

March 21, 2025

Project No.: 10853-256

Mr. Brian Burkitt, EIT  
Lower Colorado River Authority  
Water Quality Division  
P.O. Box 220  
Austin, Texas 78767-0220

Subject: Asphalt Inc., LLC  
Burnet Quarry  
Application #2024-5606 U1  
3221 FM 3509, Burnet, Texas 78611  
Response to Comments Dated March 5, 2025

Mr. Burkitt,

Below, please find the responses to your comments dated March 5, 2025, regarding the Asphalt Inc., LLC Burnet Quarry Application (#2024-5606 U1).

**Notice of the Application**

*-in accordance with Section 6.0(e) of the Highland Lakes Watershed Ordinance.*

A parcel map and supportive adjacent property owner information (10853-256) documented was submitted to demonstrate the applicant mailed a notice of the permit application to persons who own property located within 500 feet to the site or within 1,000 feet of the project limits.

1. Provide the first-class mailed receipts proving that each adjacent property owner identified on the parcel map was mailed the permit application notice.

**U1- Comment addressed.**

2. Please confirm with supportive documentation that a notice of quarry-mine activity was mailed to officials of nearby municipalities, county, and groundwater conservation district.

**U1- Comment addressed.**

**Quarry Mine Operator/Owner**

*-in accordance with Section 3.0 of the Highland Lakes Watershed Ordinance.*

The permit application was submitted listing Asphalt Inc, LLC as the owner. The evidence of ownership documentation demonstrates HVPR4 LLC (grantor) selling the subject property to Burnet Ranch Investments, LLC. Burnet County Appraisal District documents the property (ID No. 47495) owned by Burnet Ranch Investments LLC.

3. The permittee is a landowner or quarry mine operator authorized to undertake development or quarry mine activities pursuant to a permit granted. Please provide legal supportive documentation demonstrating an authorized agent of Burnet Ranch Investments LLC has allowed an authorized agent of Asphalt Inc LLC to be the permittee.

**U1- Comment addressed.**

## **Cost Estimates for Erosion/Sediment Control Fiscal Security**

4. Review the following items in the engineer's cost estimate for erosion and sediment controls document:
  - Compare the cost per unit prices to the LCRA Cost Estimate for ESC Fiscal Security bulletin. Please update the prices accordingly or provide counter cost estimates from local contractors or recent bids to propose a price that is less than what is listed.

U1- Comment partially addressed. LCRA's standard minimum pricing for seeding is \$2.00/ SY (Cost estimate technical bulletin: [lcra.org/download/cost-estimates-for-esc-tech-bulletin/?wpdmdl=31259](http://lcra.org/download/cost-estimates-for-esc-tech-bulletin/?wpdmdl=31259)). At \$2.00/SY, the total revegetation cost for approximately 1,040,440 SY would be \$2,080,880.00. The Cost per Unit pricing proposed for the "Seed Mixture (per acre)" item does not meet LCRA's revegetation minimum pricing. Please revise and update the cost per unit to meet LCRA's minimum pricing and provide an updated cost estimate.

**Response:** Please see the updated cost estimate. Per our call 03/12/2025 it was determined that the \$2/YD pricing is not consistent with purchasing seed for large areas since this price also assumes small amounts of seed not purchased in bulk. As discussed we have updated the cost estimate using referenced seed costs from local suppliers for which LCRA could be expected to utilize in the event the disturbed areas need to be revegetated by LCRA.

5. Add a quantity and pricing for a concrete washout to account for the wheel wash area. U1- Comment addressed.
6. Add a quantity and pricing for the diversion/interception/perimeter berms item to account for the proposed berm areas.  
U1- Comment addressed.
7. Add a quantity and pricing for rock berms, check dams, and high service rock berms. Refer to the markups on sheet C.2 for more information.

U1- Comment partially addressed. Based on LCRA's rock berm spacing requirements for varying slopes, the rock berm quantity will need to be updated. Please see markup on sheet 1 referencing the spacing revisions. Are these rock berms temporary or will they remain in place once the initial phase of construction is completed?

**Response:** The average slope was used to determine the spacing of rock berms. Please see the updated cost estimate which adds additional rock berms to account for some small areas of varying slope along the drainage swales.

8. All proposed work, including the final conditions need to be included within the limits of construction. The total acreage within the limits of construction needs to be the amount of seeding proposed (Seed mixture+ Hydromulching= Acreage within limits of construction).

U1- Comment partially addressed. Pit number 4 is exempt from the revegetation acreage measurement since the pit floor will be actively mined and the drainage will be self-contained within the pit walls.

**Response:** Please see the updated LOC to match the final plan limits of construction. The cost estimate has also been updated accordingly.

## **Cost Estimates for Erosion/Sediment Control Fiscal Security Additional Comments- U1**



9. Changes to the Erosion and Sedimentation Control Plan have been requested. Please revise the cost estimate to include these changes. Once the cost estimate is approved, a letter of credit or other form of financial security acceptable to LCRA must be provided prior to issuance of a permit. A Letter of Credit shall have a minimum expiration of 3 years or shall renew automatically until LCRA determines that the project has achieved final stabilization. A letter of credit template can be found in the Development permit application [hyperlink: <https://www.lcra.org/download/hlwo-developer-application-packet-1-pdf/?wpdmdl=19704>]

**Response:** Please see updated cost estimate.

### **Hydrologic Report**

*-in accordance with Section 5.2(b)(iv)(1)(a) of the Highland Lakes Watershed Ordinance.*

#### **1.2 Site Description, Post Development Conditions**

10. Revise the section to describe any offsite areas draining to the project site or if those areas will be redirected around the site. Also, see comment below regarding offsite drainage.

The eastern property boundary has multiple drainage lows conveying offsite drainage through the property. The final conditions show berm breaks allowing offsite drainage to enter the main pit. If the drainage is not diverted from the quarry pit and the intent is to impound the offsite drainage, coordination with TCEQ and LCRA may be needed for the proposed impoundment.

U1- Comment partially addressed. If you intend to impound water in the quarry, please provide LCRA with a written determination by TCEQ of whether the impounded water would be state water.

**Response:** As discussed during our call 03/12/2025, it is the operators intent to impound any state water. Per state water rights law diffuse surface runoff can be captured by a landowner in the state prior to the runoff entering a defined watercourse. Our team of engineers and ecologists have evaluated the property and have determined that none of the drainage features onsite meet the definition of state water (or watercourse). As requested by the LCRA staff we intend to seek confirmation from TCEQ. As we discussed this process may take some time and our understanding is this permit is not contingent upon TCEQ confirmation. In the unlikely event that it becomes necessary to seek authorization from the LCRA water rights division we will work with them to obtain that approval. It is anticipated that the coordination with TCEQ will be completed and shared with LCRA staff well before any potential “impoundment” occurs.

11. Revise the section to describe the drainage features located onsite that drain into Peters Creek and reference the soil resource report included in this section.

U1- Comment partially addressed. The buffer zone was denoted as a “Potential Wetland” on sheet 3 of the Quarry and Mine Plans. Please provide a description within the hydrologic report of the drainage features and the stock pond since they appear on the US Fish and Wildlife wetlands mapper.

**Response:** The area noted on the plans was noted as a potential wetland feature on the National Wetlands Inventory mapper. Westward Ecologist have visited the site and determined that there are no potential wetlands at this location. The reference has been removed from the plan sheets.

12. Revise the section to include a detailed description of the 40-acre processing plant area including information about the rock crusher (stationary or portable), storage of chemicals used in washing of the aggregates, proposed water well (protection measures), process water storage area, reuse of water (e.g. closed-loop design), and include a description of best management practices designed to control runoff directly impacting this area or if all of it is diverted to on pit.

U1- Comment partially addressed. If applicable, please provide information within the report and on the Quarry plan sheets regarding the following items within the processing plant area:

- G The storage of chemicals, the types of chemicals, proposed containment for the chemicals, and measures that will be implemented should any hazardous spills occur.
- G The proposed water well, how it will be protected from daily processing activity, and what setbacks will be provided.
- G The process water storage areas, a description of how the process water will be used, a description if a closed loop system will be utilized, and how/when/where the process water will be disposed of.
- G Description of fuel types that will be located at the pad site and what types of containment will be utilized for the fueling areas. Will there be an SPCC plan for the tanks or any fuel located on this site? Please describe what measures will be taken to prevent stormwater contamination should any spills take place.
- G Buildings, pad areas, and parking areas.
- G Although the stockpiles drain to the pit, any drainage on these piles still has the potential to leave the processing pad site. Describe what practices will be implemented within the immediate vicinity of the stockpiles to prevent them from discharging sediment. For instance, this can be done with the use of internal berms around stockpiles. Whichever practice is proposed, it needs to be included on the Erosion and Sedimentation control plan as a note.

**Response:** Please see the plant inset drawing that indicates the approximate locations of the anticipated fuel tanks, water well, wash plant and water system, buildings, and berms.

The only chemicals to be stored onsite are the fuel storage for vehicles. On road and off-road diesel is anticipated. It is anticipated that tanks will be either double walled tanks or be installed in a concrete containment structure meeting the SPCC requirements.

The well will be placed within the plant footprint to provide protection from traffic. The well will be located well outside the required OSSF setback of 100 (or 150) feet.

See hydrologic report for description of closed loop process.

There will be an SPCC for this site which will be available onsite once operation begins.

13. Provide a plan sheet to illustrate the processing plant area details. Include what is described above.

U1- Comment partially addressed. Provide a separate plan sheet for the processing plant area and include the items stated above within the plan sheet.

**Response:** Please see plant inset with additional items shown.

14. Provide a plan sheet to illustrate the schematic of the office area, parking, scale house and proposed onsite sewage facilities (illustrate setbacks).

U1- Comment addressed. If the location of either changes, revisions will need to be submitted to LCRA HLWO.

**Response: Noted**

15. State what the proposed depth for the quarry pit will be. U1- Comment addressed.
16. Revise section to clarify the proposed Garman Pits (corrected to Gorman Pit) to include purpose of the pits (e.g. initial quarrying area), approximate mining depth, proposed future use of the area, if applicable.

U1- Comment partially addressed. Will walls be installed between the gorman pits to create stepped/terraced drainage from one pit to the other? Please show if applicable. Also, provide grading contour labels for the gorman pits and provide calculations proving these pits are self-containing as stated within the report.

**Response: No walls will be installed as part of the Gorman pits. See inset map for additional detail on Gorman pits. Please see WQ calculations with the Gorman pits added. Please note the reason these were not included in the original is because pit 2 is already sized to provide WQ for this area and the fact that they are self-containing is redundant to meeting the WQ requirement of the ordinance.**

17. Will the Gorman Pits have a liner installed underneath? U1- Comment addressed.
18. It is stated that two Gorman pits are proposed but the initial conditions plan sheet (C.2 of C.4) shows 3 pits with a total acreage of 6.99 acres.

U1- Comment partially addressed. The hydrologic report states “approximately 4.6 acres” within the Post- development Conditions but the plan sheets are showing 6.9 acres. Please revise.

**Response: Please see updated hydrologic report.**

19. Add to the following statement: *In an effort to be extremely conservative the site has been evaluated assuming that impervious surface may be placed anywhere onsite. This is a very conservative approach since there is no intent to develop the entire site as impervious surface.* Include language that other improvements that are not illustrated on the Final Conditions plan sheet will be submitted to LCRA for permit revision and approval.

U1- Comment partially addressed. What precautions will be taken to prevent development in drainage areas 3A and 2B? If these are to be left undisturbed, they must remain in their natural state. Also, what precautions will be taken to prevent additional development within Drainage areas 1 and 2A once the pits are constructed?

**Response: Signs will be added onsite along the developed areas which indicate “No site disturbance beyond this point without LCRA approval” as shown on the updated maps.**

20. In accordance with Section 5.2(b)(ii) of the Highland Lakes Watershed Ordinance a quarry pit can be used as a permanent BMP if it is sufficiently sized to contain the runoff of a 10-year (24-hr) storm without discharging during a rain event. At least five of the “pit BMPs” (pits 2B, 2A, 1, 3B & 3A) described in this report are in areas not proposed for quarrying activity. Please clarify the pit BMPs are designed for a 10- year (24-hour) storm event without any discharge. Additional

information requested below.

U1- Comment addressed.

21. “Appendix I- Stormwater Runoff Calculations” was not provided in this submittal. U1- Comment addressed.

### **1.2 Site Description, Post Development Conditions Additional Comments- U1**

22. The hydrologic report on sheet 4 states “each of the six pits” but the quarry plans and calculations only show three. Please revise this statement within the report.

**Response: Please see revised statement in the hydrologic report.**

#### **XX Erosion Sedimentation Control**

23. Add a section that briefly describes the erosion and sedimentation controls in place during the initial phases of the quarry project. The information should align with plan sheet C.1 and C.2, include details about sedimentation ponds in drainage areas DA-1 and DA-2.

U1- Comment addressed.

24. Describe a timeline when the initial phase will move into a more operational phase and how the BMPs will be updated. Refer to the language included in plan sheet notes. Also, describe the erosion control phasing for the various quarrying phases.

U1- Comment addressed.

25. Describe measures proposed to manage erosion and sedimentation during the operational stages of the quarry project. For example, use of water trucks, wheel wash, berms to direct runoff, etc.

U1- Comment addressed.

#### **XX Onsite Features**

26. Reference the wells described in the Hydrogeologic Report and state if the two wells (S-1 & S-3) will be maintained or closed.

U1- Comment partially addressed. Include the proposed well that will be located on the processing plant pad within this description.

**Response: Please see updated Hydrologic Report with updated well section discussing the proposed well.**

27. Reference the man-made stock ponds described in the Hydrogeologic Report and state if the stock ponds (S-2, S-4, & S-5) will be maintained onsite or mined through.

U1- Comment addressed.

#### **2 Buffer Zones**

28. Please revise section to include any details how the buffer zone will be protected from any heavy equipment, disturbances, and how access to the buffer zone will be prevented.

U1- Comment addressed.

29. The buffer zone was not delineated correctly on the Quarry and Mine plan sheets based on the field visit. The buffer zone boundary is currently shown 50' from the creek centerline, not 75'. Please revise.

U1- Comment partially addressed. Provide a buffer zone delineation to the proposed point of beginning based on the sites existing conditions. Based on LCRA's drainage area delineations for the buffer zone, the point of beginning is located further upstream than what is currently proposed on the quarry plan sheets (approximately 840 feet further upstream). The drainage area that feeds into the proposed point of beginning is roughly 340 acres.

Please revise the drainage area delineation and the limits of the buffer zone. If needed, contact LCRA to schedule a meeting regarding this comment.

**Response: Please see the updated drainage area map included in the hydrologic report. Through coordination with LCRA review staff we have updated the drainage area and reviewed which areas noted in the last response were draining to the point of analysis and agreed on the boundary shown on the drainage area map.**

### 3 Roadway Treatment

30. Revise section to describe how the natural vegetative filter strip (NVFS) will be protected from vehicles. Revise to account for emergency shoulders, as needed, but please illustrate in the plan sheets.

U1- Comment addressed. FYI, the limits of the NVFS and pit bmps will need to be recorded via an easement once the project is close to being permitted.

**Response: Per phone call 03/20/2025 with LCRA review staff. Since this project is a Quarry/Mine that is subject to the requirements of the reclamation plan, there is no requirement for the Pit BMPs or the temporary NVFS to be included in a recorded easement.**

31. Describe how the NVFS was sized for the haul road and what type of NVFS is proposed. U1- Comment addressed.

32. Describe if any roads will be proposed around the perimeter of the project site and what treatment will be proposed.

U1- Comment addressed.

33. Describe and illustrate access roads to stormwater pits for maintenance purposes. U1- Comment addressed.

34. Describe and illustrate any access roads between the property line and the earthen berms. U1- Comment addressed.

### 4 Proposed Stormwater Earthen Berms

35. Revise section to include language about perimeter buffer. U1- Comment addressed.
36. Proof needs to be provided that the diversion berms and swales are sized for the 10-year, 24-hour storm event based on the criteria stated in section 2.2.3 sheet 270 within the HLWO technical manual.

U1- Comment addressed.

37. Swales are mentioned as a stormwater conveyance feature for the site. Revise the quarry plan sheets showing the proposed grading and locations of these swales.

U1- Comment addressed.

XX Stormwater Basins (Pits)

38. Add a section for Stormwater Basins (Pits) and update Stormwater Earthen Berm section as applicable. Provide the following details related to the basins in the narrative and supportive plan sheets.
- G BMP sizing calculations need to be provided showing that these pit BMPs were designed based on the impervious cover assumptions for each drainage area and sized for the 10-year, 24-hour storm event.

U1- Comment addressed.

- G Describe how any recharge features (e.g. fractures, cavities) on the floor will be mitigated during construction of these pits.

U1- Comment addressed.

- G Describe how the collected stormwater will be managed.

U1- Comment partially addressed. Please describe how stormwater within the basins will be managed. For instance, if the water will be reused or how dewatering activities stated within the BMP maintenance plan-will be incorporated to make sure the storage requirements of the basins are being met after subsequent rainfall events.

Also, please clarify what contaminants will be treated by the BMP quarry pits.

**Response: The stormwater captured within the basins will be allowed to infiltrate or evaporate. There are no dewatering activities planned for these pits. However, in the event of mine dewatering, water quality sampling will be performed to ensure the discharge meets the TCEQ/EPA requirements for discharge of mine dewatering. Filter bags may be utilized if necessary to prevent discharge of TSS above any regulatory discharge limitations.**

**Although the analysis of subsequent rainfall events is not required, these ponds are conservatively sized and have sufficient freeboard to handle additional rainfall events after the design storm occurs without any anticipated discharge.**

**The major factor that could be treated by the BMP quarry pits is sediment in stormwater runoff (TSS) from disturbed areas. More remote factors include fuels and lubricants from vehicles and equipment and trash/debris items. Please note that any on-site fuel storage tanks will be provided with their own secondary containment.**

- G Describe if the basins will incorporate outfalls or spillways and what storm event they're designed for.

U1- Comment partially addressed. The Quarry and Mine Activity Section within the HLWO technical manual (Section 2.4 Buffer Zones, sheet 276) requires proper dissipation of high energy flow before entering buffer zones. As stated in the manual, "By-pass flows from storms in excess of

the basin design storm must be conveyed in a stable manner through the buffer zone to the receiving water body. This can be accomplished through application of the outfall stabilization [rip-rap apron, scour hole design] and level spreader systems presented in Section I, Chapter 3.” Please provide rip-rap aprons sized for the BMP quarry pit discharges. Refer to LCRA’s pipe end treatment for riprap apron sizing and dimensioning ([PIPE END TREATMENT](#)).

**Response:** The outfalls of these pits are not anticipated to discharge even in events larger than the design storm based on the conservative nature of this design. The purpose of the outfalls is to simply provide a relief point to prevent a full berm breach. It is anticipated that any storm event that could cause a discharge would overwhelm any rip-rap placed and that the rip-rap would become mobilized downstream. We have not included any rip-rap in this design since it does not serve a purpose when no discharge is anticipated under any normal anticipated rainfall event.

- G Describe if those potential discharges will go through additional water quality best management practices prior to discharging the site.

U1- Comment partially addressed. In the event of a high precipitation storm event causing the pits to overflow, what measures will the permittee take to mitigate sediment laden discharge onsite and offsite once the storm event has passed? Please include these within the BMP maintenance plan.

**Response:** During a high precipitation event, well beyond the design storm of 6.5 inches of rainfall within 24 hours, there are no additional measures required or proposed. No edits to the hydrologic report have been made.

- G Provide supportive plan sheets with construction details of each individual basin. U1- Comment partially addressed. Provide an inset for pit 3.

**Response:** See inset for pit 3 on final conditions map.

39. Within this section it states that there will be basin walls, but the pits are shown as embankments. Will any of the pits use retaining walls?

U1- Comment addressed.

40. Add sediment depth markers to the basins. U1- Comment addressed.

#### XX Dewatering

41. Include a section that describes any dewatering activities in accordance with Section 3.3.14 of the LCRA HLWO technical manual (starts on sheet 149).

U1- Comment partially addressed. Describe how often the BMP pits will be dewatered and what practices will be used to treat the sediment laden discharge. The BMP pits will lose storage capacity during periods of recurring rain events or over time from accumulated stormwater leading to a higher potential for a discharge to take place.

**Response:** Please see comment 38 above and update to the hydrologic report.

#### XX Quarry Pit (319.1-acre)

42. Include a section that describes the quarry pit (“Pit 4” 319.1-acres) and describe the approximate timeframe for quarrying the area.



U1- Comment addressed.

43. Describe the depth of the pit using the unit of ft below ground surface (bgs) to match well data and elevation.

U1- Comment addressed.

44. Describe how any recharge features (e.g. cavities or fractures) located on the surface of the quarry floor will be mitigated in accordance with Section 5.2(b)(ii) of the Highland Lakes Watershed Ordinance and Section 2.3.2 of the LCRA technical manual.

U1- Comment addressed.

#### 5 Groundwater Monitoring Statement

**\*This request is under review based on supportive information provided and review of hydrogeologic report\***

45. Describe the approximate separation depth proposed between the quarry pit floor and water table.

U1- Comment addressed.

46. Please revise the section to state LCRA will be contacted if during quarrying activity groundwater is encountered.

U1- Comment addressed.

47. Has any groundwater monitoring been completed for this site that can establish background conditions? U1- Comment addressed.

#### 6 Surface Water Monitoring Statement

**\*This request is under review based on supportive information provided\***

48. Add a statement that monitoring information collected to meet TCEQ MSGP permit requirements will be submitted to LCRA in an annual report.

U1- Comment addressed.

#### **Hydrogeologic Report**

*-in accordance with Section 5.2(b)(iv)(1)(b) of the Highland Lakes Watershed Ordinance.*

49. Describe the tributaries to Peters creek located onsite in the Hydrogeologic Report, which is illustrated in the Soil Resource Report Soil Map attached to the Hydrologic Report.

U1- Comment partially addressed. The hydrogeologic report needs to describe the existing onsite drainage and the ridgeline to the east. Also, provide a description of Peter's creek and the drainage features located on site within the hydrogeologic report.

**Response: Response: Section 5.5 DRASTIC Classification has been revised to include the following language withing the discussion on Topography (Slope).**

“Site topography is generally characterized by topographic highs to the east and south. Natural drainage is generally to the west/northwest via either unnamed tributaries to Peters Creek or Spring Creek. There is one tributary to Peters Creek on the Site. It is listed on the National Hydrography Dataset as intermittent, meaning it does not exhibit year-round flow. Westward met with representatives of LCRA onsite on September 11, 2024 to observe the tributary and discuss potential buffers. The was no observable bank or

ordinary high-water mark. The tributary flows to the west and intersects Peters Creek about one mile downstream of Camp Longhorn. A small portion of the unnamed tributary to Peters Creek appears to have a drainage area of sufficient size to warrant a buffer zone. Please reference the Hydrologic Report and associated plan sheets for additional detail.”

50. Describe the buffer setback for the tributary located near the western property boundary.

**U1- Comment partially addressed. A description for the buffer zone dedicated for the onsite drainages was not included within this report. Please revise.**

**Response: Please reference the response to Comment 49 above.**

#### 4.2 Karst Identification

It is stated, *A field investigation was performed at the site by Connor P. Tierney, P.G. on August 29, 2024.*

51. Please describe how the field study was conducted. For example, walking in equally spaced transects across the site etc.

**U1- Comment addressed.**

52. Please describe if any additional field investigations were completed at the site by Westward Geologist(s). **U1- Comment addressed.**

#### 5.2 DRASTIC Classification

DRASTIC Classification was calculated at 121.

53. Depth to Water Table referenced a well located 0.75 miles NW of the site. This well is not available in the Well & Spring Inventory map. Revise the Depth to Water Table criteria to reference one of the wells illustrated in the Well & Spring Inventory Map.

**U1- Comment addressed.**

54. Topography (Slope) documents a 4.61 percent slope for the site and noted a rating of 5. The table documents a rating of 9. Revise the table or noted rating in the narrative.

**U1- Comment partially addressed. Section 1.2 of the hydrologic report states “Onsite slopes average approximately 3%” please match the descriptions in both reports to reflect the correct sloping and update the slope rating if applicable.**

**Response: Response: The Hydrologic report has been updated to reflect an average slope of 4.61 percent.**

#### 7.0 Well & Spring Inventory

55. Update the following statement, if the location of this specific well was confirmed. *Well 164367 is mapped onsite, however the well address is for a location north of FM 3509. No evidence of this well was observed during the field investigation.*

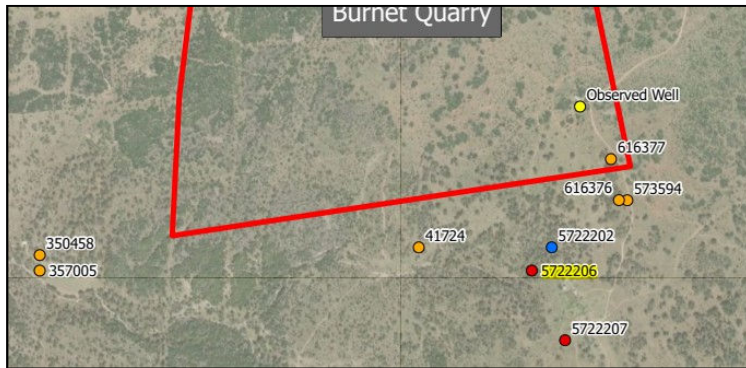
**U1- Comment addressed.**

#### 8.0 Discussion

Discussion states, *given the absence of sensitive karst features at the Site and significant depth to groundwater, quarrying activities likely will not impact groundwater quality. A groundwater*

*monitoring plan is not proposed.*

The south and southeast portion of Burnet Quarry is proposed to be the main pit, approximately 319.1-acres to have a depth of approximately 80 feet from the surface level. A few wells identified in the vicinity range from 100- 300 feet depth.



Well & Spring Inventory Map

WELL	DEPTH	WELL	DEPTH
350458	300 feet	616377	740 feet
357005	200 feet	573594	736 feet
41724	100 feet	616376	740 feet
Observed Well	No data	5722202	No data
5722207	650 feet	5722206	100 feet

56. Please provide additional supportive information to support a groundwater monitoring plan is not required with this submittal.

**U1- Comment Addressed.**

### **Mine & Quarry Plan**

*-in accordance with Section 5.2(b)(iv)(1)(c) of the Highland Lakes Watershed Ordinance.*

57. Please see marked up sheets to address any changes requested for this section or other sections.

G Plan sheet C.1 Erosion & Sedimentation Control Plan

G Plan sheet C.2. Initial Conditions

G Plan sheet C.3 Final Conditions

G Plan sheet C.4 Temporary General Notes

**U1- Comment partially addressed. Please see plan sheet markups.**

**Response: Please se plan sheets for edits and responses to plan sheet comments.**

58. Only one sheet was submitted as an erosion control plan. Since the quarry will expand gradually, ESC plan sheets need to be provided for the initial conditions, intermediate conditions, and the final conditions. The appropriate ESC's for each phase will need to be provided.

U1- Comment Addressed.

### **General Reclamation Guidance Plan**

*-in accordance with Section 5.2(b)(iv)(1)(e) of the Highland Lakes Watershed Ordinance.*

### **BMP Maintenance Plan**

59. Revise the maintenance plan to include the following:

G An introduction paragraph stating the type of BMP's to be maintained on site. U1- Comment addressed.

G A schedule for maintenance activities.

U1- Comment partially addressed. The maintenance plan only states for inspections to occur a minimum of twice annually. Please propose more frequent intervals to perform inspections. Also, a schedule or specific criteria for the stormwater pit dewatering.

**Response:** The maintenance plan has been updated to require inspections quarterly. Dewatering is not proposed or anticipated at this site. Since it is not anticipated there is no specific criteria for when to perform dewatering. The following has been added to the BMP maintenance plan to address dewatering. "Although dewatering is not anticipated from the Water Quality Pits, if it became necessary to remove captured stormwater it should be used onsite for dust control allowed to evaporate and infiltrate or other onsite industrial uses. In the event that a discharge offsite is necessary, water quality sampling will be performed to ensure the discharge meets the TCEQ/EPA requirements for discharge of mine dewatering. Filter bags will be utilized if necessary to prevent discharge of TSS above any regulatory discharge limitations."

G Provision for access to the tract by LCRA or other designated inspectors. U1- Comment addressed.

G Name, qualifications, and contact information for the party(ies) responsible for maintaining the BMP's.

U1- Comment addressed. The BMP maintenance plan will need to be signed by both parties before the permit is issued.

### **Response: Noted**

60. Provide a detailed description of the various dewatering practices to be used for the pit basins.

U1- Comment partially addressed. Be more descriptive and propose features specifically for dewatering. For instance, how the pits will be dewatered should the sediment depth surpass 3 feet or how the accumulated storm water from various events will be removed. Include what features will potentially be used, where and how the stormwater will be disposed of/used, and finally what specific dewatering practices will be used to prevent sediment laden discharge from leaving the site (example: dewatering bag, faircloth skimmer, etc.).

### **Response: See updated BMP Maintenance Plan to include matching information from the Hydrologic Report**

61. Within the detailed inspection section, include the second paragraph from section 5.5.1 within the HLWO technical manual.

U1- Comment addressed.

62. Within the maintenance plan describe how often the settled sediment will be removed from the BMP pits and how the sediment will be disposed of.

U1- Comment partially addressed. It is stated that “All sediment shall be used onsite...” Please clarify how this sediment will be used on site. Our concern is the sediment will be composed of fines and if not used properly, could potentially leave the site.

**Response: Any recovered sediment not stockpiled for sale is anticipated to be placed back into the pit in the areas that have been previously mined.**

63. Provide an example of an inspection form. **U1- Comment addressed.**

64. Include a BMP specific section within the maintenance plan and include the following statement for the proposed VFS, “No portion of the filter area will be greater than a 10% slope. The vegetated density must be greater than 80% with no large bare areas. The filter area should be densely vegetated with a mix of erosion-resistant plant species that effectively bind the soil. Native or adapted Grasses are appropriate because they require less fertilizer and are more drought resistant than exotic plants.”

**U1- Comment addressed.**

65. Before the “Name and Signature of Responsible Party for maintenance of BMP’s” section, Include the following paragraphs:

The OWNER or SUBSEQUENT OWNER shall bear all expenses for the operation and maintenance of these permanent Best Management Practices (BMP) including but not limited to all general maintenance activities needed to keep this system in proper operation condition. If this system is abused or not maintained, then it may contribute to malfunction of the storm water system. All designated BMP areas shall remain free of construction, development, and encroachments.

You as the OWNER of this property have a responsibility to provide any SUBSEQUENT OWNER or your real estate agent with a copy of this Best Management Practices (BMP) Maintenance Plan if this facility is sold so that the BMPs can be properly maintained and operated. The same rights, duties, and responsibilities borne by the current OWNER shall be borne by each subsequent OWNER.


An amended copy of this document will be provided to the LCRA within thirty (30) days of any changes in the following information:

Responsible Party for Maintenance: [Insert New Owner name] Address: [Insert Street Address]

City, State, Zip: [Insert Information]

Telephone Number: [Insert BMP Maintenance Provider Telephone Number]

U1- Comment partially addressed please edit the following to state “PERMITTEE” on sheet 5.

  
The PEERMITTEE  
maintenance of the

**Response: Please see updated BMP Maintenance Plan.**

### **BMP Maintenance Plan Additional Comments- U1**

66. Include a wheel wash section within the BMP maintenance plan and provide specific maintenance criteria for the wheel wash.

**Response:** Please see updated BMP Maintenance Plan with the following added: A wheel wash will be used for trucks leaving the facility. Water from the wheel wash will be recirculated and any sediment removed and not stockpiled for use or sale offsite will be placed in the main quarry pit. Maintenance shall be in accordance with the manufacturer's recommended procedures.

67. Include a section for the maintenance of the Gorman Pits regarding dewatering and the removal/disposal of the sediment within the Gorman Pits.

**Response:** Water from the Gorman Pits will be recirculated to the wash plant and any sediment removed and not stockpiled for use or sale offsite will be placed in the main quarry pit.

68. See comment #39, Bullet Point #5 -U1.

**Response:** See response to comment #38 above.

**Other Local, State, and Federal Regulations (5.2(b)(iii))**

*-in accordance with Section 5.2(b)(iii) of the Highland Lakes Watershed Ordinance.*

69. Provide the status for the following permitting/authorization applicable to the proposed quarry project. Please state if an authorization is not applicable and provide a copy of an approval, if issued.

G EPA National Pollutant Discharge Elimination System (NPDES) permit

U1- Comment Addressed. Please provide a copy of the authorization to LCRA upon approval.

**Response:** A copy of the authorization will be provided.

G Mine Safety and Health Administration (MSHA/OSHA) authorization

U1- Comment Addressed. Please provide a copy of the authorization to LCRA upon approval.

**Response:** A copy of the authorization will be provided.

G US Army Corp 404 permit U1-Comment Addressed.

G TCEQ MSGP permit, Air New Source permit, Aggregate Production Operation (APO) registration

U1- Comment Addressed. Please provide LCRA with a copy of the TCEQ MSGP NOI, Issued Standard Air Permit,

**Response:** A copy of the authorization will be provided.

G Central Texas Groundwater Conservation District (GCD) well approval

U1- Comment Addressed. Once approved, please provide LCRA a copy of the well approval.

**Response:** A copy of authorization will be provided.

G TxDOT safety certificate

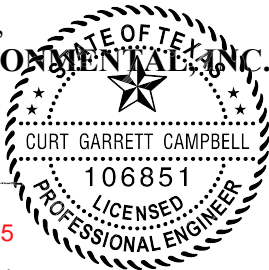

U1- Comment Addressed. Once approved, please provide LCRA a copy of the safety certificate.

**Response: A copy of authorization will be provided.**

WESTWARD will serve as the technical contact for the Applicant on this project. Please ensure that WESTWARD is copied on all correspondence, including the final approval. If you have any questions, or require additional information, please contact our office at 830-249-8284.

