

BULK STORAGE BUILDING

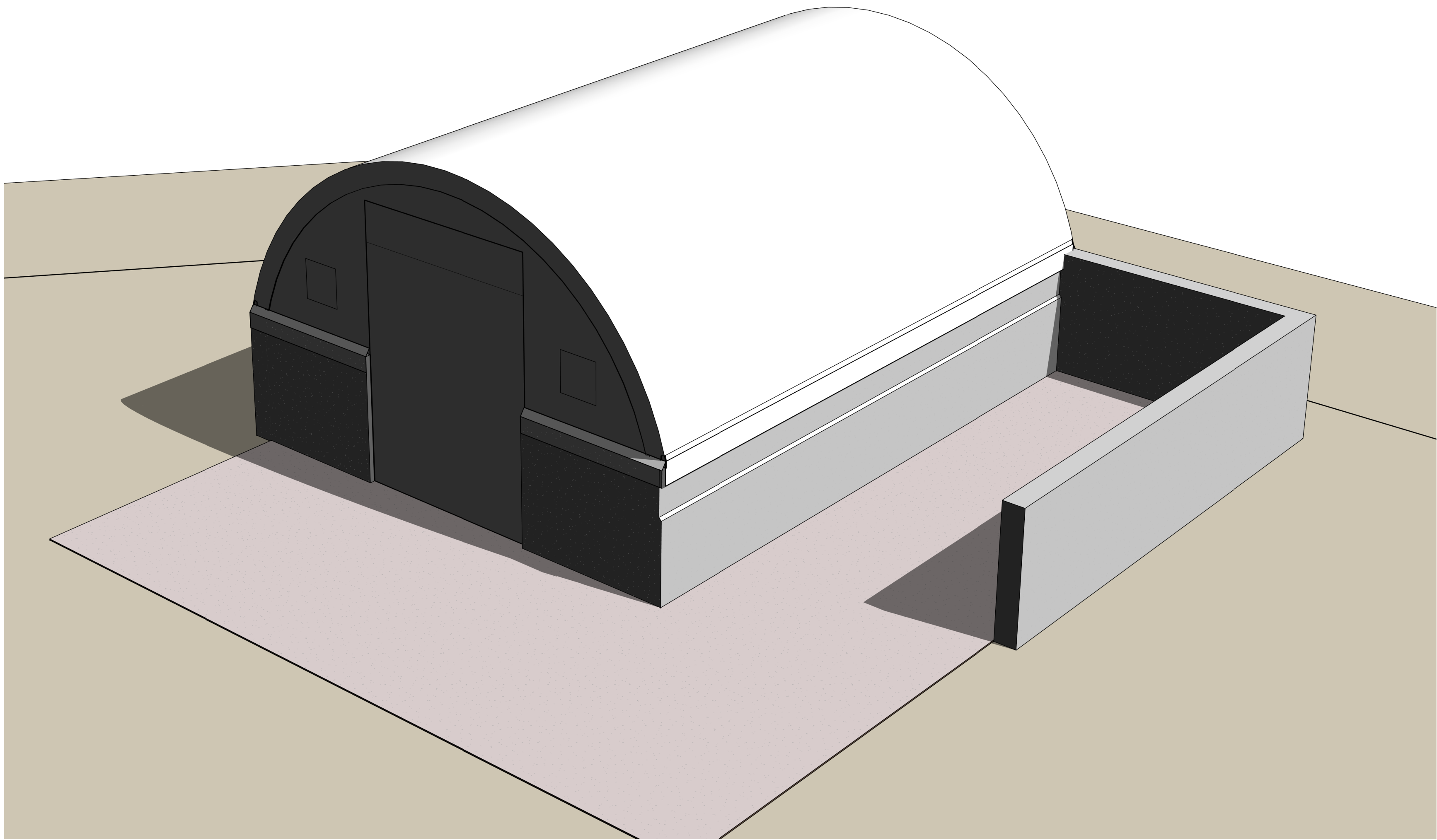
Liberty Public School District

1138 Southview Drive
Liberty, MO

CONSTRUCTION DOCUMENTS

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DESIGN TEAM

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PROJECT INFORMATION

PROJECT NUMBER: 21022, Work Order: 93061
PROJECT NAME: Liberty Bulk Storage Building

AUTHORITY HAVING JURISDICTION: Building Division - City of Liberty, MO
101 E. Kansas Street
Liberty, MO 64068

RESPONDING FIRE SERVICE: Liberty Fire Department
101 E. Kansas Street
Liberty, MO 64068

ANTICIPATED OCCUPANCY: August, 2023

CODE INFORMATION

APPLICABLE ADOPTED CODES: 2018 International Building Code

OCCUPANCY CLASSIFICATION: S-1

CONSTRUCTION TYPE: II B

SPRINKLERED PER NFPA 13 REQ'D. (903.2.9)? No

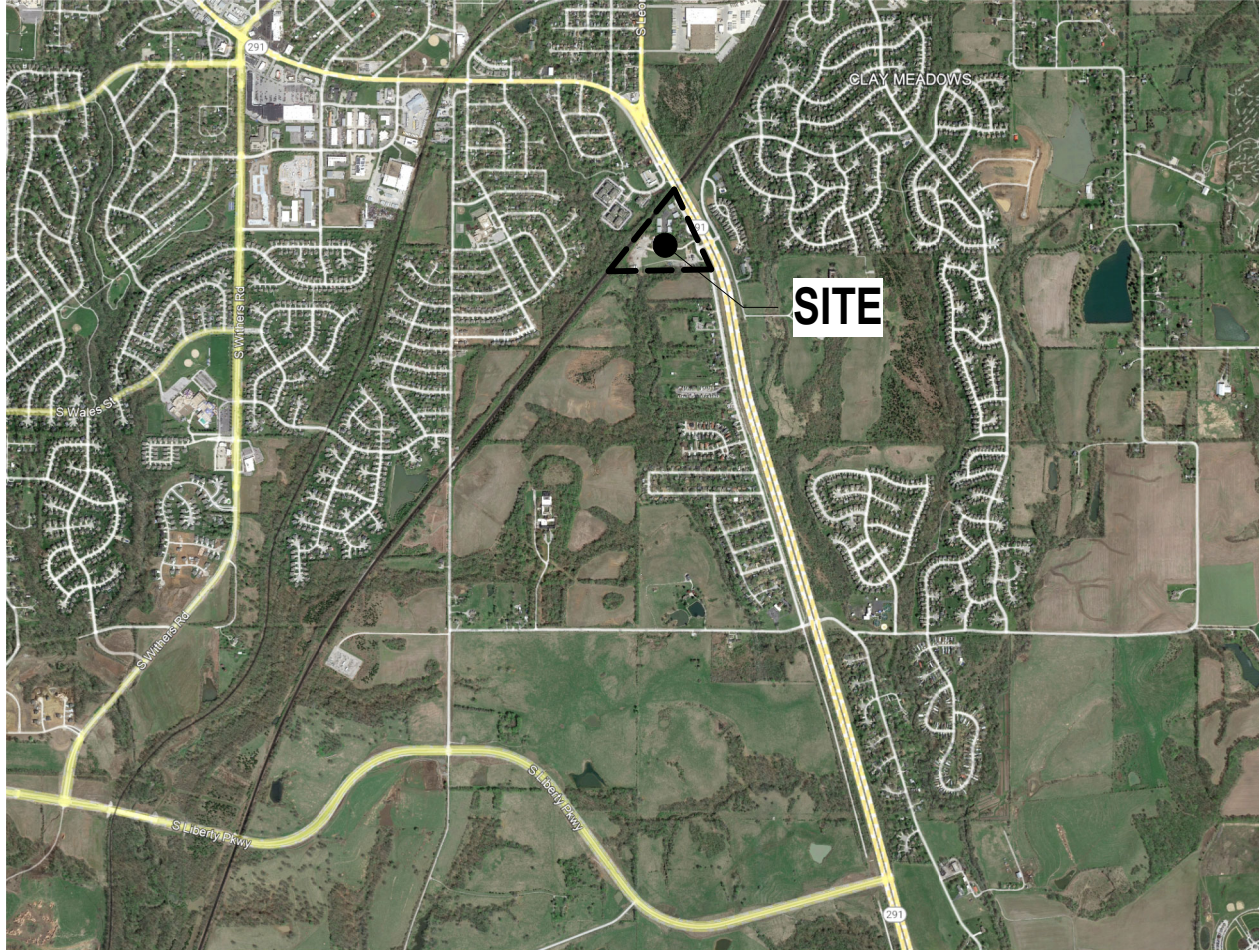
ALLOWABLE HEIGHT (TABLE 504.3): 55 FT. (S OCC., NS)
BUILDING HEIGHT: 29 FT. (Complies)

ALLOWABLE STORIES (TABLE 504.4): 2 (S-1 OCC., NS)
BUILDING STORIES: 1 (Complies)

FIRE RESISTANCE RATINGS(TABLES 601, 705.5): 0-Hour

ALLOWABLE BUILDING AREA (TABLE 506.2): 17,500 SF (S-1 OCC., NS)
BUILDING AREA: 1,622 SF (Complies)

VICINITY MAP



Bulk Storage Building
Liberty Public Schools
1138 Southview Drive, Liberty, MO

REVISIONS:

#	Description	Date
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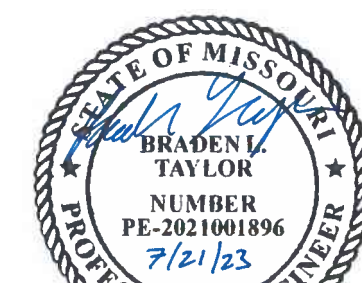
JULY 21, 2023

The Professional Architects and Engineers file stamp applies only to the original and shall appear on the final set of drawings. All drawings, specifications and other documents are subject to the rules and regulations of the Missouri Board of Architecture and Professional Engineers and shall be subject to the rules and regulations of the Missouri Board of Architecture and Professional Engineers.

