LIST OF APPENDICES

FEMA has worked to ensure that this EA document is accessible to persons with disabilities, in compliance with Section 508 of the Rehabilitation Act of 1973. Regarding the EA's Appendices, which are provided in a separate document, this EA has reported what was done and how those results affect the decision that will be made based on the totality of the EA findings. In case any of these appendices poses a challenge to be read electronically by persons with disabilities, each appendix is briefly described and summarized below, rather than being simply listed.

Appendix 1. New St. Louis Catholic High School Campus Plans. This 377-page set of construction drawings is dated April 2022. They were prepared by RHH Architects, Associated Design Group, Inc., and Champeaux, Evans, Howard Architects. **Due to the inability to make all of the above documents 508 accessible and below our size constraints, they are not included in the published EA but are available by request. The first twenty pages of plans are included in Appendix A of the published EA. Should you have any questions, please contact Tiffany Spann-Winnfield at 504-218-6800 or** tiffany.spann@fema.dhs.gov**.**

Appendix 2. DOLC New SLCHS Property Geo Tech Report. This 96-page study was prepared by Terracon Consultants, Inc dated July 28, 2023. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations, floor slabs, and pavements for the proposed project. The geotechnical exploration Scope of Services for this project included the advancement of 44 test borings to depths ranging from approximately 6 to 50 feet below existing site grades.

Appendix 3. NRCS USDA Soil Map. This appendix contains the NRCS USDA Soil Map that is provided in its entirety. Page 1 shows an image of the proposed site of relocation with lines indicating the different soil types present. Page 2 shows the legend of the map and page 3 the actual findings from the Web Soil Survey. Map was prepared on August 23, 2023.

Appendix 4. Wetland Delineation. This 52-page Wetland Delineation Report was provided on October 23, 2023. This appendix contains the findings of Southland Environmental, LLC of the 47-acre tract located East of Corbina Road in Lake Charles, Calcasieu Parish. The report discusses findings of vegetation, soils, and hydrology. It was found that this was an undeveloped pastured land with Mowata-Vidrine and Crowley-Vidrine silt loams, and 6.1 acres of wetlands present within the tract boundary. **Due to the inability to make the USACE Wetland Determination Data Sheets documents 508 accessible they are included with alternate text in the published EA but are also available by request in their entirety. Should you have any questions, please contact Tiffany Spann-Winnfield at 504-218-6800 or** tiffany.spann@fema.dhs.gov**.**

Appendix 5. EPA Sole Source Aquifer Program Response Letter. This 2-page document was received on December 12, 2023. This appendix contains the EPA determination that the project, as proposed, should not have an adverse effect on the quality of the ground water underlying the project site. This approval is based solely upon the potential impact to the quality of ground water as it relates to the EPA's authority pursuant to Section 1424(e) of the Safe Drinking Water Act.

Appendix 6. U.S. Fish & Wildlife Service Consultation Letter, Species List Louisiana Ecological Services Field Office, and NE Consistency Letter Louisiana Endangered Species Act project. This appendix contains the USFWS consistency letter for the project named 'St. Louis High School Relocation' for specified threatened and endangered species that may occur in your proposed project location pursuant to the Louisiana Endangered Species Act project review and guidance for other federal trust resources determination key (Louisiana DKey). The Consultation letter is dated September 16, 2020. The initial disaster notification letter divides the disaster-related work into categories and distinguishes what would constitute an adverse effect on T&E species. The Species List from USFWS, dated October 13, 2023, identifies any threatened, endangered, and candidate species, as well as designated and proposed critical habit that may occur within the boundary of the proposed project. A total of 4 threatened, endangered, and candidate species were identified. Red-cockaded Woodpecker Picoides *borealis* (Endangered), Whooping Crane Grus *americana* (Experimental Population, Non-Essential), Alligator Snapping Turtle Macrochelys *temminckii* (Proposed Threatened), Monarch Butterfly Danaus *plexippus* (Candidate). No critical habitat was identified in the proposed area.

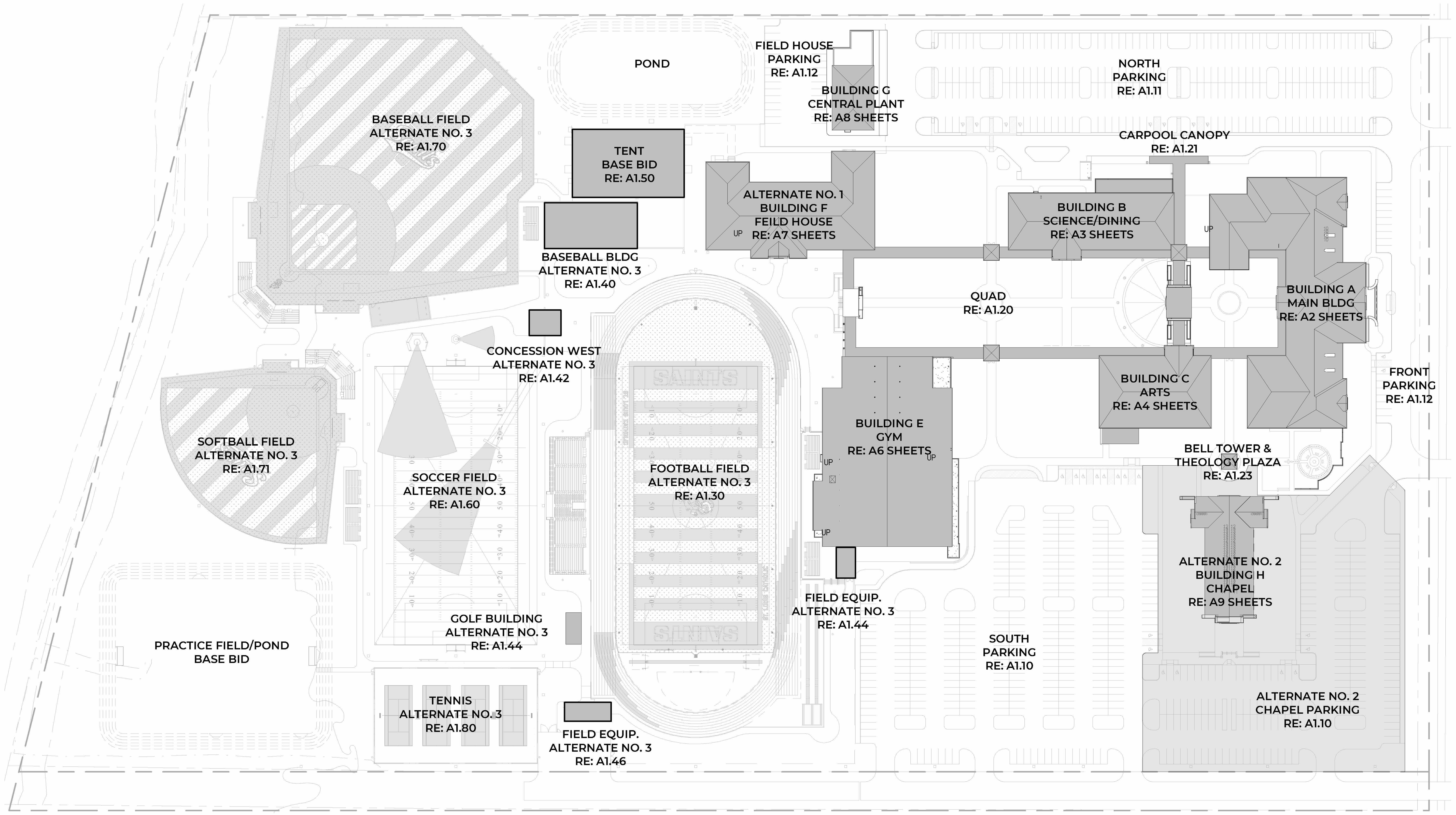
Appendix 7. Section 106 Review Consultation and Continuing Consultation. The continued consult was received on October 22, 2024. The State Historic Preservation Office (SHPO) concurs with FEMA's determination that the proposed demolition of the referenced buildings constitutes an adverse effect to the NRHP-eligible St. Louis Catholic High School Neighborhood Historic District and the individually NRHP-eligible Landry Memorial Gymnasium. This appendix contains the continued consultation letter regarding no adverse effect to historic properties.

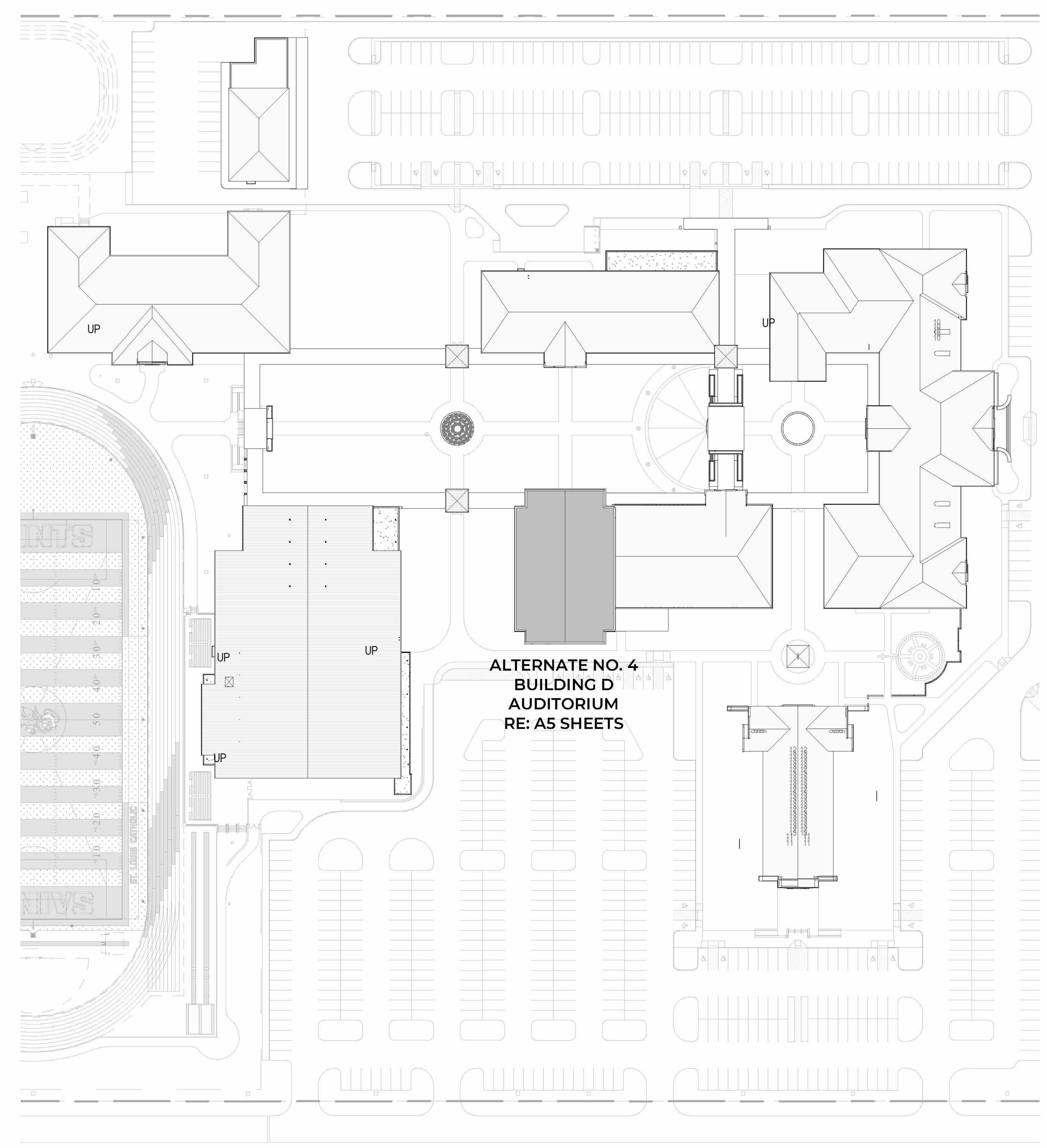
Appendix 8. Louisiana Nonattainment Maintenance Status USEP. This 4-page document was received on September 30, 2023. This appendix contains the Louisiana Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants.

Appendix 9. Phase I Environmental Assessment. This appendix contains the Phase I Environmental Site Assessment for the referenced property, prepared by Southland Environmental, dated April 4, 2023. Site assessment was conducted to identify any recognized environmental conditions. No recognized environmental conditions were identified on the subject property. The assessment encompassed a detailed environmental database search of the Louisiana Department of Natural Resources Strategic Online Natural Resources Information System (SONRIS), historical aerials, topographical maps used to determine elevation, followed by a site reconnaissance to inspect the property for environmental concerns. Interviews with landowners and state regulatory agencies were conducted to determine any additional environmental concerns.

Appendix 10. DR-4559-LA and EM-3538-LA Public Notice and Finding of No Significant Impacts. This appendix contains the Public Notice and Finding of No Significant Impacts (FONSI) that is provided in their entirety.

APPENDIX 1. New St. Louis Catholic High School Campus Plans





1 | PROJECT KEY PLAN

1" = 80'-0"

2 | PROJECT KEY PLAN - ALT. NO. 4

1" = 80'-0"

PROJECT SQUARE

	Base Bid Buildings	SF
A	Main Building	69,924
B	Science/Dining	16,338
C	Visual/Performing Arts	12,668
E	Gymnasium	44,397
G	Central Plant/Woodshop	4,300
	Belltower	400
	Arcade	25,519
	Outdoor Stage	1,665
	Tent	11,533
	TOTAL	**186,744**
F	Alternate No. 1 - Fieldhouse	21,500
H	Alternate No. 2 - Chapel	12,235
	Alternate No. 3 - Athletics	
D	Alternate No. 4 - Auditorium	10,755
	GRAND TOTAL	**231,234**

ALTERNATES:

NO 1 - FIELD HOUSE (BLDG F)

NO 2 - CHAPEL (BLDG H)

NO 3 - ATHLETICS (RE: SITE PLAN)

NO 4 - AUDITORIUM (BLDG D)

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:

DUHON PLEASANT ENGINEERS
CIVIL/STRUCTURAL

ADG ENGINEERING
MEP

TBA
LANDSCAPE

TBA
FOOD SERVICE

Construction Documents for

DIOCESE OF LAKE CHARLES - ST. LOUIS CATHOLIC HIGH SCHOOL

4220 Corbina Road, Lake Charles, LA

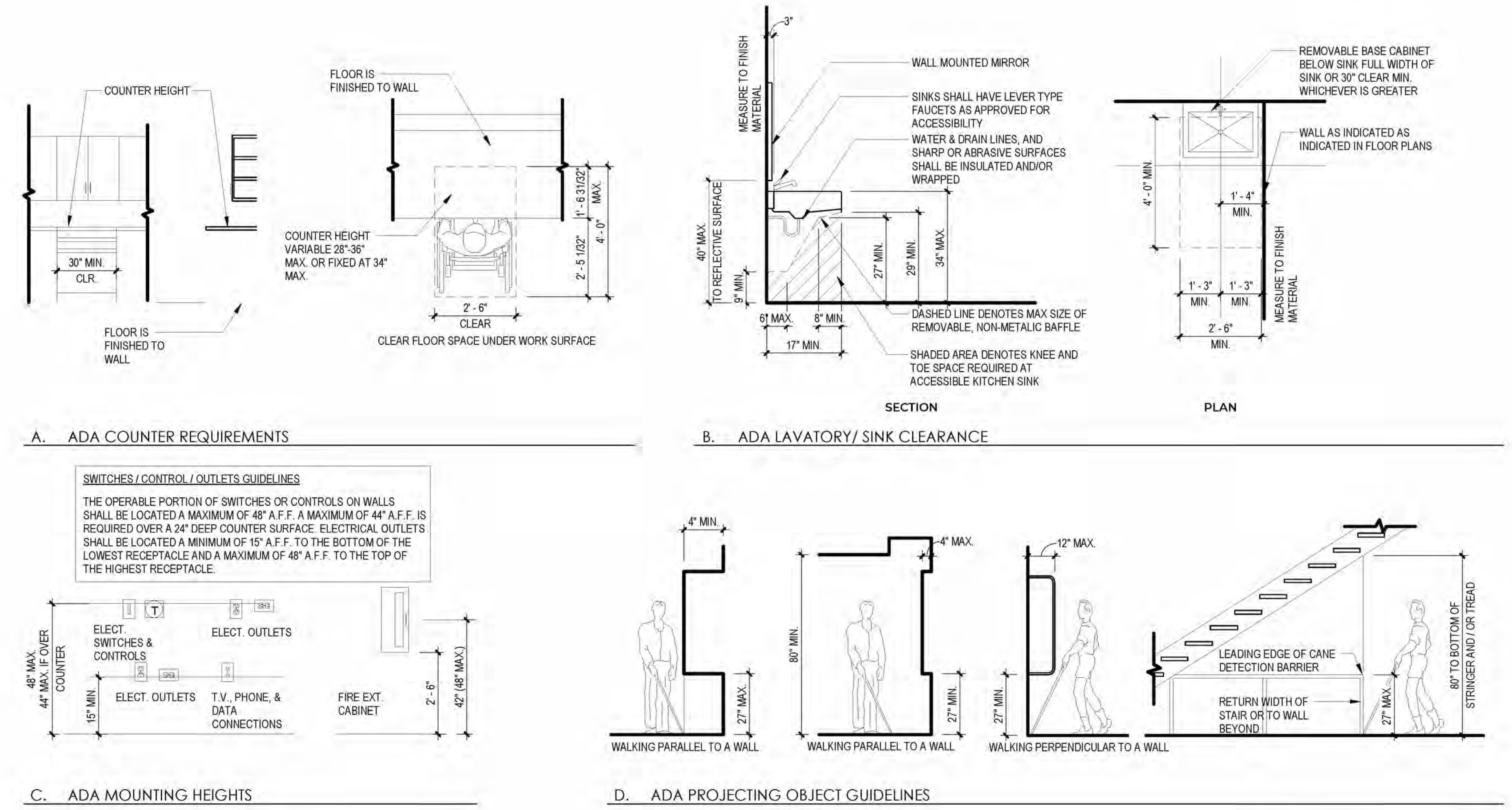
CEH PROJECT #:	2106
RHH PROJECT #:	42-01-21
DATE:	4/22/2022
FOR:	REVIEW

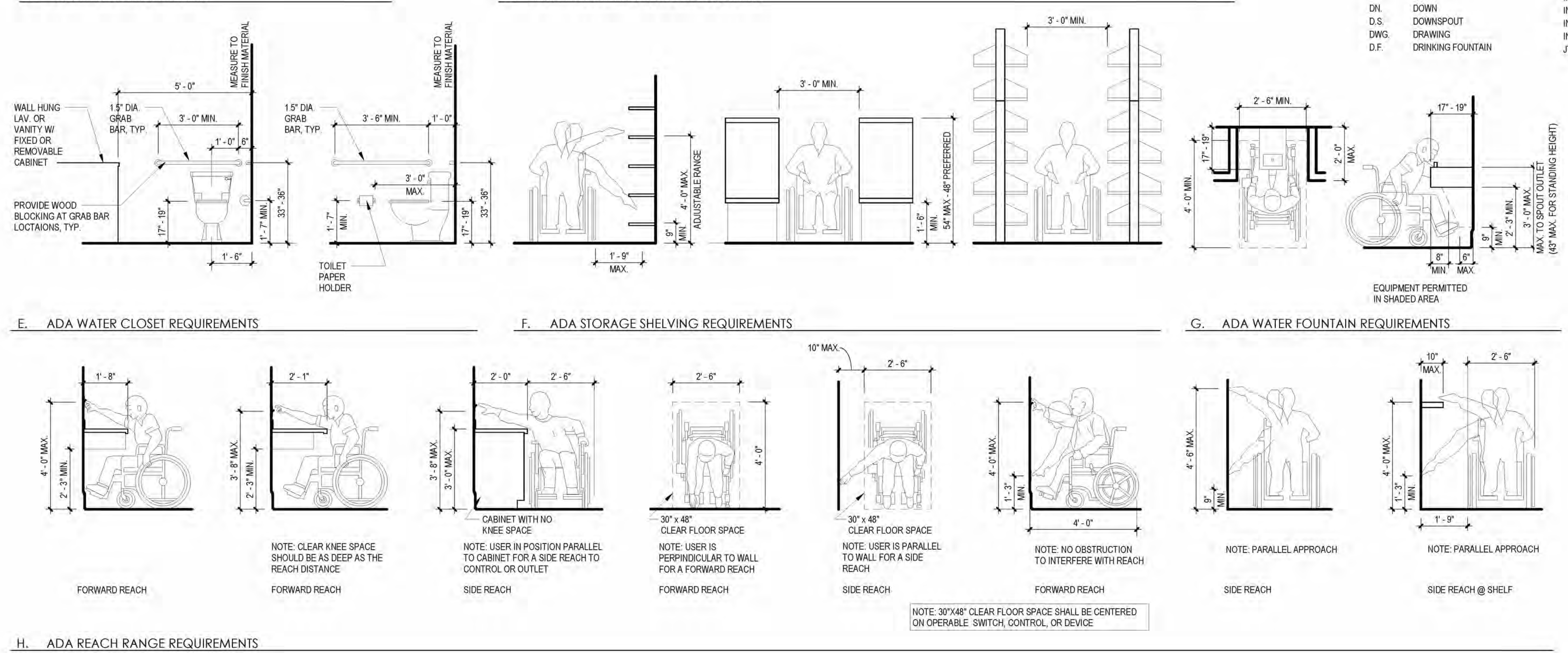
REVISION	DATE

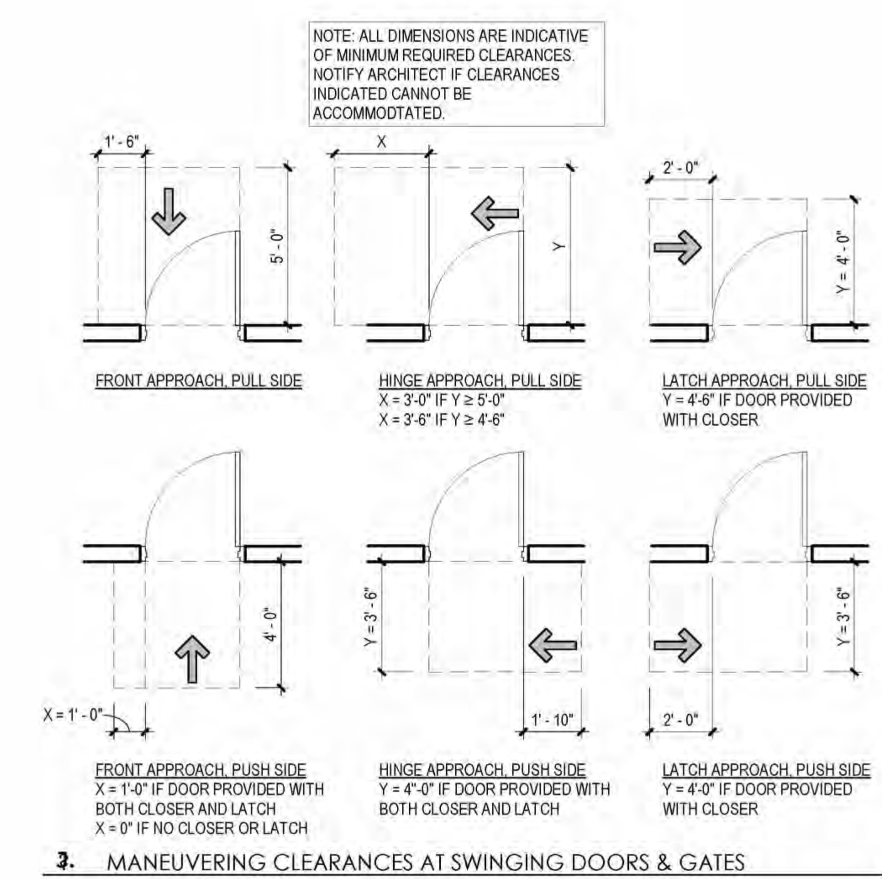
NORTH

GENERAL INFORMATION

A0.01







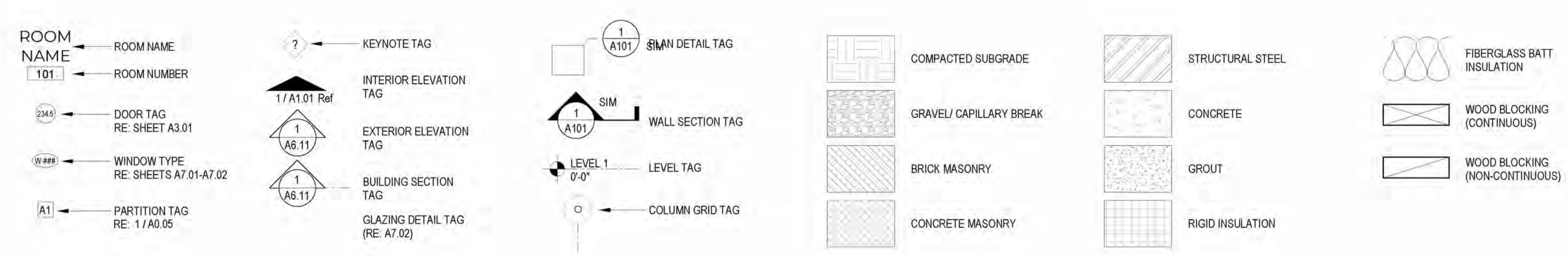
1 ADAAG REQUIREMENTS

N.T.S.

2 ABBREVIATIONS LIST

N.T.S.

ABV.	ABOVE
A.F.F.	ABOVE FINISHED FLOOR
A.C.T.	ACOUSTICAL CEILING TILE
ADJ.	ADJUSTABLE
ALT.	ALTERNATE
ALUM.	ALUMINUM
A.C.M.	ALUMINUM COMPOSITE MATERIAL
ANC.	ANCHOR
ARCH.	ARCHITECT(URAL)
@	AT
A.H.J.	AUTHORITY HAVING JURISDICTION
BCS	BABY CHANGING STATION
BSMT.	BASEMENT
BRG.	BEARING
B.M.	BENCH MARK
B/T	BETWEEN
BIT.	BITUMINOUS
BLKG.	BLOCKING
BD.	BOARD
B.S.	BOTH SIDES
BOT.	BOTTOM
B.O.D.	BOTTOM OF DECK
BRKT.	BRACKET
BLDG.	BUILDING
CAB.	CABINET
CPT.	CARPET
CLG.	CEILING
CEM.	CEMENTITIOUS
C/L	CENTER LINE
C.T.	CERAMIC TILE
C.B.	CHALKBOARD
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
C.M.U.	CONCRETE MASONRY UNIT
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
C.J.	CONTROL JOINT
COORD.	COORDINATE
C.G.	CORNER GUARD
COR.	CORRIDOR
DTL.	DETAIL
DIAM.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
DR.	DOOR
DN.	DOWN
D.S.	DOWNSPOUT
DWG.	DRAWING
D.F.	DRINKING FOUNTAIN
EA.	EACH
E.W.	EACH WAY
E.A.	EDGE ANGLE
E.W.C.	ELECTIC WATER COOLER
EHD	ELECTRIC HAND DRYER
ELEC.	ELECTRICAL
E.C.	ELECTRICAL CONDUIT
ELEV.	ELEVATION
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
ETR	EXISTING TO REMAIN
E.J.	EXPANSION JOINT
EXP.	EXPOSED or EXPANSION
EXT.	EXTERIOR
F.O.	FACE OF
F.G.	FIBERGLASS
F.F.	FINISH FLOOR
F.F.E.	FINISH FLOOR ELEVATION
FIN.	FINISH(ED)
F.D.C.	FIRE DEPARTMENT CONNECTION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
FLR.	FLOOR
F.D.	FLOOR DRAIN
FLUOR.	FLUORESCENT
FT.	FOOT or FEET
FTG.	FOOTING
FDN.	FOUNDATION
FRZ.	FREEZER
GA.	GAUGE
G.C.	GENERAL CONTRACTOR
GL.	GLASS
G.B.	GRAB BAR
GRD.	GRADE
G.F.	GROUND FACE
GYP.	GYPSUM
G.W.B.	GYPSUM WALLBOARD
HDWE.	HARDWARE
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HT.	HEIGHT
H.	HIGH
H.P.	HIGH PERFORMANCE
H.C.	HOLLOW CORE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HW	HOT WATER
I.D.	INSIDE DIAMETER
INSUL.	INSULATION
INT.	INTERIOR
INV.	INVERT
JT.	JOINT
LAM.	LAMINATE
LAV.	LAVATORY
L.F.	LINEAR FEET
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
MFR.	MANUFACTURER
M.B.	MARKER BOARD
MAS.	MASONRY
M.O.	MASONRY OPENING
MATL.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
MILLWK.	MILLWORK
MIN.	MINIMUM
MTG.	MOUNTING
MULT.	MULTIPLE
NOM.	NOMINAL
NFC	NOT FOR CONSTRUCTION
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO.	NUMBER
O.C.	ON CENTER
OPNG.	OPENING
O.H.	OPPOSITE HAND
O.D.	OUTSIDE DIAMETER
PTD.	PAINTED
PNL.	PANEL
P.T.D.	PAPER TOWEL DISPENSER
PART.	PARTITION
PED.	PEDESTRIAN
PERP.	PERPENDICULAR
P.LAM.	PLASTIC LAMINATE
PL.	PLATE
+/-	PLUS OR MINUS
PLYWD.	PLYWOOD
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P.S.	PROJECTOR SCREEN
Q.T.	QUARRY TILE
RAD.	RADIUS
R.W.C.	RAIN WATER CONDUCTOR
REC.	RECESSED
RE:	REFERENCE (REFER TO)
REFL.	REFLECTED
R.F.	REFLECTIVE FACE
REF.	REFRIGERATOR
RCP	REINFORCED CONCRETE PIPE
REINF.	REINFORCED or REINFORCING
REQ'D.	REQUIRED
REQ'TS.	REQUIREMENTS
R.A.	RETURN AIR
R.D.	ROOF DRAIN
RM.	ROOM
R.O.	ROUGH OPENING
R.B.	RUBBER BASE
SCHED.	SCHEDULE
SLT.	SEALANT
SM.	SEAM
SECT.	SECTION
S.L.V.	SHORT LEG VERTICAL
SIM.	SIMILAR
S.D.	SOAP DISPENSER
S.C.	SOLID CORE
SPECS.	SPECIFICATIONS
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STAND.	STANDING
STL.	STEEL
STRUCT.	STRUCTURAL
SGFT	STRUCTURAL GLAZED FACING TILE
SSG	STRUCTURAL SILICONE GLAZED
S.A.	SUPPLY AIR
SYN.	SYNTHETIC
T.B.	TACKBOARD
T.	TALL
TERR.	TERRAZZO
THK.	THICK(NESS)
TH.	THRESHOLD
TLT.	TOILET
T.P.H.	TOILET PAPER HOLDER
T.O.M.	TOP OF MASONRY
T.O.S.	TOP OF STEEL
TRTD.	TREATED
TYP.	TYPICAL
U.C.	UNDER COUNTER
UND.	UNDERLAYMENT
U.N.O.	UNLESS NOTED OTHERWISE
V.T.R.	VENT THROUGH ROOF
VER.	VERIFY
V.I.F.	VERIFY IN FIELD
V.O.J.	VERIFY ON JOBSITE
VERT.	VERTICAL
V.B.	VINYL BASE
V.C.T.	VINYL COMPOSITION TILE
W.C.	WATER CLOSET
W.W.M./F.	WELDED WIRE MESH/ FABRIC
W.	WIDE
WDW.	WINDOW
W.G.	WIRE GLASS
W/	WITH
W/O	WITHOUT
WD.	WOOD



3 SYMBOLS AND MATERIAL LEGEND

N.T.S.

FINISH KEY SCHEDULE

KEY NAME	FLOOR FINISH	BASE FINISH	WALL FINISH	COMMENTS
ART GALLERY	TERRAZZO	TERRAZZO	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
AUDITORIUM	CARPET TILE	RUBBER BASE	PTD. GYP. BOARD	
CAFETERIA	VCT	RUBBER BASE	PTD. GYP. BOARD	
CAMPUS MINISTRY	CARPET TILE	RUBBER BASE	PTD. GYP. BOARD	
CHAPEL	PORCELAIN TILE	PORCELAIN TILE	PTD. GYP. BOARD	
CHOIR/BAND	CARPET TILE	RUBBER BASE	PTD. GYP. BOARD	
CLASSROOM	VCT	RUBBER BASE	PTD. GYP. BOARD	
CLOSET/STORAGE	VCT	RUBBER BASE	PAINTED	
COMMONS	VCT/CARPET TILE	RUBBER BASE	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
CONCESSIONS	VCT	RUBBER BASE	PAINT	
CONFERENCE	LVT	RUBBER BASE	PAINTED	
CORRIDOR	VCT	RUBBER BASE	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
GATHER/CORRIDOR	TERRAZZO	TERRAZZO	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
GYM & AUX. GYM	HARDWOOD	RUBBER BASE	PTD. CMU/PTD. GYP. BD.	
GYM BOOSTER	TERRAZZO	TERRAZZO	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
GYM CORRIDOR	VCT	RUBBER BASE	PTD CMU	
GYM DANCE	LVT?????	RUBBER BASE	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
GYM LEVEL 1	SEALED CONCRETE	RUBBER BASE	PTD CMU	
GYM LEVEL 2	SEALED CONCRETE	RUBBER BASE	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
GYM LOBBY	TERRAZZO	TERRAZZO	PTD. CMU/PTD. GYP. BD.	
GYM RESTROOMS	PORCELAIN TILE	PORCELAIN TILE	PTD CMU	
JANITOR	SEALED CONCRETE	RUBBER BASE	PAINTED	
KITCHEN	QUARRY TILE	QUARRY TILE	PTD. GYP. BOARD	
LIBRARY	CARPET TILE	CARPET TILE	PTD. GYP. BOARD	PROVIDE CORNER GUARD AT OUTSIDE GYP. CORNERS
MECH/ELEC/DATA	SEALED CONCRETE	RUBBER BASE	PAINTED	
OFFICE	LVT	RUBBER BASE	PAINTED	
RESTROOM (GANG)	PORCELAIN TILE	RUBBER BASE	PORCELAIN TILE	
RESTROOM (SINGLE)	PORCELAIN TILE	RUBBER BASE	PORCELAIN TILE	
SCIENCE LAB	VCT	RUBBER BASE	PTD. GYP. BOARD	
STAIR	VCT/CONCRETE TREADS & LANDINGS	RUBBER BASE	PAINTED	
TECH	VCT	RUBBER BASE	PAINTED	
WEIGHT ROOM	ATHLETIC RUBBER FLOORING	RUBBER BASE	PTD CMU	
WORKROOM	VCT	RUBBER BASE	PAINTED	

FLOOR FINISH LEGEND

NOTE: REFER TO FINISH LEGEND & SCHEDULE FOR FURTHER INFORMATION

TZ-1	TERAZZO
CPT-1	CARPET TILE
LVT-1	LUXURY VINYL TILE
QT-1	QUARRY TILE
T-1	12 X 12 PORECLAIN OR CERAMIC TILE
VCT-1	VINYL COMPOSITION TILE
WD-1	WOOD FLOOR
WD-1	ATHELTIC WOOD FLOOR
AR-1	ATHLETIC RUBBER FLOOR
SC-1	SEALED CONCRETE
EP-1	EPOXY

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
DUHON PLEASANT ENGINEERS CIVIL/STRUCTURAL
ADG ENGINEERING MEP
TBA LANDSCAPE
TBA FOOD SERVICE

Construction Documents for

DIOCESE OF LAKE CHARLES - ST. LOUIS CATHOLIC HIGH SCHOOL

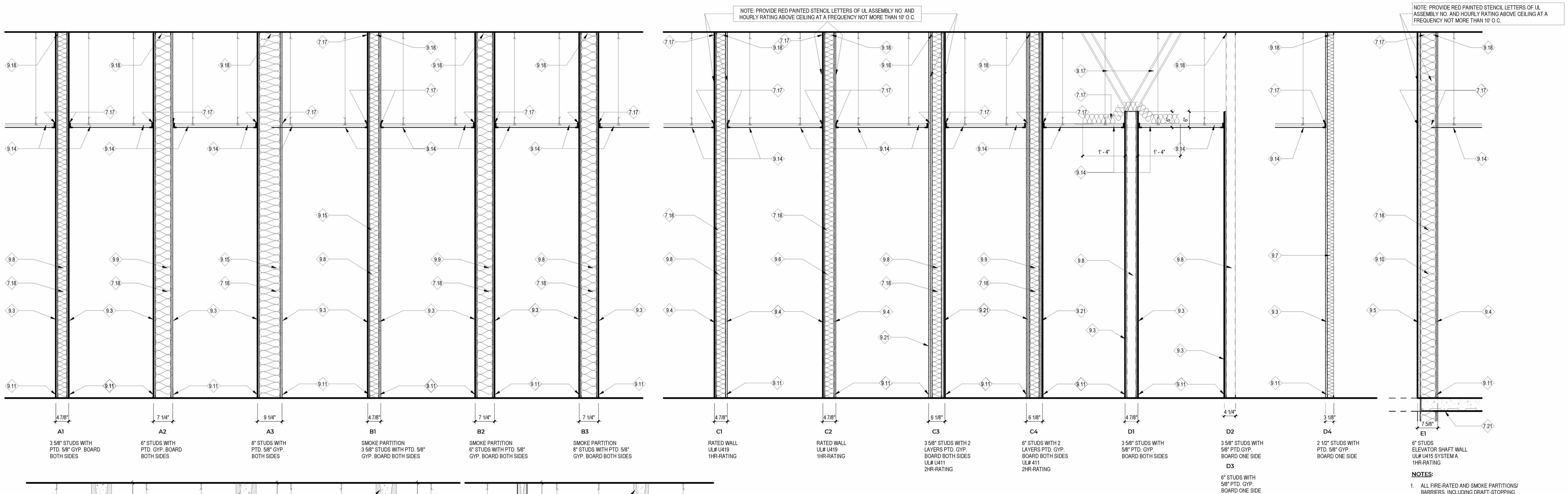
4220 Corbina Road, Lake Charles, LA

CEH PROJECT #: 2106
RHH PROJECT #: 42-01-21
DATE: 4/22/2022
FOR: REVIEW

REVISION	DATE

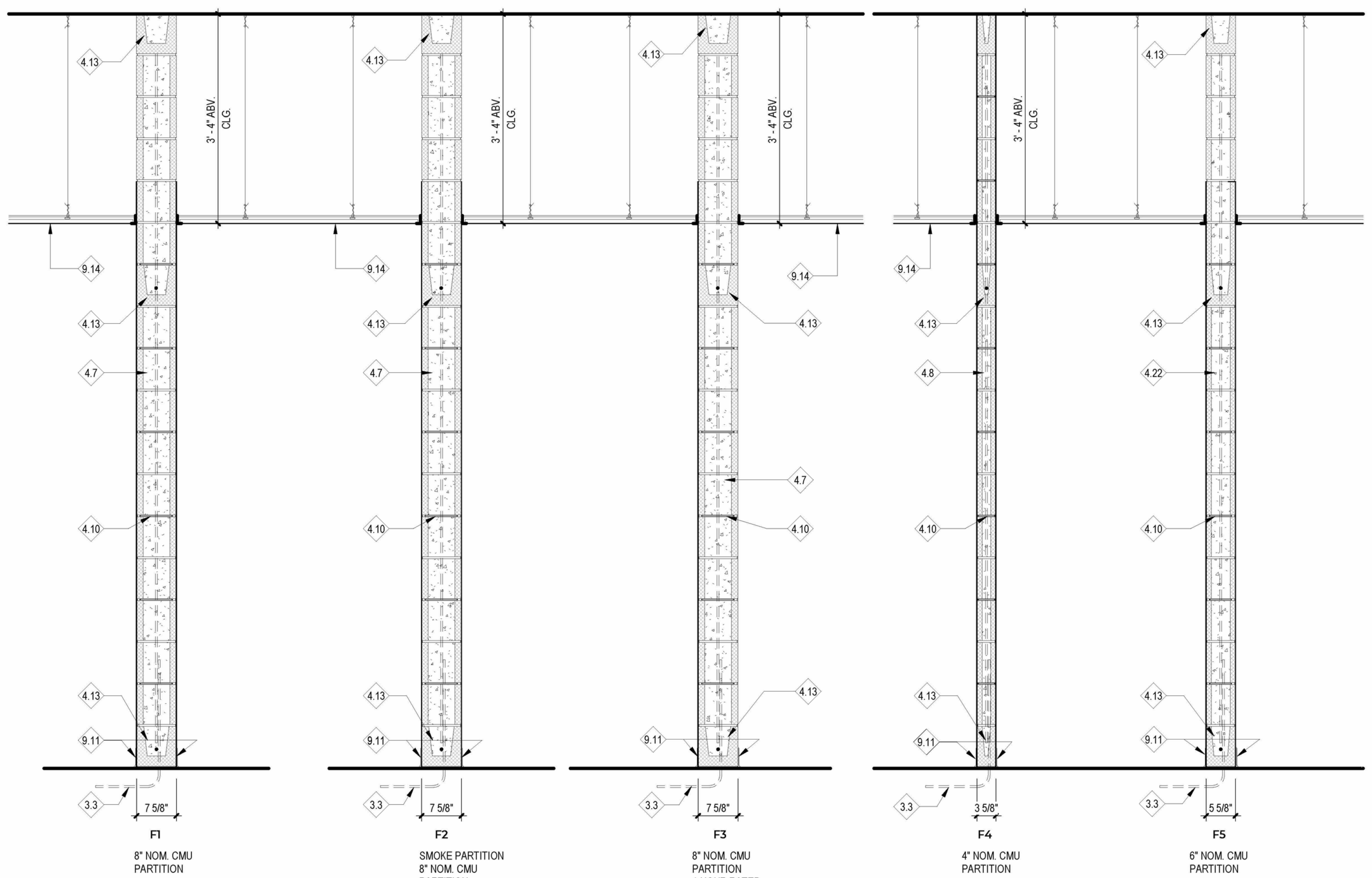
ADA REQ'TS & ABBREVIATIONS

A0.02



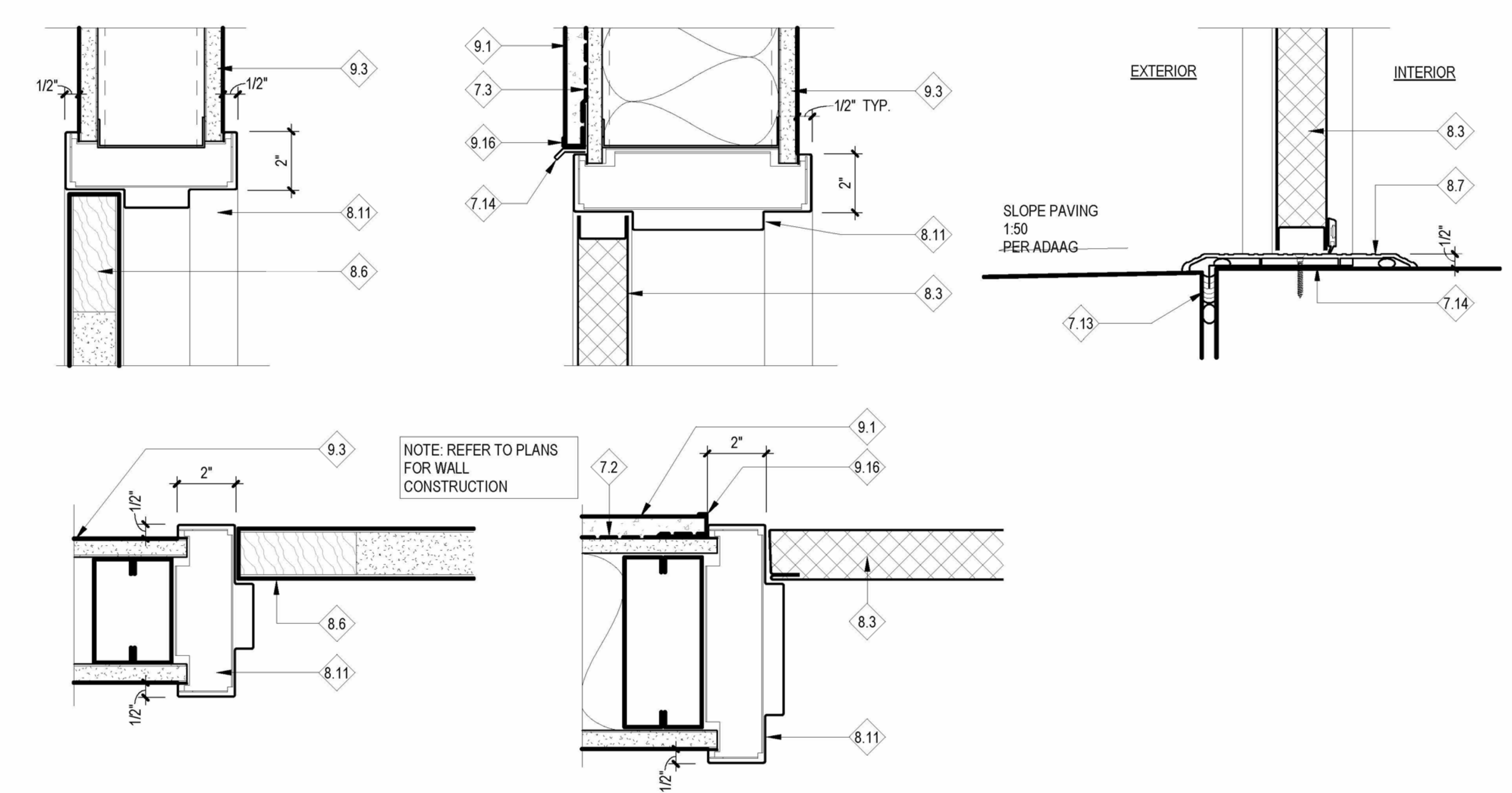
NOTES:

1. ALL FIRE-RATED AND SMOKE PARTITIONS/ BARRIERS, INCLUDING DRAFT-STOPPING SHALL EXTEND TO UNDERSIDE OF ROOF DECK AS WELL AS TO ALL PERIMETER BOUNDARIES TO PROVIDE COMPLETE SEPARATION BETWEEN SPACES. ALL TERMINATIONS SHALL BE SEALED AS REQUIRED BY CODE.
2. PROVIDE SLIP-TRACK CONNECTION AT TOP OF STUD PARTITIONS WHERE ANCHORED TO STRUCTURE OR DECK.



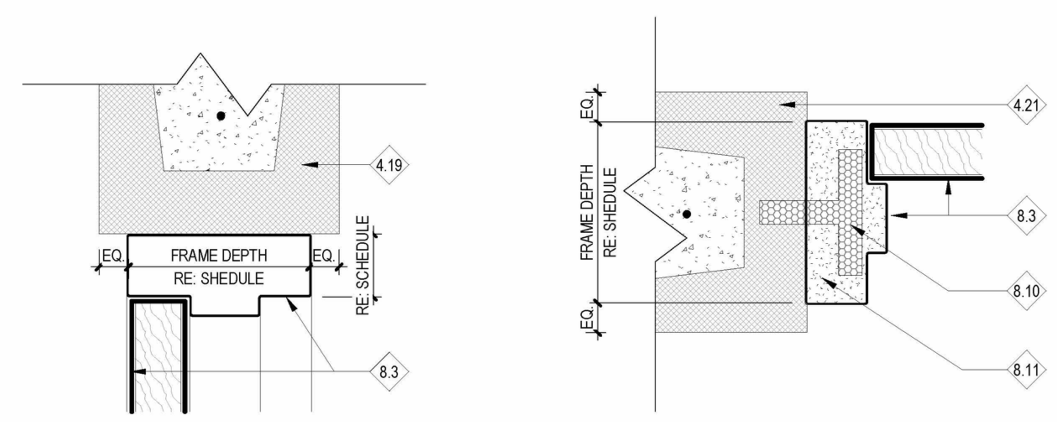
1 PARTITION TYPES

3/4" = 1'-0" NOTE NOT ALL TYPES MAY BE USED



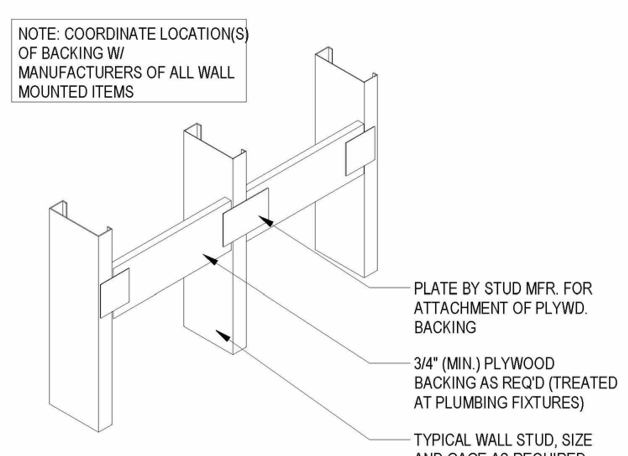
5 DOOR DETAILS

3" = 1'-0"



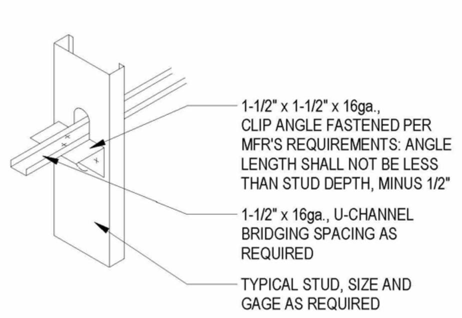
6 CMU DOOR DETAILS

3" = 1'-0"



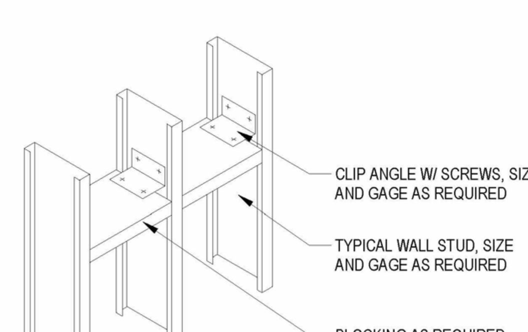
2 BACKING DETAIL

N.T.S.



3 BRIDGING DETAIL

N.T.S.



4 BLOCKING DETAIL

N.T.S.

KEYNOTES

3.3	EPOXY ANCHOR STRAIGHT DOWEL OR WET SET BENT BAR
4.7	8" CMU; REINFORCED/GROUT-FILLED CELLS @ 32" O.C.; PAINT CMU EXPOSED TO VIEW
4.8	4" CMU; REINFORCED/GROUT-FILLED CELLS @ 32" O.C.; PAINT CMU EXPOSED TO VIEW
4.10	GALV. HORIZONTAL MASONRY REINF. @ 16" O.C. VERT.
4.13	REINF. FILLED CMU BOND BEAM
4.19	REINF. FILLED CMU BOND BEAM; RE: PLAN
4.21	CMU WALL; RE: PLAN
4.22	6" CMU; REINFORCED/GROUT-FILLED CELLS @ 32" O.C.; PAINT CMU EXPOSED TO VIEW
7.2	SBS MODIFIED BITUMEN ROOFING OVER 1/2" GYPSUM COVERBOARD AND 3-1/2" POLYISO INSULATION BOARD. MINIMUM 1/4"/12" SLOPE
7.3	WEATHER BARRIER; RE: SPECS
7.13	SEALANT OVER BACKER ROD
7.14	SHEET METAL FLASHING
7.17	ACOUSTICAL SEALANT AT STRUCTURE AND PENETRATIONS
7.18	BATT INSULATION; RE: SPECS
7.21	FIRESTOPPING; TYP. AT SECOND FLOOR SLAB
8.3	HOLLOW METAL DOOR & FRAME; RE: DOOR SCHEDULE
8.6	FLUSH WOOD DOOR IN PAINTED STEEL FRAME
8.7	ADA COMPLIANT MILL FINISH ALUMINUM SADDLE THRESHOLD SET IN SEALANT
8.10	JAMB ANCHOR
8.11	GROUT-FILLED HOLLOW METAL FRAME, PTD.
9.1	3/4" PORTLAND CEMENT PLASTER ON METAL METAL LATH OVER 15# FELT & WEATHER BARRIER
9.3	5/8" GYPSUM BOARD; PAINTED
9.4	5/8" TYPE "X" GYPSUM BOARD; PAINTED
9.5	1" GYPSUM SHAFT LINER PANEL
9.6	7/8" HAT CHANNELS @ 16" O.C.
9.7	2 1/2" METAL STUDS @ 16" O.C.
9.8	3 5/8" METAL STUDS @ 16" O.C.
9.9	6" METAL STUDS @ 16" O.C.
9.10	6" C-H STUDS @ 24" O.C.
9.11	WALL BASE; RE: FINISH SCHEDULE
9.14	CEILING; RE: REFLECTED CEILING PLAN
9.15	8" METAL STUDS @ 16" 0.C.
9.16	STUCCO CASING BEAD, TYPICAL AT PERIMETER OF DOORS, WINDOWS, & PENETRATIONS
9.17	BRACE TO STRUCTURE @ 48" O.C. MAX
9.18	SLIP TRACK CONNECTION
9.21	(2) LAYERS "5/8" TYPE "X" GYPSUM BOARD; PAINTED

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:

DUHON PLEASANT ENGINEERS CIVIL/STRUCTURAL

ADG ENGINEERING MEP

TBA LANDSCAPE

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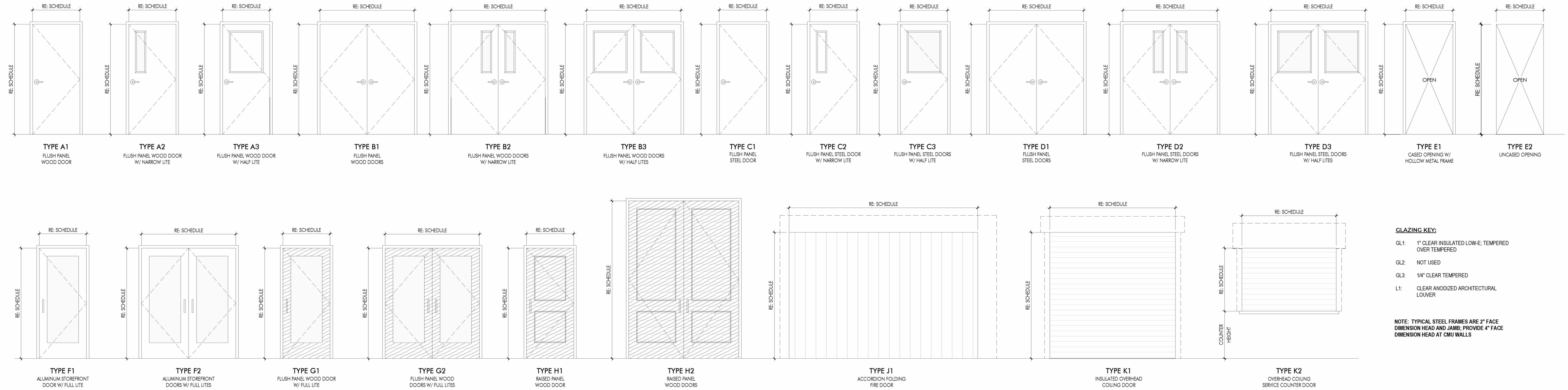
CEH PROJECT #:	2106
RHH PROJECT #:	42-01-21
DATE:	4/22/2022
FOR:	REVIEW

REVISION	DATE

PARTITION TYPES & DETAILS

A0.05

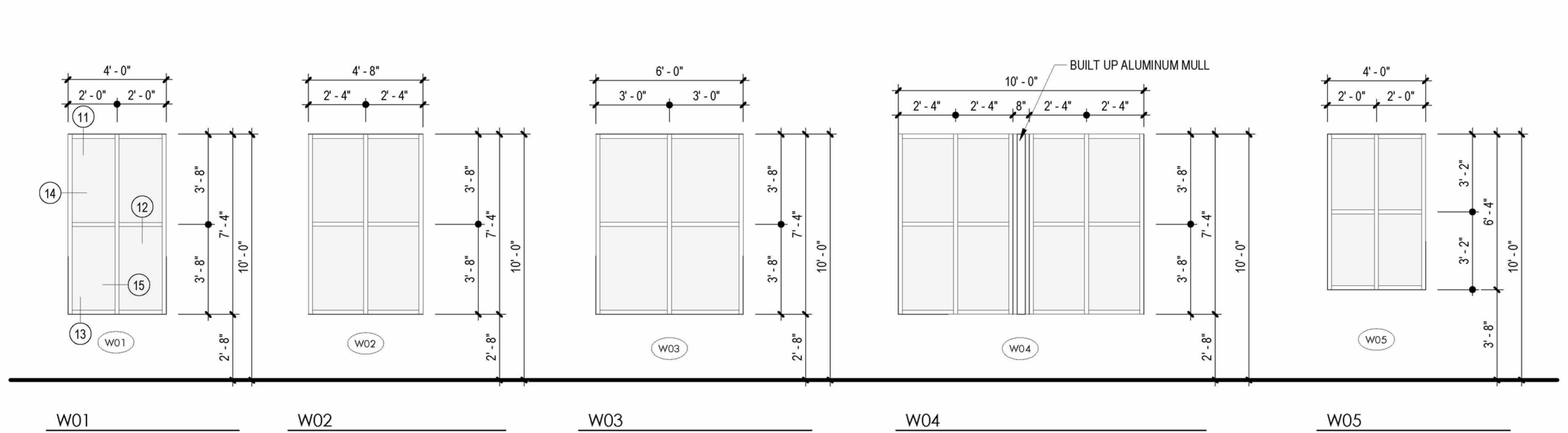


GLAZING KEY:

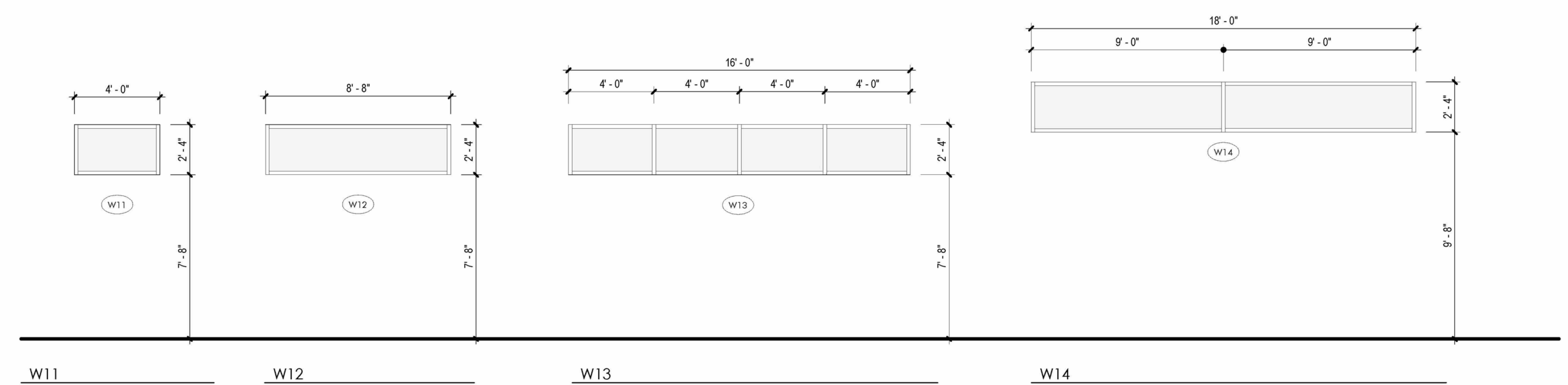
GL1: 1" CLEAR INSULATED LOW-E; TEMPERED OVER TEMPERED
GL2: NOT USED
GL3: 1/4" CLEAR TEMPERED
L1: CLEAR ANODIZED ARCHITECTURAL LOUVER

NOTE: TYPICAL STEEL FRAMES ARE 2" FACE DIMENSION HEAD AND JAMB; PROVIDE 4" FACE DIMENSION HEAD AT CMU WALLS

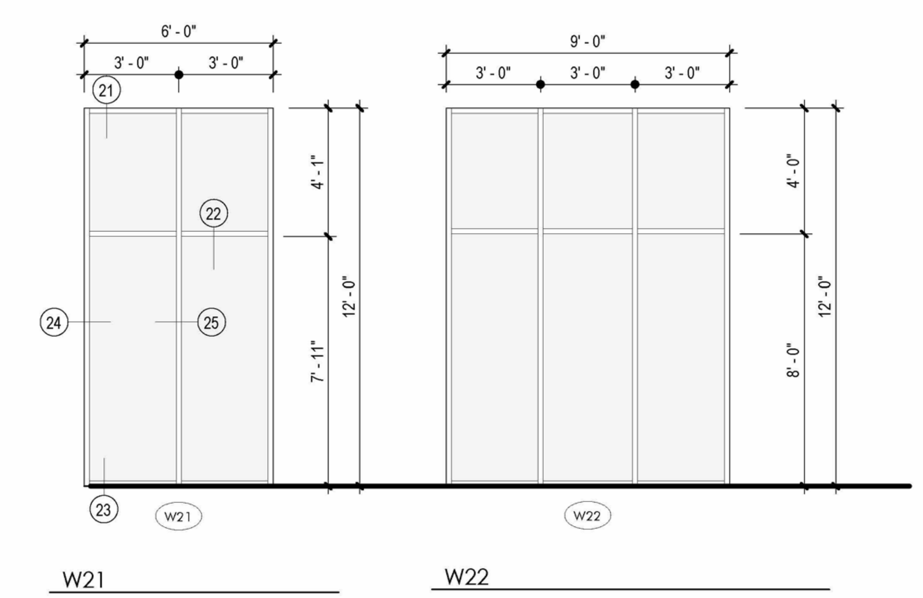
1 DOOR AND FRAME ELEVATIONS
3/8"=1'-0" NOTE: NOT ALL TYPES MAY BE USED



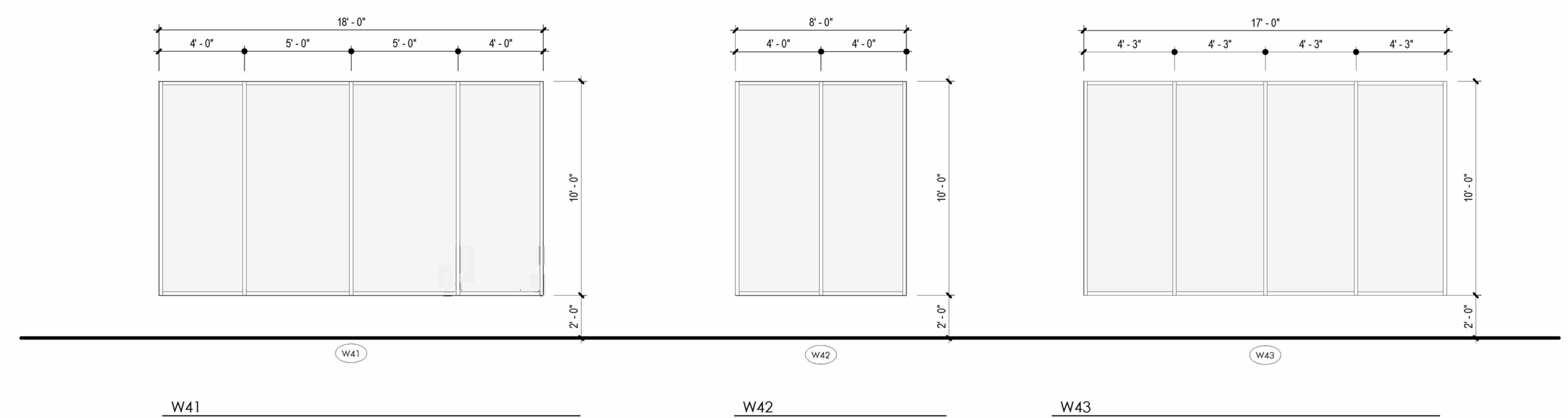
2 STOREFRONT ELEVATIONS
1/4"=1'-0" 4.5" x 2" EXTERIOR



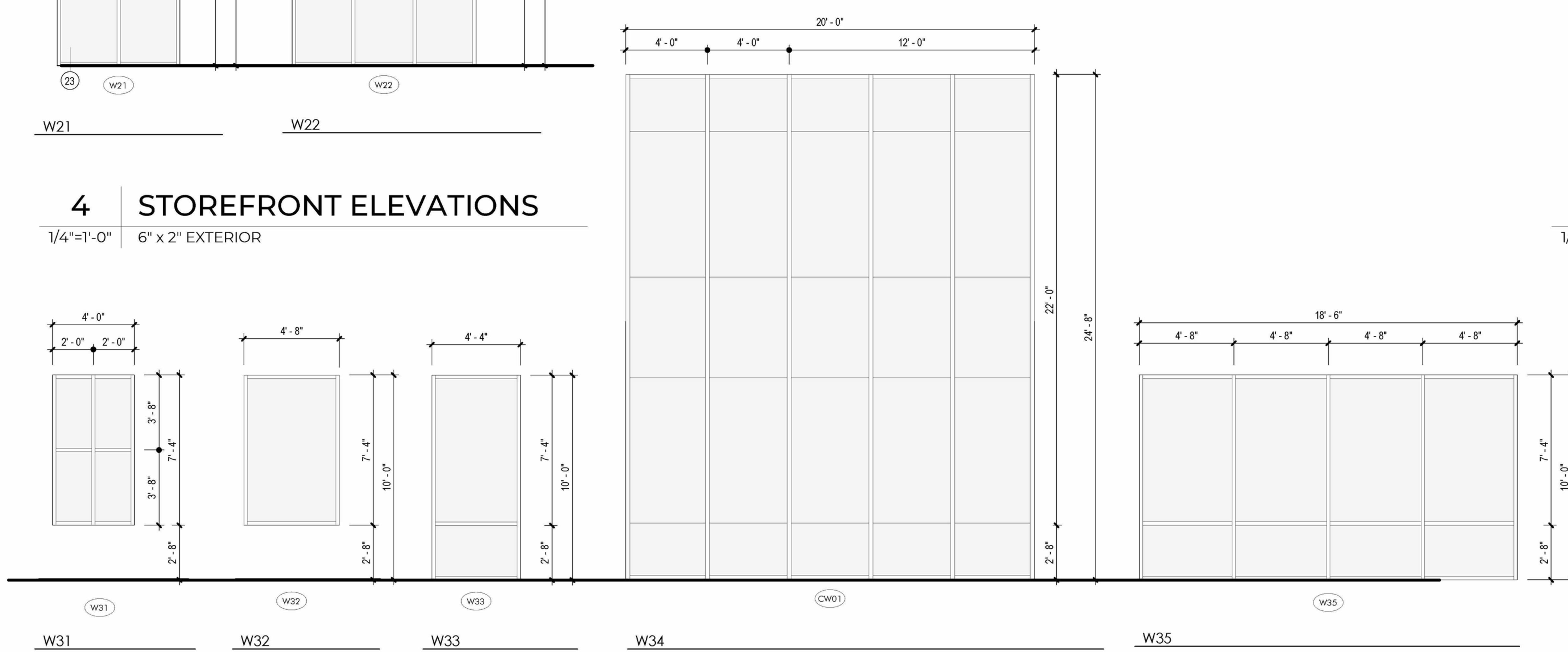
3 STOREFRONT ELEVATIONS
1/4"=1'-0" 4.5" x 2" EXTERIOR



