

**CONTRIBUTING ZONE
PLAN MODIFICATION
FOR
CISD – STARTZVILLE ELEMENTARY SCHOOL**

PREPARED FOR:



DATE: March 2023

PREPARED BY:



- **Engineers**
- **Surveyors**
- **Planners**

Moy Tarin Ramirez Engineers, LLC

12770 Cimarron Path, Ste 100 San Antonio, TX 78249
TBPE Firm #5297, TBPLS Firm #10131500
Phone 210-698-5051 – Fax 210-698-5085

CISD – STARTZVILLE ELEMENTARY SCHOOL CONTRIBUTING ZONE PLAN MODIFICATION

TABLE OF CONTENTS

- I. EDWARDS AQUIFER APPLICATION COVER PAGE**

- II. MODIFICATION OF A PREVIOUSLY APPROVED CONTRIBUTING ZONE PLAN**
 - a. ATTACHMENT A – ORIGINAL APPROVAL LETTERS
 - b. ATTACHMENT B – NARRATIVE OF PROPOSED MODIFICATION
 - c. ATTACHMENT C – CURRENT SITE PLAN OF THE APPROVED PROJECT

- III. CONTRIBUTING ZONE PLAN APPLICATION**
 - a. ATTACHMENT A: ROAD MAP
 - b. ATTACHMENT B: USGS QUADRANGLE MAP
 - c. ATTACHMENT C: PROJECT NARRATIVE
 - d. ATTACHMENT D: FACTORS AFFECTING SURFACE WATER QUALITY
 - e. ATTACHMENT E: VOLUME AND CHARACTER OF STORMWATER
 - f. ATTACHMENT J: BMP'S FOR UPGRADIENT WATER
 - g. ATTACHMENT K: BMP'S FOR ONSITE WATER
 - h. ATTACHMENT L: BMP'S FOR SURFACE STREAMS
 - i. ATTACHMENT P: MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION
 - j. CONTRIBUTING ZONE SITE PLAN
 - k. ATTACHMENT M: CONSTRUCTION PLANS
 - l. ATTACHMENT N: INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

- IV. TEMPORARY STORMWATER SECTION**
 - a. ATTACHMENT A – SPILL RESPONSE ACTIONS
 - b. ATTACHMENT B – POTENTIAL SOURCES OF CONTAMINATION
 - c. ATTACHMENT C – SEQUENCE OF MAJOR ACTIVITIES
 - d. ATTACHMENT D – TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES
 - e. ATTACHMENT F – STRUCTURAL PRACTICES
 - f. ATTACHMENT G – DRAINAGE AREA MAP
 - g. ATTACHMENT I – INSPECTION AND MAINTENANCE FOR BMPs
 - h. ATTACHMENT J – SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

- V. AGENT AUTHORIZATION FORM**
- VI. CONTRIBUTING ZONE APPLICATION FEE FORM**
- VII. TCEQ CORE DATA FORM**

Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with [30 TAC 213](#).

Administrative Review

1. [Edwards Aquifer applications](#) must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: <http://www.tceq.texas.gov/field/eapp>.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.
3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or if not withdrawn the application will be denied and the application fee will be forfeited.
4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a “Mid-Review Modification”. Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available to you:

- You can withdraw your application, and your fees will be refunded or credited for a resubmittal.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the effected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ’s Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ’s San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: CISD Startzville Elementary School				2. Regulated Entity No.: 104921697					
3. Customer Name: Comal ISD				4. Customer No.: 600249825					
5. Project Type: (Please circle/check one)	New	Modification		Extension	Exception				
6. Plan Type: (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Residential	Non-residential			8. Site (acres):		13.6 acres		
9. Application Fee:	\$6,5000	10. Permanent BMP(s):			SFB, VFS, JellyFish Filter				
11. SCS (Linear Ft.):	N/A	12. AST/UST (No. Tanks):			N/A				
13. County:	Comal	14. Watershed:			Comal River – Guadalupe River				

Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the “Texas Groundwater Conservation Districts within the EAPP Boundaries” map found at:

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Region			
County:	Hays	Travis	Williamson
Original (1 req.)	—	—	—
Region (1 req.)	—	—	—
County(ies)	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Barton Springs/Edwards Aquifer <input type="checkbox"/> Hays Trinity <input type="checkbox"/> Plum Creek	<input type="checkbox"/> Barton Springs/Edwards Aquifer	NA
City(ies) Jurisdiction	<input type="checkbox"/> Austin <input type="checkbox"/> Buda <input type="checkbox"/> Dripping Springs <input type="checkbox"/> Kyle <input type="checkbox"/> Mountain City <input type="checkbox"/> San Marcos <input type="checkbox"/> Wimberley <input type="checkbox"/> Woodcreek	<input type="checkbox"/> Austin <input type="checkbox"/> Bee Cave <input type="checkbox"/> Pflugerville <input type="checkbox"/> Rollingwood <input type="checkbox"/> Round Rock <input type="checkbox"/> Sunset Valley <input type="checkbox"/> West Lake Hills	<input type="checkbox"/> Austin <input type="checkbox"/> Cedar Park <input type="checkbox"/> Florence <input type="checkbox"/> Georgetown <input type="checkbox"/> Jerrell <input type="checkbox"/> Leander <input type="checkbox"/> Liberty Hill <input type="checkbox"/> Pflugerville <input type="checkbox"/> Round Rock

San Antonio Region					
County:	Bexar	Comal	Kinney	Medina	Uvalde
Original (1 req.)	—	<u>X</u>	—	—	—
Region (1 req.)	—	<u>X</u>	—	—	—
County(ies)	—	<u>X</u>	—	—	—
Groundwater Conservation District(s)	<input type="checkbox"/> Edwards Aquifer Authority <input type="checkbox"/> Trinity-Glen Rose	<input checked="" type="checkbox"/> Edwards Aquifer Authority	<input type="checkbox"/> Kinney	<input type="checkbox"/> EAA <input type="checkbox"/> Medina	<input type="checkbox"/> EAA <input type="checkbox"/> Uvalde
City(ies) Jurisdiction	<input type="checkbox"/> Castle Hills <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Helotes <input type="checkbox"/> Hill Country Village <input type="checkbox"/> Hollywood Park <input type="checkbox"/> San Antonio (SAWS) <input type="checkbox"/> Shavano Park	<input type="checkbox"/> Bulverde <input type="checkbox"/> Fair Oaks Ranch <input type="checkbox"/> Garden Ridge <input type="checkbox"/> New Braunfels <input type="checkbox"/> Schertz	NA	<input type="checkbox"/> San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

Sean Smith, P.E.

Print Name of Customer/Authorized Agent



Signature of Customer/Authorized Agent

Date

****FOR TCEQ INTERNAL USE ONLY****

Date(s) Reviewed:		Date Administratively Complete:	
Received From:		Correct Number of Copies:	
Received By:		Distribution Date:	
EAPP File Number:		Complex:	
Admin. Review(s) (No.):		No. AR Rounds:	
Delinquent Fees (Y/N):		Review Time Spent:	
Lat./Long. Verified:		SOS Customer Verification:	
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):
Core Data Form Complete (Y/N):			Signed (Y/N):
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):

Modification of a Previously Approved Contributing Zone Plan

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Transition Zone and Relating to 30 TAC 213.4(j), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Modification of a Previously Approved Contributing Zone Plan** is hereby submitted for TCEQ review and executive director approval. The request was prepared by:

Print Name of Customer/Agent: Sean Smith, P.E.

Date: 03/03/2023

Signature of Customer/Agent:



Project Information

1. Current Regulated Entity Name: CISD Startzville Elementary School
Original Regulated Entity Name: CISD Startzville Elementary School
Assigned Regulated Entity Number(s) (RN): 104921697
Edwards Aquifer Protection Program ID Number(s): _____
 The applicant has not changed and the Customer Number (CN) is: 600249825
 The applicant or Regulated Entity has changed. A new Core Data Form has been provided.
2. **Attachment A: Original Approval Letter and Approved Modification Letters.** A copy of the original approval letter and copies of any modification approval letters are attached.
3. A modification of a previously approved plan is requested for (check all that apply):

- Any physical or operational modification of any best management practices or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
- Any change in the nature or character of the regulated activity from that which was originally approved;
- A change that would significantly impact the ability to prevent pollution of the Edwards Aquifer and hydrologically connected surface water; or
- Any development of land previously identified in a contributing zone plan as undeveloped.

4. Summary of Proposed Modifications (select plan type being modified). If the approved plan has been modified more than once, copy the appropriate table below, as necessary, and complete the information for each additional modification.

<i>CZP Modification</i>	<i>Approved Project</i>	<i>Proposed Modification</i>
<i>Summary</i>		
Acres	<u>See Attached Summary</u>	<u>13.60</u>
Type of Development	_____	<u>Elementary School</u>
Number of Residential Lots	_____	<u>0</u>
Impervious Cover (acres)	_____	<u>5.947</u>
Impervious Cover (%)	_____	<u>43.73</u>
Permanent BMPs	_____	<u>SFB, JellyFish, VFS</u>
Other	_____	_____
<i>AST Modification</i>		
<i>Summary</i>		
Number of ASTs	_____	_____
Other	_____	_____
<i>UST Modification</i>		
<i>Summary</i>		
Number of USTs	_____	_____
Other	_____	_____

5. **Attachment B: Narrative of Proposed Modification.** A detailed narrative description of the nature of the proposed modification is attached. It discusses what was approved,

including previous modifications, and how this proposed modification will change the approved plan.

6. **Attachment C: Current Site Plan of the Approved Project.** A current site plan showing the existing site development (i.e., current site layout) at the time this application for modification is attached. A site plan detailing the changes proposed in the submitted modification is required elsewhere.
- The approved construction has not commenced. The original approval letter and any subsequent modification approval letters are included as Attachment A to document that the approval has not expired.
 - The approved construction has commenced and has been completed. Attachment C illustrates that the site was constructed as approved.
 - The approved construction has commenced and has been completed. Attachment C illustrates that the site was **not** constructed as approved.
 - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was constructed as approved.
 - The approved construction has commenced and has **not** been completed. Attachment C illustrates that, thus far, the site was **not** constructed as approved.
7. Acreage has not been added to or removed from the approved plan.
- Acreage has been added to or removed from the approved plan and is discussed in *Attachment B: Narrative of Proposed Modification*.
8. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

SUMMARY OF PREVIOUS & PROPOSED MODIFICATIONS

<i>CZP Modification Summary</i>	<i>Pre-June 1, 1999</i>	<i>Original CZP</i>	<i>Approved Modification 1</i>	<i>Proposed Modification 2</i>
Acres	13.60	13.60	13.60	13.60
Type of Development	Undeveloped	Elementary School	Elementary School	Elementary School
Number of Residential Lots	N/A	N/A	N/A	N/A
Total Impervious Cover (acres)	N/A	5.39	5.397	5.947
Impervious Cover (%)	N/A	39.63%	39.68%	43.73%
Permanent BMPs	N/A	Sand Filter Basin, VFS	Sand Filter Basin, VFS	Sand Filter Basin, VFS, JellyFish Filter
Other	N/A	N/A	N/A	N/A
Approval Letter Date	N/A	August 21, 2006	April 5, 2007	TBD

Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 21, 2006

Mr. David Swain
Comal Independent School District
1421 North Business 35
New Braunfels, Texas 78130-3240

Re: Edwards Aquifer, Comal County
Name of Project: New Startzville Elementary School; Located on the North side of F.M. 3159, approximately 500 L.F. southwest of the intersection of F.M. 3159 and F.M. 2673, in northern Comal County, Texas
Type of Plan: Request for Approval of a Contributing Zone Pollution Abatement Plan (CZPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 2507.00; Investigation No. 462643; Regulated Entity No. RN104921697

Dear Mr. Swain:

The Contributing Zone Plan application for the referenced project was submitted to the San Antonio Regional Office by Moy Civil Engineers, on behalf of Comal Independent School District on March 31, 2006. Final review of the CZP submittal was completed after additional material was received on July 11, 2006 and July 21, 2006. However, based on the information provided up to that time, the TCEQ could not confirm that the permanent BMPs met the minimum requirements for removal of total suspended solids as outlined in RG-348 (Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices). Therefore, a letter authorizing only site grading activities was approved and issued on July 28, 2006.

On July 28, 2006 additional material was received from Moy Civil Engineers which provided a detailed description and calculations for the various permanent BMPs to be employed on the school site. After a review of this material it has been determined that the applicant has met the treatment requirements outlined below. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Contributing Zone Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10% of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed project will have an area of 13.6 acres. The proposed development will include the following: 2 structures to be utilized as school building (94,591 sf); associated parking and driveways (100,506 sf); and

REPLY TO: REGION 13 • 14250 JUDSON RD. • SAN ANTONIO, TEXAS 78233-4480 • 210/490-3096 • FAX 210/545-4329

P.O. Box 13087 • Austin, Texas 78711-3087 • 512/239-1000 • Internet address: www.tceq.state.tx.us

printed on recycled paper using soy-based ink

other paved surfaces including walkways, air conditioning pads, impervious play areas, and a basketball court (39,502 sf). The total proposed impervious cover for this project will be 5.39 acres (39.6 percent). Per directions obtained from the TCEQ in preliminary meetings in March 2006, the applicant requested an exception to treatment of rooftops due to site constraints. This exception request was included in the original application. After a review of the plan the exception to treatment of rooftops is granted. The total impervious cover for this project, less the area of the rooftops, is 3.21 acres (23.6 percent). Project wastewater will be disposed of by conveyance to an on-site sewage facility.

PERMANENT POLLUTION ABATEMENT MEASURES

To prevent pollution of stormwater runoff originating on-site and potentially flowing across and off the site after construction, the following permanent BMPs are proposed.

A sand filter system is provided for the impervious area of parking located on the north and west side of the buildings. This sand filter system will treat a drainage area of 0.737 acres of which 0.698 acres is impervious cover. The sand filter basin will have a capture volume of 4,314 ft³ and a sand filter area of 880.13 ft². It is designed to remove 710 lbs of TSS.

A vegetated filter which conforms to the previous version of the TCEQ Technical Guidance Manual on BMPs dated June 1999 through July 2005 is proposed to treat the upper parking area and bus turn lane located on the west side of the site to the rear of the school buildings. The contributing area is 0.97 acres and is considered to be all impervious cover. Runoff from this area is collected and then delivered by a drainage pipe system to a level spreading device. The flow spreader will be concrete that is 6 inches wide by 12 inches high and 200 feet in length. Calculations indicate that the width of the vegetated filter strip in the direction of flow needs to be 56.5 feet. The design width of the vegetated filter in the direction of flow will be 140 feet. The required TSS removal to meet the 80% of increased load was calculated to be 871 lbs of TSS/year. The design vegetated filter will remove 940 lbs of TSS /year.

The final permanent BMP to be used on this site is twenty vegetative filter strips placed directly adjacent to the impervious cover areas designated on the plan. This includes the lower parking area, drives, and sidewalks to the north, east, and south side of the buildings. All vegetated filter areas are at 15 feet minimum width in the direction of flow and the slope does not exceed 20%. Although the vegetated filter strips meet the current design manual, which does not require calculations on this form of BMP, it is noted that based on TCEQ calculations from the previous guidance manual these filter strips collectively will remove 1,425.7 lbs of TSS/year.

The combined removal of all the above permanent BMP devices will be 3,075.7 lbs of TSS/year.

SPECIAL CONDITIONS

- I. Regulated activities identified during the site assessment investigation were conducted without the prior approval of the Contributing Zone plan as required by Commission rules (30 TAC Chapter 213). Therefore, the applicant is hereby advised that the after-the-fact conditional approval of the project, as provided by this letter, shall not absolve the applicant of any prior violations of Commission rules related to this project, and shall not necessarily preclude the Commission from pursuing appropriate enforcement actions and administrative penalties associated with such violations, as provided in 30 TAC §213.25 of Commission rules.
- II. Intentional discharges of sediment laden stormwater are not allowed. If dewatering of excavated areas becomes necessary, the discharge will be filtered through appropriately selected temporary best

- management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, etc.
- III. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to record the approval is enclosed.
- IV. In addition to the rules of the commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

STANDARD CONDITIONS

1. Pursuant to §26.136 of the Texas Water Code and the Texas Health and Safety Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project until all regulated activities are completed.
3. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.
4. The applicant must provide written notification of intent to commence construction of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
5. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

6. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is

legally transferred to another person or entity.

7. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
8. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
9. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

10. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
11. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
12. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
13. A Contributing Zone Plan approval or extension will expire and no extension will be granted if more than 50% of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
14. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

Mr. David Swain
August 21, 2006
Page 5

If you have any questions or require additional information, please contact Bobby Caldwell of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4020.

Sincerely,



for Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/BC/eg

Enclosure(s): Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance on Permanent BMPs-Form TCEQ-10263

fc/cc: Mr. Duane A. Moy, Moy Civil Engineers
Mr. Tom Homseth, Comal County
Mr. Michael Short, City of New Braunfels
Mr. Robert J. Potts, Edwards Aquifer Authority
TCEQ Central Records MC 212
TCEQ Chief Clerks Office MC 105

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
H. S. Buddy Garcia, *Commissioner*
Glenn Shankle, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 5, 2007

Mr. David Swain
Comal Independent School District
1421 North Business 35
New Braunfels, Texas, 78130

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: New Startzville Elementary School; Located on the north side of FM 3159, approximately 500 L.F. southwest of the intersection of FM 3159 and FM 2673; Comal County, Texas
TYPE OF PLAN: Request for Approval of a Modification to a Contributing Zone Plan (CZP); 30 Texas Administrative Code (TAC) Chapter 213 Subchapter B Edwards Aquifer
Edwards Aquifer Protection Program File No. 2507.01 Investigation No.: 538880
Regulated Entity No.: RN104921697

Dear Mr. Swain:

The modification to a Contributing Zone Plan application for the referenced project was submitted to the San Antonio Regional Office by Duane A. Moy of Moy Civil Engineers on behalf of Comal Independent School District on January 24, 2007. Final review of the CZP modification was completed after additional material was received on March 13, 2007 and March 22, 2007. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213 **with the exception of one outstanding technical deficiency that is described below**. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and all the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this modification to a Contributing Zone Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10% of the construction has commenced on the project or an extension of time has been requested.*

BACKGROUND

The project was originally conditionally approved for site grading activities on July 28, 2006. On August 21, 2006 an approval letter was issued for the project and BMPs as described below. A modification to the previously approved plan was submitted for review on January 24, 2007.

As outlined in the August 21, 2006 approval letter, the total site encompasses 13.6 acres and has 5.39 acres of impervious cover. An exemption to treatment of building rooftop was granted for 2.18 acres of impervious cover, leaving 3.21 acres of impervious cover remaining that required treatment by permanent BMPs.

Mr. David Swain
April 5, 2007
Page 2

The project included the construction of an elementary school and associated parking. A drip wastewater onsite sewage facility was also proposed that included a control building, driveway to the building, and septic drain field.

Twenty vegetative filter strips designed to meet the current 2005 edition of the *Edwards Aquifer Technical Guidance Manual* were approved to provide treatment for 1.469 acres of impervious cover.

A vegetative filter strip designed using the previous 1999 *TCEQ Technical Guidance Manual* (TGM) was approved to provide treatment for 0.97 acres of impervious cover, and sized to remove 940 lbs of TSS per year.

The previously approved sedimentation/filtration basin was stated to be designed to remove 710 pounds of TSS. The basin was sized to capture the first 1.5 inches of stormwater runoff from 0.737 acres with 0.698 acres of impervious cover, providing a designed total capture volume of 4,314 cubic feet.

MODIFICATION PROJECT DESCRIPTION

The proposed modification includes an enlargement of the wastewater facility building and a decrease in the driveway to the building resulting in a net increase in impervious cover of 0.007 acres, with a total site impervious cover of 5.397 acres. The previously approved 2.18 acres of impervious rooftops exempted from treatment, less the proposed total site impervious cover of 5.397 acres, leaves 3.217 acres of impervious cover requiring treatment.

PERMANENT POLLUTION ABATEMENT MEASURES

Technical deficiencies of the original application and inconsistencies in the August 21, 2007 approval letter were identified during the technical review of the referenced modification to a previously approved CZP submitted January 24, 2006. All of the deficiencies were resolved with one exception. The deficiencies, proposed resolutions, and the remaining outstanding deficiency are discussed below.

- The approval letter dated August 21, 2006 states that the 20 vegetative filter strips met the current 2005 edition of the *Edwards Aquifer Technical Guidance Manual*. Deficiencies with respect to the vegetative filter strips were identified during the technical review of the proposed modification plan. Additional material submitted to the TCEQ on March 22, 2007 corrected and resolved said deficiencies.

The modification proposed twenty vegetative filter strips designed in accordance with the *Edwards Aquifer Technical Guidance Manual* (2005) to treat 1.387 acres of impervious cover with a required load to be removed of 1,245 lbs.

- It appears that the previously approved sedimentation/filtration basin was designed to treat 456 pounds of TSS from 0.508 acres of impervious cover (456 pounds of TSS). However, 0.19 acres (170.5 pounds of TSS) of impervious cover (rooftop), originally exempted from treatment, is directed to and treated by the basin. After review, it appears that basin was sized to capture the first 1.5 inches of stormwater runoff from 0.737 acres with 0.698 acres of impervious cover (0.508 acres + 0.19 acres= 0.698 acres). The

designed capture volume of 4,314 cubic feet will treat 710 pounds of TSS (456 pounds + 170.5 pounds = 710 pounds). See table below for TSS balance.

- A vegetative filter strip designed in accordance with the 1999 edition of the *TCEQ Technical Guidance Manual* was previously approved to provide treatment for 0.97 acres of impervious cover with a minimum load to be removed of 871 pounds of TSS and is designed to remove 940 pounds of TSS.
- The modification identified and quantified 0.3564 acres of impervious cover with a required load to be removed of 320 pounds of TSS that is not proposed to be treated by a permanent BMP.
- The 170.5 pounds of TSS treated by the sedimentation/filtration basin from 0.19 acres of rooftop area exempted from treatment will account for 170.5 pounds of TSS generated by otherwise untreated areas of impervious cover.
- The 69 pounds of over-treatment provided by the vegetative filter strip will account for 69 pounds of TSS from otherwise untreated areas of impervious cover.
- Over-treatment of 69 pounds of TSS by the vegetative filter strip designed using the 1999 edition of the *TCEQ Technical Guidance Manual* and the over-treatment of 170.5 pounds of TSS treated by the sedimentation/filtration basin, compensates for the treatment of 239.5 pounds of TSS from otherwise untreated areas of impervious cover. 80.5 pounds (320 pounds of TSS minus over-treatment of 239.5 pounds of TSS) of TSS from untreated impervious areas remains untreated.
- The sedimentation/filtration basin was proposed to have been oversized to remove 710 pounds of TSS (83 pounds greater than the required 627 pounds) to provide over-treatment for the remaining impervious area not otherwise treated (80.5 pounds of TSS). It could not be confirmed that the basin was appropriately oversized to achieve the over-treatment needed to account for 80.5 pounds of TSS required to be removed for impervious areas otherwise untreated.

The following table summarizes the proposed permanent treatment and TSS accounting.

	Impervious Cover (acres)	Required Load Removed (lbs TSS)	Design Load Removed (lbs TSS)	Over-treatment provided (lbs TSS)	Untreated/unaccounted for TSS (lbs)	
Vegetative Filter (1999 TGM)	0.97	871	940	69	Untreated/unaccounted for TSS (lbs) = required load removed (lbs) - design load removed (lbs)	
Vegetative Filter A1-A20	1.387	1245	1245	0		
Sand Filter***	Sand Filter	0.508	456	---		---
	Previously exempted rooftop	(0.19*)	(170.5*)	---		---
	Total	0.698	627	627	170.5*	
Untreated Area	0.356	320	---	---	Untreated/unaccounted for TSS: 2,892 - 2,812 =>	
Total	3.221**	2892.5	2812	239.5	80.5 lbs	

* = Over-treatment provided by treatment of 0.19 acres of rooftops previously exempted from treatment.
** = Total impervious cover proposed to receive treatment less the 0.19 acres of rooftop previously exempted from treatment.
*** = Sand filter basin originally designed to capture and remove runoff from 0.698 acres of impervious cover, including 0.19 acres of previously exempted rooftops. Sand filter basin proposed to be oversized to remove 710 lbs of TSS (83 lbs of over-treatment).
Note: Values are approximate.

Upon review of the incorrect statements made in the original approval letter dated August 21, 2006, and because a good faith effort was made to correct deficiencies identified during the technical review, the modification is conditionally approved with the intent and expectation that the special conditions of approval will facilitate the correction and resolution of the deficiency prior to the approval of any future modification for this project.

SPECIAL CONDITIONS

- I. The impervious area of the proposed wastewater facility building and associated sidewalk shall be treated by a permanent BMP that is designed in accordance with the *Edwards Aquifer Technical Guidance Manual*, 2005 edition, and Standard Condition 10 of this letter shall be satisfied, and an updated site plan, and accounting/summary table shall be provided to the TCEQ San Antonio Regional Office prior to the operation of the facility.
- II. Any future modification to this project shall provide treatment by a BMP (designed in accordance with the applicable TCEQ technical guidance document for BMPs at the time of the modification) of the 80.5 pounds of unaccounted for TSS (less the TSS removed by the treatment of the facilities building

Mr. David Swain
Page 5
April 5, 2007

pursuant to Special Condition 1 of this letter) generated by otherwise untreated impervious cover, or will over-treat in another BMP (designed in accordance with the applicable TCEQ technical guidance document for BMPs at the time of the modification) to compensate for the unaccounted for TSS generated by otherwise untreated impervious cover.

- III. All sediment and/or media removed from the sedimentation/filtration basins during maintenance activities shall be properly disposed of according to 30 TAC 330 or 30 TAC 335 as applicable.
- IV. Intentional discharges of sediment laden stormwater are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetative filter strips, sediment traps, rock berms, silt fence rings, filters, etc.
- V. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to record the approval is enclosed.
- VI. For any future modifications to any of the permanent BMPs on this site, the summary/accounting table must be updated and included in the application. It is the responsibility of the applicant to maintain this information and keep it current.
- VII. The applicant shall provide all contractors with a copy of pages 1-35 through 1-60 of TCEQ TGM RG-348 (2005) as a guide for soil stabilization practices and assure that any soil stabilization is performed in accordance with these practices and the approved plan.
- VIII. In addition to the rules of the commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

STANDARD CONDITIONS

- 1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

- 2. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved Contributing Zone Plan and this notice of approval shall be maintained at the project until all regulated activities are completed.
- 3. Any modification to the activities described in the referenced CZP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of

appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

4. The applicant must provide written notification of intent to commence construction of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the name of the approved plan and file number for the regulated activity, the date on which the regulated activity will commence, and the name of the prime contractor with the name and telephone number of the contact person.
5. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved Storm Water Pollution Prevention Plan (SWPPP) must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

During Construction:

6. During the course of regulated activities related to this project, the applicant or his agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.
7. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been significantly reduced. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
8. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
9. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

Mr. David Swain
Page 7
April 5, 2007

After Completion of Construction:

10. Owners of permanent BMPs and measures must insure that the BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.
11. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.
12. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Contributing Zone Plan. If the new owner intends to commence any new regulated activity on the site, a new Contributing Zone Plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.
13. A Contributing Zone Plan approval or extension will expire and no extension will be granted if more than 50% of the total construction has not been completed within ten years from the initial approval of a plan. A new Contributing Zone Plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.
14. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact John Mauser of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4024.

Sincerely,



Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/ZCL/eg

Mr. David Swain
Page 8
April 5, 2007

Enclosure(s): Change in Responsibility for Maintenance on Permanent BMPs-Form TCEQ-10263
Deed Recordation Affidavit, Form TCEQ-0625

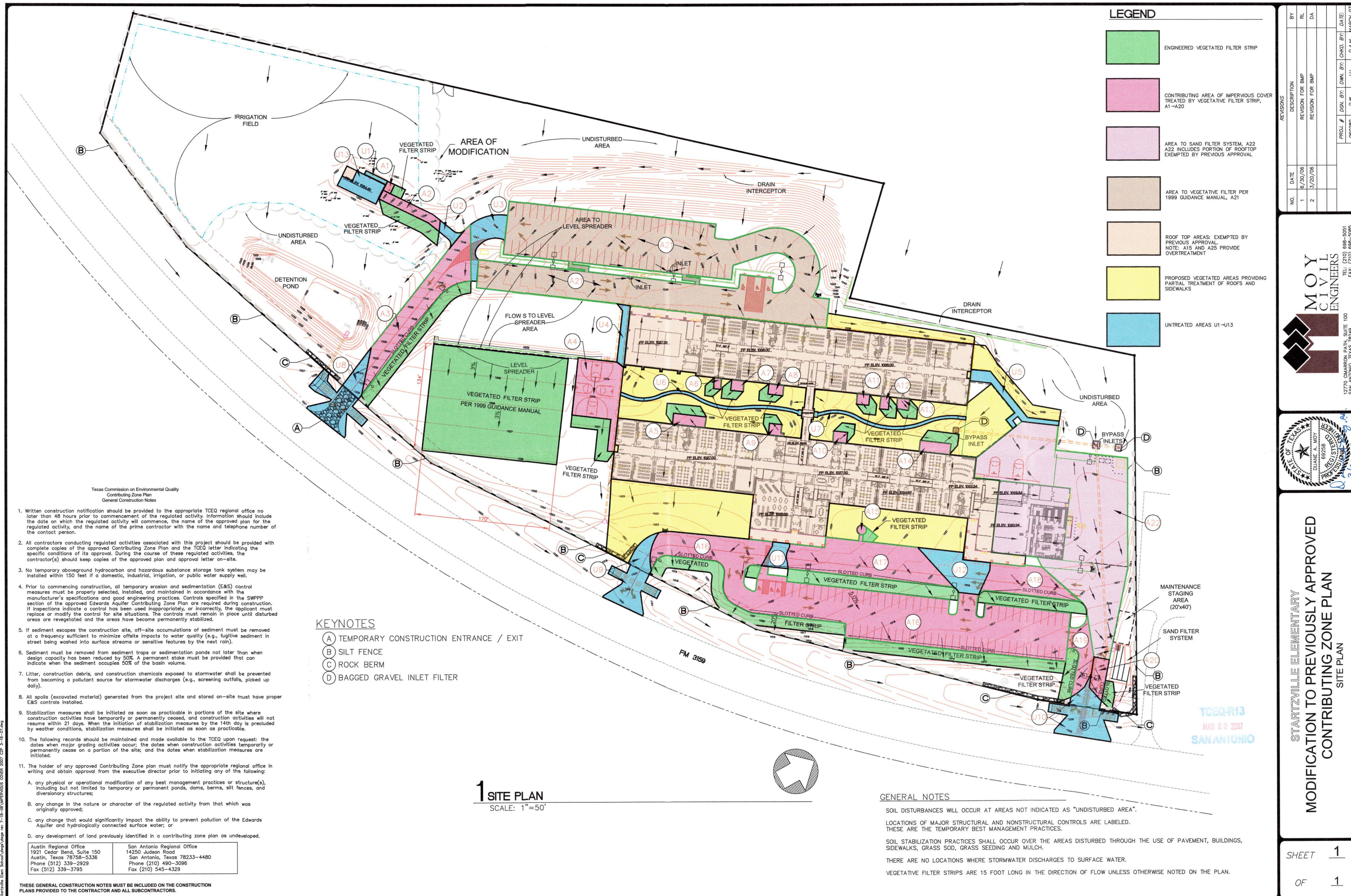
fc/cc: Mr. Duane Moy, P.E., Moy Civil Engineers
Mr. Tom Hornseth, P.E., Comal County
Mr. Robert J. Potts, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

ATTACHMENT B

NARRATIVE OF PROPOSED MODIFICATION

The proposed project will be providing new playground equipment, new rubberized surface, artificial turf play areas, and associated concrete flatwork. The impervious cover total on-site is currently 5.397 acres, or 39.68%, according to the TCEQ approval letter dated April 5, 2007. The existing permanent BMPs are a sedimentation/filtration basin and vegetative filter strips. The original Contributing Zone Plan for this site was approved on August 21, 2006. This proposed project will be providing approximately 0.55 acres of new impervious cover, for a total of 5.947 acres of impervious cover or 43.73%. This increase in impervious cover will be treated by the existing sedimentation/filtration basin, existing vegetative filter strips, new vegetative filter strips and two new JellyFish filters. An exception was granted for 2.18 acres of impervious cover from the school building roofs, as described in the project description of the approval letter from August 21, 2006. Per phone conversation with Dianne Pavlicek-Mesa, TCEQ must still honor this exception for 2.18 acres of impervious cover.