JOB NO: 21022
DRAWN BY: RDS
CHECKED BY: JB
DATE: 07/21/2023

G000

COVER SHEET

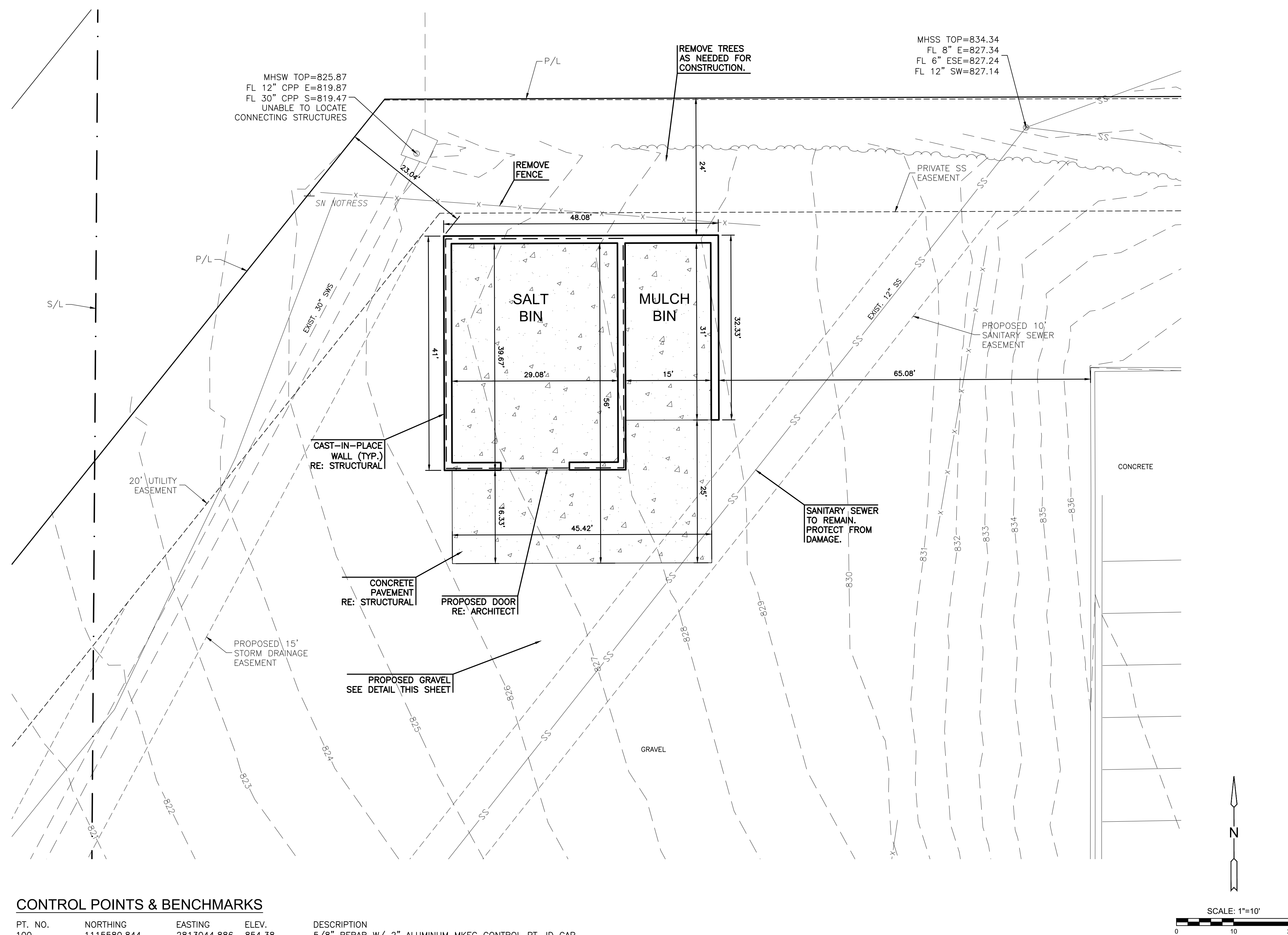
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BRADEN L. TAYLOR
LIC# 2021001896

The Professional Engineer's seal affixed to this sheet applies only to the material and items shown on this sheet. All drawings, instruments or other documents not exhibiting this seal shall not be considered prepared by this engineer, and this engineer expressly disclaims any and all responsibility for such plan, drawings, or documents.

JOB NO: 21022
DRAWN BY: MKE
CHECKED BY: BL
DATE: 07-21-202

C101



CONTROL POINTS & BENCHMARKS

PT. NO.	NORTHING	EASTING	ELEV.	DESCRIPTION
100	1115580.844	2813044.886	854.38	5/8" REBAR W/ 2" ALUMINUM MKEC CONTROL PT. ID CAP
101	1115515.975	2812771.336	834.47	5/8" REBAR W/ 2" ALUMINUM MKEC CONTROL PT. ID CAP
102	1115659.152	2812412.878	834.57	5/8" REBAR W/ 2" ALUMINUM MKEC CONTROL PT. ID CAP
103	1115368.188	2812280.635	809.39	5/8" REBAR W/ 2" ALUMINUM MKEC CONTROL PT. ID CAP

DATUM:

- 1) THE PROJECT HORIZONTAL DATUM IS BASED ON THE NAD83, MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE, (US SURVEY FEET DEFINITION), WITH A COMBINED ADJUSTMENT FACTOR (CAF) OF 1.00009310867. ALL COORDINATE AND DIMENSIONS SHOWN ON THESE PLANS ARE MODIFIED TO GROUND VALUES.

THE FOLLOWING EQUATIONS CAN BE USED FOR CONVERSION:
 GROUND COORDINATES TO STATE PLANE COORDINATES = GROUND X 1/CAF
 STATE PLANE COORDINATES TO GROUND COORDINATES = STATE PLANE X CAF

THE FOLLOWING EQUATIONS CAN BE USED FOR CONVERSION:
 GROUND COORDINATES TO STATE PLANE COORDINATES = GROUND X 1/CAF
 STATE PLANE COORDINATES TO GROUND COORDINATES = STATE PLANE X CAF

- 2) THE VERTICAL DATUM USED IS NAVD88.

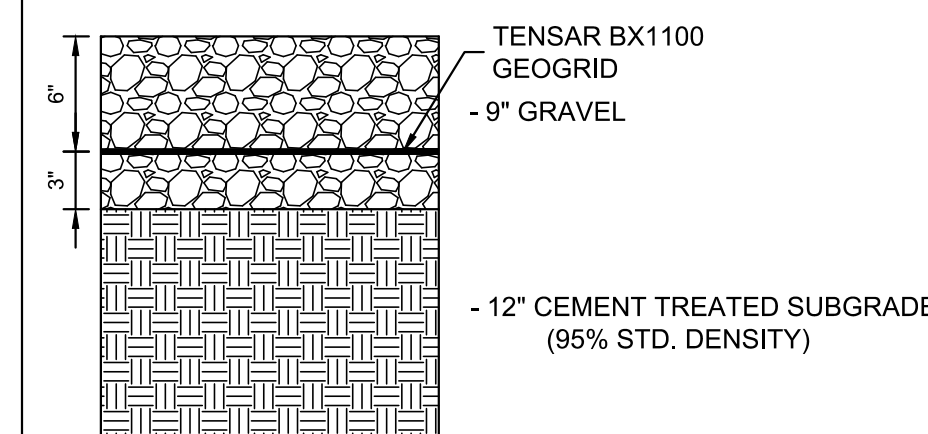
UTILITIES:

THE UNDERGROUND UTILITIES SHOWN HEREON WERE MARKED IN THE FIELD BY THE UTILITY OWNERS IN RESPONSE TO MO. TICKET NUMBER: 183411163, 183411164, AND 183411165. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

NOTE:

ALL CONTROL POINTS SHOWN HAVE ELEVATIONS ESTABLISHED USING STANDARD SURVEYING PROCEDURES AND CAN BE USED AS TEMPORARY BENCHMARKS. WHEN USING A CONTROL POINT AS A TEMPORARY BENCHMARK, IT IS RECOMMENDED THAT CROSS-CHECKS BE MADE TO OTHER CONTROL POINTS OR BENCHMARKS TO CONFIRM ELEVATIONS PRIOR TO USE.

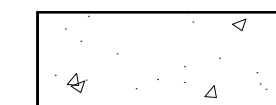
GRAVEL SECTION



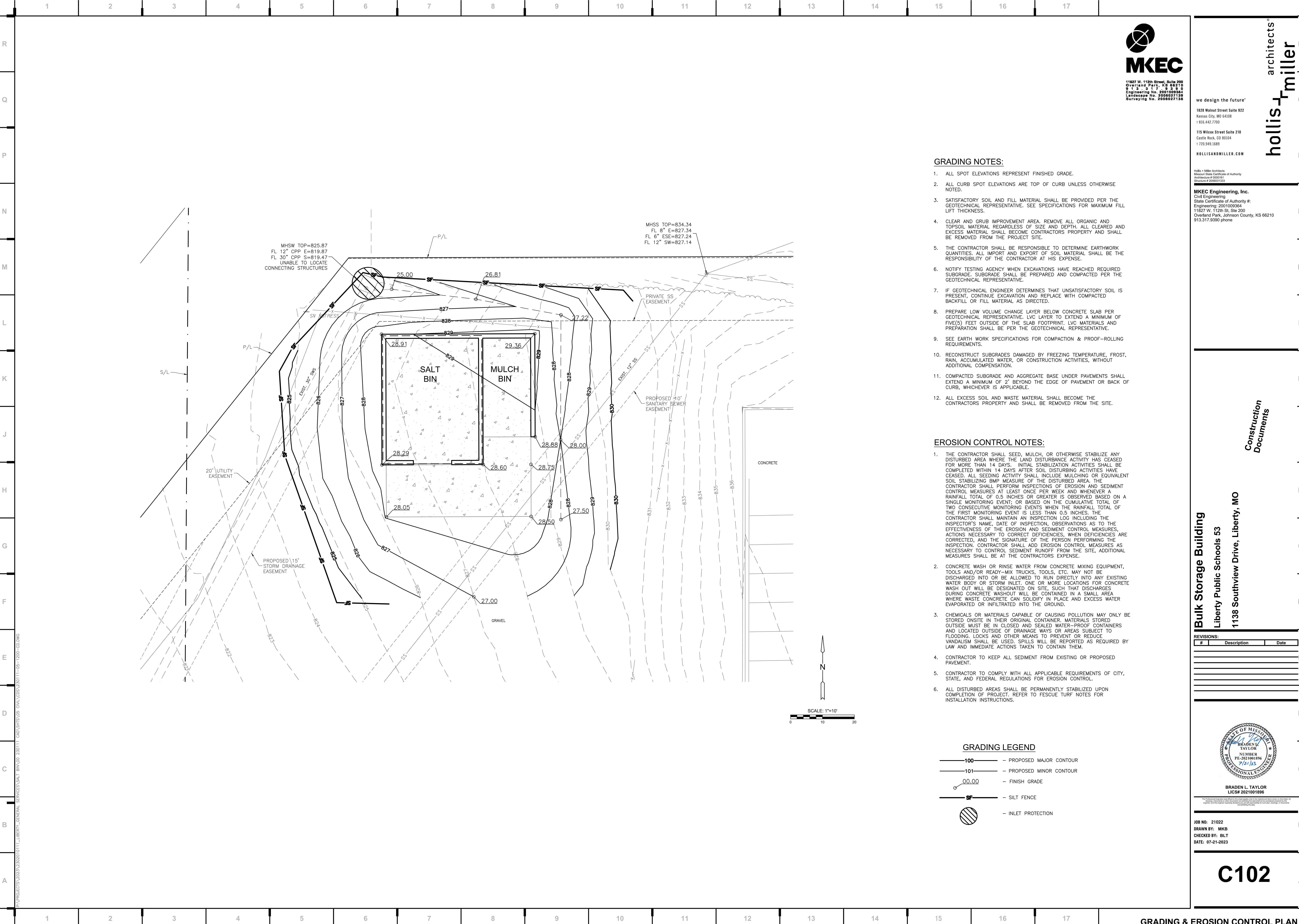
NOTES:

