

ADDENDUM NUMBER: 5
PROJECT: **UNC Charlotte Residence Hall Phase XIV - Early Site Packages**

DATE: **March 4, 2015**
OWNER: **UNC Charlotte**
ARCHITECT: **FWA Group**

NOTICE TO BIDDERS:

This addendum is issued prior to receipt of bids, proposals, and its contents do hereby become a part of the pricing documents for the above referenced project.

All subcontractor bidders are responsible for assuring that their subcontractors and vendors are properly apprised of the contents of this Addendum.

All information contained in this Addendum supersedes and takes precedence over any conflicting information in the original pricing documents.

All bidders must acknowledge receipt of this Addendum in the space provided on the Form of Proposal for their bid package.

GENERAL REVISIONS TO BID INFORMATION

- 1 Pre-Bid RFI #1 Responses dated 3/4/2015
- 2 Pre-Bid RFI #2 Responses dated 3/4/2015
- 3 Pre-Bid RFI #3 Responses dated 3/4/2015

REVISIONS TO DESIGN DOCUMENTS

- 1 Refer to Architect Addendum Number Two (2) dated February 5, 2015 - Attached.
 - 2 Refer to Architect Addendum Number Two AutoCAD (.dwg) files - Attached.
-

END OF ADDENDUM



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Early Site Package Pre-Bid RFI #1

Project: UNCC Phase XIV Residence Hall

To: Early Site Package Bidders

Prepared By: Wyatt Starnes

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Email: wstarnes@rogersbuilders.com

Date: 3/4/2015 **Includes FWA, BSDE & Optima Response 2/5/2015**

Questions & Clarifications	
1	Exterior pads and site furnishings: Civil sheet C3.10 indicates exterior MEP pads, site furnishings (bike racks, trash cans, etc.). Please verify if any work associated with these items is to be included in BP03C or if they will be by other/ future bid packages. For example BP02H item A02 references equipment pads and foundations.
Answer:	Rodgers Response: All MEP pads and site furnishings will be part of a future package, not BP03C. BP02H will be responsible for any pads associated with their early site package scope of work.
2	Site footings and walls: BP03C item B02 indicates concrete site footings and walls are to be included which are shown on sheet S103. Is BP02A responsible for the backfill, drain board and foundation drainage at these site walls shown on S103 (reference BP02A item B03.03 and B13)? Details at site walls S305 reference "dampproofing" and drain board at the site walls and refer to architectural details. There are no architectural details at site walls. Please verify if BP03C is responsible for dampproofing of the cast in place site walls.
Answer:	Rodgers Response: BP03C is responsible for all drainage board, waterproofing, dampproofing, and foundation drainage for entire project including both building and site walls. BP03C is responsible for all backfill of the interior foundations and walls. BP02A is responsible for all exterior backfill of building and both sides of site retaining wall systems. BP02A is responsible for establishing the subgrade at all slab on grade locations (inclusive of gridline 14 basement to slab on grade transition).
3	Site wall at existing patio: It appears that the site wall on S103 next to Residence Hall Dining (plan left) will be installed flush against an existing brick patio to remain. Civil sheet C2.10 indicates demolition of existing conditions up to the location of the new wall. However, it does not indicate that any additional area of pavers will have to be removed and replaced in order to install the new footings and wall at this location. Please verify the existing pavers/slab in this area will be removed and replaced by a package other than 03C in order for the footings and wall to be installed by BP03C.
Answer:	Rodgers Response: 02A is responsible for removing sufficient area of the raised brick terrace to allow for proper installation of the adjacent new concrete foundation and wall. 02A shall remove this portion of the terrace to maintain a stabilized working environment. 02A is responsible for salvaging any existing brick pavers removed. All salvaged pavers shall be palletized and located on the site at the direction of the CM. Salvaged brick pavers to be re-installed by others.
4	Poured in place stairs: Is BP03C to include poured in place stairs that are shown at three of the site wall locations? And is BP03C responsible for backfilling the site stairs per BP03C item B01 or will this be by BP02A?
Answer:	Rodgers Response: BP03C is responsible for the poured in place stairs that are shown as well as the backfilling of such.
5	Breezeway finish surface: What is the finish surface at grade at the breezeway between 7 & 10 line S201-S? Civil sheet C3.10 does not indicate this. Please verify pavers or slab is by other/future bid packages and not BP03C.
Answer:	FWA Response: Breezeway finish at grade will be pedestrian load brick pavers provided in pending Building Package.
6	Mass backfill: Please verify if BP03C is responsible for mass backfill along basement retaining walls on structural sheet S101-S between column lines 13 and 14. This is within the building footprint, but BP02A is to perform all of the mass backfill around all other basement walls on the exterior side. Is BP02A item B03.02 possibly referring to this area?
Answer:	Rodgers Response: Per RFI#2 answer above, BP02A is responsible for this backfill.
7	Please provide top of footing and top of wall at the entry steps closest to the South Building breezeway (plan south S103).
Answer:	BSDE Response: This information has been added to the drawings. See FWA Addendum #02.

