

LEVEL C - QUALITY ASSURANCE			
MINIMUM TESTS			
Verification of f_m and f_{ACI} in accordance with Article 1.4 B prior to construction and for every 5,000 sq. ft (465 sq. m) during construction			
Verification of proportions of materials in premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site			
Verification of Slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Specification Article 1.5 B.1.b.3 for self-consolidating grout			
MINIMUM INSPECTION			
Inspection Task	FREQUENCY (a)		REFERENCE FOR CRITERIA
	Continuous	Periodic	TMS 402/ACI 530/ASCE 5 TMS 602/ACI 530.1/ASCE 6
1. Verify compliance with the approved submittals		X	Art. 1.5
2. Verify that the following are in compliance:			
a. Proportions of site-mixed mortar, grout and prestressing grout for bonded tendons		X	Art. 2.1, 2.6 A, 2.6 B, 2.6 C, 2.4 G.1.b
b. Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages		X	Sec. 6.1
c. Placement of masonry units and construction of mortar joints		X	Art. 3.3 B
d. Placement of reinforcement, connectors, and prestressing tendons and anchorages	X		Sec. 6.1, 6.2.1, 6.2.6, 6.2.7
e. Grout space prior to grouting	X		Art. 3.2 D, 3.2 F
f. Placement of grout and prestressing grout for bonded tendons	X		Art. 3.5, 3.6 C
g. Size and location of structural elements		X	Art. 3.3 F
h. Type, size, and location of anchors including other details of anchorage of masonry to structural members, frames, or other construction	X		Sec. 1.2.1(e), 6.1.5.3, 6.2.1
i. Welding of reinforcement	X		Sec. 8.1.6.7.2, 9.3.3.4 (c), 11.3.3.4(b)
j. Preparation, construction, and protection of masonry during cold weather (temperature below 40° F (4.4° C)) or hot weather (temperature above 90° F (32.2° C))		X	Art. 1.8 C, 1.8 D
k. Application and measurement of prestressing force	X		Art. 3.6 B
l. Placement of AAC masonry units and construction of thin-bed mortar joints	X		Art. 3.3 B.9, 3.3 F.1.b
m. Properties of thin-bed mortar for AAC masonry	X		Art. 2.1 C.1
5. Observe preparation of grout specimens, mortar specimens, and/or prisms		X	Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) Frequency refers to the frequency of inspection, which may be continuous during the task listed or periodically during the listed task, as defined in the table.

REQUIRED VERIFICATION & INSPECTION OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS	
VERIFICATION AND INSPECTION	FREQUENCY
1. Inspect drilling operations and maintain complete and accurate records for each element.	Continuous
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.	Continuous
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3.	

REQUIRED VERIFICATION & INSPECTION OF STRUCTURAL STEEL FOR WELDING PROCESS

Inspection Tasks Prior to Welding		
Inspection Tasks Prior to Welding	QUALITY CONTROL	QUALITY ASSURANCE
Welding procedure specifications (WPSs) available	P	P
Manufacturer certifications for welding consumables available	P	P
Material identification (type/grade)	O	O
Welder identification system ¹	O	O
Fit-up of groove welds (including joint geometry)		
• Joint preparation		
• Dimensions (alignment, root opening, root face, bevel)	O	O
• Cleanliness (condition of steel surfaces)		
• Tacking (tack weld quality and location)		
• Backing type and fit (if applicable)		
Configuration and finish of access holes	O	O
Fit-up of fillet welds		
• Dimensions (alignment, gaps at root)	O	O
• Cleanliness (condition of steel surfaces)		
• Tacking (tack weld quality and location)		
Check welding equipment	O	-
Inspection Tasks During Welding		
Inspection Tasks During Welding	QUALITY CONTROL	QUALITY ASSURANCE
Use of qualified welders	O	O
Control and handling of welding consumables		
• Packaging	O	O
• Exposure Control		
No welding over cracked tack welds	O	O
Environmental conditions		
• Wind speed within limits	O	O
• Precipitation and temperature		
WPS followed		
• Settings on welding equipment		
• Travel speed		
• Selected welding materials	O	O
• Shielding gas type/flow rate		
• Preheat applied		
• Interpass temperature maintained (min./max.)		
• Proper position (F, V, H, OH)		
Welding Techniques		
• Interpass and final cleaning	O	O
• Each pass within profile limitations		
• Each pass meets quality requirements		
Inspection Tasks After Welding		
Inspection Tasks After Welding	QUALITY CONTROL	QUALITY ASSURANCE
Welds cleaned	O	O
Size, length and location of welds	P	P
Welds meet visual acceptance criteria		
• Crack prohibition		
• Weld/base-metal fusion	P	P
• Crater cross section		
• Weld profiles		
• Weld size		
• Undercut		
• Porosity		
Arc strikes	P	P
k-area ²	P	P
Backing removed and weld tabs removed (if required)	P	P
Repair activities	P	P
Document acceptance or rejection of welded joint or member	P	P
Quality Control - Requirements on the part of the steel fabricator and erector		
Quality Assurance - Requirements on the part of the project owner's representative		
P - Perform these tasks for each weld joint or member.		
O - Observe these items on a random basis. Operations need not be delayed pending these inspections.		
- The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.		
- When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75mm) of the weld.		

