City of Laredo Landfill Permit Amendment 1693B
City of Laredo, Texas
Permit Amendment MSW Permit 1693B
Laredo, Texas
Webb County, Texas
August 2014
Revised June 2015

PART II

List of Tables

List of Attachments

List of Figures

Also, there are seasonal variations in the amount of waste generated. A review of historic records of daily waste logs for the year 2011-12, shows that the daily peak was approximately 50% higher than the average accepted, excluding Saturday when there is minimal residential waste taken to the Landfill. To forecast daily peaks, the average daily waste acceptance rate is multiplied times 1.50. Table II.3 presents projected waste generation through the year ~~2020~~2036.

Table II.3
Projected Waste Generation

Year	Population Estimate	Gen Rate Lbs./Capita/Day	Tons/Year*	Average Daily tpd*	Daily Peak tpd*
2014	294,416	6.6	354,620	1140	1700
2015	302,631	6.6	364,520	1170	1750
2016	318,136	6.6	383,200	1230	1840
2017	334,435	6.6	402,830	1290	1940
2018	351,569	6.6	423,460	1360	2040
2019	369,580	6.6	445,160	1430	2140
2020	388,515	6.6	467,970	1500	2250
2021	398,055	6.6	479,458	1537	2305
2022	407,830	6.6	491,231	1574	2362
2023	417,845	6.6	503,294	1613	2420
2024	428,106	6.6	515,653	1653	2479
2025	438,618	6.6	528,316	1693	2540
2026	449,206	6.6	541,069	1734	2601
2027	460,049	6.6	554,130	1776	2664
2028	471,155	6.6	567,506	1819	2728
2029	482,528	6.6	581,205	1863	2794
2030	494,176	6.6	595,234	1908	2862
2031	505,538	6.6	608,921	1952	2928
2032	517,162	6.6	622,922	1997	2995
2033	529,054	6.6	637,245	2042	3064
2034	541,218	6.6	651,898	2089	3134
2035	553,663	6.6	666,887	2137	3206
2036	566,393	6.6	682,221	2187	3280

~~*Waste quantities rounded to nearest 10th~~

3.0 Maps

Drawings and maps illustrating requirements for Part II are found in Attachment II-1.

3.1 General Location Map 30 TAC § 330.61(c)

Elevation: 469.59

Area streams: There is an unnamed tributary of the Tex-Mex Tributary of Chacon Creek located on the north and east sides of the Landfill. Drainage channels are located along the west, north and east boundaries of the Landfill (refer to Figure II-2.5 Topographic Map).

Airports: The Laredo International Airport (LIA) is owned and operated by the City of Laredo. The LIA is located 18,000' to the northwest of the Landfill boundary. The Landfill is located within a six mile radius of the airport; therefore, the City has coordinated permitting efforts with the FAA and the airport. The orientation of the runways at the Laredo International Airport is north and south.

Property Boundary: The property boundary for the site is shown in the General Location Map. The site is currently 200 acres with a proposed additional 3.12 acres under this amendment for a total of 203.12 acres. To accommodate space for the leachate collection storage tank, tire shredding/storage operation, and other maintenance facilities, a total of 3.12 acres is being added to the permit boundary from the property south of the landfill as a part of this permit amendment. The City is the owner of the property directly south of the permit boundary which extends to SH 359.

Easements: There is a 7~~1~~0-foot wide electric power line easement that is located on-site that runs north and south through the middle of the permitted area. This easement is owned by:

Electric Power Easement:
AEP Central Power & Light
PO Box 1258
Laredo, TX 78042

Information on the electric easement is found in Part I.

The City of Laredo has rights to drainage easements that are located along the west, north and east boundaries of the permitted area. These easements are located outside the permit boundary; however, they are held by the City in perpetuity and these easements are factored into the compliance with buffer zone requirements (refer to Attachment II-5). The City secured the easements from the Hurd Ranch Company (March 21, 2003).

Drainage Easement:
Carlos R. Villarreal
City Manager
City of Laredo
1110 Houston Street
Laredo, TX 78040

Access Control Features: The Landfill's entrance road is located on the north side of SH 359. Access is limited to the landfill via a lockable gate that is located at the entrance to the facility. There is a sign at the entrance to the facility that indicates the name of the facility, hours of

operation and other requirements for the Landfill sign (refer to Site Operating Plan). The entrance road is visible from the City's solid waste offices, where staff can periodically monitor incoming traffic into the Landfill. Within the permit boundary, there is a scale house with scales.

The scale facility is staffed whenever waste is being accepted at the landfill. Scale house personnel are trained to identify acceptable and unacceptable waste streams.

To further control access, there is a barb-wire fence located on the western, northern and southern boundary of the permitted area. There is a nine-foot tall metal panel fence that is located along the eastern boundary of the permitted area.

Archaeology & Historical: There are no known archaeological or historic sites on or near the Landfill (refer to correspondence with Texas Historical Commission – Attachment II-2).

3.2 Facility Layout Map 30 TAC § 330.61(d)

The Landfill site is shown in Figure II-1.2, "Landfill Layout" and Figure II-1.3 – "Aerial View of Landfill Layout." These exhibits shows features of the site including the boundary, the various fill phases and structures located on the property.

The Landfill is currently divided into four distinct phases, separated by the electric power lines that intersect the Landfill north and south and the abandoned natural gas pipeline easement that ran east and west. Phases 1, 2 and 3 were permitted as Type 1 landfill operations; Phase 4 was permitted as a Type 4 landfill operation. Phase 4 will be converted from a Type 4 landfill to a Type 1 landfill under this permit amendment.

The proposed site layout will have two phases – East Phase (consisting of Phases 2 and the expanded Phase 3 of the current permitted design) and a West Phase (consisting of Phases 1 and 4 of the current permitted design and a new Phase 5). The Landfill Layout Map (Figure II-1.2) illustrates the location of interior roads, monitoring wells, buildings, fencing, windbreaks and visual screening, and site entrance roads.

Interior roads: The interior roads include perimeter access roads located around the entire Landfill. These are unpaved roads and the City maintains the quality of these roads on a periodic basis per the SOP. A site access road also is located between the East Phase and the West Phase.

Groundwater Monitoring wells: There are a total of ~~12~~ 17 monitoring wells located on-site. The Groundwater Monitoring Plan –March 2008 illustrates the location of the groundwater monitoring wells to be in compliance with Subchapter J Rules. These monitoring wells are shown in Attachment II.1 (Figure II-1.12). A revised GWSAP is included in Part III of this application.

Location of Buildings: Within the permitted area of the Landfill, there is a scale house located at the entrance. The scale house is manned whenever waste is being accepted at the Landfill. The only other on-site building is a small structure for the landfill gas flare.

Sequence of Fill & Construction: As of 2014, waste is disposed in Phase 2 on the east side of the Landfill. Cell 1 of Phase 3, also on the east side, is being constructed in 2014. Once Cell 1 of Phase 3 is constructed, waste operations will take place in this Cell. (Refer to Attachment II-6- ~~Sequencing~~ Sequence of Development Plan.)

After the permit amendment has been approved, the sequence of development will include final development of Phase 3, including the excavation of the area already permitted and newly permitted areas located between Phase 2 and 3. Fill operations will then proceed from the center of the East Phase and proceed south to fill the entire East Phase according to the final contours.

Once the East Phase has reached capacity, fill operations will begin at the southern end of the West Phase. Phase 4 is the previously designed Type IV Landfill. The middle of this phase has received construction and demolition debris in the past. Areas to the east and west of this area have been excavated for borrow soil. Final excavation will take place and a liner will be constructed where no waste has been received. A leachate collection system will be installed in both these areas. An engineered fill and liner will be constructed over the previously filled area and this liner will be designed to drain any leachate into the newly constructed Phase 4 cells. Two previously excavated areas of Phase 4 (West Phase) will require excavation, construction of a liner, and the installation of a leachate collection system in the area previously designated as Cells 2 and 3 of Phase 4.

