

Traffic Management Plan for The School House in Prosper, Texas

THURSDAY, OCTOBER 17, 2024

Prepared By

PROMET  ENGINEERS
TRANSPORTATION ENGINEERING & PLANNING

REVISED



10/17/2024

PROMET ENGINEERS
214 205 8683
9550 Forest Lane, Suite 342, Dallas, TX 75243
somesh@prometengineers.com
www.prometengineers.com

I. INTRODUCTION

The services of **Promet Engineers, LLC** (Promet) were retained by **CDC Group** to prepare a School Traffic Management Plan (TMP) for The School House (the “School”) as required by the Town of Prosper. The School House is a proposed campus located at 5799 Old Custer Road in Prosper, Texas. The proposed enrollment is summarized in the following table:

Table 1. Enrollment Summary

CLASSROOM	AGE (YEARS)	ENROLLMENT	START/END TIMES
		Proposed	
CR 1	4	16	8:30 AM/2:30 PM
CR 2	4	16	8:30 AM/2:30 PM
CR 3	5	16	8:30 AM/2:30 PM
CR 4	5	16	8:30 AM/2:30 PM
TOTAL		64	

Data provided by the school.

The official school timings are as follows:

Table 2. Official School Timings

TIME	ACTIVITY
7:30 AM – 7:45 AM	Staff Arrival
8:10 AM – 8:15 AM	CR 1 Kids Drop-Off
8:15 AM – 8:20 AM	CR 2 Kids Drop-Off
8:20 AM – 8:25 AM	CR 3 Kids Drop-Off
8:25 AM – 8:30 AM	CR 4 Kids Drop-Off
8:30 AM	School Begins
2:30 PM	School Ends
2:30 PM – 2:35 PM	CR 1 Kids Pick-Up (Some kids may be staying for the after-school care program)
2:35 PM – 2:40 PM	CR 2 Kids Pick-Up (Some kids may be staying for the after-school care program)
2:40 PM – 2:45 PM	CR 3 Kids Pick-Up (Some kids may be staying for the after-school care program)

2:45 PM – 2:50 PM	CR 4 Kids Pick-Up (Some kids may be staying for the after-school care program)
5:30 PM	After-School Care Kids Pick-Up

For a conservative approach, the study assumed that all the students would leave the school by 2:50 PM. This may not occur on a usual basis, but there could be a situation where the after-school program is unavailable on certain days, like during the holiday season. The traffic management plan proposes that drop-off and pick-up activities occur staggered, with each classroom having a separate drop-off and pick-up period, as shown in **Table 2**.

The school will have 10 staff members, including four teachers, one teacher for each classroom, four assistant teacher staff, and two directors.

This TMP was prepared by a registered engineer at Promet Engineers who is experienced in traffic engineering. Promet is a licensed engineering firm in Dallas, Texas, providing professional engineering services.

Field observations were performed at two private schools. The following are the names of the schools and the times at which traffic observations were made:

Table 3. School Observations

SCHOOL NAME	AGE GROUPS	ADDRESS	DATE	HOURS OBSERVED
Spanish Schoolhouse	6 weeks-6 years	1239 Alma Drive, Allen, TX 75013	Tuesday, September 17, 2024	1:30 PM – 3:30 PM
			Wednesday, September 18, 2024	7:30 AM – 9:15 AM
			Thursday, September 19, 2024	6:45 AM – 9:00 AM

As the project is a proposed construction project built by 2025, no on-site observations are applicable for the site. Therefore, the observations performed at the abovementioned schools and two other private schools in Dallas – Compass School of Texas – Northwest Highway & Spanish World School – Grand Avenue by Lambeth Engineering & Associates, PLLC provide a general idea of the queue length per student. The following are the dates and times at which observations were made:

Table 4. School Observations From 2021 and 2023

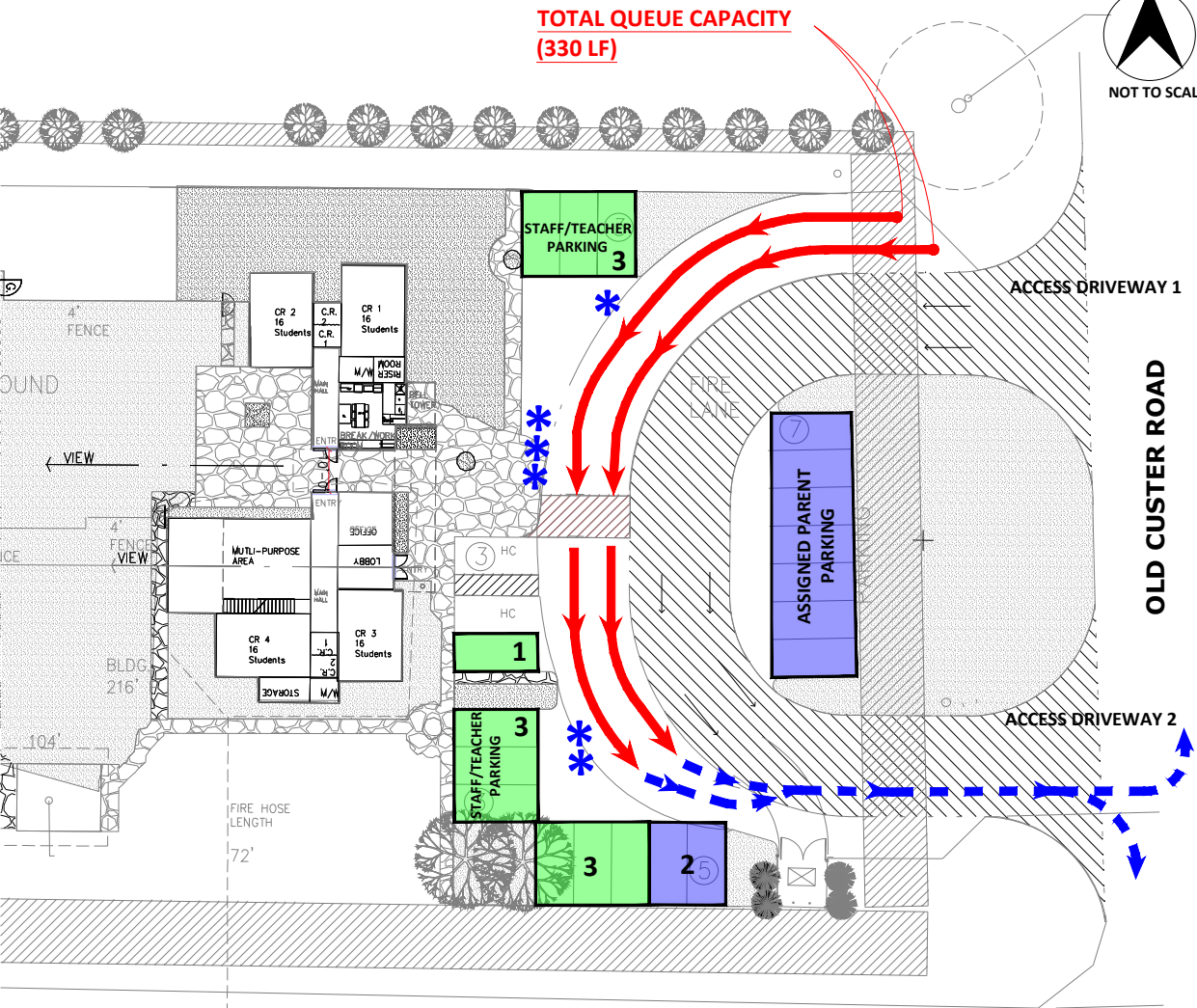
SCHOOL NAME	GRADES	ADDRESS	DATE	TIME AT WHICH THE LONGEST QUEUE WAS OBSERVED
The Compass School of Texas	Pre-K	5414 W Northwest Highway, Dallas, TX 75220	Tuesday, May 09, 2023	11.47 AM
	K		Tuesday, May 09, 2023	3.01 PM

Spanish World School	1 st – 2 nd	7159 E Grand Avenue, Dallas, TX 75223	Monday, February 08, 2021	3:00 PM
	3 rd – 5 th		Monday, February 08, 2021	3:23 PM

II. TMP EXHIBIT

Next page

Note: Architect Gregory Hagmann prepared the base site plan.