8	BP03C bid package scope includes all below grade waterproofing. BP02A scope item B13 includes foundation drainage and drain board outside the building footprint. Please verify that BP03C will provide drain board as part of waterproofing systems at the basement foundation walls per details A500 with the exception of the drain board in detail A4/A500 which is shown on the exterior side of the masonry and therefore would be provided by 02A.
Answer:	Rodgers Response: BP03C will provide all below grade waterproofing systems including detail A4/A500.
9	BP03C items B12 & C14 reference MEP and housekeeping pads. Should BP03C only include the pads currently indicated on the structural drawings within the building as there are no MEP drawings to indicate what other pads may be required inside the building? Also, confirm exterior pads are not part of the 03C scope.
Answer:	Rodgers Response: See response for RFI #1.
10	Please verify that rigid insulation is not required below slab on grade perimeter? This is not indicated in the drawings, but is listed in BP03C item B13 "as required"
Answer:	FWA Response: Below slab rigid insulation is not required per the 2012 NC Energy Conservation Code, Chapter 5.
11	Please verify that 1" rigid insulation on face of cast in place wall in section A3/A500 will be furnished and installed by another bid package other than 03C.
Answer:	FWA Response: Insulation in cavity wall construction will be in future Building Package.
12	BP03C item J03 indicates that the interior of the elevator pits are to receive waterproofing. Please verify product to be used for this condition.
Answer:	FWA Response: Interior waterproofing is not required. The exterior walls of the Central and South Elevator pits are to receive waterproofing per specification 07 13 26 "Self-Adhering Sheet Waterproofing" and as indicated on A2/A710 as part of BP03C.
13	S101-N indicates section 18/S304 at North Elevator Pit- should this be 20/S304?
Answer:	BSDE Response: This correction has been made to the drawings. See FWA Addendum #02.
14	Section 2/S303 indicates the top of a foundation wall below the first floor finish floor- please confirm this should be basement slab elevation.
Answer:	BSDE Response: Details on 01 & 02 on S303 have been revised to eliminate the reference to "first floor". See FWA Addendum #02.
15	Please verify height of central elevator pit walls on S101-N. Section detail 4/S302 shows max height of 6'-6" and does not show a concrete wall extending above slab on grade. However, S201-N indicates a CB1 concrete beam over elevator door at level 1 and the top of adjacent P4A piers are at 731.42. Please confirm if the elevator pit walls should extend to level 1 and provide any required details.
Answer:	BSDE Response: All walls around this elevator extend up to the underside of the first floor. Detail 07/S304 has been added to address this condition. See FWA Addendum #02.
16	Addendum #1, sheet S101-N removed column surrounds in slab leave out areas. Please verify these will not be required in base bid or Alternate #1.
Answer:	FWA Response: Exposed structural columns in Alternate Storage #033 will be protected with medium density SFRM in the future Building Package.
17	Please verify if all basement walls are to receive a rubbed finish per BP 03C item GC11. While these basement walls are exposed to view, these are mechanical and storage rooms therefore it is unclear if these are considered occupied. The specifications only call for class A finish and do not provide a rubbed finish specification.
Answer:	BSDE Response: There are no rubbed finish formed concrete surfaces. All basement walls, including those in mechanical rooms and the Alternate Storage [033] space of the north wing shall be finished with the Smooth finish per 033000/3.10/B. For purposes of definition, any formed concrete surface that can be accessed in the finished building, whether the space is occupied or not, shall be considered as "exposed to public view"
18	BP03C scope item C06 indicates stair nosings. Please verify where these are required- possibly at basement cast in place steps only? Is there a specific product/ type required? Also, verify if pan stairs require a nosing by 03C.
Answer:	Rodgers Response: Note that all stair nosings require a contrasting stripe on the nosing per ADA. This is an embedded aluminum oxide strip at cast concrete in BP03C. Future bid packages (not BP03C) will require a painted stripe on sealed concrete metal pan stairs, Schluter nosing at tiled stairs, and integral nosing if Alternate #4 (rubber riser/tread) is accepted.
19	Please verify the only location requiring dry shake floor hardener is Trash Room 038 per specification 033000 section 3.11.F.
Answer:	FWA Response: Dry-shake Floor Hardener per specification 03 30 00 "Cast-In-Place Concrete" is to be applied in the basement Trash Room #038 only as part of BP03C.
20	BP03C item C04 lists curing/sealing and hardening compounds. All interior slabs will be wet cured. Also specification 033000 2.10.A lists Liquid floor treatments- hardeners. Is a liquid floor harder required to be installed by 03C and if so please verify specific location? As there is not a finish schedule, we cannot verify where finish sealers/ hardeners will be required. Please advise what if anything is to be included for this.
Answer:	FWA & Rodgers Response: Penetrating Liquid Floor Treatment per specification 03 30 00 "Cast-In-Place Concrete" is to be provided at all exposed concrete basement floors and exposed concrete floors in the following rooms on Levels 1 through 5: FCU, Storage, Janitor, Electrical, Trash, Mechanical, I.T., and Stair Landings & Treads (base bid).

