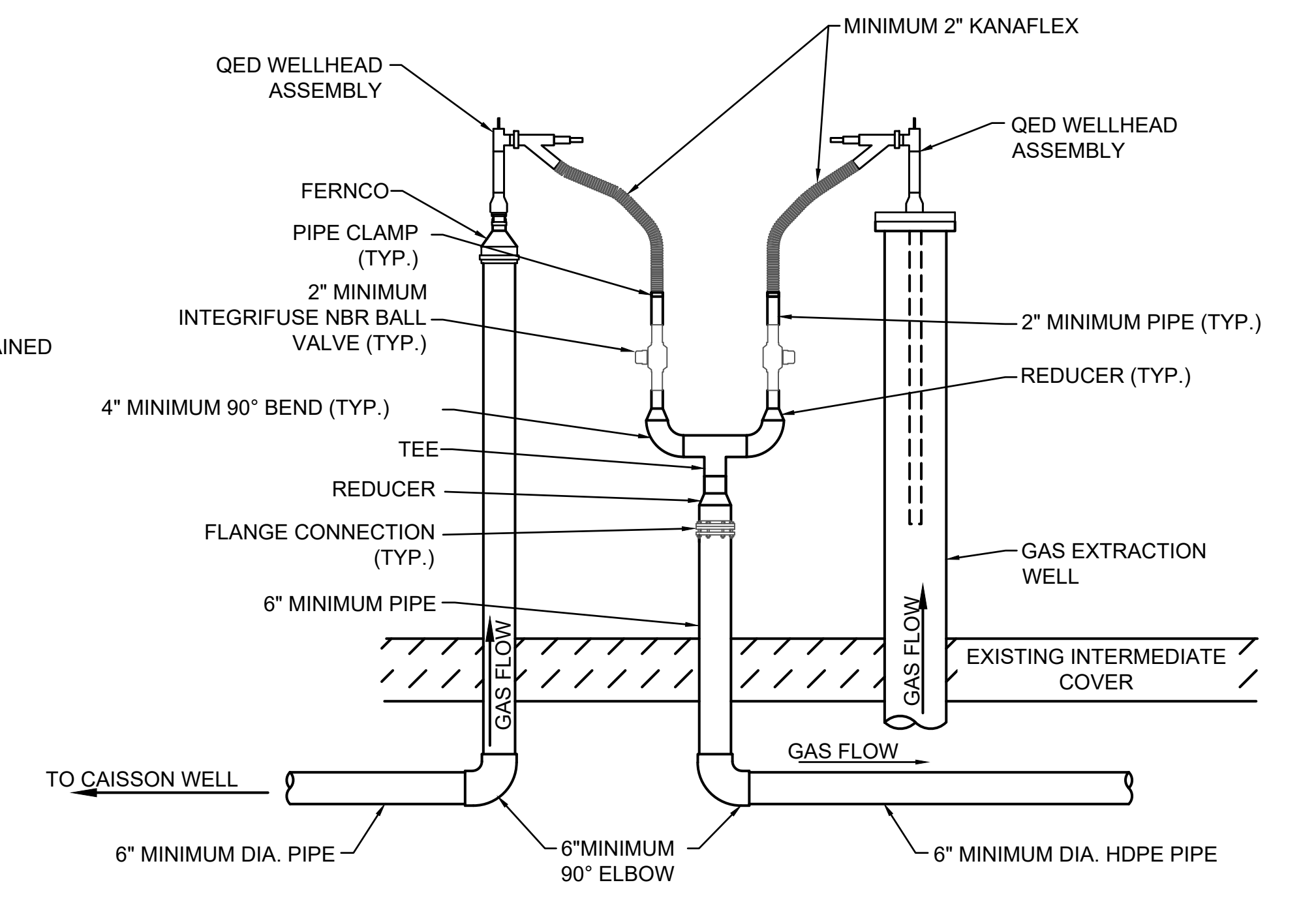


3
D27 **TYPICAL BLIND FLANGE CONNECTION**
NOT TO SCALE

- NOTES:**
1. BACKUP RINGS ARE DUCTILE IRON ABOVE GRADE, AND STAINLESS STEEL BELOW GRADE WILL BE IN DIRECT CONTACT WITH WASTE.
 2. NUTS, BOLTS AND WASHERS ARE ZINC PLATED ABOVE GRADE, AND STAINLESS STEEL BELOW INTERMEDIATE COVER GRADE.

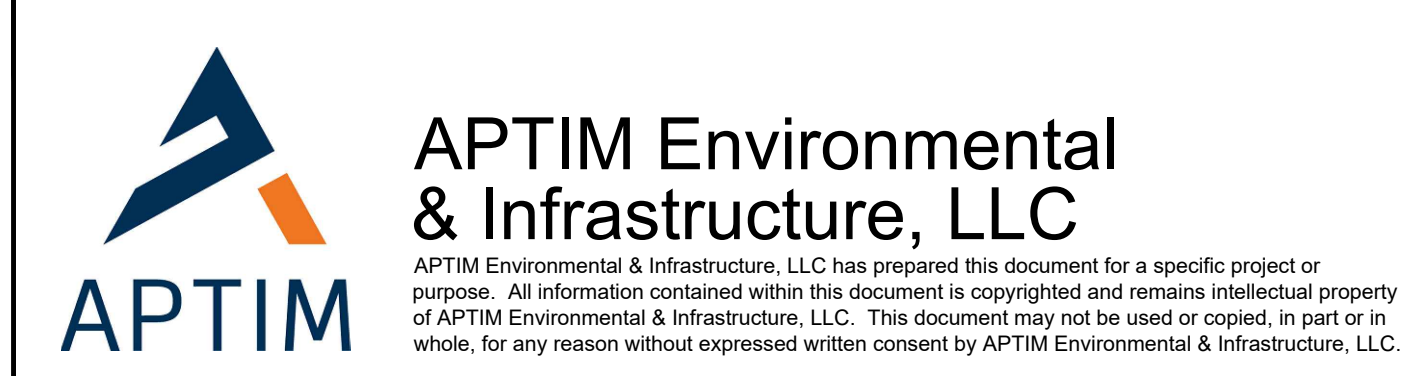


4
D27 **3" / 6" FORCE MAIN, ELECTRICAL AND 24" LFG TRENCH DETAIL**
NOT TO SCALE



6
D27 **REMOTE LFG WELLHEAD**
NOT TO SCALE

REV. NO.	DATE	DESCRIPTION



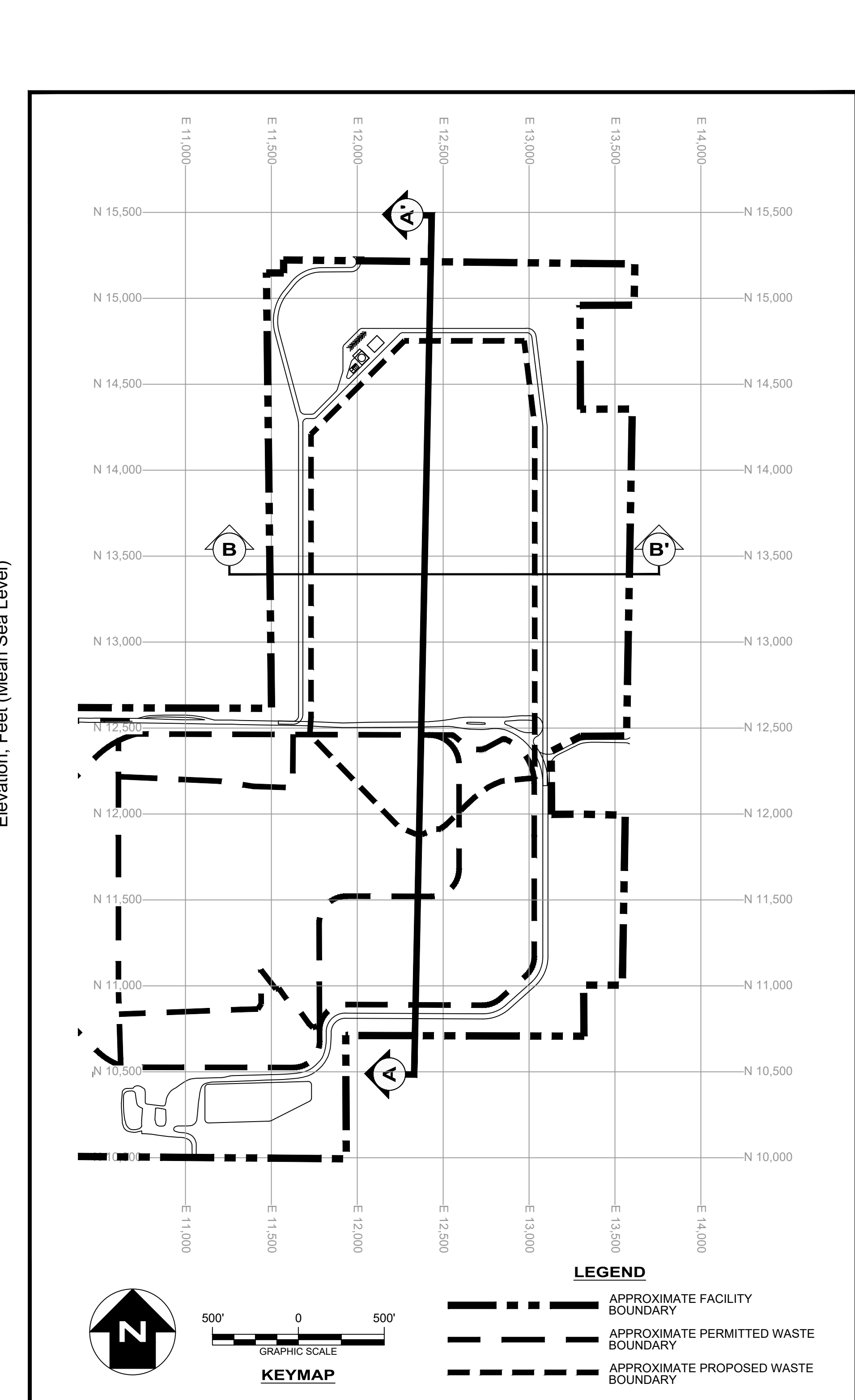
ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

LANDFILL GAS MANAGEMENT SYSTEM DETAILS - 2

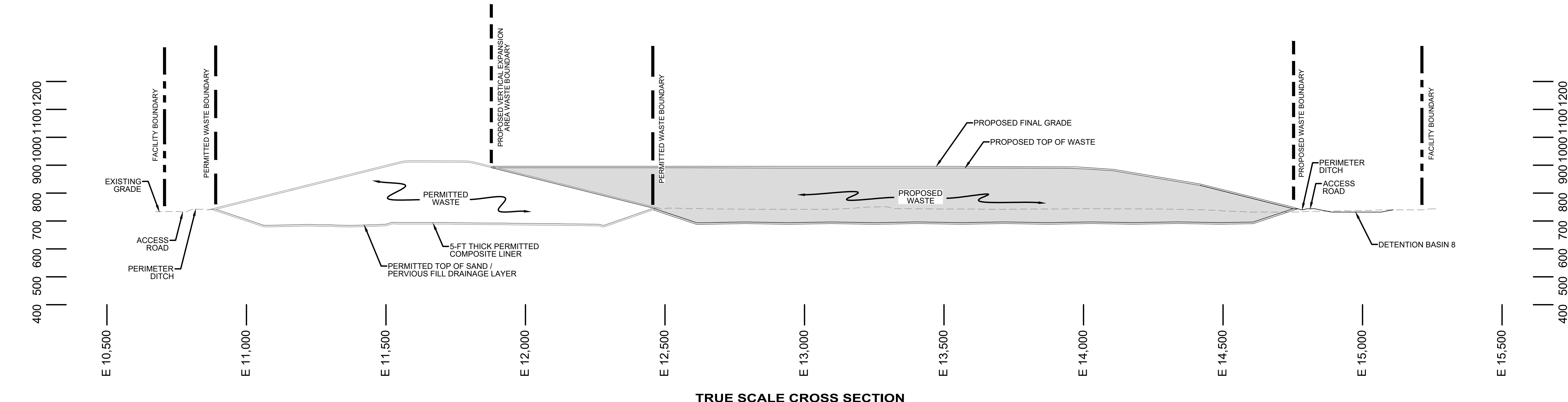
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM	DRAWING NO.:	D27
DRAWN BY:	BWM/NV/KM	CHECKED BY:	DAM
APPROVED BY:	DAM		27 OF 37 SHEETS



EXAGGERATED SCALE CROSS SECTION



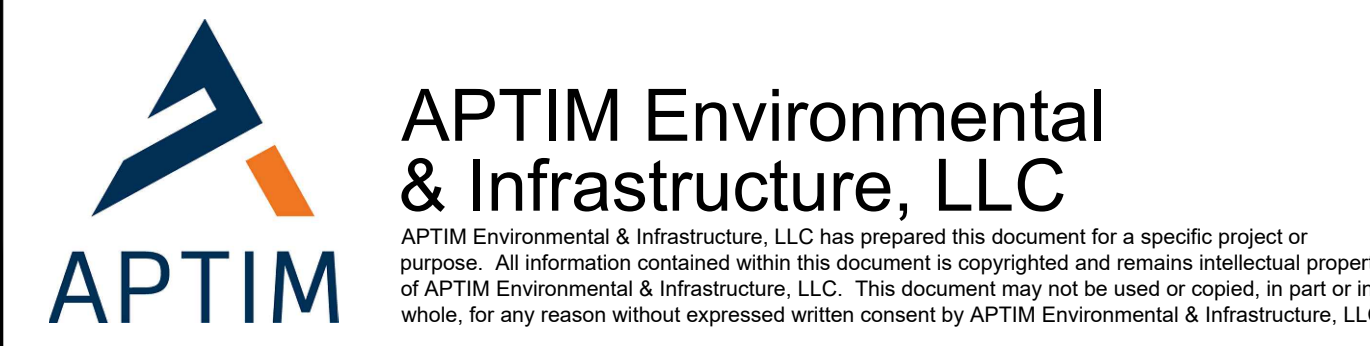
LEGEND



TRUE SCALE CROSS SECTION

- NOTES**
1. THE PROPOSED LANDFILL EXPANSION FINAL COVER SIDE SLOPES SHALL BE APPROXIMATELY 4H:1V, WITH THE EXCEPTION OF STORMWATER CONTROL FEATURES WITHIN THE WASTE BOUNDARY (NOT SHOWN). THE EXISTING LANDFILL HAS FINAL COVER SLOPES OF APPROXIMATELY 4H:1V.
 2. FOR CLARITY IN DEPICTING THE FEATURES OF THE LANDFILL THE VERTICAL SCALE HAS BEEN EXAGGERATED BY A FACTOR OF 20 ON THE TOP CROSS SECTION SHOWN.
 3. FOR CLARITY NOT ALL OF THE COMPONENTS OF THE LANDFILL ARE SHOWN.