The overall acreage of the Startzville Elementary School property is 13.60 acres and is located at 42111 FM3159, Canyon Lake, TX 78133. The site is located in the Edwards Aquifer Contributing Zone.



LEGEND

[Green Box]	ENGINEERED VEGETATED FILTER STRIP
[Pink Box]	CONTRIBUTING AREA OF IMPERVIOUS COVER TREATED BY VEGETATIVE FILTER STRIP, A1-A20
[Light Purple Box]	AREA TO SAND FILTER SYSTEM, A22. A22 INCLUDES PORTION OF ROOFTOP EXEMPTED BY PREVIOUS APPROVAL
[Light Brown Box]	AREA TO VEGETATIVE FILTER PER 1999 GUIDANCE MANUAL, A21
[Light Orange Box]	ROOF TOP AREAS: EXEMPTED BY PREVIOUS APPROVAL. NOTE: A15 AND A25 PROVIDE OVERTREATMENT
[Yellow Box]	PROPOSED VEGETATED AREAS PROVIDING PARTIAL TREATMENT OF ROOFS AND SIDEWALKS
[Blue Box]	UNTREATED AREAS U1-U13

NO.	DATE	DESCRIPTION	BY	RL	DA
1	6/30/06	REVISION FOR BMP			
2	3/20/06	REVISION FOR BMP			

MOY CIVIL ENGINEERS
 12770 CHARRON PATH, SUITE 100
 SAN ANTONIO, TEXAS 78249
 TEL: (210) 888-5051
 FAX: (210) 888-5065



STARTVILLE ELEMENTARY
 MODIFICATION TO PREVIOUSLY APPROVED
 CONTRIBUTING ZONE PLAN
 SITE PLAN

Texas Commission on Environmental Quality
 Contributing Zone Plan
 General Construction Notes

- Written construction notification should be provided to the appropriate TCEQ regional office no later than 48 hours prior to commencement of the regulated activity. Information should include the date on which the regulated activity will commence, the name of the approved plan for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person.
- All contractors conducting regulated activities associated with this project should be provided with complete copies of the approved Contributing Zone Plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractor(s) should keep copies of the approved plan and approval letter on-site.
- No temporary aboveground hydrocarbon and hazardous substance storage tank system may be installed within 150 feet if a domestic, industrial, irrigation, or public water supply well.
- Prior to commencing construction, all temporary erosion and sedimentation (E&S) control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. Controls specified in the SWPPP section of the approved Edwards Aquifer Contributing Zone Plan are required during construction. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. The controls must remain in place until disturbed areas are revegetated and the areas have become permanently stabilized.
- If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
- Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake must be provided that can indicate when the sediment occupies 50% of the basin volume.
- Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
- All spoils (excavated material) generated from the project site and stored on-site must have proper E&S controls installed.
- Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.
- The following records should be maintained and made available to the TCEQ upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.
- The holder of any approved Contributing Zone plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
 - any physical or operational modification of any best management practices or structure(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
 - any change in the nature or character of the regulated activity from that which was originally approved;
 - any change that would significantly impact the ability to prevent pollution of the Edwards Aquifer and hydrologically connected surface water; or
 - any development of land previously identified in a contributing zone plan as undeveloped.

THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.

- KEYNOTES**
- (A) TEMPORARY CONSTRUCTION ENTRANCE / EXIT
 - (B) SILT FENCE
 - (C) ROCK BERM
 - (D) BAGGED GRAVEL INLET FILTER

1 SITE PLAN
 SCALE: 1"=50'

GENERAL NOTES

SOIL DISTURBANCES WILL OCCUR AT AREAS NOT INDICATED AS "UNDISTURBED AREA". THESE ARE THE TEMPORARY BEST MANAGEMENT PRACTICES.

LOCATIONS OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS ARE LABELED. THESE ARE THE TEMPORARY BEST MANAGEMENT PRACTICES.

SOIL STABILIZATION PRACTICES SHALL OCCUR OVER THE AREAS DISTURBED THROUGH THE USE OF PAVEMENT, BUILDINGS, SIDEWALKS, GRASS SOD, GRASS SEEDING AND MULCH.

THERE ARE NO LOCATIONS WHERE STORMWATER DISCHARGES TO SURFACE WATER.

VEGETATIVE FILTER STRIPS ARE 15 FOOT LONG IN THE DIRECTION OF FLOW UNLESS OTHERWISE NOTED ON THE PLAN.

TCEQ-R13
 MAR 2 2 2007
 SAN ANTONIO

Contributing Zone Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Contributing Zone to the Edwards Aquifer and Relating to 30 TAC §213.24(1), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Contributing Zone Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Sean Smith, P.E.

Date: 03/03/2023

Signature of Customer/Agent:



Regulated Entity Name: CISD Startzville Elementary School

Project Information

1. County: Comal
2. Stream Basin: Immediate Tributary to Canyon Lake
3. Groundwater Conservation District (if applicable): Comal Trinity
4. Customer (Applicant):

Contact Person: Alejandro Araujo

Entity: Comal Independent School District

Mailing Address: 1404 IH 35 North

City, State: New Braunfels, TX

Telephone: (830) 221-2150

Email Address: alejandro.araujo@comalisd.org

Zip: 78130-2817

Fax: _____

5. Agent/Representative (If any):

Contact Person: Sean Smith, P.E.

Entity: Moy Tarin Ramirez Engineers, LLC

Mailing Address: 12770 Cimarron Path #100

City, State: San Antonio, TX

Zip: 78249

Telephone: (210) 698-5051

Fax: (210) 698-5085

Email Address: ssmith@mtrengineers.com

6. Project Location:

- The project site is located inside the city limits of _____.
- The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
- The project site is not located within any city's limits or ETJ.

7. The location of the project site is described below. Sufficient detail and clarity has been provided so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

42111 FM 3159, Canyon Lake, TX 78133

8. **Attachment A - Road Map.** A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.

9. **Attachment B - USGS Quadrangle Map.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000") is attached. The map(s) clearly show:

- Project site boundaries.
- USGS Quadrangle Name(s).

10. **Attachment C - Project Narrative.** A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:

- Area of the site
- Offsite areas
- Impervious cover
- Permanent BMP(s)
- Proposed site use
- Site history
- Previous development
- Area(s) to be demolished

11. Existing project site conditions are noted below:

- Existing commercial site
- Existing industrial site
- Existing residential site

- Existing paved and/or unpaved roads
- Undeveloped (Cleared)
- Undeveloped (Undisturbed/Not cleared)
- Other: Existing Elementary School site

12. The type of project is:

- Residential: # of Lots: _____
- Residential: # of Living Unit Equivalents: _____
- Commercial
- Industrial
- Other: Elementary School

13. Total project area (size of site): 13.60 Acres

Total disturbed area: 1.98 Acres

14. Estimated projected population: 430

15. The amount and type of impervious cover expected after construction is complete is shown below:

Table 1 - Impervious Cover

<i>Impervious Cover of Proposed Project</i>	<i>Sq. Ft.</i>	<i>Sq. Ft./Acre</i>	<i>Acres</i>
Structures/Rooftops	94,591	÷ 43,560 =	2.172
Parking	100,506	÷ 43,560 =	2.307
Other paved surfaces	63,954	÷ 43,560 =	1.468
Total Impervious Cover	235,093	÷ 43,560 =	5.947

Total Impervious Cover 5.947 ÷ Total Acreage 13.60 X 100 = 43.73% Impervious Cover

16. **Attachment D - Factors Affecting Surface Water Quality.** A detailed description of all factors that could affect surface water quality is attached. If applicable, this includes the location and description of any discharge associated with industrial activity other than construction.

17. Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

For Road Projects Only

Complete questions 18 - 23 if this application is exclusively for a road project.

N/A

18. Type of project:

- TXDOT road project.
- County road or roads built to county specifications.
- City thoroughfare or roads to be dedicated to a municipality.
- Street or road providing access to private driveways.

19. Type of pavement or road surface to be used:

- Concrete
- Asphaltic concrete pavement
- Other: _____

20. Right of Way (R.O.W.):

Length of R.O.W.: _____ feet.

Width of R.O.W.: _____ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

21. Pavement Area:

Length of pavement area: _____ feet.

Width of pavement area: _____ feet.

$L \times W = \text{_____ Ft}^2 \div 43,560 \text{ Ft}^2/\text{Acre} = \text{_____ acres.}$

Pavement area _____ acres \div R.O.W. area _____ acres $\times 100 = \text{_____ \%}$ impervious cover.

22. A rest stop will be included in this project.

A rest stop will not be included in this project.

23. Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

Stormwater to be generated by the Proposed Project

24. **Attachment E - Volume and Character of Stormwater.** A detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

Wastewater to be generated by the Proposed Project

25. Wastewater is to be discharged in the contributing zone. Requirements under 30 TAC §213.6(c) relating to Wastewater Treatment and Disposal Systems have been satisfied.

N/A

26. Wastewater will be disposed of by:

On-Site Sewage Facility (OSSF/Septic Tank):

Attachment F - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

Sewage Collection System (Sewer Lines):

The sewage collection system will convey the wastewater to the Startzville ES (name) Treatment Plant. The treatment facility is:

Existing.

Proposed.

N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

Complete questions 27 - 33 if this project includes the installation of AST(s) with volume(s) greater than or equal to 500 gallons.

N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

<i>AST Number</i>	<i>Size (Gallons)</i>	<i>Substance to be Stored</i>	<i>Tank Material</i>
1			
2			
3			
4			
5			

Total x 1.5 = _____ Gallons

28. The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than

one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

- Attachment G - Alternative Secondary Containment Methods.** Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are attached.

29. Inside dimensions and capacity of containment structure(s):

Table 3 - Secondary Containment

<i>Length (L)(Ft.)</i>	<i>Width(W)(Ft.)</i>	<i>Height (H)(Ft.)</i>	<i>L x W x H = (Ft3)</i>	<i>Gallons</i>

Total: _____ Gallons

30. Piping:

- All piping, hoses, and dispensers will be located inside the containment structure.
- Some of the piping to dispensers or equipment will extend outside the containment structure.
- The piping will be aboveground
- The piping will be underground

31. The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of: _____.

32. **Attachment H - AST Containment Structure Drawings.** A scaled drawing of the containment structure is attached that shows the following:

- Interior dimensions (length, width, depth and wall and floor thickness).
- Internal drainage to a point convenient for the collection of any spillage.
- Tanks clearly labeled
- Piping clearly labeled
- Dispenser clearly labeled

33. Any spills must be directed to a point convenient for collection and recovery. Spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

- In the event of a spill, any spillage will be removed from the containment structure within 24 hours of the spill and disposed of properly.

- In the event of a spill, any spillage will be drained from the containment structure through a drain and valve within 24 hours of the spill and disposed of properly. The drain and valve system are shown in detail on the scaled drawing.

Site Plan Requirements

Items 34 - 46 must be included on the Site Plan.

34. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = 100'.
35. 100-year floodplain boundaries:
- Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
- No part of the project site is located within the 100-year floodplain.
The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): FEMA PANEL 48091C0235F dated 9/2/2009.
36. The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
- The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.
37. A drainage plan showing all paths of drainage from the site to surface streams.
38. The drainage patterns and approximate slopes anticipated after major grading activities.
39. Areas of soil disturbance and areas which will not be disturbed.
40. Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
41. Locations where soil stabilization practices are expected to occur.
42. Surface waters (including wetlands).
 N/A
43. Locations where stormwater discharges to surface water.
 There will be no discharges to surface water.
44. Temporary aboveground storage tank facilities.
 Temporary aboveground storage tank facilities will not be located on this site.

45. Permanent aboveground storage tank facilities.
 Permanent aboveground storage tank facilities will not be located on this site.
46. Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

Practices and measures that will be used during and after construction is completed.

47. Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.
 N/A
48. These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.
 The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
 A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: _____.
 N/A
49. Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.
 N/A
50. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
 The site will be used for low density single-family residential development and has 20% or less impervious cover.
 The site will be used for low density single-family residential development but has more than 20% impervious cover.
 The site will not be used for low density single-family residential development.

51. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

- Attachment I - 20% or Less Impervious Cover Waiver.** The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
- The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
- The site will not be used for multi-family residential developments, schools, or small business sites.

52. **Attachment J - BMPs for Upgradient Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
- No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

53. **Attachment K - BMPs for On-site Stormwater.**

- A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
- Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

54. **Attachment L - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams is attached.

N/A

55. **Attachment M - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. Construction plans for the proposed permanent BMPs and measures are

attached and include: Design calculations, TCEQ Construction Notes, all proposed structural plans and specifications, and appropriate details.

N/A

56. **Attachment N - Inspection, Maintenance, Repair and Retrofit Plan.** A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all of the following:

- Prepared and certified by the engineer designing the permanent BMPs and measures
- Signed by the owner or responsible party
- Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
- Contains a discussion of record keeping procedures

N/A

57. **Attachment O - Pilot-Scale Field Testing Plan.** Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

N/A

58. **Attachment P - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that result in water quality degradation.

N/A

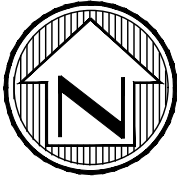
Responsibility for Maintenance of Permanent BMPs and Measures after Construction is Complete.

59. The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
60. A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development,

or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

Administrative Information

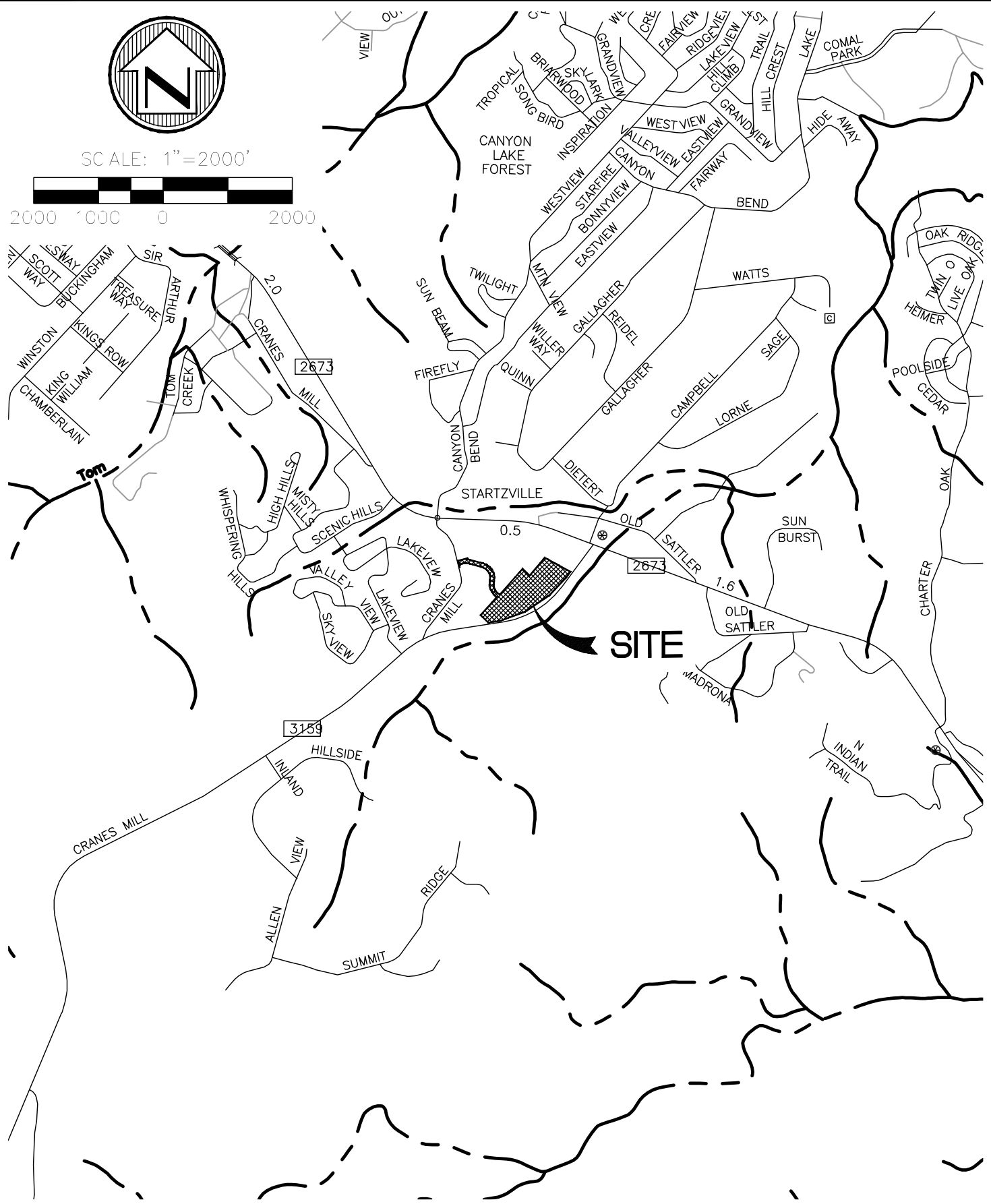
61. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.
62. Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.
63. The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.
 The Temporary Stormwater Section (TCEQ-0602) is included with the application.



SCALE: 1"=2000'



2000 1000 0 2000



SITE



Moy Tarin Ramirez Engineers, LLC

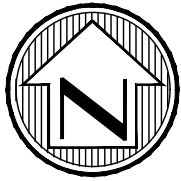
TBPE F-5297 & TBPLS F-10131500
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

- Engineers
- Surveyors
- Planners

ATTACHMENT A
STARTZVILLE ELEMENTARY SCHOOL
LOCATION MAP

PROJ. #: 01.08 DATE: MARCH 2023

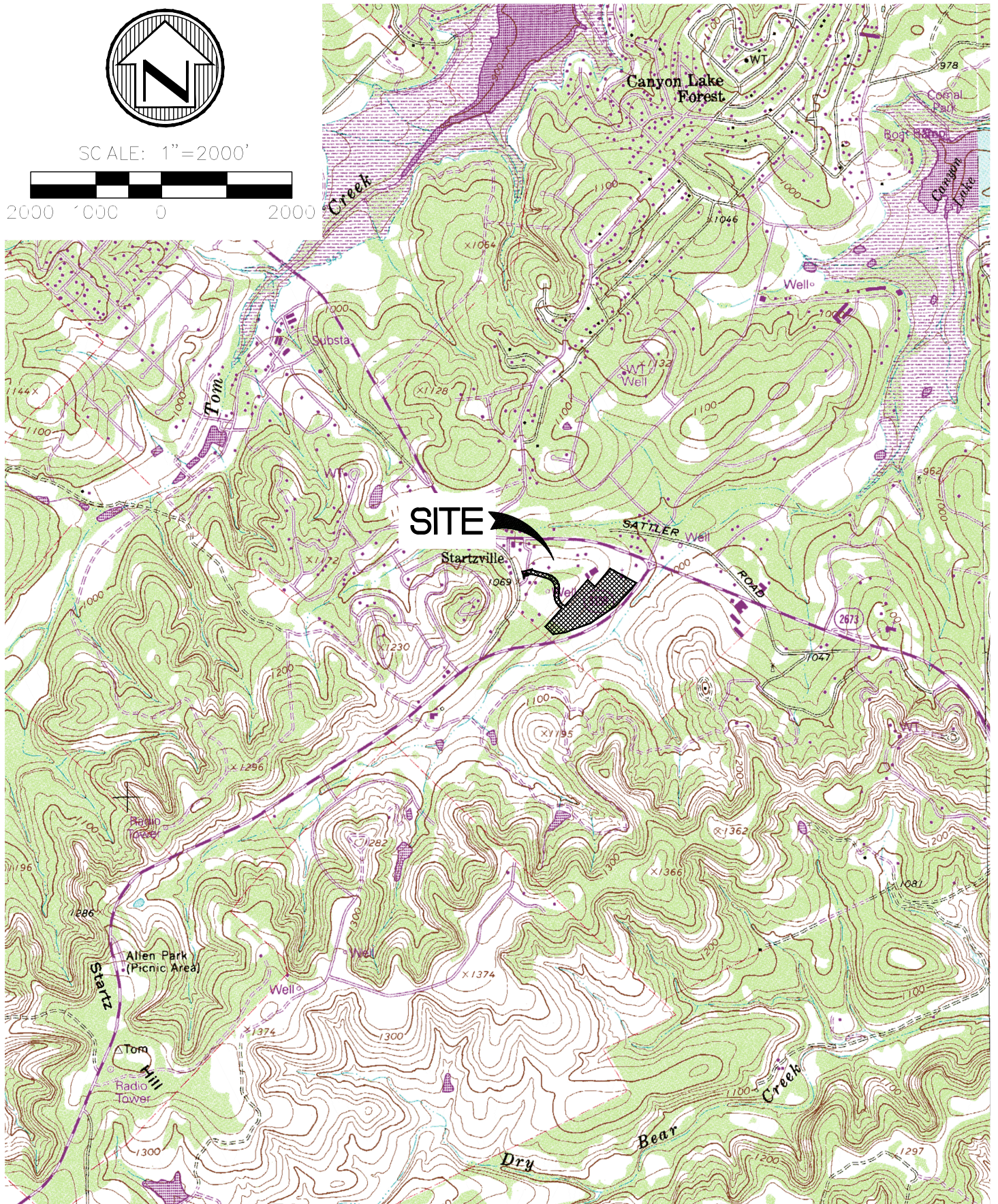
D:\G114-LEASTAR\FILE 01-0023-070-DRAMING\STARTZVILLE - LOCATION MAP.DWG



SCALE: 1"=2000'



2000 1000 0 2000



(SATTLE TX QUADRANGLE MAP)



- Engineers
- Surveyors
- Planners

Moy Tarin Ramirez Engineers, LLC

TBPE F-5297 & TBPLS F-10131500

12770 CIMARRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249

TEL: (210) 698-5051
FAX: (210) 698-5085

ATTACHMENT B
STARTZVILLE ELEMENTARY SCHOOL
USGS MAP

PROJ. #: 01.08

DATE: MARCH 2023

ATTACHMENT C

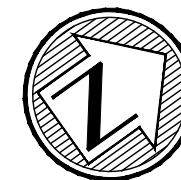
PROJECT DESCRIPTION

The proposed project will be providing new playground equipment, new rubberized surface, artificial turf play areas, and associated concrete flatwork at Startzville Elementary School. The original Contributing Zone Plan was approved on August 21, 2006 for 5.39 acres of impervious cover. The previous Contributing Zone Plan Modification was approved on April 5, 2007 for an additional 0.007 acres of impervious cover. An exception was granted in 2006 for the school roofs, which included 2.18 acres of impervious cover.

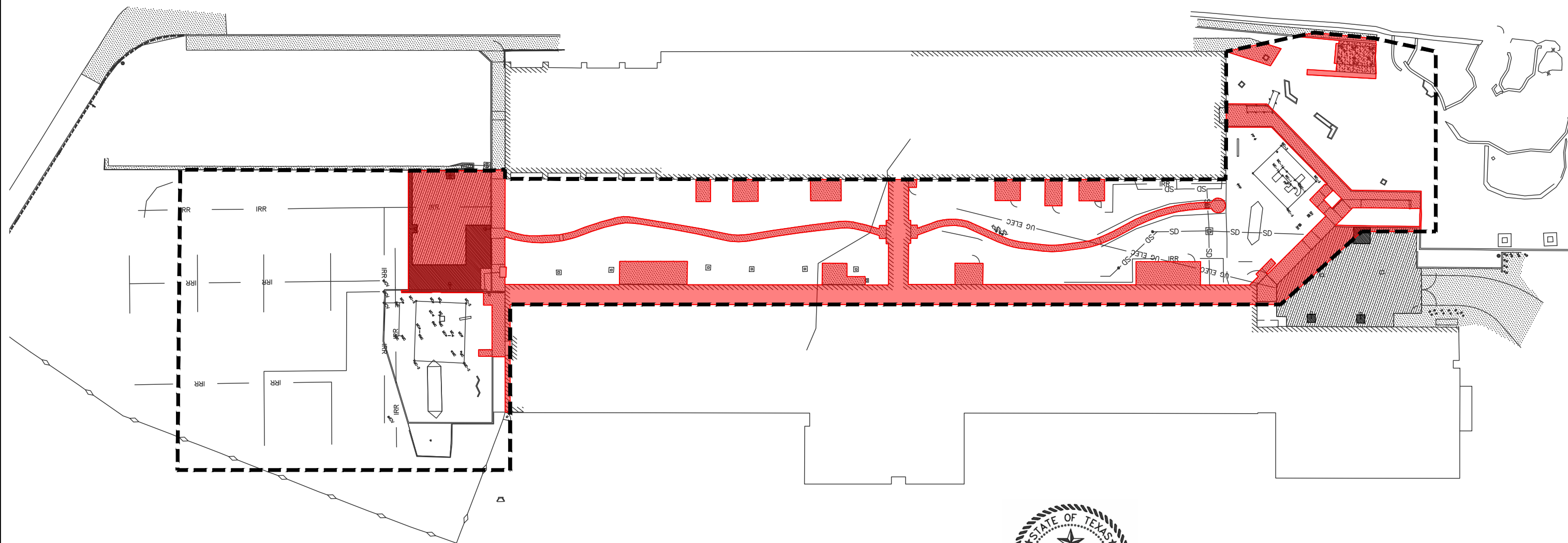
The overall acreage of the Startzville Elementary School property is 13.60 acres and is located at 42111 FM3159, Canyon Lake, TX 78133. The site is located in the Edwards Aquifer Contributing Zone.

Current development consists of an elementary school with buildings, concrete sidewalks, and asphalt parking.

The proposed impervious cover onsite will increase by approximately 0.55 acres, bringing the total site impervious cover to 5.947 acres, or 43.73 percent.



SCALE: 1"=60'
60 30 0 60



R:\COMAL ISD\STARTZVILLE_ES\2023_CZP\DRAWINGS\07_EXISTING IMPERVIOUS COVER.DWG

MTR
Moy Tarin Ramirez Engineers, LLC
TBPELS ENGINEERING F-5287/SURVEYING F-10131500
12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

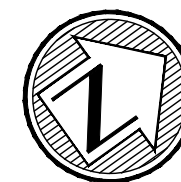
- Engineers
- Surveyors
- Planners

LEGEND

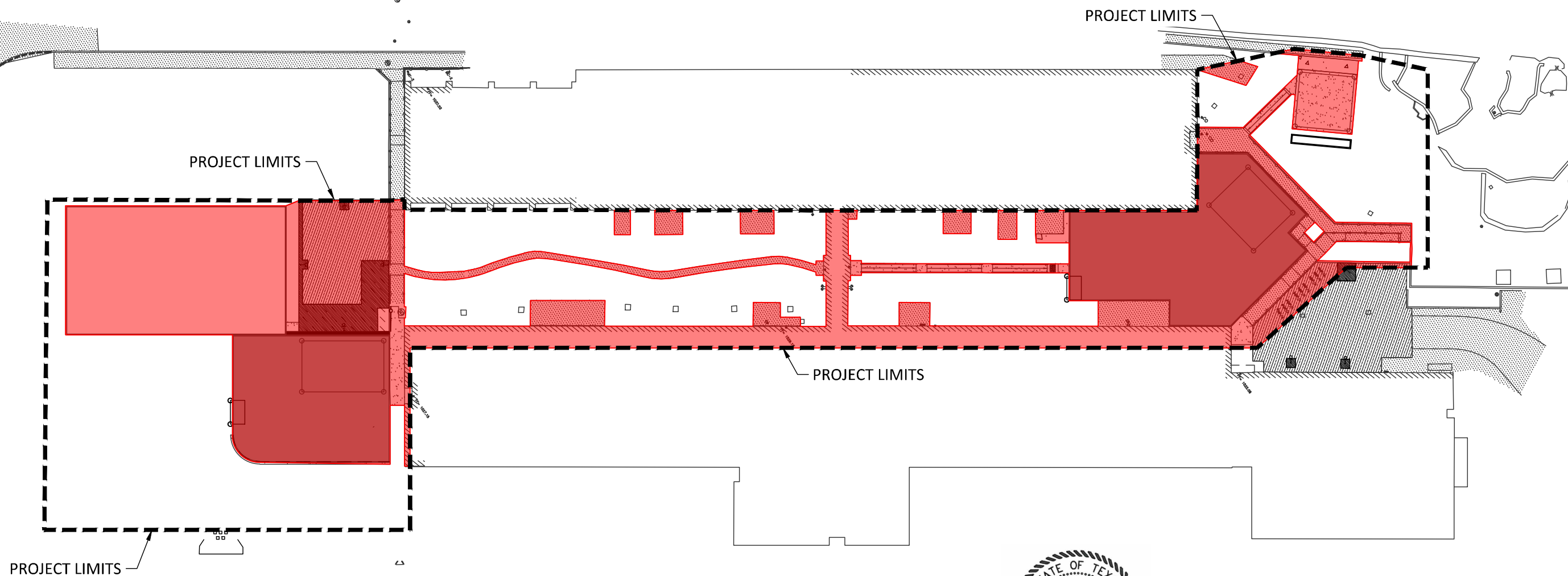
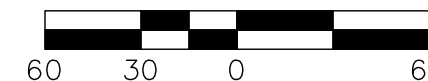
- PROJECT LIMITS
- EXISTING IMPERVIOUS COVER

TOTAL PROJECT AREA = 86,080 S.F.
EXISTING IMPERVIOUS COVER = 18,586 S.F.

COMAL ISD
STARTZVILLE ELEMENTARY SCHOOL
EXISTING IMPERVIOUS COVER EXHIBIT



SCALE: 1"=60'



R:\COMAL ISD\STARTZVILLE_ES\2023_CZP\DRAWINGS\08_PROPOSED IMPERVIOUS COVER.DWG

MTR
Moy Tarin Ramirez Engineers, LLC
 • Engineers
 • Surveyors
 • Planners
 TBPELS ENGINEERING F-5287/SURVEYING F-10131500
 12770 CIMARRON PATH, SUITE 100 TEL: (210) 698-5051
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085

LEGEND
 - - - - - PROJECT LIMITS
 ■ EXISTING IMPERVIOUS COVER

TOTAL PROJECT AREA = 86,080 S.F.
 EXISTING IMPERVIOUS COVER = 18,586 S.F.
 PROPOSED IMPERVIOUS COVER = 42,597 S.F.
 INCREASE IN IMPERVIOUS COVER = 24,011 S.F.

COMAL ISD
STARTZVILLE ELEMENTARY SCHOOL
 PROPOSED IMPERVIOUS COVER EXHIBIT

ATTACHMENT D

FACTORS AFFECTING SURFACE WATER QUALITY

Factors impacting surface water quality include fertilizers, pesticides from landscaping, sediment from soil disturbances, leaf litter from tree removal, small amounts of oil grease from vehicular traffic, and suspended solids from the proposed impervious cover areas. These factors may cause suspended solids to enter into the storm water runoff and subsequently affect the surface water. However, temporary BMPs have been designed on the basis of the Technical Guidance Manual to treat the required amount of storm water runoff as to not adversely affect water quality entering into any surface water or groundwater.

