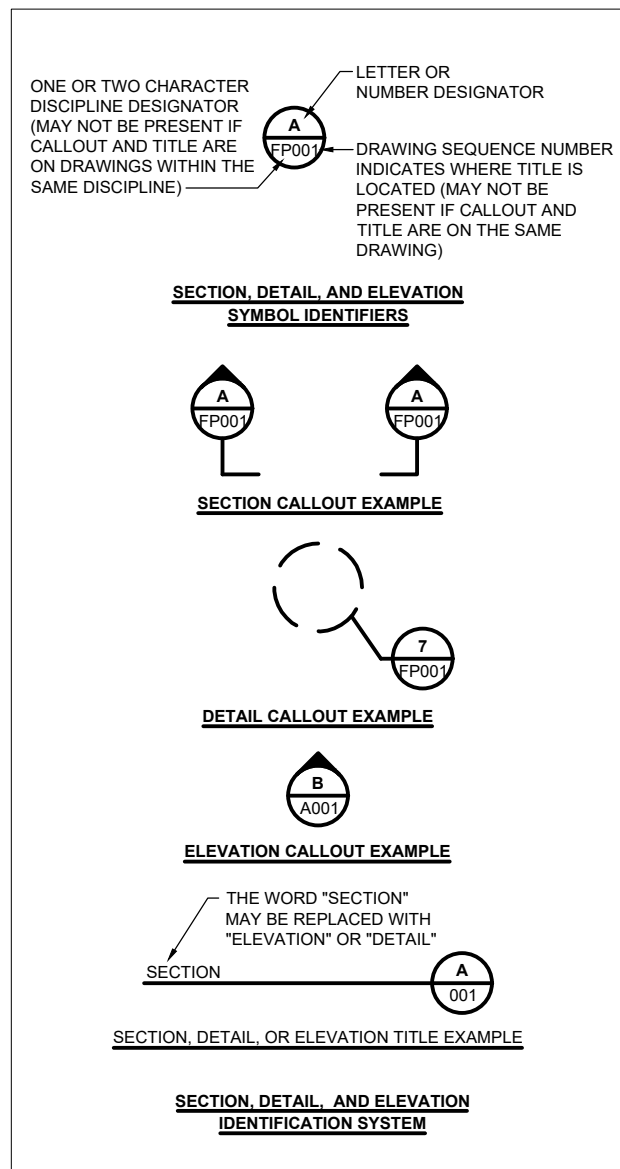


# LANDFILL DEVELOPMENT PLAN

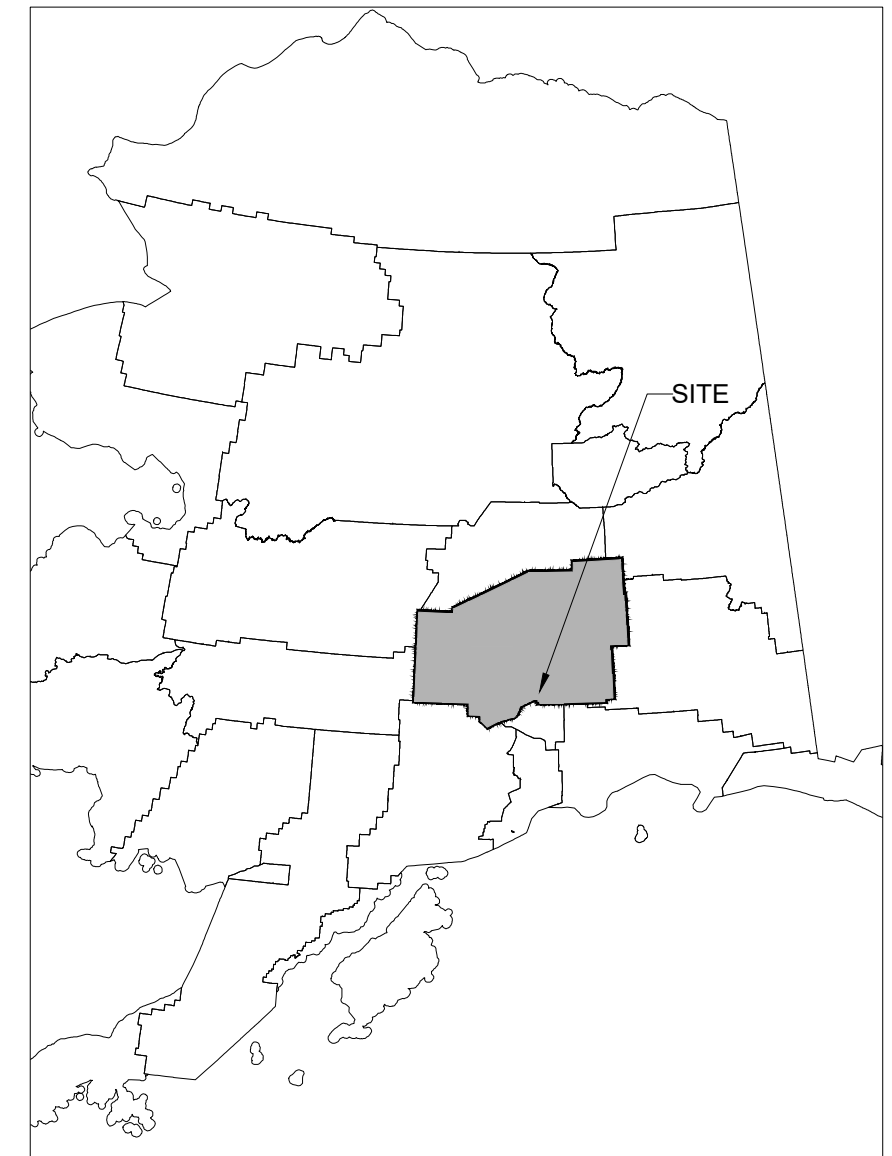
MATANUSKA-SUSITNA BOROUGH, PALMER, AK

JULY 2020

PROJECT NUMBER: 120344



Sheet Number	Sheet Title
FIGURE 1	Cover and Index
FIGURE 2	Legend and Abbreviations
FIGURE 3	Site Location
FIGURE 4	Existing Site Conditions and Control Points
FIGURE 5	General Arrangement
FIGURE 6	Conceptual Site Entrance Plan
FIGURE 7	Historic High Groundwater Elevations
FIGURE 8	MSW Proposed Cell Layout
FIGURE 9	MSW Proposed Base Grades Phases 1 through 3
FIGURE 10	MSW Proposed Base Grades Phase 1 (Cell 5)
FIGURE 11	MSW Proposed Final Grading Plan Phases 1 through 3
FIGURE 12	MSW Sequencing Phase 1 (Cell 3)
FIGURE 13	MSW Sequencing Phase 1 (Cells 4 and 5)
FIGURE 14	MSW Sequencing Phase 2 (Corridor 1 & 2)
FIGURE 15	MSW Sequencing Phase 2 (Corridor 3 & 4)
FIGURE 16	MSW Sequencing Phase 2 (Corridor 5 & 6)
FIGURE 17	MSW Sequencing Phase 2 (Corridor 7)
FIGURE 18	MSW Sequencing Phase 3
FIGURE 19	MSW Cross Sections and Details, 1 of 2
FIGURE 20	MSW Cross Sections and Details, 2 of 2
FIGURE 21	MSW Base and Final Cover Details
FIGURE 22	MSW Leachate Collection Plan Phases 1 through 3
FIGURE 23	MSW Leachate Collection Details, 1 of 2
FIGURE 24	MSW Leachate Collection Details, 2 of 2
FIGURE 25	MSW LFG Collection Plan Phases 1 through 3
FIGURE 26	MSW LFG Collection Details, 1 of 4
FIGURE 27	MSW LFG Collection Details, 2 of 4
FIGURE 28	MSW LFG Collection Details, 3 of 4
FIGURE 29	MSW LFG Collection Details, 4 of 4
FIGURE 30	MSW Conceptual Stormwater Control
FIGURE 31	MSW Conceptual Stormwater Details
FIGURE 33	C&D Proposed Final Grades
FIGURE 32	C&D Proposed Base Grades
FIGURE 34	C&D Cross Sections and Details
FIGURE 35	Asbestos Proposed Base Grades
FIGURE 36	Asbestos Proposed Final Grades
FIGURE 37	Asbestos Cross Section and Details



ALASKA STATE VICINITY MAP



no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES



**LEGEND**

**PLAN:**

- CLF-9 ACTIVE MONITORING WELL
- CLF-1 INACTIVE MONITORING WELL
- MW-12 DECOMMISSIONED MONITORING WELL
- CP SURVEY CONTROL POINT
- CLFP-1 LANDFILL GAS MONITORING PROBE
- GAS VENT
- CLFG-1 / GW-1 LANDFILL GAS WELL
- RGW-001 REMOTE LANDFILL GAS WELL
- POWER POLE
- LIGHT FIXTURE
- GCCS ISOLATION VALVE
- GCCS CLEAN OUT
- BUILDING/STRUCTURE
- EXISTING 2 FOOT CONTOURS
- EXISTING 10 FOOT CONTOURS
- EXISTING FENCE
- PROPERTY/ LANDFILL BOUNDARY
- PAVED ROAD
- UNPAVED ROAD
- PROPOSED ROAD
- GCCS GAS COLLECTION AND CONTROL SYSTEM PIPING
- BURIED CULVERT
- TREE LINE
- EXISTING CELL BOUNDARY
- PROPOSED CELL BOUNDARY
- LCP LEACHATE COLLECTION PIPING
- LCO LEACHATE CLEANOUT PIPING
- SSR LEACHATE SIDESLOPE RISER PIPING
- FM LEACHATE FORCEMAIN PIPING
- GL GAS LATERAL PIPING
- 180 DESIGN CONTOURS
- 180 GROUNDWATER CONTOURS
- CHANNEL DRAIN
- TRAILS
- LEACHATE FLOW DIRECTION
- OHE OVERHEAD ELECTRIC LINE
- PROPOSED CULVERT
- PROPOSED DITCH / DIVERSION BERM DRAINAGE DIRECTION
- EXISTING FINAL COVER
- NEW FINAL COVER
- RIPRAP DOWNSLOPE CHANNEL
- WETLANDS

**SECTION:**

- GRAVEL / AGGREGATE / RIPRAP
- CONCRETE
- PIPE BEDDING/SAND DRAIN MATERIAL
- TOP SOIL
- GENERAL FILL/ GENERAL SOIL
- COMMON FILL
- EXISTING REFUSE/ DAILY COVER/ ASBESTOS
- INTERMEDIATE COVER
- GRANULAR DRAINAGE MATERIAL / ROCK
- PIPE INSULATION
- FOAM PLUG
- ARMACELL INSULATION AND HEAT TRACE
- VAULT INSULATION
- PERMEABLE MEDIA
- SUBGRADE
- GEOTEXTILE FABRIC CUSHION
- GEOMEMBRANE LINER
- GEOSYNTHETIC CLAY LINER
- PROPOSED CELL BOUNDARY
- DOUBLE SIDED 250-MIL GEOCOMPOSITE DRAINAGE NET
- INSULATION BOARD
- GROUNDWATER LEVEL

**ABBREVIATIONS**

ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION	MAX.	MAXIMUM
APPROX~	APPROXIMATE, APPROXIMATELY	MFA	MOLDED FLANGE ADAPTER
BM	BENCHMARK	MH	MANHOLE
C&D	CONSTRUCTION AND DEMOLITION	MIL	MILLI-INCH
CIR	CIRCLE	MIN.	MINIMUM
CISP	CAST IRON SOIL PIPE	MSB	MATANUSKA-SUSITNA BOROUGH
CLF	CENTRAL LANDFILL	MW	MONITORING WELL
CONC.	CONCRETE	N	NORTHING
CONT.	CONTINUOUS	NO.	NUMBER
CS	CROSS SECTION	NPDES	NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM
CT	CONDENSATE TRAP	NPT	NATIONAL PIPE THREAD
CY	CUBIC YARD	OC	ON CENTER
DEG	DEGREE	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
DIA. OR Ø	DIAMETER	OZ	OUNCE
DR	DRIVE	PCF	POUNDS PER CUBIC FOOT
DWG	DRAWING	PERF	PERFORATED
E	EASTING	PVC	POLYVINYL CHLORIDE
EL., ELEV.	ELEVATION	RGW	REMOTE GAS WELL
ESMT	EASEMENT	SCH	SCHEDULE
F	FIGURE	SDR	STANDARD DIMENSION RATIO
FML	FLEXIBLE MEMBRANE LINER	SSR	SIDESLOPE RISER
FT	FEET	SST / S.S.	STAINLESS STEEL
GA	GAUGE	ST.	STREET
GALV	GALVANIZED	STA	STATION
GCCS	LANDFILL GAS COLLECTION & CONTROL SYSTEM	SUBD	SUBDIVISION
GCL	GEOSYNTHETIC CLAY LINER	SWPPP	STORMWATER POLLUTION PREVENTION PLAN
GCO	GAS CLEAN OUT	TYP.	TYPICAL
GDN	GEOCOMPOSITE DRAINAGE NET	UG	UNDERGROUND
GW	GAS WELL	UGE	UNDERGROUND ELECTRIC
HPDE	HIGH DENSITY POLYETHYLENE	UST	UNDERGROUND STORAGE TANK
IE.	INVERT ELEVATION	W/	WITH
IPS	IRON PIPE SIZE	WFF	WOVEN FILTER FABRIC
L.F., LF	LINEAR FEET	YD	YARD
LFG	LANDFILL GAS		
LLDPE	LINEAR LOW DENSITY POLYETHYLENE		

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

Millimeters  
 Scale For Microfining  
 Inches

**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
 LEGEND AND ABBREVIATIONS



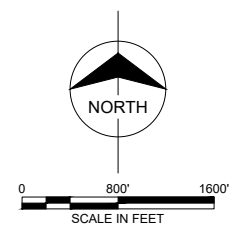
project	120344	contract	
drawing	<b>FIGURE 2 - A</b>	rev.	
sheet	2 of 37	sheets	





no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - HORIZONTAL DATUM IS ALASKA STATE PLANE COORDINATE SYSTEM ZONE 4, NAD83(2011). VERTICAL DATUM IS NAVD88 DERIVED FROM NAD83 AND GEOID12B BASED ON OPUS PROCESSING OF CONTROL POINT #100, VERIFIED WITH ADDITIONAL OPUS SOLUTION ON MISCELLANEOUS CONTROL.
  - 2019 AERIAL DOWNLOADED FROM ESRI SERVERS.



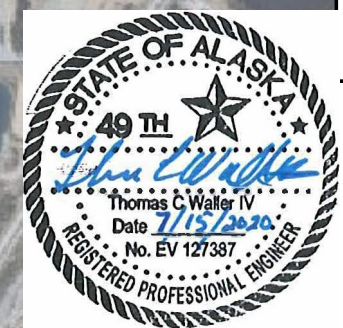
**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

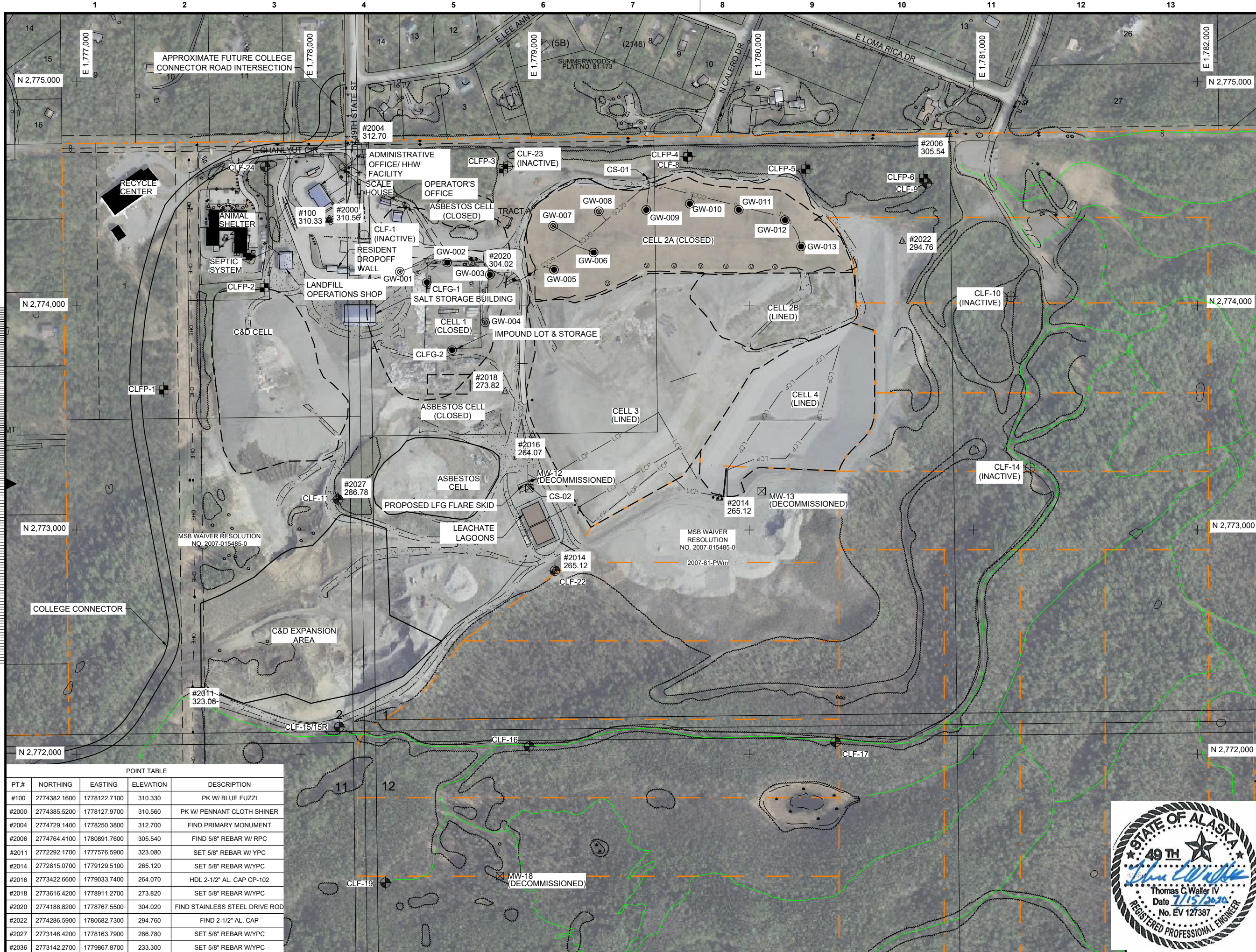


MSB CENTRAL LANDFILL  
ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
SITE LOCATION



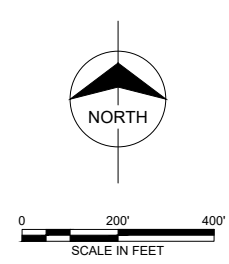
project	120344	contract	
drawing	<b>FIGURE 3</b>	rev.	<b>A</b>
sheet	3 of 37	sheets	
file	FIGURE 3 Site Location.dwg		





no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:
- EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - HORIZONTAL DATUM IS ALASKA STATE PLANE COORDINATE SYSTEM ZONE 4, NAD83(2011). VERTICAL DATUM IS NAVD88 DERIVED FROM NAD83 AND GEOID12B BASED ON OPUS PROCESSING OF CONTROL POINT #100, VERIFIED WITH ADDITIONAL OPUS SOLUTION ON MISCELLANEOUS CONTROL.
  - 2019 AERIAL DOWNLOADED FROM ESRI SERVERS.



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

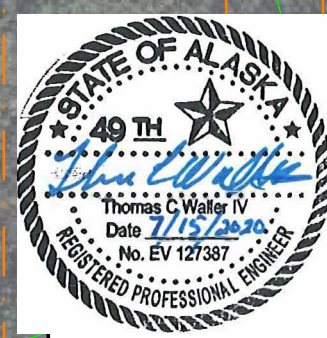


MSB CENTRAL LANDFILL ALASKA

**LANDFILL DEVELOPMENT PLAN**  
EXISTING SITE CONDITIONS AND CONTROL POINTS

project	120344	contract	
drawing		rev.	
<b>FIGURE 4 - A</b>			
sheet	4	of	37 sheets
file: FIGURE 4 Existing Site Conditions and Control Points.dwg			

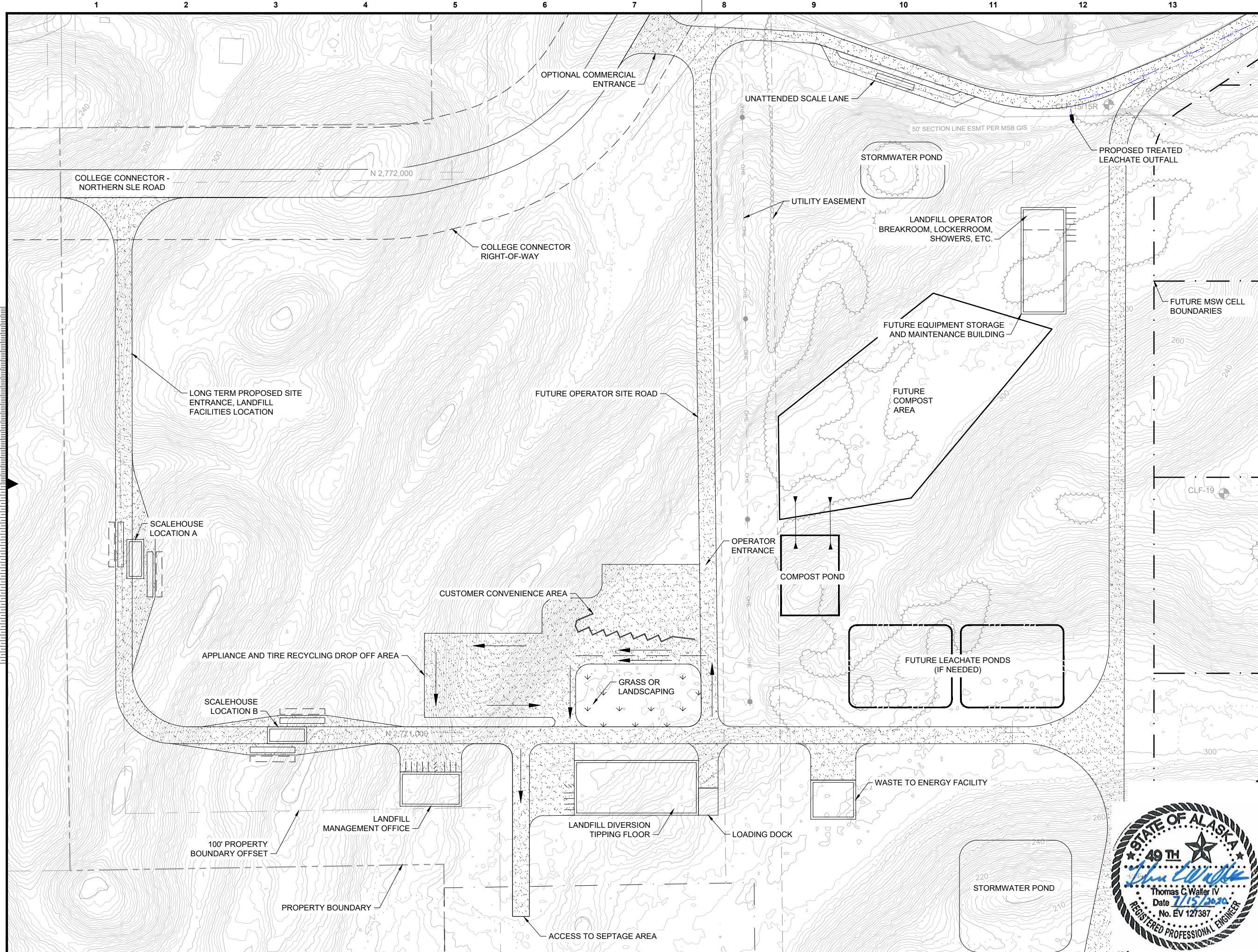
PT.#	NORTHING	EASTING	ELEVATION	DESCRIPTION
#100	2774382.1600	1778122.7100	310.330	PK W/ BLUE FUZZI
#2000	2774385.5200	1778127.9700	310.560	PK W/ PENNANT CLOTH SHINER
#2004	2774729.1400	1778250.3800	312.700	FIND PRIMARY MONUMENT
#2006	2774764.4100	1780891.7600	305.540	FIND 5/8" REBAR W/ RPC
#2011	2772292.1700	1777576.5900	323.080	SET 5/8" REBAR W/ YPC
#2014	2772815.0700	1779129.5100	265.120	SET 5/8" REBAR W/ YPC
#2016	2773422.6600	1779033.7400	264.070	HDL 2-1/2" AL. CAP CP-102
#2018	2773616.4200	1778911.2700	273.820	SET 5/8" REBAR W/ YPC
#2020	2774188.8200	1778767.5500	304.020	FIND STAINLESS STEEL DRIVE ROD
#2022	2774286.5900	1780682.7300	294.760	FIND 2-1/2" AL. CAP
#2027	2773146.4200	1778163.7900	286.780	SET 5/8" REBAR W/ YPC
#2036	2773142.2700	1779867.8700	233.300	SET 5/8" REBAR W/ YPC