REQUIRED VERIFICATION & INSPECTION OF STRUCTURAL STEEL FOR WELDING PROCESS

Inspection Tasks Prior to Bolting		
Inspection Tasks Prior to Bolting	QUALITY CONTROL	QUALITY ASSURANCE
Manufacturer's certifications available for fastener materials	O	P
Fasteners marked in accordance with ASTM requirements	O	O
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O
Proper bolting procedure selected for joint detail	O	O
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O
Proper storage provided for bolts, nuts, washers and other fastener components	O	O
Inspection Tasks During Bolting		
Inspection Tasks During Bolting	QUALITY CONTROL	QUALITY ASSURANCE
Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	O	O
Joint brought to the snug-tight condition prior to the pretensioning operation	O	O
Fastener component not turned by the wrench prevented from rotating	O	O
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O
Inspection Tasks After Bolting		
Inspection Tasks After Bolting	QUALITY CONTROL	QUALITY ASSURANCE
Document acceptance or rejection of bolted connections	P	P
Quality Control - Requirements on the part of the steel fabricator and erector		
Quality Assurance - Requirements on the part of the project owner's representative		
P - Perform these tasks for each weld joint or member.		
O - Observe these items on a random basis. Operations need not be delayed pending these inspections.		

Inspection of Steel Elements of Composite Construction Prior to Concrete Placement

Inspection of Steel Elements of Composite Construction Prior to Concrete Placement	QUALITY CONTROL	QUALITY ASSURANCE
Placement and installation of steel deck	P	P
Placement and installation of steel headed stud anchors	P	P
Document acceptance or rejection of steel elements	P	P
Quality Control - Requirements on the part of the steel fabricator and erector		
Quality Assurance - Requirements on the part of the project owner's representative		
P - Perform these tasks for each weld joint or member.		
O - Observe these items on a random basis. Operations need not be delayed pending these inspections.		

Special Inspection Additional Requirements:

- Additional items that need special inspection, in the opinion of the building official, shall be inspected.
- Coordination of Special Inspections with construction of the inspected items shall be the responsibility of the contractor.
- If Special Inspection is waived by the Authority having Jurisdiction, the general contractor shall provide the designer of record with a copy of the written exemption for each item that has been waived.
- The building official may perform inspections in addition to and/or concurrently with the Special Inspection's outlined in the tables.
- The general contractor is responsible for implementing a quality control program. The quality control program is in addition to the Special Inspection requirements and must meet or exceed those responsibilities required as part of the contract drawings and specifications.

REQUIRED VERIFICATION & INSPECTION OF SOILS

VERIFICATION AND INSPECTION	FREQUENCY
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Periodic
2. Verify excavations are extended to proper depth and have reached proper material.	Periodic
3. Perform classification and testing of compacted fill materials.	Periodic
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Continuous
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	Periodic