21	BP03C item E01 states we are to include rebar for masonry site walls in addition to the building masonry. Site walls are indicated on sheet S305 and do not indicate any rebar in masonry. However, detail 10/S3.05 which is part of Alternate 14 indicates block that may require rebar but this is not indicated. Please verify no rebar for base bid masonry site walls is required and what to include for Alternate 14.
Answer:	Rodgers Response: BP03C shall not be responsible for masonry rebar as stated in E01, however, BP03C shall provide any dowel outs from concrete assemblies into masonry assemblies as detailed on documents.
22	Please confirm that typical SOG does not require welded wire fabric throughout (in addition to fiber mesh and other reinforcing indicated in specific details).
Answer:	BSDE Response: Typical slabs-on-grade do not require WWF. However, construction joints in slabs do utilize WWF as detailed on 06/S301.
23	Please verify if elevated slabs on metal deck over steel structure require welded wire fabric (in addition to fiber mesh). If so please verify type. Reference typical sections 1, 3, & 4/S401 which indicate WWF but we did not see a call out for type.
Answer:	BSDE Response: Typical slabs <u>over structural steel framing</u> do not require WWF. However, construction joints in slabs do utilize WWF as detailed on 03/S402. NOTE: Elevated slabs supported by CFS framing (using dovetail deck) DO REQUIRE WWF as indicated. We have removed the WWF depiction from details 03, 04, 06, 07, 10, & 15 on S401. The WWF in detail 01/S401 is correct. See FWA Addendum #02.
24	Section 2/S303 at 27 & 28 line on sheets 203-N, 204-N, and 205-N does not appear to be correct. Please verify call out.
Answer:	BSDE Response: The reference has been revised to read 02/S401 at these locations. See FWA Addendum #02.
25	Detail 5/S403- please verify shear wall anchor welded to steel are by 05A
Answer:	BSDE Response: This shear wall anchor should be part of the structural steel fabrication.
26	Detail 17 & 18/S603- please verify shear wall hold down plates and anchors are furnished by 05A or metal framing contractor and are to be cast into walls by 03C.
Answer:	Rodgers Response: Shear wall hold down plates, anchor rods, and nuts are provided by 05A. BP03C is responsible for slab blockout, installation of plates, anchor rods, nuts, and grouting.
27	BP03C item lists soil poisoning under slabs on grade. Will a soil poisoning specification be provided?
Answer:	FWA & BSDE Response: Soil treatment with termiticides is not included in the construction documents.
28	Refer to Bid Package 02H- Site Electrical. Paragraph A02 – Calls for Equipment Pads and Foundations. We understand that we have to provide Pads for Utility Transformers as per detail#8 on dwg#E001. What about foundations- as we do not see any foundations being provided by EC. Please clarify? If no foundations are by EC then please delete it from our scope.