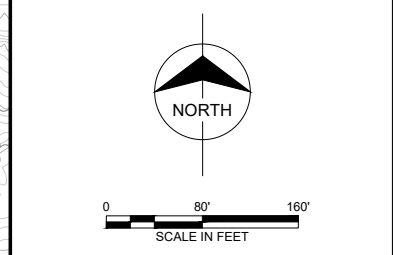






no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

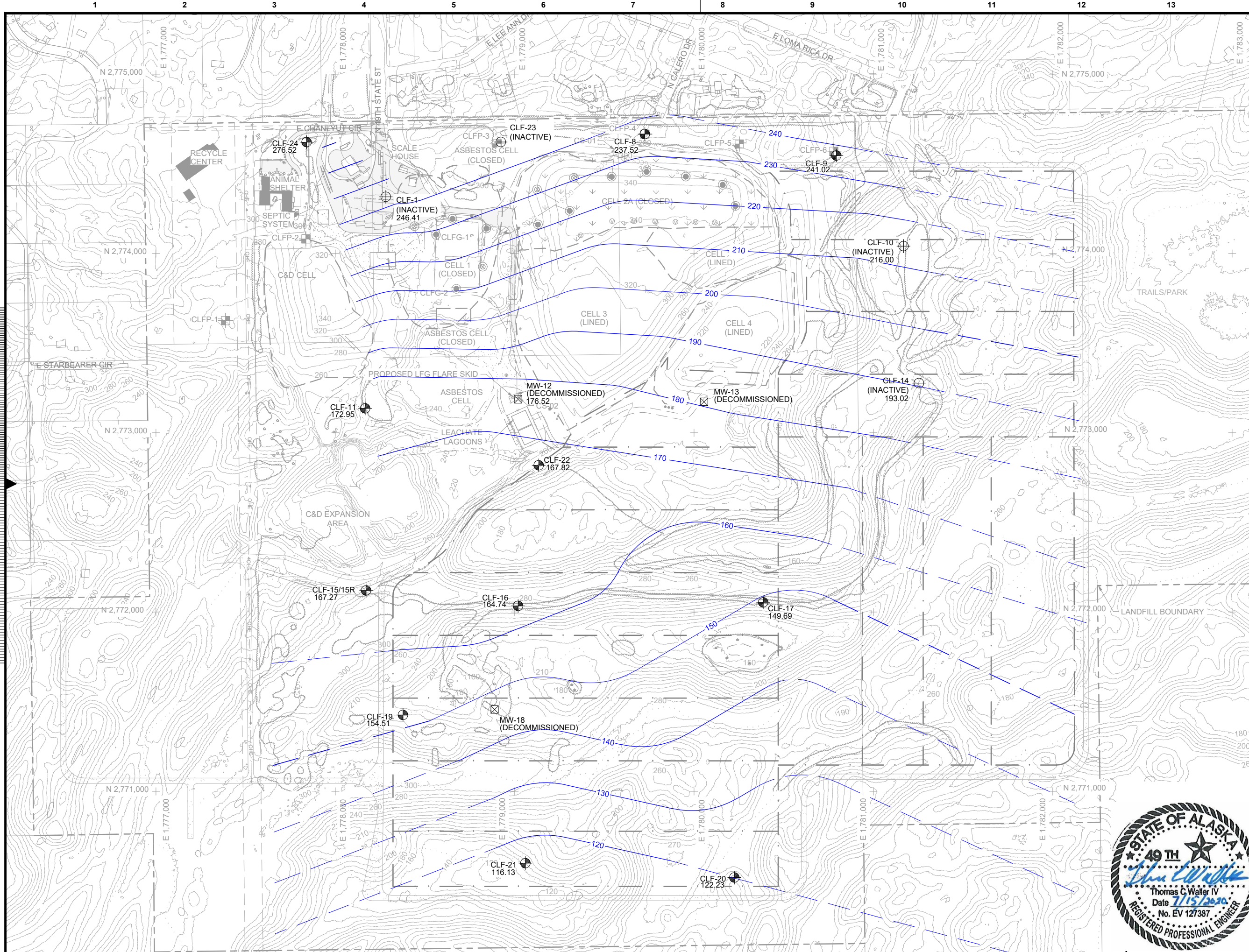


**LANDFILL DEVELOPMENT PLAN  
CONCEPTUAL SITE ENTRANCE  
PLAN**

project	120344	contract	
drawing	<b>FIGURE 6 - A</b>	rev.	
sheet	6 of 37 sheets		
file	FIGURE 6 Conceptual Site Entrance Plan.dwg		

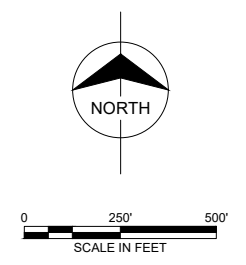
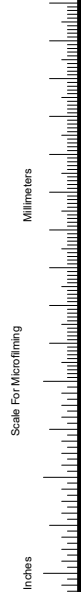






no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - GROUNDWATER ELEVATION CONTOURS BASED ON HISTORIC HIGH WATER LEVEL FOR EACH INDIVIDUAL MONITORING WELL. GROUNDWATER ELEVATION DATA IS NOT ALL FROM THE SAME SAMPLING EVENT.
  - GROUNDWATER CONTOUR INTERVAL IS TEN FEET (DASHED WHERE IMPLIED).



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL ALASKA

LANDFILL DEVELOPMENT PLAN

HISTORIC HIGH GROUNDWATER ELEVATIONS

project	120344	contract	
---------	--------	----------	--

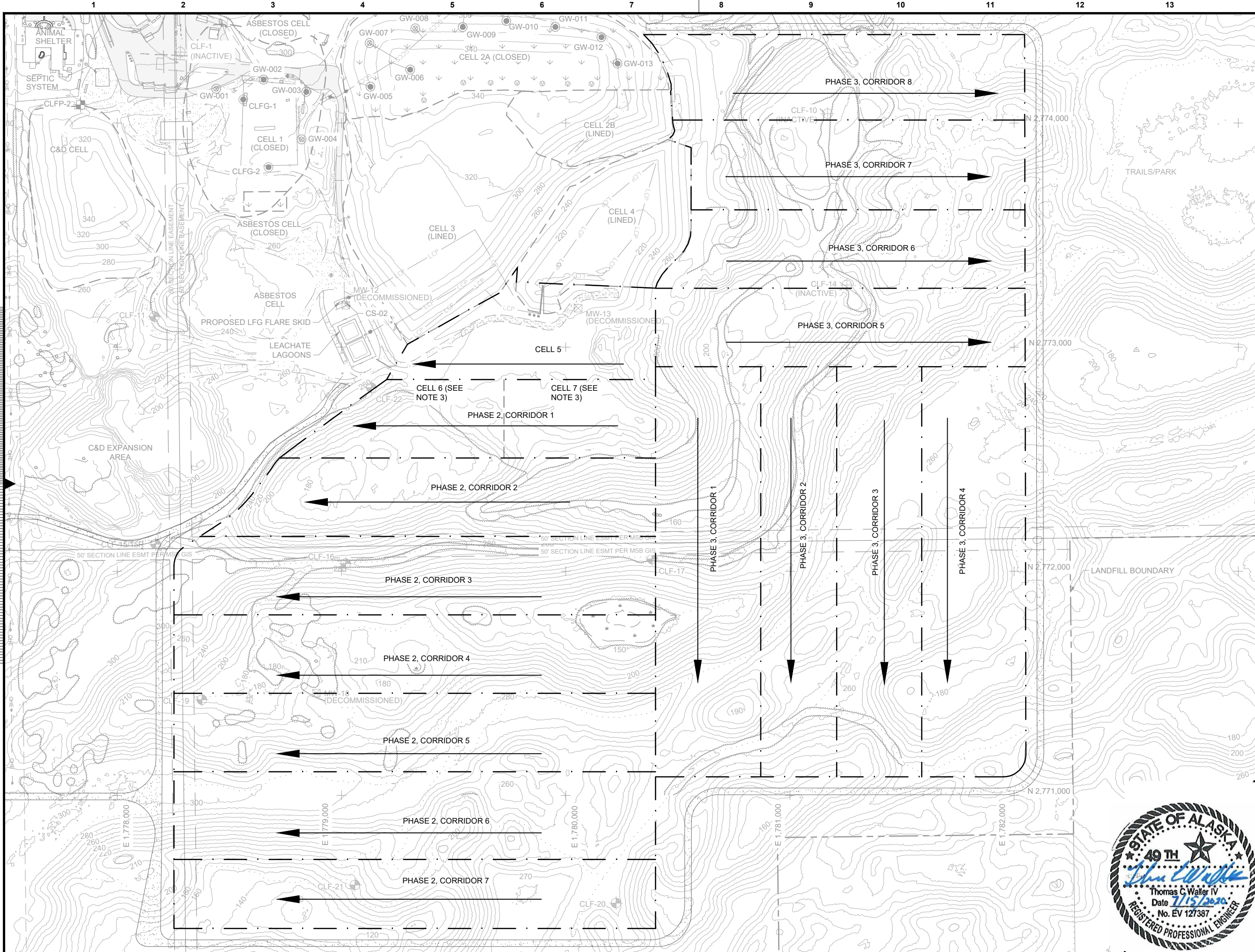
drawing **FIGURE 7 - A** rev.

sheet	7	of	37	sheets
-------	---	----	----	--------

file FIGURE 7 Historic High Groundwater Elevations.dwg





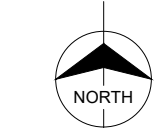


no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - FUTURE CORRIDORS TO BE SPLIT INTO CELLS, WITH SIZING DETERMINED BASED ON INCOMING WASTE FILLING RATES AND THE DESIRED APPROXIMATE LIFE OF THE CELL. FOR EXAMPLE, PHASE 2, CORRIDOR 1 WILL LIKELY BE SPLIT INTO TWO CELLS (CELL 6 AND 7). THE ACTUAL CELL DIVISION BOUNDARY TO BE DETERMINED IN THE FUTURE; HOWEVER, THE CELL WITH THE SUMP WILL BE THE FIRST CONSTRUCTED TO AVOID MOVING LEACHATE MANAGEMENT STRUCTURES DURING FUTURE CELL DEVELOPMENT.

Scale For Microfilming  
Millimeters

Inches



0 200' 400'  
SCALE IN FEET

**FOR PLANNING PURPOSES ONLY**



date JULY 2020	detailed M. AULT
designed T. KOLLER	checked F. DORAN



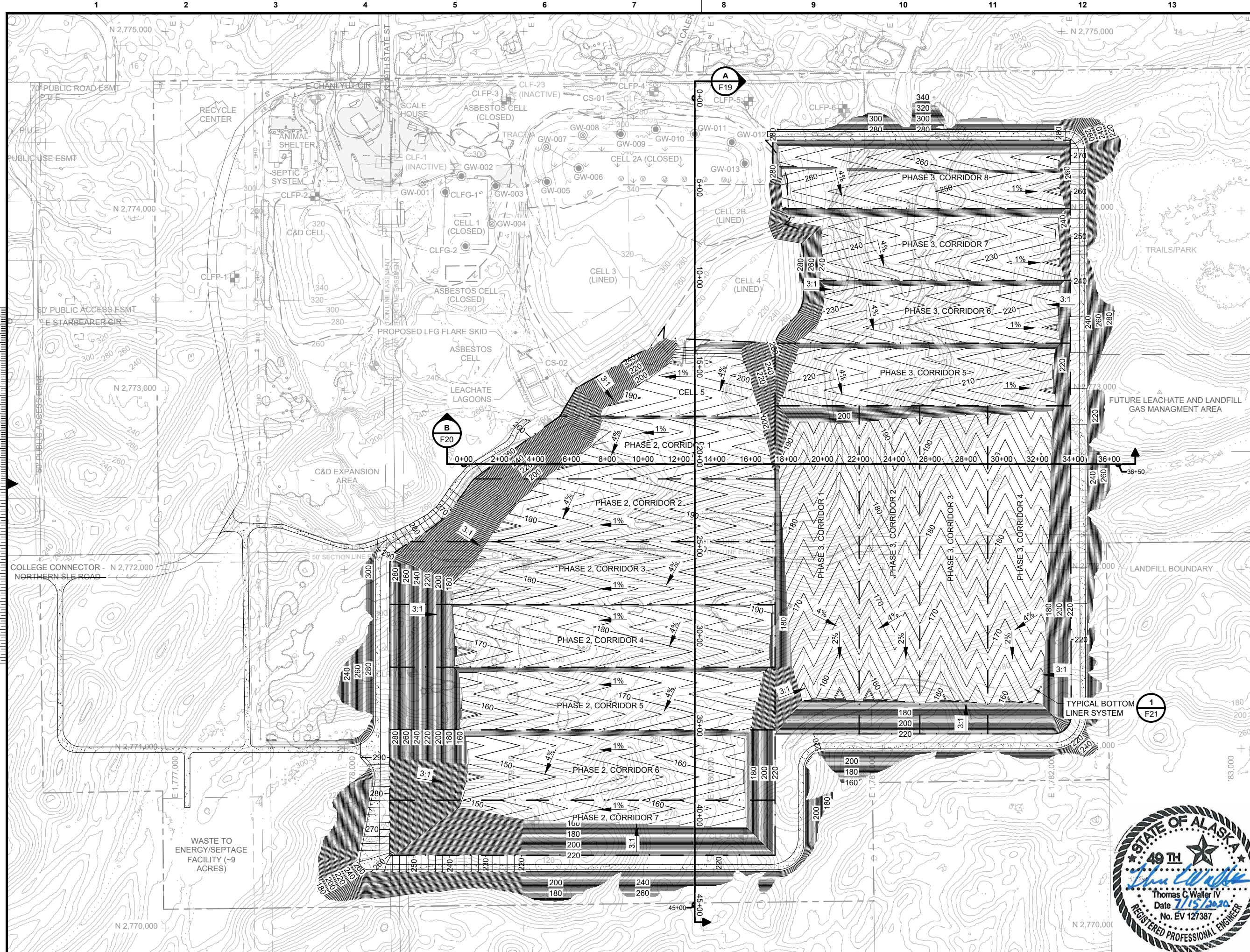
MSB CENTRAL LANDFILL ALASKA

LANDFILL DEVELOPMENT PLAN  
MSW PROPOSED CELL LAYOUT



project 120344	contract
drawing <b>FIGURE 8 - A</b>	rev.
sheet 8 of 37 sheets	file FIGURE 8 MSW Proposed Cell Layout.dwg



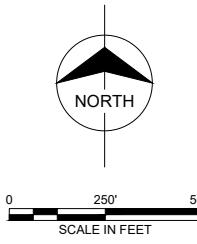


Scale For Microfitting  
Millimeters

Inches

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS REPRESENT TOP OF PREPARED SUBGRADE.



**FOR PLANNING PURPOSES ONLY**

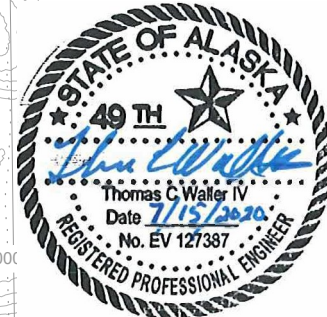


date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

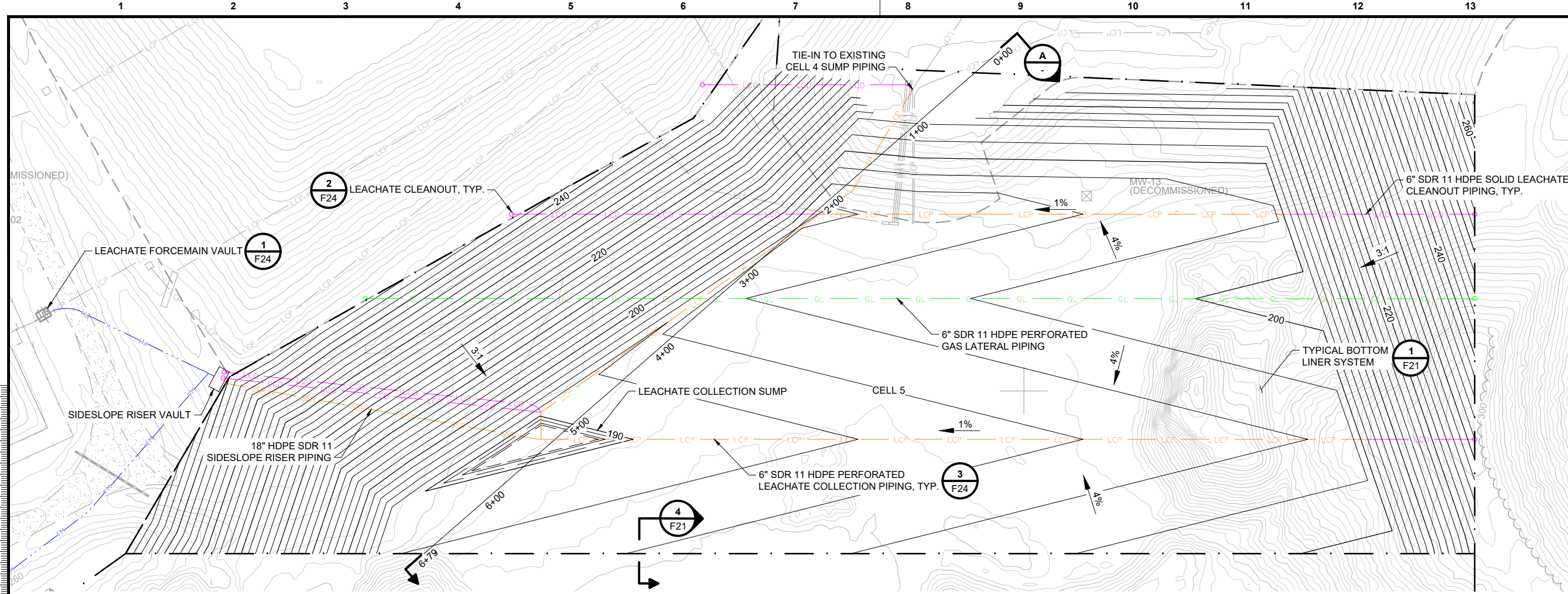


MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW PROPOSED BASE GRADES  
PHASES 1 THROUGH 3

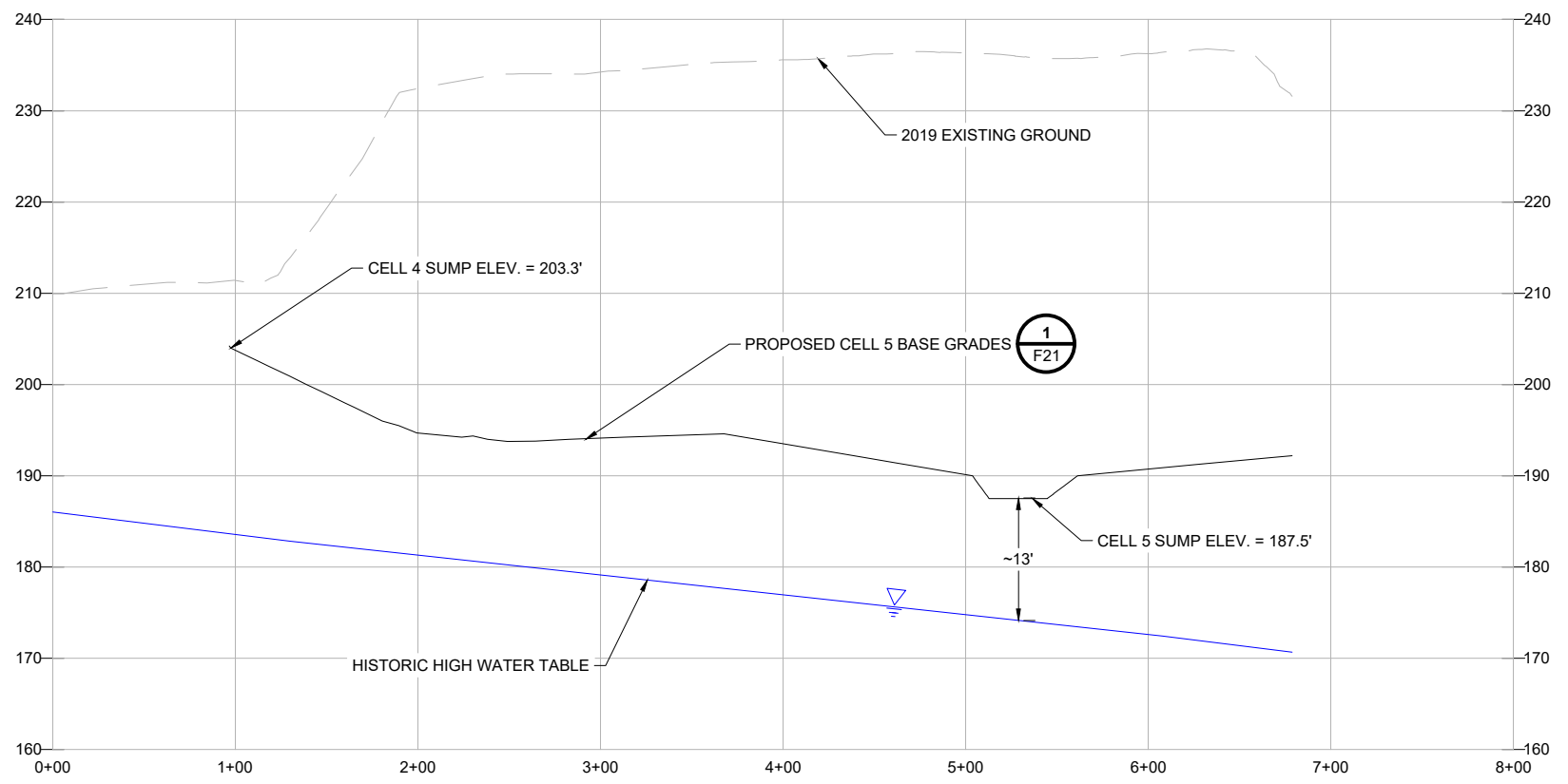
project	120344	contract	
drawing	<b>FIGURE 9 - A</b>		rev.
sheet	9	of	37 sheets
file	FIGURE 9 MSW Proposed Base Grades Phases 1 through 3.dwg		







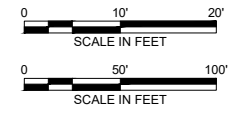
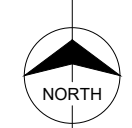
**CELL 5 PLAN VIEW**  
SCALE: 1" = 50'



**CELL 5 CROSS SECTION**  
HORIZ. SCALE: 1" = 50'  
VERT. SCALE: 1" = 10'

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. DESIGN CONTOURS REPRESENT TOP OF PREPARED SUBGRADE.
  - CELL 4 OPERATION SHOULD BE RESTRICTED TO THE CELL 5 BOUNDARY SHOWN TO ALLOW FOR THE REMOVAL OF THE EXISTING CELL 4 BERM AND TYING IN THE LEACHATE COLLECTION PIPING TO ROUTE TO THE NEW CELL 5 SUMP. SEE REPORT FOR MORE DETAIL.



**FOR PLANNING PURPOSES ONLY**



date JULY 2020	detailed M. AULT
designed T. KOLLER	checked F. DORAN

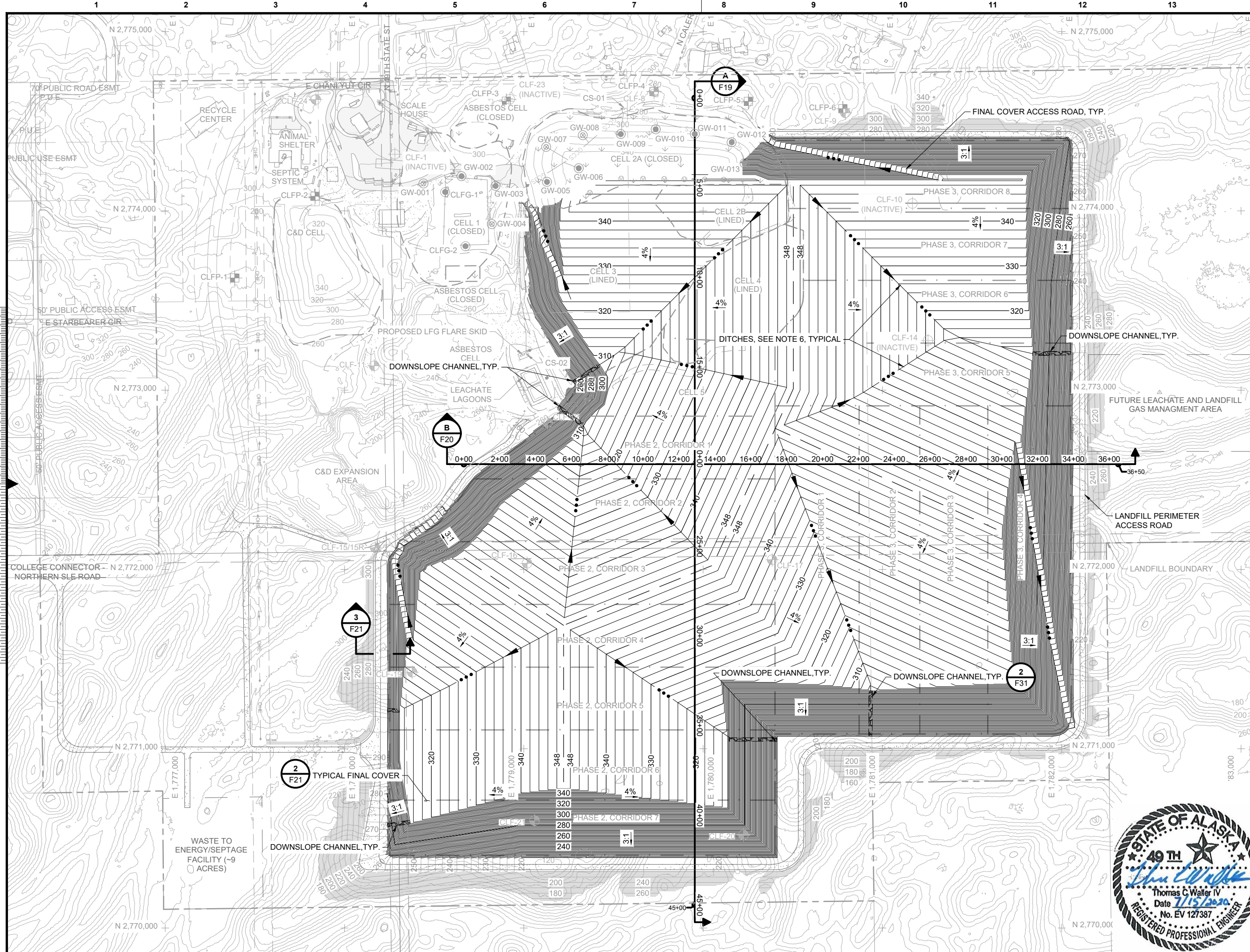


MSB CENTRAL LANDFILL  
ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW PROPOSED BASE GRADES  
PHASE 1 (CELL 5)

project 120344	contract
drawing <b>FIGURE 10 - A</b>	rev.
sheet 10	of 37 sheets
file FIGURE 10 MSW Proposed Base Grades Phase 1 (Cell 5).dwg	







no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS SHOWN REPRESENT TOP OF FINAL COVER.
  - HIGH FINAL COVER ELEVATION IS 348.5 FEET MSL NAVD88.
  - MINIMUM CROWN SLOPE IS FOUR PERCENT; MAXIMUM SIDE SLOPE IS 3:1.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN.