REQUIRED SPECIAL INSPECTION AND TESTS OF CONCRETE CONSTRUCTION

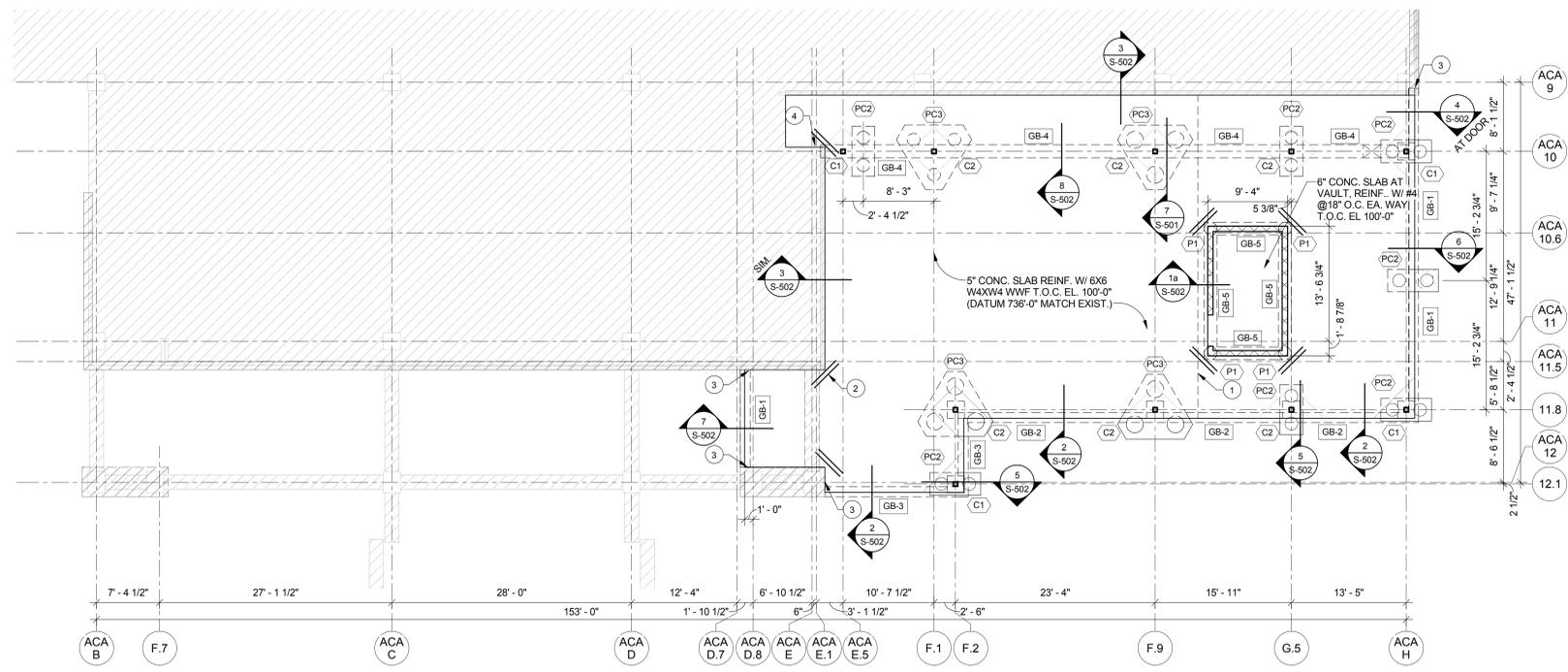
VERIFICATION AND INSPECTION	FREQUENCY	REFERENCED STANDARD	IBC REFERENCE
1. Inspect reinforcement, including prestressing tendons, and verify placement.	Periodic	ACI 318 Ch. 20, 25.2, 25.3, 26.5.1-26.5.3	1908.4
2. Reinforcing bar welding:			
a. Verify weldability of reinforcing bars other than ASTM A 706	Periodic	AWS D1.4 ACI 318: 26.5.4	
b. Inspect single-pass fillet welds, maximum 5/16"	Periodic		
c. Inspect all other welds.	Continuous		
3. Inspect anchors cast in concrete.	Periodic	ACI 318: 17.8.2	
4. Inspection of anchors post installed in hardened concrete members.			
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	Continuous	ACI 318: 17.8.2.4	
b. Mechanical anchors and adhesive anchors not defined in 4.a.	Periodic	ACI 318: 17.8.2	
5. Verifying use of required mix design.	Periodic	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Continuous	ASTM C172, ASTM C31, ACI 318: 26.4.5, 26.12	1908.10
7. Inspection of concrete and shotcrete placement for proper application techniques.	Continuous	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.	Periodic	ACI 318: 26.4.7-26.4.9	1908.9
9. Inspection of prestressed concrete for:			
a. Application of prestressing forces; and	Continuous	ACI 318: 26.9.2.1	
b. Grouting of bonded prestressing tendons.	Continuous	ACI 318: 26.9.2.3	
10. Inspect erection of precast concrete members.	Periodic	ACI 318: Ch. 26.8	
11. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	Periodic	ACI 318: 26.10.2	
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	Periodic	ACI 318: 26.10.1(b)	

REQUIRED VERIFICATION & INSPECTION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