Respectfully Submitted,

**WESTWARD ENVIRONMENTAL, INC.**



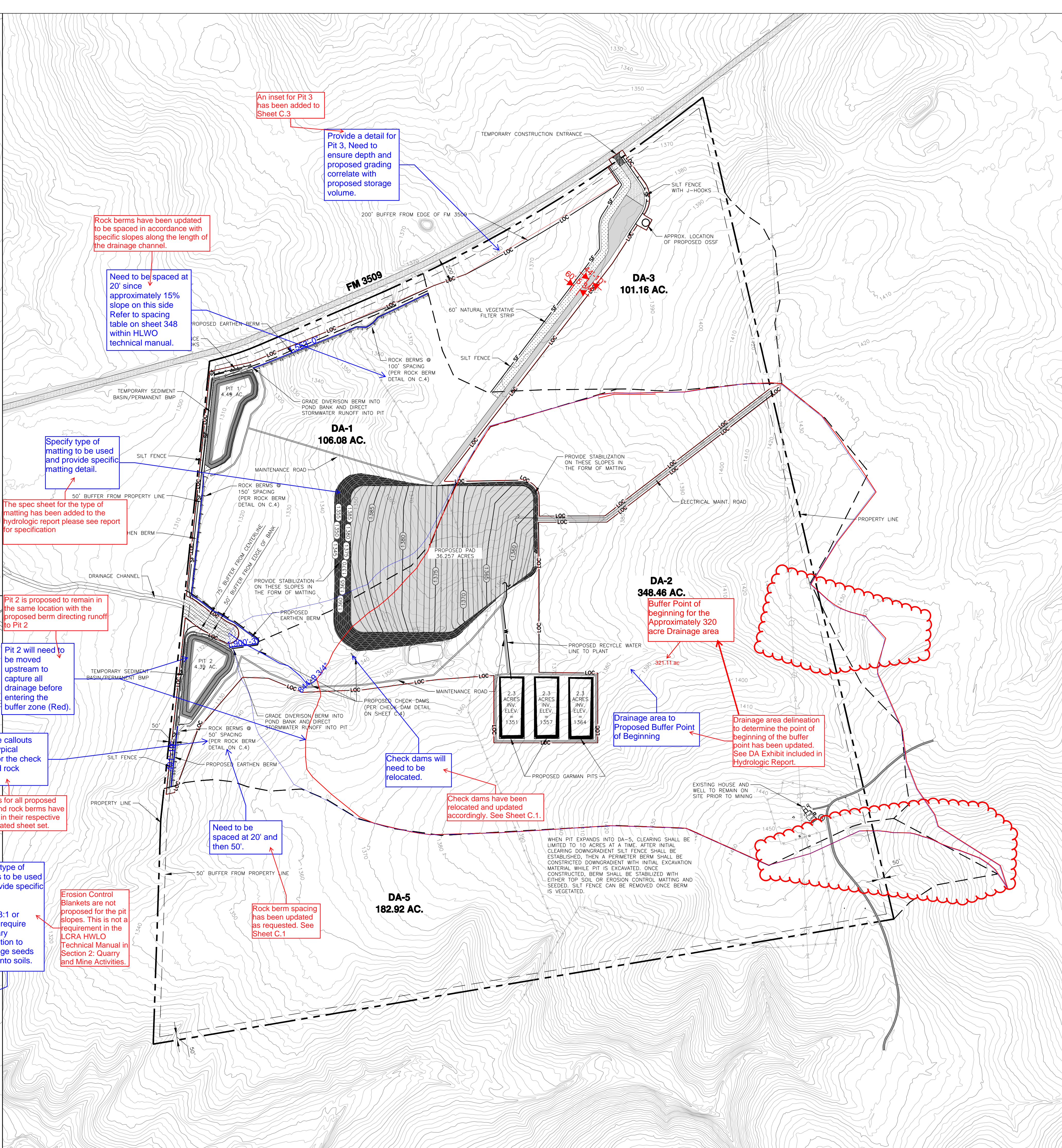
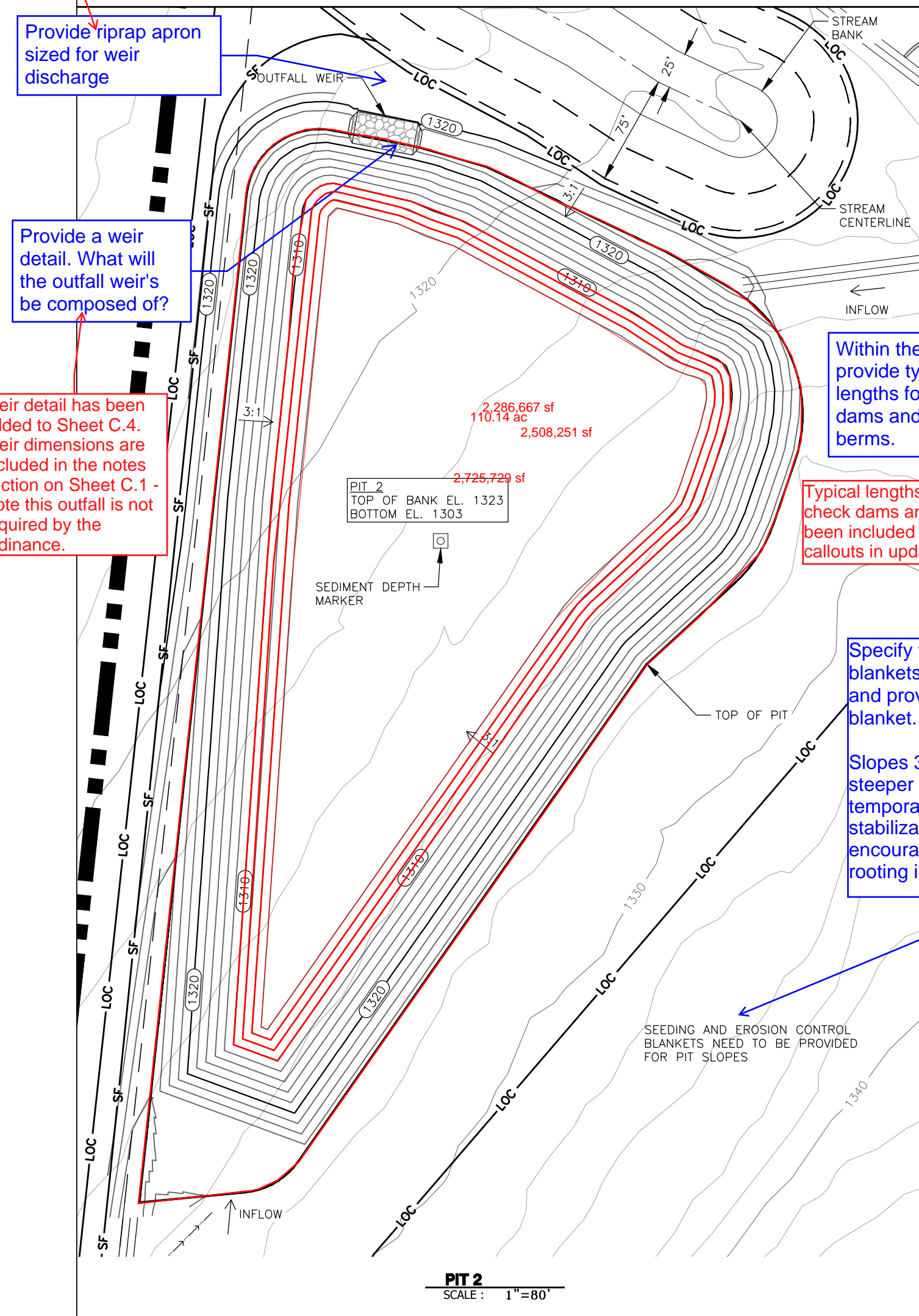
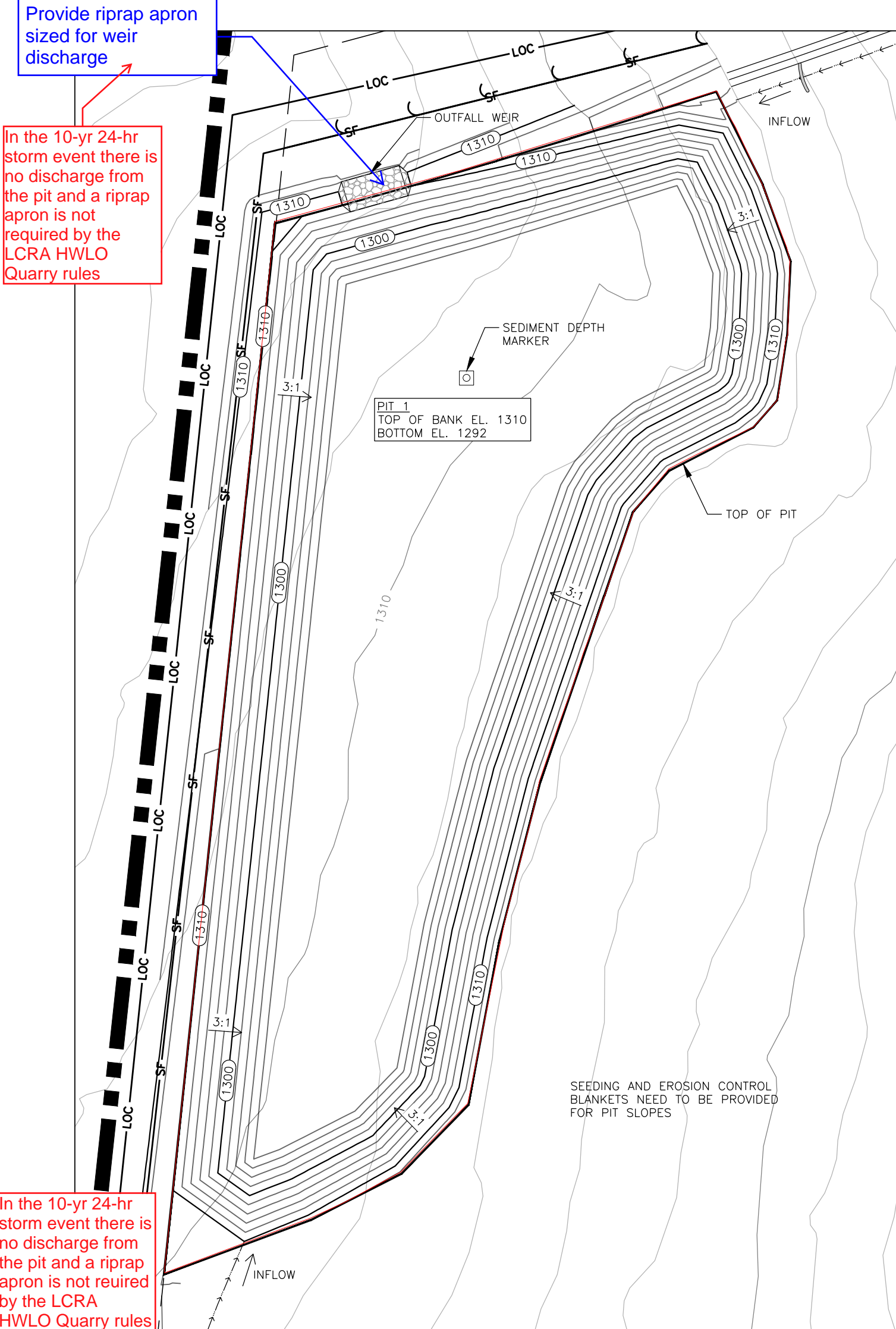
3/21/2025

Curt G. Campbell, PE License #106851  
Senior VP of Engineering & Natural Resources

List of Attachments:

- Updated Plans Sheets C1-C5
- Updated BMP Maintenance Plan
- Updated Hydrologic Report
- Updated Hydrogeologic Plan





0200

0400

0800

SCALE: 1" = 400'

N

LEGEND

---

PROPERTY LINE

---

EXISTING FENCELINE

---

EXISTING OVERHEAD ELECTRIC

---

EXISTING MAJOR CONTOUR

---

EXISTING MINOR CONTOUR

---

PROPOSED MAJOR CONTOUR

---

PROPOSED MINOR CONTOUR

---

DRAINAGE AREAS

---

DITCH-SWALE

---

LIMITS OF CONSTRUCTION

---

SILT FENCE

---

BERM (TOP & TOE OF SLOPE)

---

STOCKPILE

---

WATER WELL

---

ASPHALT AREA

---

BASE AREA

---

VEGETATIVE FILTER STRIP

---

TEMPORARY CONSTRUCTION ENTRANCE

---

MATTING

NOTE:

- NO EXCAVATION IS PROPOSED IN THE 50' BUFFER FROM THE PROPERTY LINE OR THE 200' BUFFER FROM FM 3509
- 50' PROPERTY LINE SETBACK DUE TO TEXAS PIT SAFETY RULES FOR SLOPE STABILITY.
- NORTH PROPERTY LINE SETBACK (200' MEASURED FROM EDGE OF PAVEMENT) IS DUE TO TDDOT PIT SAFETY RULE FOR QUARRIES ALONG PUBLIC ROADWAYS.
- BUFFER ZONES SHALL REMAIN UNDISTURBED OTHER THAN THE IMPROVEMENTS SHOWN ON THESE PLANS - ENCROACHMENT INTO A BUFFER ZONE OR DAME TO BUFFER ZONE AREAS WILL BE CONSIDERED A PRIORITY VIOLATION AND WILL RESULT IN A STOP WORK ORDER AND POSSIBLE FINES
- ENTRANCE ROAD IS 45' WIDE, 12' WIDE DRIVING LANES, WITH 10' SHOULDERS.
- DUST CONTROL WILL BE PROVIDED PER TCEQ SWPS AND AIR PERMIT.
- PITS 1 AND 2 WILL ACT AS TEMPORARY SEDIMENT BASINS UNTIL THEY ARE FULLY DEVELOPED AND THEN THEY WILL REMAIN ON SITE AS PERMANENT BMPs.
- OUTFALL WEIRS DESIGNED TO BE 50' WIDE AT TOP, 42' WIDE AT BOTTOM, TOP OF WEIR IS 2' ABOVE BOTTOM OF WEIR WITH 2:1 SLOPES FROM TOP TO BOTTOM. THE WEIR IS 10' LONG ACROSS THE TOP OF THE BERM.

IMAGE: N/A

ISSUE DATE: 2/17/2025

DRAWN BY: JPW

CHECKED BY: CGC

SCALE: 1" = 400'

JOB NO.: 10853-256

SHEET NO.:

C.1

OF C.4

WESTWARD

Environmental Engineering, Natural Resources,

P.O. Box 2205 Boerne, Texas 78006

(830) 249-8284 Fax: (830) 249-0221

TBPE REG. NO.: F-4524

TBPE REG. NO.: 50112

REV	DESCRIPTION	BY	DATE

STATE OF TEXAS

CURT GARRETT CAMPBELL

106851

PROFESSIONAL ENGINEER

2/17/2025

Curt G. Campbell, P.E.

License No. 106851

EROSION & SEDIMENTATION CONTROL PLAN

LCRA PERMITTING - BURNET QUARRY

ASPHALT INC.

3221 FM 3509, BURNET, TX 78611















ASPHALT INC.

LCRA Highland Lakes Watershed Ordinance  
Engineer's Report

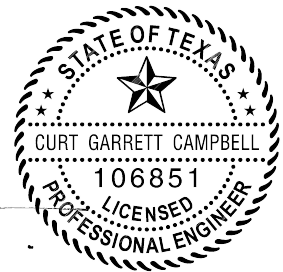
Burnet Quarry  
3221 FM 3509  
Burnet, Texas 78611  
Burnet County

Submitted to: The Lower Colorado River Authority

Prepared By:



Boerne, Texas  
830-249-8284  
Date: December 2024  
Project No. 10853-256  
-JPW/NMS-



Signature: \_\_\_\_\_

Curt G. Campbell, PE - License No. 106851

TX PE Firm No. 4524

Date: 3/21/2025

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## **APPENDICES**

- I. Existing Conditions
- II. Proposed Grading & Drainage Patterns
- III. Location & Schematics of BMPs
- IV. Soils Map
- V. Stormwater Runoff Calculations
- VI. ESC Cost Estimate
- VII. Buffer Drainage Area Map
- VIII. Plant Detail Map
- IX. Erosion Matting Specification

# **1 INTRODUCTION**

## **1.1 Purpose**

The purpose of this plan is to support the development of a construction aggregate processing plant and quarry operation by Asphalt Inc. (Applicant) on an approximately 710-acre site located at 3221 Farm Road 3509, Burnet, Texas 78611 (Site). The primary quarrying area is planned to be approximately 327 acres in total area. The site will also have 3 smaller pit areas totaling approximately 30 acres that will be utilized to handle onsite stormwater runoff. The site will include the following infrastructure: a processing plant, haul roads, a scale and scale house/office and Gorman pits (test pits). The plant pad is approximately 36 acres which includes the proposed stockpiling and materials handling areas. The proposed stormwater permanent BMPs include several quarry pits, final earthen perimeter berms, and natural vegetated filter strips, check dams, and rock berms.

## **1.2 Site Description**

### Pre-development Conditions:

The area to be developed has historically been utilized as a residential/agricultural property and has an abandoned house in the southeast corner. The site is mostly vegetated with native vegetation. Onsite slopes average approximately 4.61%, with existing drainage flowing unobstructed generally from the east to west. There are two USGS Blue Lines mapped on the site. Two converge forming a single unnamed tributary to Peters Creek. It is listed on the National Hydrography Dataset as intermittent, meaning it does not exhibit year-round flow. Westward met with representatives of LCRA onsite on September 11, 2024 to observe the tributary and discuss potential buffers. There was no observable bank or ordinary high-water mark. The tributary flows to the west and intersects Peters Creek about one mile downstream of Camp Longhorn. No discharge from the construction onsite will enter the drainage area of the man-made lake at Camp Longhorn. The other Blue Line, flows to the northwest toward the FM3509 frontage, ultimately draining to Spring Creek. The existing drainage flows unobstructed toward the drainage lows as sheet flow across native land except for a few minor ranch roads. There are three small existing stock pond onsite (see Existing Conditions Map). Minimal existing impervious cover exists in the form of residential structures.

### Post-development Conditions:

Although the site is not currently planned to be totally developed, to be overly conservative, we have sized BMPs with the assumption that the entire site will be impervious surface minus a 50 foot perimeter buffer, a 200 foot roadway buffer, 2 portions of the site that will not be developed (DA 3A and 2B) and a buffer as required by LCRA for a small portion of the drainage that has a drainage area greater than 320 acres. The planned development acreage of approximately 36 acres will include the processing plant, haul roads, a scale and scale house, and product stockpile areas. The final quarry pit will cover approximately 327 acres in the southeast portion of the site and will be self-contained. The pad area for the processing plant will be graded slightly to assure proper diversion of drainage to the primary quarry pit (pit 4). The plant will consist of a series of conveyors, screens, crushers and washers to segregate the material into appropriate sizes for sale. Three Gorman Pits are proposed for processing of mined material which will be used for water recycling and material capture. The total Gorman Pit area includes approximately 10.3 acres and the pits themselves are approximately 6.9 acres in surface area.. The Gorman Pits will be



constructed such that runoff from the associated access and maintenance areas will be fully retained within the pits. Runoff from these pits will be self-contained. The pits will be constructed so that minimal upgradient runoff would enter them and they will be operated with a minimum of 1 foot of freeboard. Since the pits do not accept drainage other than what directly lands on them the 1 foot of free board is more than sufficient to contain the 10-year, 24-hour rainfall event of 6.5 inches. These pits will be located within the drainage area of water quality pit 2 and any runoff would be captured.

The facility will be located on-site permanently (for more than 180 days) with proposed maximum production rates of 200 tons per hour (TPH) and 528,000 tons per year (TPY). Asphalt Inc., LLC will utilize BACT at the facility. Permanently mounted spray bars shall be installed at the inlet/outlet of all crushers, at all shaker screens, and at all material transfer points and used as necessary to maintain compliance with TCEQ rules and regulations. Dust emissions from in-plant roads and active work areas that are associated with the operation of this facility shall be minimized by watering. All stockpiles shall be sprinkled with water as necessary to minimize dust emissions.

In an effort to be extremely conservative the site has been evaluated assuming that impervious surface may be placed anywhere onsite, other than in drainage areas 3A and 2B which will be left undeveloped. This is a very conservative approach since there is no intent to develop the entire site as impervious surface. The purpose of this approach is to set up a plan that pre-establishes the BMPs for any situation that may arise where the site needs additional impervious surface to adjust to market conditions. **Other improvements not illustrated on the final Conditions plan sheet will be submitted to LCRA for permit revision and approval.**

There are a total of six drainage areas for the site (DA-1, DA-2A, DA-2B, DA-3A, DA-3B and DA-04) in the final condition. The pit BMPs for drainage areas 1 and 2A will be constructed at the initiation of the project and will also serve as construction BMPs (sedimentation basins). These BMPs may be the only pit BMPs constructed other than the main quarry pit. The additional pit BMP (Pit 3) has been calculated to be available in the future if needed. The runoff from these drainage areas will all be treated by these Quarry Pits, again with the very conservative assumption that the entire drainage area may be used for stockpiles or other miscellaneous impervious surfaces and are considered as such for the sake of this analysis. Each pit was designed using the calculation spreadsheet attached as **Appendix I – Stormwater Runoff Calculations – Burnet Quarry**. Note that in the table we also included an analysis for pit 2 using the SCS method to evaluate the pit capacity to hold the runoff from the 2 year storm event from the entire predevelopment drainage area. Each pit was designed to accommodate a minimum of one foot of freeboard between the top of the pit walls and the 10-year water surface elevation. Stormwater will be conveyed to each of the three pits by berms and swales with a minimum 0.5% grade. The proposed entry road and scale house area is encompassed in DA-1 (sub-basin of DA-1) and DA-3B. The portion of this 3.67-acre impervious cover area in DA-1 will be treated by pit 1 and the remaining acreage (less than 3 acres) in DA-3B will be treated with a downgradient natural vegetative filter strip.

Small areas of offsite drainage from the east drain into the property (see sheet C.1). These areas will be allowed to drain naturally and will not be diverted around the site. Once the pit is constructed offsite run-on will be allowed to enter the main pit.

It is anticipated that the main entrance will be off FM 3509/Hoover Valley Road on the northeast side of the site. The entry road will be treated with natural vegetative filter strips for areas that do not drain to the onsite quarry pits.

## **2 BUFFER ZONES**

Of the 3 USGS blue lines and their associated drainage areas only one drainage area is larger than 320 acres. According to LCRA quarry guidance a buffer shall be established on drainage courses with a drainage area greater than 320 acres. The drainage course that flows east to west across the center of the property meets this definition. Therefore, a buffer zone of a minimum width of 25-feet from the top of the channel bank on each side of the drainage is proposed along the western site boundary. The channel bank was established in the field during a pre-submittal site visit with LCRA staff to be conservatively 50 feet on each side of the stream centerline. The total buffer width is therefore 75 feet from the centerline of the stream or 150 feet total.

Access to the buffer is restricted by the proposed earthen berm as shown on the plans.

## **3 ROADWAY TREATMENT**

A 60 foot Natural Vegetative Filter Strips (NVFS) will be utilized to treat runoff from the portions of roadway which exist outside the primary drainage areas. The drainage area for DA-3B is approximately 75 acres and the impervious surface area for this section of road is less than 3 acres. The proposed NVFS, as shown on the Interim Conditions Map is 60 feet wide, which is the maximum recommended width and has a total surface area of approx. 136,026 square feet.

## **4 PROPOSED STORMWATER EARTHEN BERMS**

Although 6 drainage areas have been analyzed and minimum pit areas have been determined, at the initiation of the project only development within DA-1 and DA-2A is proposed which would not otherwise drain to the main quarry pit (DA-4) or the NVFS in DA3B. Stormwater from Drainage Areas DA-1 and DA-2A will be directed to the proposed pits via earthen berms and swales as indicated on Interim Conditions Map. These berms are located along the perimeter setbacks and the swales are at the toe of the berms. Otherwise site drainage will follow the natural contours of the site. Berm heights will be a minimum of 4 feet. Berms at the perimeter of the site will be located outside the 50-foot setback from the property line on the east, west and south sides and 200 feet from the property line on the north. These setbacks are not required by LCRA but act as a perimeter buffer for the site. **Stormwater earthen berms will be constructed at the initiation of the project at the same time as pit 1 and pit 2 are constructed to direct runoff to the pits.**

## **5 EROSION SEDIMENTATION CONTROL**

The first phase of development for this project will be to construct pit BMPs for basins DA1 and DA2. This will include initial clearing and installation of silt fence downgradient of the proposed pit areas. The material mined to create these pits will be used onsite to make the plant pad areas. Once the pit BMPs are in place they will serve as the sedimentation basins for the construction phase of the project where all runoff from the construction areas drains to these pits. Additional BMPs may be utilized onsite as part of the construction, but these BMPs are in excess to those required to ensure runoff from the site is mitigated onsite. Exact locations of any other BMPs may be adjusted in the field based on inspections and coordination with LCRA inspectors.

## **6 OTHER SITE FEATURES**

### **Wells:**

There are 2 wells located on-site as referenced in the hydrogeologic report as S-1 and S-3. It is anticipated that these wells will remain in service until such time as the pit expands near the well location. Prior to mining this area the wells will be plugged and abandoned in accordance with GCD/TCEQ regulations.

### **Proposed Well/Wells**

This site will utilize groundwater, and a well is proposed on the plant pad to provide site water. This well will be sited within the plant footprint to protect it from traffic. The casing will be extended to a minimum of 18 inches above grade to prevent any infiltration from surface runoff. The well will be permitted and constructed in accordance with the CTGCD rules and regulations. Note: Additional wells may be necessary based on the hydrogeologic testing that is required as part of the GCD permitting process. If additional wells become necessary, this data will be shared with LCRA for their records.

### **Stock Ponds:**

There are 3 stock ponds located on-site as referenced in the hydrogeologic report as features S-2, S-4, S-5. S-2 is located within the proposed mining area and will be removed during mining. S-4 and S-5 will remain and may be used for livestock onsite.

## **7 STORMWATER - WATER QUALITY PITS**

### **Recharge Features:**

If potentially sensitive recharge features are encountered during construction, a responsible individual, trained in sensitive recharge feature recognition, will direct work to stop in the immediate vicinity and evaluate the feature's sensitivity. If it is determined to be potentially sensitive, the feature will either be protected by a rock berm composed of clean, open-graded 3- to 5- inch rock, or sealed with concrete. Once the feature is either sealed or protected, operations may continue in the vicinity.

### **Outfalls:**

Collected stormwater will be allowed to infiltrate and evaporate. In the unlikely event of a discharge each pit will include an emergency overflow weir. These overflow weirs are designed to pass the 100-year rainfall event and are intended to protect the pond berms.

### **Dewatering:**

Although dewatering is not anticipated from the Water Quality Pits, if it became necessary to remove captured stormwater it should be used onsite for dust control allowed to evaporate and infiltrate. In the event that a discharge offsite is necessary, water quality sampling will be performed to ensure the discharge meets the TCEQ/EPA requirements for discharge of mine dewatering. Filter bags will be utilized if necessary to prevent discharge of TSS above any regulatory discharge limitations.

## **8 MAIN QUARRY PIT**

The main quarry pit (pit 4) will be the primary mining area for the material to be processed and sold onsite. The quarry pit is planned to be 80 feet below grade to an elevation of approximately 1305-1310 amsl. Material will be removed from the pit via conveyor to the processing plant. It is

anticipated that the main pit will take approximately 18-24 months from the start of construction to be fully functional.

## **9 GROUNDWATER MONITORING STATEMENT**

The quarry excavation is anticipated to be approximately 80 feet deep at this site. A review of the adjacent well logs indicates that groundwater surfaces are in excess of 250 feet below the surface. It is not anticipated that groundwater will be encountered as part of this project, therefore the Groundwater Monitoring Plan is not necessary. Should conditions change onsite an groundwater monitoring plan can be prepared at that time. In addition, if groundwater is encountered a permit will become necessary with the local groundwater conservation district and LCRA will be notified. Please see the Hydrogeologic Report for further information.

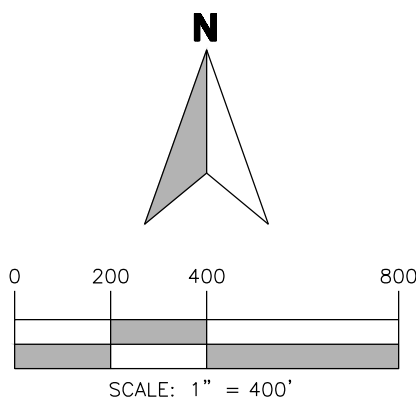
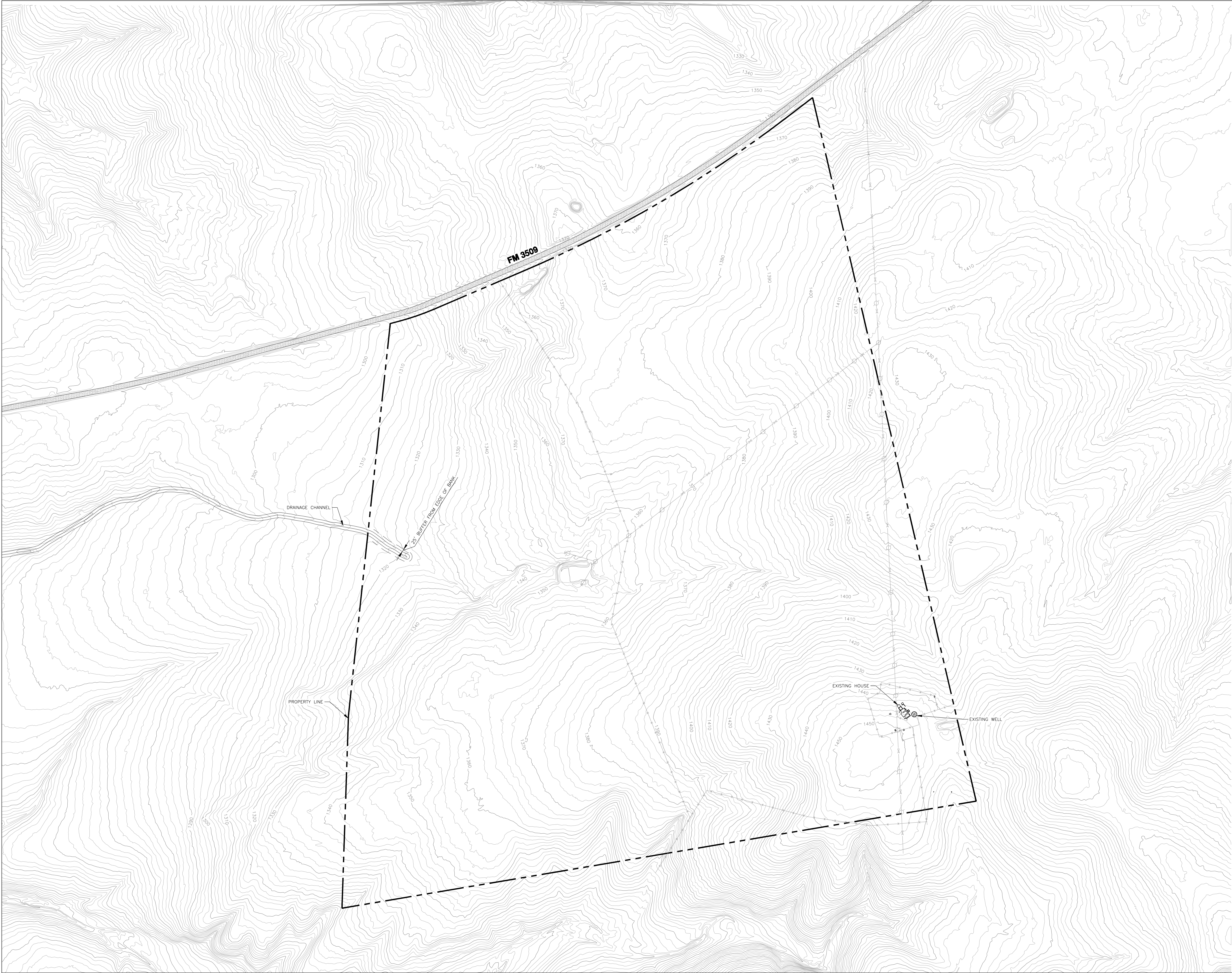
## **10 SURFACE WATER MONITORING STATEMENT**

Surface water monitoring for this site is proposed to be conducted in accordance with the site's TXR05 Industrial SWPPP as administered by TCEQ. **Monitoring information collected to meet TCEQ MSGP permit requirements will be submitted to LCRA in an annual report.**

# **Appendix – I**

## **Existing Conditions**





- LEGEND**
- PROPERTY LINE
  - - - - - BUFFER LINE
  - - - - - EXISTING OVERHEAD ELECTRIC
  - - - - - EXISTING FENCELINE
  - ⊙ WATER WELL
  - ASPHALT AREA

IMAGE:	N/A
ISSUE DATE:	12/9/2024
DRAWN BY:	JPW
CHECKED BY:	CGC
SCALE:	1" = 400'
JOB NO.:	10853.256

SHEET NO.:	C.0
OF C.4	

**WESTWARD**  
Environmental Engineering, Natural Resources,  
P.O. Box 2205 Boerne, Texas 78006  
(830) 249-8284 Fax: (830) 249-0221  
TBP REG. NO.: F-4524  
TBP REG. NO.: 50112

REV.	DESCRIPTION	BY	DATE

2/17/2025  
Curt G. Campbell, P.E.  
License No. 106851

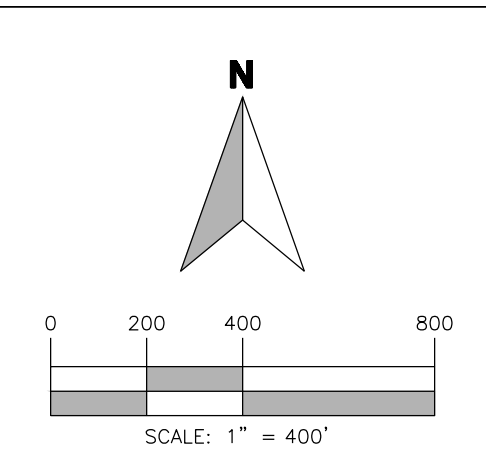
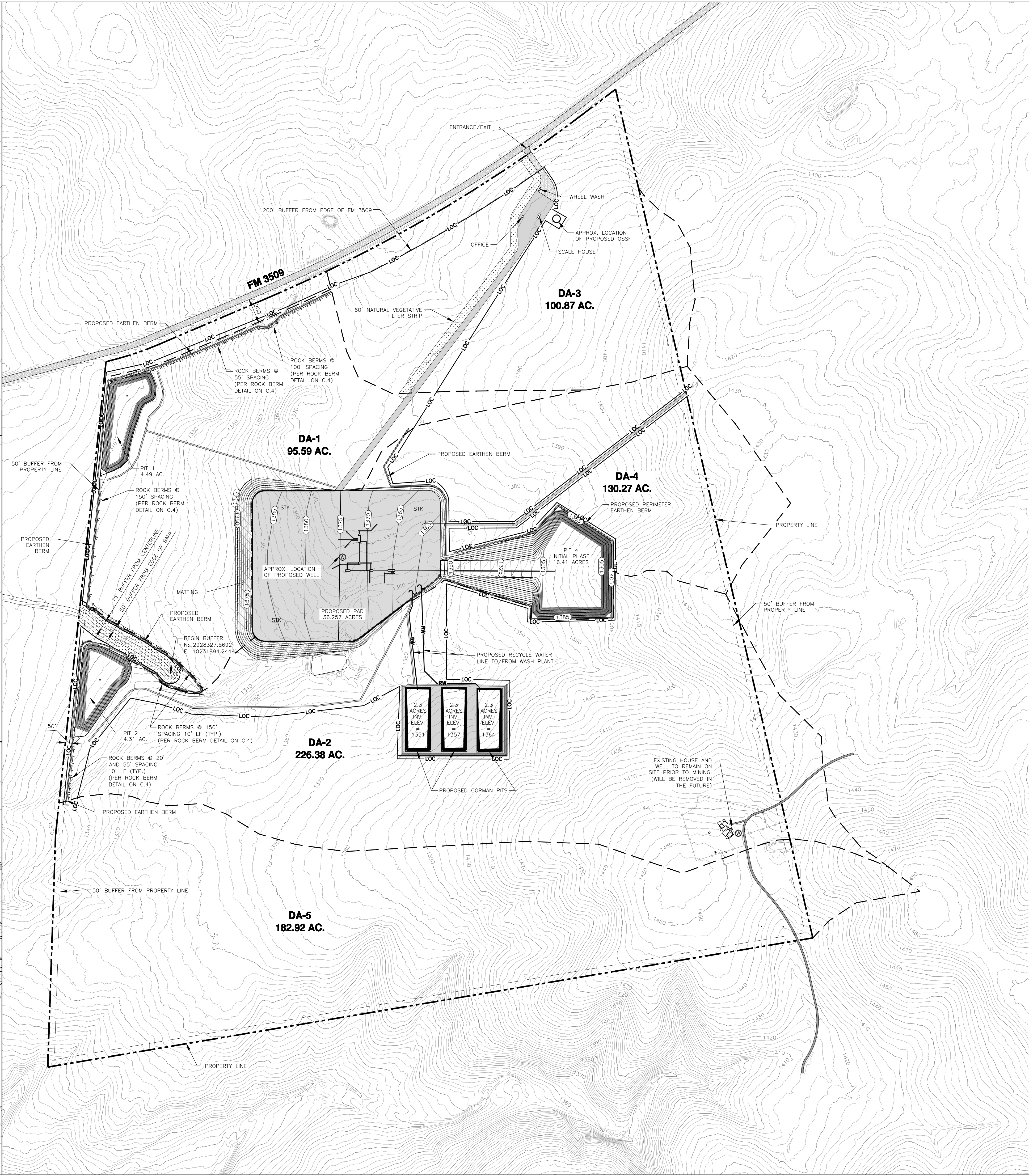
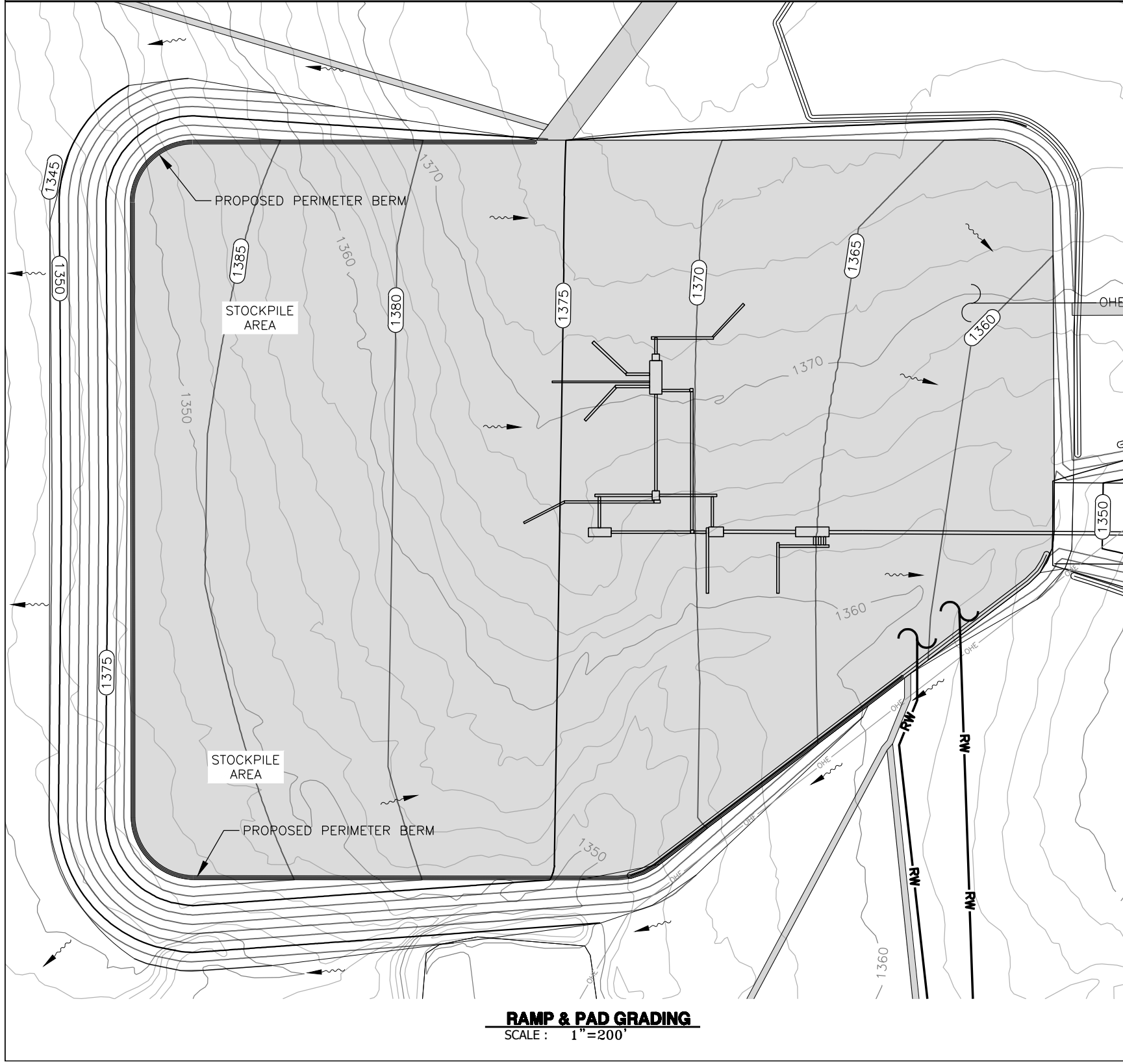
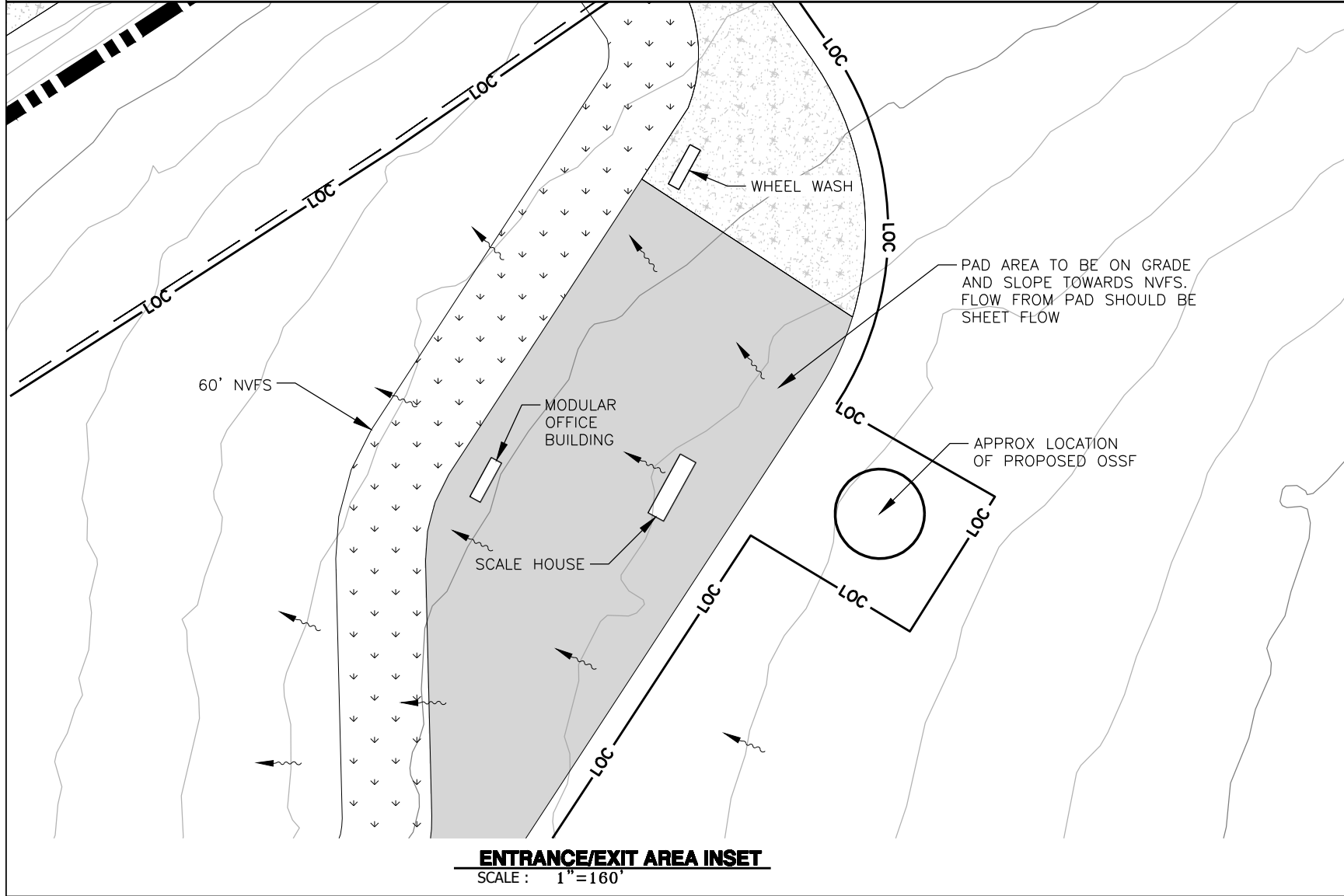
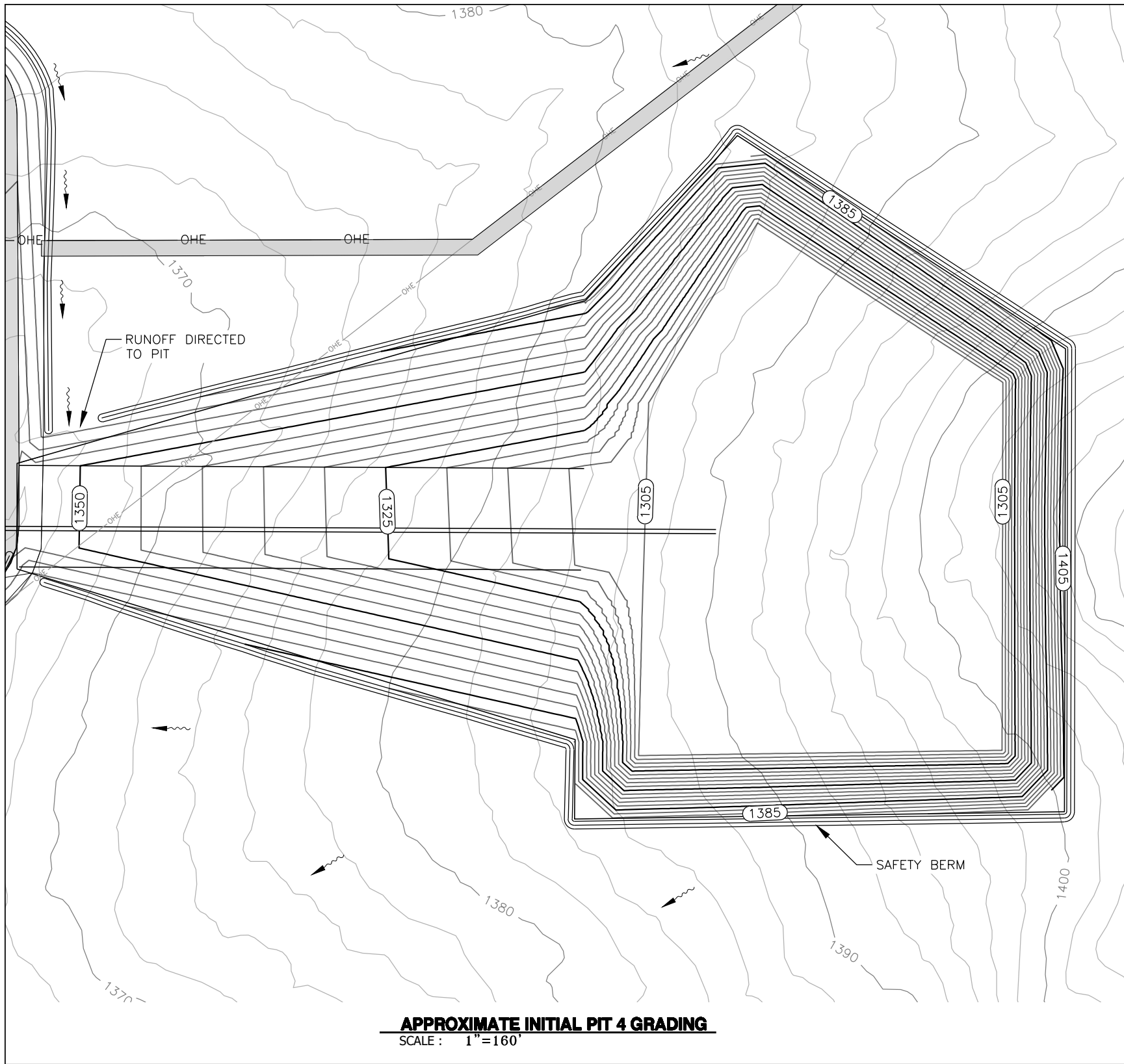
**EXISTING CONDITIONS**  
LCRA PERMITTING – BURNET QUARRY  
ASPHALT, INC.  
3221 FM 3509, BURNET, TX 78611