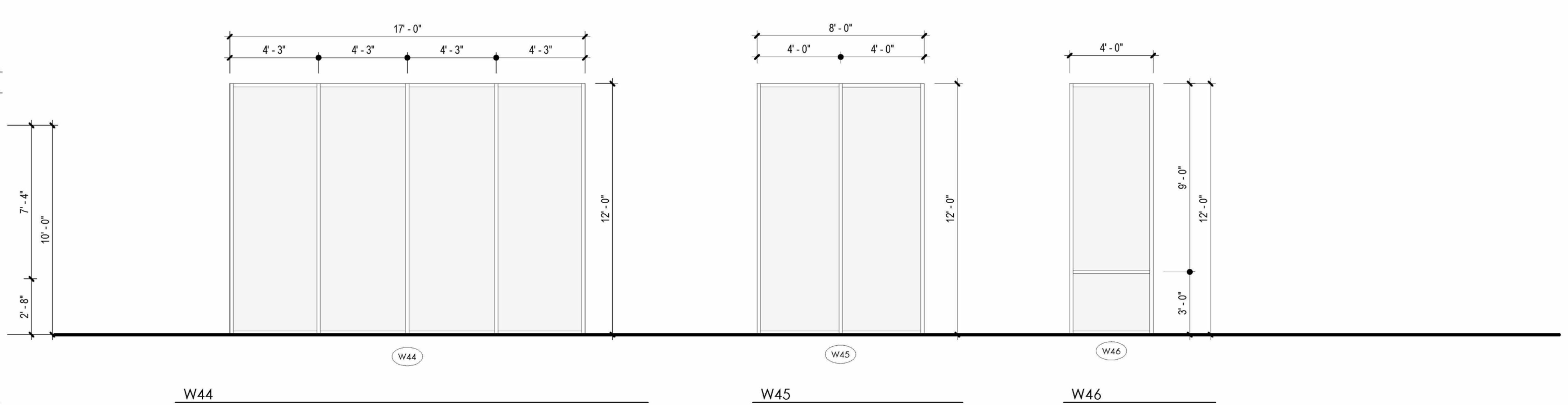
4 STOREFRONT ELEVATIONS
1/4"=1'-0" 6" x 2" EXTERIOR



5 STOREFRONT ELEVATIONS
1/4"=1'-0" 4.5" x 2" EXTERIOR BUILDING E



6 STOREFRONT ELEVATIONS
1/4"=1'-0" 4.5" x 2" EXTERIOR



7 STOREFRONT ELEVATIONS
1/4"=1'-0" 6" x 2" EXTERIOR BUILDING E

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
DUHON PLEASANT ENGINEERS CIVIL/STRUCTURAL
ADG ENGINEERING MEP
TBA LANDSCAPE
TBA FOOD SERVICE

Construction Documents for
DIOCESE OF LAKE CHARLES - ST. LOUIS CATHOLIC HIGH SCHOOL
4220 Corbina Road, Lake Charles, LA

CEH PROJECT #: 2106
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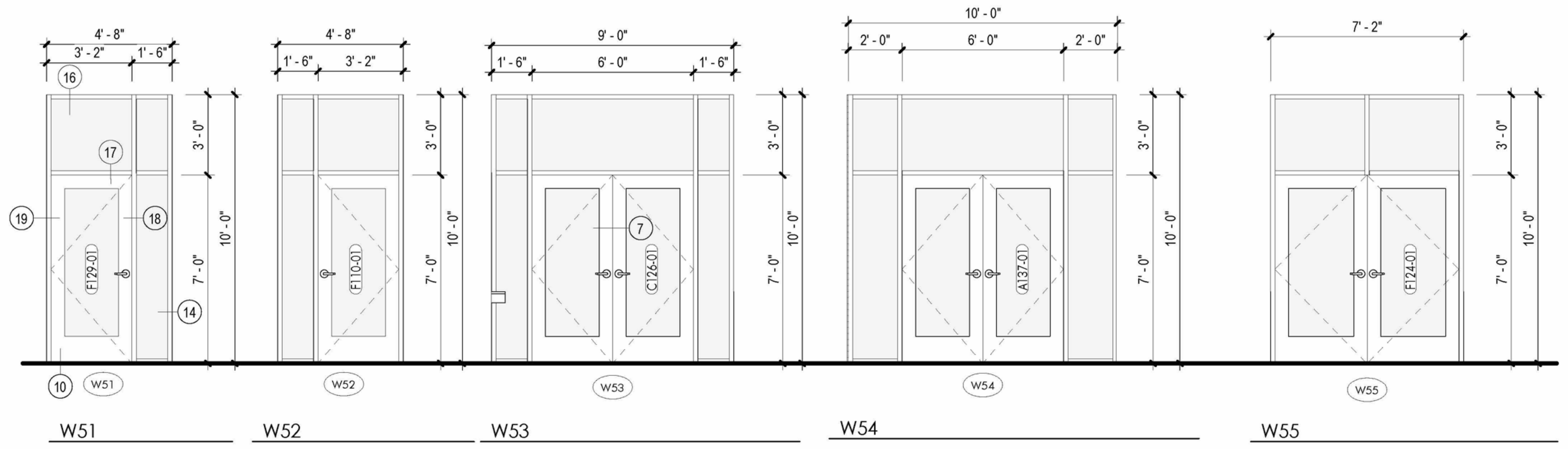
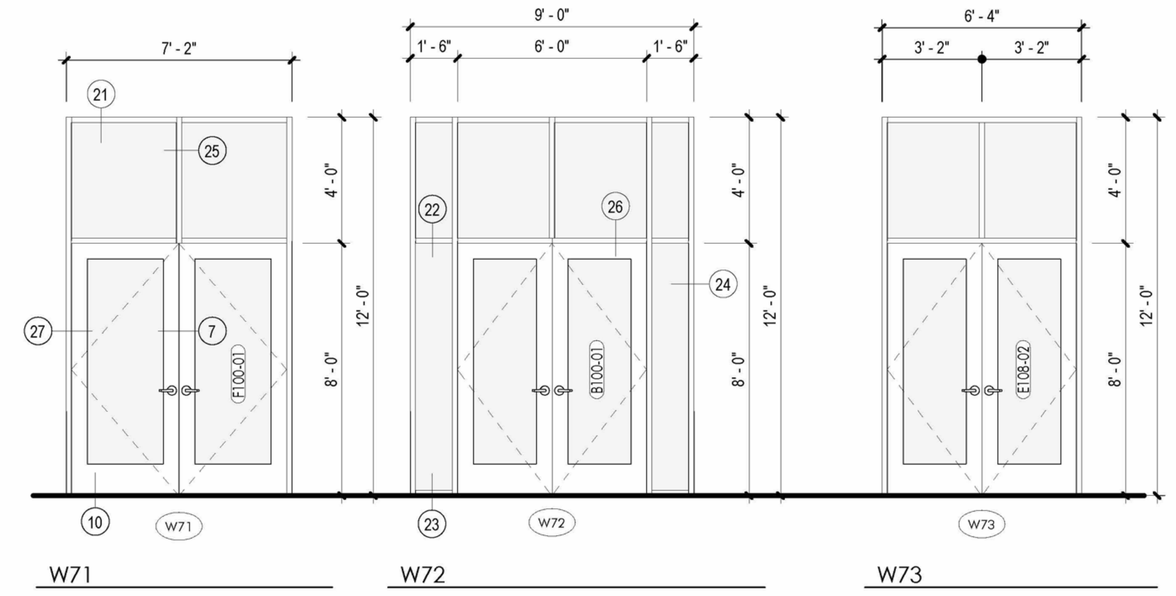
DOOR & WINDOW SCHEDULES

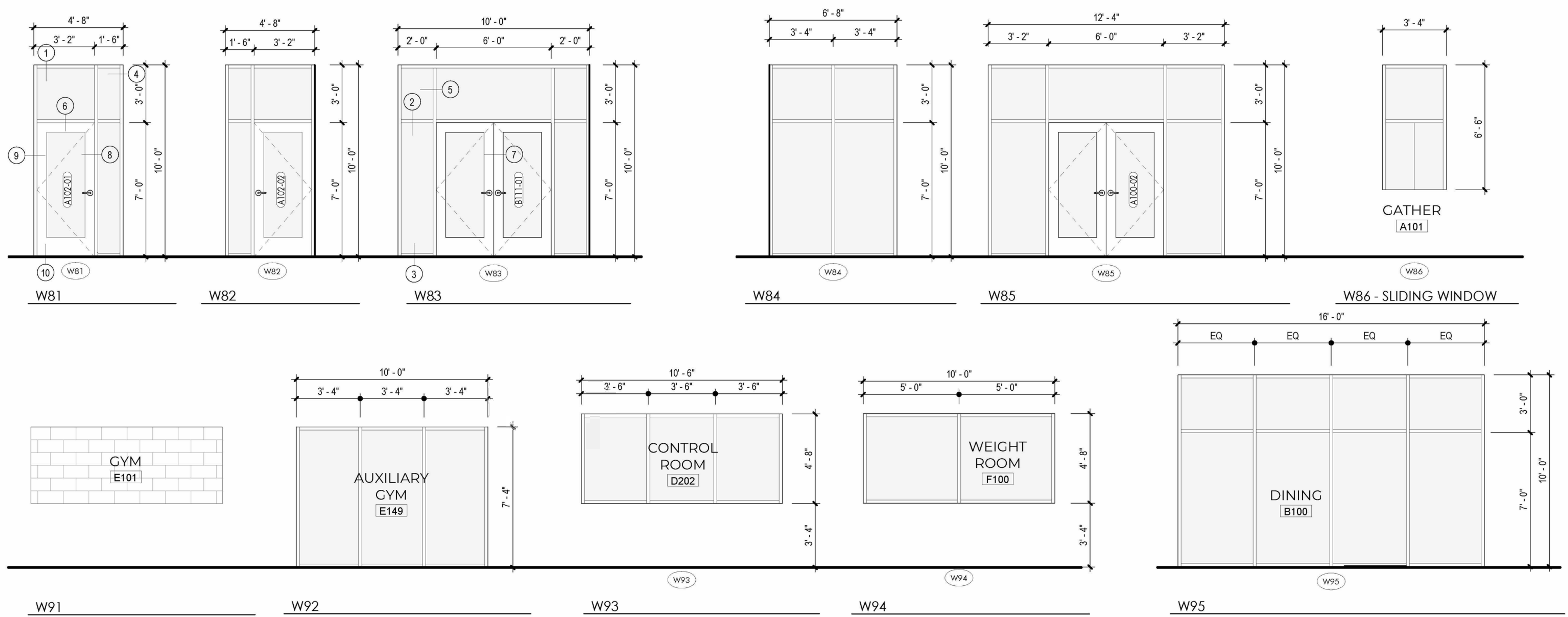
A0.06



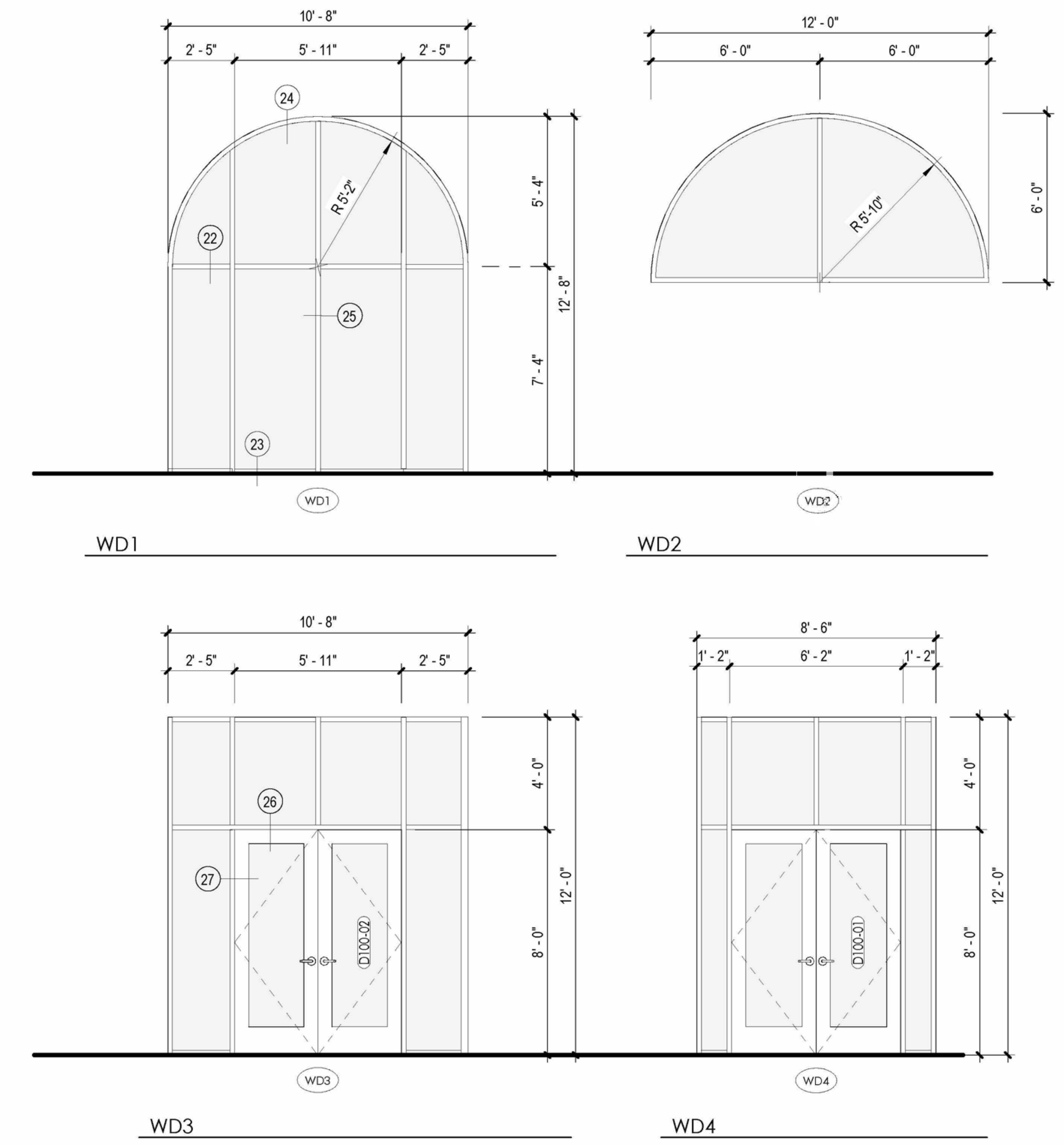
1 STOREFRONT ENTRANCE ELEVATIONS
1/4"=1'-0" 4.5" X 2" EXTERIOR



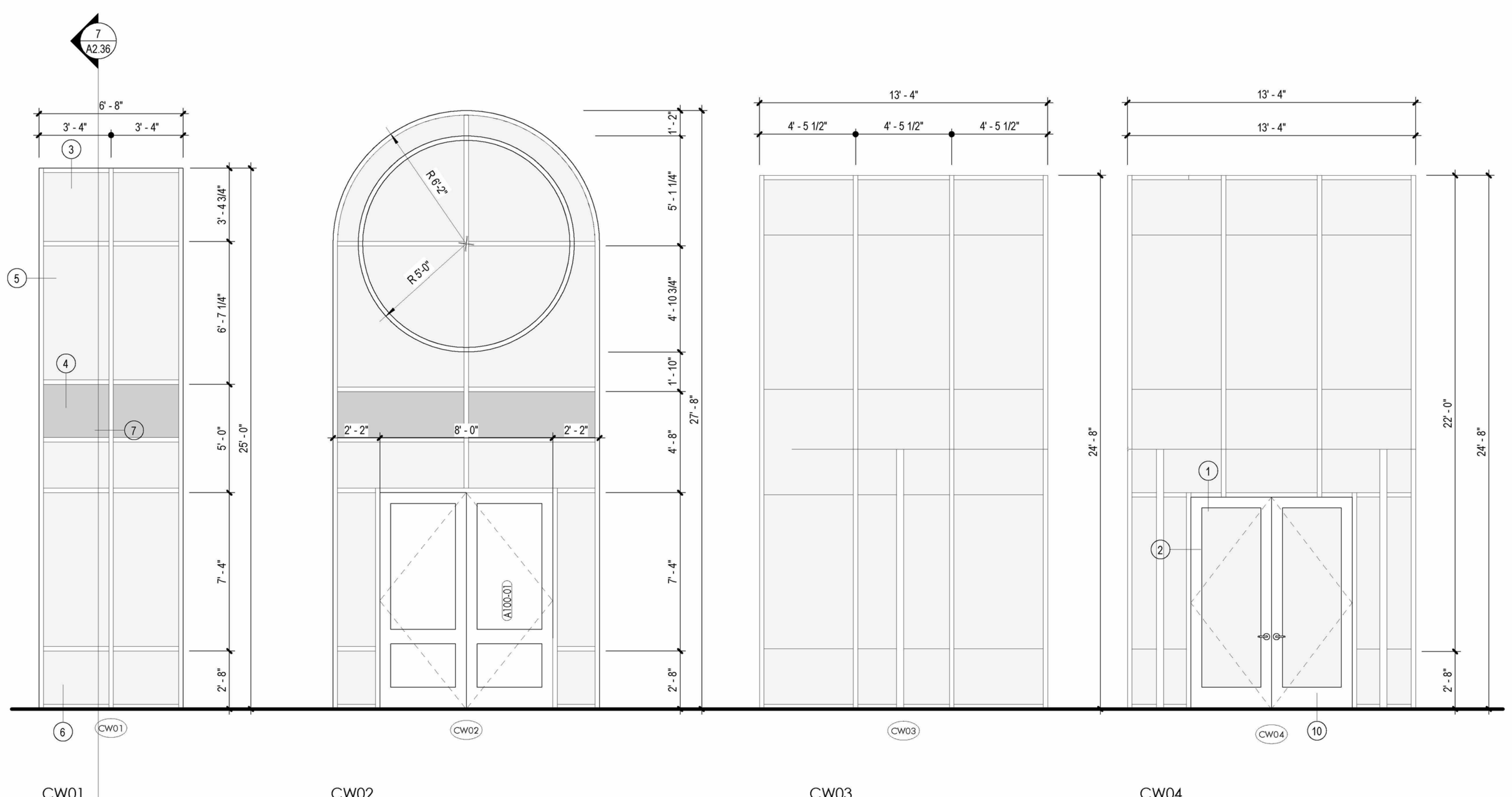
2 STOREFRONT ENTRANCE ELEVATIONS
1/4"=1'-0" 6" X 2" EXTERIOR



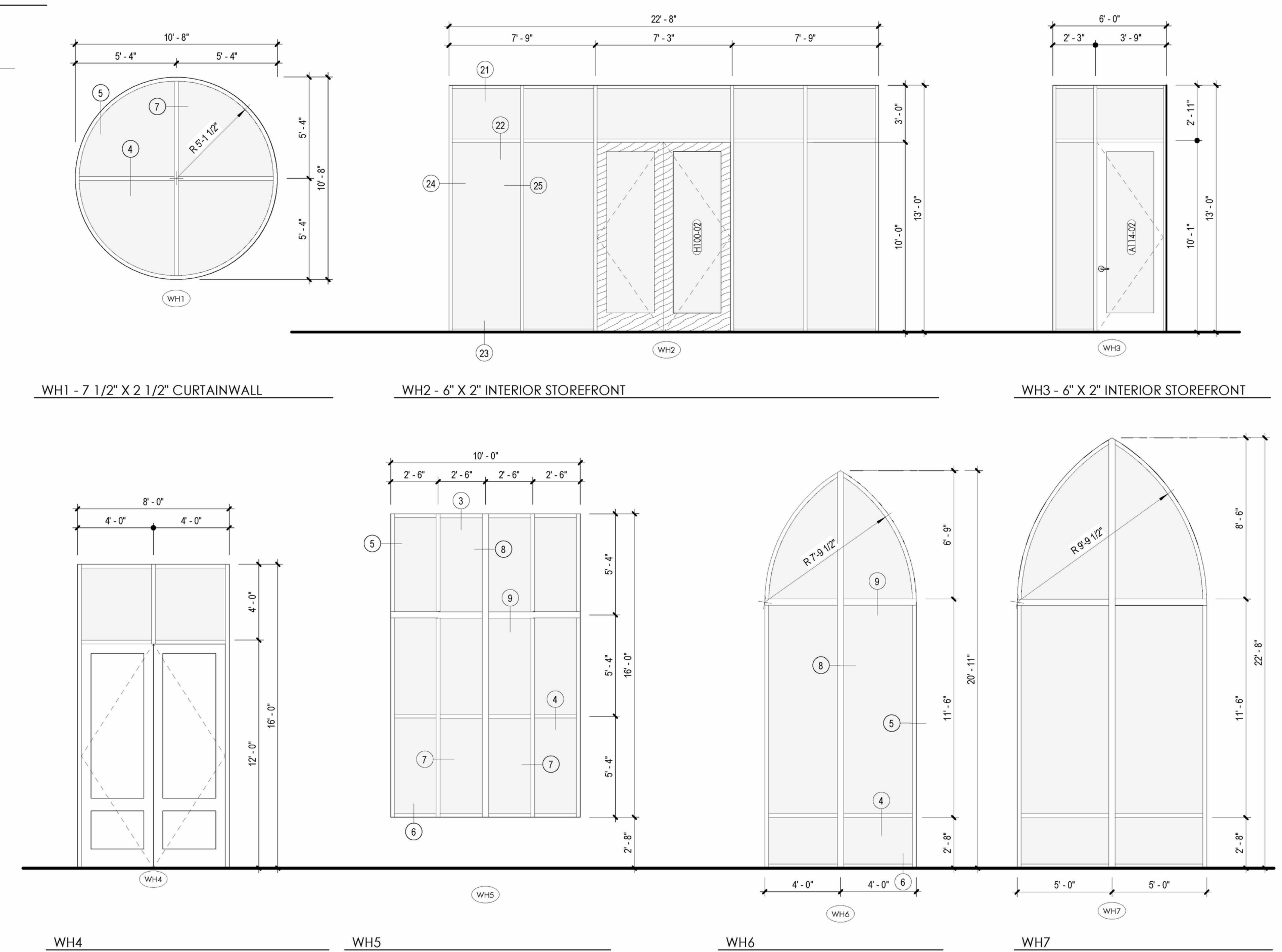
3 STOREFRONT ELEVATIONS
1/4"=1'-0" 4"X 1 3/4" INTERIOR



4 STOREFRONT ELEVATIONS
1/4"=1'-0" 6" x 2" EXTERIOR - BUILDING D



5 CURTAINWALL ELEVATIONS
1/4"=1'-0" 7 1/2" x 2 1/2" EXTERIOR - BUILDING A



6 CURTAINWALL ELEVATIONS
1/4"=1'-0" 7 1/2" X 2 1/2" U.N.O. - BUILDING H

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
DUHON PLEASANT ENGINEERS CIVIL/STRUCTURAL
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Construction Documents for
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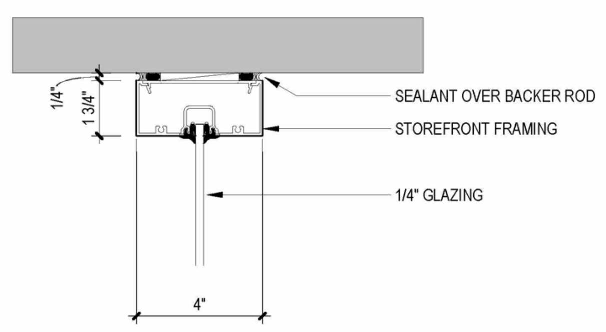
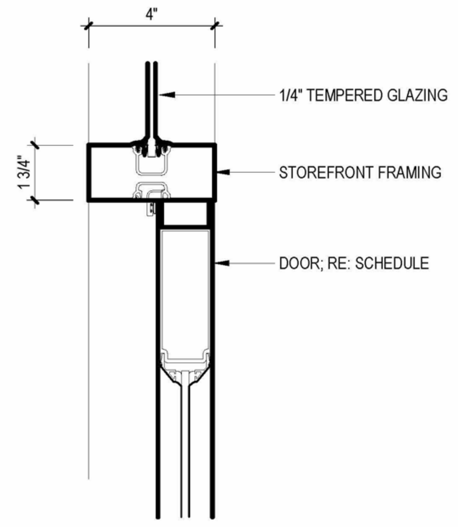
DOOR & WINDOW SCHEDULES

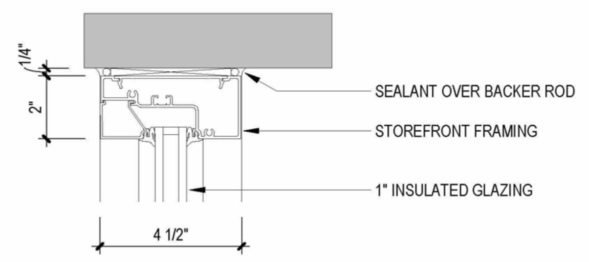
A0.07



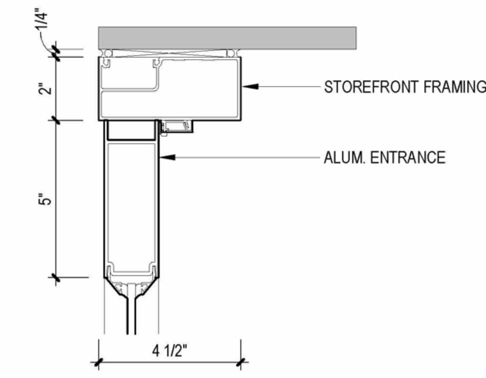
1 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - HEAD



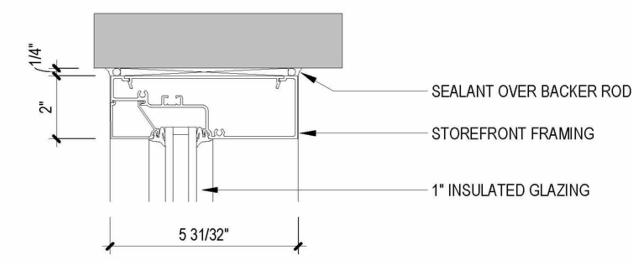
6 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - DOOR HEAD W/ TRANSOM



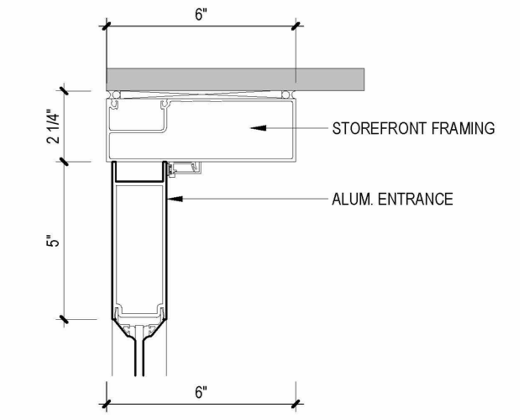
11 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT HEAD



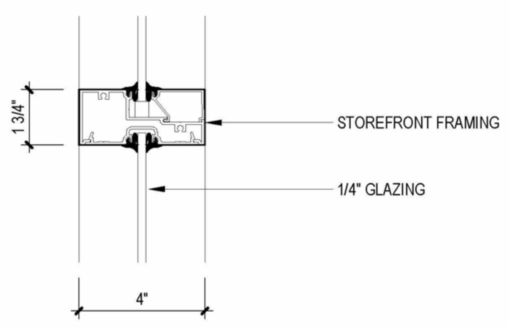
16 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT - DOOR HEAD



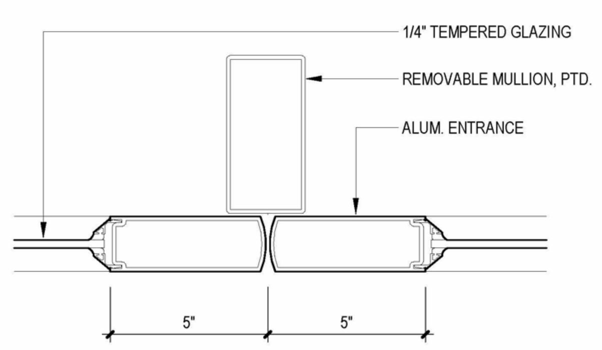
21 DETAIL
3" = 1'-0" 6" STOREFRONT HEAD - CENTER



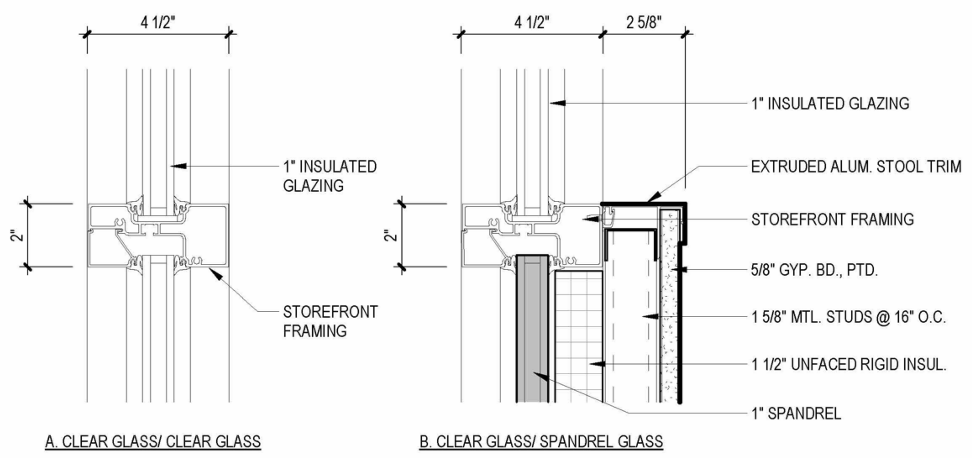
26 DETAIL
3" = 1'-0" 6" STOREFRONT - DOOR HEAD



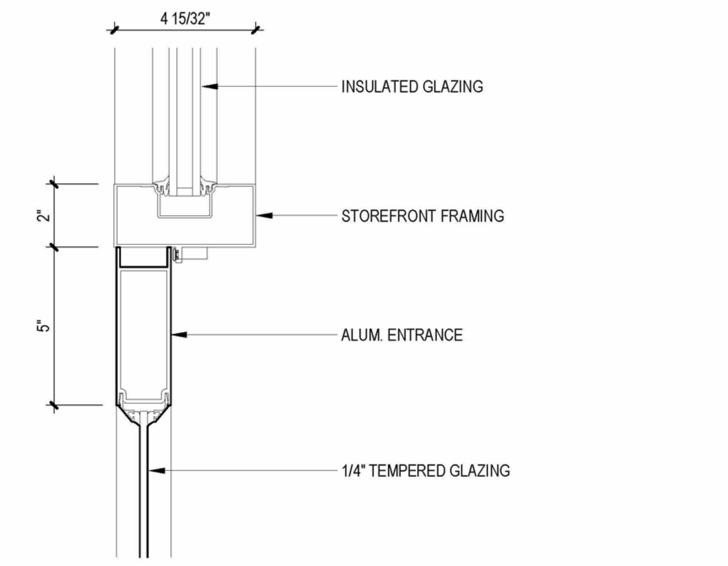
2 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - HORIZONTAL



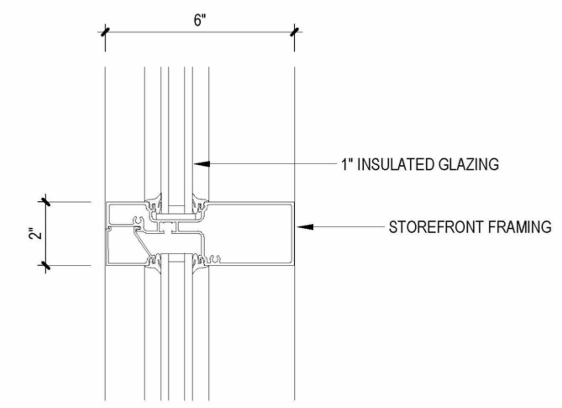
7 DETAIL
3" = 1'-0" DOOR - MEETING STILES



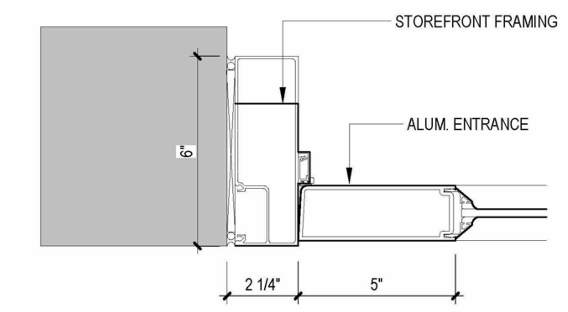
12 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT HORIZONTAL



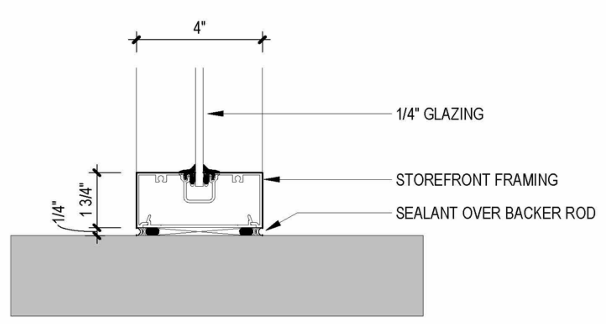
17 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT - DOOR HEAD W/ TRANSOM



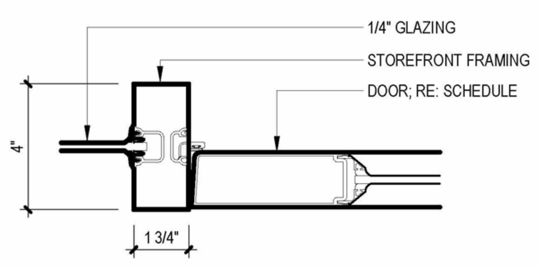
22 DETAIL
3" = 1'-0" 6" STOREFRONT HORIZONTAL - CENTER



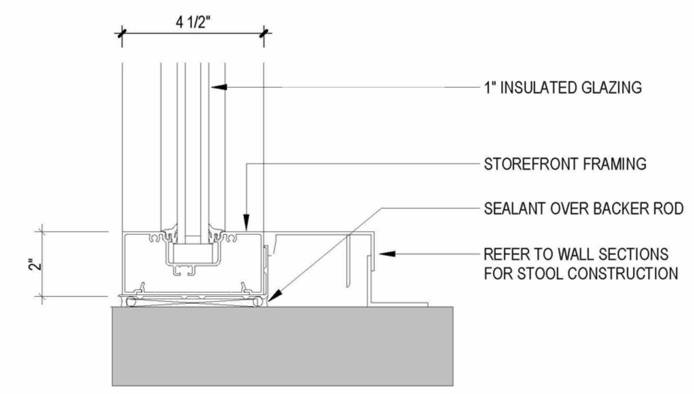
27 DETAIL
3" = 1'-0" 6" STOREFRONT - DOOR JAMB



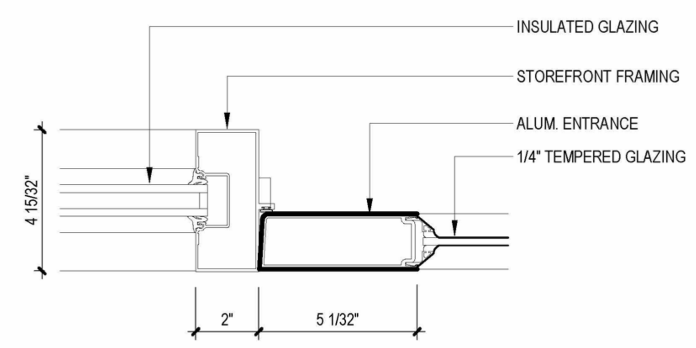
3 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - SILL



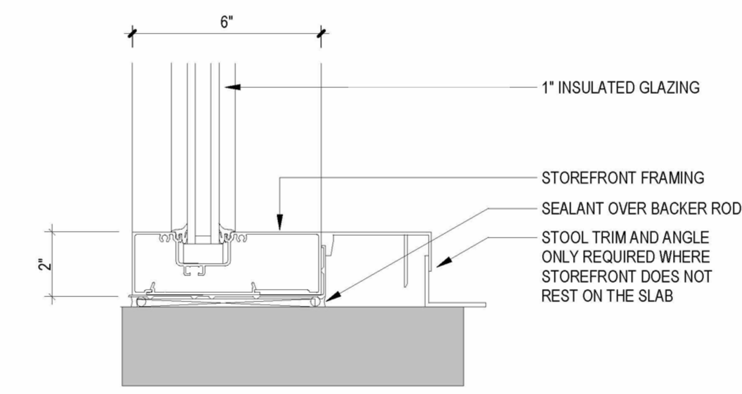
8 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - DOOR JAMB/ SIDELITE



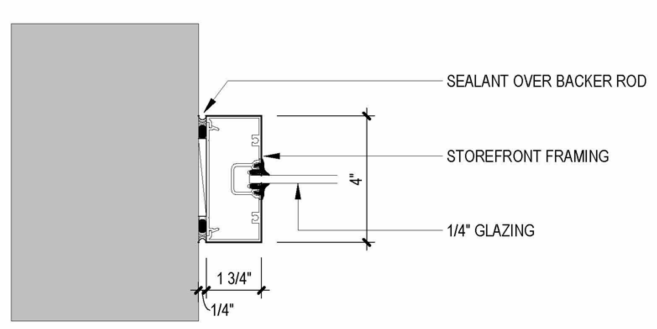
13 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT SILL



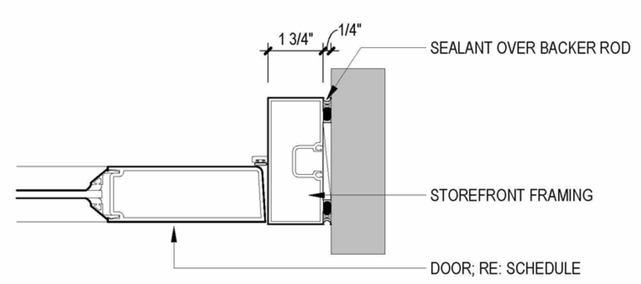
18 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT - DOOR JAMB W/ SIDELITE



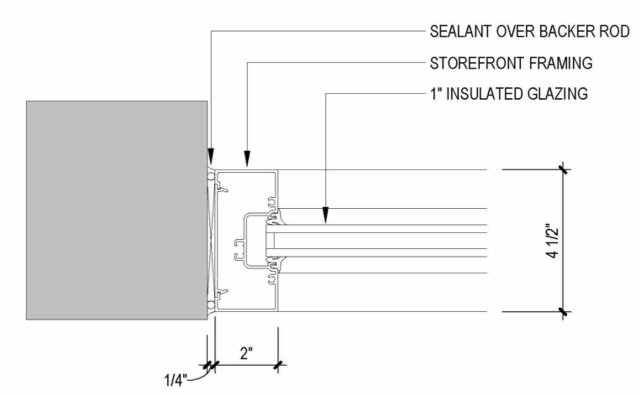
23 DETAIL
3" = 1'-0" 6" STOREFRONT SILL - CENTER



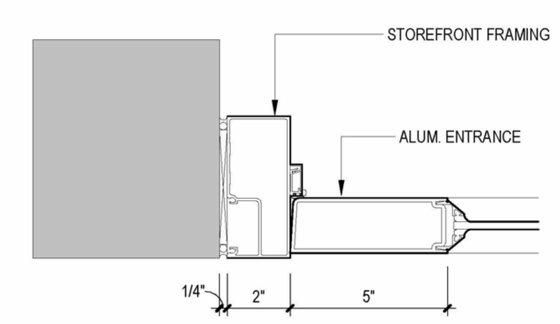
4 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - JAMB



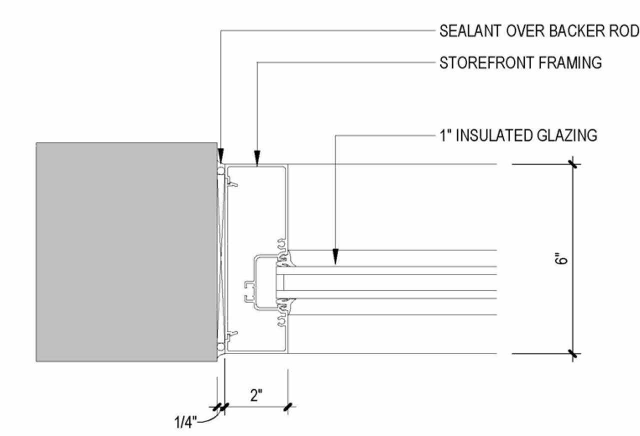
9 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - DOOR JAMB



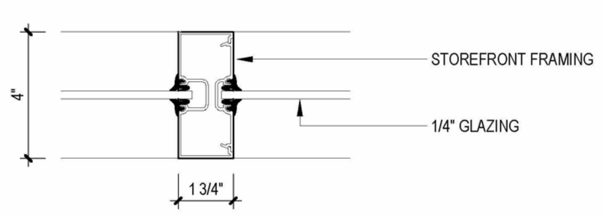
14 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT JAMB



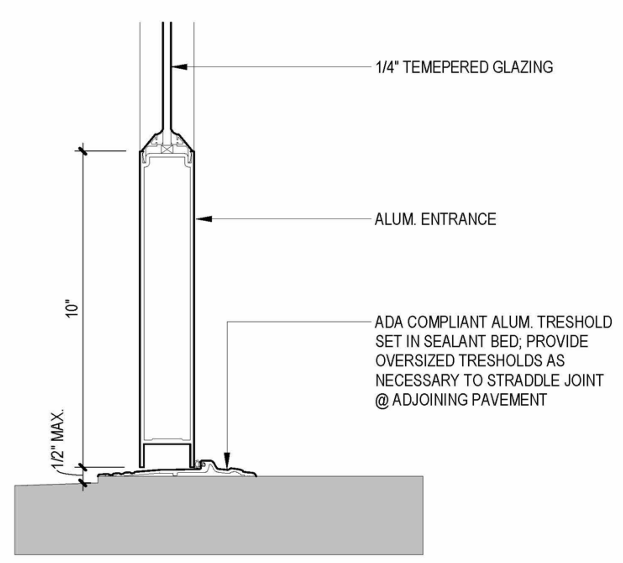
19 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT - DOOR JAMB



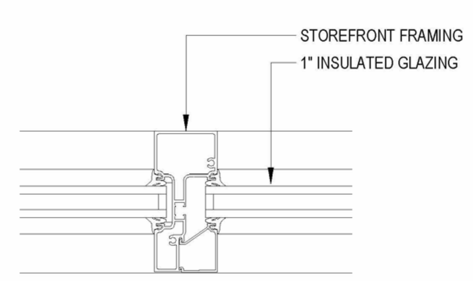
24 DETAIL
3" = 1'-0" 6" STOREFRONT JAMB - CENTER



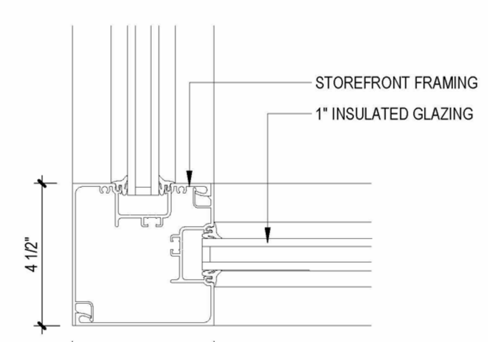
5 DETAIL
3" = 1'-0" 4" INTERIOR STOREFRONT - VERTICAL



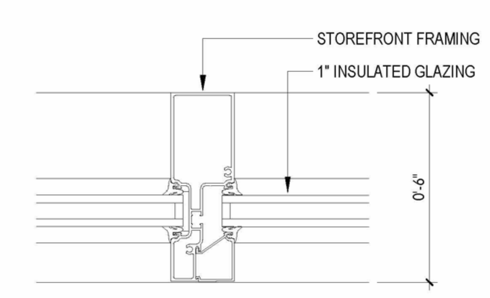
10 DETAIL
3" = 1'-0" DOOR THRESHOLD TYPICAL



15 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT VERTICAL



20 DETAIL
3" = 1'-0" 4 1/2" STOREFRONT CORNER JAMB



25 DETAIL
3" = 1'-0" 6" STOREFRONT VERTICAL

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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4220 Corbina Road, Lake Charles, LA

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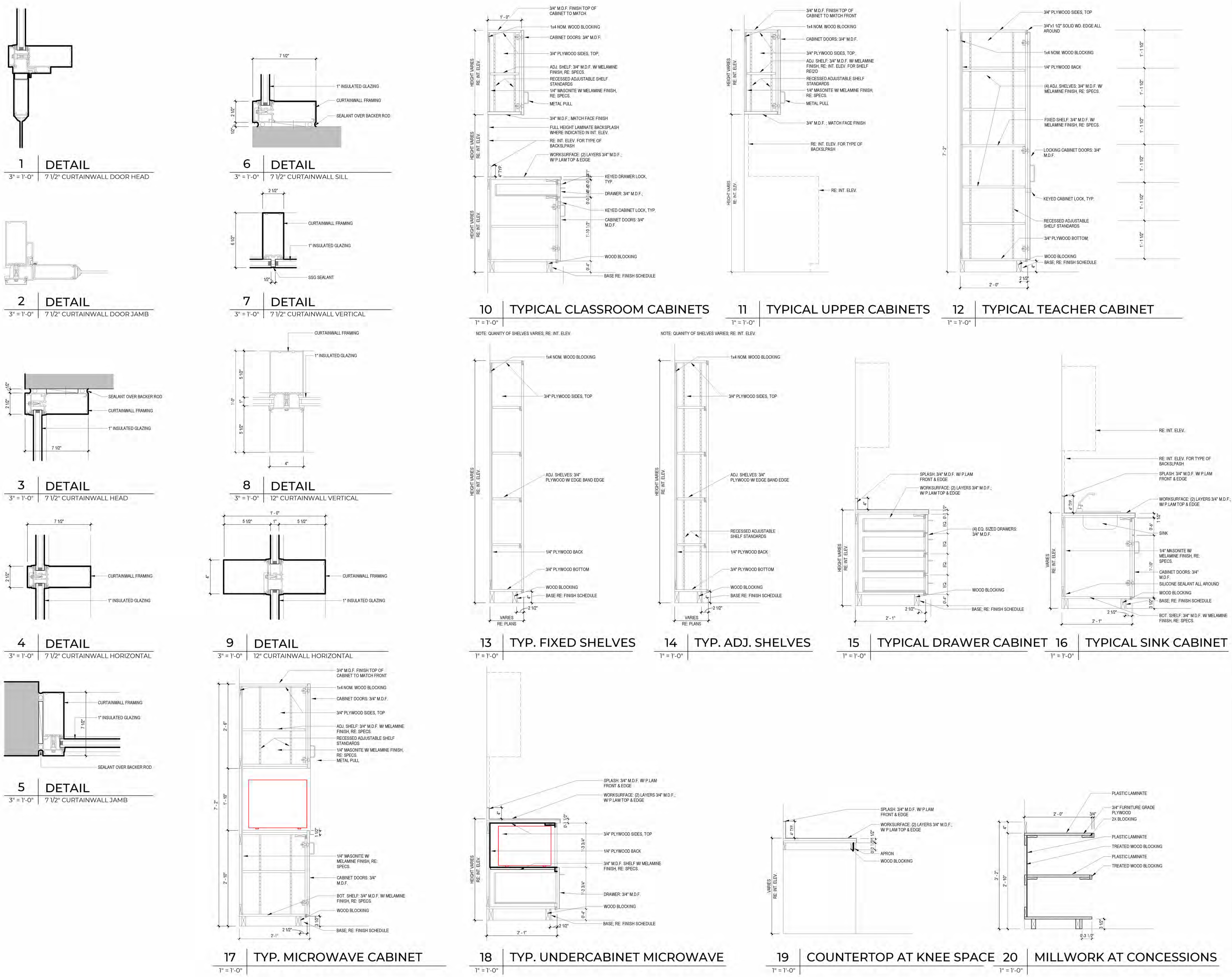
STOREFRONT DETAILS

A0.08



RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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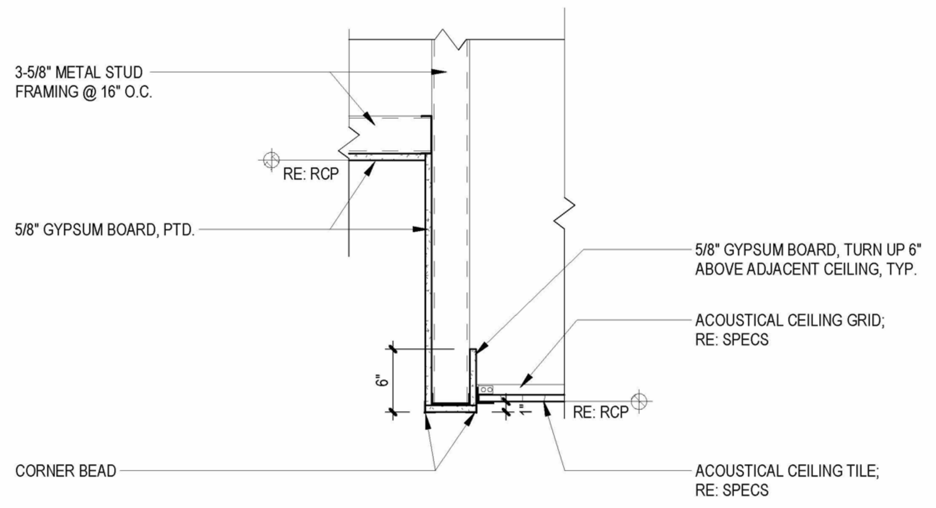
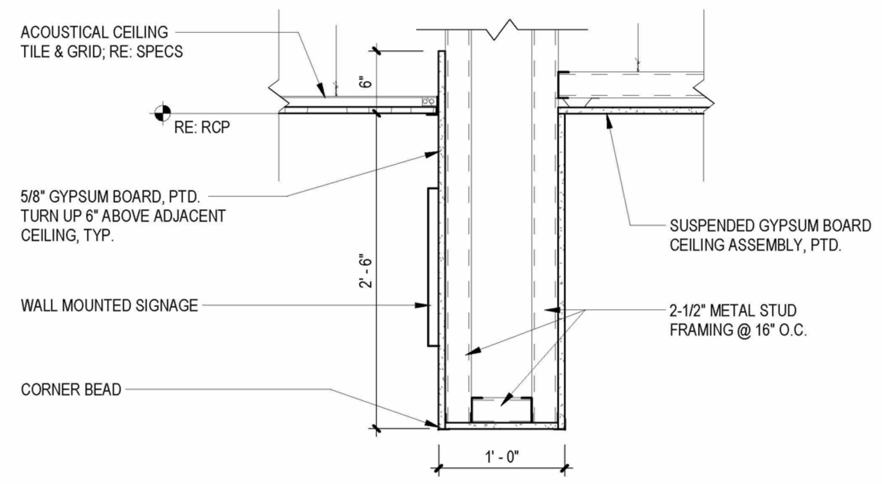
CURTAINWALL AND MILLWORK DETAILS

A0.09



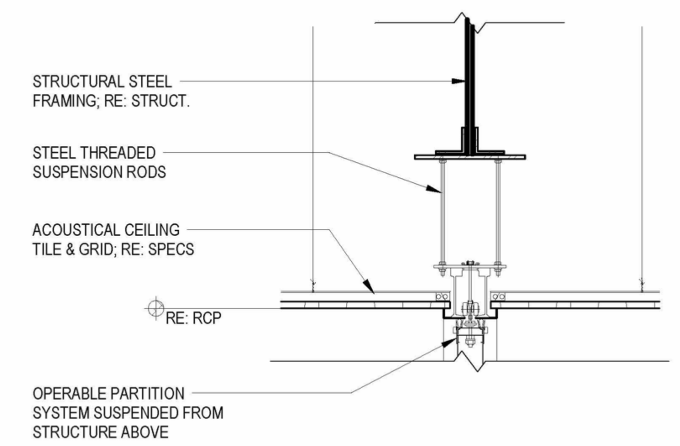
1 CEILING DETAIL A

1" = 1'-0"



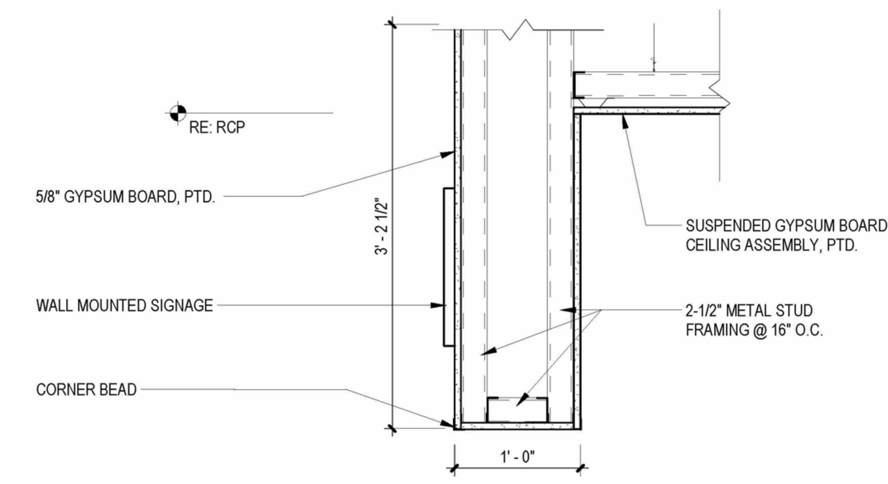
2 CEILING DETAIL C

1" = 1'-0"



4 CEILING DETAIL D

1" = 1'-0"



6 CEILING DETAIL F

1" = 1'-0"

RHH ARCHITECTS

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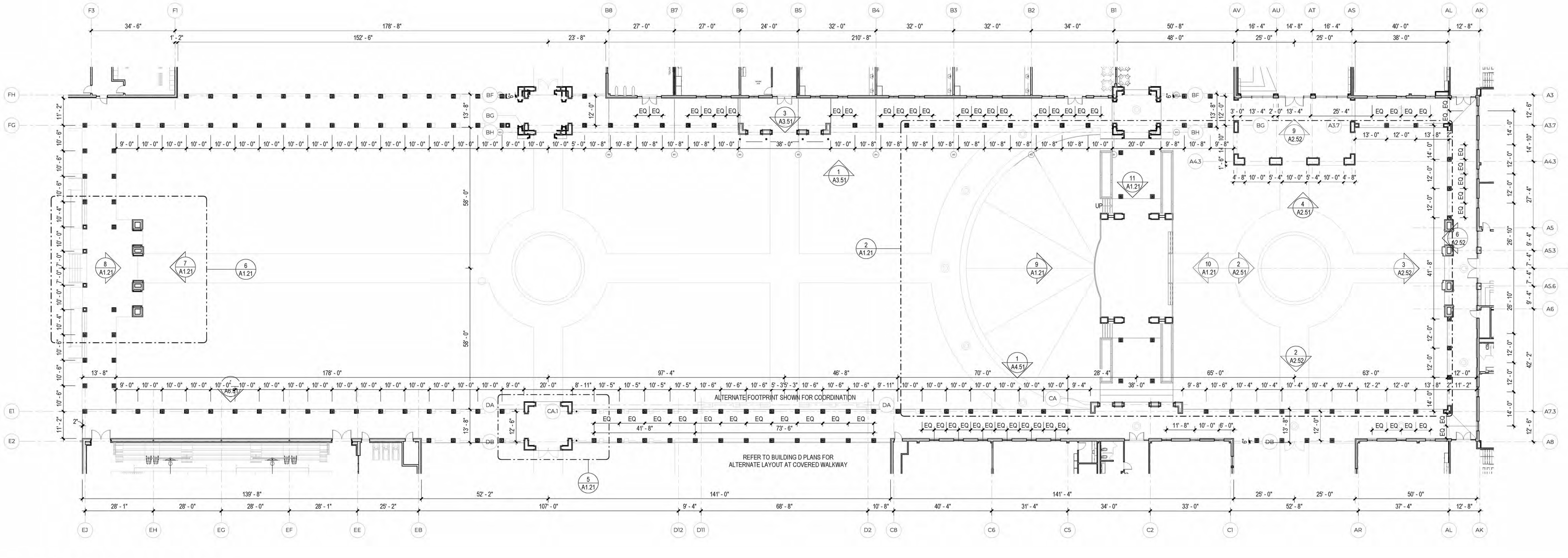
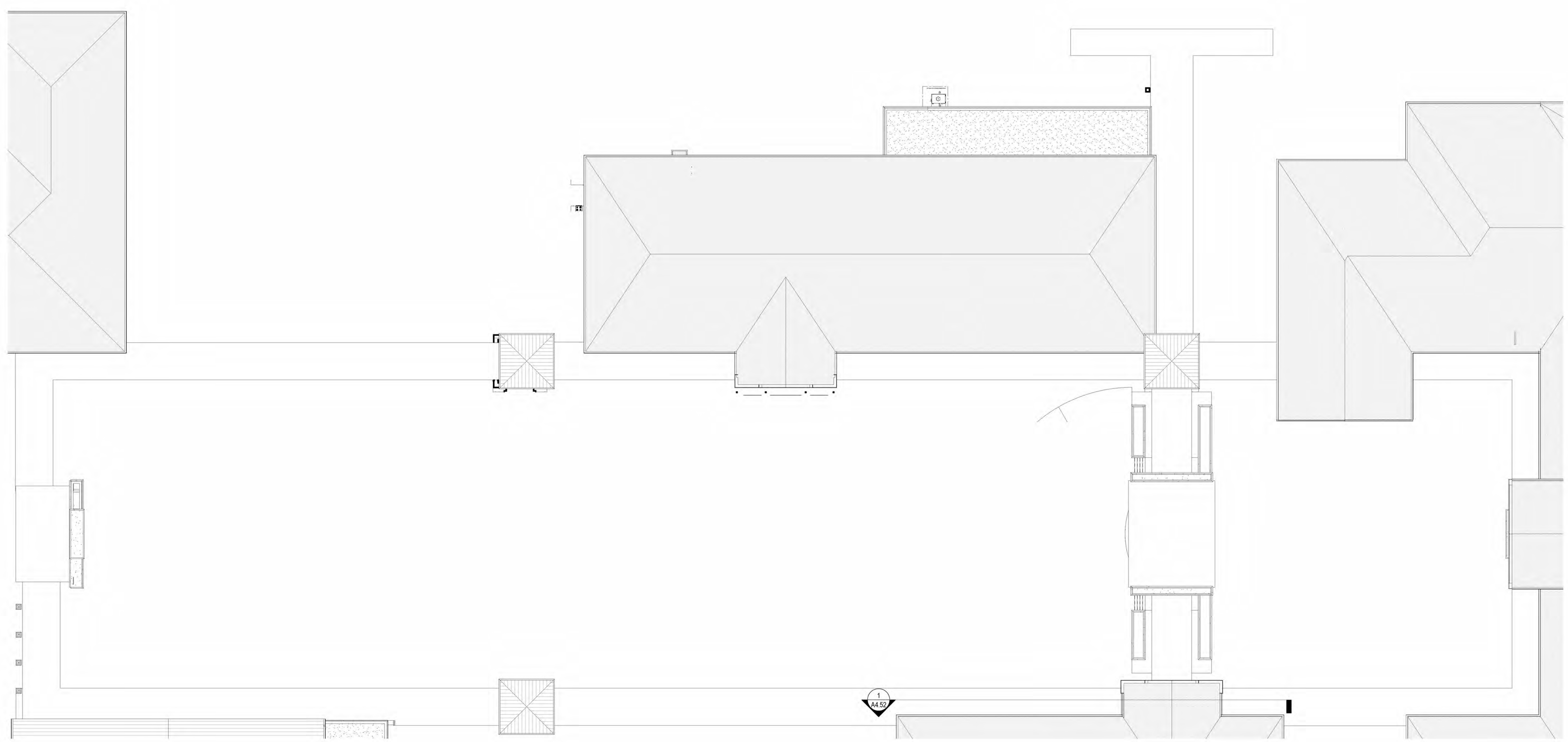
TYPICAL CEILING DETAILS

A0.10



1 | QUAD SITE PLAN
1" = 20'-0"



2 | QUAD ROOF PLAN
1" = 20'-0"

RHH ARCHITECTS

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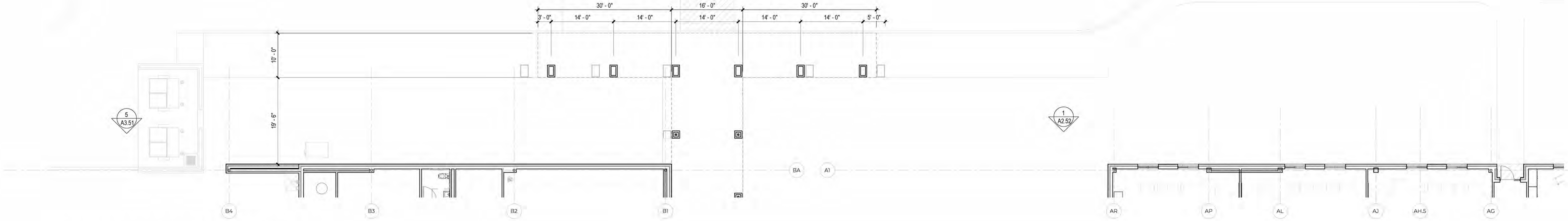
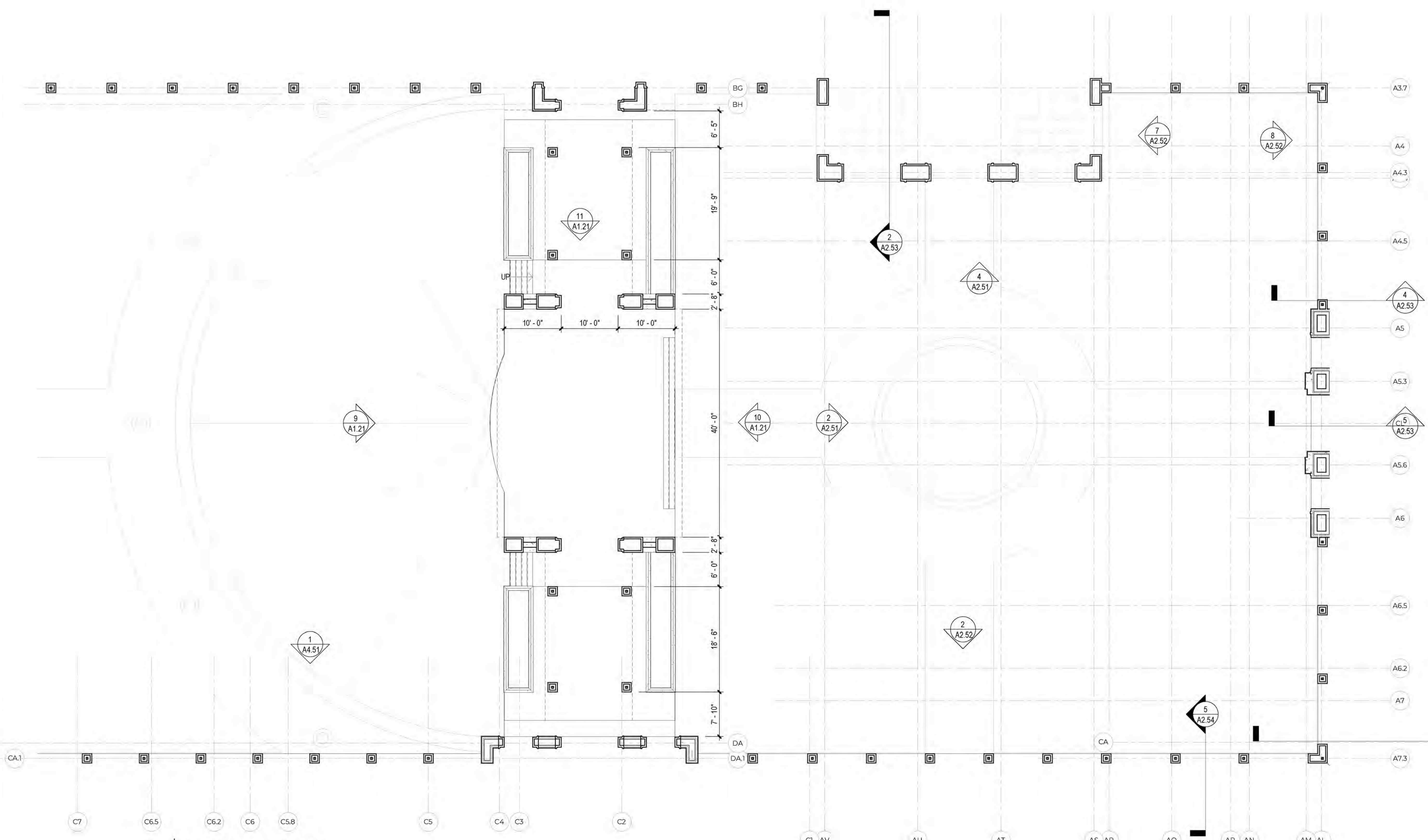
QUAD SITE PLAN & ROOF PLAN