1. GRAVEL SHALL BE WELL GRADED WITH NO MORE THAN 15% PASSING THE NO. 200 SIEVE

PAVING LEGEND



- CONCRETE SECTION (RE: STRUCTURAL



GRADING NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FINISHED GRADE.
2. ALL CURB SPOT ELEVATIONS ARE TOP OF CURB UNLESS OTHERWISE NOTED.
3. SATISFACTORY SOIL AND FILL MATERIAL SHALL BE PROVIDED PER THE GEOTECHNICAL REPRESENTATIVE. SEE SPECIFICATIONS FOR MAXIMUM FILL LIFT THICKNESS.
4. CLEAR AND GRUB IMPROVEMENT AREA, REMOVE ALL ORGANIC AND TOPSOIL MATERIAL REGARDLESS OF SIZE AND DEPTH, ALL CLEARED AND EXCESS MATERIAL SHALL BECOME CONTRACTORS PROPERTY AND SHALL BE REMOVED FROM THE PROJECT SITE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE EARTHWORK QUANTITIES. ALL IMPORT AND EXPORT OF SOIL MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT HIS EXPENSE.
6. NOTIFY TESTING AGENCY WHEN EXCAVATIONS HAVE REACHED REQUIRED SUBGRADE. SUBGRADE SHALL BE PREPARED AND COMPACTED PER THE GEOTECHNICAL REPRESENTATIVE.
7. IF GEOTECHNICAL ENGINEER DETERMINES THAT UNSATISFACTORY SOIL IS PRESENT, CONTINUE EXCAVATION AND REPLACE WITH COMPACTED BACKFILL OR FILL MATERIAL AS DIRECTED.
8. PREPARE LOW VOLUME CHANGE LAYER BELOW CONCRETE SLAB PER GEOTECHNICAL REPRESENTATIVE. LVC LAYER TO EXTEND A MINIMUM OF FIVE(S) FEET OUTSIDE OF THE SLAB FOOTPRINT. LVC MATERIALS AND PREPARATION SHALL BE PER THE GEOTECHNICAL REPRESENTATIVE.
9. SEE EARTH WORK SPECIFICATIONS FOR COMPACTION & PROOF-ROLLING REQUIREMENTS.
10. RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURE, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, WITHOUT ADDITIONAL COMPENSATION.
11. COMPACTED SUBGRADE AND AGGREGATE BASE UNDER PAVEMENTS SHALL EXTEND A MINIMUM OF 2' BEYOND THE EDGE OF PAVEMENT OR BACK OF CURB, WHICHEVER IS APPLICABLE.
12. ALL EXCESS SOIL AND WASTE MATERIAL SHALL BECOME THE CONTRACTORS PROPERTY AND SHALL BE REMOVED FROM THE SITE.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL SEED, MULCH, OR OTHERWISE STABILIZE ANY DISTURBED AREA WHERE THE LAND DISTURBANCE ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS. INITIAL STABILIZATION ACTIVITIES SHALL BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES HAVE CEASED. ALL SEEDING ACTIVITY SHALL INCLUDE MULCHING OR EQUIVALENT SOIL STABILIZING BMP MEASURE OF THE DISTURBED AREA. THE CONTRACTOR SHALL PERFORM INSPECTIONS OF EROSION AND SEDIMENT CONTROL MEASURES AT LEAST ONCE PER WEEK AND WHENEVER A RAINFALL TOTAL OF 0.5 INCHES OR GREATER IS OBSERVED BASED ON A SINGLE MONITORING EVENT; OR BASED ON THE CUMULATIVE TOTAL OF TWO CONSECUTIVE MONITORING EVENTS WHEN THE RAINFALL TOTAL OF THE FIRST MONITORING EVENT IS LESS THAN 0.5 INCHES. THE CONTRACTOR SHALL MAINTAIN AN INSPECTION LOG INCLUDING THE INSPECTOR'S NAME, DATE OF INSPECTION, OBSERVATIONS AS TO THE EFFECTIVENESS OF THE EROSION AND SEDIMENT CONTROL MEASURES, ACTIONS NECESSARY TO CORRECT DEFICIENCIES, WHEN DEFICIENCIES ARE CORRECTED, AND THE SIGNATURE OF THE PERSON PERFORMING THE INSPECTION. CONTRACTOR SHALL ADD EROSION CONTROL MEASURES AS NECESSARY TO CONTROL SEDIMENT RUNOFF FROM THE SITE, ADDITIONAL MEASURES SHALL BE AT THE CONTRACTORS EXPENSE.
2. CONCRETE WASH OR RINSE WATER FROM CONCRETE MIXING EQUIPMENT, TOOLS AND/OR READY-MIX TRUCKS, TOOLS, ETC. MAY NOT BE DISCHARGED INTO OR BE ALLOWED TO RUN DIRECTLY INTO ANY EXISTING WATER BODY OR STORM INLET. ONE OR MORE LOCATIONS FOR CONCRETE WASH OUT WILL BE DESIGNATED ON SITE, SUCH THAT DISCHARGES DURING CONCRETE WASHOUT WILL BE CONTAINED IN A SMALL AREA WHERE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER EVAPORATED OR INFILTRATED INTO THE GROUND.
3. CHEMICALS OR MATERIALS CAPABLE OF CAUSING POLLUTION MAY ONLY BE STORED ONSITE IN THEIR ORIGINAL CONTAINER. MATERIALS STORED OUTSIDE MUST BE IN CLOSED AND SEALED WATER-PROOF CONTAINERS AND LOCATED OUTSIDE OF DRAINAGE WAYS OR AREAS SUBJECT TO FLOODING. LOCKS AND OTHER MEANS TO PREVENT OR REDUCE VANDALISM SHALL BE USED. SPILLS WILL BE REPORTED AS REQUIRED BY LAW AND IMMEDIATE ACTIONS TAKEN TO CONTAIN THEM.
4. CONTRACTOR TO KEEP ALL SEDIMENT FROM EXISTING OR PROPOSED PAVEMENT.
5. CONTRACTOR TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF CITY, STATE, AND FEDERAL REGULATIONS FOR EROSION CONTROL.
6. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED UPON COMPLETION OF PROJECT. REFER TO FESCUE TURF NOTES FOR INSTALLATION INSTRUCTIONS.

GRADING LEGEND

- 100 - PROPOSED MAJOR CONTOUR
- 101 - PROPOSED MINOR CONTOUR
- 00.00 - FINISH GRADE
- SF - SILT FENCE
- INLET PROTECTION

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HOLLISANDMILLER.COM

Hollis + Miller Architects
Missouri State Certificate of Authority
Architecture # 0000181
Structure # 200001333

MKEC Engineering, Inc.
Civil Engineering
State Certificate of Authority #:
Engineering: 2001009364
11827 W. 112th St. Ste 200
Overland Park, Johnson County, KS 66210
913.317.9390 phone

Bulk Storage Building
Liberty Public Schools 53
1138 Southview Drive, Liberty, MO

REVISIONS:

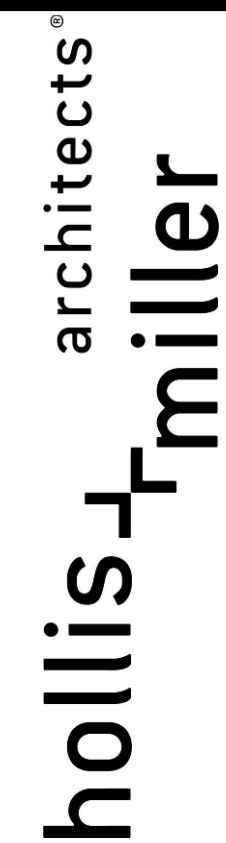
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BRADEN L. TAYLOR
LIC# 2021001896

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DRAWN BY: MKB
CHECKED BY: BLT
DATE: 07-21-2023

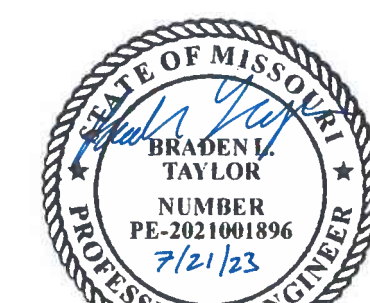
C102



Holle & Miller Architects
Missouri State Certificate of Authority
Architecture # 0000161
Structure # 2006031333