ATTACHMENT E

VOLUME AND CHARACTER OF STORM WATER

Volume of Storm Water

Startzville Elementary School is located to the southeast of a local high point. Stormwater generally sheet flows across the property from the northwest to the southeast, eventually discharging into the drainage ditch along FM 3159. The rational method ($Q=CIA$) was used to calculate the 25-year storm event. The following areas and volumes were calculated:

On-Site Drainage Area A

Existing Conditions

Area = 22.88 acres

Impervious Cover = 7.14 acres

Runoff Coefficient = 0.67

Percent Impervious = 31.21%

$Q_{25} = 91.85$ cfs

Proposed Conditions

Area = 22.88 acres

Impervious Cover = 7.69 acres

Runoff Coefficient = 0.68

Percent Impervious = 33.61%

$Q_{25} = 93.30$ cfs

Character of Storm Water

Stormwater runoff generated from the site during construction will be typical of an elementary school educational facility with buildings, parking lots, and basin maintenance projects. The runoff should consist of small amounts of suspended solids created by sediments from disturbed soils, construction dust, sawdust and hydrocarbons from construction equipment. Temporary BMP's have been selected from the TCEQ Publication, "Complying with the Edwards Aquifer Rules: Technical Guidance for Best Management Practices," to treat the required volume and character of storm water runoff to remove the increased total suspended solids (TSS) due to the proposed maintenance activities. Permanent stabilization of areas where soil is disturbed by construction activities will be accomplished by solid sodding in those areas.

Stormwater runoff generated after construction is complete will also be typical of an elementary school educational facility. The runoff will contain sediments from rooftops, driveways, parking lots, sidewalks, landscape areas, and other miscellaneous impervious areas from the site. The runoff may contain small amounts of oil, grease, suspended solids, fertilizers, and pesticides. The post construction runoff will be treated through the existing Sand Filter Basin and VFS, as well as with the proposed VFS and JellyFish filters.

ATTACHMENT J

BMP'S FOR UPGRADIENT STORM WATER

Upgradient stormwater flows onto the site but is intercepted by interceptor drains and diverted around impervious cover areas. A portion of the diverted upgradient stormwater is conveyed to a detention pond. The discharge from the detention pond flows directly into the FM 3159 drainage ditch. The other portion of diverted stormwater flows into an underground drainage system which conveys the flow to its existing outfall location, the FM 3159 drainage ditch.

ATTACHMENT K

BMP'S FOR ON-SITE STORM WATER

During construction, temporary BMPs consisting of silt fences and bagged gravel inlet filters will be utilized at strategic locations to minimize the amount of sediment leaving the site. After construction, permanent BMPs in the form of an existing filtration basin, proposed vegetative filter strips, and two proposed JellyFish filter will treat on-site runoff.

The proposed project requires the removal of vegetative filter strips due to the footprint of the playgrounds and synthetic turf play areas. These VFS currently treat 0.95 acres of impervious cover. This was factored into the design of the new play areas, with the proposed JellyFish filters designed to accept the entire affected areas as well as treat a portion of the roof that was previously untreated due to an exception granted in 2006 by TCEQ.

There are 5.947 acres of impervious cover on site, however, TCEQ granted an exception for 2.18 acres of impervious cover in 2006 for the roofs. The TSS removal requirement for the resulting 3.767 acres of impervious cover is 3,381 lbs. The impervious cover on site will increase by 0.55 acres with the proposed project. Accounting for the removal of the existing VFS, the permanent BMPs proposed with this project must treat a total of 1.50 acres of impervious over. The following table breaks down the amount of impervious cover treated by each proposed permanent BMP.

Permanent BMP	Acres of Impervious Cover
Vegetative Filter Strips	0.17
JellyFish Filter #1	1.23
JellyFish Filter #2	0.60
Total	2.00

The proposed project will provide overtreatment for a total of 0.50 acres of impervious cover, which calculates to a total of 449 lbs of TSS above the required removal amount.

**Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations**

Project Name: Starzville Elementary School
Date Prepared: 2/10/2023

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$
Pages 3-27 to 3-30

$L_{M\text{ TOTAL PROJECT}}$ = Required TSS removal resulting from the proposed development = 80% of increased load
 A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County = **Comal**
Total project area included in plan * = **1.98** acres
Predevelopment impervious area within the limits of the plan * = **0.00** acres
Total post-development impervious area within the limits of the plan* = **1.83** acres
Total post-development impervious cover fraction * = **0.92**
P = **33** inches
 $L_{M\text{ TOTAL PROJECT}}$ = **1643** lbs.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **1**
Total drainage basin/outfall area = **1.23** acres
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres
Post-development impervious area within drainage basin/outfall area = **1.23** acres
Post-development impervious fraction within drainage basin/outfall area = **1.00**
 $L_{M\text{ THIS BASIN}}$ = **1104** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **JF** abbreviation
Removal efficiency = **86** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7:
 $LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

A_C = Total On-Site drainage area in the BMP catchment area
 A_I = Impervious area proposed in the BMP catchment area
 A_P = Pervious area remaining in the BMP catchment area
 L_R = TSS Load removed from this catchment area by the proposed BMP

A_C = **1.23** acres
 A_I = **1.23** acres
 A_P = **0.00** acres
 L_R = **1208** lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\text{ THIS BASIN}}$ = **1104** lbs.
F = **0.91**

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP = **0.00** acres
Offsite impervious cover draining to BMP = **0.00** acres

Calculations from RG-348
Pages Section 3.2.22

Rainfall Intensity = **1.15** inches per hour
Effective Area = **1.11** acres
Cartridge Length = **54** inches

Peak Treatment Flow Required = **1.28** cubic feet per second

7. Jellyfish

Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size

Jellyfish Size for Flow-Based Configuration = **JFPD0806-7-2**
Jellyfish Treatment Flow Rate = **1.43** cfs



**Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations**

Project Name: Starzville Elementary School
Date Prepared: 1/30/2023

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$
Pages 3-27 to 3-30

$L_{M\text{ TOTAL PROJECT}}$ = Required TSS removal resulting from the proposed development = 80% of increased load
 A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Comal	
Total project area included in plan *	2.12	acres
Predevelopment impervious area within the limits of the plan *	0.00	acres
Total post-development impervious area within the limits of the plan*	1.97	acres
Total post-development impervious cover fraction *	0.93	
P =	33	inches
$L_{M\text{ TOTAL PROJECT}}$ =	1768	lbs.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	0.75	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.60	acres
Post-development impervious fraction within drainage basin/outfall area =	0.80	
$L_{M\text{ THIS BASIN}}$ =	539	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **JF** abbreviation
Removal efficiency = **86** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7:
 $LR = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

A_C = Total On-Site drainage area in the BMP catchment area
 A_I = Impervious area proposed in the BMP catchment area
 A_P = Pervious area remaining in the BMP catchment area
 L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	0.75	acres
A_I =	0.60	acres
A_P =	0.15	acres
L_R =	591	lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\text{ THIS BASIN}}$ = **539** lbs.
F = **0.91**

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP = **0.00** acres
Offsite impervious cover draining to BMP = **0.00** acres

Calculations from RG-348
Pages Section 3.2.22

Rainfall Intensity = **1.15** inches per hour
Effective Area = **0.54** acres
Cartridge Length = **54** inches

Peak Treatment Flow Required = 0.63 cubic feet per second

7. Jellyfish

Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size

Jellyfish Size for Flow-Based Configuration = **JFPD0806-4-1**
Jellyfish Treatment Flow Rate = **0.80** cfs



Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.

Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet

1. The Required Load Reduction for the total project:

Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where: $L_{M \text{ TOTAL PROJECT}}$ = Required TSS removal resulting from the proposed development = 80% of increased L_C
 A_N = Net increase in impervious area for the project
 P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Comal	
Total project area included in plan *	13.60	acres
Predevelopment impervious area within the limits of the plan *	0.00	acres
Total post-development impervious area within the limits of the plan *	3.77	acres
Total post-development impervious cover fraction *	0.28	
P =	33	inches

$L_{M \text{ TOTAL PROJECT}} = 3381$ lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = **1**



2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. =	1	
Total drainage basin/outfall area =	0.17	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	0.17	acres
Post-development impervious fraction within drainage basin/outfall area =	1.00	
$L_{M \text{ THIS BASIN}} =$	153	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **Vegetated Filter Strips**
 Removal efficiency = **85** percent

- Aqualogic Cartridge Filter
- Bioretention
- Contech StormFilter
- Constructed Wetland
- Extended Detention
- Grassy Swale
- Retention / Irrigation
- Sand Filter
- Stormceptor
- Vegetated Filter Strips
- Vortechs
- Wet Basin
- Wet Vault

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

where: A_C = Total On-Site drainage area in the BMP catchment area
 A_i = Impervious area proposed in the BMP catchment area
 A_p = Pervious area remaining in the BMP catchment area
 L_R = TSS Load removed from this catchment area by the proposed BMP

$A_C =$	0.17	acres
$A_i =$	0.17	acres
$A_p =$	0.00	acres
$L_R =$	165	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired L_M THIS BASIN = **153** lbs.

F = **0.93**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.

Calculations from RG-348

Pages 3-34 to 3-36

Rainfall Depth = **2.20** inches
Post Development Runoff Coefficient = **0.82**
On-site Water Quality Volume = **1108** cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP = **0.00** acres
Off-site Impervious cover draining to BMP = **0.00** acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **222**

Total Capture Volume (required water quality volume(s) x 1.20) = **1330** cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System

Designed as Required in RG-348

Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = **NA** cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate = **0.1** in/hr Enter determined permeability rate or assumed value
Irrigation area = **NA** square feet
NA acres

8. Extended Detention Basin System

Designed as Required in RG-348

Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin = **NA** cubic feet

9. Filter area for Sand Filters

Designed as Required in RG-348

Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin = **NA** cubic feet

Minimum filter basin area = **NA** square feet

Maximum sedimentation basin area = **NA** square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = **NA** square feet For maximum water depth of 8 feet

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = **NA** cubic feet

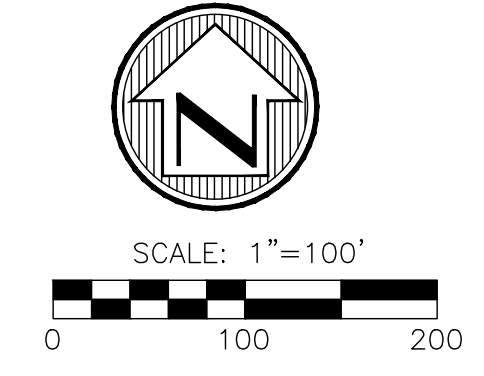
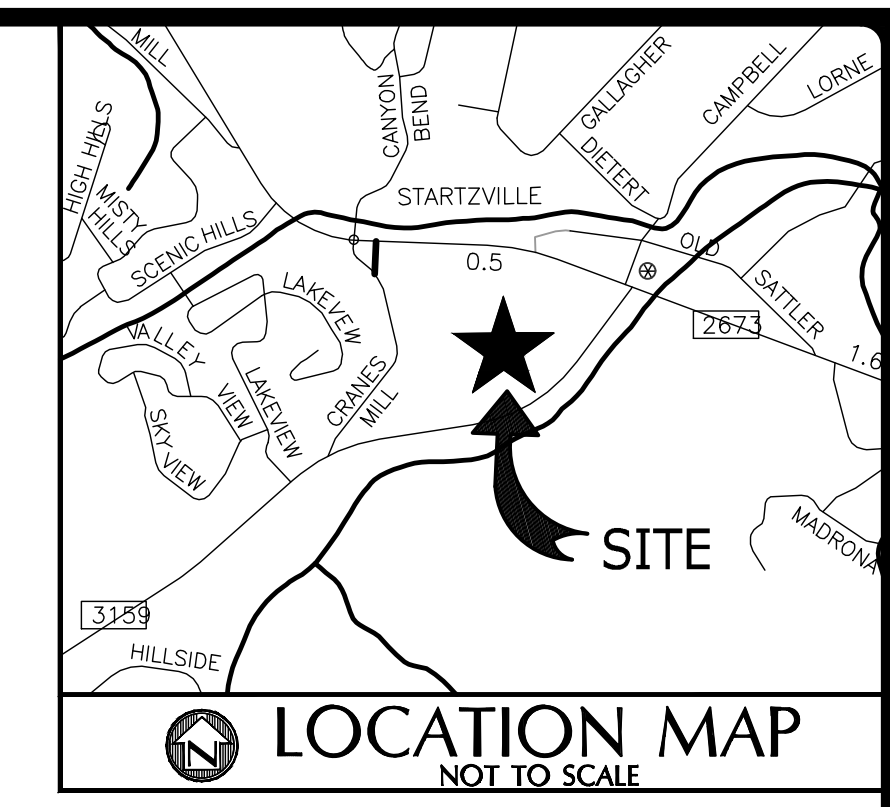
Minimum filter basin area = **NA** square feet

Maximum sedimentation basin area = **NA** square feet For minimum water depth of 2 feet
Minimum sedimentation basin area = **NA** square feet For maximum water depth of 8 feet

ATTACHMENT L

BMP's FOR SURFACE STREAMS

There are no surface streams on the project site. Permanent and temporary BMPs, as shown on the Site Plan, will be used to minimize sediments leaving the site and flowing into off-site surface streams during and after construction.



LEGEND

	PROPERTY LINE
	EXISTING CONTOUR
	SILT FENCE
	SAND/GRAVEL BAG
	RUBBERIZED PLAYGROUND SURFACE
	NEW CONCRETE SIDEWALK/FLATWORK
	ARTIFICIAL TURF PLAY AREA
	NEW ASPHALT PAVEMENT
	BAGGED GRAVEL INLET FILTER

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES**

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE APPROVED PROJECT;
 - THE ACTIVITY START DATE; AND
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFFSITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
 - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
 - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
 - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
 - A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPs) OR STRUCTURE(S) INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERRIS, SILT FENCES, AND DIVERSIONARY STRUCTURES;
 - B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
 - C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
 - D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

Austin Regional Office
1210 Park 26 Circle, Building A
Austin, Texas 78753-1008
Phone: (512) 339-2329
Fax: (512) 339-3766

San Antonio Regional Office
14250 Junction Road
San Antonio, Texas 78233-4480
Phone: (210) 480-3096
Fax: (210) 545-4320

GENERAL NOTES:

1. PROVIDE BAGGED GRAVEL INLET FILTERS AT ALL EXPOSED DRAINAGE STRUCTURES.
2. SOIL DISTURBANCES WILL OCCUR OVER PARTS OF SITE AS INDICATED ON PLAN.
3. LOCATIONS OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS ARE LABELED.
4. THESE ARE THE TEMPORARY AND PERMANENT BEST MANAGEMENT PRACTICES.
5. SOIL STABILIZATION PRACTICES SHALL OCCUR OVER THE ENTIRE SITE WITH THE USE OF PAVEMENT, BUILDINGS, SIDEWALKS, GRASS SOIL, GRASS SEEDING AND MULCH.
6. THERE ARE NO LOCATIONS WHERE STORMWATER DISCHARGES TO SURFACE WATER.

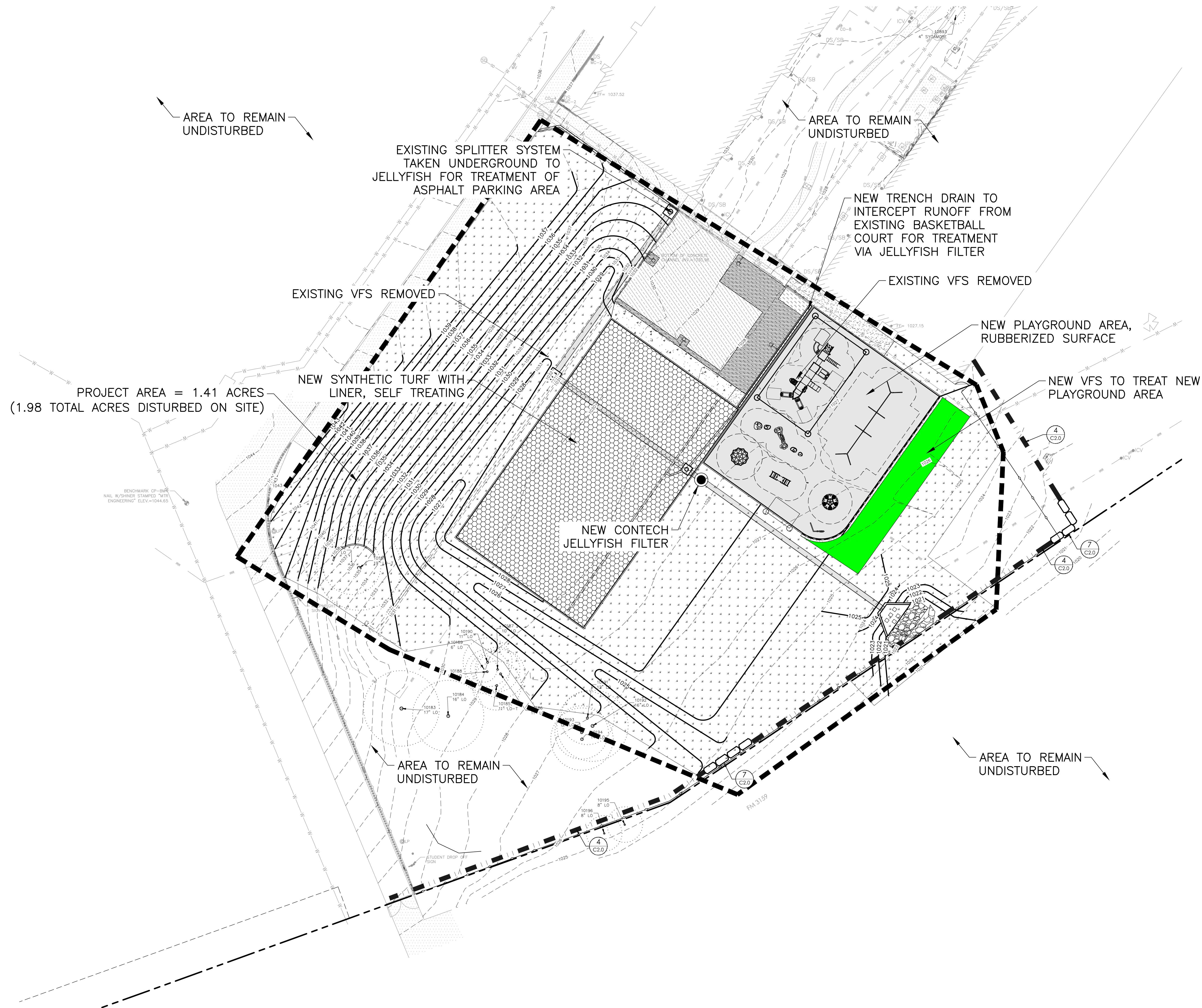
NO.	DATE	DESCRIPTION	BY

• Engineers
 • Surveyors
 • Planners

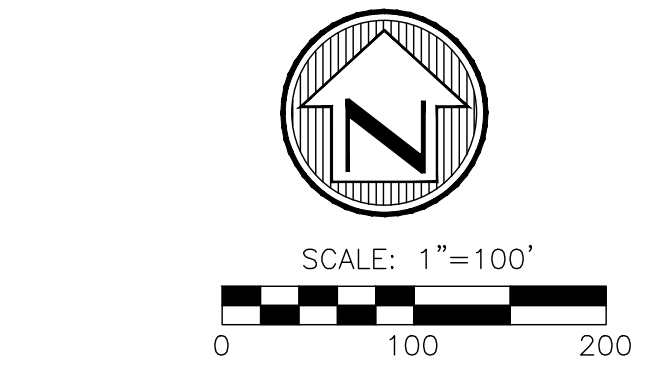
Moy Tarin Ramirez Engineers, LLC
 TPELTS: ENGINEERING F-5297/SURVEYING F-01151500
 12770 CAMARILLO PATH, SUITE 100 TEL: (210) 698-5051
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5065



PLAYGROUND UPGRADES - PACKAGE C - GROUP 3
 ARLON SEAY ES AND SPRING BRANCH MS
CONTRIBUTING ZONE PLAN / STORM WATER POLLUTION PREVENTION PLAN



PROJECT AREA = 1.41 ACRES
(1.98 TOTAL ACRES DISTURBED ON SITE)



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- SILT FENCE
- SAND/GRAVEL BAG
- RUBBERIZED PLAYGROUND SURFACE
- NEW CONCRETE SIDEWALK/FLATWORK
- ARTIFICIAL TURF PLAY AREA
- NEW ASPHALT PAVEMENT
- BAGGED GRAVEL INLET FILTER

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRIBUTING ZONE PLAN
GENERAL CONSTRUCTION NOTES**

1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY GROUND DISTURBANCE OR CONSTRUCTION ACTIVITIES. THIS NOTICE MUST INCLUDE:
 - THE NAME OF THE APPROVED PROJECT;
 - THE ACTIVITY START DATE; AND
 - THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT SHOULD BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED CONTRIBUTING ZONE PLAN (CZP) AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTOR(S) SHOULD KEEP COPIES OF THE APPROVED PLAN AND APPROVAL LETTER ON-SITE.
3. NO HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
4. PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
5. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
6. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
7. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BEING DISCHARGED OFF-SITE.
8. ALL EXCAVATED MATERIAL THAT WILL BE STORED ON-SITE MUST HAVE PROPER E&S CONTROLS.
9. IF PORTIONS OF THE SITE WILL HAVE A CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
10. THE FOLLOWING RECORDS SHOULD BE MAINTAINED AND MADE AVAILABLE TO THE TCEQ UPON REQUEST:
 - THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR;
 - THE DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE; AND
 - THE DATES WHEN STABILIZATION MEASURES ARE INITIATED.
11. THE HOLDER OF ANY APPROVED CZP MUST NOTIFY THE APPROPRIATE REGIONAL OFFICE IN WRITING AND OBTAIN APPROVAL FROM THE EXECUTIVE DIRECTOR PRIOR TO INITIATING ANY OF THE FOLLOWING:
 - A. ANY PHYSICAL OR OPERATIONAL MODIFICATION OF ANY BEST MANAGEMENT PRACTICES (BMPs) OR STRUCTURE(S), INCLUDING BUT NOT LIMITED TO TEMPORARY OR PERMANENT PONDS, DAMS, BERRIS, SILT FENCES, AND DIVERSIONARY STRUCTURES;
 - B. ANY CHANGE IN THE NATURE OR CHARACTER OF THE REGULATED ACTIVITY FROM THAT WHICH WAS ORIGINALLY APPROVED;
 - C. ANY CHANGE THAT WOULD SIGNIFICANTLY IMPACT THE ABILITY TO PREVENT POLLUTION OF THE EDWARDS AQUIFER; OR
 - D. ANY DEVELOPMENT OF LAND PREVIOUSLY IDENTIFIED AS UNDEVELOPED IN THE APPROVED CONTRIBUTING ZONE PLAN.

Austin Regional Office
1210 Park 26 Circle, Building A
Austin, Texas 78753-1008
Phone (512) 339-2929
Fax (512) 339-3766

San Antonio Regional Office
14250 Jurine Road
San Antonio, Texas 78233-4480
Phone (210) 480-3086
Fax (210) 545-4320

GENERAL NOTES:

1. PROVIDE BAGGED GRAVEL INLET FILTERS AT ALL EXPOSED DRAINAGE STRUCTURES.
2. SOIL DISTURBANCES WILL OCCUR OVER PARTS OF SITE AS INDICATED ON PLAN.
3. LOCATIONS OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS ARE LABELED.
4. THESE ARE THE TEMPORARY AND PERMANENT BEST MANAGEMENT PRACTICES.
5. SOIL STABILIZATION PRACTICES SHALL OCCUR OVER THE ENTIRE SITE WITH THE USE OF PAVEMENT, BUILDINGS, SIDEWALKS, GRASS SOIL, GRASS SEEDING AND MULCH.
6. THERE ARE NO LOCATIONS WHERE STORMWATER DISCHARGES TO SURFACE WATER.

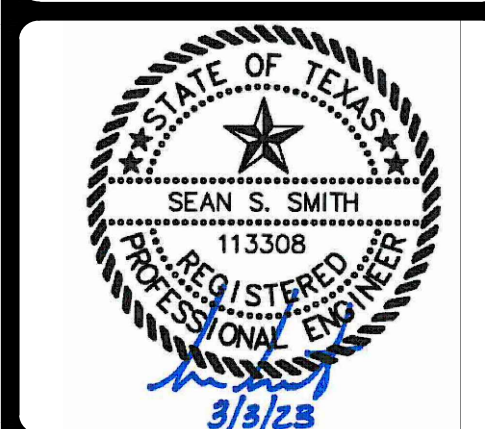
NO.	DATE	DESCRIPTION	BY

**Engineers
• Surveyors
• Planners**

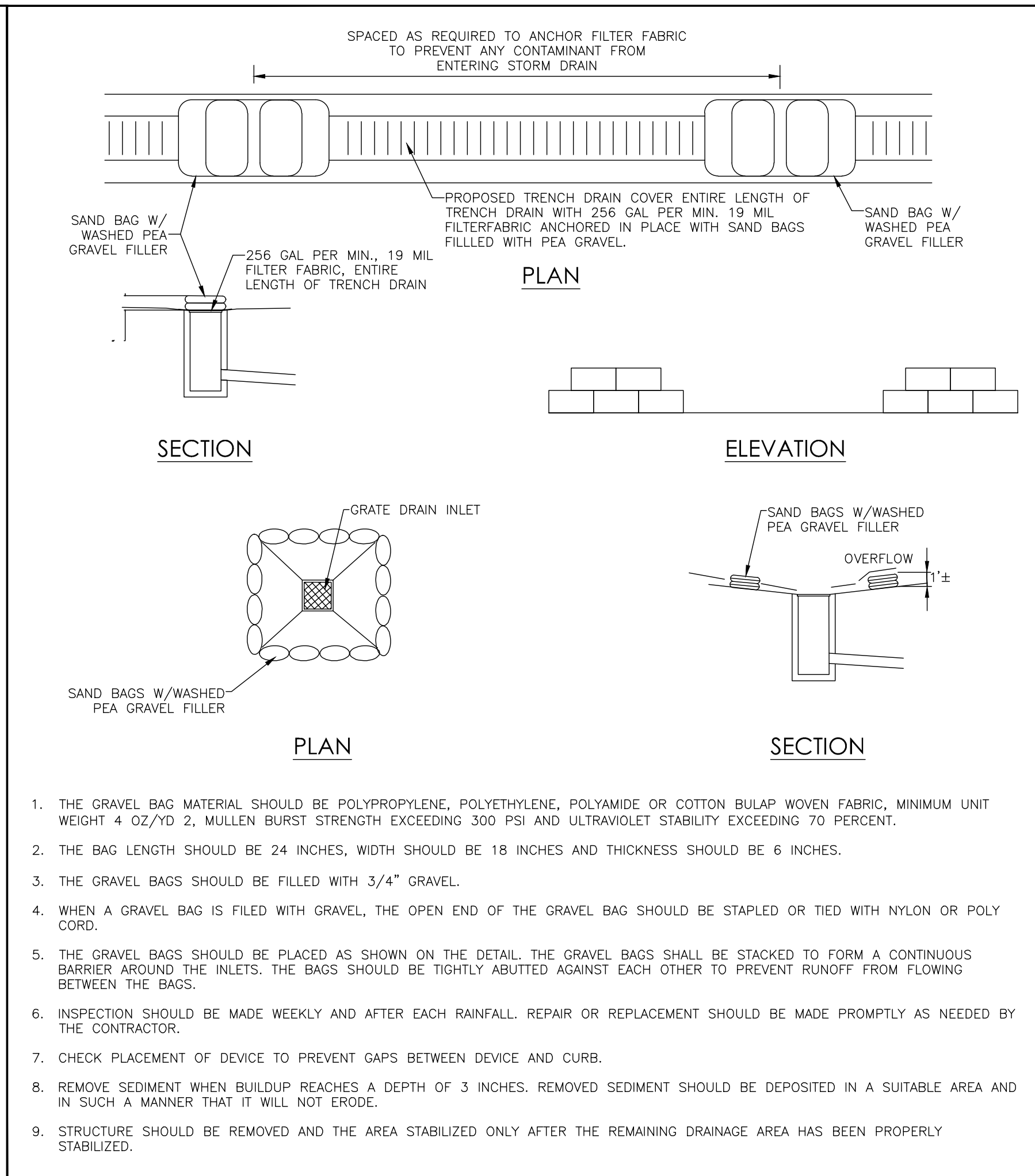
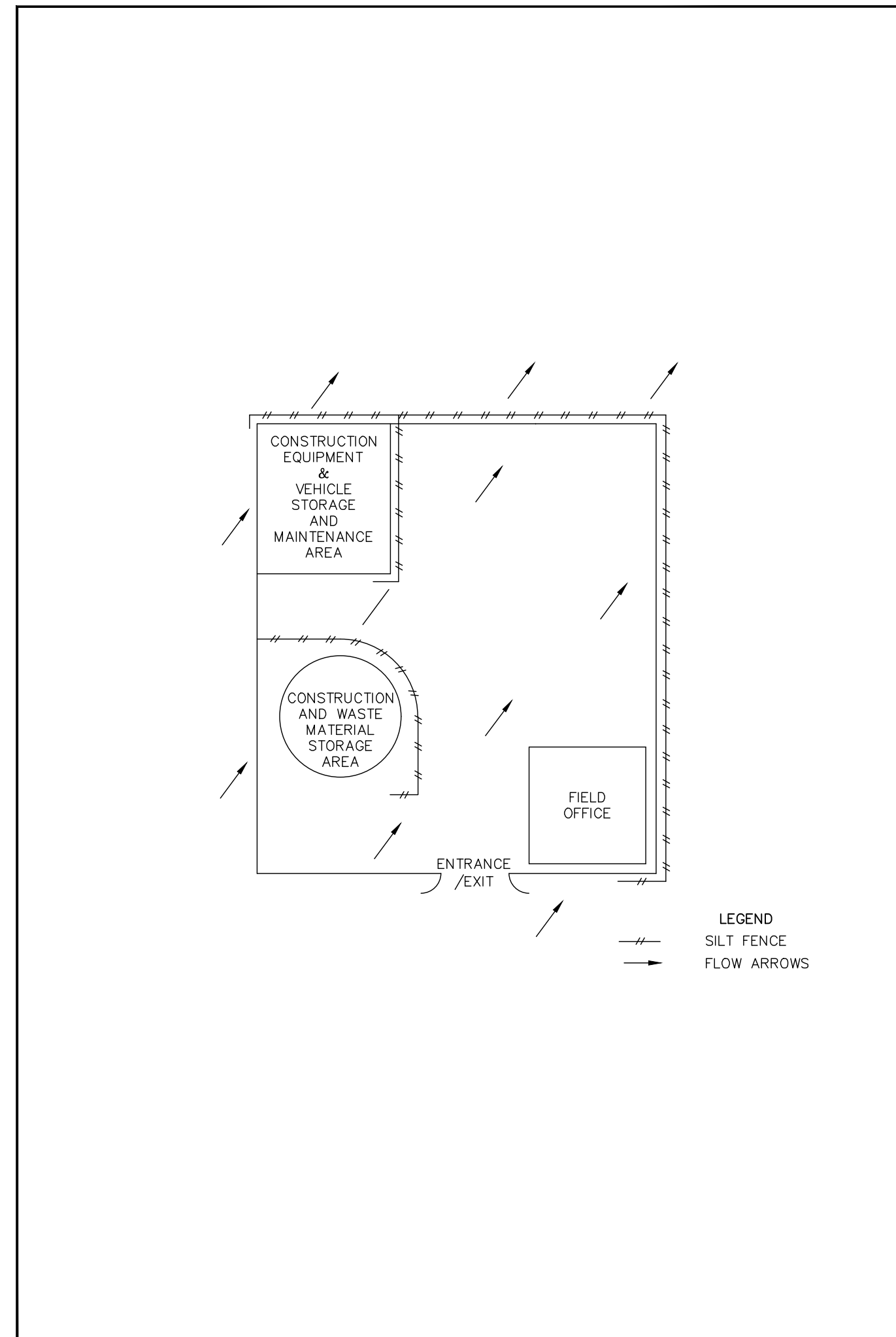
MIR