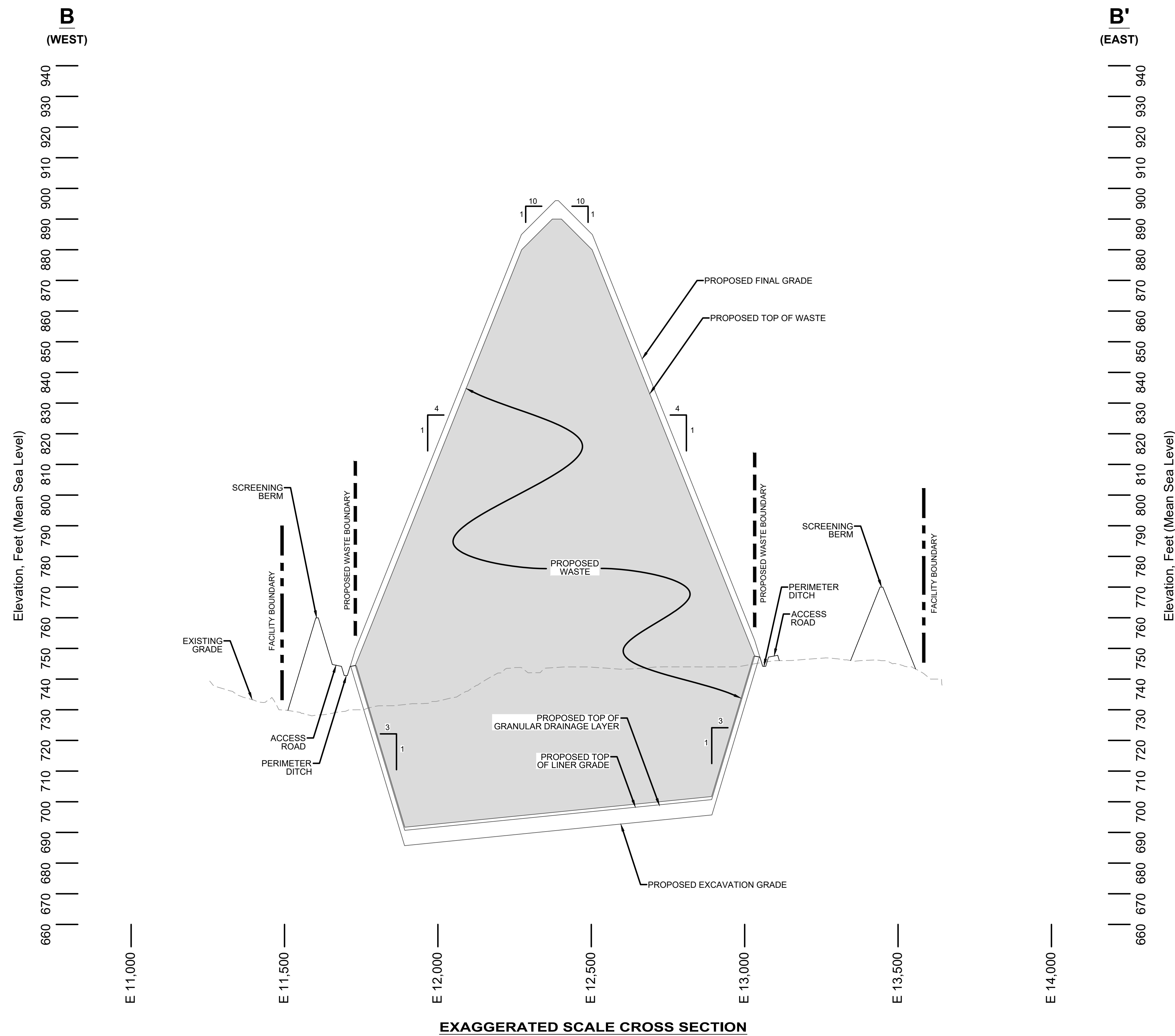
REV. NO.	DATE	DESCRIPTION



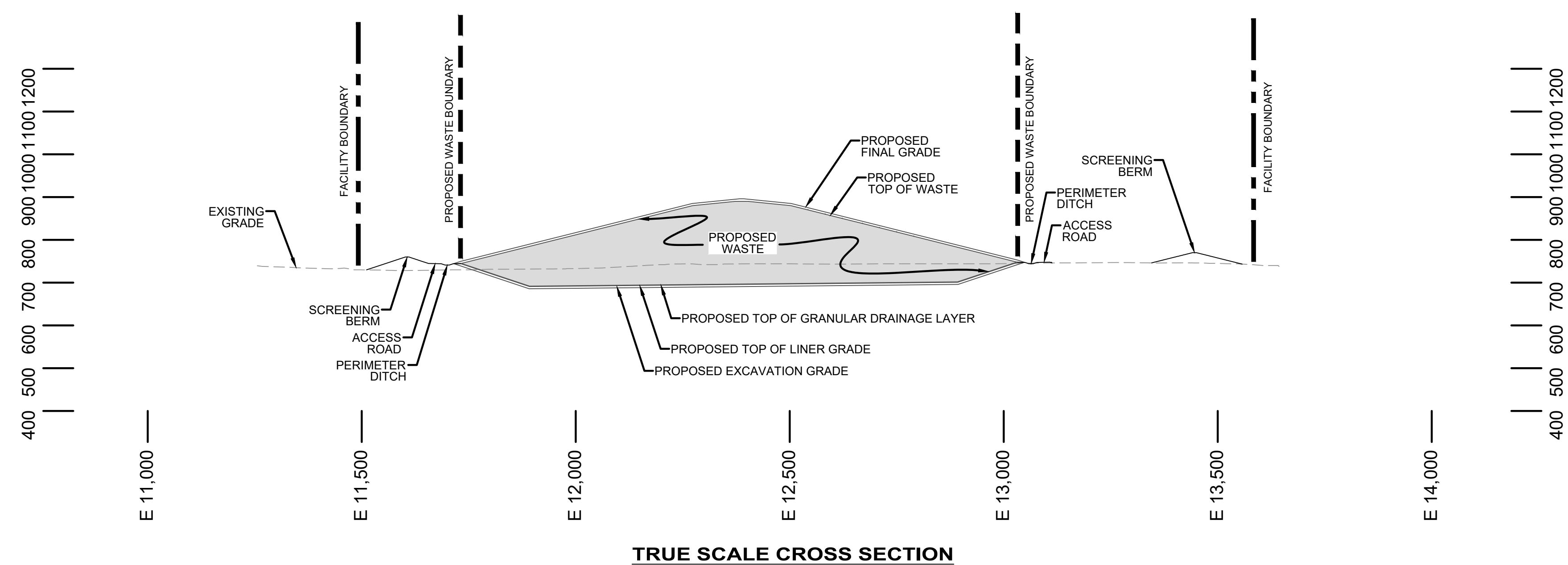
**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

CROSS SECTION A-A'

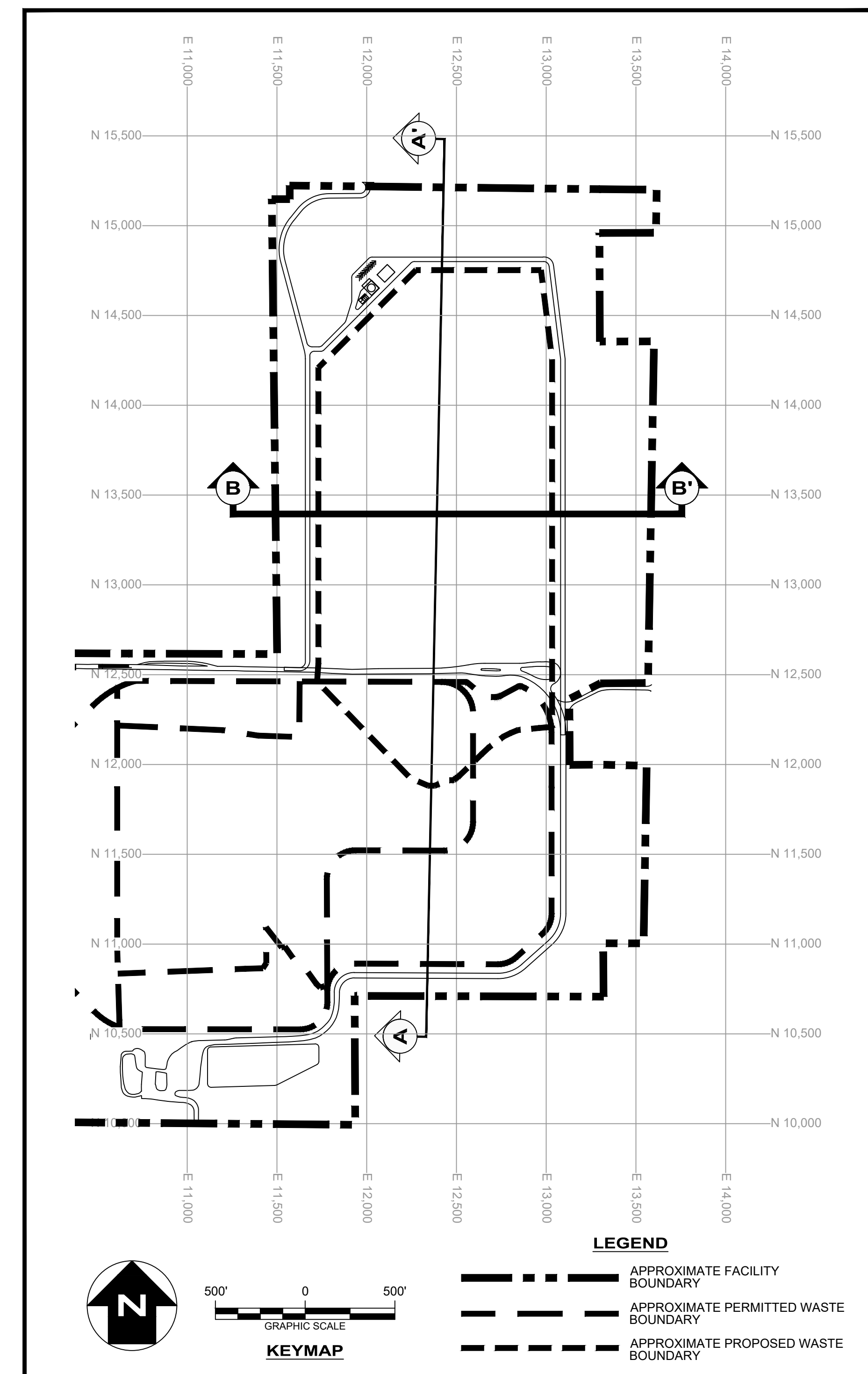
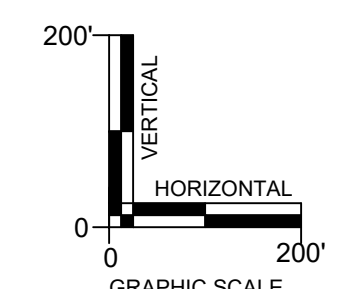
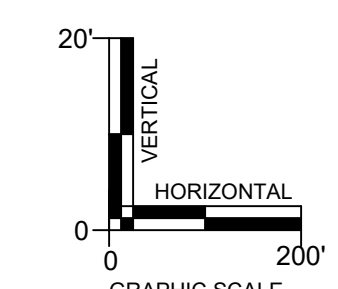
PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM	DRAWING NO.
DRAWN BY: BWM/NV/KM	D28
CHECKED BY: DAM	28 OF 37 SHEETS
APPROVED BY: DAM	



EXAGGERATED SCALE CROSS SECTION



TRUE SCALE CROSS SECTION



LEGEND
 - - - - - APPROXIMATE FACILITY BOUNDARY
 - - - - - APPROXIMATE PERMITTED WASTE BOUNDARY
 - - - - - APPROXIMATE PROPOSED WASTE BOUNDARY

- NOTES**
1. THE PROPOSED LANDFILL EXPANSION FINAL COVER SIDE SLOPES SHALL BE APPROXIMATELY 4H:1V, WITH THE EXCEPTION OF STORMWATER CONTROL FEATURES WITHIN THE WASTE BOUNDARY (NOT SHOWN). THE EXISTING LANDFILL HAS FINAL COVER SLOPES OF APPROXIMATELY 4H:1V.
 2. FOR CLARITY IN DEPICTING THE FEATURES OF THE LANDFILL THE VERTICAL SCALE HAS BEEN EXAGGERATED BY A FACTOR OF 20 ON THE TOP CROSS SECTION SHOWN.
 3. FOR CLARITY NOT ALL OF THE COMPONENTS OF THE LANDFILL ARE SHOWN.