Queuing Summary

TIME PERIOD	CLASS ROOMS	STUDENTS PICKED-UP/DISMISSIED	MAXIMUM VEHICLE ACCUMULATION	ASSIGNED STUDENTS FOR WALK-IN/WALK-OUT WITH PARENT	TRAVELING MODES	VEHICULAR TRAFFIC DEMAND (QUEUE)
8:10 AM - 8:15 AM	CR 1	16	9	7	Pick Up: 100%	Provided: 330 LF (15 veh)
8:15 AM - 8:20 AM	CR 2	16	9	7		Provided: 330 LF (15 veh)
8:20 AM - 8:25 AM	CR 3	16	9	7		Provided: 330 LF (15 veh)
8:25 AM - 8:30 AM	CR 4	16	9	7		Provided: 330 LF (15 veh)
2:30 PM - 2:35 PM	CR 1	16	9	7		Provided: 330 LF (15 veh)
2:35 PM - 2:40 PM	CR 2	16	9	7		Provided: 330 LF (15 veh)
2:40 PM - 2:45 PM	CR 3	16	9	7		Provided: 330 LF (15 veh)
2:45 PM - 2:50 PM	CR 4	16	9	7		Provided: 330 LF (15 veh)
						6
					2	

*Vehicular queue calculated at 22.0 feet/veh.

GENERAL NOTES:

1. Parent drop-off activity in the morning has a similar protocol as the parent pick-up in the afternoon.
2. It is recommended that this Traffic Management Plan be circulated to parents to understand the queuing strategy proposed on site.
3. The approved Traffic Management Plan must be incorporated into PD in the form of an agreement with the Town of Prosper.

Legend

- * - School Staff
- Green Box - Staff Parking
- Blue Box - Parent Parking
- Red Arrow - Provided Queue
- Blue Dashed Arrow - Outbound Route

The purpose of this Traffic Management Plan (TMP) is to present traffic operations that promote safety and efficient vehicle circulation. This TMP was developed to prevent queuing of drop-off/pick-up related vehicles within the city rights-of-way. Any deficiency due to spillover of queuing into undesignated areas of the city rights-of-way, including roadway travel lanes, should be corrected by the school immediately.

I, Somesh R. Katukuri, P.E. #141380, certify that the results of queuing analysis by implementing this Traffic Management Plan show no queuing of vehicles to occur on Old Custer Road during the drop-off and pick-up school operation.

ADJACENT ROADWAYS
Old Custer Road: 2-lane, undivided

TRAFFIC MANAGEMENT STRATEGIES
Number of Staff Assistance: 6 outside, 4 inside during drop-off and pick-up operations
No crossing guards required

III. SCHOOL DESCRIPTION

Location: 5799 Old Custer Road, Prosper, Texas – 75078

Adjacent Roadways:

- **Old Custer Road**
 - Approximately 22 feet in width, two lanes, two-way operation, undivided.
 - There are no sidewalks in either direction.
 - Posted Speed Limit: 55 mph. No school zone speed limit.

Adjacent Intersections:

- **Frontier Parkway at Old Custer Road**
 - Stop-Controlled on Old Custer Road
 - No Marked Crosswalks or Barrier-Free Ramps
- **N Custer Road at Old Custer Road**
 - Stop-controlled on Old Custer Road
 - No Marked Crosswalks
 - Barrier-Free Ramps on Custer Road in the northwest and southwest corners.

Access Points:

- It is proposed that the school have two access points on Old Custer Road. Access Driveway 1 will operate as an inbound driveway only. Inbound at this driveway will be allowed from northbound and southbound directions on Old Custer Road. Access Driveway 2 will operate as an outbound driveway only. Outbound at this driveway will be allowed to northbound and southbound directions on Old Custer Road. The two access driveways are connected internally in a C-shape driveway with four lanes – two designated for parent queuing and the other two designated fire lanes. The queue lane is 10 feet wide, and the fire lanes are 24 feet wide (12 feet each lane).