VERIFICATION AND INSPECTION	FREQUENCY	REFERENCED STANDARD
1. Material verification of cold-formed steel deck:		
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	Periodic	Applicable ASTM material standards
b. Manufacturer's certified test reports.	Periodic	
2. Inspection of welding:		
a. Cold-formed steel deck:		
1) Floor and roof deck welds.	Periodic	AWS D1.3

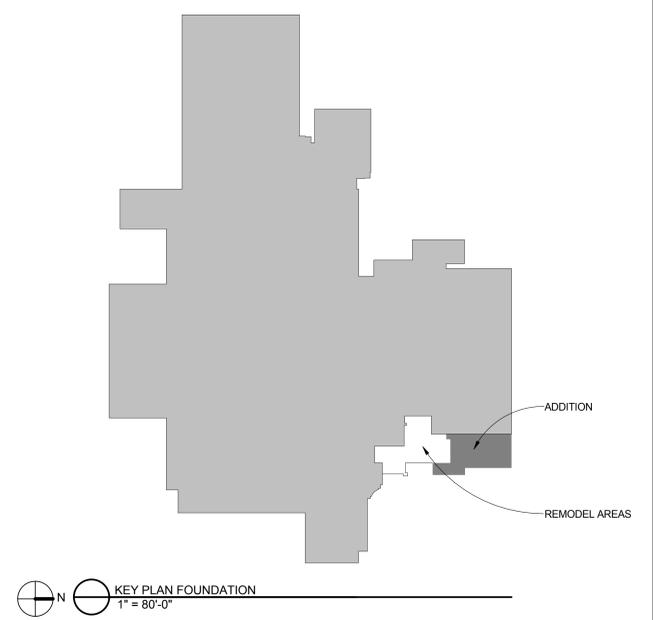
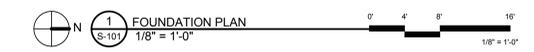
CONSULTANTS:		OFFEROR:	ARCHITECT/ENGINEERS:	Drawing Title IBC INSPECTION TABLES	Project Title EXPAND PHARMACY AND LOBBY	Project Number 589-334	Office of Construction and Facilities Management
Revisions:				Approved: Project Director	Building Number 1	Drawing Number S-003	
Date					Location COLUMBIA, MO	Dwg. of --	Department of Veterans Affairs
Date					Date 4/3/18	Checked CGH	

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- FOUNDATION PLAN NOTES:**
- SEE SHEETS S-001, S-002 AND S-003 FOR GENERAL STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS.
 - REFERENCE SHEET S-602 FOR AUGER CAST PILE DETAILS.
 - CENTER ALL PILE CAPS ON COLUMN GRID OR WALL INTERSECTIONS UNLESS NOTED OTHERWISE.
 - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION THAT MAY AFFECT THE PROJECT AND REPORT DISCREPANCIES TO THE ENGINEER. ANY DIMENSIONS AND ELEVATIONS THAT IMPACT NEW WORK SHALL BE VERIFIED PRIOR TO FABRICATION OF ANY MATERIAL. EXISTING BUILDING ELEMENTS THAT ARE TO BE ABANDONED THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.
 - CONTRACTOR SHALL SUBMIT JOINT LAYOUT FOR SLAB ON GRADE. REF. GENERAL NOTES. PROVIDE (2) #4 X 4'-0" IN SLAB AT ALL RE-ENTRANT CORNERS, DISCONTINUOUS SAWN JOINTS AND DISCONTINUOUS ISOLATION JOINTS AT COLUMNS.

- PLAN MARKS**
- AUGER CAST PILE, MINIMUM LOCATIONS SHOWN UNLESS APPROVED BY ENGINEER PRIOR TO CONSTRUCTION, REF. S-602
 - ⊕ DENOTES AUGER CAST PILE, REF. SHEET S-602
 - ⊕ DENOTES PILE CAP, REF. SHEET S-602
 - ▭ DENOTES GRADE BEAM, REF. GRADE BEAM SCHEDULE S-601
 - ⊕ DENOTES COLUMN MARKS, REF. COLUMN SCHEDULE S-601
 - ① G.C. TO COORDINATE 10" STORM SEWER WITH FOUNDATION PLACEMENT
 - ② (2) #4 X 4'-0", TYP.
 - ③ PROVIDE ADHESIVE DOWELS TO MATCH HORIZ. GRADE BEAM REINF. DRILL AND ADHERE TO EXIST. CONC. (6" MIN. EMBED)
 - ④ PROVIDE 1/2" MINIMUM EXPANSION JOINT BETWEEN NEW GRADE BEAM AND EXISTING CONCRETE WALL.