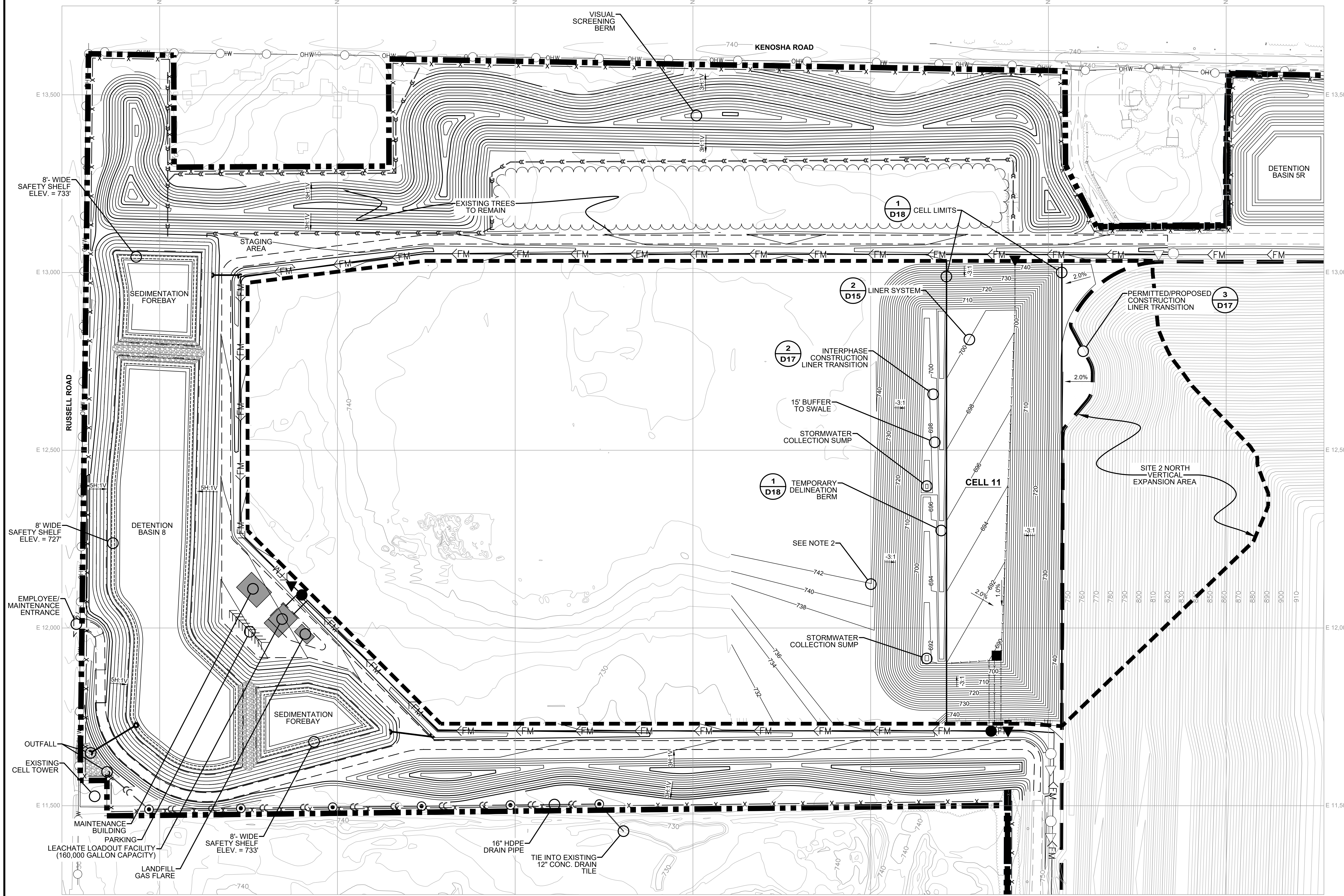
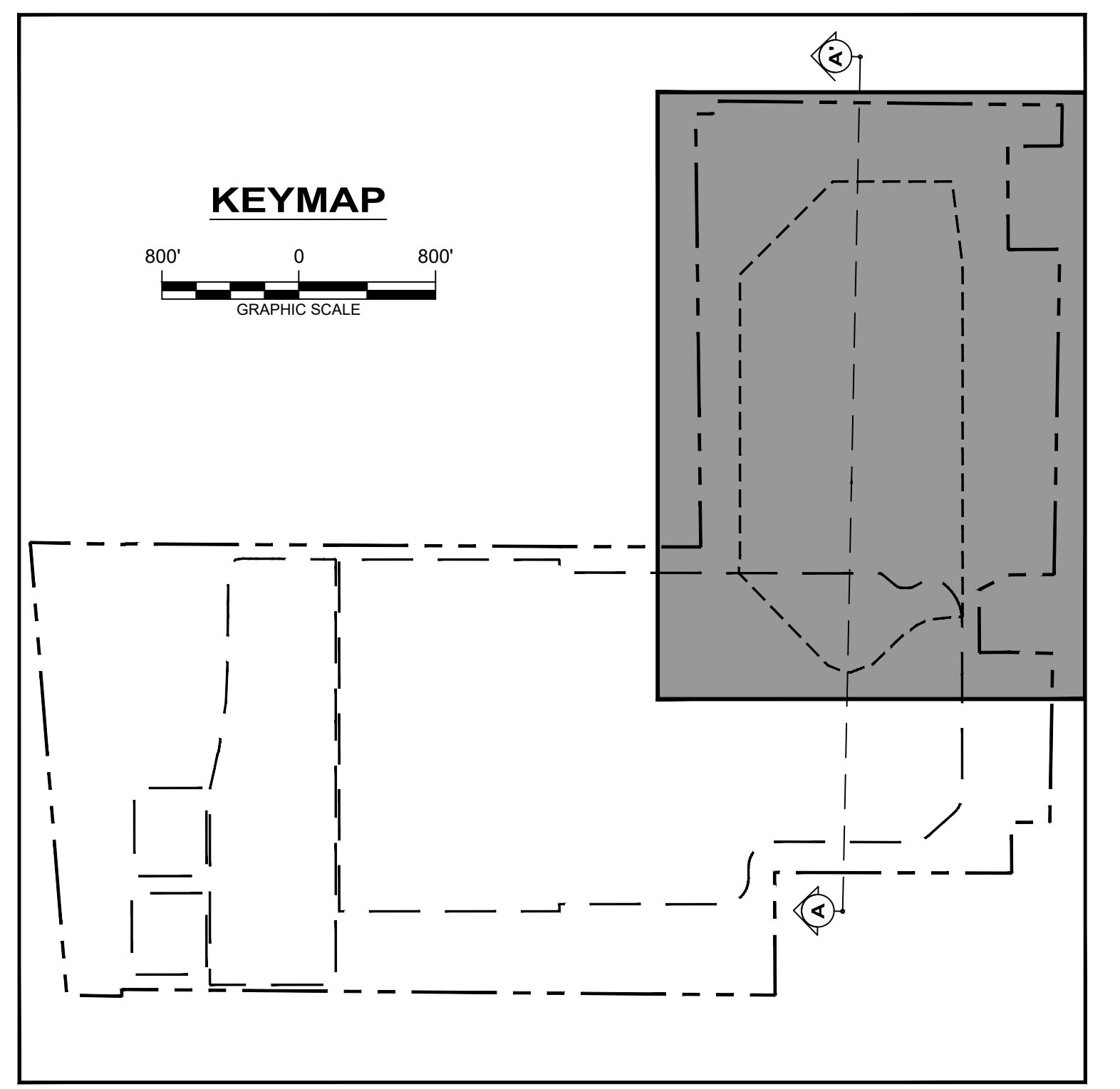
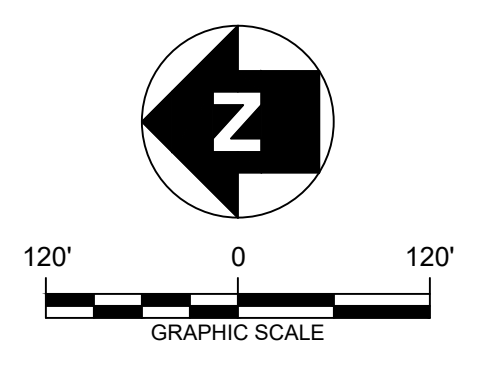
REV. NO.	DATE	DESCRIPTION



**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

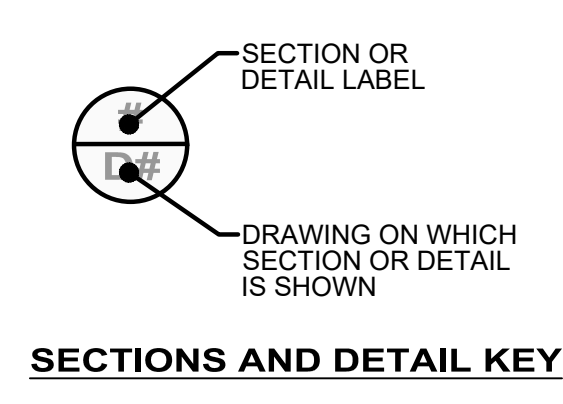
CROSS SECTION B-B'

PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM	DRAWING NO.
DRAWN BY: BWM/NV/KM	D29
CHECKED BY: DAM	29 OF 37 SHEETS
APPROVED BY: DAM	

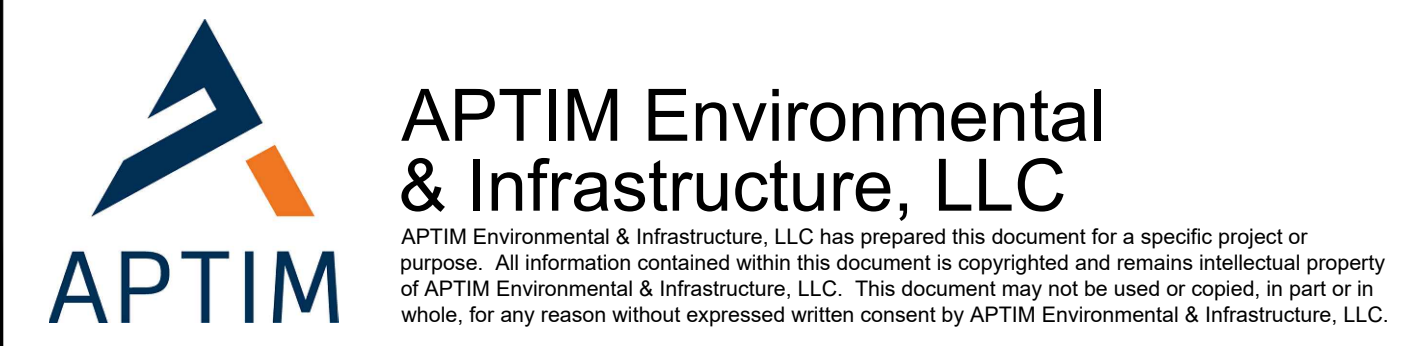


- LEGEND**
- APPROXIMATE FACILITY BOUNDARY
 - APPROXIMATE EXISTING WASTE BOUNDARY
 - APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
 - EXISTING CONTOUR
 - EXISTING ROAD
 - EXISTING VEGETATION
 - EXISTING FENCE
 - EXISTING CULVERT
 - EXISTING GROUND SURFACE ELEVATION CONTOUR (FEET-MSL)
 - PROPOSED ROAD
 - PROPOSED CULVERT
 - EXISTING FORCEMAIN
 - EXISTING LEACHATE COLLECTION PIPE
 - EXISTING LEACHATE CLEANOUT LOCATION
 - EXISTING LEACHATE VAULT LOCATION
 - EXISTING LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED FORCEMAIN
 - PROPOSED LEACHATE COLLECTION PIPE
 - PROPOSED LEACHATE CLEANOUT LOCATION
 - PROPOSED LEACHATE VAULT/MANHOLE LOCATION
 - PROPOSED LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED DRAIN TILE
 - STORMWATER MANHOLE
 - STORMWATER HEADWALL

- NOTES**
1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
 2. THE EXISTING STOCKPILE AND ASSOCIATED BASIN WITHIN THE HORIZONTAL EXPANSION AREA WILL BE REMOVED BEFORE CELL CONSTRUCTION COMMENCES. SURVEYED EXISTING GRADES ARE MODIFIED IN THIS PHASING PLAN TO APPROXIMATE ANTICIPATED SITE TOPOGRAPHY FOLLOWING REMOVAL OF THE STOCKPILE.
 3. CURRENT TOPOGRAPHY MAY DIFFER FROM THAT SHOWN.
 4. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
 5. CELL DEVELOPMENT WILL PROCEED IN NUMERICAL ORDER. VERTICAL EXPANSION WILL PROGRESS CONCURRENT WITH CELL 11 DEVELOPMENT.
 6. THE TEMPORARY STORMWATER COLLECTION SUMP AND ASSOCIATED DITCH SHOWN ALONG THE NORTHERN EDGE OF THE NEWLY CONSTRUCTED CELL REPRESENTS A TYPICAL INTERIM STORMWATER MANAGEMENT SYSTEM DURING CELL CONSTRUCTION. ACTUAL INTERIM STORMWATER MANAGEMENT STRUCTURES MAY DIFFER FROM WHAT IS SHOWN BASED ON OPERATIONAL NEEDS.
 7. THE TEMPORARY TERRACE BENCH AND DRAINAGE DITCH SHOWN ALONG THE OPERATIONAL SLOPE OF THE LANDFILL REPRESENTS A TYPICAL INTERIM STORMWATER MANAGEMENT FEATURE. TEMPORARY TERRACE BENCHES MAY BE USED TO COLLECT STORMWATER FROM AREAS OF THE OPERATIONAL SLOPE WHERE INTERMEDIATE COVER HAS BEEN APPLIED. INTERIM STORMWATER MANAGEMENT STRUCTURES MAY DIFFER FROM WHAT IS SHOWN BASED ON OPERATIONAL NEEDS.
 8. INTERIM STORMWATER MANAGEMENT STRUCTURES MAY BE MODIFIED TO ACCOMMODATE CONSTRUCTION ACTIVITIES AS THEY PROGRESS, AND SHOULD BE APPROPRIATELY SIZED TO MANAGE STORMWATER RUNOFF DURING CONSTRUCTION.
 9. THE ANTICIPATED CONSTRUCTION PHASING DEPICTED IN THIS DRAWING IS SUBJECT TO CHANGE BASED ON OPERATIONAL NEEDS.



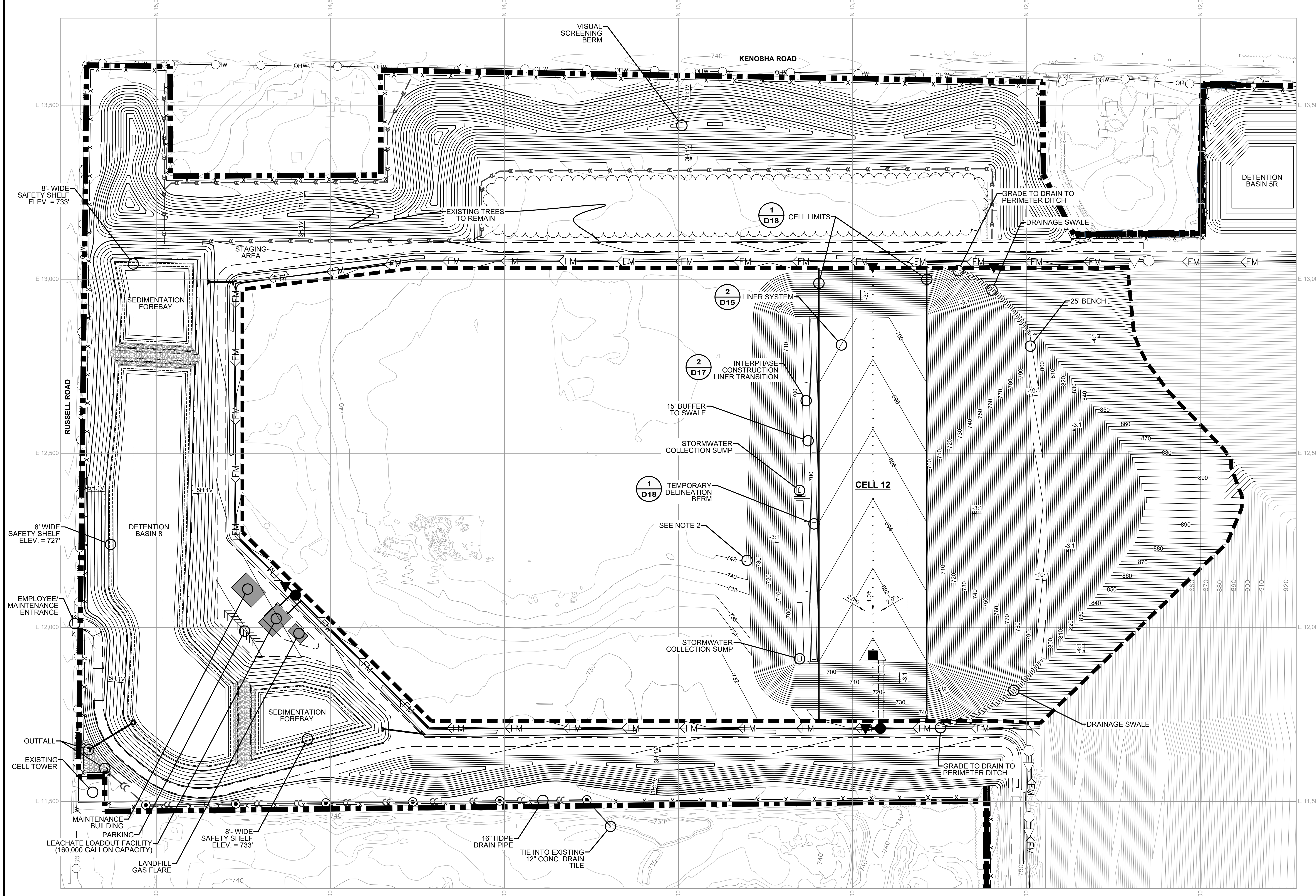
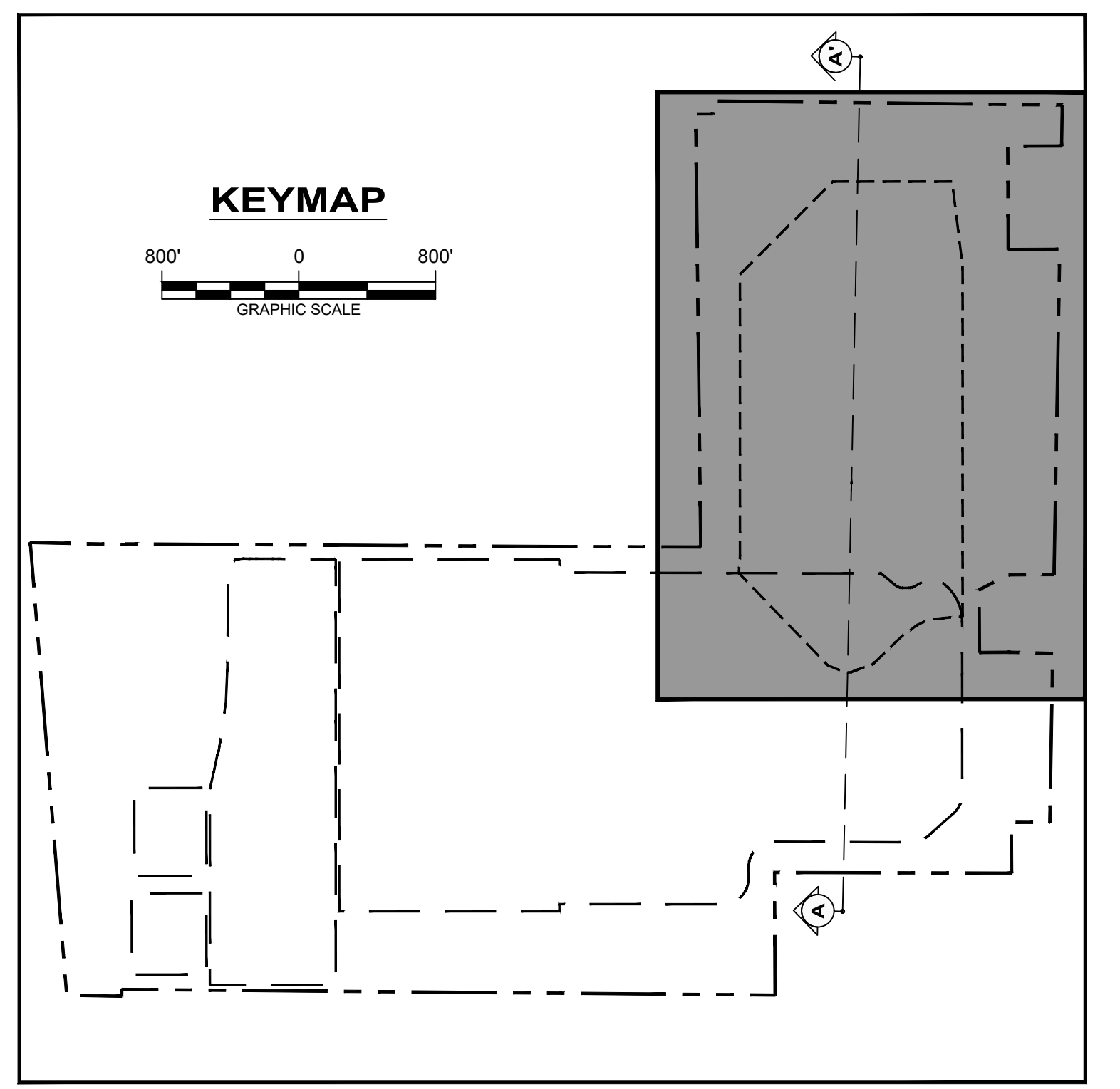
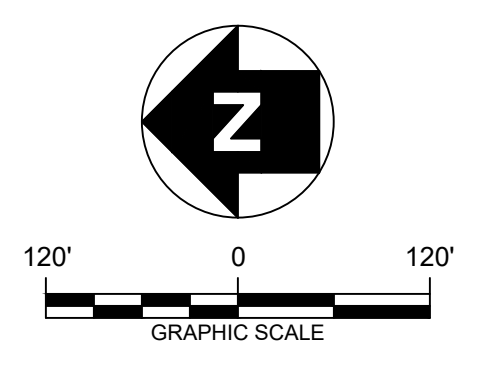
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