Following construction of Phase 4, Phase 5 will be constructed as the next area to be filled. This is the area that was located over the previously abandoned natural gas pipeline. Construction will include excavation of any remaining segments of the pipeline, plugging the remaining pipeline ends and subgrade preparation. A liner and leachate collection system will be installed in this area and the liner system will connect to the liners for Phase 4 and Phase 1.

A liner will be placed over areas of the West Phase that were constructed prior to Subtitle D liner requirements. This liner and leachate collection system will be designed in a manner that directs any leachate generated over new waste to flow to a leachate collection system, specifically, over Phase 1 – Cells 17 and 18 which have liners and leachate collection systems or to the new Phase 5 which will also have a liner and leachate collection system. The liner will include a geosynthetic composite liner (gcl) and a geotextile layer with a leachate collection system. Interim and final cover will be placed over the Phases in accordance with the SOP and the Final Closure Plan.

Facility Fencing: A perimeter fence is located along the western, northern and southern boundaries of the site. A nine-foot high metal panel fence with barbed wire is located along the eastern side of the landfill (Photo II.1). This fence was installed per an agreement between the City and Hurd Ranch Company as part of an agreement for the adjacent drainage easement.

Photo II.1
Eastern Buffer Zone and Fence

Windbreaks: There is a 25' high wind fence that is located along the southeast boundary and a section of the northern

Cell 9	2.15	In-situ compacted clay	Constructed
Cell 10	2.15	In-situ compacted clay	Constructed
Cell 11	2.15	In-situ compacted clay	Constructed
Cell 12	2.15	In-situ compacted clay	Constructed
Cell 13	2.90	In-situ compacted clay	Constructed
Cell 14	2.75	In-situ compacted clay	Constructed
Cell 15	2.69	In-situ compacted clay	Constructed
Cell 16	2.58	In-situ compacted clay	Constructed
Cell 17	7.90	GCL, 60 mil HDPE	Constructed
Cell 18	9.86	GCL, 60 mil HDPE	Constructed
Phase 2			
Cell 1	5.24	In-situ compacted clay	Constructed
Cell 2	5.24	GCL, 60 mil HDPE	Constructed
Cell 3	3.58	2’ clay, 60 mil HDPE	Constructed
Cell 4	2.75	2’ clay, GCL, 60 mil HDPE	Constructed
Cell 5/6	7.94	GCL, 60 mil HDPE	Constructed
Cell 7/8	6.25	GCL, 60 mil HDPE	Constructed
Cell 9/10	6.42	GCL, 60 mil HDPE	Constructed
Cell 11/12	6.48	GCL, 60 mil HDPE	Constructed
Cell 13/14	18.90	GCL, 60 mil HDPE	Constructed
Phase 3			
Cell 1	9.2	GCL, 60 mil HDPE	Not constructed – anticipated construction 2014
Cell 2	13.56	GCL, 60 mil HDPE	Not constructed – construction will be initiated after permit amendment
Phase 4			
Cell 1	6.56	GCL (existing waste cell to be overlain with GCL, HDPE and a LCS)	Type IV liner constructed to be modified for Type I waste
Cell Dimensions (cont)			
Cell 2	2.51	GCL, 60 mil HDPE	Not constructed
Cell 3	6.19	GCL, 60 mil HDPE	Not constructed
Phase 5			
Cell 1	3.77	GCL, 60 mil HDPE	Not constructed

Minimum/ Maximum Waste Elevations & Final Cover: Under the current 1999 permit, the minimum permitted waste elevations (top of liner elevations) are 445’ msl for Phase 1 (NW), 445’ msl for Phase 2 (NE), 445’ msl for Phase 3 (SE), and 490’ msl for Phase 4 (SW). The minimum top of liner elevations for the proposed amendment will remain the same for Phases 1, 2 and 3. The minimum elevation will be lowered to 467’ msl for Phase 4 and the new Phase 5 will have a minimum elevation of 503’ msl.

The current permit set the maximum final cover elevations as 640.5’ msl for Phase 1 (NW), 637’ msl for Phase 2 (NE), 546.5’ msl for Phase 3 (SE) and 576.5’ msl for Phase 4 (SW). Based on a two-foot thickness for the typical standard final cover, the maximum waste placement elevations

would be 638.5’ msl for Phase 1 (NW), 635’ msl for Phase 2 (NE), 544.5’ msl for Phase 3 (SE) and 574.5’. Development of the landfill per the proposed amendment will create one west side hill with its peak over the Phase 1 area and one east side hill with its peak over the Phase 2 area.

The elevation of the landfill is proposed to be increased from 640.5’ msl to 664.5’ msl on the west side and from 637’ msl to 65~~2~~4.5’ msl on the east side. The final cover proposed for the landfill will include a GCL and Flexible Membrane Liner (FML) cover or an alternative final cover that will utilize the “water balance design” per TCEQ guidelines. If a standard GCL and FML cover design are incorporated, then final elevation of the waste is 662.5’ msl on the west side and 652.5’ msl on the east side. The currently permitted and proposed elevation limits for waste placement are shown on the cross section exhibits provided as Figures III-2.3 through III-2.6 of Part III, Attachment 2.

3.3 Topographic Map 30 TAC § 330.61(e)

Figure II-1.5 - “Topographic Map” shows the landfill boundary on a United States Geological Survey (USGS) 7 ½ minute quadrangle map of the area.

3.4 Aerial Photograph 30 TAC § 330.61(f)

An aerial photograph of the Landfill and surrounding area from Texas Natural Resources Information Systems is attached as Figure II-1.6. The photo presents an aerial view of the site and the area one mile outside of the permit boundary.

3.5 Land Use Map 30 TAC § 330.61(g)

Figures II-1.7 ~~and ,~~ II-1.8, and II-1.8A show the various land uses within a one mile radius of the landfill boundary.

Land Uses within one mile of the Landfill include the following:

Residential Areas: The closest residential property is located approximately 800’ to the west of the landfill. Two residential subdivisions with low population densities are located west of the landfill and include Western Hide and Salina Cantu. The areas around the Landfill have low density residential characteristics. A windshield survey of streets and a review of aerial photographs identified approximately 630 residential buildings located within one mile of the Landfill. The majority of these residential buildings are located approximately 0.7 miles to the west of the Landfill. According to the City’s GIS Department, the region around the landfill has a population density of between 6 to 258 persons per acre, the lowest density rating used by the Laredo GIS Department. Refer to Attachment II-7 (~~Laredo~~ City GIS Maps).

Schools: The Larga Vista Head Start, a preschool with a maximum capacity of 20 children, is located 0.9 miles to the west of the Landfill. Two new schools are anticipated to be constructed in the near-term following approval of bond funds. One is a middle school and the other is an elementary school. These are both located approximately one-third of a mile south of the Landfill. A traffic signal is being installed at the intersection of Hwy 359 and EG Ranch Road (the road the schools are located on) to improve safety at the intersection of EG Ranch Road,

radius of the airport; therefore the City is required to coordinate permitting efforts with the FAA and the airport. The orientation of the runways at the Laredo International Airport is north and south.

In 2013, the FAA and airport administration did not express opposition to the landfill changes proposed. The correspondence with the FAA and the City's airport management are presented in Attachment II-9 – Airport Location Restrictions.

The Landfill's construction will not exceed 200' above grade. This exempts the Landfill from consideration as an obstruction by the FAA per 14 CFR 77.9.