Revisions:	Date

CONSULTANTS:

OFFEROR:

ARCHITECT/ENGINEERS:

Drawing Title
FOUNDATION PLAN

Approved: Project Director

Project Title
EXPAND PHARMACY AND LOBBY

Project Number: **589-334**
 Building Number: **1**
 Drawing Number: **S-101**
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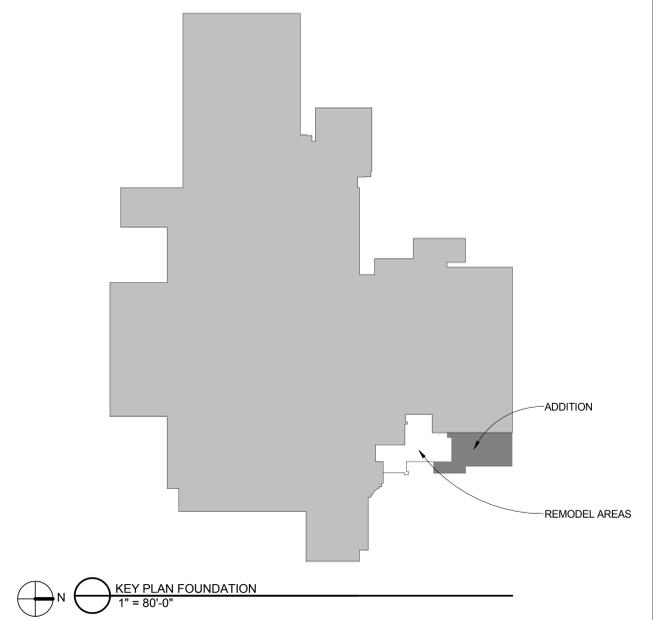
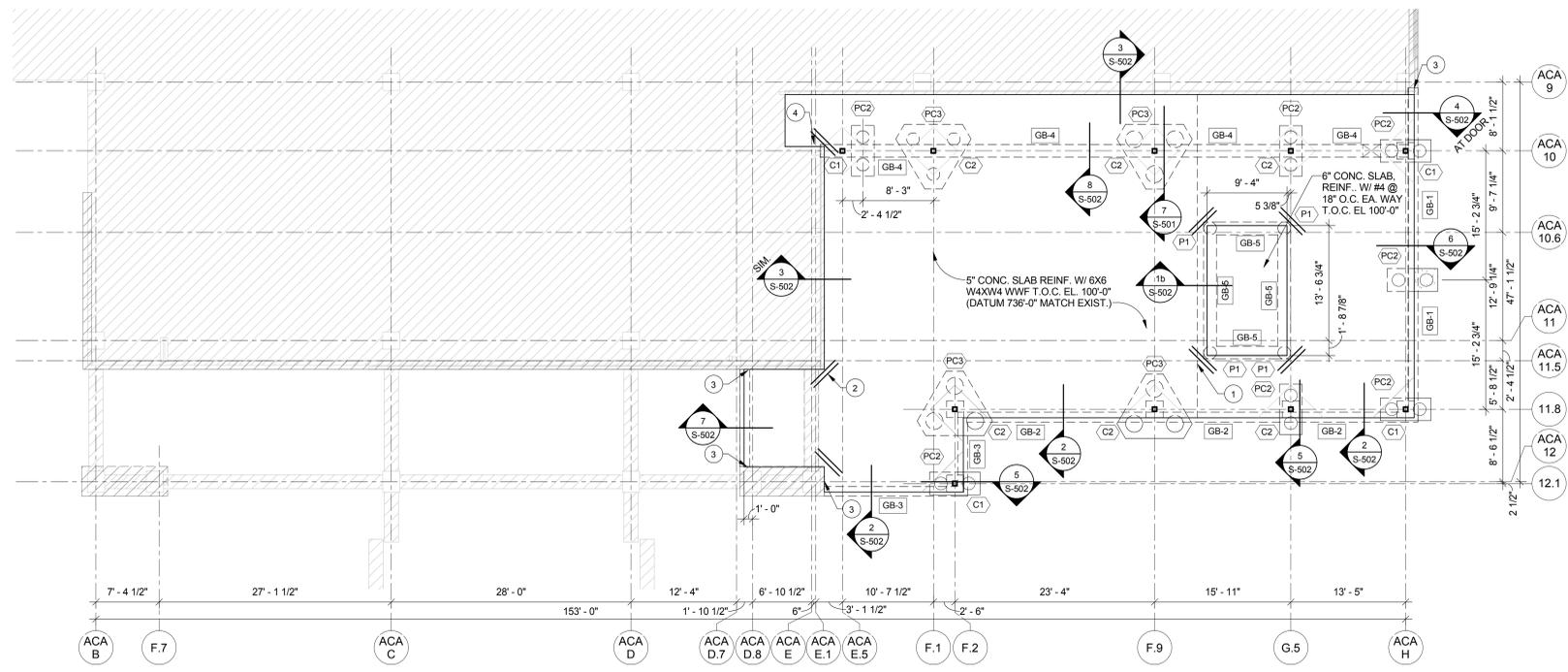
Location: COLUMBIA, MO
 Date: 4/3/18
 Checked: CGH
 Drawn: JTR