MKEC Engineering, Inc.
Civil Engineering
State Certificate of Authority #:
Engineering: 2001009364
11827 W. 112th St, Ste 200
Overland Park, Johnson County, KS 66210
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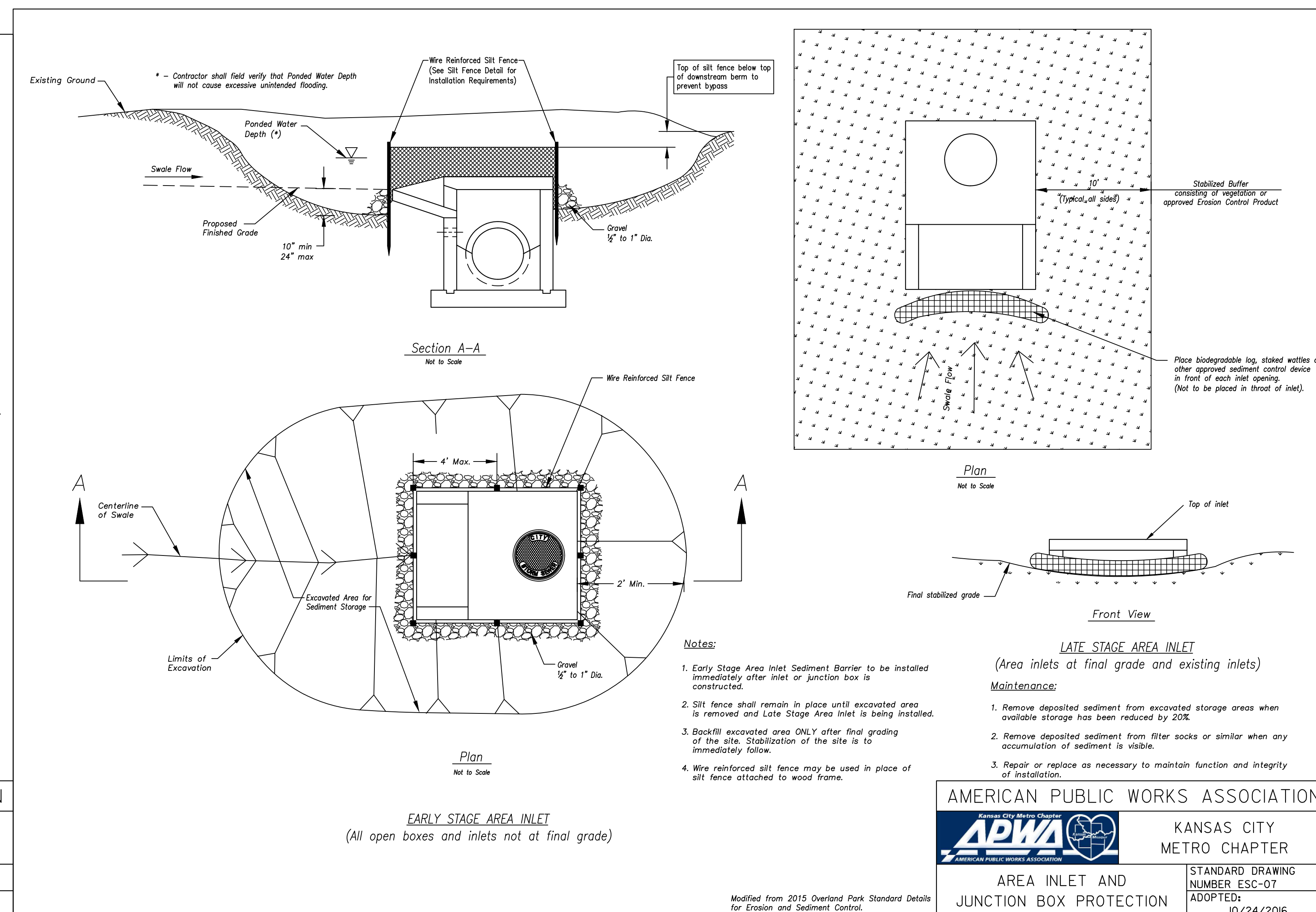
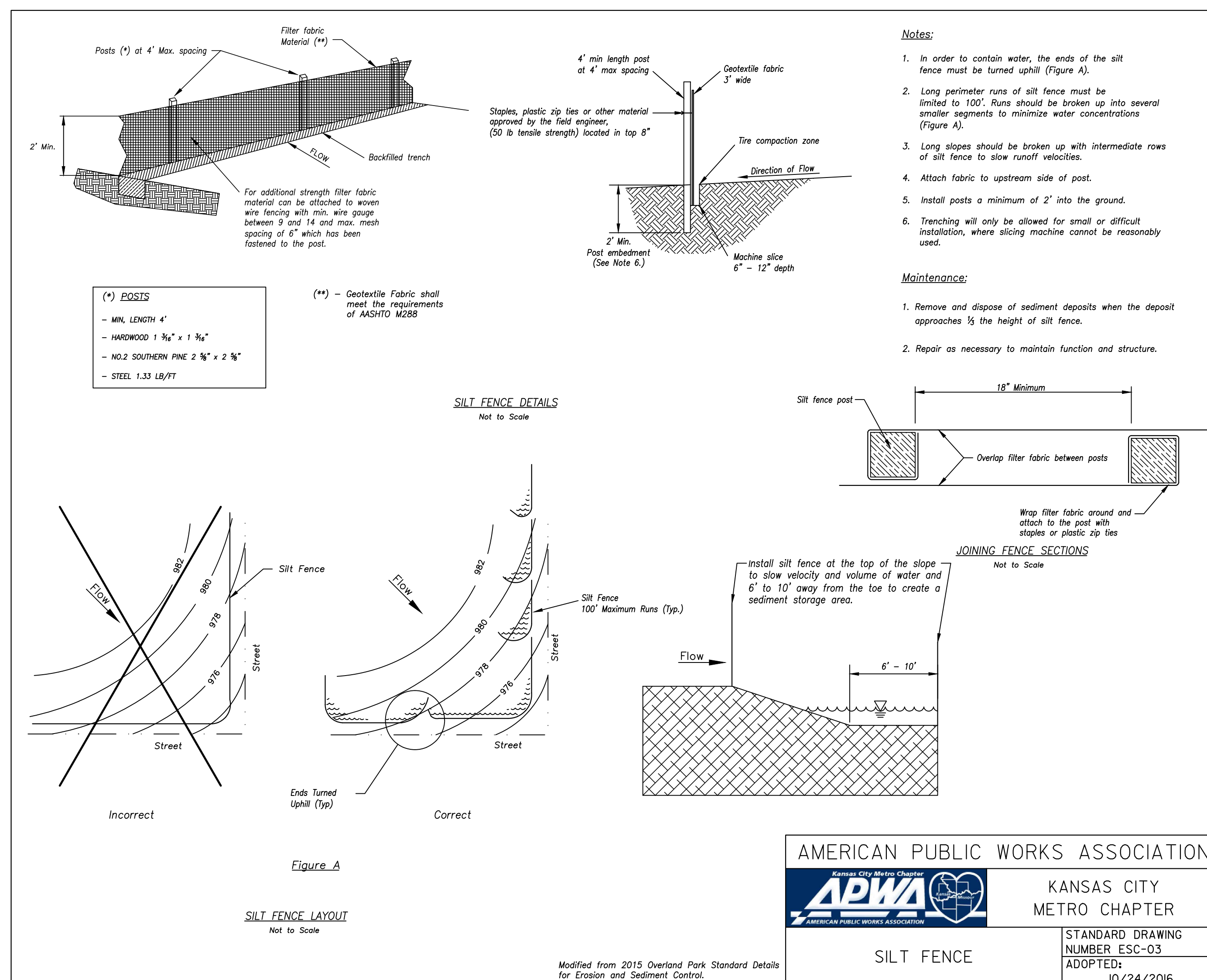
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JOB NO: 21022
DRAWN BY: MKE
CHECKED BY: BL
DATE: 07-21-202

C200

SITE DETAILS



SYMBOL LEGEND

	BRICK (in section)	Classroom A101	RM NAME RM NUMBER
	CONCRETE MASONRY UNIT - CMU (in section)		
	CONCRETE (in section)	A123	DOOR NUMBER
	GYP BD (in section)	A	WALL TYPE
	PLYWOOD (in section)	A	FRAME TYPE
	RIGID INSUL & EIFS (in section)	1	GLASS TYPE
	BATT INSUL (in section)		SECTION CUT LINE
	ACOUSTICAL TILE (in section)		ELEVATION SYMBOL
	STUCCO (in section)		ELEV NUMBER SHEET NUMBER
	SOIL		
	SAND		ENLARGED DETAIL
	CONTINUOUS LUMBER		Joist Bearing 100'-0"
	BLOCKING/SHIM		DATUM MARKER
	FINISH LUMBER/ HARDWOOD		AREA "A"
	STEEL OR METAL		AREA "B"
			MATERIAL JOINT
			BUILDING EXPANSION JOINT

SHEET KEYNOTE LEGEND

03 30 00.A01	CAST-IN-PLACE CONCRETE
13 31 00.A01	FABRIC STRUCTURES

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Civil Engineer
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Construction Documents

Bulk Storage Building
Liberty Public Schools
1138 Southview Drive, Liberty, MO

SHEET NOTES

- REFER TO SHEET G000 FOR SHEET INDEX
- DO NOT SCALE THIS DRAWING
- DIMENSIONS ARE TO FACE OF CONCRETE, UNO.