3.8 General Geology and Soils 30 TAC § 330.61(j)

Laredo lies within the Rio Grande embayment of the Gulf Coastal Plain. The Gulf Coastal Plain is characterized by a relatively flat, low-lying surface which slopes gradually to the Gulf of Mexico. The Gulf Coastal Plain sediments and alluvial sediments are composed of complex interbedded sediments of gravel, sand, silt and clays formed in a fluvial deltaic environment. Depositional sediments of the Tertiary system are present at the surface as outcrops throughout the general area surrounding the facility. The Tertiary is divided into the Eocene Series with one major group division within the region, the Claiborne Group. The Carrizo Sand is the lowermost formation of the Claiborne Group. The Carrizo is composed of a very permeable, massive, cross-bedded, medium-grained sand which ranges in thickness from 150' to 1,200'. Above the Carrizo Sand, the Biford, El Pico Clay, Laredo-, and Yegua Formations occur in areas southwest of the Frio River which is located approximately 75 miles northwest of Laredo. These differ litho-logically and by fossil content from their equivalent counterparts northeast of the Frio River known as the Reklaw, Queen City Sand, Weches and Sparta Sand.

The predominantly sandy units, the Bigford Formation, the Queen City Sand and the Laredo formation and the Sparta Sand interfinger in the vicinity of the Frio River. The Bigford Formation consists of sand, silt and thin beds of shale, with shale making up about 25 percent of the formation in the outcrop. The Queen City Sand is a thick unit of sand, clay and sandy clay. The Queen City Bigford unit ranges in thickness from approximately 200' in Zavala County to 1,400' in Frio County. The Sparta Sand ranges from 40' to 200' in thickness and consists of sand with minor amounts of clay. The El Pico Clay outcrops in the northwestern corner of Webb County interfingering with the Queen City Sand to the east near the Frio River. The El Pico Clay consists mostly of clay with sandstone and coal. The clay is in part gypsiferous, medium gray to brown. The sandstone in this unit is mostly fine-grained with some medium to coarse-grained material, argillaceous, silty, in part gauconitic with thin to massive bedding. The sandstone is friable to indurated and attains a thickness of 900' to 1,150'. The Laredo Formation consists of sand at its base grading upward to sandy clay and clay at the top. The Laredo Formation has a maximum thickness of 600' to 700'. The uppermost formation of the Claiborne Group is the Yeuga which consists mostly of sandy, silty, lignitic, chocolate- to reddish-brown clay with sandstone. The sandstone is a quartz, fine –grained, indurated to friable, massive, calcareous, glaconitic sand which weathers to a loose ferruginous yellow-orange and reddish-brown soil. The clay produces a dark-gray soil.

the aforementioned lined ditch 2S-2/3 will be eliminated. To accomplish the conveyance of drainage formerly handled by this ditch, a HDPE pipe storm drain will be constructed from a point near the center of the site around the south end of Phase 3. This storm drain will discharge into retention Pond C-1, the upstream pond of a two-stage retention facility designed to replace the existing stormwater storage capacity of the current Pond C. The second, downstream pond of the two-stage facility is identified as Pond C-2. Due to the topography's slope, Ponds C-1 and C-2 are separated to have differing water surface elevations, thus maximizing the available storage volume. Discharge from Pond C-1 directly drains into Pond C-2.

Surface water run-off from the final cover of each phase will sheet flow across the top surface of the landfill and a short distance down the 4(H):1(V) landfill sideslope. Berms will be constructed at 40 vertical-foot intervals down the sideslope to form drainage terraces which intercept runoff and convey it laterally across the hillside to rundown channels. These are lined, flat-bottom channels which route runoff down the side slope to the landfill toe. Once the runoff is conveyed to the base of the landfill, it is carried in surface ditches to sedimentation basins located west of Phase 1 (sedimentation Pond A), northeast of Phase 1 (sedimentation Pond B), and east of Phase 3 (sedimentation Ponds C-1 and C-2). Culverts will be used at locations where drainage ditches cross access roads and easements as well as for sedimentation basin outlet structures.

3.10 Abandoned Oil, Gas, and Water Wells 30 TAC § 330.61(l)

3.10.1 Water Wells 30 TAC § 330.61(l)(1)

A review of water wells located within one mile of the Landfill is presented in Figure II-1.14. The water well information was derived from the Texas Water Development Board (TWDB) 2012 Report. There are a total of 15 water wells located within one mile of the Landfill based on the TWDB information. There are no known abandoned water wells located within the permit boundary. Water well records are presented in Attachment II-3.

3.10.2 Crude Oil and Gas Wells 30 TAC § 330.61(l)(2)

A review of the Railroad Commission of Texas Public GIS Map Viewer has identified known oil and gas wells within a one mile radius of the landfill site. These are displayed on Figure II-1.14, "Water ~~and,~~ Oil and Natural Gas ~~Wells~~Well Locations". There are no known abandoned oil or gas wells located within the permit boundary. Attachment II-4 includes oil and gas well information from the Texas Railroad Commission.

3.11 Floodplain and Wetlands 30 TAC § 330.61(m)

3.11.1 Floodplains 30 TAC § 330.61(m)(1)

Since the 1999 amendment, there have been no major changes in land use or traffic patterns surrounding the landfill. However, since the 1999 amendment, the City's floodplain map has been updated. The revised Federal Emergency Management Administration (FEMA) flood study shows portions of the landfill located in an area identified as Zone A Floodplain within the

constructed or filled with solid waste. The new buffer zone may include any previously permitted airspace."

The landfill has buffer zones located along each side of the landfill. The widths of the buffer zones vary considerably across the site, but meet the minimum required 50' distance requirement as previously approved in the 1999 Permit Amendment.

In addition to buffer zones that are located within the Landfill permit, the City has drainage easements that border the Landfill along the west, east and northern boundaries. These easements were negotiated between the City and Hurd Ranch Company. The terms of the easements state that the City controls the easements "in perpetuity" and the City has the responsibility to maintain these easements. As part of the easement agreements, the City constructed a nine foot tall metal panel fence along the eastern border of the site, with the intent of providing additional screening between the Landfill and the industrial property owned by Hurd. It is the intention of the City to continue to maintain this easement as long as the Landfill is in operation and throughout the closure and post-closure care periods. The drainage easements vary in width between 100' and 200'.

In addition to the buffer along the southern border of the site, the City owns the property where administrative and fleet maintenance vehicles are located and represents an additional 700' of buffer between the Landfill permit boundary and SH 359.The City commits to maintaining ownership of this property throughout the life of the Landfill, and through the post-closure care period.

The City will maintain a 125' buffer zone from new waste. "New Waste" is defined as any waste that is placed above the currently permitted elevation or in areas not previously authorized, including the area where the abandoned natural gas pipeline is located. The buffer zone along the northern boundary will remain unchanged. The boundaries of new waste are presented in Figure II-1.4. Figure II-1.4 also illustrates that the landfill meets the distance requirement within the currently permitted boundary, with the exception of two feet along the western side of the Landfill. In this area, the City will extend the buffer zone into the City-owned drainage easement. Table II.10 presents the Buffer Zone distances from both the toe of the fill and the New Waste.