A1.20

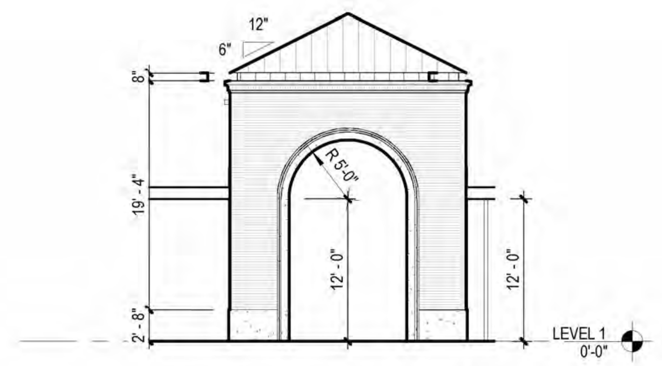
NORTH



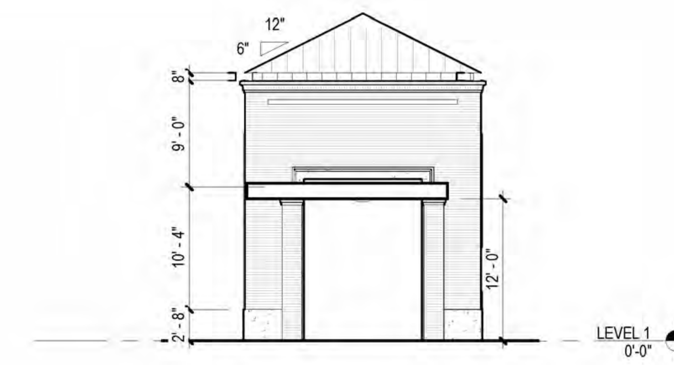
1 | CARPOOL CANOPY PLAN
3/32" = 1'-0"



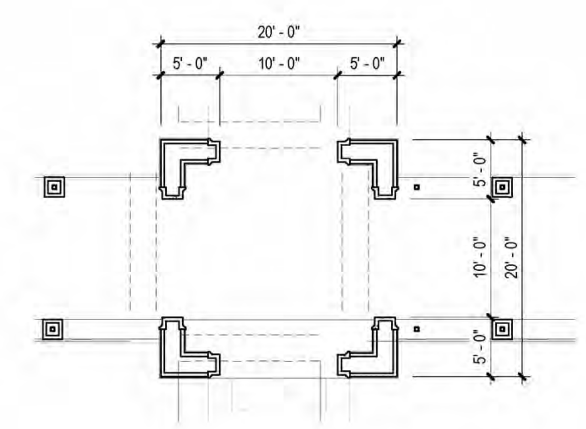
2 | STAGE PLAN
3/32" = 1'-0"



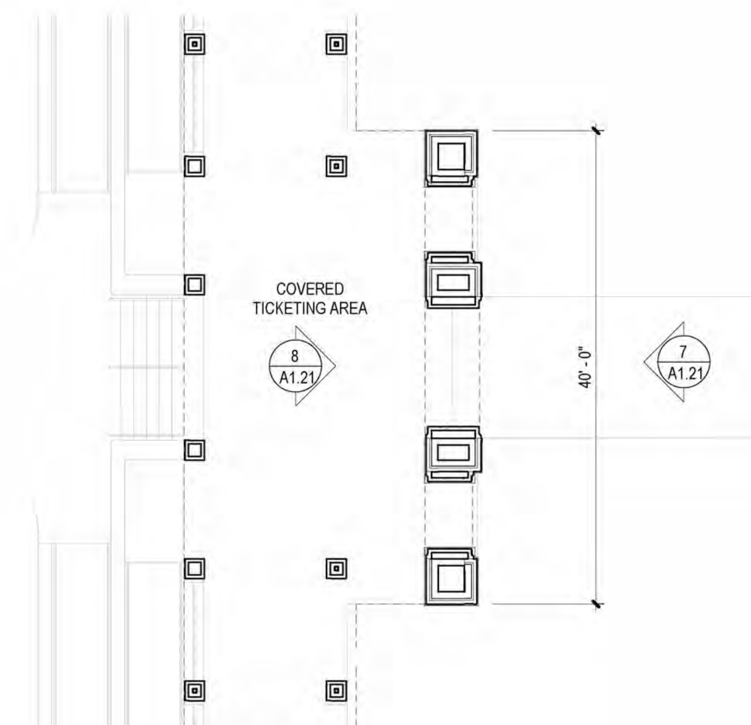
3 | QUAD S - ENTRANCE N
3/32" = 1'-0"



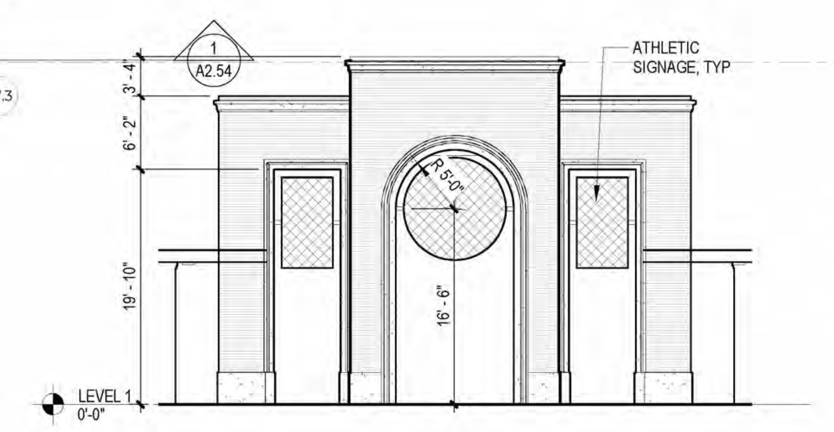
4 | QUAD S - ENTRANCE E
3/32" = 1'-0"



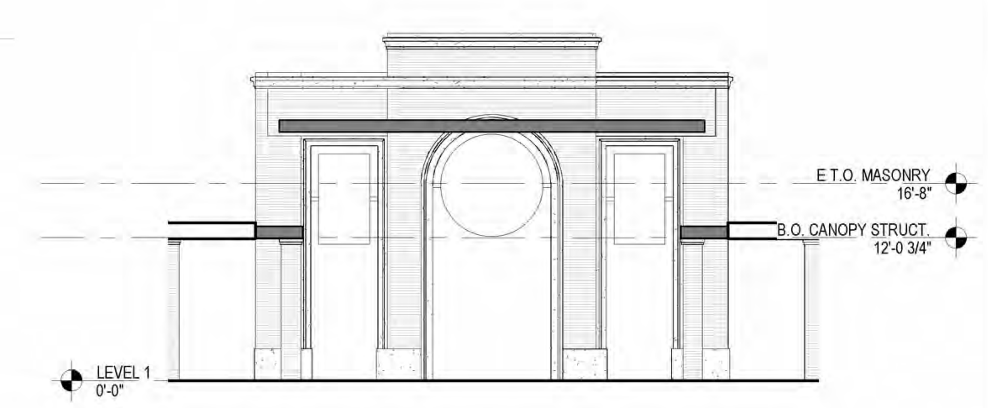
5 | QUAD SOUTH ENTRANCE PLAN
3/32" = 1'-0"



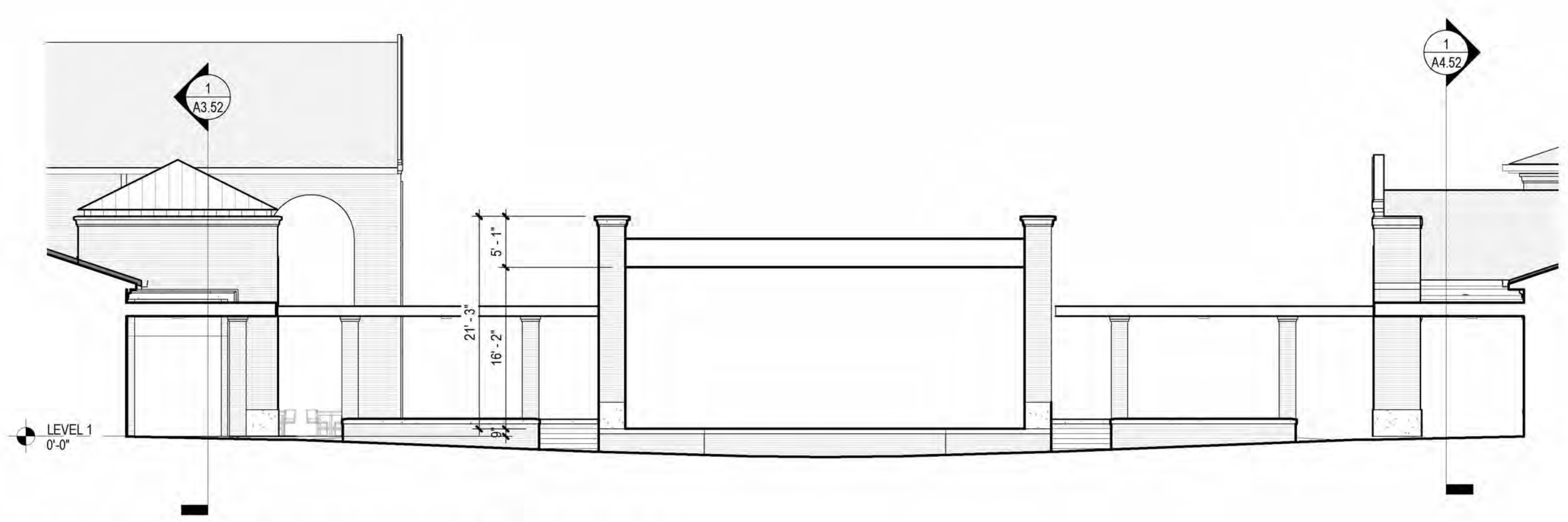
6 | ATHLETICS ENTRANCE PLAN
3/32" = 1'-0"



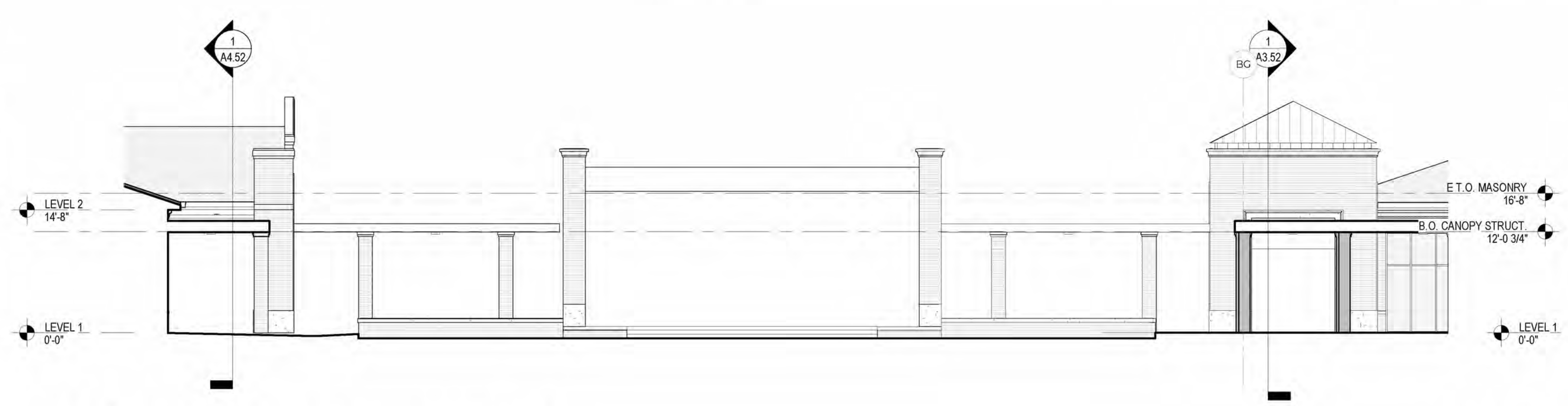
7 | QUAD - ATHLETIC ENTRANCE - EAST
3/32" = 1'-0"



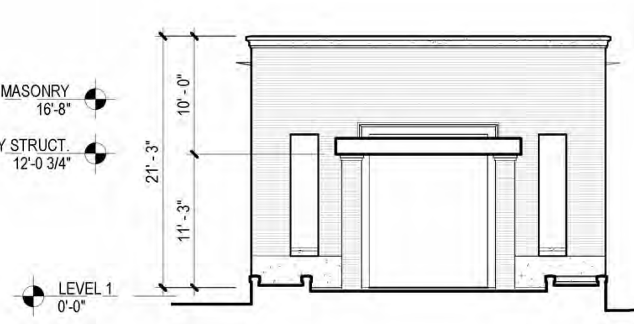
8 | QUAD - ATHLETIC ENTRANCE - WEST
3/32" = 1'-0"



9 | STAGE - WEST ELEVATION
3/32" = 1'-0"



10 | STAGE - EAST ELEVATION
3/32" = 1'-0"



11 | STAGE - NORTH ELEVATION
3/32" = 1'-0"

MATERIALS LEGEND:

- 4" NOMINAL BRICK VENEER
- 3/4" PORTLAND CEMENT PLASTER or CAST STONE
- STANDING SEAM METAL WALL PANEL
- ARCHITECTURAL COMPOSITE SHINGLE ROOFING

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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ADG ENGINEERING — MEP
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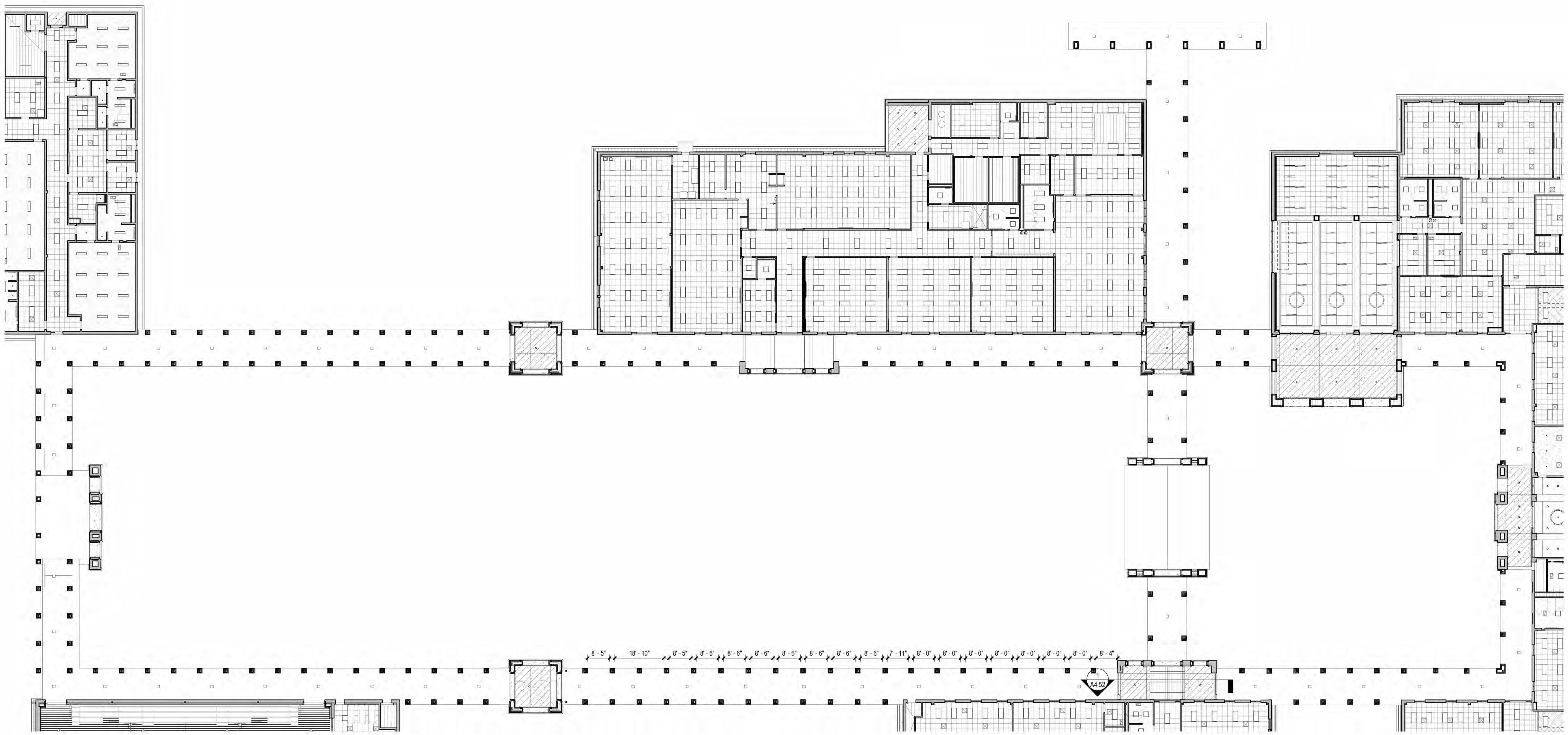
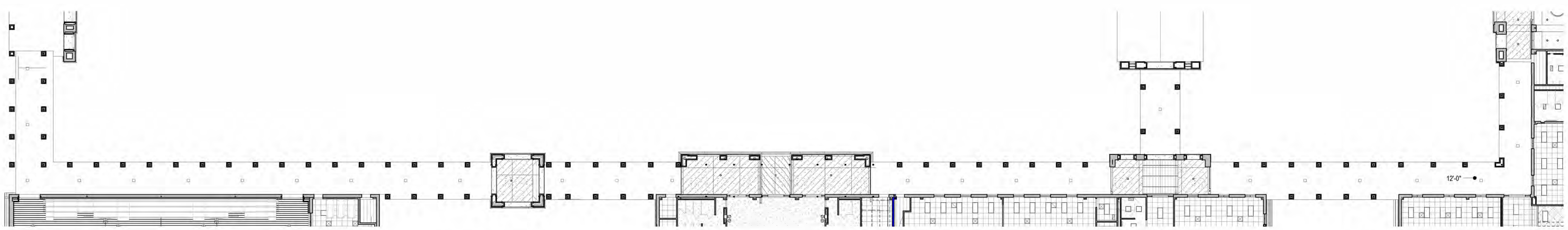
QUAD STRUCTURES

A1.21



1 | QUAD RCP - BASE BID

1" = 20'-0"



2 | QUAD RCP -ALT. NO. 4

1" = 20'-0"

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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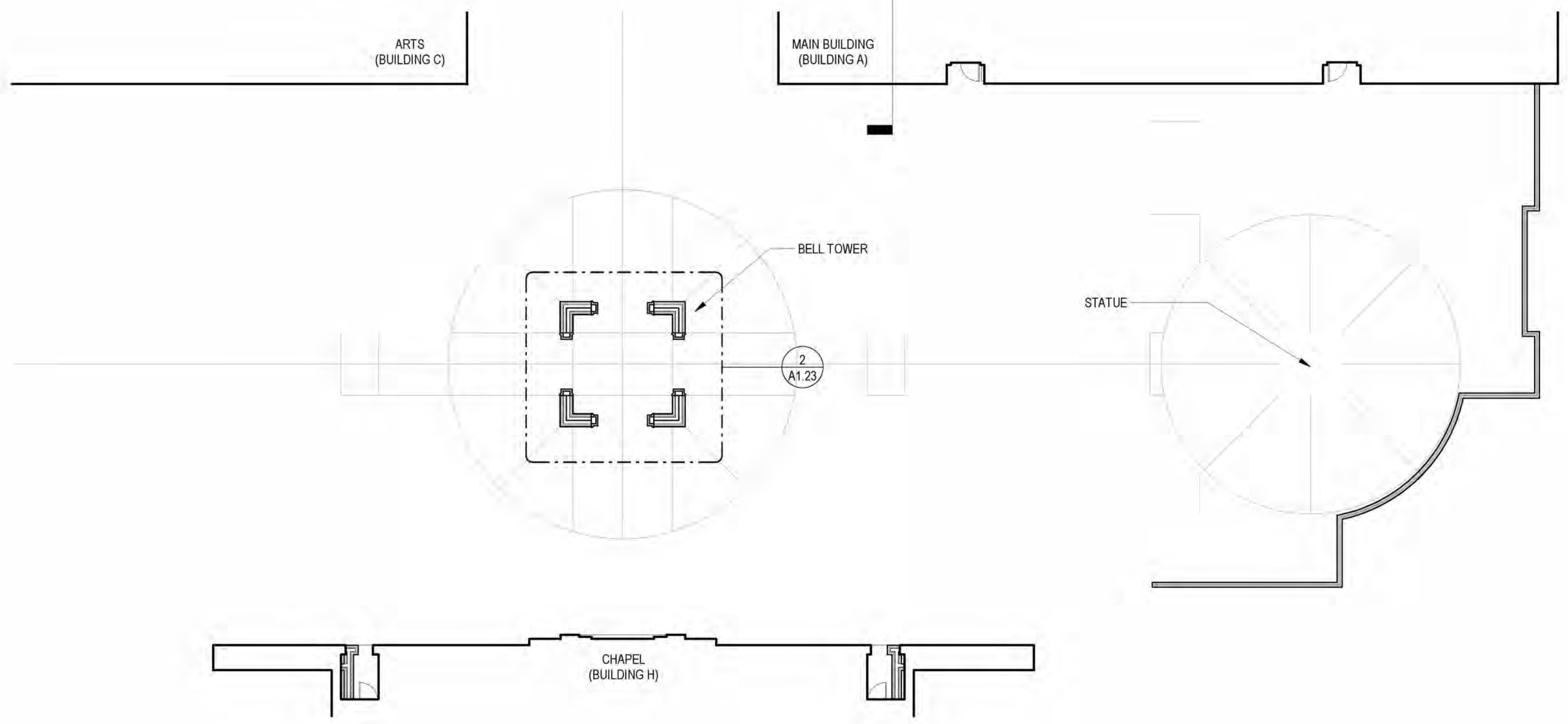
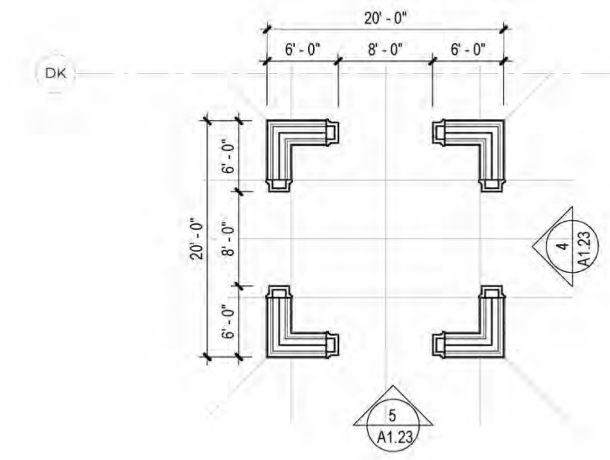
QUAD RCP

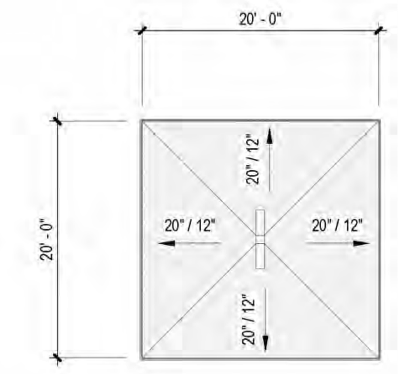
A1.22



1 THEOLOGY COURTYARD PLAN
1/16" = 1'-0"



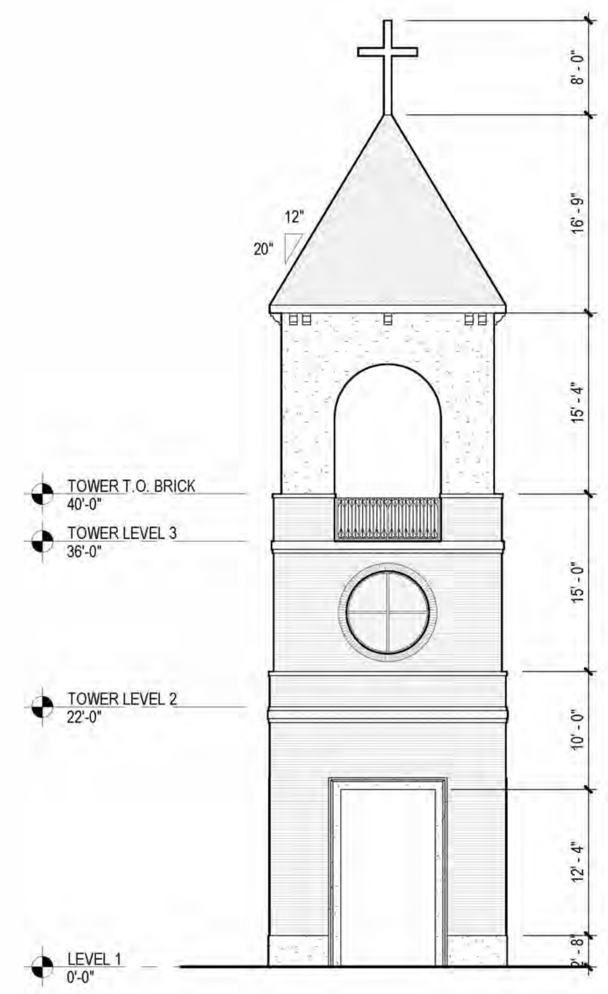
2 TOWER PLAN
3/32" = 1'-0"



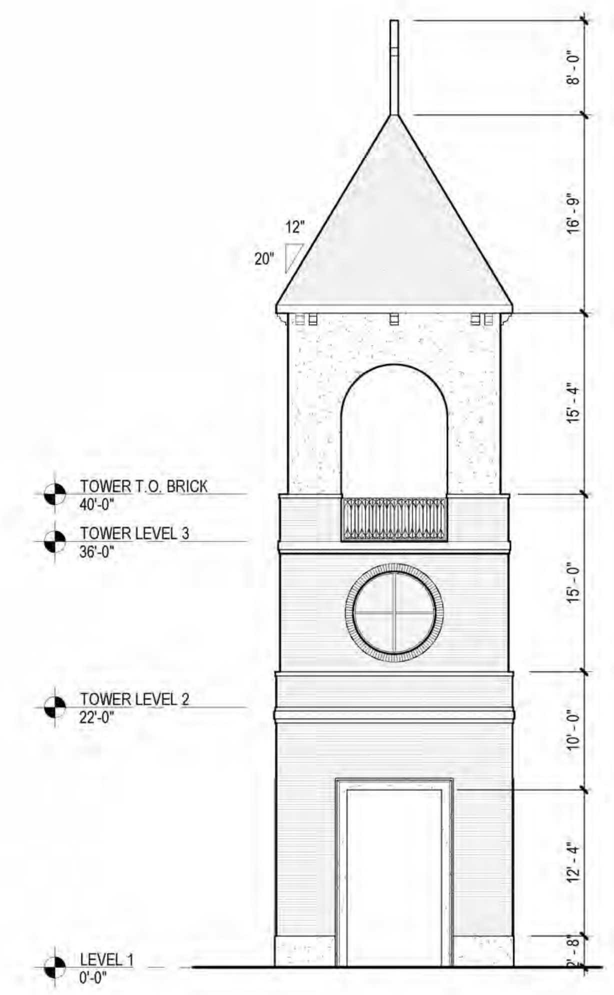
3 TOWER ROOF PLAN
3/32" = 1'-0"

MATERIALS LEGEND:

- 4" NOMINAL BRICK VENEER
- 3/4" PORTLAND CEMENT PLASTER or CAST STONE
- STANDING SEAM METAL WALL PANEL
- ARCHITECTURAL COMPOSITE SHINGLE ROOFING



4 QUAD - TOWER EAST ELEVATION
3/32" = 1'-0"



5 QUAD - TOWER SOUTH ELEVATION
3/32" = 1'-0"

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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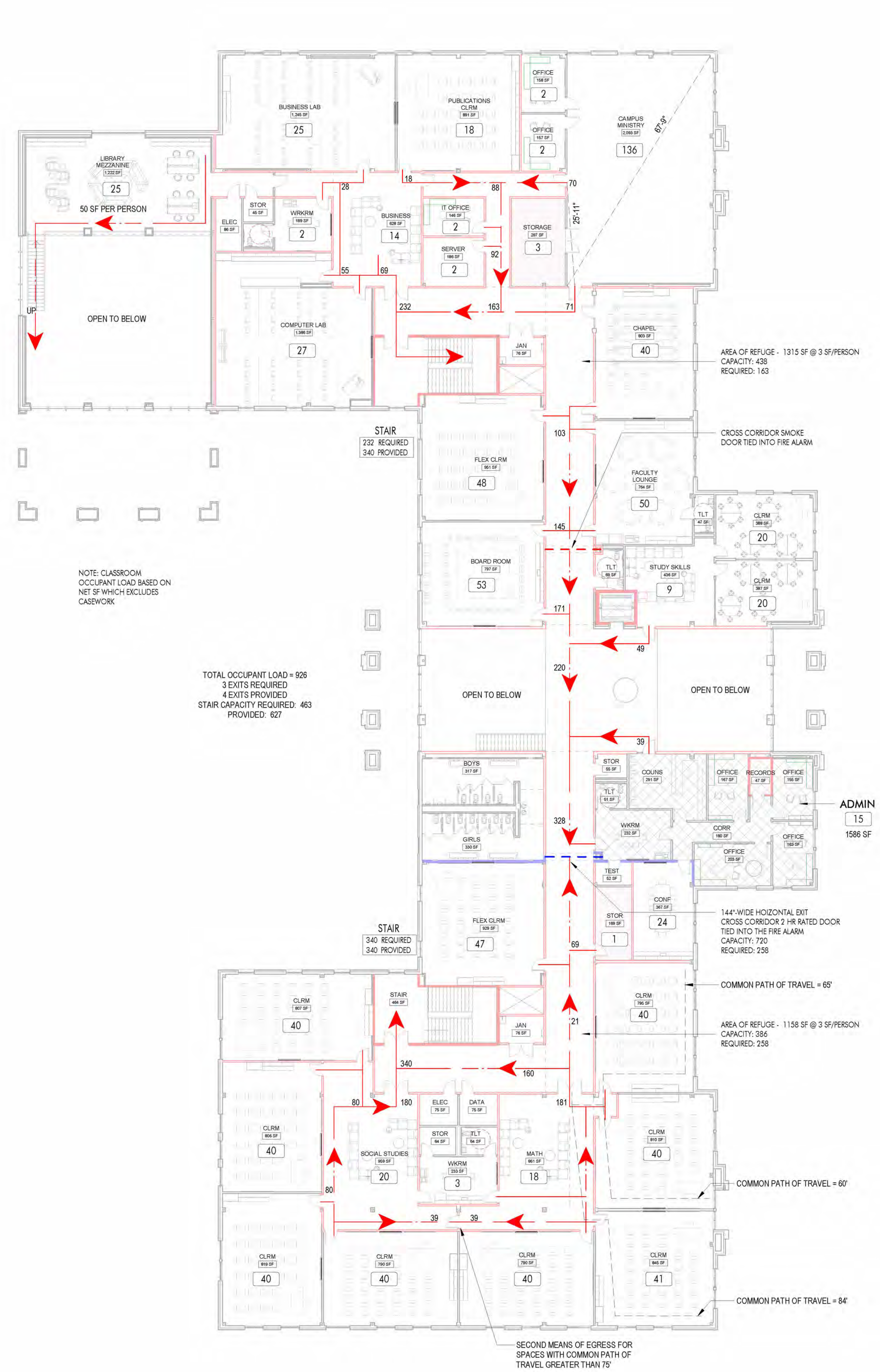
NORTH

BELL TOWER & THEOLOGY PLAZA

A1.23

1 BUILDING A - LEVEL 1 LIFE SAFETY PLAN
1/16" = 1'-0"



2 BUILDING A- LEVEL 2 LIFE SAFETY PLAN
1/16" = 1'-0"

CODE SUMMARY

BUILDING CODES:
LIFE SAFETY CODE, NFPA 101 - 2015
INTERNATIONAL BUILDING CODE (IBC] - 2015
AMERICAN WITH DISABILITIES ACT GUIDELINES (ADAAG] - 2010

I. BUILDING INFORMATION
CITY LIMITS:
ZONING:
FLOOD ZONE:
SITE AREA:
BUILDING AREA:
BASE FLOOD ELEVATION: RE: CIVIL
WETLANDS: RE: CIVIL

II. OCCUPANCY
OCCUPANCY CLASSIFICATION OF THE STRUCTURE:
NFPA 101: EDUCATIONAL (CHAPTER 14]
ASSEMBLY (CHAPTER 12]
ACCESSORY BUSINESS
IBC: EDUCATION GROUP E (SECTION 305]
ASSEMBLY GROUP A-3 (SECTION 303]
ACCESSORY BUSINESS GROUP B (SECTION 304]

III. CONSTRUCTION TYPE AND FIRE-RESISTANCE RATINGS
NFPA 101: TYPE II-000* [TABLE A.8.2.1.2, COMMENTARY 8.1]
*TYPE II-111 AT ASSEMBLY EXCEPT AT ROOF STRUCTURE 20' AFF
IBC: TYPE II-B* [TABLE 503]

IV. ALLOWABLE HEIGHT AND AREA
MAXIMUM ALLOWABLE HEIGHTS AND FLOOR AREAS FOR TYPES OF CONSTRUCTION AND OCCUPANCY CLASSIFICATIONS:
IBC: TABLE 506.2 FOR TYPE II-B, SPRINKLERED
GROUP E: 2 STORIES, 58,000 SF PER STORY
GROUP A-3: 2 STORIES, 38,000 SF PER STORY
MAX HEIGHT IIB = 75'
IBC 506.2.3: AREA INCREASE $A_A = A_T +$ [NS X I_F] PER FLOOR
IBC 506.3: FRONTAGE INCREASE – I_F = [F/P – 0.25] W/30
I_F = [1-.25] X [30/30] = .75
AREA INCREASE (E): 43,500 + [14,500 X .75] = 54,375 SF
AREA INCREASE (A-3): 28,500 + [9,500 X .75] = 35,625 SF

VI. FIRE SPRINKLER SYSTEMS AND FIRE ALARM REQUIREMENTS SPRINKLER SYSTEM REQUIREMENT:
NFPA 101: EDUCATION – YES [14.3.5.1]
ASSEMBLY – YES [12.3.5.1]
IBC: GROUP E –FIRE AREA EXCEEDS 12,000 SF [903.2.3]
GROUP A3 – FIRE AREA EXCEEDS 12,000 SF OR O.L. EXCEEDS 300 [903.2.1.3]
FIRE ALARM SYSTEM REQUIREMENT:
NFPA 101: EDUCATIONAL – YES [SEC. 14.3.4.1]
ASSEMBLY – YES [SEC. 12.3.4.1]
IBC: GROUP E: YES [SEC. 907.2.3]
GROUP A3: YES, AS REQUIRED BY GROUP E OCC. [SEC. 907.2.1]

VIII. OCCUPANCY
OCCUPANT LOAD FACTORS
NFPA 101 [TABLE 7.3.1.2] & IBC [TABLE 1004.1.2]:

ASSEMBLY (W/O FIXED SEATS)	15 NET SF/OCCUPANT
MEDIA CENTER:	50 NET SF/OCCUPANT
STACKS:	100 NET SF/OCCUPANT
BENCH SEATING	18 LINEAR INCHES/OCCUPANT
BUSINESS (ADMIN AREAS):	100 GROSS SF/OCCUPANT
KITCHEN	100 NET SF/OCCUPANT
EDUCATION:	20 NET SF/OCCUPANT
LOCKER ROOMS:	15 NET SF/OCCUPANT
EXERCISE (W/O EQUIP):	15 NET SF/OCCUPANT
LABS/EXERCISE (W/EQUIP):	50 NET SF/OCCUPANT
STORAGE:	300 NET SF/OCCUPANT

IX. MEANS OF EGRESS
CAPACITY OF EGRESS:
NFPA 101 [TABLE 7.3.3.1]: STAIRWAYS – O.L. X 0.3"/OCCUPANT (44" MIN. EACH); RAMPS/LEVEL – O.L. X 0.2"/OCCUPANT (44" MIN. EACH)
IBC [1005.1]: STAIRWAYS – O.L. X 0.3"/OCCUPANT (44" MIN. EACH); RAMPS/LEVEL – O.L. X 0.2"/OCCUPANT (44" MIN. EACH)

MINIMUM NUMBER OF EXITS:
NFPA 101 [SEC. 7.4.1.2]: <500 OCCUPANTS: 2 EXITS
500 -1000 OCCUPANTS: 3 EXITS
>1000 OCCUPANTS: 4 EXITS

IBC [1021.1]: <500 OCCUPANTS: 2 EXITS
500 -1000 OCCUPANTS: 3 EXITS
>1000 OCCUPANTS: 4 EXITS

HORIZONTAL EXITS:
NFPA 101: 2HR [7.7.4]
IBC: 2HR [1026.2]

UNPROTECTED VERTICAL OPENINGS:
8.6.9 CONVENIENCE OPENINGS.
8.6.9.1 WHERE PERMITTED BY CHAPTERS 11 THROUGH 43, UNENCLOSED VERTICAL OPENINGS NOT CONCEALED WITHIN THE BUILDING CONSTRUCTION SHALL BE PERMITTED AS FOLLOWS:
(1) SUCH OPENINGS SHALL CONNECT NOT MORE THAN TWO ADJACENT STORIES (ONE FLOOR PIERCED ONLY).
(2) SUCH OPENINGS SHALL BE SEPARATED FROM UNPROTECTED VERTICAL OPENINGS SERVING OTHER FLOORS BY A BARRIER COMPLYING WITH 8.6.5.
(3) SUCH OPENINGS SHALL BE SEPARATED FROM CORRIDORS.

LIST DETAILED EGRESS REQUIREMENTS FOR NFPA 101:
- THE CLEAR WIDTH OF ANY CORRIDOR OR PASSAGEWAY SHALL NOT BE LESS THAN 6 FT OF CLEAR WIDTH. [14.2.3.2].
- NOT LESS THAN 2 SEPARATE EXITS SHALL BE PROVIDED ON EACH STORY AND SHALL BE ACCESSIBLE FROM EVERY PART OF EVERY STORY AND MEZZANINE. [14.2.4].
- DEAD-END CORRIDORS SHALL NOT EXCEED 50 FT IF SPRINKLED [14.2.5.2].
- COMMON PATHS OF TRAVEL SHALL NOT EXCEED 100' IF SPRINKLED [14.2.5.3].
- CLASSROOMS LARGER THAN 1,000 S.F. OR WITH AN OCCUPANT LOAD OF MORE THAN 50 SHALL HAVE A MIN. OF TWO EXIST ACCESS DOORS , PROVIDE SEPARATE ACCESS TO SEPARATE EXITS, AND SHALL BE PERMITTED TO OPEN ONTO A COMMON CORRIDOR, PROVIDED THAT SUCH CORRIDOR LEADS TO SEPARATE EXITS LOCATED IN OPPOSITE DIRECTIONS. [14.2.5.4]
- TRAVEL DISTANCE TO EXITS SHALL NOT EXCEED 200 FT. IF SPRINKLED. [14.2.6.3]
- STAIRWAY ENCLOSURES ARE REQUIRED.
- ELEVATOR REQUIRED: NO [7.5.4.7]
- AREA OF REFUGE REQUIRED: YES [7.2.12]

LIST DETAILED EGRESS REQUIREMENTS FOR IBC:
- ELEVATOR REQUIRED: NO [1007.2.1]
- AREA OF REFUGE REQUIRED: NO [1007.3.3]
- COMMON PATHS OF TRAVEL SHALL NOT EXCEED 75' FOR GROUP E [1006.2.1], 30' FOR GROUP A [1006.2.1].
- A MINIMUM OF 2 SEPARATE EXITS SHALL BE PROVIDED ON EACH STORY AND FROM EACH SPACE WITH MORE THAN 49 OCCUPANTS [1006.3.2 (1)].
- TRAVEL DISTANCE TO EXITS SHALL NOT EXCEED 250 FT [TABLE 1017.2].
- THE MINIMUM CORRIDOR WIDTH SHALL NOT BE LESS THAN 72 IN. [1020.2] FOR OCCUPANT LOAD OF 100 OR MORE.
- DEAD-END CORRIDORS SHALL NOT EXCEED 50 FT [1020.4.2].

LIFE SAFETY LEGEND

75 / 50 / 25 — NUMBER OF OCCUPANTS ALONG PATH OF EGRESS
DIRECTION OF EGRESS
OCCUPANT LOAD
DOOR
72 REQUIRED — NUMBER OF OCCUPANTS ALLOWED
888 PROVIDED — NUMBER OF OCCUPANTS EXITING
90 — REQUIRED OPENING RATING (min.)
EXIT SIGN (DIRECTION & ILLUMINATION SIDE)
FE-1 — FIRE EXTINGUISHER: SEMI-RECESSED CABINET
FE-2 — FIRE EXTINGUISHER: SURFACE MOUNTED CABINET
FE-3 — FIRE EXTINGUISHER: FULLY RECESSED CABINET
FE-4 — FIRE EXTINGUISHER: SURFACE MOUNTED BRACKET
FE-5 — FIRE EXTINGUISHER: UNDER COUNTER WITH BRACKET
AC — ACCESS CONTROL TIED TO SHARED CARD READER, RE: ELEC.
CR — ACCESS CONTROL CARD READER, RE: ELEC.
PB — ACCESS CONTROL PUSH BUTTON, RE: ELEC.
HO — HOLD OPEN TIED INTO FIRE ALARM; RE: ELEC.
SMOKE PARTITION
1 - HOUR RATED WALL
2 - HOUR RATED WALL
STORAGE AREAS REQUIRE SMOKE PARTITION TO CEILING WITH SELF CLOSING DOORS
RATED FLOOR ASSEMBLY AS NOTED

NORTH

RHH ARCHITECTS
CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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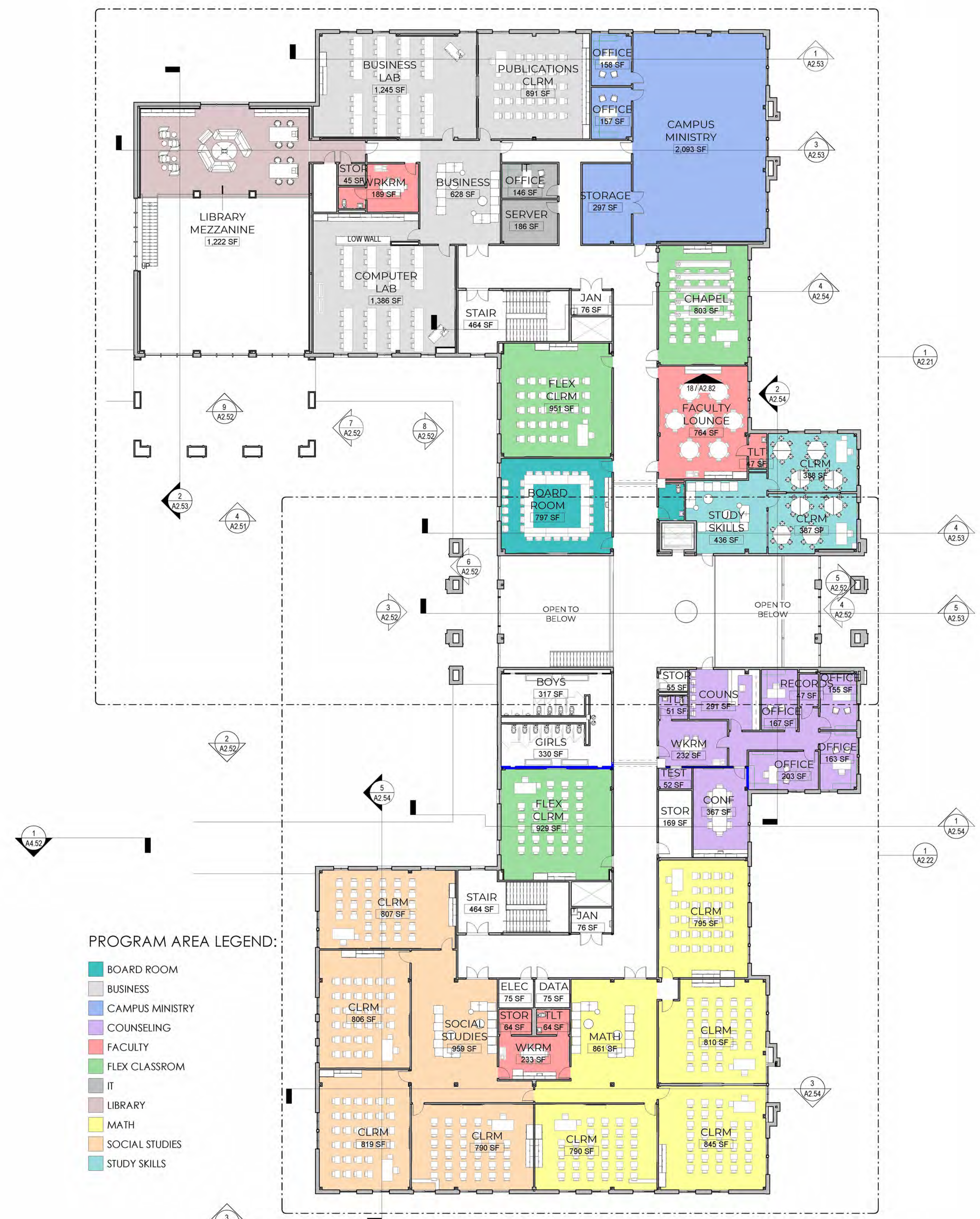
BUILDING A LIFE SAFETY PLANS & CODE SUMMARY
A2.00

1 BUILDING A - LEVEL 1 OVERALL FLOOR PLAN

1/16" = 1'-0"



2 BUILDING A- LEVEL 2 OVERALL FLOOR PLAN

1/16" = 1'-0"

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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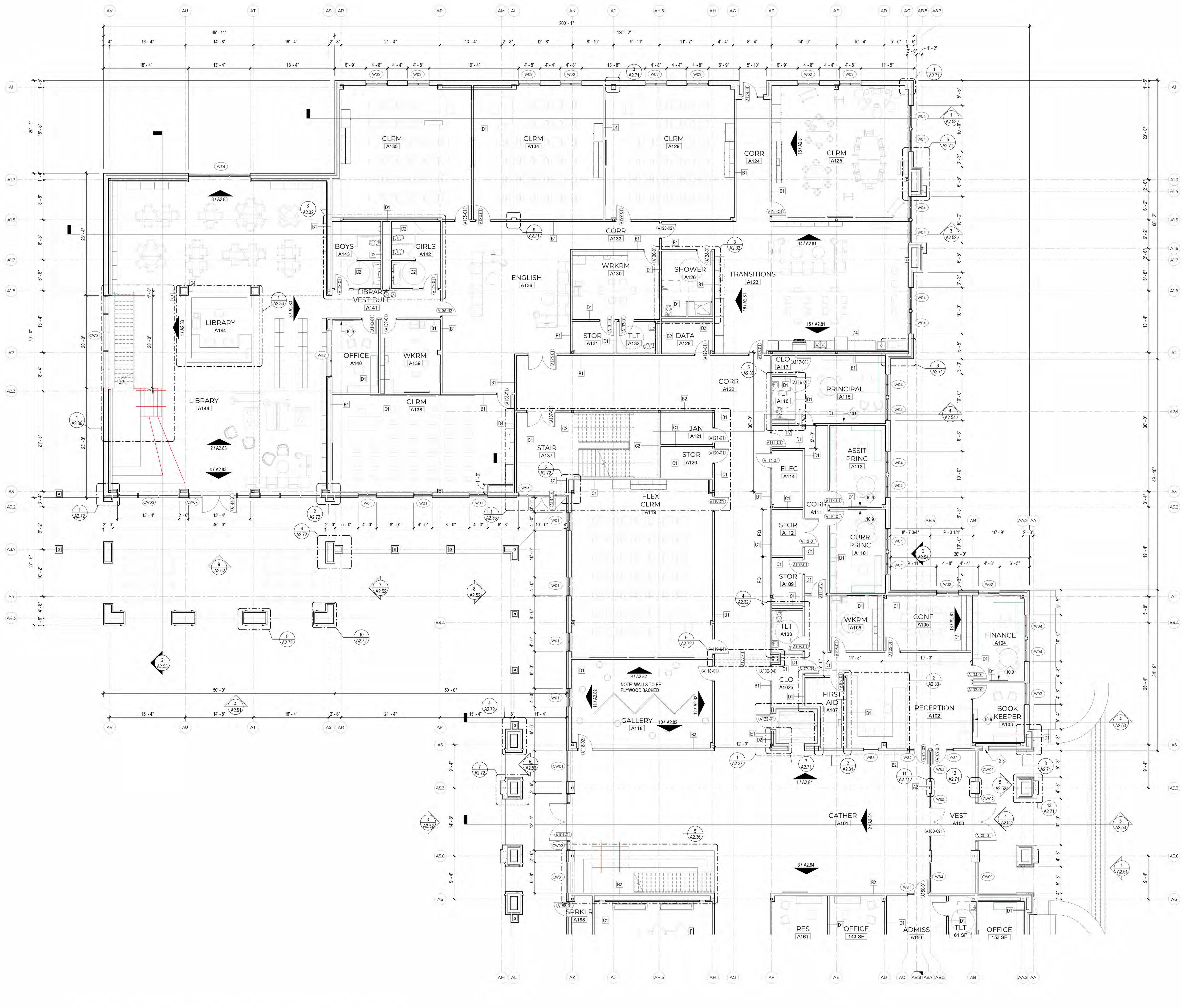
BUILDING A FLOOR PLANS

A2.01

NORTH



1 BUILDING A - LEVEL 1 FLOOR PLAN - NORTH

1/8" = 1'-0"

FLOOR PLAN LEGEND

- ROOM NAME
- ROOM NUMBER
- DOOR TAG RE: SHEET A3.01
- WINDOW TYPE RE: SHEETS A7.01-A7.02
- PARTITION TAG RE: 1 / A0.05
- KEYNOTE TAG
- INTERIOR ELEVATION TAG
- EXTERIOR ELEVATION TAG
- BUILDING SECTION TAG
- SIM PLAN DETAIL TAG
- WALL SECTION TAG
- LEVEL TAG
- COLUMN GRID TAG
- U.N.O., WALLS ARE CENTERED ON COLUMN CENTER LINE
- 4" U.N.O. DISTANCE FROM WALL FACE TO EDGE OF DOOR FRAME
- RECESSED FIRE EXTINGUISHER CABINET AND EXTINGUISHER
- SHEET METAL DOWNSPOUT/BOOT TIED INTO PAINTED DOWNSPOUT BOOT

FLOOR PLAN NOTES:

1. UNLESS NOTED OTHERWISE, MASONRY WALLS ARE DIMENSIONED TO FACE OF MASONRY.
2. UNLESS NOTED OTHERWISE, STUD PARTITIONS ARE DIMENSIONED TO CENTERLINE OF STUD.

KEYNOTES

10.9	4' MARKER BOARD W/ 4' x 1' TACK STRIP
12.3	MAIL PASS THROUGH DROP BOX

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
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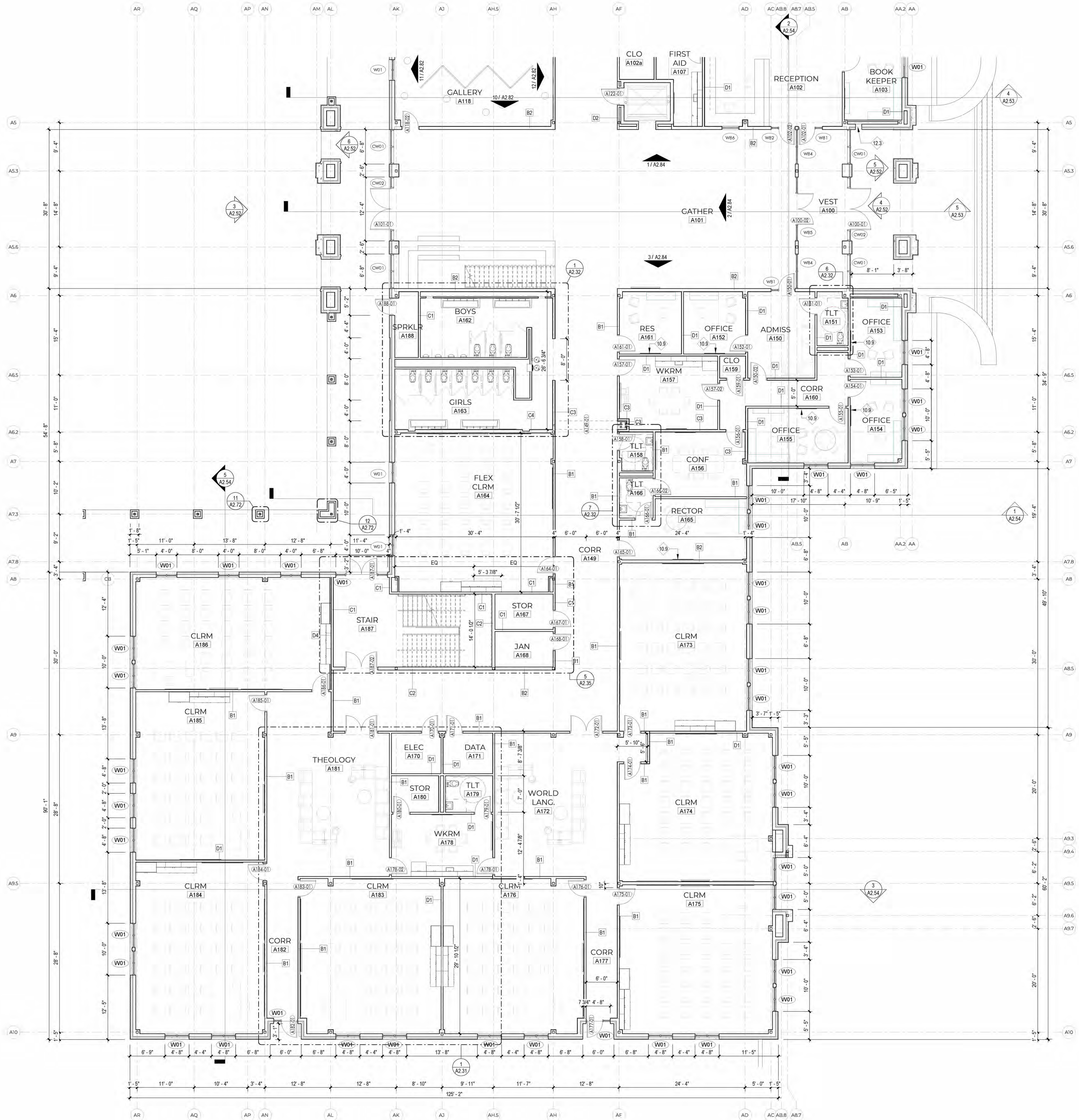
BUILDING A LEVEL 1 PLAN - NORTH

A2.11

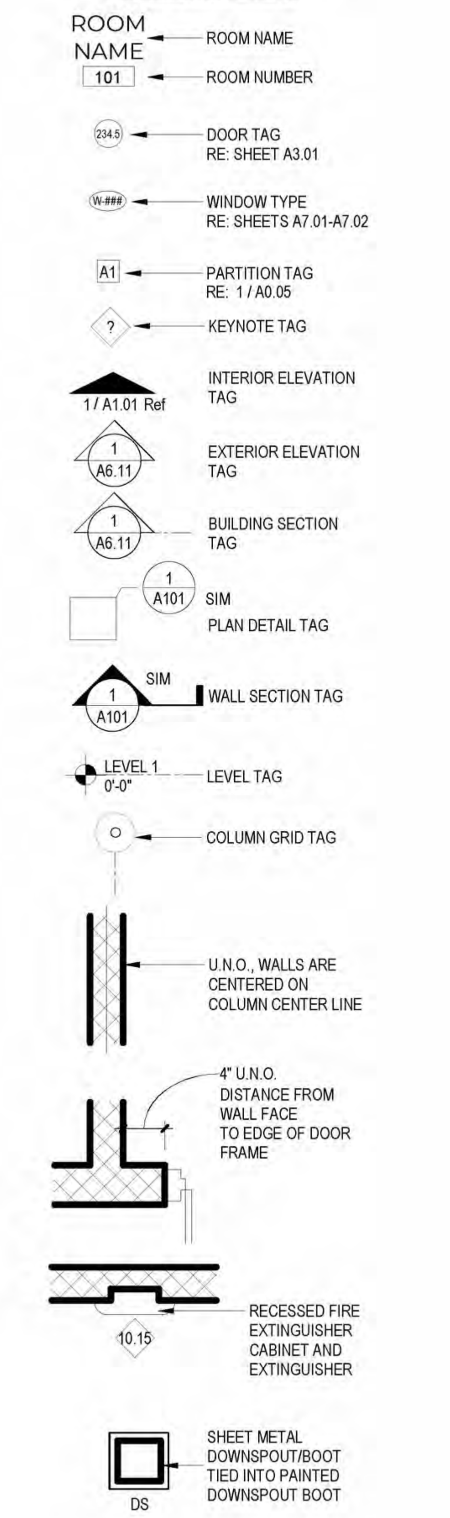


1 BUILDING A - LEVEL 1 FLOOR PLAN - SOUTH

1/8" = 1'-0"

NORTH

FLOOR PLAN LEGEND



FLOOR PLAN NOTES:

1. UNLESS NOTED OTHERWISE, MASONRY WALLS ARE DIMENSIONED TO FACE OF MASONRY.
2. UNLESS NOTED OTHERWISE, STUD PARTITIONS ARE DIMENSIONED TO CENTERLINE OF STUD.

KEYNOTES

10.9	4' MARKER BOARD W/ 4' x 1' TACK STRIP
12.3	MAIL PASS THROUGH DROP BOX

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

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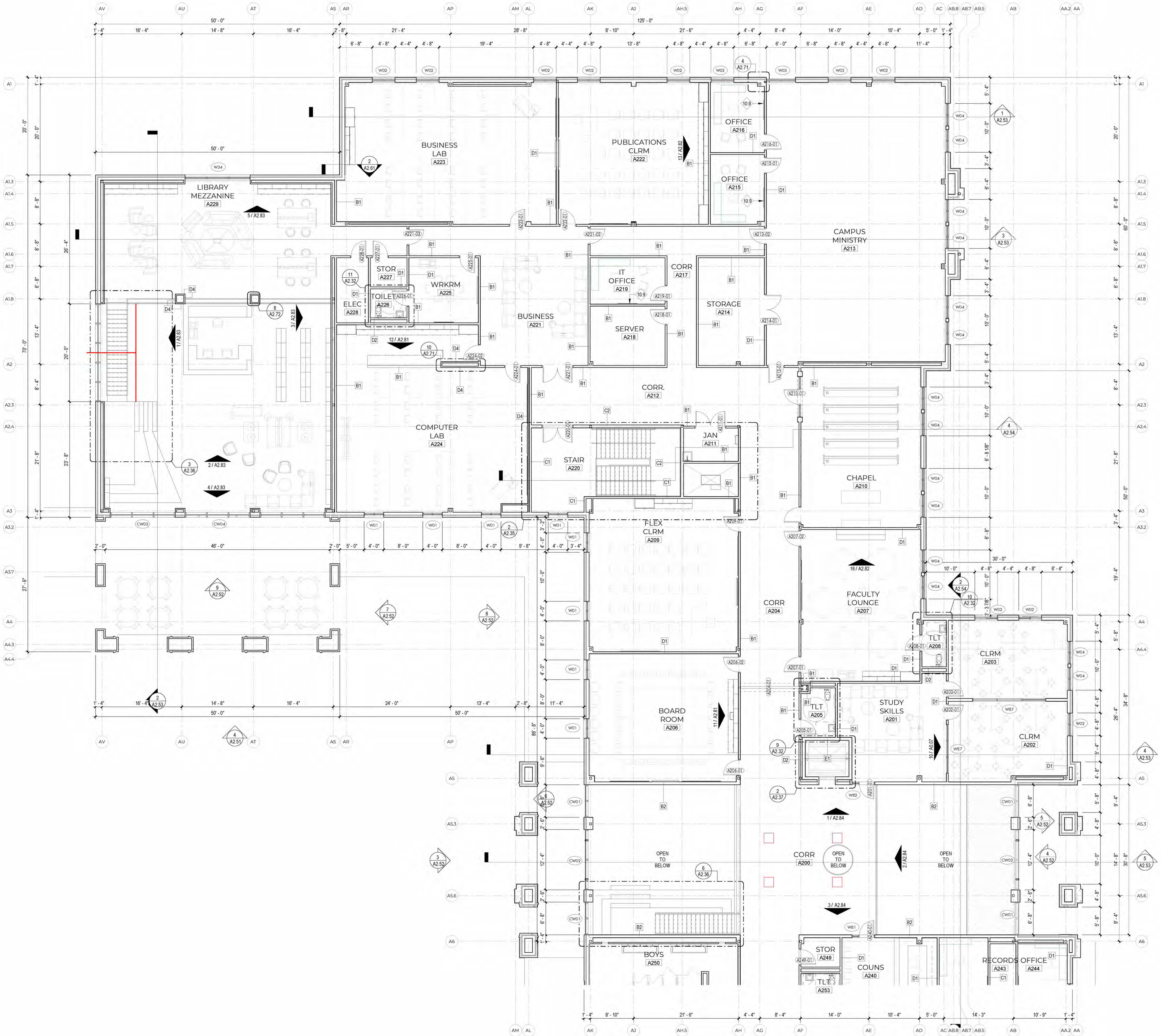
BUILDING A LEVEL 1 PLAN - SOUTH

A2.12



1 BUILDING A - LEVEL 2 FLOOR PLAN - NORTH

1/8" = 1'-0"

NORTH

FLOOR PLAN LEGEND

- ROOM NAME — ROOM NAME
- 101 — ROOM NUMBER
- 234.5 — DOOR TAG RE: SHEET A3.01
- W-### — WINDOW TYPE RE: SHEETS A7.01-A7.02
- A1 — PARTITION TAG RE: 1 / A0.05
- ? — KEYNOTE TAG
- 1 / A1.01 Ref — INTERIOR ELEVATION TAG
- 1 / A6.11 — EXTERIOR ELEVATION TAG
- 1 / A6.11 — BUILDING SECTION TAG
- 1 / A101 SIM — PLAN DETAIL TAG
- SIM 1 / A101 — WALL SECTION TAG
- LEVEL 1 0'-0" — LEVEL TAG
- COLUMN GRID TAG
- U.N.O., WALLS ARE CENTERED ON COLUMN CENTER LINE
- 4" U.N.O. DISTANCE FROM WALL FACE TO EDGE OF DOOR FRAME
- 10.15 — RECESSED FIRE EXTINGUISHER CABINET AND EXTINGUISHER
- DS — SHEET METAL DOWNSPOUT/BOOT TIED INTO PAINTED DOWNSPOUT BOOT

FLOOR PLAN NOTES:

1. UNLESS NOTED OTHERWISE, MASONRY WALLS ARE DIMENSIONED TO FACE OF MASONRY.
2. UNLESS NOTED OTHERWISE, STUD PARTITIONS ARE DIMENSIONED TO CENTERLINE OF STUD.