IV. QUEUING SUMMARY TABLE FOR SIMILAR SCHOOLS

The following is the description of the pick-up and drop-off operations observed during the visits at the similar schools mentioned above:

- 1.) Spanish Schoolhouse: Pick-up and drop-off at this school occur in queue, as shown in **Figure 1** below. The staff assists with loading/unloading the kids. It was also observed that some parents park their cars, walk their kids to school during drop-off, and bring their kids to their vehicles during pick-up. These operations are like those of the proposed school. However, this school's age

group is between 6 weeks and 6 years, unlike the proposed school, which serves 4 and 5-year-olds. As mentioned in the National Center for Education Statistics, the school has 135 students (120 students in Pre-Kindergarten and 15 in kindergarten). **Appendix A** provides the enrollment information from the National Center for Education Statistics website. The student enrollment is higher than that of students at the proposed school.

Figure 1. Spanish Schoolhouse



The following table provides the observed longest queues at similar schools mentioned above:

Table 5. Queuing Summary for Similar Schools

SCHOOL	OBSERVED TIME PERIOD	GRADES /AGES	START/ END TIMES*	STUDENTS PICKED-UP/DISMISSED	MAXIMUM VEHICLE ACCUMULATION
Spanish Schoolhouse	7:00 AM	Pre-K, K (6 weeks-6 years)	7:00 AM – 6:00 PM	NA (observed>50)	5
	2:00 PM				18
The Compass School of Texas	11:47 AM	Pre-K	7:50 AM – 4:30 PM	45	12
	3:01 PM	K		13	6
Spanish World School	3:00 PM	1 st – 2 nd	8:00 AM – 5:00 PM	33	5
	3:23 PM	3 rd – 5 th		29	6

V. QUEUING PROJECTIONS FOR THE SCHOOL HOUSE

Based on the observations and queuing data for similar schools, as shown in **Table 5**, the highest queuing occurred at The Compass School of Texas, with six vehicles in the queue when 13 students were dismissed. Therefore, the number of vehicles in the queue per student is 0.46 (13 students for six vehicles). However, based on the Town’s review of the observations, a conservative estimate of 85% (0.85) has been used in the study. As each classroom will have its drop-off and pick-up period, each drop-off and pick-up period will have 16 students (considering no students in the after-school program). Out of the 16 students in each group, 7 students will be assigned to walk in/walk out to the school's front door. These 7 parents will park in the 7 available parking spaces in front of the door as shown in **Exhibit 1**. Therefore, with the recommended factor, the estimated longest queue will be 8.1 vehicles, 9 when rounded off.

The following table provides the queue projections for the proposed school:

Table 6. Queue Projections for The School House

SCHOOL	TIME PERIOD	CLASSROOMS	STUDENTS PICKED-UP/DISMISSED	ASSIGNED STUDENTS FOR WALK-IN/WALK-OUT WITH PARENT	MAXIMUM VEHICLE ACCUMULATION
The School House	8:10 AM – 8:15 AM	CR 1	16	7	9
	8:15 AM – 8:20 AM	CR 2	16	7	9
	8:20 AM – 8:25 AM	CR 3	16	7	9
	8:25 AM – 8:30 AM	CR 4	16	7	9
	2:30 PM – 2:35 PM	CR 1	16	7	9
	2:35 PM – 2:40 PM	CR 2	16	7	9
	2:40 PM – 2:45 PM	CR 3	16	7	9
	2:45 PM – 2:50 PM	CR 4	16	7	9
	5:30 PM	After-School Care Kids	None (Assumed)	None (Assumed)	0

The projected longest queue for the proposed school is 9 vehicles. The estimation is based on a conservative ratio provided by the Town of Prosper. The school offers two queue lanes for parents to drop off and pick up their kids with staff and teacher assistance. The site plan shows 21 parking spaces with two accessible spaces. Teachers and staff will occupy at least ten parking spaces. Assuming 10 parking spaces are designated for school staff (four teachers, four assistant teachers, and two directors), as shown in the TMP Exhibit 1, the parents will have nine parking spaces available, not including two accessible parking spaces. The 7 assigned parents who walk in/walk out their children during the drop-off/pick-up periods to and from the school front door will utilize these parking spaces.