Moy Tarin Ramirez Engineers, LLC

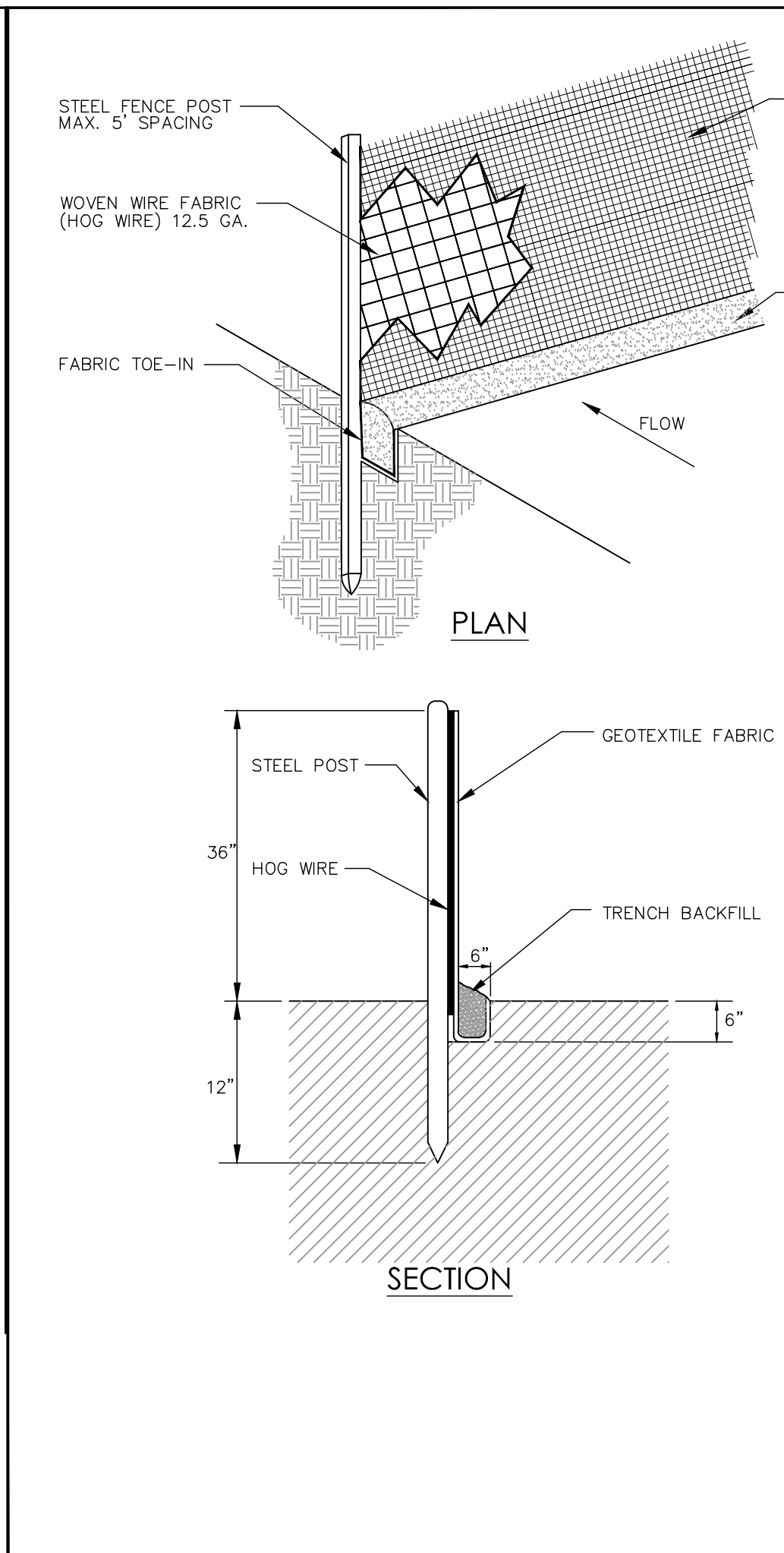
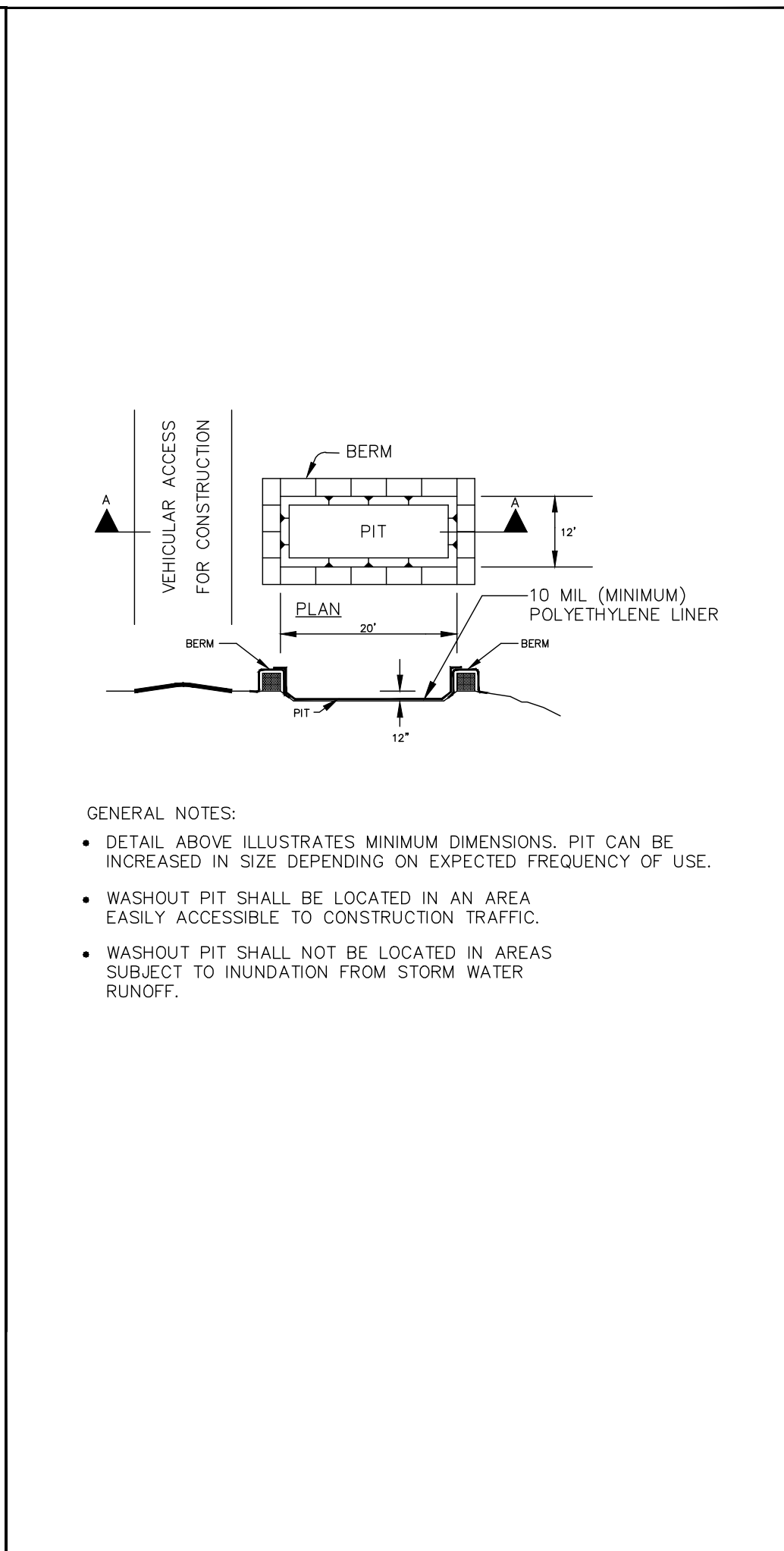
TEPELS: ENGINEERING F-5297/SURVEYING F-10115100
12770 CAMARON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
TEL: (210) 698-5051
FAX: (210) 698-5085



PLAYGROUND UPGRADES - PACKAGE C - GROUP 3
 STARTZVILLE ELEMENTARY SCHOOL
 CONTRIBUTING ZONE PLAN / STORM WATER POLLUTION PREVENTION PLAN



1. THE GRAVEL BAG MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, POLYAMIDE OR COTTON BULAP WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OZ/YD 2, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70 PERCENT.
2. THE BAG LENGTH SHOULD BE 24 INCHES, WIDTH SHOULD BE 18 INCHES AND THICKNESS SHOULD BE 6 INCHES.
3. THE GRAVEL BAGS SHOULD BE FILLED WITH 3/4" GRAVEL.
4. WHEN A GRAVEL BAG IS FILLED WITH GRAVEL, THE OPEN END OF THE GRAVEL BAG SHOULD BE STAPLED OR TIED WITH NYLON OR POLY CORD.
5. THE GRAVEL BAGS SHOULD BE PLACED AS SHOWN ON THE DETAIL, THE GRAVEL BAGS SHALL BE STACKED TO FORM A CONTINUOUS BARRIER AROUND THE INLETS, THE BAGS SHOULD BE TIGHTLY ADJUTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.
6. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
7. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
8. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. STRUCTURE SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



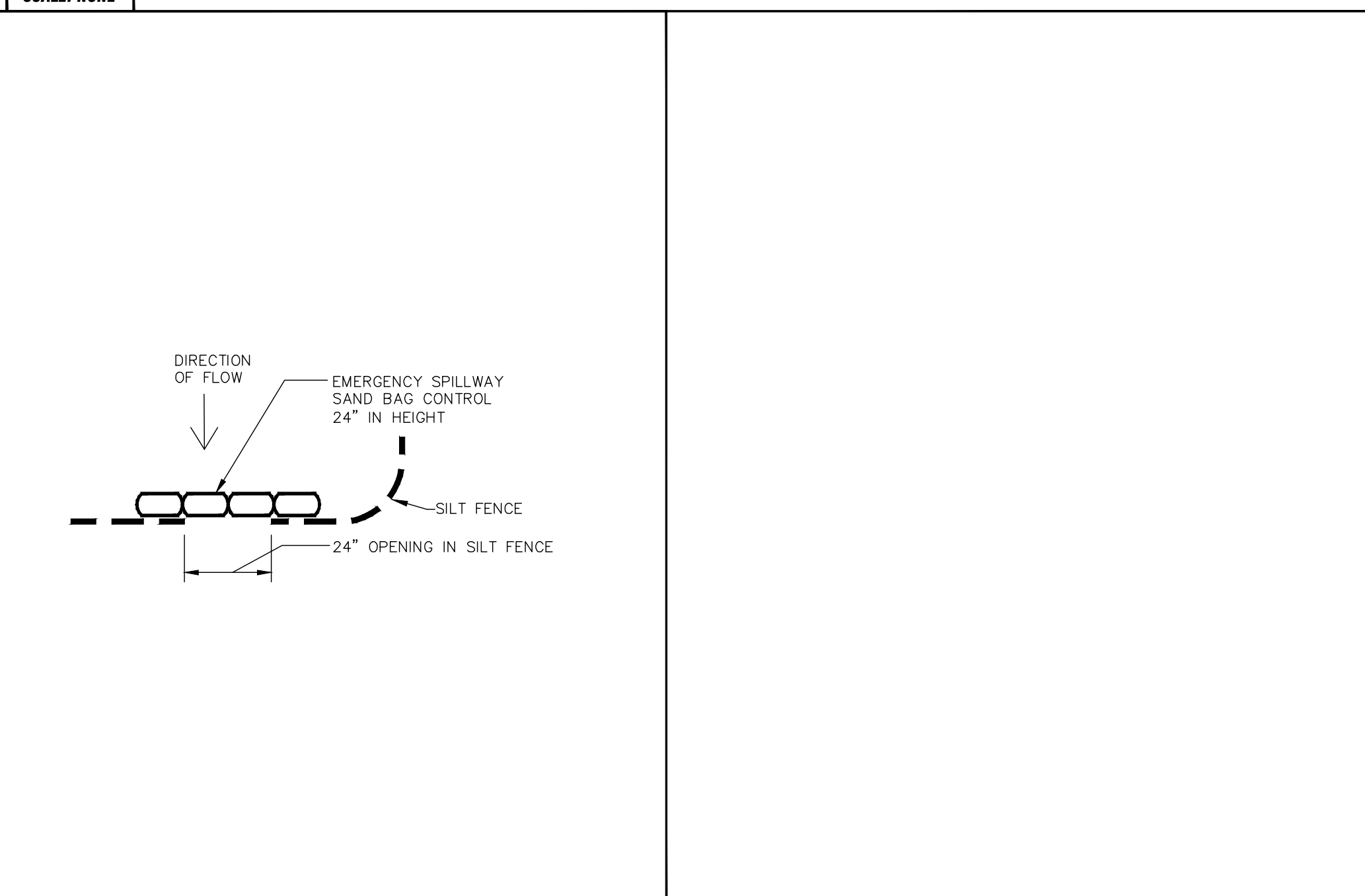
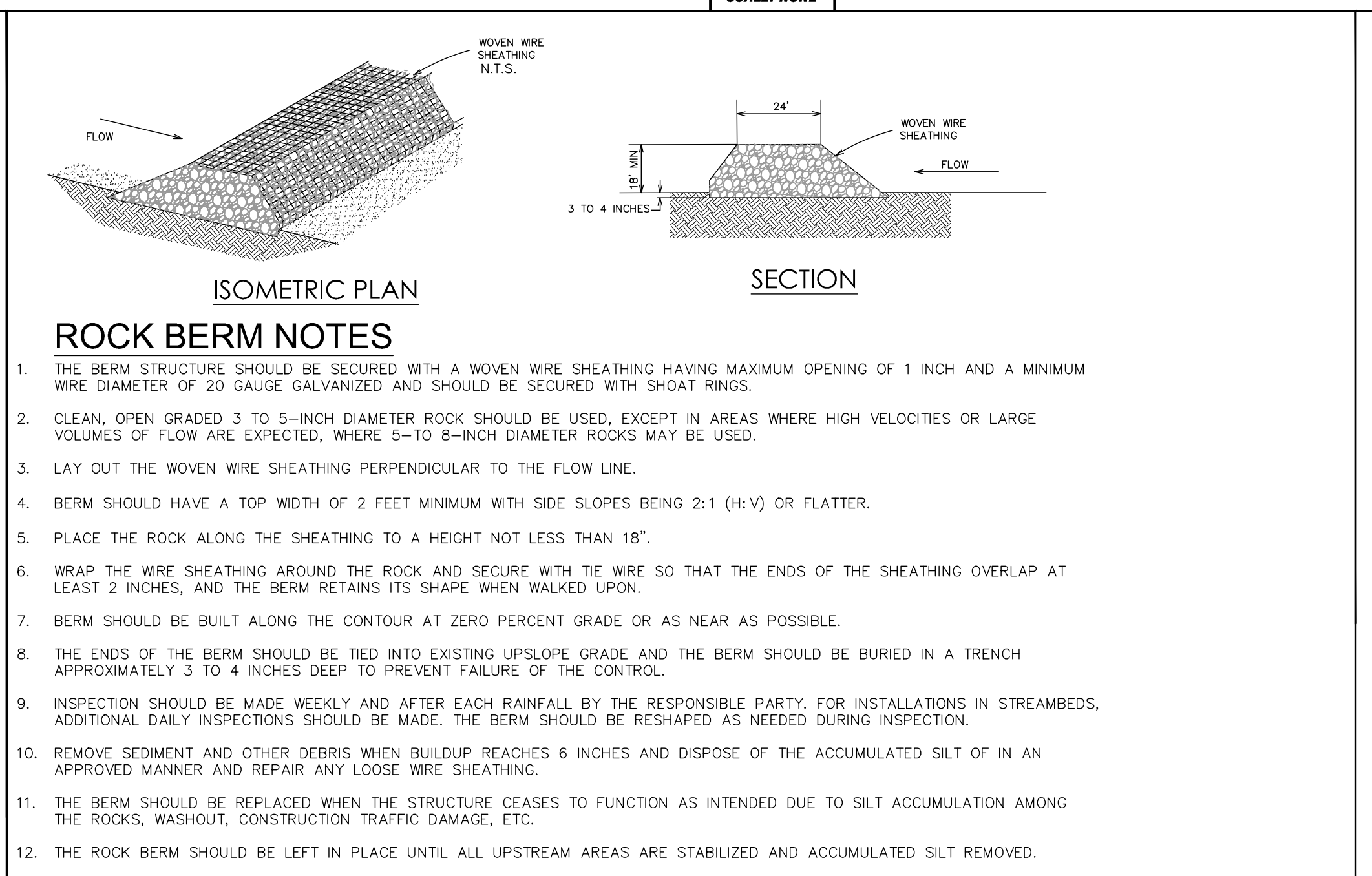
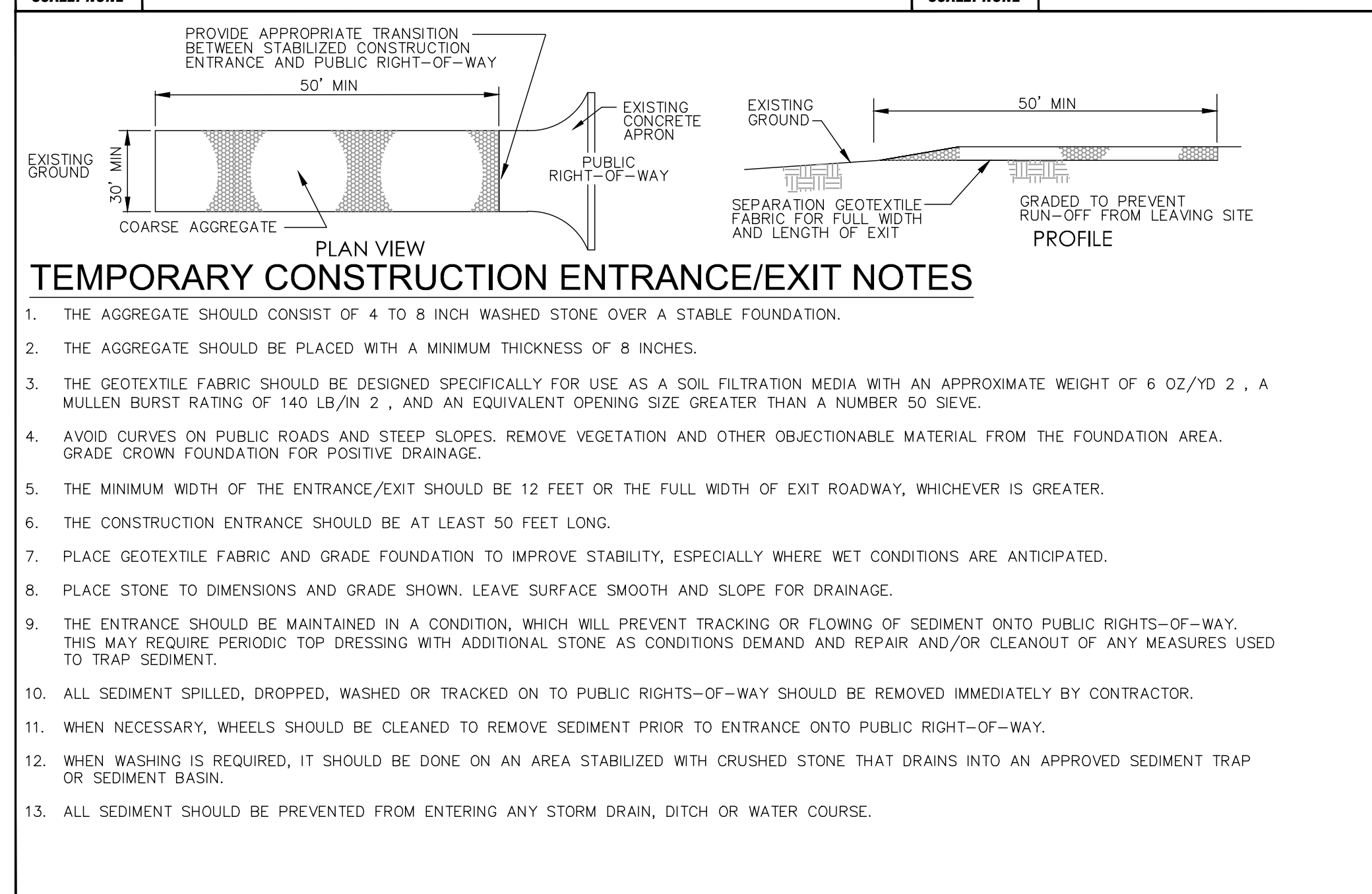
- SILT FENCE NOTES**
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/N 2, ULTRAVIOLET STABILITY EXCEEDING 70% AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
 2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM NOMINAL WEIGHT 1.25 LB/FT 2, AND BRINELL HARDNESS EXCEEDING 140.
 3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12.5 GAUGE MINIMUM.
 4. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1 FOOT DEEP AND SPACED NOT MORE THAN 5 FEET ON CENTER.
 5. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA. FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE, THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS 1/4 ACRE/100 FEET OF FENCE.
 6. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP). WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
 7. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
 8. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
 9. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
 10. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES, OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE OLD FENCE.
 11. REPLACE ANY TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.
 12. 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 VEHICULAR ACCESS POINTS.

1 CONSTRUCTION STAGING AREA
 SCALE: NONE

2 BAGGED GRAVEL INLET FILTER
 SCALE: NONE

3 CONCRETE TRUCK WASHOUT PIT
 SCALE: NONE

4 SILT FENCE DETAIL
 SCALE: NONE



5 STABILIZED CONSTRUCTION ENTRANCE / EXIT
 SCALE: NONE

6 ROCK BERM
 SCALE: NONE

7 PLAN - SAND BAG CONTROL DETAIL
 SCALE: NONE

NO.	DATE	DESCRIPTION	BY

MIR
 Engineers
 Surveyors
 Planners

Moy Tarin Ramirez Engineers, LLC
 TPEELS: ENGINEERING F-5297/SURVEYING T-1011500
 12770 CHAMBERLAIN PATH, SUITE 100
 SAN ANTONIO, TEXAS 78249
 TEL: (210) 698-5051
 FAX: (210) 698-5085



PLAYGROUND UPGRADES - PACKAGE C - GROUP 3
 STARTZVILLE ELEMENTARY SCHOOL
 CONTRIBUTING ZONE PLAN / STORM WATER POLLUTION PREVENTION PLAN DETAILS

GENERAL NOTES:

- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO BEGINNING WORK.
- ALL WASTE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND IT SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE SITE TO A STATE LICENSED LANDFILL. CONTRACTOR WILL BE REQUIRED TO PROVIDE DOCUMENTATION WHERE DISPOSED MATERIAL IS TAKEN TO. THE OWNER WILL NOT BE HELD LIABLE FOR WASTE MATERIAL.
- CONTRACTOR IS REQUIRED TO SET AND VERIFY ALL PROJECT ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY THE SAME MATERIALS AS WELL AS VERTICAL AND HORIZONTAL ALIGNMENT.
- GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSION & GRADE CONDITIONS (BOTH NEW AND EXISTING). HE SHALL REPORT ANY DISCREPANCIES TO THE PROJECT ENGINEER BEFORE PROCEEDING WITH ANY PHASE OF THE WORK AS HE WILL BE RESPONSIBLE FOR ALL WORK AS INTENDED BY THE DRAWINGS AND SPECIFICATIONS.
- CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY.
- BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND GENERALLY BE LOCATED TO AFFORD MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT AND TO ASSURE AN EXPEDITIOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION.
- ANY EXISTING OFF-SITE IMPROVEMENTS AND/OR UTILITIES REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE PROJECT ARCHITECT AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGES DONE TO EXISTING FENCES, CURBS, CONCRETE DRIVEWAYS, SIDEWALK STRUCTURES AND PAVEMENT THAT ARE NOT INDICATED TO BE REMOVED. AN INVENTORY OF EXISTING CONDITIONS SHALL BE CONDUCTED WITH THE CONTRACTOR AND OWNER PRIOR TO DEMOLITION.
- CONTRACTOR SHALL MAINTAIN CONTINUAL ALL UTILITY SERVICES (GAS, TELE, CATV, ELEC., WATER, SEWER, STORM SEWER, ETC.) TO EXISTING FACILITIES AND BUILDINGS WHERE CONSTRUCTION IS IN THE PROXIMITY OF A UTILITY. THE CONTRACTOR WILL TAKE PRECAUTION TO PROTECT AND/OR SUPPORT THE UTILITY.
- CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- NOTIFY OWNER 72 HOURS IN ADVANCE OF UTILITY SHUTDOWN.
- ADJUST ALL EXISTING VALVES & UTILITIES TO REMAIN TO FINISH GRADE. REFERENCE GRADING & UTILITY PLAN.
- CONTRACTOR SHALL COORDINATE ALL DEMOLITION CONSTRUCTION ACTIVITIES WITH OTHER DISCIPLINES AS REQUIRED.
- CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION WITH UTILITY PLANS.
- CONTRACTOR IS RESPONSIBLE FOR CLEARING THE ALIGNMENT FOR ALL NEW FENCING. CLEARING TO INCLUDE ALL VEGETATION, TREE LIMBS, AND SHRUBS WITHIN 5' OF NEW FENCE ALIGNMENT ON EACH SIDE.
- CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL SILT FROM THE DRAINAGE SYSTEM AND FLUSH THE DRAINAGE SYSTEM UPON SUBSTANTIAL COMPLETION OF THE PROJECT.

DRAINAGE AND STORM SEWER NOTES:

- CLEAR COVER FOR REINFORCEMENT STEEL IS 2" UNLESS OTHERWISE NOTED.
- MATERIAL SPECIFICATIONS:
CONCRETE/CONCRETE RIPRAP: CLASS A 3000 PSI IN 28 DAYS UNLESS OTHERWISE NOTED ON PLANS.
REINFORCING STEEL: CONFORM TO A.S.T.M. A-615, GRADE 60 (2" CLEAR COVER UNLESS OTHERWISE NOTED ON PLANS)
PIPE RAILING: CONFORM TO A.S.T.M. A-53, GRADE B, OR A-501
STORM SEWER PIPE MATERIAL SPECIFICATIONS: PIPE MATERIAL SHALL BE AS NOTED ON DRAINAGE PLANS. WHEN SPECIFIED:
A) REINFORCED CONCRETE PIPE (RCP) CLASS IV UNLESS OTHERWISE SPECIFIED ON PLAN.
B) PRECAST BOX CULVERT OLDCASTLE PRECAST TYPE I OR EQUAL APPROVED BY ENGINEER.
C) POLYVINYL CHLORIDE (PVC) PIPE SHALL BE SDR 26 (115 PSI)
D) ALUMINIZED STEEL (AS)
1) CORRUGATIONS: 3"X2"X7-1/2" HELICAL CORRUGATIONS PER ASSHTO M-36, TYPE IR (ASTM A-760)
2) MATERIAL: ALUMINIZED TYPE 2 STEEL PER ASSHTO M-274 (ASTM A-819)
3. JOINT: HUGGER BAND WITH TECHNO ANGLES. CONTRACTOR TO PROVIDE 5-C BANDS WITH BAR BOLT AND STRAP CONNECTION AND 12" WIDE NEOPRENE GASKET FOR ALL STORM PIPE UNDER PAVEMENT AREAS.
4. THICKNESS: 0.064" (16 GAUGE)
- ALL STORM SEWER INLET GRATES SHALL BE GALVANIZED.
- CONCRETE COLLARS SHALL BE PROVIDED ON ALL STORM DRAIN TO JUNCTION BOX/GRATE INLET CONNECTIONS. REFERENCE DETAILS.
- GROUT INVERTS OF ALL JUNCTION BOXES AND GRATE INLETS TO DRAIN.
- ALL JUNCTION BOXES SHALL HAVE MANHOLES FOR ACCESS WITH BOLTED MANHOLE LIDS.
- ALL DRAINAGE STRUCTURES, LIDS AND GRATES SHALL BE RATED FOR H20 LOADING.
- ALL PIPE TRENCHES SHALL CONTAIN FILTER FABRIC BETWEEN THE INITIAL AND SECONDARY BACKFILL. REFERENCE DETAILS AND SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.
- ALL CONCRETE STORM DRAIN STRUCTURES TO HAVE A 32" CLEAR OPENING FOR ACCESS. CONTRACTOR TO PROVIDE CORRESPONDING LID AND FRAME TO PROVIDE 32" CLEAR OPENING.

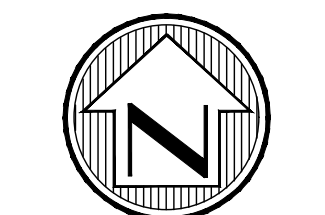
PAINT SPECIFICATION

THE PAVEMENT MARKING PAINT TO BE USED ON THIS PROJECT WILL BE CORILLA HI-PERFORMANCE ACRYLIC ZONE MARKING PAINT FROM ACECEL OR APPROVED EQUAL. WHITE PAINT 22W-E008 AND LEAD-FREE YELLOW 22Y-E006.

SURFACE PREPARATION: SURFACES WILL BE CLEAN, DRY AND FREE FROM LOOSE OR PEELING SURFACES. DO NOT APPLY WHEN AIR TEMPERATURES ARE BELOW 50°F OR WHEN THE RELATIVE HUMIDITY EXCEEDS 85% OR WHEN THE TEMPERATURE FALLS BELOW THE DEW POINT. IT IS RECOMMENDED TO PLACE AN INCONSPICUOUS TEST STRIP TO DETERMINE IF THE NEW ASPHALT SURFACES HAVE CURED SUFFICIENTLY TO PAINT. WAIT 24 HOURS AFTER A RAIN TO PAINT ASPHALT SURFACES.

APPLICATION RATES: APPLY PAINT AT FILM THICKNESS AND SPREADING RATE AS RECOMMENDED BY THE PAINT SUPPLIER. ALL OF THE NEW ASPHALT SURFACES WILL BE PAINTED WITH TWO (2) COATS OF 15.0 MILS WET, 8.0 MILS DRY. THE FIRST COAT MUST BE COMPLETELY DRY BEFORE THE SECOND COAT IS APPLIED. WAIT A MINIMUM OF 10 DAYS BETWEEN THE ASPHALT PLACEMENT AND THE PERMANENT TRAFFIC STRIPING AND MARKINGS.