~~ and Drainage Easement~~~~Figure II-1.4 – Buffer Zones - illustrates the Landfill's official buffer zone boundaries. The following presents a discussion of buffers that are in place at the Landfill between the toe of the Landfill and adjacent properties. The buffer zones along the northern boundary of the Landfill remain unchanged. No new waste is located along the northern portion of the Landfill. The buffer zones along the northern boundary include the existing buffer that ranges between approximately 53' and 64' within the permit boundary, and between 352' and 430' when the drainage easement is factored into the buffer zone. Buffer zones along the east side of the landfill range between 126' and 316' within the permit boundary and 231' and 421' with the drainage easement factored into the buffer zone. The buffer zone along the southern border ranges between 77' and 269'. In addition to the buffer along the southern border of the site, the City owns the property where administrative and fleet maintenance vehicles are located and represents~~

~~an additional 700' of buffer between the Landfill permit boundary and SH 359. The City commits to maintaining ownership of this property throughout the life of the landfill, and through the post-closure care period. The western boundary buffer zone ranges between 105' and 146'; with the drainage easement, this buffer is between 205' and 274'. Table II.10 summarizes the buffer zones along the perimeter of the landfill.~~

Table II.10
Buffer Zones

	~~Without Easement Min-Max~~Buffer from Toe of Fill	~~With Drainage Easement Min-Max~~Buffer from New Waste
North~~*~~	55’ – 66’~~56-78~~	648’ – 662’~~352-430~~
East	125’ – 289’~~126-316~~	141’ – 698’~~231-421~~
West*	106’ – 147’~~105-174~~	125’ – 686’~~205-274~~
South~~~~**	76’ – 308’~~76-269~~	227’ – 396’~~537-743~~

*The easement along the west side will include approximately 2 foot of the drainage easement.
~~* No new waste within 125’ of permit boundary or fill limits~~
~~** Southern boundary includes City-owned property not part of permit~~
~~** The fill area boundaries have not changed on the southern boundary~~

The buffer zones include access roads that are routinely maintained providing access for vehicles to perform periodic monitoring as well as emergency vehicles.

The drainage design presented in Part III, Attachment 6 demonstrates that the facility will comply with drainage and sediment control within the perimeter of the permitted boundary.

3.14 Historical and Archaeological Review 30 TAC § 330.61(o)

Coordination with the Texas Historical Commission regarding historically significant sites and structures, as well as known archaeological sites was undertaken. The Historical Commission reviewed information provided by the City. Based on the evaluation of site conditions, the Texas Historical Commission responded that the project may proceed – no significant sites were identified. Copies of Correspondence letters are included in Attachment II-2.

3.15 Council of Governments and Local Government 30 TAC § 330.61(p)

Correspondence with the South Texas Development Council and local government agencies including the City of Laredo has been initiated and a copy of the correspondence is included in Attachment II-2.

City of Laredo Landfill Permit Amendment 1693B
City of Laredo, Texas
Permit Amendment MSW Permit 1693B
Laredo, Texas
Webb County, Texas
August 2014

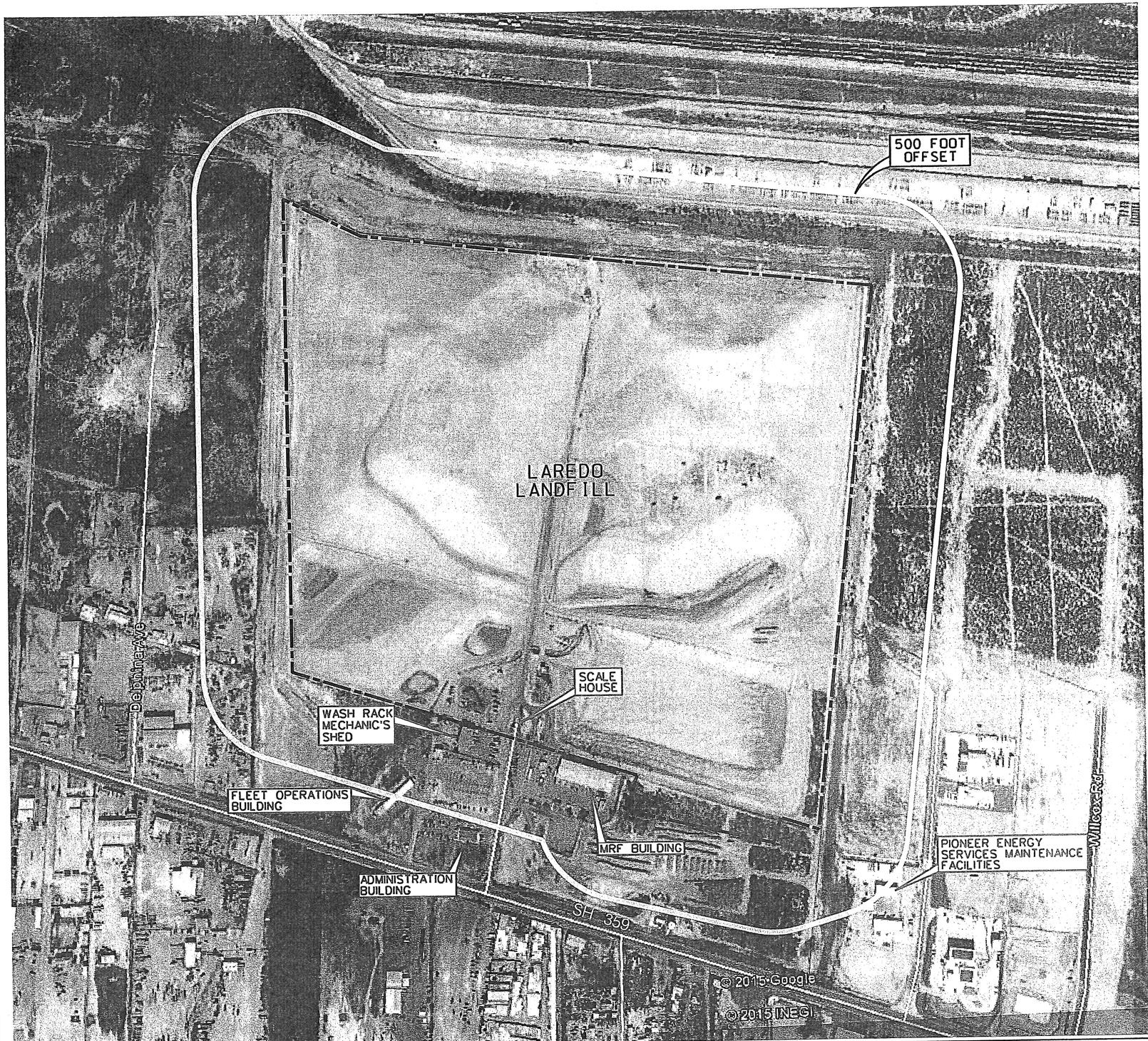
Revised June 2015

PART II
Attachment 1
Figures

LAREDO LANDFILL
PART II
Attachment 1
Figures

TABLE OF CONTENTS

List of Figures



N

300 150 0 300 600

SCALE HORIZONTAL FEET

LEGEND

AMENDED PERMIT BOUNDARY

SOURCE: GOOGLE EARTH 2015

FOR PERMIT PURPOSES ONLY

REV	DATE	DESCRIPTION	DES BY	APP BY
1	6/18/15	NOD NO. 1	MC	SBH

CITY PROJ. No.	LAREDO LANDFILL VERTICAL EXPANSION
AZB PROJ. No. 212029	PERMIT AMENDMENT APPLICATION No. MSW-1693B
DATE: AUGUST 2014	WEBB COUNTY, TEXAS
DES BY SH	LAND USE WITHIN 500' OF PERMIT BOUNDARY
DRN BY AZB	FIGURE II-1.8A
CHK BY SH	
APP BY MC	

CITY OF LAREDO

SHEET OF

FILE:

ATTACHMENT: II-1

AZ&B ARREDONDO, ZEPEDA & BRUNZ, LLC
TBPE FIRM REG. # F-1005B
CIVIL · ENVIRONMENTAL · SURVEYING
CONSTRUCTION MANAGEMENT · MUNICIPAL