Answer:	Rodgers Response: No foundations are required for utility pads.
29	Refer to Bid Package 02H- Site Electrical. Paragraph A07 – This bid package 02H does not install/lay/pull any New Telecom or Electrical cabling work. So the question of terminating any wires for future electrical package including testing does not arise. As such it is suggested that this Paragraph should be deleted from our package. Please clarify?
Answer:	Rodgers Response: The last sentence of A07 shall be removed as this is not applicable to the Early Site Package.
30	Dwg#E-010 plan note#1, please provide number and size of existing MV Conductors/ Telecom Cables to be removed from existing Power and Telecom duct banks between Man Hole 31 and 31A that were feeding Sanford Hall & Moore Hall. Also remove cables between MH31 to Existing Switch 31, clarify if these are live or redundant cables? Please clarify and provide details on number and size of cables/conduits?
Answer:	Optima Response: Medium voltage conductors should be based on (6)#2(15KV) cables and (2)#6 THWN cables. Sump pump conductors based on 3#8 cables. Cables from manhole 31A to switch 31 are the same cables to be removed (existing abandoned cables that previously fed Moore and Sanford Hall). No live medium voltage conductors. Existing conduits are based on 4". Existing site lighting branch circuits should be based on 1" conduit and 3#8 conductors minimum.
31	Dwg#E-001-Conduit rough in diagram at bottom of the page. Please clarify who is doing the Pad for Generator. If by Early site package please provide size and details? Please clarify?
Answer:	Rodgers Response: Generator pad will be part of future Bid Package.
32	Should each subcontractor be responsible for cutting and patching of existing roads/pavements associated with their bid package.
Answer:	Rodgers Response: Yes, each Bid Package shall examine the plans, existing site and be responsible for cutting and patching of the work to complete the work of their Bid Package.
33	Specifications call for duct bank below roads to be reinforced. Please provide a detail on the reinforced duct bank.
Answer:	Optima Response: For the reinforced duct bank portion, provide (8) #4 rebar spaced evenly with (4) located above and (4) located below the conduit.
34	Can you please provide CAD files of the grading plan to assist in our estimate.
Answer:	BSDE Response: A grading CAD file has been provided to Rodgers in FWA Addendum #02 for distribution as they deem appropriate. This file is not part of the contract documents and all information contained therein is for reference only.
35	B08- Will there be any room to stockpile footing spoils used for backfill?
Answer:	Rodgers Response: Due to the site limitations, stock piling of footing spoils is not achievable however limited spoils can be used for foundation backfill if can be coordinated within the building footprint and does not affect flow of work.