## **Appendix – II**

### **Proposed Grading & Drainage Patterns**





- LEGEND**
- PROPERTY LINE
  - - - EXISTING FENCELINE
  - - - EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - - - PROPOSED MAJOR CONTOUR
  - - - PROPOSED MINOR CONTOUR
  - - - DRAINAGE AREAS
  - - - LIMITS OF CONSTRUCTION
  - - - SILT FENCE
  - - - BERM (TOP & TOE OF SLOPE)
  - - - STOCKPILE
  - - - WATER WELL
  - - - FLOW ARROW
  - - - ASPHALT AREA
  - - - BASE AREA
  - - - VEGETATIVE FILTER STRIP

- NOTES**
1. BUFFER ZONES SHALL REMAIN UNDISTURBED OTHER THAN THE IMPROVEMENTS SHOWN ON THESE PLANS. ENCROACHMENT INTO A BUFFER ZONE OR DAMAGE TO BUFFER ZONE AREA WILL BE CONSIDERED A PRIORITY VIOLATION AND WILL RESULT IN A STOP WORK ORDER AND POSSIBLE FINES.
  2. DUST CONTROL WILL BE PROVIDED PER TCEQ SWP3 AND AIR PERMIT.
- NOTE:**
- NO EXCAVATION IS PROPOSED IN THE 50' BUFFER FROM THE PROPERTY LINE OR THE 200' BUFFER FROM FM 3509.
  - 50' PROPERTY LINE SETBACK DUE TO TEXAS PIT SAFETY RULES FOR SLOPE STABILITY.
  - NORTH PROPERTY LINE SETBACK (200' MEASURED FROM EDGE OF PAVEMENT) IS DUE TO TxDOT PIT SAFETY RULE FOR QUARRIES ALONG PUBLIC ROADWAYS.
  - ACTUAL PIT SLOPE WILL VARY AND WILL BE BASED ON HIGH WALL STABILITY OF IN PLACE MATERIAL.

IMAGE:	N/A
ISSUE DATE:	3/21/2025
DRAWN BY:	JPW
CHECKED BY:	CCG
SCALE:	1" = 400'
JOB NO.:	10853-256

SHEET NO.:  
**C.2**  
OF C.5

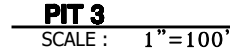
**WESTWARD**  
Environmental Engineering, Natural Resources,  
P.O. Box 2205 Boerne, Texas 78006  
(830) 249-8284 Fax: (830) 249-0221  
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REV	DESCRIPTION	DATE	BY

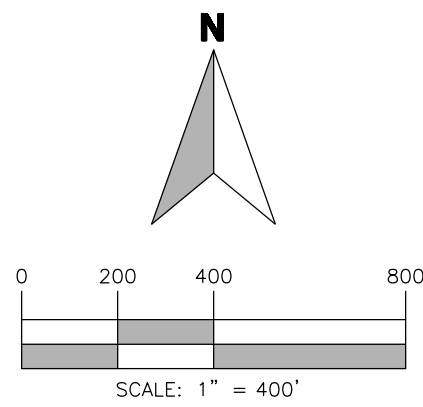
STATE OF TEXAS  
Curt Garrett Campbell  
106851  
Professional Engineer  
3/21/2025  
Curt G. Campbell, P.E.  
License No. 106851















**INITIAL CONDITIONS**  
LCRA PERMITTING – BURNET QUARRY  
ASPHALT INC.  
3221 FM 3509, BURNET, TX 78611





EXISTING HOUSE TO BE  
DEMOLISHED AND WELL  
TO BE PLUGGED PRIOR  
TO MINING IN THIS AREA  
IN ACCORDANCE WITH  
TCEQ RULES.



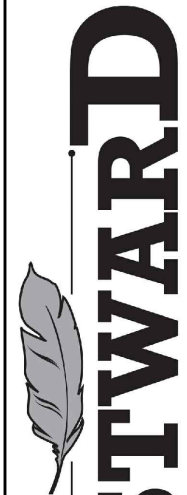
-  PROPERTY LINE  
 EXISTING FENCELINE  
 EXISTING MAJOR CONTOUR  
 EXISTING MINOR CONTOUR  
 PROPOSED MAJOR CONTOUR  
 PROPOSED MINOR CONTOUR  
 DRAINAGE AREAS  
 LIMITS OF CONSTRUCTION  
 SILT FENCE  
 BERM (TOP & TOE OF SLOPE)  
 STOCKPILE  
 WATER WELL  
 ASPHALT AREA  
 BASE AREA

- PROPOSED RETENTION PIT 3 IS NOT NECESSARY AT THIS LOCATION.
- VEGETATIVE FILTER STRIP WILL BE SUFFICIENT UNLESS IMPERVIOUS COVER IS ADDED ON DOWN SLOPE OF ROAD DRAINAGE AREA.
- NORTH PROPERTY LINE SETBACK (200') MEASURED FROM EXISTING DRAINAGE DRAINAGE AREA.
- SAFETY RULE FOR QUARRIES ALONG PUBLIC ROADWAYS.
- AT OR WITHIN 200' OF THE ROADWAY.
- 50' PROPERTY LINE SETBACK DUE TO TEXAS PIT 2. DRAINAGE RUN FOR 100' STARTING FROM PIT 2. PIT 2 WAS DESIGNED TO DRAIN BACK TO MAIN PIT DEVELOPMENT.
- VEGETATIVE FILTER STRIP WILL DRAIN TO SOUTHEAST CORNER AND FLOW INTO MAIN DEVELOPMENT PIT 2.
- VEGETATIVE FILTER STRIP TO BE REMOVED AND REPLACED BY RETENTION PIT 3 IF IMPERVIOUS COVER IS ADDED TO DRAINAGE AREA.
- PERIMETER BERMS PROPOSED AROUND MAIN PIT DEVELOPMENT.
- 21' BUFFER ZONE REQUIRED FROM TOP OF THE CHANNEL BANK WHERE THE LIMITS OF THE 320 ACRO CONTRIBUTING DRAINAGE AREA DENS. (LCRA HLCR 5.0).
- BUFFER ZONES SHALL REMAIN UNDISTURBED OTHER THAN THE IMPROVEMENTS SHOWN ON THESE PLANS AND SHALL NOT BE USED FOR ANY OTHER PURPOSE. IF BUFFER ZONE AREAS WILL BE CONSIDERED A PRIORITY VIOLATION AND WILL RESULT IN A STOP AND ABANDONMENT OF THE PROJECT.
- DUST CONTROL WILL BE PROVIDED PER TCEQ SWP3 5.0.01.
- 60' NW FWS IS NOT NECESSARY IN THIS PHASE AS DA-38 IS UTILIZING PIT 3 FOR WATER QUALITY. A SIGNIFICANT IMPROVEMENT TO QUALITY IS SHOWN ON THE FINAL CONSTRUCTION PLAN SHEET.
- ANY FUTURE DEVELOPMENT WILL BE SUBMITTED FOR TECHNICAL REVIEW AND PERMIT REVISION APPROVAL.

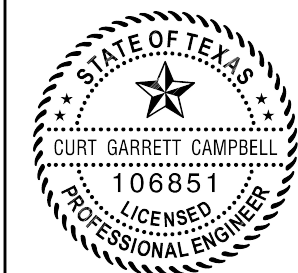
IMAGE: N/A	
ISSUE DATE:	3/21/2025
DRAWN BY:	JPW
CHECKED BY:	CGC
SCALE: 1" =	400'
JOB NO.:	10853-256

### C.3

OF C.5



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Environmental, Engineering, Natural Resources.  
P.O. Box 2205 Boerne, Texas 78006  
(830) 249-8284 Fax: (830) 249-0221  
TBE REG. NO.: F-4524  
TBE REG. NO.: 50112

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3/21/2025

## FINAL CONDITIONS

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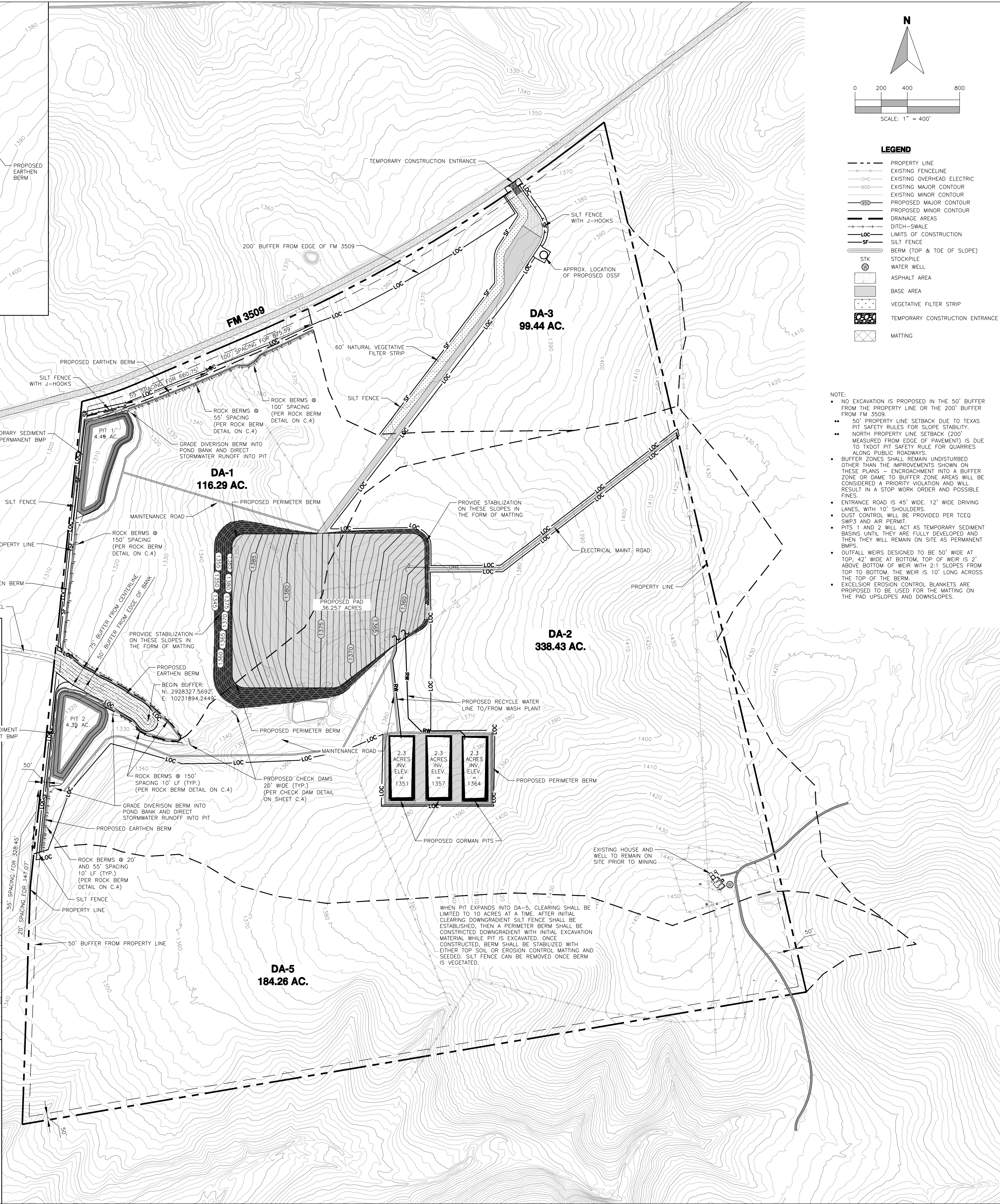
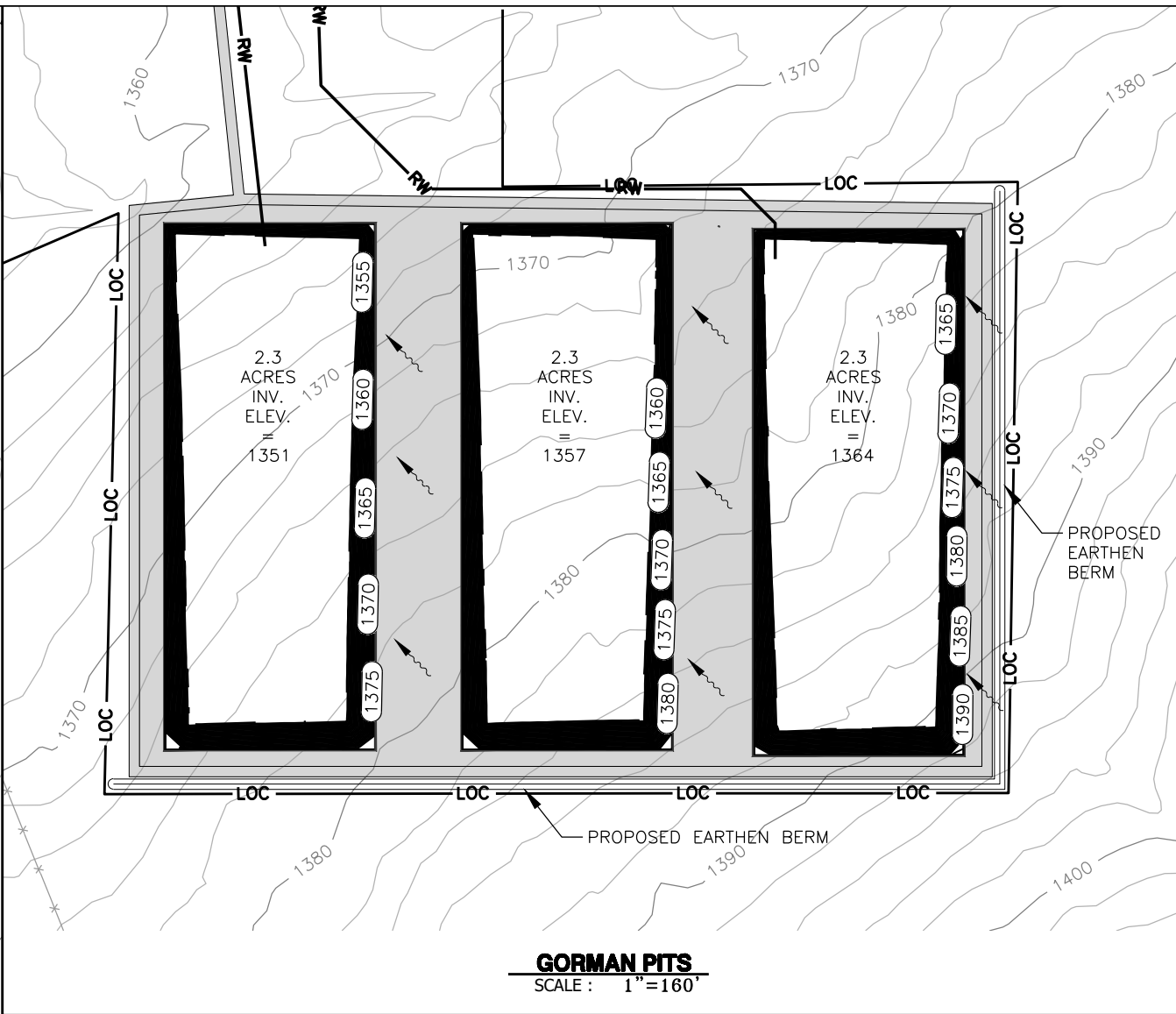
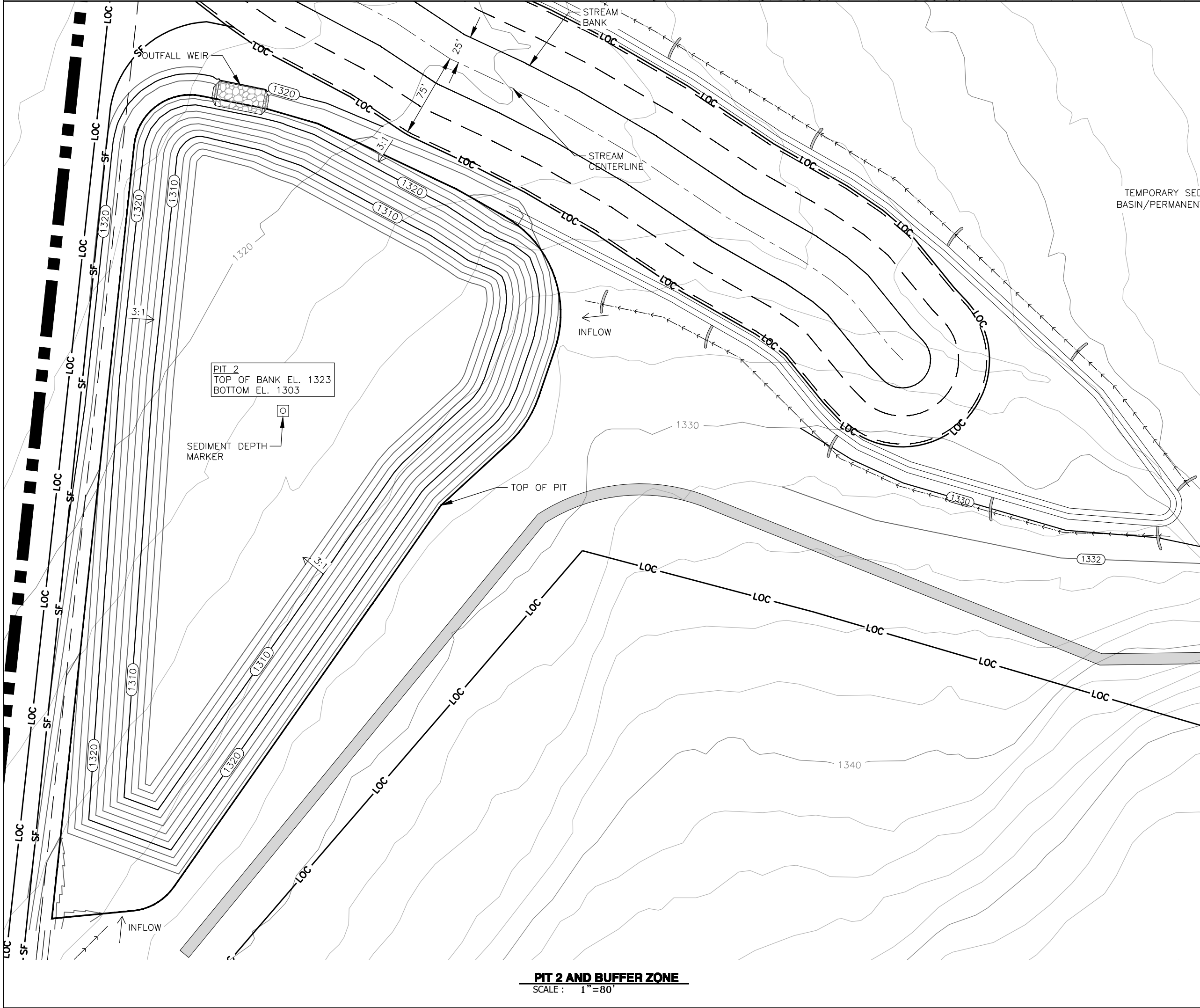
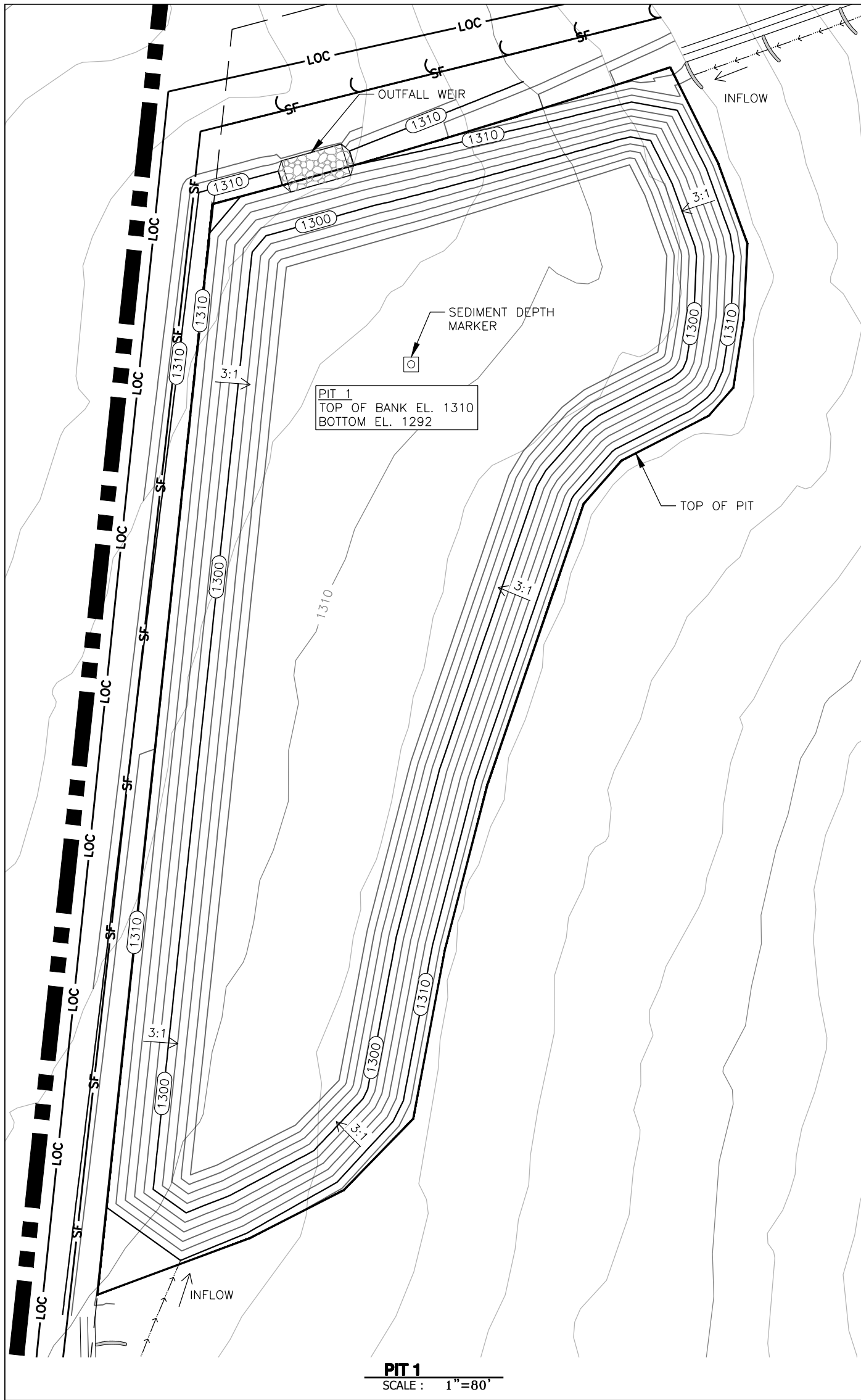
3221 FM 3509, BURNET, TX 78611



## **Appendix – III**

### **Location & Schematics of BMPs**





- LEGEND**
- PROPERTY LINE
  - - - EXISTING FENCELINE
  - - - EXISTING OVERHEAD ELECTRIC
  - - - EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - - - PROPOSED MAJOR CONTOUR
  - - - PROPOSED MINOR CONTOUR
  - - - DRAINAGE AREAS
  - - - DITCH-SWALE
  - - - LIMITS OF CONSTRUCTION
  - - - SILT FENCE
  - - - BERM (TOP & TOE OF SLOPE)
  - - - STOCKPILE
  - - - WATER WELL
  - - - ASPHALT AREA
  - - - BASE AREA
  - - - VEGETATIVE FILTER STRIP
  - - - TEMPORARY CONSTRUCTION ENTRANCE
  - - - MATTING

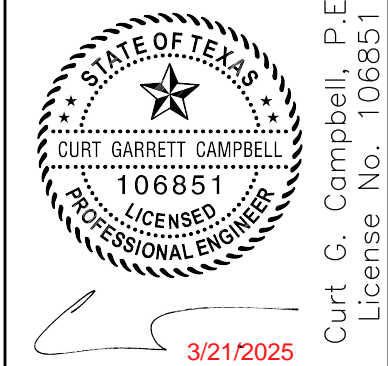
- NOTE:**
- NO EXCAVATION IS PROPOSED IN THE 50' BUFFER FROM THE PROPERTY LINE OR THE 200' BUFFER FROM FM 3509.
  - 50' PROPERTY LINE SETBACK DUE TO TEXAS PIT SAFETY RULES FOR SLOPE STABILITY.
  - NORTH PROPERTY LINE SETBACK (200' MEASURED FROM EDGE OF PAVEMENT) IS DUE TO TxDOT PIT SAFETY RULE FOR QUARRIES ALONG PUBLIC ROADWAYS.
  - BUFFER ZONES SHALL REMAIN UNDISTURBED OTHER THAN THE IMPROVEMENTS SHOWN ON THESE PLANS - ENCROACHMENT INTO A BUFFER ZONE OR DAME TO BUFFER ZONE AREAS WILL BE CONSIDERED A PRIORITY VIOLATION AND WILL RESULT IN A STOP WORK ORDER AND POSSIBLE FINES.
  - ENTRANCE ROAD IS 45' WIDE, 12' WIDE DRIVING LANES, WITH 10' SHOULDERS.
  - DUST CONTROL WILL BE PROVIDED PER TCEQ SWPS AND AIR PERMIT.
  - PITS 1 AND 2 WILL ACT AS TEMPORARY SEDIMENT BASINS UNTIL THEY ARE FULLY DEVELOPED AND THEN THEY WILL REMAIN ON SITE AS PERMANENT BMPs.
  - OUTFALL WEIRS DESIGNED TO BE 50' WIDE AT TOP, 42' WIDE AT BOTTOM, TOP OF WEIR IS 2' ABOVE BOTTOM OF WEIR WITH 2:1 SLOPES FROM TOP TO BOTTOM. THE WEIR IS 10' LONG ACROSS THE TOP OF THE BERM.
  - EXCLOSURE EROSION CONTROL BLANKETS ARE PROPOSED TO BE USED FOR THE MATTING ON THE PAD UPSLOPES AND DOWNSLOPES.

IMAGE:	N/A
ISSUE DATE:	3/21/2025
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SHEET NO.:	C.1
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TBP REG. NO.: 50112

REV.	DESCRIPTION	DATE	BY

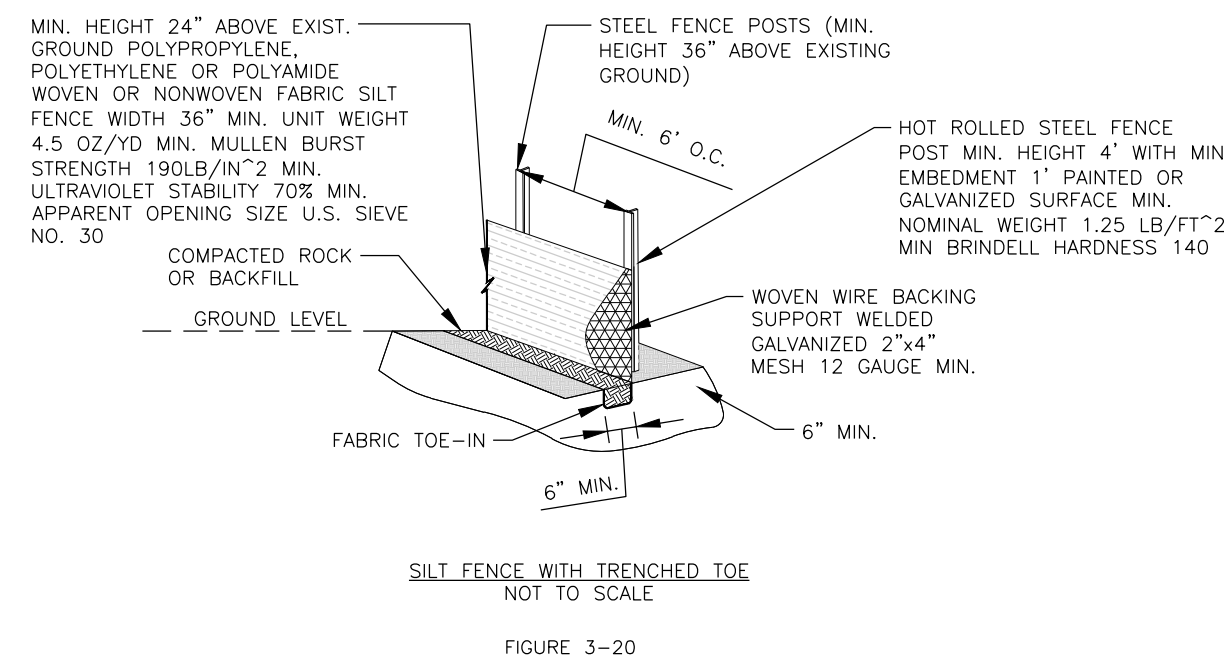


**EROSION & SEDIMENTATION CONTROL PLAN**  
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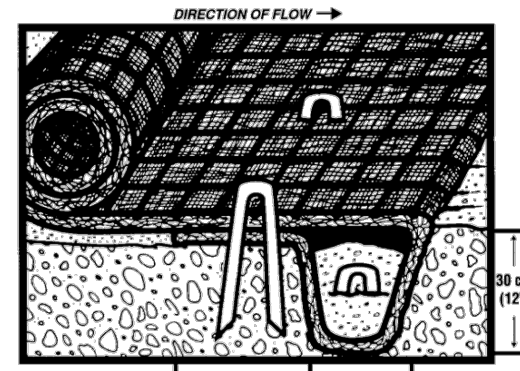




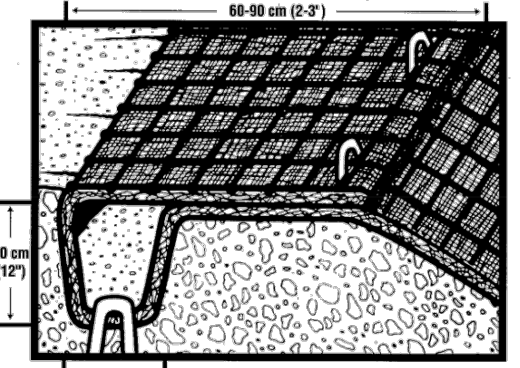


**Installation:**

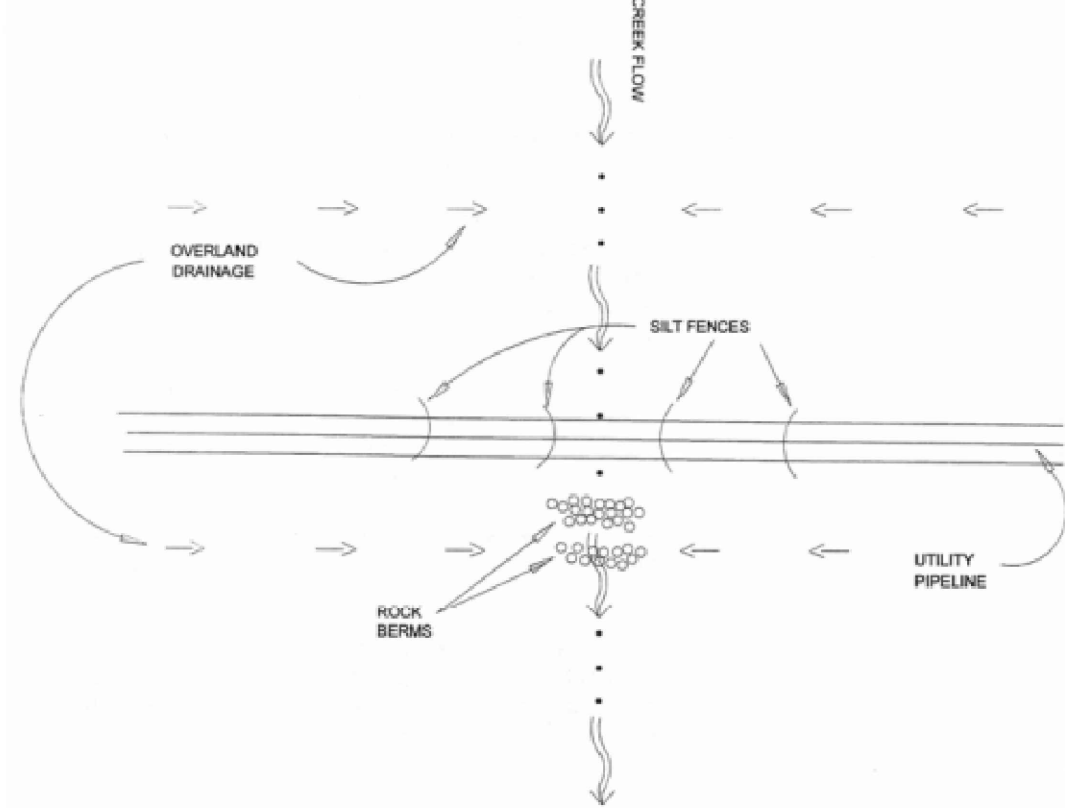
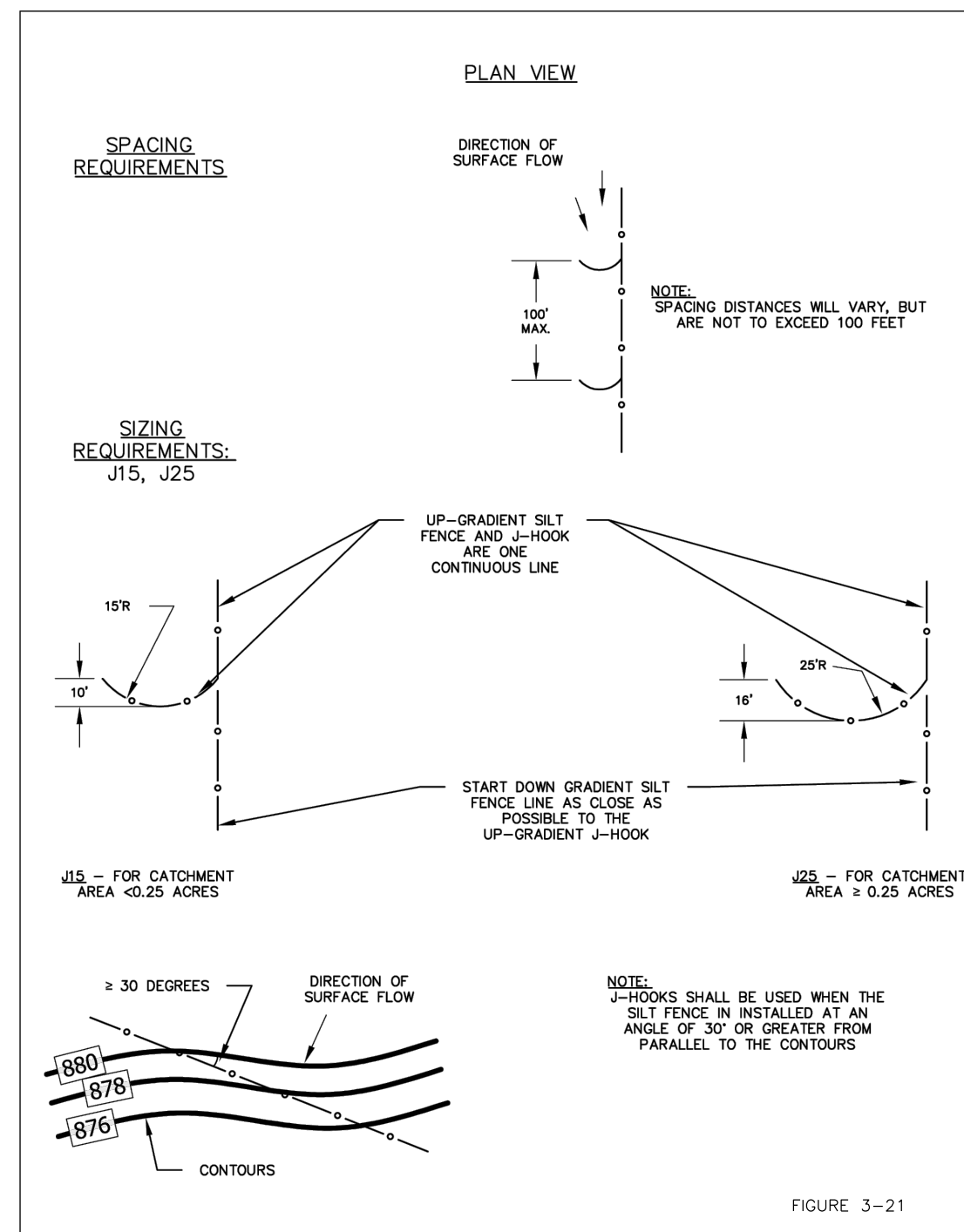
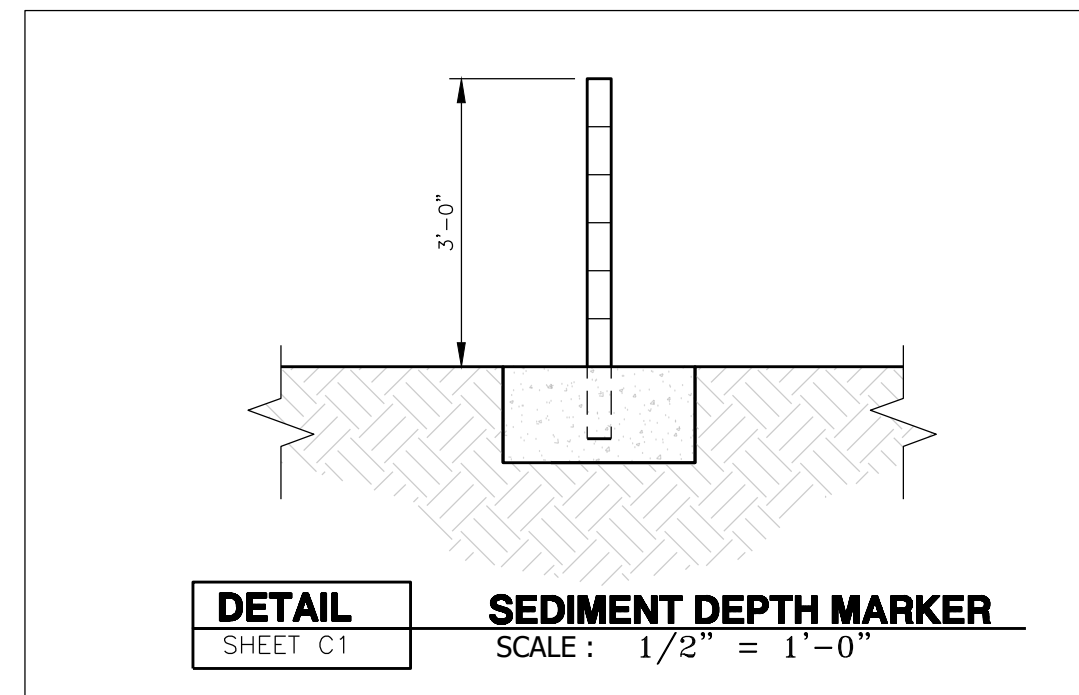
Proper installation of blankets and matting is necessary for these materials to function as intended. They should always be installed in accordance with the manufacturer's recommendations. Proper anchoring of the material and preparation of the soil are two of the most important aspects of installation. Typical anchoring methods are shown in Figure 14 and Figure 15.