VI. CIRCULATION

1. Parent northbound and southbound traffic on Old Custer Road enters the inner queue lane through Access Driveway 1. Approximately seven vehicles can queue in the available queuing space. The parent traffic will enter the outer queue lane when the inner queue lane is wholly occupied. Approximately seven vehicles can queue in the outer queue lane.
2. Traffic exits the queuing area and continues in the internal travel lane to exit the site through Access Driveway 2 after the vehicle has loaded/unloaded the students entering/exiting the car.
3. Staff parking is provided on-site, as shown in **Exhibit 1**.
4. Staff and teachers assist with the drop-off and pick-up operations. On a typical day, four teachers, four assistant teachers, and two directors are available. During drop-off, the 6 staff members assist in picking up the students and guide them to a multi-purpose room managed by four staff members. The 6 staff members outside guide traffic, open car doors, take kids by hand, and safely walk the children to the multi-purpose room inside the school. Once all the students are gathered in the multi-purpose room, each teacher will take the 16 students assigned per classroom to their respective classrooms. During pick-up, the teachers/staff gather the students in the multi-purpose room after school ends. Four staff members manage the multi-purpose room with students. The remaining 6 staff members assist with the afternoon parent pick-up operations outside. The parents start queuing in the queue lanes. They carry some form of identification or a school pass visible to the staff/teachers so that the kids are brought from the multi-purpose room efficiently based on the identification. This method ensures that each student is released to the correct person, making the process safe and efficient. Once a student is unloaded/loaded, the parent vehicle moves out of the queue lane to enter the fire lane and exit the site through Access Driveway 2. Additionally, during each drop-off/pick-up period for each classroom, 7 assigned parents walk in/walk out their children to and from the front door by parking in the seven available parking spaces in front of the school, as shown in **Exhibit 1**.

VII. CONCLUSION

The proposed school will be located at 5799 Old Custer Road, Prosper, Texas. It will serve children between the ages of 4 and 5. The total student enrollment will be 64, with 16 students in each classroom. The school will have 10 staff members, including four teachers, one teacher for each classroom, four assistant teacher staff, and two directors. Based on queue calculations, it was determined that the longest queue for the proposed school is 9 vehicles. The site can accommodate at least 14 vehicles as a double queue, as shown in **Exhibit 1**. Additionally, each drop-off/pick-up period will have 7 assigned parents who walk-in/walk-out their children to the front door by parking in the seven available parking spaces in front of the school. The queue will be contained in the site without spillback to the public street – Old Custer Road. Therefore, no mitigation plan is necessary.

END OF MEMO

APPENDIX A

NCES Enrollment Data

IES
NCES
National Center for Education Statistics
☰ MENU

Go

Search for Private Schools

PSS Private School Universe Survey

Search Information

[Search Results](#)
[Modify Search](#)
[About the Data](#)
[Help](#)

School Name: SPANISH SCHOOLHOUSE		NCES School ID: A0771854
Physical Address: 653 Pkwy Blvd Coppell, TX 75019-6003	County: Dallas schools in county	Phone: (972) 462-1100

School Characteristics

Grade Span: (Grades PK - KG) <div style="background-color: #0056b3; color: white; padding: 2px;">PKKG</div> Total Students: 130 Non-Prekindergarten Total Students: 16 Classroom Teachers (FTE): 4.0 Student/Teacher Ratio: 4.0	Student Body: Coed Level: Elementary Type: Special Program Emphasis Days in Year: 181 Hours in Day: 5 Library: Yes Affiliation: Nonsectarian Associations: School does not belong to ANY associations or organizations Locale/Code: Large suburb / 21
--	--

Enrollment Characteristics

Enrollment by Grade:

Students	PK	KG
	114	16

Enrollment by Race/Ethnicity:

Students	American Indian/ Alaska Native	Asian	Black	Hispanic	White	Native Hawaiian/ Pacific Islander	Two or More Races
	0	0	0	12	4	0	0

NOTE: The inclusion or exclusion of a school in this locator does NOT constitute an endorsement of the school and should NOT be used in any way to infer the accreditation status of the school.