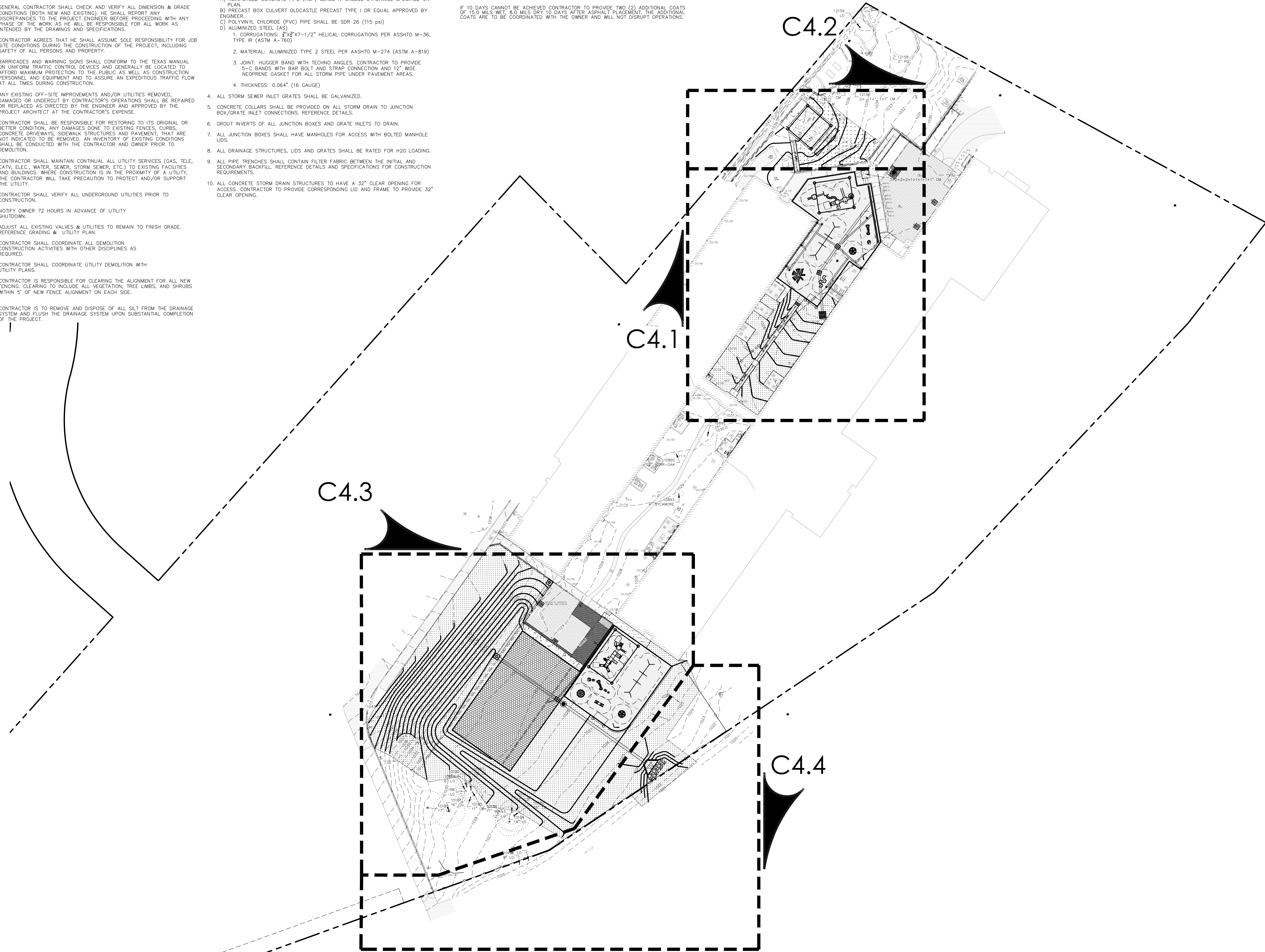
IF 10 DAYS CANNOT BE ACHIEVED CONTRACTOR TO PROVIDE TWO (2) ADDITIONAL COATS OF 15.0 MILS WET, 8.0 MILS DRY 10 DAYS AFTER ASPHALT PLACEMENT. THE ADDITIONAL COATS ARE TO BE COORDINATED WITH THE OWNER AND WILL NOT DISRUPT OPERATIONS.



SCALE: 1"=40'

LEGEND

- + 802.97 EXISTING SPOT ELEVATION
- XXXXXX PROPOSED ELEVATION
- TC TOP OF CURB ELEVATION
- NG NATURAL GROUND ELEVATION
- INV INVERT ELEVATION
- TOG TOP OF GRATE ELEVATION
- 1004 NEW CONTOUR
- 1004 EXISTING CONTOUR
- CHAINLINK FENCE
- EQUIPMENT FALL ZONE AREA (TYP.)
- SOLID SOD AREA
- POURED-IN-PLACE RUBBER
- SYNTHETIC TURF
- NEW CONCRETE FLATWORK
- NEW CONCRETE RIPRAP
- NEW ASPHALT PATCH



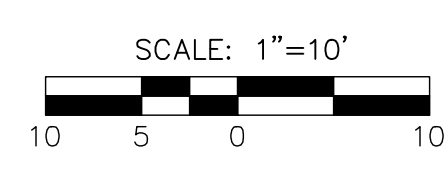
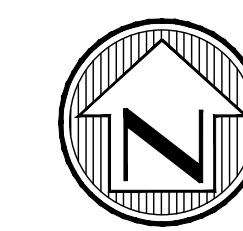
NO.	DATE	DESCRIPTION	BY

MIR
Moy Tatin Ramirez Engineers, LLC
 Engineers • Surveyors • Planners
 17770 CHAMBRON PATH, SUITE 100
 SAN ANTONIO, TEXAS 78249
 TEL: (210) 698-5051
 FAX: (210) 698-5085



PLAYGROUND UPGRADES - PACKAGE C - GROUP 3
 STARTZVILLE ES
 OVERALL SITE GRADING AND DRAINAGE PLAN

SHEET
C4.0



LEGEND

- + 802.97 EXISTING SPOT ELEVATION
- XXXXXX* PROPOSED ELEVATION
- TC TOP OF CURB ELEVATION
- NG NATURAL GROUND ELEVATION
- INV INVERT ELEVATION
- TGG TOP OF GRATE ELEVATION
- 1004— NEW CONTOUR
- - - - -1004- - - EXISTING CONTOUR
- O—O— CHAINLINK FENCE
- EQUIPMENT FALL ZONE AREA (TYP.)
- SOLID SOD AREA
- POURED-IN-PLACE RUBBER
- SYNTHETIC TURF
- NEW CONCRETE FLATWORK
- NEW CONCRETE RIPRAP
- NEW ASPHALT PATCH

SITE GRADING/DRAINAGE KEYNOTES:

- 1 NEW CONCRETE SIDEWALK/FLATWORK. REFERENCE SECTION DETAIL NO. 6, SHEET C5.0.
- 2 NEW CONCRETE SIDEWALK/FLATWORK TO MATCH EXISTING. PROVIDE EXPANSION JOINT AT JUNCTURE PER DETAIL NO. 6, SHEET C5.0.
- 3 EXISTING CONCRETE SIDEWALK/FLATWORK/RIGID PAVEMENT/STRUCTURAL CONCRETE TO REMAIN IN PLACE.
- 4 NEW SIDEWALK/FLATWORK TO MATCH STRUCTURAL CONCRETE/RIGID PAVEMENT. PROVIDE EXPANSION JOINT AT JUNCTURE PER DETAIL NO. 6, SHEET C5.0.
- 5 NEW TRAFFIC RATED FENCE (PUSS P2) AND 6' ORNAMENTAL FENCE. AMERISTAR STALWART II WITH 6' MAJESTIC ORNAMENTAL FENCE OR APPROVED EQUAL.
- 6 NEW 4' WIDE 6' HIGH ORNAMENTAL FENCE GATE. AMERISTAR MAJESTIC OR APPROVED EQUAL. CONTRACTOR TO PROVIDE PLANC HARDWARE.
- 7 NEW CONCRETE HEADER (FLUSH) CURB. REFERENCE DETAIL NO. 4, SHEET C5.0.
- 8 NEW CONCRETE RISERS WITH HANDRAILS. REFERENCE DETAIL NO. 1, SHEET C5.2 AND DETAIL NO. 2, SHEET C5.2.
- 9 TYPICAL 6" CONCRETE CURB. REFERENCE DETAIL NO. 3, SHEET C5.0.
- 10 NEW CURB TO MATCH EXISTING. CONTRACTOR TO PROVIDE EXPANSION JOINT W/ 2 EA. 18" DOWELS DRILLED INTO EXISTING CONCRETE AT JUNCTURE.
- 11 EXISTING CONCRETE CURB TO REMAIN IN PLACE.
- 12 NEW SYNTHETIC TURF PLAYGROUND SECTION. REFERENCE DETAIL NO. 1, SHEET C5.1.
- 13 NEW POURED-IN-PLACE RUBBER PLAYGROUND SECTION. REFERENCE DETAIL NO. 3, SHEET C5.1.
- 14 NEW PLAYGROUND EQUIPMENT PROVIDED BY OWNER.
- 15 NEW SHADE STRUCTURE. REFERENCE SPECIFICATIONS. REFERENCE DIMENSIONAL CONTROL PLANS FOR DIMENSIONS.
- 16 NEW DUAL FOUNDATION CANTILEVER SHADE STRUCTURE. REFERENCE SPECIFICATIONS.
- 17 NEW 9' HIGH BASKETBALL GOAL. MIRACLE EQUIPMENT MODEL# 360-757 OR APPROVED EQUAL. CONTRACTOR TO INSTALL CONCRETE FOOTING PER MANUFACTURER REQUIREMENTS.
- 18 NEW HANDRAIL. REFERENCE DETAIL NO. 1, SHEET C5.2.
- 19 CONTRACTOR TO PROVIDE CATCH BASIN AT TRENCH DRAIN. REFERENCE INVERT ELEVATIONS FOR DEPTH.
- 20 NEW SDR26 PVC DRAINAGE PIPING. REFERENCE SIZE, LENGTH AND INVERT ELEVATIONS SHOWN ON PLAN.
- 21 CONTRACTOR TO PROVIDE WYE BEND.
- 22 CONTRACTOR TO PROVIDE WYE AND 1/8 BEND.
- 23 NEW ONE-WAY CLEANDOUT. REFERENCE DETAIL NO. 9, SHEET C5.0.
- 24 NEW CONTECH JELLYFISH SYSTEM OR APPROVED EQUAL. REFERENCE DETAIL SHEET C5.4.
- 25 NEW PRE-CAST CONCRETE JUNCTION BOX ("OLD CASTLE" OR APPROVED EQUAL). CONTRACTOR TO PROVIDE 6" NECK EXTENSION WITH SOLID LID FOR ACCESS PER DETAIL NO. 12, SHEET C5.0. REFERENCE TOP AND INVERT ELEVATIONS AND BOX SIZE SHOWN ON PLAN.
- 26 NEW SOLID SOD. REFERENCE LANDSCAPING NOTES.
- 27 NEW PRE-CAST CONCRETE GRATE INLET ("OLD CASTLE" OR APPROVED EQUAL). IF LOCATED IN LANDSCAPING AREA, PROVIDE ADJACENT CONCRETE APRON PER DETAIL NO. 13, SHEET C5.0. CONTRACTOR TO PROVIDE VARIABLE HEIGHT RISERS AS NECESSARY. REFERENCE TOP OF GRATE AND INVERT ELEVATIONS AND INLET SIZE SHOWN ON PLAN.
- 28 EXISTING SANITARY SEWER TO REMAIN IN PLACE.
- 29 CONTRACTOR TO CONVERT EXISTING GRATE INLET TO JUNCTION BOX. REFERENCE PLAN FOR BOX SIZE AND TOP OF BOX ELEVATIONS.
- 30 CONTRACTOR TO EXTEND EXISTING/PROPOSED DRAINAGE PIPING TO INSIDE FACE OF NEW JUNCTION BOX.
- 31 CONCRETE RAMP AT 12:1 MAX. SLOPE. CONTRACTOR TO PROVIDE ADJACENT RAILS ON BOTH SIDES OF RAMP. RAILS TO EXTEND 1'-0" MIN. BEYOND LIMITS OF RAMP. REFERENCE RAMP LENGTH AND SPOT ELEVATIONS SHOWN ON PLAN. REFERENCE HANDRAIL DETAIL NO. 1, SHEET C5.2 AND SECTION DETAIL NO. 6, SHEET C5.2.
- 32 CONTRACTOR TO CONNECT EXISTING DOWNSPOUT TO UNDERGROUND DRAINAGE SYSTEM. PROVIDE CLEANOUT. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS. DOWNSPOUT HEIGHTS VARY. REFERENCE DETAIL NO. 7, SHEET C5.0.
- 33 NEW TRENCH DRAIN WITH WITH DUCTILE IRON ADA SLOTTED GRATE (POLYDRAIN OR APPROVED EQUAL). REFERENCE DETAIL NO. 11, SHEET C5.0.
- 34 NEW CONCRETE RIP-RAP. REFERENCE DETAIL NO. 16, SHEET C5.0.
- 35 CONTRACTOR TO PROVIDE THICKENED EDGE. REFERENCE DETAIL NO. 6E, SHEET C5.0.
- 36 CONTRACTOR TO INCREASE HEIGHT OF CURB TO MATCH EXISTING ADJACENT GRADE.
- 37 NEW ASPHALT PAVEMENT. REFERENCE DETAIL NO. 1, SHEET C5.0.
- 38 LIMIT OF ASPHALT PAVEMENT.
- 39 EXISTING ASPHALT PAVEMENT TO REMAIN IN PLACE.
- 40 NEW UNDERGROUND ELECTRICAL. CONTRACTOR TO PROVIDE PULL BOX AT LOCATION WHERE TYING TO EXISTING ELECTRICAL.
- 41 EXISTING UTILITY STRUCTURE OR CLEANOUT TO REMAIN IN PLACE. CONTRACTOR TO ADJUST LID TO FINISH GRADE.
- 42 NEW SIDEWALK DRAIN. REFERENCE DETAIL NO. 5, SHEET C5.2.
- 43 EXISTING WOOD DECK AND COLUMNS TO REMAIN IN PLACE.
- 44 EXISTING PLANTER TO REMAIN IN PLACE.
- 45 EXISTING WALL TO REMAIN IN PLACE.
- 46 NEW MODULAR BLOCK RETAINING WALL. PROVIDE CONCRETE FOOTING. REFERENCE RETAINING WALL DETAILS NOS. 1 THRU 6, SHEET C5.3.
- 47 EXISTING TREE TO REMAIN. CONTRACTOR TO PROVIDE TREE PROTECTION PER SHEET C5.5.
- 48 NEW ORNAMENTAL FENCING TO MATCH EXISTING. CONTRACTOR TO PROVIDE TERMINAL POST.
- 49 NEW CHAIN-LINK BACKSTOP. REFERENCE DETAIL NO. 7, SHEET C5.2.
- 50 NEW CAST-IN-PLACE CONCRETE HEADWALL. REFERENCE DETAIL NO. 8, SHEET C5.3.
- 51 NEW ROCK GABION MATTRESS. REFERENCE DETAIL NO. 4, SHEET C5.2.
- 52 NEW DISSIPATER BLOCKS. REFERENCE DETAIL NO. 8, SHEET C5.2.
- 53 CONTRACTOR TO GRADE AREA TO DRAIN.
- 54 CONTRACTOR TO PROVIDE BOLTED GALVANIZED BAR GRATE ON HEADWALL PIPE EXIT TO RESTRICT ACCESS.
- 55 CONTRACTOR TO SEAL LINER AROUND PIPE AND TRANSITION TO SOLID PIPE. SEAL PER MANUFACTURER REQUIREMENTS.
- 56 CONTRACTOR TO RECONSTRUCT PLANTER WALLS AT THIS LOCATION. CONTRACTOR TO FILL PLANTED WITH NEW EARTH ENRICHED TOPSOIL OR APPROVED EQUAL.

MATCHLINE SHEET C4.3

MATCHLINE SHEET C4.3

FM 3159

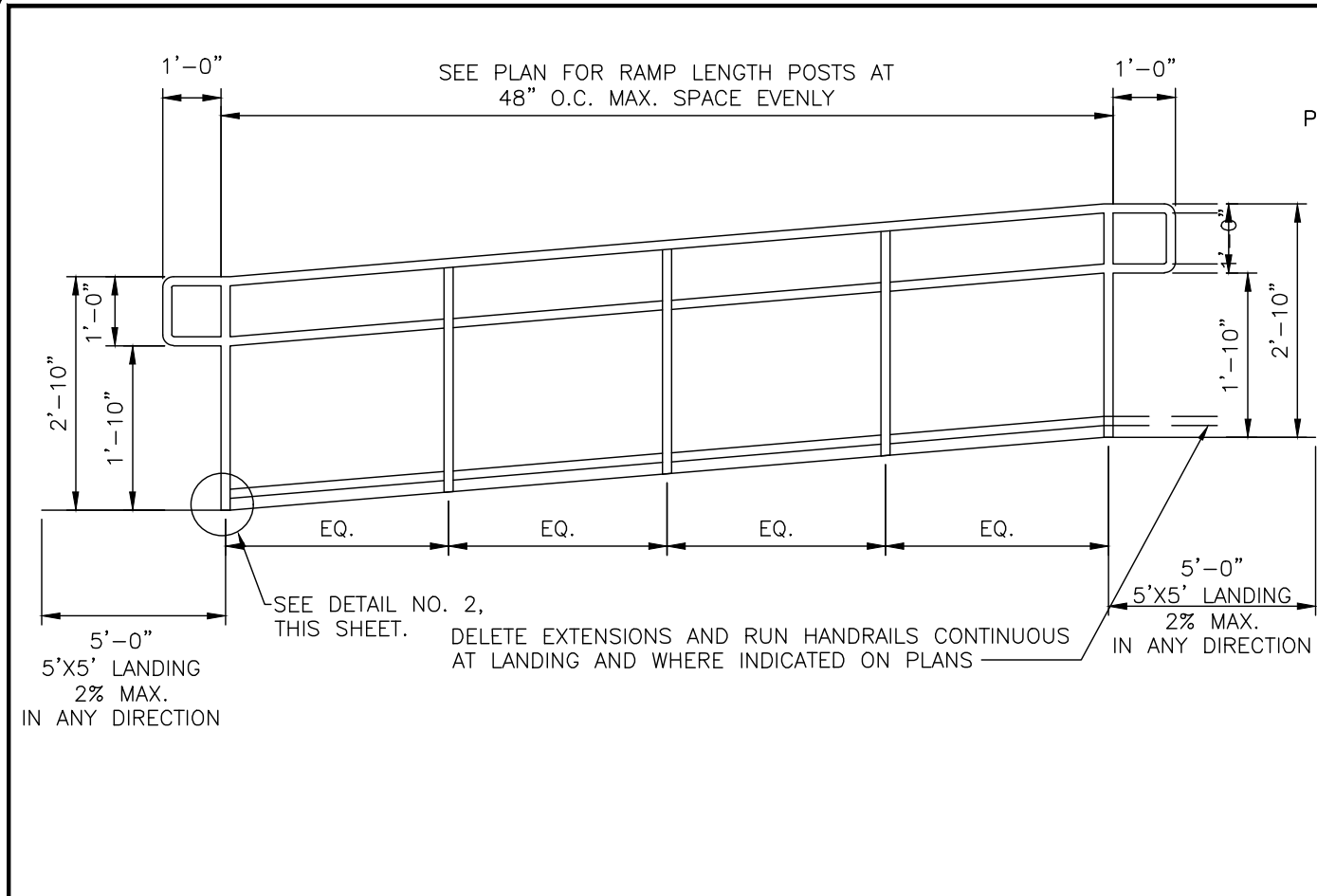
NO.	DATE	DESCRIPTION	BY

MIR
 Engineers
 Surveyors
 Planners
Moy Tarin Ramirez Engineers, LLC
 TPELTS: ENGINEERING F-5297/SURVEYING F-10115000
 12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051
 SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5065

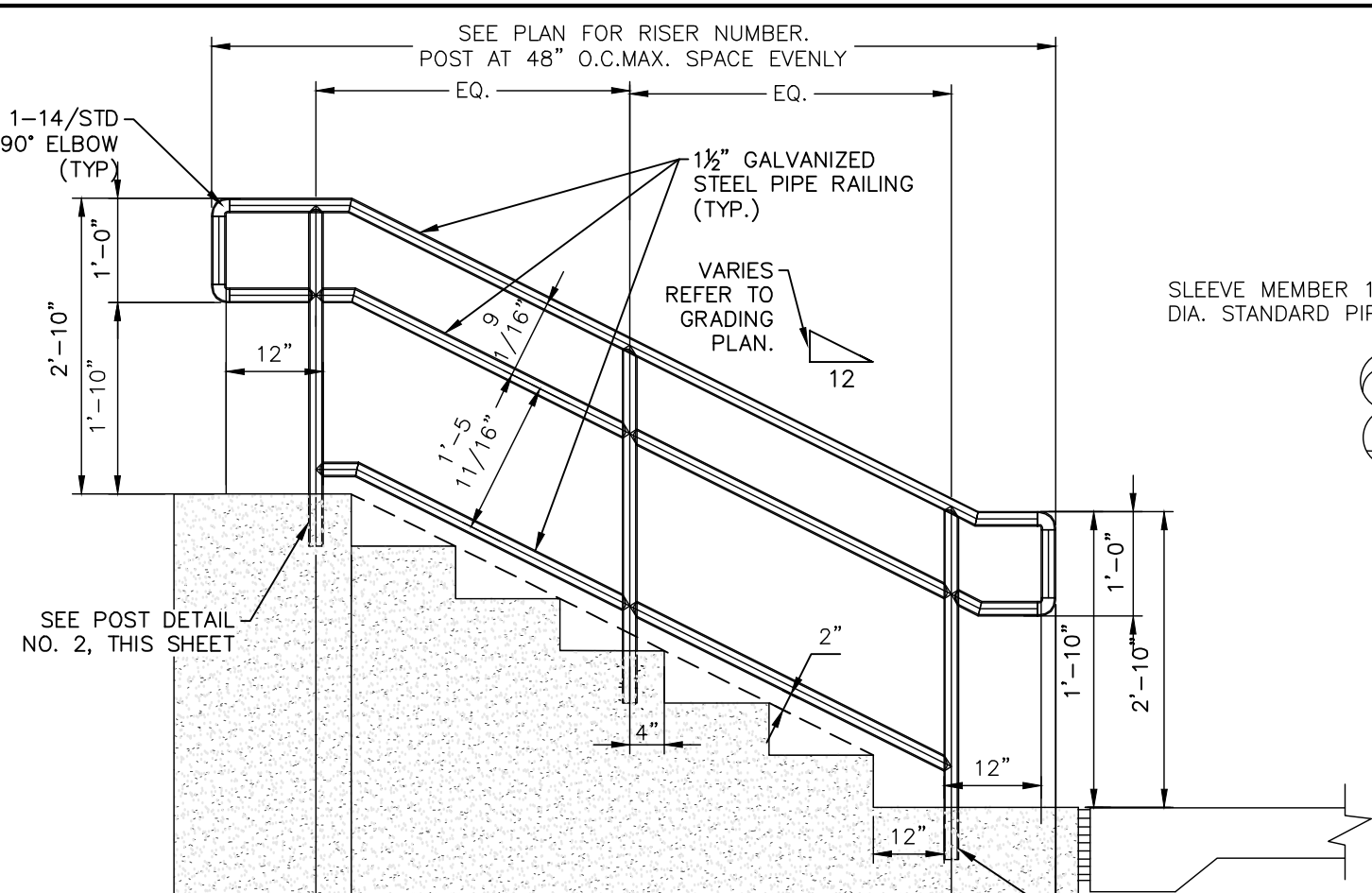


PLAYGROUND UPGRADES - PACKAGE C - GROUP 3
 STARTVILLE ES
 SITE GRADING AND DRAINAGE PLAN

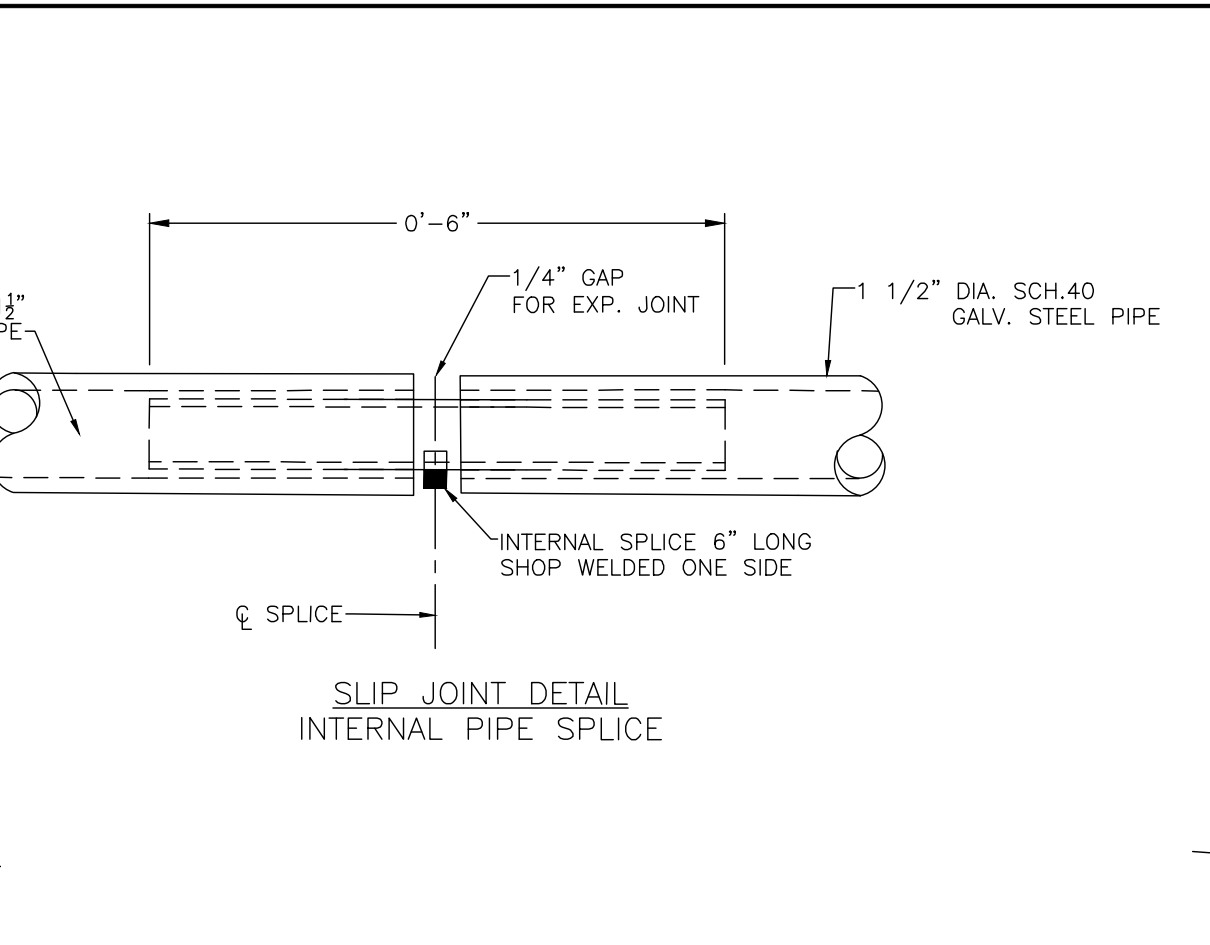
SHEET
C4.4



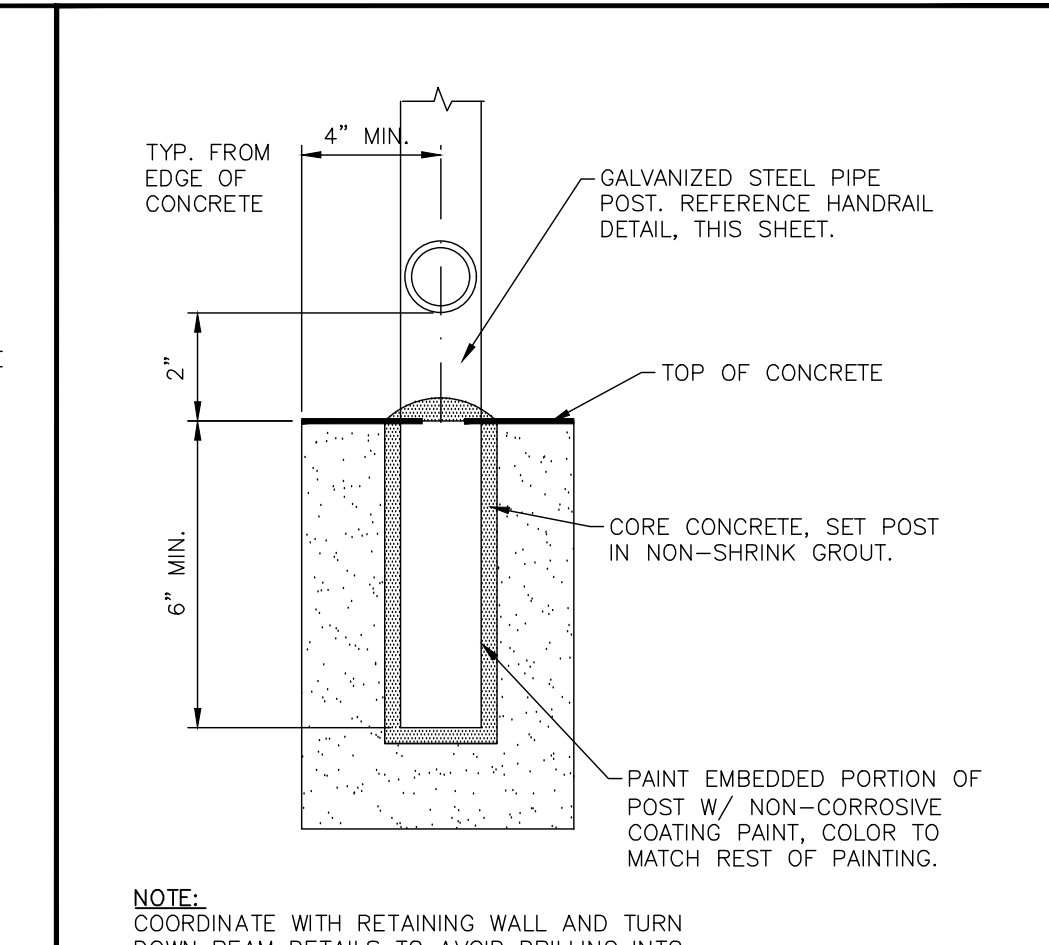
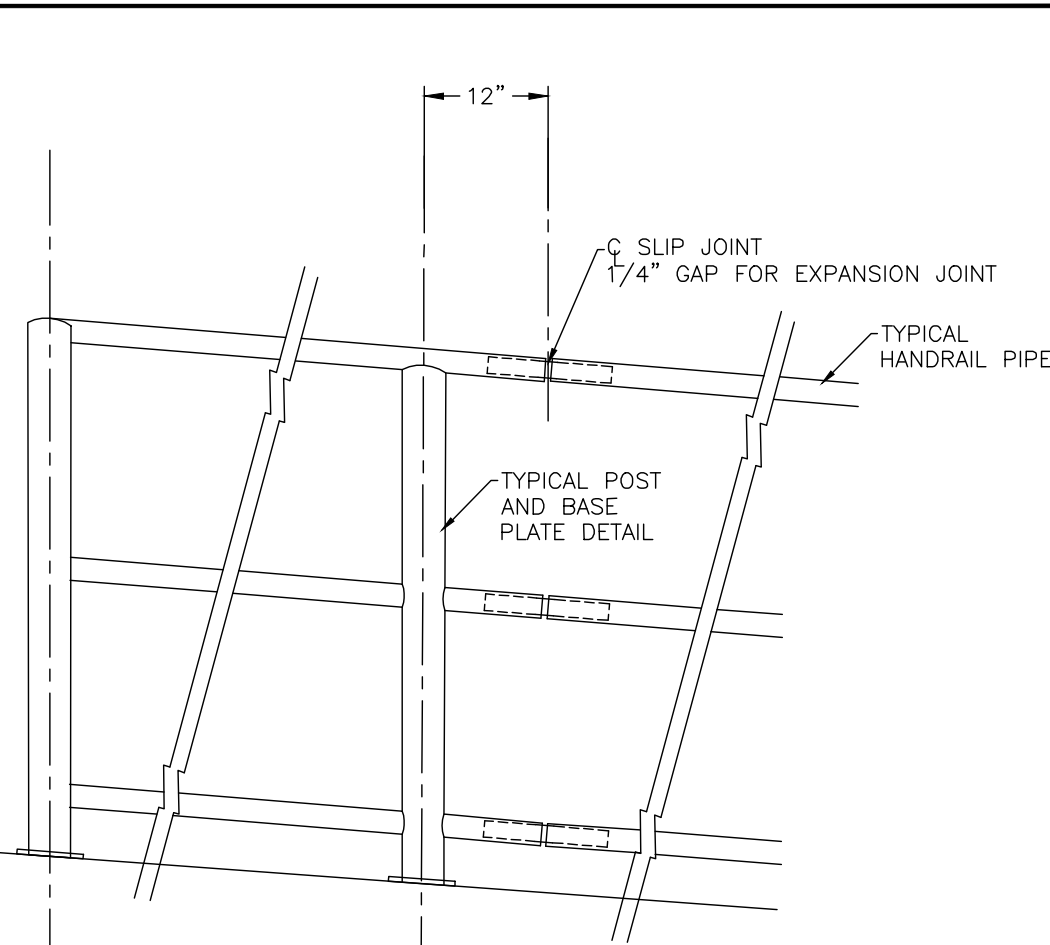
- NOTE:**
- HANDRAIL CONSTRUCTION 1 1/2" GALV. STEEL PIPE - TYPICAL
 - ALL STEEL PIPE TO BE HOTDIPPED GALVANIZED AFTER FABRICATION.
 - NO ONSITE WELDING WILL BE ALLOWED.
 - CONTRACTOR TO PROVIDE A SLIP-JOINT AT ALL CONSTRUCTION JOINTS.