**FOR PLANNING PURPOSES ONLY**

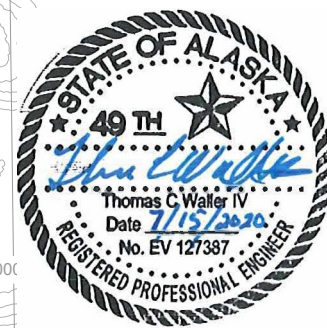


date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

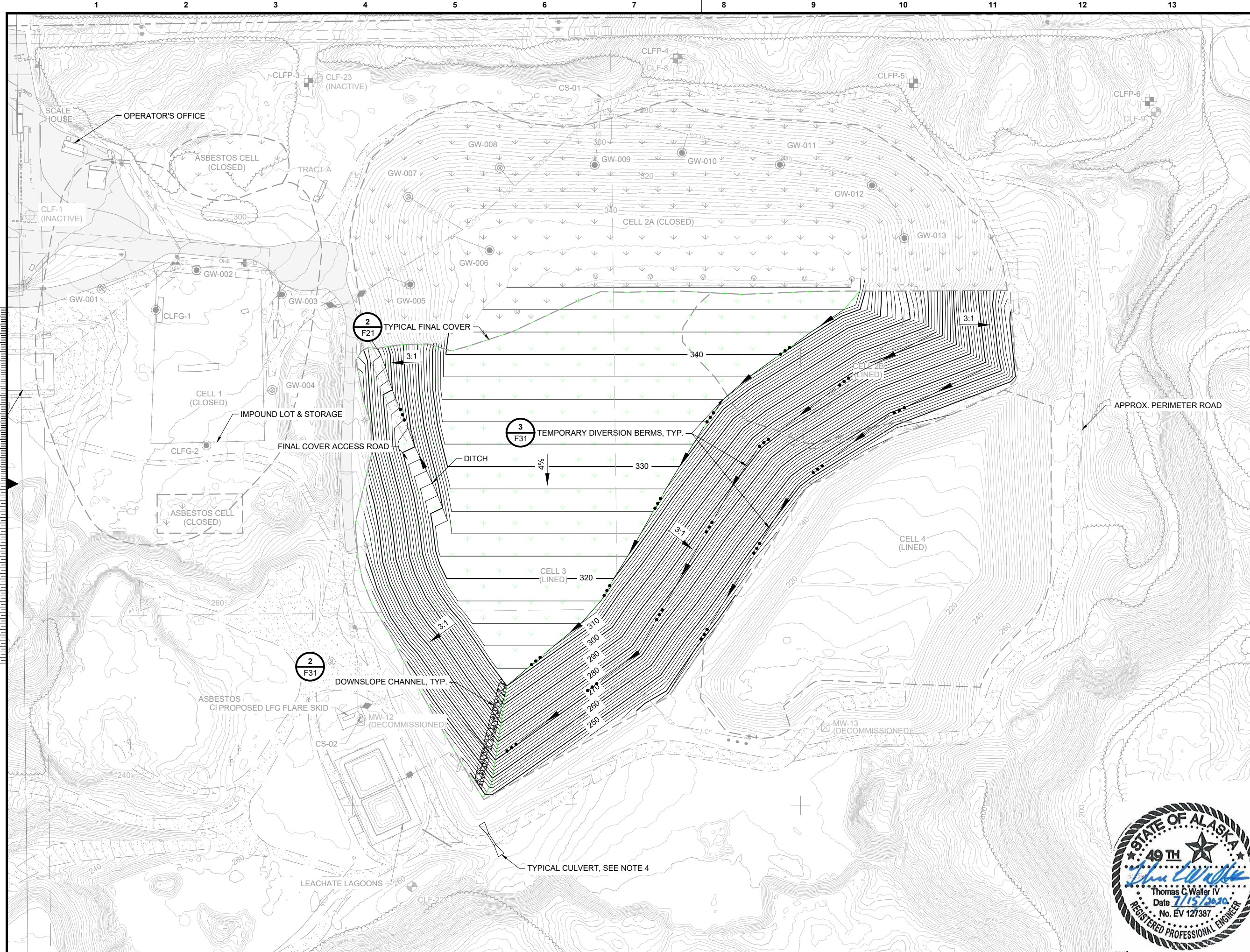
MSB CENTRAL LANDFILL ALASKA

**LANDFILL DEVELOPMENT PLAN**  
MSW PROPOSED FINAL  
GRADING PLAN PHASES 1  
THROUGH 3

project	120344	contract	
drawing	<b>FIGURE 11 - A</b>		rev.
sheet	11	of	37 sheets

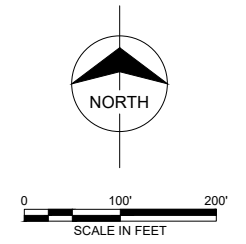






no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOW IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS SHOWN REPRESENT TOP OF INTERMEDIATE GRADING.
  - REFER TO FIGURE 24 FOR FINAL COVER GCCS PLAN.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER BMP'S SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
  - THE VOLUME OF REMAINING AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS BASED ON THE FALL 2019 SURVEY TO THE TOP OF FINAL INTERMEDIATE COVER. CELL 3 REMAINING AIRSPACE = 228,000 CY.



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL ALASKA

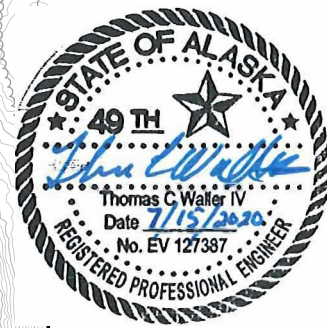
LANDFILL DEVELOPMENT PLAN  
MSW SEQUENCING PHASE 1  
(CELL 3)

project	120344	contract	
---------	--------	----------	--

drawing **FIGURE 12 - A** rev.

sheet	12	of	37	sheets
-------	----	----	----	--------

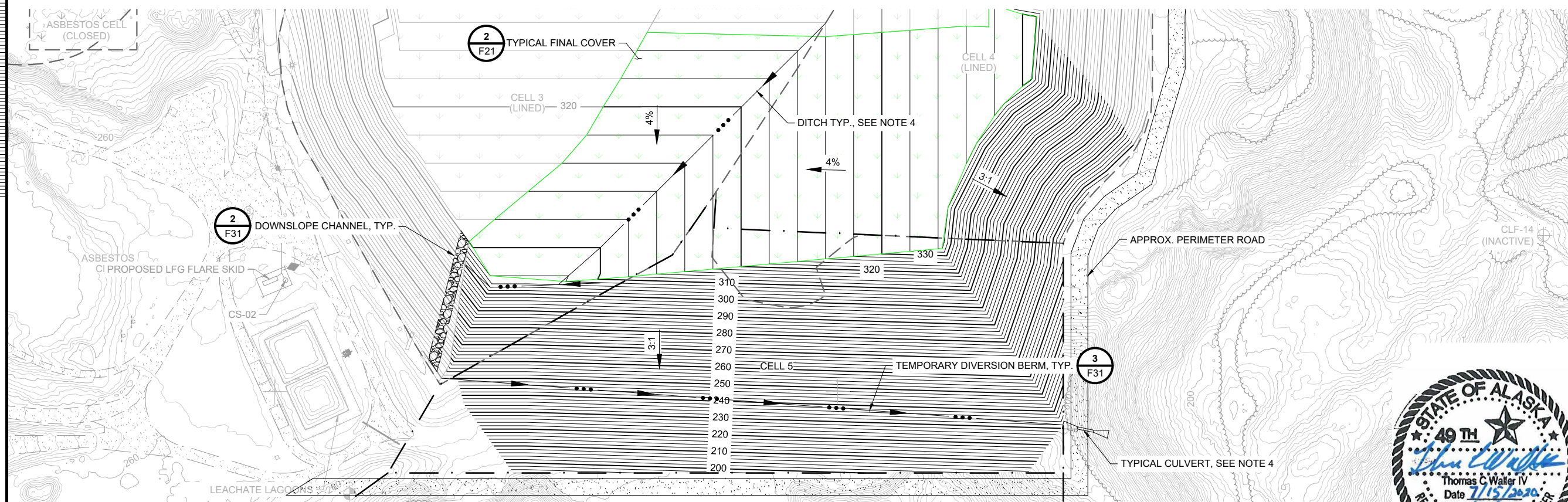
file FIGURE 12 MSW Sequencing Phase 1 (Cell 3).dwg







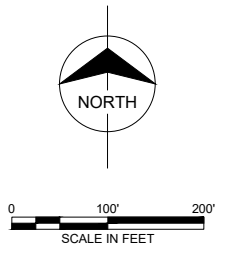
PHASE 1, CELL 4  
SCALE: 1"=100'



PHASE 1, CELL 5  
SCALE: 1"=100'

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS REPRESENT TOP OF FINAL INTERMEDIATE GRADING.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
  - THE ESTIMATED VOLUME OF AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS CALCULATED FROM THE TOP OF DRAINAGE LAYER TO TOP OF FINAL INTERMEDIATE COVER. CELL 4 ESTIMATED AIRSPACE = 984,000 CY. CELL 5 ESTIMATED AIRSPACE = 1,410,000 CY.



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL ALASKA

LANDFILL DEVELOPMENT PLAN  
MSW SEQUENCING PHASE 1  
(CELLS 4 AND 5)

project	120344	contract	
---------	--------	----------	--

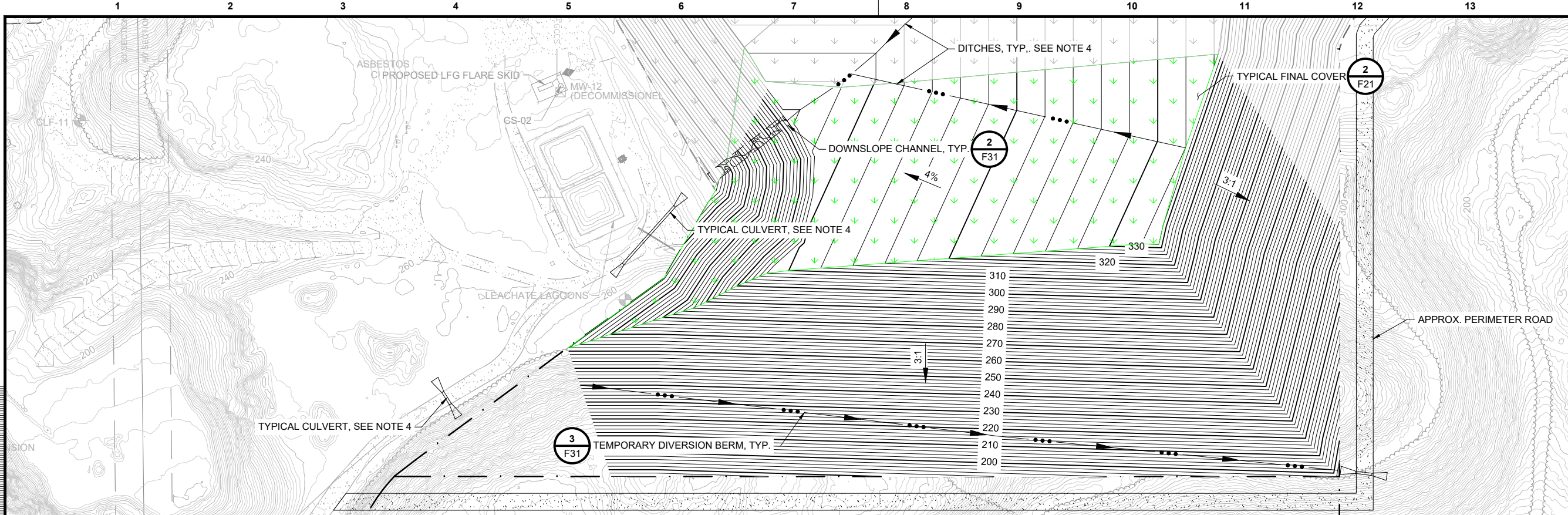
drawing **FIGURE 13** rev. **A**

sheet	13	of	37	sheets
-------	----	----	----	--------

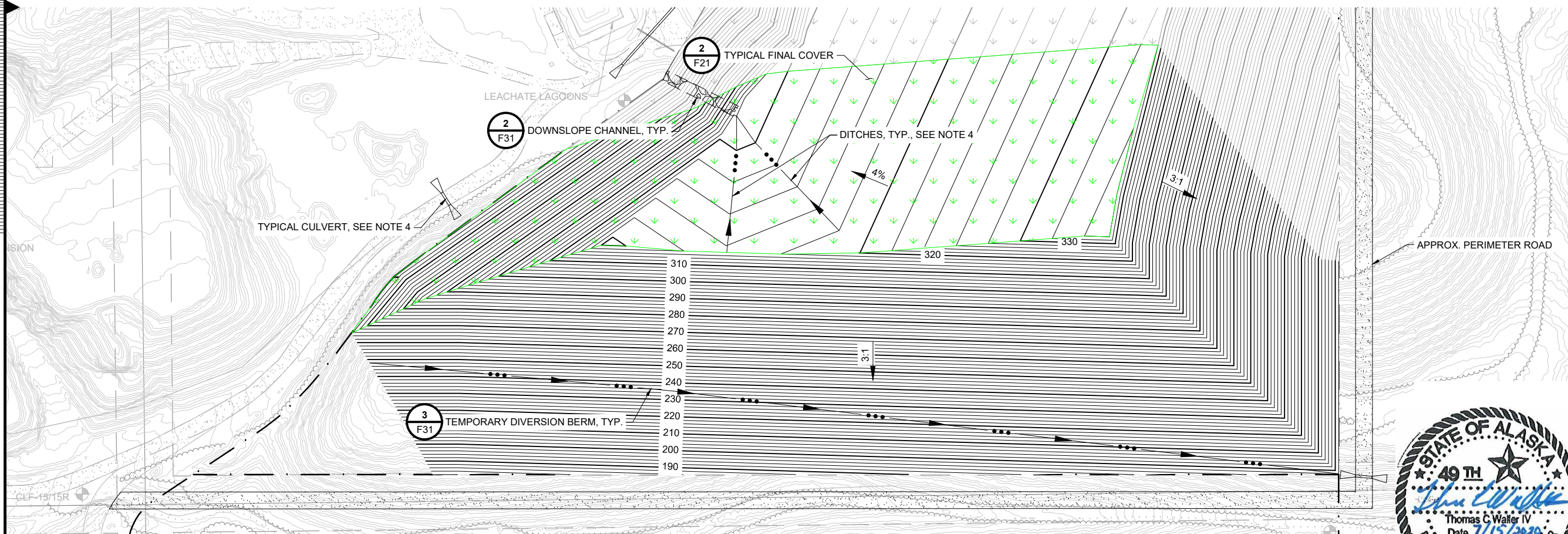
file FIGURE 13 MSW Sequencing Phase 1 (Cells 4 and 5).dwg







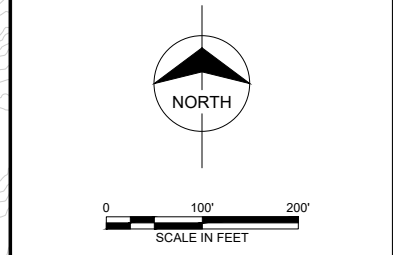
PHASE 2, CORRIDOR 1  
SCALE: 1"=100'



PHASE 2, CORRIDOR 2  
SCALE: 1"=100'

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS INTERVAL REPRESENT TOP OF FINAL INTERMEDIATE GRADING.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
  - THE ESTIMATED VOLUME OF AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS CALCULATED FROM THE TOP OF DRAINAGE LAYER TO TOP OF FINAL INTERMEDIATE COVER. PHASE 2, CORRIDOR 1 ESTIMATED AIRSPACE = 1,585,000 CY. PHASE 2, CORRIDOR 2 ESTIMATED AIRSPACE = 2,192,000 CY.



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

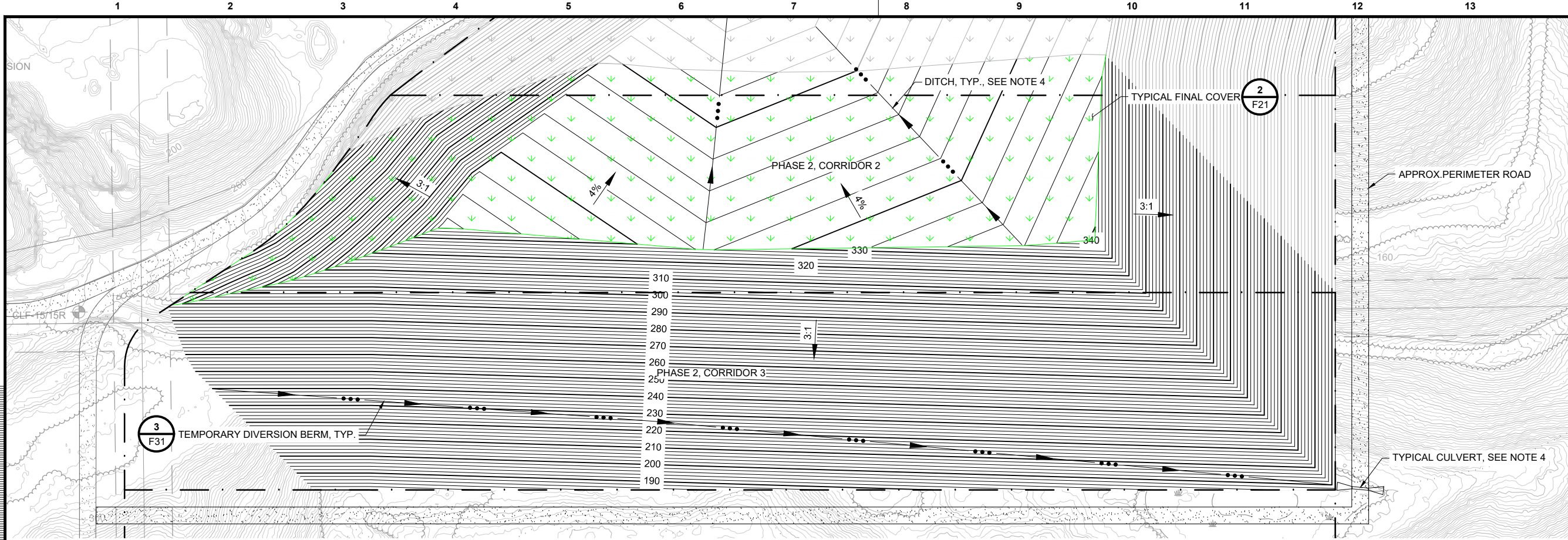


**LANDFILL DEVELOPMENT PLAN**  
MSW SEQUENCING PHASE 2  
(CORRIDOR 1 & 2)

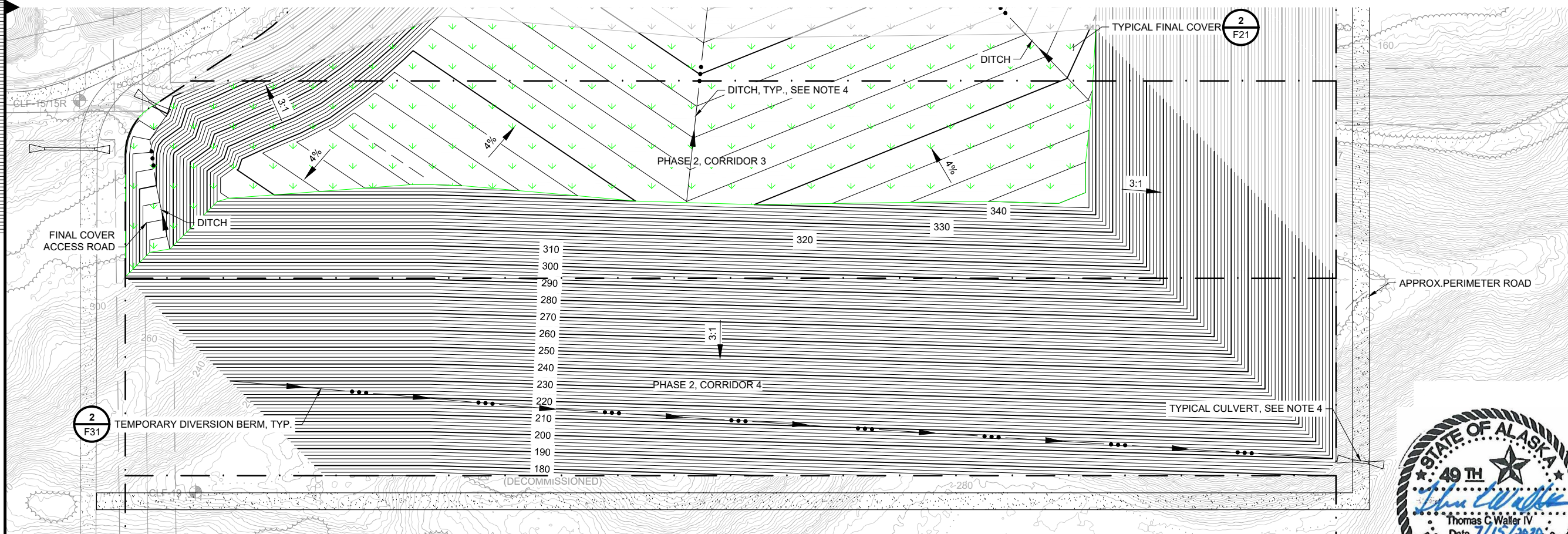
project	120344	contract	
drawing	<b>FIGURE 14 - A</b>		rev.
sheet	14	of	37 sheets
file FIGURE 14 MSW Sequencing Phase 2 (Corridor 1 & 2).dwg			







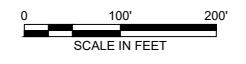
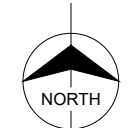
PHASE 2, CORRIDOR 3  
SCALE: 1" = 100'



PHASE 2, CORRIDOR 4  
SCALE: 1" = 100'

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS REPRESENT TOP OF FINAL INTERMEDIATE COVER
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
  - THE ESTIMATED VOLUME OF AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS CALCULATED FROM THE TOP OF DRAINAGE LAYER TO TOP OF FINAL INTERMEDIATE COVER. PHASE 2, CORRIDOR 3 ESTIMATED AIRSPACE = 2,890,000 CY. PHASE 2, CORRIDOR 4 ESTIMATED AIRSPACE = 3,434,000 CY.