Source: PSS Private School Universe Survey data for the 2021-2022 school year
 Note: "N/A" means the data are not available or not applicable.

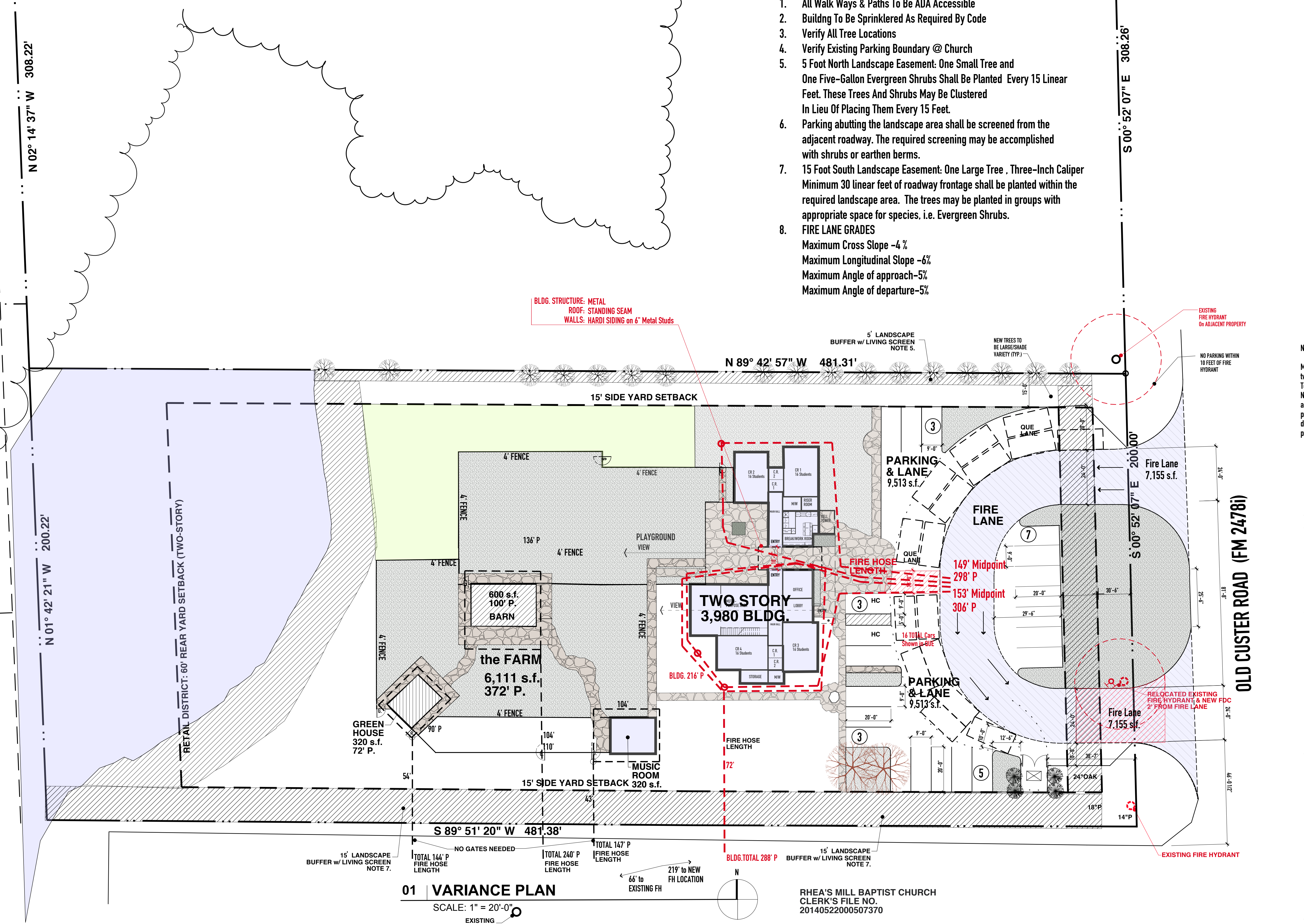
LOT 13
COLLIN GREEN ADDITION
VOLUME G, PAGE 245
COLLIN COUNTY
PLATT RECORDS

LOT 12
COLLIN GREEN ADDITION
VOLUME G, PAGE 245
COLLIN COUNTY
PLATT RECORDS

LOT 11
COLLIN GREEN ADDITION
VOLUME G, PAGE 245
COLLIN COUNTY
PLATT RECORDS

NOTES

- All Walk Ways & Paths To Be ADA Accessible
- Building To Be Sprinklered As Required By Code
- Verify All Tree Locations
- Verify Existing Parking Boundary @ Church
- 5 Foot North Landscape Easement: One Small Tree and One Five-Gallon Evergreen Shrubs Shall Be Planted Every 15 Linear Feet. These Trees And Shrubs May Be Clustered In Lieu Of Placing Them Every 15 Feet.
- Parking abutting the landscape area shall be screened from the adjacent roadway. The required screening may be accomplished with shrubs or earthen berms.
- 15 Foot South Landscape Easement: One Large Tree, Three-Inch Caliper Minimum 30 linear feet of roadway frontage shall be planted within the required landscape area. The trees may be planted in groups with appropriate space for species, i.e. Evergreen Shrubs.
- FIRE LANE GRADES**
Maximum Cross Slope -4%
Maximum Longitudinal Slope -6%
Maximum Angle of approach-5%
Maximum Angle of departure-5%



NOTE:

Min. 140 ft. curb to curb to be considered two separate points of access.
Town Fire Code 503.1.4
NOTE: Fire lane arrangement shown is acceptable given the site constraints pending variance submission, and demonstration of intent and additional fire protection provided.

HOSE LAY VARIANCE

FIRE Variance is required for the hose lay to exceed 150 ft. Approval required PRIOR TO Site Plan approval. Town Fire Code requires additional measures to meet the intent not depicted on this Zoning exhibit.