Office of Construction and Facilities Management
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 - Ⓜ DENOTES AUGER CAST PILE. REF. SHEET S-602
 - Ⓢ DENOTES PILE CAP. REF. SHEET S-602
 - Ⓜ DENOTES GRADE BEAM. REF. GRADE BEAM SCHEDULE S-601
 - Ⓢ DENOTES COLUMN MARKS. REF. COLUMN SCHEDULE S-601
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Revisions:	Date

CONSULTANTS:

OFFEROR:

ARCHITECT/ENGINEERS:

Drawing Title
FOUNDATION PLAN - BID DEDUCT #2

Approved: Project Director

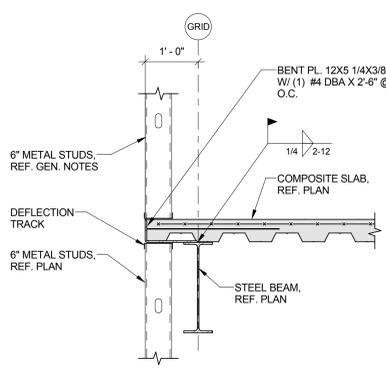
Project Title
EXPAND PHARMACY AND LOBBY

Project Number: 589-334
 Building Number: 1
 Drawing Number: S-101.2
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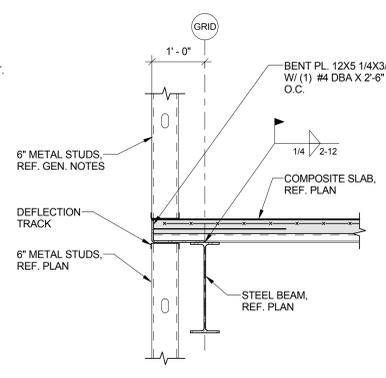
Location: COLUMBIA, MO
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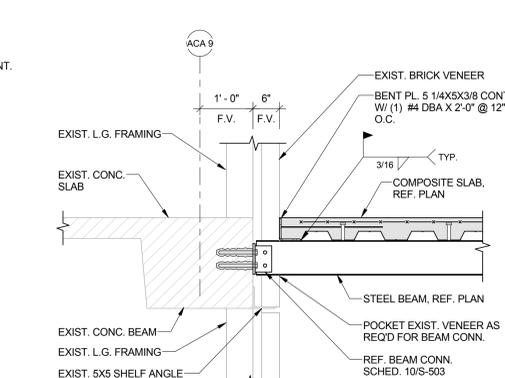