KEYNOTES

10.9	4' MARKER BOARD W/ 4' x 1' TACK STRIP

RHH ARCHITECTS

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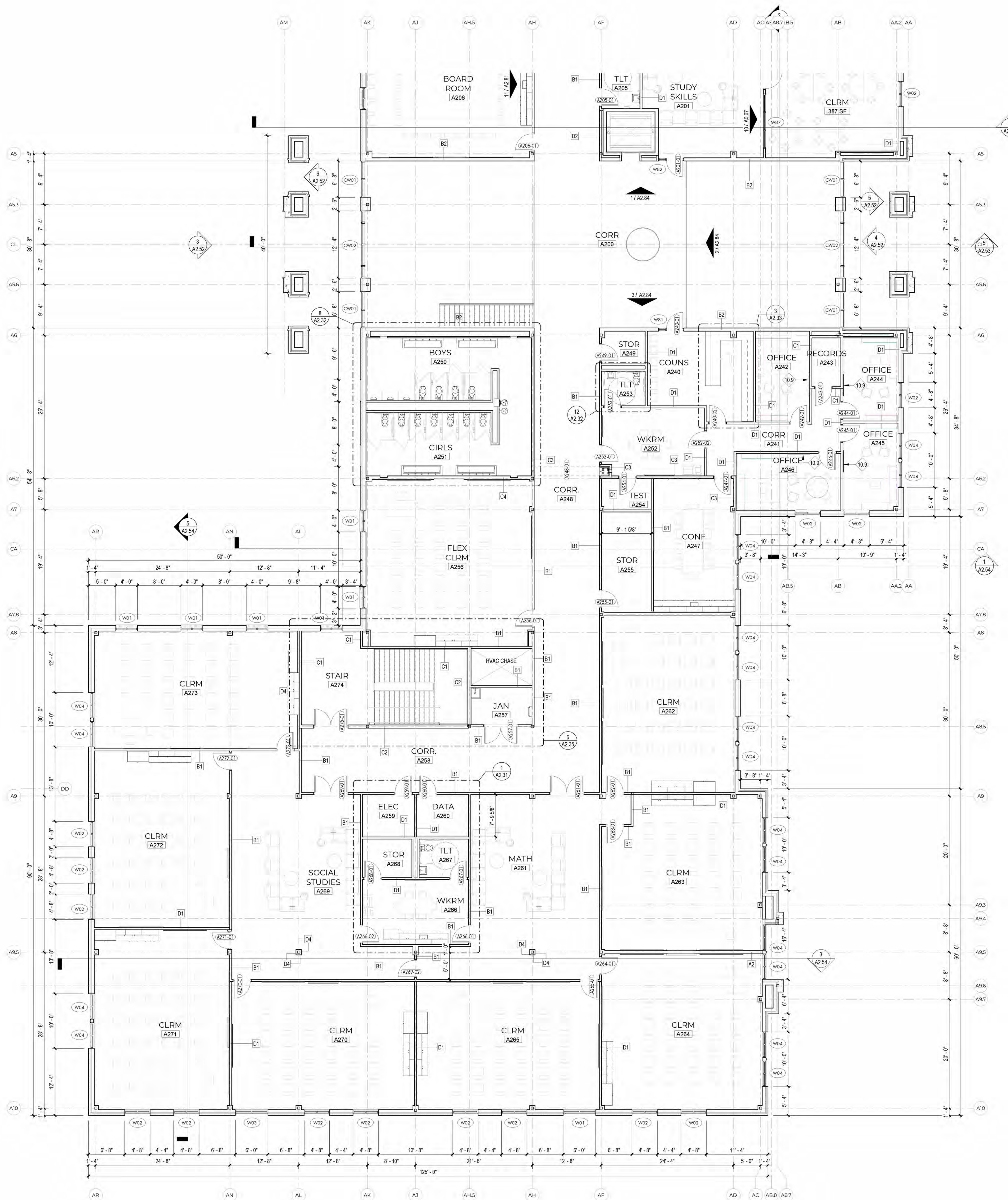
BUILDING A LEVEL 2 PLAN - NORTH

A2.21



1 BUILDING A - LEVEL 2 FLOOR PLAN - SOUTH
1/8" = 1'-0"

FLOOR PLAN LEGEND

- ROOM NAME
- ROOM NUMBER
- DOOR TAG RE: SHEET A3.01
- WINDOW TYPE RE: SHEETS A7.01-A7.02
- PARTITION TAG RE: 1 / A0.05
- KEYNOTE TAG
- INTERIOR ELEVATION TAG
- EXTERIOR ELEVATION TAG
- BUILDING SECTION TAG
- SIM PLAN DETAIL TAG
- WALL SECTION TAG
- LEVEL TAG
- COLUMN GRID TAG
- U.N.O., WALLS ARE CENTERED ON COLUMN CENTER LINE
- 4" U.N.O. DISTANCE FROM WALL FACE TO EDGE OF DOOR FRAME
- RECESSED FIRE EXTINGUISHER CABINET AND EXTINGUISHER
- SHEET METAL DOWNSPOUT/BOOT TIED INTO PAINTED DOWNSPOUT BOOT

FLOOR PLAN NOTES:

1. UNLESS NOTED OTHERWISE, MASONRY WALLS ARE DIMENSIONED TO FACE OF MASONRY.
2. UNLESS NOTED OTHERWISE, STUD PARTITIONS ARE DIMENSIONED TO CENTERLINE OF STUD.

KEYNOTES

10.9	4' MARKER BOARD W/ 4' x 1' TACK STRIP

RHH ARCHITECTS

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Construction Documents for
DIOCESE OF LAKE CHARLES - ST. LOUIS CATHOLIC HIGH SCHOOL
4220 Corbina Road, Lake Charles, LA

CEH PROJECT #: 2106
RHH PROJECT #: 42-01-21
DATE: 4/22/2022
FOR: REVIEW

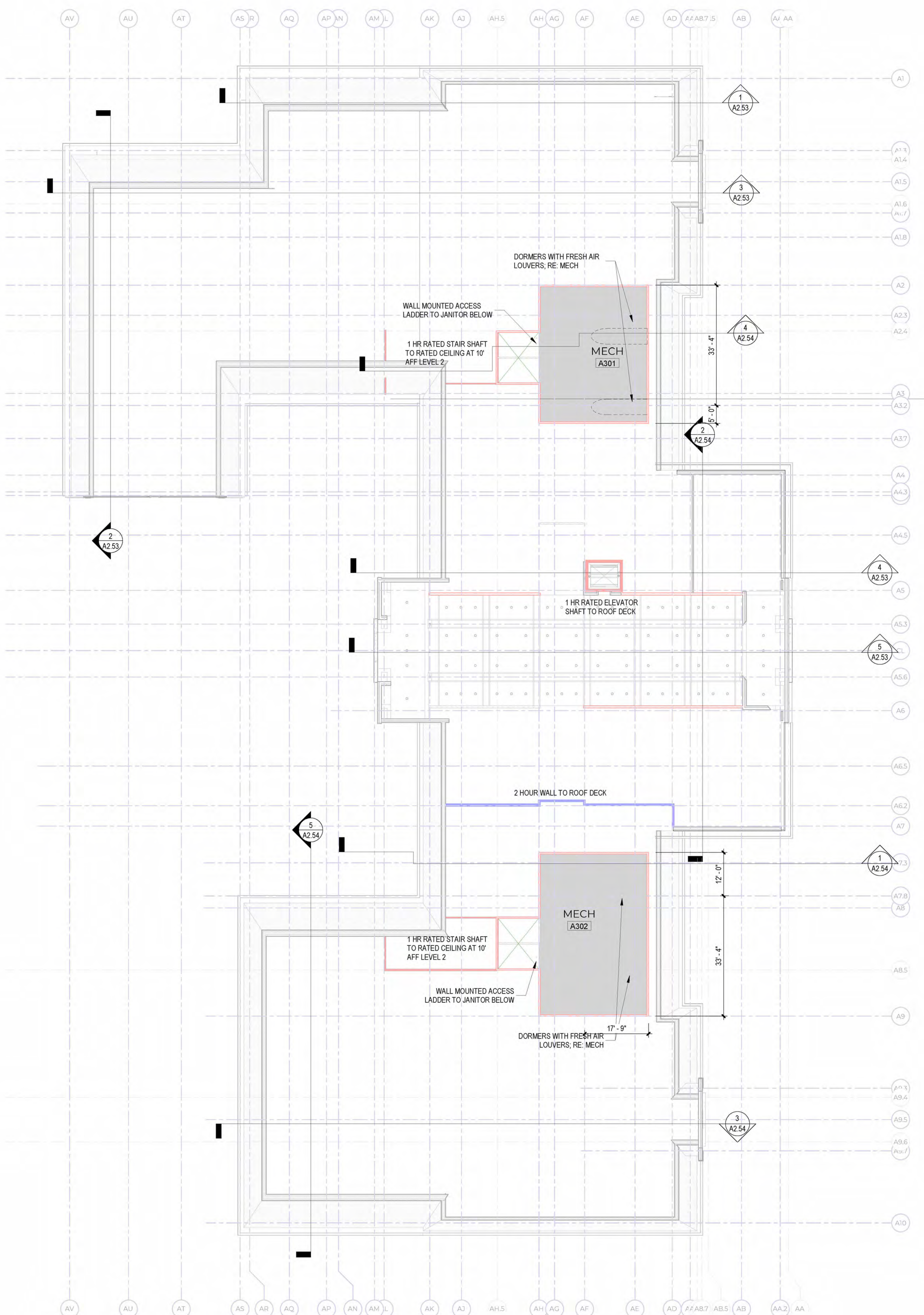
REVISION	DATE

BUILDING A LEVEL 2 PLAN - SOUTH

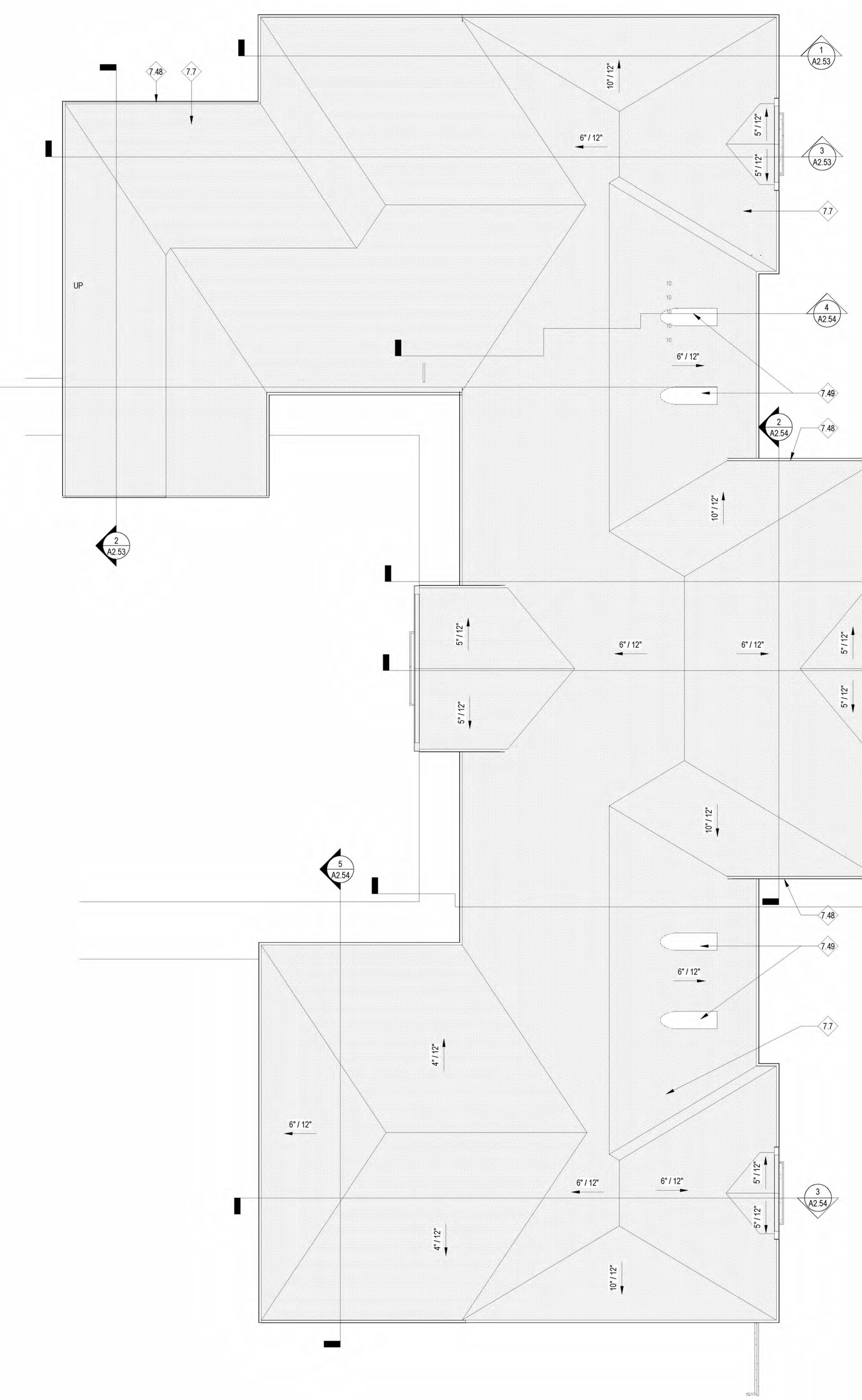
A2.22

NORTH

NOTE : FRAMING NOT SHOWN FOR CLARITY



1 | BUILDING A - ATTIC PLAN
1/16" = 1'-0"



2 | BUILDING A - ROOF PLAN
1/16" = 1'-0"

RHH ARCHITECTS

CHAMPEAUX EVANS HOTARD ARCHITECTS

CONSULTANTS:
DUHON PLEASANT ENGINEERS — CIVIL/STRUCTURAL
ADG ENGINEERING — MEP
TBA — LANDSCAPE
TBA — FOOD SERVICE

Construction Documents for
DIOCESE OF LAKE CHARLES - ST. LOUIS CATHOLIC HIGH SCHOOL
4220 Corbina Road, Lake Charles, LA

CEH PROJECT #: 2106
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REVISION	DATE

BUILDING A
ATTIC AND ROOF PLANS

A2.23

NORTH

APPENDIX 2. DOLC New SLCHS Property Geo Tech Report

Geotechnical Engineering Report

New St. Louis Catholic High School Campus
Lake Charles, Louisiana
September 1, 2023
Terracon Project No. EU235053

Prepared for:
Champeaux Evans Hotard APAC
Lake Charles, LA

Prepared by:
Terracon Consultants, Inc.
Baton Rouge, Louisiana

September 1, 2023

Champeaux Evans Hotard APAC
702 Dr. Michael Debakey Drive
Lake Charles, LA 70601

Attn: Mr. Stephen Hotard, AIA
P: (337) 439-8871
E: stephen@champeaux.biz

Re: Geotechnical Engineering Report
New St. Louis Catholic High School Campus
Corbina Road and James Court
Lake Charles, Louisiana
Terracon Project No. EU235053

Dear Mr. Hotard:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PEU235053_Rev. 1 dated July 28, 2023. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations, floor slabs, and pavements for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

STATE OF LOUISIANA
LYNNE E. ROUSSEL
License No. 35152
PROFESSIONAL ENGINEER
9/1/2023

Trent A. Whitley, P.E.
Senior Engineer

Lynne E. Roussel, P.E.
Principal | Office Manager

REPORT TOPICS

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the ***GeoReport*** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

New St. Louis Catholic High School Campus
Corbina Road and James Court
Lake Charles, Louisiana
Terracon Project No. EU235053
September 1, 2023

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed new St. Louis Catholic High School campus to be located east of the intersection of Corbina Road and James Court in Lake Charles, Louisiana. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Excavation considerations
- Lateral earth pressure
- Foundation design and construction
- Floor slab design and construction
- Seismic site classification per IBC
- Pavement design and construction

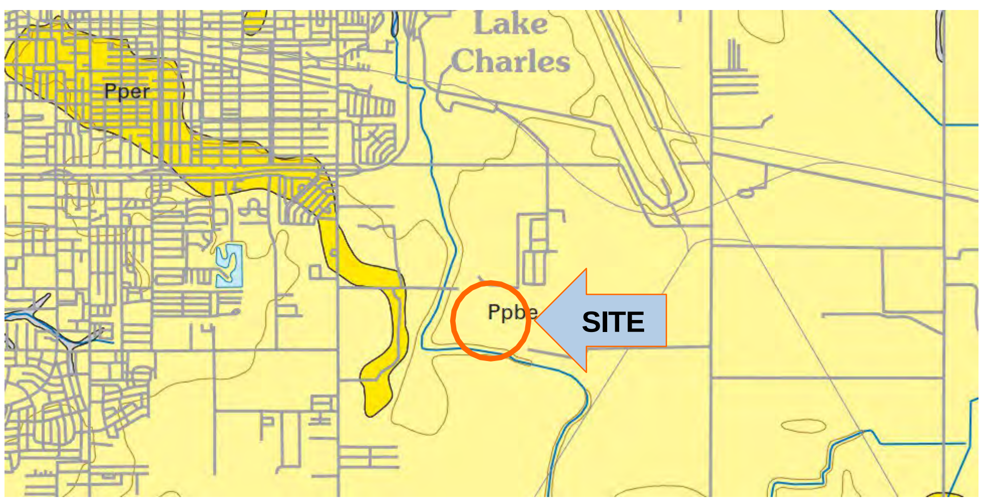
The geotechnical exploration Scope of Services for this project included the advancement of 44 test borings to depths ranging from approximately 6 to 50 feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and/or as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information See **Site Location**.	The project is located east of the intersection of Corbina Road and James Court in Lake Charles, Louisiana. Latitude/Longitude (approximate): 30.1817, -93.1586 (See Exhibit D)
Existing Improvements	No existing improvements appear to be present at the project site.

Item	Description
Current Ground Cover	The field associated with the project site was lightly vegetated and very dry at the time of our exploration.
Existing Topography	The site is relatively flat.
Geology	The property is located within an area of Beaumont Alloformation (**Ppbe**) of Prairie Terrace deposits of Pleistocene Age. Beaumont Alloformation consists of plain deposits of late to middle Pleistocene streams: the oldest alloformation and topographically highest surface or the Prairie Allogroup units of southwestern Louisiana. It exhibits the relict channels of the Red and Calcasieu rivers and includes deposits of the Ingleside barrier trend within the Lake Charles quadrangle. The Pleistocene Age deposits typically consist of medium stiff to very stiff tan and light gray silty clays and clays with silt and sand layering. The soils within the Prairie Terrace deposits typically provide good foundation support for relatively light to moderately loaded structures, are overconsolidated, and normally only marginally compressible. In some areas that are very dry and desiccated, the potential for expansive properties exists, but these conditions are not typical of the Prairie Terrace deposits. 

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	An email request for proposal was provided by Mr. Hotard, representing CEH, on July 9, 2023. The request included a Google Earth image of the site and conceptual plan drawings of the layout and elevations of the planned development.
Project Description	The project includes the construction of a new campus for St. Louis Catholic High School, including new school buildings, a gymnasium, a courtyard, a central plant, a pavilion, six sports fields/courts (including a football field, baseball field, softball field, soccer field, practice field, and tennis courts), and associated parking and drives.
Proposed Structures	Structures associated with the project include a two-story main classroom building, a two-story gymnasium, and 6 one-story buildings (including a science building, arts building, auditorium, chapel, field house, and baseball building).
Building Construction	Not provided; we anticipate one-story buildings will be constructed using shallow foundations to support column loads in conjunction with a floor slab foundation system, and two-story buildings may be constructed with drilled shaft foundations to support column loads in conjunction with a floor slab foundation system.
Finished Floor Elevation	Finished floor elevation for the structures were not provided. We have assumed finished floor elevation will not be more than 3 feet above existing grade.
Maximum Loads	Anticipated structural loads were not provided. In the absence of information provided by the design team, we will use the following loads in estimating settlement based on our experience with similar projects. ■ One-Story Building Columns: 50 kips ■ Two-Story Building Columns: 150 kips ■ Column Uplift Load: 30 kips ■ Walls: 3 kips per linear foot (klf) ■ Slabs: 150 pounds per square foot (psf)
Pavements	Paved driveway and parking will be constructed on the parcel. We assume rigid (concrete) pavement sections should be considered for all parking areas except the limestone parking area south of the proposed tennis courts. Please confirm this assumption. Anticipated traffic is as follows: ■ Autos/light trucks: 500 vehicles per day ■ Light delivery and trash collection vehicles: 10 vehicles per week ■ Buses: 30 vehicles per day The pavement design period is 20 years.

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
01	Silty Clay and Lean Clay	Brown, reddish brown, gray, and tan, very stiff to hard, silty clay and lean clay
02	Upper Fat Clay	Gray, reddish brown, and tan, stiff to hard, fat clay
03	Upper Lean Clay and Sandy Silty Clay	Reddish brown, gray, and tan, medium stiff to very stiff, sandy lean clay, sandy silty clay, and lean clay
04	Upper Clayey Sand	Reddish brown and gray, loose to medium dense, clayey sand
05	Lower Fat Clay	Brown and dark gray, stiff to very stiff, fat clay; B-02 contains lean clay from 32 feet to 40 feet
06	Lower Clayey Sand	Dark gray and light gray, dense, clayey sand
07	Lower Lean Clay	Light gray and tan, stiff to hard, lean clay and sandy lean clay

Groundwater was initially encountered in borings B-01 through B-18 (excluding B-17) during drilling at a depth of between approximately 13 and 16 feet below the existing ground surface. After 15 minutes, the water was measured at about 7 to 9 feet below existing grade. No groundwater was encountered in borings B-17 or in borings B-19 through B-44. This does not necessarily mean the borings terminated above groundwater, or that the water levels summarized above are stable groundwater levels. Due to the low permeability of the soils encountered in the borings, a relatively long period of time may be necessary for the groundwater level to develop and stabilize in a borehole in these materials. Long term observations in piezometers or observation wells sealed from the influence of surface water are often required to define the field or in-situ groundwater level in materials of this type.

Groundwater fluctuations occur due to seasonal variations in the amount of rainfall, runoff, site modification, and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. Perched water conditions, where groundwater is trapped above clays in an otherwise unsaturated zone are also common in this region. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

In general, the near surface soils encountered at the project site below approximately 3 inches of topsoil consist of relatively dry silt and stiff to hard silty clay to a depth of about 1 foot below existing grade underlain by relatively dry, very stiff to hard lean clay to a depth of 2 feet below existing grade. Beneath the lean clay, the soils encountered generally included stiff to hard, slickensided fat clay to a depth of 8 feet below existing grade. The surface soils appeared relatively stable at the time of the exploration. However, these silty soils are expected to become unstable with typical earthwork and construction traffic, especially after precipitation events. To reduce potential for surface instability, effective drainage should be completed early in the construction sequence and maintained during and after construction. The construction phase drainage should be considered in the development of the project overall grading and drainage plan. The possible poor drainage conditions can lead to instability in the areas around the site and hamper construction progress. A temporary dewatering system of sumps and pumps could be necessary to remove ponding water where positive drainage is not feasible.

If possible, the grading should be performed during the warmer and drier time of the year. If grading is performed during the winter months or at times with persistent rain, an increased risk for possible undercutting and replacement of unstable subgrade or the need for other mitigation measures will persist. It should be budgeted to remove the upper 2 feet of silt, silty clay and dry fat clays.

The near surface soils at the site, to the depth of the approximate seasonal moisture change zone of about 8 feet, consists of low- to moderate-plasticity silt, silty clay, and lean clay to a depth of 2 feet underlain by high plasticity fat clay. In general, lean clays are considered to exhibit low to moderate potential while fat clays are considered to exhibit a high potential for shrink-swell movements. The Potential Vertical Rise (PVR) approach is a common method used to predict vertical movements in plastic clays. The methodology is based on a correlation between the plasticity index (PI) of the soil, moisture content, and the percent volumetric change. Considering the average conditions at the project site, a PVR at this site is predicted to be approximately 1.5 to 2 inches. The moisture conditions in the upper 8 feet were considered to be relatively dry with water content typically within 5 percent of the material plastic limits, especially within the fat clay encountered at about 2 feet below existing grade. Lab swell tests on two relatively dry samples of the fat clay indicated moderate shrink/swell potential. Reducing PVR can be accomplished by creating a buffer of low volume change low permeability material between the bottom of the slab or athletic field surfaces and the high-volume change fat clays. Based on our experience at nearby project sites, we recommend construction of a minimum 3 feet buffer of low volume change materials between the bottom of the structure or field surface and the underlying fat clays. This buffer is usually created through a combination of undercut/removal and raising site grade. The buffer should extend a minimum of 5 feet from the perimeter of the structure or field footprint. The low volume change fill material meeting the soil property and compaction requirements for imported lean clay structural fill should be as specified in the **Earthwork** section. Details of moisture conditioning are included in the **Earthwork** section. A sand fill is not recommended due to the relative high permeability of this material which could allow surface water intrusion causing moisture change and related shrink/swell of the underlying fat clays.

Additional site preparation recommendations, including proof-rolling and fill placement, are provided in the **Earthwork** section.

The **Shallow Foundations** section addresses support of lightly to moderately loaded structures bearing on structural fill. The **Floor Slabs** section addresses slab-on-grade support of the buildings if site preparation recommendations in this report are followed.

Heavily loaded structures or structures potentially sensitive to shallow foundation settlement may be supported on deep foundations. The **Deep Foundations** section addresses support of the structures on drilled shafts.

Recommendations were requested for rigid pavements, flexible pavements, and aggregate surfacing. The **Pavements** section addresses the design of pavement systems.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

Earthwork is anticipated to include grubbing, proof-rolling, excavations and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations, floor slabs, pavements, and athletic field surfaces.

Site Preparation

We anticipate construction will be initiated by stripping vegetation, desiccated silty soils, and loose, soft or otherwise unsuitable material. Complete stripping of the topsoil or root mat should be performed in the proposed building, pavement, and athletic field areas. Stripped materials consisting of vegetation and organic materials should be wasted off site or used to vegetate landscaped areas. Topsoil and underlying silty soil measurements were made at the boring locations; however, stripping depths at or between our boring locations and across the site could vary considerably. As such we recommend actual stripping depths be evaluated by a representative of Terracon during construction to aid in preventing removal of excess material.

For estimation purposes, we anticipate approximately 24 inches of soil removal should be anticipated for site preparation activities. Former utility lines and utility backfill, if present, should be removed from beneath the structures, and the resulting excavations should be properly backfilled as outlined herein. If roots are encountered, the entire root ball should be excavated such that the remaining roots measure 1 inch in diameter or less.

The exposed subgrade should be proof-rolled with heavy rubber tire construction equipment such as a loaded scraper or partially loaded tandem axle dump truck. The vehicle should weigh between 15 and 20 Tons (total vehicle weight). The proof-rolling should be performed under the direction of the Geotechnical Engineer. Proof-rolling should be performed after a suitable period of dry weather to avoid degrading an otherwise acceptable subgrade and to reduce the amount of undercutting/remedial work required. Areas excessively deflecting under the proof-roll should be delineated and subsequently addressed by the Geotechnical Engineer. The Geotechnical Engineer may require isolated areas to be undercut and replaced with structural fill and compacted. Widespread instability may require chemical treatment with lime or cement as specified by the Geotechnical Engineer at the time of construction. Excessively wet or dry material should either be removed or moisture conditioned and recompacted.

If the soils are deemed competent based on proof roll activities, the dry fat clay soil should be moisture conditioned. The exposed subgrade should be scarified, wetted to 2 to 3 percent above the optimum moisture, and compacted to a minimum of 95 percent of standard Proctor. The remaining fill placement can then be placed.

In addition to the above moisture conditioning, a minimum 3 feet buffer of low volume change materials should be placed between the bottom of the structure or field surface and the underlying fat clays to help mitigate potential shrink and swell.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within 10 feet of structures, pavements, constructed slopes, and other structural areas. General fill is material used to achieve grade outside of these areas, like landscaped areas. Earthen materials used for structural and general fill should meet the following material property requirements:

Soil Type [1]	USCS Classification	Acceptable Parameters (for Structural Fill)
Imported Lean Clay [2]	CL	Liquid Limit less than 45, Plasticity index greater than 10 and less than 25.
Imported Sand	SP, SP-SM	Less than 10% Passing No. 200 sieve
Aggregate Base	GP	LADOTD 610 Crushed Limestone or similarly graded crushed recycled concrete.

Soil Type [1]	USCS Classification	Acceptable Parameters (for Structural Fill)
On-Site Soils	CL	The on-site lean clay soils appear suitable for use as fill; however, if they do not meet the low plasticity criteria, they should not be utilized within 3 feet of finished grade beneath building areas.
On-Site Soils	ML	The silt materials are typically not considered ideal for use as structural fill due to difficult compaction characteristics and stability issues at higher moistures. Low plasticity silt may be used for establishing the subbase for parking/drives if cement treated (10 percent by volume).
On-Site Soils [3]	CH LL>50	The on-site soils from approximately 2 feet to 6 or 8 feet below existing grade consist of fat clay. This material is typically not recommended for use as structural fill without lime treatment due to difficult compaction characteristics, stability issues at higher moistures, and shrink/swell potential. It can be used as backfill in the landscape areas without lime treatment.

1. Structural and general fill should consist of approved materials free of organic matter and debris. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site.
2. Delineation of fat clays and lean clays should be performed in the field by a qualified geotechnical engineer or their representative, and could require additional laboratory testing.
3. CH soils should not be used within structural fill areas.

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill	General Fill
Maximum Lift Thickness	9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used. 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used.	Same as Structural fill.

Item	Structural Fill	General Fill
Minimum Compaction Requirements [1, 2, 3]	95% of standard Proctor (ASTM D698) maximum dry density for soil structural fill below foundations, floor slabs, pavement subgrade, and other structural areas. 95% of modified Proctor (ASTM D1557) maximum dry density for aggregate base beneath pavement or aggregate surfacing.	92% of max.
Water Content Range [1]	Low plasticity cohesive: -2% to +3% of optimum Granular: -3% to +3% of optimum Aggregate Base: -2% to +2% of optimum	As required to achieve min. compaction requirements.

1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698). The moisture content and compaction should be measured for each lift of engineered fill during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.
2. For moisture levels of granular material, it is also appropriate to be conditioned at workable levels to allow for satisfactory compaction to be achieved without the cohesionless fill material pumping when proof-rolled.

Based on the results of borings B-16, B-17, and B-18 completed within the proposed detention pond areas, the surficial silt and silty clay (CL-ML and ML) and underlying fat clay (CH) encountered within the borings to a depth of 2 feet to 4 feet below existing grade appear to be generally not suitable for use as structural fill materials onsite. The lean clay (CL) soils encountered appear to be suitable and may be utilized as structural fill if they meet the requirements for structural fill stated herein.

Utility Trench Backfill

Utility trenches are a common source of water infiltration and migration. Utility trenches penetrating beneath the building should be effectively sealed to restrict water intrusion and flow through the trenches, which could migrate below the building. The trench should provide an effective trench plug that extends at least 5 feet from the face of the building exterior. The plug material should consist of cementitious flowable fill or low permeability clay. The trench plug material should be placed to surround the utility line. If used, the clay trench plug material should be placed and compacted to comply with the water content and compaction recommendations for structural fill stated previously in this report.

Grading and Drainage

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. Water retained next to the building can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least 10 feet from the building.

At project sites with minimal grade change and with development and roads surrounding the construction area, it can be difficult to maintain positive drainage throughout the construction phase. The construction phase drainage should be considered in the development of the project overall grading and drainage plan. The possible poor drainage conditions can lead to instability in the areas around the buildings and hamper construction progress. The site grading and general contractor should consider their means and methods to maintain drainage during the construction phase.

Exposed ground should be sloped and maintained at a minimum 5 percent away from the building for at least 10 feet beyond the perimeter of the buildings. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. A minimum 12-inch thick layer of cohesive backfill should be placed against and 5 feet laterally from the exterior of foundation walls in unpaved/landscaped areas to reduce infiltration of surface water to underlying foundation support soils. After building construction and landscaping, final grades should be verified to document effective drainage has been achieved. Grades around the structures should also be periodically inspected and adjusted as necessary as part of the structure's maintenance program. Where paving or flatwork abuts the structures, a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Trees or other vegetation whose root systems can remove excessive moisture from the subgrade and foundation soils should not be planted next to the structure. Trees and shrubbery should be kept away from the exterior edges of the foundation element a distance at least equal to 1.5 times their expected mature height.

Earthwork Construction Considerations

Shallow excavations for the proposed structures and athletic field surfaces are anticipated to be accomplished with conventional construction equipment. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of floor slabs. Construction traffic over the completed subgrades should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over, or adjacent to, construction areas should be removed. If the subgrade desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted, prior to floor slab construction.

Although the groundwater table was relatively low at the time of field exploration, the groundwater table could rise and affect excavations, especially for over-excavations and replacement of lower strength soils, where applicable. A temporary dewatering system consisting of sumps with pumps could be necessary to achieve some depths of excavation.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, shoring, dewatering, or any of the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of vegetation and topsoil, proof-rolling and mitigation of areas delineated by the proof-roll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked as necessary until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement and field surfacing areas. One density and water content test should be performed for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

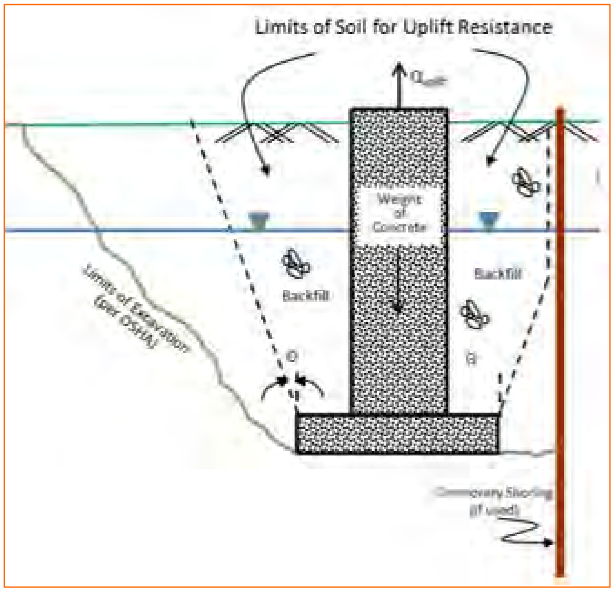
Design Parameters – Compressive Loads

Item	Description
Maximum Net Allowable Bearing Pressure [1, 2]	1,800 psf (Isolated columns and continuous footings).
Required Bearing Stratum [3]	Structural fill.
Minimum Foundation Dimensions	Columns: 24 inches Continuous: 16 inches
Ultimate Passive Resistance [4] **(equivalent fluid pressures)**	250 pcf (cohesive backfill) 350 pcf (granular backfill)
Ultimate Adhesion/Coefficient of Sliding Friction [5]	400 psf (existing clay or cohesive backfill) 0.39 (granular material)
Minimum Embedment Below Finished Grade [6]	Exterior footings: 18 inches Interior footings: 12 inches
Estimated Total Settlement from Structural Loads [2]	Less than about 1 inch.
Estimated Differential Settlement [2]	About 1/2 of total settlement.

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. The allowable bearing pressure may be increased by one-third when considering the alternative load combinations of Section 1605.3.2 of the 2015 International Building Code, however, it should not be increased when loads are determined by the basic allowable stress design load combinations of Section 1605.3.1.
2. Values provided are for maximum loads noted in **Project Description**. Settlement is for structural loads and up to 3 feet of engineering fill. Differential settlements are as measured over a span of 40 feet.
3. Unsuitable or soft/unstable soils should be over-excavated and replaced per the recommendations in **Earthwork**.
4. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. Apply a factor of safety of at least 1.5 to this value when designing for lateral force resistance.
5. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions.
6. Embedment necessary to minimize the effects of seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.

Design Parameters - Uplift Loads

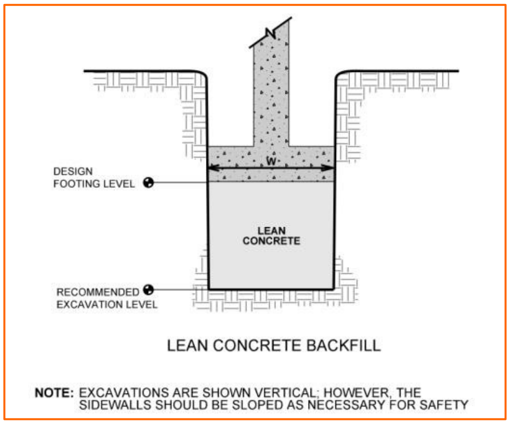
Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ, of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 115 pcf should be used for the backfill. This unit weight should be reduced to 53 pcf for portions of the backfill or natural soils below the groundwater elevation.



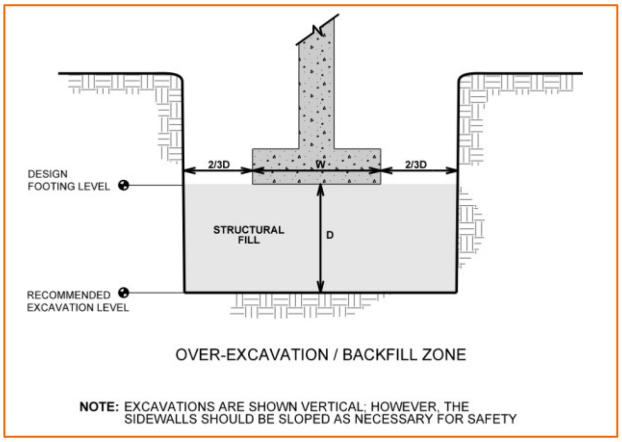
Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

If unsuitable bearing soils are encountered at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. This is illustrated on the sketch below.



Over-excavation for structural fill placement below footings should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with structural soil fill or crushed stone wrapped in non-woven geotextile fabric, placed as recommended in the **Earthwork** section.



The following precautions are essential to the satisfactory performance of shallow foundations:

- Provide positive drainage away from the foundations, both during and after construction.
- Avoid excavations during inclement weather and place concrete within the excavations within 24 hours after completion of the excavations.
- Verify that the excavations are completely within the required bearing stratum or structural fill and remove and replace any unacceptable soils as discussed herein.
- Maintain adequate moisture levels in exposed excavation and slab subgrades, but do not allow the areas to become saturated.
- Place a “mudmat” of lean concrete to seal the bearing stratum in the event wet conditions are experienced or expected.
- Minimize traffic in excavations to only that necessary to place the steel and concrete for the footings.

- Remove free water in the excavations prior to placing concrete.

DEEP FOUNDATIONS

Drilled Concrete Shafts

Drilled concrete shafts are a common foundation system for the planned construction, and when suitably reinforced, are particularly efficient in resisting uplift and horizontal forces. The following paragraphs provide design recommendations and construction considerations for a drilled concrete shaft supported foundation system.

Axial Resistance

We have predicted the nominal (ultimate) compression and tension geotechnical resistance for various drilled concrete shaft diameters and depths for static load conditions using contributions from skin friction and end bearing. The nominal side friction resistance of the drilled concrete shafts was predicted for uncased conditions using published design approaches for calculation of skin friction including the alpha (α) method for cohesive soils and the β-method for cohesionless soils, assuming uncased construction. The skin friction resistance from the upper 4 feet of the shaft was neglected. The nominal end bearing resistance for the drilled concrete shaft was estimated using classic bearing capacity theory for cohesive soils and empirical correlations between corrected Standard Penetration Test (SPT) N_{60} values and the mobilized base resistance for cohesionless soils. If casing is used, the nominal compression and tension resistance in the tables below should be reduced by 10%.

The following table provides our recommendations for the nominal (ultimate) geotechnical resistance in kips for individual drilled shafts.

Drilled Shaft Axial Resistance Summary [1]								
Drilled Shaft Depth (feet) [2]	**Nominal (Ultimate) Compression Resistance (kips)** [3]				**Nominal (Ultimate) Tension Resistance (kips)** [3, 4]			
	Shaft Diameter (inches)				**Shaft Diameter (inches)**			
	18	**24**	**30**	**36**	**18**	**24**	**30**	**36**
20	75	108	147	189	46	62	79	96
25	--	139	187	241	--	81	102	125
30	--	182	246	324	--	103	130	159
35	--	212	285	363	--	126	159	194
40	--	252	334	421	--	159	201	244

1. Design capacities are dependent upon the method of installation, and quality control during installation. The values provided are estimates and should be verified when installation protocols have been finalized.
2. Measured from the ground surface at the time of field exploration.
3. NR - Not Recommended. The depth of 18-inch diameter shafts is limited to not more than 20 feet due to anticipated installation difficulty below this depth.
4. Buoyant weight of shaft is included in nominal tension resistance.

The shaft resistances presented in the table above are the nominal (ultimate) geotechnical resistances and appropriate ASD factors of safety for the design should be established considering control methods specified to verify field capacity at the time of construction. Provided below are the recommended factors of safety that can be considered for this project:

Field Capacity Verification Method	ASD Factor of Safety
Static Load Test on minimum 1 test shaft per structure (after verification that concrete is at design strength). Full-time observation of production shaft installation	2
No static load test, but full-time observation of production shaft installation.	2.5

The allowable tension capacity should be determined using a factor of safety of 3 unless a static tension load test is performed. Design capacities can be increased by 33% for highly transient loads such as wind loads, unless the transient loads have already been included in the factored design load (subject to verification of allowable structural capacity).

The structural capacity of the shafts should be evaluated by the structural engineer to assure that they can safely accommodate the combined stresses that may be induced by axial and lateral loads, drag loads, and overturning moments. The shaft should be adequately reinforced full depth to develop the full tension resistance.

Shaft top spacing is normally set to allow for typical construction tolerances in placement and vertical alignment. Drilled shafts should have a minimum (center-to-center) spacing of three diameters. For large shaft groups, the final design should be checked to evaluate potential for group settlement.

Lateral Capacity

The response of deep foundations to lateral loads is not only dependent upon the soil material's horizontal subgrade reaction, but also on the shaft actual cross-sectional features, effective length, stiffness, arrangement in the shaft cap with respect to direction of loading, and "fix-head" or "free-head" cap interaction conditions. The analysis is usually performed to provide a lateral load that result in some limiting amount of deflection or to a specified maximum yield moment capacity of the shaft. Shafts subjected to lateral and moment loading should be analyzed as part of the structural detailing. Tensile and lateral load resistance of deep foundation elements should be neglected unless the shafts are adequately reinforced.

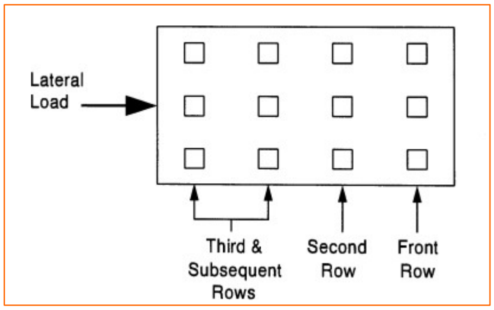
We have not performed a lateral resistance analyses as part of this scope. However, we have included soil parameters below for a lateral analysis using LPILE™ software. If lateral loads exceed approximately 10 kips/shaft, a detailed analysis of lateral load resistance should be performed after the actual loading conditions and shaft configurations have been determined considering reductions for shadowing in a shaft group.

The following table lists input values for use in LPILE™ analyses. LPILE™ estimates values of k_h and E_{50} based on undrained strength; however, non-default values of k_h should be used where provided. Since deflection or a service limit criterion will likely control lateral capacity design, no safety/resistance factor is included with the parameters.

Approximate Depth Below the Existing Grade (ft) [1]	LPILE™ Soil p-y Model	Effective Unit Weight (lb/ft³)	Cohesion (lb/ft²)	Internal Angle of Friction (Degrees)	Strain [2] ε_{50}	Static Lateral Subgrade Modulus [2] k (lb/in³)
Lean Clay/Silt [2] 0 – 2	Stiff Clay w/o free water	115	--	--	--	--
Lean Clay 2 – 4	Stiff Clay w/o free water	130	1,800	--	0.007	500
Fat Clay 4 – 8	Stiff Clay w/o free water	131	1,800	--	0.007	500
Lean Clay 8 – 11	Stiff Clay w/o free water	68	1,250	--	0.007	500
Clayey Sand 11 – 15	Sand (Reese)	58	--	30	--	60
Lean Clay/ Fat Clay 15 – 27	Stiff Clay w/o free water	59	1,250	--	0.007	500
Lean Clay/ Fat Clay 27 – 40	Stiff Clay w/o free water	56	1,600	--	0.007	500
Clayey Sand 40 – 45	Sand (Reese)	58	--	39	--	125
Lean Clay 45 – 50	Stiff Clay w/o free water	70	1,500	--	0.007	500

1. Minimum foundation depth of 16-ft. If the foundation length is less than 16 feet, analysis for fixity is warranted.
2. The upper 2-feet should not be considered to provide full passive resistance due to potential for disturbance and desiccation effects.

When shafts are used in groups, the lateral capacities of the shafts in the second, third, and subsequent rows of the group should be reduced as compared to the capacity of a single, independent shaft. Guidance for applying p-multiplier factors to the p values in the p-y curves for each row of shaft foundations within a shaft group are as follows:



- Front row: $P_m = 0.8$
- Second row: $P_m = 0.4$
- Third and subsequent row: $P_m = 0.3$.

For the case of a single row of shafts supporting a laterally loaded grade beam, group action for lateral resistance of shafts would need to be considered when spacing is less than three shaft diameters (measured center-to-center). However, spacing closer than 3D (where D is the diameter of the shaft) is not recommended, due to potential for the installation of a new shaft disturbing an adjacent installed shaft, likely resulting in axial capacity reduction.

Tensile and lateral load resistance of deep foundation elements should be neglected unless the shafts are adequately reinforced. The installation of a long reinforcing cages can be problematic with small diameter shafts. Therefore, it may be appropriate in some cases to design the foundations with deeper foundation caps or grade beams or utilize other means of lateral support where high lateral loads occur.

Load Testing

If a factor of safety of 2 is used to establish the allowable shaft resistance, a static load test should be performed to validate the predicted axial resistance. The cost of the load test should be considered in the selection of the factor of safety/resistance factor for shaft design.

If a load test is planned, at least one shaft representing the predominant diameter and depth should be tested. However, if more than one depth will be used, additional load tests should be added. Alternatively, the shaft can be instrumented with strain gages to provide load distribution information during the testing of a single shaft to allow for estimating allowable loads for shorter shafts. The test shaft(s) should be installed using the installation methods planned for production foundation elements.

For a static load test, the shafts should be loaded to a minimum of 250% of its design capacity after confirming the concrete strength, but typically not sooner than 7 days after installation. Ideally the shafts should be loaded to produce top of shaft movement as provided below to allow for an accurate interpretation of the ultimate resistance.

Shaft Diameter (inches)	Minimum Top of Shaft Movement For Load Test Interpretation (inches)
18	1-1/4
24	1-1/2
30	1-3/4
36	2

The load test including design of the reaction beam and shafts should be provided by the foundation contractor. However, we should oversee the load testing program and validate our capacity predictions based upon the test results.

Shaft Settlement, Drag Load and Down Drag

Shafts installed into the stiff to very stiff, overconsolidated clays below approximately 25 feet from existing grade at the site should experience minimal settlements. Top of shaft movement of less than 1 inch is expected for the allowable design loads. These movements are associated with the loading from the structure and would be in addition to any fill-induced or down-drag settlement, where applicable.

If more than three feet of fill will be placed at this site to achieve final grade, fill induced settlement will create drag load on the shafts which may result in excessive shaft movement from down-drag effects. Drilled shafts typically have sufficient structural capacity to account for drag loads that may develop. Our office should be notified if fill heights exceeding three feet are planned so that we can evaluate the expected top of shaft movement and other potential settlement related development issues.

Drilled Shaft Construction Considerations

The drilling contractor should be experienced in the subsurface conditions observed at the boring locations, and the shaft excavations should be performed with equipment capable of efficiently advancing through the soil and providing a clean bearing area. The straight–shaft foundations should be installed in general accordance with the procedures presented in “Drilled Shafts: Construction Procedure and Design Methods,” Publication No. FHWA-NHI-18-024, FHWA GEC 010, September 2018 by the U.S. Department of Transportation Federal Highway Administration, and “Standard Specification for the Construction of Drilled Piers,” ACI Publication No. 336.1-01, 2011.

Because the subsurface conditions could vary away from the boring locations, we recommend that the Geotechnical Engineer or his representative observe the shaft installations to evaluate that the intended bearing material is encountered and sufficiently penetrated, and to provide recommendations should conditions vary from those encountered at our borings.

The subsurface conditions predominantly consist of medium stiff to stiff, lean to fat clays. The clay soils should be relatively easy to drill through using conventional auger drilling equipment. However, the shaft contractor should consider utilizing mud slurry or temporary steel casing to maintain stability of the upper portions of the excavation, particularly at depths of about 11 feet where groundwater and clayey sand were encountered. Prediction of excavation cave-in and the need for casing or mud slurry methods is not exact and depends on many factors including but not limited to: soil strength, sand/silt content, excavation and drilling methods, planned diameter and depth of the excavation, water table at time of construction, amount of time shaft excavation will be open, etc. The need for casing/mud slurry is best evaluated at the time of actual construction. As stated previously, the occurrence of sand and silt layering below a depth of 11 feet and related groundwater may cause difficulties with shaft excavation stability.

The concrete for the drilled shafts should be a flowable mix that can achieve the required compressive strength with a slump of 7 to 9 inches. If open excavation techniques are planned the concrete should be on-site near the end of the shaft excavation process and placed immediately after final excavation of the shaft. Free-fall concrete placement in dry drilled shafts is acceptable, provided care is taken to avoid striking the concrete on the sides of the excavation or the reinforcing steel. A bottom-dump hopper or a tremie, discharging near the bottom of the excavation, could be used to place concrete and reduce concrete segregation. If the mud slurry method is used, the discharge hose end should be placed at the base of the excavation prior to pumping the concrete. A “pig” should be used to reduce the mixing of drill mud and concrete in the discharge hose, and the discharge hose should be continuously raised during the placement with at least five feet of concrete head maintained over the discharge end of the hose. Proper construction techniques and quality control are important for the integrity of the deep foundation system. The drilled shaft installation process should be performed under the observation of the Geotechnical Engineer. The Geotechnical Engineer should document the shaft installation process including soil and groundwater conditions encountered, consistency with expected conditions, and details of the installed shaft.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC). Based on the soil properties encountered at the site and as described on the exploration logs and results, it is our professional opinion that the **Seismic Site Classification is D**. Subsurface explorations at this site were extended to a maximum depth of 50 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Although not considered necessary, additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

FLOOR SLABS

The subgrade soils below a depth of 2 feet are comprised of high plasticity clays exhibiting the potential to swell with increased water content. Construction of the floor slab, combined with the revising site drainage creates the potential for gradual increased water contents within the clays. Increases in water content will cause the clays to swell and damage the floor slab. To reduce the swell potential to less than about 1 inch, at least the upper 3 feet of subgrade soils below the floor slab (excluding the floor slab support course) should be an approved Low Volume Change (LVC) buffer consisting of lean clays as specified in the **Earthwork** section. This buffer can be comprised of undercutting the existing soils onsite and replacing with structural lean clay fill or increasing the grade of the site with lean clay above the site grade, or a combination of both.

This report provides recommendations to help mitigate the effects of soil shrinkage and expansion. However, even if these procedures are followed, some movement and (at least minor) cracking in the structure should be anticipated. The severity of cracking and other damage such as uneven floor slabs will probably increase if modification of the site results in excessive wetting or drying of the expansive soils. Eliminating the risk of movement and distress may not be feasible, but it may be possible to further reduce the risk of movement if significantly more expensive measures are used during construction. Some of these options are discussed in this report such as additional undercut and replacement of expansive soils or a structural slab.

Design parameters for floor slabs assume the requirements for **Earthwork** have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the granular base beneath the floor slab.

Floor Slab Design Parameters

Item	Description
Floor Slab Support [1]	A leveling course of 4-6 inches of free-draining (less than 10% passing the U.S. No. 200 sieve) sand compacted to at least 95% of ASTM D 698 [2] over compacted structural fill and/or stable subgrade.
Estimated Modulus of Subgrade Reaction [2]	100 pounds per square inch per inch (psi/in) for point loads.

1. Free-draining granular material should have less than 10 percent fines (material passing the No. 200 sieve). Other design considerations such as cold temperatures and condensation development could warrant more extensive design provisions.
2. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in **Earthwork**, and the floor slab support as noted in this table. It is

Item	Description
	provided for point loads. For large area loads the modulus of subgrade reaction would be substantially lower.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a water-proof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or monolithic turn-down slabs are designed to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

Settlement of floor slabs supported on existing fill materials cannot be accurately predicted, but could be larger than normal and result in some cracking. Mitigation measures as noted in **Existing Fill** within **Earthwork** are critical to the performance of floor slabs. In addition to the mitigation measures, the floor slab can be stiffened by adding steel reinforcement, grade beams and/or post-tensioned elements.

Floor Slab Construction Considerations

Finished subgrade within and for at least 10 feet beyond the floor slab should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed and structural fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

The Geotechnical Engineer should approve the condition of the floor slab subgrades immediately prior to placement of the floor slab support course, reinforcing steel and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

POST TENSION SLAB DESIGN PARAMETERS

Post Tension (PT) slabs are common in this type of construction and can be effective in reducing slab cracking and effects from unanticipated differential movement from settlement and shrink/swell of underlying soils. We understand a PT slab will be utilized for the tennis courts associated with this project. The soil parameters provided below are based on the Post Tensioning Institute (PTI) method which is outlined in the "PTI Design of Post-Tensioned Slabs-on-Ground, 3rd Edition (2008)". The design parameters provided correspond with a post-tensioned slab-on-grade foundation that is placed on approximately 3 feet of compacted lean clay soils over the native lean/fat clays with the exterior grade beams placed at least 18 inches below the final grade on compacted structural fill as specified herein. Foundations placed at least 12 inches below finished grade can be designed for a net allowable bearing pressure of 2,000 psf. The continuous grade beams should experience a total settlement of less than 1 inch with differential of about ½ inch over 30 feet. If any changes are anticipated in the subgrade or fill conditions, Terracon should be notified in order to verify the recommendations provided.

Post-Tensioned Slab Design Parameters	
Item	**Parameter**
Estimated Edge Moisture Variation, e_m	Edge Lift: 5.1 feet Center Lift: 9 feet
Estimated Differential Soil Movement, y_m	Edge Lift: 1.38 inches Center Lift: 0.79 inches
Friction Coefficient	0.35
Potential Vertical Rise, PVR	~ 1 inch

It should be noted that the differential soil movements of the project site in-situ material do not account of the influence of vegetation located near the proposed building footprint, which can impact the foundation's performance. The design of the exterior grade beam to a depth of 18 inches feet below finished grade should aid in reducing some of these effects, but deeper embedment may be necessary to account for effects of trees. Planting of large landscaping next to the tennis court should be minimized to the extent practical.

The foundation excavations should be inspected by a representative of Terracon before placement of steel or concrete to assess the that the excavation can support the design loads and are consistent with the materials discussed in the report. Soft or loose areas encountered within the bottom of the footing excavation should be removed and replaced with properly compacted structural fill material as described in the **Earthwork** section of the report.

Once the footing excavations have been opened and inspected, the concrete should be promptly placed to avoid the excavation bottoms being exposed to weather. Surface runoff should be diverted away from the foundation excavations and should not be permitted to pond before or during construction. If the excavations must be left open for an extended period (over 1 day), then they should be covered and protected to prevent evaporation and any introduction of moisture.

ARTIFICIAL TURF RECOMMENDATIONS

Subgrade Conditions

Surficial material at the existing football field consists of low to medium plasticity silt, silty clay, and lean clay to a depth of 2 feet and fat clay below a depth of 2 feet. It is our understanding that the proposed football field elevation will be established within a few inches of the existing grades. The exposed subgrade soils will be conducive for the support of the proposed artificial turf either on 12 inches of lime-treated fill cap or on 12 inches of aggregate base. Since turf systems were not specified prior to report completion, we have provided two typical turf system construction methods below.

Prior to placement of the lime-treated fill or aggregate base, site preparation should be completed in accordance with the **Earthwork** section, and low-volume change fill should be placed to the base of the lime-treated fill or aggregate base.

“FieldTurf” artificial turf system can be established over a 12-inch layer of permeable aggregate (#57 stone or similar) over filter fabric placed over the stable/proof-rolled subgrade.

“Geo-Surfaces” turf system consisting of drainage underlayment and turf cover can be supported on a minimum 12 inches of lime-treated fill which should meet the requirements of imported lean clay specified in the **Earthwork** section.

Design Considerations

Artificial turf performance is affected by its surroundings, especially by presence of water. Turf subgrade should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature turf deterioration. The civil engineer should consider the following drainage recommendations in the design and layout of pavements:

- Final grade adjacent to field areas should slope down from the edges;
- The subgrade surface should be sloped to promote proper subsurface drainage;
- Perimeter drain systems should be properly installed;

It is our understanding that a 'French Drain', or similar perimeter drain system, will be installed at the site. To prevent migration/transport of fines through the drain system a perforated drain pipe with filter fabric sock should be placed within a permeable aggregate which also should be encased in filter fabric.

DETENTION PONDS

We understand a detention pond will be constructed in the northeast corner of the project site. Beneath the silty clay (CL-ML), silt (ML), and lean clay (CL) soils encountered to a depth of about 2 foot below existing grade, the underlying soils generally consisted of fat clay (CH) soils ranging from a depth of about 2 feet to 8 feet below existing grade.

For construction of detention ponds, site preparation should include removal of existing vegetation, topsoil, root mats, unstable silty soils, and loose, soft or otherwise unsuitable material in accordance with the **Earthwork** section prior to pond excavation activities. Pond side slopes should be constructed no deeper than 3-horizontal to 1-vertical to prevent side slope failure. Surface instability is not expected on the slopes of the proposed improvements for a pond up to about 9 feet deep, especially after site preparation operations. However, surficial slope instability typically impacts the upper 3 to 5 feet of the subsurface profile, predominantly during extended wet and dry periods. The contractor should check for the occurrence of tension cracks along the banks during construction and after construction is completed. The banks should also be visually inspected periodically during routine maintenance. Tension cracks are initial signs of the soil sliding off the pond bank. The contractor should stop work and move equipment and stockpiles away from the top of the bank immediately if cracks or other signs of slope movement are identified.

If future surficial slope erosion occurs near the crest of slopes, we recommend the slope face be restored as soon as practical. We recommend irrigated landscaping be setback a minimum of 30 feet from the crest of the slopes.

If the pond is expected to extend deeper than 9 feet below existing grade, the base of the pond may extend into sandy lean clay (CL) or clayey sand (SC) soils. If these soils are anticipated, we should be contacted to provide recommendations on clay liner soil characteristics and general construction considerations associated with encountering groundwater.

PAVEMENTS

General Pavement Comments

Pavement designs are provided for the traffic conditions and pavement life conditions as noted in **Project Description** and in the following sections of this report. A critical aspect of pavement performance is site preparation. Pavement designs noted in this section must be applied to the site which has been prepared as recommended in the **Earthwork** section.

Support characteristics of subgrade for pavement design do not account for shrink/swell movements of an expansive clay subgrade. Thus, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade.

Pavement Design Parameters

Design of Asphaltic Concrete (AC) pavements are based on the procedures outlined in the National Asphalt Pavement Association (NAPA) Information Series 109 (IS-109). Design of Portland Cement Concrete (PCC) pavements are based upon American Concrete Institute (ACI) 330; Guide for Design and Construction of Concrete Parking Lots.

A subgrade CBR of 4 was used for the AC pavement designs, and a modulus of subgrade reaction of 130 pci was used for the PCC pavement designs. The values were empirically derived based upon our experience with the lean clay and fat clay subgrade soils and our understanding of the quality of the subgrade as prescribed by the **Site Preparation** conditions as outlined in **Earthwork**. A modulus of rupture of 600 psi, corresponding to a 4,000 psi compressive strength, was used for concrete pavement.

Pavement Section Thicknesses

The following table provides options for AC and PCC Sections:

Asphaltic Concrete Design					
Layer	**Minimum Thickness (inches)**				
	Parking Stalls		**Driveways**		**Entrances, Exits[4]**
Asphalt Surface and Binder [1]	3		4		Concrete Only
Aggregate Base [2,3]	6	--	6	--	4

1. Design and construction of asphaltic or bituminous concrete should be in accordance with Louisiana Department of Transportation Specifications for Roads and Bridges 2016 (LSSRB).
2. The aggregate base should be a No. 610 limestone or similarly graded recycled crushed concrete compacted to 100% of its max dry density as determined by ASTM D-698, Standard Proctor Test with stability present.
3. Alternatively, a minimum 9-inches of soil-cement base should be constructed in general accordance with Section 305 of the 2016 LSSRB. The lime and/or cement addition rates should be based upon classification testing performed on the actual proposed soils at the time of construction in accordance with Section 305.04. Based on soil conditions observed in the upper 2 feet at the soil boring locations the cement addition rate should be 10% Type I Cement by volume. Initial lime treatment with 6% hydrated lime by volume may be necessary depending on soils present at the finished subgrade at the time of construction to reduce PI to less than 15 prior to cement treatment.
4. A minimum 7-inch concrete pavement is recommended at entrances to provide increased resistance to turning forces and rutting. PCC pavements are recommended for trash container pads and in any other areas subjected to heavy wheel loads and/or turning traffic.

Portland Cement Concrete Design				
Layer	**Thickness (inches)**			
	Parking Stalls	**Driveways**	**Entrances, Exits**	**Dumpster Pad [5]**
PCC [1, 2]	5	6	7	8
Aggregate Base [3, 4]	4	4	4	4

1. 4,000 psi at 28 days, 4-inch maximum slump and 3 to 5 percent air entrained. PCC pavements are recommended for trash container pads and in any other areas subjected to heavy wheel loads and/or turning traffic.
2. Standard design and construction details for rigid pavements are contained in ACI330R-21. It is recommended that the design engineer refer to this document for more detailed information. A critical aspect of concrete pavements for facilities of this nature is joint spacing and related details. ACI330R-21 addresses these important details.
3. Aggregate base course should be a No. 610 limestone or similarly graded recycled concrete compacted to 100% of its max dry density as determined by ASTM D-698, Standard Proctor Test with stability present.
4. The aggregate base will serve to protect the subgrade, reduce pumping of fines, and reduce shrink/swell affects for the concrete pavement applications. Alternatively, a minimum 9 inches of compacted select low plasticity structural fill (compacted to a minimum 95% of the standard proctor maximum dry density) could

Portland Cement Concrete Design				
	Thickness (inches)			
	Parking Stalls			

be placed across the site under the planned PCC pavements incorporating minimum 2-ft strips of geotextile fabric at each planned control joint locations.

5. The trash container pad should be large enough to support the container and the tipping axle of the collection truck.

The estimated pavement sections provided in this report are minimums for the assumed design criteria, and as such, periodic maintenance should be expected. Areas for parking of heavy vehicles, concentrated turn areas, and start/stop maneuvers could require thicker pavement sections. Edge restraints (i.e. concrete curbs or aggregate shoulders) should be planned along curves and areas of maneuvering vehicles. A maintenance program including surface sealing, joint cleaning and sealing, and timely repair of cracks and deteriorated areas will increase the pavement's service life. As an option, thicker sections could be constructed to decrease future maintenance.

Although not required for structural support of PCC pavements, a minimum 4-inch thick dense graded aggregate base course layer is recommended to help reduce potential for slab curl, shrinkage cracking, and subgrade pumping through joints. Proper joint spacing will also be required to prevent excessive slab curling and shrinkage cracking. Joints should be sealed to prevent entry of foreign material and dowelled where necessary for load transfer.

Timing of saw-cutting is also very important to reduce formation of shrinkage cracking. Where practical, we recommend early-entry cutting of crack-control joints in PCC pavements. Cutting of the concrete in its "green" state typically reduces the potential for micro-cracking of the pavements prior to the crack control joints being formed, compared to cutting the joints after the concrete has fully set. Micro-cracking of pavements may lead to crack formation in locations other than the sawed joints, and/or reduction of fatigue life of the pavement.

Openings in pavements, such as decorative landscaped areas, are sources for water infiltration into surrounding pavement systems. Water can collect in the islands and migrate into the surrounding subgrade soils thereby degrading support of the pavement. This is especially applicable for islands with raised concrete curbs, irrigated foliage, and low permeability near-surface soils. The civil design for the pavements with these conditions should include features to restrict or to collect and discharge excess water from the islands. Examples of features are edge drains connected to the storm water collection system, longitudinal subdrains, or other suitable outlet and impermeable barriers preventing lateral migration of water such as a cutoff wall installed to a depth below the pavement structure.

Dishing in parking lots surfaced with ACC is usually observed in frequently used parking stalls (such as near the front of buildings), and occurs under the wheel footprint in these stalls. The use of higher-grade asphaltic cement, or surfacing these areas with PCC, should be considered. The dishing is exacerbated by factors such as irrigated islands or planter areas, sheet surface drainage to the front of structures, and placing the ACC directly on a compacted clay subgrade.

Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. Therefore, preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g. crack and joint sealing and patching) and global maintenance (e.g. surface sealing). Preventive maintenance is usually the priority when implementing a pavement maintenance program. Additional engineering observation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install below pavement drainage systems surrounding areas anticipated for frequent wetting.
- Place 8 inches of compacted dense graded crushed stone around drop inlet basins extending at least 8 inches from the perimeter to reduce settlement at pavement interface.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
- Place compacted, low permeability backfill against the exterior side of curb and gutter.
- Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

Aggregate Pavement Thickness

Aggregate pavements designed in accordance with the following table may be implemented for drives and parking areas onsite.

Typical Pavement Section Thickness (inches)		
Traffic Area	**Aggregate Base Course [1,2]**	**Woven Geotextile**
Limestone Aggregate Paving	12	Mirafi HP370 or equivalent

1. Aggregate base course should be a No. 610 limestone or similarly graded recycled concrete compacted to 95% of its max dry density as determined by ASTM D-1557, Modified Proctor Test with stability present over high-performance geotextile.
2. The aggregate paving should be placed over stable subgrade prepared as recommended in the Earthwork section.