REVISIONS:		
#	Description	Date



JOB NO: 21022
DRAWN BY: RDS
CHECKED BY: JB
DATE: 07/21/2023

A101

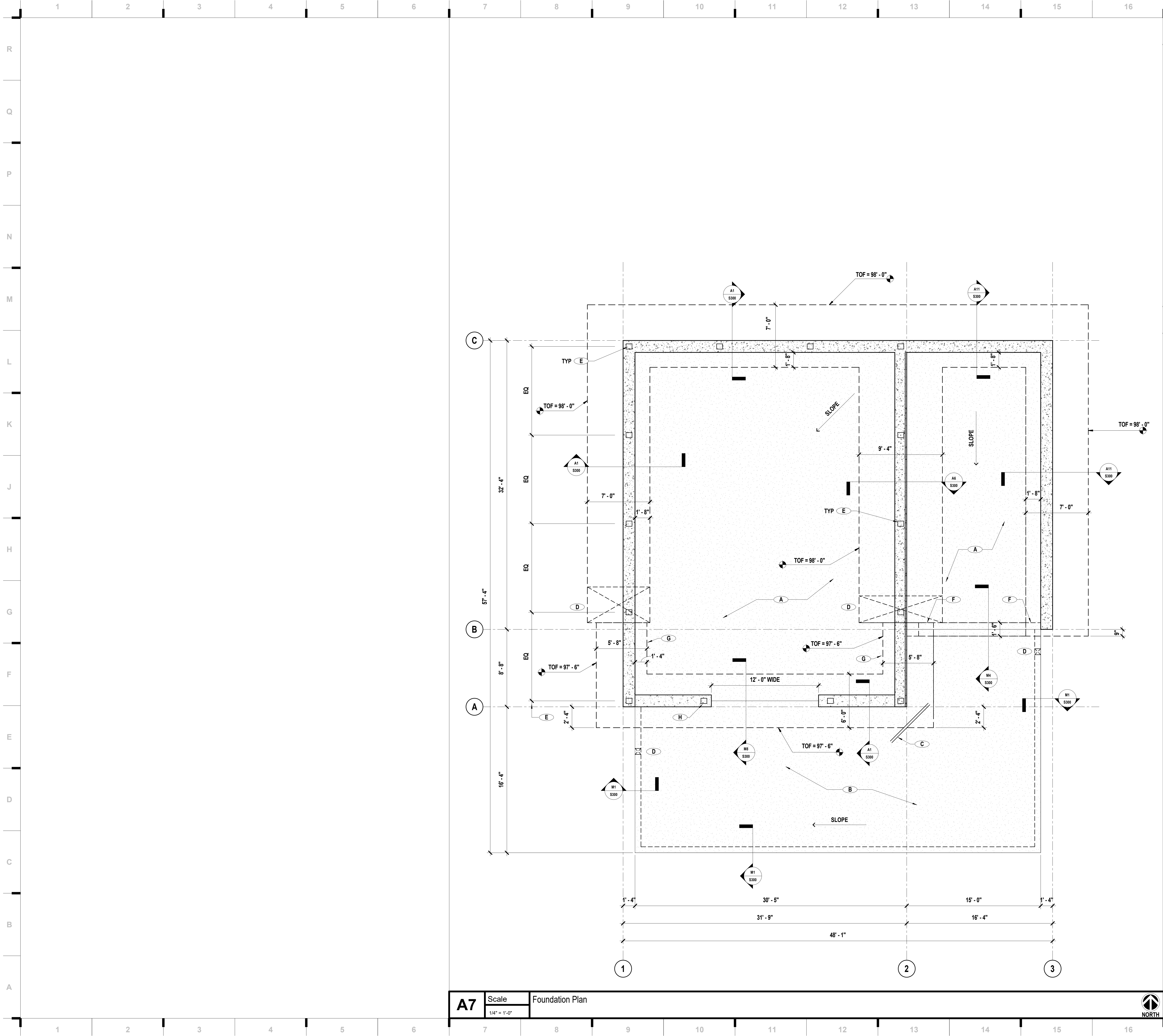
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
R	<div><div>A. Building Code</div><div>1. The design and construction shall conform to the 2018 International Building Code (IBC) as amended by the City of Liberty, MO.</div></div>																	
Q	<div><div>B. Design Loads</div><div>1. This project is designed to resist the most critical loads resulting from the basic load combinations outlined in section 1605 of the code.</div><div>2. Dead Loads<div>a. The roof mounted equipment weights used for design are indicated on the contract documents. The Contractor shall submit actual weights for all roof mounted equipment for review by the Engineer.</div><div>b. Total service roof dead load: 3 psf (Includes 0.25 psf collateral load)</div></div></div>																	
P	<div><div>3. Live Loads</div><div>a. Code Loads<div>1. Roof12 psf</div><div>2. Vertical Skid Loader Wheel Load5385 lb point load over an area of 12"x 6"</div><div>3. Horizontal Barrier Load6000 lb point load over an area of 12" x 12"</div></div></div>																	
N	<div><div>4. Snow - The snow load is in accordance with ASCE 7 with the following criteria:</div><div>a. Ground snow load$p_g = 20$ psf,</div><div>b. Exposure Factor$C_e = 1.0$</div><div>c. Importance Factor$I_s = 1.0$</div><div>d. Thermal Factor$C_t = 1.2$</div><div>e. Roof Snow Factor$C_s = 1.0$</div><div>f. Flat Roof Snow Load$p_f = 16.8$ psf</div><div>g. Minimum Snow Load$p_m = 20$ psf</div></div>																	
M	<div><div>5. Wind - The wind load is in accordance with ASCE 7 with the following criteria:</div><div>a. Basic wind speed$V = 110$ mph</div><div>b. Allowable Stress Design Wind Speed$V_{asd} = 85$ mph</div><div>c. Risk CategoryII</div><div>d. Exposure CategoryC</div><div>e. Internal Pressure Coefficient± 0.55</div><div>f. Components & Cladding Forceper code</div></div>																	
L	<div><div>6. Seismic - The seismic design is in accordance with the general building code with the following criteria:</div><div>a. Importance Factor$I_e = 1.00$</div><div>b. Risk CategoryII</div><div>c. 0.2 sec Spectral Response Acceleration$S_S = 9.5\%$</div><div>d. 1.0 sec Spectral Response Acceleration$S_1 = 6.9\%$</div><div>e. Soil Site ClassD (Assumed)</div><div>f. Design 0.2sec Spectral Response Acceleration$S_{DS} = 10.1\%$</div><div>g. Design 1.0sec Spectral Response Acceleration$S_{D1} = 11.0\%$</div><div>h. Seismic Design CategoryB</div><div>i. Basic Seismic Force Resisting SystemGround Supported Cantilever Walls</div><div>j. Design Base Shear23 kips</div><div>k. Seismic Response Coefficient$C_S = 0.081$</div><div>l. Response Modification Coefficient$R = 1.25$</div><div>m. Analysis ProcedureEquivalent Lateral Force</div></div>																	
K	<div><div>C. Foundations</div><div>1. Geotechnical Report<div>a. A geotechnical report was not provided for this project.</div></div></div>																	
J	<div><div>2. Spread Footings, Trench Footing and Grade Beams</div><div>a. All shallow foundations have been designed to bear on undisturbed soil or engineered fill for a net allowable bearing pressure of 1500 psf based on presumptive values per IBC table 1806.2.</div></div>																	
H	<div><div>3. Retaining Walls</div><div>a. Retaining walls have been designed assuming a maximum unrestrained equivalent fluid pressure of 45 psft.</div><div>b. Retaining walls are designed assuming that a drained, non-hydrostatic condition exists behind the walls.</div><div>c. Maximum construction joint spacing shall be 40'-0" OC.</div></div>																	
G	<div><div>4. All structural concrete utilized for the purpose of retaining soil shall attain full design strength prior to any backfill being placed against the concrete, unless temporary bracing is used. Use only hand operated tools for compaction adjacent to foundation walls.</div></div>																	
F	<div><div>D. Concrete</div><div>1. All concrete and reinforcing details shall conform to ACI 318 and CRSI "Manual of Standard Practice".</div></div>																	
E	<div><div>2. Strength - The following areas shall have a minimum 28 day compressive strength:</div><div>a. Exterior flatwork concrete: 4000 psi</div><div>b. Footing and grade beams: 4000 psi</div><div>c. Walls: 4000 psi</div></div>																	
D	<div><div>3. No water may be added to the concrete mix on the job site unless specifically withheld at the batch plant. The workability should be attained through the use of water-reducing agents and/or super-plasticizing chemical admixtures.</div></div>																	
C	<div><div>4. Reinforcing</div><div>a. Grade<div>1. Typical reinforcingASTM A615, Grade 60</div><div>2. Welded reinforcingASTM A706</div></div><div>b. Lap splices and development lengths in reinforcement shall be per the Typical Reinforcing Splice Length Table (A5 / S530) unless indicated elsewhere in the drawings and specifications. Lap welded wire reinforcing one full mesh space plus 2 inches.</div><div>c. Welded Wire ReinforcingASTM A1064<div>1. All welded wire reinforcing for slab on grade shall be supported on metal chairs specifically designed for soil bearing conditions. Pulling reinforcing up during concrete placement is not allowed.</div><div>2. All welded wire for metal deck supported slab shall be supported by metal chairs with a maximum spacing of 4'-0" OC. Pulling reinforcing up during concrete placement is not allowed.</div></div><div>d. All concrete shall be reinforced unless specifically identified on the drawings as unreinforced. Reinforce sections with similar conditions located elsewhere on the project.</div><div>e. All synthetic and steel fiber reinforcement shall be considered secondary reinforcing only.</div></div>																	
B	<div><div>5. Concrete cover shall be the following:</div><div>a. Concrete cast against and exposed to earth3"</div><div>b. Concrete exposed to earth or weather #5 and smaller1 1/2"</div><div>c. Concrete exposed to earth or weather #6 and larger2"</div></div>																	
A	<div><div>6. All openings in slabs, walls, foundations, etc. shall have an additional (2) #5's on each side, in each corner of the opening and each face of the member. Extend reinforcing 2'-6" beyond edge of opening.</div></div>																	
	<div><div>7. The Contractor shall furnish an additional (5) bars of each size specified on the structural drawings of reinforcing bars not indicated on drawings to be placed as directed by the Structural engineer. All costs for material and placement shall be included in the base bid. Fabricate and deliver only when ordered by the Engineer of record.</div></div>																	
	<div><div>8. Aluminum items shall not be embedded in concrete.</div></div>																	
	<div><div>E. Post Installed Anchors</div><div>1. All post installed anchors shall be designed assuming cracked concrete at the anchorage.</div><div>2. All post installed anchors shall be installed per the manufacturers recommendations.<div>a. Install expansion anchors per the manufacturers recommended standard embedment unless otherwise noted in the contract documents.</div><div>b. The embedment of all post installed anchors shall be defined as the distance from the surface of the loaded material and the deepest part of the anchor after the anchor is placed but not expanded.</div></div></div>																	
	<div><div>3. All expansion anchors shall perform to a minimum load capacity of the Hilti Kwik Bolt 3 or approved equal.</div></div>																	
	<div><div>4. All adhesive anchors embedded in concrete shall perform to a minimum load capacity of the Hilti HIT HY-200-R V3 Adhesive Anchors.</div></div>																	
	<div><div>5. All anchors shall be stainless steel at exterior exposed conditions.</div></div>																	
	<div><div>F. Miscellaneous</div><div>1. Periodic site observation by field representatives of Hollis and Miller Architects, if provided, is solely for the purpose of determining if the work of the contractor is proceeding in general accordance with the structural contract documents. This limited site observation should not be construed as exhaustive or continuous to check the quality or quantity of the work, but rather periodic in an effort to guard the owner against defects or deficiencies in the work of the contractor. Observations by the engineer shall not be considered inspections, and in no way relieves the contractor of any requirements of the contract documents.</div></div>																	
	<div><div>2. The structure is designed to function as a unit upon completion and is not structurally stable until all connections, framing, permanent bracing, and exterior load bearing walls (where applicable) are complete and have achieved their design strength. Contractor is solely responsible for maintaining structural stability during erection and construction and is responsible for furnishing all temporary bracing and/or support that may be required as the result of the contractor's construction methods and/or sequences. Temporary bracing plans should include installation and removal sequencing as applicable. Temporary bracing systems are not to be removed until structural work is complete.</div></div>																	
	<div><div>3. The contractor shall not alter or modify work shown on the structural drawings without receiving written approval from the engineer. When conflicts occur between the drawings and specifications, the strictest interpretation shall govern.</div></div>																	
	<div><div>4. The contract structural drawings and specifications represent the finished structure, and except where specifically shown, do not indicate the method or means of construction. The contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, procedures, techniques, sequence, and safety precautions and programs. The engineer will not be responsible for the acts or omission of the contractor, subcontractor, or any other persons performing any of the work, or for the failure of any of them to carry out the work in accordance with the contract documents.</div></div>																	
	<div><div>5. See architectural and civil drawings for other pertinent information related to the structural work and coordinate as required. These structural drawings are intended to be utilized as a complete set of documents that represent the building's structural systems. No single sheet or series of sheets is intended to "stand alone". Typical details may or may not be cut at specific locations throughout the drawings, but are to be applied where required. These structural drawings are intended to be included in a complete set of construction documents, including but not limited to, architectural drawings, and civil drawings. Contractor shall verify coordination of these drawings with contents of above sets specified and only proceed with bidding and construction after such has taken place.</div></div>																	
	<div><div>6. All existing field and building conditions shall be verified by the Contractor before any other work shall begin. Coordinate with Engineer of Record regarding any discrepancy with existing building dimensions.</div></div>																	
	<div><div>7. Submittals<div>a. Submittals are to be based upon the latest submitted contract documents. This includes all addendums, Architectural Supplemental Instructions (ASIs), Structural Supplemental Drawings (SSD's), and Requests for Information (RFI's).</div><div>b. Submittals shall be original documents. Shop drawings shall not be a duplication, in any way, of the contract documents. This includes, but is not limited to, photocopies, electronic drawing copying or electronic scanning. Any submitted shop drawing that is not original will be rejected and returned without review.</div><div>c. Prior to submission of the submittals to the Architect, the Contractor shall review the shop drawings for conformance to the means, methods, techniques, sequences, and operations of construction. The submittal shall be coordinated with all other trades and shall include responses to all Contractor directed questions. After all aspects of the Contractor's review are complete, the Contractor's review stamp shall be affixed to the shop drawings and those shop drawings forwarded to the Architect or Structural Engineer for review. Shop drawings not bearing the Contractor's review stamp will be returned without review.</div><div>d. Design Calculations - All calculations shall be signed and sealed by a professional engineer licensed in the State of the project. Provide the following design calculations for review:<div>1. Fabric Canopy Structure Framing and Connections</div><div>e. Submittals - Provide the following submittals for review:<div>1. Concrete Mix Design and Materials</div><div>2. Concrete Reinforcing</div><div>3. Embedded Items (plates, angles, etc.)</div><div>4. Fabric Canopy Superstructure</div></div><div>f. Substitutions are allowed prior to bid only. Reference the specifications for timing of submission</div></div></div></div>																	
	<div><div>G. Special Inspections (based on 2018 IBC, Chapter 17)</div><div>1. Special inspection reports shall be submitted to the Building Official, Owner, Architect, Engineer, Contractor, Sub-Contractor and any other pertinent entity in a timely manner.</div></div>																	
	<div><div>2. All discrepancies found by the special inspector shall immediately be brought to the attention of the general contractor and corrected. If the contractor is unable to correct the discrepancy, the special inspector shall notify the Architect and Engineer.</div></div>																	
	<div><div>3. Upon completion of the project, the special inspector shall submit a final report delineating that the work was, to the best of the inspector's knowledge, completed in conformance with the approved contract documents and applicable building code.</div></div>																	
	<div><div>4. The Owner shall retain special inspection services for the items listed below. The Contractor shall provide light general labor as required to assist with special inspections.</div></div>																	
	<div><div>5. Concrete<div>a. See Schedule of Special Inspections Table this sheet.</div></div></div>																	
	<div><div>6. Post installed Anchors</div></div>																	