36	BP 03C item C03- Would this not fall under the steel package?
Answer:	Rodgers Response: BP03C will be required to install these items provided by BP05A.
37	BP03C E01- Can the mason provide his own reinforcing as to not cause conflict with quantities?
Answer:	Rodgers Response: See response to RFI #22
38	Bid Package 02A specific summary of work L. Mechanical Piping (L01-L04) describes mechanical piping for possible HW/CW piping construction. There is not a spot on the bid breakdown sheet for this work. Does the 02A Bid package need to include this work? If so please add to bid breakdown sheet.
Answer:	Rodgers Response: BP02A is responsible for this scope of work. Please provide breakout cost on Specific Summary of Work cost breakdown sheet and label "Section 14: Mechanical Piping".
39	Bid package 02A breakdown sheet line item 1.03 Engineering / Design Services. What is to be included in this line item?
Answer:	Rodgers Response: This is applicable to any Independent Field Engineering or Design Services associated with this Bid
40	Who is responsible for the concrete retaining walls and guardrail as shown on plan page C3.10?
Answer:	Rodgers Response: Bid Package 03A shall be responsible for the concrete retaining walls. Guardrails (railings) shall be by future Bid Package.
41	Bid Breakdown sheet line item 6.05 & 7.06 look to show the same foundation drains? Is this two separate line items? If so please give detail description of the two line items.
Answer:	Rodgers Response: This is the same scope and not intended to be listed twice. Bidders shall utilize 7.06 location for bid breakdown purposes.
42	Do not see the foundation drains on the Civil plans. What plan page do we need to refer to for these foundation drains?
Answer:	BSDE Response: Primary Foundation drainage plans are shown on sheet S102-N & S102-S. Note that civil drawing C5.10 must be referred to for tie ins. Also note that foundation drainage is called for behind site walls on sheet S103
43	For Bid Package 02A, do we include all 4"/6"/8" Sanitary Sewer lines in bid breakdown 8.01? Or would you like to add more line items?
Answer:	Rodgers Response: Please provide the LF dimension for each size in the space at 9.01.
44	Do we include the 2" irrigation pipe in line item 9.01? Or would you like to add more line items for this work?
Answer:	Rodgers Response: This shall be included in Bid Package 02A and can be a part of the 9.01 pricing breakdown.
45	For Bid Package 02A, do we include the 6" fire line piping in line item 10.01? Or would you like to add more line items for this work?
Answer:	Rodgers Response: This shall be included in Bid Package 02A and can be a part of the 10.01 pricing breakdown.
46	Do not see a fire hydrant assembly on the civil drawings as call out in line item 10.04? Do you want to delete this line item.
Answer:	Rodgers Response: The project does not have a new fire hydrant and line item is not applicable.
47	Where do you want us to put the 6" FDC line and FDC on the bid breakdown sheet?
Answer:	Rodgers Response: This shall be included in Bid Package 02A and can be a part of the 10.01 pricing breakdown.
48	Who is responsible for cutting of concrete Pavements, Asphalt Roads and shrubbery if any? What is Bid Package 02H- Site Electrical Package responsibility? Please clarify?
Answer:	Rodgers Response: Bid Package 02A shall be responsible for all site demolition as indicated in BP 02A and as shown in the site demolition drawings. Bid Package 02H shall be responsible for the demolition of impediments including concrete/asphalt and its replacement to complete the scope of work and as indicated in RFI #38.
49	Who is responsible for patching of concrete Pavements, Asphalt for Roads and replacing grass and landscaping coming in way of duct banks under 02H Site Electrical package. Is it by the 02A Site Work Contractor? What is Bid Package 02H- Site Electrical Package responsibility? Please clarify?
Answer:	Rodgers Response: See RFI #38 and 70 for clarity.
50	Refer to Bid Package 02H- Site Electrical – Specific Summary of work. Paragraph B43 and B44 – Looks like the scope of work called for in these two paragraphs are not applicable to Early Site Package (Electrical). Since there is no blocking or backing, work in roof area by EC then please delete it from our scope. Please clarify?
Answer:	Rodgers Response: B44 of Bid Package 02H is not applicable however B43 shall apply to backing, grounding, support of own work.
51	Refer to dwg#E020. There is no drainage shown for new manholes. Please mark the same and specify size of conduits and how and where (location) to drop these drainages.
Answer:	FWA Response: Please see detail #13/E-001 showing the piping size. Routing locations of these pipes are shown on the respective civil plan.