Aggregate Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. We recommend that preventive maintenance should be planned and provided for through an on-going pavement management program to slow the rate of pavement deterioration, and to preserve the pavement investment. Preventive maintenance is usually the first priority when implementing a planned pavement maintenance program and provides the highest return on investment for pavements. Over time the placement of additional limestone material will likely be required within aggregate paved areas that exhibit depressions. These areas should be filled with additional limestone rather than scalping of material from adjacent areas. Prior to implementing any maintenance, additional engineering observation is recommended to determine the type and extent of preventive maintenance. Even with periodic maintenance, some movements may still occur, and repairs may be required.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

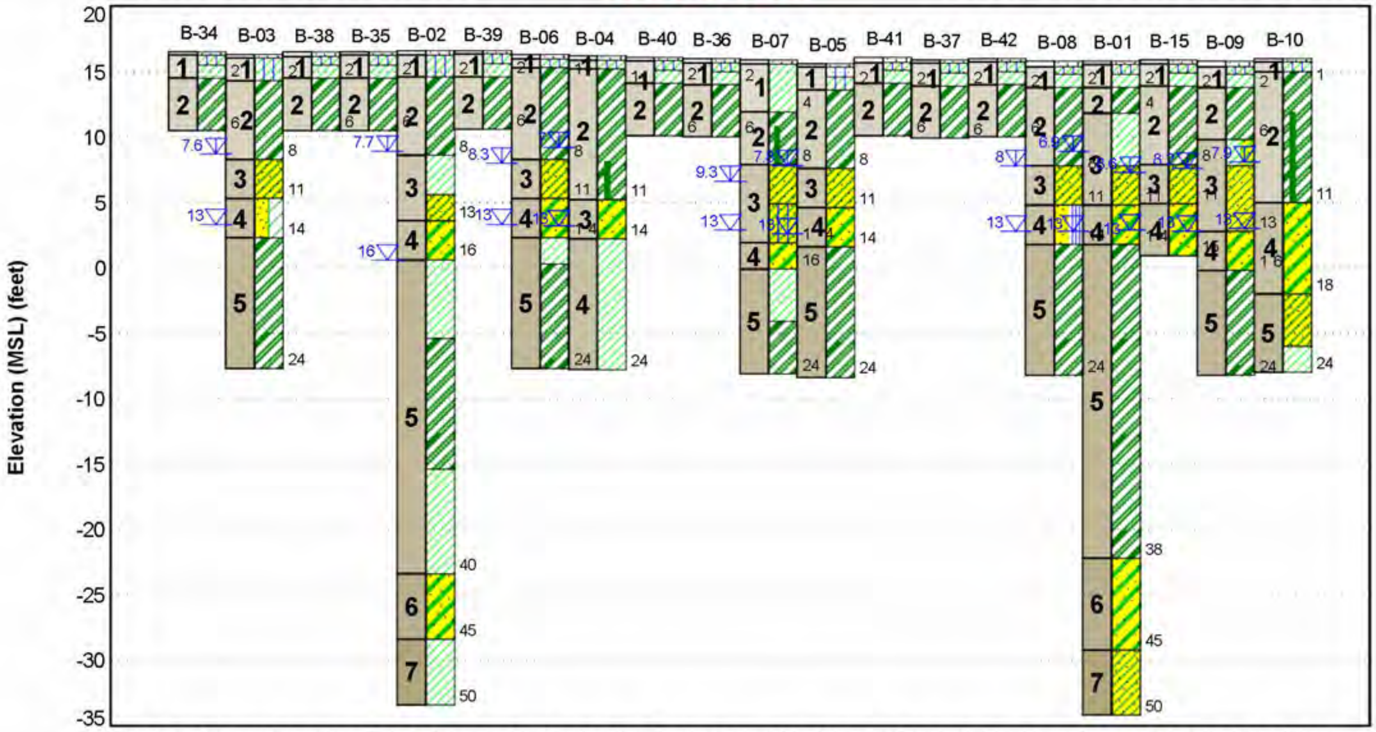
Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

FIGURES

Contents:

Terracon
220 Prater Rd
Sulphur, LA

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Silty Clay and Lean Clay	Brown, reddish brown, gray, and tan, very stiff to hard, silty clay and lean clay
2	Upper Fat Clay	Gray, reddish brown, and tan, stiff to hard, fat clay
3	Upper Lean Clay and Sandy Silty Clay	Reddish brown, gray, and tan, medium stiff to very stiff, sandy lean clay, sandy silty clay, and lean clay
4	Upper Clayey Sand	Reddish brown and gray, loose to medium dense, clayey sand
5	Lower Fat Clay	Brown and dark gray, stiff to very stiff, fat clay; B-02 contains lean clay from 32 feet to 40 feet
6	Lower Clayey Sand	Dark gray and light gray, dense, clayey sand
7	Lower Lean Clay	Light gray and tan, stiff to hard, lean clay and sandy lean clay

LEGEND

- Topsoil
- Silty Clay
- Lean Clay
- Fat Clay
- Sandy Lean Clay
- Clayey Sand
- Poorly-graded Sand with Clay
- Silt
- Sandy Silty Clay
- Poorly-graded Sand with Silt
- Lean Clay with Sand

NOTES:

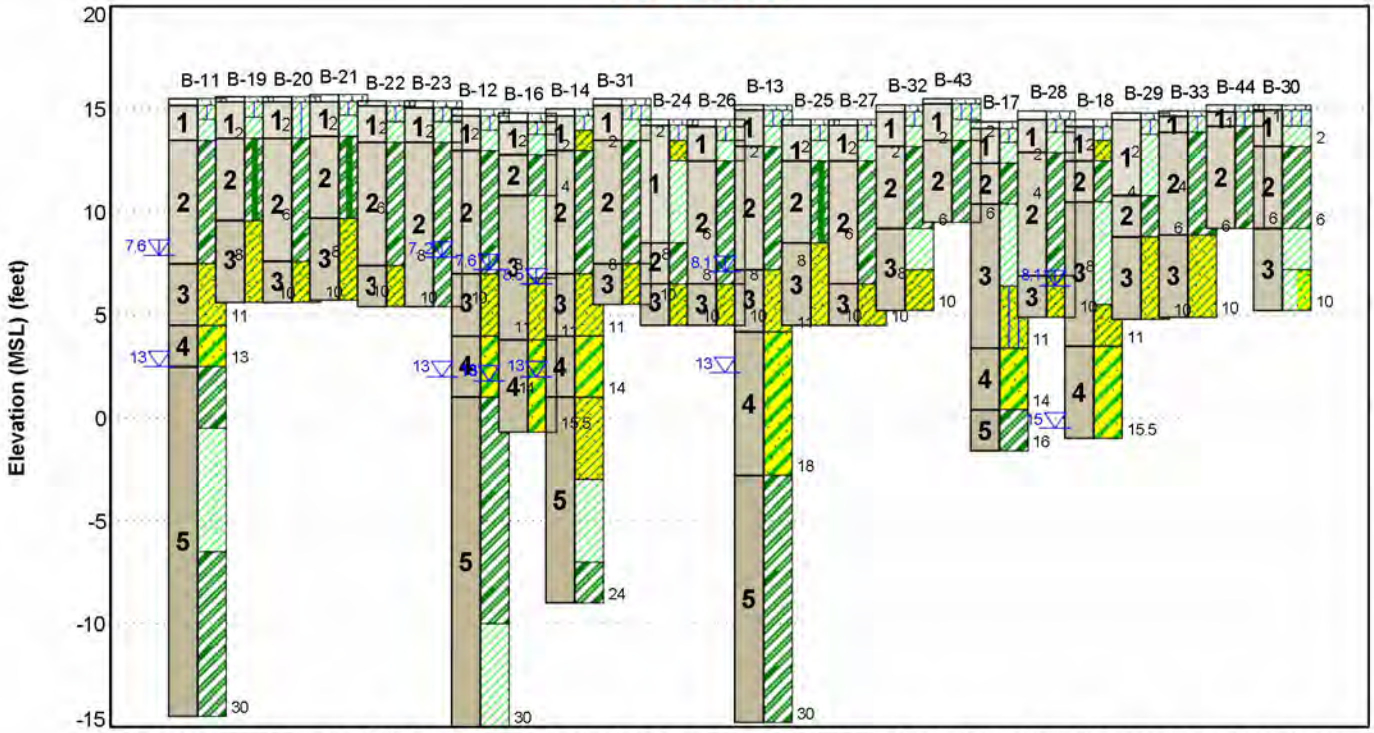
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

- First Water Observation
- Second Water Observation

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

Terracon
220 Prater Rd
Sulphur, LA

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

LEGEND

Model Layer	Layer Name	General Description
1	Silty Clay and Lean Clay	Brown, reddish brown, gray, and tan, very stiff to hard, silty clay and lean clay
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3	Upper Lean Clay and Sandy Silty Clay	Reddish brown, gray, and tan, medium stiff to very stiff, sandy lean clay, sandy silty clay, and lean clay
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6	Lower Clayey Sand	Dark gray and light gray, dense, clayey sand
7	Lower Lean Clay	Light gray and tan, stiff to hard, lean clay and sandy lean clay

Topsoil
Silty Clay
Lean Clay
Fat Clay
Sandy Lean Clay
Clayey Sand
Sandy Silty Clay
Lean Clay with Sand

NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

First Water Observation
Second Water Observation

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Locations	Type of Exploration	Boring Depth (feet)	Drilled Location
2	Soil Borings	50	Two-story building areas
3	Soil Borings	30	Stadium seats / press box
9	Soil Borings	24	Building areas
4	Soil Borings	15	Detention pond / central plant
15	Soil Borings	10	Fields / courts
11	Soil Borings	6	Parking areas

Boring Layout and Elevations: Unless otherwise noted, Terracon personnel provided the boring layout. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet) and approximate elevations were estimated from the provided survey information. If elevations and a more precise boring layout are desired, we recommend borings be surveyed following completion of fieldwork.

Subsurface Exploration Procedures: We advanced the borings with a ATV-mounted rotary drill rig using continuous flight augers (solid stem) followed by rotary wash techniques. Samples were continuously obtained in the upper 10 feet of each boring and at maximum intervals of 5 feet thereafter. In the thin-walled tube sampling procedure, a seamless steel tube with a sharp cutting edge was pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. We observed and recorded groundwater levels during drilling and sampling. For safety purposes, all borings were backfilled with auger cuttings or cement-bentonite grout, consistent with state regulations, upon completion. Pavements were patched with cold-mix asphalt and/or pre-mixed concrete, as appropriate.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the

Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D6913/D6913M Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
- ASTM D2166/D2166M Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
- ASTM D7263 Standard Test Methods for Laboratory Determination of Density (Unit Weight) of Soil Specimens
- ASTM D4546 Standard Test Methods for One-Dimensional Swell or Collapse of Soils

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

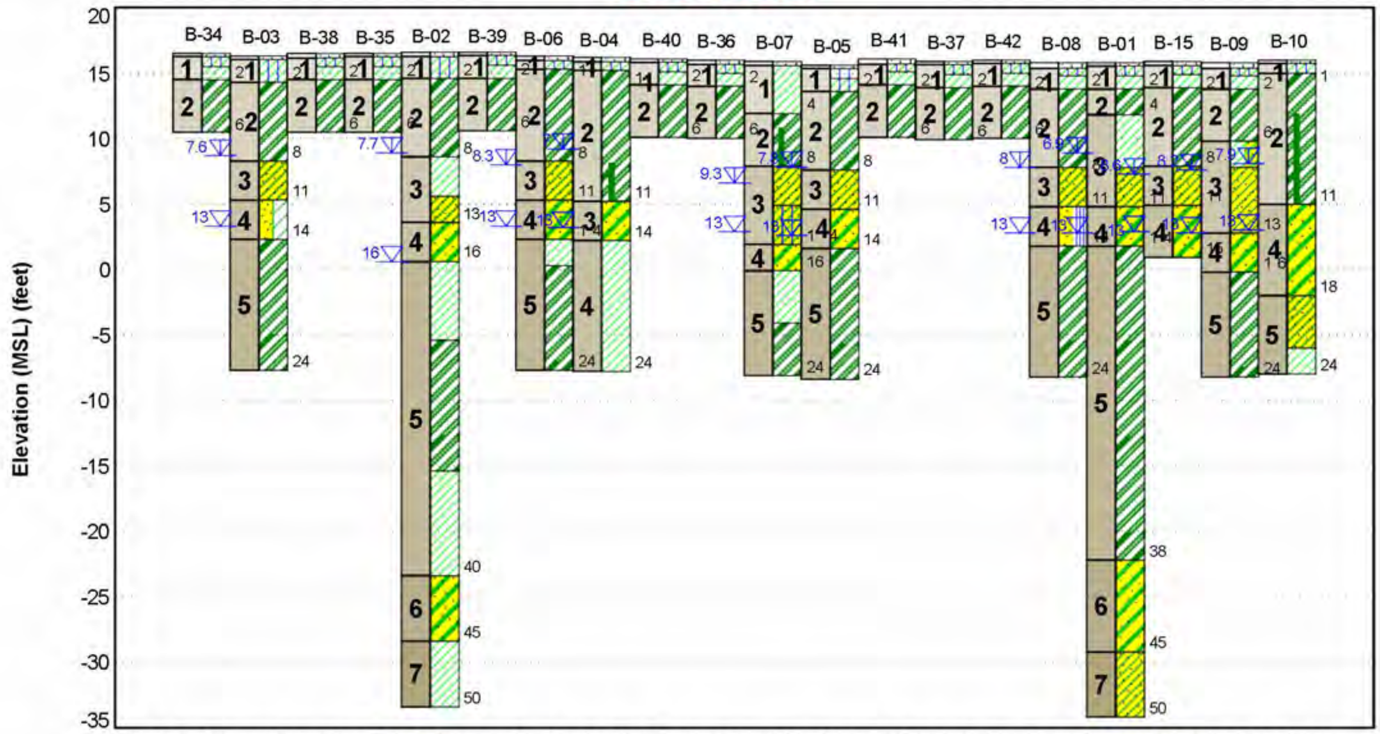
SITE LOCATION AND EXPLORATION PLANS

Contents:

Note: All attachments are one page unless noted above.

Terracon
220 Prater Rd
Sulphur, LA

GeoModel



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LEGEND

Model Layer	Layer Name	General Description
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4	Upper Clayey Sand	Reddish brown and gray, loose to medium dense, clayey sand
5	Lower Fat Clay	Brown and dark gray, stiff to very stiff, fat clay; B-02 contains lean clay from 32 feet to 40 feet
6	Lower Clayey Sand	Dark gray and light gray, dense, clayey sand
7	Lower Lean Clay	Light gray and tan, stiff to hard, lean clay and sandy lean clay

- Topsoil
- Silty Clay
- Lean Clay
- Fat Clay
- Sandy Lean Clay
- Clayey Sand
- Poorly-graded Sand with Clay
- Silt
- Sandy Silty Clay
- Poorly-graded Sand with Silt
- Lean Clay with Sand

NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

- First Water Observation
- Second Water Observation

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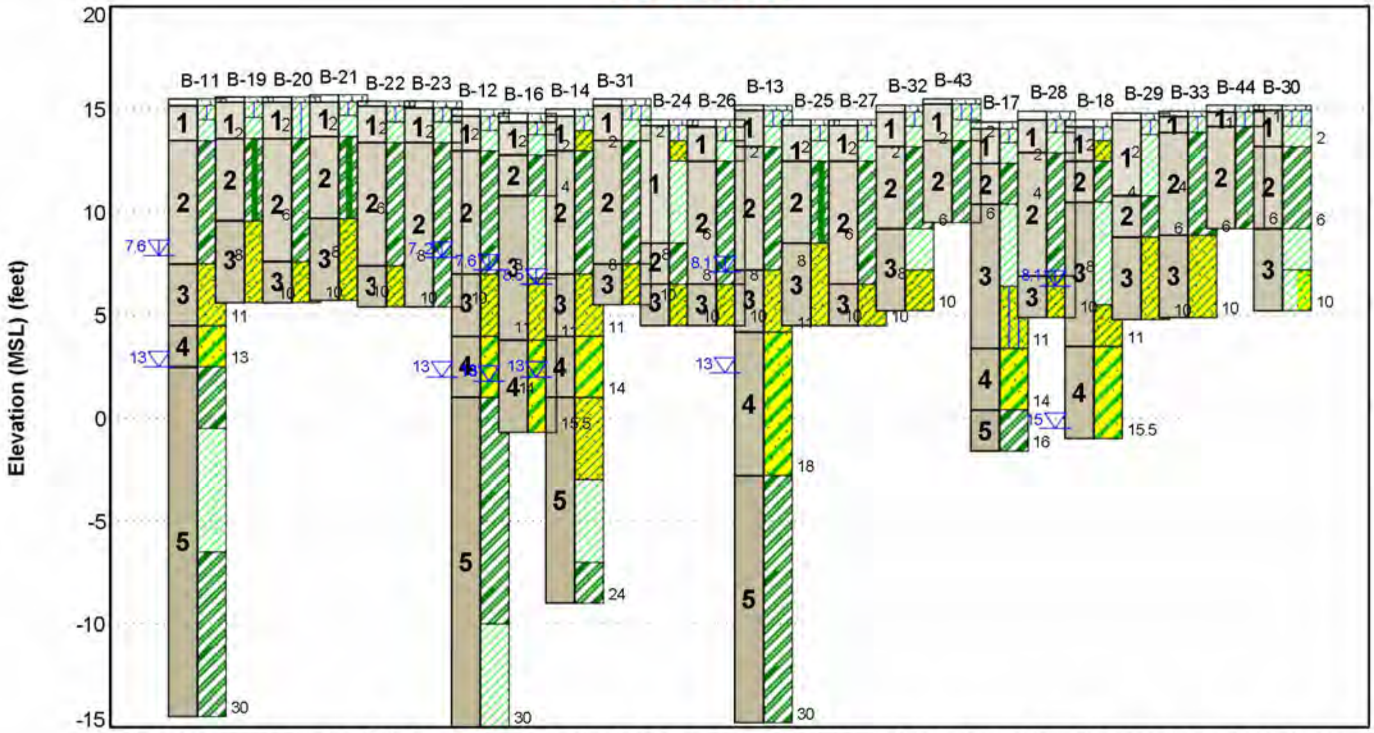
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

Terracon
220 Prater Rd
Sulphur, LA

GeoModel



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LEGEND

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5	Lower Fat Clay	Brown and dark gray, stiff to very stiff, fat clay; B-02 contains lean clay from 32 feet to 40 feet
6	Lower Clayey Sand	Dark gray and light gray, dense, clayey sand
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NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

▽ First Water Observation
▽ Second Water Observation

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

EXPLORATION RESULTS

Contents:

Note: All attachments are one page unless noted above.

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-01

Location: See Exploration Plan

Latitude: 30.1820° Longitude: -93.1564°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	FAT CLAY (CH), brown, stiff to very stiff *(continued)*											
	-gray, stiff to very stiff below 28 feet	30			2.25 (HP)	UC	1.58	6.5	37.1	86		
		35			2.00 (HP)							
38.0	**CLAYEY SAND (SC)**, dark gray, dense	40			0.25 (HP)				24.7			43
	-dense below 43 feet				6-15-19 N=34							
45.0	**SANDY LEAN CLAY (CL)**, light gray and tan, stiff to very stiff	45										
50.0		50			4.50 (HP)	UC	1.48	6	18.8	111		
	Boring Terminated at 50 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

- First encountered
- After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-50' Rotary Wash

Abandonment Method
Boring backfilled with bentonite grout upon completion

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M.Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-02

Location: See Exploration Plan

Latitude: 30.1813° Longitude: -93.1581°

Depth (Ft.)	Material Description	Water Level Observations	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil		--							
2.0	**SILTY CLAY (CL)**, brown and light gray, very stiff to hard		4.50 (HP)							
8.0	**FAT CLAY (CH)**, brown and gray, very stiff to hard; -with trace silt below 6 feet	First encountered (approx. 7.5 ft)	4.00 (HP)	UC	1.97	10	25.2	98	87-22-65	
			3.25 (HP)							
			4.25 (HP)							
11.0	**LEAN CLAY (CL)**, tan and light gray, stiff to very stiff, with trace silt		3.00 (HP)	UC	1.66	9.3	18.7	108	45-13-32	
13.0	**SANDY LEAN CLAY (CL)**, reddish brown and light gray, stiff		1.00 (HP)							
16.0	**CLAYEY SAND (SC)**, reddish brown and light gray, medium dense	After 15 minutes (approx. 16 ft)	7-8-9 N=17				21.5			35
22.0	**LEAN CLAY (CL)**, brown, medium stiff; -with sand layers to 20 feet		3-4-3 N=7				28.8			96
	FAT CLAY (CH), dark gray, stiff to very stiff; -with trace sand to 25 feet		2.50 (HP)							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
- First encountered
- After 15 minutes

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M.Billiot

Notes
Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-16' Continuous Flight Auger
16'-50' Rotary Wash

Logged by
B. Alexander

Boring Started
08-01-2023

Abandonment Method
Boring backfilled with bentonite grout upon completion

Boring Completed
08-01-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-02

Location: See Exploration Plan

Latitude: 30.1813° Longitude: -93.1581°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	FAT CLAY (CH), dark gray, stiff to very stiff *(continued)*				2.00 (HP)							
		30										
32.0	**LEAN CLAY (CL)**, dark gray, stiff				1.75 (HP)	UC	1.69	5.5	35.7	88	49-18-31	
		35										
					1.50 (HP)							
40.0	**CLAYEY SAND (SC)**, light gray, dense	40										
					8-16-20 N=36							
45.0	**LEAN CLAY (CL)**, light gray and tan, very stiff to hard, with sand seams and pockets	45										
	-low strain failure at 48 feet				4.50 (HP)	UC	3.21	4	19.1	114		97
50.0	***Boring Terminated at 50 Feet***	50										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
- First encountered
- After 15 minutes

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M.Billiot

Logged by
B. Alexander

Boring Started
08-01-2023

Boring Completed
08-01-2023

Notes

Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-16' Continuous Flight Auger
16'-50' Rotary Wash

Abandonment Method
Boring backfilled with bentonite grout upon completion

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-03

Location: See Exploration Plan

Latitude: 30.1819° Longitude: -93.1581°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil											
	SILTY CLAY (CL-ML), brown				--				6.0			
2.0	-brown and light gray, very stiff to hard below 1 foot				4.00 (HP)							
	FAT CLAY (CH), tan and light gray, very stiff				2.25 (HP)	UC	2.35	15	18.4	118	65-13-52	
		5			2.50 (HP)							
8.0			▽		2.50 (HP)							
	SANDY LEAN CLAY (CL), reddish brown and light gray, very stiff				2.50 (HP)							
11.0		10										
14.0	**SAND WITH CLAY (SP-SC)**, reddish brown, medium dense		▽		6-8-9 N=17				26.4			11
	FAT CLAY (CH), brown, very stiff -with sand seams from 14 feet to 20 feet	15			1.75 (HP)	UC	0.89	5.8	26.2	97		
					2.50 (HP)							
		20										
24.0					2.25 (HP)							
	Boring Terminated at 24 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

▽ First encountered

▽ After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-07-2023

Boring Completed
08-07-2023

St. Louis Catholic High School
Corbina Road and James Court | Lake Charles, LA
Terracon Project No. EU235053

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-04

Location: See Exploration Plan
Latitude: 30.1820° Longitude: -93.1576°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil				--							
1.0	**SILTY CLAY (CL)**, brown, very stiff to hard											
	FAT CLAY (CH), brown and light gray, stiff to very stiff				4.50 (HP)				15.4	93	60-18-42	
					3.50 (HP)							
		5			2.25 (HP)	UC	3.05	13.3	16.3	114	53-16-37	
			∇		2.00 (HP)							
					2.00 (HP)							
11.0		10										
	CLAYEY SAND (SC), reddish brown, medium dense		∇		5-7-10 N=17							
14.0												
	FAT CLAY (CH), brown, stiff to very stiff, -with sand seams from 18 to 20 feet	15			2.50 (HP)							
					2.50 (HP)							
	-gray and brown below 20 feet	20										
24.0					2.75 (HP)	UC	1.29	6	31.5	91		
	Boring Terminated at 24 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

∇ First encountered

∇ After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-07-2023

Boring Completed
08-07-2023

St. Louis Catholic High School
Corbina Road and James Court | Lake Charles, LA
Terracon Project No. EU235053

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-05

Location: See Exploration Plan

Latitude: 30.1819° Longitude: -93.1571°

Depth (Ft.)	Description	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil								
1.0	**SILT (ML)**, brown, with clay seams	--				4.2		NP	
2.0	**SILTY CLAY (CL-ML)**, brown and light gray, hard	4.50 (HP)							
8.0	**FAT CLAY (CH)**, gray and tan, very stiff -with ferrous nodules to 6 feet	3.75 (HP)	UC	3.41	7.8	15.8	117	52-15-37	
		2.50 (HP)							
		2.25 (HP)	UC	2.55	7.3	19.6	111		
11.0	**SANDY LEAN CLAY (CL)**, reddish brown and light gray, very stiff	2.50 (HP)							
14.0	**CLAYEY SAND (SC)**, reddish brown, loose	4-5-5 N=10							
24.0	**FAT CLAY (CH)**, brown, very stiff -with sand layers from 14 feet to 16 feet	3.25 (HP)							
		2.75 (HP)	UC	2.21	5.2	27.5	95	70-22-48	
		3.00 (HP)							

Boring Terminated at 24 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
- First encountered
- After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M.Billiot

Logged by
B. Alexander

Boring Started
08-07-2023

Boring Completed
08-07-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-06

Location: See Exploration Plan

Latitude: 30.1826° Longitude: -93.1578°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil											
1.0	**SILTY CLAY (CL)**, brown				--							
	FAT CLAY (CH), brown and tan, stiff to very stiff				4.50 (HP)				18.0		68-19-49	
					2.00 (HP)	UC	1.87	6.7	19.0	105	62-19-43	
	-with ferrous nodules from 4 feet to 6 feet	5			2.00 (HP)							
8.0					2.50 (HP)							
	SANDY LEAN CLAY (CL), reddish brown and light gray, medium stiff to stiff -low strain failure at 8 feet		First encountered		1.75 (HP)	UC	0.97	3.3	20.0	109		
11.0		10										
	CLAYEY SAND (SC), reddish brown, medium dense		After 15 minutes		5-5-8 N=13							
14.0												
16.0	**LEAN CLAY (CL)**, brown, very stiff, with sand seams	15			3.00 (HP)							
	FAT CLAY (CH), brown, very stiff				2.75 (HP)							
		20										
24.0	-brown and gray below 22 feet				3.00 (HP)							
	Boring Terminated at 24 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

∇ First encountered

∇ After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-07-2023

Boring Completed
08-07-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-07

Location: See Exploration Plan

Latitude: 30.1814° Longitude: -93.1572°

Depth (Ft.)	Description	Depth (Ft.) scale	Water Level Observations	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches topsoil			--							
	LEAN CLAY (CL), brown and light gray, stiff to very stiff			4.50 (HP)	UC	1.72	2	7.7	103	30-10-20	
4.0	-with silt seams to 2 feet			4.50 (HP)							
	FAT CLAY (CH), tan and gray, medium stiff to stiff, slickensided	5		1.25 (HP)	UC	0.86	7.5	20.6	105		
8.0	-very stiff below 6 feet			2.75 (HP)							
11.0	**SANDY LEAN CLAY (CL)**, tan and light gray, stiff	10	▽	1.75 (HP)							
14.0	**SANDY SILTY CLAY (CL-ML)**, reddish brown and light gray, medium stiff to stiff -low strain failure at 11 feet		▽	1.00 (HP)	UC	0.79	3.7	17.9	115	22-16-6	
16.0	**CLAYEY SAND (SC)**, reddish brown and light gray, medium dense	15		5-7-9 N=16				21.5			18
20.0	**LEAN CLAY (CL)**, brown, stiff			1.75 (HP)							
24.0	**FAT CLAY (CH)**, brown, stiff to very stiff, with sand seams	20		2.00 (HP)							
	Boring Terminated at 24 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

▽ First encountered

▽ After 15 minutes

Advancement Method

0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

St. Louis Catholic High School
Corbina Road and James Court | Lake Charles, LA
Terracon Project No. EU235053

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-08

Location: See Exploration Plan

Latitude: 30.1824° Longitude: -93.1565°

Depth (Ft.)	Description
0.4	Approximately 5-inches of topsoil
1.0	**SILTY CLAY (CL-ML)**, brown
2.0	**LEAN CLAY (CL)**, brown and light gray, hard
8.0	**FAT CLAY (CH)**, tan and light gray, stiff to very stiff, slickensided
11.0	**SANDY LEAN CLAY (CL)**, reddish brown and light gray, stiff -low strain failure at 8 feet
14.0	**POORLY GRADED SAND WITH SILT (SP-SM)**, reddish brown, medium dense
24.0	**FAT CLAY (CH)**, brown, medium stiff to stiff, with sand layers -very stiff below 18 feet
	Boring Terminated at 24 Feet

Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
--							
4.50 (HP)							
1.75 (HP)	UC	1.50	13.6	21.5	106	63-18-45	
2.00 (HP)							
1.50 (HP)							
1.75 (HP)	UC	1.24	3.5	15.8	114	29-14-15	
7-7-8 N=15				23.5			9
1.00 (HP)				29.5			99
2.00 (HP)							
2.50 (HP)							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
- First encountered
- After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-09

Location: See Exploration Plan

Latitude: 30.1814° Longitude: -93.1560°

Depth (Ft.)	Material Description	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.4	Approximately 5-inches of topsoil								
1.0	**SILTY CLAY (CL-ML)**, brown	--							
2.0	**LEAN CLAY (CL)**, brown and light gray, hard, with silt seams and pockets	4.50 (HP)							
	FAT CLAY (CH), gray and tan, very stiff, slickensided	2.00 (HP)	UC	3.22	14.6	18.8	109	68-14-54	
6.0	-with ferrous nodules below 4 feet	2.00 (HP)							
8.0	**LEAN CLAY WITH SAND (CL)**, light gray and tan, very stiff	2.50 (HP)							
	SANDY LEAN CLAY (CL), reddish brown and light gray, stiff	1.25 (HP)	UC	1.64	5.5	17.5	111		
13.0		1.25 (HP)							
16.0	**CLAYEY SAND (SC)**, reddish brown and light gray, medium dense	8-7-8 N=15							
	FAT CLAY (CH), brown, stiff to very stiff, with sand seams -low strain failure at 18 feet	2.00 (HP)	UC	1.22	3	25.2	96	53-19-34	
24.0		1.75 (HP)							

Boring Terminated at 24 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
- First encountered
- After 15 minutes

Notes

Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M.Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-10

Location: See Exploration Plan

Latitude: 30.1808° Longitude: -93.1558°

Depth (Ft.)	Material Description	Depth (Ft.) scale	Water Level Observations	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil			--							
1.0	**SILTY CLAY (CL-ML)**, brown, hard										
	FAT CLAY (CH), light gray and brown, very stiff to hard			4.50 (HP)						74-18-56	
	-slickensided below 2 feet			3.75 (HP)							
		5		3.25 (HP)	UC	2.44	15	15.9	115	50-13-37	
			▽	3.50 (HP)							
				2.50 (HP)							
11.0		10									
	CLAYEY SAND (SC), tan and light gray, loose		▽	3-4-5 N=9				16.7			41
	-medium dense below 14.5 feet	15		5-8-12 N=20							
18.0											
	SANDY LEAN CLAY (CL), brown, stiff, with sand seams			1.75 (HP)							
22.0		20									
	LEAN CLAY (CL), brown, medium stiff to stiff, -with sand seams -low strain failure at 22 feet			3.00 (HP)	UC	0.67	4.4	24.4	100		
24.0	***Boring Terminated at 24 Feet***										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ First encountered
▽ After 15 minutes

Notes
Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-11

Location: See Exploration Plan

Latitude: 30.1824° Longitude: -93.1560°

Depth (Ft.)	Material Description	Sample Depth (Ft.)	Water Level Observations	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil										
1.0	**SILTY CLAY (CL-ML)**, brown, hard			--							
2.0	**LEAN CLAY (CL)**, tan and light gray, hard, with silt seams and pockets			4.50 (HP)							
8.0	**FAT CLAY (CH)**, tan and light gray, stiff to very stiff			2.00 (HP)	UC	1.81	15	19.8	113	53-15-38	
		5		2.50 (HP)							
	-with trace sand below 6 feet		First encountered	2.00 (HP)							
11.0	**SANDY LEAN CLAY (CL)**, reddish brown and light gray, stiff to very stiff			2.25 (HP)	UC	0.99	8.5	20.4	106		
13.0	**CLAYEY SAND (SC)**, reddish brown, medium dense	10	After 15 minutes	6-7-6 N=13							
16.0	**FAT CLAY (CH)**, reddish brown, stiff, with sand layers	15		1.75 (HP)							
22.0	**LEAN CLAY (CL)**, brown, stiff to very stiff, with silt seams			2.00 (HP)	UC	1.04	7.8	28.4	94	40-19-21	
		20									
	FAT CLAY (CH), brown and gray, stiff			1.75 (HP)							
	-dark gray below 25 feet	25									

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

First encountered

After 15 minutes

Advancement Method

0'-13' Continuous Flight Auger
13'-30' Rotary Wash

Abandonment Method

Boring backfilled with bentonite grout upon completion

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-11

Graphic Log	Location: See Exploration Plan Latitude: 30.1824° Longitude: -93.1560° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	FAT CLAY (CH), brown and gray, stiff *(continued)*											
					1.50 (HP)							
	30.0	30										
	Boring Terminated at 30 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
First encountered
After 15 minutes

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Notes
Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-13' Continuous Flight Auger
13'-30' Rotary Wash

Abandonment Method
Boring backfilled with bentonite grout upon completion

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-12

Location: See Exploration Plan

Latitude: 30.1824° Longitude: -93.1550°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil				--							
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, very stiff to hard, with silt seams				4.50 (HP)	UC	2.05	3.5	12.6	107	40-15-25	
	FAT CLAY (CH), tan and light gray, very stiff				3.75 (HP)							
		5			2.50 (HP)							
8.0	-with trace sand below 6 feet		▽		3.00 (HP)	UC	2.16	14.8	20.0	110		
	SANDY LEAN CLAY (CL), reddish brown and light gray, very stiff				2.25 (HP)							
11.0		10										
14.0	**CLAYEY SAND (SC)**, reddish brown, medium dense		▽		7-7-9 N=16				20.7			37
	FAT CLAY (CH), brown, stiff -with sand layers to 16 feet	15			1.25 (HP)							
	-with silt seams from 18 feet to 20 feet				1.50 (HP)							
		20										
25.0	-brown and gray from 23 feet to 28 feet				2.25 (HP)							
	LEAN CLAY (CL), dark gray, stiff	25										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ First encountered
▽ After 15 minutes

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Notes

Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-13' Continuous Flight Auger
13'-30' Rotary Wash

Abandonment Method
Boring backfilled with bentonite grout upon completion

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-12

Graphic Log	Location: See Exploration Plan Latitude: 30.1824° Longitude: -93.1550° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	LEAN CLAY (CL), dark gray, stiff *(continued)*											
	-dark gray below 28 feet				1.25 (HP)							
	30.0	30										
	Boring Terminated at 30 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

▽ First encountered

▽ After 15 minutes

Advancement Method

0'-13' Continuous Flight Auger

13'-30' Rotary Wash

Abandonment Method

Boring backfilled with bentonite grout upon completion

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-13

Location: See Exploration Plan

Latitude: 30.1810° Longitude: -93.1540°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil				--							
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, with silt layers				4.50 (HP)							
	FAT CLAY (CH), reddish brown and tan, stiff to very stiff -with ferrous nodules to 4 feet				1.75 (HP)	UC	2.08	15	18.6	109	56-17-39	
	-tan and light gray, slickensided below 4 feet	5			1.75 (HP)							
8.0					3.50 (HP)	UC	2.31	13.3	18.9	112		
	SANDY LEAN CLAY (CL), reddish brown and light gray, stiff		▽		1.75 (HP)							
11.0		10										
	CLAYEY SAND (SC), gray and tan, loose		▽		3-4-4 N=8							
18.0	-reddish brown, medium dense below 14 feet	15			5-7-10 N=17							
	FAT CLAY (CH), brown, stiff to very stiff -with sand seams to 25 feet				1.50 (HP)				25.8			88
		20										
	-dark gray below 25 feet	25			3.00 (HP)							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations

▽ First encountered

▽ After 15 minutes

Notes

Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-13' Continuous Flight Auger
13'-30' Rotary Wash

Abandonment Method
Boring backfilled with bentonite grout upon completion

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-13

Graphic Log	Location: See Exploration Plan Latitude: 30.1810° Longitude: -93.1540° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	FAT CLAY (CH), brown, stiff to very stiff *(continued)*											
					3.75 (HP)							
	30.0	30										
	Boring Terminated at 30 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

First encountered

After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-30' Rotary Wash

Abandonment Method
Boring backfilled with bentonite grout upon completion

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-14

Location: See Exploration Plan

Latitude: 30.1820° Longitude: -93.1546°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil										
1.0	**SILTY CLAY (CL-ML)**, brown			--				9.3			
2.0	**SANDY LEAN CLAY (CL)**, brown and light gray, medium stiff to stiff			2.25 (HP)	UC	0.87	5.7	19.7	108	37-18-19	
	FAT CLAY (CH), reddish brown and light gray, stiff to very stiff			2.50 (HP)							
	-tan and light gray with trace sand below 4 feet	5		2.50 (HP)	UC	1.68	14.3	18.7	111		
8.0	-with ferrous nodules from 6 feet to 8 feet			2.00 (HP)							
11.0	**SANDY LEAN CLAY (CL)**, reddish brown and light gray, medium stiff to stiff	10	▽	1.00 (HP)							
14.0	**CLAYEY SAND (SC)**, reddish brown and light gray, medium dense		▽	4-5-6 N=11							
18.0	**SANDY LEAN CLAY (CL)**, brown, very stiff	15		2.50 (HP)							
22.0	**LEAN CLAY (CL)**, brown, stiff	20		1.50 (HP)	UC	1.16	7.8	26.1	97		
24.0	**FAT CLAY (CH)**, brown, very stiff, -with sand seams			2.25 (HP)							
	Boring Terminated at 24 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

▽ First encountered

▽ After 15 minutes

Advancement Method
0'-13' Continuous Flight Auger
13'-24' Rotary Wash

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

220 Prater Rd
Sulphur, LA

Boring Log No. B-15

Location: See Exploration Plan

Latitude: 30.1809° Longitude: -93.1562°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil				--							
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, very stiff				4.50 (HP)	UC	3.51	2.6	8.0	109	28-17-11	
8.0	**FAT CLAY (CH)**, brown and gray, stiff to very stiff, slickensided				2.00 (HP)							
		5			1.50 (HP)	UC	1.79	13.3	18.0	109		
					2.25 (HP)							
11.0	**SANDY LEAN CLAY (CL)**, tan and light gray, medium stiff to stiff		▽		1.00 (HP)							
		10										
15.0	**CLAYEY SAND (SC)**, reddish brown and gray, loose				3-4-4 N=8							
	-medium dense below 13 feet		▽		7-7-10 N=17							
	Boring Terminated at 15 Feet	15										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations

▽ First encountered

▽ After 15 minutes

Advancement Method
0'-15' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-16

Location: See Exploration Plan

Latitude: 30.1832° Longitude: -93.1545°

Graphic Log	Depth (Ft.) / Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (cf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.4 Approximately 5-inches of topsoil				--				7.9			
	1.0 **SILTY CLAY (CL-ML)**, brown and light gray, hard											
	LEAN CLAY (CL), brown, hard				4.50 (HP)				14.3			
	2.0											
	FAT CLAY (CH), brown, hard				4.50 (HP)				20.5		65-15-50	
					3.00 (HP)				18.9			
	4.0											
	LEAN CLAY (CL), tan and light gray, very stiff				2.25 (HP)				17.8		48-14-34	
		5			2.50 (HP)				18.4			
					2.50 (HP)				21.7			
			▽		2.25 (HP)				23.3		46-16-30	
	8.0											
	SANDY LEAN CLAY (CL), reddish brown and light gray, medium stiff to very stiff				1.00 (HP)				21.8			
					1.00 (HP)				22.3		27-14-13	
		10			4.00 (HP)				19.5			
	11.0											
	CLAYEY SAND (SC), reddish brown and light gray, loose				4-5-4 N=9				19.7			48
	-medium dense below 12.5 feet		▽		7-9-9 N=18							
		15			6-8-9 N=17				21.1			24
	15.5											
	Boring Terminated at 15.5 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
- ▽ First encountered
- ▽ After 15 minutes

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Notes

Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-15' Continuous Flight Auger

Logged by
B. Alexander

Boring Started
08-02-2023

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-17

Location: See Exploration Plan

Latitude: 30.1831° Longitude: -93.1534°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches				--				3.8			
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				8.2		34-14-20	
4.0	**FAT CLAY (CH)**, tan and light gray, very stiff, slickensided				3.00 (HP)				16.8			
					2.50 (HP)				17.0			
8.0	**LEAN CLAY (CL)**, tan and light gray, stiff to very stiff	5			1.50 (HP)				20.1		46-16-30	
					1.25 (HP)				20.6			
					2.25 (HP)				22.7			
					2.00 (HP)				19.4		47-15-32	
11.0	**SANDY SILTY CLAY (CL-ML)**, reddish brown and tan, soft to medium stiff				1.50 (T)				23.8			
					1.60 (T)				25.5			
		10			1.00 (HP)				18.7		23-17-6	
14.0	**CLAYEY SAND (SC)**, tan and light gray, loose to medium dense				4-4-4 N=8				18.7			36
					5-7-8 N=15				23.6			27
16.0	**FAT CLAY (CH)**, brown, very stiff	15			2.75 (HP)				26.5			

Boring Terminated at 16 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-15' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-18

Location: See Exploration Plan

Latitude: 30.1826° Longitude: -93.1533°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil				--				11.4			
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**SANDY LEAN CLAY (CL)**, brown, stiff, with silt seams				1.50 (HP)				12.7		25-16-9	
	FAT CLAY (CH), brown and tan, stiff				1.50 (HP)				21.1			
4.0	-tan and light gray below 3 feet				1.75 (HP)				17.2			
	LEAN CLAY (CL), tan and light gray, stiff to very stiff				2.00 (HP)				16.7			
		5			2.25 (HP)				18.8		47-15-32	
					1.75 (HP)				19.5			
					2.50 (HP)				16.2			
9.0			▽		1.25 (HP)				17.1		40-17-23	
	SANDY LEAN CLAY (CL), reddish brown and light gray, stiff to very stiff				2.00 (HP)				18.5			
11.0		10			1.00 (HP)				18.4			70
	CLAYEY SAND (SC), reddish brown, medium dense				4-5-6 N=11							
					3-6-5 N=11				21.4			23
15.5		15	▽		6-9-9 N=18							
	Boring Terminated at 15.5 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ First encountered
▽ After 15 minutes

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-01-2023

Boring Completed
08-01-2023

Notes

Elevation Reference: Elevations based on Google Earth

Advancement Method
0'-15.5' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-19

Location: See Exploration Plan

Latitude: 30.1829° Longitude: -93.1555°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown and light gray				--				6.2			
2.0	**LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				9.4		46-15-31	
	FAT CLAY (CH), gray and tan, very stiff				2.75 (HP)				18.6			
6.0	-slickensided below 4 feet	5			2.00 (HP)							
	SANDY LEAN CLAY (CL), tan and light gray, stiff to very stiff				2.75 (HP)							
10.0					1.50 (HP)							
	Boring Terminated at 10 Feet	10										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-20

Location: See Exploration Plan

Latitude: 30.1824° Longitude: -93.1555°

Graphic Log	Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3	Approximately 3-inches of topsoil				--				15.0			
		SILTY CLAY (CL-ML), brown, very stiff				2.50 (HP)				18.8			
	2.0												
		FAT CLAY (CH), tan and gray, stiff to very stiff, slickensided				1.75 (HP)				19.3		50-18-32	
			5			2.00 (HP)							
						2.50 (HP)							
	8.0												
		SANDY LEAN CLAY (CL), reddish brown and light gray, medium stiff				0.75 (HP)							
	10.0												
		Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-21

Location: See Exploration Plan

Latitude: 30.1819° Longitude: -93.1555°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				51.6			
2.0	**LEAN CLAY (CL)**, brown and light gray, stiff				1.50 (HP)				19.6			
	FAT CLAY (CH), reddish brown and gray, very stiff				3.00 (HP)				26.4		67-18-49	
6.0		5			3.50 (HP)				18.3		52-18-34	
	SANDY LEAN CLAY (CL), reddish brown and light gray, stiff to very stiff				2.50 (HP)							
10.0					1.75 (HP)							
	Boring Terminated at 10 Feet	10										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-22

Location: See Exploration Plan

Latitude: 30.1813° Longitude: -93.1553°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown				--				6.0			
2.0	**LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				11.4			
	FAT CLAY (CH), brown and light gray, hard				4.50 (HP)				14.9			
	-gray and tan, with ferrous nodules below 4 feet	5			1.75 (HP)				19.4	107	56-15-41	
8.0					1.00 (HP)							
10.0	**SANDY LEAN CLAY (CL)**, reddish brown and light gray, very stiff				2.25 (HP)							
	Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-23

Location: See Exploration Plan

Latitude: 30.1806° Longitude: -93.1552°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				4.8			
2.0	**LEAN CLAY (CL)**, brown, hard, with ferrous nodules				4.50 (HP)				16.5			
	FAT CLAY (CH), tan and light gray, hard				4.50 (HP)				20.1		75-14-61	
	-light gray and tan, slickensided below 4 feet	5			3.25 (HP)				18.4			
					2.25 (HP)				18.8			
10.0					2.75 (HP)							
	Boring Terminated at 10 Feet	10										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-01-2023

Boring Completed
08-01-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-24

Location: See Exploration Plan

Latitude: 30.1828° Longitude: -93.1541°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				4.9		22-15-7	
2.0	**SANDY LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				9.9			
6.0	**LEAN CLAY (CL)**, tan and light gray, stiff to very stiff				2.00 (HP)				17.5			
		5			2.25 (HP)							
8.0	**FAT CLAY (CH)**, tan and light gray, very stiff, with trace sand				2.50 (HP)							
10.0	**SANDY LEAN CLAY (CL)**, reddish brown, medium stiff to stiff				1.00 (HP)							
	Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-25

Location: See Exploration Plan

Latitude: 30.1824° Longitude: -93.1537°

Graphic Log Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil				--				11.2			
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and tan, stiff				1.50 (HP)				18.6			
	FAT CLAY (CH), light gray and tan, stiff to very stiff, slickensided				2.25 (HP)				18.5		51-15-36	
6.0		5			1.75 (HP)				18.0			
	SANDY LEAN CLAY (CL), light gray and tan, very stiff				2.25 (HP)							
10.0					1.50 (HP)							
	Boring Terminated at 10 Feet	10										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M.Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-26

Location: See Exploration Plan

Latitude: 30.1824° Longitude: -93.1542°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				10.6			
2.0	**LEAN CLAY (CL)**, brown, stiff to very stiff, with silt seams				2.00 (HP)				18.8			
	FAT CLAY (CH), light gray and tan, stiff, slickensided with ferrous nodules				1.75 (HP)				18.5		60-16-44	
	gray and tan from 4 feet to 6 feet	5			1.50 (HP)							
8.0	tan and gray from 6 feet to 8 feet				2.50 (HP)							
10.0	**SANDY LEAN CLAY (CL)**, brown and reddish brown, stiff to very stiff				2.00 (HP)							
	Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-27

Location: See Exploration Plan

Latitude: 30.1817° Longitude: -93.1537°

Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3	Approximately 3-inches of topsoil				--				12.5			
	1.0	**SILTY CLAY (CL-ML)**, brown, hard											
	2.0	**LEAN CLAY (CL)**, gray and tan, stiff, with silt seams and pockets				1.25 (HP)				20.8			
	8.0	**FAT CLAY (CH)**, light gray and tan, medium stiff to stiff				1.00 (HP)				20.8			
		-with trace sand below 4 feet	5			2.50 (HP)							
		-with ferrous nodules below 6 feet				3.50 (HP)							
	10.0	**SANDY LEAN CLAY (CL)**, light gray and tan, very stiff				3.75 (HP)							
		Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-28

Location: See Exploration Plan

Latitude: 30.1813° Longitude: -93.1535°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Test Type	Compressive Strength (tsf)	Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.4	Approximately 5-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				6.8			
2.0	**LEAN CLAY (CL)**, gray and tan, hard, with calcareous nodules and silt seams				4.50 (HP)				20.1			
8.0	**FAT CLAY (CH)**, tan and gray, stiff to very stiff				1.75 (HP)				18.8			
		5			2.25 (HP)							
					1.50 (HP)							
10.0	**SANDY LEAN CLAY (CL)**, tan and light gray, medium stiff				0.75 (HP)							
	Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-29

Location: See Exploration Plan

Latitude: 30.1816° Longitude: -93.1532°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				11.3			
	LEAN CLAY (CL), brown, very stiff				3.00 (HP)				20.3			
	-tan and light gray below 2 feet				1.50 (HP)				17.3	109	43-14-29	
4.0	**FAT CLAY (CH)**, tan and light gray, stiff to very stiff	5			2.00 (HP)							
6.0	**SANDY LEAN CLAY (CL)**, tan and light gray, very stiff				2.50 (HP)							
	-reddish brown and light gray below 8 feet				1.00 (HP)							
10.0	***Boring Terminated at 10 Feet***	10										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-30

Location: See Exploration Plan

Latitude: 30.1813° Longitude: -93.1442°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard								7.3			
2.0	**LEAN CLAY (CL)**, brown and light gray, hard, with silt seams and pockets and ferrous nodules				4.50 (HP)				15.2			
6.0	**FAT CLAY (CH)**, gray and tan, stiff to very stiff				1.75 (HP)				18.7		62-15-47	
		5			2.00 (HP)							
8.0	**LEAN CLAY (CL)**, reddish brown and gray, medium stiff to stiff				1.00 (HP)							
10.0	**LEAN CLAY WITH SAND (CL)**, reddish brown and gray, stiff to very stiff				2.00 (HP)							
	Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-03-2023

Boring Completed
08-03-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-31

Location: See Exploration Plan

Latitude: 30.1806° Longitude: -93.1544°

Graphic Log Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil				--				7.4			
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				17.7		34-14-20	
	FAT CLAY (CH), reddish brown and light gray, stiff to very stiff				2.75 (HP)				19.0			
	-slickensided below 4 feet	5			1.75 (HP)							
8.0					2.75 (HP)							
10.0	**SANDY LEAN CLAY (CL)**, reddish brown and light gray, medium stiff				0.75 (HP)				23.6			
	Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-32

Location: See Exploration Plan

Latitude: 30.1809° Longitude: -93.1537°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 4-inches of topsoil				--				4.5			
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				12.9			
6.0	**FAT CLAY (CH)**, tan and gray, stiff to very stiff, slickensided				2.50 (HP)				20.3	103	57-12-45	
		5			1.50 (HP)				20.0			
8.0	**LEAN CLAY (CL)**, light gray and tan, stiff				1.75 (HP)				16.7			
10.0	**SANDY LEAN CLAY (CL)**, reddish brown and gray, medium stiff				0.75 (HP)				18.6			
	Boring Terminated at 10 Feet	1										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-01-2023

Boring Completed
08-01-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-33

Location: See Exploration Plan

Latitude: 30.1809° Longitude: -93.1533°

Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown				--				10.3			
	FAT CLAY (CH), tan and light gray, stiff to very stiff				2.50 (HP)				24.5		76-22-54	
					1.25 (HP)				18.1			
6.0	-with ferrous nodules below 4 feet	5			2.00 (HP)				18.3			
	SANDY LEAN CLAY (CL), reddish brown and light gray, stiff -with ferrous nodules to 8 feet				1.50 (HP)				19.4			
10.0					0.50 (HP)							
	Boring Terminated at 10 Feet	10										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-10' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-34

Graphic Log	Location: See Exploration Plan Latitude: 30.1825° Longitude: -93.1584° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3 Approximately 3-inches of topsoil											
	1.0 **SILTY CLAY (CL-ML)**, brown				--				3.7			
	2.0 **LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				6.7		39-24-15	
	FAT CLAY (CH), reddish brown and light gray, very stiff				3.00 (HP)				22.1			
	6.0	5			2.75 (HP)							
	Boring Terminated at 6 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-07-2023

Boring Completed
08-07-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-35

Graphic Log	Location: See Exploration Plan Latitude: 30.1830° Longitude: -93.1579° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3 Approximately 3-inches of topsoil											
	1.0 **SILTY CLAY (CL-ML)**, brown				--				9.7			
	LEAN CLAY (CL), brown and light gray, hard 2.0				4.50 (HP)				9.6		28-15-13	
	FAT CLAY (CH), tan and light gray, very stiff				2.50 (HP)							
	6.0	5			2.25 (HP)							
	Boring Terminated at 6 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-36

Location: See Exploration Plan

Latitude: 30.1827° Longitude: -93.1571°

Graphic Log	Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3	Approximately 4-inches of topsoil											
	1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				6.8			
	2.0	**LEAN CLAY (CL)**, reddish brown and light gray, hard				4.50 (HP)				18.0			
		FAT CLAY (CH), reddish brown and light gray, very stiff				2.50 (HP)							
	6.0		5			2.25 (HP)							

Boring Terminated at 6 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-37

Location: See Exploration Plan

Latitude: 30.1830° Longitude: -93.1565°

Graphic Log Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil				--				7.3			
1.0	**SILTY CLAY (CL-ML)**, brown and light gray, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, very stiff				2.75 (HP)				14.3		38-16-22	
	FAT CLAY (CH), tan and light gray, stiff, slickensided				1.75 (HP)							
6.0		5			1.50 (HP)							
	Boring Terminated at 6 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-04-2023

Boring Completed
08-04-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-38

Location: See Exploration Plan

Latitude: 30.1810° Longitude: -93.1582°

Graphic Log	Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3	Approximately 4-inches of topsoil				--				7.7			
	1.0	**SILTY CLAY (CL-ML)**, brown, hard											
	2.0	**LEAN CLAY (CL)**, brown and tan, hard				4.50 (HP)				17.2			
		FAT CLAY (CH), gray and tan, stiff to very stiff, slickensided				2.00 (HP)				21.1		54-13-41	
	6.0	-tan and reddish brown below 4 feet	5			3.00 (HP)							

Boring Terminated at 6 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-39

Location: See Exploration Plan

Latitude: 30.1804° Longitude: -93.1582°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil				--				5.6			
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and light gray, hard				4.50 (HP)				13.9			
	FAT CLAY (CH), tan and light gray, hard, slickensided				4.50 (HP)							
6.0		5			2.75 (HP)							
	Boring Terminated at 6 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-40

Graphic Log	Location: See Exploration Plan Latitude: 30.1807° Longitude: -93.1575° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3 Approximately 3-inches of topsoil				--				4.0			
	1.0 **SILTY CLAY (CL-ML)**, brown											
	LEAN CLAY (CL), tan and brown, hard 2.0				4.50 (HP)				9.2		32-16-16	
	FAT CLAY (CH), tan and reddish brown, very stiff to hard				4.50 (HP)							
	6.0	5			3.50 (HP)							
	Boring Terminated at 6 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-01-2023

Boring Completed
08-01-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-41

Location: See Exploration Plan

Latitude: 30.1810° Longitude: -93.1567°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.4	Approximately 5-inches of topsoil											
1.0	**SILTY CLAY (CL-ML)**, brown, hard				--				12.0			
2.0	**LEAN CLAY (CL)**, brown and tan, medium stiff to stiff				1.00 (HP)							
6.0	**FAT CLAY (CH)**, tan and gray, medium stiff to stiff, slickensided				1.00 (HP)				18.9			
		5			1.50 (HP)							

Boring Terminated at 6 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-42

Location: See Exploration Plan

Latitude: 30.1804° Longitude: -93.1567°

Graphic Log	Depth (Ft.) / Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
	0.3 Approximately 3-inches of topsoil											
	1.0 **SILTY CLAY (CL-ML)**, brown, hard				--				10.3		27-17-10	
	2.0 **LEAN CLAY (CL)**, brown and light gray, stiff				1.50 (HP)				17.5			
	FAT CLAY (CH), tan and light gray, stiff to very stiff, slickensided				2.25 (HP)							
	6.0	5			1.75 (HP)							

Boring Terminated at 6 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

Terracon
220 Prater Rd
Sulphur, LA

Boring Log No. B-43

Location: See Exploration Plan

Latitude: 30.1806° Longitude: -93.1537°

Graphic Log / Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
0.3	Approximately 3-inches of topsoil				--				5.9			
1.0	**SILTY CLAY (CL-ML)**, brown, hard											
2.0	**LEAN CLAY (CL)**, brown and tan, hard				4.50 (HP)				8.7		40-15-25	
	FAT CLAY (CH), tan and light gray, hard, with trace silt				4.50 (HP)							
6.0	-with ferrous nodules below 4 feet	5			1.00 (HP)							

Boring Terminated at 6 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations based on Google Earth

Water Level Observations
No free water observed

Advancement Method
0'-6' Continuous Flight Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
ATV

Hammer Type
Rope and Cathead

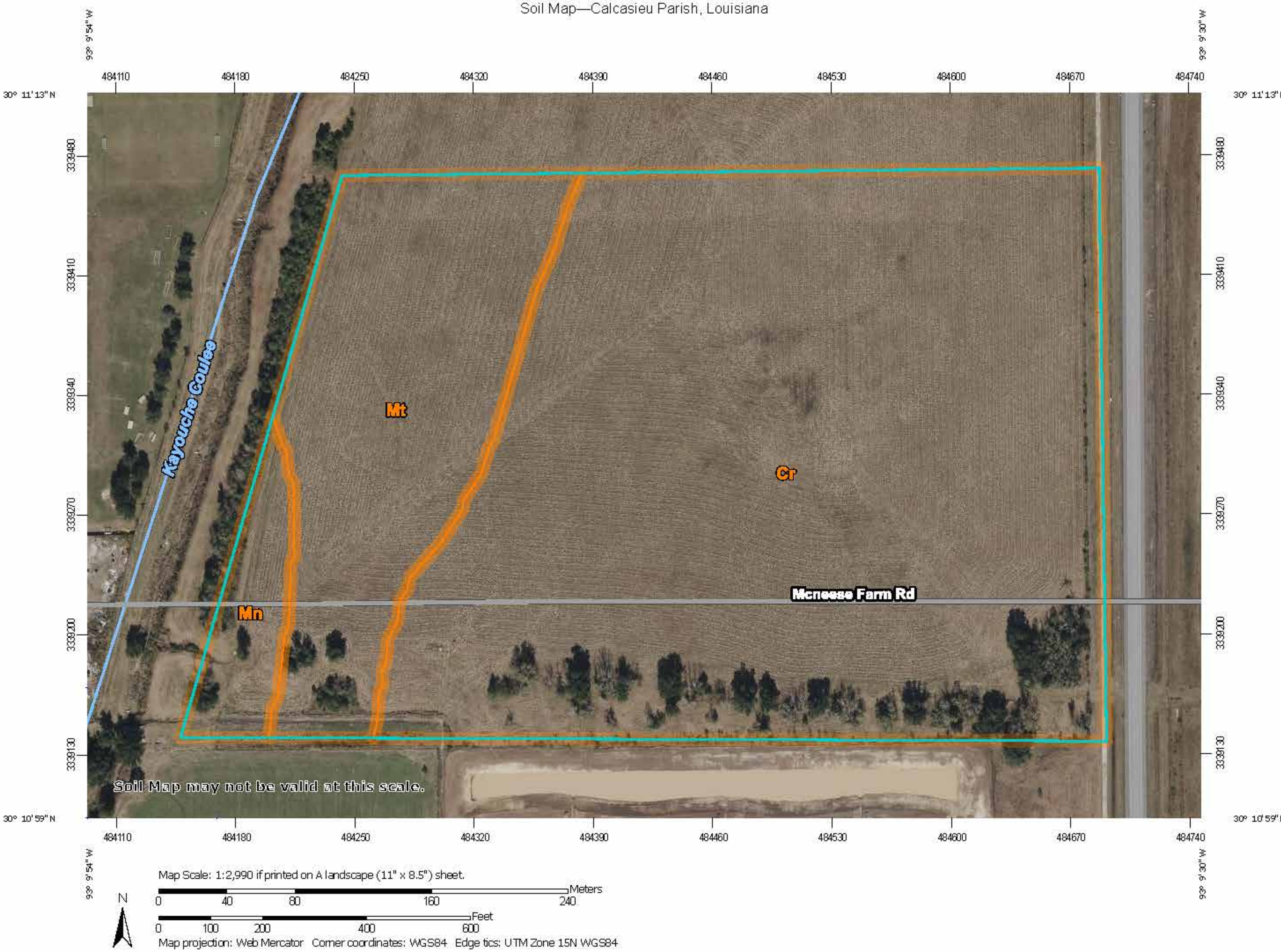
Driller
M. Billiot

Logged by
B. Alexander

Boring Started
08-02-2023

Boring Completed
08-02-2023

APPENDIX 3. NRCS USDA Soil Map


93° 9' 54" W
93° 9' 30" W
30° 11' 13" N
30° 10' 59" N
484110
484180
484250
484320
484390
484460
484530
484600
484670
484740
3339480
3339410
3339340
3339270
3339200
3339130
Kayouche Coulee
Mt
Cr
Mn
Mcneese Farm Rd
Soil Map may not be valid at this scale.
Map Scale: 1:2,990 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 40 80 160 240
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Calcasieu Parish, Louisiana
Survey Area Data: Version 18, Sep 1, 2022

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

Date(s) aerial images were photographed: Nov 13, 2022—Nov 27, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cr	Crowley-Vidrine complex, 0 to 1 percent slopes	30.4	74.9%
Mn	Midland silty clay loam, 0 to 1 percent slopes, rarely flooded	1.6	4.0%
Mt	Mowata-Vidrine complex, 0 to 1 percent slopes, rarely flooded	8.6	21.2%
Totals for Area of Interest		**40.6**	**100.0%**

APPENDIX 4. Wetland Delineation

SOUTHLAND
ENVIRONMENTAL

SENT VIA EMAIL

October 23, 2023

Mr. Stephen C. Hotard
Champeaux, Evans, Hotard
720 Dr. Michael Debakey Drive
Lake Charles, LA 70601

RE: Wetland Delineation
47-Acre Tract- Corbina Road
Calcasieu Parish, Louisiana

Dear Mr. Hotard,

Southland Environmental, LLC is pleased to provide this electronic copy of the Wetland Delineation Report for the referenced property. A copy of this Delineation Report can be submitted to the Corps of Engineers with a request for a preliminary wetland determination upon your review and approval.

If you have any questions or need a bound copy of the report, please do not hesitate to contact us. We appreciate the opportunity to provide this service for you.
Sincerely,

C. Blaine Johnson, P.E.
Owner/Sr. Engineer

Attachment

WETLAND DELINEATION

47-ACRE TRACT CORBINA ROAD
CALCASIEU PARISH, LOillSIANA

Prepared for:

Champeaux Evans Hotard
702 Dr. Michael Debakey Drive
Lake Charles, Louisiana 70601

October 23, 2023

C. Blaine Johnson, P.E.
Owner/Sr. Engineer

Jared King, P.G.
Owner/Sr. Environmental Scientist

Prepared by:

SOUTHLAND ENVIRONMENTAL

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SUMMARY

An approximate 47-acre tract located east of Corbina Road in Lake Charles, Calcasieu Parish, Louisiana was evaluated for the presence of jurisdictional wetlands. The property is undeveloped and is comprised of pastured land. The site has been historically used for agricultural purposes. A series of roads and small drainage swales are located on the tract to promote drainage to aide with hay production and cattle grazing.

The dominant grass vegetation consisted of Yellow Bluestem and Bahia grass. Soils present on the property, as mapped by the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) include Mowata-Vidrine and Crowley-Vidrine silt loams. The property has a relatively flat topography which is not typical of the listed soil types. Typical Mowata-Vidrine and Crowley-Vidrine silt loams are typically “pimple mounded”. The mounds were likely leveled as a result of historical agriculture activities on the property.

The wetland delineation was performed in accordance with the procedures and methods as described in the U.S. Department of the Army Corps of Engineers (COE) 1987 Manual for Wetland Delineations and the Atlantic and Gulf Coastal Plain Regional Supplement 2010.

Based on the results of this delineation, 6.1 acres of wetlands are present within the tract boundary.

1.0 INTRODUCTION

Southland Environmental, LLC (Southland Environmental) was retained to conduct a wetland delineation on property that is located east of Corbina Road in Lake Charles, Calcasieu Parish. The property is located in Section 23, Township 10 South, Range 08 West. The center of the property is located at Latitude 30º 10’ 54.1” North, Longitude 93º 9’ 21.1” West. The purpose of the delineation was to evaluate the tract for the potential presence of wetlands. A site location map is included as **Figure 1** and a site diagram is included as **Figure 2.** LIDAR imagery was also reviewed and is included as **Figure 3**. LIDAR is a remote sensing method that uses a near-infrared laser to map changes in elevation of the surface of the Earth. Also included as **Figure 4** is a Flagging Key.

Jared King of Southland Environmental was involved with the field evaluation on October 5, 2023. Mr. King has a Bachelor’s of Science Degree in Environmental Science and has experience in wetland ecosystem evaluation and wetland vegetation identification, in addition to specialized training in performing wetland delineations. Mr. King has been performing wetland delineations for over ten years. Blaine Johnson managed the project. Mr. Johnson has over thirty years’ experience in environmental investigation and permitting, with over twenty years’ experience in wetland permitting. Copies of the applicable Certificates of Training are included as **Attachment A**.

2.0 METHODOLOGY

The wetland delineation performed by Southland Environmental was conducted in accordance with technical guidelines and methods for wetland delineations set forth by the COE in the 1987

Manual for Wetland Delineations and the Atlantic and Gulf Coastal Plains Regional Supplement 2010. These technical guidelines and methods utilize a multi-parameter approach to identify and delineate wetlands for the purposes of Section 404 of the Clean Water Act.

According to the COE 1987 Manual for Wetland Delineations, a site must have hydrophytic vegetation, hydric soils, and wetland hydrology in order for it to be classified as a wetland. The following definitions are from the COE 1987 Manual for Wetland Determinations:

> **Hydrophytic vegetation** – the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. When hydrophytic vegetation comprises a community where indicators of hydric soils and wetland hydrology also occur, the area has wetland vegetation.
>
> **Wetland soils** – a soil that is saturated, flooded, ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (US Department of Agriculture – Soil Conservation Service 1985). Hydric soils that occur in areas having positive indicators of hydrophytic vegetation and wetland hydrology are wetland soils.
>
> **Wetland hydrology** – the sum total of wetness characteristics in areas that are inundated or have saturated soils for sufficient duration to support hydrophytic vegetation.

Prior to the site visit, the Calcasieu Parish Soil Survey prepared by the USDA-NRCS was reviewed. The purpose of that review was to determine the soil types as mapped by USDA. As indicated by the Soil Survey, the delineated site includes two soil types: Mowata-Vidrine silt loams (Mt) and Crowley-Vidrine silt loams (Cr). Mt soils are listed as a partially hydric soil and Cr soils are listed as a predominantly nonhydric soil in Calcasieu Parish. In addition to the soils map, infrared aerial photographs from 1998, 2004, and 2008 were reviewed. The soil maps and infrared photographs are included as **Attachment B**.