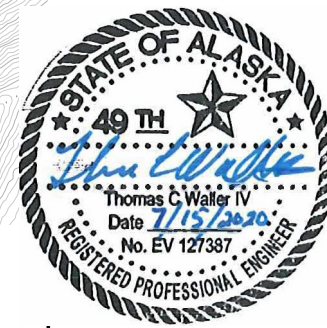
**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

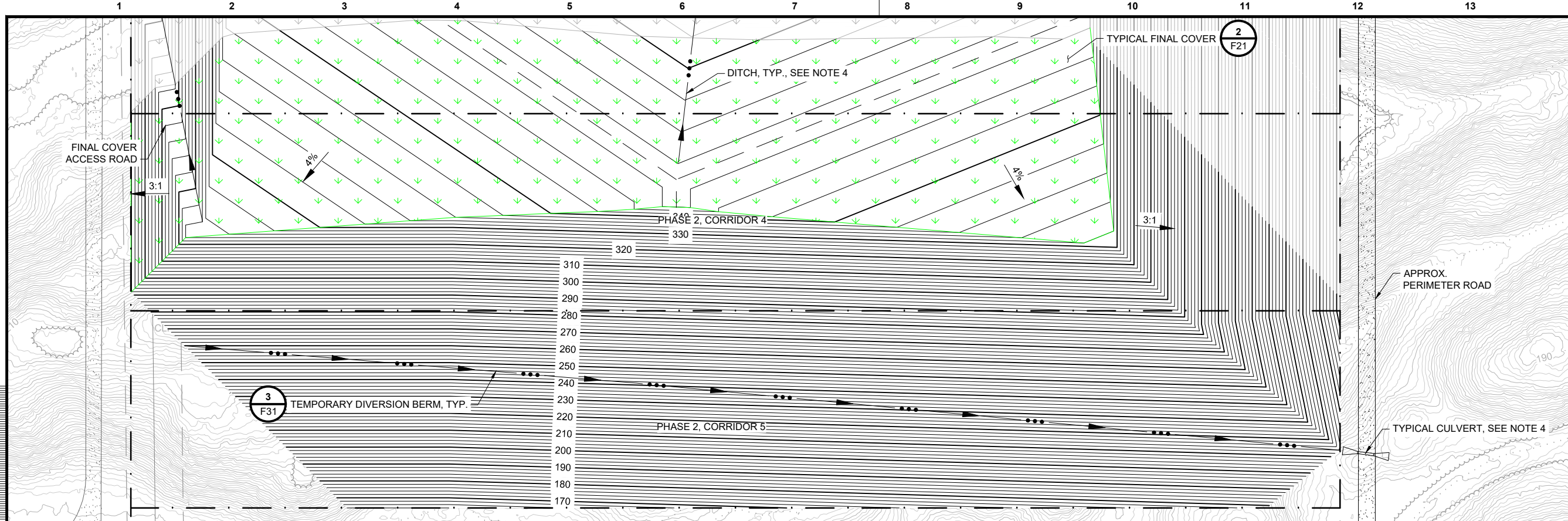


MSB CENTRAL LANDFILL ALASKA  
LANDFILL DEVELOPMENT PLAN  
MSW SEQUENCING PHASE 2  
(CORRIDOR 3 & 4)

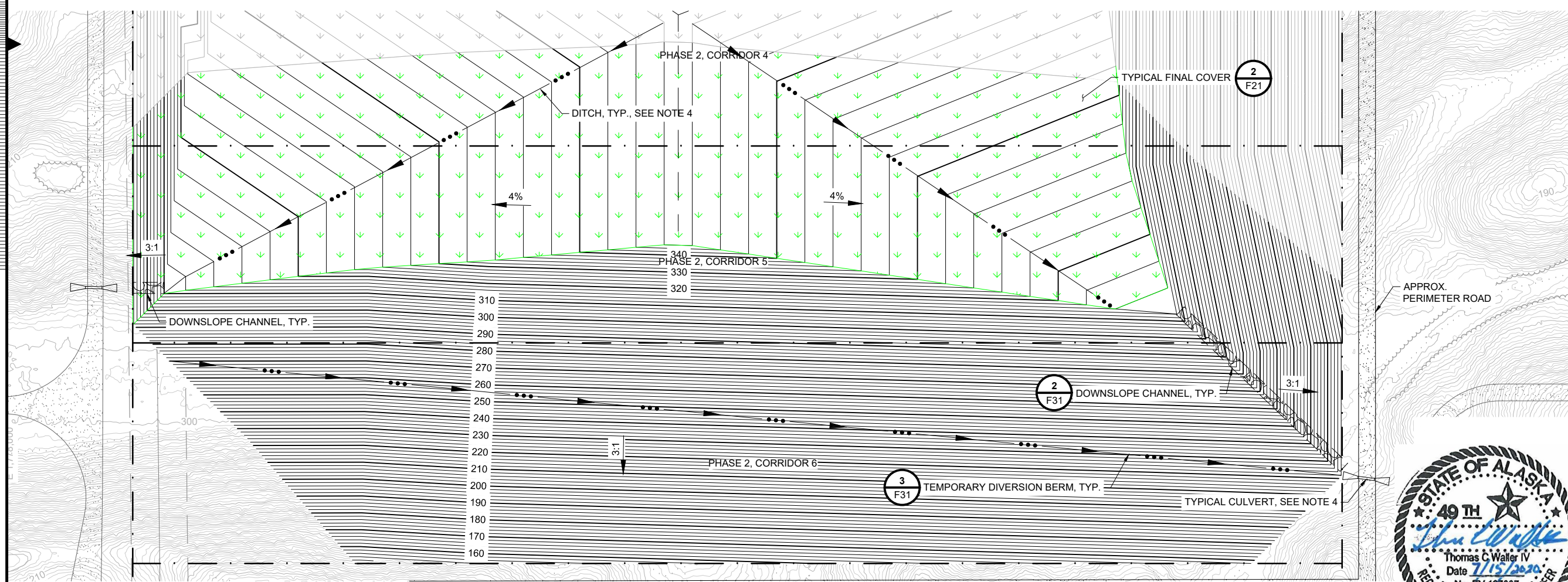


project	120344	contract	
drawing	FIGURE 15 - A		rev.
sheet	15	of	37 sheets
file	FIGURE 15 MSW Sequencing Phase 2 (Corridor 3 & 4).dwg		





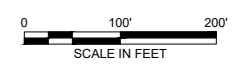
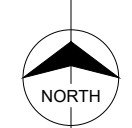
PHASE 2, CORRIDOR 5  
SCALE: 1" = 100'



PHASE 2, CORRIDOR 6  
SCALE: 1" = 100'

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS REPRESENT TOP OF FINAL INTERMEDIATE GRADING.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
  - THE ESTIMATED VOLUME OF AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS CALCULATED FROM THE TOP OF DRAINAGE LAYER TO TOP OF FINAL INTERMEDIATE COVER. PHASE 2, CORRIDOR 5 ESTIMATED AIRSPACE = 3,660,000 CY. PHASE 2, CORRIDOR 6 ESTIMATED AIRSPACE = 4,228,000 CY.



**FOR PLANNING PURPOSES ONLY**

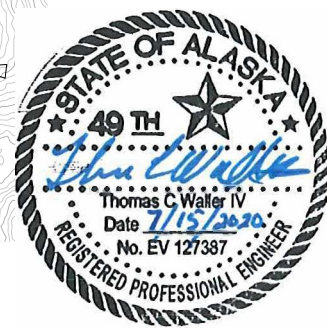


date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



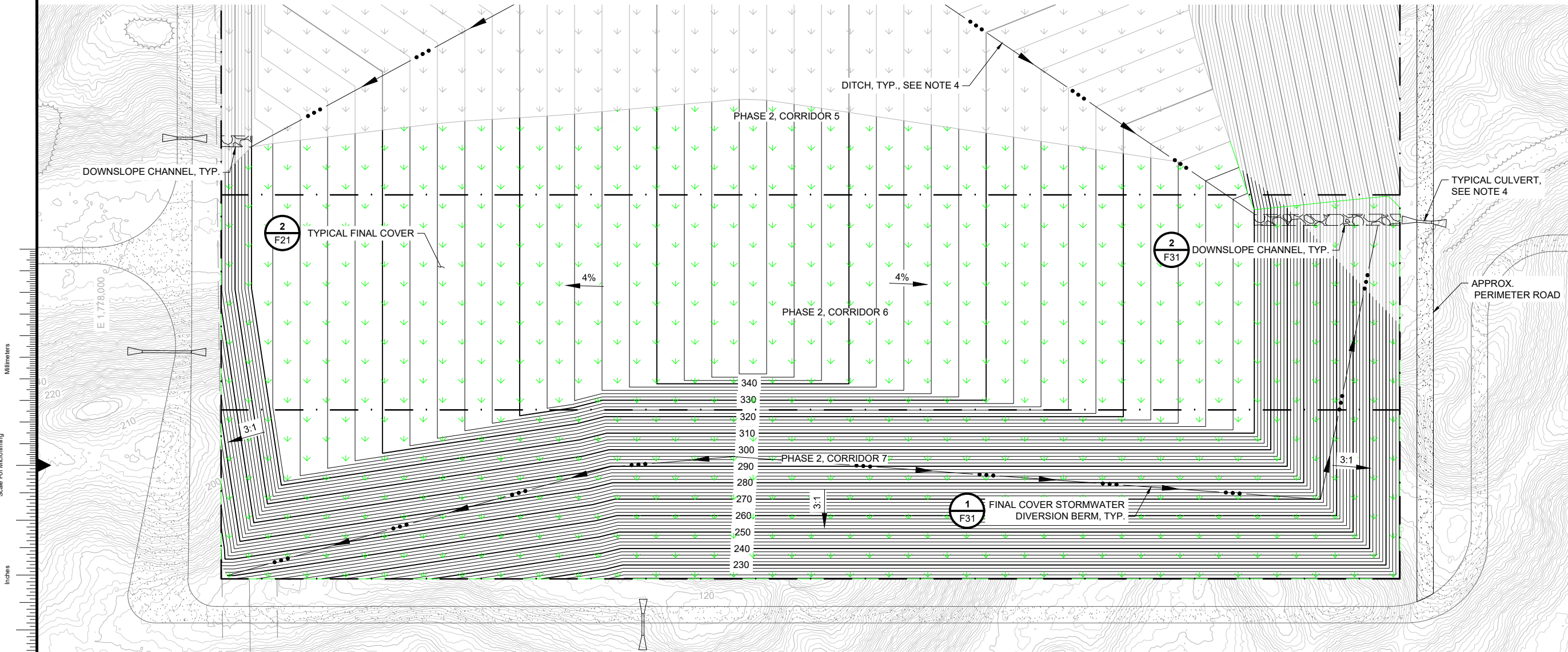
MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW SEQUENCING PHASE 2  
(CORRIDOR 5 & 6)

project	120344	contract	
drawing		rev.	
<b>FIGURE 16 - A</b>			
sheet	16	of	37 sheets
file: FIGURE 16 MSW Sequencing Phase 2 (Corridor 5 & 6).dwg			





no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES



- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS REPRESENT TOP OF FINAL INTERMEDIATE GRADING.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
  - THE ESTIMATED VOLUME OF AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS CALCULATED FROM THE TOP OF DRAINAGE LAYER TO TOP OF FINAL INTERMEDIATE COVER. PHASE 2, CORRIDOR 7 ESTIMATED AIRSPACE = 5,149,000 CY.

PHASE 2, CORRIDOR 7  
SCALE: 1" = 100'

**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

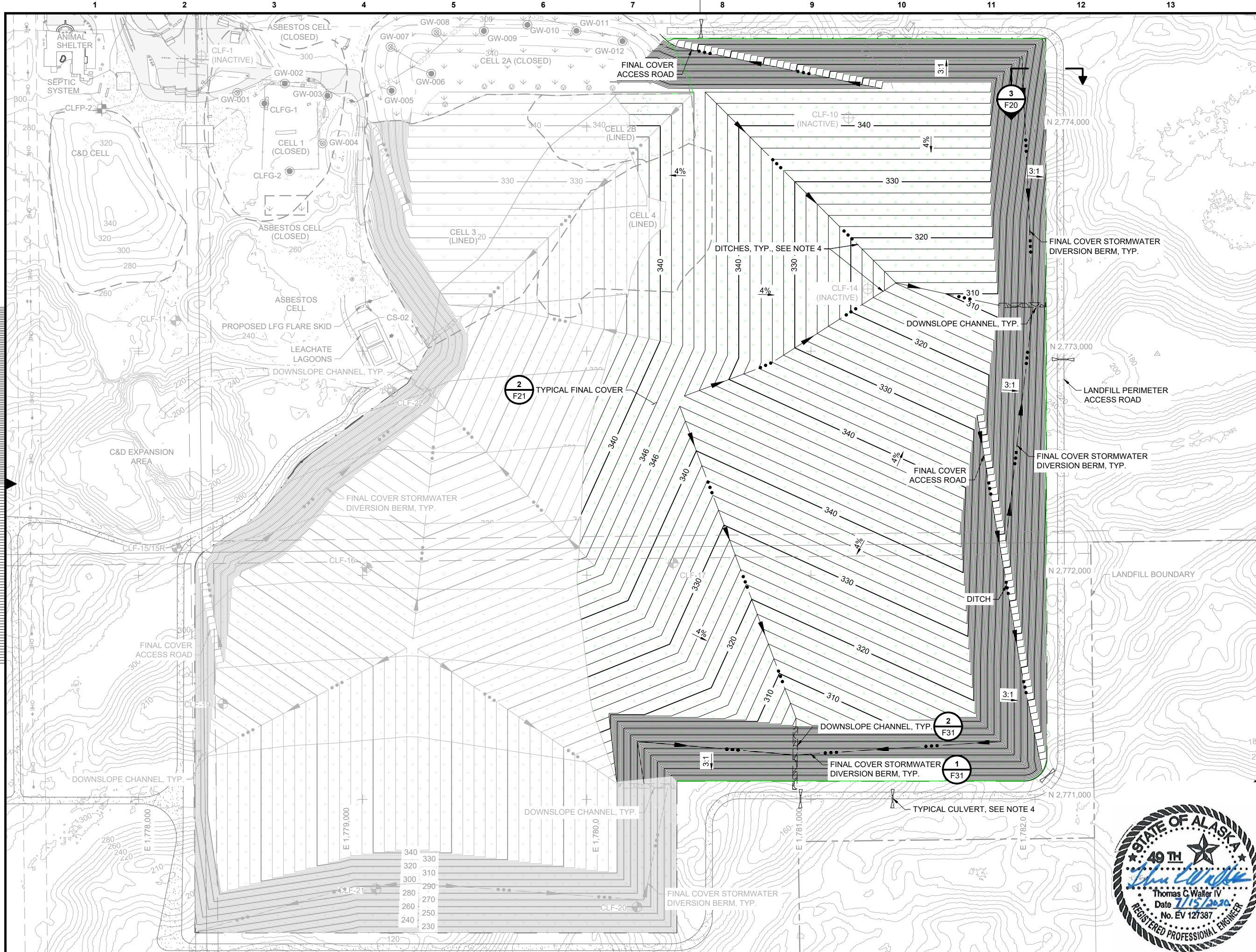


MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW SEQUENCING PHASE 2 (CORRIDOR 7)



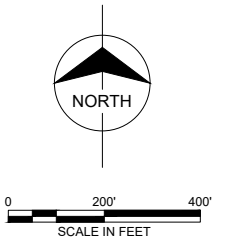
project	120344	contract	
drawing	<b>FIGURE 17 - A</b>		rev.
sheet	17	of	37 sheets
file: FIGURE 17 MSW Sequencing Phase 2 (Corridor 7).dwg			





no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. CONTOURS REPRESENT TOP OF FINAL INTERMEDIATE GRADING.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.
  - THE ESTIMATED VOLUME OF AIRSPACE (WHICH INCLUDES WASTE, DAILY COVER AND FINAL INTERMEDIATE COVER) IS CALCULATED FROM THE TOP OF DRAINAGE LAYER TO TOP OF FINAL INTERMEDIATE COVER. PHASE 3 ESTIMATED AIRSPACE = 24,065,000 CY.



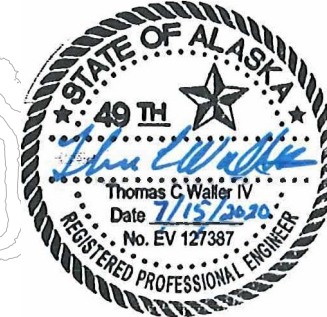
**FOR PLANNING PURPOSES ONLY**



date JULY 2020	detailed M. AULT
designed T. KOLLER	checked F. DORAN



MSB CENTRAL LANDFILL ALASKA  
LANDFILL DEVELOPMENT PLAN  
MSW SEQUENCING PHASE 3



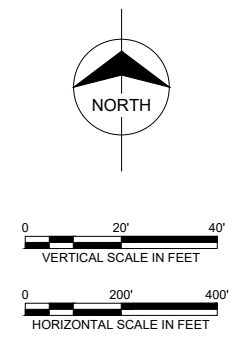
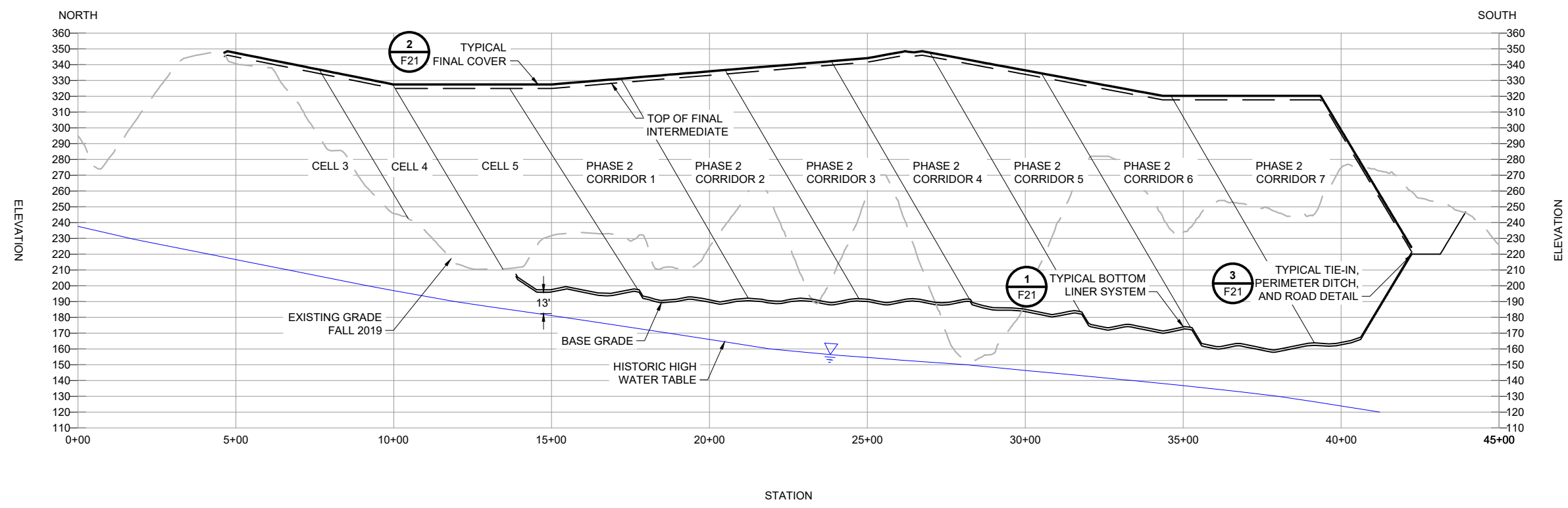
project 120344	contract
drawing <b>FIGURE 18 - A</b>	rev.
sheet 18	of 37 sheets
file FIGURE 18 MSW Sequencing Phase 3.dwg	



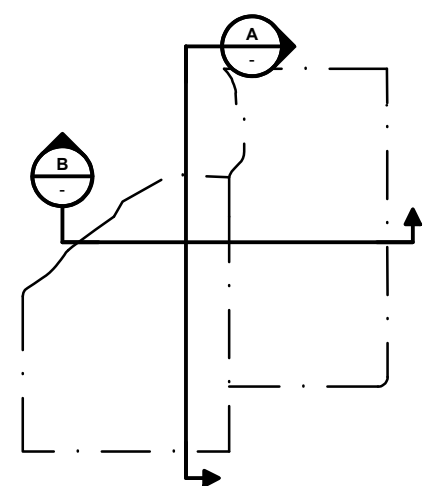
no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

**NOTES:**

- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.



**MSW CROSS SECTION**  
 VERTICAL SCALE: 1" = 20'  
 HORIZONTAL SCALE: 1" = 200'



**KEY MAP**  
 SCALE: NTS

**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL ALASKA

**LANDFILL DEVELOPMENT PLAN**  
 MSW CROSS SECTIONS AND DETAILS, 1 OF 2

project	120344	contract	
---------	--------	----------	--

drawing	<b>FIGURE 19 - A</b>		rev.
sheet	19	of	37 sheets

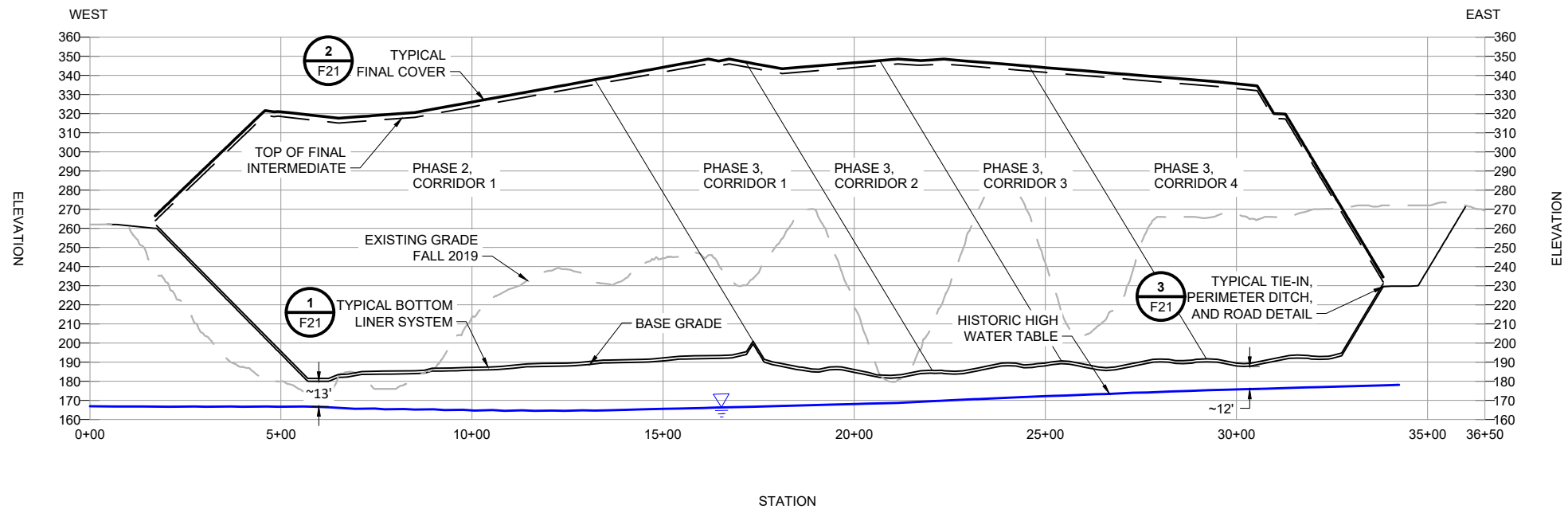




no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

**NOTES:**

- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED.

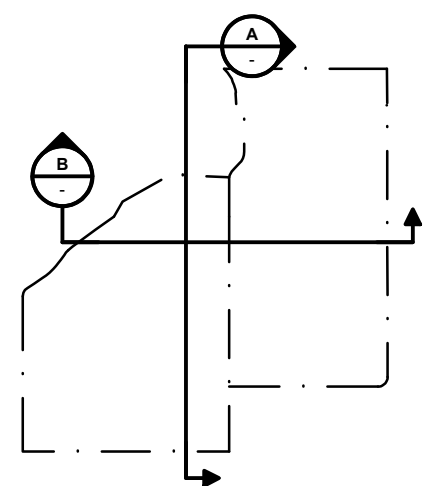


Scale For Microfining  
Millimeters  
Inches

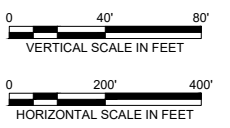
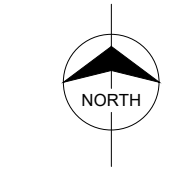
ELEVATION

STATION

**MSW CROSS SECTION**  
VERTICAL SCALE: 1" = 40'  
HORIZONTAL SCALE: 1" = 200'



**KEY MAP**  
SCALE: NTS



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



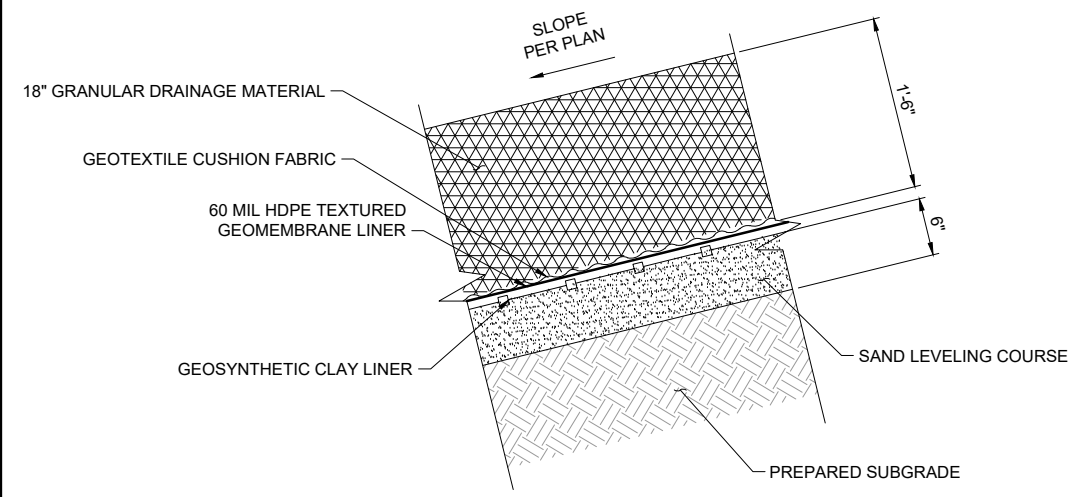
MSB CENTRAL LANDFILL ALASKA

**LANDFILL DEVELOPMENT PLAN**  
MSW CROSS SECTIONS AND DETAILS, 2 OF 2

project	120344	contract	
drawing	<b>FIGURE 20 - A</b>		rev.
sheet	20	of	37 sheets