City of Laredo Landfill Permit Amendment 1693B
City of Laredo, Texas
Permit Amendment MSW Permit 1693B
Laredo, Texas
Webb County, Texas
August 2014
Revised June 2015

PART II
Attachment 2
Correspondence

LAREDO LANDFILL
PART II
Attachment 2
Correspondence

TABLE OF CONTENTS

List of Attachments

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Texas Pollutant Discharge Elimination System
Storm Water Multi-Sector General Permit

The Notice of Intent (NOI) for the facility listed below was received on November 18, 2011. The intent to discharge storm water associated with industrial activity under the terms and conditions imposed by the Texas Pollutant Discharge Elimination System (TPDES) storm water multi-sector general permit TXR050000 is acknowledged. Your facility's TPDES multi-sector storm water general permit number is:

TXR05AZ35
Coverage Effective: November 21, 2011

TCEQ's storm water multi-sector general permit requires certain storm water pollution prevention and control measures, possible monitoring and reporting, and periodic inspections. Among the conditions and requirements of this permit, you must have prepared and implemented a storm water pollution prevention plan (SWP3) that is tailored to your industrial site. As a facility authorized to discharge under the storm water multi-sector general permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

Project/Site Information:
RN102327582
CITY OF LAREDO LANDFILL
6912 HWY 359
LAREDO, TX 78043-4787
WEBB COUNTY

Operator:
CN600131908
CITY OF LAREDO
PO BOX 1965
LAREDO, TX 78044-1965

This permit expires on August 14, 2016, unless otherwise amended. If you have any questions related to processing you may contact the Storm Water Processing Center by **email at SWPERMIT@tceq.texas.gov or by telephone at (512) 239-3700**. For technical issues, you may contact the storm water technical staff by email at swgp@tceq.texas.gov or by telephone at (512) 239-4671. Also, you may obtain information on the storm water web site at http://www5.tceq.texas.gov/wq_dpa/. A copy of this document should be kept with your SWP3.

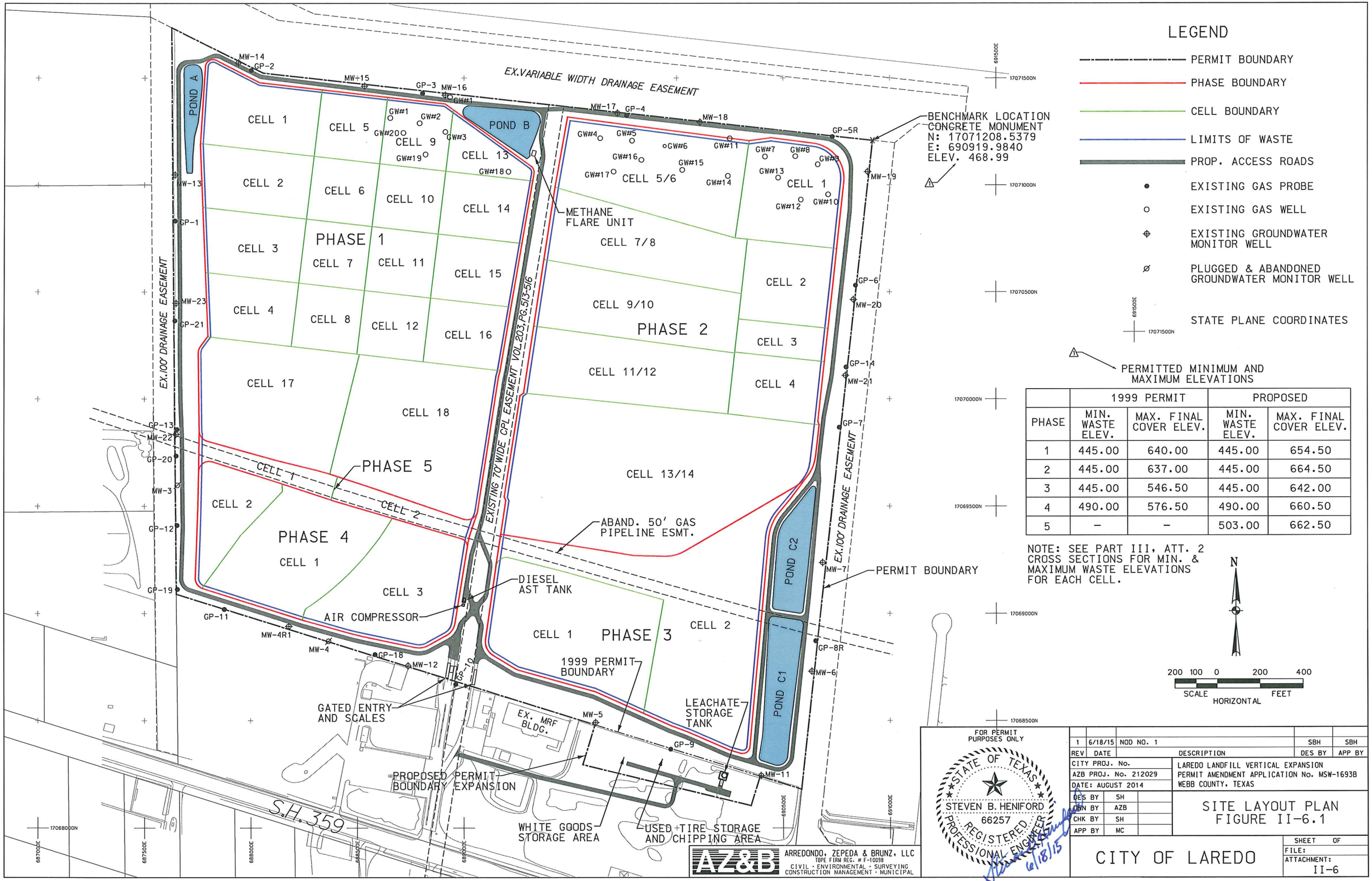
Issued Date: March 29, 2012

FOR THE COMMISSION

City of Laredo Landfill Permit Amendment 1693B
City of Laredo, Texas
Permit Amendment MSW Permit 1693B
Laredo, Texas
Webb County, Texas
August 2014

Revised June 2015

PART II
Attachment 6
Sequence of Development Plan



PHASE	1999 PERMIT MIN. WASTE ELEV.	1999 PERMIT MAX. FINAL COVER ELEV.	PROPOSED MIN. WASTE ELEV.	PROPOSED MAX. FINAL COVER ELEV.
1	445.00	640.00	445.00	654.50
2	445.00	637.00	445.00	664.50
3	445.00	546.50	445.00	642.00
4	490.00	576.50	490.00	660.50
5	–	–	503.00	662.50

NOTE: SEE PART III, ATT. 2 CROSS SECTIONS FOR MIN. & MAXIMUM WASTE ELEVATIONS FOR EACH CELL.