**Figure 3-14 Initial Anchor Trench for Blankets and Mat**

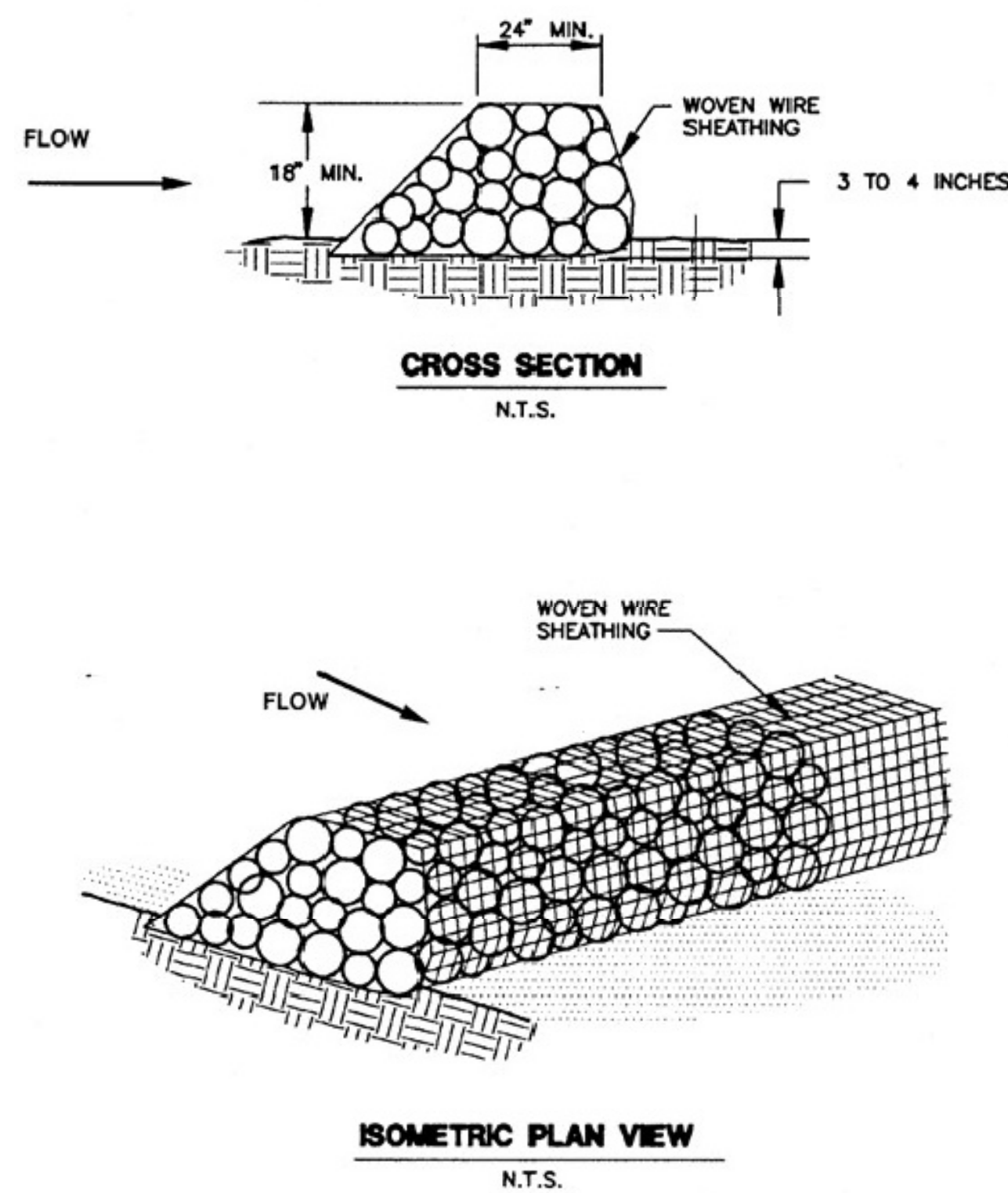


**Figure 3-15 Terminal Anchor Trench for Blankets and Mats**

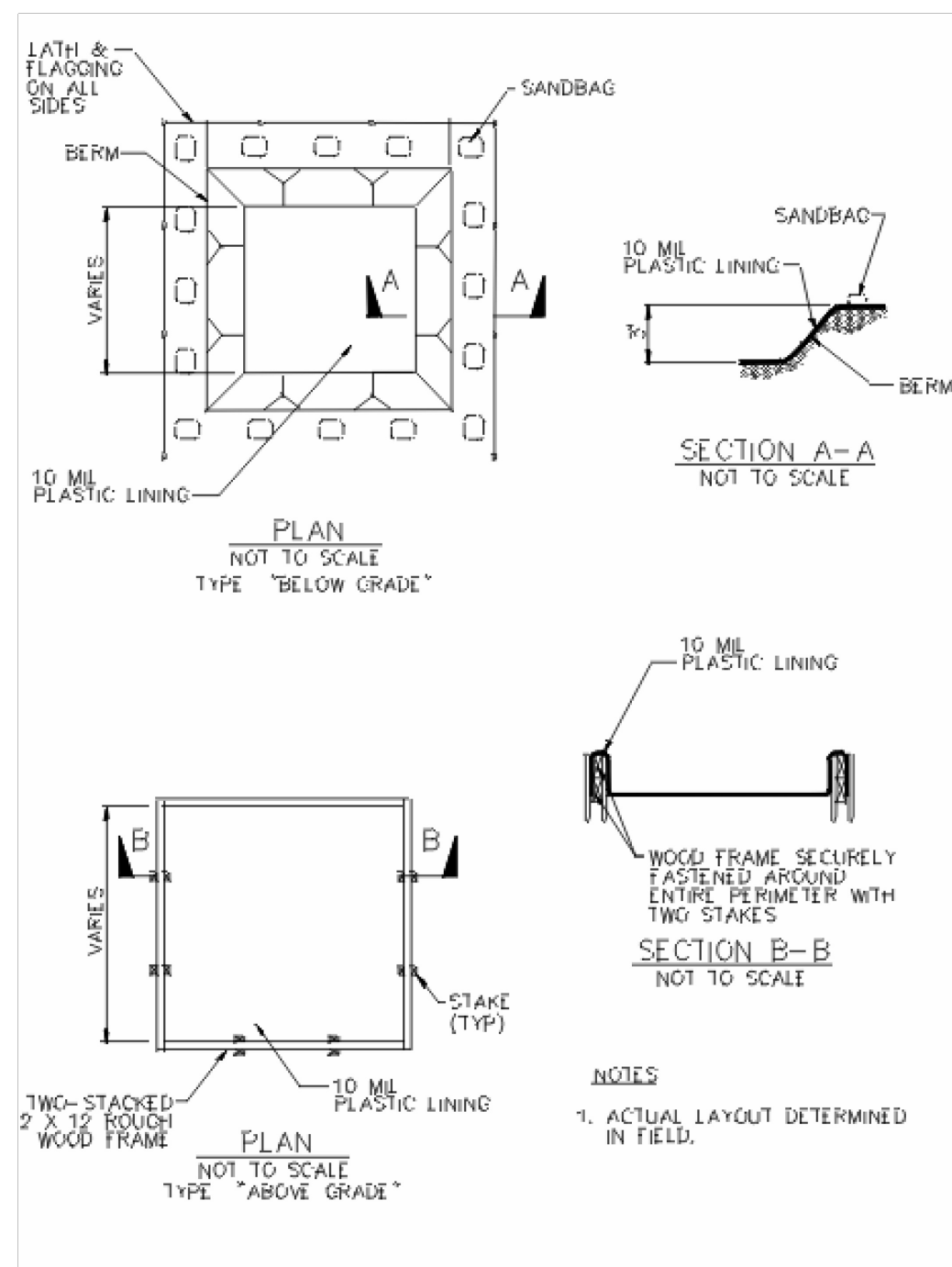


### Utility Crossing or Excavation within Creek

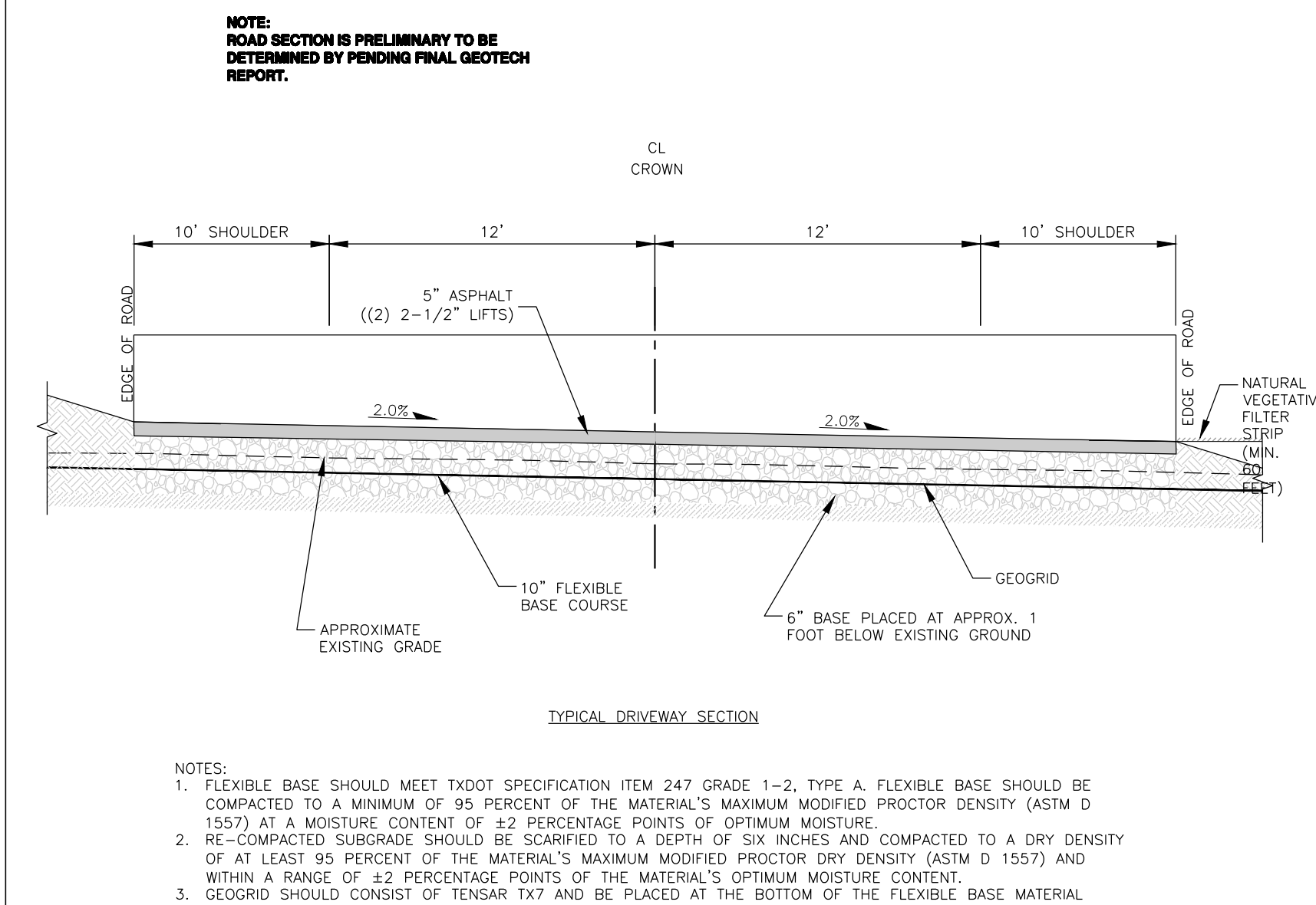
### APPENDIX 2.7.1



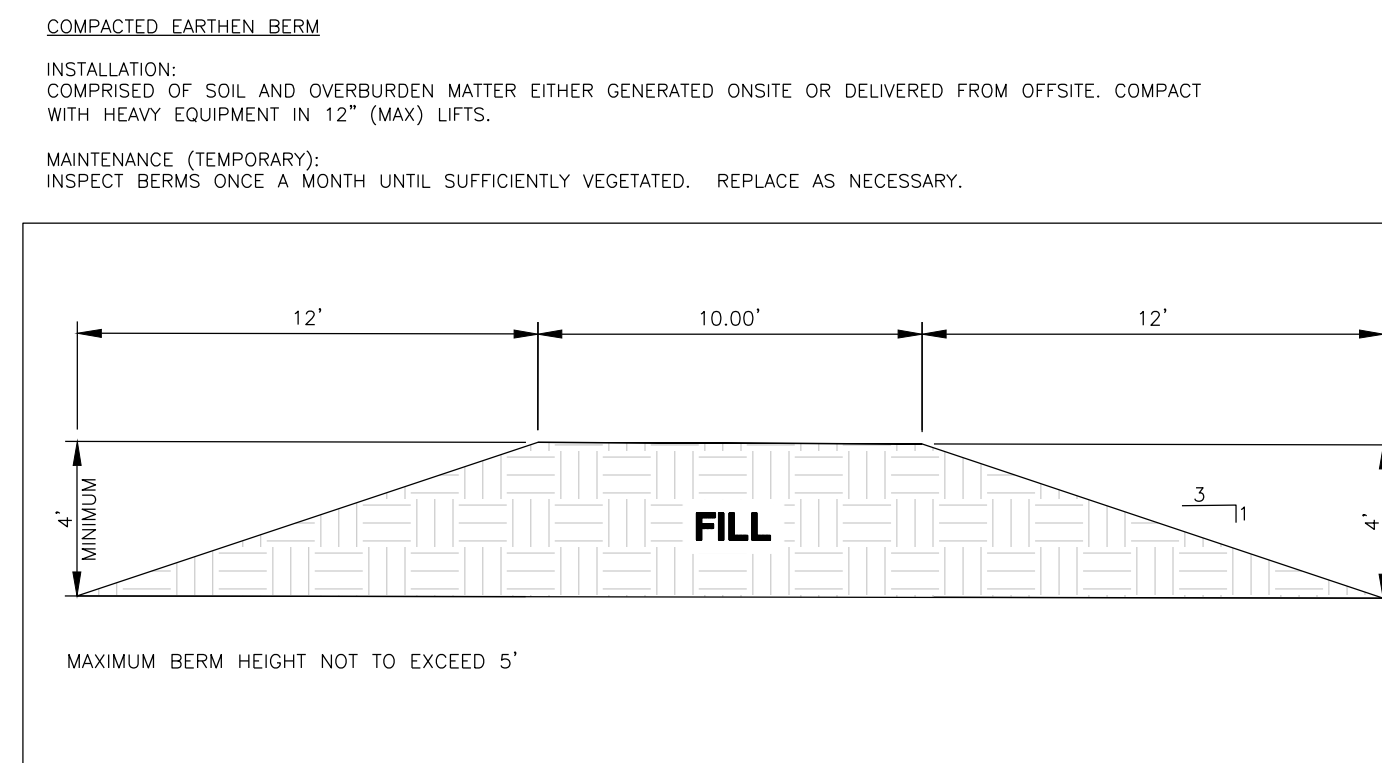
**Figure 4-14: Natural Vegetative Filter Strip**



### Figure 3-35 Schematic Diagrams of Concrete Washout Areas



**Figure 3-26 Diagram of a Rock Check Dam**

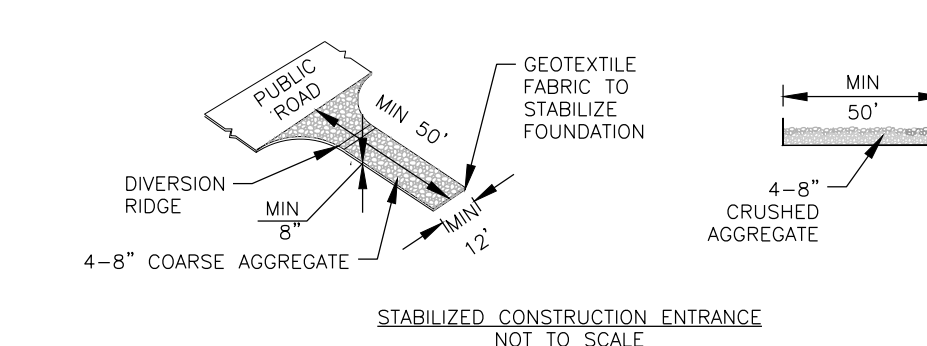


**STABILIZED CONSTRUCTION ENTRANCE**

INSTALLATION:

- 1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
- 2. TURN INWARD AT THE ENTRANCE/EXIT SHOULD BE 12" OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
- 3. THE CONSTRUCTION ENTRANCE SHOULD BE 50' LONG.
- 4. CONSTRUCT A RAMP WITH A MINIMUM EXCESSIVE CURVE TO CONSTRUCT A RIDGE, 6-8" HIGH WITH 3" (H/V) SIDE SLOPES. ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE FOUNDATION.
- 5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET.
- 6. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET.
- 7. PLACE STONE TO DIMENSION AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
- 8. INSTALL A PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

MAINTENANCE: INSPECT WEEKLY. REPLACE STONE AS NECESSARY TO PREVENT TRACKING OFF-SITE.



### GEOTEXTILE FABRIC PROPERTIES

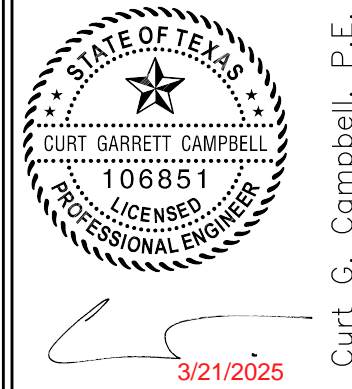
- MIN. 6 OZ/SQ. YD.; 140 LB/SQ. IN MULLEN BURST.
- EQUIVALENT OPENING SIZE MIN. 50 SIEVE.
- GRADE SLOPE TO DRAIN.
- ADD ADDITIONAL STONE AS REQUIRED.
- STABILIZED CONSTRUCTION EXIT SHOULD EXTEND FULL WIDTH OF ROAD.

IMAGE:	N/A
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DRAWN BY:	JPW
CHECKED BY:	CGC
SCALE: 1" =	AS NOTED
JOB NO.:	10853-256

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**BMP GENERAL NOTES & DETAILS CONT.**

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## **Appendix – IV**

### **Soils Map**





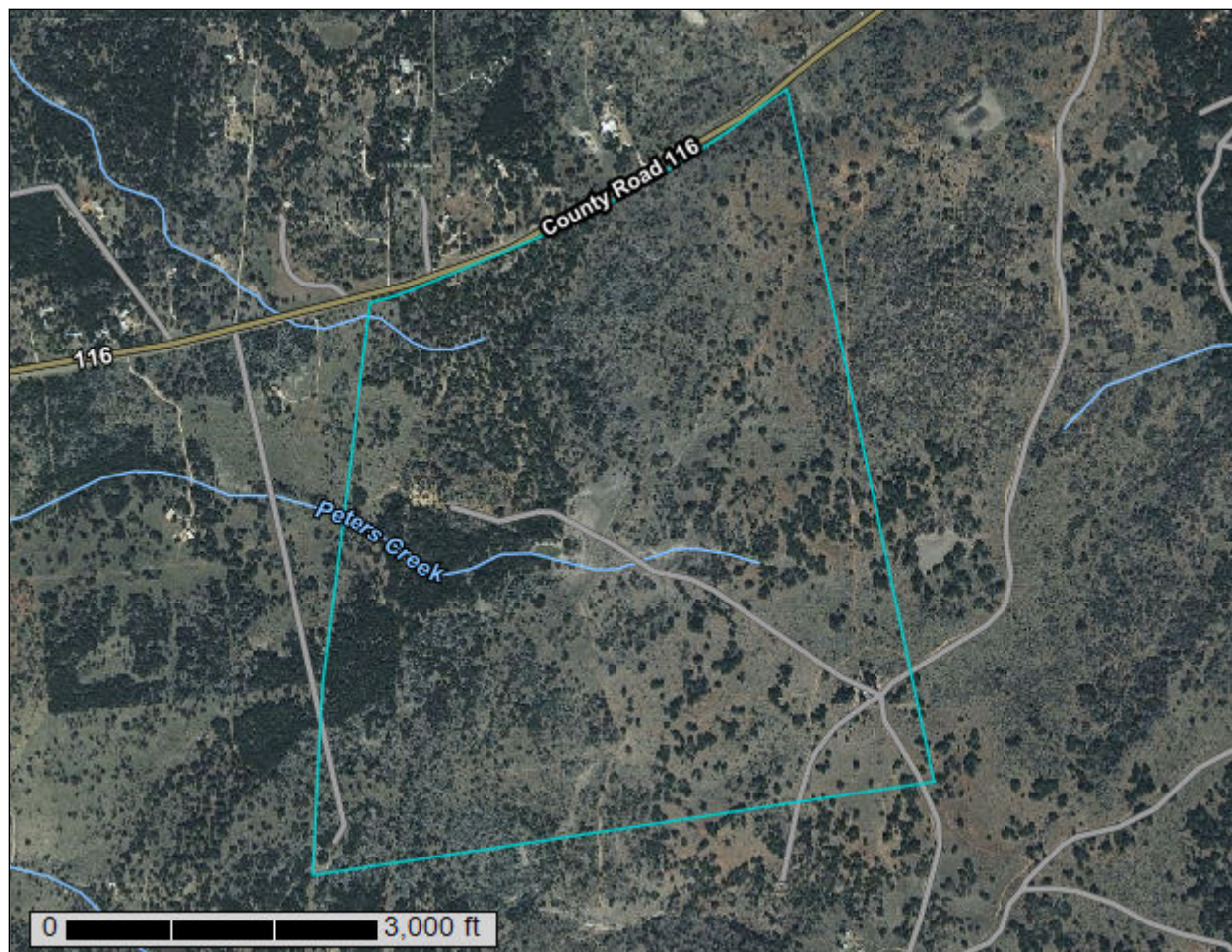
United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Blanco and Burnet Counties, Texas**



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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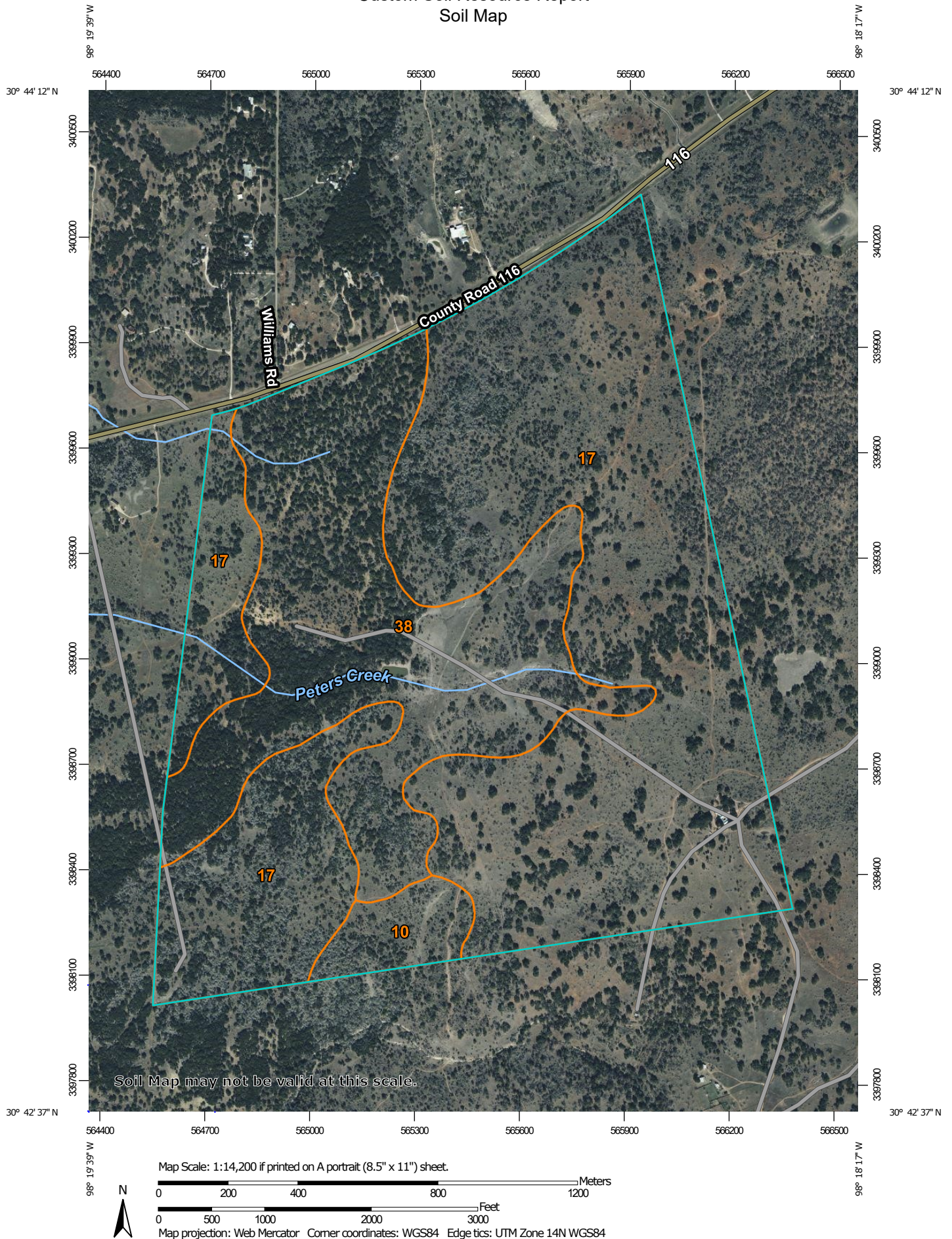
# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



# Custom Soil Resource Report Soil Map





# Custom Soil Resource Report


## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals


### Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:31,700.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Blanco and Burnet Counties, Texas  
Survey Area Data: Version 20, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 15, 2019—Dec 19, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
10	Eckert-Rock outcrop complex, 2 to 20 percent slopes	21.5	3.0%
17	Hensley gravelly loam, 1 to 8 percent slopes	470.5	66.2%
38	Purves clay, 1 to 8 percent slopes	218.6	30.8%
<b>Totals for Area of Interest</b>		<b>710.5</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Blanco and Burnet Counties, Texas

### 10—Eckert-Rock outcrop complex, 2 to 20 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2ynhn  
*Elevation:* 700 to 1,770 feet  
*Mean annual precipitation:* 30 to 35 inches  
*Mean annual air temperature:* 65 to 68 degrees F  
*Frost-free period:* 220 to 260 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Eckert and similar soils:* 50 percent  
*Rock outcrop:* 25 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Eckert

##### Setting

*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder, backslope, footslope  
*Landform position (three-dimensional):* Side slope, base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from limestone

##### Typical profile

*A - 0 to 7 inches:* very cobbly loam  
*R - 7 to 40 inches:* bedrock

##### Properties and qualities

*Slope:* 2 to 20 percent  
*Surface area covered with cobbles, stones or boulders:* 0.0 percent  
*Depth to restrictive feature:* 4 to 14 inches to lithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Low to high (0.01 to 1.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 5 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Very low (about 0.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Ecological site:* R081BY354TX - Very Shallow 23-31 PZ  
*Hydric soil rating:* No

## Description of Rock Outcrop

### Setting

*Landform:* Ridges  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Side slope, base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Residuum weathered from limestone

### Typical profile

*R - 0 to 80 inches:* bedrock

### Properties and qualities

*Slope:* 2 to 20 percent  
*Depth to restrictive feature:* 0 to 2 inches to lithic bedrock  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high  
(0.06 to 1.98 in/hr)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

## Minor Components

### Harper

*Percent of map unit:* 13 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder, backslope, footslope  
*Landform position (three-dimensional):* Side slope, base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* R081CY360TX - Low Stony Hill 29-35 PZ  
*Hydric soil rating:* No

### Tarpley

*Percent of map unit:* 12 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder, backslope, footslope  
*Landform position (three-dimensional):* Side slope, base slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Ecological site:* R081CY361TX - Redland 29-35 PZ  
*Hydric soil rating:* No

## 17—Hensley gravelly loam, 1 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2ysnl  
*Elevation:* 650 to 1,600 feet  
*Mean annual precipitation:* 30 to 35 inches  
*Mean annual air temperature:* 65 to 68 degrees F  
*Frost-free period:* 220 to 260 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Hensley and similar soils:* 75 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hensley

#### Setting

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Residuum weathered from limestone

#### Typical profile

*A - 0 to 5 inches:* gravelly loam  
*Bt - 5 to 18 inches:* clay  
*R - 18 to 60 inches:* bedrock

#### Properties and qualities

*Slope:* 1 to 8 percent  
*Surface area covered with cobbles, stones or boulders:* 0.0 percent  
*Depth to restrictive feature:* 10 to 20 inches to lithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Very low (about 2.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 4s  
*Land capability classification (nonirrigated):* 4s  
*Hydrologic Soil Group:* D  
*Ecological site:* R081CY361TX - Redland 29-35 PZ

*Hydric soil rating:* No

**Minor Components**

**Anhalt**

*Percent of map unit:* 10 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R081CY358TX - Deep Redland 29-35 PZ  
*Hydric soil rating:* No

**Pedernales**

*Percent of map unit:* 8 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R082AY378TX - Tight Sandy Loam 25-32 PZ  
*Hydric soil rating:* No

**Hensley, stony**

*Percent of map unit:* 4 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Ecological site:* R081CY361TX - Redland 29-35 PZ  
*Hydric soil rating:* No

**Tarpley**

*Percent of map unit:* 3 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Ecological site:* R081CY361TX - Redland 29-35 PZ  
*Hydric soil rating:* No

**38—Purves clay, 1 to 8 percent slopes**

**Map Unit Setting**

*National map unit symbol:* dk3b  
*Elevation:* 670 to 1,870 feet  
*Mean annual precipitation:* 31 to 35 inches  
*Mean annual air temperature:* 65 to 67 degrees F



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*Frost-free period:* 220 to 260 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Purves and similar soils:* 70 percent

*Minor components:* 30 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Purves

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Interfluve, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Clayey residuum weathered from limestone

#### Typical profile

*A - 0 to 9 inches:* clay

*Bk - 9 to 16 inches:* cobbly clay

*R - 16 to 40 inches:* bedrock

#### Properties and qualities

*Slope:* 1 to 8 percent

*Surface area covered with cobbles, stones or boulders:* 0.0 percent

*Depth to restrictive feature:* 8 to 20 inches to lithic bedrock

*Drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 45 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 1.0

*Available water supply, 0 to 60 inches:* Very low (about 2.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* D

*Ecological site:* R081CY574TX - Shallow 29-35 PZ

*Hydric soil rating:* No

### Minor Components

#### Doss

*Percent of map unit:* 15 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Interfluve, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* R081CY574TX - Shallow 29-35 PZ

*Hydric soil rating:* No

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### **Brackett**

*Percent of map unit:* 8 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Interfluve, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* R081CY355TX - Adobe 29-35 PZ

*Hydric soil rating:* No

### **Tarpley**

*Percent of map unit:* 4 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Interfluve, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Ecological site:* R081CY361TX - Redland 29-35 PZ

*Hydric soil rating:* No

### **Rock outcrop**

*Percent of map unit:* 3 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Interfluve, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

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## **Appendix – V**

### **Stormwater Runoff Calculations**



Stormwater Runoff Calculations - Burnet Quarry

Final Conditions:								
DA-1:								
Drainage Area (ac)	10yr-24hr Event (in)	Runoff (ac-ft)	Drainage Area (sf)	Pond Area (sf)	Pond Area (ac)	Pond Depth Req. (ft)	Total Pond Depth Provided (ft)	Total Pond Volume (cf)
100.32	6.5	54.34	4,369,939.20	195,658.40	4.49	12.10	18.0	3521851.2

DA-2A:								
Drainage Area (ac)	10yr-24hr Event (in)	Runoff (ac-ft)	Drainage Area (sf)	Pond Area (sf)	Pond Area (ac)	Pond Depth Req. (ft)	Total Pond Depth Provided (ft)	Total Pond Volume (cf)
65.94	6.5	35.72	2,872,346.40	191361.89	4.39	8.13	20.0	3827237.8

DA-3B:								
Drainage Area (ac)	10yr-24hr Event (in)	Runoff (ac-ft)	Drainage Area (sf)	Pond Area (sf)	Pond Area (ac)	Pond Depth Req. (ft)	Total Pond Depth Provided (ft)	Total Pond Volume (cf)
75.03	6.5	40.64	3,268,306.80	144710.71	3.32	12.23	18.0	2604792.8

Interim Conditions:								
DA-2 (2-yr)*:								
Drainage Area (ac)	2yr-24hr Event (in)	Runoff (ac-ft)	Drainage Area (sf)	Pond Area (sf)	Pond Area (ac)	Pond Depth Req. (ft)	Total Pond Depth Provided (ft)	Total Pond Volume (cf)
338.43	2.2	62.05	14,741,967.24	191361.89	4.39	14.12	20.0	3827237.8

\*calculated this number  
using equation 20.44 and  
a CN value of 82 using  
NRCS method

Gorman Pits:								
Drainage Area (ac)	10yr-24hr Event (in)	Runoff (ac-ft)	Drainage Area (sf)	Pond Area (sf)	Pond Area (ac)	Pond Depth Req. (ft)	Total Pond Depth Provided (ft)	
10.32	6.5	5.59	449,539.20	300564.00	6.90	0.81	1.0	

## **Appendix – VI**

### **ESC Cost Estimate**

**Engineer's Cost Estimate for  
Erosion/Sediment Controls**

Pay Item	Units	Cost per Unit	Estimate per Pay Item
Stabilized Construction Entrance	1.0	\$1500.00	\$ 1,500.00
Diversion/interceptor/perimeter dike	3934.9	\$4 per linear ft.	\$ 15,739.52
<sup>1</sup> Erosion Control Blankets (sq. yds)	9,571.00	\$1.34	\$ 12,825.14
<sup>1</sup> Erosion Control Blanket Installation	2 people, 2 days	See below <sup>1</sup>	\$ 1,200.00
Silt Fence (L Ft.)	10,115.01	\$3.00	\$ 30,345.03
Reinforced Rock Berms (Linear Ft)	620	\$30.00	\$ 18,600.00
<sup>2</sup> Seed Mixture (per acre)	57.00	\$723.20	\$ 41,222.40
<sup>2</sup> Seed Application (labor + equip rental)	5 days	See below <sup>2</sup>	\$ 2,500.00
<sup>3</sup> Water Truck Rental (daily rate)	9 days	\$700.00	\$ 6,300.00
<sup>3</sup> Water Application (labor)	9 days	\$200.00	\$ 1,800.00
Concrete washout	1	\$1000.00	\$ 1,000.00
Subtotal:			\$ 133,032.09
10% Contingency:			\$ 13,303.21
<b>TOTAL</b>			<b>\$ 146,335.30</b>

<sup>1</sup>Erosion Control Blanket quantity is based on application for stabilization of the plant pad slopes, and an extra 500 square yard contingency has been added to cover any other slopes that exceed 3H:1V. Installation cost assumes two people working eight hour days for two days at \$25.00/hour. An additional \$400 was added for contingency/equipment costs.

<sup>2</sup>Seed and Application assumes the following:

- 57-acre seed application area within the proposed limits of construction using appropriate species at the application rates listed in Table 1 or other appropriate mixture listed in Tables 3-3 and/or 3-4 in the LCRA Technical Manual;
- Prices of seed may vary and are based on currently available seed. Current price estimates used in Table 1 below are based on Turner Seed Company's 2025 Spring Price List (attached);
- Approximately \$1,500.00 estimated equipment rental for one week; and
- One person working 8 hours/day for one week at \$25/hour.

<sup>3</sup>Water Application assumes the following:

- Rental of a water truck at approximately \$700/day (daily rate);
- Water from the well on-site will be utilized;
- One person working an 8-hour day at \$25.00/hour;
- Seeding occurs in early spring and watering occurs every two weeks for the first three months, followed by once monthly until the vegetation is established, approximately six months total.