- Split the Building into 2 halves to Provide Hose access prohibited by the Building as One Whole. This is achieved by 10' breezeway.
- Additional measures are to create a 10' area in the QUE LANE to have the Fire Dept. Service Vehicles unobstructured access to the Building.
- The hose Layout to the South and on the Church Fire lane provides an additional Perimeter of 208', less than the required 300'.

TWO POINTS OF ACCESS VARIANCE

FIRE Variance is required for the two points of access to be less than 140 ft. curb to curb. Approval required PRIOR TO Site Plan approval. Town Fire Code requires additional measures to meet the intent not depicted on this Zoning exhibit. ADDITIONAL INTENT shall be Fire Lane Access from the Adjacent Church Property thus reducing Hose Length. Also, the addition of a Fire Sprinkler System for the Main Building that is under 4,000 s.f.

01 VARIANCE PLAN

SCALE: 1" = 20'-0"

RHEA'S MILL BAPTIST CHURCH
CLERK'S FILE NO.
20140522000507370

ROGERS HEALY
AND ASSOCIATES REAL ESTATE
C: 214.418.0455
e: JP@RogersHealy.com
w: RogersHealy.com
a: 3001 Knox Street #210, Dallas, TX 75205
OWNER / CLIENT: JP Findley

C	D	C
CONSRAT	DESIGN	CONSTRUCTION
C: 972.880.0870 O/F: 972.649.0410 5848 Fairview Pkwy Fairview, Texas 75069 Building Quality since 1997		
CONTRACTOR: Bill Oelfke		

ARCHITECT
09.09.2024
gregory HAGMANN
COPYRIGHT 2023 ARCHITECT
404 Provincetown Ln.
Richardson, Texas 75080
214.928.7575
ggharchitect@yahoo.com



THE SCHOOL HOUSE

NEW PRESCHOOL AGES 4-5

5799 OLD CUSTER RD. PROSPER, TX. 75078

Situated in the Town of Prosper, Collin County, Tx., in the George Horn Survey of all of Tract One, Tract Two & Tract Three and part of Tract Four.

ZONE-24-0017 "EXHIBIT V-1" VARIANCE

PLANNED DEVELOPMENT 5.657 Acre Tract
Located in the Town of Prosper, Texas

ISSUE:
P & Z
SEP. 30, 2024
REV. OCT. 12, 2024

PROJECT NO: 2406SH.01