- NOTE:**
- FOLLOW GENERAL NOTES FOR SIDEWALKS UNLESS OTHERWISE NOTED ON DETAIL.
 - REFERENCE GRADING PLAN FOR PROPOSED SPOT ELEVATIONS.
 - REFERENCE GRADING PLAN FOR NUMBER AND DEPTH OF RISERS.
 - IF 2 OR MORE RISERS, PROVIDE ADJACENT HANDRAILS. EXTEND HANDRAILS 1' BEYOND LIMITS OF RISERS AS SHOWN ON PLAN. SEE HANDRAIL DETAIL, THIS SHEET.



- NOTE:**
- PROVIDE HANDRAIL/GUARDRAIL PIPE SLIP JOINTS @ 30' MAX. SPACING OR ACROSS CONCRETE EXPANSION JOINTS.



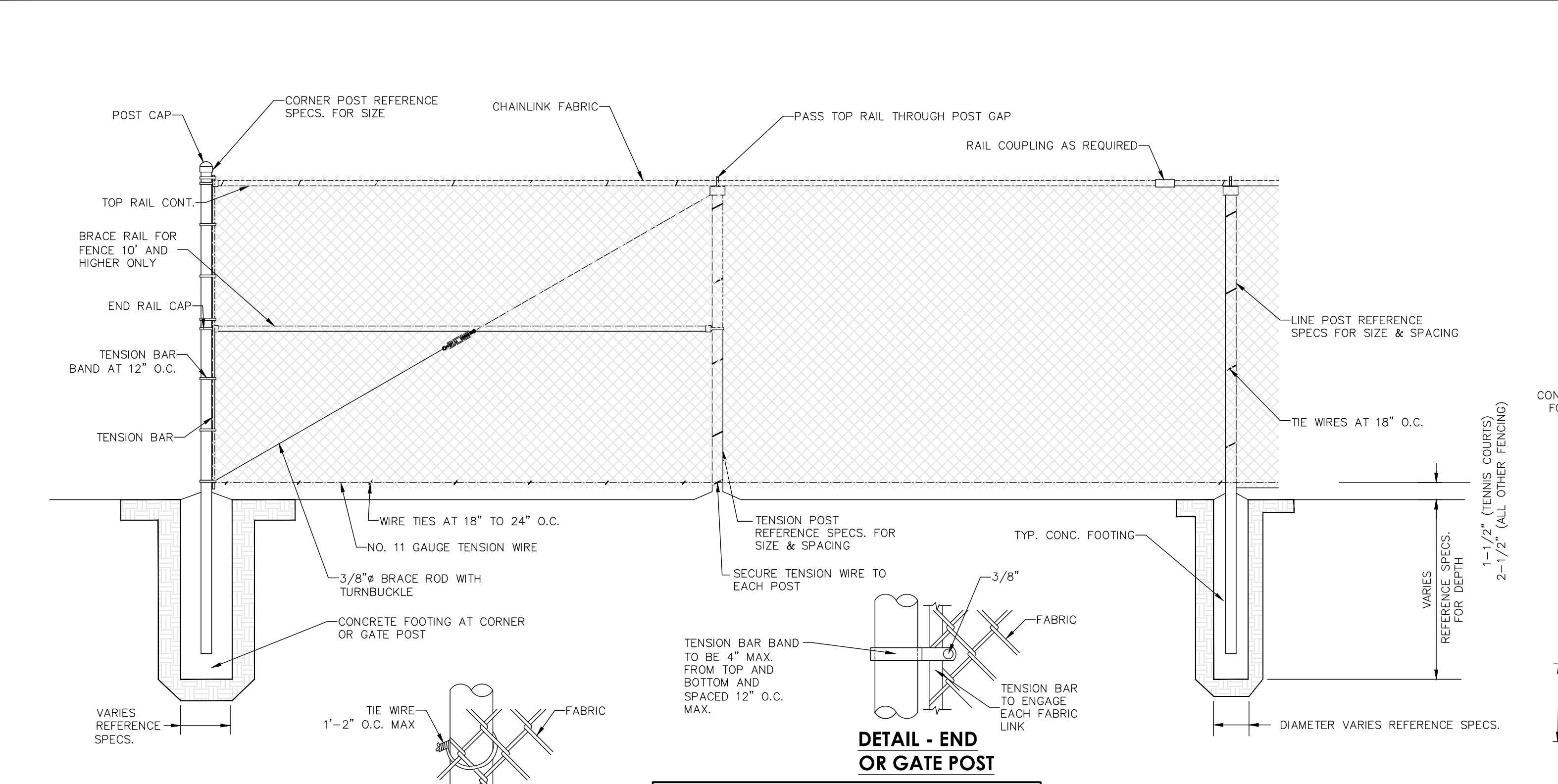
- NOTE:**
- COORDINATE WITH RETAINING WALL AND TURN DOWN BEAM DETAILS TO AVOID DRILLING INTO REINFORCEMENT BARS.

1 TYPICAL RAIL AT RAMP AND CONCRETE STEPS WITH SLIP JOINT DETAIL

SCALE: NONE

2 POST DETAIL

SCALE: NONE



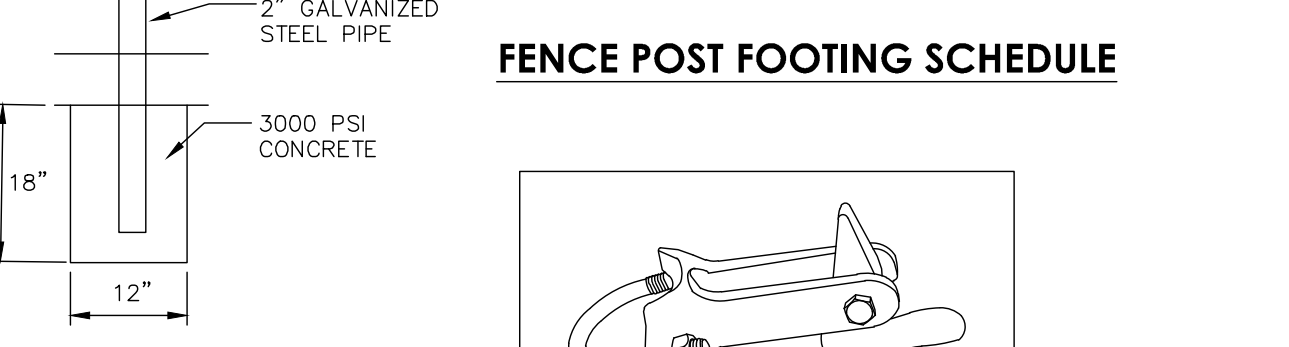
LINE AND TERMINAL POSTS

FABRIC HEIGHT	TYPE POST	"A" DIAM	"B" DEPTH	"C" POST EMBED.
4'-0"	LINE	10"	28"	30"
	TERMINAL	12"	34"	36"
5'-0" TO 6'-0"	LINE	12"	30"	28"
	TERMINAL	12"	40"	38"
8'-0"	LINE	12"	36"	34"
	TERMINAL	12"	40"	38"
10'-0" TO 12'-0"	LINE	16"	48"	46"
	TERMINAL	16"	48"	46"

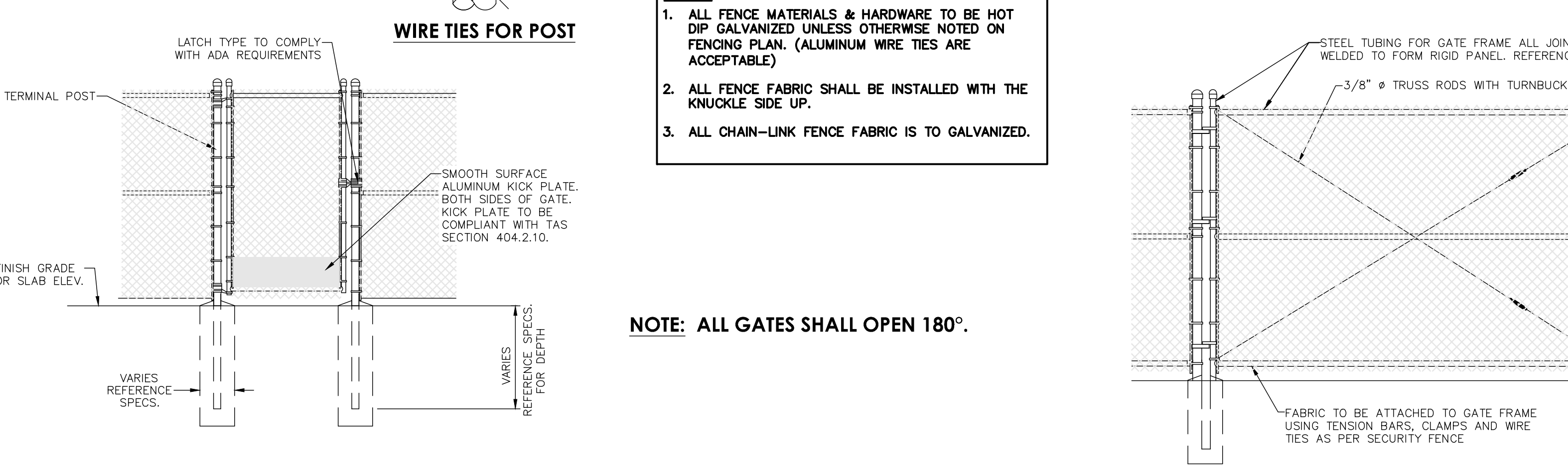
NOTE: TERMINAL POSTS INCLUDE END, CORNER, AND TENSION POSTS

GATE POST

GATE LEAF WIDTH	GATE POST (OD)	FABRIC HEIGHT	"A" DIAM	"B" DEPTH	"C" POST EMBED.
3' TO 4'	3"	4'	10"	30"	28"
		5' TO 6'	12"	40"	38"
		8'	16"	46"	44"
5' TO 9'	4"	3' TO 4'	18"	48"	46"
		5' TO 6'	18"	48"	46"
		8'	18"	60"	58"
10'	6.625"	8'-0"	18"	60"	58"



FENCE POST FOOTING SCHEDULE

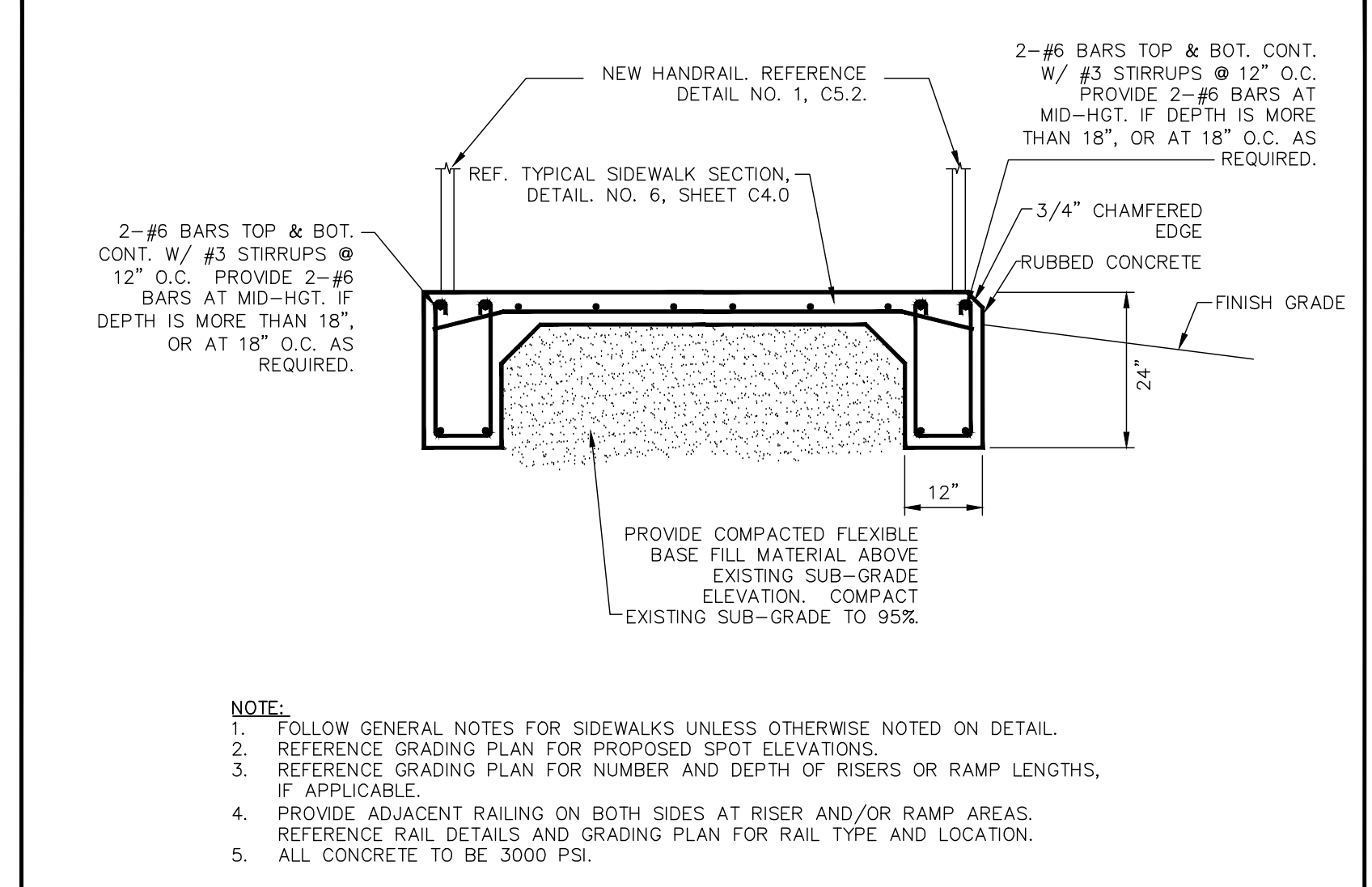
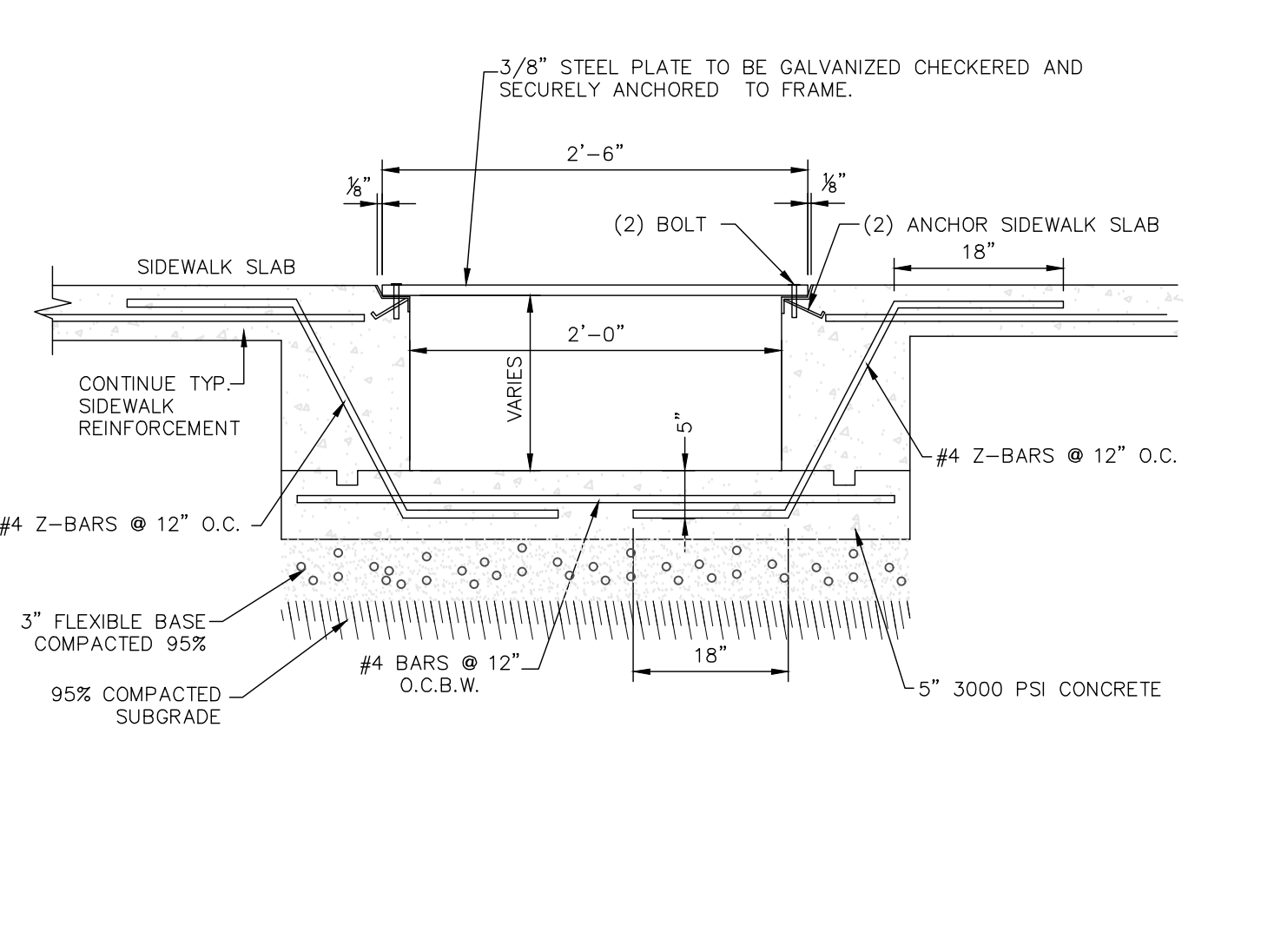


- NOTES:**
- ALL FENCE MATERIALS & HARDWARE TO BE HOT DIP GALVANIZED UNLESS OTHERWISE NOTED ON FENCING PLAN. (ALUMINUM WIRE TIES ARE ACCEPTABLE)
 - ALL FENCE FABRIC SHALL BE INSTALLED WITH THE KNUCKLE SIDE UP.
 - ALL CHAIN-LINK FENCE FABRIC IS TO GALVANIZED.

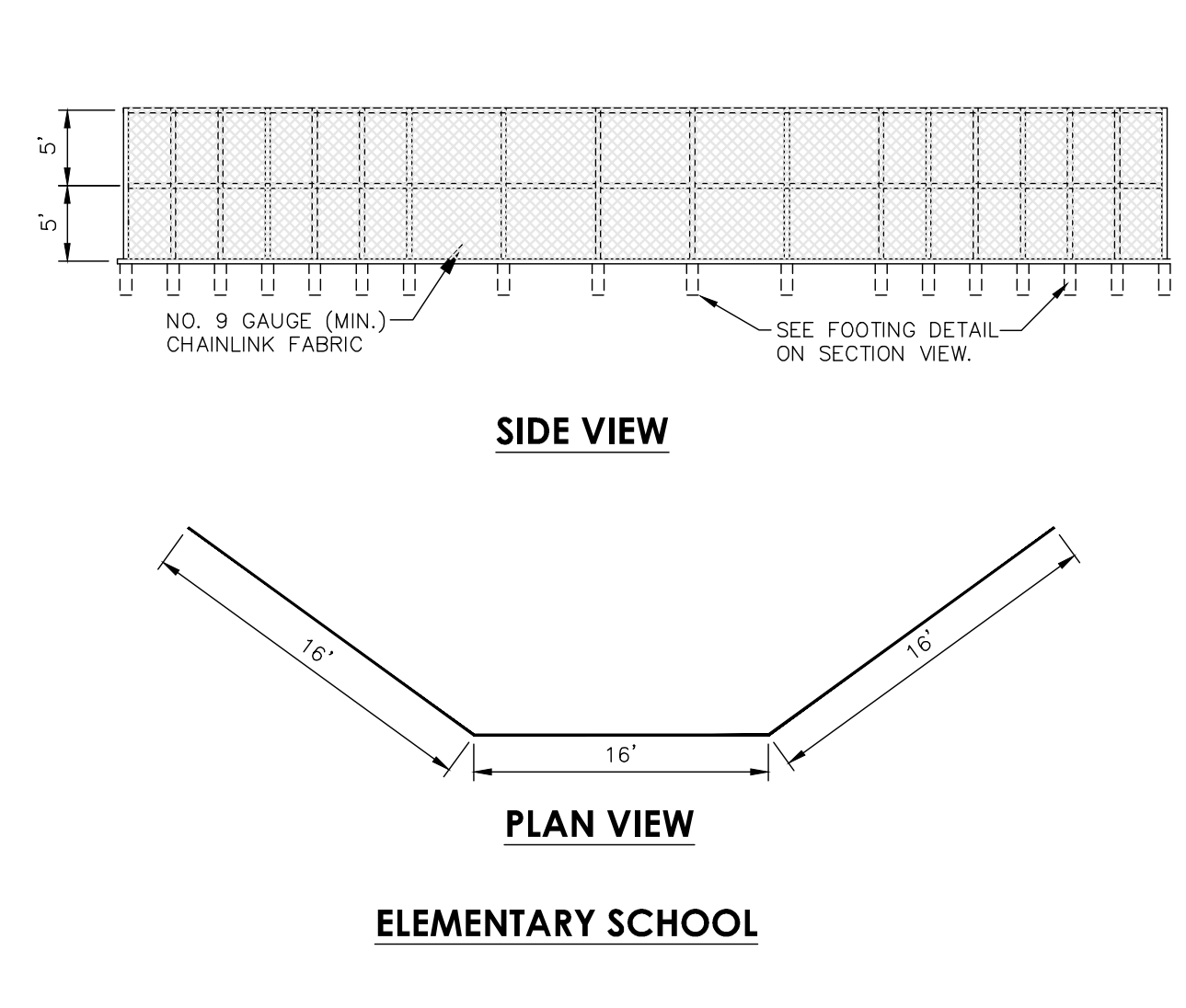
NOTE: ALL GATES SHALL OPEN 180°.

3 CHAINLINK FENCE DETAILS

SCALE: NONE



- NOTE:**
- FOLLOW GENERAL NOTES FOR SIDEWALKS UNLESS OTHERWISE NOTED ON DETAIL.
 - REFERENCE GRADING PLAN FOR PROPOSED SPOT ELEVATIONS.
 - REFERENCE GRADING PLAN FOR NUMBER AND DEPTH OF RISERS OR RAMP LENGTHS, IF APPLICABLE.
 - PROVIDE ADJACENT RAILING ON BOTH SIDES OF RISER AND/OR RAMP AREAS. REFERENCE RAIL DETAILS AND GRADING PLAN FOR RAIL TYPE AND LOCATION.
 - ALL CONCRETE TO BE 3000 PSI.



ELEMENTARY SCHOOL

5 SINGLE SIDEWALK DRAIN DETAIL

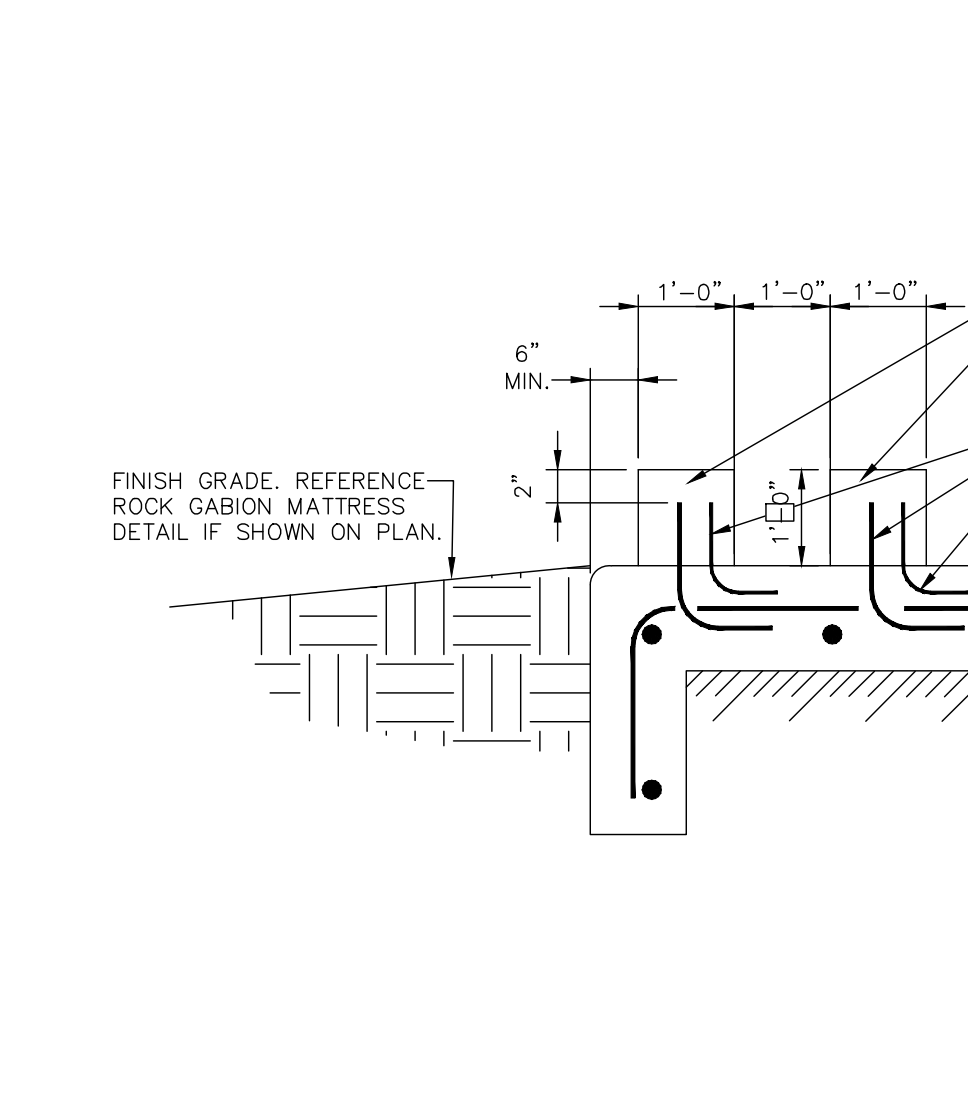
SCALE: NONE

6 SECTION DETAIL

SCALE: NONE

7 CHAINLINK BACKSTOP DETAILS

SCALE: NONE



8 DISSIPATOR BLOCK DETAIL

SCALE: NONE

NO.	DATE	DESCRIPTION

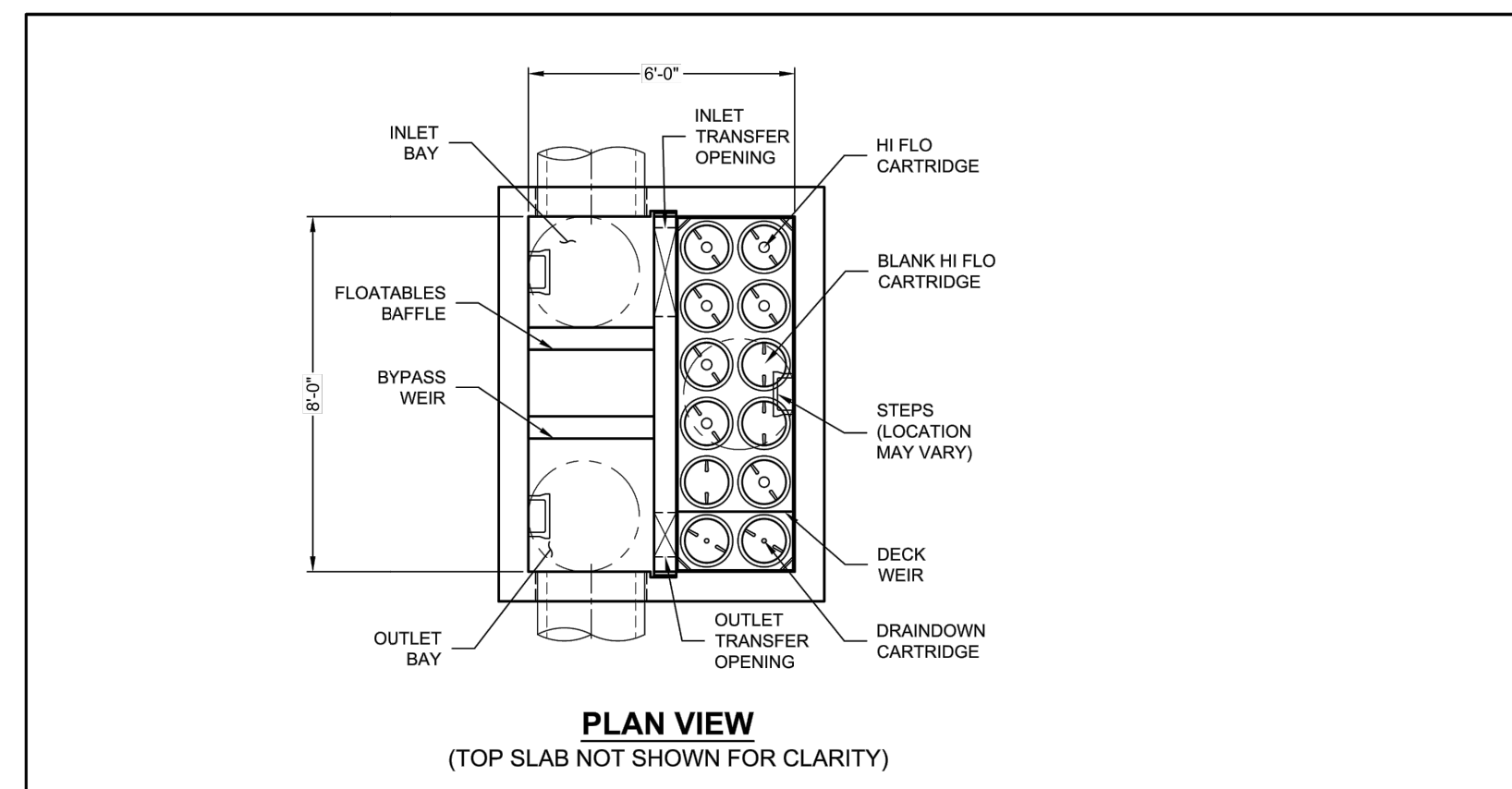
Engineers
Surveyors
Planners

MIR
Moy Tarin Ramirez Engineers, LLC
12770 CHAMRON PATH, SUITE 100
SAN ANTONIO, TEXAS 78249
TEL: (210) 698-5051
FAX: (210) 698-5085



PLAYGROUND UPGRADES - PACKAGE C - GROUP 3
STARTZVILLE ES
DETAILS

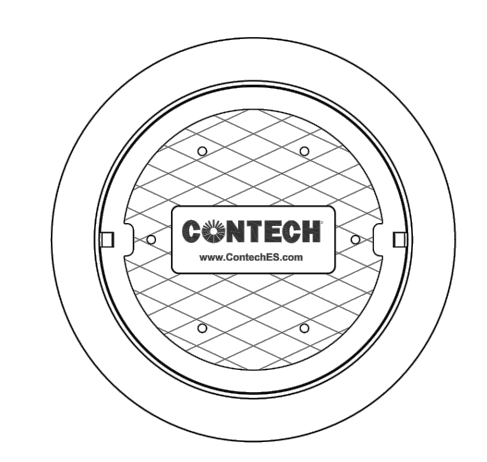
SHEET
C5.2



JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VALVE CURB INLET OR SHALLOW PIPE INLET OPTIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE LENGTH	54"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"
FLOW RATE HI-FLO / DRAINDOWN (GFS) (PER CART)	0.178 (0.089)
MAX. TREATMENT (CFS)	1.86
DECK TO INSIDE TOP (MIN) (B)	5.00



SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WQU #1
WATER QUALITY FLOW RATE (cfs)	1.43
PEAK FLOW RATE (cfs)	13.38
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	7 / 2
CARTRIDGE LENGTH	54"

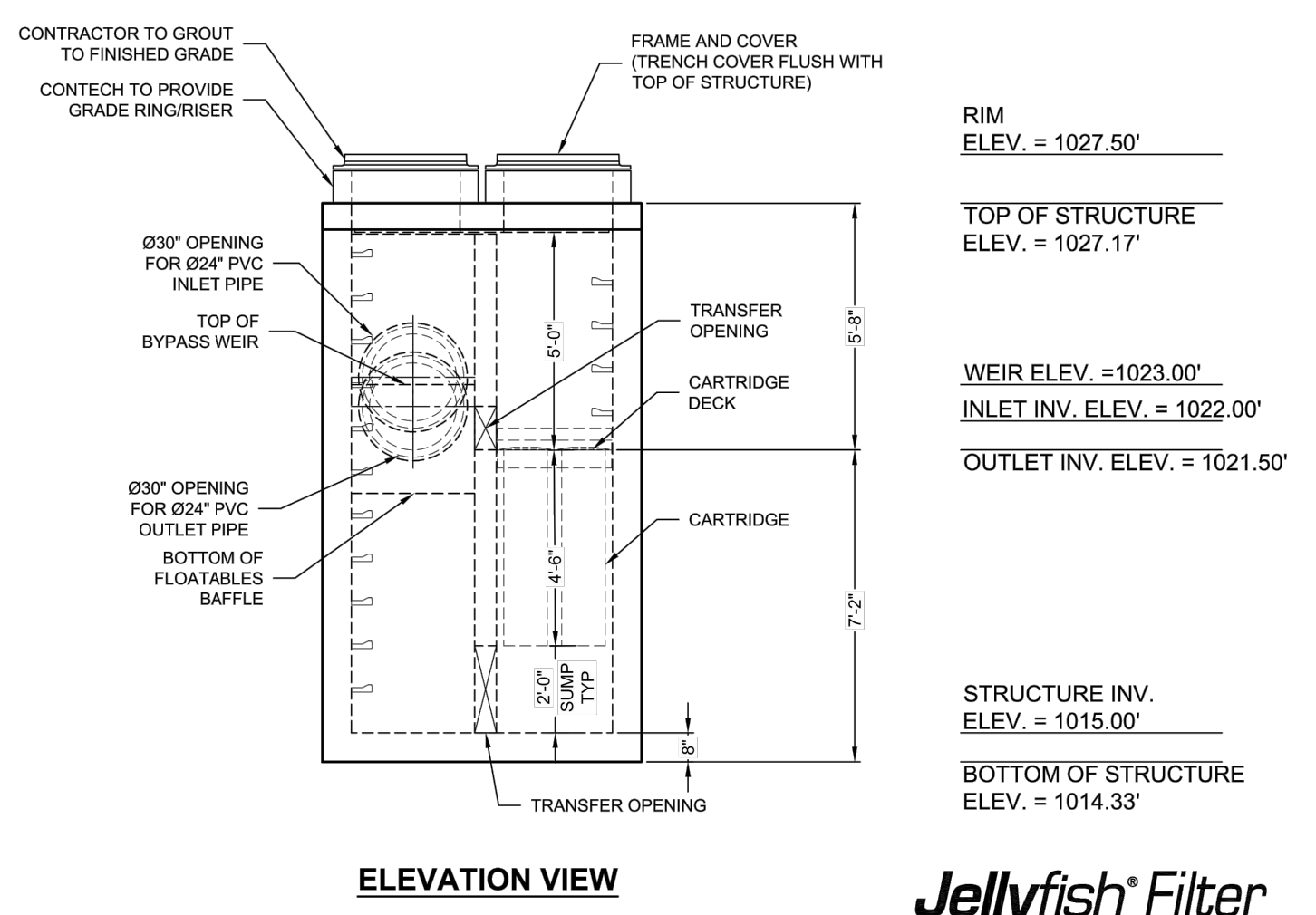
PIPE DATA

PIPE DATA	I.E.	MATL.	DIA.	SLOPE %	HGL.
INLET #1	1022.00'	PVC	24"	-	-
INLET #2	-	-	-	-	-
OUTLET	1021.50'	PVC	24"	-	-

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	1027.50'
ANTI-FLOTATION BALLAST	WIDTH HEIGHT
	-

NOTES/SPECIAL REQUIREMENTS:
* PER ENGINEER OF RECORD



FRAME AND COVER (DIAMETER VARIES) N.T.S.

RIM ELEV. = 1027.50'

TOP OF STRUCTURE ELEV. = 1027.17'

WEIR ELEV. = 1023.00'

INLET INV. ELEV. = 1022.00'

OUTLET INV. ELEV. = 1021.50'

STRUCTURE INV. ELEV. = 1015.00'

BOTTOM OF STRUCTURE ELEV. = 1014.33'

Jellyfish Filter

CONTECH ENGINEERED SOLUTIONS LLC
www.contech-es.com
3025 Centre Pointe Dr., Suite 400, West Chester, OH 45390
800-338-1122 513-645-7000 513-645-7993 FAX

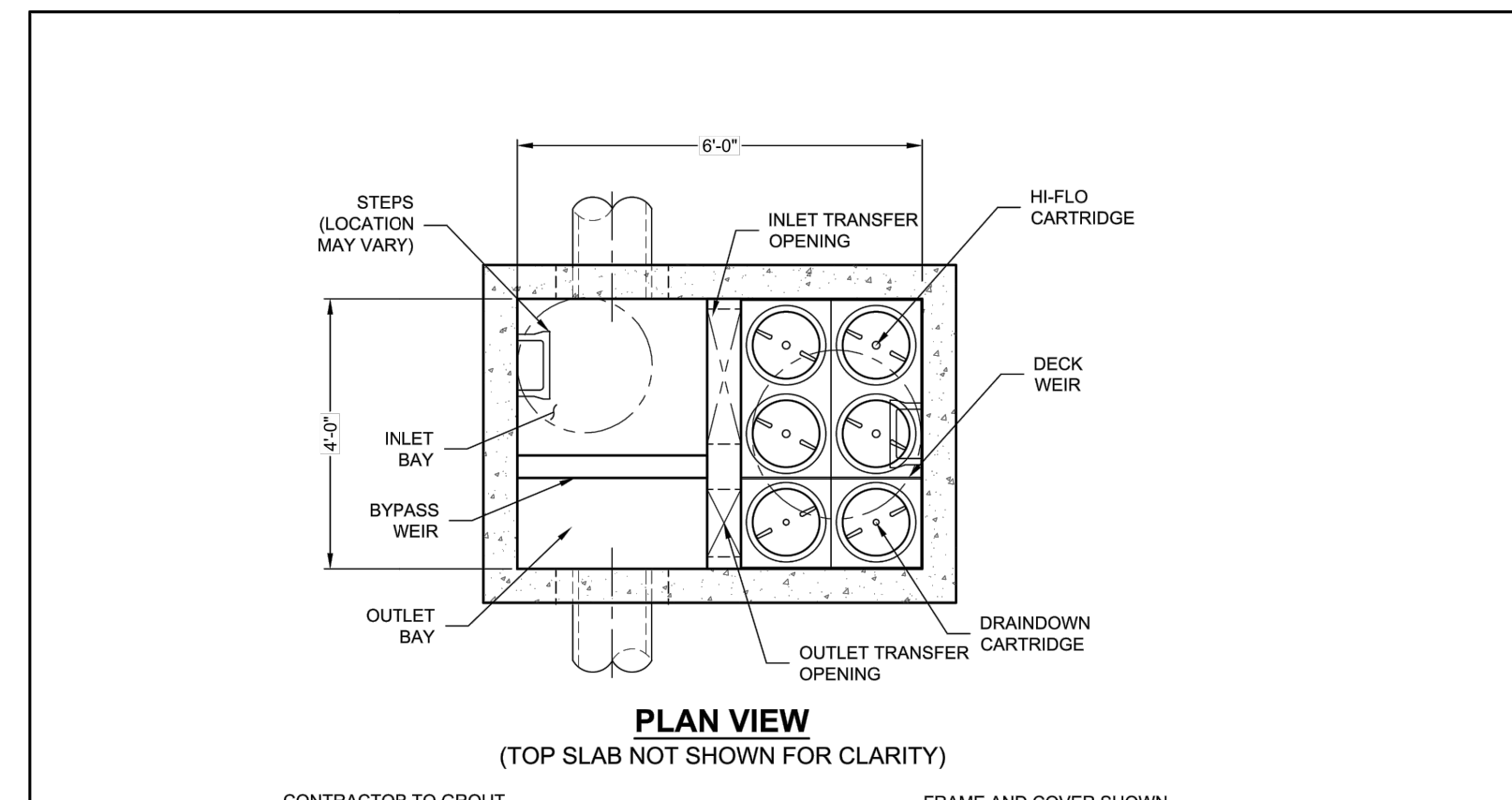
8' x 6' JELLYFISH - 740695-010
STARZVILLE ELEMENTARY SCHOOL
COMAL, TX
SITE DESIGNATION: WQU #1

GENERAL NOTES:

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE: www.contech-es.com
- JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 8' - 10' AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
- STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
- OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
- THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
- NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES:

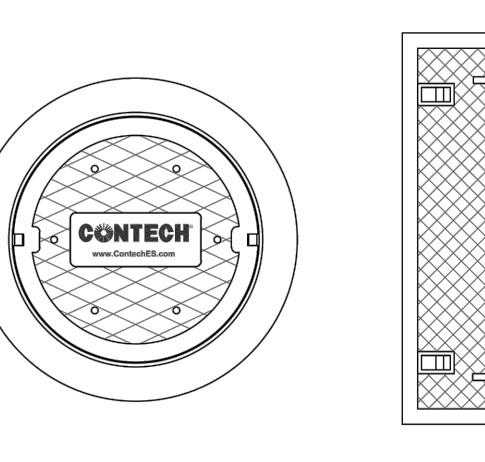
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
- CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
- CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.



JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VALVE CURB INLET OR SHALLOW PIPE INLET OPTIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.

CARTRIDGE LENGTH	54"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"
FLOW RATE HI-FLO / DRAINDOWN (GFS) (PER CART)	0.178 (0.089)
MAX. TREATMENT (CFS)	0.93
DECK TO INSIDE TOP (MIN) (B)	5.00'



SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WQU #2
WATER QUALITY FLOW RATE (cfs)	0.80
PEAK FLOW RATE (cfs)	16.40
RETURN PERIOD OF PEAK FLOW (yrs)	25
# OF CARTRIDGES REQUIRED (HF / DD)	4 / 1
CARTRIDGE LENGTH	54"

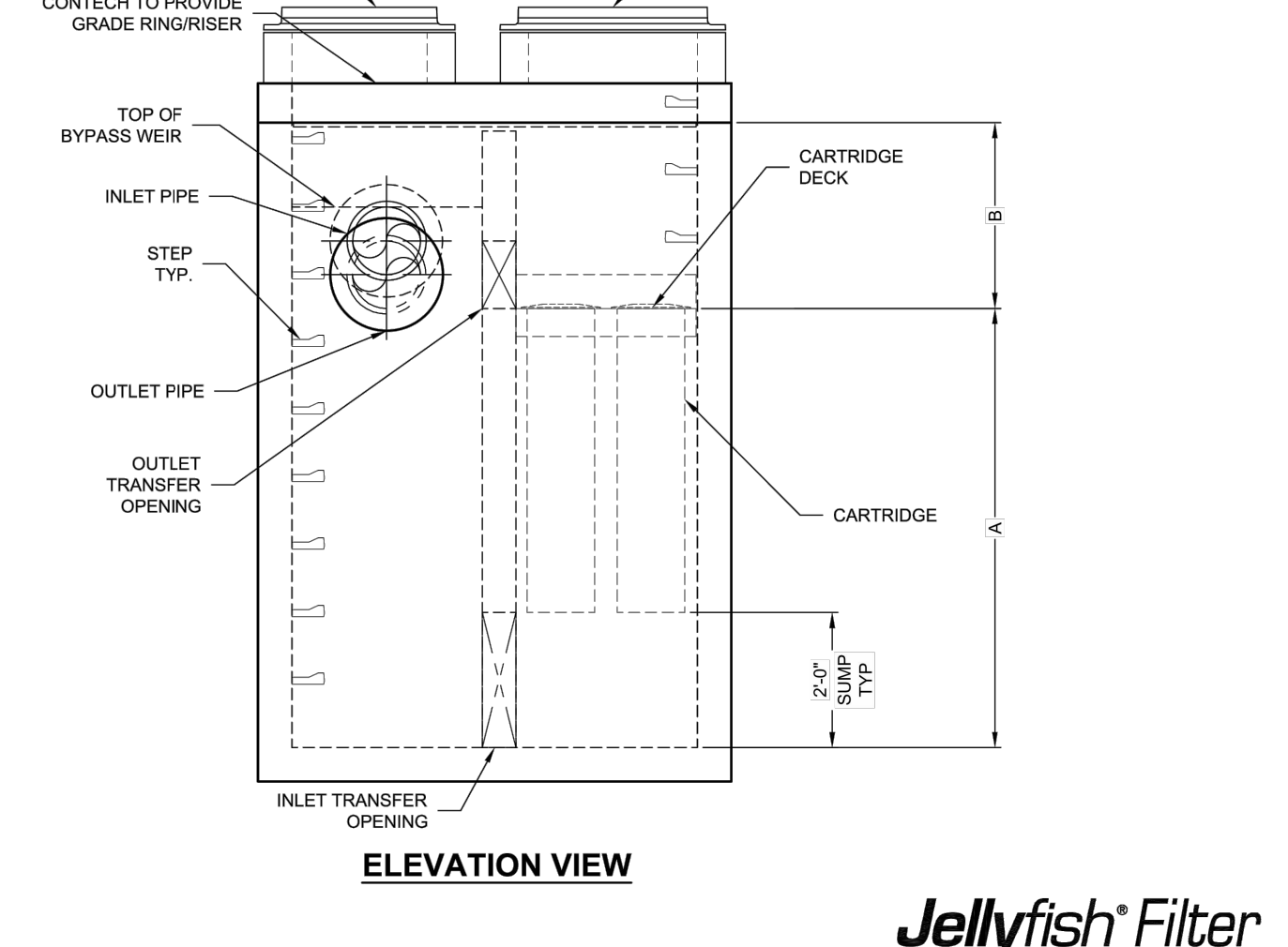
PIPE DATA

PIPE DATA	I.E.	MATL.	DIA.	SLOPE %	HGL.
INLET #1	1016.87'	CPP	18"	-	-
INLET #2	-	-	-	-	-
OUTLET	1016.97'	CPP	18"	-	-

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	1021.50'
ANTI-FLOTATION BALLAST	WIDTH HEIGHT
	-

NOTES/SPECIAL REQUIREMENTS:
* SHALLOW CONFIGURATION
* PER ENGINEER OF RECORD



FRAME AND COVER (DIAMETER VARIES) N.T.S.

RIM ELEVATION = 1021.50'

ANTI-FLOTATION BALLAST WIDTH HEIGHT

Jellyfish Filter

CONTECH ENGINEERED SOLUTIONS LLC
www.contech-es.com
3025 Centre Pointe Dr., Suite 400, West Chester, OH 45390
800-338-1122 513-645-7000 513-645-7993 FAX

4' x 6' JELLYFISH - 740695-20
STARZVILLE ELEMENTARY SCHOOL
COMAL, TX
WQU #2

GENERAL NOTES:

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE: www.contech-es.com
- JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION AND SITE SPECIFIC EARTH COVER REQUIREMENT. TYPICAL CASTINGS SHALL MEET AASHTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
- STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
- OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
- THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE (WHERE APPLICABLE) AT EQUAL OR GREATER SLOPE.
- NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES:

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
- CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
- CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,147,728; 6,212,035; 6,153,636; 6,153,637; 6,153,638; 6,153,639; 6,153,640; 6,153,641; 6,153,642; 6,153,643; 6,153,644; 6,153,645; 6,153,646; 6,153,647; 6,153,648; 6,153,649; 6,153,650; 6,153,651; 6,153,652; 6,153,653; 6,153,654; 6,153,655; 6,153,656; 6,153,657; 6,153,658; 6,153,659; 6,153,660; 6,153,661; 6,153,662; 6,153,663; 6,153,664; 6,153,665; 6,153,666; 6,153,667; 6,153,668; 6,153,669; 6,153,670; 6,153,671; 6,153,672; 6,153,673; 6,153,674; 6,153,675; 6,153,676; 6,153,677; 6,153,678; 6,153,679; 6,153,680; 6,153,681; 6,153,682; 6,153,683; 6,153,684; 6,153,685; 6,153,686; 6,153,687; 6,153,688; 6,153,689; 6,153,690; 6,153,691; 6,153,692; 6,153,693; 6,153,694; 6,153,695; 6,153,696; 6,153,697; 6,153,698; 6,153,699; 6,153,700; 6,153,701; 6,153,702; 6,153,703; 6,153,704; 6,153,705; 6,153,706; 6,153,707; 6,153,708; 6,153,709; 6,153,710; 6,153,711; 6,153,712; 6,153,713; 6,153,714; 6,153,715; 6,153,716; 6,153,717; 6,153,718; 6,153,719; 6,153,720; 6,153,721; 6,153,722; 6,153,723; 6,153,724; 6,153,725; 6,153,726; 6,153,727; 6,153,728; 6,153,729; 6,153,730; 6,153,731; 6,153,732; 6,153,733; 6,153,734; 6,153,735; 6,153,736; 6,153,737; 6,153,738; 6,153,739; 6,153,740; 6,153,741; 6,153,742; 6,153,743; 6,153,744; 6,153,745; 6,153,746; 6,153,747; 6,153,748; 6,153,749; 6,153,750; 6,153,751; 6,153,752; 6,153,753; 6,153,754; 6,153,755; 6,153,756; 6,153,757; 6,153,758; 6,153,759; 6,153,760; 6,153,761; 6,153,762; 6,153,763; 6,153,764; 6,153,765; 6,153,766; 6,153,767; 6,153,768; 6,153,769; 6,153,770; 6,153,771; 6,153,772; 6,153,773; 6,153,774; 6,153,775; 6,153,776; 6,153,777; 6,153,778; 6,153,779; 6,153,780; 6,153,781; 6,153,782; 6,153,783; 6,153,784; 6,153,785; 6,153,786; 6,153,787; 6,153,788; 6,153,789; 6,153,790; 6,153,791; 6,153,792; 6,153,793; 6,153,794; 6,153,795; 6,153,796; 6,153,797; 6,153,798; 6,153,799; 6,153,800; 6,153,801; 6,153,802; 6,153,803; 6,153,804; 6,153,805; 6,153,806; 6,153,807; 6,153,808; 6,153,809; 6,153,810; 6,153,811; 6,153,812; 6,153,813; 6,153,814; 6,153,815; 6,153,816; 6,153,817; 6,153,818; 6,153,819; 6,153,820; 6,153,821; 6,153,822; 6,153,823; 6,153,824; 6,153,825; 6,153,826; 6,153,827; 6,153,828; 6,153,829; 6,153,830; 6,153,831; 6,153,832; 6,153,833; 6,153,834; 6,153,835; 6,153,836; 6,153,837; 6,153,838; 6,153,839; 6,153,840; 6,153,841; 6,153,842; 6,153,843; 6,153,844; 6,153,845; 6,153,846; 6,153,847; 6,153,848; 6,153,849; 6,153,850; 6,153,851; 6,153,852; 6,153,853; 6,153,854; 6,153,855; 6,153,856; 6,153,857; 6,153,858; 6,153,859; 6,153,860; 6,153,861; 6,153,862; 6,153,863; 6,153,864; 6,153,865; 6,153,866; 6,153,867; 6,153,868; 6,153,869; 6,153,870; 6,153,871; 6,153,872; 6,153,873; 6,153,874; 6,153,875; 6,153,876; 6,153,877; 6,153,878; 6,153,879; 6,153,880; 6,153,881; 6,153,882; 6,153,883; 6,153,884; 6,153,885; 6,153,886; 6,153,887; 6,153,888; 6,153,889; 6,153,890; 6,153,891; 6,153,892; 6,153,893; 6,153,894; 6,153,895; 6,153,896; 6,153,897; 6,153,898; 6,153,899; 6,153,900; 6,153,901; 6,153,902; 6,153,903; 6,153,904; 6,153,905; 6,153,906; 6,153,907; 6,153,908; 6,153,909; 6,153,910; 6,153,911; 6,153,912; 6,153,913; 6,153,914; 6,153,915; 6,153,916; 6,153,917; 6,153,918; 6,153,919; 6,153,920; 6,153,921; 6,153,922; 6,153,923; 6,153,924; 6,153,925; 6,153,926; 6,153,927; 6,153,928; 6,153,929; 6,153,930; 6,153,931; 6,153,932; 6,153,933; 6,153,934; 6,153,935; 6,153,936; 6,153,937; 6,153,938; 6,153,939; 6,153,940; 6,153,941; 6,153,942; 6,153,943; 6,153,944; 6,153,945; 6,153,946; 6,153,947; 6,153,948; 6,153,949; 6,153,950; 6,153,951; 6,153,952; 6,153,953; 6,153,954; 6,153,955; 6,153,956; 6,153,957; 6,153,958; 6,153,959; 6,153,960; 6,153,961; 6,153,962; 6,153,963; 6,153,964; 6,153,965; 6,153,966; 6,153,967; 6,153,968; 6,153,969; 6,153,970; 6,153,971; 6,153,972; 6,153,973; 6,153,974; 6,153,975; 6,153,976; 6,153,977; 6,153,978; 6,153,979; 6,153,980; 6,153,981; 6,153,982; 6,153,983; 6,153,984; 6,153,985; 6,153,986; 6,153,987; 6,153,988; 6,153,989; 6,153,990; 6,153,991; 6,153,992; 6,153,993; 6,153,994; 6,153,995; 6,153,996; 6,153,997; 6,153,998; 6,153,999; 6,154,000; 6,154,001; 6,154,002; 6,154,003; 6,154,004; 6,154,005; 6,154,006; 6,154,007; 6,154,008; 6,154,009; 6,154,010; 6,154,011; 6,154,012; 6,154,013; 6,154,014; 6,154,015; 6,154,016; 6,154,017; 6,154,018; 6,154,019; 6,154,020; 6,154,021; 6,154,022; 6,154,023; 6,154,024; 6,154,025; 6,154,026; 6,154,027; 6,154,028; 6,154,029; 6,154,030; 6,154,031; 6,154,032; 6,154,033; 6,154,034; 6,154,035; 6,154,036; 6,154,037; 6,154,038; 6,154,039; 6,154,040; 6,154,041; 6,154,042; 6,154,043; 6,154,044; 6,154,045; 6,154,046; 6,154,047; 6,154,048; 6,154,049; 6,154,050; 6,154,051; 6,154,052; 6,154,053; 6,154,054; 6,154,055; 6,154,056; 6,154,057; 6,154,058; 6,154,059; 6,154,060; 6,154,061; 6,154,062; 6,154,063; 6,154,064; 6,154,065; 6,154,066; 6,154,067; 6,154,068; 6,154,069; 6,154,070; 6,154,071; 6,154,072; 6,154,073; 6,154,074; 6,154,075; 6,154,076; 6,154,077; 6,154,078; 6,154,079; 6,154,080; 6,154,081; 6,154,082; 6,154,083; 6,154,084; 6,154,085; 6,154,086; 6,154,087; 6,154,088; 6,154,089; 6,154,090; 6,154,091; 6,154,092; 6,154,093; 6,154,094; 6,154,095; 6,154,096; 6,154,097; 6,154,098; 6,154,099; 6,154,100; 6,154,101; 6,154,102; 6,154,103; 6,154,104; 6,154,105; 6,154,106; 6,154,107; 6,154,108; 6,154,109; 6,154,110; 6,154,111; 6,154,112; 6,154,113; 6,154,114; 6,154,115; 6,154,116; 6,154,117; 6,154,118; 6,154,119; 6,154,120; 6,154,121; 6,154,122; 6,154,123; 6,154,124; 6,154,125; 6,154,126; 6,154,127; 6,154,128; 6,154,129; 6,154,130; 6,154,131; 6,154,132; 6,154,133; 6,154,134; 6,154,135; 6,154,136; 6,154,137; 6,154,138; 6,154,139; 6,154,140; 6,154,141; 6,154,142; 6,154,143; 6,154,144; 6,154,145; 6,154,146; 6,154,147; 6,154,148; 6,154,149; 6,154,150; 6,154,151; 6,154,152; 6,154,153; 6,154,154; 6,154,155; 6,154,156; 6,154,157; 6,154,158; 6,154,159; 6,154,160; 6,154,161; 6,154,162; 6,154,163; 6,154,164; 6,154,165; 6,154,166; 6,154,167; 6,154,168; 6,154,169; 6,154,170; 6,154,171; 6,154,172; 6,154,173; 6,154,174; 6,154,175; 6,154,176; 6,154,177; 6,154,178; 6,154,179; 6,154,180; 6,154,181; 6,154,182; 6,154,183; 6,154,184; 6,154,185; 6,154,186; 6,154,187; 6,154,188; 6,154,189; 6,154,190; 6,154,191; 6,154,192; 6,154,193; 6,154,194; 6,154,195; 6,154,196; 6,154,197; 6,154,198; 6,154,199; 6,154,200; 6,154,201; 6,154,202; 6,154,203; 6,154,204; 6,154,205; 6,154,206; 6,154,207; 6,154,208; 6,154,209; 6,154,210; 6,154,211; 6,154,212; 6,154,213; 6,154,214; 6,154,215; 6,154,216; 6,154,217; 6,154,218; 6,154,219; 6,154,220; 6,154,221; 6,154,222; 6,154,223; 6,154,224; 6,154,225; 6,154,226; 6,154,227; 6,154,228; 6,154,229; 6,154,230; 6,154,231; 6,154,232; 6,154,233; 6,154,234; 6,154,235; 6,154,236; 6,154,237; 6,154,238; 6,154,239; 6,154,240; 6,154,241; 6,154,242; 6,154,243; 6,154,244; 6,154,245; 6,154,246; 6,154,247; 6,154,248; 6,154,249; 6,154,250; 6,154,251; 6,154,252; 6,154,253; 6,154,254; 6,154,255; 6,154,256; 6,154,257; 6,154,258; 6,154,259; 6,154,260; 6,154,261; 6,154,262; 6,154,263; 6,154,264; 6,154,265; 6,154,266; 6,154,267; 6,154,268; 6,154,269; 6,154,270; 6,154,271; 6,154,272; 6,154,273; 6,154,274; 6,154,275; 6,154,276; 6,154,277; 6,154,278; 6,154,279; 6,154,280; 6,154,281; 6,154,282; 6,154,283; 6,154,284; 6,154,285; 6,154,286; 6,154,287; 6,154,288; 6,154,289; 6,154,290; 6,154,291; 6,154,292; 6,154,293; 6,154,294; 6,154,295; 6,154,296; 6,154,297; 6,154,298; 6,154,299; 6,154,300; 6,154,301; 6,154,302; 6,154,303; 6,154,304; 6,154,305; 6,154,306; 6,154,307; 6,154,308; 6,154,309; 6,154,310; 6,154,311; 6,154,312; 6,154,313; 6,154,314; 6,154,315; 6,154,316; 6,154,317; 6,154,318; 6,154,319; 6,154,320; 6,154,321; 6,154,322; 6,154,323; 6,154,324; 6,154,325; 6,154,326; 6,154,327; 6,154,328; 6,154,329; 6,154,330; 6,154,331; 6,154,332; 6,154,333; 6,154,334; 6,154,335; 6,154,336; 6,154,337; 6,154,338; 6,154,339; 6,154,340; 6,154,341; 6,154,342; 6,154,343; 6,154,344; 6,154,345; 6,154,346; 6,154,347; 6,154,348; 6,154,349; 6,154,350; 6,154,351; 6,154,352; 6,154,353; 6,154,354; 6,154,355; 6,154,356; 6,154,357; 6,154,358; 6,154,359; 6,154,360; 6,154,361; 6,154,362; 6,154,363; 6,154,364; 6,154,365; 6,154,366; 6,154,367; 6,154,368; 6,154,369; 6,154,370; 6,1

ATTACHMENT N

INSPECTION, MAINTENANCE, REPAIR AND RETROFIT PLAN

ENGINEERED VEGETATIVE FILTER STRIPS

Once a vegetated area is well established, little additional maintenance is generally necessary. The key to establishing a viable vegetated feature is the care and maintenance it receives in the first few months after it is planted. Once established, all vegetated BMPs require some basic maintenance to ensure the health of the plants including:

- Pest Management. An Integrated Pest Management (IPM) Plan should be developed for vegetated areas. This plan should specify how problem insects and weeds will be controlled with minimal or no use of insecticides and herbicides.
- Seasonal Mowing and Lawn Care. If the filter strip is made up of turf grass, it should be mowed as needed to limit vegetation height to 18 inches, using a mulching mower (or removal of clippings). If native grasses are used, the filter may require less frequent mowing, but a minimum of twice annually. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices; however, herbicide use should be kept to a minimum (Urbonas et al., 1992). Healthy grass can be maintained without using fertilizers because runoff usually contains sufficient nutrients. Irrigation of the site can help assure a dense and healthy vegetative cover.
- Inspection. Inspect filter strips at least twice annually for erosion or damage to vegetation; however, additional inspection after periods of heavy runoff is most desirable. The strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation. More frequent inspections of the grass cover during the first few years after establishment will help to determine if any problems are developing, and to plan for long-term restorative maintenance needs. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Construction of a level spreader device may be necessary to reestablish shallow overland flow.
- Debris and Litter Removal. Trash tends to accumulate in vegetated areas, particularly along highways. Any filter strip structures (i.e., level spreaders) should be kept free of obstructions to reduce floatables being flushed downstream, and for aesthetic reasons.

The need for this practice is determined through periodic inspection, but should be performed no less than 4 times per year.

- Sediment Removal. Sediment removal is not normally required in filter strips, since the vegetation normally grows through it and binds it to the soil. However, sediment may accumulate along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.

- Grass Reseeding and Mulching. A healthy dense grass should be maintained on the filter strip. If areas are eroded, they should be filled, compacted, and reseeded so that the final grade is level. Grass damaged during the sediment removal process should be promptly replaced using the same seed mix used during filter strip establishment. If possible, flow should be diverted from the damaged areas until the grass is firmly established. Bare spots and areas of erosion identified during semi-annual inspections must be replanted and restored to meet specifications. Corrective maintenance, such as weeding or replanting should be done more frequently in the first two to three years after installation to ensure stabilization. Dense vegetation may require irrigation immediately after planting, and during particularly dry periods, particularly as the vegetation is initially established.

JELLYFISH FILTERS

Jellyfish cartridges are passively backwashed automatically after each storm event, which removed accumulated sediment from the membranes and significantly extends the service life of the cartridges and the maintenance interval. If required, the cartridges can be easily manually backwashed without removing the cartridges. Additionally, the lightweight cartridges can be removed by hand and externally rinsed, and rinsed cartridges then re-installed. These simple maintenance options allow for cartridge regeneration, thereby minimizing cartridge replacement costs and life-cycle treatment costs while ensuring long-term treatment performance. Regular inspection and maintenance are proven, cost-effective ways to maximize water resource protection for all stormwater pollution control practices, and are required to ensure proper functioning of the Jellyfish Filter. Inspection of the Jellyfish Filter is performed from the surface, while proper maintenance required a combination of procedures conducted from the surface and worker entry in the structure.