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Early Site Package Pre-Bid RFI #2

Project: UNCC Phase XIV Residence Hall

To: Early Site Package Bidders

Prepared By: Wyatt Starnes

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Date: 3/4/2015 **Includes FWA, BSDE & Optima Response 2/16/2015**

Questions & Clarifications	
1	There are no details showing the 6x6x5/16" steel tube posts base and cap plates which attached to the light gauge metal framing floor plans. Are they Similar to the shear wall hold down at steel column detail 10, on drawing S403?
Answer:	BSDE RESPONSE: As of FWA Addendum #2 (dated 2015-02-05) all HSS posts have their top and bottom conditions documented. Refer to the references on the various plan sheets for details applicable to each location. Detail 10/S403 is only applicable to shear wall hold down locations as documented on sheets S211 and S213 and is not associated with HSS posts
2	Regarding the structural steel, architectural elevator sections A2/A710 and A2/A712 show elevator hoist beam but no size. The structural drawings do not show hoist beams and guide rail supports. Please provide locations and size of hoist beams and guide rail supports.
Answer:	BSDE RESPONSE: As of FWA Addendum #2 (dated 2015-02-05) hoist beams have been shown on the structural plans at all three elevator locations. Based on floor-to-floor heights, it is expected that elevator guide rails will be anchored to the slab edges and that additional guide rail supports between floors will not be required for this project.
3	Regarding the structural steel scope, are there any steel tubes or overhead door channel steel required for overhead doors, typical at exterior trash door on elevation C2 on A202? If required, please provide locations and size of overhead door channel steel.
Answer:	FWA RESPONSE: No additional structural steel is required for the overhead doors.
4	There are no posts shown on drawing S202-S at grids C and F along 13 to support beams for the 3rd floor, drawing S203-S. Please clarify.
Answer:	BSDE RESPONSE: As of Addendum #2 (dated 2015-02-05) these posts have been shown.
5	Regarding the structural steel scope, do the metal deck shop drawings need to be signed and sealed by an engineer?
Answer:	BSDE RESPONSE: No they do not.



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Early Site Package Pre-Bid RFI #3

Project: UNCC Phase XIV Residence Hall

To: Early Site Package Bidders

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Date: 3/4/2015 **Includes FWA, BSDE & Optima Response 2/17/2015**

Questions & Clarifications	
1	A subcontractor has been contacted by the manufacturer of Vapor Lock 20/20 and they have provided the attached substitution request for their product to be considered in lieu of the specified Barrier One product. It appears their product meets the requirements with the exception of the life-time warranty (see attached product literature). Please verify if this product is acceptable.
Answer:	FWA RESPONSE: FWA Response: 1) Based on the question it is clear that this substitution request is based on the 03 05 10 CONCRETE MOISTURE VAPOR REDUCTION ADMIXTURE specification dated 12/1/2014 and not the revised specification dated 2/05/2015 issued in the FWA Addendum #2. 2) The attached CSI Substitution Request form indicates "(After the Bidding/Negotiating Phase)". The Early Site Package Bid Date is currently February 25, 2015. 3) The revised specification does not have a Basis-of-Design. 4) The Vapor Lock 20/20 Warranty is for a period of ten years in lieu of the specified "Life of the concrete". Based on the above noted items this product is not accepted as being compliant with the current specification.
2	Please verify Alternate 1 should include all slab on grade column diamonds in the slab leave out area and that these diamonds are not part of the base bid.
Answer:	NO, All columns diamonds in all areas should be included in the base bid regardless of whether or not the adjoining slab is part of the base bid. This serves several purposes: 1.) The column base plates and anchor bolts are protected by the diamond. 2.)The slab area around the columns can be left in a prepared, smooth, level condition with the stone and vapor barrier in place as required by the base bid. Please revise or clarify the bid packages to indicate all column diamonds are part of the base bid.
3	Since the basement walls are not designed as retaining walls and require bracing, can the engineer provide anticipated lateral loads on these walls due to perimeter backfill until the structure is in place?
Answer:	The lateral load on the wall is 60 pounds per cubic foot of equivalent fluid pressure per Foundation note #4 on sheet S001. We can not provide more exact loads due to the wide variety of potential conditions. The design of any bracing will have to be done for the specific conditions imposed which include such things as: backfill height at time of bracing removal, height of brace point on wall, spacing and angle of braces, etc.