Special Inspection of Concrete Construction - Table 1705.3			
Req'd	Inspection Task	Continuous	Periodic
Yes	1. Inspect reinforcing steel, including prestressing tendons, and...		X
Yes	2. Inspection of reinforcing steel welding in accordance with Steel Construction section above.		X
Yes	3. Inspection of anchors cast in concrete.		X
Yes	4. Inspection of anchors post-installed in hardened concrete members.	X	
Yes	5. Verify use of approved design mix.		X
Yes	6. Prior to placement fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	
Yes	7. Inspect concrete and shotcrete placement for proper application techniques.	X	
Yes	8. Inspect for maintenance of specified curing temperature and techniques.		X
No	9. Inspection of prestressed concrete:		
No	9.a. Application of prestressing forces	X	
No	9.b. Grouting of bonded prestressing tendons in the...	X	
No	10. Erection of precast structural members		X
No	11. Verification of in-situ concrete strength, prior to...		X
Yes	12. Inspection formwork for shape, location and...		X

SYMBOLS LEGEND			
	PLAN NOTE		SLAB STEP
	FLOOR OR ROOF SLOPE ARROW		SLAB SLOPE
	ELEVATION SYMBOL		EARTH HATCH
	DRAWING REVISION NUMBER		GRAVEL HATCH
	REVISION CLOUD		CONCRETE HATCH
	GRID LINE		GROUT HATCH
	WELDED WIRE FABRIC		BUILDING SECTION CUT OR DETAIL
			SHEET NUMBER
			ENLARGED DETAIL OR PLAN NUMBER
			SHEET NUMBER

Symbols		L	
&	And	L	Live Load
@	At	LBS	Pounds
A		LG	Length
A	Axial Load	LLBB	Long Leg Back to Back
ADDL	Additional	LLH	Long Leg Horizontal
AFF	Above Finished Floor	LLV	Long Leg Vertical
AHU	Air Handling Unit	LOC	Location
ALT	Alternate	LONG	Longitudinal
ALUM	Aluminum	LR	Roof Live Load
APPROX	Approximate	LSH	Long Side Horizontal
AR	Anchor Rod	LSV	Long Side Vertical
ARCH	Architect/Architectural Drawings	LWC	Light-Weight Concrete
ATS	Anchor Tie-Down System	LWT	Light-Weight
B		M	
BAL	Balance	MAS	Masonry
BL	Brick Ledge	MAX	Maximum
BLDG	Building	MCJ	Masonry Control Joint
BLKG	Blocking	MECH	Mechanical
BM	Beam	MEP	Mechanical/Electrical/Plumbing
BO	Bottom of	MEZZ	Mezzanine
BOD	Bottom of Deck	MFR	Manufacturer
BOS	Bottom of Steel	MIN	Minimum
BOT	Bottom	MIR	Mirror
BRG	Bearing	MISC	Miscellaneous
BS	Both Sides	MO	Masonry Opening
BTWN	Between	MTL	Metal
C		MX	Strong Axis Moment
C	Compression	MY	Weak Axis Moment
CANT	Cantilever	N	
CFSF	Cold-Formed Steel Framing	NIC	Not in Contract
CIP	Cast-In-Place	NM	Non-Metallic
CJ	Control Joint	NO or #	Number
CJP	Complete Joint Penetration	NS	Near Side/Non-Shrink
CL	Center Line	NTS	Not to Scale
CLR	Clear	NWC	Normal-Weight Concrete
CMU	Concrete Masonry Unit	NWT	Normal-Weight
COL	Column	O	
CONC	Concrete	OC	On Center
CONN	Connection	OD	Outside Diameter
CONST	Construction	OF	Outside Face
CONT	Continuous/Continue	OH	Opposite Hand
COORD	Coordinate	OPNG	Opening
CSJ	Construction Joint	OPP	Opposite
CTRD	Centered	P	
D		PAF	Powder Actuated Fastener
D	Dead Load	PAR	Parallel
d	Penny	PC	Precast Concrete
DBA	Deformed Bar Anchor	PCF	Pounds per Cubic Foot
DIA or Ø	Diameter	PERP	Perpendicular
DIM	Dimension	PL	Plate
DN	Down	PLF	Pounds per Linear Foot
DT	Precast Double Tee	PREFAB	Prefabricated
DTL	Detail	PRELIM	Preliminary
DWG	Drawing	PSF	Pounds per Square Foot
DWL	Dowel	PSI	Pounds per Square Inch
E		PT	Point or Post-Tensioned
E		Q	
E	Seismic Load	QTY	Quantity
EA	Each	R	
EF	Each Face	R	Radius
EJ	Expansion Joint	REF	Reference/Refer to
EL	Elevation	REINF	Reinforcing/Reinforced/Reinforcement
ELEV	Elevator	REQD	Required
EMBED	Embedment/Embedded	REQT	Requirement
ENGR	Engineer	RET	Return
EOD	Edge of Deck	REV	Revision
EOR	Engineer of Record	RO	Rough Opening
EOS	Edge of Slab	RTU	Roof Top Unit
EO	Equal	S	
EQUIP	Equipment	S	Snow Load
EQUIV	Equivalent	SCHED	Schedule/Scheduled
ES	Each Side	SC	Slip Critical
EW	Each Way	SDS	Self-Drilling Screw
EXIST or (E)	Existing	SECT	Section
EXT	Exterior	SF	Square Foot
F		SH1	Sheet
FAB	Fabricate	SIM	Similar
fc	28-day Concrete Strength	SLOB	Short Leg Back to Back
FD	Floor Drain	SLG	Slab-on-Grade
FFE	Finished Floor Elevations	SP	Spacing
FIN	Finish/Finished	SPEC	Specification
FLR	Floor	SQ	Square
fmi	28-day Masonry Strength	SS	Stainless Steel
FND	Foundation	STD	Standard
FO	Face of	STIF	Stiffener
FRAM	Framing	STL	Steel
FS	Far Side	STR	Structure/Structural
FT	Foot/Feet	SW	Shear Wall
FUT OR (F)	Future	SYM	Symmetrical
FV	Field Verify	T	
Fy	Yield Strength	T	Tension
G		T&B	Top and Bottom
GA	Gauge/Gage	THK	Thickness
GALV	Galvanize/Galvanized	THRD	Threaded Rod
GEN	General	TO	Top of
GR	Grade	TOC	Top of Concrete
H	Horizontal Shear	TOF	Top of Foundation
H		TOM	Top of Masonry
HSA	Headed Stud Anchor	TOS	Top of Steel/Top of Slab
HD	Headed/Hold Down	TOW	Top of Wall
HGR	Hanger	TRANS	Transverse
HK	Hook	TYP	Typical
HORIZ	Horizontal	U	
HT	Height	UNO	Unless Noted Otherwise
I		V	
ID	Inside Diameter	V	Vertical Shear
IF	Inside Face	VAR	Varies
IN	Inch	VERT	Vertical
INT	Interior	W	
J		W	Wind Load
JST	Joist	Wi	With
JT	Joint	W/O	Without
K		WF	Wide Flange
K	Kip (1000 lbs)	WP	Work Point/Waterproofing
KSF	Kips per Square Foot	WS	Waterstop
KSI	Kips per Square Inch	WT	Weight
		WWR	Welded Wire Reinforcing