The delineation was begun by traversing the site and making a general evaluation of the topography and drainage features. Sample points were selected at appropriate locations to properly characterize the soil, vegetation, and hydrology on the investigated property. Five representative sample points were selected and a detailed evaluation was conducted at these locations. The data collected at these sample points were recorded on Wetland Data Forms and the location of the sample plots were marked with a Trimble Global Positioning Unit (GPS). The Wetland Data Forms are included as **Attachment C**.

After a general evaluation of the tract and conducting data points, a Trimble GPS was utilized to map the wetland areas. Once GPS mapping was completed, geospatial data was imported into ArcView GIS for graphical display and land cover analysis.

3.0 SITE DESCRIPTION

The delineated property is located east of Corbina Road and north of East McNeese Street in Lake Charles, Calcasieu Parish. The tract is rectangular in shape and encompasses approximately 47 acres. Based on aerial photography review and the site investigation, the property is currently undeveloped and consists of pasture land. The dominant vegetation on the site is listed within Section 4.1 of this report. As noted earlier, the USDA-NRCS soil maps indicate that soils on the property consist of two soil types: Mt and Cr. Mt soils are listed as partially hydric in Calcasieu Parish. Cr soils are listed as predominantly nonhydric soil.

Photographs of the sample locations were taken and are included as **Attachment D**.

4.0 FINDINGS

The tract of land was inspected with respect to the potential presence of wetlands. Five sample points were selected to characterize the site. At these sample points, the soils, hydrology, and vegetation were characterized and the information was recorded on Wetland Data Forms. The findings of the delineation are described in the following sections.

4.1 VEGETATION

The typical dominant plant species that were encountered at the site included the following:

UPLAND

Brothriochloa ischaemum (King Ranch Bluestem)
Croton Capitatus (Hogwort)

FACULTATIVE UPLAND

Paspalum notatum (Bahia grass)

FACULTATIVE

Stenotaphrum secundatum (St. Augustine Grass)
Triadica sebifera (Chinese Tallow)
Morella cerifera (Southern Bayberry)

FACULTATIVE WETLAND

Saccharum giganteum (Plume Grass)
Bidens aristosa (Breaded Beggarticks)

OBLIGATE WETLAND

Juncus effusus (Lamp Rush)

Two of the sample points had a dominance of hydrophytic vegetation.

4.2 SOILS

The review of the Soil Survey indicated that the delineated tract was located on two soil types. Below is a brief description of the soils from the Soil Survey of Calcasieu Parish.

- Mt soils are level and gently sloping, poorly drained and moderately well drained. They are on the Gulf Coast Prairies. The landscape consists of broad flats that have many low mounds. The mounds are circular and range from 30 to 150 feet in diameter and from 1 to 6 feet in height. Individual areas of this complex range from 30 to 1,500 acres and contain about 60 percent Mowata soils and about 30 percent Vidrine soils. The poorly drained Mowata soil is in the intermound areas and the moderately well drained Vidrine soil is on the mounds. Slopes range from about 0 to 1 percent on the intermound areas and from about 1 to 5 percent on the mounds. The investigated property did not exhibit the typical "pimple mounded" topography associated with Mt soils. The soils were likely leveled as a result of the historical agriculture practices that may have occurred on the site. Mt soils are listed as partially hydric in Calcasieu Parish.

- Cr soils are level and somewhat poorly drained. They are on broad convex ridges on the Gulf Coast Prairies. This complex consists of small areas of Crowley and Vidrine soils that are so intermingled that they cannot be mapped separately at the scale selected. Areas are irregular in shape and range from 20 to 1,000 acres. The landscape consists of broad, convex ridges that contain many small convex mounds. The mounds are circular and range from 50 to 150 feet in diameter and 1 foot to 6 feet in height. Cr soils are listed as predominantly nonhydric in Calcasieu Parish however, during the site inspection hydric soil indicators were present in areas of the site mapped Cr.

4.3 HYDROLOGY

General observations and inspections of the soil samples were performed to evaluate for wetland hydrology. One primary indicator or two secondary indicators must be present for an area to have wetland hydrology.

- Sample Plot 1 exhibited no primary or secondary indicators of wetland hydrology. One primary indicator or two secondary indicators must be present for an area to have wetland hydrology.

- Sample Plot 2 exhibited oxidized rhizospheres on living roots, which is primary wetland hydrology indicators. This plot also included secondary hydrology indicators crawfish burrows and geomorphic position.

- Sample Plot 3 exhibited no primary or secondary indicators of wetland hydrology. One primary indicator or two secondary indicators must be present for an area to have wetland hydrology.

- Sample Plot 4 exhibited oxidized rhizospheres on living roots, which is primary wetland hydrology indicators. This plot also included secondary hydrology indicators crawfish burrows and geomorphic position.

- Sample Plot 5 exhibited no primary or secondary indicators of wetland hydrology. One primary indicator or two secondary indicators must be present for an area to have wetland hydrology.

5.0 CONCLUSIONS

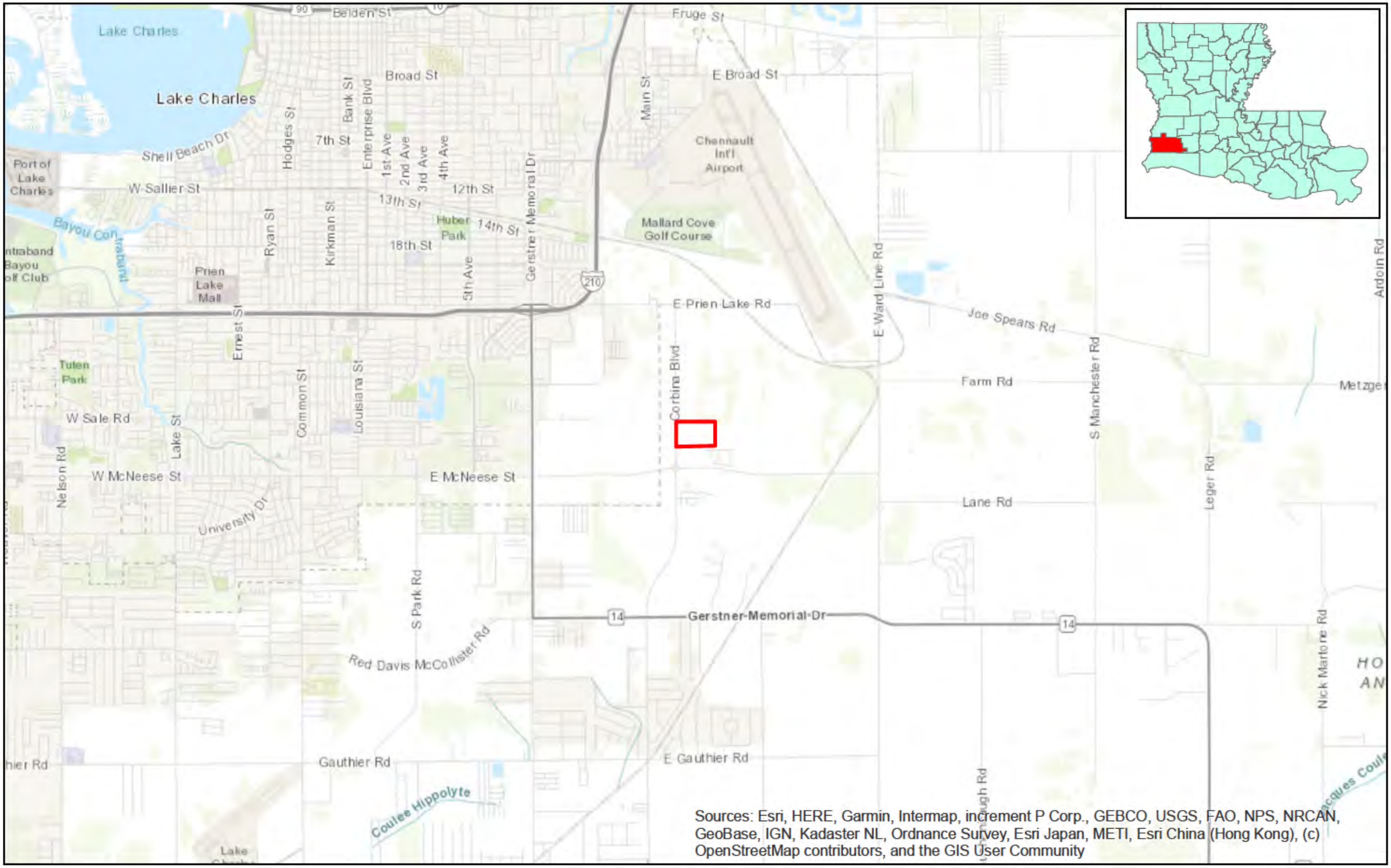
An approximate 47-acre tract located adjacent east of Corbina Road in eastern Lake Charles, Louisiana was evaluated for the presence of jurisdictional wetlands. The wetland delineation was performed in accordance with the procedures and methods as described in the COE 1987 Manual for Wetland Delineations.

The investigated property consists of agricultural or pasture land. Due to agricultural practices, the site has been manipulated to promote drainage. Field roads and small drainage swales have been installed on the tract. The eastern section of the property is at a lower elevation and shows evidence of wetland characteristics. A small depression area in the center of the tract that is poorly drained also showed evidence of wetland characteristics. The western portion of the land showed the highest elevations and no evidence of wetland hydrology.

Based on the results of this delineation, approximately 6.1 acres of herbaceous wetlands and 40.9 acres of uplands are present on the investigated property. The wetlands identified on the tract appeared to be isolated in nature and not directly connected or adjacent to a navigable water way.

FIGURE 1

Site Location Map



0 0.5 1 2 Miles

Review Area (±47 Ac)

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FIGURE 1
SITE LOCATION MAP

WETLAND DELINEATION
PROPOSED ST. LOUIS SCHOOL
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: JRK	Date: 10/02/23	SE Project # 12096
Checked By:	Date:	Revised:

FIGURE 2

Site Diagram

Review Area (±47 Acres)

Wetland Area (±6.1 Acres)

Sample Plot & ID

Roadside Ditch (1,175 Feet)

Field Road

0 125 250 500 Feet

SOUTHLAND ENVIRONMENTAL

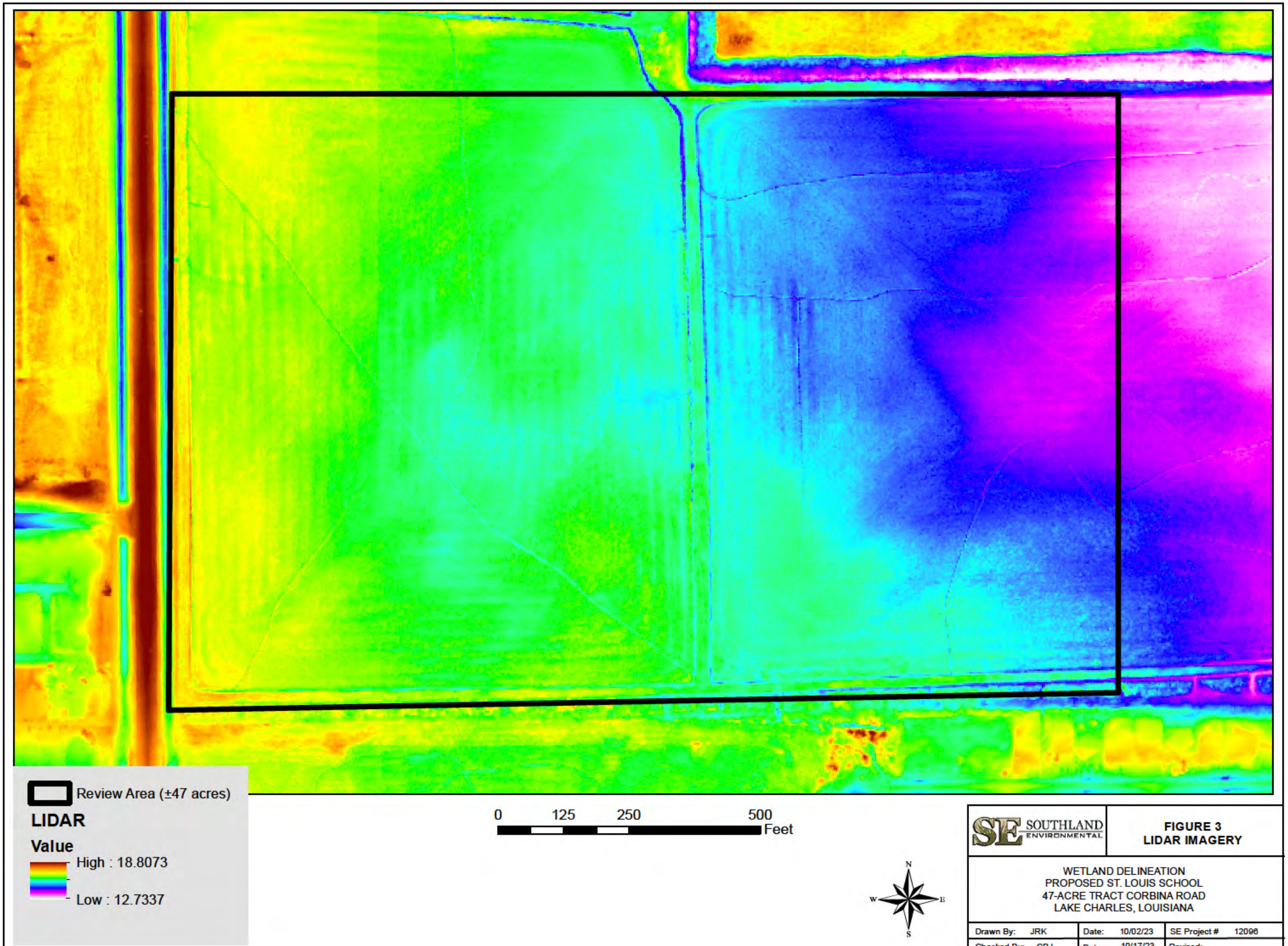
FIGURE 2
SITE DIAGRAM

WETLAND DELINEATION
PROPOSED ST. LOUIS SCHOOL
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By:	JRK	Date:	10/17/23	SE Project #	12096
Checked By:	CBJ	Date:	10/17/23	Revised:	

FIGURE 3

Lidar Imagery



SOUTHLAND ENVIRONMENTAL

FIGURE 3
LIDAR IMAGERY

WETLAND DELINEATION
PROPOSED ST. LOUIS SCHOOL
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By:	JRK	Date:	10/02/23	SE Project #	12096
Checked By:	CBJ	Date:	10/17/23	Revised:	

FIGURE 4

Flagging Key

0 125 250 500
Feet

Review Area (±47 Acres)
Wetland Area (±6.1 Acres)

SOUTHLAND ENVIRONMENTAL

FIGURE 4
FLAGGING KEY

WETLAND DEL NEATION
PROPOSED ST. LOUIS SCHOOL
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By:	JRK	Date:	10/17/23	SE Project #	12096
Checked By:	CBJ	Date:	10/17/23	Revised:	

ATTACHMENT A

Certificates of Training

Richard Chinn Environmental Training, Inc.

certifies that

Jared King

has successfully completed a

38 Hour Army Corps of Engineers Wetland Delineation Training Program

Issued Certificate No. 9362 and 3.8 CEUs, September 25 - 28, 2023, in Baton Rouge, Louisiana

This course is pre-approved by the Society of Wetland Scientists Professional Certification Program to provide 2.5 Training Credits and/or Points

Richard Chinn, SPWS

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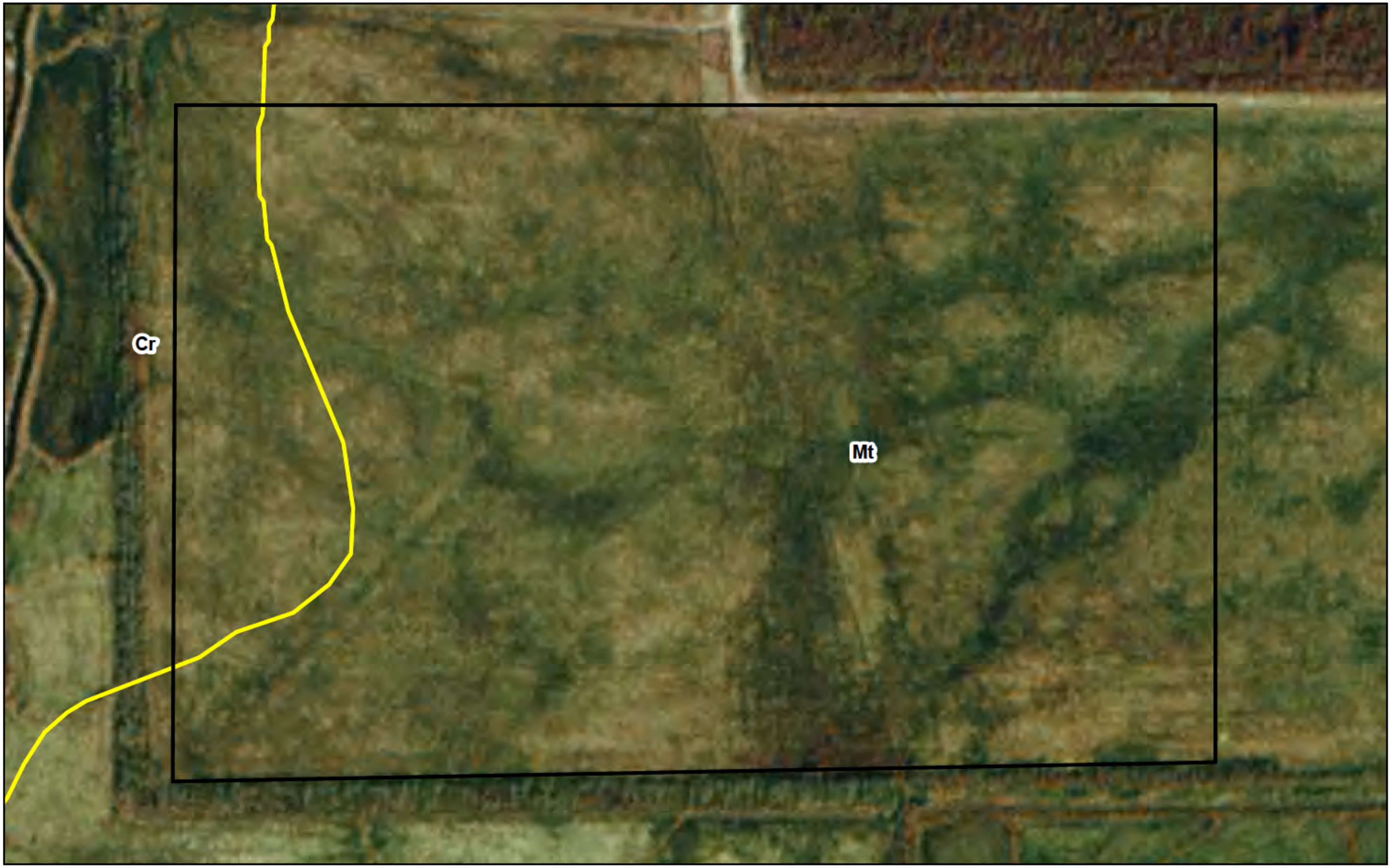
This training has been based in part on the U. S. Army Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1 (1987 manual), as provided for in the training materials developed in conjunction with Section 307(e) of the Water Resources Development Act of 1990 for the Wetland Delineator Certification Program.

ATTACHMENT B

Infrared and Soil Maps



1998 AERIAL

0 125 250 500 Feet

Review Area (±47 Ac)

N
W
E
S

SOUTHLAND ENVIRONMENTAL

ATTACHMENT B
INFRARED AND SOIL MAP

WETLAND DELINEATION
PROPOSED ST. LOUIS SCHOOL
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By:	JRK	Date:	10/02/23	SE Project #	12096
Checked By:	CBJ	Date:	10/17/23	Revised:	

2004 AERIAL

0 125 250 500 Feet

Review Area (±47 Ac)

N W E S

SOUTHLAND ENVIRONMENTAL

ATTACHMENT B
INFRARED AND SOIL MAP

WETLAND DELINEATION
PROPOSED ST. LOUIS SCHOOL
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By:	JRK	Date:	10/02/23	SE Project #	12096
Checked By:	CBJ	Date:	10/17/23	Revised:	

2008 AERIAL

0 115 230 460 Feet

Review Area (±47 Ac)

SOUTHLAND ENVIRONMENTAL

ATTACHMENT B
INFRARED AND SOIL MAP

WETLAND DELINEATION
PROPOSED ST. LOUIS SCHOOL
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By:	JRK	Date:	10/17/23	SE Project #	12096
Checked By:	CBJ	Date:	10/17/23	Revised:	

ATTACHMENT C

Wetland Data Forms

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Champeaux Evans Hotard - St. Louis High City/County: Lake Charles/Calcasieu Sampling Date: 10/9/23
Applicant/Owner: Lake Charles Diocese State: LA Sampling Point: 1
Investigator(s): J.King/L. Demary Section, Township, Range: 23-10S-08W
Landform (hillside, terrace, etc.): Slight Ridge Local relief (concave, convex, none): Convex Slope (%): 0-1
Subregion (LRR or MLRA): LRR T, MLRA 150A Lat: 484754 Long: 3339002 Datum: UTM NAD 83
Soil Map Unit Name: Crowley-Vidrine (Cr) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	**Is the Sampled Area within a Wetland?**	**Yes** ___ **No** X
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes ___ No X		

Remarks:
Drier than normal site conditions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Sapling/Shrub Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Croton capitatus*	20	Yes	UPL
2. *Triadica sebifera*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	22	=Total Cover	
50% of total cover:	11	20% of total cover:	5

Herb Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Bothriochloa ischaemum*	50	Yes	UPL
2. *Stenotaphrum secundatum*	40	Yes	FAC
3. *Kummerowia striata*	5	No	FACU
4. *Iva angustifolia*	2	No	UPL
5. *Erigeron annuus*	1	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	98	=Total Cover	
50% of total cover:	49	20% of total cover:	20

Woody Vine Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	42	x 3 =	126
FACU species	6	x 4 =	24
UPL species	72	x 5 =	360
Column Totals:	120 (A)		510 (B)

Prevalence Index = B/A = 4.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	95	7.5YR 5/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
X Coast Prairie Redox (A16) **(outside MLRA 150A)**
___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Champeaux Evans Hotard - St. Louis High City/County: Lake Charles/Calcasieu Sampling Date: 10/9/23

Applicant/Owner: Lake Charles Diocese State: LA Sampling Point: 2

Investigator(s): J.King/L. Demary Section, Township, Range: 23-10S-08W

Landform (hillside, terrace, etc.): Slight Depression Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR or MLRA): LRR T, MLRA 150A Lat: 484880 Long: 3338953 Datum: UTM NAD 83

Soil Map Unit Name: Mowata-Vidrine (Mt) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:
Drier than normal site conditions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	____ Aquatic Fauna (B13)
____ High Water Table (A2)	____ Marl Deposits (B15) **(LRR U)**
____ Saturation (A3)	____ Hydrogen Sulfide Odor (C1)
____ Water Marks (B1)	X Oxidized Rhizospheres on Living Roots (C3)
____ Sediment Deposits (B2)	____ Presence of Reduced Iron (C4)
____ Drift Deposits (B3)	____ Recent Iron Reduction in Tilled Soils (C6)
____ Algal Mat or Crust (B4)	____ Thin Muck Surface (C7)
____ Iron Deposits (B5)	____ Other (Explain in Remarks)
____ Inundation Visible on Aerial Imagery (B7)	
____ Water-Stained Leaves (B9)	

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Sapling/Shrub Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Croton capitatus*	1	No	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1	=Total Cover	
50% of total cover:	1	20% of total cover:	1

Herb Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Stenotaphrum secundatum*	40	Yes	FAC
2. *Juncus effusus*	30	Yes	OBL
3. *Cynodon dactylon*	10	No	FACU
4. *Paspalum notatum*	5	No	FACU
5. *Erigeron annuus*	5	No	FACU
6. *Cuphea viscosissima*	2	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	92	=Total Cover	
50% of total cover:	46	20% of total cover:	19

Woody Vine Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	0	x 2 =	0
FAC species	42	x 3 =	126
FACU species	20	x 4 =	80
UPL species	1	x 5 =	5
Column Totals:	93 (A)		241 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Loamy/Clayey	
4-15	10YR 4/2	98	7.5YR 5/6	2	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
X Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
X Coast Prairie Redox (A16) **(outside MLRA 150A)**
___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Champeaux Evans Hotard - St. Louis High City/County: Lake Charles/Calcasieu Sampling Date: 10/9/23

Applicant/Owner: Lake Charles Diocese State: LA Sampling Point: 3

Investigator(s): J.King/L. Demary Section, Township, Range: 23-10S-08W

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR or MLRA): LRR T, MLRA 150A Lat: 485155 Long: 3338994 Datum: UTM NAD 83

Soil Map Unit Name: Mowata-Vidrine (Mt) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes X	No ___	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:
Drier than normal site conditions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Sapling/Shrub Stratum (Plot size: 30)			
1. *Croton capitatus*	5	Yes	UPL
2. *Triadica sebifera*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	10	=Total Cover	
50% of total cover:	5	20% of total cover:	2

Herb Stratum (Plot size: 30)			
1. *Bothriochloa ischaemum*	80	Yes	UPL
2. *Paspalum notatum*	50	Yes	FACU
3. *Stenotaphrum secundatum*	20	No	FAC
4. *Iva angustifolia*	5	No	UPL
5. *Cuphea viscosissima*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	157	=Total Cover	
50% of total cover:	79	20% of total cover:	32

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25.0%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	27	x 3 =	81
FACU species	50	x 4 =	200
UPL species	90	x 5 =	450
Column Totals:	167 (A)		731 (B)

Prevalence Index = B/A = 4.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	95	7.5YR 5/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- X Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Champeaux Evans Hotard - St. Louis High City/County: Lake Charles/Calcasieu Sampling Date: 10/9/23

Applicant/Owner: Lake Charles Diocese State: LA Sampling Point: 4

Investigator(s): J.King/L. Demary Section, Township, Range: 23-10S-08W

Landform (hillside, terrace, etc.): Slight Depression Local relief (concave, convex, none): Concave Slope (%): 0-1

Subregion (LRR or MLRA): LRR T, MLRA 150A Lat: 485173 Long: 3338942 Datum: UTM NAD 83

Soil Map Unit Name: Mowata-Vidrine (Mt) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
Drier than normal site conditions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Sapling/Shrub Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Morella cerifera*	5	Yes	FAC
2. *Croton capitatus*	2	Yes	UPL
3. *Triadica sebifera*	2	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	9	=Total Cover	
50% of total cover:	5	20% of total cover:	2

Herb Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Saccharum giganteum*	60	Yes	FACW
2. *Bidens aristosa*	25	Yes	FACW
3. *Persicaria punctata*	3	No	OBL
4. *Erigeron annuus*	2	No	FACU
5. *Paspalum notatum*	2	No	FACU
6. *Iva angustifolia*	1	No	UPL
7. *Panicum virgatum*	1	No	FAC
8.			
9.			
10.			
11.			
12.			
	94	=Total Cover	
50% of total cover:	47	20% of total cover:	19

Woody Vine Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	85	x 2 =	170
FAC species	8	x 3 =	24
FACU species	4	x 4 =	16
UPL species	3	x 5 =	15
Column Totals:	103 (A)		228 (B)

Prevalence Index = B/A = 2.21

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	95	5YR 5/8	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) (**MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes X **No** ___

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Champeaux Evans Hotard - St. Louis High City/County: Lake Charles/Calcasieu Sampling Date: 10/9/23

Applicant/Owner: Lake Charles Diocese State: LA Sampling Point: 5

Investigator(s): J.King/L. Demary Section, Township, Range: 23-10S-08W

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR or MLRA): LRR T, MLRA 150A Lat: 485088 Long: 3338829 Datum: UTM NAD 83

Soil Map Unit Name: Mowata-Vidrine (Mt) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No X (If no, explain in Remarks.)

Are Vegetation No , Soil No , or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation No , Soil No , or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:
Drier than normal site conditions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Sapling/Shrub Stratum (Plot size: 30)			
1. *Croton capitatus*	15	Yes	UPL
2. *Triadica sebifera*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	20	=Total Cover	
50% of total cover:	10	20% of total cover:	4
Herb Stratum (Plot size: 30)			
1. *Bothriochloa ischaemum*	70	Yes	UPL
2. *Paspalum notatum*	10	No	FACU
3. *Andropogon virginicus*	10	No	FAC
4. *Sporobolus indicus*	5	No	FACU
5. *Iva annua*	1	No	FAC
6. *Solidago odora*	1	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	97	=Total Cover	
50% of total cover:	49	20% of total cover:	20
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	16	x 3 =	48
FACU species	15	x 4 =	60
UPL species	86	x 5 =	430
Column Totals:	117 (A)		538 (B)

Prevalence Index = B/A = 4.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	95	7.5YR 5/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
_X_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:

ATTACHMENT D

Site Photographs

Photograph 1
Sample Plot 1

Photograph 2
General View of Plot 1 Facing North

Photograph 3
General View of Plot 1 Facing East

Photograph 4
General View of Plot 1 Facing South

Photograph 5
General View of Plot 1 Facing West

Photograph 6
Sample Plot 2

Photograph 7
General View of Plot 2 Facing North

Photograph 8
General View of Plot 2 Facing East

Photograph 9
General View of Plot 2 Facing South

Photograph 10
General View of Plot 2 Facing West

Photograph 11
Sample Plot 3


Photograph 12
General View of Plot 3 Facing North


Photograph 13
General View of Plot 3 Facing East


Photograph 14
General View of Plot 3 Facing South

Photograph 15
General View of Plot 3 Facing West

Photograph 16
Sample Plot 4

Photograph 17
General View of Plot 4 Facing North

Photograph 18
General View of Plot 4 Facing East


Photograph 19
General View of Plot 4 Facing South


Photograph 20
General View of Plot 4 Facing West

Photograph 21
Sample Plot 5

Photograph 22
General View of Plot 5 Facing North

Photograph 23
General View of Plot 5 Facing East

Photograph 24
General View of Plot 5 Facing South

Photograph 25
General View of Plot 5 Facing West

APPENDIX 5. EPA Sole Source Aquifer Program Response Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1201 ELM STREET, SUITE 500
DALLAS, TEXAS 75270

December 12, 2023

Ms. Tiffany Spann-Winfield
Deputy EHP Program Lead, Environmental Liaison Officer
FEMA-DR 4559 LA / Louisiana Integration and Recovery Office
1500 Main Street
Baton Rouge, LA 70802

Dear Ms. Spann-Winfield:

We have received your December 4, 2023, letter requesting our evaluation of the potential environmental impacts which might result from the following project:

Propose Roman Catholic Church/Diocese of Lake Charles, Replace/Rebuild: St. Louis High School Facilities in Alternative Location, Funded By The Federal Emergency Management Agency (FEMA), (PW#s 1265, 2284, 2495 FEMA-DR-4559-LA) /// General Area: (30.181700, -93.158600), 47 Acres, Near Intersection: James Court & Corbina Road, Lake Charles, Calcasieu Parish, LA 70615

The project funded by the Federal Emergency Management Agency (FEMA), is located on the Chicot aquifer system which has been designated a sole source aquifer (SSA) by the EPA. Based on the information provided for the project, we have determined that the project, as proposed, should not have an adverse effect on the quality of the ground water underlying the project site.

This approval of the proposed project does not relieve the applicant from adhering to other State and Federal requirements, which may apply. This approval is based solely upon the potential impact to the quality of ground water as it relates to the EPA's authority pursuant to Section 1424(e) of the Safe Drinking Water Act.

EPA intends to evaluate and respond to all projects submitted for formal review or evaluation purposes within forty-five (45) calendar days, from the Stamped Date the project is received by the EPA. However, if EPA is unable to complete its review within that timeframe, no assumption of a determination of a lack of impacts can be made. EPA acknowledges our approval is not required by law for the project to proceed with funding.

If you did not include the parish, project description, project location, area map, plat or the federal funding agency, please do so in future SSA correspondence.

If you have any questions on this letter or the SSA program please contact me at (214) 665-8485.

Sincerely yours,

Omar T. Martinez, Coordinator
Sole Source Aquifer Program
Ground Water/UIC Section

cc: Jesse Means, LDEQ
Lead Environmental Protection Specialist | FEMA | EHP | LIRO, Region 6

Date: December 12, 2023

FYI: We have moved and have a New Address & Mail Code, please see below.

Omar T. Martinez, Environmental Scientist
Sole Source Aquifer Program Coordinator
Ground Water/UIC Section (Mail Code: WDDG)
U.S. Environmental Protection Agency, Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270

APPENDIX 6. U.S. Fish & Wildlife Service Consultation Letter, Species List Louisiana Ecological Services Field Office, and NE Consistency Letter_ Louisiana Endangered Species Act project

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
Phone: (337) 291-3100 Fax: (337) 291-3139

In Reply Refer To: October 13, 2023
Project Code: 2024-0004556
Project Name: St. Louis High School Relocation

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and candidate species, as well as designated and proposed critical habitat that may occur within the boundary of your proposed project and may be affected by your proposed project. The Fish and Wildlife Service (Service) is providing this list under section 7 (c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Changes in this species list may occur due to new information from updated surveys, changes in species habitat, new listed species and other factors. Because of these possible changes, feel free to contact our office (337-291-3109) for more information or assistance regarding impacts to federally listed species. The Service recommends visiting the IPaC site or the Louisiana Ecological Services Field Office website (https://www.fws.gov/southeast/lafayette) at regular intervals during project planning and implementation for updated species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect Federally listed species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)).

Bald eagles have recovered and were removed from the List of Endangered and Threatened Species as of August 8, 2007. Although no longer listed, please be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.).

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance", which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: https://www.fws.gov/migratorybirds/pdf/management/ nationalbaldeaglenanagementguidelines.pdf

Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. Onsite personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/ southeast/our-services/eagle-technical-assistance/. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. The Division of Migratory Birds for the Southeast Region of the Service (phone: 404/679-7051, e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting any necessary consultation.

Activities that involve State-designated scenic streams and/or wetlands are regulated by the Louisiana Department of Wildlife and Fisheries and the U.S. Army Corps of Engineers, respectively. We, therefore, recommend that you contact those agencies to determine their interest in proposed projects in these areas.

Activities that would be located within a National Wildlife Refuge are regulated by the refuge staff. We, therefore, recommend that you contact them to determine their interest in proposed projects in these areas.

Additional information on Federal trust species in Louisiana can be obtained from the Louisiana Ecological Services website at: https://www.fws.gov/southeast/lafayette

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Louisiana Ecological Services Field Office
200 Dulles Drive
Lafayette, LA 70506
(337) 291-3100

PROJECT SUMMARY

Project Code: 2024-0004556
Project Name: St. Louis High School Relocation
Project Type: New Constr - Above Ground
Project Description: The applicant proposes to replace the St. Louis High School Old Gym and Main Building by relocating and rebuilding the facilities. The proposed location has been identified as approximately 47 acres located east of the intersection of Corbina Road and James Court in Lake Charles, (30.1817, -93.1586).

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@30.181656500000003,-93.15587125789477,14z

Counties: Calcasieu County, Louisiana

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered
Whooping Crane *Grus americana* Population: U.S.A (Southwestern Louisiana) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

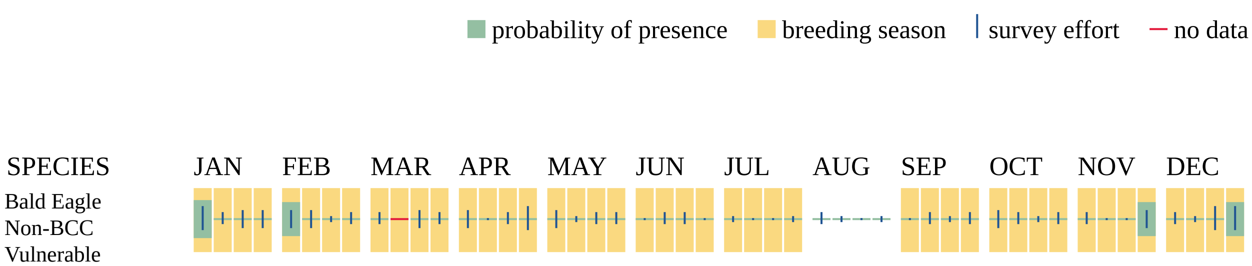
Probability of Presence ( )

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season ( )
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Dickcissel *Spiza americana* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9453	Breeds May 5 to Aug 31
Gull-billed Tern *Gelochelidon nilotica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31

NAME	BREEDING SEASON
King Rail *Rallus elegans* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Painted Bunting *Passerina ciris* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9511	Breeds Apr 25 to Aug 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read the supplemental information and specifically the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

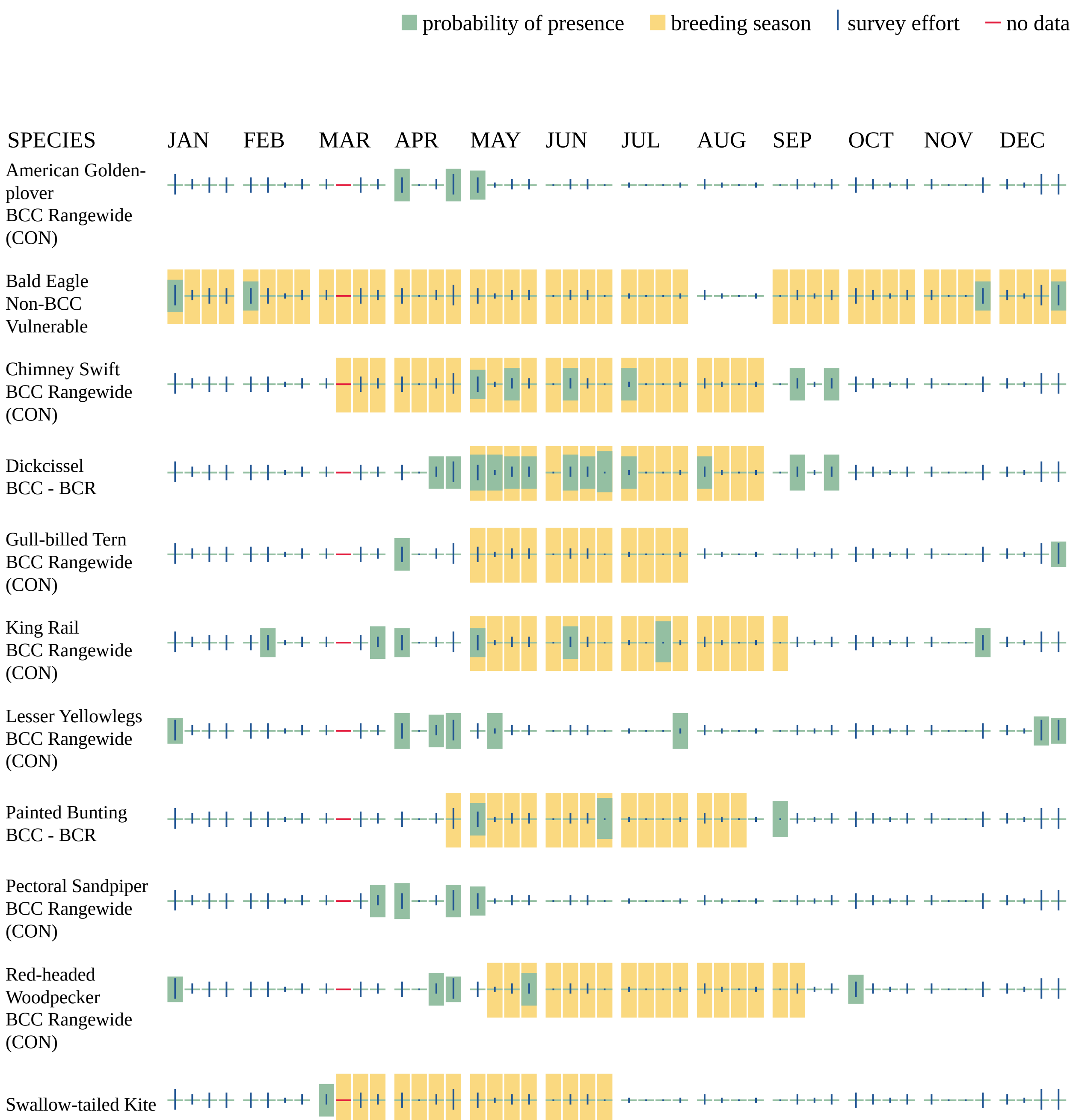
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season ( )

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

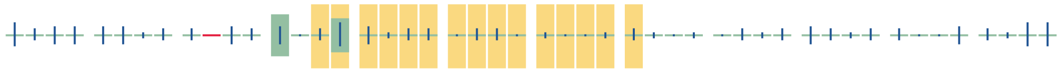
Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



BCC Rangewide (CON)

Willet
BCC Rangewide (CON)



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

IPAC USER CONTACT INFORMATION

Agency: Federal Emergency Management Agency
Name: Gunnar Muckelberg
Address: 500 C St SW, Washington, DC 20472
City: Washington
State: DC
Zip: 20472
Email gunnar.muckelberg@associates.fema.dhs.gov
Phone: 2256035967

U.S. Department of Homeland Security
Federal Emergency Management Agency
Louisiana Integration and Recovery Office
1500 Main Street
Baton Rouge, LA 70802

September 16, 2020

Joseph Ranson
Field Supervisor
U.S. Fish & Wildlife Service
200 Dulles Drive
Lafayette, LA 70506

Dear Mr. Ranson,

The President of the United States issued a Major Disaster Declaration FEMA 4559-DR-LA (Declaration) (3538-EM-LA) on August 28, 2020 (Amendment No. 1 signed on August 30, 2020; Amendment No. 2 signed on August 31, 2020; Amendment No. 3 signed on September 1, 2020, Amendment No. 4 signed on September 5, 2020; Amendment No. 5 signed September 7, 2020; Amendment No. 6 signed September 9, 2020, Amendment No. 7 signed September 11, 2020; Amendment No. 8 September 12, 2020) for the damages caused by Hurricane Laura in Louisiana that occurred from August 22, 2020 to August 27, 2020. The Federal Emergency Management Agency (FEMA) will provide federal funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§5121-5207 *et. seq.*, (P.L. 93-288, as amended). These FEMA funds are available to eligible state, tribal, and local governments as well as certain eligible Private Non-Profit (PNP) organizations (sub-recipients).

The Declaration authorizes Individual Assistance funding for assistance to individuals and households for eligible Sub-recipients within the following parishes: Acadia, Allen, Beauregard, Calcasieu, Cameron, Grant, Jackson, Jefferson Davis, Lincoln, Natchitoches, Ouachita, Rapides, Sabine, Vermilion, Vernon, and Winn Parish.

The Declaration authorizes Public Assistance funding for emergency work, the repair or replacement of disaster-damaged facilities, and improved or alternate projects beyond the pre-disaster condition for eligible Applicants within the following parishes: Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis, and Vernon for Public Assistance Category A (debris removal) and all parishes for Public Assistance Category **B** (emergency protective measures), including direct Federal assistance.

Bienville, Catahoula, and Sabine Parishes for debris removal [Category A (already designated for emergency protective measures [Category B, including direct federal assistance, under the Public Assistance program) for Jackson, Lincoln, and Rapides Parishes for debris removal [Category A (already designated for Individual Assistance and emergency protective measures [Category B, including direct federal assistance, under the Public Assistance program) Additional parishes may be designated for assistance at a later date and FEMA will notify your office at that time.

The Declaration authorizes Public Assistance [Categories C-G] for Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis, and Vernon Parishes for Public Assistance [Categories C-G] (already designated for Individual Assistance and assistance for debris removal and emergency protective measures [Categories A and B], including direct federal assistance, under the Public Assistance program.

The Declaration also authorizes Acadia, Grant, Natchitoches, Vermilion, and Winn Parishes for Public Assistance [Category A] (already designated for Individual Assistance and assistance for emergency protective measures [Category B], including direct federal assistance, under the Public Assistance program) and Morehouse and Union Parishes for Individual Assistance (already designated for emergency protective measures [Category B), including direct federal assistance, under the Public Assistance program.

Caddo, La Salle, and St. Landry Parishes for Individual Assistance (already designated for emergency protective measures [Category B], including direct federal assistance, under the Public Assistance program).

Under FEMA 4559-DR-LA, sub-recipients in all jurisdictions in the State of Louisiana are eligible for funding under Section 404 of FEMA's Hazard Mitigation Grant Program (HMGP). Eligible Section 404 HMGP projects include acquisition of hazard-prone property, retrofitting existing buildings and facilities, elevation of flood-prone structures, infrastructure protection measures, drainage projects, wildfire mitigation projects, individual and community safe rooms, and nonstructural measures such as planning. Should a sub-recipient propose a project outside of a declared jurisdiction, FEMA will contact you for initial information on that Parish as appropriate.

The Endangered Species Act of 1973, 16 U.S.C. §1531 *et seq.*, P.L. 93-205, as amended, requires federal agencies to determine the effects of their actions on threatened and endangered (T&E) species of fish, wildlife, plants, and their critical habitat, and take steps to conserve and protect these species.

FEMA requests informal consultation with the U.S. Fish & Wildlife Service (USFWS) in accordance with Section 7 of the Endangered Species Act of 1973 (87 Stat.884, as amended); E.O. 13186, Migratory Bird Treaty Act (16 U.S.C. 703-711); Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.); Clean Water Act of 1972 (33 U.S.C. 1344); National Environmental Policy Act of 1969 (83 Stat. 852; 42 U.S.C. 4321 et seq.); and the Coastal Barrier Resources Act of 1982 (96 Stat. 1653; 16 U.S.C. 3501 et seq.) to assist FEMA in determining potential project impacts.

In emergency situations in designated parishes, some projects will have already taken place to protect the health and safety of the public. Most of the permanent repair projects in these parishes will typically restore the damaged facility to its pre-disaster footprint and condition. The majority of the projects for this disaster will be repairs to buildings, equipment, utilities, and debris disposal activities.

FEMA Public Assistance has divided disaster-related work into two broad Categories of Work: Emergency and Permanent Work. These categories are further divided into seven categories. FEMA's past experience with recovery projects in the State of Louisiana allows us to anticipate no adverse effects to T&E species for the majority of projects in the following categories.

In cases where the recovery work requires additional efforts with potential to impact T&E species or habitat, our office will make an initial determination of effect and seek concurrence with your office on that determination prior to proceeding with federal funding.

A. Debris Removal and Disposal (Emergency Work) - this involves the clearance of trees and woody debris; building components or contents; sand, mud, silt, and gravel; and disaster related wreckage.

a. Vegetative Debris

1. Debris placed by the curbside from private property will be collected, and generally taken to a staging site and then disposed by chipping, hauling to a landfill or occasionally burned under a Louisiana Department of Environmental Quality (LDEQ) burn permit. Root balls will be left in place unless they present a safety hazard. Some sub-applicants compost the chips into mulch, which is either sold or available for residents.

11. In parks, most vegetative debris that will be removed with FEMA funds is located along trails and in improved and pre-disturbed areas such as campgrounds, day-use areas, parking lots, and picnic areas. Debris along trails will generally be moved to the side of the trail and left in place to decompose. Debris in the improved areas will generally be hauled away to a staging site or disposed of by chipping and spreading.

111. FEMA does not fund any actions on federal property under the PA Program with the exception of emergency debris removal from Federal Highway Administration roads.

1v. FEMA does not normally fund removal of debris in undeveloped areas or streams, except within 50 feet upstream of structures. If FEMA does become involved with vegetative debris removal from streams or riparian areas, we will consult with your office as appropriate.

b. Construction and Other Non-Vegetative Debris

1. To be eligible for reimbursement from FEMA under the PA Program, the sub-applicant must dispose of all waste materials resulting from projects, such as construction and demolition debris, silt, excess dirt, or overburden in an approved landfill. Other disposal options, such as burning, burying, and stockpiling, shall comply with the LDEQ standards and requirements.

11. FEMA will recommend that channel work in permanent streams be avoided as much as possible. FEMA will also recommend that debris removal from streams should be conducted from the stream bank whenever possible.

Therefore, FEMA will likely make a "No Effect" determination for the majority of these projects. However, FEMA is aware of critical habitats and potential species presence in certain sensitive areas (parks, waterways, springs, etc.) and if a project arises that has the potential to affect T&E species or habitat, FEMA will contact your office for advice and/or further consultation.

B. Emergency Protective Measures (Emergency Work)- Emergency protective measures are those activities undertaken by a community before, during, and following a disaster. Generally, this includes actions such as sheltering displaced disaster victims, activating Office of Emergency Management operations, and compensating police and fire departments for overtime. Occasionally an emergency berm or sandbags may be placed to prevent flooding, and these temporary structures are removed as part of FEMA funding.

   FEMA will likely make a "No Effect" determination for Emergency Protective Measure projects. However, if a project arises that has the potential to affect T&E species and/or critical habitat, FEMA will contact your office for advice and/or further consultation.

C. Roads and Bridges (Permanent Work)- this involves roads, bridges, and associated facilities (e.g., auxiliary structures, lighting, and signage).

   a. Most work in this category will be for the repair of existing roads within the footprint of the right of way.

   b. FEMA will recommend only using staging areas in previously disturbed sites and existing road rights-of-way.

   c. Work conducted in water, such as repair or replacement of culverts or bridges and wing-wall and wing-wall protection would proceed through the normal permitting process, and any culvert that is upgraded beyond one size will be evaluated with a hydrology and hydraulics study to determine potential downstream effects.

   d. FEMA does not typically fund erosion control measures in streams involving replacement of riprap and repair of material on a stream bank unless those measures would protect improved property such as a dam, bridge, or road.

Therefore, FEMA will likely make a "No Effect" determination for these projects. However, if a project arises that has the potential to affect T&E species or habitat, FEMA will contact your office for advice and/or further consultation.

D. Water and Water Control Facilities - this involves dams and reservoirs; levees, lined and unlined engineered drainage channels; canals, aqueducts, sediment basins, shore protective devices, some irrigation facilities, and pumping facilities.

a. While FEMA does not anticipate many projects in this category under funding requests from FEMA 4559-DR-LA, if such requests are received, the application would be evaluated and FEMA will consult with USFWS if any potential sensitive species issues are identified.

E. Buildings and Equipment (Permanent Work) - this involves buildings, structural components, interior systems such as electrical or mechanical work, equipment, and contents including furnishings.

a. Normally repairs to buildings and equipment will occur within the footprint of the structure.

b. FEMA will recommend only using staging areas in a previously disturbed sites and existing rights-of-way.

Therefore, FEMA will likely make a "No Effect" determination for these projects. However, if a project arises that has the potential to affect T&E species or habitat, FEMA will contact your office for advice and/or further consultation.

F. Utilities (Permanent Work) - this involves water treatment plants and delivery systems; power generation and distribution facilities; including natural gas systems, wind turbines, generators, substations, and power lines; sewage collection systems and treatment plants; and communications.

a. Normally projects in Category Fare repair to pre-disaster condition within existing rights-of-way.

Therefore, FEMA will likely make a "No Effect" determination for these projects. However, if a project arises that has the potential to affect T&E species or habitat, FEMA will contact your office for advice and/or further consultation.

G. Parks, Recreation, and other (Permanent Work) - this involves mass transit facilities such as railways, swimming pools, bath houses, tennis courts, boat docks, piers, picnic tables, golf courses, fish hatcheries, and facilities that do not fit Categories C-F.

a. Most funding requests in this category are structure repairs, such as a roof on a gazebo, and would not impact sensitive species. FEMA does not anticipate many projects in this category under funding requests from FEMA 4559-DR-LA.

Therefore, FEMA will likely make a "No Effect" determination for these projects.

The attached list references the USFWS list of federally listed threatened, endangered, and proposed species provided by the USFWS via the Information, Planning, and Conservation (IPaC) System *(http://ecos.fws.gov/ipac/)*. In addition, each project will be checked for proximity to critical habitat based on the IPaC System and the USFWS Critical Habitat Portal *(http://ecos.fws.gov/crithab/)* to determine if additional consultation with USFWS is necessary.

FEMA will utilize this list in making its determinations. According to the attached list, there are no critical habitats established within the declared area. Louisiana is also located with the Mississippi flyway region for Migratory Birds.

FEMA hereby requests any additional information from your office including any updates to the IPaC species list and critical habitat designations, Migratory Birds; and Bald Eagles for the above listed Parishes or on any special concerns that USFWS has regarding FEMA's proposed work in these areas.

In some cases, FEMA may be funding an activity that has already undergone Section 7 consultation through another federal agency. For instance, the U.S. Army Corps of Engineers may have issued an individual Clean Water Act permit to cover certain activities along beaches and in other waters of the U.S.

The issuance of a permit may have required informal or formal consultation with the USFWS and the resulting terms and conditions are incorporated into the permit requirements.

In cases like this where there is an existing consultation agreement between USFWS and another federal agency; where that other federal agency is playing a regulatory or other role in the approval or implementation of the FEMA-funded project; where the FEMA-funded activity aligns with the activity described in the other agency's Section 7 consultation; and where the consultation or permit is not expired; it is FEMA's intent to adopt the other federal agency's Section 7 consultation, including all avoidance and minimization measures and terms and conditions that resulted from that consultation, without further notification to USFWS.

FEMA believes this approach furthers Congress's intent in creating the Unified Federal Review process for which FEMA and DOI are signatory agencies (Section 429 of the Stafford Act).

Thank you in advance for your assistance. Should you have any questions, please contact Tiffany Spann-Winfield at 504-218-6800 or tiffany.spann@fema.dhs.gov or Jerame Cramer at (504) 247-7771 or jerame.cramer@fema.dhs.gov.

Sincerely,

JERAME J CRAMER Digitally signed by JERAME J CRAMER
Date: 2020.09.18 08:36:33 -05'00'

Jerame J. Cramer
EHP Advisor
DR-4559-LA
FEMA Region 6
Louisiana Integration & Recovery Office
1500 Main St.
Baton Rouge, LA 70802

Enclosures: Declaration Map for FEMA 4559-DR-LA
USFWS List of Federally Listed Threatened, and Endangered Species in Declared Jurisdictions in the State of Louisiana

APPENDIX 7. Section 106 Review Consultation and Continuing Consultation

BILLY NUNGESSER
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF HISTORIC PRESERVATION

CARRIE BROUSSARD
INTERIM ASSISTANT SECRETARY

October 22, 2024

Tiffany Spann-Winfield
Environmental Liaison Officer
Louisiana Integration & Recovery Office
FEMA Region 6

Re: SECTION 106 REVIEW CONTINUING CONSULTATION, HURRICANE LAURA, FEMA-4559-DR-LA
THE SOCIETY OF ROMAN CATHOLIC CHURCH OF THE DIOCESE OF LAKE CHARLES PROPOSED DEMOLITION AND RELOCATION, PW01265, PT02284, PW02495, AND AIDB 3158:

- ST. LOUIS HIGH SCHOOL MAIN BUILDING (30.21808, -93.20770), GRANTS MANAGER PROJECT #167257
- THE LANDRY MEMORIAL GYMNASIUM (30.218386, -93.208367), GRANTS MANAGER PROJECT #171267
- THE KRAJICEK GYMNASIUM (30.218296, -93.208831), GRANTS MANAGER PROJECT #689991

1620 BANK STREET, LAKE CHARLES, CALCASIEU PARISH, LA
ADVERSE EFFECT AND REQUEST TO IMPLEMENT THE ABBREVIATED CONSULTATION PROCESS (ACP)

Dear Ms. Spann-Winfield:

Thank you for your letter received on October 10, 2024, regarding the Federal Emergency Management Agency (FEMA) to provide funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, in response to the following major Disaster Declaration, FEMA-4559-DR-LA, for Hurricane Laura, dated August 28, 2020. FEMA is continuing the Section 106 review for the above-referenced properties in accordance with the *Programmatic Agreement among FEMA, the Louisiana State Historic Preservation Officer (SHPO), the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), and Participating Tribes,* dated December 21, 2016, as amended, pursuant to Stipulation I.A.3 of the 2024 Statewide PA, in response to a request by The Society of Roman Catholic Church of the Diocese of Lake Charles (DLOC or subrecipient) to provide funds for the demolition of campus structures and the relocation of the St. Louis High School (undertaking). Our office concurs with FEMA's determination that the proposed demolition of the above-referenced buildings constitutes an adverse effect to the NRHP-eligible St. Louis Catholic High School Neighborhood Historic District and the individually NRHP-eligible Landry Memorial Gymnasium.

Our office has reviewed the ACP treatment measures to mitigate adverse effects and have the following comment to offer. Regarding the recordation of the Landry Memorial Gym, to avoid any misunderstandings, SHPO recommends that FEMA share the draft ACP with the NPS Southeast Regional Office and receive their official feedback regarding the appropriate HABS level and documentation format. If you have questions or concerns, please contact Jennie Garcia in our Division of Historic Preservation at jgarcia@crt.la.gov.

Sincerely,

Carrie Broussard

Carrie Broussard
State Historic Preservation Officer

State of Louisiana

BILLY NUNGESSER
LIEUTENANT GOVERNOR

OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT

KRISTIN P. SANDERS
ASSISTANT SECRETARY

February 9, 2024

Tiffany Spann-Winfield
Environmental Liaison Officer
Louisiana Integration & Recovery Office
FEMA Region 6

Re: THE SOCIETY OF ROMAN CATHOLIC CHURCH OF THE DIOCESE OF LAKE CHARLES PROPOSED CAMPUS RELOCATION, PW01265, PW02284, AND PW02495:

- ST. LOUIS HIGH SCHOOL MAIN BUILDING (30.21808, -93.20770), GRANS MANAGER PROJECT #167257
- THE LANDRY MEMORIAL GYMNASIUM (30.218386, -93.208367), GRANTS MANAGER PROJECT #171267
- THE KRAJICEK GYMNASIUM (30.218296, -93.208831), GRANTS MANAGER PROJECT #689991
1620 BANK STREET, LAKE CHARLES, CALCASIEU PARISH, LOUISIANA

Dear Ms. Spann-Winfield:

Thank you for your letter received on February 7, 2024, regarding the continued consultation for the above referenced National Register eligible properties. Based on the updated scope of work where the Subrecipient is no longer demolishing the three properties and will instead render the buildings safe and secure, our office concurs that there will be no adverse effect to historic properties.

If you have questions or concerns, please contact Jennie Garcia in our Division of Historic Preservation at jgarcia@crt.la.gov.

Sincerely,

Kristin P. Sanders

Kristin Sanders
State Historic Preservation Officer

APPENDIX 8. Louisiana Nonattainment Maintenance Status USEPA

logo

You are here: EPA Home > Green Book > >National Area and County-Level Multi-Pollutant Information >Louisiana Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Louisiana Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of September 30, 2023

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m^3) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:
LOUISIANA GO

Important Notes

Download National Dataset: dbf | xls | Data dictionary (PDF)

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
LOUISIANA								
Ascension Parish	1-Hour Ozone (1979)-NAAQS revoked	Baton Rouge, LA	92939495969798990001020304	/ /	Severe-15	Whole	107,215	22/005
Ascension Parish	8-Hour Ozone (1997)-NAAQS revoked	Baton Rouge, LA	04050607080910	12/30/2011	Moderate	Whole	107,215	22/005
Ascension Parish	8-Hour Ozone (2008)	Baton Rouge, LA	1213141516	03/21/2017	Marginal	Whole	107,215	22/005
Beauregard Parish	1-Hour Ozone (1979)-NAAQS revoked	Beauregard Parish, LA	929394	10/17/1995	Incomplete Data	Whole	35,654	22/011
Calcasieu Parish	1-Hour Ozone (1979)-NAAQS revoked	Lake Charles, LA	9293949596	06/02/1997	Marginal	Whole	192,768	22/019

APPENDIX 9. Phase I Environmental Assessment

SOUTHLAND
ENVIRONMENTAL

SENT VIA EMAIL

April 4, 2023

Ms. Bridget Evans, Architect
Champeaux, Evans, Hotard, APAC
702 Dr. Michael DeBakey Drive
Lake Charles, LA 70601

RE: Phase I Environmental Site Assessment
47-Acre Tract Corbina Road
Lake Charles, LA

Dear Ms. Evans,

Southland Environmental, LLC is pleased to provide this electronic copy of the Phase I Environmental Site Assessment for the referenced property. This assessment was performed in accordance with the guidelines set forth in ASTM E 1527-21.

If you have any questions, please do not hesitate to contact us. We appreciate the opportunity to provide this service for you.

Sincerely,

C. Blaine Johnson, P.E.
Owner/Sr. Engineer

Attachment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

CORBINA ROAD 47-ACRE TRACT
LAKE CHARLES, CALCASIEU PARISH, LOUISIANA

Prepared for:

Champeaux, Evans, Hotard, APAC
702 Dr. Michael DeBakey Drive
Lake Charles, Louisiana 70601

April 4, 2023

Jared R. King, P.G.
0 tal Scientist

C. Baine Johnson, P.E.
Owner/ Sr. Engineer

Prepared by:

SOUTHLAND
ENVIRONMENTAL

Southland Environmental, LLC
510 Clarence Street
Lake Charles, Louisiana 70601
(337) 436-3248

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APPENDICES

SUMMARY

Southland Environmental, LLC (Southland Environmental) conducted a Phase I Environmental Site Assessment (ESA) of property located adjacent to and east of Corbina Road in Lake Charles, Louisiana. The property is currently undeveloped and 47 acres in size. Based on the results of the activities performed during this Phase I ESA, no recognized environmental conditions were identified on the subject property.

1.0 INTRODUCTION

Southland Environmental was retained Champeaux, Evans, Hotard, APAC to conduct a Phase I ESA of an approximate 47-acre tract located along Corbina Road in Lake Charles, Louisiana. The subject property is currently undeveloped.

1.1 PURPOSE

The purpose of this investigation was to identify recognized environmental conditions present at the property. A recognized environmental condition is defined as (1) the presence of hazardous substances or petroleum products in, on or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on or at the subject property under conditions that pose a material threat of future release to the environment. This definition is taken from the ASTM Standards on Environmental Site Assessments for Commercial Real Estate, as specified in E 1527-21 (November 2021).

1.2 DETAILED SCOPE OF SERVICES

Prior to performing the site reconnaissance, an environmental database search was conducted and a review of the Louisiana Department of Natural Resources Strategic Online Natural Resources Information System (SONRIS) website for oil and gas wells in the vicinity of the subject property was conducted. A United States Geological Survey topographical map and historical aerial photographs were reviewed to determine elevations, composition of surrounding properties, and possible sources of environmental concern. Upon review of the environmental database report, SONRIS website, maps, and historical aerial photographs, the site reconnaissance was performed on the subject property. The site reconnaissance was performed by inspecting the subject property for possible sources of environmental concern. Upon completion of the visual inspection of the subject property, a driving tour was conducted within a 1.0-mile radius of the subject property to determine additional possible sources of environmental concerns, which have the possibility to impact the subject property.

Upon completion of the site reconnaissance, interviews with landowners and state regulatory agencies were conducted to determine any additional environmental concerns associated with the subject property.

1.3 SIGNIFICANT ASSUMPTIONS

At the time of this Phase I ESA, there were no facilities or structures identified on or adjacent to the subject property, which would cause any significant assumptions to be made regarding the condition of the property.

1.4 LIMITATIONS AND EXCEPTIONS OF THE STUDY

The findings and opinions of Southland Environmental are based, in part, on data and information provided by others. Southland Environmental has identified the sources of such information, but makes no warranty or guarantee regarding the accuracy or completeness of such data, the information obtained, or the conclusions solely based on such data.

Environmental assessments and other preliminary investigations are, by their nature, limited investigations. Southland Environmental neither guarantees nor warrants that the sites are free of toxic or hazardous wastes, or other environmental risks that further investigation might reveal. Additionally, the scope of this Phase I ESA does not constitute an evaluation of the environmental compliance record, requirements, or status of these sites.

In addition, the activities of this Phase I ESA have been conducted for the sole purpose of gathering information pertinent to identifying recognized environmental conditions. This assessment does not address physical and working conditions of site improvements and/or buildings, including to structures, roofs, foundations, electrical and plumbing systems, air conditioning/heating systems, on-site sanitary sewer systems, and storm drainage.

1.5 SPECIAL TERMS AND CONDITIONS

There are no special terms or conditions, which are applicable to this Phase I ESA.

1.6 DATA GAPS

There were no data gaps encountered during the performance of this Phase I ESA.

1.7 USER RELIANCE

No information obtained in performing this Phase I ESA is suspected to be incorrect, skewed, or inaccurate. The reliance of this report is limited to only the report user.

2.0 SITE DESCRIPTIONS

2.1 LOCATION AND LEGAL DESCRIPTION

The subject property is located in Section 23, Township 10 South, Range 8 West of Calcasieu Parish. The approximate coordinates of the center of the property are Latitude 30º 10’ 54.4” N and Longitude 93º 09’ 19.7” W. A Site Location Map is included as Figure 1 and a Site Survey, provided by the Report User, is included as Figure 2 in Appendix A of this report.

2.2 SITE AND VICINITY CHARACTERISTICS

The subject property is located along Corbina Road in southeast Lake Charles, Louisiana. Corbina Road is located on the west boundary of the property and pasture land is located on the east boundary of the subject property. Land uses in the vicinity of the subject property are primarily a mixture of new and upcoming residential development and agricultural pastures.

2.3 CURRENT USES OF THE PROPERTY

The subject property is currently undeveloped and used for agricultural purposes.

2.4 DESCRIPTIONS OF STRUCTURES, ROADS, OTHER IMPROVEMENTS ON THE SITE

No structures, roads, or other improvements are located on the subject property. A drainage ditch is located immediately west and adjacent of the subject property, paralleling Corbina Road. The adjoining utilities include fiber optic communications and natural gas distribution. No additional improvements, structures, or roads were noted on the subject property.

2.5 CURRENT USES OF THE ADJOINING PROPERTIES

The properties north of the subject property are undeveloped and used for cattle grazing and consists of property that contains old storage buildings that were once used by the former Chennault Airforce base. East of the subject property is property used for cattle grazing. South of the subject property is land that is undeveloped and agricultural in use and land that is part of a residential development at the southeast corner of the subject property. Corbina Road is located on the west boundary of the subject property. The property across Corbina Road is a mix of residential properties and undeveloped land.