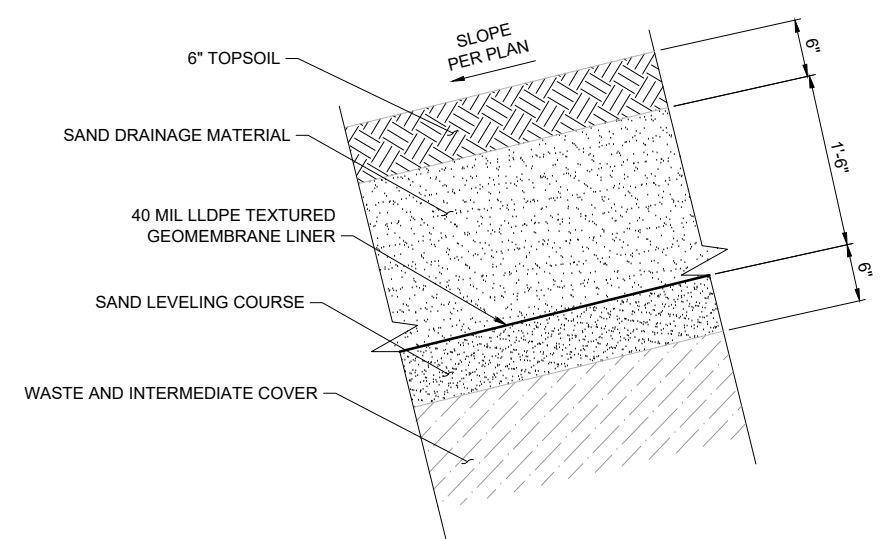






**TYPICAL BOTTOM LINER SYSTEM**  
NOT TO SCALE

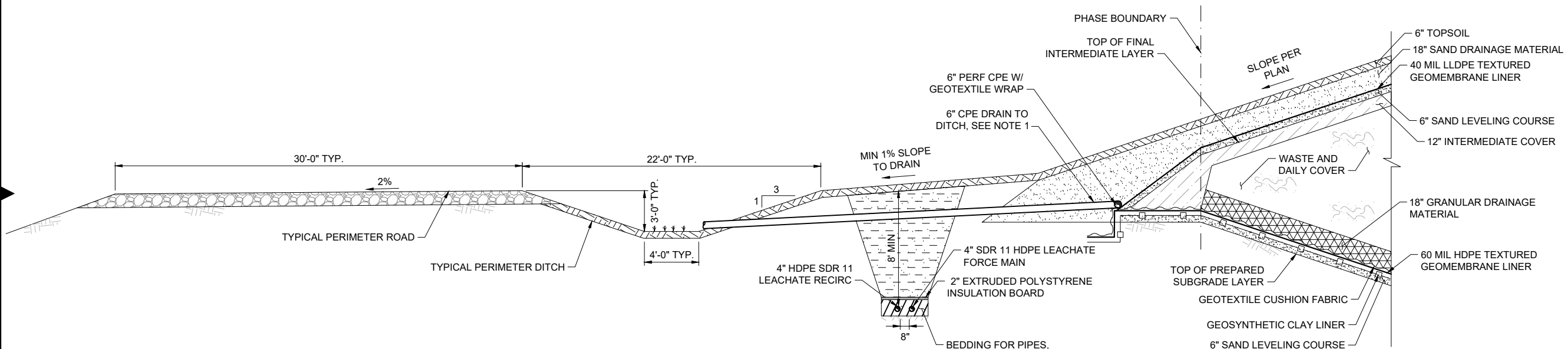
1 1 1 1  
F9 F10 F19 F20



**TYPICAL FINAL COVER SYSTEM**  
NOT TO SCALE

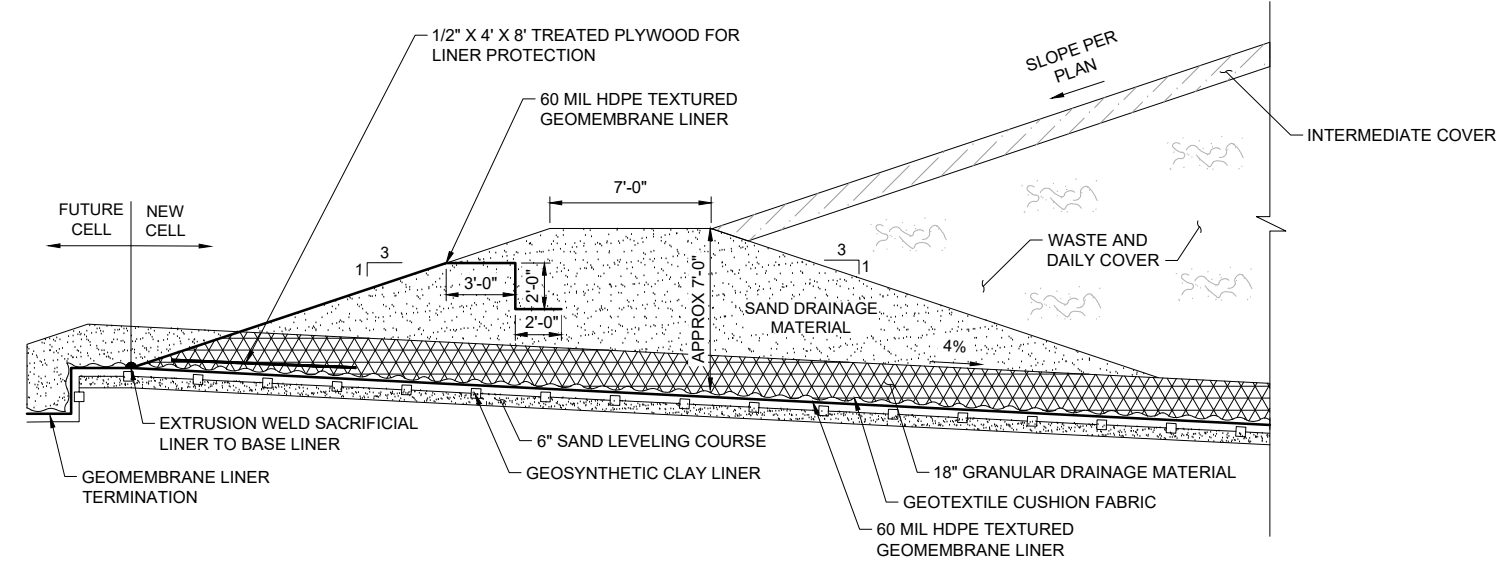
2 2 2 2 2 2 2 2 2 2  
F11 F12 F13 F14 F15 F16 F17 F18 F19 F20

Scale For Microfining  
Millimeters  
Inches



**TYPICAL TIE-IN, PERIMETER DITCH, AND ROAD DETAIL**  
NOT TO SCALE

3 3 3 3  
F11 F18 F19 F20



**PERIMETER CONTAINMENT BERM**  
NOT TO SCALE

4  
F10

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- DAYLIGHT PIPE APPROXIMATELY EVERY 100-FT IN DITCH WITH SOLID CPE PIPE. PIPE OUTLETS TO BE COVERED WITH GUARD TO PREVENT RODENT INTRUSION.
  - PIPE BEDDING SHALL EXTEND A MINIMUM OF ONE FOOT HORIZONTALLY FROM THE OUTSIDE OF THE LEACHATE PIPE. PIPE BEDDING SHALL EXTEND A VERTICAL DISTANCE OF 6-INCHES ABOVE THE TOP OF PIPE AND 4-INCHES BELOW THE BOTTOM OF PIPE.

**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

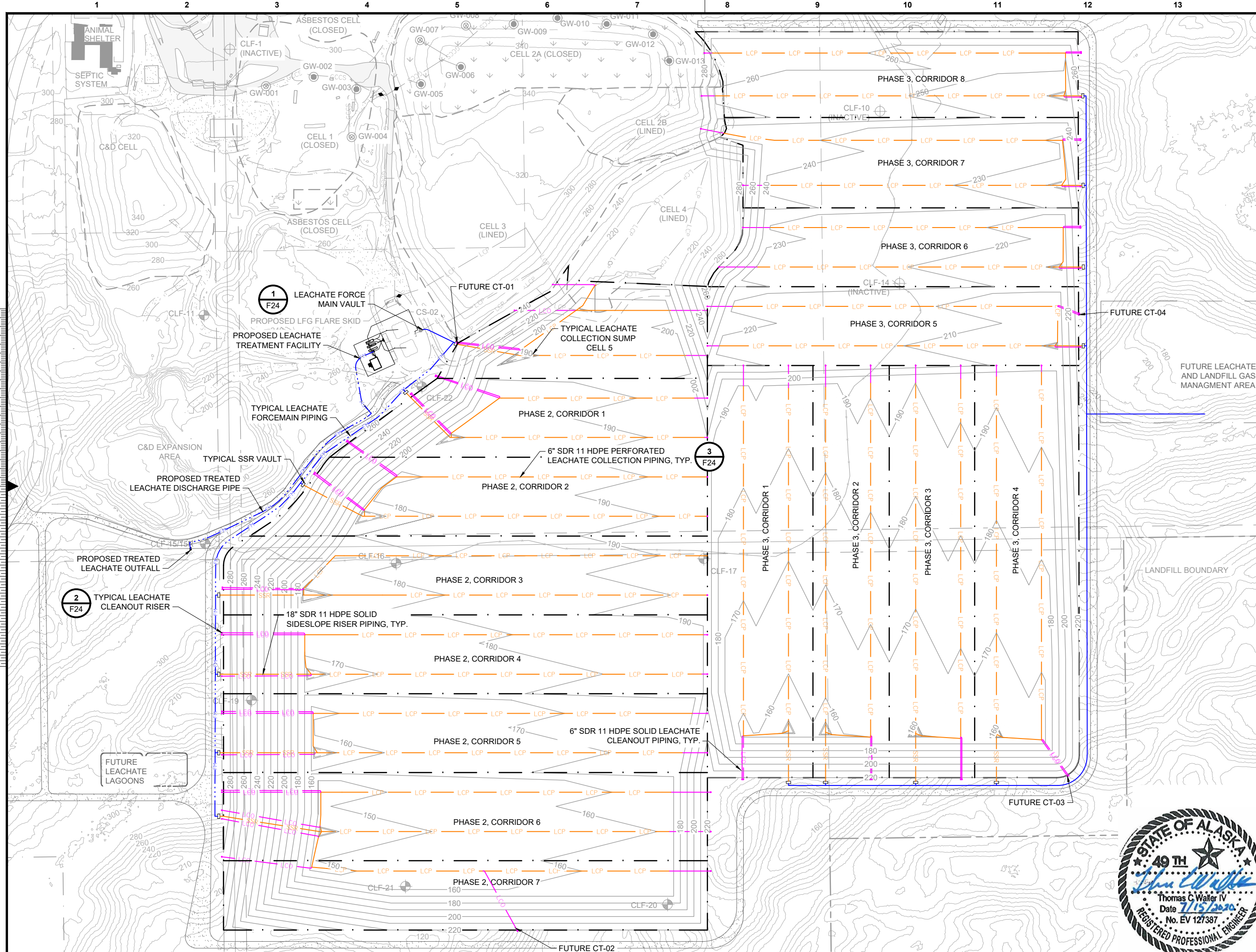


MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW BASE AND FINAL COVER DETAILS

project	120344	contract	
drawing	<b>FIGURE 21 - A</b>		rev.
sheet	21	of	37 sheets
file FIGURE 21 MSW Base and Final Cover Details.dwg			



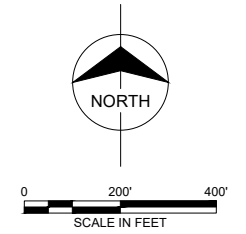




no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TEN (10) FEET. CONTOURS REPRESENT TOP OF PREPARED SUBGRADE.

Scale For Macrofining  
Inches  
Scale For Microfining  
Millimeters



**FOR PLANNING PURPOSES ONLY**



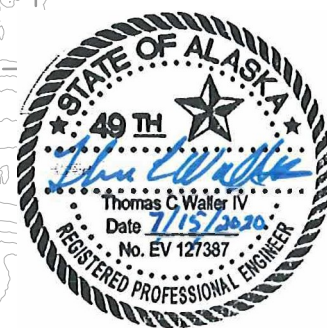
date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



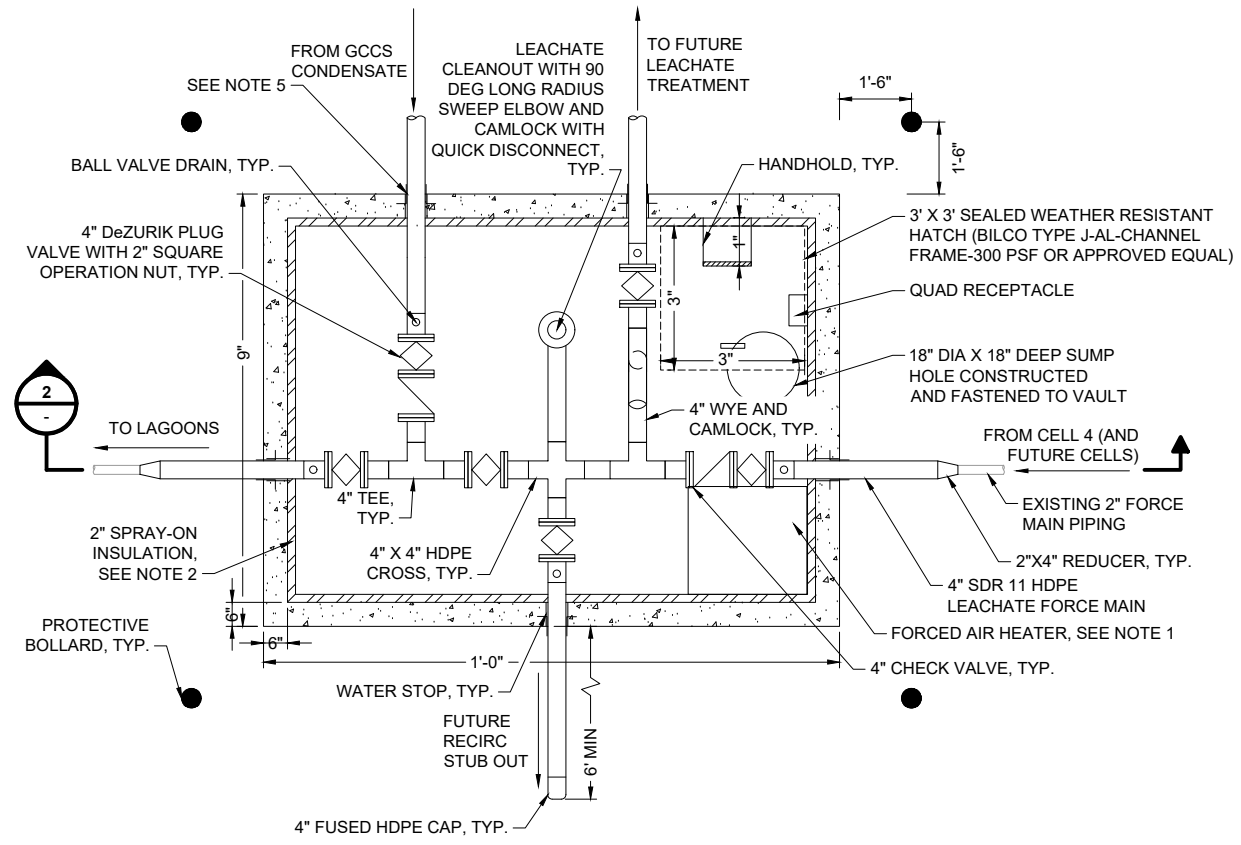
MSB CENTRAL LANDFILL ALASKA

LANDFILL DEVELOPMENT PLAN  
MSW LEACHATE COLLECTION  
PLAN PHASES 1 THROUGH 3

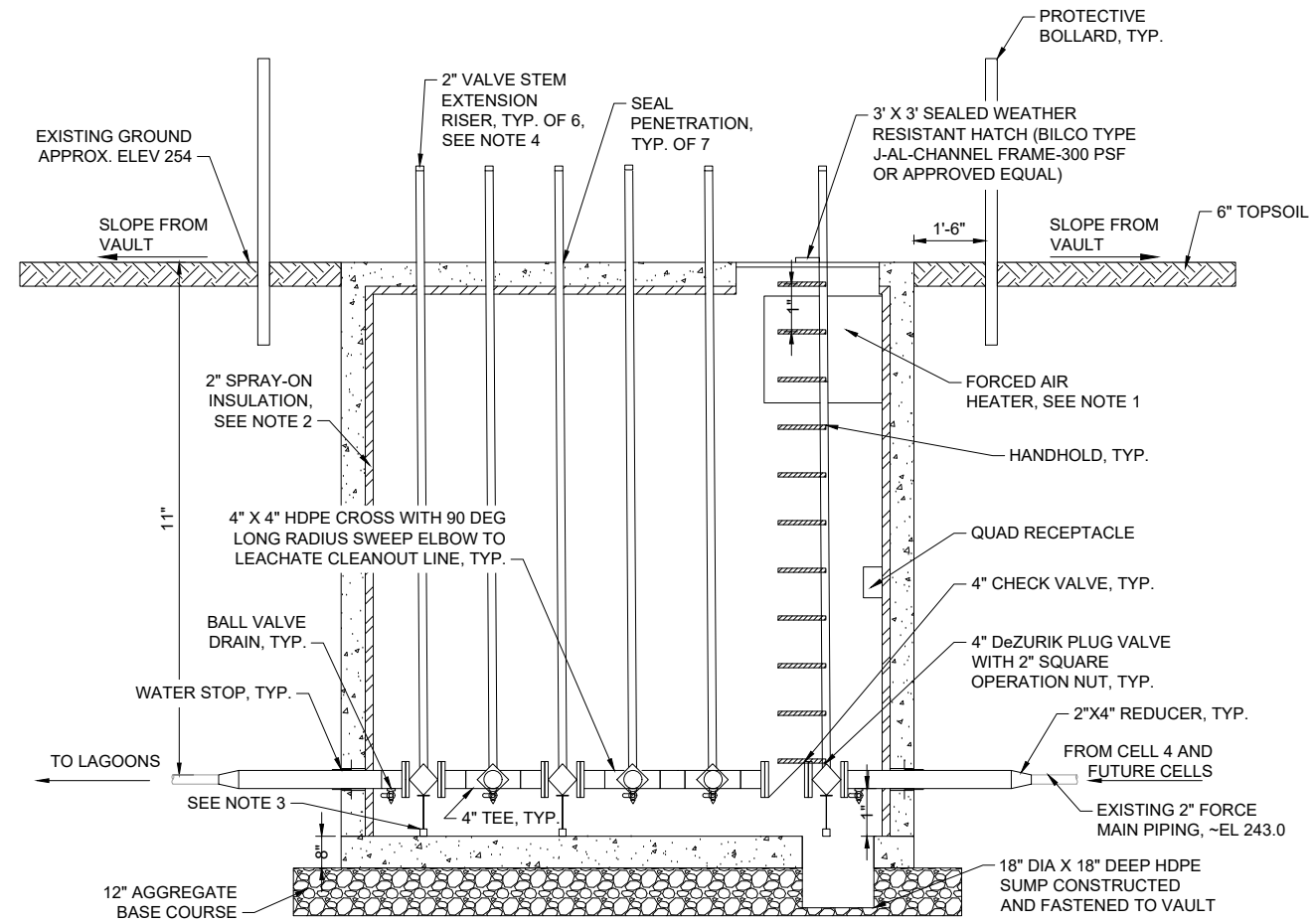
project	120344	contract	
drawing		rev.	
<b>FIGURE 22 - A</b>			
sheet	22	of	37 sheets
file	FIGURE 22 MSW Leachate Collection Plan Phases 1 through 3.dwg		



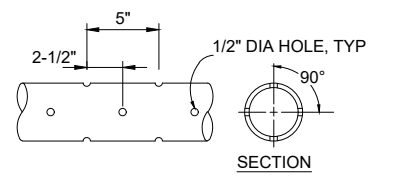




**LEACHATE FORCE MAIN VAULT**  
SCALE: 1" = 2'



**LEACHATE FORCE MAIN VAULT**  
SCALE: 1" = 2'



**PIPE PERFORATION DETAIL**  
NOT TO SCALE

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- F&I 240V 3KW 1-PHASE INDUSTRIAL RATED HEATER W/ THERMOSTAT CONTROL (CHROMALOX CXHA-03 OR EQUAL). HEATER MUST BE A FORCED AIR INTRINSICALLY SAFE HEATER. MOUNT TO VAULT WALL PER MFR'S INSTRUCTIONS AND W/ MFR'S APPROVED WALL MOUNTS.
  - PLACE 2" SPRAY-ON INSULATION ON INSIDE OF VAULT.
  - PROVIDE AND INSTALL PIPE SUPPORTS UNDER EACH VALVE AND FITTING AND ADDITIONAL SUPPORTS AS NEEDED SPACED AT 3-FEET.
  - VALVE STEM EXTENSIONS SHALL BE INSTALLED FOR EACH VALVE AND END 2-FT ABOVE TOP OF VAULT. STEM EXTENSION RISERS SHALL BE SEALED AND LABELED AT VAULT SURFACE. VALVE OPEN AND CLOSE LABEL AND DIRECTIONS SHALL BE LABELED WITH EXTERIOR UV RESISTANT PAINT. VALVE LABEL SHALL INDICATE PIPE FORCE MAIN ORIGIN AND DESTINATION. ONE REMOVABLE T-HANDLE SHALL BE PROVIDED TO OPERATE ALL VALVES.
  - GCCS CONDENSATE LINE AND FUTURE LEACHATE TREATMENT LINE TO ENTER VAULT AT 11-FT DEPTH PERPENDICULAR TO THE VAULT (I.E., NO SLOPE WITHIN THE LAST 4-FEET OF PIPE). ONCE IN TRENCH, SLOPE PIPE UP TO 8-FT DEPTH WITH INSULATION BOARD COVER. BOARD COVER SHALL BE MAINTAINED FOR ENTIRE LENGTH OF PIPES.

**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL ALASKA

LANDFILL DEVELOPMENT PLAN  
MSW LEACHATE COLLECTION  
DETAILS, 1 OF 2

project	120344	contract	
---------	--------	----------	--

drawing **FIGURE 23 - A** rev.

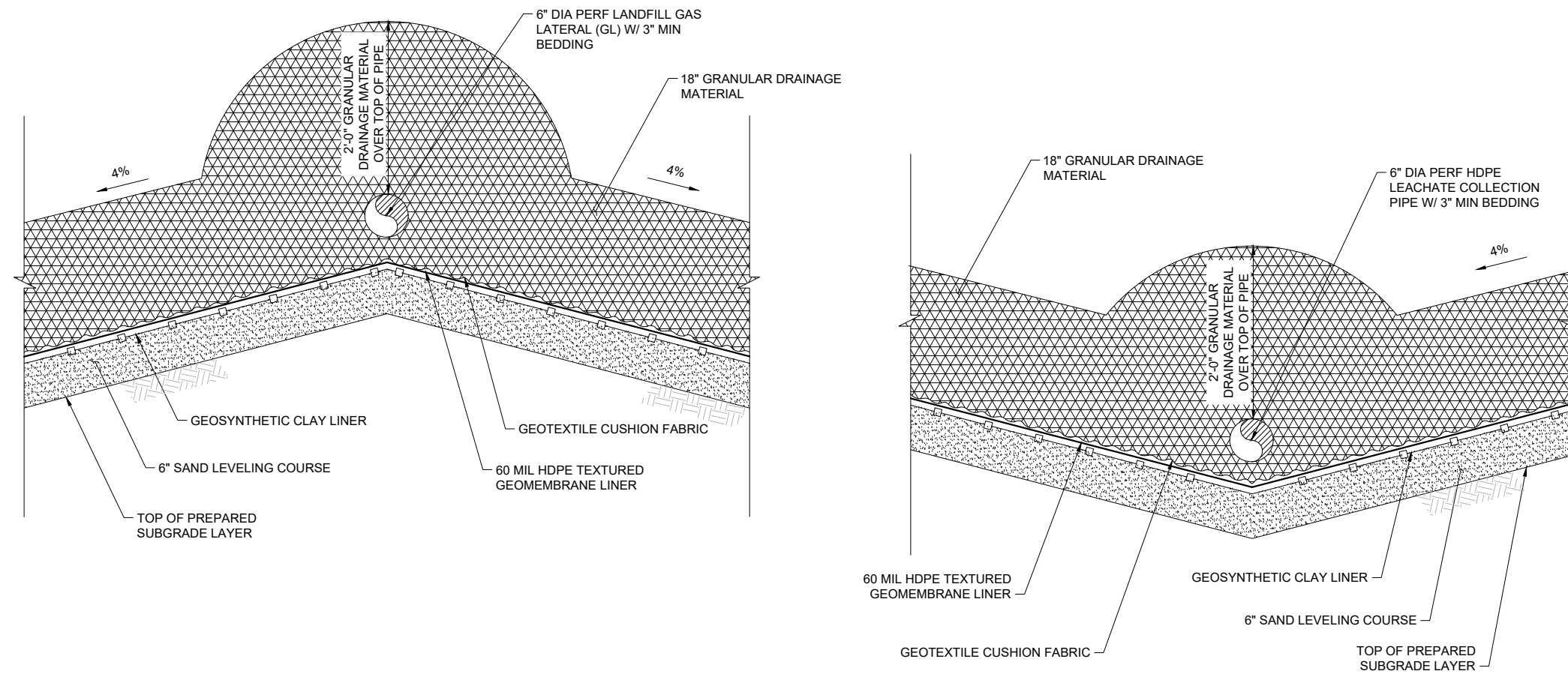
sheet	23	of	37	sheets
-------	----	----	----	--------

file FIGURE 23 MSW Leachate Collection Details, 1 of 2.dwg

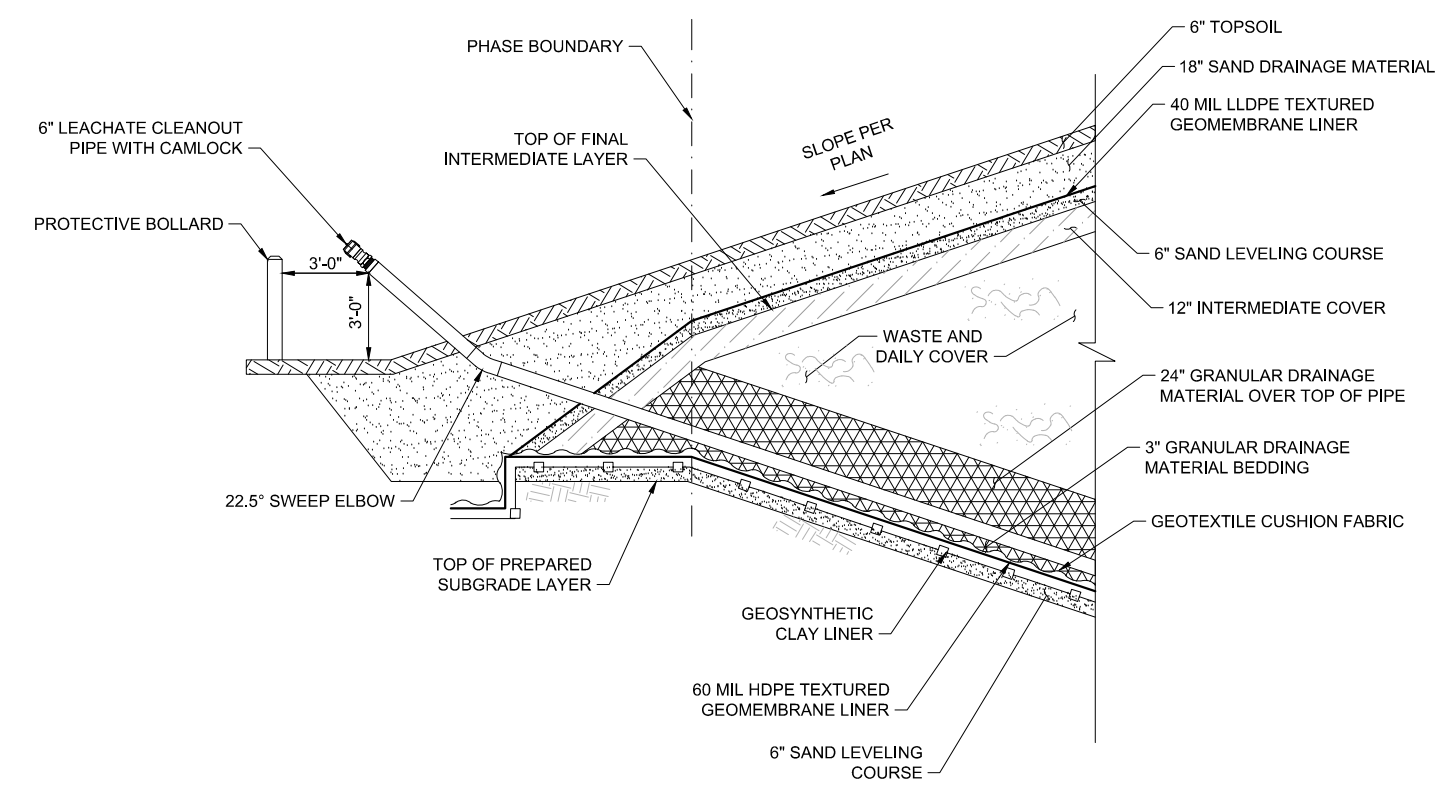




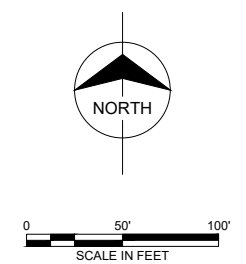
no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES