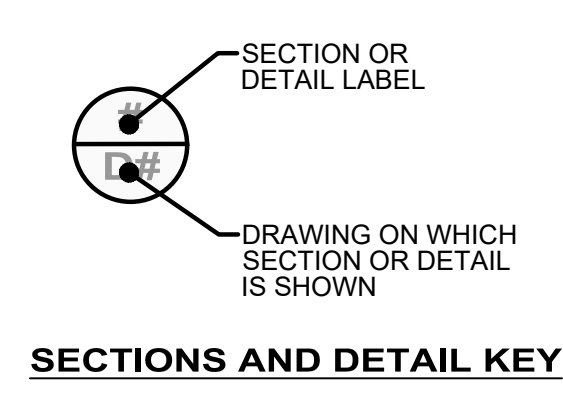
LANDFILL PHASING PLAN
PHASE A

PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM/KM	DRAWING NO. D30
DRAWN BY: BWM/NV/KM	
CHECKED BY: DAM	
APPROVED BY: DAM	30 OF 37 SHEETS

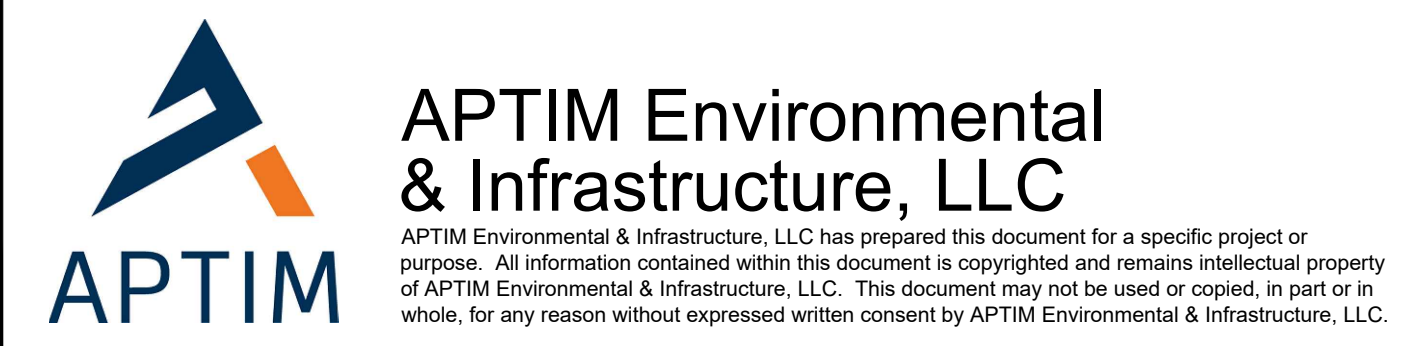


- LEGEND**
- APPROXIMATE FACILITY BOUNDARY
 - APPROXIMATE EXISTING WASTE BOUNDARY
 - APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
 - EXISTING CONTOUR
 - EXISTING ROAD
 - EXISTING VEGETATION
 - EXISTING FENCE
 - EXISTING CULVERT
 - EXISTING GROUND SURFACE ELEVATION CONTOUR (FEET-MSL)
 - PROPOSED ROAD
 - PROPOSED CULVERT
 - EXISTING FORCEMAIN
 - EXISTING LEACHATE COLLECTION PIPE
 - EXISTING LEACHATE CLEANOUT LOCATION
 - EXISTING LEACHATE VAULT LOCATION
 - EXISTING LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED FORCEMAIN
 - PROPOSED LEACHATE COLLECTION PIPE
 - PROPOSED LEACHATE CLEANOUT LOCATION
 - PROPOSED LEACHATE VAULT/MANHOLE LOCATION
 - PROPOSED LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED DRAIN TILE
 - STORMWATER MANHOLE
 - STORMWATER HEADWALL

- NOTES**
1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY CQM, INC. ON 10/22/2018 EXCEPT STORMWATER MANAGEMENT FEATURES ASSOCIATED WITH SITE 2 EAST (DITCHES AND BASIN 5R). STORMWATER DESIGN GRADES ARE SHOWN FOR THESE FEATURES FOR COMPLETENESS, AS NOT ALL GRADES ARE CAPTURED BY THE TOPOGRAPHIC SURVEY.
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 9. THE ANTICIPATED CONSTRUCTION PHASING DEPICTED IN THIS DRAWING IS SUBJECT TO CHANGE BASED ON OPERATIONAL NEEDS.



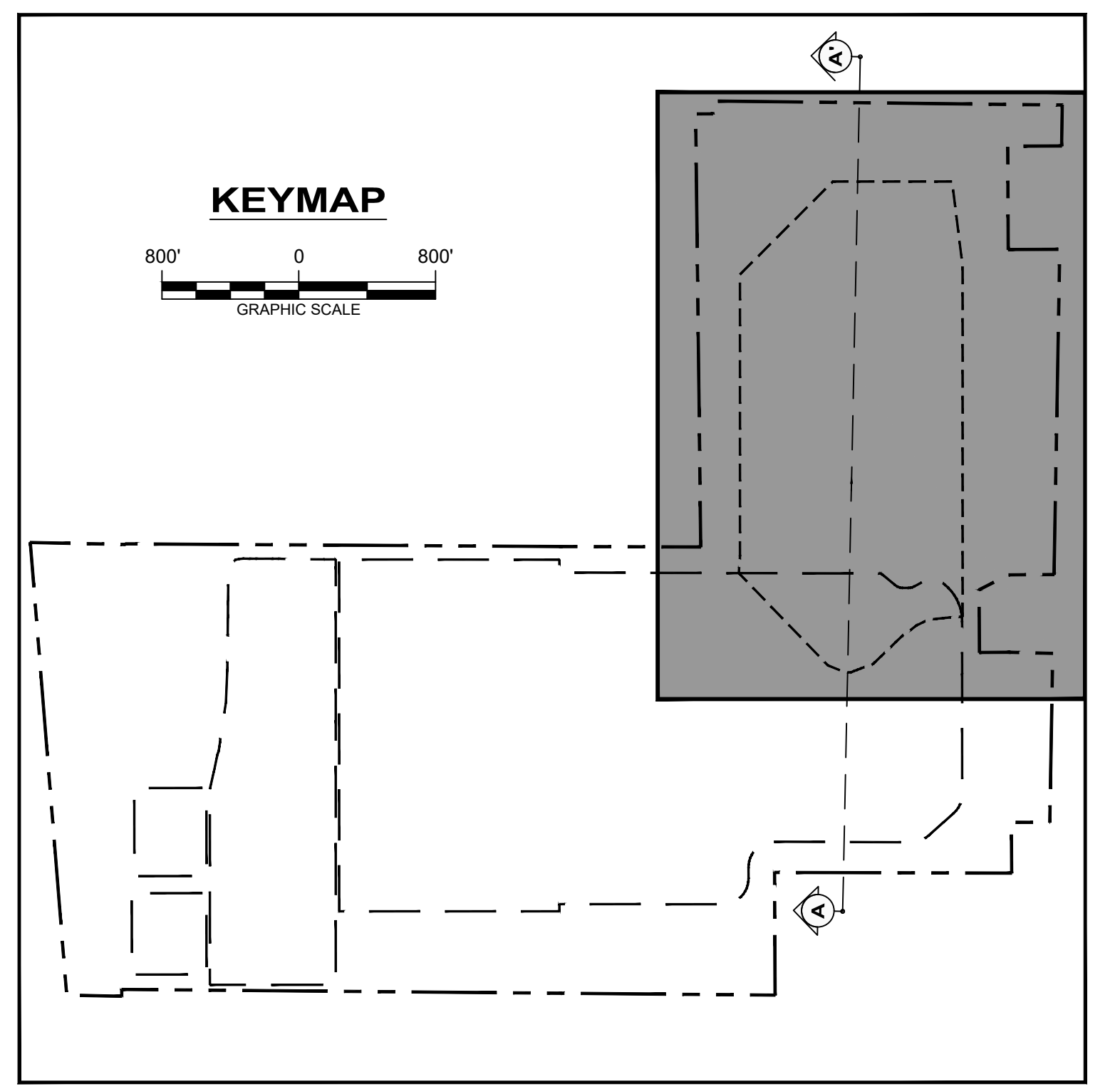
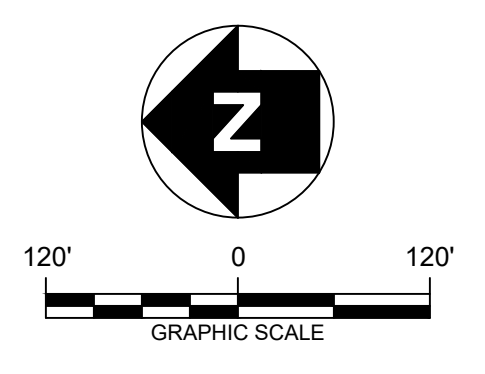
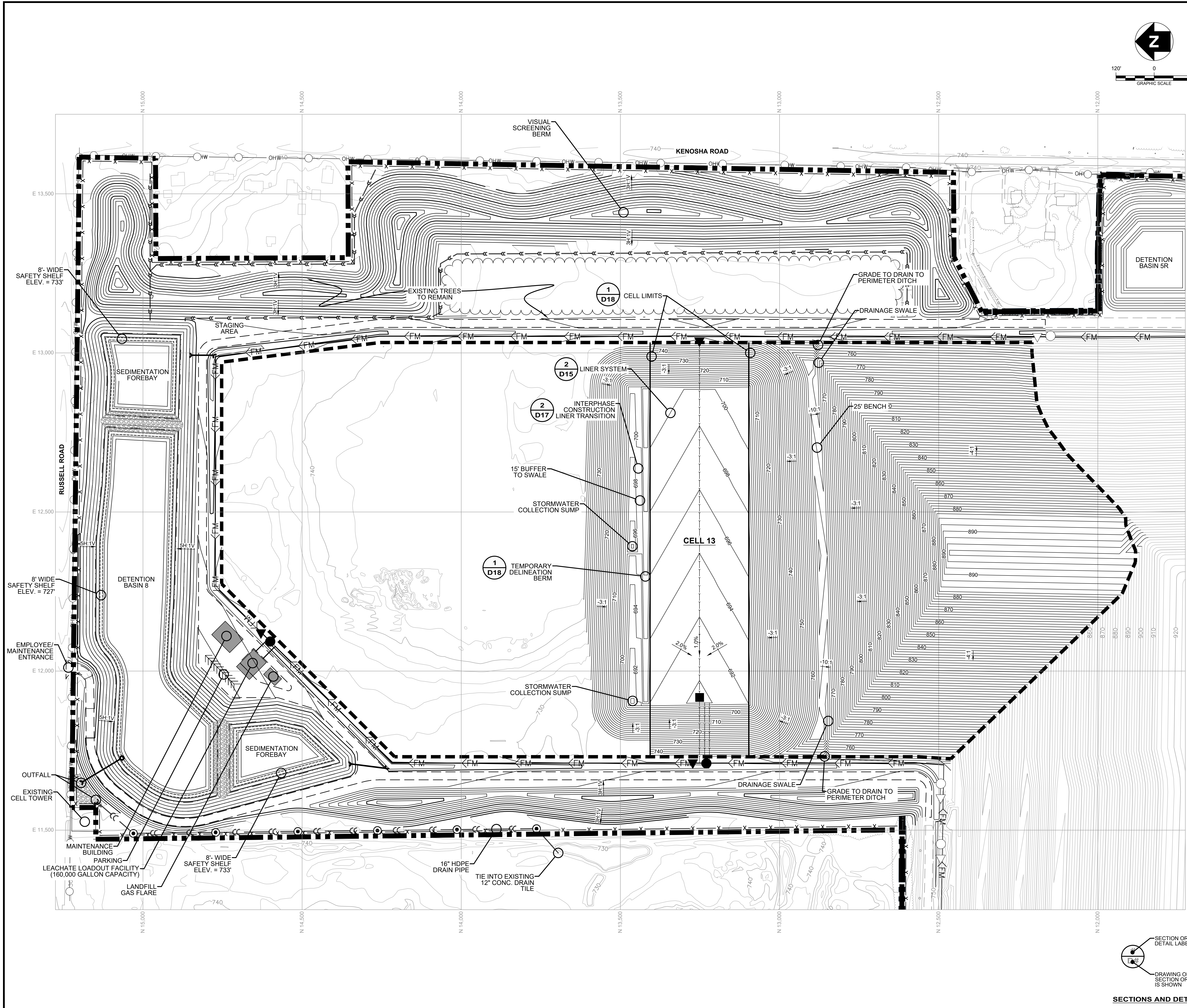
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