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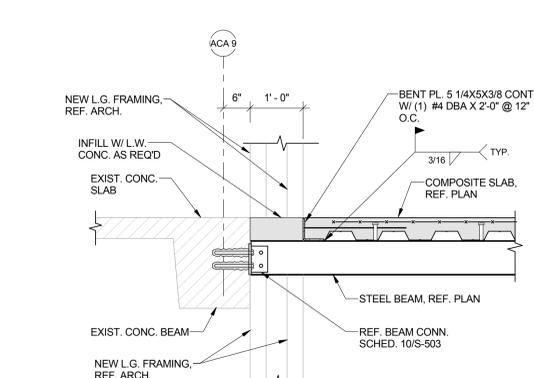
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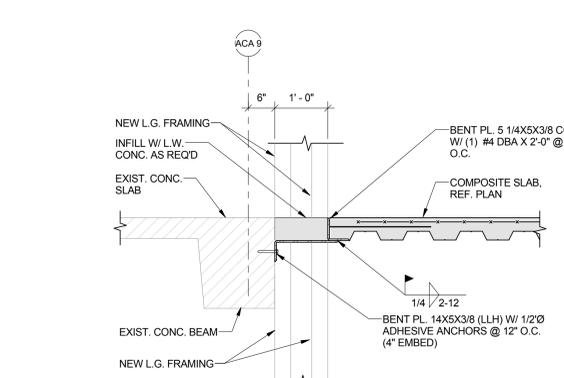
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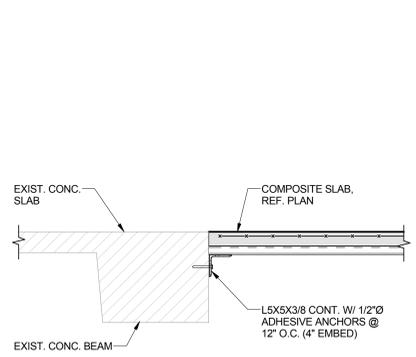
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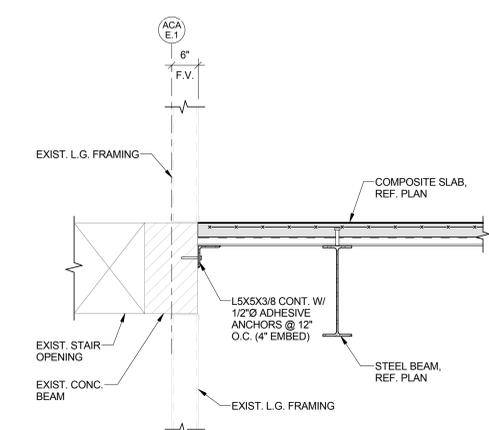
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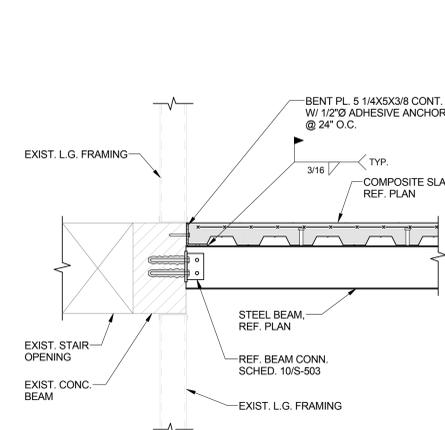
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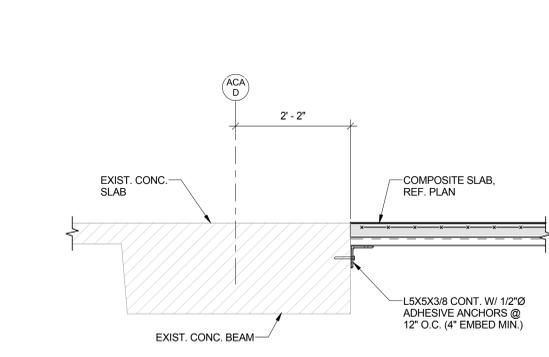
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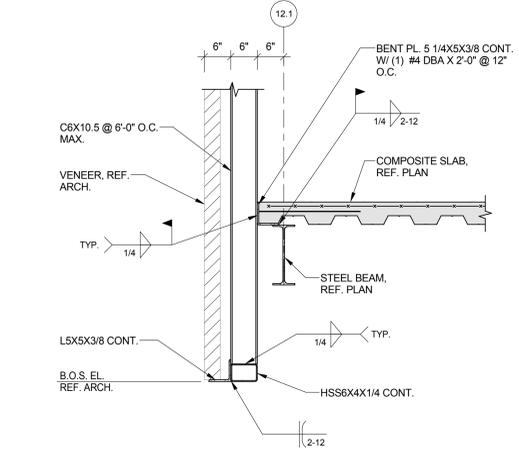
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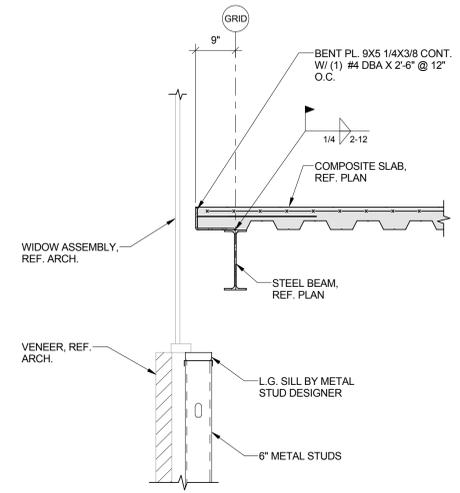