**TYPICAL LEACHATE AND GAS LATERAL COLLECTION CROSS-SECTION**  
NOT TO SCALE



**LEACHATE CLEANOUT RISER**  
NOT TO SCALE



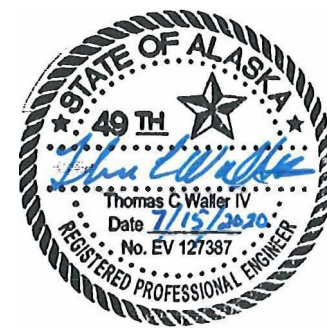
**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

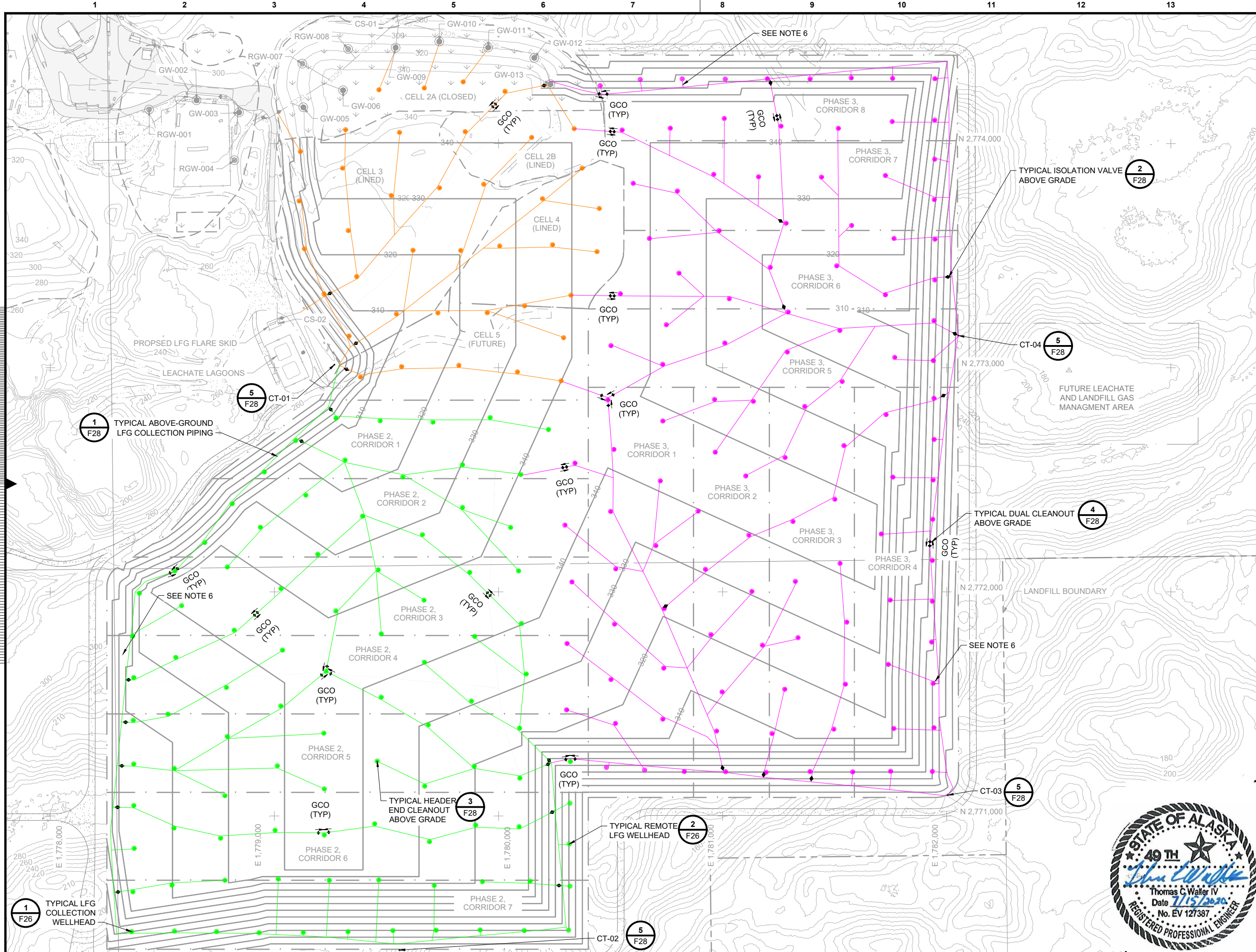


MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW LEACHATE COLLECTION DETAILS, 2 OF 2



project	120344	contract	
drawing	<b>FIGURE 24 - A</b>		rev.
sheet	24	of	37 sheets
file: FIGURE 24 MSW Leachate Collection Details, 2 of 2.dwg			

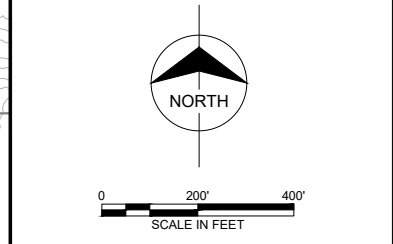




no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TEN (10) FEET. DESIGN CONTOURS REPRESENT TOP OF FINAL COVER.
  - INSTALL GAS CLEAN OUTS (GCO, TYP) AT EACH HIGH POINT INDICATED.
  - HORIZONTAL GAS COLLECTION PIPING NOT SHOWN.
  - LFG HEADER TO BE LOCATED IN A CULVERT UNDER ROADS WHERE APPLICABLE.

- LEGEND:**
- PHASE 1 GAS WELL & PIPING
  - PHASE 2 GAS WELL & PIPING
  - PHASE 3 GAS WELL & PIPING



**FOR PLANNING PURPOSES ONLY**



date JULY 2020	detailed M. AULT
designed T. KOLLER	checked F. DORAN



**LANDFILL DEVELOPMENT PLAN**  
MSW LFG COLLECTION PLAN  
PHASES 1 THROUGH 3

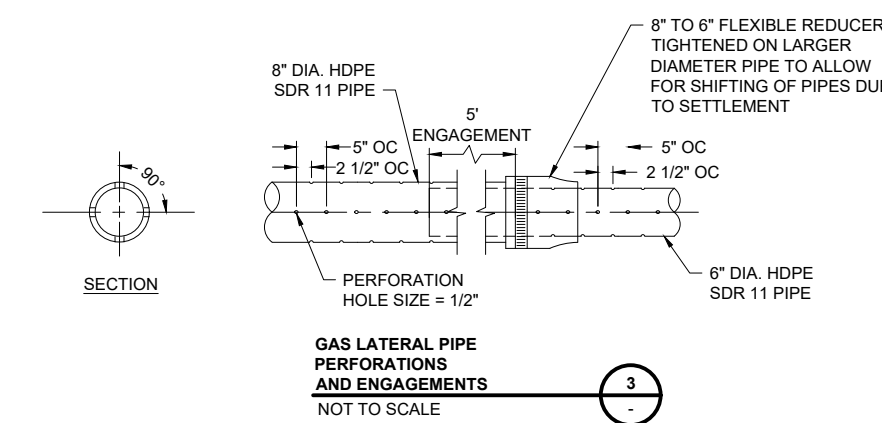
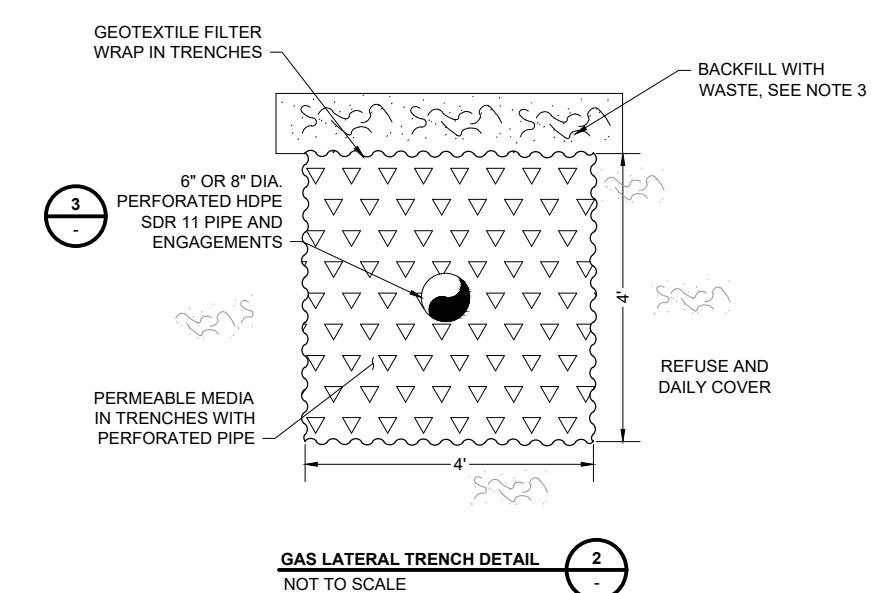
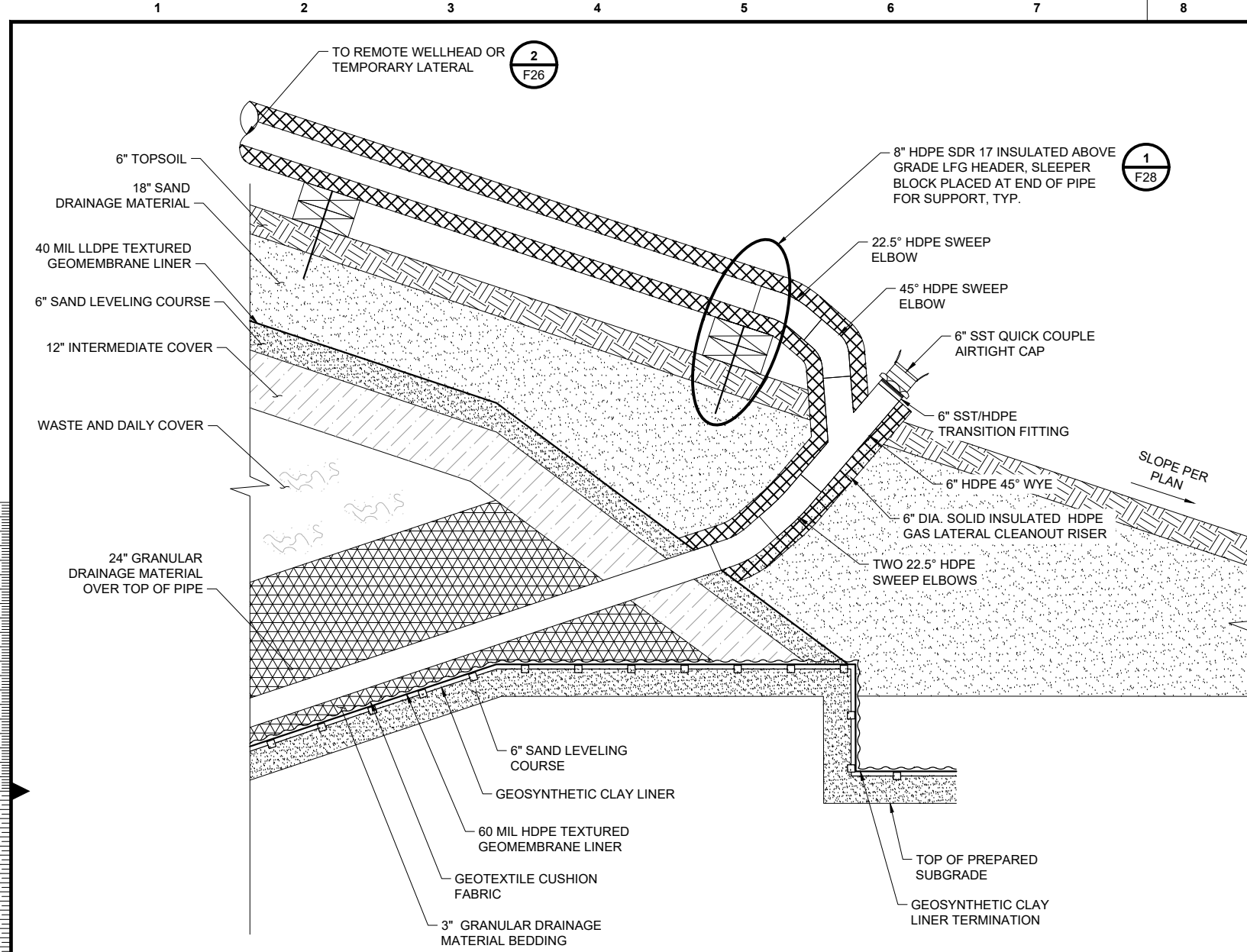
project 120344	contract
drawing <b>FIGURE 25 - A</b>	rev.
sheet 25 of 37 sheets	
file FIGURE 25 MSW LFG Collection Plan Phases 1 through 3	









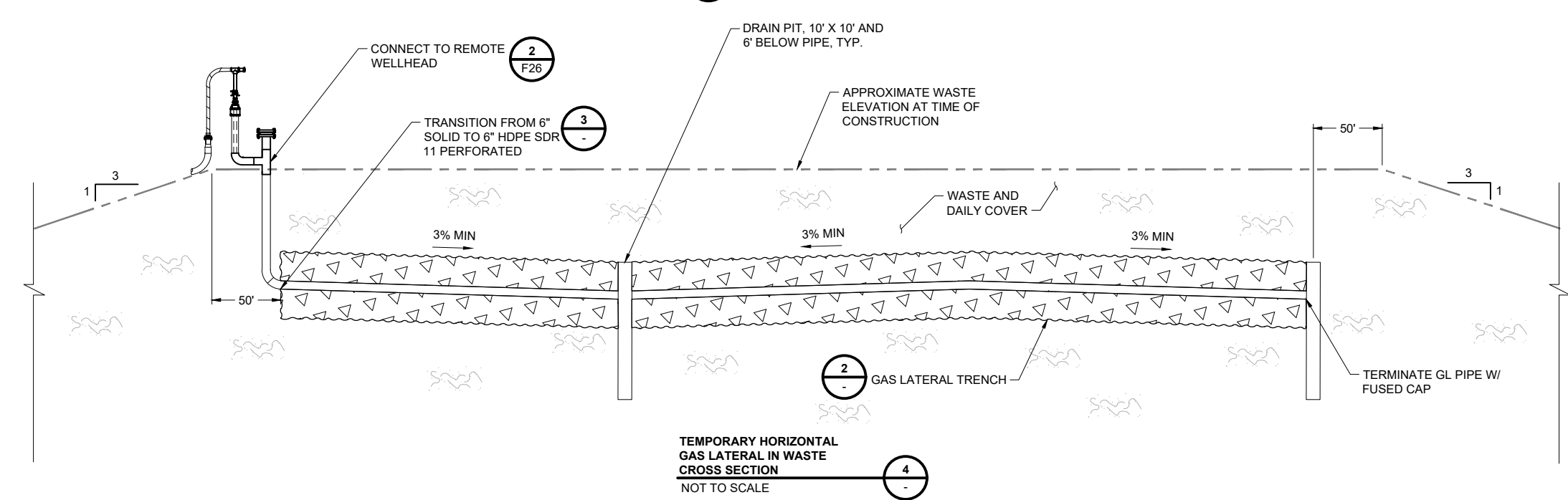


Scale For Microfining  
Millimeters  
Inches

**GAS LATERAL CONNECTION TO LFG HEADER**  
NOT TO SCALE

**GAS LATERAL TRENCH DETAIL**  
NOT TO SCALE

**GAS LATERAL PIPE PERFORATIONS AND ENGAGEMENTS**  
NOT TO SCALE



**TEMPORARY HORIZONTAL GAS LATERAL IN WASTE CROSS SECTION**  
NOT TO SCALE

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- PERMEABLE MEDIA MAY BE SHREDDED TIRES OR COARSE AGGREGATE. OWNER TO FURNISH PERMEABLE MEDIA.
  - ALTERNATE THE PERFORATED SECTIONS OF THE 8" SDR 11 AND 6" SDR 11 HDPE PIPE EVERY TWO PIPE LENGTH (I.E., EVERY 80 FEET) FOR THE ENTIRE LENGTH OF THE LATERAL.
  - PLACE A MINIMUM OF 5-FOOT OF WASTE OVER ALL SECTIONS OF PIPE INSTALLED. TRENCHES MUST BE COMPLETELY BACKFILLED PRIOR TO WASTE PLACEMENT.

**FOR PLANNING PURPOSES ONLY**



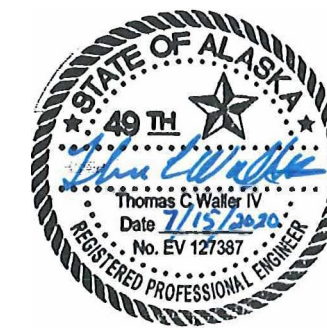
date JULY 2020	detailed M. AULT
designed T. KOLLER	checked F. DORAN



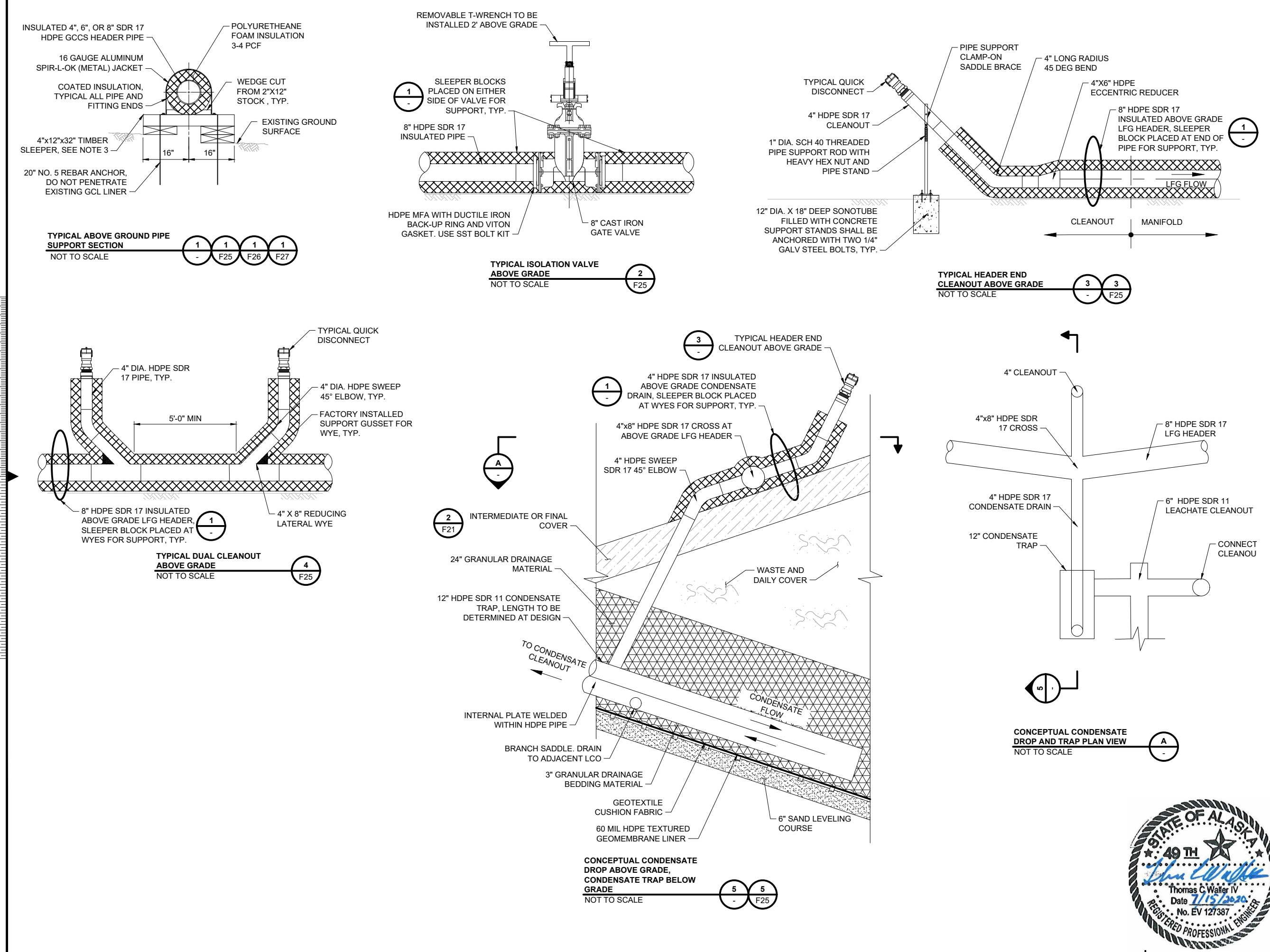
MSB CENTRAL LANDFILL  
ALASKA

**LANDFILL DEVELOPMENT PLAN**  
MSW LFG COLLECTION DETAILS,  
2 OF 4

project 120344	contract
drawing <b>FIGURE 27 - A</b>	rev.
sheet 27	of 37 sheets
file FIGURE 27 MSW LFG Collection Details, 2 of 4.dwg	







no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- PROTECTION BOLLARDS SHALL BE INSTALLED TWO PER CLEANOUT RISER OR ISOLATION VALVE AS DIRECTED BY ENGINEER.
  - CLEANOUT ACCESS RISER SHALL BE APPROX 3 FEET ABOVE EXISTING GRADE AND SHALL HAVE TYPICAL CAMLOCK ASSEMBLY. ALL SST DUST CAPS AND CAMLOCK CAPS SHALL BE AIRTIGHT.
  - SLEEPERS TO BE LOCATED EVERY 10 FEET, AT HIGH POINTS IN VERTICAL ELEVATION, AT CHANGES IN HORIZONTAL DIRECTION, AT PIPE JOINTS, AND AT VALVE LOCATIONS.