**Table 1. Example of Year-Round Permanent, Native Seed Mix**

Species	Pounds per acre	Price per pound	Subtotal per acre
Sideoats grama ( <i>Bouteloua curtipendula</i> )	2.0	\$30.00	\$60.00
Buffalograss ( <i>Bouteloua dactyloides</i> )	1.4	\$30.00	\$42.00
Canadian wildrye ( <i>Elymus canadensis</i> )	1.4	\$10.00	\$14.00
Green sprangletop ( <i>Leptochloa dubia</i> )	2.6	\$16.00	\$41.60
Mexican hat ( <i>Ratibida columnifera</i> )	1.0	\$20.00	\$20.00
Little bluestem ( <i>Schizachyrium scoparium</i> )	1.8	\$12.00	\$21.60
Purple threeawn ( <i>Aristida purpurea</i> )	1.4	\$16.00	\$22.40
Silver bluestem ( <i>Bothriochloa laguroides</i> )	6.0	\$80.00	\$480.00
Indiangrass, Cheyenne ( <i>Sorghastrum nutans</i> )	1.8	\$12.00	\$21.60
Total Estimated Cost/Acre =			<b>\$723.20</b>
Total Estimated Cost (assumes 57 acres) =			<b>\$ 41,222.40</b>

**From the Water Quality Management Technical Manual:**

**Table 3-3 Temporary Seeding for Burnet, Travis, and Llano Counties**

Dates	Climate	Species (lb/ac)
Sept 1 to Nov 30	Temporary Cool Season	Oats ( <i>Avena sativa</i> ) 21.0
		Wheat (Red, Winter) 30.0
		( <i>Triticum aestivum</i> )
		<b>Total 51.0</b>
Oct 1 to Mar 30	Temporary Cool Season	Cereal Rye ( <i>Secale cereale</i> ) 70.0
May 15 to Aug 31	Temporary Warm Season	Foxtail Millet ( <i>Setaria italica</i> ) 30.0

**Table 3-4 Permanent Seeding for Burnet, Travis, and Llano Counties**

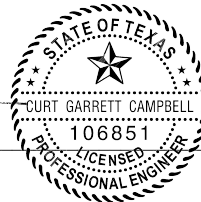
Dates	Climate	Species (lb/ac)
Year Round	Permanent Cool/Warm Season (Native Species)	Purple three-awn ( <i>Aristida purpurea</i> ) 1.4
		Sideoats grama ( <i>Bouteloua curtipendula</i> ) 2.0
		Silver bluestem ( <i>Bothriochloa laguroides</i> ) 6.0
		Buffalograss ( <i>Buchloe dactyloides</i> ) 1.4
		Canadian wildrye ( <i>Elymus Canadensis</i> ) 1.4
		Engelmann's daisy ( <i>Engelmannia pinnatifida</i> ) 0.6
		Green sprangletop ( <i>Leptochloa dubia</i> ) 2.6
		Mexican hat ( <i>Ratibida columnifera</i> ) 1.0
		Little bluestem ( <i>Schizachyrium scoparium</i> ) 1.8
		Indiangrass ( <i>Sorghastrum nutans</i> ) 1.8
		Texas Wintergrass ( <i>Nassella leucotricha</i> ) 15.0
		<b>Total 35.0</b>
Mar 30 to Oct 1	Permanent Warm Season	Bermuda ( <i>Cynodon dactylon</i> )(hulled) 45.0
Oct 1 to Mar 30	Permanent Cool/Warm Season	Bermuda ( <i>Cynodon dactylon</i> ) (unhulled) 70.0
		Cereal Rye ( <i>Secale cereale</i> ) 90.0
		<b>Total 160.0</b>

Curt Campbell, PE - TX License. No. 144228 Registered Professional Engineer

Signature of Registered Professional Engineer

Date: 3/21/2025

Westward Environmental, Inc. – Texas Firm Registration # F- 4524





## **2025 SPRING PRICE LIST**

**[www.turnerseed.com](http://www.turnerseed.com)**

J Mercer - [j@turnerseed.com](mailto:j@turnerseed.com)

Jesse Speer - [jesse@turnerseed.com](mailto:jesse@turnerseed.com)

Luke Turner - [luke@turnerseed.com](mailto:luke@turnerseed.com)

Blair Vick - [blair@turnerseed.com](mailto:blair@turnerseed.com)

**254-559-2065**



## 2025 GRASS SEEDS

Bluestems		Price	Unit
Big Bluestem	Kaw	\$12.00	PLS
Broomsedge Bluestem	Native	OUT	PLS
Bushy Bluestem	Native	OUT	PLS
Cane Bluestem	Native	OUT	PLS
Little Bluestem	Aldous	\$13.00	PLS
Little Bluestem	Cimarron	\$14.00	PLS
Little Bluestem	Coastal Plains	\$66.00	PLS
Little Bluestem	Native	\$12.00	PLS
Little Bluestem	OK Select	\$18.00	PLS
Old World Bluestem	T-587	\$33.00	PLS
Old World Bluestem	WW-B Dahl	\$33.00	PLS
Old World Bluestem	WW-Spar	ASK	PLS
Sand Bluestem	Native	\$20.00	PLS
Silver Bluestem	Santiago Germplasm	\$80.00	PLS
Splitbeard Bluestem	Native	\$60.00	PLS

Cool Season Grasses		Price	Unit
Annual Ryegrass	Beef Builder	\$42.50	50# Bag
Annual Ryegrass	Gulf	\$40.00	50# Bag
Canada Wildrye	Lavaca	\$22.00	PLS
Canada Wildrye	Native	\$10.00	PLS
Creeping Red Fescue	Boreal	\$2.00	LB
Indian Ricegrass	Native	\$30.00	PLS
Little Barley	Cibolo	\$21.00	PLS
Perennial Ryegrass	Pure Sport	\$100.00	50# Bag
Tall Fescue	Camelot	\$100.00	50# Bag
Tall Fescue	Kentucky 31	\$75.00	50# Bag
Tall Fescue	Sungold GLX	\$100.00	50# Bag
Tall Wheatgrass	Jose	\$4.00	PLS
Virginia Wildrye	Native	\$9.00	PLS
Western Wheatgrass	Native	\$12.00	PLS

Grama Grasses		Price	Unit
Blue Grama	Alma	\$20.00	PLS
Blue Grama	Native	\$19.00	PLS
Buffalograss	Texoka	\$28.00	PLS
Buffalograss	Timeless	\$30.00	PLS
Sideoats Grama	El Reno	\$25.00	PLS
Sideoats Grama	Haskell	\$30.00	PLS

Indiangrass		Price	Unit
Indiangrass	Cheyenne	\$12.00	PLS
Indiangrass	Lometa	OUT	PLS

Lovegrass		Price	Unit
Lehman Lovegrass	Variety Not Stated	OUT	PLS
Sand Lovegrass	Bend	\$24.00	PLS
Teff Lovegrass	Variety Not Stated	\$3.00	LB
Weeping Lovegrass	Ermello	\$15.00	PLS
Wilman Lovegrass	Variety Not Stated	\$16.00	PLS

Miscellaneous Grasses		Price	Unit
Alkali Sacaton	Native	\$25.00	PLS
Arizona Cottontop	Native	OUT	PLS
Bahiagrass	Pensacola	\$5.00	LB
Buffelgrass	Common	ASK	PLS
Common Barnyard Grass	Echinochloa crus-galli	\$6.00	LB
Crabgrass	Red River	\$6.00	PLS
Curly Mesquite	Native	OUT	PLS
Eastern Gamagrass	Native	OUT	PLS
Galleta	Viva	\$47.00	PLS
Green Sprangletop	Van Horn	\$7.00	PLS
Hooded Windmillgrass	Burnett Germplasm	\$85.00	PLS
Inland Sea Oats	Native	\$120.00	PLS
Johnsongrass	Variety Not Stated	OUT	LB
Plains Bristlegrass	Native	\$16.00	PLS
Purple Threawn	Native	\$16.00	PLS
Purpletop	Native	\$40.00	PLS
Rough Barnyard Grass	(Echinochloa muricata)	\$15.00	LB
Sand Dropseed	Native	\$10.00	PLS
Sand Dropseed	Taylor Germplasm	ASK	PLS
Sorghum Almum	Variety Not Stated	ASK	PLS
White Tridens	Guadalupe Germplasm	\$100.00	PLS

Panicums		Price	Unit
Kleingrass	Selection 75	\$13.00	PLS
Switchgrass	Alamo	\$14.00	PLS
Switchgrass	Blackwell	\$11.00	PLS
Texas Panicum	Native	OUT	PLS

Pasture Bermudagrass		Price	Unit
Bermudagrass	Common (Hulled)	\$9.00	LB
Bermudagrass	Common (Unhulled)	\$6.00	LB
Bermudagrass	Giant	ASK	LB
Buckaroo Blend	Chilly Verde, Giant & Jacob	\$12.00	LB
Texas Tough Blend	Giant, Forage Max & Majestic	ASK	LB

Turf Grasses		Price	Unit
Bermudagrass	Blackjack (Coated)	\$7.50	LB
Bermudagrass	Common (Hulled)	\$9.00	LB
Bermudagrass	Common (Unhulled)	\$6.00	LB
Bermudagrass	Maya (Coated)	\$7.50	LB
Bermudagrass	Sahara 2	ASK	LB
Buffalograss	Timeless	\$30.00	LB
Perennial Ryegrass	Pure Sport	\$100.00	50# Bag
Tall Fescue	Camelot	\$100.00	50# Bag
Tall Fescue	Sungold GLX	\$100.00	50# Bag
Turner Turf	Buffalograss 70% Blue Grama 30%	\$24.00	LB
Turner Turf 3	Buffalograss 70% Blue Grama 28% Curly Mesquite 2%	\$26.00	LB

**PRICES ARE SUBJECT TO CHANGE DUE TO AVAILABILITY**

**MIXES ONLY**

**NEW ITEM**

## 2025 WILDLIFE & FORB SEEDS

Clovers		Price	Unit
Alyce Clover	Variety Not Stated	\$3.50	LB
Arrowleaf Clover	Zulu 2	\$2.50	LB
Balansa Clover	Fixation	\$2.25	LB
Ball Clover	Variety Not Stated	OUT	LB
Berseem Clover	Frosty	\$3.50	LB
Crimson Clover (Coated)	Kentucky Pride	\$2.00	LB
Crimson Clover (Raw)	Kentucky Pride	\$2.25	LB
Persian Clover	eNhance	\$2.50	LB
Red Clover	Dynamite	ASK	LB
Red Clover	Kenland	\$5.00	LB
Spineless Burr Medic Clover	Cavalier	\$5.00	LB
White Clover	Dutch	\$6.00	LB
White Sweet Clover	Hubam	\$3.50	LB
White Sweet Clover	Silver River	\$3.50	LB
Yellow Blossom Sweet Clover	Variety Not Stated	\$3.25	LB

Forb Mix			
Illinois Bundleflower (Sabine)	10.0%		
Sweet Clover (Silver River)	10.0%		
Blackeyed Susan	9.0%		
Clasping Coneflower	9.0%		
Indian Blanket	9.0%		
Lanceleaf Coreopsis	9.0%		
Partridge Pea	9.0%		
Plains Coreopsis	9.0%		
Purple Prairie Clover	9.0%		
White Prairie Clover	5.0%		
Awnless Bushsunflower (Plateau)	3.0%		
Common Annual Sunflower	3.0%		
Maximilian Sunflower (Aztec)	3.0%		
Purple Coneflower	3.0%		
Cost Per Acre	\$84.00	100%	
Cost Per PLS Lb.	\$12.00		
PLS Pounds Per Acre	7.00		

Legumes		Price	Unit
Aeschynomene	(American Joint Vetch)	\$5.50	LB
Alfalfa	Ladak	\$4.75	LB
Alfalfa (Coated & Inoculated)	L-602	\$5.00	LB
Alfalfa (Raw & Inoculated)	L-602	\$6.00	LB
Cowpea	Ace	\$1.50	LB
Cowpea	Blackeye	\$2.00	LB
Cowpea	Iron & Clay	\$1.00	LB
Cowpea	Red Ripper	\$1.00	LB
Hairy Vetch	Variety Not Stated	\$2.00	LB
Illinois Bundleflower	Native	\$6.00	PLS
Lab Lab	Variety Not Stated	\$2.50	LB
Mungbean	Variety Not Stated	\$2.00	LB
Partridge Pea	Native	\$16.00	PLS
Purple Prairie Clover	Native	\$18.00	PLS
Soybean	Laredo	\$1.50	LB
Sunn Hemp	Variety Not Stated	\$2.00	LB
White Prairie Clover	Native	\$40.00	PLS

Lespedeza		Price	Unit
Korean Lespedeza	Variety Not Stated	\$3.50	LB
Sericea Lespedeza	Variety Not Stated	\$4.50	LB
Roundhead Lespedeza	Native	\$95.00	PLS

Millets		Price	Unit
Browntop Millet	Variety Not Stated	\$50.00	50# Bag
Foxtail Millet	German R	\$50.00	50# Bag
Foxtail Millet	Scotty Fox	\$75.00	50# Bag
Hybrid Pearl Millet	Variety Not Stated	\$90.00	50# Bag
Japanese Millet	Variety Not Stated	\$50.00	50# Bag
Proso Millet	Dove	\$75.00	50# Bag

Other Forbs		Price	Unit
Buckwheat	Variety Not Stated	\$50.00	50# Bag
Chicory	Variety Not Stated	\$4.50	LB
Chufas	Variety Not Stated	\$1.75	LB
Daikon Radish	Driller	\$2.00	LB
Engelmann Daisy	Eldorado	OUT	PLS
Fourwing Saltbush	Native	\$13.50	PLS
Okra	Clemson Spineless	\$1.50	LB
Pennsylvania Smartweed	Variety Not Stated	\$22.00	LB
Winter Rape	Variety Not Stated	\$38.00	50# Bag
Sesame	Variety Not Stated	\$3.75	LB
Turnips	Purpletop	\$2.00	LB

Other Grasses		Price	Unit
Hybrid Grain Sorghum	W-844-E	\$2.50	LB
Rice	Variety Not Stated	\$23.00	50# Bag
Sorghum	Egyptian Wheat	\$2.00	LB
Sorghum	Early Sumac (Red Top)	\$40.00	50# Bag
Sorghum	Hegari	\$35.00	50# Bag
Sorghum Almun	Variety Not Stated	\$2.50	LB

Sunflowers		Price	Unit
Awnless Bushsunflower	Plateau	\$45.00	PLS
Hybrid Oil Sunflower	SF CP Sportsman	\$3.50	LB
Maximilian Sunflower	Native	\$22.00	PLS
Native Sunflower (Common Annual)	Native	\$10.00	PLS
Peredovick Sunflower	Variety Not Stated	\$50.00	50# Bag

Seeders-Fertilizers-Etc.		
20-10-5 Fertilizer	50 Lb. Sack	\$23.00
33-0-0 Fertilizer	50 Lb. Sack	\$23.00
6-3-0 Fertilizer	50 Lb. Sack	\$12.00
Broadcast Seeder	Hand	\$38.00
Broadcast Seeder	PTO	ASK
Inoculant	Clover & Alfalfa	\$8.00
Inoculant	Cowpea - Sunn Hemp - Peanuts	\$8.00
Inoculant	Pea - Vetch - Lentils	\$8.00

**PRICES ARE SUBJECT TO CHANGE DUE TO AVAILABILITY**

**MIXES ONLY**

**NEW ITEM**

**TURNER SEED COMPANY**

P.O. BOX 791 • BRECKENRIDGE, TEXAS 76424

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FAX: 254-559-5024 • www.turnerseed.com

**2025 GRASS & OTHER SEED MIXES**

Bluestem Mix Non Sandy			
Little Bluestem		45.0%	
Indiangrass		25.0%	
Switchgrass (Blackwell)		25.0%	
Big Bluestem		5.0%	
Cost Per Acre	\$46.80		
Cost Per PLS Lb.	\$12.00		
PLS Pounds Per Acre	3.90	100.0%	

Bluestem Mix Sandy			
Little Bluestem		45.0%	
Switchgrass (Blackwell)		20.0%	
Indiangrass		15.0%	
Sideoats Grama (Haskell)		10.0%	
Big Bluestem		10.0%	
Cost Per Acre	\$52.00		
Cost Per PLS Lb.	\$13.00		
PLS Pounds Per Acre	4.00	100.0%	

Hardland Grass Seed Mix			
Kleingrass (Selection 75)		25.0%	
Willman Lovegrass		25.0%	
WW-B Dahl Bluestem		20.0%	
Sideoats Grama		20.0%	
Green Sprangletop (Van Horn)		10.0%	
Cost Per Acre	\$47.50		
Cost Per PLS Lb.	\$19.00		
PLS Pounds Per Acre	2.50	100.0%	

Pipeline Mix			
Kleingrass (Selection 75)		15.0%	
Wilman Lovegrass		15.0%	
Green Sprangletop (Van Horn)		10.0%	
Sideoats Grama		10.0%	
Tall Wheatgrass		10.0%	
Annual Ryegrass		7.0%	
Foxtail Millet		7.0%	
Hooded Windmillgrass (Burnet Germplasm)		5.0%	
Silver Bluestem		5.0%	
Teff Lovegrass		5.0%	
WW-Spar Bluestem		5.0%	
Canadian Wildrye		3.0%	
Virginia Wildrye		3.0%	
Cost Per Acre	\$70.00		
Cost Per PLS Lb.	\$7.00		
PLS Pounds Per Acre	10.00	100.0%	

SOL Mix			
Blue Grama		50.0%	
Hooded Windmillgrass		14.0%	
Sand Dropseed		12.0%	
Sideoats Grama		12.0%	
Buffalograss		11.0%	
Curly Mesquite		1.0%	
Cost Per Acre	\$70.00		
Cost Per PLS Lb.	\$28.00		
PLS Pounds Per Acre	2.50	100.0%	

Sandyland Grass Seed Mix			
Wilman Lovegrass		25.0%	
Plains Bristlegrass		15.0%	
Switchgrass (Blackwell)		15.0%	
Green Sprangletop		10.0%	
Indiangrass		10.0%	
Little Bluestem		10.0%	
Sideoats Grama (Haskell)		10.0%	
Big Bluestem		5.0%	
Cost Per Acre	\$47.85		
Cost Per PLS Lb.	\$14.50		
PLS Pounds Per Acre	3.30	100.0%	

Tank Dam Mix			
Annual Ryegrass		35.0%	
Bermudagrass		10.0%	
Tall Fescue		10.0%	
Foxtail Millet (German)		8.0%	
Teff Lovegrass		6.0%	
Crabgrass		5.0%	
Kleingrass (Selection 75)		5.0%	
Sideoats Grama		5.0%	
Wilman Lovegrass		5.0%	
WW-Spar Bluestem		5.0%	
Blue Grama		3.0%	
Hooded Windmillgrass (Burnet Germplasm)		2.0%	
Silver Bluestem (Santiago Germplasm)		1.0%	
Cost Per Acre	\$75.00		
Cost Per Lb.	\$7.50		
Pounds Per Acre	10.00	100.0%	

Texas Native Multi-Site Mix			
Little Bluestem		10.0%	
Illinois Bundleflower		10.0%	
Blue Grama		9.0%	
Indiangrass		9.0%	
Switchgrass (Blackwell)		9.0%	
Indian Blanket		4.5%	
Big Bluestem		3.0%	
Canada Wildrye		3.0%	
Green Sprangletop (Van Horn)		3.0%	
Hooded Windmillgrass		3.0%	
Plains Bristlegrass		3.0%	
Sand Dropseed		3.0%	
Sideoats Grama		3.0%	
Silver Bluestem		3.0%	
Virginia Wildrye		3.0%	
Western Wheatgrass		3.0%	
Awnless Bushsunflower (Plateau)		2.5%	
Blackeyed Susan		2.5%	
Plains Coreopsis		2.5%	
Purple Prairie Clover		2.0%	
White Prairie Clover		2.0%	
Partridge Pea		2.0%	
Buffalograss (Texoka)		1.0%	
Inland Sea Oats		1.0%	
Maximilian Sunflower (Aztec)		1.0%	
Purpletop		1.0%	
Sand Lovegrass		1.0%	
Cost Per Acre	\$77.00		
Cost Per PLS Lb.	\$14.00		
PLS Pounds Per Acre	5.50	100.0%	

**PRICES ARE SUBJECT TO CHANGE DUE TO AVAILABILITY****MIXES ONLY****NEW ITEM**

# 2025 WILDLIFE SEED MIXES & FOOD PLOTS

Native Perennial Wildlife Mix		
Switchgrass (Blackwell)	14.0%	
Little Bluestem	12.0%	
Plains Bristlegrass	12.0%	
Sideoats Grama	12.0%	
Green Sprangletop (Van Horn)	10.0%	
Illinois Bundleflower (Sabine)	10.0%	
Sweet Clover (Silver River)	10.0%	
Purple Prairie Clover	8.0%	
Indiangrass (Cheyenne)	5.0%	
Awnless Bushsunflower (Plateau)	3.0%	
Partridge Peas	3.0%	
Maximillian Sunflower (Aztec)	1.0%	
Cost Per Acre	\$61.60	100.0%
Cost Per PLS Lb.	\$11.00	
PLS Pounds Per Acre	5.60	

Pollinator Mix		
Illinois Bundleflower (Sabine)	12.0%	
Sweet Clover (Silver River)	12.0%	
Green Sprangletop (Van Horn)	10.0%	
Blackeyed Susan	7.0%	
Indian Blanket	7.0%	
Plains Coreopsis	7.0%	
Awnless Bushsunflower (Plateau)	5.0%	
Blue Grama	5.0%	
Clasping Coneflower	5.0%	
Gayfeather	5.0%	
Hooded Windmillgrass	5.0%	
Partridge Peas	5.0%	
Purple Prairie Clover	5.0%	
Sideoats Grama	5.0%	
Maximillian Sunflower (Aztec)	3.0%	
White Prairie Clover	2.0%	
Cost Per Acre	\$72.80	100.0%
Cost Per PLS Lb.	\$13.00	
PLS Pounds Per Acre	5.60	

Spring Quail & Turkey Mix		
Browntop Millet	15.0%	
Buckwheat	15.0%	
Foxtail Millet (German R)	15.0%	
Hybrid Grain Sorghum	15.0%	
Cowpea (Ace)	10.0%	
Proso Millet (Dove)	10.0%	
Hybrid Oil Sunflower	5.0%	
Hybrid Pearl Millet	5.0%	
Okra	5.0%	
Soybean	5.0%	
Cost Per Acre	\$30.00	100.0%
Cost Per Lb.	\$1.50	
Pounds Per Acre	20.00	

Spring Deer Mix		
Cowpeas (Ace)	25.0%	
Cowpeas (Iron & Clay)	10.0%	
Cowpeas (Red Ripper)	10.0%	
Lab Lab	10.0%	
Okra (Spineless)	10.0%	
Soybeans	10.0%	
Sunn Hemp	10.0%	
Buckwheat	5.0%	
Chicory	5.0%	
Cowpea (California Blackeye)	5.0%	
Cost Per Acre	\$35.00	100.0%
Cost Per Lb.	\$1.75	
Pounds Per Acre	20.00	

Spring Dove Mix		
Browntop Millet	25.0%	
Foxtail Millet (German R)	25.0%	
Hybrid Black Oil Sunflower	20.0%	
Hybrid Grain Sorghum	20.0%	
Sesame	10.0%	
Cost Per Acre	\$40.00	100.0%
Cost Per Lb.	\$2.00	
Pounds Per Acre	20.00	

Texas Perennial Wildlife Mix		
Kleingrass (Selection 75)	15.0%	
Sweet Clover (Silver River)	15.0%	
Wilman Lovegrass	15.0%	
Plains Bristlegrass	12.0%	
Switchgrass (Blackwell)	12.0%	
Green Sprangletop (Van Horn)	10.0%	
Illinois Bundleflower (Sabine)	10.0%	
Purple Prairie Clover	5.0%	
Partridge Peas	4.0%	
Awnless Bushsunflower (Plateau)	1.0%	
Maximillian Sunflower (Aztec)	1.0%	
Cost Per Acre	\$42.00	100.0%
Cost Per PLS Lb.	\$8.00	
PLS Pounds Per Acre	5.25	

Waterfowl Mix		
Japanese Millet	25.0%	
Browntop Millet	20.0%	
Rice	20.0%	
Buckwheat	15.0%	
Hybrid Grain Sorghum	10.0%	
Barnyard Grass	5.0%	
Smartweed	5.0%	
Cost Per Acre	\$45.00	100.0%
Cost Per Lb.	\$2.25	
Pounds Per Acre	20.00	

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**MIXES ONLY**

**NEW ITEM**

# 2025 SPRING WILDFLOWER MIXES - \$30 PER POUND

PRICES ARE SUBJECT TO  
CHANGE DUE TO AVAILABILITY

## Texas Native Wildflower Mix

Common Name	% By Weight	Season	Bloom Period	Longevity	Bloom Color
Black-Eyed Susan	10%	Warm	May - November	ABP	Yellow
Clasping Coneflower	10%	Warm	May - June	Annual	Yellow/Dark Red
Common Milkweed	1%	Warm	May - August	Perennial	Pink
Drummond Phlox	1%	Cool	February - June	Annual	Red
Gayfeather	8%	Warm	August - December	Perennial	Purple
Greenthread	1%	Cool	February - December	AP	Yellow/Dark Red
Indian Blanket	25%	Warm	February - December	Annual	Red/Yellow
Lemon Mint	5%	Warm	April - October	Annual	Purple
Mealy Blue Sage	1%	Warm	April - November	Perennial	Purple/Blue
Mexican Hat	1%	Warm	March - November	Perennial	Yellow/Dark Red
Missouri Primrose	1%	Warm	April - August	Perennial	Yellow
Plains Coreopsis	10%	Warm	April - June	Annual	Yellow/Dark Red
Prairie Coneflower	1%	Warm	March - November	Perennial	Yellow
Purple Coneflower	6%	Warm	May - June	Perennial	Purple
Purple Prairie Clover	9%	Warm	June - July	Perennial	Purple
Scarlet Sage	1%	Warm	March - December	Perennial	Red
Showy Evening Primrose	5%	Cool	February - July	Perennial	Pink
Showy Milkweed	1%	Warm	May - June	Perennial	Pink
White Prairie Clover	1%	Warm	June - August	Perennial	White
White Yarrow	1%	Cool	April - June	Perennial	White
Wild Bergamot	1%	Warm	June - September	Perennial	Pink

## Starburst Wildflower Mix

Common Name	% By Weight	Season	Bloom Period	Longevity	Bloom Color
Bachelor's Button	5%	Cool	March - May	Annual	Blue
Bird's Foot Trefoil	4%	Warm	June - August	Perennial	Yellow
Black-Eyed Susan	5%	Warm	May - November	ABP	Yellow
Blue Flax	4%	Warm	May - June	Perennial	Light Blue
California Poppy	12%	Cool	February - September	Annual	Orange
Clasping Coneflower	4%	Warm	May - June	Annual	Yellow/Dark Red
Common Milkweed	1%	Warm	May - August	Perennial	Pink
Corn Poppy	5%	Cool	March - July	Annual	Red
Cosmos	10%	Warm	May - November	Annual	Red/Pink
Drummond Phlox	1%	Cool	February - June	Annual	Red
False Sunflower	1%	Warm	June - September	Perennial	Yellow
Gayfeather	4%	Warm	August - December	Perennial	Purple
Golden Mane Tickseed	1%	Warm	June - July	Annual	Yellow/Dark Red
Grayhead Coneflower	1%	Warm	May - September	Perennial	Yellow
Greenthread	1%	Cool	February - December	A/P	Yellow
Indian Blanket	4%	Warm	February - December	Annual	Red/Yellow
Lanceleaf Coreopsis	8%	Warm	May - August	Perennial	Yellow
Lemon Mint	5%	Warm	April - October	Annual	Purple
Mealy Blue Sage	1%	Warm	April - November	Perennial	Purple/Blue
Mexican Hat	1%	Warm	March - November	Perennial	Yellow/Dark Red
Missouri Primrose	1%	Warm	March - November	Perennial	Yellow
Moss Verbena	1%	Warm	March - July	ABP	Purple
Pale Purple Coneflower	1%	Warm	May - June	Perennial	Purple
Plains Coreopsis	5%	Warm	April - June	Annual	Yellow/Dark Red
Prairie Coneflower	1%	Warm	March - November	Perennial	Yellow
Purple Coneflower	1%	Warm	May - June	Perennial	Purple
Purple Prairie Clover	1%	Warm	June - July	Perennial	Purple
Scarlet Flax	1%	Warm	May - July	Annual	Red
Scarlet Sage	1%	Warm	March - December	Perennial	Red
Showy Evening Primrose	5%	Cool	February - July	Perennial	Pink
Showy Milkweed	1%	Warm	May - June	Perennial	Pink
White Prairie Clover	1%	Warm	June - August	Perennial	White
White Yarrow	1%	Cool	April - June	Perennial	White
Wild Bergamot	1%	Warm	June - September	Perennial	Pink

SEEDING RATE PER ACRE = 8 TO 10 LBS.

PER ONE THOUSAND SQUARE FEET = 1/5 TO 1/2 LB.

ALWAYS SOW ON FRESHLY DISTURBED SOIL. SEVEN TIMES THE DIAMETER OF ANY SEED IS MAXIMUM DEPTH TO PLANT THE SEED!



# 2025 WILDFLOWERS

Common Name	Genus	Species	Planting Rate	Price Per Pound	Longevity	Season	Bloom Period	Bloom Color
American Basketflower	Centaurea	americana	10	\$80.00	Annual	Warm	May - June	Purple
Bachelor's Button	Centaurea	cyanus	4	\$10.00	Annual	Cool	March - May	Blue
Bird's Foot Trefoil	Lotus	corniculatus	8 - 10	\$7.50	Perennial	Warm	June - August	Yellow
Black-Eyed Susan	Rudbeckia	hirta	1 - 2	\$15.00	ABP	Warm	May - Oct	Yellow
Blanketflower	Gaillardia	aristata	5	\$25.00	Perennial	Warm	July - Sept	Red/Yellow
Blue Flax	Linum	lewisii	8	\$20.00	Perennial	Warm	May - June	Light Blue
Butterfly Milkweed	Asclepias	tuberosa	10	\$250.00	Perennial	Warm	April - Sept	Orange
California Poppy	Eschscholzia	californica	8	\$26.00	Annual	Cool	Feb - Sept	Orange
Clasping Coneflower	Dracopis	amplexicaulis	2 - 3	\$18.00	Annual	Warm	May - June	Yellow/Dark Red
Common Milkweed	Asclepias	syriaca	8	\$110.00	Perennial	Warm	May - August	Pink
Corn Poppy	Papaver	rheas	2	\$25.00	Annual	Cool	March - July	Red
Cosmos	Cosmos	bipinnatus	15	\$16.00	Annual	Warm	May - Nov	Red/Pink
Cutleaf Evening Primrose	Oenothera	laciniata	1	\$22.00	Annual	Cool	May - Sept	Yellow
Drummond Phlox	Phlox	drummondii	8	\$50.00	Annual	Cool	Feb - June	Red
False Sunflower	Heliopsis	helianthoides	9	\$22.00	Perennial	Warm	June - Sept	Yellow
Gayfeather	Liatris	spicata	5	\$60.00	Perennial	Warm	August - Dec	Purple
Golden Mane Tickseed	Coreopsis	basalis	3		Annual	Warm	June - July	Yellow/Dark Red
Grayhead Coneflower	Ratibida	pinnata	3	\$65.00	Perennial	Warm	May - Sept	Yellow
Greenthread	Thelesperma	filifolium	6	\$50.00	A/P	Cool	Feb - Dec	Yellow/Dark Red
Hoary Vervain	Verbena	stricta	3	OUT	Perennial	Warm	May - Sept	Purple
Indian Blanket	Gaillardia	pulchella	7 - 8	\$22.00	Perennial	Warm	Feb - Dec	Red/Yellow
Lanceleafed Coreopsis	Coreopsis	lanceolata	5	\$16.00	Perennial	Warm	May - August	Yellow
Lemon Mint	Monarda	citriodora	3	\$40.00	Annual	Warm	April - Oct	Purple
Mealy Blue Sage	Salvia	farinacea	8	\$75.00	Perennial	Warm	April - Nov	Purple/Blue
Mexican Hat	Ratibida	columnifera	2	\$20.00	Perennial	Warm	March - Nov	Yellow/Dark Red
Missouri Primrose	Oenothera	macrocarpa	10	\$40.00	Perennial	Warm	April - August	Yellow
Moss Verbena	Verbena	tenuisecta	6	\$50.00	A/P	Warm	March - July	Purple
Pale Purple Coneflower	Echinacea	pallida	12	\$22.00	Perennial	Warm	May - August	Purple
Plains Coreopsis	Coreopsis	tinctoria	1 - 2	\$12.00	Annual	Warm	April - June	Yellow/Dark Red
Prairie Coneflower	Ratibida	columnifera	2	\$20.00	Perennial	Warm	March - Nov	Yellow
Purple Coneflower	Echinacea	purpurea	12	\$28.00	Perennial	Warm	May - June	Purple
Scarlet Flax	Linum	rubrum	8	\$35.00	Annual	Warm	May - July	Red
Scarlet Sage	Salvia	coccinea	5	\$40.00	Perennial	Warm	March - Dec	Red
Showy Evening Primrose	Oenothera	speciosa	1	\$50.00	Perennial	Cool	Feb - July	Pink
Showy Milkweed	Asclepias	speciosa	8	\$150.00	Perennial	Warm	May - June	Pink
Tahoka Daisy	Machaeranthera	tanacetifolia	5	\$140.00	Annual	Cool	May - Oct	Purple
White Yarrow	Achillea	millefolium	1	\$30.00	Perennial	Cool	April - June	White
Wild Bergamot	Monarda	fistulosa	1	\$80.00	Perennial	Warm	June - Sept	Pink
Zinnia	Zinnia	elegans	9	\$20.00	Annual	Warm	May - Nov	Multiple

## SPECIES NATIVE TO TEXAS

"Has anyone by fussing before the mirror ever gotten taller by so much as an inch? If fussing can't even do that, why fuss at all? Walk into the fields and look at the wildflowers. They don't fuss with their appearance. But have you ever seen color and design quite like it? The ten best dressed men and women in the country look shabby alongside them. If God gives such attention to the wildflowers, most of them never even seen, don't you think he'll attend to you, take pride in you, do his best for you?  
**From "The Message" by Eugene H. Peterson, Luke 12:25-28**



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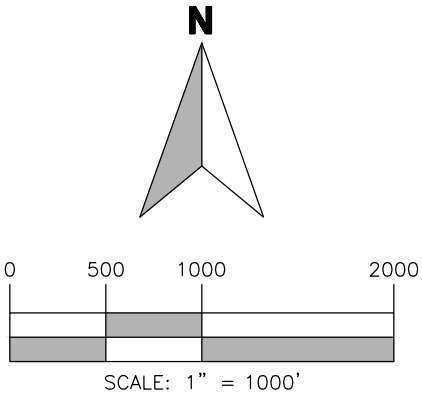
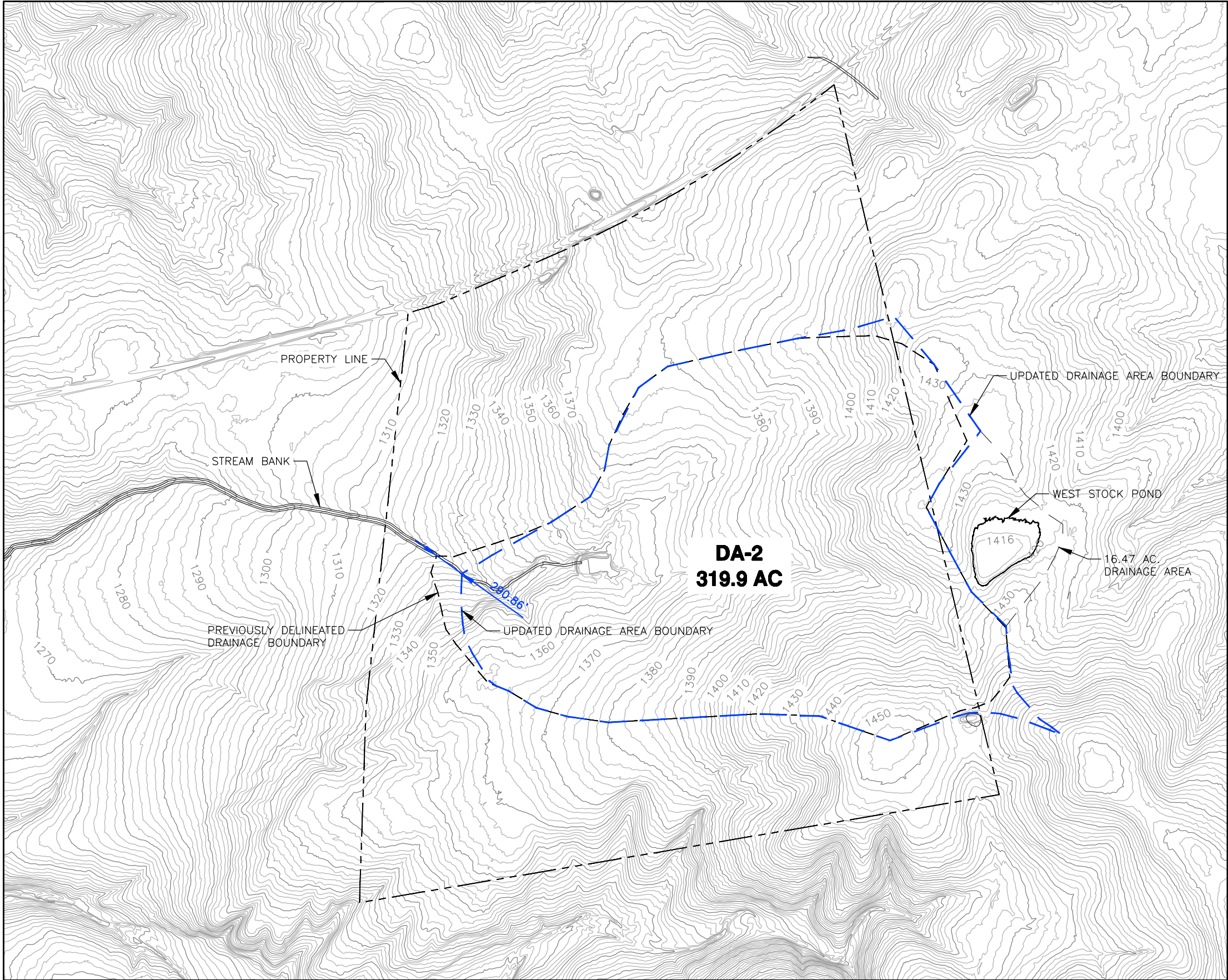
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## **Appendix – VII**

### **Buffer Drainage Area Map**





LEGEND

- PROPERTY LINE
- 900— EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- ORIGINAL DRAINAGE AREAS
- UPDATED DRAINAGE AREAS

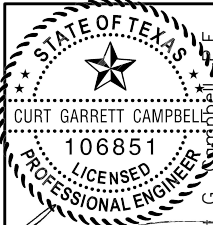
NOTE:  
IN THE DESIGNED STORM EVENT, THE WEST STOCK POND RETAINS ALL STORMWATER AND DOES NOT OVERFLOW INTO DA-2. SEE STAGE STORAGE TABLE BELOW FOR TOTAL VOLUME OF WEST STOCK POND AND THE CALCULATED RUNOFF CALCULATIONS SHOWING THE AMOUNT OF RUNOFF DRAINING TO THE WEST STOCK POND FOR THE 10-YR 24-HR STORM EVENT.