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A7 Scale Foundation Plan
1/4" = 1'-0"



- PLAN REFERENCE NOTES**
- A** 8" CONCRETE SLAB ON GRADE WITH 15 MIL VAPOR RETARDER AND 4" CRUSHED ROCK DRAINAGE FILL PER SPECIFICATION. REINFORCE PER TYPICAL DETAILS. TOP OF CONCRETE ELEVATION VARIES PER CIVIL. MAXIMUM TOP OF CONCRETE ELEVATION = 829.07 = 100'-0".
 - B** 8" CONCRETE SLAB ON GRADE WITH 4" CRUSHED ROCK DRAINAGE FILL PER SPECIFICATION. REINFORCE PER TYPICAL DETAILS. TOP OF CONCRETE ELEVATION VARIES PER CIVIL. MAXIMUM TOP OF CONCRETE ELEVATION = 829.07 = 100'-0".
 - C** PROVIDE (2) #5 x 4'-0" LG DIAGONAL BARS AT ALL RE-ENTRANT CORNERS PER A13/S530. CENTER BARS ON CORNERS IN CENTER OF SLAB.
 - D** FOOTING STEP RE: A9 / S530.
 - E** FABRIC CANOPY TRUSS BASE PLATE PER CANOPY MFR. BASE PLATES SHALL BE LOCATED SUCH THAT BASE PLATE ANCHORS ARE CENTERED ON THE 1'-4" CONCRETE WALLS. FINAL NORTH-SOUTH LOCATIONS TO BE DETERMINED AND COORDINATED WITH CANOPY MFR.
 - F** CARRY TOP OF GRADE BEAM OVER ADJACENT WALL FOOTINGS.
 - G** REF: A1 / 300 FOR WALL AND FOOTING REINFORCING INFORMATION.
 - H** PROVIDE 6" MINIMUM DISTANCE FROM ANCHOR ROD TO EDGE OF DOOR OPENING.

- FOUNDATION NOTES**
- TOP OF WALL FOOTING ELEVATION = 98'-0" U.N.O.
 - GRIDS INDICATE EXTERIOR FACE OF CONCRETE WALLS.
 - RE: SHEET S300 FOR TOP OF WALL ELEVATIONS, COORDINATE TOP OF WALL WITH ARCHITECTURAL PLANS.
 - FOUNDATION AND ANCHORAGE DESIGN IS BASED ON PRELIMINARY LEVEL BASE REACTION REPORT PROVIDED BY CANOPY MFR. DESIGN IS TO BE CONFIRMED IN CONSTRUCTION ADMINISTRATION PRIOR TO ORDERING ANCHOR RODS FOR COORDINATION AND FINAL LAYOUT.

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PHONE: 913.317.9390

Construction Documents

Bulk Storage Building
Liberty Public Schools
1138 Southview Drive, Liberty, MO

REVISIONS:

#	Description	Date
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07/21/2023
DAVID A. KRELL
NUMBER
PE-2021014172
PROFESSIONAL ENGINEER

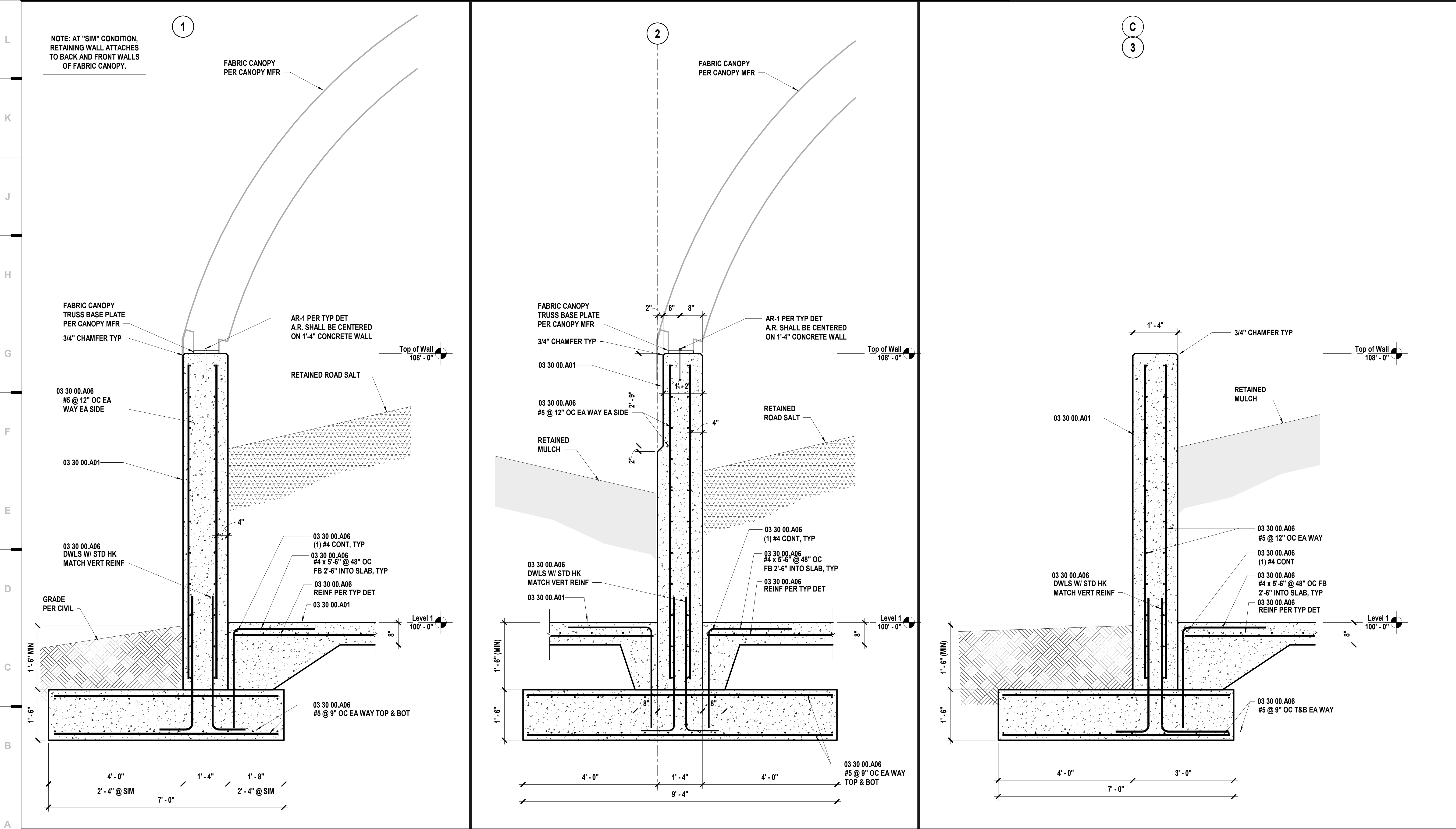
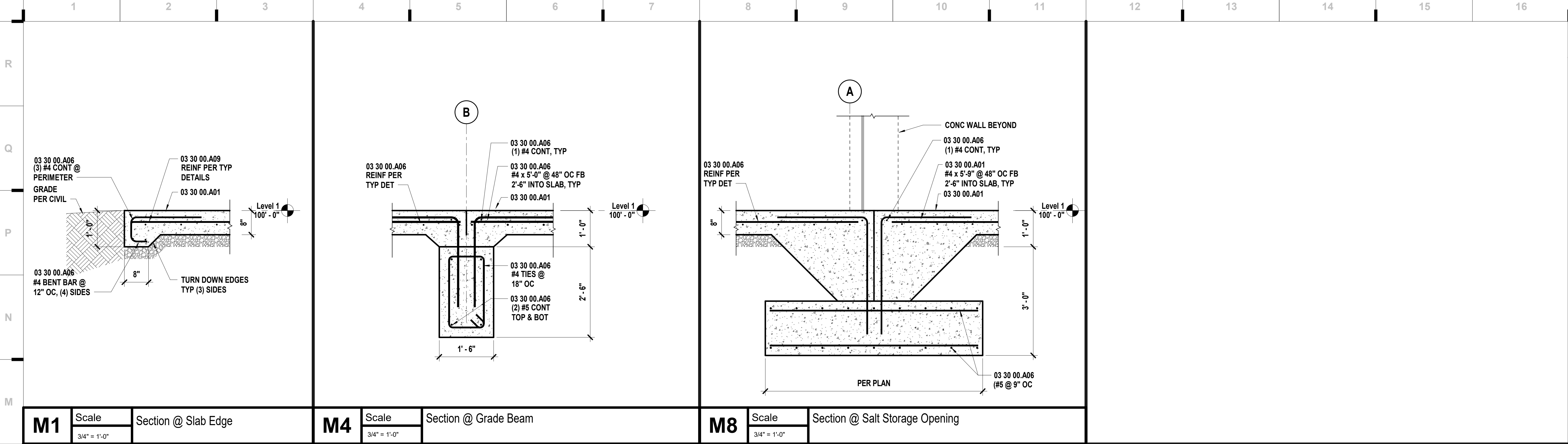
David A. Krell
PE-2021014172

The Professional Engineer seal affixed to this sheet applies only to the signature and shall not be used on any other project. The engineer is responsible for the accuracy of the design and shall be held responsible for any errors or omissions. The engineer is not responsible for any errors or omissions in the design or construction of the project.