**FOR PLANNING PURPOSES ONLY**



date JULY 2020	detailed M. AULT
designed T. KOLLER	checked F. DORAN

MSB CENTRAL LANDFILL ALASKA

**LANDFILL DEVELOPMENT PLAN**  
MSW LFG COLLECTION DETAILS,  
3 OF 4

project 120344	contract
drawing <b>FIGURE 28 - A</b>	rev.
sheet 28	of 37 sheets
file FIGURE 28 MSW LFG Collection Details, 3 of 4.dwg	



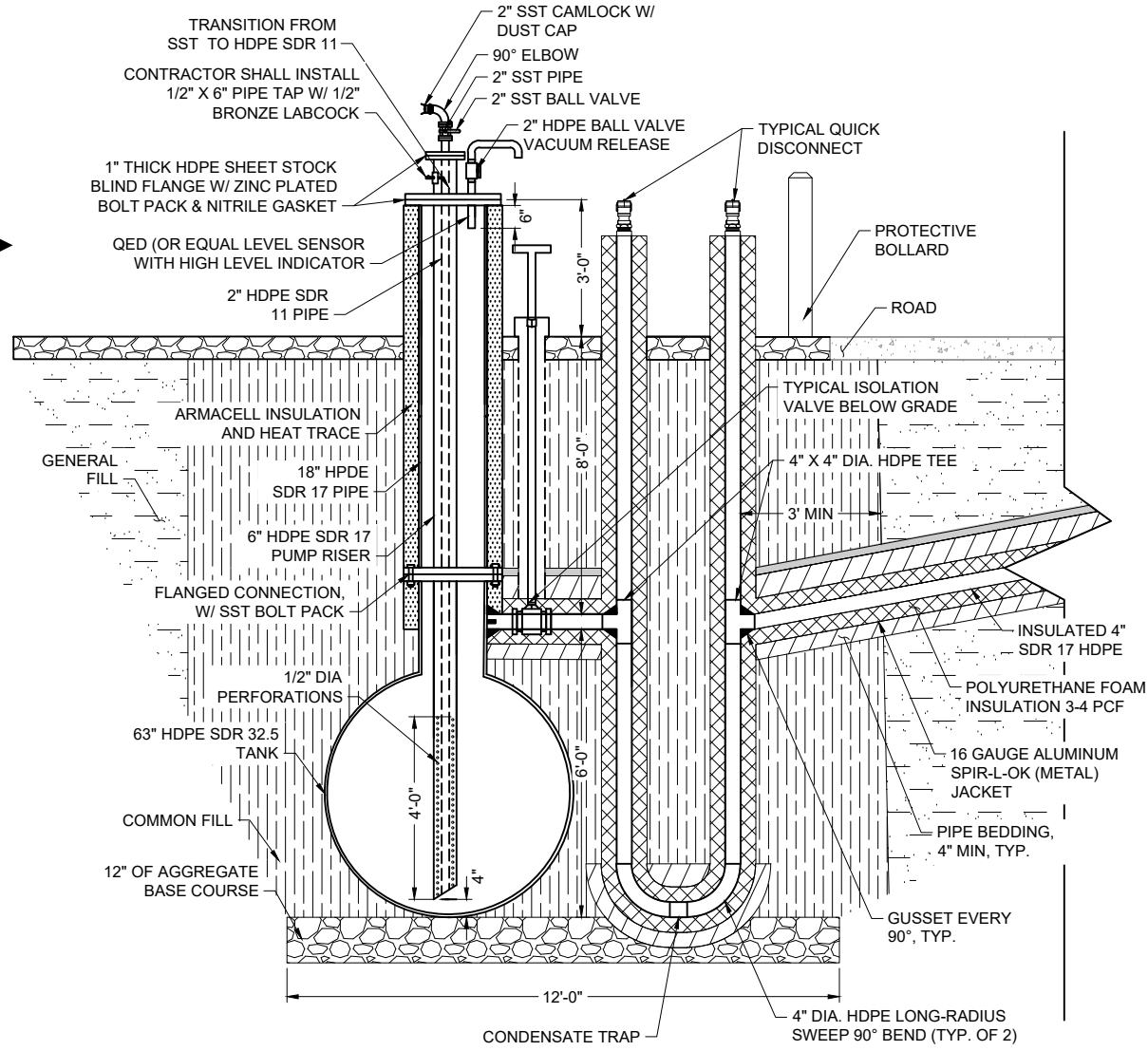


no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

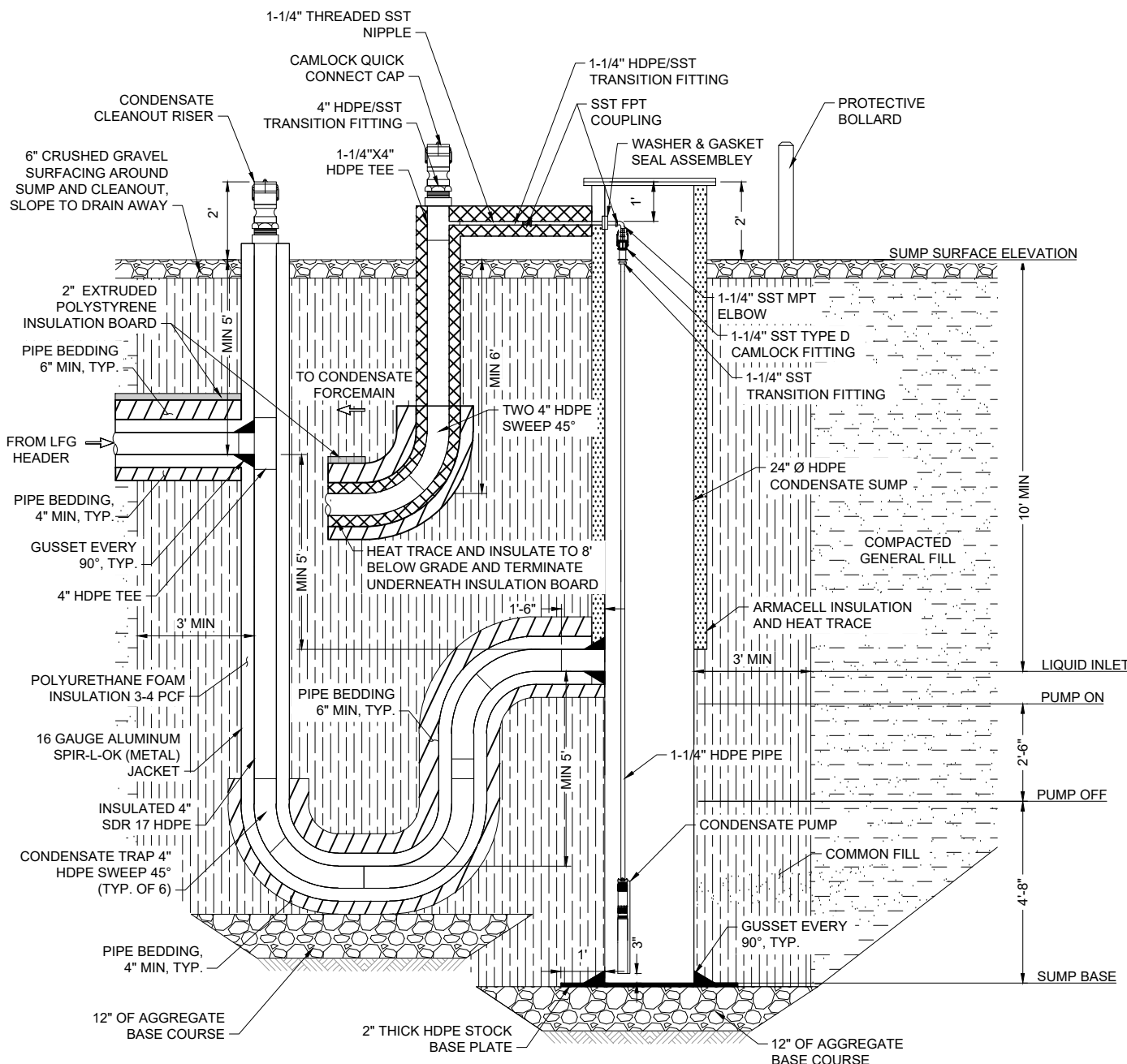
**NOTE:**  
1. REFER TO 2020 GCCS PLANS FOR MORE DETAILS

Scale For Microfitting  
Millimeters

Inches



**CONDENSATE SUMP CS-01**  
NOT TO SCALE



**CONDENSATE SUMP CS-02**  
NOT TO SCALE

**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

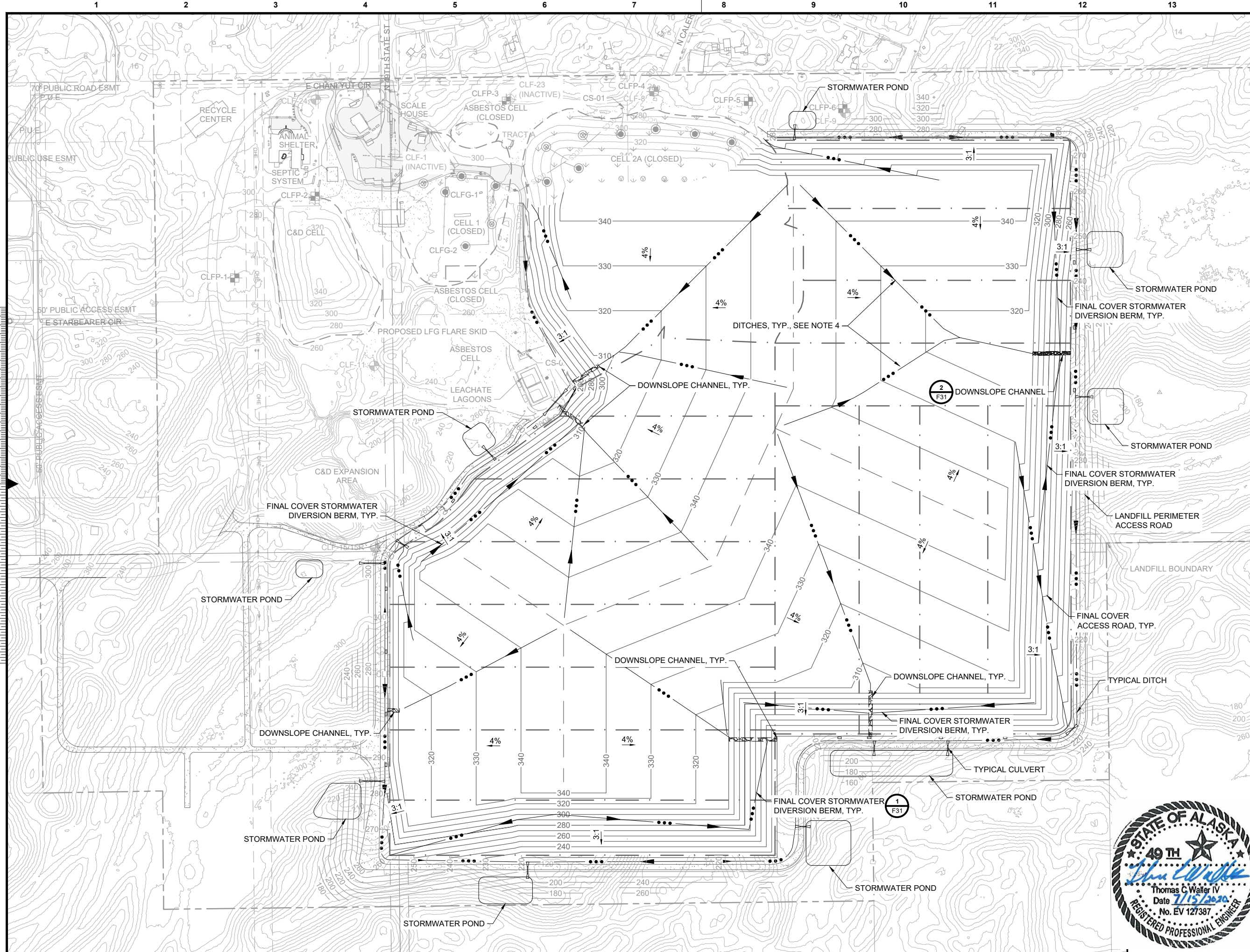


MSB CENTRAL LANDFILL  
ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW LFG COLLECTION DETAILS,  
4 OF 4



project	120344	contract	
drawing		rev.	
<b>FIGURE 29 - A</b>			
sheet	29	of	37 sheets
file: FIGURE 29 MSW LFG Collection Details, 4 of 4.dwg			



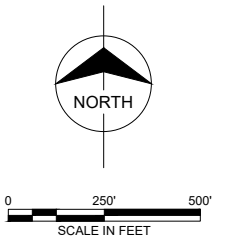


no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TEN (10) FEET.
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TEN (10) FEET. DESIGN CONTOURS REPRESENT TOP OF FINAL COVER.
  - CROSS-SECTIONAL DIMENSIONS AND THE NEED FOR EROSION CONTROL BMP'S FOR THE FINAL COVER DITCHES SHALL BE COMPLETED AT THE TIME OF DESIGN. PERIMETER DITCH GRADING, CULVERTS, AND STORMWATER BASIN DESIGN ALSO COMPLETED AT THE TIME OF CLOSURE DESIGN.

Scale For Microfining  
Millimeters

Inches



**FOR PLANNING PURPOSES ONLY**

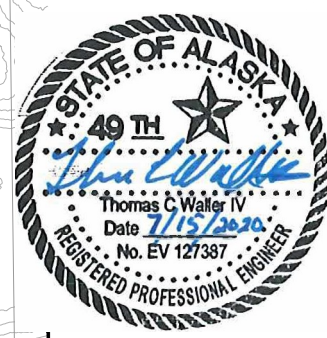


date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



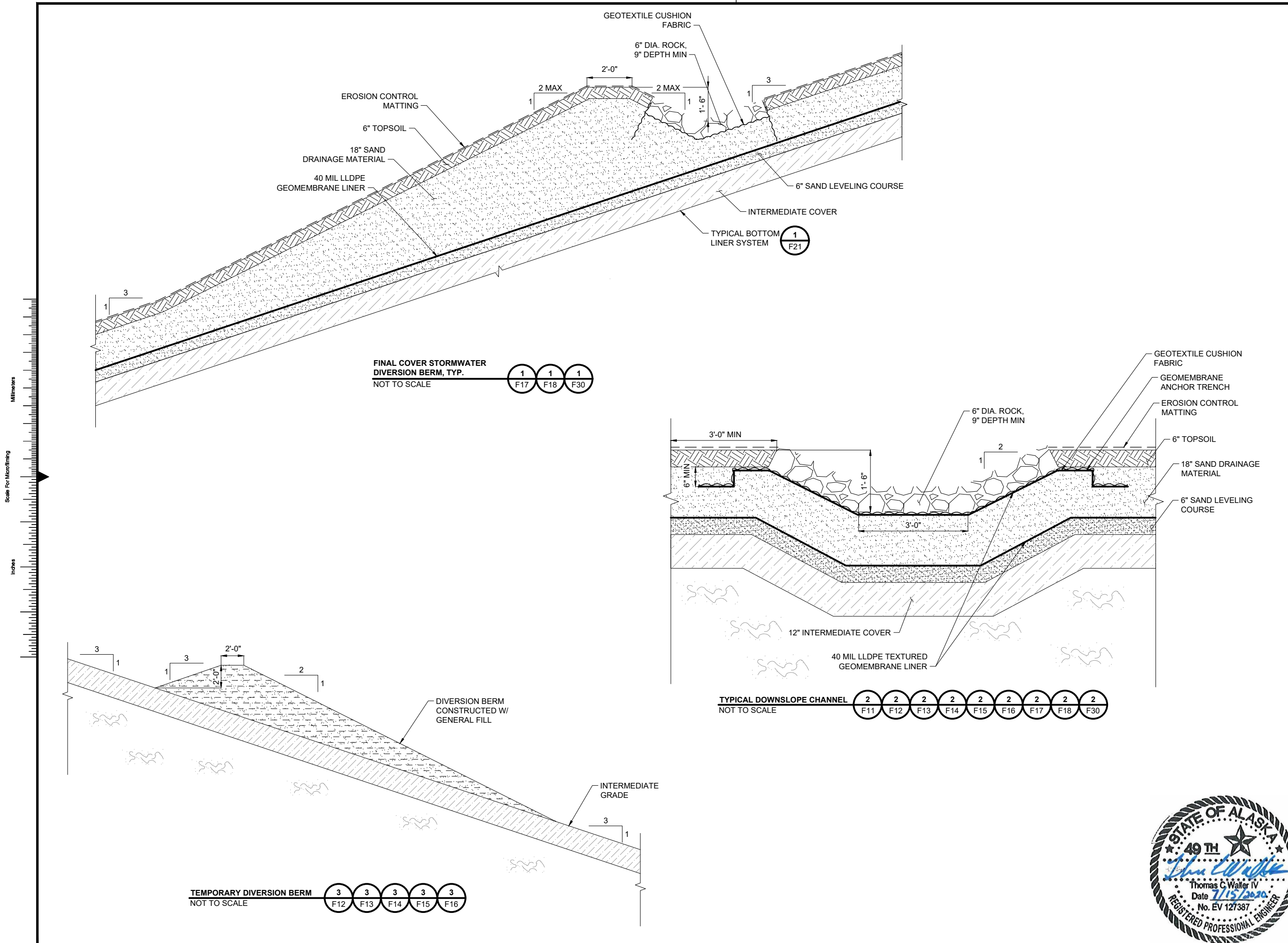
MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
MSW CONCEPTUAL STORMWATER CONTROL

project	120344	contract	
drawing		rev.	
<b>FIGURE 30 - A</b>			
sheet	30	of	37 sheets
file: FIGURE 30 MSW Conceptual Stormwater Control.dwg			





no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES



Scale For Microfining  
Millimeters  
Inches

**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

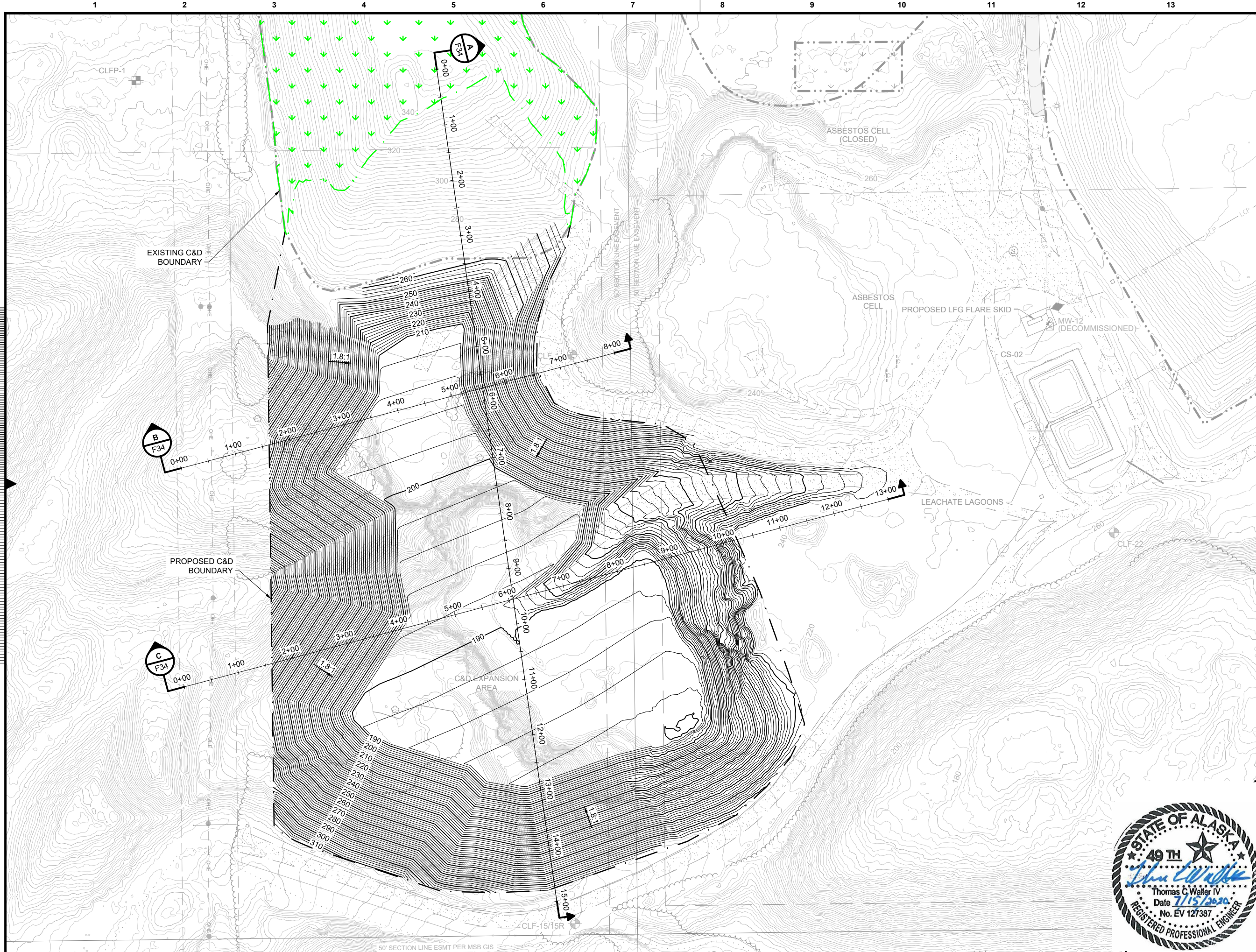
MSB CENTRAL LANDFILL  
ALASKA

**LANDFILL DEVELOPMENT PLAN**  
MSW CONCEPTUAL  
STORMWATER DETAILS

project	120344	contract	
drawing	<b>FIGURE 31 - A</b>		rev.
sheet	31	of	37 sheets
file	FIGURE 31 MSW Conceptual Stormwater Details.dwg		

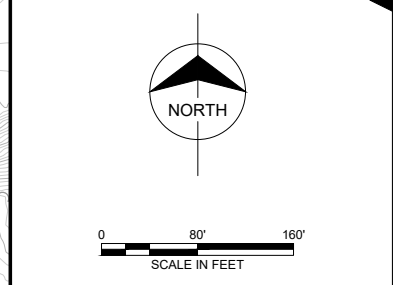






no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. DESIGN CONTOURS REPRESENT TOP OF PROPOSED BASE GRADES.



**FOR PLANNING PURPOSES ONLY**

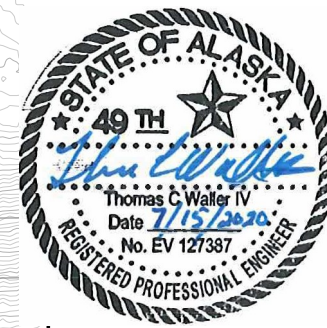


date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



**LANDFILL DEVELOPMENT PLAN  
C&D PROPOSED BASE GRADES**

project	120344	contract	
drawing	<b>FIGURE 32 - A</b>		rev.
sheet	32	of	37 sheets
file: FIGURE 32 C&D Proposed Base Grades.dwg			

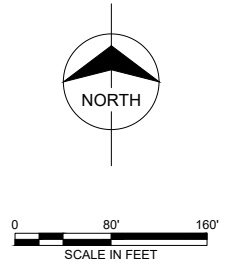






no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. DESIGN CONTOURS REPRESENT TOP OF FINAL GRADE.