STAGE STORAGE TABLE (WEST STOCK POND)	
ELEVATION (AMSL)	VOLUME (AC-FT)
1416	0
1417	2.80
1418	6.33
1419	10.78
1420	16.47

WEST STOCK POND – RUNOFF CALCULATIONS	
DRAINAGE AREA (AC.)	16.47
10YR-24HR EVENT (IN.)	6.5
RUNOFF (AC-FT)	8.92



**WESTWARD**  
Environmental Engineering, Natural Resources.  
P.O. Box 2205 Boerne, Texas 78006  
(830) 249-8284 Fax: (830) 249-0221  
TBPE REG. NO.: F-4524



Curt G. Campbell  
P.E.  
License No. 106851  
3/21/2022

**DA-2 EXHIBIT**  
LCRA PERMITTING – BURNET QUARRY ASPHALT INC.  
3221 FM 3509, BURNET, TX 78611

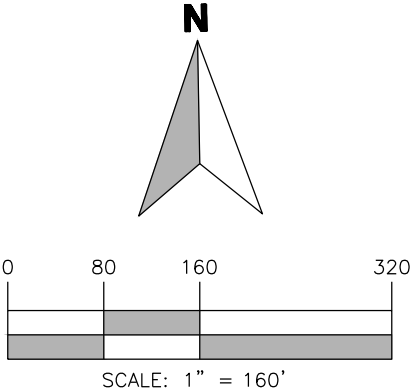
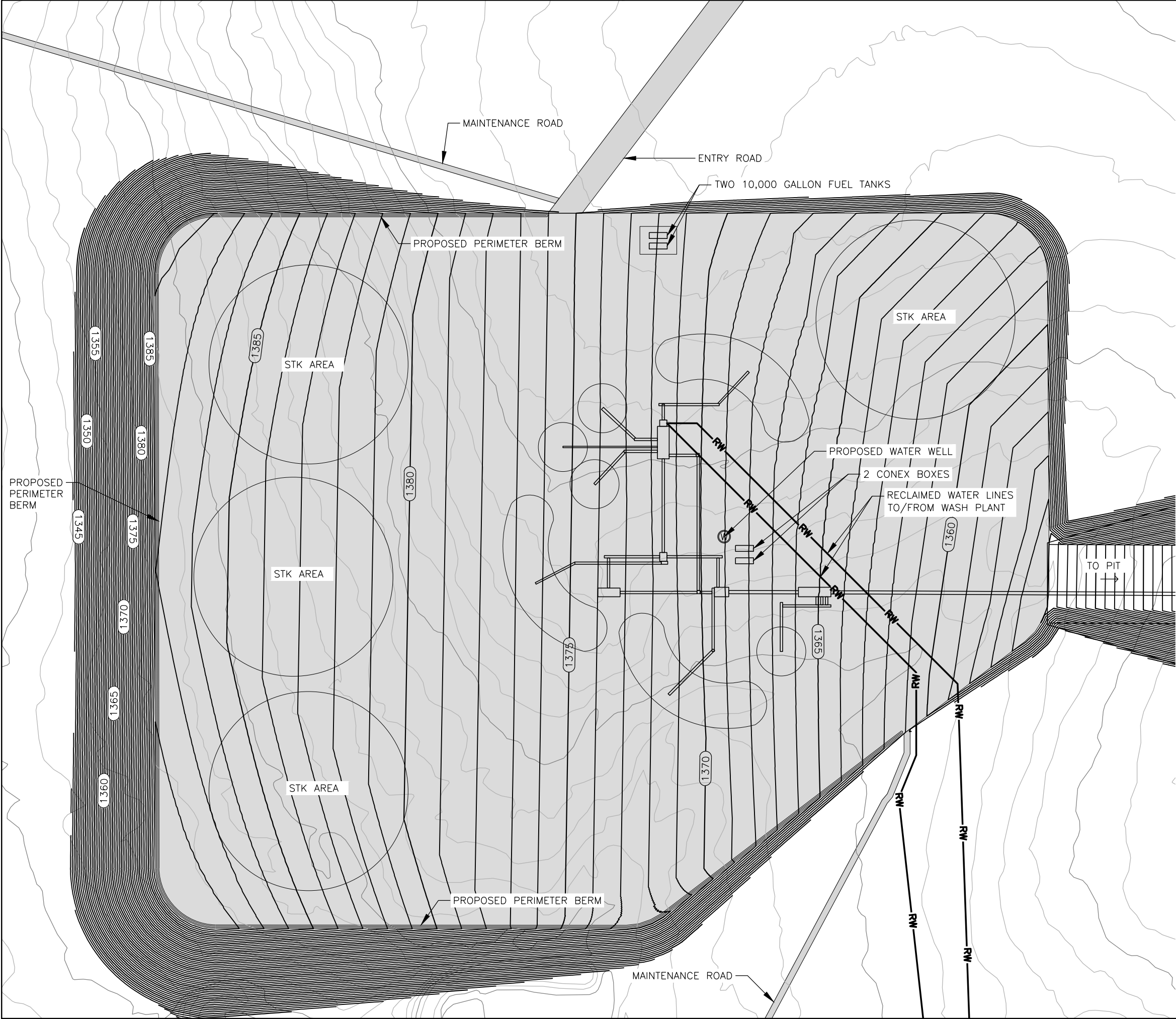
REV.	DESCRIPTION	BY	DATE

IMAGE: N/A	ISSUE DATE: 3/21/2025	DRAWN BY: WBE	CHECKED BY: CGC	SCALE: 1" = 1000'	JOB NO.: 10853-256
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## **Appendix – VII**

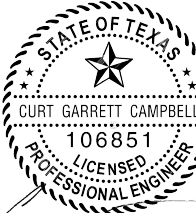
### **Plant Detail Map**







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**3/21/2025**

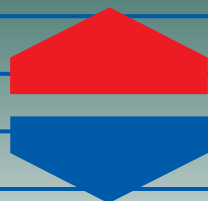
PAD & PLANT AREA EXHIBIT			
LCRA PERMITTING – BURNET QUARRY			
ASPHALT, INC.			
3221 FM 3509, BURNET, TX 78611			
REV	DESCRIPTION	BY	DATE

IMAGE:	N/A
ISSUE DATE:	3/21/2025
DRAWN BY:	JPW
CHECKED BY:	CGC
SCALE:	1" = 160'
JOB NO.:	10853-256



## **Appendix – VII**

### **Erosion Matting Specification**



# Curlex® Blankets

## Excelsior Erosion Control Blankets

### Product Description

American Excelsior Company is the inventor of biodegradable erosion control blankets. Developed in the early 60's, Curlex excelsior blankets are specifically designed to actually promote ideal growing conditions for grass seed, while simultaneously protecting topsoil from wind and water erosion. Curlex excelsior blankets have long passed the test of time. By design, Curlex blankets have a built-in swell factor - wet curled excelsior fibers slightly expand in thickness and interlock to form a strong, fiber matrix. This allows the fibers to provide intimate contact with local terrain. Water flow is trained to follow the curled fiber matrix. The roughness of the curled excelsior matrix slows the velocity to a point where gravity takes over, which allows moisture to slowly seep into the topsoil to promote ideal growing conditions.

#### MATERIAL CHARACTERISTICS

Curlex blankets consist of unique softly barbed, interlocking, curled, Aspen excelsior fibers. They are weed seed free. Curlex blankets are available with a variety of environmentally sensitive and/or stronger netting types to match job site requirements. We offer a green color-coded plastic netting for applications requiring UV resistance strength and longevity. Our photodegradable QuickMow™ netting is recommended for urban, golf course, and certain roadside projects. It is color-coded white to identify it as a rapid break-down, polypropylene netting designed for use in areas to be mowed. Also available is our FibreNet™ - 100% biodegradable netting - for use in critical environmentally sensitive areas.

Most straight-line fiber blankets draw the line at  $270 \text{ g/m}^2$  (.50 lb/yd<sup>2</sup>), but not Curlex. At just under  $400 \text{ g/m}^2$  (.75 lb/yd<sup>2</sup>) Curlex blankets bring 50% more erosion control fibers to your job site. Curlex blankets are available in natural Aspen or QuickGRASS® (green). Combine that with a roll that's wider than conventional blankets and you have today's most effective and efficient, multi-purpose degradable erosion control blanket. Curlex excelsior blankets are available individually wrapped or in master packs to allow for mechanical unloading and stacking.

#### PERFORMANCE CAPABILITIES

Product	Slopes	Shear Stress Rating
Curlex I	2H:1V & flatter	84 Pa (1.75 lb/ft <sup>2</sup> )
Curlex II	1.5H:1V & flatter	108 Pa (2.25 lb/ft <sup>2</sup> )

#### TYPICAL APPLICATIONS

- Highway embankments, ditch bottoms and slopes, bridges, approaches and medians
- Residential, commercial, & industrial developments
- Urban drainage, stream banks, and waterways
- Golf course fairways, roughs, waterways, & drop structures
- Landfill caps, side slopes, and let down structures
- Pipeline right-of-ways

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SUGGESTED SPECIFICATIONS

**Curlex Single Net (Curlex I)**

A specific cut of Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length. It shall be of consistent thickness, with fibers evenly distributed throughout the entire area of the blanket. The top of each blanket shall be covered with photodegradable or biodegradable netting. Material shall not contain any weed seed or chemical additives.

**Specifications**

Recommended Use: Slopes to 2:1, Channel to 7 ft/s, shear stress to 1.75 lb/ft<sup>2</sup>  
Roll Sizes: 4' x 112.5' (50 yd<sup>2</sup>), 8' x 112.5' (100 yd<sup>2</sup>), 16' x 112.5' (200 yd<sup>2</sup>)  
Standard Weight\*: .73 lb/yd<sup>2</sup>  
Netting Options: Green, QuickMow White (90 day), FibreNet  
Color: Natural Aspen or QuickGRASS Green



**Curlex Double Net (Curlex II)**

A specific cut of Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length. It shall be of consistent thickness, with fibers evenly distributed throughout the entire area of the blanket. The top and bottom of each blanket shall be covered with photodegradable or biodegradable netting. Material shall not contain any weed seed or chemical additives.

**Specifications**

Recommended Use: Slopes to 1.5:1, Channels to 9 ft/s, shear stress to 2.25 lb/ft<sup>2</sup>  
Roll Sizes: 4' x 112.5' (50 yd<sup>2</sup>), 8' x 112.5' (100 yd<sup>2</sup>), 16' x 112.5' (200 yd<sup>2</sup>)  
Standard Weight\*: .73 lb/yd<sup>2</sup>  
Netting Options: Green, QuickMow White (90 day), FibreNet  
Color: Natural Aspen or QuickGRASS Green



\*Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen Excelsior is 22%.

**Installation**

Before installing Curlex blankets, the seedbed shall be inspected by the Owner's Representative to ensure it has been properly compacted and fine graded to remove any existing rills. It shall be free of obstructions, such as tree roots, projections such as stones, and other foreign objects. Grass seed shall match soil conditions to allow for maximum germination, dense vegetation, and a structural root system. Contractor shall proceed when satisfactory conditions are present. After the area has been properly shaped, seeded, fertilized, and compacted, locate the start of the roll, making sure the roll is facing toward the area to be covered, and then roll out the blanket. Blankets shall be rolled out flat, even, and smooth without stretching the material then anchored to the subgrade.

**Slopes:** It is recommended that the blankets be installed in the same direction as the water flow; however, on short slopes it may be more practical to install horizontally across the width of the application. If more than one width is required, simply abut the edges together and secure the blankets with a common row of biodegradable staples, steel staples, or stakes. Overlapping of Curlex excelsior blankets is not required or recommended. An exception is waterway slopes.

**Channels:** Curlex blankets shall be centered to offset a seam in the middle of the waterway. They shall be installed in the same direction as the water flow. The adjoining blankets shall be installed away from the center of channel and concentrated water flow. They shall be secured by a common row of staples. It is usually not necessary to overlap Curlex blankets; however, a 2" shingle type installation shall be used in waterway slopes applications. Curlex blanket installation should continue up the side slopes 3' above the anticipated high water elevation. Flanks exposed to runoff, or sheet flow, must be protected by a check slot or trenched. Curlex blankets shall be trenched at the start of the channel and anchored using a staggered staple pattern at end of roll overlaps and end of roll terminations.

Disclaimer: Curlex is a system for erosion control and re-vegetation on slopes and channels. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in erosion control and re-vegetation applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantees and assumes no obligation or liability for the reliability or accuracy of information contained herein for the results, safety, or suitability of using Curlex, or for damages occurring in connection with the installation of any erosion control product whether or not made by AEC or its affiliates, except as separately and specifically made in writing by AEC. These specifications are subject to change without notice.



If you would like to receive more information or consult with one of our Customer Care Center Specialists, please call us toll free at (888-352-9582)

PDF download specifications available in the Technical Support Library at [www.curlex.com](http://www.curlex.com)

ASPHALT INC.

LCRA Quarry/Mine Permit  
Hydrogeologic Report

Burnet Quarry  
3221 FM 3509  
Burnet, Texas 78611  
Burnet County

Submitted to: The Lower Colorado River Authority

Prepared By:

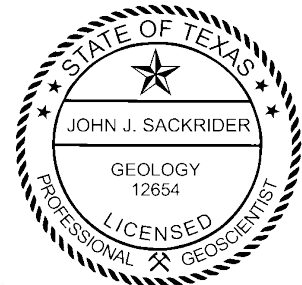


Boerne, Texas  
830-249-8284

Date: Revised March 2025

Project No. 10853-256

-CT/JG/JJS-



Signature: \_\_\_\_\_

John J. Sackrider, PG – License No. 12654

TX PG Firm No. 50112

Date: 3/21/2025

## **1.0 PURPOSE**

Westward Environmental, Inc. (**WESTWARD**) has been retained by Asphalt Inc., LLC (Client) to prepare a Hydrogeologic Report (Report) for their Burnet Quarry (Site) in Burnet County, Texas. This report was prepared as a required attachment to a Lower Colorado River Authority (LCRA) Highland Lakes Watershed Ordinance (HLO) Quarry/Mine Permit Application.

## **2.0 REGULATORY GUIDANCE**

### Lower Colorado River Authority Highland Lakes Watershed Ordinance

This report was prepared in accordance with the LCRA HLO, effective February 1, 2006 and amended January 1, 2022.

## **3.0 PROJECT LOCATION**

The Site is approximately 710 acres located south of FM 3509 and 3.6 miles southwest of the W State HWY 29 intersection in Burnet County, Texas. The Site entrance is located on the south side of FM 3509, at approximately 30.7327366, -98.313530.

## **4.0 METHODOLOGY**

The following sections describe the methods, references, and standards utilized by **WESTWARD** geologists

### **4.1 Aquifer Characteristics & DRASTIC Classification**

Aquifer identification was accomplished through reference of mapped aquifer outcrops and subcrops available through the Texas Water Development Board's (TWDB) Water Data Interactive Groundwater Data Viewer (Viewer), State of Texas Well Reports available through the Texas Department of Licensing and Regulation (TDLR), and regional groundwater information provided through the Central Texas Groundwater Conservation District (CTGCD) website.

DRASTIC Classification was performed in accordance with United States Environmental Protection Agency (EPA) document *DRASTIC: A Standardized System for Evaluating Ground Water Pollution Potential Using Hydrogeologic Settings* (EPA/600/2-87/035). Data utilized in the DRASTIC characterization was collected in the field, and from multiple sources including the TWDB, the U.S. Department of Agriculture (USDA) National Resource Conservation Service (NRCS) Web Soil Survey, the Texas Speleological Survey (TSS), and the U.S. Geological Survey (USGS) National Geospatial Program.

### **4.2 Karst Identification**

**WESTWARD** geologists conducted a review of Google Earth aerial imagery, multispectral imagery available through the Texas Natural Resources Information System (TNRIS), the University of Texas Bureau of Economic Geology Geologic Atlas of Texas (GAT) Llano Sheet, applicable USGS Topographic quadrangle(s), the TWDB Water Data Interactive Groundwater Data Viewer (WDIGDV), and the USDA NRCS Web Soil Survey prior to the field investigation. The purpose of this desktop review was to identify published karst and potentially sensitive recharge features suspected to be on site, and to target high priority areas for further evaluation during the field study.



A field study was performed at the Site by Connor P. Tierney, P.G. (#15607) on August 29, 2024. The field study consisted of a pedestrian survey. The focus of the pedestrian survey was to confirm either the presence or absence of potentially sensitive recharge features identified during the desktop review, and to visually inspect the high priority areas for potentially sensitive recharge features.

#### 4.3 Well & Spring Inventory

The Well & Spring Inventory was performed with ESRI ArcGIS software and publicly available shapefile data downloaded from the TWDB and the USGS National Water Information System: Mapper.

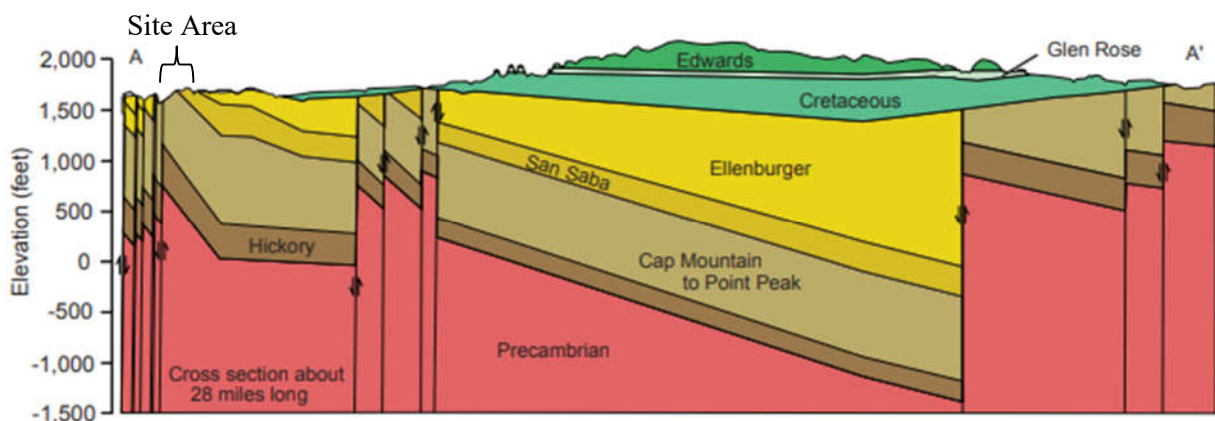
### 5.0 AQUIFER CHARACTERISTICS & DRASTIC CLASSIFICATION

A desktop review was utilized for aquifer identification and DRASTIC classification. The accuracy of the desktop review was limited by the accessibility, scale, and age of the data available.

#### 5.1 The Ellenburger-San Saba Aquifer

The Ellenburger–San Saba Aquifer is a minor aquifer that is found in parts of 15 counties in the Llano Uplift area of Central Texas. It consists of the Tanyard, Gorman, and Honeycut formations of the Ellenburger Group and the San Saba Limestone Member of the Wilberns Formation. The aquifer contains a sequence of limestone and dolomite that crop out in a circular pattern around the Llano Uplift and dip radially into the subsurface away from the center of the uplift to depths of approximately 3,000 feet. Regional block faulting has significantly compartmentalized the aquifer. The maximum thickness of the aquifer is about 2,700 feet. Water is held in fractures, cavities, and solution channels and is commonly under confined conditions. The aquifer is highly permeable in places, as indicated by wells that yield as much as 1,000 gallons per minute and springs that issue from the aquifer, maintaining the base flow of streams in the area (TWDB, 2024a).

#### Generalized Cross Section



*Adapted from unpublished cross section by P. Taybor, 1993, used by Standen and Ruggiero, 2007*

Water produced from the aquifer is inherently hard and usually has less than 1,000 milligrams per liter of total dissolved solids. Fresh to slightly saline water extends downdip



to depths of approximately 3,000 feet. Elevated concentrations of radium and radon also occur in the aquifer (TWDB, 2024a).

Most of the groundwater is used for municipal purposes, and the remainder for irrigation and livestock. A large portion of water flowing from San Saba Springs, which is the water supply for the city of San Saba, is thought to be from the Ellenburger–San Saba and Marble Falls aquifers (TWDB, 2024a).

## **5.2 DRASTIC Classification**

Based on the information below, a DRASTIC Index of 121 was calculated for the Site.

### **Depth to Water Table**

State of Texas Well ID 357005 is located ~ 1,800 feet southwest of the Site. This well was completed to a depth of 200 feet on January 29, 2014, and did not encounter groundwater. The surface of the well is ~ 60 feet below the lowest point on the Site. As a conservative estimate, a depth to groundwater of 250 feet was used.

The total depth of the producing well (#616377) onsite was completed to 740 ft. bgs. The water level was not measured in this well. However, at the time the well was completed, the water level was measured at 340 ft. bgs. A DRASTIC rating of 1 was utilized.

### **Net Recharge**

Based on an Aquifer Assessment performed by the Groundwater Technical Assistance (GTA) Section of the TWDB, net recharge is approximated as 2% of annual precipitation. The GTA reports 2.5 feet (30 inches) of precipitation annually for Burnet County (Bradley, 2009). Therefore, net recharge equated to 0.6 inches per year which correlates with a DRASTIC rating of 1.

### **Aquifer Media**

The Ellenburger Group contains the most extensive karst development in the region (Stafford, 2018). The typical rating of 10 for Karst Limestone was utilized for the aquifer media rating.

### Soil Media

#### **Published Soil Unit Descriptions** (USDA NRCS Web Soil Survey)

<i>Soil Name</i>	<i>Group</i>	<i>Thickness (Inches)</i>	<i>Description</i>	<i>Soil Classification</i>
Eckrant-Rock Outcrop 2 to 20 Percent Slopes	D	4" – 14"	Sand: 42% Silt: 37% Clay: 21% Plasticity Index: 14%	Sand
Hensley Gravelly Loam, 1 to 8 Percent Slopes	D	10" – 20"	Sand: 30% Silt: 31% Clay: 39% Plasticity Index: 27%	Clay
Purves Clay, 1 to 8 Percent Slopes	D	8" – 20"	Sand: 26%	Clay
			Silt: 28%	
			Clay: 46%	
			Plasticity Index: 32%	

According to Seed et al., there is an approximate relationship between the Plasticity Index (PI) and the Inherent Swelling Capacity (ISC) of a unit. Based on the published PI values, these soil units likely possess high to very high ISCs (Seed, 1962) and would be classified as Shrinking and/or Aggregated Clays. However, based on observations of site soil conditions during the field investigation, the soil profile appeared to be less than ten inches thick across a majority of the site. Therefore, site soil media is classified as Thin or Absent which correlates to a DRASTIC rating of 10.

### Topography (Slope)

Site topography is generally characterized by topographic highs to the east and south. Natural drainage is generally to the west/northwest via either unnamed tributaries to Peters Creek or Spring Creek. There is one tributary to Peters Creek on the Site. It is listed on the National Hydrography Dataset as intermittent, meaning it does not exhibit year-round flow. Westward met with representatives of LCRA onsite on September 11, 2024 to observe the tributary and discuss potential buffers. There was no observable bank or ordinary high-water mark. The tributary flows to the west and intersects Peters Creek about one mile downstream of Camp Longhorn. A small portion of the unnamed tributary to Peters Creek appears to have a drainage area of sufficient size to warrant a buffer zone. Please reference the Hydrologic Report and associated plan sheets for additional detail.

An average value of 4.61 percent slope was calculated for the Site using the USGS 3DEP Elevation 2.5-meter resolution dataset and Global Mapper software. This value correlates with a DRASTIC rating of 9.

### Impact of Vadose Zone

The vadose zone is comprised of units similar to the Aquifer Media. The typical rating of 10 for Karst Limestone was utilized.

### Hydraulic Conductivity of the Aquifer

Reported Hydraulic Conductivity values for the Ellenburger-San Saba aquifer range from 0.3 – 132.6 feet per day, with a geometric mean of 4.9 feet per day (TWDB, 2016). This value was converted to 36.6 gallons/day/square foot which correlates with a DRASTIC rating of 1.

### Total

<b><u>DRASTIC</u></b>	<b><u>Multiplier</u></b>	<b><u>Rating</u></b>	<b><u>Total</u></b>
Depth	5	1	5
Recharge	4	1	4
Aquifer	3	10	30
Soil	2	10	20
Topography	1	9	9
Impact	5	10	50
Conductivity	3	1	3
<b>DRASTIC Index</b>			<b>121</b>

## **6.0 KARST IDENTIFICATION**

The field investigation was performed to verify the presence or absence of published data identified during the desktop review and to identify, assess and record any features not previously observed at the site. During the desktop review, several areas were targeted for field investigation. These target areas constituted the primary focus of the field investigation. Other areas of the Site were observed during field reconnaissance and all karst features encountered were recorded. The results of both the desktop review and the field investigation are provided below.

### **6.1 Desktop Review**

A desktop review of publicly available data revealed two water wells, well #164367 and well #616377. The desktop review did not reveal potential karst features or mapped faults at the Site.

### **6.2 Field Investigation**

A field investigation was conducted on August 29, 2024, to observe surface geology, structure, and potential recharge features.

#### Surface Geology

Observation of visible bedrock outcrops suggests the geology of the Site is consistent with the mapped surface geology.

#### Structure

Areas of aligned vegetation identified during the desktop review were observed in the field near drainage areas, however there was insufficient visual evidence to classify a fault.

#### Karst Features

There were no karst features observed during the field investigation.

#### Non-karst & Manmade Features

Five (5) non-karst features were observed and recorded during the field investigation. Of these, two are (2) water wells and three (3) are man-made stock ponds. None of these features are categorized as sensitive.

### **6.3 Feature Descriptions**

The feature descriptions below were compiled from a combination of field observations and State of Texas Well Reports accessed via the TWDB Viewer. Copies of the state well reports and select photographs are included in **Attachment C**. Feature sensitivity rating is based on the document “Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones” published by the TCEQ.

#### **S-1 (MB)**

#### **Not Sensitive**

Feature S-1 is a water well (Tracking #616377) which is categorized as a Manmade Feature in Bedrock. The well was completed to a total depth of 740 ft. bgs with a diameter of 9.875 in. from the surface to the base. The well was completed with a 5 in. diameter PVC casing extending 36 in. above ground level. The well is capped, however there is a 0.25 in. hole in the PVC cap. A 6' x 6' x 6" concrete pad was completed at ground level around the well. The well log made no mention of voids or other open spaces. At the time of completion in August 2022, the static water level was recorded at 360 ft. bgs (TWDB, 2024b). The catchment area is less than 1.6 acres, and the probability of rapid infiltration is low.

#### **S-2 (CD)**

#### **Not Sensitive**

Feature S-2 is a man-made stock pond, which is categorized as a Non-Karst Closed Depression. This feature measures 180 ft. long, 70 ft. wide, and 4 ft. deep. The feature was not holding water at the time of the field investigation. However, some vegetation and mud were observed at the bottom of the feature, indicating the previous presence of water. The catchment area is less than 1.6 acres, and the probability of rapid infiltration is low.

#### **S-3 (MB)**

#### **Not Sensitive**

Feature S-3 is a water well, near the on-site residence, which is categorized as a Manmade Feature in Bedrock. The well was completed to an unknown total depth. The well was completed with a 5 in. diameter PVC casing extending 24 in. above ground level. The well is completed with a metal cover. A water level was not measured at the time of the field investigation. The catchment area is less than 1.6 acres, and the probability of rapid infiltration is low.

#### **S-4 (CD)**

#### **Not Sensitive**

Feature S-4 is a man-made stock pond, which is categorized as a Non-Karst Closed Depression. This feature measures 400 ft. long, 150 ft. wide, and 8 ft. deep. The feature was holding water at the time of the field investigation. The catchment area is greater than 1.6 acres, and the probability of rapid infiltration is low.

### S-5 (CD)

### Not Sensitive

Feature S-5 is a man-made stock pond, which is categorized as a Non-Karst Closed Depression. This Feature was 150 ft. long, 90 ft. wide, and 5 ft. deep. The feature was not holding water at the time of the field investigation. However, some vegetation and mud were observed at the bottom of the feature, indicating the previous presence of water. The catchment area is less than 1.6 acres, and the probability of rapid infiltration is low.

## 7.0 WELL & SPRING INVENTORY

The Well & Spring Inventory was performed using ESRI ArcGIS software and publicly available data sources. Two water well databases were utilized, the TWDB database, and the Texas Submitted Drillers Report (SDR) database. Both were accessed and downloaded via the TWDB website through the Groundwater Data page (TWDB, 2024c). Water wells located within one mile of the Site were extracted and categorized according to their corresponding origin database. A total of 52 wells were identified within one mile of the site. A Well & Spring Inventory Map and summary table is included in **Appendix C**. The breakdown of recorded well uses are summarized in the table below.

**Recorded Well Use Summary  
Table**

Domestic	44
Irrigation or Stock	2
Monitor or Test	1
Spring	1
Unknown/Not Provided	2
Public Supply	1
Recreation	1
<b>Total</b>	<b>52</b>

Well 164367 is mapped onsite, however the well address is for a location north of FM 3509. No evidence of this well was observed during the field investigation.

Spring data was accessed and downloaded via the USGS National Water Information System: Mapper (USGS, 2024). Other than the spring reference above, no additional springs were mapped within one mile of the site.

## 8.0 Discussion

State of Texas Well ID 357005 is located ~ 1,800 feet southwest of the site. This well was completed to a depth of 200 feet on January 29, 2014, and did not encounter groundwater. The surface of the well is ~ 60 feet below the lowest point on the site. As a conservative estimate, a depth to groundwater of 250 feet was assumed.

Given the absence of sensitive karst features at the Site and significant depth to groundwater, quarrying activities likely will not impact groundwater quality. A groundwater monitoring plan is not proposed.

## 9.0 References

- (Bradley, 2009) Bradley, R. G., Texas Water Development Board – Groundwater Technical Assistance Section: GTA Aquifer Assessment 08-03mag.  
[http://www.twdb.texas.gov/groundwater/docs/AA/AA08-03\\_MAG.pdf](http://www.twdb.texas.gov/groundwater/docs/AA/AA08-03_MAG.pdf)
- (EPA, 1987) Environmental Protection Agency, DRASTIC: A Standardized System for Evaluating Ground Water Pollution Potential Using Hydrogeologic Settings. EPA/600/2-87/035.
- (Seed, 1962) Seed, H.B., Woodward, R.J., and Lundgren, R. (1962), Prediction of swelling potential for compacted clays, Journal of Soil Mechanics and Foundation Division ASCE, Vol. 88 (SM3), pp. 53–87.
- (Stafford, 2018) Stafford, K. W. and Veni, G., 2018. *Hypogene Karst of Texas*: TSS Monograph 3: Karst of the Paleozoic Aquifer System: Llano Region, Texas Pg 99-110.
- (TWDB, 2016) Texas Water Development Board. November 4, 2016. Minor Aquifers of the Llano Uplift Region of Texas (Marble Falls, Ellenburger-San Saba, and Hickory)  
[http://www.twdb.texas.gov/groundwater/models/gam/llano/Llano\\_Uplift\\_Numerical\\_Model\\_Report\\_Final.pdf](http://www.twdb.texas.gov/groundwater/models/gam/llano/Llano_Uplift_Numerical_Model_Report_Final.pdf)
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Accessed: August 30, 2024  
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- (TWDB, 2024b) Texas Water Development Board. Water Data for Texas: State Well Number 41724  
Accessed: August 30, 2024  
<https://www3.twdb.texas.gov/apps/waterdatainteractive//GetReports.aspx?Num=41724&Type=SDR-Well>
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<http://www.twdb.texas.gov/groundwater/data/index.asp>
- (USGS, 2024) U.S. Geological Survey. National Water Information System: Mapper. Springs  
Accessed: September 2024  
<https://maps.waterdata.usgs.gov/mapper/?state=tx>



**Attachment A**

**Karst Identification Table**



## **Attachment B**

### **Site Geologic Map Site Soils Map**



Legend

Approximate Property Boundary

Identified Features

Published Geology (GDT\*)

Cpw - Wilberns Formation showing Point Peak, Morgan Creek Limestone, and Welge Sandstone Members, undivided

Cs - Wilberns Formation showing San Saba Member

\* *Geologic Database of Texas*

N

05001,000

Feet

001

OF 003

SHEET NO.:

IMAGE: ESRI WORLD IMAGERY

ISSUE DATE:10/18/2024

DRAWN BY:CPT/JG

CHECKED BY:JJS

SCALE: 1" =1,000'

JOB NO.:10853-256

SITE GEOLOGIC MAP

BURNET QUARRY ASPHALT INC., LLC  
BURNET, BURNET COUNTY, TEXAS

REV.

DESCRIPTION

BY

DATE

STATE OF TEXAS

JOHN J. SACKRIDER

GEOLOGY  
12654

PROFESSIONAL GEOSCIENTIST

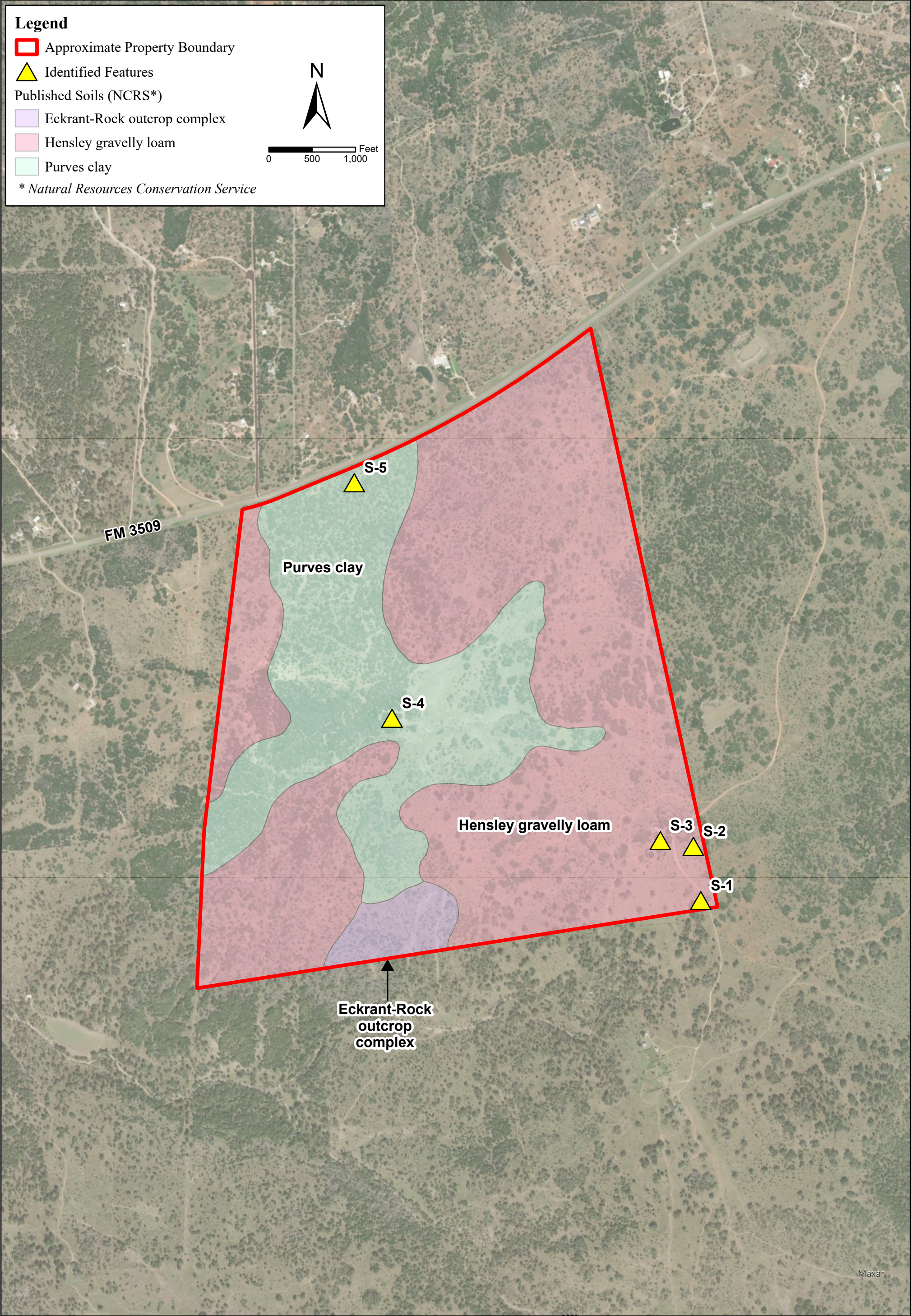
11/1/2024

WESTWARD

Environmental. Engineering. Natural Resources.

P.O. Box 2205, Boerne, Texas 78006  
(830) 249-8284 Fax: (830) 249-0221  
TBPE REG. NO.: F-4524  
TBPG REG. NO.: 50112





002

OF 003

SHEET NO.:

IMAGE: ESRI WORLD IMAGERY	
ISSUE DATE:	10/18/2024
DRAWN BY:	CPT/JG
CHECKED BY:	JJS
SCALE: 1" =	1,000'
JOB NO.:	10853-256

SITE SOILS MAP

BURNET QUARRY ASPHALT INC., LLC

BURNET, BURNET COUNTY, TEXAS

REV.	DESCRIPTION	BY	DATE

STATE OF TEXAS

JOHN J. SACKRIDER

GEOLOGY

12654

LICENSED PROFESSIONAL GEOSCIENTIST

11/1/2024

WESTWARD

Environmental. Engineering. Natural Resources.