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
STEVEN B. HENIFORD
66257
REGISTERED
PROFESSIONAL ENGINEER
6/18/15

REV	DATE	DESCRIPTION	DES BY	APP BY
1	6/18/15	NOD NO. 1	SBH	SBH

CITY PROJ. No.
AZB PROJ. No. 212029
DATE: AUGUST 2014
DES BY SH
DRN BY AZB
CHK BY SH
APP BY MC

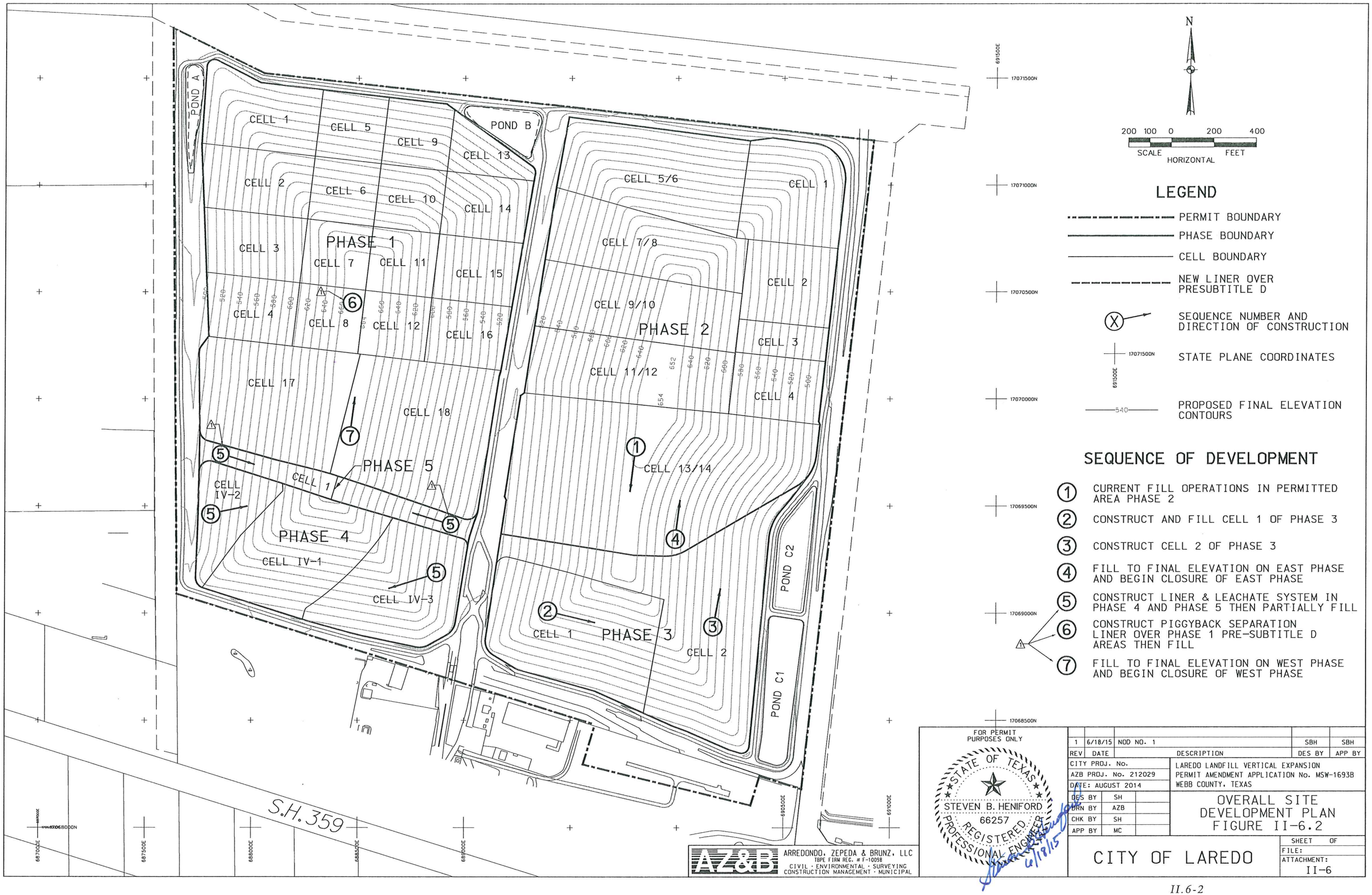
LAREDO LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693B
WEBB COUNTY, TEXAS

SITE LAYOUT PLAN
FIGURE II-6.1

CITY OF LAREDO

SHEET OF
FILE:
ATTACHMENT: II-6

AZ&B
ARREDONDO, ZEPEDA & BRUNZ, LLC
TBPE FIRM REG. # F-10098
CIVIL · ENVIRONMENTAL · SURVEYING
CONSTRUCTION MANAGEMENT · MUNICIPAL



N

200 100 0 200 400

SCALE HORIZONTAL FEET

LEGEND

- PERMIT BOUNDARY
- PHASE BOUNDARY
- CELL BOUNDARY
- NEW LINER OVER PRESUBTITLE D
- (X) SEQUENCE NUMBER AND DIRECTION OF CONSTRUCTION
- 17071500N / 6915000E STATE PLANE COORDINATES
- 540 PROPOSED FINAL ELEVATION CONTOURS

SEQUENCE OF DEVELOPMENT

1. CURRENT FILL OPERATIONS IN PERMITTED AREA PHASE 2
2. CONSTRUCT AND FILL CELL 1 OF PHASE 3
3. CONSTRUCT CELL 2 OF PHASE 3
4. FILL TO FINAL ELEVATION ON EAST PHASE AND BEGIN CLOSURE OF EAST PHASE
5. CONSTRUCT LINER & LEACHATE SYSTEM IN PHASE 4 AND PHASE 5 THEN PARTIALLY FILL
6. CONSTRUCT PIGGYBACK SEPARATION LINER OVER PHASE 1 PRE-SUBTITLE D AREAS THEN FILL
7. FILL TO FINAL ELEVATION ON WEST PHASE AND BEGIN CLOSURE OF WEST PHASE

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
STEVEN B. HENIFORD
66257
REGISTERED PROFESSIONAL ENGINEER
6/18/15

ARREDONDO, ZEPEDA & BRUNZ, LLC
TBPE FIRM REG. # F-10058
CIVIL · ENVIRONMENTAL · SURVEYING
CONSTRUCTION MANAGEMENT · MUNICIPAL