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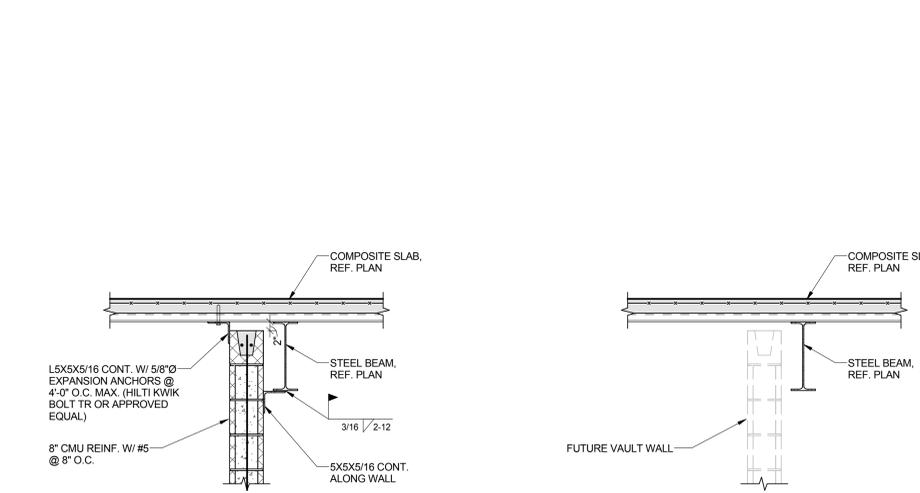
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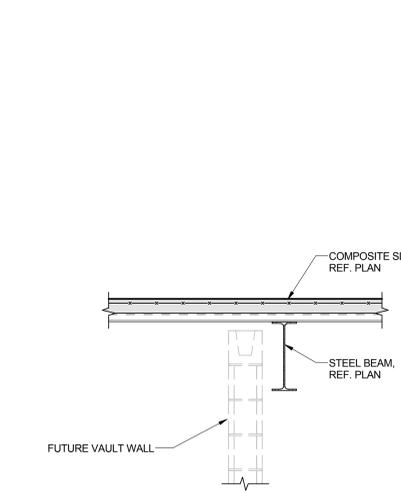
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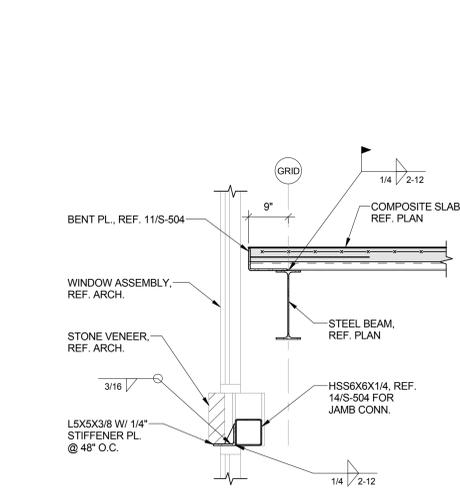
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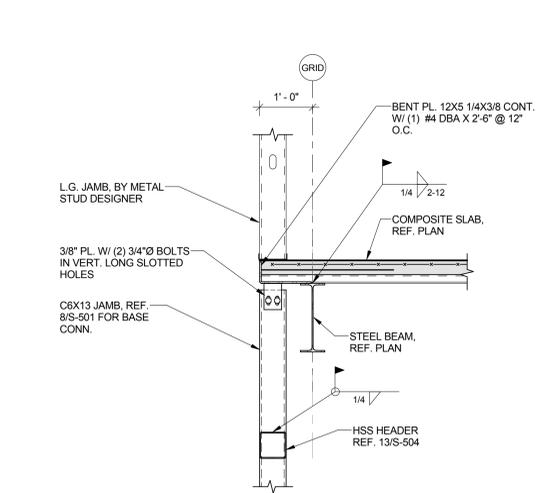
12a FRAMING SECTION
 S-504 3/4" = 1'-0"



12b FRAMING SECTION - BID DEDUCT #2
 S-504 3/4" = 1'-0"



13 FRAMING SECTION
 S-504 3/4" = 1'-0"



14 FRAMING SECTION
 S-504 3/4" = 1'-0"

Revisions:	Date

CONSULTANTS:

OFFEROR:


ARCHITECT/ENGINEERS:


Drawing Title
FRAMING DETAILS
 Approved: Project Director

Project Title
EXPAND PHARMACY AND LOBBY
 Project Number
589-334
 Building Number
1
 Drawing Number
S-504
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