**FOR PLANNING PURPOSES ONLY**

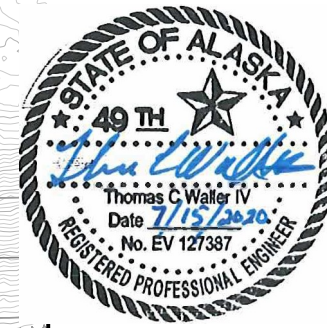


date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

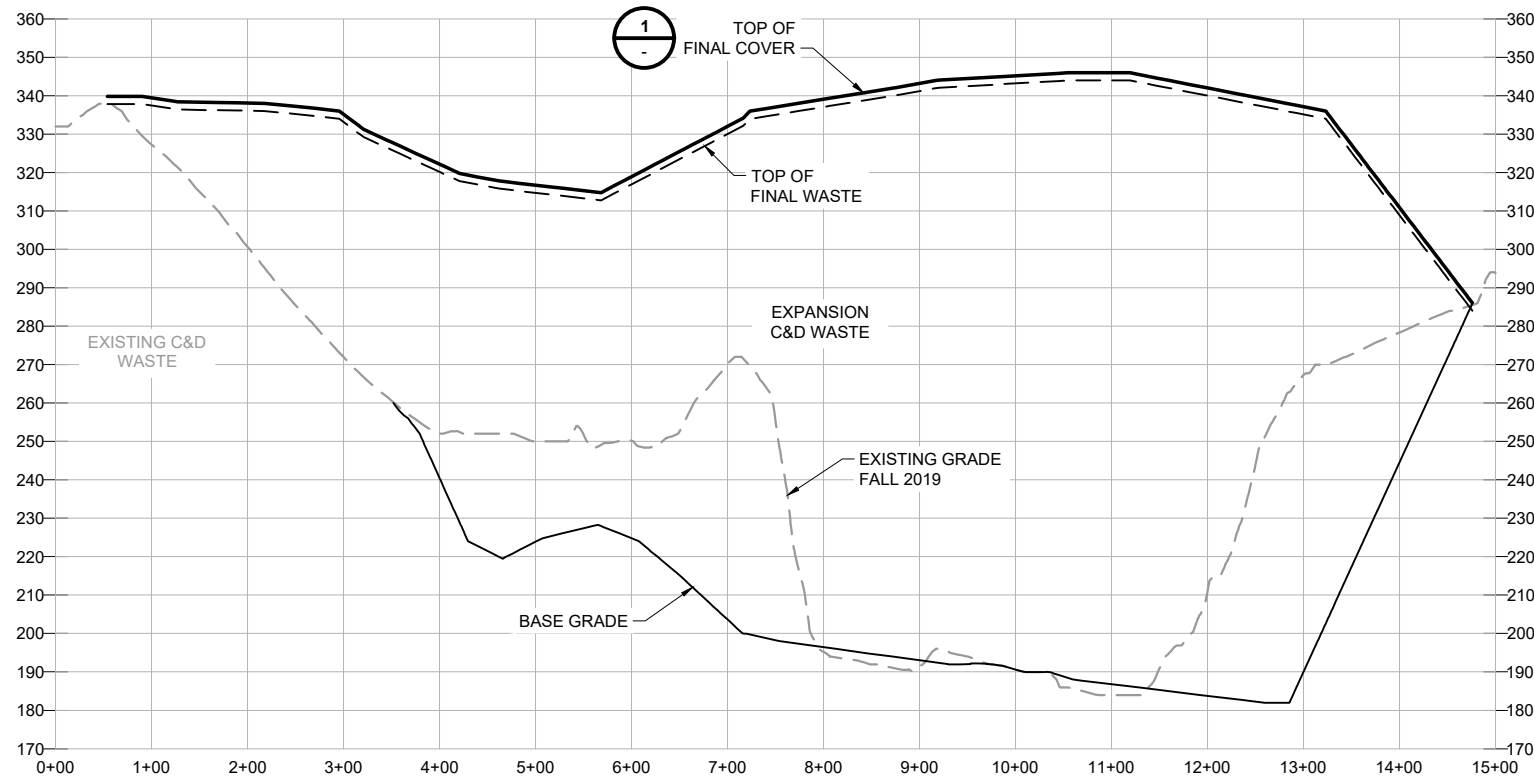


MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
 C&D PROPOSED FINAL GRADES

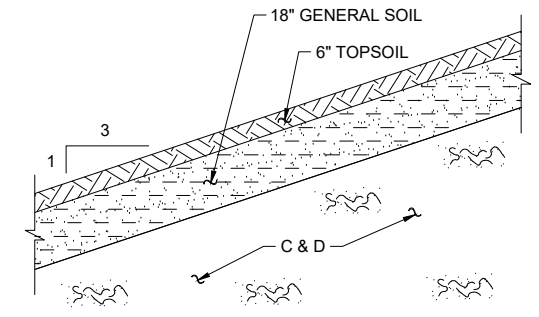
project	120344	contract	
drawing	<b>FIGURE 33</b>	rev.	<b>A</b>
sheet	32 of 37	sheets	
file FIGURE 33 C&D Proposed Final Grades.dwg			







**C&D CROSS SECTION N-S**  
 VERTICAL SCALE: 1" = 20"  
 HORIZONTAL SCALE: 1" = 100'



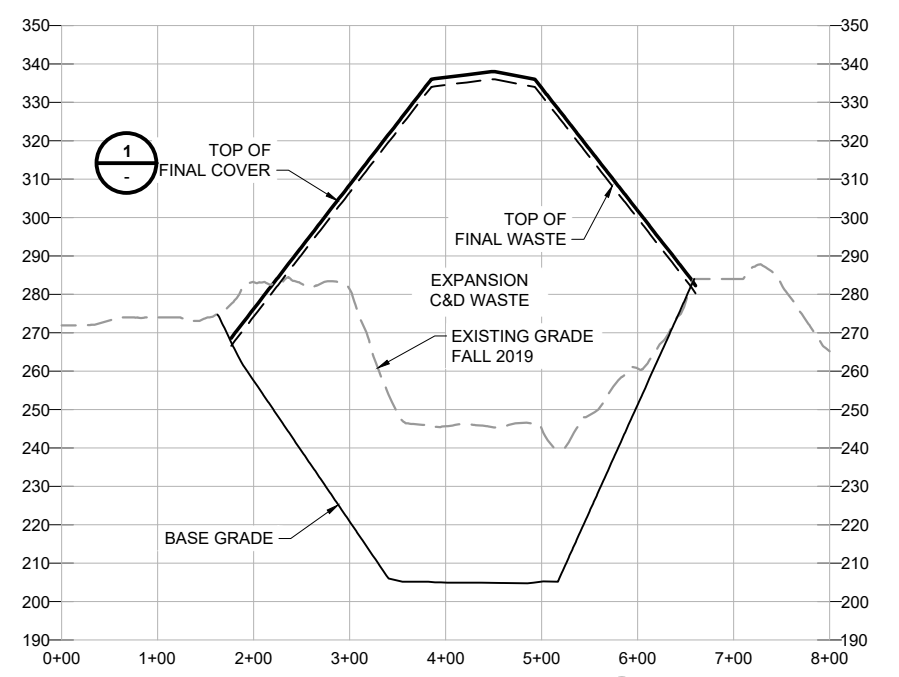
**C&D FINAL COVER DETAIL**  
 NTS

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

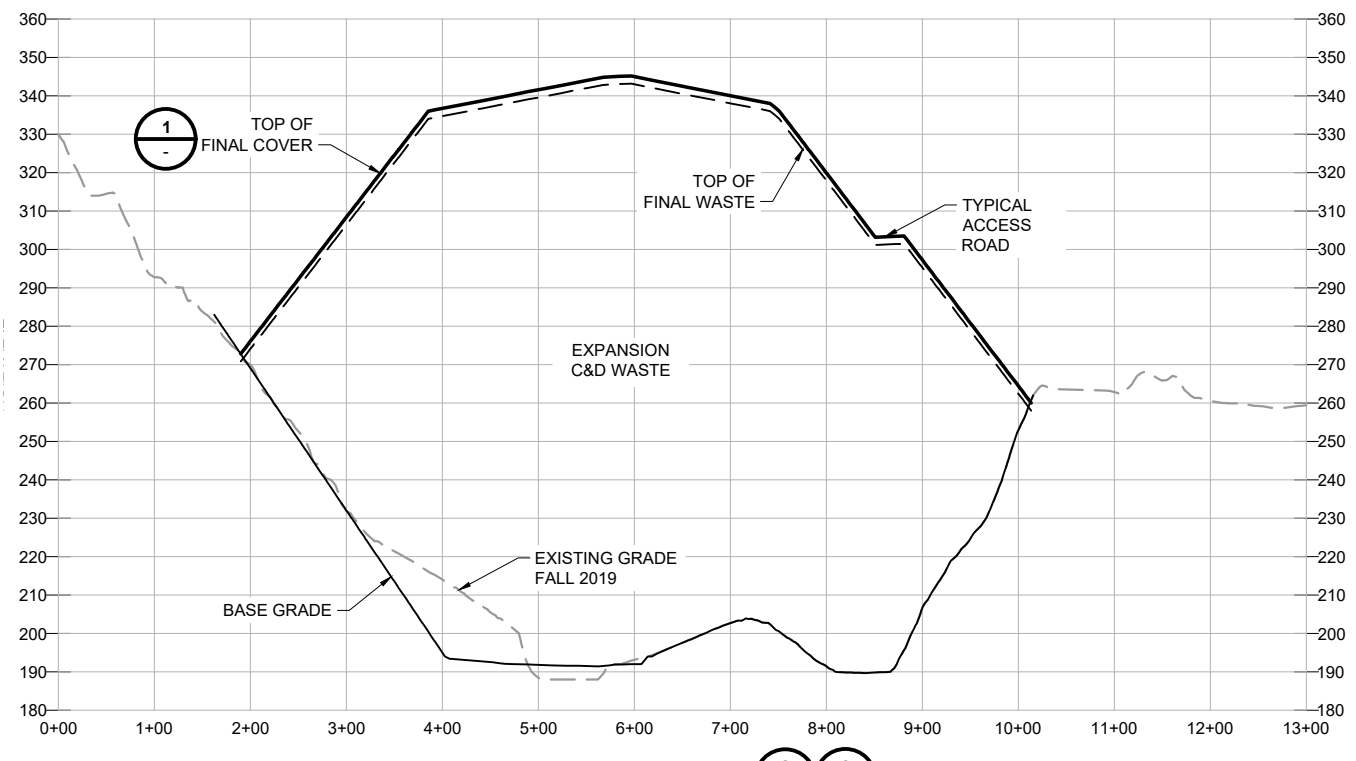
**NOTES:**  
 1. EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED.

Scale For Microfining  
 Millimeters

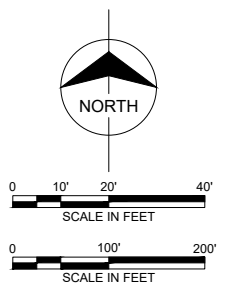
Inches



**C&D CROSS SECTION W-E**  
 VERTICAL SCALE: 1" = 20"  
 HORIZONTAL SCALE: 1" = 100'



**C&D CROSS SECTION W-E**  
 VERTICAL SCALE: 1" = 20"  
 HORIZONTAL SCALE: 1" = 100'



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

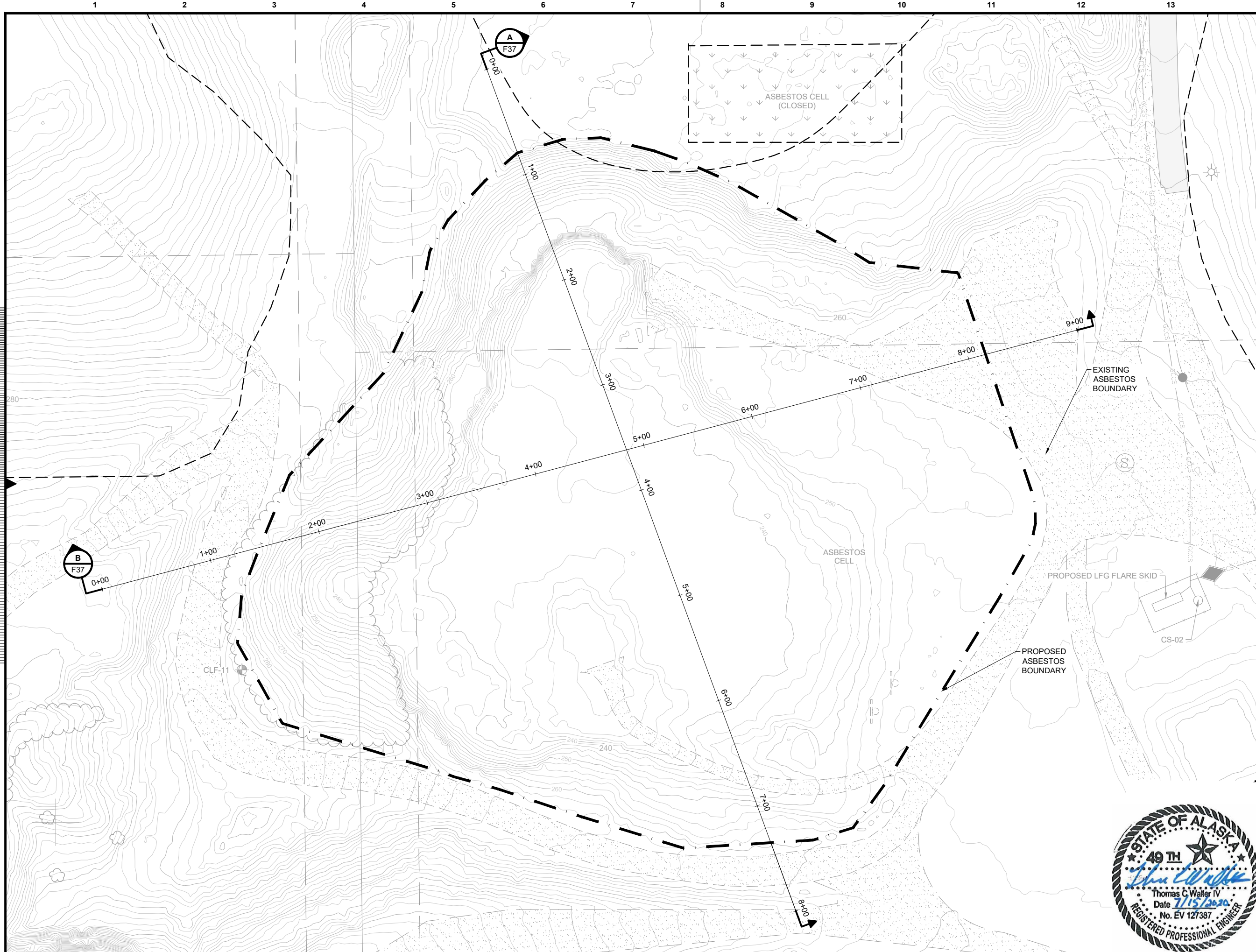


MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
 C&D CROSS SECTIONS AND DETAILS



project	120344	contract	
drawing	<b>FIGURE 34 - A</b>		rev.
sheet	34	of	37 sheets
file	FIGURE 34 C&D Cross Sections and Details.dwg		

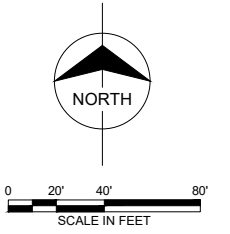




Scale For Microfilming  
 Millimeters  
 Inches

no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN BASE GRADES ARE ASSUMED TO BE THE SAME AS EXISTING GRADES.



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN

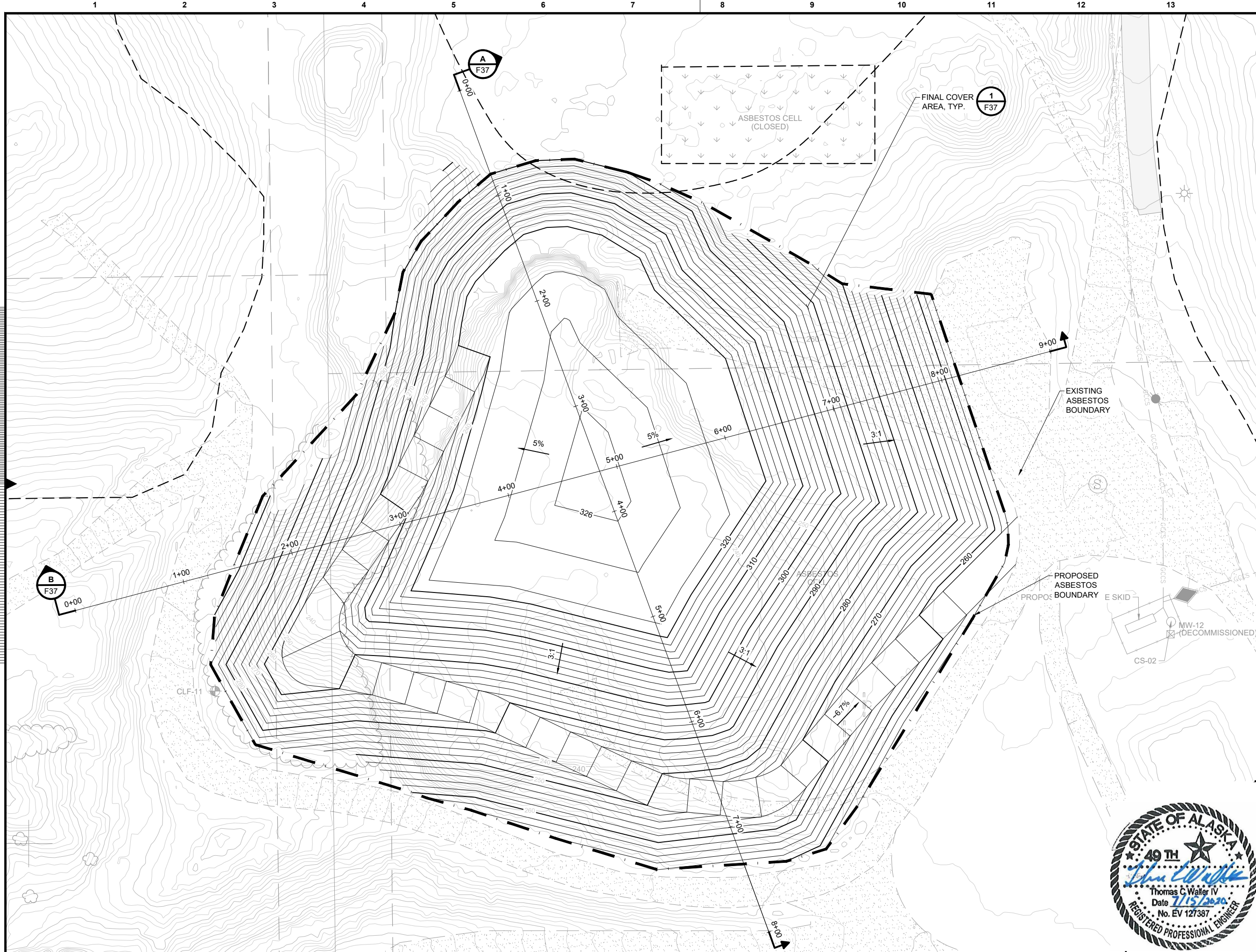


MSB CENTRAL LANDFILL ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
 ASBESTOS PROPOSED BASE GRADES



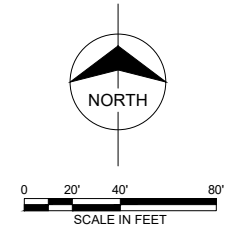
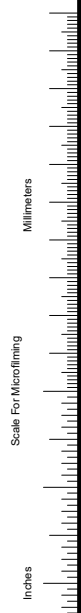
project	120344	contract	
drawing	<b>FIGURE 35 - A</b>		rev.
sheet	35	of	37 sheets
file FIGURE 35 Asbestos Proposed Base Grades.dwg			





no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

- NOTES:**
- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED. CONTOUR INTERVAL IS TWO (2) FEET
  - EXISTING SITE FEATURES SHOWN PROVIDED BY MSB.
  - DESIGN CONTOUR INTERVAL IS TWO (2) FEET. DESIGN CONTOURS REPRESENT TOP OF FINAL COVER.



**FOR PLANNING PURPOSES ONLY**

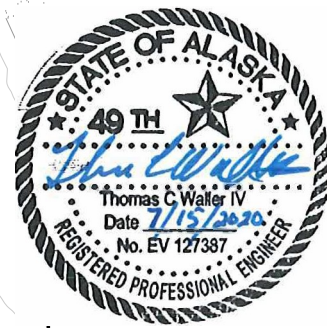


date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL  
ALASKA  
**LANDFILL DEVELOPMENT PLAN**  
ASBESTOS PROPOSED FINAL  
GRADES

project	120344	contract	
drawing	<b>FIGURE 36 - A</b>		rev.
sheet	36	of	37 sheets
file	FIGURE 36 Asbestos Proposed Final Grades.dwg		

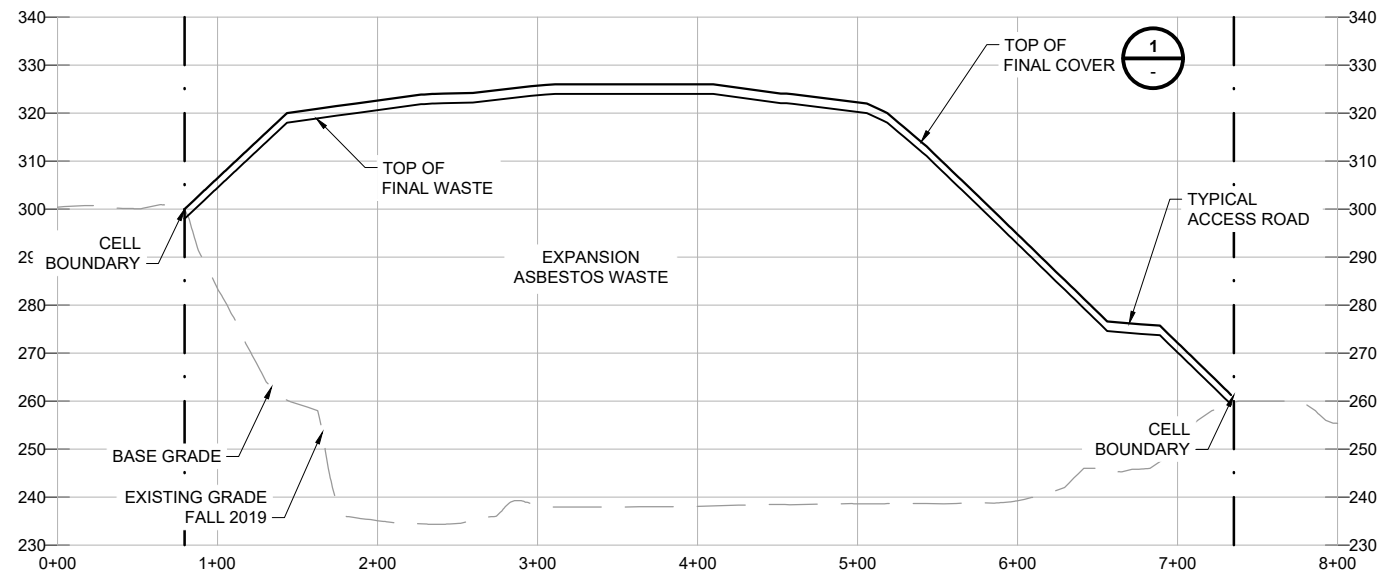




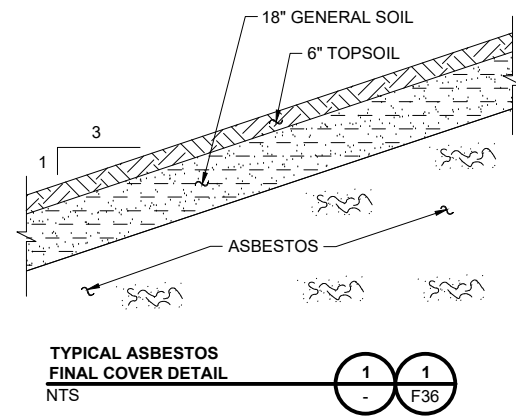
no.	date	by	ckd	description
A	7/15/20	TLK	FJD	PLANNING PURPOSES

**NOTES:**

- EXISTING SITE TOPOGRAPHY CREATED FROM DRAFT LIDAR DATA FLOWN IN THE FALL OF 2019 PROVIDED BY MSB. THE ACCURACY OF THE DATA IS NOT GUARANTEED.
- DESIGN BASE GRADES ARE ASSUMED TO BE THE SAME AS EXISTING GRADES.



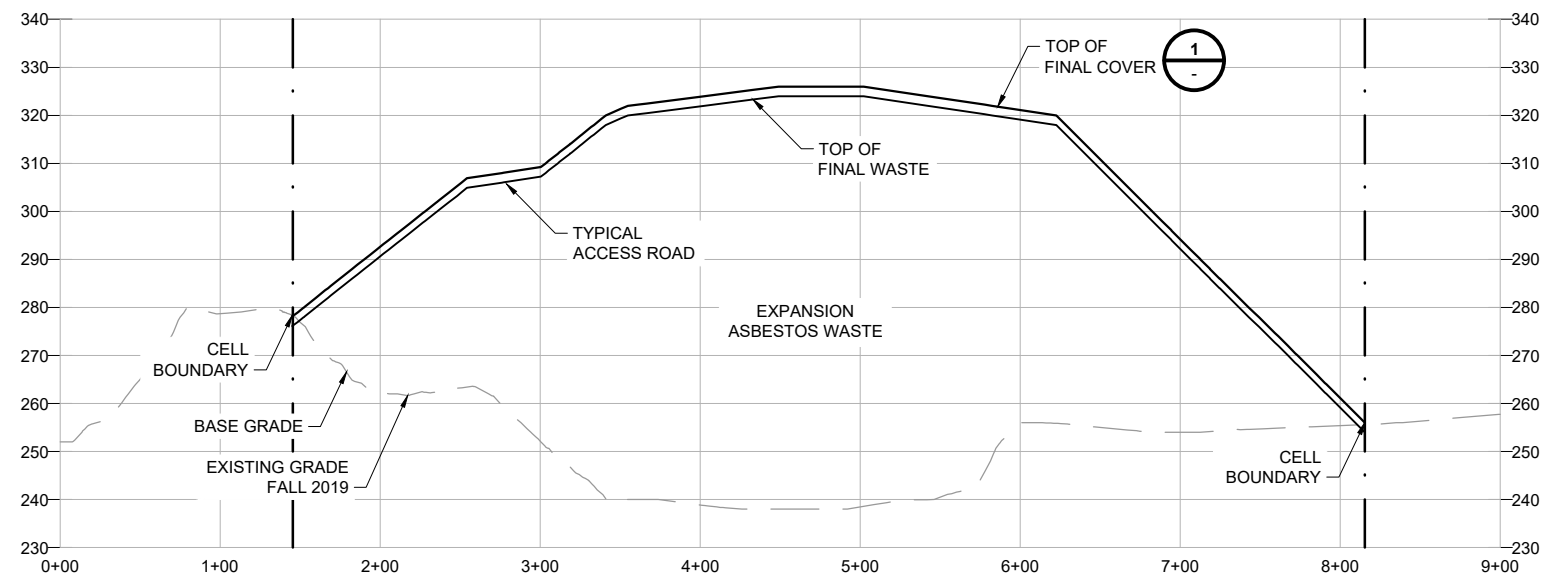
**ASBESTOS CROSS SECTION**  
 VERT. SCALE: 1" = 20'  
 HORIZ. SCALE: 1" = 60'



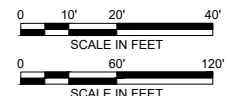
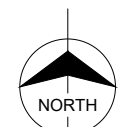
**TYPICAL ASBESTOS FINAL COVER DETAIL**  
 NTS

Scale For Microfining  
 Millimeters

Inches



**ASBESTOS CROSS SECTION**  
 VERT. SCALE: 1" = 20'  
 HORIZ. SCALE: 1" = 60'



**FOR PLANNING PURPOSES ONLY**



date	JULY 2020	detailed	M. AULT
designed	T. KOLLER	checked	F. DORAN



MSB CENTRAL LANDFILL ALASKA

**LANDFILL DEVELOPMENT PLAN**  
 ASBESTOS CROSS SECTION AND DETAILS

project	120344	contract	
drawing		rev.	
<b>FIGURE 37 - A</b>			
sheet	37	of	37 sheets