- Inspection. Post-construction inspection is required prior to putting the Jellyfish Filter into service. Routine inspections are recommended quarterly during the first year of operation to accurately assess the sediment and floatable pollutant accumulation, and to ensure that the automatic backwash feature is functioning properly.

- **Cleaning.** The unit must be cleaned annually. This cleaning includes removal and appropriate disposal of all water, sediment, oil and grease, and debris that has accumulated within the unit. The Jellyfish Filter is inspected and maintained by professional vacuum cleaning service providers with experience in the maintenance of underground tanks, sewers and catch basins. Since some of the maintenance procedures require manned entry into the Jellyfish structure, only professional maintenance service providers trained in confined space entry procedures should enter the vessel. Service provider companies typically have personnel who are trained and certified in confined space entry procedures according to local, state, and federal standards.

- **Filter Cartridge Testing.** Filter cartridges should be tested for adequate flow rate, every 12 months and cleaned and re-commissioned, or replaced if necessary. A manual backflush must be performed on a single draindown cartridge using a Jellyfish Cartridge Backflush pipe (described in the Jellyfish Filter Owner's manual). If the time required to drain 14 gallons of backflush water from the Backflush Pipe (from top of pipe to the top of the open flapper valve) exceeds 15 seconds, it is recommended to perform a manual backflush on each of the cartridges. After the manual backflush, the draindown test should be repeated on a single cartridge to determine if the cartridge can drain 14 gallons of water in 15 seconds. If the cartridge still does not achieve the design flow rate, it must be replaced. The unit should be cleaned out immediately after an oil, fuel or chemical spill.

- **Filter Cartridge Cleaning.** This cartridge cleaning procedure is performed by removing the cartridge from the cartridge deck and externally rinsing the filtration tentacles using a low-pressure water sprayer, as described in the Jellyfish Filter Owner's Manual. If this procedure is performed within the structure, the cartridge or individual filtration tentacles should be rinsed while safely suspended over the maintenance access wall opening in the cartridge deck, such that rinsate flows into the lower chamber of the Jellyfish Filter. If the rinsing procedure is performed outside the structure, the cartridge or individual filtration tentacles should be rinsed in a suitable basin such as a plastic barrel or tub, and rinsate subsequently poured into the maintenance access wall opening in the cartridge deck. Sediment is subsequently removed from the lower chamber by standard vacuum service.

RECORD KEEPING

Maintenance and inspection records should be kept on file by the Owner of the permanent BMPs for a period of at least three (3) years. Repair and retrofit records should be kept on file by the Owner of the permanent BMPs for a period of at least five (5) years.

JEFFREY B. SMITH
Print Name


Signature of Applicant/Owner/Agent

6.9.22
Date

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Sean Smith, P.E.

Date: 3/3/2023

Signature of Customer/Agent:



Regulated Entity Name: CISD STARTZVILLE ELEMENTARY SCHOOL

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

The following fuels and/or hazardous substances will be stored on the site: _____

These fuels and/or hazardous substances will be stored in:

- Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

- Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.
- Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.
- Fuels and hazardous substances will not be stored on the site.
- 2. **Attachment A - Spill Response Actions.** A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
- 3. Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
- 4. **Attachment B - Potential Sources of Contamination.** A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

- 5. **Attachment C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.
 - For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.
 - For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
- 6. Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Guadalupe River

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

- 7. **Attachment D – Temporary Best Management Practices and Measures.** TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

- A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
 - A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
 - A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
 - A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8. The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
- Attachment E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
 - There will be no temporary sealing of naturally-occurring sensitive features on the site.
9. **Attachment F - Structural Practices.** A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10. **Attachment G - Drainage Area Map.** A drainage area map supporting the following requirements is attached:
- For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
 - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
 - For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
 - There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

- There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.
11. **Attachment H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.
- N/A
12. **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
13. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.
14. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
15. Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.
16. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
19. Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
21. If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
22. Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

ATTACHMENT A
SPILL RESPONSE ACTIONS

1. Housekeeping
 - A. Minimize materials: An effort will be made to store only enough materials required to do the job.
 - B. Storage: All materials stored on site will be stored in a neat, orderly manner in their appropriate containers in a covered area. If storage in a covered area is not feasible, then the materials will be covered with polyethylene or polypropylene sheeting to protect them from the elements.
 - C. Labeling: Products will be kept in their original containers with the original manufacturer's label affixed to each container.
 - D. Mixing: Substances will not be mixed with one another unless this is recommended by the manufacturer.
 - E. Disposal: Whenever possible, all of a product will be used prior to disposal of the container. Manufacturer's recommendations will be followed for proper use and disposal of materials on site.
 - F. Inspections: The site superintendent will inspect the site daily to ensure proper use and disposal of materials on site.
 - G. Spoil Materials: Any excavated earth that will not be used for fill material and all demolished pavement will be hauled off site immediately and will be disposed of properly, in accordance with all applicable state/local regulations.
2. Product Specific Practices
 - A. Petroleum Products: All on site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. If petroleum products will be present at the site, then they will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used on site will be applied according to the manufacturer's recommendations.
 - B. Concrete Trucks: Ready/Transit Mix Trucks will not be allowed to wash out or discharge surplus concrete or drum wash water except in the designated location on site as shown on the SWPPP site plan.
 - C. Paints: All containers will be tightly sealed and stored when not required for use. Excess paint will not be poured into storm sewer system or drainage channels, but will be properly disposed of according to manufacturers' instructions or state/local regulations.

- D. Fertilizers: Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. The fertilizer will be stored in a covered area, and any partially used bags will be transferred to a sealable plastic bin to avoid spills.

3. Spill Control and Response Measures

A spill prevention and response team will be designated by the site superintendent. In addition, the following practices will be followed for spill cleanup:

- A. Information: Manufacturers' recommended methods for spill cleanup will be clearly posted, and site personnel will be made aware of the procedures and location of the information and cleanup supplies.
- B. Equipment: Materials and equipment necessary for spill cleanup will be present on the site at all times. Equipment and materials will include, but not be limited to brooms, shovels, rags, gloves, goggles, absorbent materials (sand, sawdust, etc.) and plastic or metal trash containers specifically designed for this purpose. The materials and equipment necessary for spill cleanup will be dependent upon the nature and quantity of the material stored on site.
- C. Response: All spills will be cleaned up immediately upon discovery.

Cleanup

- (1) Clean up leaks and spills immediately
- (2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
- (3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in TCEQ Technical Guidance Manual RG-348 for specific information.

Minor Spills

- (1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- (2) Use absorbent materials on small spills rather than hosing down or burying the spill
- (3) Absorbent materials should be promptly removed and disposed of properly.
- (4) Follow the practice below for a minor spill:
- (5) Contain the spread of the spill.
- (6) Recover spilled materials.

(7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

- (1) Contain spread of the spill.
- (2) Notify the project foreman immediately.
- (3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- (4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- (5) If the spill occurs during rain, cover the spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

- (1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- (2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110, 119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
- (3) Notification should first be made by telephone and followed up with a written report.
- (4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- (5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

D. Vehicle and Equipment Maintenance

- (1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills.

- (2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately.
- (3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- (4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- (5) Place drip pans or absorbent materials under paving equipment when not in use.
- (6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- (7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- (8) Oil filters disposed of in trash cans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can be recycled. Ask the oil supplier or recycler about recycling oil filters.
- (9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

E. Vehicle and Equipment Fueling

- (1) If fueling must occur onsite, use designated areas, located away from drainage courses, to prevent the run-on of stormwater and the runoff of spills.
- (2) Discourage "topping off" of fuel tanks.
- (3) Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

F. Safety: The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substances.

G. Reporting: Spills of toxic or hazardous material (if present on site) will be reported to the appropriate state or local government agency, regardless of the spill's size.

H. Record Keeping: The spill prevention plan will be modified to include measures to prevent this type of spill from recurring as well as improved methods for cleaning up any future spills. A description of each spill, what caused it, and the cleanup measures used will be kept with this plan.

ATTACHMENT B
POTENTIAL SOURCES OF CONTAMINATION

Potential Source	Oil, grease, fuel and hydraulic fluid contamination from construction equipment and vehicle dripping.
Preventive Measure	Vehicle maintenance, when possible, will be performed within a construction staging area specified by the General Contractor.
Potential Source	Miscellaneous trash and litter from construction workers and material wrappings.
Preventive Measure	Trash containers will be placed throughout the site to encourage proper trash disposal.
Potential Source	Construction debris.
Preventive Measure	Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.
Potential Source	Stormwater contamination from excess application of fertilizers, herbicides and pesticides.
Preventive Measure	Fertilizers, herbicides and pesticides will be applied only when necessary and in accordance with manufacturers directions.
Potential Source	Soil and mud from construction vehicle tires as they leave the site.
Preventive Measure	A stabilized construction exit shall be utilized as vehicles leave the site. Any soil, mud, etc. carried from the project onto public roads shall be cleaned up within 24 hours.
Potential Source	Sediment from soil, sand, gravel and excavated materials stockpiled on site.
Preventive Measure	Silt fence shall be installed on the downgradient side of all stockpiled materials. Reinforced rock berms shall be installed at all downstream discharge locations.

ATTACHMENT C
SEQUENCE OF MAJOR ACTIVITIES

Construction Sequencing

- A. Installation of temporary BMPs as shown on the CZP Site Plan. Silt fence will be placed along the down gradient boundary. (0.025 acres disturbed)
- B. Demolition and grading. (1.98 acres disturbed)
- C. Seeding and soil stabilization. (1.08 acres disturbed)

ATTACHMENT D
TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Description of Temporary Best Management Practices:

Vegetation will be used as a temporary stabilization technique for all areas disturbed by construction, not covered in pavement, buildings, or other structures.

Sequence of installation during construction process for each phase of construction:

Vegetation as a temporary control will only be utilized in the event a disturbed area has been left denuded for more than 14 days.

Up gradient storm water flowing across the site:

There is minimum upgradient flow entering the construction area. All upgradient flow will be treated along with the stormwater generated onsite.

Onsite storm water flowing across and off the site:

The storm water originating onsite and flowing off the site will be treated through temporary BMPs. Silt fences will be installed at all locations where non-concentrated storm water exits the site.

Prevention of pollutants from entering surface streams, sensitive features and the aquifer:

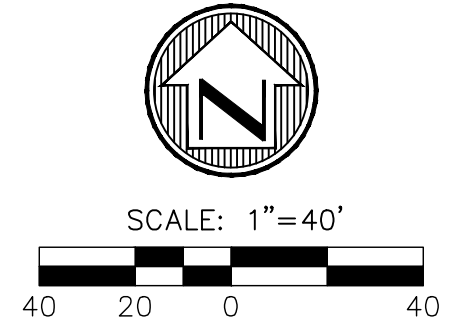
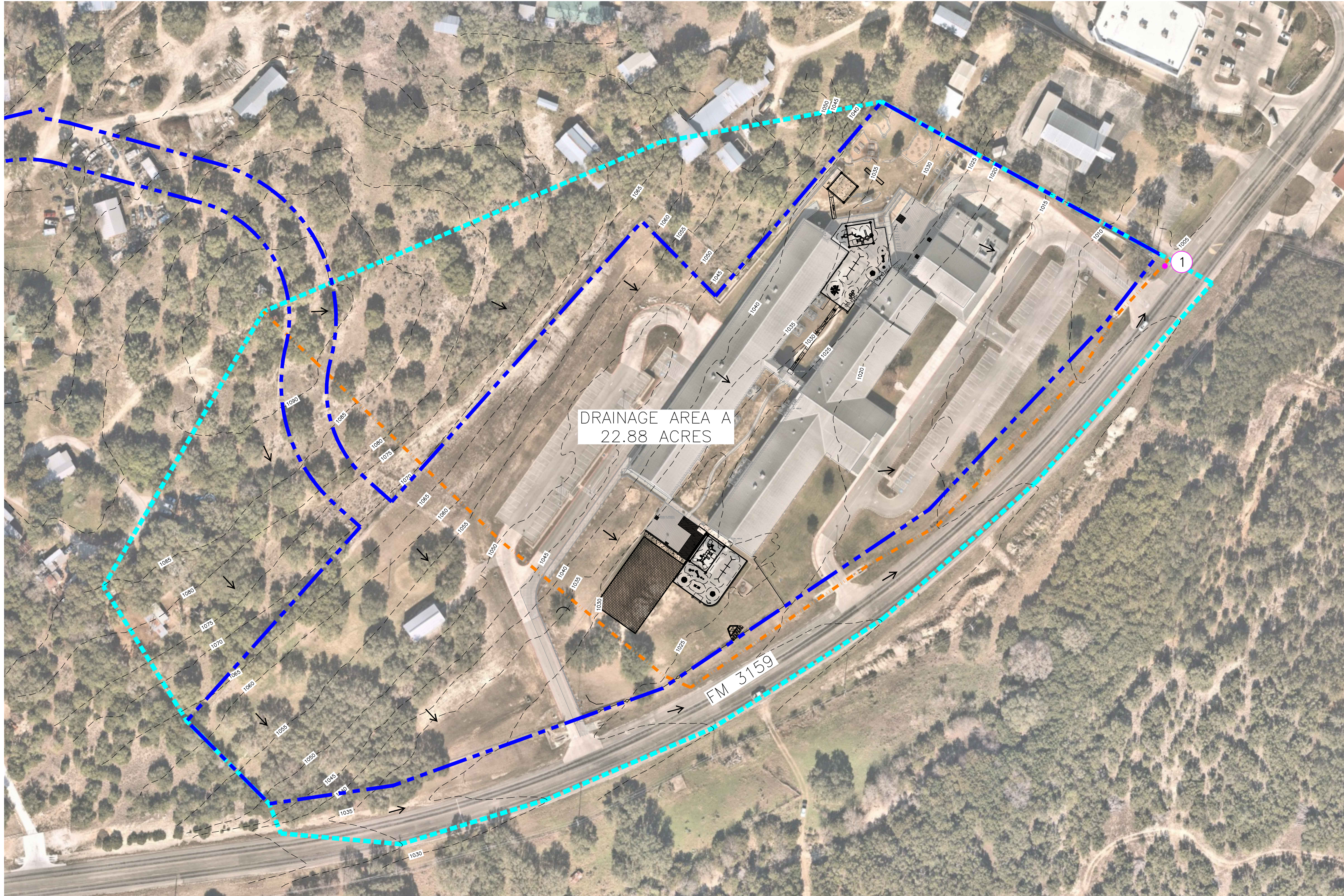
The storm water originating onsite and flowing off the site will be treated using temporary BMPs prior to it entering surface streams, sensitive features and the aquifer. Silt fences will be installed at all locations where non-concentrated storm water may leave the site. These silt fences should filter the storm water prior to it leaving the site.

Maintaining flow to naturally-occurring sensitive features:

The storm water originating onsite and flowing off the site will continue to flow into the down gradient receiving waters. Any sensitive features downstream will continue to receive flow originating on the site. Prior to the flow leaving the site, it will be treated through temporary BMPs. These temporary BMPs should remove sediment, pollutants and debris if installed and maintained properly.

ATTACHMENT F
STRUCTURAL PRACTICES

Vegetation will be used as a temporary stabilization technique for all areas disturbed by construction, not covered by pavement, buildings, or other structures. Temporary stabilization shall consist of temporary seeding of disturbed areas that are denuded beyond 14 days without construction restart within 21 days. As a temporary control, the vegetation will be used to stabilize barren areas that are inactive for long periods of time.



- LEGEND**
- - - - - SITE BOUNDARY
 - - - - - OVERALL WATERSHED BOUNDARY
 - - - - - 1% ANNUAL CHANCE FLOODPLAIN
 - - - - - TIME OF CONCENTRATION
 - - - - - EXISTING CONTOURS
 - 1 CALCULATION POINT
 - FLOW ARROWS

EXISTING DRAINAGE CALCULATIONS

EXISTING CONDITIONS Q CALCULATION										
PT. NO.	AREA OF ACCUMULATION	TOTAL ACRES	C-VALUE	Tc (min)	I5 (in/hr)	I25 (in/hr)	I100 (in/hr)	Q5 (cfs)	Q25 (cfs)	Q100 (cfs)
1	A	22.88	0.67	22.50	4.32	6.02	7.59	65.99	91.85	115.85

PROPOSED DRAINAGE CALCULATIONS

PROPOSED/ULTIMATE CONDITIONS Q CALCULATION										
PT. NO.	AREA OF ACCUMULATION	TOTAL ACRES	C-VALUE	Tc (min)	I5 (in/hr)	I25 (in/hr)	I100 (in/hr)	Q5 (cfs)	Q25 (cfs)	Q100 (cfs)
1	A	22.88	0.68	22.50	4.32	6.02	7.59	67.03	93.30	117.68

REVISIONS	
NO.	DESCRIPTION

MIR

Moy Tarin Ramirez Engineers, LLC

Engineers
Surveyors
Planners

FIRM TYPE NO. F-5297 & TBPLS NO. F-10131500
12770 CHARRON PATH, SUITE 100 TEL: (210) 698-5051
SAN ANTONIO, TEXAS 78249 FAX: (210) 698-5085



STARTZVILLE ELEMENTARY SCHOOL
ATTACHMENT G
DRAINAGE AREA MAP

EXHIBIT
G

R:\COMAL ISD\STARTZVILLE ES\2023 G2P\DRAWINGS\ATTACHMENT G DRAINAGE AREA MAP.DWG

ATTACHMENT I
INSPECTION AND MAINTENANCE FOR BMPS

Silt Fence

1. Inspect all fencing weekly, and after any rainfall.
2. Remove sediment when buildup reaches 6 inches, or install a second line of fencing parallel to the old fence.
3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
4. Replace or repair any sections crushed or collapsed in the course of construction activity.

Bagged Gravel Inlet Filter

1. Inspections should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by contractor.
2. Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
3. Check placement of device to prevent gaps between device and curb.
4. Inspect filter fabric and patch or replace if torn or missing.
5. Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

CISD STARTZVILLE ELEMENTARY SCHOOL

Responsible Party Form

Pollution Prevention Measure		Inspected	Corrective Action	
			Description	Date Completed
Silt Fence	Inspections			
	Fencing			
	Sediment Removal			
	Torn Fabric			
	Crushed/Collapsed Fencing			
Bagged Gravel Inlet Filters	Inspections			
	Replaced/Reshaped			
	Silt Removed			

Inspector's Name

Inspector's Signature

Name of Owner/Operator

Date

Note: Inspector is to attach a brief statement of his qualifications to this report.

ATTACHMENT J
SCHEDULE OF INTERIM AND PERMANENT SOIL STABILIZATION PRACTICES

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of the site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

Temporary stabilization shall consist of temporary seeding of disturbed areas that are denuded beyond 14 days without construction restart within 21 days.

As pad sites (buildings, sidewalks and pavement) are completed, permanent landscaping and sod shall be planted and irrigated. Curb and gutter will direct runoff into the permanent water quality basin.

Temporary vegetation stabilization techniques shall be in accordance with the TCEQ Technical Guidance Manual RG-248 (*Complying with the Edwards Aquifer Rules – Technical Guidance on Best Management Practices*), Chapter 1 Temporary Best Management Practices, Section 1.3.8 Temporary Vegetation, as follows:

Temporary Vegetation

Vegetation is used as a temporary or permanent stabilization technique for areas disturbed by construction, but not covered by pavement, buildings, or other structures. As a temporary control, vegetation can be used to stabilize stockpiles and barren areas that are inactive for long periods of time.

Vegetative techniques can and should apply to every construction project with few exceptions. Vegetation effectively reduces erosion in swales, stockpiles, berms, mild to medium slopes, and along roadways.

Other techniques may be required to assist in the establishment of vegetation. These other techniques include erosion control matting, mulches, surface roughening, swales and dikes to direct runoff around newly seeded areas, and proper grading to limit runoff velocities during construction. (NCTCOG, 1993b)

Materials:

The type of temporary vegetation used on a site is a function of the season and the availability of water for irrigation. For areas that are not irrigated, the year can be divided into two temporary planting seasons and one season for planting of permanent warm weather groundcovers. These periods are shown in Figure 1-19 for Bexar, Comal, Kinney, Medina, and Uvalde Counties. Appropriate temporary vegetation for these areas is shown in Table 1-4.

Other vegetation may perform as well as the recommended varieties, especially where irrigation is available. County agricultural extension agents are a good source for suggestions for other types of temporary vegetation. All seed should be high quality, U.S. Dept. of Agriculture certified seed.

Installation:

(1) Interim or final grading must be completed prior to seeding, minimizing all steep slopes. In addition, all necessary erosion structures such as dikes, swales, and diversions, should also be installed.

(2) Seedbed should be well pulverized, loose, and uniform.

(3) Fertilizer should be applied at the rate of 40 pounds of nitrogen and 40 pounds of phosphorus per acre, which is equivalent to about 1.0 pounds of nitrogen and phosphorus per 1000 square feet. Compost can be used instead of fertilizer and applied at the same time as the seed.

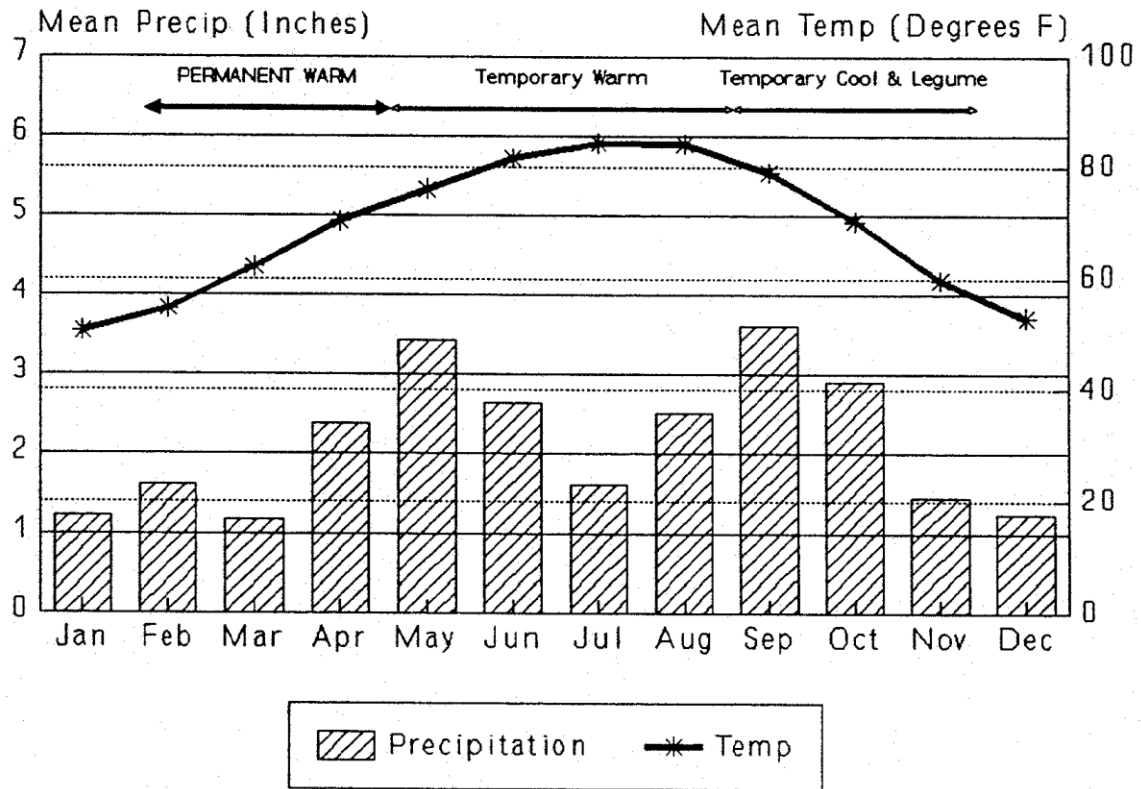


Figure 1-19 Planting Dates for Bexar, Comal, Kinney, Medina, and Uvalde Counties (Northcutt, 1993)

Table 1-4 Temporary Seeding for Bexar, Comal, Kinney, Medina, and Uvalde Counties (Northcutt, 1993)

Dates	Climate	Species (lb/ac)
Sept 1 to Nov 30	Temporary Cool Season	Tall Fescue 4.0
		Oats 21.0
		Wheat (Red, Winter) 30.0
		Total 55.0
Sept 1 to Nov 30	Cool Season Legume	Hairy Vetch 8.0
May 1 to Aug 31	Temporary Warm Season	Foxtail Millet 30.0

(4) Seeding rates should be as shown in Table 1-4 or as recommended by the county agricultural extension agent.

(5) The seed should be applied uniformly with a cyclone seeder, drill, cultipacker seeder or hydroseeder (slurry includes seed, fertilizer and binder).

(6) Slopes that are steeper than 3:1 should be covered with appropriate soil stabilization matting as described in the following section to prevent loss of soil and seed.

Irrigation:

Temporary irrigation should be provided according to the schedule described below, or to replace moisture loss to evapotranspiration (ET), whichever is greater. Significant rainfall (on-site rainfall of ½” or greater) may allow watering to be postponed until the next scheduled irrigation.

Time Period	Irrigation Amount and Frequency
Within 2 hours of installation	Irrigate entire root depth, or to germinate seed
During the next 10 business days	Irrigate entire root depth every Monday, Wednesday, and Friday
During the next 30 business days or until Substantial Completion	Irrigate entire root depth a minimum of once per week, or as necessary to ensure vigorous growth
During the next 4 months or until Final Acceptance of the Project	Irrigate entire root depth once every two weeks, or as necessary to ensure vigorous growth

If cool weather induces plant dormancy, water only as necessary to maintain plant health.

Irrigate in a manner that will not erode the topsoil but will sufficiently soak the entire depth of roots.

Inspection and Maintenance Guidelines:

(1) Temporary vegetation should be inspected weekly and after each rain event to locate and repair any erosion.

(2) Erosion from storms or other damage should be repaired as soon as practical by regrading the area and applying new seed.

(3) If the vegetated cover is less than 80%, the area should be reseeded.

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I _____ Alex Araujo _____,
Print Name

_____ Executive Director Construction & Planning _____,
Title - Owner/President/Other

of _____ Comal Independent School District _____,
Corporation/Partnership/Entity Name

have authorized _____ Moy Tarin Ramirez Engineers, LLC _____
Print Name of Agent/Engineer

of _____ Moy Tarin Ramirez Engineers, LLC _____
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.
4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.
5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

[Handwritten Signature]

Applicant's Signature

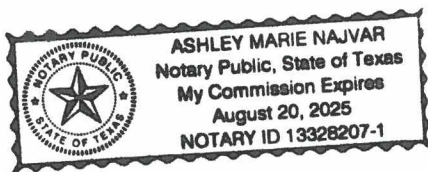
3/31/22
Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Alex Arango known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 31st day of March, 2022.



Ashley Najvar
NOTARY PUBLIC

Ashley Najvar
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 08/20/2025

Application Fee Form

Texas Commission on Environmental Quality

Name of Proposed Regulated Entity: CISD Startzville Elementary School

Regulated Entity Location: 310 Cannan Rd, Canyon Lake, TX 78133

Name of Customer: Comal ISD

Contact Person: John E. Chapman

Phone: (830) 221-2150

Customer Reference Number (if issued): CN 600249825

Regulated Entity Reference Number (if issued): RN 104921697

Austin Regional Office (3373)

Hays

Travis

Williamson

San Antonio Regional Office (3362)

Bexar

Medina

Uvalde

Comal

Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

Austin Regional Office

San Antonio Regional Office

Mailed to: TCEQ - Cashier

Overnight Delivery to: TCEQ - Cashier

Revenues Section

12100 Park 35 Circle

Mail Code 214

Building A, 3rd Floor

P.O. Box 13088

Austin, TX 78753

Austin, TX 78711-3088

(512)239-0357

Site Location (Check All That Apply):

Recharge Zone

Contributing Zone

Transition Zone

<i>Type of Plan</i>	<i>Size</i>	<i>Fee Due</i>
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	\$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	13.60 Acres	\$ 6,500.00
Sewage Collection System	L.F.	\$
Lift Stations without sewer lines	Acres	\$
Underground or Aboveground Storage Tank Facility	Tanks	\$
Piping System(s)(only)	Each	\$
Exception	Each	\$
Extension of Time	Each	\$

Signature: 

Date: 03/03/2023

Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

<i>Project</i>	<i>Project Area in Acres</i>	<i>Fee</i>
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1	\$3,000
	1 < 5	\$4,000
	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

Organized Sewage Collection Systems and Modifications

<i>Project</i>	<i>Cost per Linear Foot</i>	<i>Minimum Fee- Maximum Fee</i>
Sewage Collection Systems	\$0.50	\$650 - \$6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

<i>Project</i>	<i>Cost per Tank or Piping System</i>	<i>Minimum Fee- Maximum Fee</i>
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

Exception Requests

<i>Project</i>	<i>Fee</i>
Exception Request	\$500

Extension of Time Requests

<i>Project</i>	<i>Fee</i>
Extension of Time Request	\$150



TCEQ Use Only

TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<input checked="" type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)	<input type="checkbox"/> Other	
2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 600249825		RN 104921697

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)		
<input type="checkbox"/> New Customer		<input type="checkbox"/> Update to Customer Information		<input type="checkbox"/> Change in Regulated Entity Ownership
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)				
The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).				
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John)			<i>If new Customer, enter previous Customer below:</i>	
7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)	
11. Type of Customer:	<input type="checkbox"/> Corporation	<input type="checkbox"/> Individual	Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited	
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Sole Proprietorship		<input type="checkbox"/> Other:	
12. Number of Employees		13. Independently Owned and Operated?		
<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 and higher		<input type="checkbox"/> Yes <input type="checkbox"/> No		
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following				
<input type="checkbox"/> Owner		<input type="checkbox"/> Operator		<input type="checkbox"/> Owner & Operator
<input type="checkbox"/> Occupational Licensee		<input type="checkbox"/> Responsible Party		<input type="checkbox"/> Voluntary Cleanup Applicant <input type="checkbox"/> Other:
15. Mailing Address:				
	City	State	ZIP	ZIP + 4
16. Country Mailing Information (if outside USA)			17. E-Mail Address (if applicable)	
18. Telephone Number		19. Extension or Code		20. Fax Number (if applicable)
() -				() -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)	
<input type="checkbox"/> New Regulated Entity <input type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information	
The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).	
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)	
CISD STARTZVILLE ELEMENTARY SCHOOL	

23. Street Address of the Regulated Entity: <i>(No PO Boxes)</i>	42111 FM3159,						
	City	CanyonLake	State	TX	ZIP	78133	ZIP + 4
24. County	Comal						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	500 FT SW OF FM 3159 AND FM 2673 INTERSECTION							
26. Nearest City	Canyon Lake				State	TX	Nearest ZIP Code	78133
27. Latitude (N) In Decimal:	29.841744			28. Longitude (W) In Decimal:	98.260092			
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds			
29	50	30.28	98	16	08.73			
29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)		31. Primary NAICS Code (5 or 6 digits)		32. Secondary NAICS Code (5 or 6 digits)			
8211			611110					
33. What is the Primary Business of this entity? <i>(Do not repeat the SIC or NAICS description.)</i>								
Elementary School								
34. Mailing Address:	42111 FM 3159							
	City	Canyon Lake	State	TX	ZIP	78133	ZIP + 4	
35. E-Mail Address:	alejandro.araujo@comalisd.org							
36. Telephone Number	37. Extension or Code			38. Fax Number <i>(if applicable)</i>				
(830) 885-9500				() -				

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.


<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input checked="" type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input type="checkbox"/> Waste Water	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:

SECTION IV: Preparer Information

40. Name:	Sean Smith, P.E.	41. Title:	Senior Vice President
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(210) 698-5051		(210) 698-5085	ssmith@mtrengineers.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Moy Tarin Ramirez Engineers, LLC	Job Title:	Senior Vice President
Name <i>(In Print)</i> :	Sean Smith, P.E.	Phone:	(210) 698- 5051
Signature:		Date:	