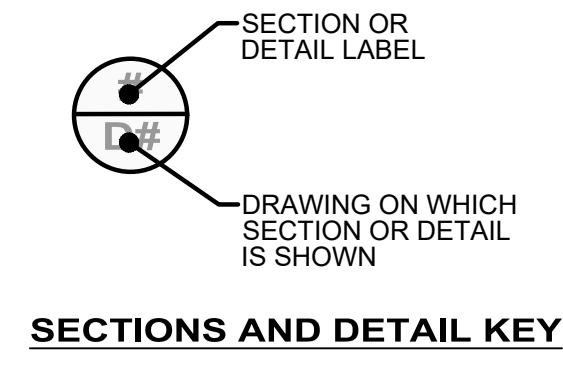
LANDFILL PHASING PLAN
PHASE B

PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM/KM	DRAWING NO. D31
DRAWN BY: BWM/NV/KM	
CHECKED BY: DAM	
APPROVED BY: DAM	31 OF 37 SHEETS

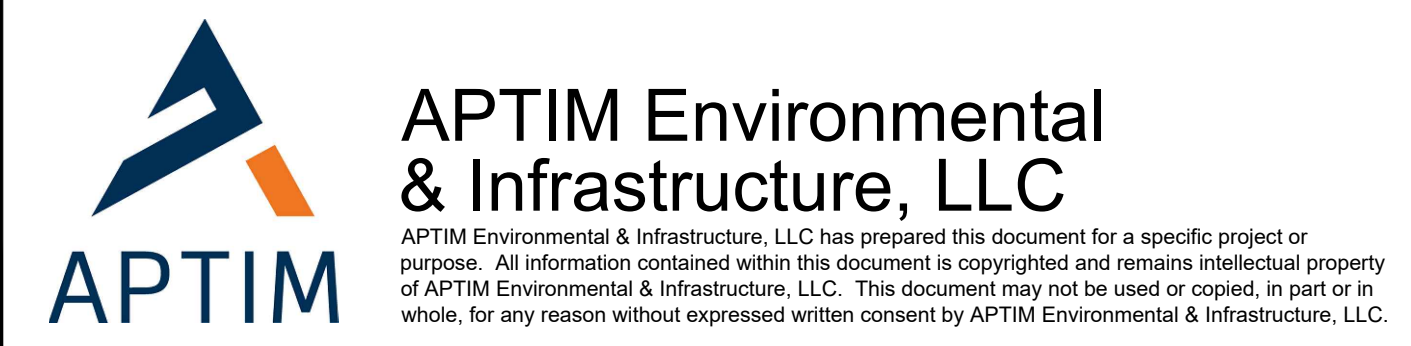


- LEGEND**
- APPROXIMATE FACILITY BOUNDARY
 - APPROXIMATE EXISTING WASTE BOUNDARY
 - APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
 - EXISTING CONTOUR
 - EXISTING ROAD
 - EXISTING VEGETATION
 - EXISTING FENCE
 - EXISTING CULVERT
 - PROPOSED GROUND SURFACE ELEVATION CONTOUR (FEET-MSL)
 - PROPOSED ROAD
 - PROPOSED CULVERT
 - EXISTING FORCEMAIN
 - EXISTING LEACHATE COLLECTION PIPE
 - EXISTING LEACHATE CLEANOUT LOCATION
 - EXISTING LEACHATE VAULT LOCATION
 - EXISTING LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED FORCEMAIN
 - PROPOSED LEACHATE COLLECTION PIPE
 - PROPOSED LEACHATE CLEANOUT LOCATION
 - PROPOSED LEACHATE VAULT/MANHOLE LOCATION
 - PROPOSED LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED DRAIN TILE
 - STORMWATER MANHOLE
 - STORMWATER HEADWALL

- NOTES**
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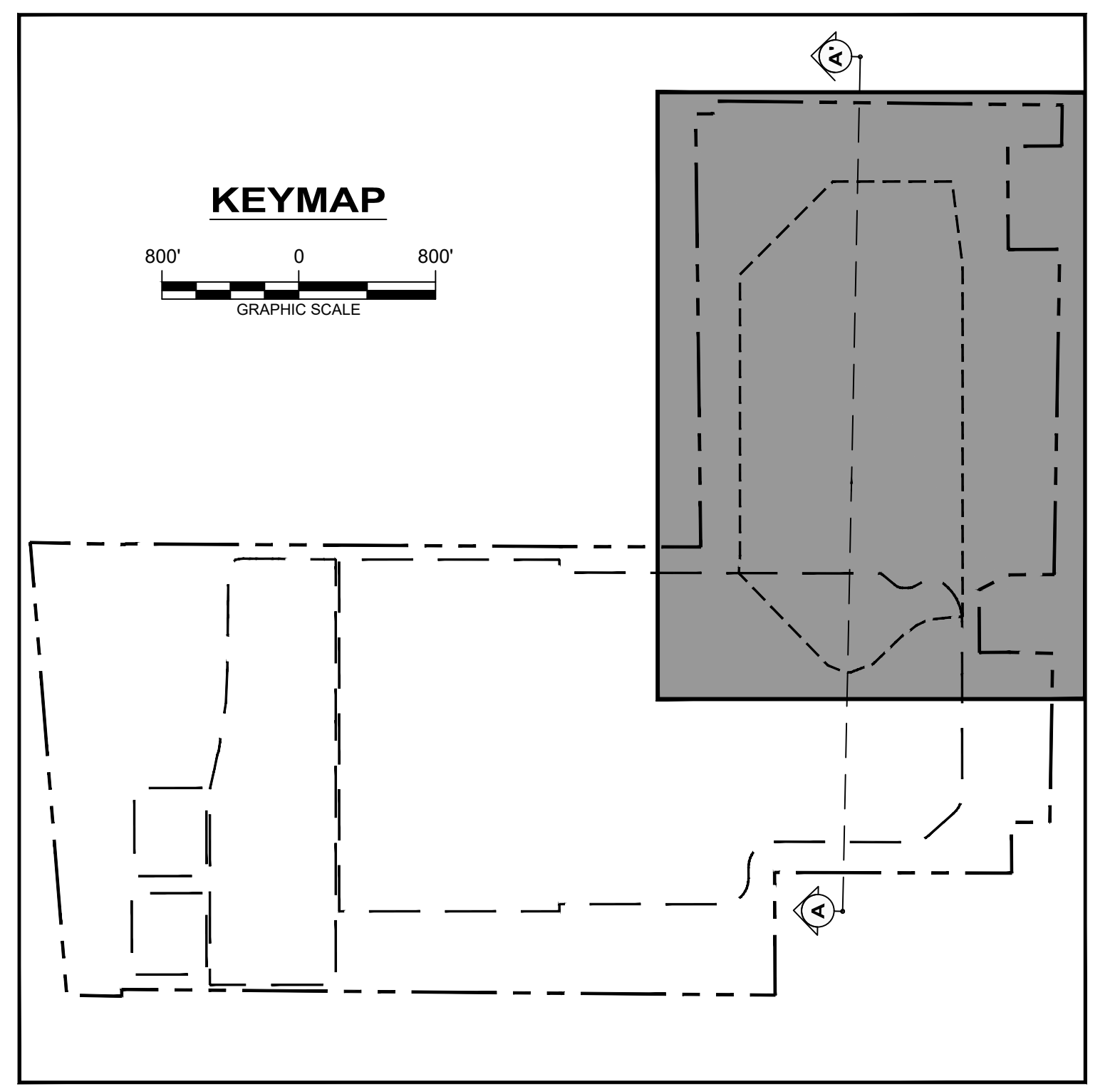
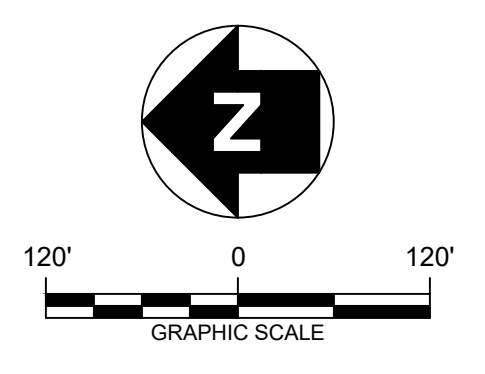
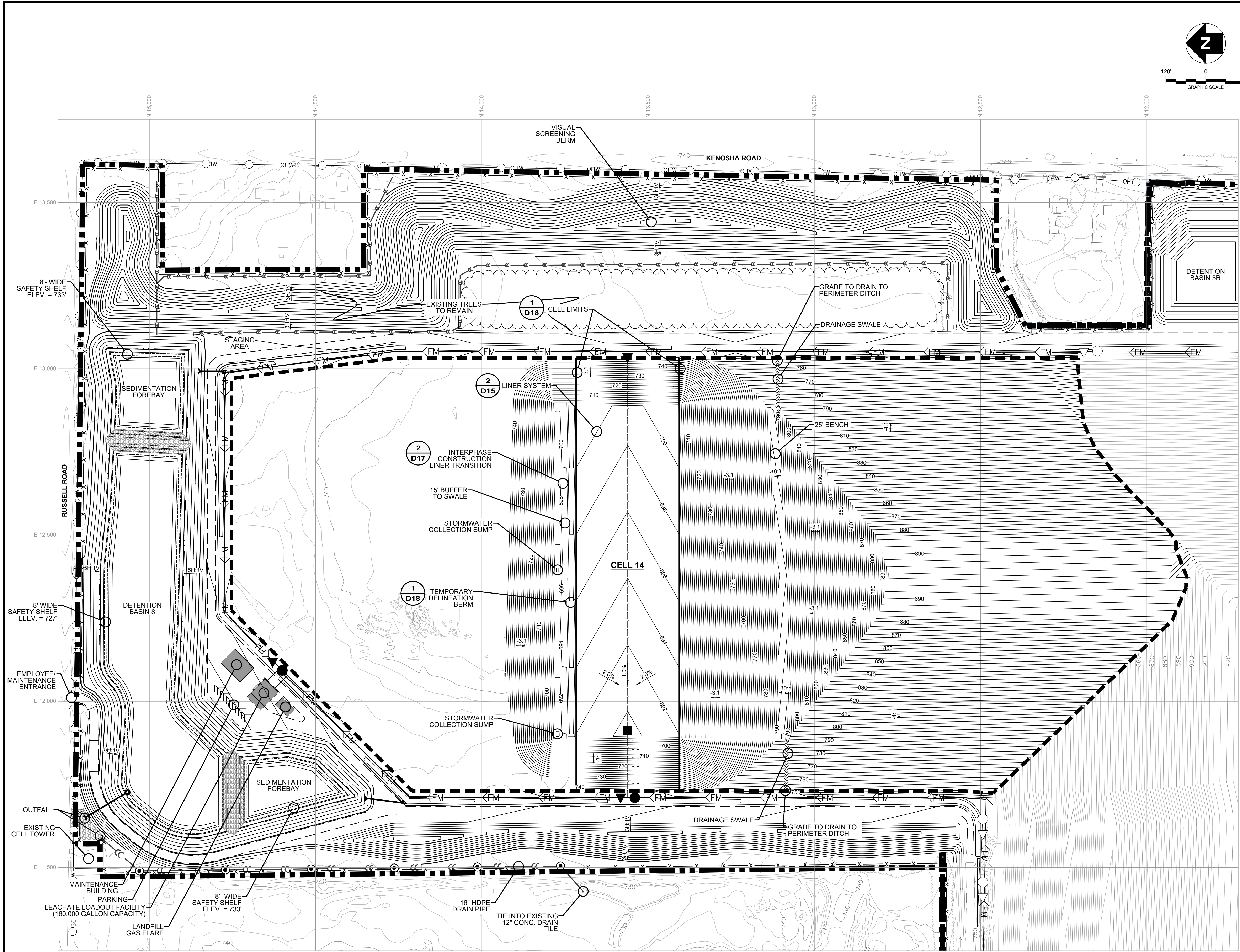
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

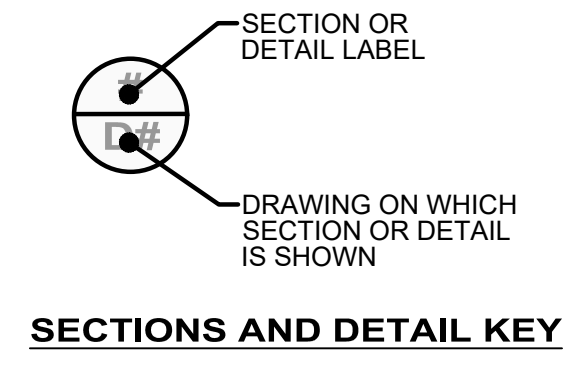
LANDFILL PHASING PLAN
PHASE C

PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM/KM	DRAWING NO.
DRAWN BY: BWM/NV/KM	D32
CHECKED BY: DAM	32 OF 37 SHEETS
APPROVED BY: DAM	

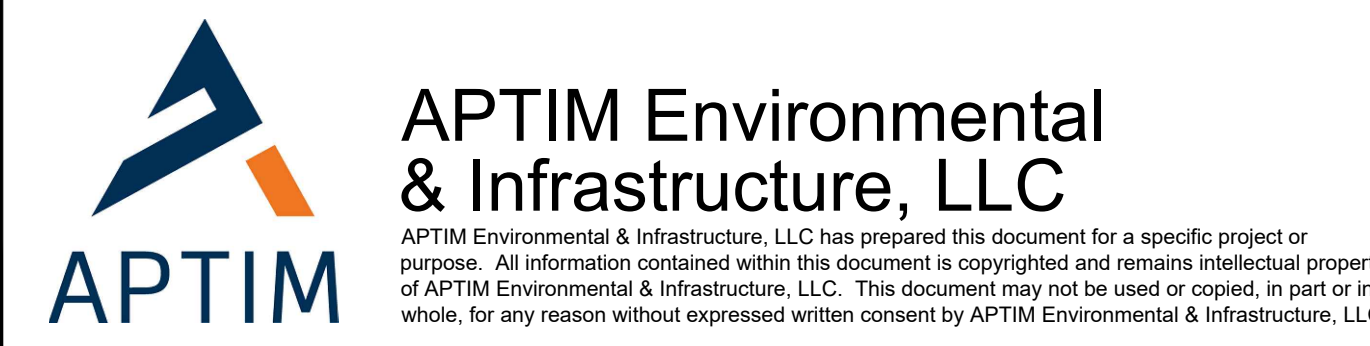


- LEGEND**
- APPROXIMATE FACILITY BOUNDARY
 - APPROXIMATE EXISTING WASTE BOUNDARY
 - APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
 - EXISTING CONTOUR
 - EXISTING ROAD
 - EXISTING VEGETATION
 - EXISTING FENCE
 - EXISTING CULVERT
 - PROPOSED GROUND SURFACE ELEVATION CONTOUR (FEET-MSL)
 - PROPOSED ROAD
 - PROPOSED CULVERT
 - EXISTING FORCEMAIN
 - EXISTING LEACHATE COLLECTION PIPE
 - EXISTING LEACHATE CLEANOUT LOCATION
 - EXISTING LEACHATE VAULT LOCATION
 - EXISTING LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED FORCEMAIN
 - PROPOSED LEACHATE COLLECTION PIPE
 - PROPOSED LEACHATE CLEANOUT LOCATION
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 - STORMWATER MANHOLE
 - STORMWATER HEADWALL