P.O. Box 2205, Boerne, Texas 78006

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TBPE REG. NO.: F-4524

TBPG REG. NO.: 50112



## **Attachment C**

### **Karst Survey Select Photographs State of Texas Well Reports**

## **Karst Survey: Select Photographs**

### **Feature S-1**



**S-1: Water Well (Capped)**



**S-1: Well Pad**

### **Feature S-2**



**S-2: Stock Pond**



**S-2: Dry Bottom with Mud**

### **Feature S-3**



**S-3: Water Well**



**S-3: Water Well with Cover**



**Feature S-4**



**S-4: Stock Pond**



**S-4: Water in Stock Pond**

**Feature S-5**



**S-5: Stock Pond**



**S-5: Stock Pond with Dry Bottom**

## STATE OF TEXAS WELL REPORT for Tracking #616377

Owner:	HVPR4, LLC	Owner Well #:	Well #4 & CTGCD#8840
Address:	13240 Pond Springs Rd Austin, TX 78729	Grid #:	57-22-2
Well Location:	3221 FM 3509 Burnet, TX 78611	Latitude:	30° 42' 57.4" N
Well County:	Burnet	Longitude:	098° 18' 27.1" W
Number of Wells Drilled:	4	Elevation:	1425 ft. above sea level

Type of Work: **New Well**

Proposed Use: **Domestic**

Drilling Start Date: **8/12/2022**

Drilling End Date: **8/16/2022**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>9.875</b>	<b>0</b>	<b>740</b>

Drilling Method: **Air Rotary**

Borehole Completion: **Filter Packed**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Filter Material</i>	<i>Size</i>
Filter Pack Intervals:	<b>360</b>	<b>740</b>	<b>Gravel</b>	<b>3/8 (pea)</b>

Annular Seal Data: **No Data**

Seal Method: **Poured**

Sealed By: **Driller**

Distance to Property Line (ft.): **50+**

Distance to Septic Field or other  
concentrated contamination (ft.): **150+**

Distance to Septic Tank (ft.): **150+**

Method of Verification: **Google Maps**

Surface Completion: **Surface Sleeve Installed**

**Surface Completion by Driller**

Water Level: **340 ft. below land surface on 2022-08-16** Measurement Method: **Logging Sonde**

Packers: **Rubber at 10 ft.**

Type of Pump: **Unknown**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
460 - 560	Fresh

Chemical Analysis Made: **No**Did the driller knowingly penetrate any strata which  
contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Underground Water Resources, LLC****PO Box 429  
Devine, TX 78016**Driller Name: **Michael A Mello**License Number: **59591**Apprentice Name: **Wesley S Bolin**Apprentice Number: **60504**Comments: **No Data**

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	3	Top Soil
3	44	White Rock
44	64	Brown Rock
64	124	Grey Rock
124	164	Grey Rock / Clay
164	320	Grey / White Rock
320	340	Red Rock
340	380	Green / Red / White Rock
380	400	Black Rock
400	520	Green / White Rock
520	540	Red / Grey Rock
540	600	Grey /White /Tan Rock
600	700	Red / Grey Rock
700	740	Dark Green / Grey Rock

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
5	Blank	New Plastic (PVC)	SDR 17	0	460
5	Screen	New Plastic (PVC)	SDR 17 0.035	460	640
5	Blank	New Plastic (PVC)	SDR 17	640	740

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation**  
**P.O. Box 12157**  
**Austin, TX 78711**  
**(512) 334-5540**



## STATE OF TEXAS WELL REPORT for Tracking #357005

Owner: **Robert Manning**

Owner Well #: **2**

Address: **1000 Indian Springs Rd  
Burnet, TX 78611**

Grid #: **57-22-2**

Well Location: **1000 Indian Springs Rd  
Burnet, TX 78611**

Latitude: **30° 42' 43" N**

Longitude: **098° 19' 53" W**

Well County: **Burnet**

Elevation: **No Data**

Type of Work: **New Well**

Proposed Use: **Domestic**

Drilling Start Date: **1/29/2014**

Drilling End Date: **1/29/2014**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	<b>8</b>	<b>0</b>	<b>20</b>
	<b>6.25</b>	<b>20</b>	<b>200</b>

Drilling Method: **Air Hammer**

Borehole Completion: **N/A**

Annular Seal Data: **No Data**

Seal Method: **Not Applicable**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other  
concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Unknown**

Water Level: **No Data**

Packers: **N/A**

Type of Pump: **No Data**

Well Tests: **Unknown**      **Yield: 0 GPM**

---

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
<b>N/A</b>	<b>San Saba</b>

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which  
contained injurious constituents?: **No**

---

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **APEX Drilling Inc.**  
**P O Box 867**  
**Marble Falls, TX 78611**

Driller Name: **Andrew Jackson Johnson** License Number: **54989**

Comments: **No Data**

---

Lithology:  
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:  
BLANK PIPE & WELL SCREEN DATA

<i>From (ft)</i>	<i>To (ft)</i>	<i>Description</i>
<b>000-001</b>		<b>Gravel</b>
<b>001-003</b>		<b>Black Dirt</b>
<b>003-007</b>		<b>Broken Green Limestone</b>
<b>007-145</b>		<b>Gray Green Limestone w / Clay</b>
<b>145-151</b>		<b>Red Limestone</b>
<b>151-200</b>		<b>Gray Green Tan Limestone</b>
<b>DRY</b>		
<b>Backfilled 2 Cement Plug</b>		

<i>Dia. (in.)</i>	<i>New/Used</i>	<i>Type</i>	<i>Setting From/To (ft.)</i>
<b>N/A</b>			

---

**IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY**

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation**  
**P.O. Box 12157**  
**Austin, TX 78711**  
**(512) 334-5540**



## **Attachment D**

### **Well & Spring Inventory: Map Well & Spring Inventory: Summary Table**



Legend

Approximate Property Boundary

1 Mile Offset

Submitted Driller's Reports Database

Observed Well

Spring

Texas Water Development Board Database

N

01,0002,0004,000Feet

Note: There are no mapped springs located within 1 mile of this Site.

003

SHEET NO.:  
OF 003

IMAGE: ESRI WORLD IMAGERY

ISSUE DATE:	10/17/2024
DRAWN BY:	CPT/JG
CHECKED BY:	JJS
SCALE: 1" =	2,000'
JOB NO.:	10853-256

WELL & SPRING INVENTORY MAP

BURNET QUARRY  
ASPHALT INC., LLC  
BURNET, BURNET COUNTY, TEXAS

REV.	DESCRIPTION	BY	DATE

STATE OF TEXAS

JOHN J. SACKRIDER

GEOLOGY 12654

PROFESSIONAL GEOSCIENTIST

11/1/2024

WESTWARD

Environmental. Engineering. Natural Resources.

P.O. Box 2205, Boerne, Texas 78006  
(830) 249-8284 Fax: (830) 249-0221  
TBPE REG. NO.: F-4524  
TBPGE REG. NO.: 50112



**SDRDB & TWDB WELL DATA - WATER WELLS WITHIN 1 MILE OF BURNET QUARRY**

<u>WELL ID #</u>	<u>WELL TYPE</u>	<u>PROPOSED USE</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>DEPTH</u>	<u>INJURIOUS WATER</u>	<u>PLUGGING REPORT</u>
2424	New Well	Domestic	30.733055	-98.323889	500	no	No Data
41724	New Well	Domestic	30.712778	-98.315556	100	no	No Data
42289	New Well	Domestic	30.742222	-98.308612	558	no	No Data
107366	New Well	Domestic	30.741945	-98.303612	480	no	No Data
112847	New Well	Domestic	30.73000	-98.321111	365	no	No Data
161574	New Well	Test Well	30.727222	-98.336667	205	no	No Data
164367	New Well	Domestic	30.726111	-98.323611	365	no	No Data
221074	New Well	Domestic	30.723889	-98.336111	400	No Data	No Data
221076	New Well	Domestic	30.724444	-98.339167	220	No Data	No Data
228488	New Well	Domestic	30.737222	-98.311389	525	no	No Data
229427	New Well	Domestic	30.725555	-98.337500	160	no	No Data
233302	New Well	Domestic	30.740278	-98.298889	220	no	No Data
243623	New Well	Domestic	30.735556	-98.298611	500	no	No Data
280615	New Well	Domestic	30.738334	-98.320833	600	no	No Data
318859	New Well	Domestic	30.741945	-98.300278	160	no	No Data
350458	New Well	Domestic	30.71250	-98.331389	300	no	No Data
357005	New Well	Domestic	30.711945	-98.331389	200	no	No Data
378657	New Well	Domestic	30.723333	-98.329722	300	no	No Data
379674	New Well	Domestic	30.73000	-98.333055	400	no	No Data
380484	New Well	Domestic	30.729722	-98.336667	340	no	No Data
380500	New Well	Domestic	30.729167	-98.335000	500	no	No Data
384010	New Well	Domestic	30.733334	-98.324722	340	No Data	No Data
384013	New Well	Domestic	30.731944	-98.326389	440	no	No Data
423987	New Well	Domestic	30.725833	-98.326667	420	no	No Data
426233	New Well	Domestic	30.728611	-98.331667	440	no	No Data
462274	New Well	Domestic	30.739722	-98.308056	600	no	No Data
464029	New Well	Domestic	30.741389	-98.302222	140	no	No Data
464031	New Well	Domestic	30.741111	-98.302222	170	no	No Data
538331	New Well	Domestic	30.738333	-98.306667	660	no	No Data
548605	Unknown	Unknown	30.731944	-98.319722	480	no	No Data
573592	New Well	Domestic	30.731989	-98.308095	726	no	No Data
573594	New Well	Domestic	30.714467	-98.306844	736	no	No Data
579563	New Well	Domestic	30.7316	-98.326917	150	no	No Data
579564	New Well	Domestic	30.73255	-98.326683	150	no	No Data
579565	New Well	Domestic	30.736333	-98.325683	300	no	No Data
616377	New Well	Domestic	30.715944	-98.307528	740	no	No Data
616376	New Well	Domestic	30.714472	-98.307194	740	no	No Data
621641	New Well	Domestic	30.733762	-98.327091	440	no	No Data
621752	New Well	Domestic	30.73606	-98.29778	570	no	No Data
623122	New Well	Domestic	30.730436	-98.319979	380	no	No Data
680227	New Well	Domestic	30.731785	-98.327211	110	no	No Data
5722102	Withdrawal of Water	Recreation	30.713612	-98.340278	183	No Data	No Data
5722103	Withdrawal of Water	Public Supply	30.715833	-98.340000	185	No Data	No Data
5722106	Withdrawal of Water	No Data	30.728611	-98.334722	450	No Data	No Data
5722201	Withdrawal of Water	Domestic	30.73250	-98.316944	350	No Data	No Data
5722202	Spring	Unused	30.712778	-98.310001	0	No Data	No Data
5722203	Withdrawal of Water	Stock	30.734167	-98.310834	240	No Data	No Data
5722204	Withdrawal of Water	Domestic	30.737222	-98.308612	65	No Data	No Data
5722205	Withdrawal of Water	Stock	30.736111	-98.312223	300	No Data	No Data
5722206	Withdrawal of Water	Domestic	30.711945	-98.310834	100	No Data	No Data
5722207	Withdrawal of Water	Domestic	30.709445	-98.309445	650	No Data	No Data
Observed Well	No Data	Domestic	30.717828	-98.3088197	No Data	No Data	No Data

## **BMP Maintenance Plan**

### **Types of BMPs to be Maintained on this site:**

- Natural Vegetative Filter Strips
- Water Quality Pits
- Silt Fence
- Check Dams

### **LCRA Access:**

LCRA inspectors or their designees may enter the site for the purpose of inspecting site BMPs.

### **General Guidelines**

The ability and the commitment to maintain stormwater BMPs are necessary for the proper operation of these facilities. Maintainability and facility access are particularly important issues for a BMP installed below grade.

#### Accessibility

According to many maintenance personnel, the biggest problem they encounter is not the amount or frequency of maintenance they must perform, but the difficulties they have in simply reaching the location of the required maintenance work. In order for proper maintenance to be performed, the various components of the stormwater system and, indeed, the facility itself, must be accessible to both maintenance personnel and their equipment and materials.

Legal barriers such as lack of access rights or inadequate maintenance easements can stop the best maintenance efforts before they can even get started. This is especially pertinent to project reviewers, who normally have the authority to require such legal aspects of the project.

#### Durability

The use of strong, durable, and non-corroding materials, components, and fasteners can greatly expedite facility maintenance efforts. These include strong, lightweight metals such as aluminum for trash racks, orifice and weir plates, and access hatches; reinforced concrete for outlet structures and inlet headwalls; hardy, disease resistant vegetation for bottoms, side slopes, and perimeters; and durable rock for gabions and riprap linings.

### **BMP Maintenance Requirements**

#### Detailed Inspections

Detailed BMP inspections should occur at least twice annually. At least one of these inspections should be during or immediately following a runoff producing event. Detailed inspections should



be performed by an engineer or other stormwater treatment professional. Any deficiencies identified during an inspection should be repaired as soon as practical.

Maintenance operations may be required as a result of deficiencies identified during a site inspection. However, general site maintenance, as described below should be performed on a regular basis, regardless of the timing of more detailed inspections. Site maintenance should be performed as required to maintain site aesthetics, vegetation, BMP access, and debris removal. At a minimum, site maintenance should be performed twice annually.

#### General Site Maintenance

General site maintenance, as described below, should be performed on a regular basis, regardless of the timing of more detailed inspections. Site maintenance should be performed as required to maintain site aesthetics, vegetation, BMP access, and debris removal. At a minimum, site maintenance should be performed twice annually.

- (1) Identify, replant, and restore eroded areas. Add a level spreader, energy dissipation, or other repairs as required to ensure that erosion is not repeated.
- (2) Identify areas that do not have acceptable vegetated covers (80% or higher for most BMPs). Reseed, add soil, and irrigate as required to ensure that coverage requirements are met.
- (3) Mow sites twice annually and as required to keep grass height under 18 inches. Additional mowing may be performed for site aesthetics. Export clippings from site to prevent release of nutrients from decaying plant matter. Remove any woody growth, especially from embankments, berms, and swales. For swales, grass should not be regularly mowed below four inches.
- (4) Use non-chemical methods for maintaining health of vegetation. Pesticides, herbicides, or fertilizers should only be used as a last option, and then as minimally as possible. Fertilizer should rarely be required because runoff will typically contain sufficient nutrient loads.
- (5) Irrigation may be required in order to maintain acceptable levels of vegetated coverage, especially for engineered vegetated strips.
- (6) Never deposit grass clippings, brush, or other debris in BMPs or buffers.
- (7) Prevent over-compaction of BMP components that rely partially or wholly on infiltration (vegetation strips, bio-retention, and other basins). Mowing and other maintenance should be performed with hand equipment or a light-weight lawn tractor.
- (8) Remove any built-up sediment and debris, especially along uphill edges, berms, swales, and level spreaders; and around BMP inlets and outlets.
- (9) Identify any other problems. A detailed inspection may be required.

#### **Natural Vegetative filter Strips**

No portion of the filter area will be greater than a 10% slope. The vegetated density must be greater than 80% with no large bare areas. The filter area should be densely vegetated with a mix of

erosion-resistant plant species that effectively bind the soil. Native or adapted Grasses are appropriate because they require less fertilizer and are more drought resistant than exotic plants.”

## **Water Quality Pits**

### Maintenance Schedule

Each of the pit BMPs onsite provides greater than 3 feet of freeboard. Sediment shall be removed from the pits once 3 feet of sediment is accumulated. All sediment shall be used onsite or disposed of in accordance with applicable regulations.

### Pit Dewatering

All dewatering associated with the mining pit will conform to standards and instructions from the TXR05 stormwater plan and Central Texas Groundwater Conservations District Quarry Permit associated with this site.

### Sediment Disposal

Stormwater pollutants include a variety of substances that are deposited on pervious and impervious surfaces and then transported by the next rainfall. Consequently, a variety of contaminants that may be classified as hazardous or toxic may enter stormwater management systems. These contaminants include heavy metals, petroleum hydrocarbons, pesticides, and a variety of organic chemicals. Consequently, several federal and state laws and regulations may apply to the disposal of sediments which accumulate in stormwater systems. Maintenance of BMPs frequently requires disposal of accumulated sediment and other material. In high concentrations, these materials may be classified as special wastes when disposed of in municipal landfills.

## **Silt Fence**

Inspect all fencing weekly, and after any rainfall in excess of 0.5 inch or more.

- Remove sediment when buildup reaches 6 inches.
- Replace any torn fabric.
- Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
- When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

## **BMP Maintenance Permit**

Once a project containing permanent BMPs is completed, the project owner must complete a BMP Maintenance Permit Application per Appendix 1.7.1 of the HLWO Technical Manual following the submittal requirements in Appendix 1.7. Also, the party responsible for BMP maintenance



should use the checklists found in Appendix 1.7.2 and 1.7.3 to guide their inspections and maintenance activities.

### **Check Dams**

Inspect check dams weekly and after each rain event (of 0.5 inch or more) to locate and repair any damage.

- Remove accumulated sediment when it reaches one half of the original height of the check dam. Dispose of sediment in a manner that will not cause additional siltation.
- When construction is complete, properly dispose of any sediment buildup and restore the prior location of the check dam.

### **Dewatering**

Although dewatering is not anticipated from the Water Quality Pits, if it became necessary to remove captured stormwater it should be used onsite for dust control allowed to evaporate and infiltrate. In the event that a discharge offsite is necessary, water quality sampling will be performed to ensure the discharge meets the TCEQ/EPA requirements for discharge of mine dewatering. Filter bags will be utilized if necessary to prevent discharge of TSS above any regulatory discharge limitations.

### **Gorman Pits**

The Gorman Pits are part of a closed loop system. Water from the pits will be recirculated to the wash plant and any sediment removed and not stockpiled for use or sale offsite will be placed in the main quarry pit.

### **Wheel Wash**

A wheel wash will be used for trucks leaving the facility. Water from the wheel wash will be recirculated and any sediment removed and not stockpiled for use or sale offsite will be placed in the main quarry pit. Maintenance shall be in accordance with the manufacturer's recommended procedures.

**BMP Maintenance Plan**

I, \_\_\_\_\_, have read and understand the BMP Maintenance Plan contained in this Development Permit Application.

I understand the specific Permanent Best Management Practices and associated inspection and maintenance schedules which are outlined in this plan. Asphalt Inc., LLC, will implement these inspections and perform maintenance as required to meet the intent of the plan.

The PERMITTEE or SUBSEQUENT PERMITTEE shall bear all expenses for the operation and maintenance of these permanent Best Management Practices (BMP) including but not limited to all general maintenance activities needed to keep this system in proper operation condition. If this system is abused or not maintained, then it may contribute to malfunction of the storm water system. All designated BMP areas shall remain free of construction, development, and encroachments.

You as the PERMITTEE of this property have a responsibility to provide any SUBSEQUENT PERMITTEE or your real estate agent with a copy of this Best Management Practices (BMP) Maintenance Plan if this facility is sold so that the BMPs can be properly maintained and operated. The same rights, duties, and responsibilities borne by the current PERMITTEE shall be borne by each subsequent PERMITTEE.

An amended copy of this document will be provided to the LCRA within thirty (30) days of any changes in the following information:

Responsible Party for Maintenance: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

**(Signature Page Immediately Follows)**



**Name and signature of responsible party for maintenance of BMPs**

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Asphalt Inc., LLC

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Asphalt Inc., LLC  
11675 Jollyville Road, Suite 150  
Austin, TX 78759

**Name and signature of Engineer**

Print Name: \_\_\_\_\_  
Westward Environmental, Inc.

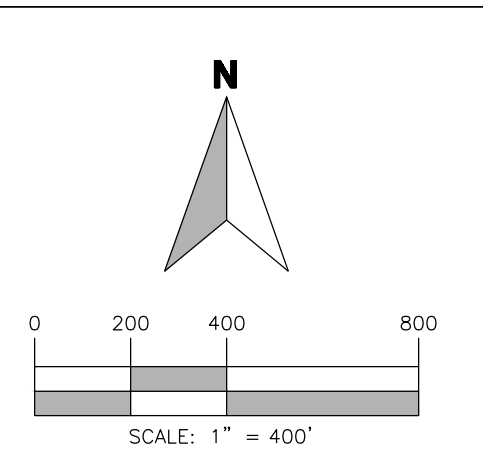
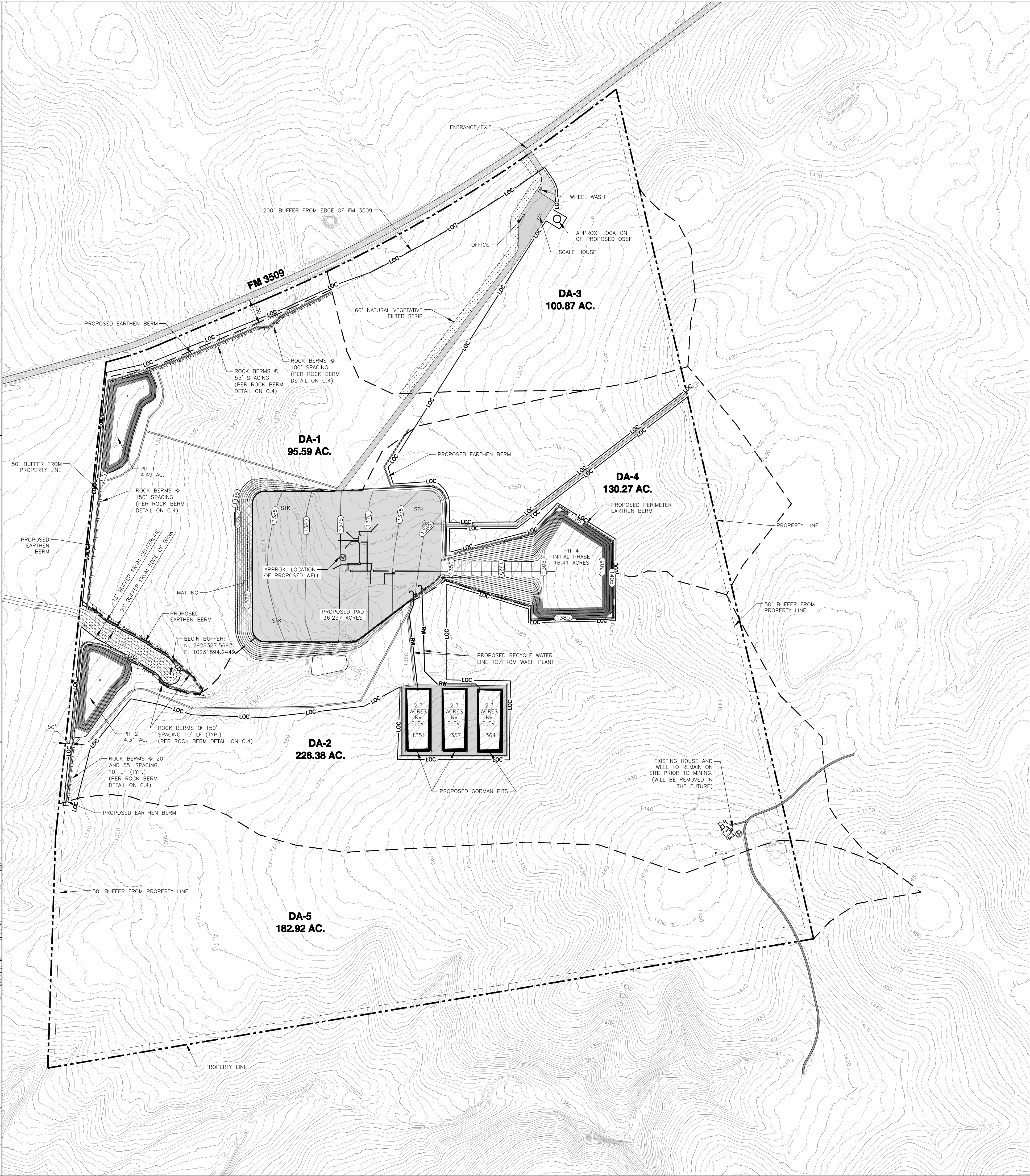
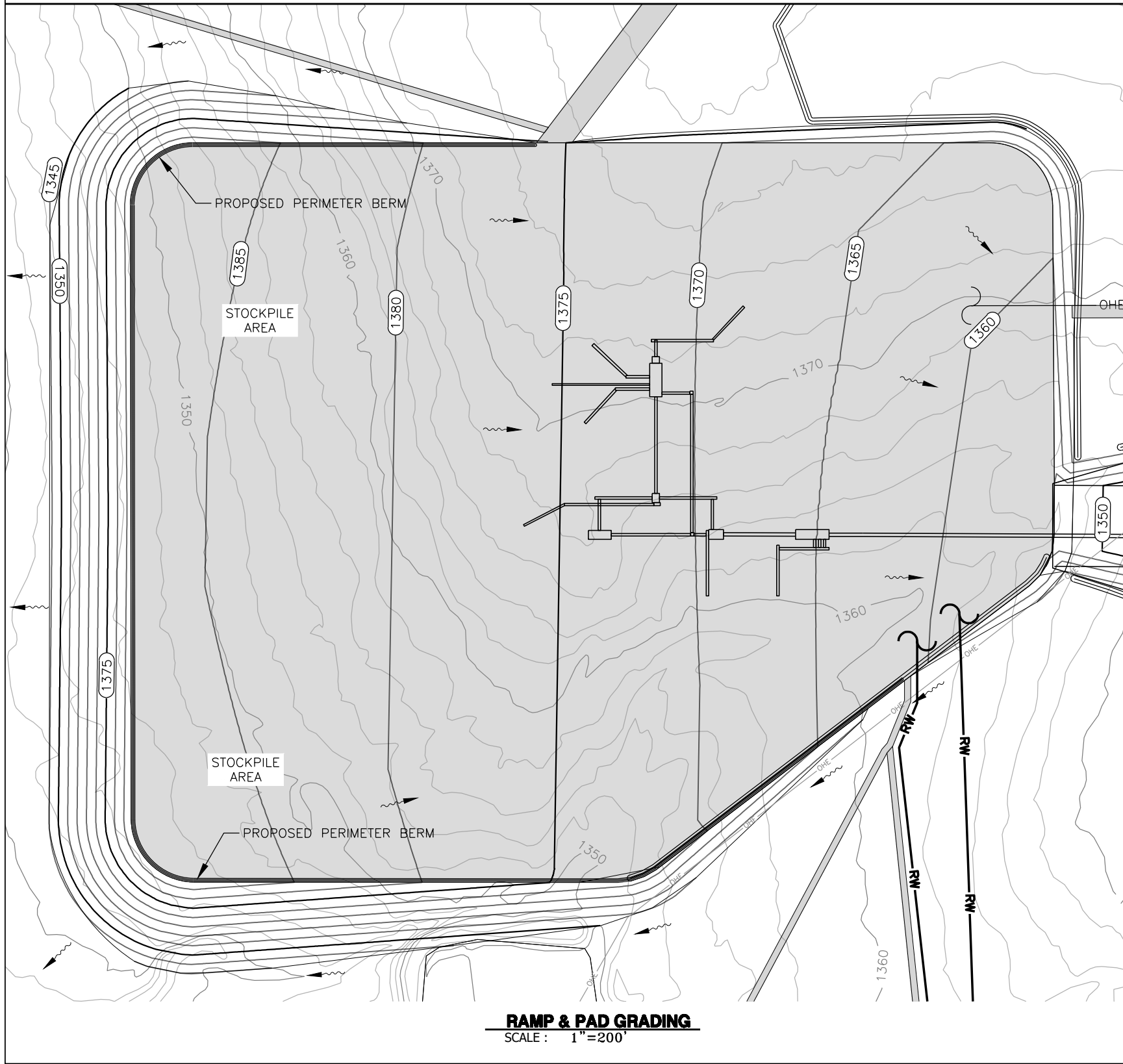
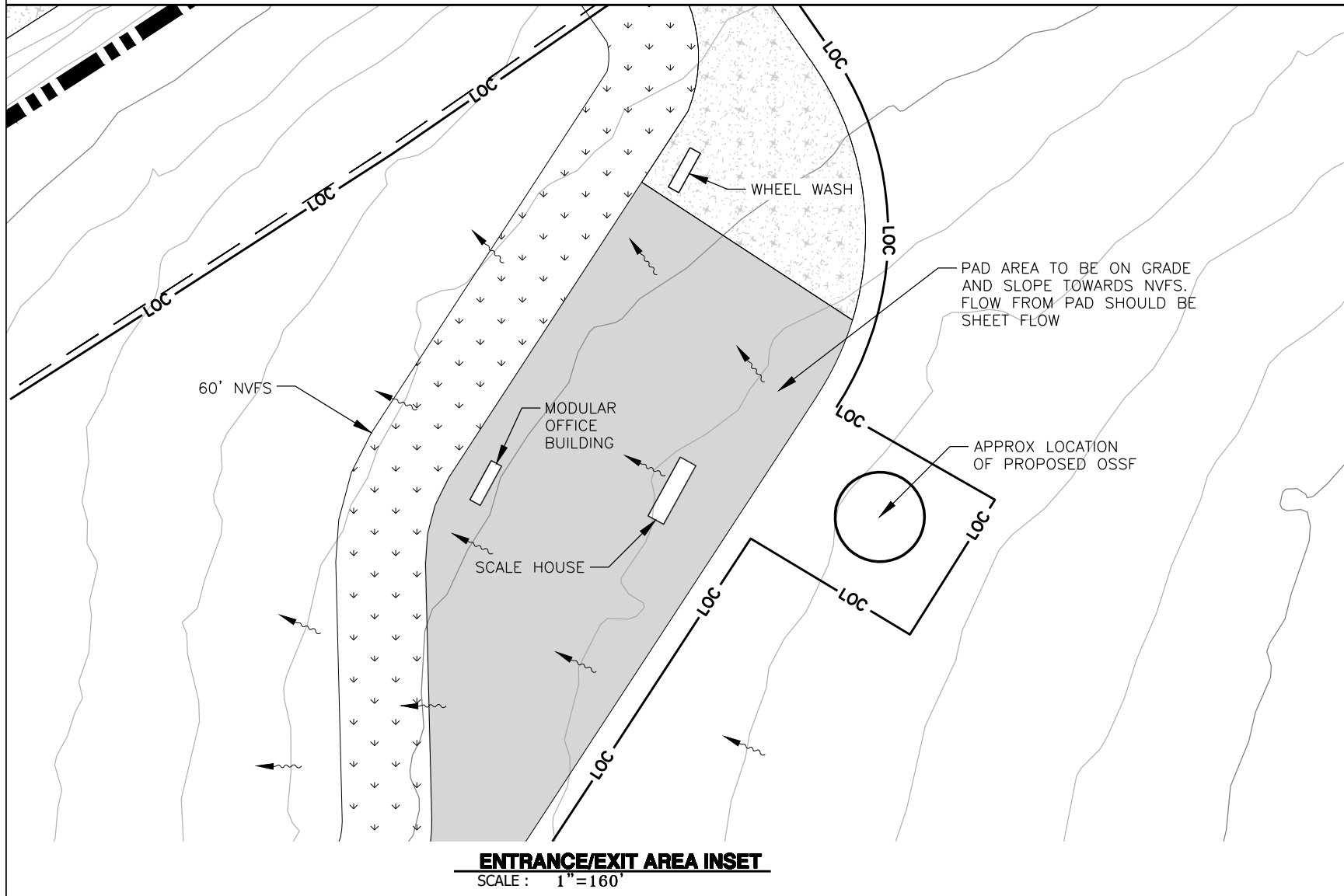
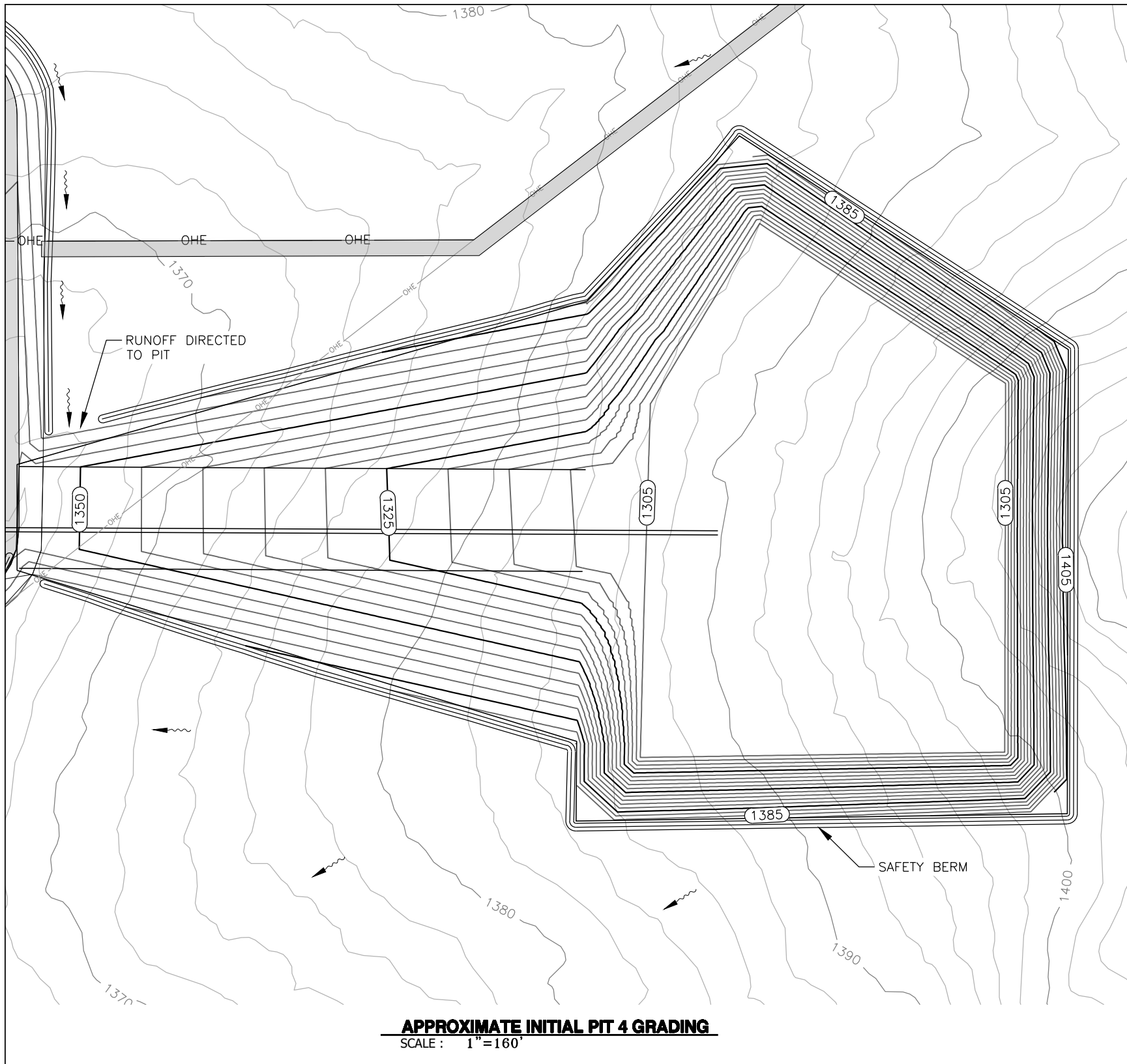
Signature \_\_\_\_\_ Date: \_\_\_\_\_

Westward Environmental, Inc.  
4 Shooting Club Rd.  
Boerne, TX 78006  
Phone: 830-249-8284  
Fax: 830-249-0221









- LEGEND**
- PROPERTY LINE
  - - - EXISTING FENCELINE
  - - - EXISTING MAJOR CONTOUR
  - - - EXISTING MINOR CONTOUR
  - - - PROPOSED MAJOR CONTOUR
  - - - PROPOSED MINOR CONTOUR
  - - - DRAINAGE AREAS
  - - - LIMITS OF CONSTRUCTION
  - - - SILT FENCE
  - - - BERM (TOP & TOE OF SLOPE)
  - - - STOCKPILE
  - - - WATER WELL
  - - - FLOW ARROW
  - - - ASPHALT AREA
  - - - BASE AREA
  - - - VEGETATIVE FILTER STRIP

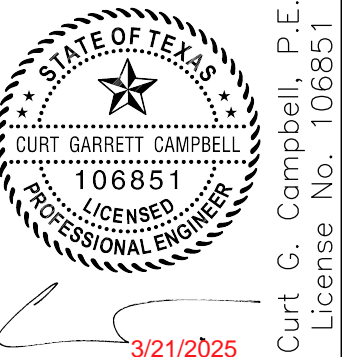
- NOTES**
1. BUFFER ZONES SHALL REMAIN UNDISTURBED OTHER THAN THE IMPROVEMENTS SHOWN ON THESE PLANS. ENCROACHMENT INTO A BUFFER ZONE OR DAMAGE TO BUFFER ZONE AREA WILL BE CONSIDERED A PRIORITY VIOLATION AND WILL RESULT IN A STOP WORK ORDER AND POSSIBLE FINES.
  2. DUST CONTROL WILL BE PROVIDED PER TCEQ SWP3 AND AIR PERMIT.
- NOTE:**
- NO EXCAVATION IS PROPOSED IN THE 50' BUFFER FROM THE PROPERTY LINE OR THE 200' BUFFER FROM FM 3509.
  - 50' PROPERTY LINE SETBACK DUE TO TEXAS PIT SAFETY RULES FOR SLOPE STABILITY.
  - NORTH PROPERTY LINE SETBACK (200' MEASURED FROM EDGE OF PAVEMENT) IS DUE TO TxDOT PIT SAFETY RULE FOR QUARRIES ALONG PUBLIC ROADWAYS.
  - ACTUAL PIT SLOPE WILL VARY AND WILL BE BASED ON HIGH WALL STABILITY OF IN PLACE MATERIAL.

IMAGE:	N/A
ISSUE DATE:	3/21/2025
DRAWN BY:	JPW
CHECKED BY:	CCG
SCALE:	1" = 400'
JOB NO.:	10853-256

SHEET NO.:  
**C.2**  
OF C.5

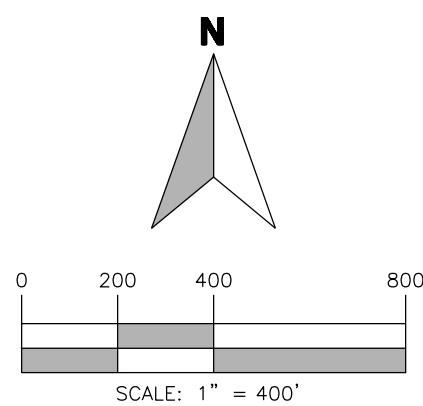
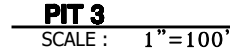
**WESTWARD**  
Environmental Engineering, Natural Resources,  
P.O. Box 2205 Boerne, Texas 78006  
(830) 249-8284 Fax: (830) 249-0221  
TBP REG. NO.: F-4524  
TBP REG. NO.: 50112

REV	DESCRIPTION	DATE	BY

















**INITIAL CONDITIONS**  
LCRA PERMITTING – BURNET QUARRY  
ASPHALT INC.  
3221 FM 3509, BURNET, TX 78611





- LEGEND**

	PROPERTY LINE
	EXISTING FENCELINE
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	DRAINAGE AREAS
	LIMITS OF CONSTRUCTION
	SILT FENCE
	BANK (TOP & TOE OF SLOPE)
	STORM PUMP
	WATER WELL
	ASPHALT AREA
	BASE AREA

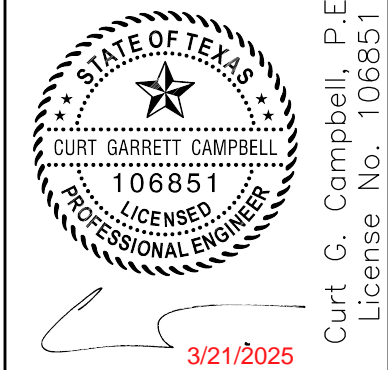
- NOTES:
1. PROPOSED RETENTION PIT IS NOT NECESSARY AT THIS POINT OF CONSTRUCTION.
  2. VEGETATIVE FILTER STRIP WILL BE SUFFICIENT FOR PREVENTING EROSION OF THE 20' MAIN SLOPE OF ROAD OR THROUGH THEIR RESPECTIVE DRAINAGE AREAS.
  3. NINE PERCENT SLOPE SETBACK (200' MEASURED FROM EDGE OF PAVEMENT) IS DUE TO TXDOT PIT SAFETY RULE FOR QUARRIES ALONG HIGHWAY.
  4. BERM IS ONLY NECESSARY ALONG EDGE OF "PIT" AT OR WITHIN 200' OF THE ROADWAY.
  5. 50' PROPERTY LINE SETBACK IS DUE TO TEXAS PIT SAFETY RULES FOR SLOPE STABILITY.
  6. PAD DESIGNED TO DRAIN BACK TO MAIN PIT DRAINAGE.
  7. WHILE IN EARLY DEVELOPMENT PAD WILL DRAIN TO NEARBY DRAINAGE AND FLOW INTO MAIN RETENTION PIT 2.
  8. VEGETATIVE FILTER STRIP TO BE REMOVED AND REPLACED BY RETENTION PIT 2. INTERVIOUS COVE IS DEVELOPED TO AREA 1B.
  9. ALL OTHER TERMS PROPOSED AROUND MAIN PIT DEVELOPMENT.
  10. 25' BUFFER ZONE REQUIRED FROM TOP OF THE DRAINAGE BERM TO 25' INTERVIOUS COVE TO ACR CONTRIBUTING DRAINAGE AREA ENDS. (LCRA HWL 5.2(c)(2)).
  11. BUILDING AREAS SHALL REMAIN UNDISTURBED OTHER THAN THE IMPROVEMENTS SHOWN ON THESE PLANS ENCROACHMENT INTO A BUFFER ZONE OR DAME TO ACR CONTRIBUTING DRAINAGE AREA WILL BE CONSIDERED PRIORITY VIOLATION AND WILL RESULT IN A STOP WORK ORDER AND POSSIBLE FURTHER ACTION.
  12. WILL BE CONTROLLED BY TCEQ SWP3 AND AIR PERMIT.
  13. DEVELOPMENT IS NOT NECESSARY IN THIS PHASE AS DA=3B IS UTILIZING PIT 3 FOR WATER QUALITY. ALL DEVELOPMENT IS LIMITED TO WHAT IS SHOWN ON THESE PLANS.
  14. ANY FUTURE DEVELOPMENT NEEDS TO BE SUBMITTED TO LCRA FOR TECHNICAL REVIEW AND PERMIT APPROVAL.