3.0 USER PROVIDED INFORMATION

The information contained in Section 3.0 was based on information provided by the report user. The user questionnaire was completed by Ms. Bridget Evans of Champeaux, Evans, Hotard, APAC. A copy of the user information questionnaire is included in Appendix B.

3.1 TITLE RECORDS

The task of performing a title records search or environmental liens search is the responsibility of the report user. It is the option of the report user to perform this service during the Phase I ESA. Title records and environmental lien searches were not performed by the report user or Southland Environmental as part of this assessment.

3.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

The provided information indicates that the user is not aware of any environmental liens or use limitations on the subject property.

3.3 SPECIALIZED KNOWLEDGE

Southland Environmental was not made aware of any specialized knowledge or experiences that are material to recognized environmental conditions in connection with the subject property.

3.4 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

Southland Environmental was not made aware of any commonly known or reasonably ascertainable information within the local community that is material to recognized environmental conditions in connection to the subject property.

3.5 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

No valuation reduction of the property, due to hazardous substances, is known to have occurred on the subject property.

3.6 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

According to the Calcasieu Parish Police Jury Mapping Application on March 14, 2023, the subject property is currently owned by Lake Charles Catholic High Schools, Inc.

3.7 REASON FOR PERFORMING PHASE I ESA

This Phase I ESA was performed to identify and understand potential environmental conditions which could potentially impact the subject property. In addition, the Phase I ESA was also performed to qualify the user for Limited Liability Protection to CERCLA liability.

3.8 OTHER

No other information regarding the subject property was provided to Southland Environmental by the report user.

4.0 RECORDS REVIEW

4.1 STANDARD ENVIRONMENTAL RECORD SOURCES

A computer database search of environmental agency file records was conducted for Southland Environmental by Banks Environmental Data (Banks). A copy of the Banks report (ES# 141754) is included as Appendix C.

4.1.1 National Priorities List Sites

The National Priorities List (NPL) is the list of high priority hazardous waste sites in the United States eligible for long-term remedial action financed under the federal Superfund program and the Comprehensive Environmental Response, Compensation, and Liability ACT (CERCLA). The Banks Report did not identify any Federal NPL or State NPL sites within the 1.0-mile search radius of the subject property.

4.1.2 Delisted NPL Sites

The Delisted NPL is a list of all sites that have been deleted from the Environmental Protection Agency's (EPA) NPL list. These sites are taken off the NPL list usually due to no further response or remedial action being required on them. The Banks Report did not identify any Delisted NPL sites listed within the 0.5-mile search radius of the subject property.

4.1.3 CERCLIS Sites

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) sites come from the CERCLA, a federal law designed to clean up abandoned hazardous waste sites. These sites are either proposed, listed, or under review currently to be a part of the NPL. The Banks Report did not identify any CERCLIS sites within the 0.5-mile search radius of the subject property.

4.1.4 No Further Remedial Action Planned Sites

CERCLIS sites designated No Further Remedial Action Planned (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, either no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require federal Superfund action or NPL consideration. The Banks Report did not identify any CERCLIS NFRAP sites within the 0.5-mile search radius of the subject property.

4.1.5 RCRA-CORRACTS Sites

These sites are registered hazardous waste generators or handlers that fall under the Resource Conservation and Recovery Act (RCRA) and subject to corrective action activity. The Banks Report did not identify any RCRA-CORRACTS sites within the 1.0-mile search radius of the subject property.

4.1.6 RCRA-TSD Facilities

This database lists all treatment, storage, and disposal of hazardous material sites that fall under RCRA. The Banks Report did not identify any RCRA-TSD facilities within the 0.5-mile search radius of the subject property.

4.1.7 RCRA Large/Small Quantity Generators

The EPA and the LDEQ maintain lists of registered large and small quantity generators of hazardous wastes. A Large Quantity Generator of hazardous waste generate 1,000 kilograms (kg) per month or more of acutely hazardous waste. A Small Quantity Generator generates between

100 kg and 1000 kg of waste per month. A Conditionally Exempt Small Quantity Generator generates no more than 100 kg of hazardous waste per month. The Banks Report did not identify any RCRA-GEN hazardous waste generators within the 0.25-mile search radius of the subject property.

4.1.8 Emergency Response Notification System

The Emergency Response Notification System (ERNS) is a national database used to store information on unauthorized release of oil and hazardous substances that have been reported to the National Response Center since 2001. The Banks Report did not identify any ERNS site within the 0.25-mile search radius of the subject property.

4.1.9 Engineering Control/Institutional Control Sites

This is a listing of Brownfield Management System (BMS) sites that have had Engineering Controls (ECs) or Institutional Controls (ICs) placed on them. ECs are physical methods or modifications put into place on a site to reduce or eliminate the possibility of human exposure to known contamination. ICs are administrative constraints, such as legal controls, that help minimize the potential for human exposure to known contamination by ensuring appropriate land and resource use. The Banks Report did not identify any EC or IC sites within the 0.5-mile search radius of the subject property.

4.1.10 Federal and State Brownfields Sites

This is a listing of sites that assist the EPA in collecting, tracking, and uploading information of sites in relation to the Small Business Liability Relief and Brownfields Revitalization Act. These sites are real property that is either abandoned or underutilized where redevelopment or expansion is complicated by real or perceived environmental contamination. The Banks Report did not identify any Brownfields sites within the 0.5-mile search radius of the subject property.

4.1.11 Solid Waste Landfill Sites

This database contains listings of all solid waste disposal facilities or landfills registered with the Solid Waste Program for the LDEQ. The Banks Report did not identify any solid waste landfill sites within the 0.5-mile search radius of the subject property.

4.1.12 Leaking Underground Storage Tank Sites

This database is a list of all known leaking underground storage tanks (identified as LPST in the Banks Report) as registered with the Remediation Services Division of the LDEQ. The Banks Report did not identify any LPST sites within the 0.5-mile search radius of the subject property.

4.1.13 Registered Underground Storage Tanks

This database is a list of all known underground storage tanks (identified as PST in the Banks Report) as registered with the Remediation Services Division of the LDEQ. The Banks Report identified one PST site within the 0.25-mile search radius of the subject property. This site is described as follows:

- Morgan Field C Store, 3170 E. McNeese Street, Lake Charles, located approximately 0.23-mile southwest of the subject property. The site is due south of the subject property. Refer to Section 4.5 of this report for more details about this facility.

4.1.14 Voluntary Cleanup Program Sites

This database contains information about sites that have been placed in the Louisiana Voluntary Cleanup Program (VCP). This is a program that provides current property owners with the opportunity to clean up contaminated properties and attain a release of liability for further clean-up of historical contamination at the site. The Banks Report did not identify any VCP sites within the 0.5-mile search radius of the subject property.

4.1.15 State Hazardous Waste Sites

This database contains information on facilities which store, process, or dispose of hazardous waste as maintained by the Industrial and Hazardous Waste Permits section of the Texas Commission of Environmental Quality (TCEQ), or other state regulatory agencies. This database is not currently available from LDEQ. The Banks Report did not identify any State Hazardous Waste (HW) sites within the 0.25-mile search radius of the subject property.

4.1.16 Unmapped Sites

The Banks Report did not identify any unmapped sites within the search radius of the subject property.

4.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES

The Banks Report presents additional databases other than the standard ASTM required information. A description of these databases and details of the search area for the databases are listed in the Banks Report. The Banks report did not identify any additional environmental record sources within the search radius of the subject property.

4.3 PHYSICAL SETTING SOURCE

A United States Geological Survey (USGS) 7.5-minute Topographical Map was reviewed as part of this Phase I ESA. The natural site elevation is approximately 15 feet above National Geodetic Vertical Datum (NGVD) based on the USGS Topographical Map. Drainage on the subject property appears to be toward the property boundaries, with a roadside drainage ditch located along Corbina Road and the various drainage swales located throughout the subject property.

4.4 HISTORICAL USE INFORMATION ON THE PROPERTY AND ADJOINING PROPERTIES

4.4.1 Aerial Photographs Review

Historical aerial photographs from flights flown in 1940, 1953, 1963, 1975, 1983, 1990, 1998, 2004, 2010, 2017, and 2021 were reviewed as part of this Phase I ESA. The aerial photographs are included as Appendix D.

In the 1940 and 1953 aerial photographs, the subject property and surrounding properties appear to be undeveloped. Various stormwater drainage laterals can be seen in the vicinity of the subject property.

In the 1963, 1975, and 1983 aerial photographs, the subject property appears to have some agricultural use as access roads can be seen near the property. The storage buildings utilized by the Chennault Airforce Base can be seen constructed north of the subject property. In the 1975 photograph, oil & gas exploration activities are visible on property located northwest of the subject property. This includes an access road north of the subject property leading to a well location pad. A pit is visible east of the well pad. In the 1983 aerial photograph, the oil and gas exploration activities are no longer visible, however the access road leading to the pad remains. The remainder of the surrounding properties appear to be used for agricultural purposes.

In the 1990, 1998, 2004, and 2010 aerial photographs, the subject property and surrounding properties remain undeveloped and agricultural in use. Additional drainage laterals are visible in the vicinity. No development other than the previously mentioned storage buildings north of the subject property are present. East McNeese Street is visible south of the subject property.

In the 2017 and 2021 aerial photographs, the subject property remains predominantly undeveloped and agricultural as it presently exists. Corbina Road can be seen on the west boundary of the subject property and East McNeese Street is seen further to the south. Residential development is visible southeast and southwest of the subject property.

No pits, ponds, or excavations are visible on the subject property in any of the reviewed aerial photographs.

4.4.2 City Directory Review

A historical directory search was conducted for Southland Environmental by Banks Environmental Data (Banks). A copy of the Banks City Directory Report (ES# 141754) is included as Appendix E. The report includes City Directory listings from 1970, 1975, 1980, 1986-87, 1992, 1997, 2002, 2007, 2012, 2017, and 2022. The directories were reviewed for listings at and in the vicinity of Corbina Road, Advent Court, Basin Way, Cabot Drive, East McNeese Street, East Prien Lake Road, Fairwood Lane, Forestwood Drive, Gardenwood Parkway, James Court, Lake Crest Drive, Meadow Brook Way, Rosehill Drive, and Village Lane. There were earlier City Directories available for Lake Charles, LA but they did not list the subject property area.

The subject property was not identified in any of the City Directories searched. Personal residences, apartments, and commercial properties are listed in the vicinity of the subject property in each of these directories. There were no properties listed that would be expected to cause an environmental concern to the subject property.

4.5 LDEQ RECORDS REVIEW

A review of the LDEQ Environmental Data Management System (EDMS) for issues pertaining to the subject property and surrounding properties was also performed as part of this Phase I ESA. This review was performed to determine any additional possible environmental concerns for the subject property. Due to the absence of a property address, EDMS files for East McNeese Street and Corbina Road were reviewed. The only EDMS files identified within the area of the subject property were associated with construction companies developing at Morganfield Subdivision south of the subject property. Files for each of the companies were associated with storm water discharge permits.

The Morgan Field C Store is located at 3170 E. McNeese Street approximately 0.23-mile south of the subject property. EDMS files indicated the site has a 3-compartment UST with a capacity of 25,000 gallons. The tank was installed in August 2022. Site reconnaissance revealed this is a new convenience store under construction and it is not yet in operation.

4.6 OIL AND GAS REVIEW

A review of the SONRIS website was performed for oil and gas wells or historical oil and gas wells in the vicinity of the subject property. Ten permitted well sites were identified within 1.0-mile of the subject property.

A table of LDNR SONRIS wells within a 1.0-mile radius is presented below:

Well Serial Number	Permit Date	Well Status
121342	8/31/1967	PLUGGED AND ABANDONED GAS
122698	12/11/1967	PLUGGED AND ABANDONED GAS
164521	7/30/1979	PLUGGED AND ABANDONED GAS
168388	4/22/1980	PLUGGED AND ABANDONED GAS
168446	4/24/1980	PLUGGED AND ABANDONED GAS
175229	5/11/1981	PLUGGED AND ABANDONED GAS
152273	6/16/1976	PLUGGED AND ABANDONED NO PRODUCT SPECIFIED
143570	9/18/1973	DRY AND PLUGGED NO PRODUCT SPECIFIED
148470	4/21/1975	DRY AND PLUGGED NO PRODUCT SPECIFIED
147021	10/10/1974	PERMIT EXPIRED

A review of the LDNR database revealed that a gas well was installed on a tract located northwest of the subject property in December of 1967. The well (serial number 122698), which was installed by Pan American Petroleum Corporation, was plugged and abandoned in November of 1979. According to the Plug and Abandonment report, the upper casing of the well was cutoff at six feet below ground surface and a steel plate was welded onto the top end of the casing. No pit registration records were identified during the LDNR database review. In addition, the property at which this well was located was subject to soil sampling and analysis activities as part of another due diligence research project. The results from these activities indicate it is not expected that this well location would have an adverse effect on the subject property.

Although generally accurate, mapped SONRIS well locations are not exact. No well sites are indicated to be present on the subject property. Oil and gas exploration and production activities can be a source of soil and groundwater contaminants. Based on the status and distance from these wells to the subject property, they are not expected to pose an environmental concern to the subject property.

5.0 SITE RECONNAISSANCE

5.1 METHODOLOGY AND LIMITING SITE CONDITIONS

A site inspection was performed on March 30, 2023 by Blaine Johnson of Southland Environmental. There were no limiting conditions that impeded the complete inspection of the subject property. Photographs taken during the inspection are included in Appendix F.

5.2 SITE OBSERVATIONS

5.2.1 Exterior Observations

The subject property, which is currently undeveloped, is accessed from Corbina Road. A barbed wire fence is located along the southern and western boundaries of the property. A gate is located on the adjacent property to the north (from Corbina Road) which provides access near the northwest corner of the subject property.

A dense line of trees and shrubs is located along the southern boundary of the subject property. The subject property is maintained through mowing on a regular basis, as there is primarily only grassy vegetation and very small trees growing throughout the remainder of the subject property. A few small drainage swales are located throughout the subject property, the largest swale running north/south is located at the approximate center of the property.

There was no stained or stressed vegetation identified on the subject property.

5.2.2 Interior Observations

As there were no buildings on the property, no interior observations were made.

5.3 HAZARDOUS SUBSTANCES

No hazardous substances were identified on the subject property at the time of the site inspection.

5.4 INDICATORS OF POLYCHLORINATED BIPHENYLS (PCBs)

No pole-mounted transformers were observed on the subject property. Electrical providers have been contacted in the past with respect to transformers. These providers have stated in previous correspondence that their transformers are operated in compliance with all Federal and State regulatory guidelines, including those promulgated by the US EPA in Part 761 of Title 40, Toxic Substance Control Act. In case of a spill from a transformer on any site, these providers will take the appropriate action.

5.5 SOLID WASTE DISPOSAL

No evidence of solid waste disposal was observed on the subject property at the time of the site inspection.

5.6 STORAGE TANKS

There was no evidence of any storage tanks located on the subject property at the time of the site inspection.

6.0 INTERVIEWS

Interview questionnaires for each interview performed as part of this Phase I ESA is included in Appendix G.

6.1 INTERVIEWS WITH OWNERS

According to information obtained from the Calcasieu Parish Tax Assessor on-line database, the subject property is currently owned by the Lake Charles Catholic High Schools, Inc. Since the subject property was just recently purchased, Southland Environmental contacted the previous landowner as part of this ESA. Mr. James Palma of East Prien Lake Properties, LLC was contacted in regards to the historic use of the subject property. Mr. Palma indicated that East Prien Lake Properties had owned the property since about 2006. Mr. Palma stated that to his knowledge, he was unaware of any USTs, pipelines, or environmental issues associated with the subject property. He also stated he was unaware of any instances where an environmental agency had to respond to the subject property.

6.2 INTERVIEW WITH SITE MANAGER

No site manager interview was conducted during this Phase I ESA.

6.3 INTERVIEWS WITH OCCUPANTS

The site was unoccupied at the time of the site inspection.

6.4 INTERVIEWS WITH LOCAL GOVERNMENT OFFICIALS

Mr. Jason Roy with the LDEQ was interviewed regarding environmental issues pertaining to the subject property. He stated that he was unaware of any environmental concerns associated with the subject property. Mr. Roy indicated that any documentation that the LDEQ would have on file for facilities in that area is available on the LDEQ EDMS.

6.5 INTERVIEWS WITH OTHERS

No additional interviews were conducted as part of this assessment.

7.0 ADDITIONAL SERVICES

No additional services were provided as part of this Phase I ESA.

8.0 FINDINGS

Based on the results of the activities performed during this Phase I ESA, no recognized environmental conditions were identified with the subject property.

A recognized environmental condition is defined as (1) the presence of hazardous substances or petroleum products in, on or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on or at the subject property under conditions that pose a material threat of future release to the environment.

8.1 VAPOR INTRUSION

Based on information obtained during this Phase I ESA, there have been no documented soil or groundwater contamination at the subject property or adjacent to the subject property. Therefore, vapor intrusion impacts to structures on the property would not be anticipated to be a concern.

9.0 OPINIONS

Based on the results of the activities performed during this Phase I ESA, no recognized environmental conditions were identified on the subject property.

10.0 CONCLUSIONS

Southland Environmental, LLC has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-21 of property located along Corbina Road in Lake Charles, Louisiana and described in Section 2.1 of this report. The subject property is undeveloped. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. Based on the results of the activities performed during this Phase I ESA, no recognized environmental conditions were identified on the subject property.

11.0 DEVIATIONS

No deviations from ASTM Practice E 1527-21 were made during the investigation.

12.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Southland Environmental personnel have extensive experience in environmental investigations and in Phase I and II Environmental Site Assessments. Many of these assessments have been performed for repeat clients and have involved diverse properties including private, commercial, light industrial, and heavy industrial properties. These properties have ranged in size from hundreds of acres and many buildings, to small lots containing no buildings.

12.1 QUALIFICATIONS AND CREDENTIALS OF SOUTHLAND ENVIRONMENTAL PERSONNEL

Resumes of Southland Environmental personnel who participated in this investigation are included as Appendix H. The Environmental Professional's Statement is included in Appendix I.

13.0 REFERENCES

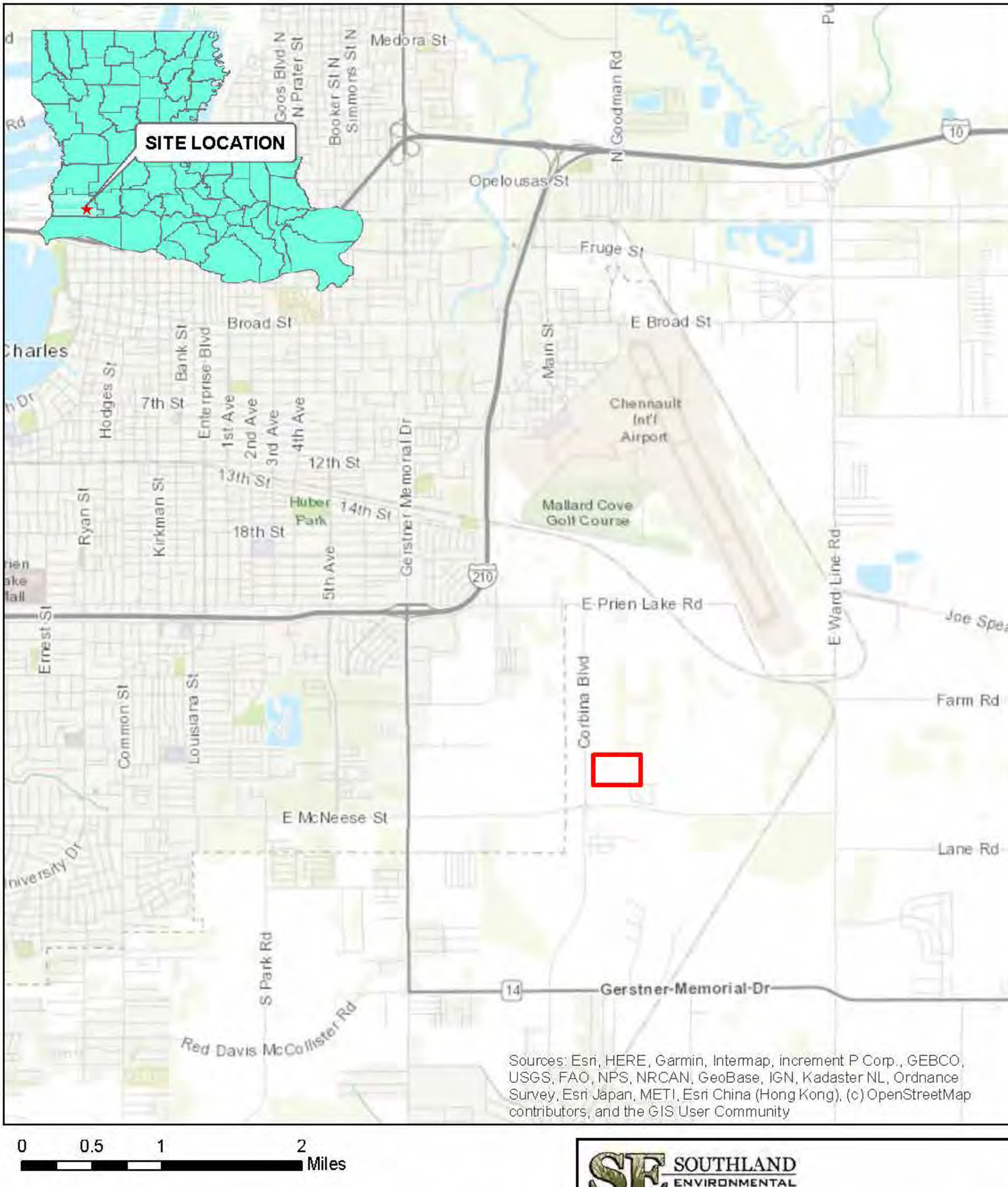
- ASTM International, E 1527-21, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", ASTM International, West Conshohocken, PA.
- Banks Environmental Data, The Banks Regulatory Database Report, ES #141754, prepared for Southland Environmental, LLC, Lake Charles, Louisiana.
- Calcasieu Parish Police Jury Mapping Application, https://gis-cppj.hub.arcgis.com.
- City Directory Report obtained from Banks Environmental Data, ES #141754.
- Historical Aerial Photography obtained from Banks Environmental Data, ES #141754.
- Louisiana Department of Environmental Quality Environmental Data Management System (EDMS) records obtained from http://edms.deq.louisiana.gov/app/doc/ querydef.aspx, Louisiana Department of Environmental Quality, Baton Rouge, Louisiana.
- Louisiana Department of Environmental Quality Geographic Information Systems Interactive Mapping Application, http://gis.deq.state.la.us/menu.aspx, Louisiana Department of Environmental Quality, Baton Rouge, Louisiana.
- Louisiana Department of Natural Resources Strategic Online Natural Resources Information System (SONRIS) records obtained from http://sonris.com, Louisiana Department of Natural Resources, Baton Rouge, Louisiana.

APPENDIX A

Figures

FIGURE 1

Site Location Map



SITE LOCATION

SOUTHLAND ENVIRONMENTAL

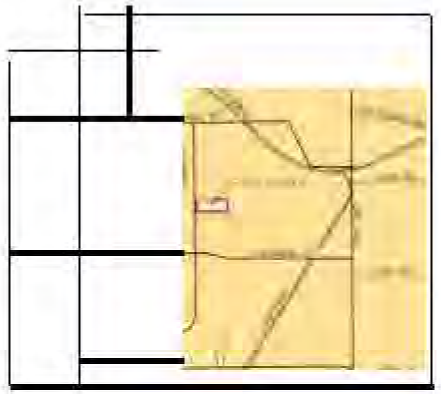
FIGURE 1
SITE LOCATION MAP

PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

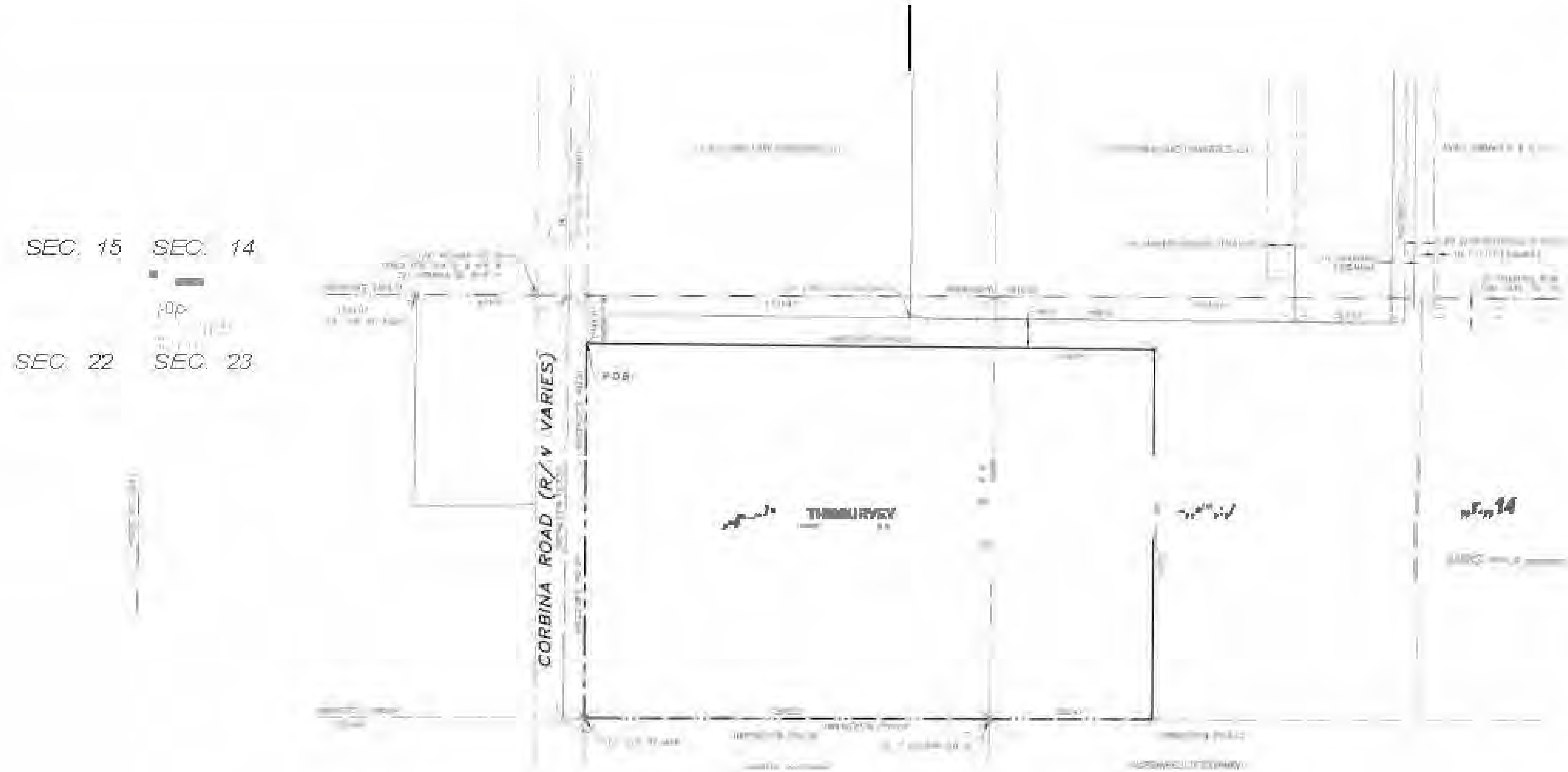
Drawn By: JRK	Checked By: CBJ
Date: 03/15/23	Project #: 12055

FIGURE 2

Site Survey



VICINITY SKETCH



DETAIL SKETCH

A Professional Land Surveying Firm
P.O. Box 1747
Sulphur, LA 70664-1747

BOUNDARY SURVEY OF A
47.264 ACRE TRACT FOR
EASTPRIEN LAKE PROPERTIES, LLC
LAKE CHARLES, LOUISIANA

DRAWING PROVIDED BY CLIENT

FIGURE 2
SITE SURVEY
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47 ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: LOH	Checked By: CBJ
Date: 1/14/23	Project#: 12055

APPENDIX B

User Provided Information

ASTM E 1527-13
USER QUESTIONNAIRE INTRODUCTION

In order to qualify for one of the landowner liability Protections (llPs)'x[7] offered by the Small Business liabili(Y Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"),1[88] the user must conduct the foffowing inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30 and 312.31. These inquiries must also be conducted by EPA Brownfield Assessment and Characterization grantees. The user should provide the following information to the environmental professional. Failure to conduct these inquiries could result in a determination that "all appropriate inquiries" is not complete.

(1.) Environmental liens that are filed or recorded against the property (40 CFR 312.25).

Did a search of recorded land title records (or judicial records where appropriate, see Note 1 below} identify any environmental liens filed or recorded against the property wider federal tribal, state or local law? NJ0

Note 1 - In certain jurisdictions, federal, tribal, state, or local statues, or regulations specify that environmental liens and Activity and Use Limitations (AULs) be filed in judicial records rather than in land title records. In such cases judicial records must be searched for environmental liens and AULs.

(2.) Activity and use limitations that are in place on the property or that have been filed or recorded against the property (40 CFR 312.26(a)(l)(v) and (vi)).

Did a search of recorded land title records (or judicial records where appropriate, see Note 1 above) identify any AULs such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state, or local law? No

(3.) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line ofbusiness as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

tio

(4.) Relationship of the purchase price to the fair market value of the property ifit were not contaminated (40 CFR 312.29).

Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? \J{ S

(5.) Commonly known or reasonably ascertainable information about the property (40 CFR 312.30).

Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example,

(a.) Do you know the past uses of the property? A V; ct.,v1,fvw-e...,

(b.) Do you know of specific chemicals that are present or once were present at the property? N--,-c-0

(c.) Do you know of spills or other chemical releases that have taken place at the property? '-.1.'.o

(d.) Do you know of any environmental cleanups that have taken place at the property? - N

(6.) The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property? N,-o

[11] *landowner Liabi/iry Protections. or llPs. is the term used to describe the three rypes of potential defenses to Superfimd /iabiliry in EPA's Interim Guidance Regarding Criteria landowners Must Meer in Order to Qualify for Bona Fide Prospective Purchaser. Contiguous Properly Owner. or Innocent landowner limitations on CERClA liabiliry ("Common Elements"Guide) issued on March 6. 2003.*

II/IJ *P.l. 107-1 /8.*

Signed

3/14/2023
Date

VJ' o{50=e1htvis1 Architect
Printed Name/ Title

APPENDIX C

Regulatory Records Documentation

Prepared for:

SOUTHLAND ENVIRONMENTAL LLC
510 Clarence St
Lake Charles, LA 70601

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Regulatory Database Report

ASTM E1527-21 / AAI Compliant

Corbina Rd Tract

Lake Charles, LA 70607

Calcasieu County

PO #: 12055

ES-141754

Tuesday, March 14, 2023

Banks Environmental Data, Inc. - PO Box 12851 - Austin, TX 78711 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Table of Contents

Banks Environmental Data, Inc. - PO Box 12851 - Austin, TX 78711 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Geographic Summary

Location
Calcasieu County, LA
Target location is 0.073 square miles and has a 1.11 mile perimeter

Coordinates	
Longitude & Latitude in Degrees Minutes Seconds	NA
Longitude & Latitude in Decimal Degrees	NA
X and Y in UTM	NA

Elevation
NA

Zip Codes Searched

Search Distance	Zip Codes (historical zip codes included)
Target Property	70607
0.25 miles	70615, 70607
0.5 miles	70615, 70607
1 mile	70615, 70607

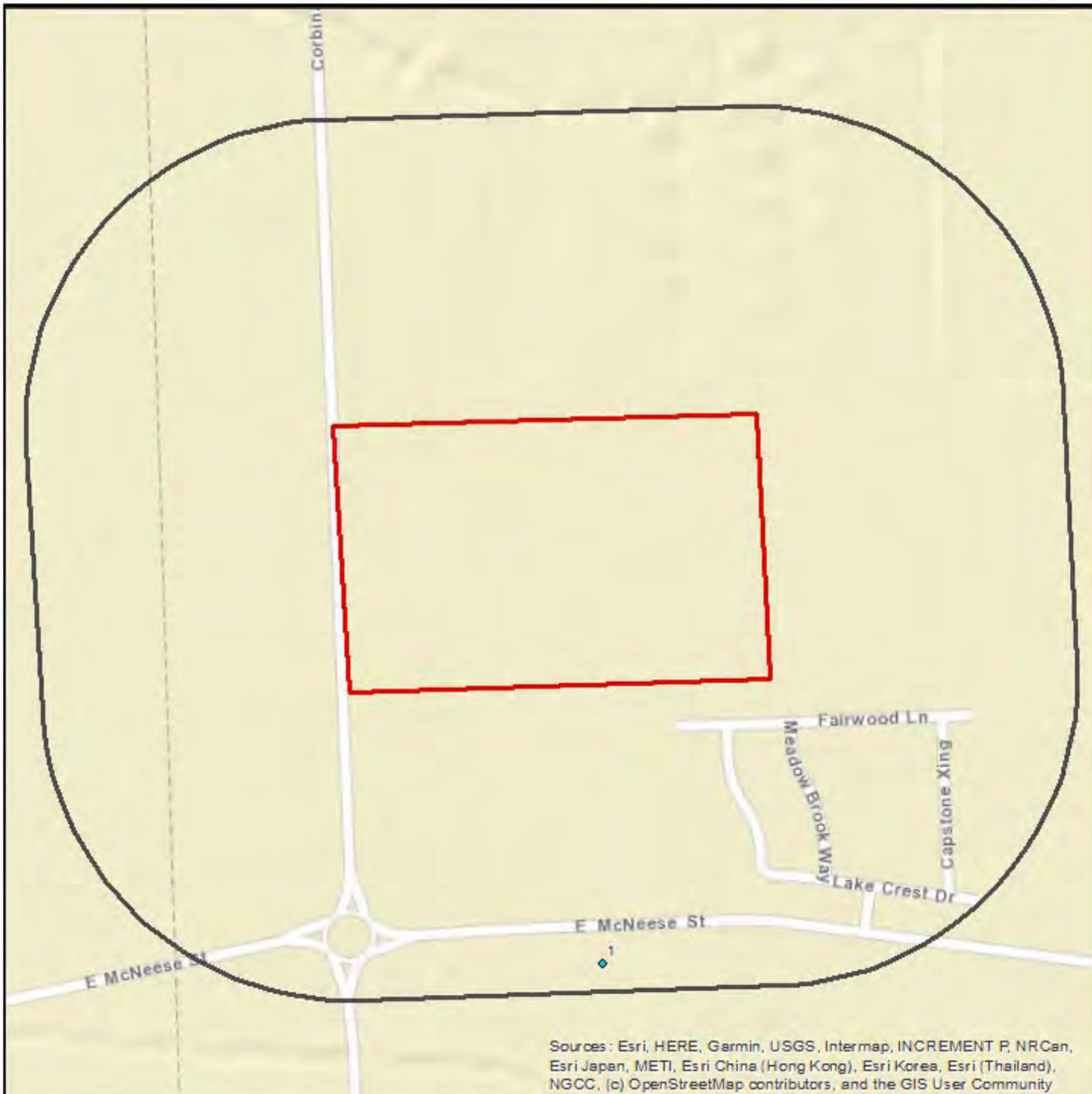
Topos Searched

Search Distance	Topo Name
Target Property	Lake Charles (1977)
0.25 miles	Lake Charles (1977)
0.5 miles	Lake Charles (1977)
1 mile	Lake Charles (1977)

Database Summary

Databases Searched	Distance Searched	# Mapped	# Not Mapped	Total
Federal - ASTM 1527-21/AAI Required				
National Priority List (NPL)	1	0	0	0
Delisted National Priority List (DNPL)	0.5	0	0	0
SEMS (CER SEMS)	0.5	0	0	0
SEMS NFRAP (CER SEMS NFRAP)	0.5	0	0	0
RCRA CORRACTS (RCRA COR)	1	0	0	0
RCRA non-CORRACTS TSD (RCRA TSD)	0.5	0	0	0
RCRA Generators (RCRA GEN)	0.25	0	0	0
Federal Brownfields (FED BWN)	0.5	0	0	0
Federal Institutional Control (FED IC)	0.5	0	0	0
Federal Engineering Control (FED EC)	0.5	0	0	0
ERNS List (ERNS)	0.25	0	0	0
State - ASTM 1527-21/AAI Required				
State/Tribal Equivalent NPL (ST NPL)	1	0	0	0
State/Tribal Equivalent CERCLIS (ST CER)	0.5	0	0	0
State/Tribal Disposal or Landfill (SWLF)	0.5	0	0	0
State/Tribal Leaking Storage Tank (LPST)	0.5	0	0	0
State/Tribal Storage Tank (PST)	0.25	1	0	1
State/Tribal Institutional Control (ST IC)	0.25	0	0	0
State/Tribal Engineering Control (ST EC)	0.5	0	0	0
State/Tribal Voluntary Cleanup (VCP)	0.5	0	0	0
State/Tribal Brownfield (ST BWN)	0.5	0	0	0
State/Tribal Hazardous Waste (HW)	0.25	0	0	0
Non-ASTM/AAI Required Databases				
RCRA (RCRA)	0.25	0	0	0
Dry Cleaners (DRYC)	0.25	0	0	0
Total Sites Found		**1**	**0**	**1**

Summary Map - 0.25 Mile Buffer



Corbina Rd Tract

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract

RCRA COR, RCRA TSD, CER, LPST, NPL, ST NPL, SWLF

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract

RCRA GEN, ST & FED BWN, ST & FED EC, ST & FED IC, DNPL, CER NFRAP, PST, VCP, ST CER

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract

ERNS, HW, RCRA, DRYC

Target Property

Search Buffer

1 : 7,500

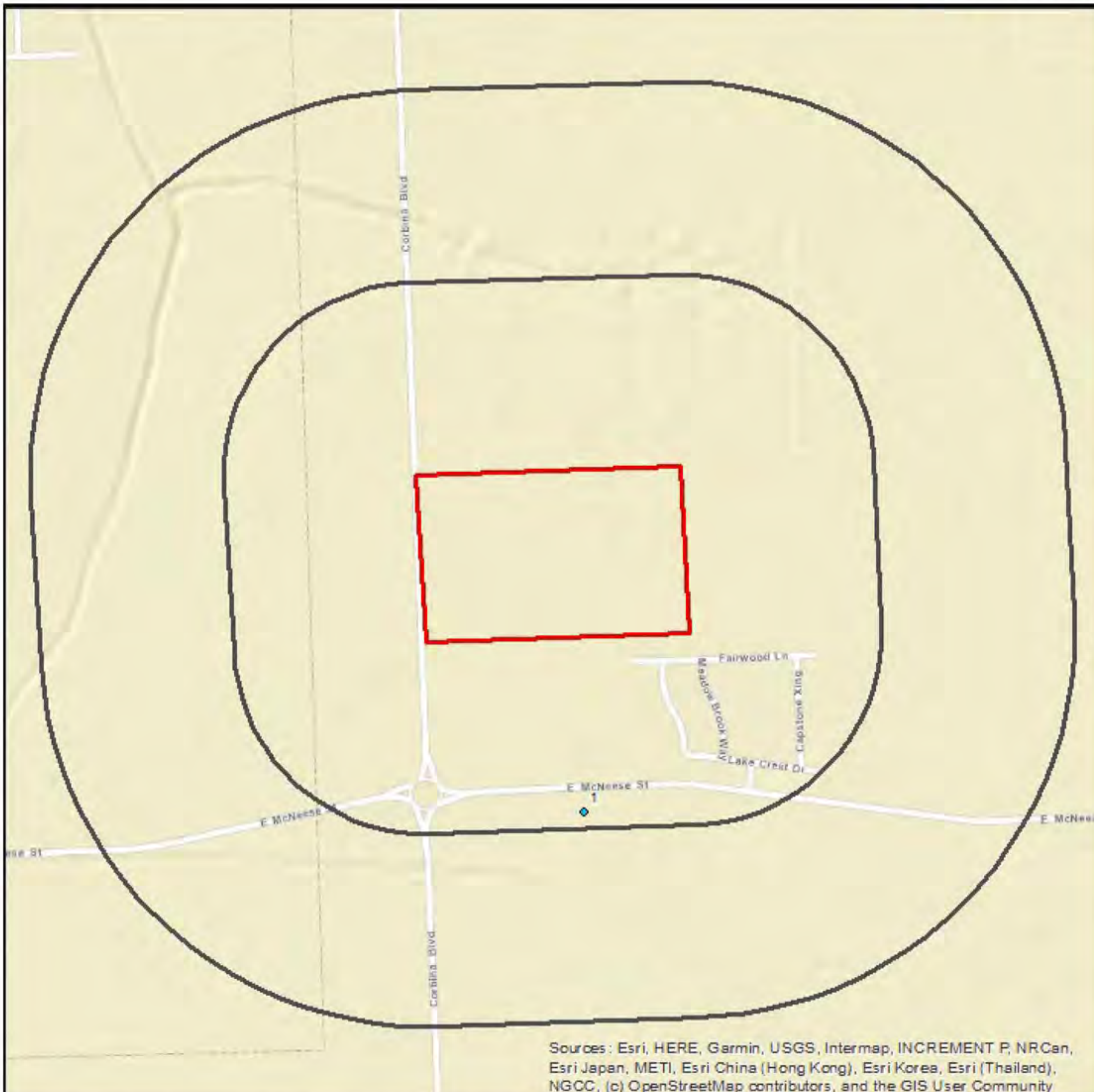
1 inch = 0.118 miles
1 inch = 625 feet
1 centimeter = 0.075 kilometers
1 centimeter = 75 meters

N

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

Summary Map - 0.5 Mile Buffer

BANKS ENVIRONMENTAL DATA A DIVISION OF THE BANKS GROUP



Corbina Rd Tract

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract

RCRA COR, RCRA TSD, CER, LPST, NPL, ST NPL, SWLF

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract

RCRA GEN, ST & FED BWN, ST & FED EC, ST & FED IC, DNPL, CER NFRAP, PST, VCP, ST CER

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract

ERNS, HW, RCRA, DRYC

Target Property

Search Buffer

1 : 12,000

1 inch = 0.189 miles

1 inch = 1000 feet

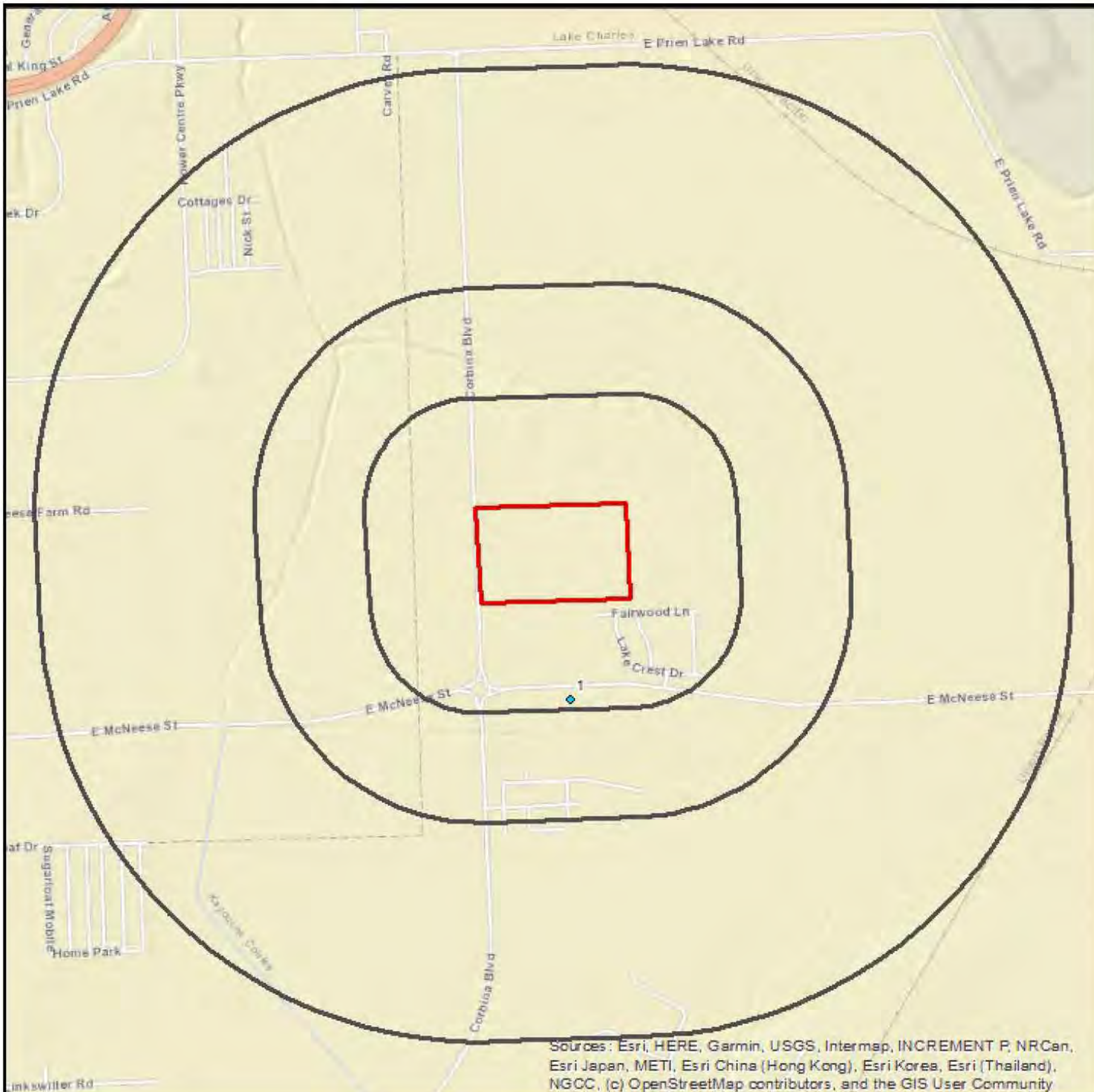
1 centimeter = 0.120 kilometers

1 centimeter = 120 meters

N

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33.0' 00" North
Second Standard Parallel: 45.0' 00" North
Central Meridian: 96.0' 00" West
Latitude of Origin: 39.0' 00" North

Summary Map - 1 Mile Buffer



Corbina Rd Tract

Single Site	Cluster Site	Large Tract	Cluster Site with Large Tract

RCRA COR, RCRA TSD, CER, LPST, NPL, ST NPL, SWLF

Single Site	Cluster Site	Large Tract	Cluster Site with Large Tract

RCRA GEN, ST & FED BWN, ST & FED EC, ST & FED IC, DNPL, CER NFRAP, PST, VCP, ST CER

Single Site	Cluster Site	Large Tract	Cluster Site with Large Tract

ERNS, HW, RCRA, DRYC

Target Property

Search Buffer

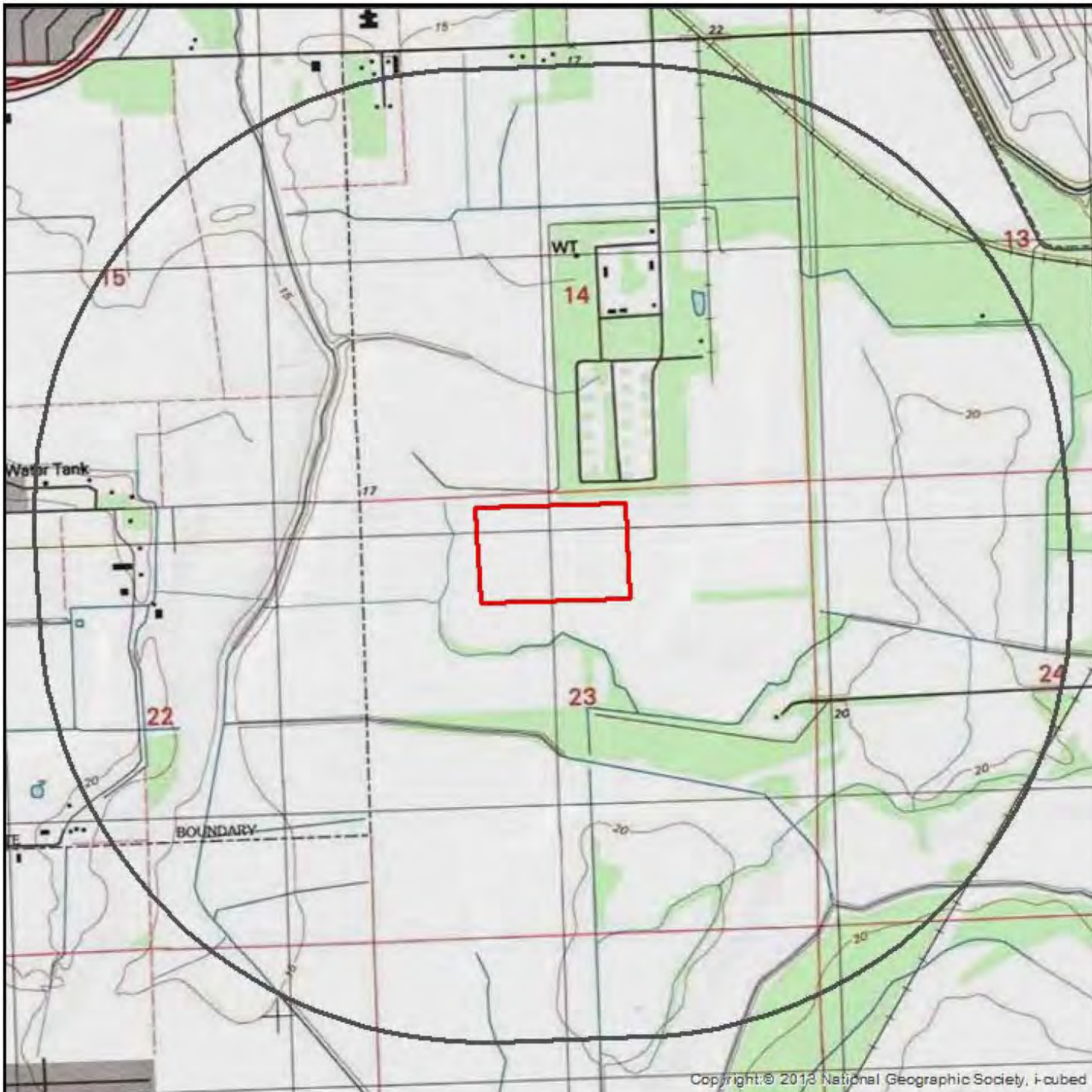
1 : 21,000
1 inch = 0.331 miles
1 inch = 1750 feet
1 centimeter = 0.210 kilometers
1 centimeter = 210 meters

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

N

Topographic Overlay Map - 1 Mile Buffer

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Corbina Rd Tract

Target Property

Search Buffer

Target Property Quad Name(s)
Lake Charles (1977)

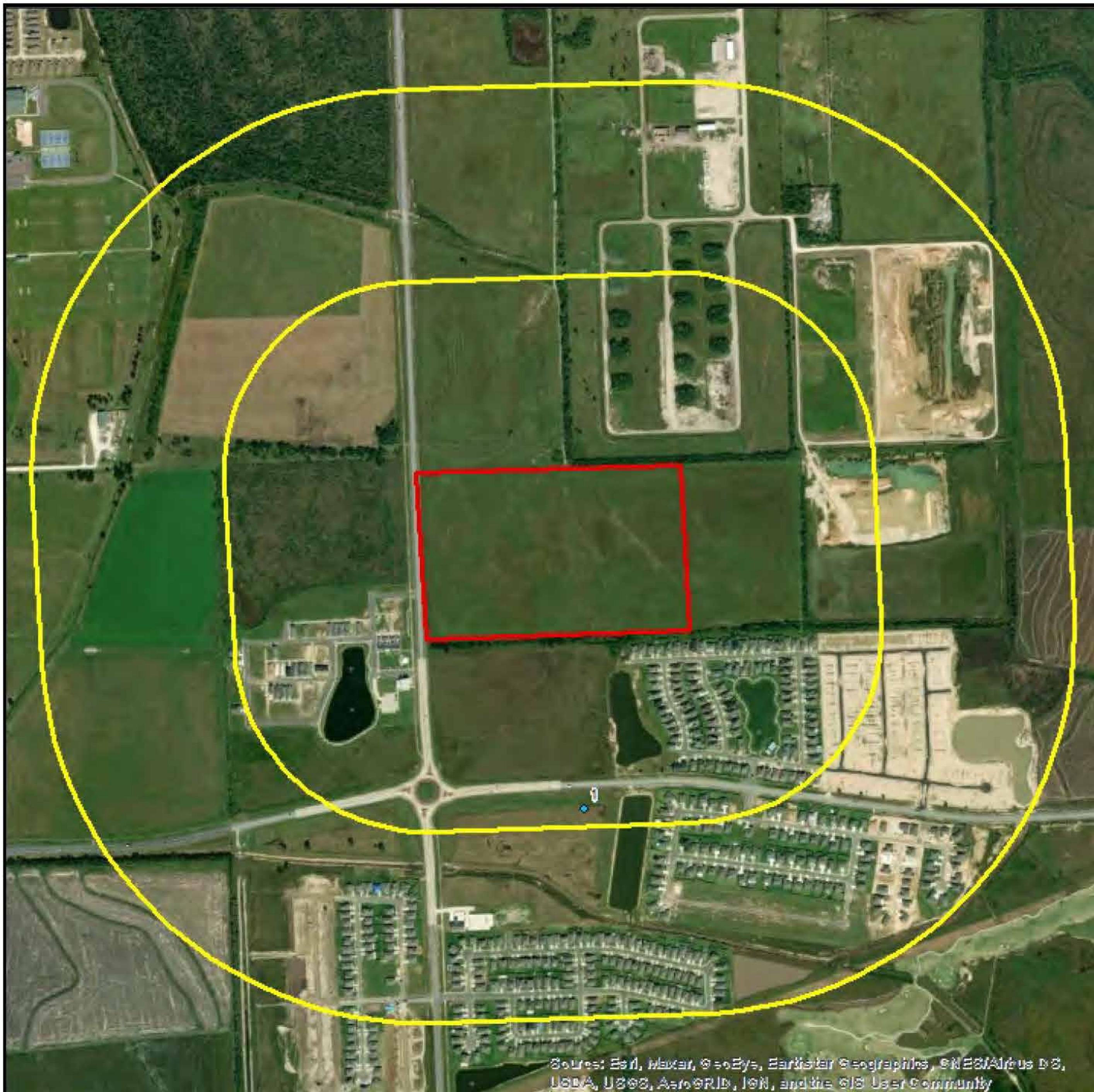
1 : 21,000
1 inch = 0.331 miles
1 inch = 1750 feet

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

N

Current Imagery Overlay Map - 0.5 Mile Buffer

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP



Corbina Rd Tract

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract
RCRA COR, RCRA TSD, CER, LPST, NPL, ST NPL, SWLF

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract
RCRA GEN, ST & FED BWN, ST & FED EC, ST & FED IC, DNPL, CER NFRAP, PST, VCP, ST CER

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract
ERNS, HW, RCRA, DRYC

Target Property

Search Buffer

1 : 12,000

1 inch = 0.189 miles
1 inch = 1000 feet
1 centimeter = 0.120 kilometers
1 centimeter = 120 meters

N

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

Soil Survey Map - 0.25 Mile Buffer

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Corbina Rd Tract

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract
RCRA COR, RCRA TSD, CER, LPST, NPL, ST NPL, SWLF

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract
RCRA GEN, ST & FED BWN, ST & FED EC, ST & FED IC, DNPL, CER NFRAP, PST, VCP, ST CER

Single Site | Cluster Site | Large Tract | Cluster Site with Large Tract
ERNS, HW, RCRA, DRYC

Target Property
Search Buffer
Soils Boundary

1 : 7,500
1 inch = 0.118 miles
1 inch = 625 feet
1 centimeter = 0.075 kilometers
1 centimeter = 75 meters

Lambert Conformal Conic Projection
1983 North American Datum
First Standard Parallel: 33 0' 00" North
Second Standard Parallel: 45 0' 00" North
Central Meridian: 96 0' 00" West
Latitude of Origin: 39 0' 00" North

N

Soils

Soils Types Found	
Target Property	Mt, Cr
Within 0.25 miles of Target Property	Mr, Mt, Cr, Lt

Soil Type Descriptions

Cr - Crowley-Vidrine complex, 0 to 1 percent slopes	
Percent Hydric	4
Minimum Depth to Bedrock	

Crowley (55 percent)	
Hydrologic Group	High runoff potential
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	High
Depth to Restrictive Feature	

Horizon	Soil Texture	Upper Boundary	Lower Boundary	AASHTO	Unified
Ap	Silt loam	0 cm	18 cm	A-4, A-6	CL, CL-ML, ML
Btg1	Silty clay	43 cm	102 cm	A-7-6	CH, CL
Btg2	Clay loam	102 cm	203 cm	A-6, A-7-6	CH, CL
Eg	Silt loam	18 cm	43 cm	A-4, A-6	CL, CL-ML, ML

Vidrine (35 percent)	
Hydrologic Group	High runoff potential
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	High
Depth to Restrictive Feature	

Horizon	Soil Texture	Upper Boundary	Lower Boundary	AASHTO	Unified
A	Silt loam	0 cm	15 cm	A-4	CL, CL-ML, ML
BCtg	Silty clay loam	165 cm	203 cm	A-6, A-7-6	CH, CL
Bt/E	Silty clay	36 cm	46 cm	A-6, A-7-6	CH, CL
Btg	Silty clay	46 cm	165 cm	A-6, A-7-6	CH, CL
E	Silt loam	15 cm	36 cm	A-4	CL, CL-ML, ML

Acadiana (3 percent)	
Hydrologic Group	
Soil Drainage Class	Moderately well drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Edgerly (3 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Mowata (2 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Prairieland (2 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Lt - Prairieland silt loam, 0 to 1 percent slopes, rarely flooded	
Percent Hydric	82
Minimum Depth to Bedrock	

Soils

Prairieland (80 percent)	
Hydrologic Group	Moderately high runoff potential when drained and high runoff potential undrained
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	High
Depth to Restrictive Feature	

Horizon	Soil Texture	Upper Boundary	Lower Boundary	AASHTO	Unified
Ap	Silt loam	0 cm	22 cm	A-4, A-6	CL-ML, ML
Btg/E	Loam	34 cm	60 cm	A-4, A-6, A-7-6	CH, CL
Btg1	Loam	60 cm	150 cm	A-6, A-7-6	CH, CL
Btg2	Clay loam	150 cm	203 cm	A-6, A-7-6	CH, CL
Eg	Silt loam	22 cm	34 cm	A-4, A-6	CL-ML, ML

Edgerly (11 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Crowley (3 percent)	
Hydrologic Group	
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Kaplan (2 percent)	
Hydrologic Group	
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Kinder (2 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Midland (2 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Mr - Edgerly loam, 0 to 1 percent slopes, rarely flooded	
Percent Hydric	9
Minimum Depth to Bedrock	

Edgerly (82 percent)	
Hydrologic Group	High runoff potential
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	High
Depth to Restrictive Feature	

Horizon	Soil Texture	Upper Boundary	Lower Boundary	AASHTO	Unified
Ap	Loam	0 cm	19 cm	A-4, A-6	CL, CL-ML, ML
Bt	Loam	19 cm	78 cm	A-6, A-7-6	CL
Btg	Clay loam	78 cm	203 cm	A-6, A-7-6	CH, CL

Soils

Prairieland (6 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Kaplan (4 percent)	
Hydrologic Group	
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Vidrine (3 percent)	
Hydrologic Group	
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Crowley (2 percent)	
Hydrologic Group	
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Midland (2 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Mowata (1 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Mt - Mowata-Vidrine complex, 0 to 1 percent slopes, rarely flooded	
Percent Hydric	65
Minimum Depth to Bedrock	

Mowata (60 percent)	
Hydrologic Group	High runoff potential
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	High
Depth to Restrictive Feature	

Horizon	Soil Texture	Upper Boundary	Lower Boundary	AASHTO	Unified
Ap	Silt loam	0 cm	20 cm	A-4	CL, CL-ML, ML
Btg	Silty clay	86 cm	203 cm	A-6, A-7-6	CL
Btg/E	Clay loam	46 cm	86 cm	A-7-6	CH, CL
Eg	Silt loam	20 cm	46 cm	A-4	CL, CL-ML, ML

Vidrine (30 percent)	
Hydrologic Group	High runoff potential
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	High
Depth to Restrictive Feature	

Soils

Horizon	Soil Texture	Upper Boundary	Lower Boundary	AASHTO	Unified
A	Silt loam	0 cm	15 cm	A-4	CL, CL-ML, ML
BCtg	Silty clay loam	152 cm	203 cm	A-6, A-7-6	CH, CL
Bt/E	Silt loam	48 cm	56 cm	A-6, A-7-6	CH, CL
Btg	Silty clay	56 cm	152 cm	A-6, A-7-6	CH, CL
E	Silt loam	15 cm	48 cm	A-4	CL, CL-ML, ML

Crowley (3 percent)	
Hydrologic Group	
Soil Drainage Class	Somewhat poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Leton (3 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Edgerly (2 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Midland (2 percent)	
Hydrologic Group	
Soil Drainage Class	Poorly drained
Corrosion Potential - Uncoated Steel	
Depth to Restrictive Feature	

Soils Descriptions

AASHTO Classification Definitions	
A-1, A-1-a, A-1-b	Granular materials (35% or less passing No. 200 sieve), sonte fragments, gravel and sand
A-2, A-2-4, A-2-5, A-2-6, A-2-7	Granular materials (35% or less passing No. 200 sieve), silty or clayey gravel and sand
A-3	Granular materials (35% or less passing No. 200 sieve), fine sand
A-4	Silt-Clay materials (more than 35% passing No. 200 sieve), silty soils
A-5	Silt-Clay materials (more than 35% passing No. 200 sieve), silty soils
A-6	Silt-Clay materials (more than 35% passing No. 200 sieve), clayey soils
A-7, A-7-5, A-7-6	Silt-Clay materials (more than 35% passing No. 200 sieve), clayey soils
A-8	Silt-Clay materials (more than 35% passing No. 200 sieve), clayey soils

Unified Classification Definitions	
CH	Fine-grained soils, silts and clays (liquid limit is 50% or more), Fat Clay
CL, CL-A (proposed), CL-K (proposed), CL-ML, CL-O (proposed), CL-T (proposed)	Fine-grained soils, silts and clays (liquid limit is less than 50%), Lean Clay
GC, GC-GM	Coarse-grained soils, Gravels, gravel with fines, Clayey Gravel
GM	Coarse-grained soils, Gravels, gravel with fines, Silty Gravel
GP, GP-GC, GP-GM	Coarse-grained soils, Gravels, clean gravels, Poorly Graded Gravel
GW, GW-GC, GW-GM	Coarse-grained soils, Gravels, clean gravels, Well-Graded Gravel
MH, MH-A, MH-K, MH-O, MH-T	Fine-grained soils, silts and clays (liquid limit is 50% or more), Elastic Silt
ML, ML-A (proposed), ML-K (proposed), ML-O (proposed), ML-T (proposed)	Fine-grained soils, silts and clays (liquid limit is less than 50%), Silt
OH, OH-T (proposed)	Fine-grained soils, silts and clays (liquid limit is 50% or more), Organic Clay or Organic Silt
OL	Fine-grained soils, silts and clays (liquid limit is less than 50%), Organic Clay or Organic Silt
PT	Highly organic soils, Peat
SC, SC-SM	Coarse-grained soils, Sands, sands with fines, Clayey Sand
SM	Coarse-grained soils, Sands, sands with fines, Silty Sand
SP, SP-SC, SP-SM	Coarse-grained soils, Sands, clean sands, Poorly Graded Sand
SW, SW-SC, SW-SM	Coarse-grained soils, Sands, clean sands, Well-Graded Sand

Source

Natural Resources Conservation Service, Soil Survey Geographic (SSURGO) Database.

Disclaimer

This Soils Survey from Banks Environmental Data, Inc. has searched Natural Resources Conservation Service (NRCS) and the Soil Survey Geographic Database (SSURGO). All soil data presented on the map and in the details section are based on information obtained from NRCS. Although Banks performs quality assurance and quality control on all data, inaccuracies of the data and mapped locations could possibly be traced to the source. Banks Environmental Data, Inc. cannot fully guarantee the accuracy of the SSURGO database maintained by NRCS.

Water & Oil/Gas Wells Map - 0.25 Mile Buffer

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Corbina Rd Tract

- Single Water Well
- Water Well Cluster
- Single Oil/Gas/Other Well
- Oil/Gas/Other Well Cluster
- Water/Oil/Gas/Other Well Cluster

- Target Property
- Search Buffer

1 : 7,500
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1 inch = 625 feet
1 centimeter = 0.075 kilometers
1 centimeter = 75 meters

N

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1983 North American Datum
First Standard Parallel: 33 0' 00" North
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Water & Oil/Gas Wells

Map ID	Well ID	Owner	Well Type	Elevation
1	669	CHENNAULT AFB	Water: Industrial	15 ft
2	USGS301108093091801	USGS	Water: Not Reported	15 ft
3	17019200960000	AMOCO PRODUCTION COMPANY	20	17 ft

Source

U.S. Geological Survey, Louisiana Department of Natural Resources

Disclaimer

This well scan from Banks Environmental Data, Inc. has included a digital search of state and federal wells currently digitized in our geospatial database. Since this scan includes only well data that is currently mapped in our geospatial database, more wells could exist within the search area. For a complete well search or to locate more details, please contact Banks to obtain a full Water Well Report or Oil & Gas Well/Pipeline Search Report. More detailed individual well records can also be obtained from Banks for an additional cost, please reference a Well ID # from this well scan.