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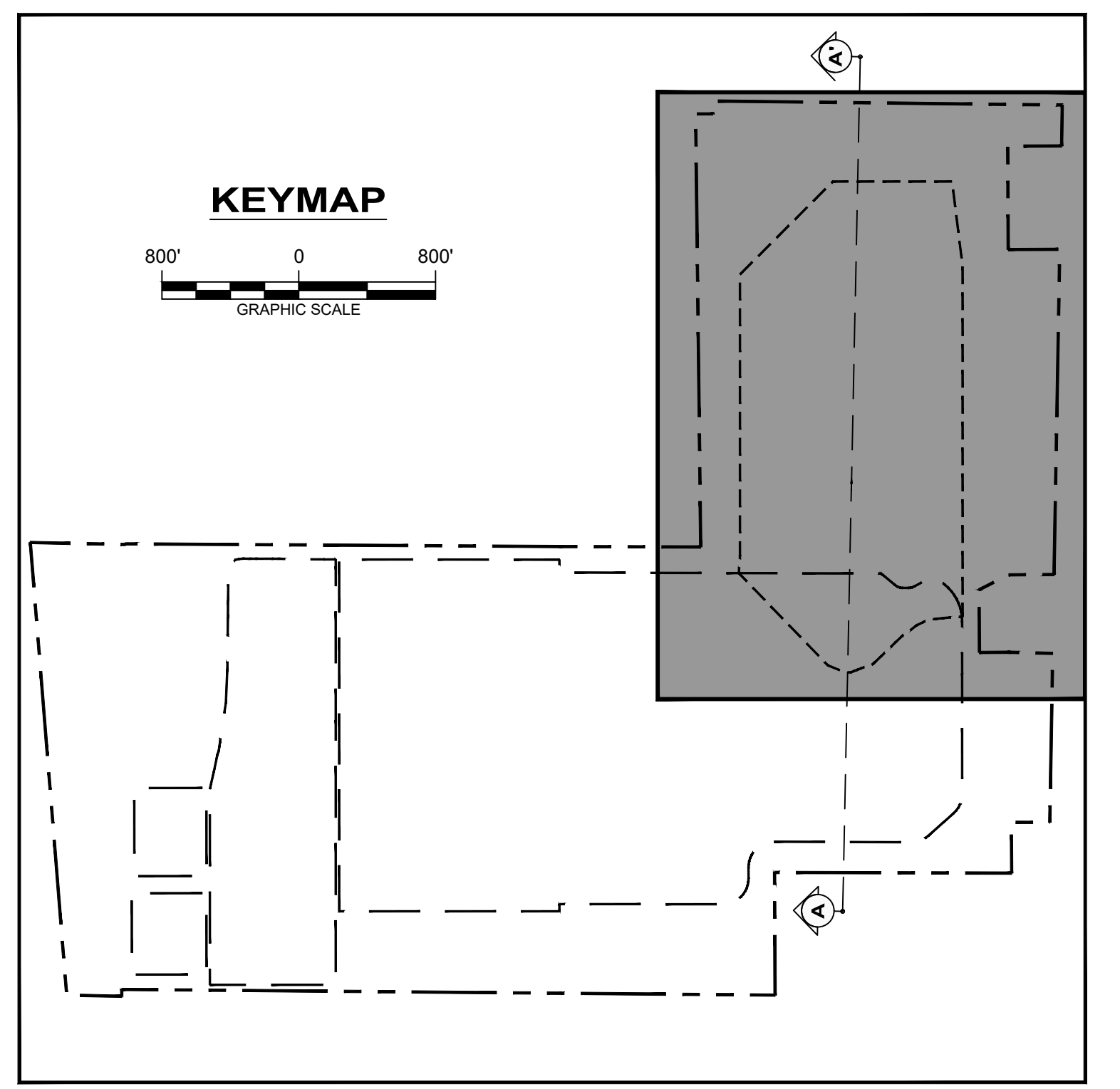
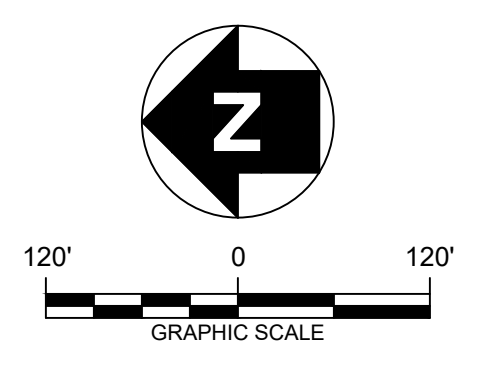
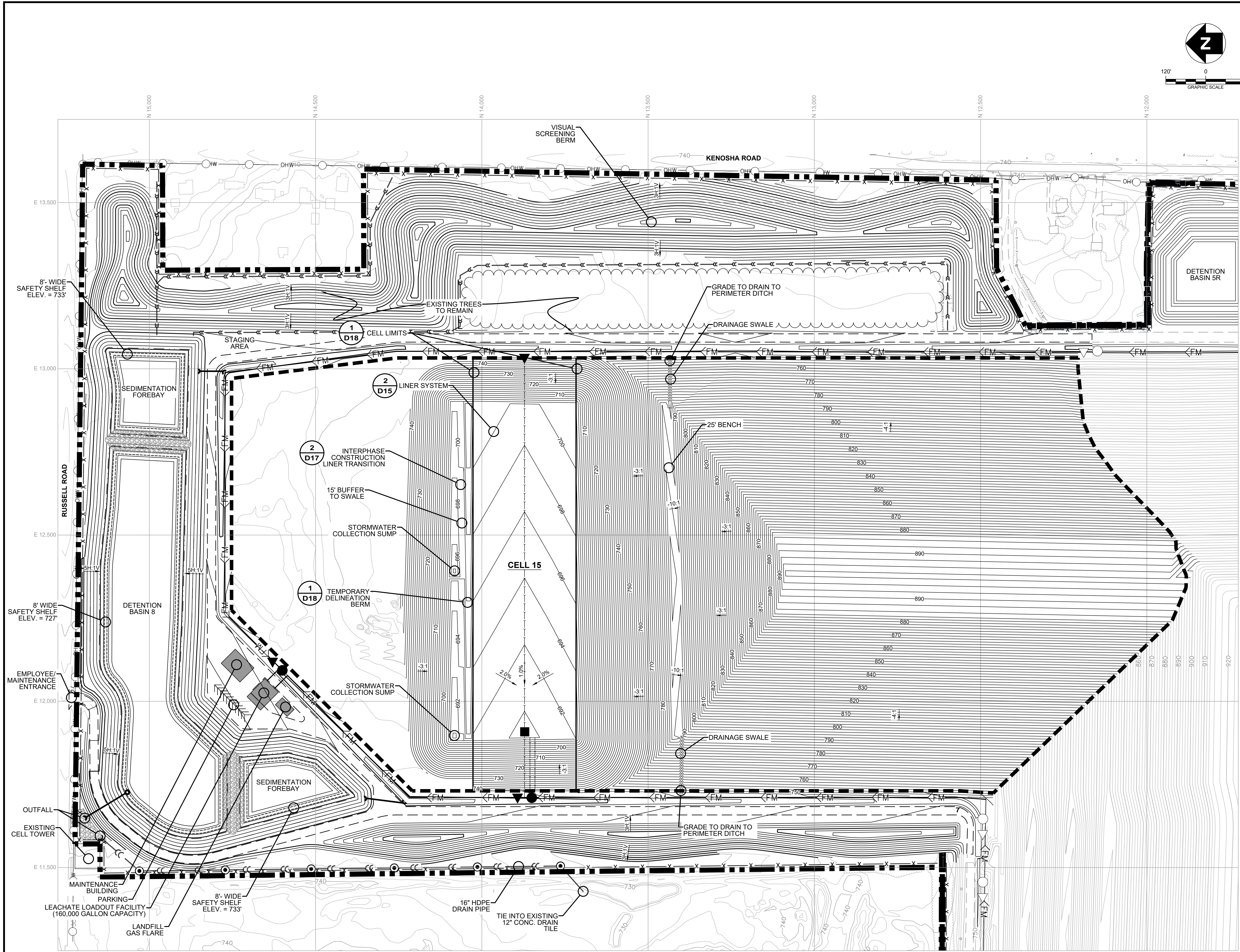
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

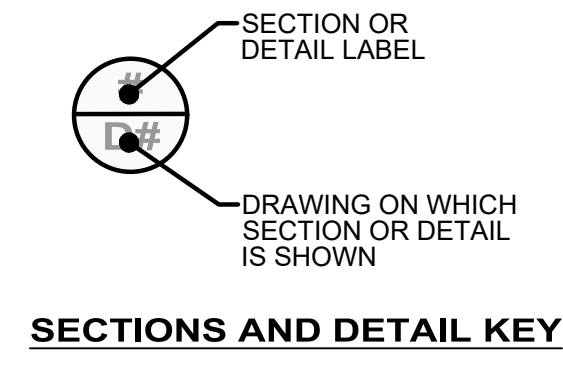
LANDFILL PHASING PLAN
PHASE D

PROJ. NO.:	631020105	DATE:	MAY 2022	
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D33	
DRAWN BY:	BWM/NV/KM	CHECKED BY:		DAM
APPROVED BY:	DAM			33 OF 37 SHEETS

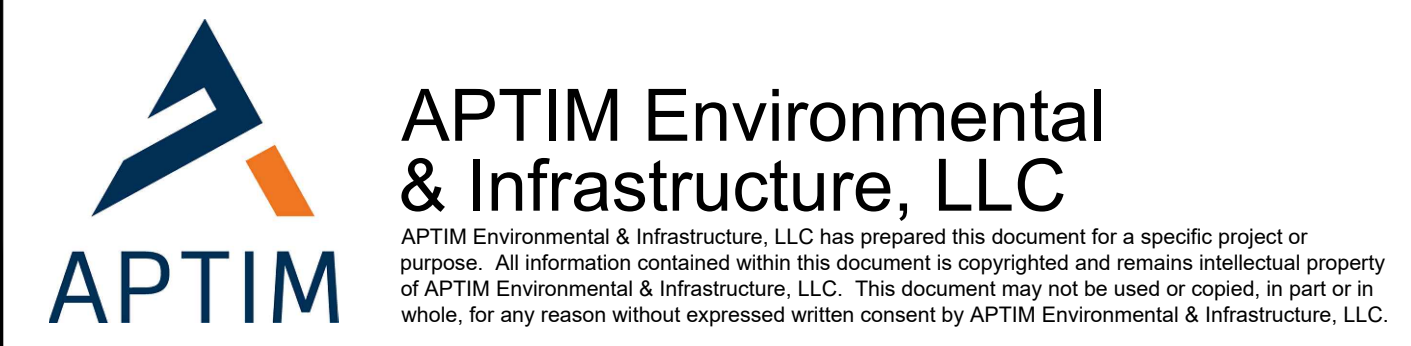


- LEGEND**
- APPROXIMATE FACILITY BOUNDARY
 - APPROXIMATE EXISTING WASTE BOUNDARY
 - APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
 - EXISTING CONTOUR
 - EXISTING ROAD
 - EXISTING VEGETATION
 - EXISTING FENCE
 - EXISTING CULVERT
 - PROPOSED GROUND SURFACE ELEVATION CONTOUR (FEET-MSL)
 - PROPOSED ROAD
 - PROPOSED CULVERT
 - EXISTING FORCEMAIN
 - EXISTING LEACHATE COLLECTION PIPE
 - EXISTING LEACHATE CLEANOUT LOCATION
 - EXISTING LEACHATE VAULT LOCATION
 - EXISTING LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED FORCEMAIN
 - PROPOSED LEACHATE COLLECTION PIPE
 - PROPOSED LEACHATE CLEANOUT LOCATION
 - PROPOSED LEACHATE VAULT/MANHOLE LOCATION
 - PROPOSED LEACHATE COLLECTION SUMP LOCATION
 - PROPOSED DRAIN TILE
 - STORMWATER MANHOLE
 - STORMWATER HEADWALL