REV	DATE	DESCRIPTION	DES BY	APP BY
1	6/18/15	NOD NO. 1	SBH	SBH

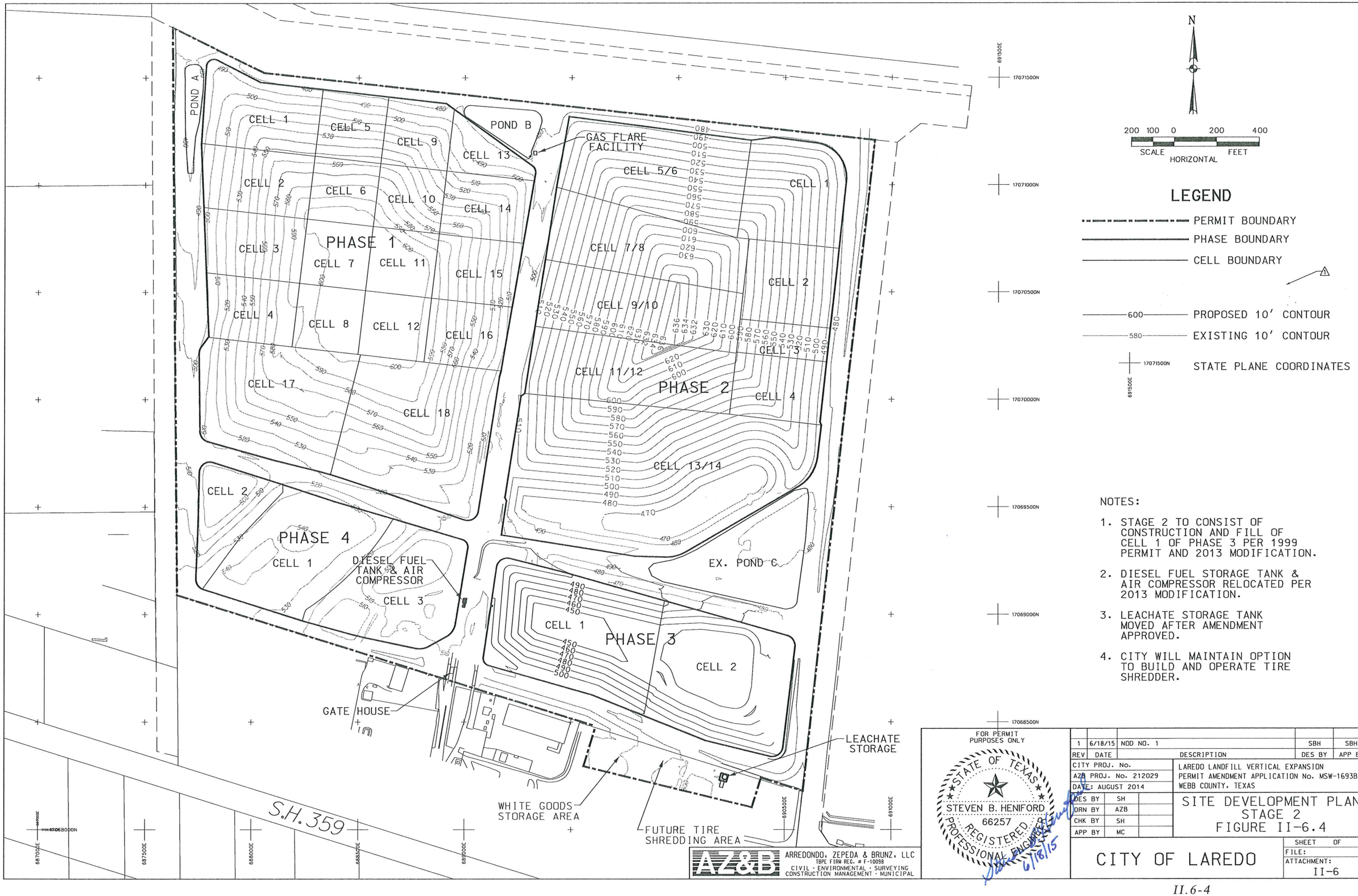
CITY PROJ. No.	
AZB PROJ. No. 212029	
DATE: AUGUST 2014	
DES BY	SH
DRN BY	AZB
CHK BY	SH
APP BY	MC

LAREDO LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693B
WEBB COUNTY, TEXAS

OVERALL SITE DEVELOPMENT PLAN FIGURE II-6.2

CITY OF LAREDO

SHEET OF
FILE:
ATTACHMENT: II-6



N

200 100 0 200 400

SCALE HORIZONTAL FEET

LEGEND

- PERMIT BOUNDARY
- PHASE BOUNDARY
- CELL BOUNDARY
- 600 PROPOSED 10' CONTOUR
- 580 EXISTING 10' CONTOUR
- 17071500N 691500E STATE PLANE COORDINATES

NOTES:

1. STAGE 2 TO CONSIST OF CONSTRUCTION AND FILL OF CELL 1 OF PHASE 3 PER 1999 PERMIT AND 2013 MODIFICATION.
2. DIESEL FUEL STORAGE TANK & AIR COMPRESSOR RELOCATED PER 2013 MODIFICATION.
3. LEACHATE STORAGE TANK MOVED AFTER AMENDMENT APPROVED.
4. CITY WILL MAINTAIN OPTION TO BUILD AND OPERATE TIRE SHREDDER.

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
STEVEN B. HENIFORD
66257
REGISTERED
PROFESSIONAL ENGINEER
6/18/15

ARREDONDO, ZEPEDA & BRUNZ, LLC
TBPE FIRM REG. # F-10058
CIVIL · ENVIRONMENTAL · SURVEYING
CONSTRUCTION MANAGEMENT · MUNICIPAL

REV	DATE	DESCRIPTION	DES BY	APP BY
1	6/18/15	NOD NO. 1	SBH	SBH

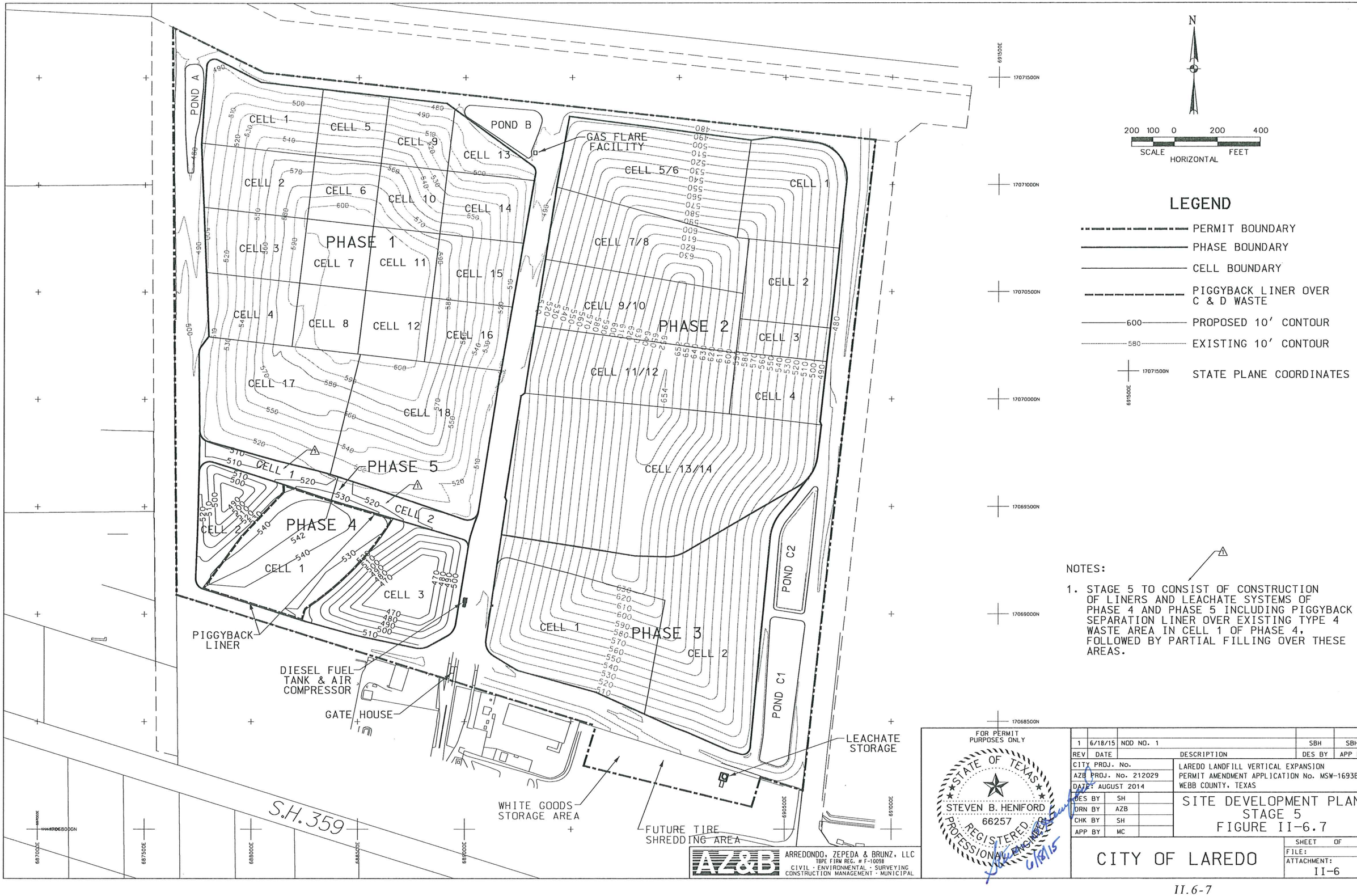
CITY PROJ. No.
AZB PROJ. No. 212029
DATE: AUGUST 2014
DES BY SH
DRN BY AZB
CHK BY SH
APP BY MC