IMAGE: N/A	
ISSUE DATE:	3/21/2025
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CHECKED BY:	CGC
SCALE: 1" =	400'
JOB NO.:	10853-256

SHEET NO.:

**C.3**

OF C.5

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**FINAL CONDITIONS**  
LCRA PERMITTING – BURNET QUARRY  
ASPHALT, INC.  
3221 FM 3509, BURNET, TX 78611







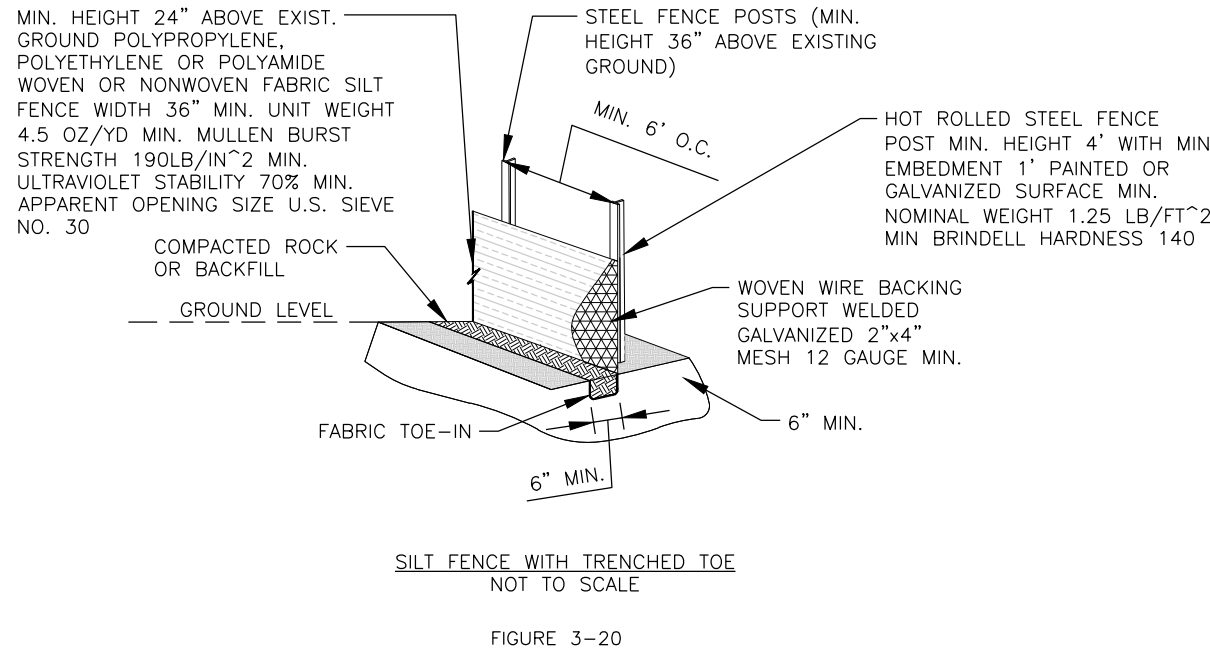


FIGURE 3-20

#### Installation:

Proper installation of blankets and matting is necessary for these materials to function as intended. They should always be installed in accordance with the manufacturer's recommendations. Proper anchoring of the material and preparation of the soil are two of the most important aspects of installation. Typical anchoring methods are shown in Figure 14 and Figure 15.

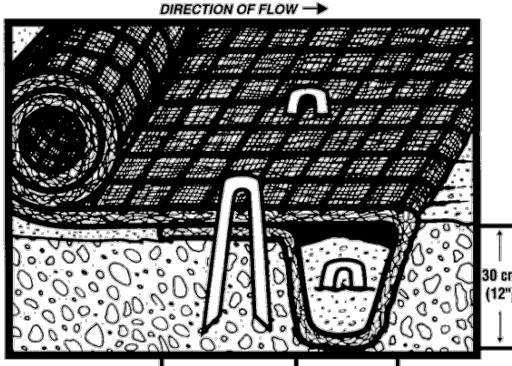


Figure 3-14 Initial Anchor Trench for Blankets and Mats

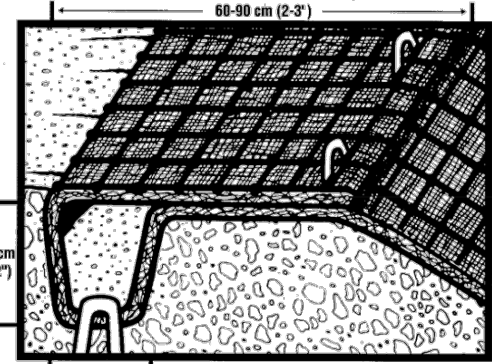


Figure 3-15 Terminal Anchor Trench for Blankets and Mats

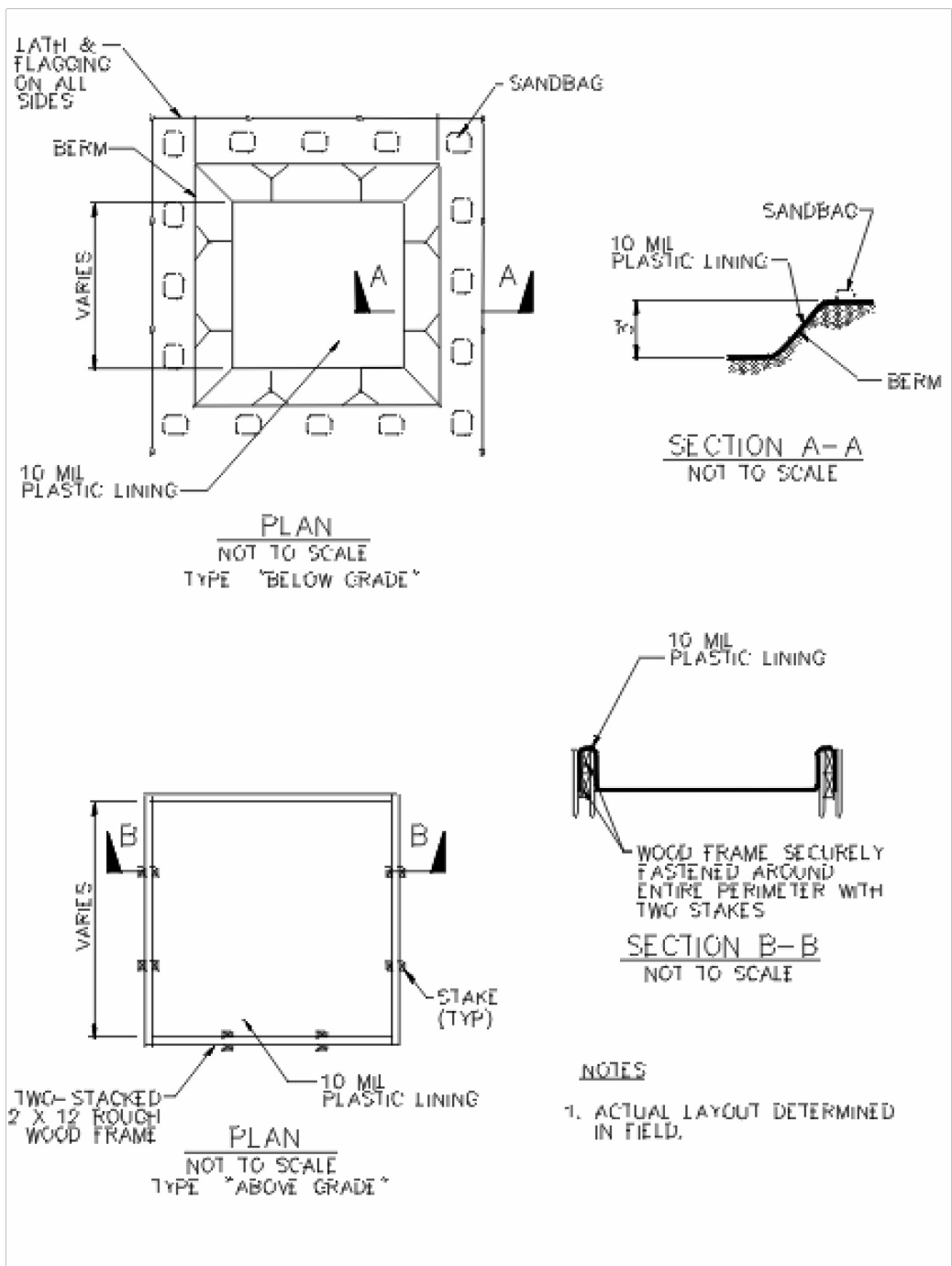
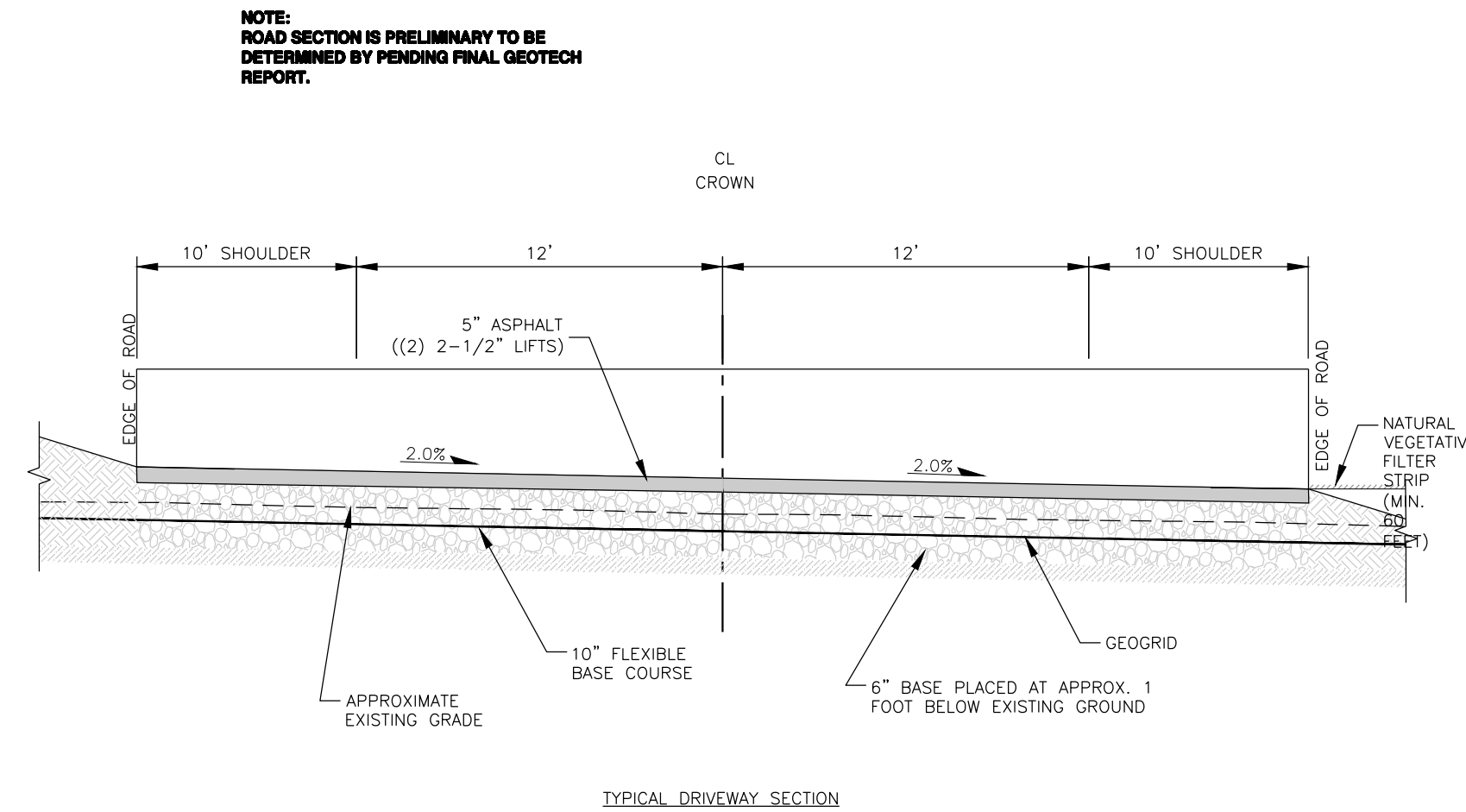
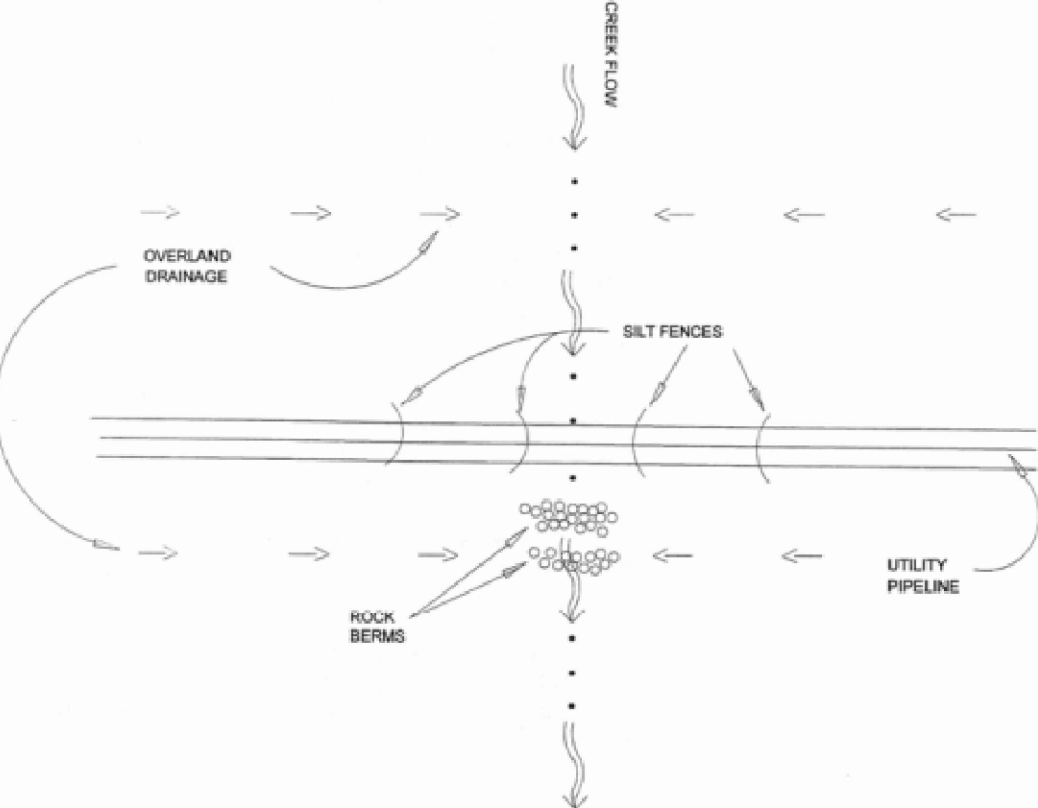
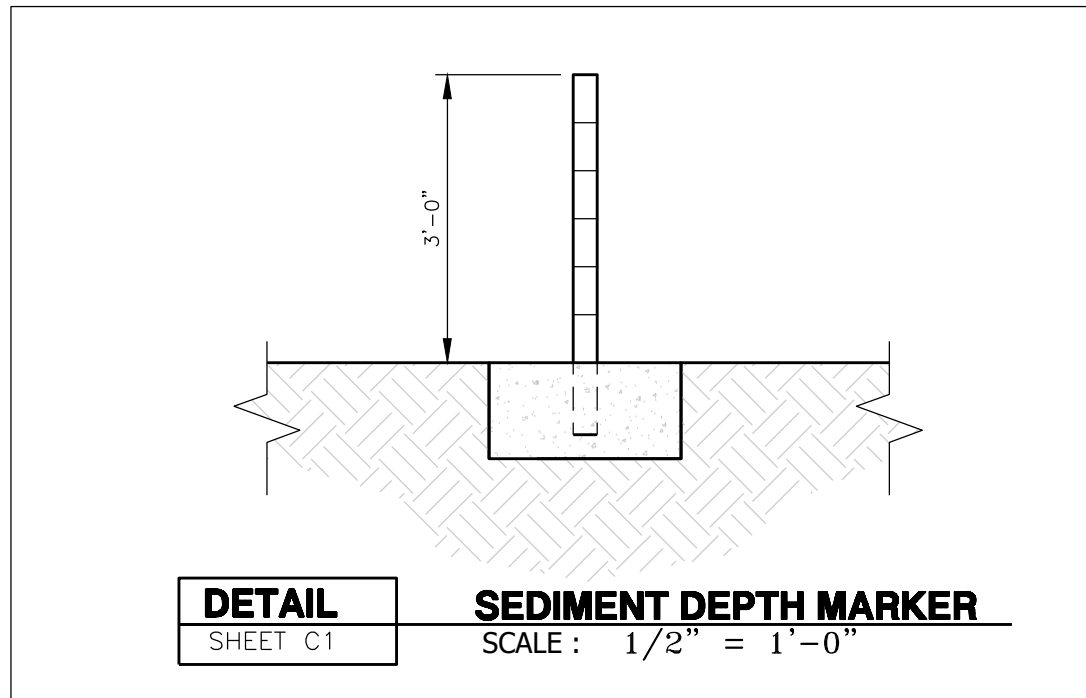


Figure 3-35 Schematic Diagrams of Concrete Washout Areas

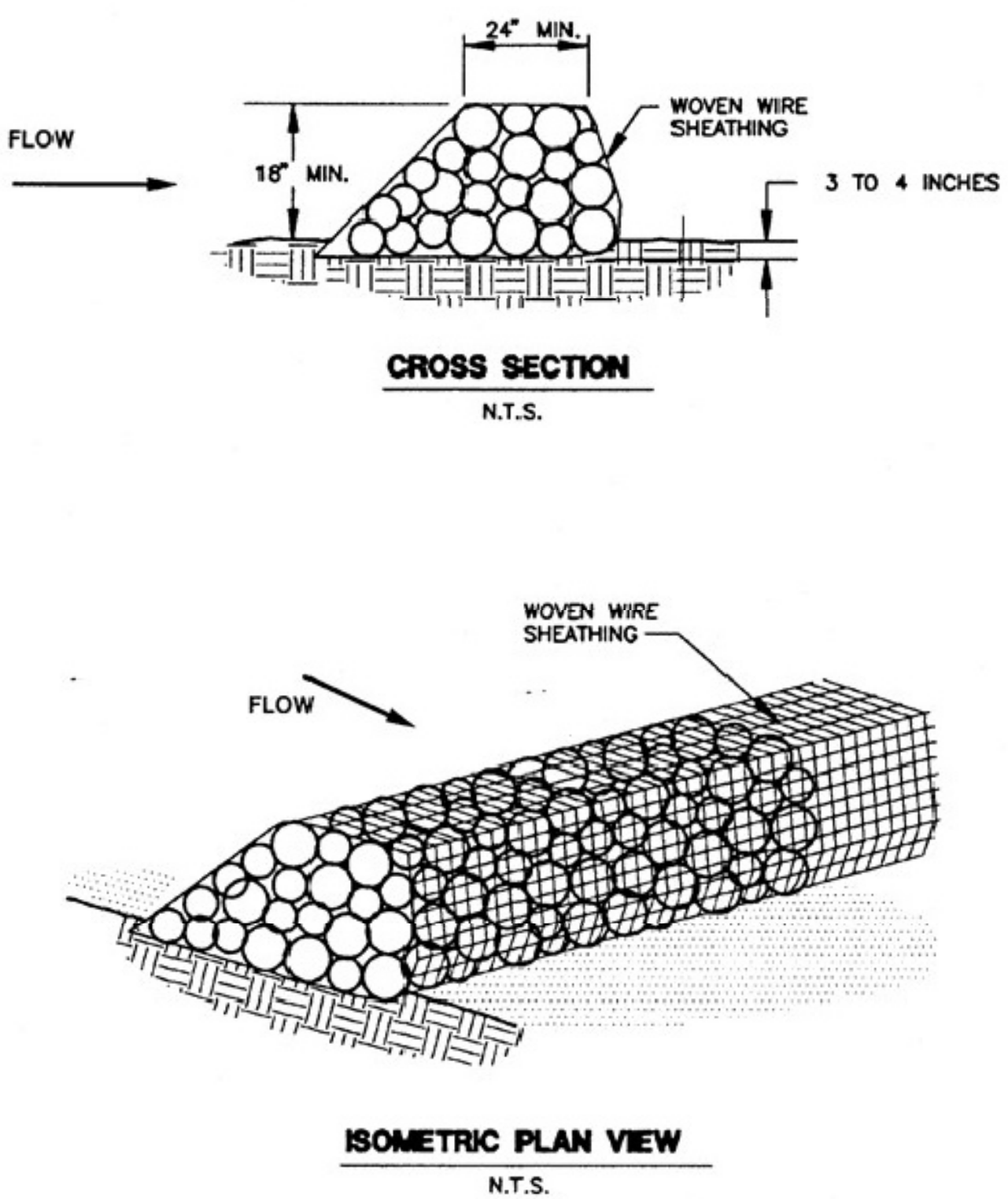


- NOTES:
1. FLEXIBLE BASE SHOULD MEET TYPOT SPECIFICATION ITEM 247 GRADE 1-2. TYPE A. FLEXIBLE BASE SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MATERIAL'S MAXIMUM MODIFIED PROCTOR DENSITY (ASTM D 1557) AT A MOISTURE CONTENT OF  $\pm 2$  PERCENTAGE POINTS OF OPTIMUM MOISTURE.
  2. RE-COMPACTED SUBGRADE SHOULD BE SCARIFIED TO A DEPTH OF SIX INCHES AND COMPACTED TO A DRY DENSITY OF AT LEAST 95 PERCENT OF THE MATERIAL'S MAXIMUM MODIFIED PROCTOR DRY DENSITY (ASTM D 1557) AND WITHIN A RANGE OF  $\pm 2$  PERCENTAGE POINTS OF THE MATERIAL'S OPTIMUM MOISTURE CONTENT.
  3. GEOGRID SHOULD CONSIST OF TENSAR TX7 AND BE PLACED AT THE BOTTOM OF THE FLEXIBLE BASE MATERIAL.



#### Utility Crossing or Excavation within Creek

#### APPENDIX 2.7.1



3 - 42

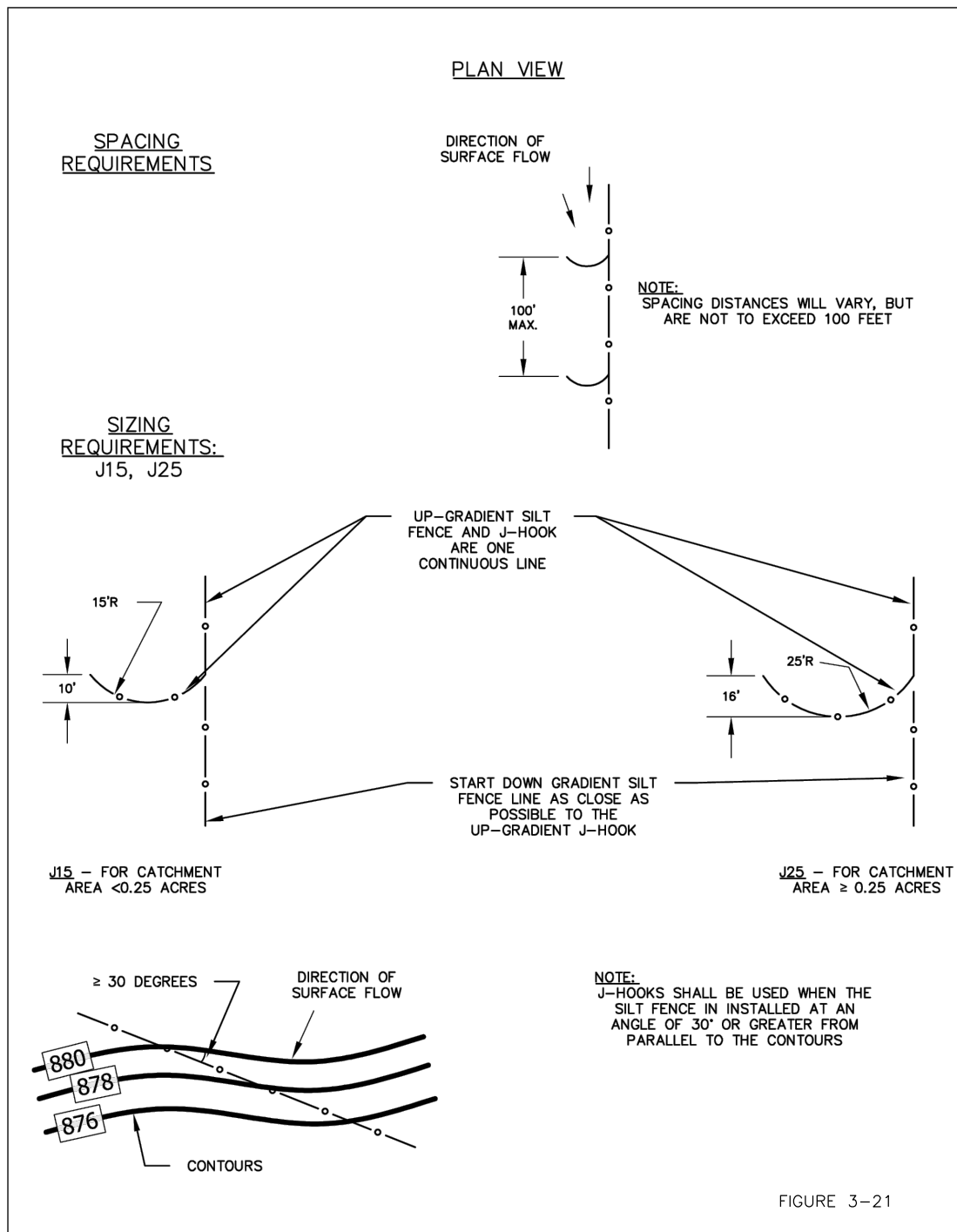


FIGURE 3-21

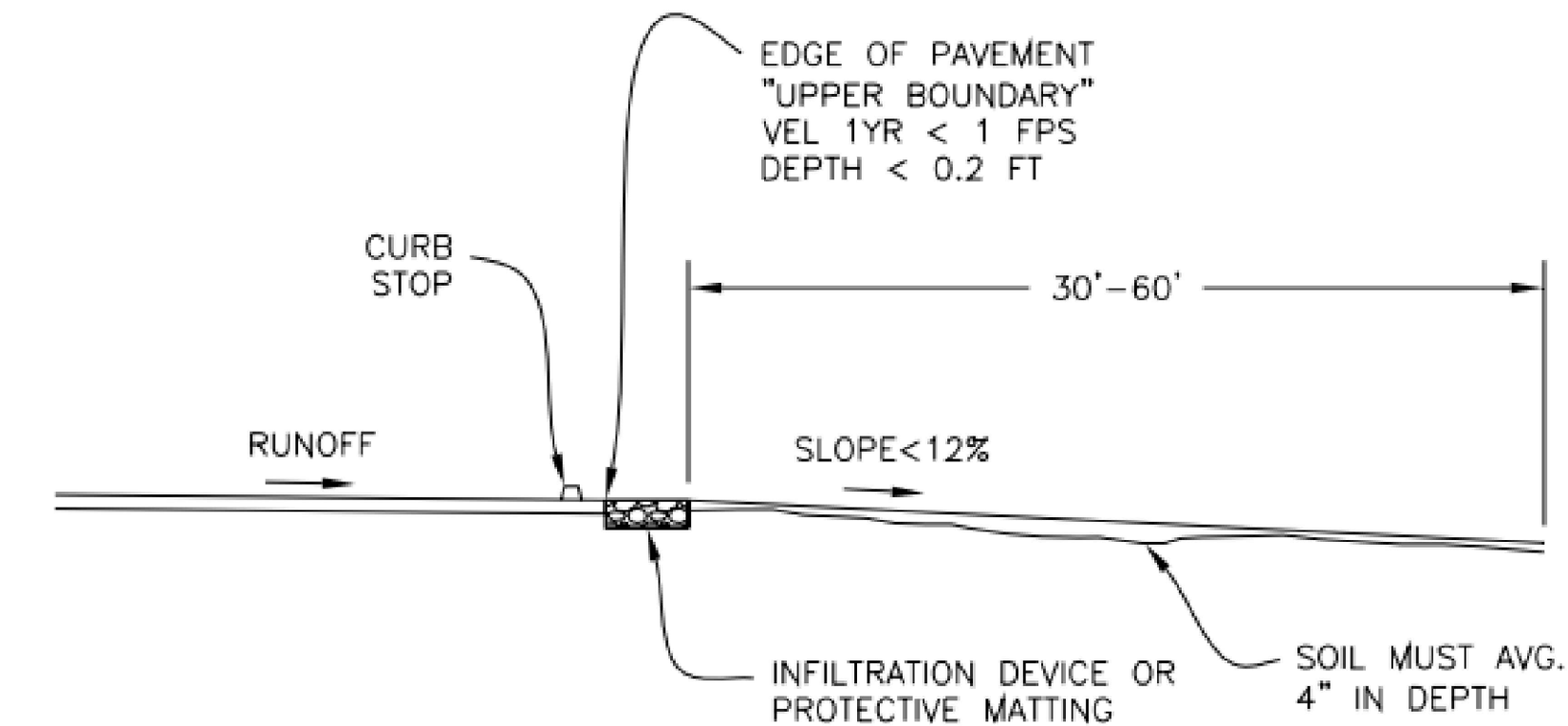
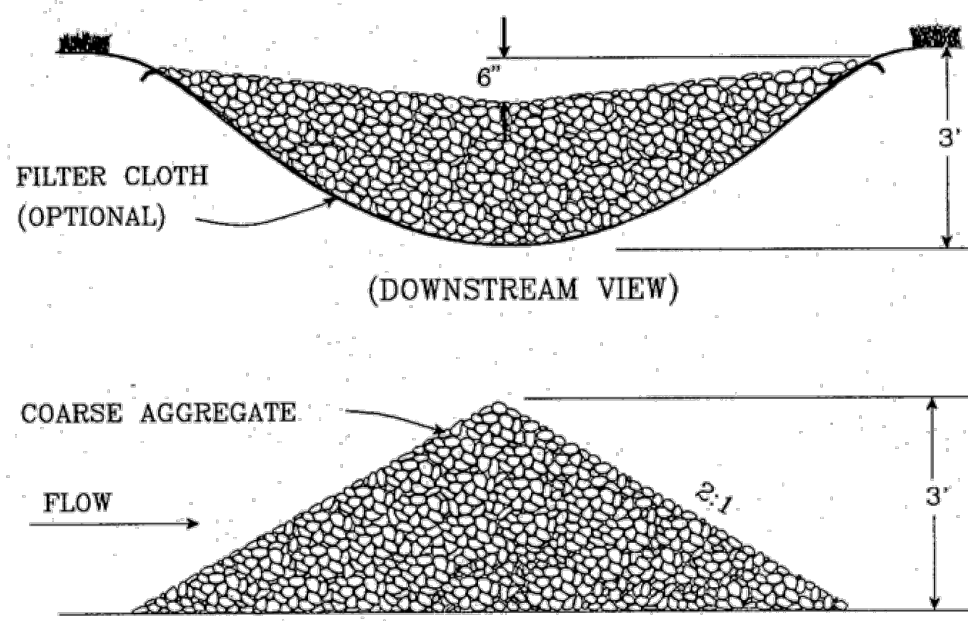


Figure 4-14: Natural Vegetative Filter Strip

#### 2 ACRES OR LESS OF DRAINAGE AREA:



#### 2-10 ACRES OF DRAINAGE AREA:

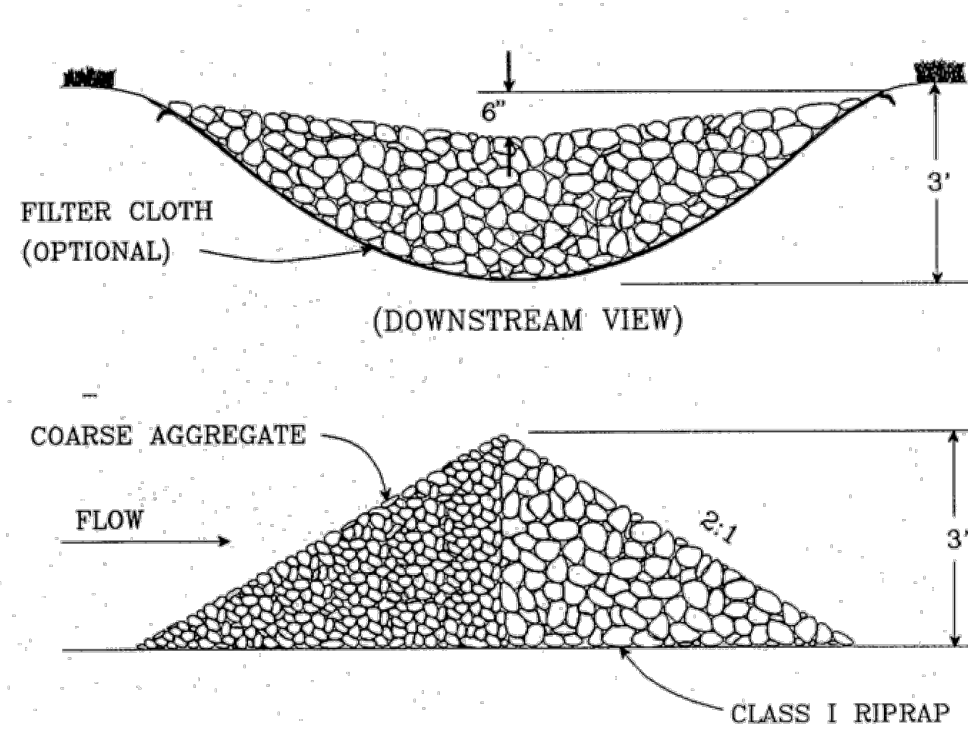
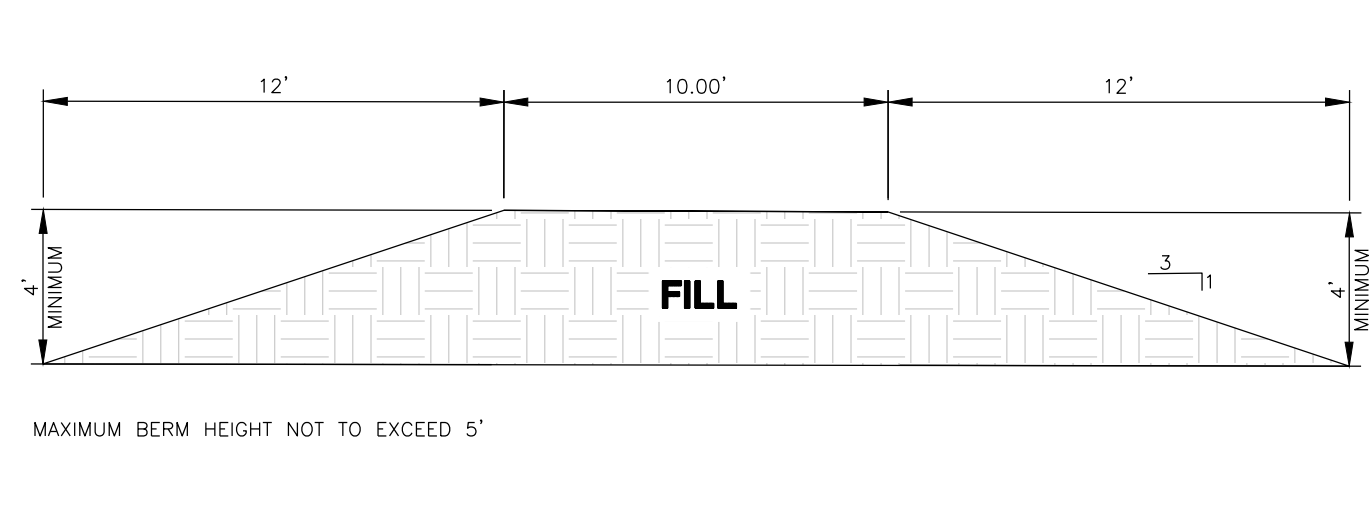


Figure 3-26 Diagram of a Rock Check Dam

#### COMPACTED EARTHEN BERM

INSTALLATION: COMPRISED OF SOIL AND OVERBURDEN MATTER EITHER GENERATED ONSITE OR DELIVERED FROM OFFSITE. COMPACT WITH HEAVY EQUIPMENT IN 12" (MAX) LIFTS.

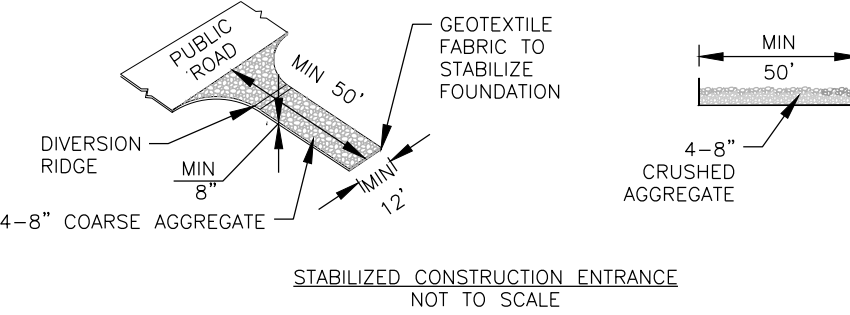
MAINTENANCE (TEMPORARY): INSPECT BERMS ONCE A MONTH UNTIL SUFFICIENTLY VEGETATED. REPLACE AS NECESSARY.



#### STABILIZED CONSTRUCTION ENTRANCE

- INSTALLATION:
1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE, WHICHEVER IS GREATER.
  2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12' OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
  3. THE CONSTRUCTION ENTRANCE SHOULD BE 50' LONG.
  4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-8" HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
  5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
  6. PLACE STONE TO DIMENSION AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
  7. INSTALL A PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

MAINTENANCE: INSPECT WEEKLY. REPLACE STONE AS NECESSARY TO PREVENT TRACKING OFF-SITE.



#### GEOTEXTILE FABRIC PROPERTIES:

- MIN. 6 OZ/SQ. YD.; 140 LB/SQ. IN MULLEN BURST.
- EQUIVALENT OPENING SIZE MIN. 50 SIEVE.
- GRADE SLOPE TO DRAIN.
- ADD ADDITIONAL STONE AS REQUIRED.
- STABILIZED CONSTRUCTION EXIT SHOULD EXTEND FULL WIDTH OF ROAD.

IMAGE:	N/A
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SHEET NO.:	C.5
OF C.5	

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TBP REG. NO.: F-4524  
TBP REG. NO.: 50112

REV.	DESCRIPTION	BY	DATE

STATE OF TEXAS  
Curt G. Campbell, P.E.  
10853  
LICENSED PROFESSIONAL ENGINEER  
License No. 106651  
3/21/2025

**BMP GENERAL NOTES & DETAILS CONT.**  
LCRA PERMITTING - BURNET QUARRY ASPHALT, INC.  
3221 FM 3509, BURNET, TX 78611