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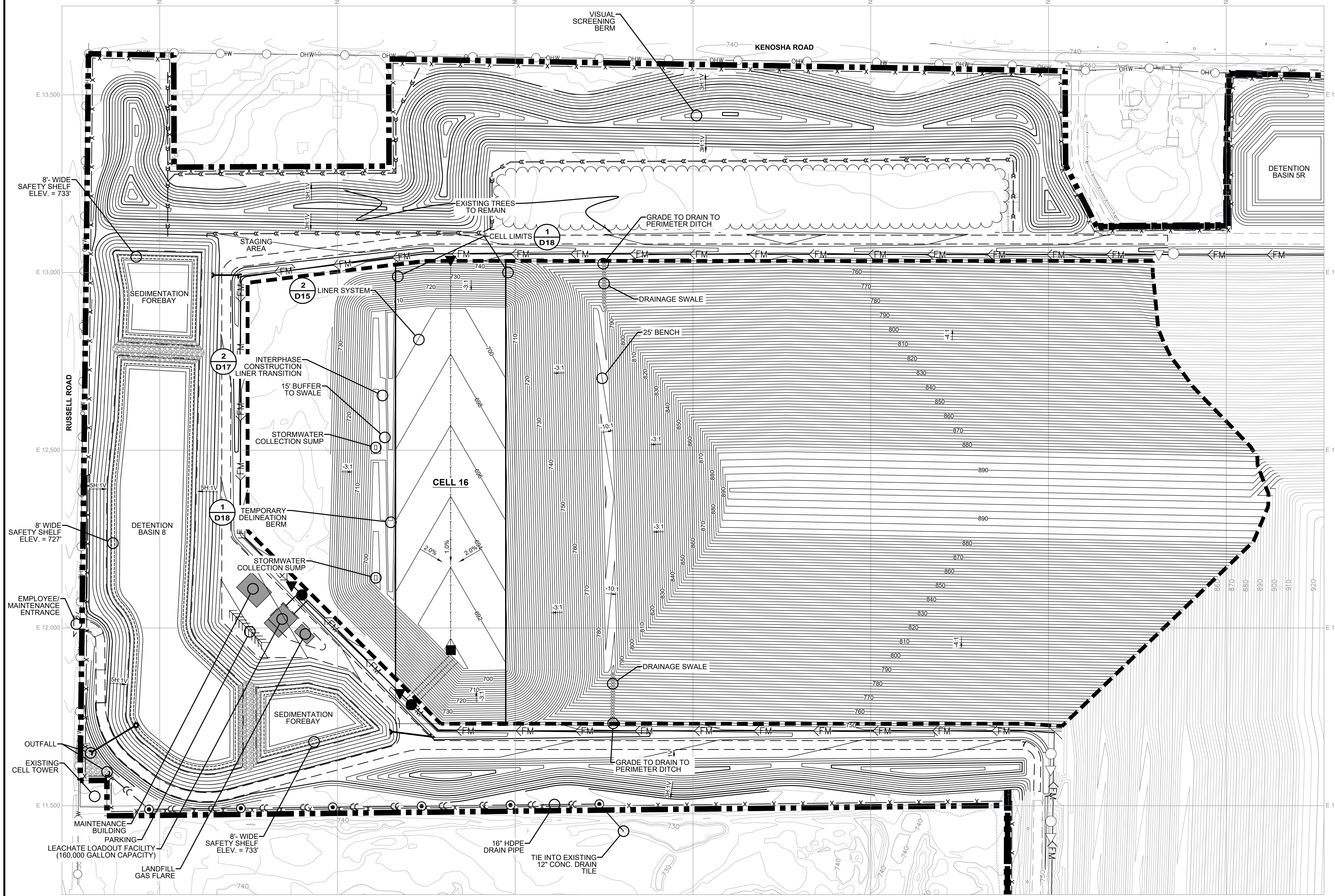
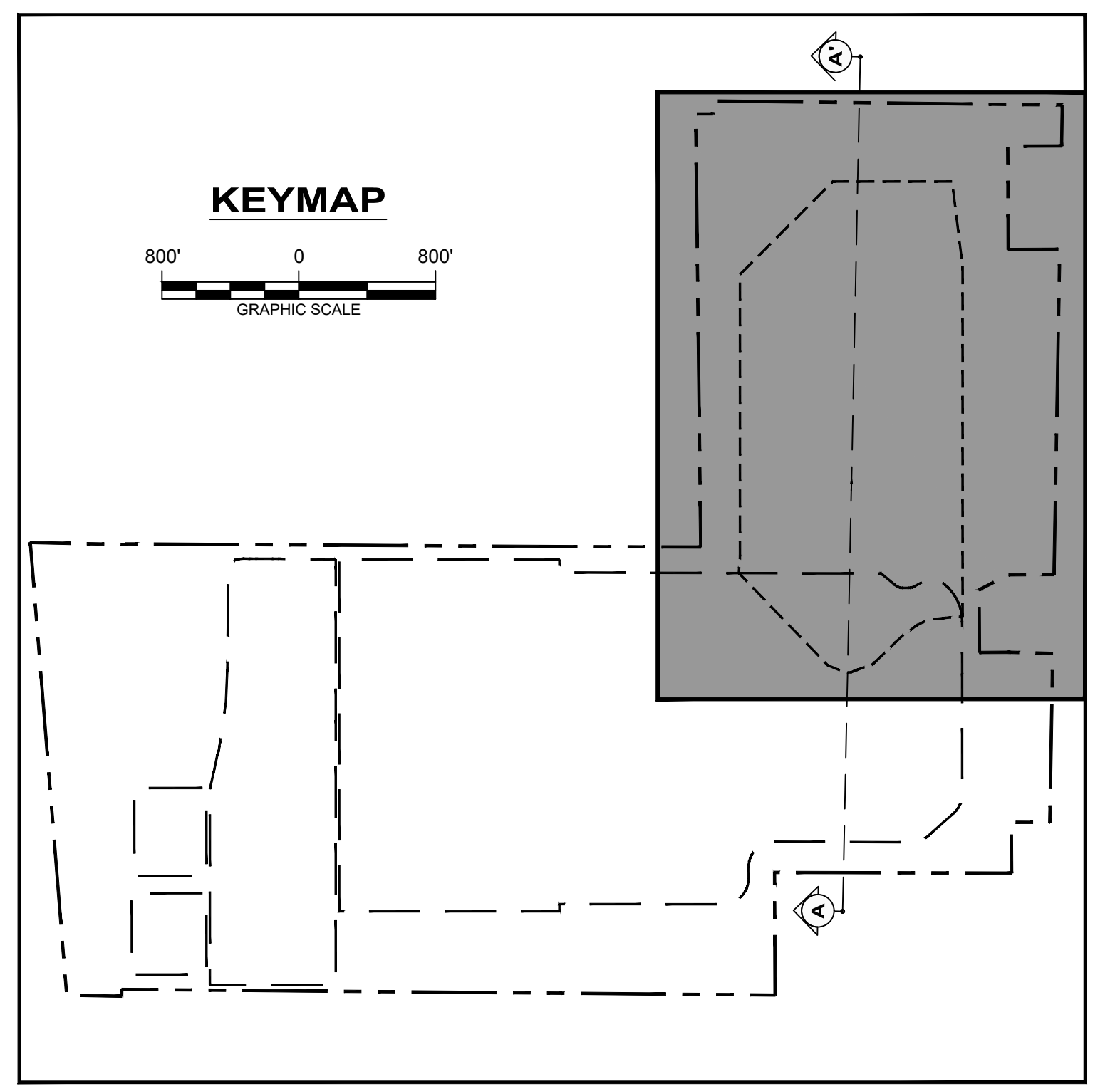
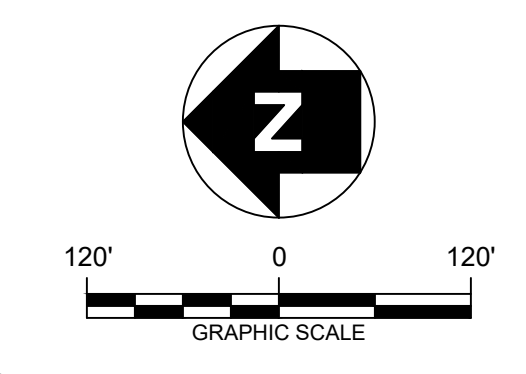
REV. NO.	DATE	DESCRIPTION



**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

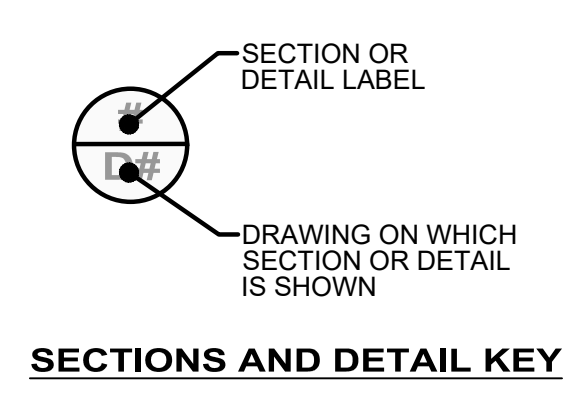
**LANDFILL PHASING PLAN
PHASE E**

PROJ. NO.:	631020105	DATE:	MAY 2022	
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D34	
DRAWN BY:	BWM/NV/KM	CHECKED BY:		DAM
CHECKED BY:	DAM	APPROVED BY:		DAM
APPROVED BY:	DAM			34 OF 37 SHEETS

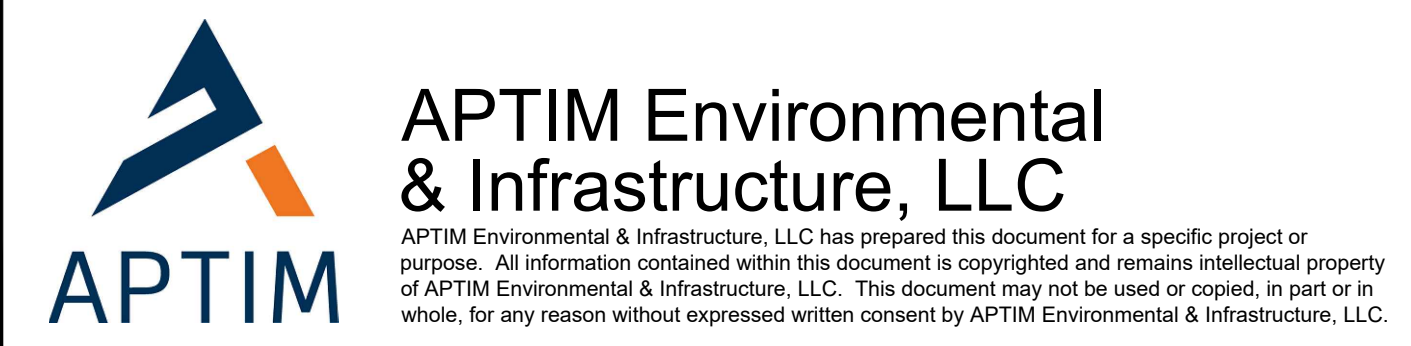


- LEGEND**
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 - APPROXIMATE EXISTING WASTE BOUNDARY
 - APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
 - EXISTING CONTOUR
 - EXISTING ROAD
 - EXISTING VEGETATION
 - EXISTING FENCE
 - EXISTING CULVERT
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 - PROPOSED ROAD
 - PROPOSED CULVERT
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 - EXISTING LEACHATE COLLECTION PIPE
 - EXISTING LEACHATE CLEANOUT LOCATION
 - EXISTING LEACHATE VAULT LOCATION
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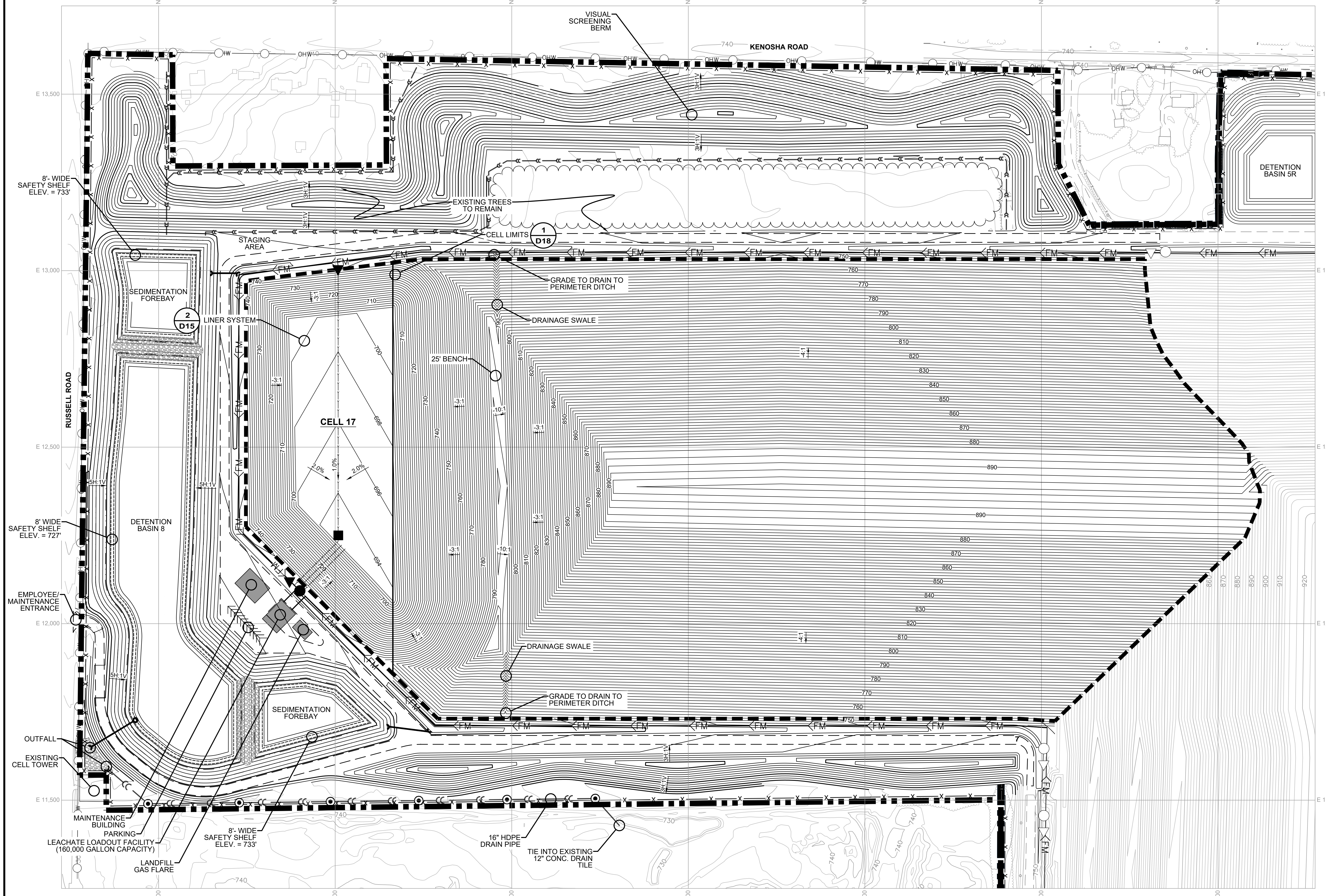
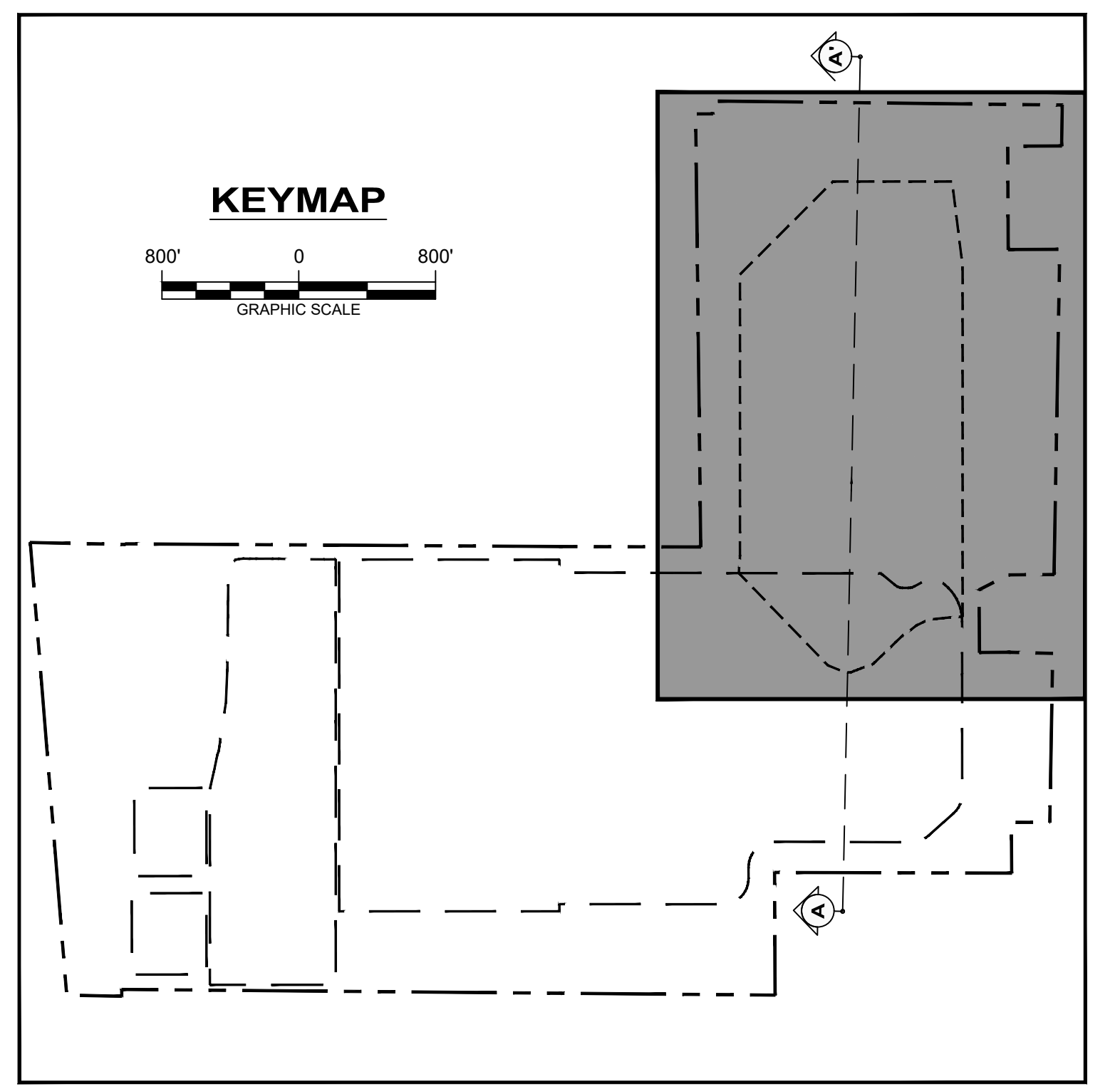
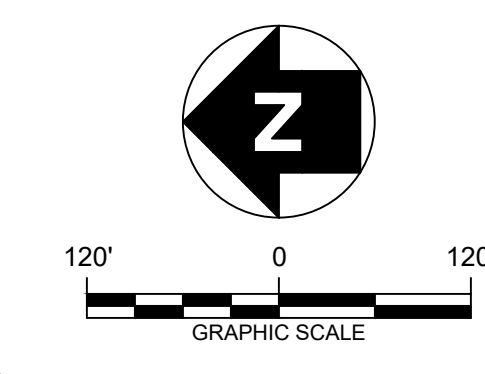
REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