LAREDO LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693B
WEBB COUNTY, TEXAS

SITE DEVELOPMENT PLAN
STAGE 2
FIGURE II-6.4

CITY OF LAREDO

SHEET OF
FILE:
ATTACHMENT:
II-6



N

200 100 0 200 400

SCALE HORIZONTAL FEET

LEGEND

- PERMIT BOUNDARY
- PHASE BOUNDARY
- CELL BOUNDARY
- PIGGYBACK LINER OVER C & D WASTE
- 600 PROPOSED 10′ CONTOUR
- 580 EXISTING 10′ CONTOUR
- 17071500N / 6915000E STATE PLANE COORDINATES

NOTES:

1. STAGE 5 TO CONSIST OF CONSTRUCTION OF LINERS AND LEACHATE SYSTEMS OF PHASE 4 AND PHASE 5 INCLUDING PIGGYBACK SEPARATION LINER OVER EXISTING TYPE 4 WASTE AREA IN CELL 1 OF PHASE 4, FOLLOWED BY PARTIAL FILLING OVER THESE AREAS.

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
STEVEN B. HENIFORD
66257
REGISTERED
PROFESSIONAL
ENGINEER
6/18/15

ARREDONDO, ZEPEDA & BRUNZ, LLC
TBPE FIRM REG. # F-10098
CIVIL · ENVIRONMENTAL · SURVEYING
CONSTRUCTION MANAGEMENT · MUNICIPAL

REV	DATE	DESCRIPTION	DES BY	APP BY
1	6/18/15	NOD NO. 1	SBH	SBH

CITY PROJ. No.
AZB PROJ. No. 212029
DATE: AUGUST 2014

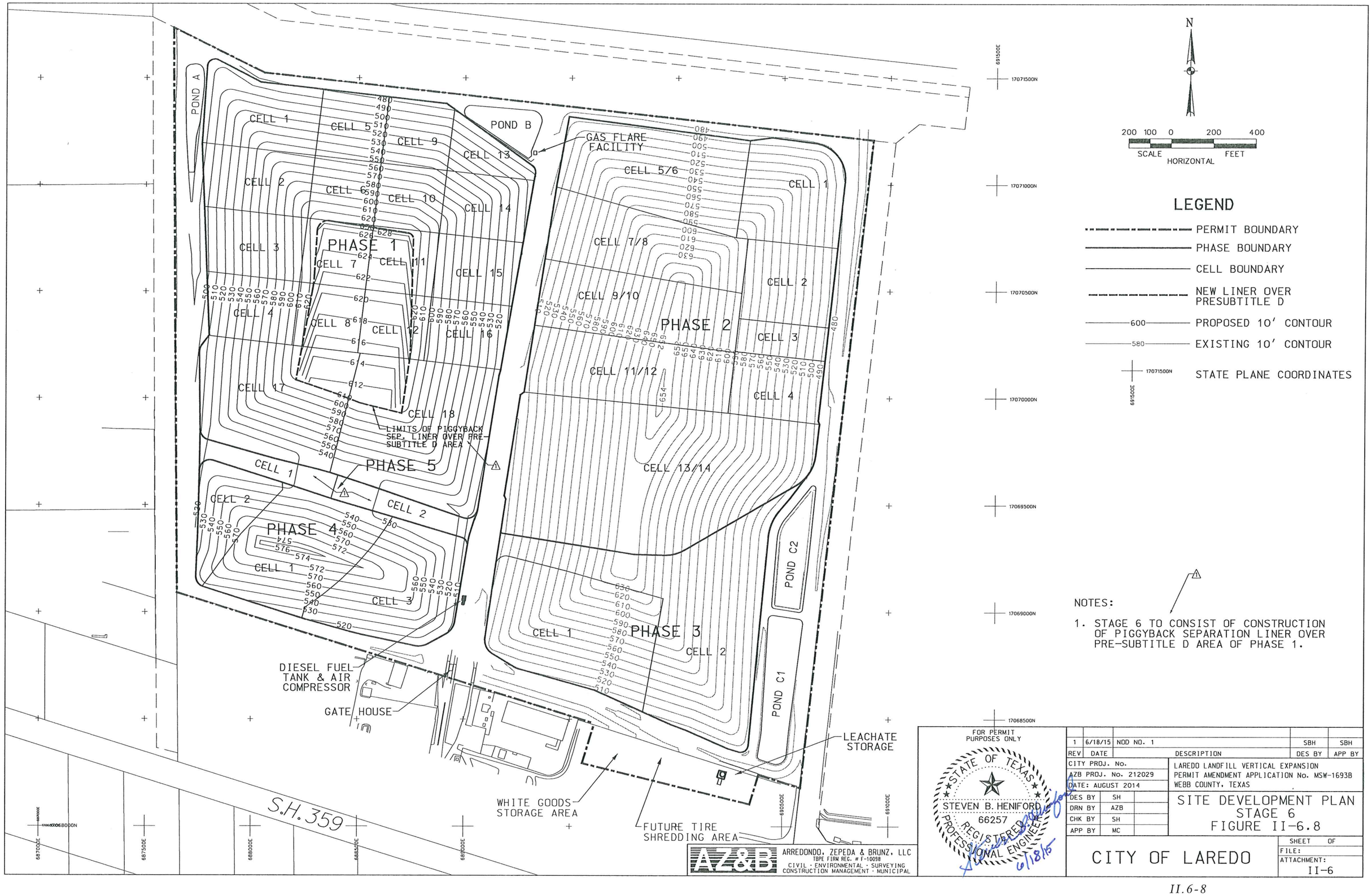
DES BY	SH
DRN BY	AZB
CHK BY	SH
APP BY	MC

LAREDO LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693B
WEBB COUNTY, TEXAS

SITE DEVELOPMENT PLAN
STAGE 5
FIGURE II-6.7

CITY OF LAREDO

SHEET OF
FILE:
ATTACHMENT: II-6



LEGEND

- PERMIT BOUNDARY
- PHASE BOUNDARY
- CELL BOUNDARY
- NEW LINER OVER PRESUBTITLE D
- 600 PROPOSED 10' CONTOUR
- 580 EXISTING 10' CONTOUR
- 17071500N / 6915000E STATE PLANE COORDINATES

NOTES:

1. STAGE 6 TO CONSIST OF CONSTRUCTION OF PIGGYBACK SEPARATION LINER OVER PRE-SUBTITLE D AREA OF PHASE 1.

FOR PERMIT PURPOSES ONLY

STATE OF TEXAS
STEVEN B. HENIFORD
66257
REGISTERED
PROFESSIONAL ENGINEER
6/18/15

ARREDONDO, ZEPEDA & BRUNZ, LLC
TBPE FIRM REG. # F-10098
CIVIL · ENVIRONMENTAL · SURVEYING
CONSTRUCTION MANAGEMENT · MUNICIPAL

REV	DATE	DESCRIPTION	DES BY	APP BY
1	6/18/15	NOD NO. 1	SBH	SBH

CITY PROJ. No.
AZB PROJ. No. 212029
DATE: AUGUST 2014

DES BY	SH	
DRN BY	AZB	
CHK BY	SH	
APP BY	MC	

LAREDO LANDFILL VERTICAL EXPANSION
PERMIT AMENDMENT APPLICATION No. MSW-1693B
WEBB COUNTY, TEXAS

SITE DEVELOPMENT PLAN
STAGE 6
FIGURE II-6.8

CITY OF LAREDO

SHEET OF
FILE:
ATTACHMENT: II-6