All well locations are based on information obtained from state and federal sources. Although Banks performs quality assurance and quality control on all data, inaccuracies of the records and mapped locations could possibly be traced to the specific regulatory authority or individual well driller. Banks Environmental Data, Inc. cannot fully guarantee the accuracy of the data or well location(s) of the maps and records maintained by the state and federal agencies.

Mapped Sites Summary

Database	Distance from Target Property	Map ID	Facility Site Name	Facility Site Address	Site Details Page #
PST	0.23 miles SW	1	Morgan Field C Store	3170 E McNeese St, Lake Charles, LA	21

*Sites are sorted by database tier, database, and distance from the target site.

End of Mapped Sites Summary Section

Banks Environmental Data, Inc. - PO Box 12851 - Austin, TX 78711 - 800.531.5255 P - 512.478.1433 F
www.banksenvdata.com

Unmapped Sites Summary

Banks Environmental Data performed a thorough search and no unmapped sites were found.

Zip Code Map - 1 Mile Buffer

BANKS ENVIRONMENTAL DATA
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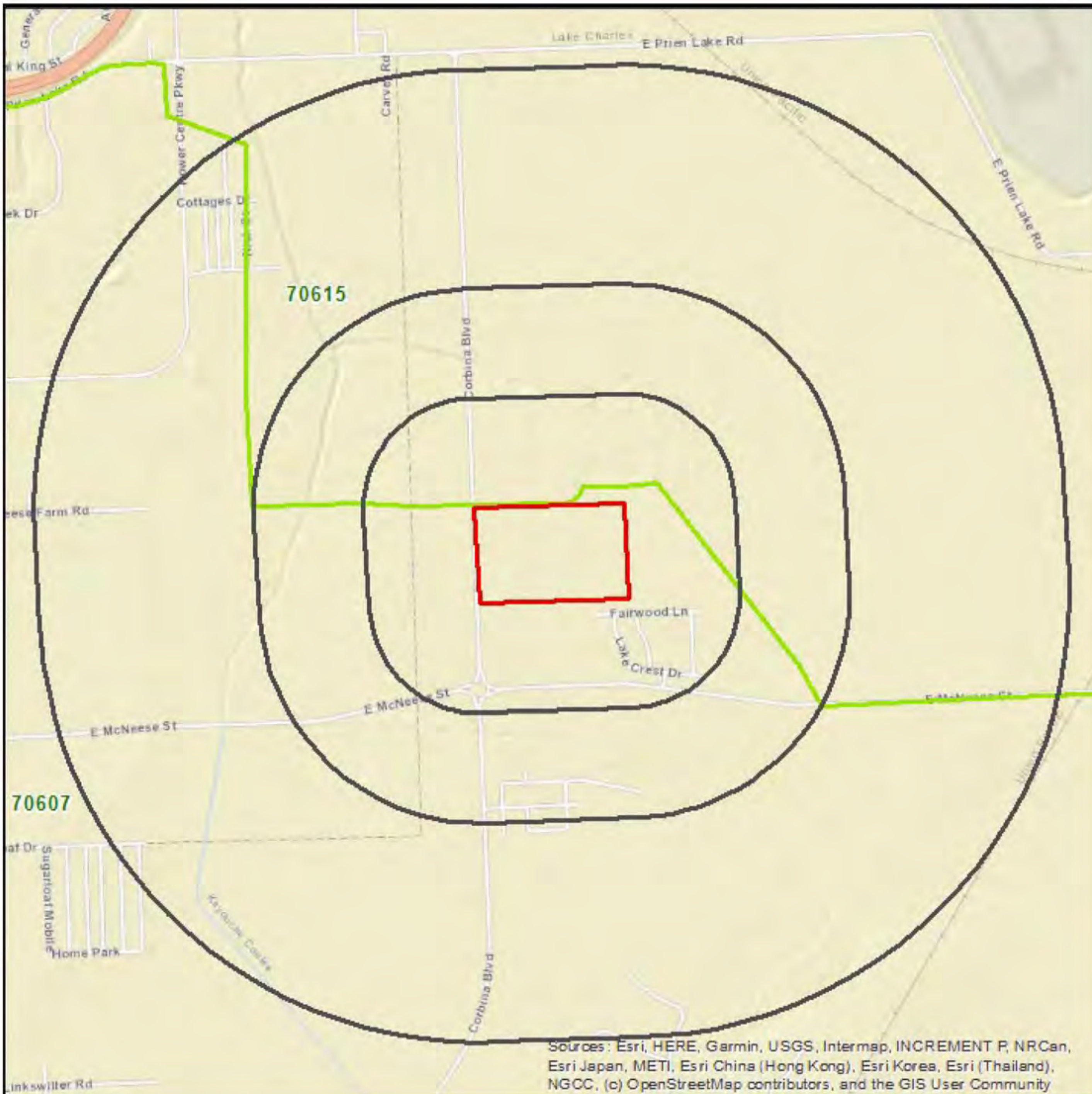

Corbina Rd Tract

Target Property

Search Buffer

Zip Code Boundary

1 : 21,000
1 inch = 0.331 miles
1 inch = 1750 feet
1 centimeter = 0.210 kilometers
1 centimeter = 210 meters

N

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Central Meridian 96 0' 00" West
Latitude of Origin 39 0' 00" North

MapID 1: PST - 3170 E McNeese St

PST - State/Tribal Storage Tank

Map ID #1	PST - State/Tribal Storage Tank	Source: LADEQ
Agency Interest ID: 235532	**Secondary ID: NA**	**Banks ID: 235532**
Morgan Field C Store		Rel. Loc.: 0.23 miles SW
3170 E McNeese St, Lake Charles, LA		Elevation: 16.4 feet (+16.4)

State Contact Name:	
Tank #:	**#72103**
Status:	Active
Capacity:	
Install Date:	8/31/2022
Closure Certification Date:	
Removed:	
Above or Below Ground Tank:	below
Piping Type:	
Tank Contents:	72103-gasoline & diesel

End of PST Sites Section

Dataset Descriptions and Sources

Dataset	Source	Dataset Description	Update Schedule	Data Requested	Data Obtained	Data Updated	Source Updated
NPL -- National Priority List	EPA	NPL is the list of high priority hazardous waste sites in the United States eligible for long-term remedial action financed under the federal Superfund program or SEMS database (formerly known as the CERCLIS database). The EPA will only add sites to the NPL list based upon completion of the Hazard Ranking System (HRS) screening, public solicitation of comments about the proposed site, and after all comments have been addressed.	Quarterly	01/16/2023	01/16/2023	01/17/2023	12/22/2023
DNPL -- Delisted National Priority List	EPA	DNPL is a list of all sites that have been deleted from the EPA NPL list (SEMS database). These sites are taken off the NPL list usually due to no further response or remedial action being required on them. Notices to delete NPL sites are published in the Federal Register and become effective unless the EPA receives significant adverse or critical comments during the 30-day public comment period.	Quarterly	01/16/2023	01/16/2023	01/17/2023	12/22/2022
CER SEMS -- SEMS	EPA	The EPA maintains the SEMS database to track sites under the Comprehensive Environmental Response, Compensation, and Liability Act, a federal law designed to clean up abandoned hazardous waste sites. These sites are either proposed, listed or under review currently to be a part of the National Priority List.	Quarterly	01/16/2023	01/16/2023	01/17/2023	12/22/2022
CER SEMS NFRAP -- SEMS NFRAP	EPA	From the Superfund Enterprise Management System (SEMS) database No Further Remedial Action Planned or NFRAP have been removed from the listing. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.	Quarterly	01/16/2023	01/16/2023	01/17/2023	12/22/2023
RCRA COR -- RCRA CORRACTS	EPA	These sites are registered hazardous waste generators or handlers that fall under the Resource Conservation and Recovery Act (RCRA) and subject to corrective action activity.	Quarterly	01/18/2023	01/18/2023	01/24/2023	01/16/2023
RCRA TSD -- RCRA non-CORRACTS TSD	EPA	This database lists all treatment, storage and disposal of hazardous material sites that fall under the Resource Conservation and Recovery Act (RCRA). All hazardous waste TSD facilities are required to notify EPA of their existence.	Quarterly	01/18/2023	01/18/2023	01/24/2023	01/16/2023
RCRA GEN -- RCRA Generators	EPA	The EPA regulates all Hazardous Waste Generators subject to the Resource Conservation and Recovery Act (RCRA). They are classified by the quantity of hazardous waste generated. A Small Quantity Generator (SQG) generates between 100kg and 1,000 kg of waste per month. A Large Quantity Generator (LQG) generates over 1,000 kg of waste per month. A Conditionally Exempt SQG (CEG) generates less than 100 kg of waste per month.	Quarterly	01/18/2023	01/18/2023	01/24/2023	01/16/2023
FED BWN -- Federal Brownfields	EPA	A listing of sites that assist the EPA in collecting, tracking, and updating information of sites in relation to the Small Business Liability Relief and Brownfields Revitalization Act. These sites are real property that is either abandoned or underutilized where redevelopment or expansion is complicated by real or perceived environmental contamination.	Quarterly	12/19/2022	12/19/2022	12/26/2022	12/19/2022
FED IC -- Federal Institutional Control	EPA	This is a listing of Brownfield Management System (BMS) sites that have had Institutional Controls (ICs) placed on them. ICs are administrative restrictions, such as legal controls, that help minimize the potential for human exposure to known contamination by ensuring appropriate land or resource use. ICs are meant to supplement Engineering Controls and will rarely be the sole remedy at a site. ICs are a type of Activity and Use Limitation (AUL).	Quarterly	12/19/2022	12/19/2022	12/26/2022	12/19/2022
FED EC -- Federal Engineering Control	EPA	This is a listing of Brownfield Management System (BMS) sites that have had Engineering Controls (ECs) placed on them. ECs are physical methods or modifications put into place on a site to reduce or eliminate the possibility of human exposure to known contamination. ECs are a type of Activity and Use Limitation (AUL).	Quarterly	12/19/2022	12/19/2022	12/26/2022	12/19/2022

Dataset Descriptions and Sources

Dataset	Source	Dataset Description	Update Schedule	Data Requested	Data Obtained	Data Updated	Source Updated
ERNS -- ERNS List	EPA/National Response Center	ERNS is a national database used to store information on unauthorized releases of oil and hazardous substances that have been reported to the National Response Center since 2001. The NRC is the sole federal point of contact for reporting oil and chemical spills. Prior to 2001 this information was maintained by the EPA.	Annually	01/09/2023	01/09/2023	01/09/2023	01/09/2023
ST NPL -- State/Tribal Equivalent NPL (LA)	LADEQ	This database contains 2 different types of records of hazardous properties in Louisiana that are considered or have already been through remediation. A confirmed status denotes that assessments have been performed and a determination made that (1) hazardous waste or substances are present at the site and (2) these sites are under the jurisdiction of the Inactive and Abandoned Sites regulations. A potential status is an indicator that sites are either waiting to be assessed or the assessment (investigation) is in progress.	Quarterly	01/20/2023	01/20/2023	01/27/2023	01/20/2023
ST CER -- State/Tribal Equivalent CERCLIS (LA)	N/A	This database is not currently available from this state. If this state does make this database available in the future, Banks Environmental Data will obtain it for reporting purposes.	N/A	N/A	N/A	N/A	N/A
SWLF -- State/Tribal Disposal or Landfill (LA)	LADEQ	This database contains listings of all Type I, Type II, Type III C&D solid waste landfills registered with the Solid Waste Program for the state of Louisiana.	Quarterly	01/20/2023	01/30/2023	02/01/2023	11/16/2022
LPST -- State/Tribal Leaking Storage Tank (LA)	LADEQ	This database is a list of all known leaking underground storage tanks as registered with the Remediation Services Division of the LDEQ. The Louisiana Department of Environmental Quality (LDEQ) migrated all environmental data to a new system in 1999. The old system consisted of many different databases with different formats to collect various types of data. The new system is now the primary tool used to track, collect and pull reports from DEQ data. After the migration took place the old database was locked and is no longer accessible. Prior to 1999 LDEQ reported LUSTs as individual instances of actual leaks. The new database reports LUSTs as tanks currently in remediation. Once a facility leak is evaluated and the remediation is closed, the site is no longer considered a 'LUST'. However, Banks will continue to report these sites as a LUST in the Regulatory Report.	Quarterly	01/20/2023	01/20/2023	01/27/2023	01/20/2023
LPST -- State/Tribal Leaking Storage Tank (LA)	EPA	The Tribal LUST database (maintained by EPA Region 6) provides information on leaking underground storage tank on tribal lands in Louisiana, Arkansas, Oklahoma, New Mexico and Tribal Nations.	Quarterly	12/29/2022	12/29/2022	12/29/2022	04/28/2022
PST -- State/Tribal Storage Tank (LA)	LADEQ	This database is a list of all known underground and aboveground storage tanks registered with the Remediation Services Division of the LDEQ.	Quarterly	01/20/2023	01/20/2023	01/27/2023	01/20/2023
PST -- State/Tribal Storage Tank (LA)	EPA	The Tribal UST database (maintained by EPA Region 6) provides underground storage tank information on tribal lands in Louisiana, Arkansas, Oklahoma, New Mexico and Tribal Nations.	Quarterly	12/29/2022	12/29/2022	12/29/2022	04/28/2022
ST IC -- State/Tribal Institutional Control (LA)	LADEQ	This database contains state Voluntary Cleanup Program sites that have an Institutional Control (ICs) placed on them. ICs are administrative restrictions, such as legal controls, that help minimize the potential for human exposure to known contamination by ensuring appropriate land or resource use.	Quarterly	02/09/2023	02/09/2023	02/09/2023	02/09/2023
ST EC -- State/Tribal Engineering Control (LA)	LADEQ	This database contains state Voluntary Cleanup Program sites that have Engineering Controls (ECs) placed on them. ECs are physical methods or modifications put into place on a site to reduce or eliminate the possibility of human exposure to known contamination.	Quarterly	02/09/2023	02/09/2023	02/09/2023	02/09/2023

Dataset Descriptions and Sources

Dataset	Source	Dataset Description	Update Schedule	Data Requested	Data Obtained	Data Updated	Source Updated
VCP -- State/Tribal Voluntary Cleanup (LA)	LADEQ	This database contains information about sites that have been placed in the Louisiana Voluntary Remediation Program (VRP). The mission of the program is to provide a mechanism by which property owners (or potential owners) or others can clean up contaminated properties and receive a release of liability for further cleanup of historical contamination at a site. This release of liability flows to future owners of the property as well.	Quarterly	02/09/2023	02/09/2023	02/09/2023	02/09/2023
ST BWN -- State/Tribal Brownfield (LA)	N/A	This database is not currently available from this state. If this state does make this database available in the future, Banks Environmental Data will obtain it for reporting purposes.	N/A	N/A	N/A	N/A	N/A
HW -- State/Tribal Hazardous Waste (LA)	LADEQ	This database is not currently available from this state. If this state does make this database available in the future, Banks Environmental Data will obtain it for reporting purposes.	N/A	N/A	N/A	N/A	N/A
RCRA -- RCRA	EPA	This database lists all sites that fall under the Resource Conservation and Recovery Act (RCRA) and are not classifiable as treatment, storage, disposers of hazardous material, hazardous waste generator or subject to corrective action activity.	Quarterly	01/18/2023	01/18/2023	01/24/2023	01/16/2023
DRYC -- Dry Cleaners (LA)	N/A	This database is not currently available from this state. If this state does make this database available in the future, Banks Environmental Data will obtain it for reporting purposes.	N/A	N/A	N/A	N/A	N/A

Disclaimer

The Banks Environmental Data Regulatory Database Report was prepared based upon data obtained from State, Tribal, and Federal sources known to Banks Environmental Data at the time the data was obtained. Great care has been taken by Banks in obtaining the best available data from the best available sources. However, there is a possibility that there are sources of data applicable or pertaining to this report's target property, and/or surrounding properties, to which Banks does not have access or has not accessed. Furthermore, although Banks Environmental Data performs quality assurance and quality control on all data, including data it obtains, Banks recognizes that inaccuracies in data from these sources may, and do, exist; accordingly, inaccurate data may have been used or relied upon in the preparation of this report. Even though Banks Environmental Data performs a thorough and diligent search to locate and fix any inaccuracies in the data relied upon in the preparation of this report, Banks cannot guarantee or warrant the accuracy of the locations, information, data, or report. The purchaser of this report accepts this report "as is" and assumes all risk related to any potential in accuracy contained in the report or not reported in it, whether due to a reliance by Banks Environmental Data on inaccurate data, or for any other reason [including but not limited to the negligence or express negligence of Banks Environmental Data]. If this report is being used for the Records Review section of a Phase I Site Assessment according to the ASTM 1527-21, for EPA's All Appropriate Inquiry, or for any other purpose (public or private), all liability and responsibility is assumed by the Environmental Professional or other individual or entity acquiring the report.

APPENDIX D

Historical Aerial Photographs

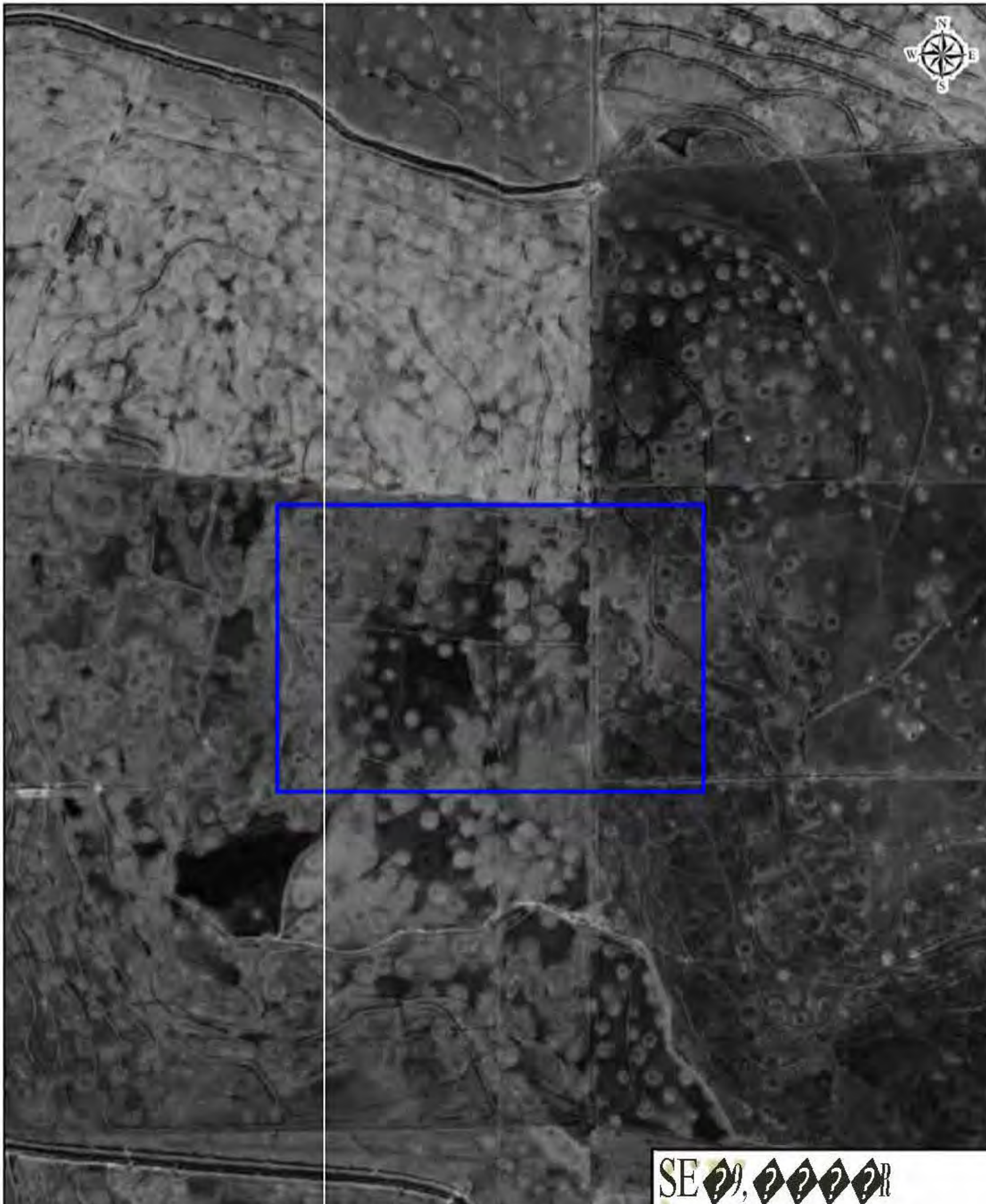
Date: 1940
Source: ASCS

0 250 500 1,000 Feet

1940 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

D SITE LOCA110N

Drawn By: LOH	Checked By: CBJ
Date: 3116/23	Project#: 12055



Date: 1953
Source: ASCS

0 250 500 1,000 Feet

1953 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAO
LAKE CHARLES, LOUISIANA

D.awn By: LDH	Checked By: CBJ
Date: 1/16113	Project#: 11055

SITE LOCATION

Date: 1963
Source: ASCS

0 250 500 1,000 Feet

1963 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: LOH	Checked By: CBJ
Date: 3116/23	Project#: 12055

Date: 1975
Source: USGS

0 250 500 1,000 Feet

SOUTHLAND ENVIRONMENTAL

1975 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

SITE LOCATION

Drawn By: LOH	**Checked By:** CBJ
Date: 3116/23	**Project#:** 12055

Date: 1983
Source: USGS

--c:::= ------------- •Feet
0 250 500 1,000

SOUTHLAND ENVIRONMENTAL

1983 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: LOH	Checked By: CBJ
Date: 3116/23	Project#: 12055

D SITE LOCATION

Date: 1990
Source: USGS

——c:::=--------------- •Feet
0 250 500 1,000

SOUTHLAND
ENVIRONMENTAL

1990 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: LOH	Checked By: CBJ
Date: 3116123	Project#: 12055

SITE LOCA110N

SOUTHLAND ENVIRONMENTAL

Date: 1998

Source: USGS

Feet

0 250 500 1,000

1998 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: LOH	Checked By: CBJ
Date: 3116123	Project#: 12055

D SITE LOCATION

Date: 2004
Source: USDA

Feet
0 250 500 1,000

SOUTHLAND
ENVIRONMENTAL

<U04 AEAIJ\L P"OIU(;AAPt1
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACAE TRACT COABINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: LDH	Checked By: CBJ
Date: 3/16113	Project#: 12055

SITE LOCATION

Date: 2010
Source: USDA

0 250 500 1,000 Feet

2010 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

Drawn By: LOH	Checked By: CBJ
Date: 3116123	Project#: 12055

SITE LOCATION

Date: 2017
Source: USDA

0 250 500 1,000 Feet

SOUTHLAND ENVIRONMENTAL

2017 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

D SITE LOCATION

Drawn By: LOH	Checked By: CBJ
Date: 3116/23	Project#: 12055

Date: 2021
Source: USDA

0 250 500 1,000 Feet

SOUTHLAND ENVIRONMENTAL

2021 AERIAL PHOTOGRAPH
PHASE I ENVIRONMENTAL SITE ASSESSMENT
47-ACRE TRACT CORBINA ROAD
LAKE CHARLES, LOUISIANA

D SITE LOCATION

Drawn By: LOH	Checked By: CBJ
Date: 3116123	Project#: 12055

APPENDIX E

City Directory Report

Prepared for:

SOUTHLAND ENVIRONMENTAL LLC
510 Clarence St
Lake Charles, LA 70601

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

City Directory Report

Corbina Rd Tract

Lake Charles, LA 70607

Calcasieu County

PO #: 12055

ES-141754

Friday, March 17, 2023

CITY DIRECTORY REPORT	
ES-141754	March 17, 2023

AREA RESEARCHED

Street	Address Ranges Searched
Advent Ct	Any addresses
Basin Way	Any addresses
Cabot Dr	Any addresses
Corbina Rd	100-4000
E McNeese St	2700-4000
E Prien Lake	4228-4644 (evens)
Fairwood Ln	Any addresses
Forestwood Dr	Any addresses
Gardenwood Pkwy	Any addresses
James Ct	Any addresses
Lake Crest Dr	Any addresses
Meadow Brook Way	Any addresses
Rosehill Dr	Any addresses
Village Ln	Any addresses

RESEARCH PROTOCOL

Banks Environmental Data, Inc. (Banks) has completed your request for a historical tenant search for the above site. The information in this report was developed to aid the Environmental Engineer/Consultant in determining a history of previous uses of a subject property in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with a subject property as specified by ASTM 1527-05 Section 8.3. Banks has researched Haines, Coles and Polk crisscross directories back to 1940 or to the earliest year available at the Allen County Public Library in Fort Wayne, IN for any occurrences of the above address. The findings are listed in the table below.

CURRENT TENANT INFORMATION

Source: Polk's 2022 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*Personal residences (3013, 3032, 3048, 3052, 3056, 3060, 3068)*
3024 Basin Way	Nearby St	*(listed as "no current listing")*
Cabot Dr	Nearby St	*Personal residences (listed at 4308, 4328)*
Corbina Rd	Nearby St	*(no tenants listed in address range)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
E Prien Lake Rd	Nearby St	*(no tenants listed in address range)*
3247 Fairwood Ln	Nearby St	*Calibrated Performance LLC (nonclassified)*
Fairwood Ln	Nearby St	*Personal residences (listed at 3203, 3207, 3211, 3219, 3223, 3227, 3231, 3234, 3235, 3238, 3239, 3242, 3243, 3250, 3251, 3254, 3255, 3258, 3259, 3267, 3271, 3275, 3279, 3283, 3287)*
3215 Fairwood Ln	Nearby St	*(listed as "no current listing")*
Forestwood Dr	Nearby St	*Personal residences (listed at 3009, 3013, 3017, 3020, 3024, 3032)*
4316 Gardenwood Pkwy	Nearby St	*Personal residence*
James Ct	Nearby St	*(street not listed)*
4430 Lake Crest Dr	Nearby St	*A1 Notary Mobile Service*
Lake Crest Dr	Nearby St	*Personal residences (listed at 3214, 3218, 3222, 3226, 3234, 3235, 3238, 3246, 3258, 3259, 3262, 3263, 3266, 3270, 3274, 4402, 4403, 4406, 4407, 4410, 4411, 4414, 4415, 4418, 4419, 4422, 4423, 4426, 4427, 4431, 4434, 4435, 4438, 4439, 4442)*
Meadow Brook Way	Nearby St	*Personal residences (listed at 4402, 4406, 4407, 4410, 4414, 4415, 4418, 4419, 4422, 4423, 4426, 4427, 4430, 4431, 4434, 4435, 4438, 4442)*
Rosehill Dr	Nearby St	*Personal residences (listed at 3200, 3203)*
922 Village Ln	Nearby St	*Abate's Plumbing (contractors)*
4315 Village Ln	Nearby St	*Apartments (4 tenants listed)*
Village Ln	Nearby St	*Personal residences (listed at 803, 804, 815, 816, 827, 828, 903, 904, 915, 916, 934)*

HISTORICAL TENANT INFORMATION

Source: Polk's 2017 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*Personal residences (3040, 3060)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(no tenants listed in address range)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
E Prien Lake Rd	Nearby St	*(no tenants listed in address range)*
Fairwood Ln	Nearby St	*Personal residences (listed at 3219, 3223, 3231, 3234, 3238, 3239, 3243, 3247, 3251, 3258, 3259)*
3283 Fairwood Ln	Nearby St	*(listed as "no current listing")*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*Personal residences (listed at 4407, 4423, 4427)*
Meadow Brook Way	Nearby St	*Personal residences (listed at 4406, 4414, 4415, 4418, 4427)*
Rosehill Dr	Nearby St	*(street not listed)*
922 Village Ln	Nearby St	*Abate's Plumbing (contractors)*
Village Ln	Nearby St	*Personal residences (listed at 803, 804, 815, 816, 828, 903, 904, 915, 916, 934)*
827 Village Ln	Nearby St	*(listed as "no current listing")*

Source: Polk's 2012 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(no tenants listed in address range)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
4420 E Prien Lake Rd	Nearby St	*Dyno Nobel Inc (explosives)*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
922 Village Ln	Nearby St	*Abate's Plumbing (contractors)*
Village Ln	Nearby St	*Personal residences (listed at 803, 804, 815, 816, 828, 903, 904, 915, 916, 934)*
827 Village Ln	Nearby St	*(listed as "no current listing")*

Source: Polk's 2007 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(no tenants listed in address range)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
4420 E Prien Lake Rd	Nearby St	*Acme Sandblasting & Painting*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
922 Village Ln	Nearby St	*Abate's Plumbing (contractors)*
Village Ln	Nearby St	*Personal residences (listed at 803, 804, 815, 816, 827, 828, 903, 904, 915, 916, 934)*

Source: Polk's 2002 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(no tenants listed in address range)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
4420 E Prien Lake Rd	Nearby St	*Acme Sandblasting & Painting* *Dyno Nobel Mid America (detergents/soaps)*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
922 Village Ln	Nearby St	*Abate's Plumbing (contractors)*
Village Ln	Nearby St	*Personal residences (listed at 803, 804, 816, 827, 904, 915, 916)*
815, 828, 903 Village Ln	Nearby St	*(listed as "not verified")*

Source: Polk's 1997 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(no tenants listed in address range)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
4420 E Prien Lake Rd	Nearby St	*Acme Sandblasting & Painting* *Strawn Explosives*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
Village Ln	Nearby St	*(street not listed)*

Source: Polk's 1992 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(street not listed)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
4420 E Prien Lake Rd	Nearby St	*Clark College Inc (professional driving school)* *Pioneer Storage Service Inc*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
Village Ln	Nearby St	*(street not listed)*

Source: Polk's 1986-87 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(street not listed)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
4420 E Prien Lake Rd	Nearby St	*Pioneer Storage Service Inc*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
Village Ln	Nearby St	*(street not listed)*

Source: Polk's 1980 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(street not listed)*
E McNeese St	Nearby St	*(no tenants listed in address range)*
4420 E Prien Lake Rd	Nearby St	*Allison Moving & Storage Co Inc* *Pioneer Storage Service Inc*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
Village Ln	Nearby St	*(street not listed)*

Note: Polk's 1981 Lake Charles, LA City Directory not available.

Source: Polk's 1975 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(street not listed)*
E McNeese St	Nearby St	*(street not listed)*
(unnumbered) E Prien Lake Rd	Nearby St	*Allison Moving & Storage Co Inc*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
Village Ln	Nearby St	*(street not listed)*

Source: Polk's 1970 Lake Charles, LA City Directory

Address	Location	Tenants
Advent Ct	Nearby St	*(street not listed)*
Basin Way	Nearby St	*(street not listed)*
Cabot Dr	Nearby St	*(street not listed)*
Corbina Rd	Nearby St	*(street not listed)*
E McNeese St	Nearby St	*(street not listed)*
E Prien Lake Rd	Nearby St	*(no tenants listed in address range)*
Fairwood Ln	Nearby St	*(street not listed)*
Forestwood Dr	Nearby St	*(street not listed)*
Gardenwood Pkwy	Nearby St	*(street not listed)*
James Ct	Nearby St	*(street not listed)*
Lake Crest Dr	Nearby St	*(street not listed)*
Meadow Brook Way	Nearby St	*(street not listed)*
Rosehill Dr	Nearby St	*(street not listed)*
Village Ln	Nearby St	*(street not listed)*

Note: Earlier directories are available for Lake Charles, LA but do not cover the research area.

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APPENDIX F

Site Photographs

Photograph 1.
View of north boundary of subject property facing east.

Photograph 2.
View of across center of subject property facing south.

Photograph 3.
View across north portion of subject property facing southwest.

Photograph 4.
View of north boundary of subject property facing west.

Photograph 5.
View of east boundary of subject property facing south


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Photograph 6
View of south boundary of subject property facing east.

Photograph 7.
View across east portion of subject property facing northeast.

Photograph 8.
View of south boundary of subject property facing west.

Photograph 9.
View from south boundary of subject property facing south. Future PST site in background.

Photograph 10.
View of west boundary of subject property facing north.

Photograph 11.
View of north boundary of subject property facing west.

Photograph 12.
View of soil fill activities on north boundary of subject property.

Photograph 13.
View drainage swale which runs north/south through center of subject property.

Photograph 14.
View of cattle grazing area near north boundary of subject property.

Photograph 15.
View of typical ground surface of subject property.

APPENDIX G

Interview Documentation

Phase I: Environmental Questionnaire for Persons Knowledgeable of Site

Name of Landowner: ______James Palma- Owner East Prien Lake Properties, LLC

- How long have you owned the investigated property?
  Since 2006
- What, if any, were the known past uses of the investigated property?
  Only use for hunting and cattle grazing
- If known, who was the previous owner of the investigated property?
  Not known
- Have there ever been any Underground Storage Tanks (USTs) in service at the investigated property? If so, what were they utilized for?
  No
- Are there any pipelines on the investigated property? If so, what substances do they transport (if known)?
  No
- Have there ever been any pits or ponds constructed on the investigated property? If so, what was their purpose?
  No
- Have any fires ever occurred on the investigated property, or has the local fire department ever had to respond to a call at this location?
  No
- Have there ever been any instances where federal environmental agencies or local health department have had to respond at this location?
  No
- Is there any other information, not requested above, that would be applicable to this Phase I investigation?
  No

Signature of Person Interviewed/Interviewer: ___ ______________________________

Date: 3-28-2023

Phase I: Environmental Questionnaire for Persons Knowledgeable of Site

Name of Interviewed/Affiliation: .JA-lbA) R i) Y,

Name of Interviewer: Blaine Johnson

Site Location: Corbing Rd - East Side

- **Are you aware of any known past or present environmental impacts associated with the investigated property?**

  No

- **Do you know of any possible sources for environmental impacts from the properties surrounding the investigated tract?**

  No

- Is **there any additional information that LDEQ is aware of regarding the investigated tract or surrounding properties that would be applicable to this Phase** I **investigation?**

  Any documentation that the LDEQ would have on file for this area is available on the LDEQ EDMS.

Signature of Interviewer: ______

Date of Interview: 3/0:),,J

APPENDIX H

Resumes

C. BLAINE JOHNSON, P. E.

PROJECT MANAGEMENT/OVERSIGHT
SITE INVESTIGATION AND REMEDIATION
SOIL AND GROUNDWATER REMEDIATION
HAZARDOUS/SOLID WASTE MANAGEMENT
GROUNDWATER MONITORING AND REPORTING
ENVIRONMENTAL PERMITTING AND ENGINEERING
WETLANDS AND NEPA PERMITTING/DOCUMENTATION

EDUCATION

B.S., Civil Engineering, McNeese State University, 1984

PROFESSIONAL HISTORY

May 2018-Present	Owner and Senior Engineer, Southland Environmental, LLC
1999-May 2018	Senior Engineer, Arabie Environmental Solutions, LLC (Formerly Triegel & Associates, Inc.)
1996-1999	Senior Engineer, Triegel & Associates, Inc. (LA Office)
1995-1996	Senior Project Manager, RETEC Inc., Lake Charles, LA
1991-1995	Senior Engineer, Radian Corporation, Baton Rouge, LA
1987-1991	Project Manager, IT Corporation, Baton Rouge, LA
1985-1987	Project Engineer, Trinity Engineering Testing Corporation, Dallas, TX

PROFESSIONAL REGISTRATIONS AND AFFILIATIONS

- Registered Professional Engineer in Louisiana
- Louisiana Engineering Society
- Louisiana Air and Waste Management Association
- Louisiana Chemical Industry Alliance

REPRESENTATIVE EXPERIENCE

Mr. Johnson has over thirty-five years of experience as a Project Manager/Engineer having performed project work on various environmental projects including civil and geotechnical design, subsurface remediation, regulatory permitting, and surface and subsurface investigations. He has been involved for over 20 years in the oversight and preparation of numerous Section 404/10 Permit Applications and provided project management and regulatory interaction with the US Army Corps of Engineers and other programmatic agencies and entities participating in the permitting process for projects with wetlands impacts and projects occurring within the Waters of the United States, such as dredging and construction of marine vessel required structures.

He is experienced in projects dealing with engineering investigation, design, construction, closure, and remediation of hazardous and solid waste management facilities, which are regulated by the pertaining HSWA, RCRA, and CERCLA requirements. Mr. Johnson is experienced with the engineering and permitting procedures in preparation of hazardous and solid waste applications for existing facilities as well as Post-Closure permits for treatment, disposal, and storage facilities which are in operation and are being closed. He has technical experience in the operation and maintenance of groundwater/non-aqueous phase liquids/leachate recovery and treatment systems. He is able to provide the project management, technical applications, and regulatory interaction pertinent for the performance of these types of projects. Mr. Johnson has provided Project Manager and Engineer services required in accordance with the National Environmental Policy Act (NEPA) for various projects in the Gulf Coast Region.

REGULATORY COMPLIANCE

Preparation, review, and certification of permit applications for solid waste disposal facilities, stormwater discharge permit applications for various commercial and industrial clients, and air permit and renewal applications for solid waste facilities and chemical manufacturing facilities.

Preparation of numerous Section 404/10 Permit Applications and provided project management and regulatory interaction with the US Army Corps of Engineers, Louisiana Department of Coastal Management, and other programmatic agencies and entities participating in the permitting process.

Project Manager and Engineer for engineering and construction projects in Louisiana that entailed the performance of services required to provide the documentation necessary for Environmental Assessment and/or Categorical Exclusion in accordance with the NEPA, LADOTD, and FHWA regulations and guidelines. He has also served as the Project Manager and Engineer for projects entailing data gathering, compilation, and documentation preparation of NEPA required EA's for multiple sites in Louisiana, Texas, Alabama, Arkansas, Mississippi, and Florida.

Preparation and development of RCRA Facility Investigation (RFI) strategy and workplan and current condition documents for clients in Louisiana and Arkansas.

Preparation of certification reports for various treatment, storage, and disposal facilities (surface impoundments, tanks, landfills), to verify compliance with RCRA, and other state and local regulations.

Preparation of hazardous waste permit applications (Part A and Part B) and post-closure care permits applications, including providing technical review and regulatory interaction on behalf of the clients in Louisiana and Arkansas.

CORRECTIVE ACTION DESIGN AND CONSTRUCTION

Project Manager for the design, implementation, and operation and maintenance of corrective action plans for various underground storage tank projects. This included regulatory agency negotiation and recommendations prior to commencement of the corrective actions. Corrective actions that were implemented include the recovery and treatment of dissolved and free-phase petroleum hydrocarbons in soils and groundwater due to petroleum fuel releases. Other remediation techniques included source removal by excavation, in-situ treatment via introduction of contaminant reduction compounds, and engineering controls to prevent migration and infiltration of materials throughout the affected areas.

Evaluation, design, implementation, and third party oversight of remedial actions and retrofits of RCRA hazardous wastes units in Louisiana, Arkansas, and Mississippi.

Project Manager for the installation and operation/maintenance of a groundwater recovery system. This recovery system was designed to separately recover impacted groundwater and free-phase chlorinated solvent (DNAPL) while maintaining hydraulic containment of the site through the use of a dual pump system. The system has recovered over 25,000 gallons of DNAPL product.

Remedial design and permitting for the closure of several surface impoundments, and solid waste landfills (in accordance with RCRA) in Louisiana, Mississippi, and Arkansas.

Implementation of construction quality assurance activities and subsequent certification of closure reports for surface impoundments and landfills in Louisiana, Mississippi, and Arkansas.

Design of the expansion and partial closure of an existing hazardous waste landfill in Mississippi.

Development of design alternatives, prepared construction and post closure cost estimates for the eventual technical design for a hazardous waste landfill in southern Arkansas.

Responsible for quality assurance activities of a dual pond closure and remediation in south Louisiana which included documentation, inspections, field testing and verification of various remediation and construction activities. These closure and remediation activities included steam stripping and centrifuging of pond sludges, placement of remediated materials, and installation of the final cover system.

ENVIRONMENTAL MONITORING AND ASSESSMENT

Management and participation of investigations of various sites including petroleum fuel service stations, commercial businesses, and industrial and manufacturing facilities.

Management and participation of investigations pertaining to surface releases and subsurface migration of various chemicals (chlorinated and brominated organics, and other compounds) at several sites in Louisiana, Arkansas, and Mississippi. The investigations were performed as pre-RFI activities under the corrective measures program or were used as part of the program after investigation activities were initiated.

Response to a spill of a chlorinated solvent (DNAPL) from an underground pipeline into nearby ditches. The scope of work entailed the installation of borings and monitoring wells which were used to monitor the groundwater flow direction and gradient, refine hydraulic coefficients based on aquifer testing, define stratigraphy at the site, and delineate the horizontal and vertical extent of the release. Bioassay samples were collected and it was determined that naturally-occurring microorganisms were present. The regulatory agency was convinced that in selected aquifers, the contaminant was “self-remediating” and that no actions were warranted other than monitoring the decline in concentrations of the contaminant.

Management and performance of several Phase I and II property transfer site assessments for industrial and commercial clients. These assessments of various exploration and production facilities, oil and gas gathering and refining facilities, and chemical facilities were used to identify possible environmental liabilities for buyer, lenders, and sellers.

Participated in the report preparation and field investigation phases of a multi-location real estate transfer/site assessment project determining the environmental liabilities due to the presence of on-site underground storage tanks.

JARED KING, P. G.

ENVIRONMENTAL INVESTIGATIONS
ENVIRONMENTAL PERMITTING
ENVIRONMENTAL REMEDIATION

EDUCATION

McNeese State University, B.S., Environmental Science, December 2004

PROFESSIONAL HISTORY

04/18-Date	Owner and Senior Environmental Scientist, Southland Environmental, LLC
07/03-05/18	Senior Environmental Scientist, Arabie Environmental Solutions, LLC
01/03-07/03	Environmental Co-op, Sasol North America

PROFESSIONAL REGISTRATIONS

Registered Professional Geoscientist in Louisiana, No. 836

TRAINING/CERTIFICATION

- Southwest Safety Council Training
- Westlake South Site Specific Safety Training
- OSHA 40-Hour HAZWOPER Training
- RCRA Hazardous Waste Training
- Transportation Worker Identification Credential (TWIC)
- Certified Stormwater Inspector

REPRESENTATIVE EXPERIENCE

Mr. King has over ten years experience in environmental projects including environmental sampling, permit applications, and maintenance and monitoring of several groundwater remediation systems.

Mr. King has worked on numerous environmental projects. For the past fourteen years, Mr. King has managed and performed RCRA compliance inspections, operated a groundwater recovery system, and operated a stormwater treatment system at the a local industrial facility. He has collected stormwater samples for this facility. He has also inspected and monitor leachate for two hazardous waste landfills.

Mr. King has worked on the installation of soil boring and groundwater monitoring wells. He has performed sampling and development of groundwater monitoring wells including low-flow purging and sampling. He has collected stormwater samples for various industrial and commercial facilities. He has been involved maintenance and outfall monitoring of several recovery systems and has prepared discharge monitoring reports (DMRs) for these outfalls. He has also worked on groundwater monitoring reports for commercial and industrial facilities. He is also proficient with integration and mapping of

Global Position System (GPS) data into Geographical Information Systems (GIS) software.

Mr. King has performed numerous Phase I Environmental Site Assessments (ESA) in accordance with the ASTM standards for real estate transactions. These Phase I ESAs have been performed in Louisiana, Texas, Mississippi, Alabama, and Florida. He has prepared checklists for FCC towers and structures and historical reports in accordance with the National Environmental Protection Act guidelines. He was worked on Army Corps of Engineers Permit Applications, Coastal Use Permit Application, and assisted in wetland delineations. He has performed field activities associated with installation, removal, and processing of sediment traps as part of an estuary evaluation. Mr. King has also assisted engineers with the preparation and submittal of Solid Waste Permit Application to the LDEQ.

Mr. King has extensive experience with the performance of Phase II ESAs, which have included assessments of soil, sediment, surface water, storm water, and groundwater on non-developed, commercial, light industrial, and heavy industrial properties. Mr. King has supervised and/or performed various methods of soil and groundwater collection and has processed samples utilizing various types of sampling methods. Such sampling methods include, but are not limited to, EPA Method 5035 soil sampling for volatile organic compounds and collection of groundwater samples utilizing low-flow groundwater sampling procedures. Mr. King has also performed various soil-vapor studies which have included the use of vacuum-air canisters and methane detection meters.

Mr. King has performed and documented Health and Safety Monitoring and is familiar with the operation of Organic Vapor Analyzers. He also has performed several monitoring tasks using gas detection pumps and detector tubes.

Mr. King has assisted in the maintenance and operation of a large groundwater monitoring and recovery system at an industrial facility. He has been involved in the shut down and start up of the recovery system, removal, reinstalling, and jetting of recovery wells as part of maintenance activities. He has performed troubleshooting and repaired on pneumatic pumps and controllers. Mr. King has repaired submersible electric pumps, motors, and motor leads. He has maintained transfer lines on the recovery systems and performed sampling of the recovery wells, monitoring wells, collection tanks, and transfer headers.

While working as a co-op, Mr. King has assisted in environmental projects and environmental incident investigations. He has performed weekly hazardous waste inspections and assisted with hazardous waste profiling and shipments. He has assisted engineers in air compliance permitting and calculating emissions for production units. He has performed groundwater sampling events and has coordinated maintenance activities on a groundwater recovery system. During the groundwater sampling events, Mr. King has utilized low-flow purging and sampling techniques and equipment.

APPENDIX I

Environmental Professional's Statement

ENVIRONMENTAL PROFESSIONAL'S STATEMENT

Southland Environmental, LLC declares that, to the best of its knowledge and belief, Southland Environmental, LLC personnel meet the definition of Environmental professional as defined in §312.10 of 40 CFR 312 and,

Southland Environmental, LLC personnel have specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. Southland Environmental, LLC personnel have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

APPENDIX 10. DR-4559-LA and EM-3538-LA Public Notice and FONSI

PUBLIC NOTICE
FEMA-4559-DR-LA and FEMA-3538-EM-LA

The Federal Emergency Management Agency (FEMA) hereby gives notice to the public of its intent to reimburse eligible applicants for eligible costs for assistance to repair and/or replace facilities damaged by Hurricane Laura , occurring August 22 to August 27, 2020. This notice applies to the Public Assistance (PA), Individual Assistance (IA), and Hazard Mitigation Grant (HMGP) programs implemented under the authority of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. §§ 5121-5207.

Under an Emergency declaration (FEMA 3538-EM–LA) signed by the President on August 23, 2020 and amended on August 25, 2020, and August 26, 2020, FEMA is authorized to identify, mobilize, and provide at its discretion, equipment and resources necessary to alleviate the impacts of the emergency. Emergency protective measures Category B, limited to direct federal assistance under the Public Assistance program and reimbursement for mass care including evacuation and shelter support are available for the following Parishes: Acadia, Allen, Ascension, Assumption, Beauregard, Calcasieu, Cameron, East Baton Rouge, East Feliciana, Evangeline, Iberia, Iberville, Jefferson, Jefferson Davis, Lafayette, Lafourche, Livingston, Orleans, Plaquemines, Pointe Coupee, St. Bernard, St. Charles, St. Helena, St. James, St. John the Baptist, St. Landry, St. Martin, St. Mary, St. Tammany, Tangipahoa, Terrebonne, Vermilion, Washington, West Baton Rouge and West Feliciana. The President also authorized Public Assistance-Category B to include reimbursement for eligible emergency protective measures for all parishes.

Under a major disaster declaration (FEMA-4559-DR-LA) (for the incident beginning August 22, 2020) signed by the President on August 28, 2020 and amended August 30, 2019 and August 31, 2020, the following parishes have been designated eligible for PA Category A: Acadia, Allen, Beauregard, Bienville, Bossier, Calcasieu, Cameron, Catahoula, Evangeline, Grant, Jackson, Jefferson Davis, Lincoln, Natchitoches, Rapides, Sabine, Vermilion, Vernon, Webster, and Winn Parishes. All Parishes are designated eligible for PA Category B (emergency protective measures), including Direct Federal Assistance under the major disaster declaration. Currently, the following Parishes are designated eligible for PA Category C-G: Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis, and Vernon Parishes. Additional parishes may be designated at a later date.

Under FEMA-4559-DR- LA the following parishes have been designated eligible for IA: Acadia, Allen, Beauregard, Caddo, Calcasieu, Cameron, Grant, La Salle, Jackson, Jefferson Davis, Lincoln, Morehouse, Natchitoches, Ouachita, Rapides, Sabine, St. Landry, Union, Vermilion, Vernon, and Winn Parishes. Additional parishes may be designated at a later date. All parishes in the State of Louisiana are eligible for HMGP under FEMA-4459-DR- LA.

This public notice concerns activities that may affect historic properties, activities that are located in or affect wetland areas or the 100-year floodplain, and critical actions within the 500-year floodplain. Such activities may adversely affect the historic property, floodplain or wetland, or may result in continuing vulnerability to flood damage.

Presidential Executive Orders 11988 and 11990 require that all federal actions in or affecting the floodplain or wetlands be reviewed for opportunities to relocate, and evaluated for social, economic, historical, environmental, legal and safety considerations. Where there is no opportunity to relocate, FEMA is required to undertake a detailed review to determine what measures can be taken to minimize future damages. The public is invited to participate in the process of identifying alternatives and analyzing their impacts through this notification.

FEMA has determined that for certain types of facilities there are normally no alternatives to restoration in the floodplain/wetland. These are facilities that meet all of the following criteria: 1) FEMA's estimate of the cost of repairs is less than 50% of the cost to replace the entire facility, and is less than $100,000; 2) the facility is not located in a floodway; 3) the facility has not sustained major structural damage in a previous Presidentially declared flooding disaster or emergency; and 4) the facility is not critical (e.g., the facility is not a hospital, generating plant, emergency operations center, or a facility that contains dangerous materials). FEMA intends to provide assistance for the restoration of these facilities to their pre-disaster condition, except that certain measures to mitigate the effects of future flooding or other hazards may be included in the work. For example, a bridge or culvert restoration may include a larger waterway opening to decrease the risk of future washouts.

For routine activities, this will be the only public notice provided. Other activities and those involving facilities that do not meet the four criteria are required to undergo more detailed review, including study of alternate locations. Subsequent public notices regarding such projects will be published if necessary, as more specific information becomes available.

In many cases, an applicant may have started facility restoration before federal involvement. Even if the facility must undergo detailed review and analysis of alternate locations, FEMA will fund eligible restoration at the original location if the facility is functionally dependent on its floodplain location (e.g., bridges and flood control facilities), or the project facilitates an open space use, or the facility is an integral part of a larger network that is impractical or uneconomical to relocate, such as a road. In such cases, FEMA must also examine the possible effects of not restoring the facility, minimize floodplain/wetland impacts, and determine both that an overriding public need for the facility clearly outweighs the Executive Order requirements to avoid the floodplain/wetland, and that the site is the only practicable alternative. State of Louisiana and local officials will confirm to FEMA that proposed actions comply with all applicable State and local floodplain management and wetland protection requirements.

FEMA intends to provide IA program funding for disaster-related housing. These actions may adversely affect a floodplain or wetland or may result in continuing vulnerability to floods. These actions may include repair, restoration, or construction of housing or private bridges, purchase and placement of travel trailers or manufactured housing units, or repair of structures as minimum protective measures. This will be the only public notice concerning these actions.

FEMA also intends to provide HMGP funding to the State of Louisiana to mitigate future disaster damages. These projects may include construction of new facilities, modification of existing facilities, undamaged facilities, relocation of facilities out of floodplains, demolition of structures, or other types of projects to mitigate future disaster damages. In the course of developing project proposals, subsequent public notices will be published, if necessary, as more specific information becomes available.

The National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties. Those actions or activities affecting buildings, structures, districts or objects 50 years or older or that affect archeological sites or undisturbed ground will require further review to determine if the property is eligible for listing in the National Register of Historic Places (Register). If the property is determined to be eligible for the Register, and FEMA’s undertaking will adversely affect it, FEMA will provide additional public notices. For historic properties not adversely affected by FEMA’s undertaking, this will be the only public notice.

Interested persons may obtain information about these actions or a specific project by writing to Jerame Cramer, Environmental Historic Preservation Advisor (EHAD), Federal Emergency Management Agency, 1500 Main St., Baton Rouge, LA 70802 or by emailing fema-liro-ehp-pa@fema.dhs.gov. Comments should be sent in writing within 30 days of the date of this notice.

FEDERAL EMERGENCY MANAGEMENT AGENCY
FINDING OF NO SIGNIFICANT IMPACT
ST. LOUIS CATHOLIC HIGH SCHOOL CAMPUS CHANGE OF LOCATION PROPOSAL
CALCASIEU PARISH, LOUISIANA
FEMA-4559-DR-LA

BACKGROUND

Hurricane Laura made landfall on August 27, 2020, at Cameron, Louisiana, as a Category 4 storm with sustained winds of more than 150 miles per hour and a minimum central pressure of 939 millibars. President Donald Trump declared a major disaster for the State of Louisiana (FEMA-DR- 4559-LA) on August 28, 2020, authorizing the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA) to provide federal assistance in designated areas of Louisiana. This assistance is under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), Public Law (P.L.) 93-288, as amended.

The Society of the Roman Catholic Church of the Diocese of Lake Charles has submitted an application for Federal Emergency Management Agency (FEMA) grant funding under FEMA's Public Assistance Program being administered in response to FEMA-4559-DR-LA. The St. Louis School Campus was substantially damaged by Hurricane Laura's winds and coastal flooding and were deemed eligible for grant funding to relocate and reconstruct the St. Louis High School Facilities at an alternative site. The applicant proposes to demolish the damaged facilities, render them safe, and then construct new facilities that includes the development of new school buildings, a gymnasium, a courtyard, a central plant, a pavilion, detention ponds, and six sports fields/courts, such as a football field, baseball field, softball field, soccer field, practice field, and tennis courts in Lake Charles, Calcasieu Parish, Louisiana. The facility is proposed to be reconstructed east of the intersection of Corbina Road and James Court in Lake Charles (30.1817°N, -93.1586°W) located approximately 4.0 miles southeast of the current location. The parcel is approximately 47 acres.

In accordance with the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations (CFR) Parts 1500–1508) and FEMA's Instruction 108-1-1 for implementing NEPA , an Environmental Assessment (EA) was prepared. The purpose of this EA is to analyze the potential environmental impacts associated with the change of location proposal and to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

Three project alternatives were considered in this DEA: Alternative 1 (No-Action Alternative); Alternative 2 (Relocation and construction of a new campus on an alternate site (west of Corbina Blvd.)), and Alternative 3 (Relocation and construction of a new campus for St. Louis Catholic High School in Lake Charles, Louisiana). (Proposed Action)

FINDING OF NO SIGNIFICANT IMPACT

The Proposed Action would not result in any significant adverse impacts related to floodplains, wildlife, state and federally listed threatened and endangered species, and hazardous materials. The Proposed Action as described in the DEA may have short-term, temporary, negligible to minor impacts to geology, topography, soils, wetlands and waters of the U.S., floodplains and hydrology, water quality and resources, land use and planning, air quality, cultural resources, low income and minority populations, noise, and traffic. The Proposed Action may have long-term, permanent, negligible to minor impacts to socioeconomics, wetlands through the unavoidable loss of wetlands and water resources and quality through a temporary increase in suspended solids through stormwater runoff during and after construction. Based on the information analyzed, FEMA has determined that the implementation of the proposed action would not result in significant adverse impacts to the quality of the natural and human environment. The proposed action is not anticipated to have the potential for significant cumulative effects when combined with past, present, and reasonably foreseeable future actions. As a result of this FONSI, an EIS will not be prepared and the proposed action as described in the EA may proceed. All adverse impacts require conditions to minimize or mitigate impacts to the proposed project site and surrounding areas.

CONDITIONS

The following conditions must be met as part of this project. Failure to comply with these conditions may jeopardize the receipt of federal funding.

- In accordance with applicable local, state, and federal regulations, the applicant is responsible for acquiring any necessary permits and/or clearances prior to the commencement of any construction related activities.

- FEMA Public Assistance grant funded projects carried out in the floodplain or affecting the floodplain must be coordinated with the local floodplain administrator for a floodplain development permit and the action must be undertaken in compliance with relevant, applicable and required local codes and standards and thereby, will reduce the risk of future flood loss, minimize the impacts of floods on safety, health, and welfare, and preserve and possibly restore beneficial floodplain values as required by Executive Order 11988.

- Fill or borrow material used must be sourced from sites that do not contain any buried cultural materials (*i.e.,* wells, cisterns, foundations, basements, prehistoric Indian artifacts, human burials, and the like). If during the course of work, archaeological artifacts (prehistoric or historic) or human remains are discovered, Plaquemines Parish and/or its contractors must immediately stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The Applicant and GOHSEP must inform the FEMA Public Assistance program, who would in turn contact the FEMA Historic Preservation staff. The Applicant must not proceed with work until FEMA completes consultation with the SHPO. In addition, if unmarked graves are present, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act is required. In that situation, the Applicant must notify the local law enforcement agency within 24 hours of the discovery, and notify FEMA and the Louisiana Division of Archaeology at (225) 342-8170 within 72 hours of the discovery. Failure to comply with these stipulations may jeopardize FEMA funding of the project.

- If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous conditions.

- To manage fugitive dust resulting from earth-moving activities, storage piles, disturbed surface areas, unpaved sections, and other construction-related operations, the project will employ one or more of the following measures: watering, coverings, wind fencing, haul bed coverings, wheel washers, vegetation, restricted site access, and street sweeping.

- To the greatest extent feasible, the project will endeavor to minimize the disturbed area and preserve the existing vegetation, while also maintaining topsoil whenever possible.

- In compliance with Executive Order 11990, due to the unavoidable impacts and loss of wetlands, compensatory wetland mitigation is required. Compensatory mitigation must be completed prior to, or concurrent with, wetland conversion activities. A minimum ratio of 1 to 1 (acreage) is required. For the wetland impacts associated with this project there is a loss of 6 acres; therefore, 6 acres of wetland mitigation credits must be purchased at an approved mitigation bank. Proof of purchase of mitigation bank credits must be provided to FEMA and GOHSEP. Documentation will be requested at project close out. All credits must be purchased and support wetlands in the State of Louisiana.

- Existing trees and other vegetation within the construction area that might be affected by the public right-of-way will be safeguarded on a case-by-case basis. Protective measures will involve the installation of fencing and appropriate signage. Any necessary trimming, root pruning, or removal of trees or stumps within the public right-of-way due to construction will be minimized and conducted under the supervision of a licensed arborist. If feasible, any trees removed from the construction site within the public right-of-way will be relocated to an area near the project site. Any disturbed existing vegetation or ground cover resulting from construction activities will be restored through seeding and fertilization.

- Per Louisiana Administrative Code 1-315 B.6, the Society of the Roman Catholic Church of the Diocese of Lake Charles would be required to plant two trees for every tree removed.

- The contractor will be responsible for developing and maintaining a comprehensive Storm Water Pollution Prevention Plan (SWPPP) that outlines the Contractor's strategies to prevent stormwater collection system contamination during the project. Each project's SWPPP will align with the requirements of the Municipal Separate Storm Sewer System (MS4) Permit for the area. Contractors must take all necessary precautions to prevent the entry of fuels, oils, asphalt, concrete, chemicals, and other hazardous materials into the drainage system and groundwater table as per relevant specifications. Implementation of Storm Water Control Measures (SCMs) will encompass safeguarding the storm drain system, spill prevention and cleanup, employee training, site cleanliness, and temporary erosion controls. Residues from dust collectors, concrete mixers, vehicle wash racks, and entrance/exit debris will be appropriately disposed of at an approved disposal facility.

- Create stabilized construction entrances and exits utilizing methods such as employing large, crushed rocks, stone pads, steel wash racks, hose-down systems, and pads to effectively manage construction-related traffic and minimize environmental impact.

- Calcasieu Parish's Code of Ordinances has made unlawful the operation of "any equipment used in construction work within one hundred sixty-five (165) feet of any residential or noise-sensitive area between sunset and sunrise on weekdays and Saturdays, and 9:00 p.m. to 8:00 a.m. on Sundays and holidays, except for emergency work". Additionally, all construction machinery and vehicles must be equipped with effective sound muffling devices and operated in a manner that minimizes noise while ensuring efficient work performance. Activities in the vicinity of noise and vibration-sensitive areas, such as churches, hospitals, and schools, will be minimized to the extent practically feasible.

- Guarantee the proper maintenance of equipment, which includes regular engine upkeep, ensuring adequate tire inflation, and the proper maintenance of pollution control devices.

- Implement thorough monitoring and control of construction traffic as necessary. Ensure that all construction operations adhere to the safety regulations outlined in the Occupational Safety and Health Act (OSHA). Provide a minimum of 48 hours' notice to residents and emergency response agencies before any street closures and expected areas of reduced water pressure.

- The project construction may entail the handling of potentially hazardous materials, such as petroleum products, cement, caustics, acids, solvents, paint, electronic components, pesticides, herbicides, fertilizers, and treated timber, which could lead to the generation of limited quantities of hazardous wastes. It is imperative to implement suitable measures to prevent, minimize, and manage the occurrence of spills involving hazardous materials. Moreover, any hazardous and non-hazardous wastes generated during the construction process must be disposed of in strict accordance with the pertinent regulations at the Federal, state, and local levels.

- To mitigate indirect effects such as erosion, sedimentation, dust, and other disturbances associated with the construction, the contractor needs to adhere to all relevant local, state, and federal regulations about sediment control, solid waste disposal, spill management, and the release of surface runoff and stormwater into nearby waters of the U.S. and surrounding drainage areas.

- Ensure that all new construction adheres to current codes and standards. By 44 C.F.R. § 9.11(d)(6), projects must not be constructed in a floodplain management standard that offers less protection than what the community has adopted through its participation in the National Flood Insurance Program. It is the responsibility of the applicant to coordinate all construction activities with the local floodplain administrator regarding floodplain permit(s) before commencing any activities and to maintain compliance with officially adopted local floodplain ordinances. Documentation of all coordination related to these permit(s) should be provided to the local floodplain administrator, the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (LA GOHSEP), and FEMA as part of the permanent project file. Under 44 CFR 9.11 (d) (9), whenever feasible, mitigation or minimization standards should be implemented.

- If human bones or unmarked grave(s) are discovered within the project area, adherence to the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is mandatory. The applicant is responsible for promptly informing the law enforcement agency of the relevant jurisdiction within twenty-four hours of the discovery. Additionally, FEMA and the Louisiana Division of Archaeology can be notified at 225-342-8170 within seventy-two hours of the discovery.

- If archaeological artifacts, whether prehistoric or historic, are discovered during the project's execution, the applicant must halt work in the proximity of the finding and implement all necessary measures to mitigate potential damage. It is imperative that the applicant promptly notifies their designated Public Assistance (PA) contacts at FEMA, who will subsequently engage FEMA's Historic Preservation (HP) staff. Work should not resume until FEMA HP concludes consultation with the State Historic Preservation Officer (SHPO) and any other relevant parties.

- Bald eagles, having made a remarkable recovery, were removed from the List of Endangered and Threatened Species on August 8, 2007. Despite this change in status, it is crucial to note that bald eagles remain safeguarded under the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668 et seq.). To aid in the preservation of these majestic birds, the Service has formulated the National Bald Eagle Management (NBEM) Guidelines, designed to equip landowners, land managers, and others with comprehensive information and recommendations to mitigate potential project impacts on bald eagles. Particularly, these guidelines focus on preventing any form of "disturbance," which is strictly prohibited under the BGEPA. Outlined in the NBEM Guidelines are the following recommendations: (1) maintaining a designated distance between the project's activity and the nest (buffer area); (2) preserving natural areas, preferably forested, between the project's activities and nest trees (landscape buffers); and (3) avoiding specific activities during the breeding season. All personnel on-site must be made aware of the potential presence of nesting bald eagles within the project area. In the event of the discovery of such nests within or adjacent to the proposed project area, it is essential to conduct an assessment to ascertain whether the project is likely to disturb the nesting bald eagles. Any discovery of a bald eagle nest should be immediately reported to the relevant authorities.

- The US Fish and Wildlife Service on October 8, 2020, recommended reclassifying the red-cockaded woodpecker as a threatened species. This proposal included a section 4(d) rule outlining specific prohibitions and exceptions that we deemed necessary and advisable for the conservation of the red-cockaded woodpecker. Initially, these prohibitions involved the restriction of incidental take resulting from the damage or conversion of currently occupied red-cockaded woodpecker nesting and foraging habitat. Additionally, forest management practices within these habitats were to be restricted. The operation of vehicles or mechanical equipment, use of floodlights, and human presence within an active cavity tree cluster during the red-cockaded woodpecker breeding season were also proposed to be prohibited. Moreover, the installation of artificial cavity inserts, drilled cavities, or cavity restrictor plates, as well as activities that render active cavity trees unusable to red-cockaded woodpeckers, were included in the proposed restrictions. The use of insecticides or herbicides on any standing pine tree within 0.50 miles from the center of an active cavity tree cluster of red-cockaded woodpeckers was also prohibited (85 FR 63498, October 8, 2020). To further protect the red-cockaded woodpecker's habitat, the following additional measures are suggested: Restricting vehicle use on existing roads and avoiding the construction of new roads and trails within clusters. Limiting silvicultural and cultural operations to daylight hours, with an emphasis on avoiding activities within 1-2 hours of dawn and dusk. Permitting mechanized equipment in a cluster during the non-breeding season for red-cockaded woodpecker management activities only. Prohibiting habitat management activities other than prescribed burning during the breeding season (April – July).

Public Review and Comment

The EA can be viewed and downloaded from FEMA's website at www.fema.gov/plan/ehp/envdocuments/ea-region6.shtm. The EA was also available for public review at the [name of facility, address]. A legal notice was posted in the local newspaper on XX date through XX date. No substantive comments were received; therefore the Draft EA will become final and the initial Public Notice will also serve as the final Public Notice.

APPROVAL AND ENDORSEMENT

________________________________ Date ____________________________
Latoya Leger
Regional Environmental Officer
Louisiana Integration and Recovery Office (LIRO)

________________________________ Date ____________________________
Arsany Thomas
Recovery Division Director
FEMA Region 6