LANDFILL PHASING PLAN
PHASE F

PROJ. NO.: 631020105	DATE: MAY 2022
DESIGNED BY: DAM/BWM/KM	DRAWING NO. D35
DRAWN BY: BWM/NV/KM	
CHECKED BY: DAM	
APPROVED BY: DAM	35 OF 37 SHEETS

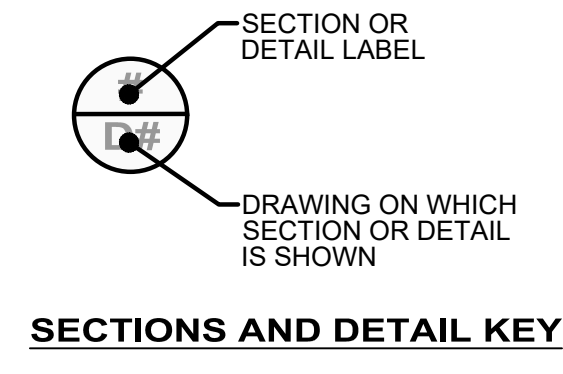


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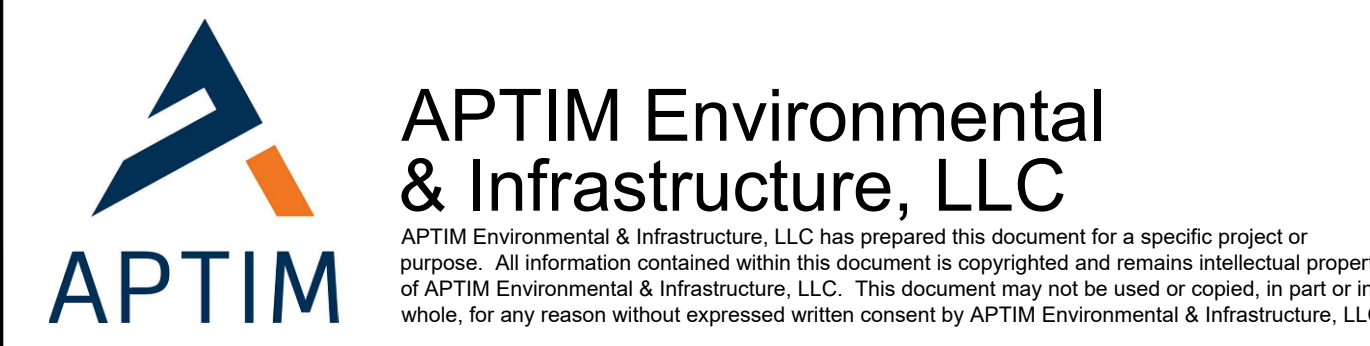
- APPROXIMATE FACILITY BOUNDARY
- APPROXIMATE EXISTING WASTE BOUNDARY
- APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
- EXISTING CONTOUR
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING FENCE
- EXISTING CULVERT
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- PROPOSED ROAD
- PROPOSED CULVERT
- EXISTING FORCEMAIN
- EXISTING LEACHATE COLLECTION PIPE
- EXISTING LEACHATE CLEANOUT LOCATION
- EXISTING LEACHATE VAULT LOCATION
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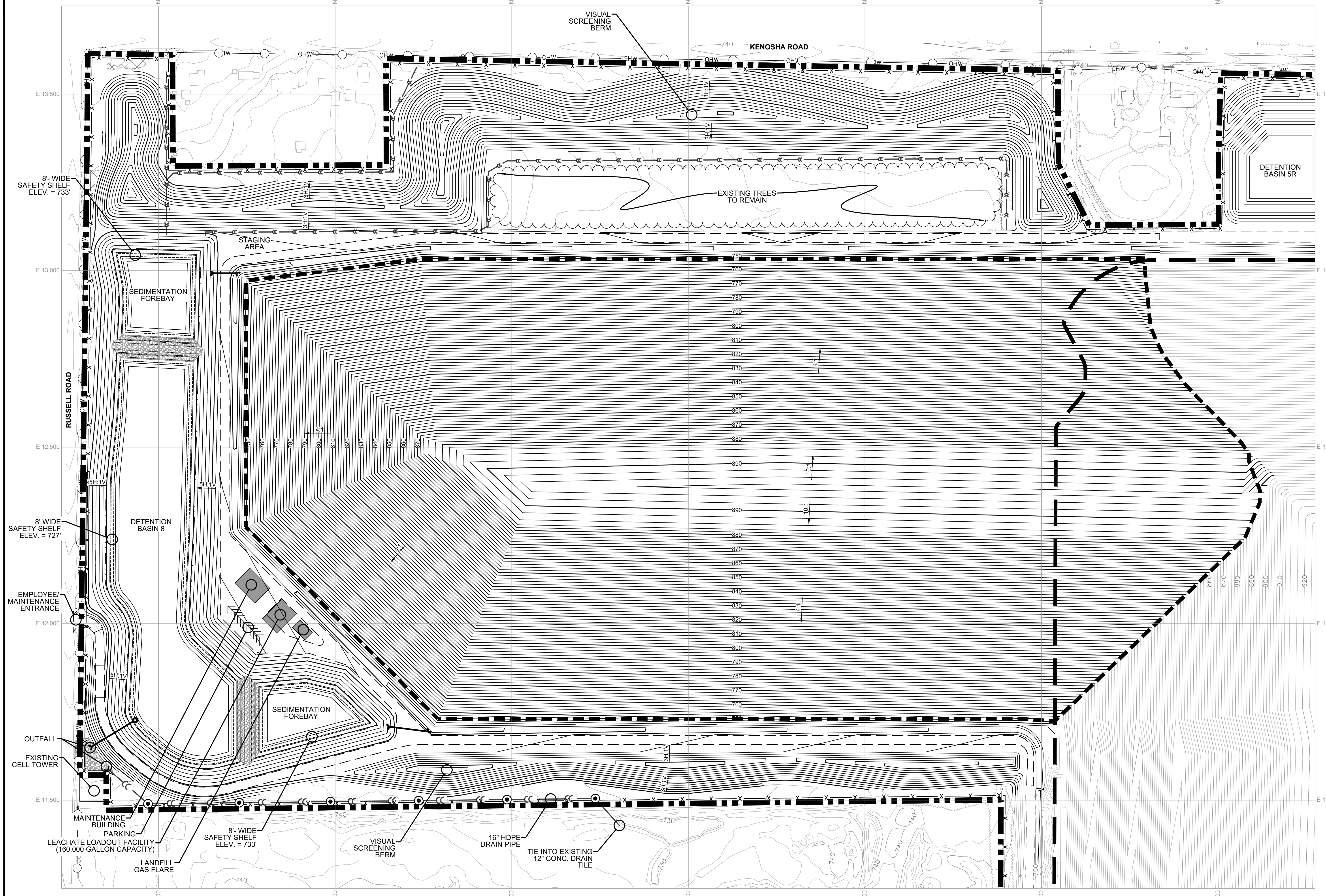
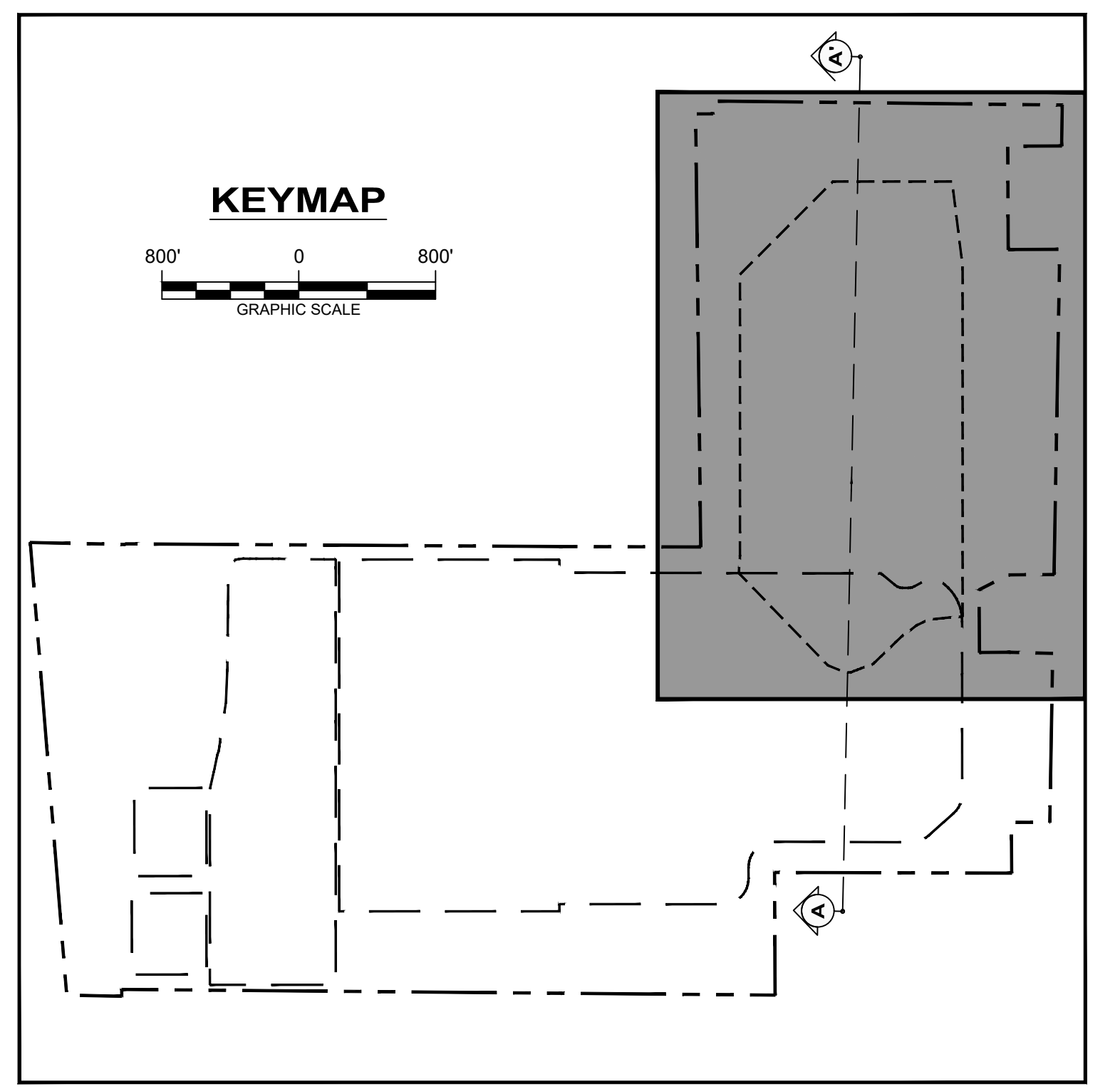
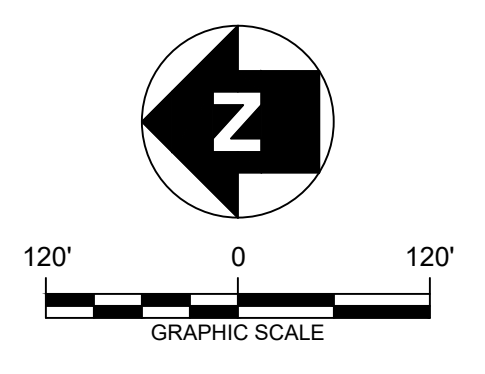
REV. NO.	DATE	DESCRIPTION



**ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS**

**LANDFILL PHASING PLAN
PHASE G**

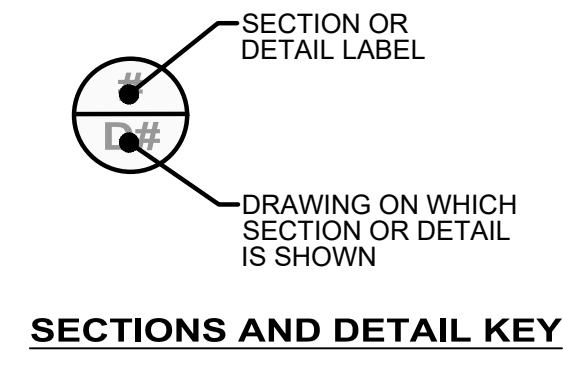
PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D36
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		



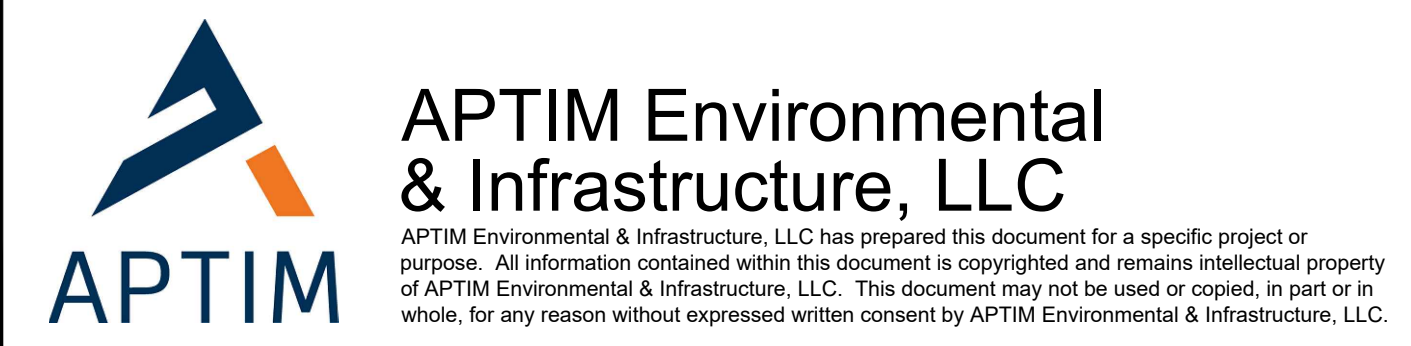
LEGEND

	APPROXIMATE FACILITY BOUNDARY
	APPROXIMATE EXISTING WASTE BOUNDARY
	APPROXIMATE PROPOSED EXPANSION WASTE BOUNDARY
	EXISTING CONTOUR
	EXISTING ROAD
	EXISTING VEGETATION
	EXISTING FENCE
	EXISTING CULVERT
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	PROPOSED ROAD
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	EXISTING FORCEMAIN
	EXISTING LEACHATE COLLECTION PIPE
	EXISTING LEACHATE CLEANOUT LOCATION
	EXISTING LEACHATE VAULT LOCATION
	EXISTING LEACHATE COLLECTION SUMP LOCATION
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REV. NO.	DATE	DESCRIPTION



ZION LANDFILL - SITE 2 NORTH EXPANSION
CITY OF ZION, ILLINOIS

LANDFILL PHASING PLAN
PHASE H

PROJ. NO.:	631020105	DATE:	MAY 2022
DESIGNED BY:	DAM/BWM/KM	DRAWING NO.:	D37
DRAWN BY:	BWM/NV/KM		
CHECKED BY:	DAM		
APPROVED BY:	DAM		
			37 OF 37 SHEETS