JOB NO: 21022
DRAWN BY: TS
CHECKED BY: LR
DATE: 07/21/2023

S101

FOUNDATION PLAN



SHEET KEYNOTE LEGEND

03 30 00.A01 CAST-IN-PLACE CONCRETE
03 30 00.A06 REINFORCING BARS
03 30 00.A09 WELDED WIRE REINFORCEMENT

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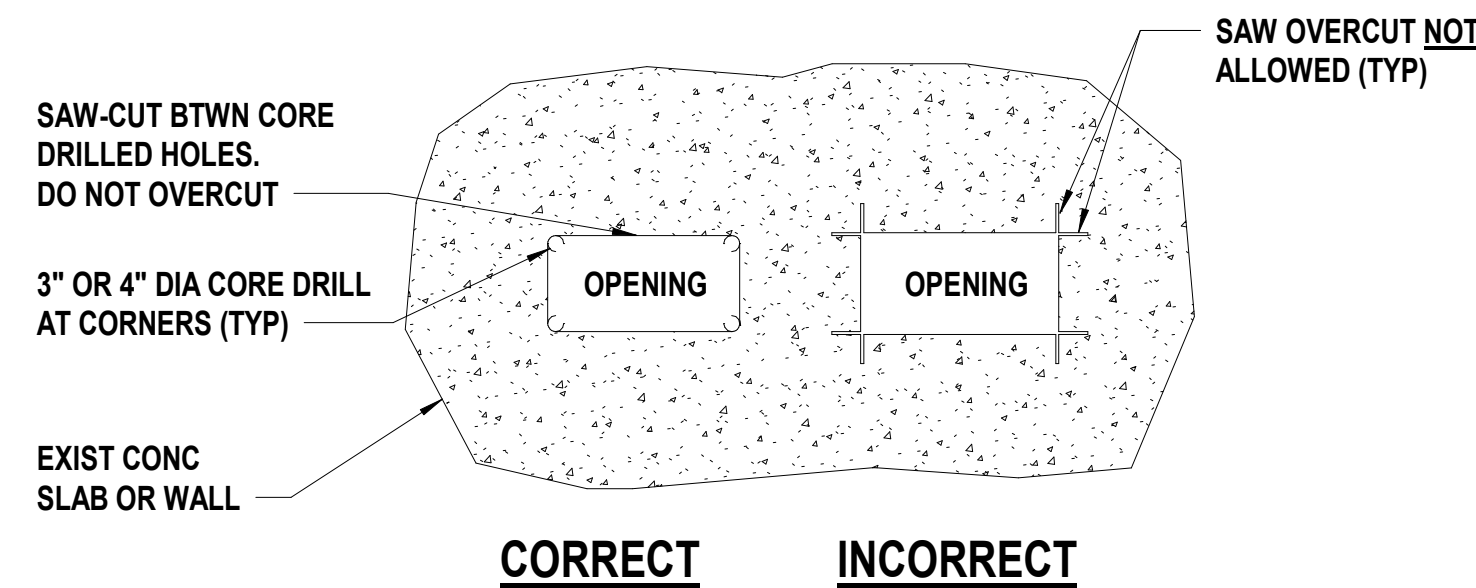
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DATE: 07/21/2023

S300

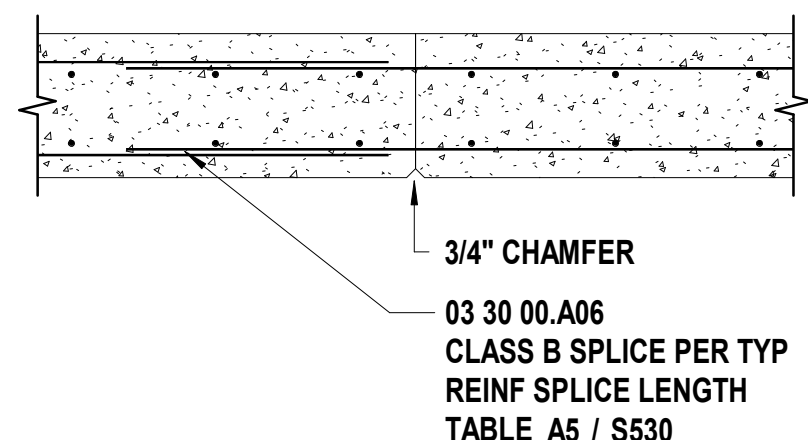
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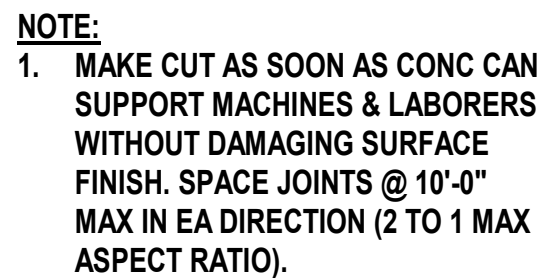
03 30 00.A01	CAST-IN-PLACE CONCRETE
03 30 00.A06	REINFORCING BARS



N13	Scale	Typical Concrete Slab & Wall Sawcut Detail
	NTS	



J9	Scale	Typical Concrete Wall Construction Joint
	NTS	



J13	Scale	Typical Slab on Grade Details
	NTS	

T-Intersection

Corner Intersection

NOTES:

1. APPLIES TO CONCRETE WALLS, FOUNDATIONS, ETC.
2. CORNER BARS TO MATCH SIZE & SPACING OF HORIZONTAL REINFORCING.
3. SPLICE LENGTH PER TYPICAL REINFORCING SPLICE LENGTH TABLE A5 / S530

CONC FTG PER PLAN

BENT BAR SPLICES TO MATCH LONGITUDINAL FTG REINF

2'-0" 2'-0"

LAP LENGTH

FTG REINF RE: SECTIONS (TYP)

CAST PVC WALL SLEEVE W/ MODULAR RUBBER SEALS BOTH ENDS AROUND PIPE OR CONDUIT. FILL SPACE BTWN SLEEVE AND CONCRETE WITH GROUT AND CAULK AT BOTH ENDS

1 1

6 MIN

PIPE OR CONDUIT BY OTHER DISCIPLINES

TOF PER PLAN

CONC FTG PER PLAN

FTG REINF RE: SECTIONS (TYP)

6 CLR MIN

6 CLR MIN

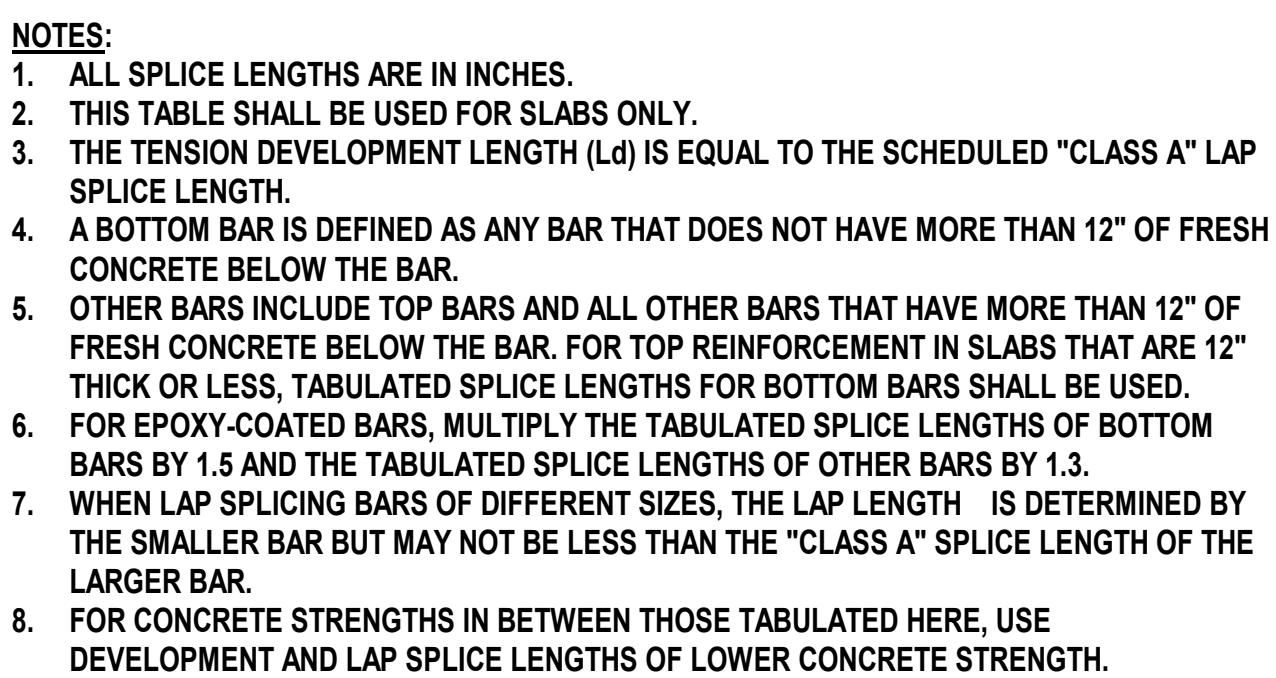
PIPE OR CONDUIT BY OTHER DISCIPLINES

THRU FTG

NOTE:

1. BELOW FOOTING PIPE AND CONDUIT ENCASEMENT ONLY REQUIRED WHEN WITHIN 6" OF FOOTING BEARING ELEVATION

E13	Scale	Typical Conduit/Pipe Penetration at Footing Detail
	NTS	



A9	Scale	Typical Footing Step
	NTS	



A13	Scale	Typical Reinforcing at Re-entrant Corner
	NTS	

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REVISIONS:		
#	Description	Date



David A. Krell

PE-2021014172

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CHECKED BY: LR
DATE: 07/21/2023

S530