ADDENDUM NUMBER TWO (2)

DATE: February 5, 2015

PROJECT: Resident Hall Phase XIV
University of North Carolina at Charlotte
Early Site Package
SCO ID# 12-10117-03C
Code 41026 Item 307

**FWA PROJECT
NUMBER:** 2420.02.3

This Addendum Number Two (2) forms a part of the Contract Documents, clarifies and/or modifies the original Documents for the above referenced project and subsequent Addenda, and shall take precedence over the original Contract Documents dated December 1, 2014 and all subsequent Addenda issued by The FWA Group.

This Addendum consists of two (2) pages of written text, four (5) specification sections, twenty four (24) drawings and one (1) CAD file.

CHANGES TO PRIOR ADDENDA:

- NA

CHANGES TO PROCUREMENT AND CONTRACTING REQUIREMENTS:

Add the following

00 31 00 AVAILABLE PROJECT INFORMATION

1. CAD Documentation
 - a. A CAD file listed below, representing the site grading, is made available to the CM for distribution to bidders and contractors as they deem necessary. It is not part of the Contract Documents and all information contained therein is for reference only.
 - b. CAD File: 2420.02.3_UNCC XIV ESP_grading_3d.dwg

CHANGES TO SPECIFICATIONS GROUP

Revise the following Specification Sections:

1. 01 21 00 ALLOWANCES
 - a. Replace specification dated 12/1/2014 with specification dated 2/05/2015.
2. 01 22 00 UNIT PRICES
 - a. Replace specification dated 12/1/2014 with specification dated 2/05/2015.

ADDENDUM NO. 2
Residence Hall Phase XIV
University of North Carolina at Charlotte
February 5, 2015

3. 01 23 00 ALTERNATES
 - a. Replace specification dated 1/27/2015 with specification dated 2/05/2015.
4. 03 05 10 CONCRETE MOISTURE VAPOR REDUCTION ADMIXTURE
 - a. Replace specification dated 12/1/2014 with specification dated 2/05/2015.
5. 33 41 00 STORM UTILITY DRAINAGE PIPING
 - a. Replace specification dated 12/1/2014 with specification dated 2/05/2015.

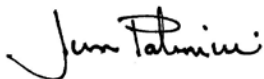
CHANGES TO DRAWINGS:

The sheets listed below (Revised by Addendum No. 2) are hereby revised and made part of the Contract Documents:

VOLUME 1 DRAWINGS

- | | |
|-----------|---|
| a. C2.10 | EARLY SITE DEMOLITION PLAN |
| b. S101-N | NORTH FOUNDATION PLAN |
| c. S101-S | SOUTH FOUNDATION PLAN |
| d. S103 | SITE WALL PLAN |
| e. S201-N | 1ST FLOOR NORTH FRAMING PLAN |
| f. S201-S | 1ST FLOOR SOUTH FOUNDATION AND FRAMING PLAN |
| g. S202-N | 2ND FLOOR NORTH FRAMING PLAN |
| h. S202-S | 2ND FLOOR SOUTH FRAMING PLAN |
| i. S203-N | 3RD FLOOR NORTH FRAMING PLAN |
| j. S203-S | 3RD FLOOR SOUTH FRAMING PLAN |
| k. S204-N | 4TH FLOOR NORTH FRAMING PLAN |
| l. S204-S | 4TH FLOOR SOUTH FRAMING PLAN |
| m. S205-N | 5TH FLOOR NORTH FRAMING PLAN |
| n. S205-S | 5TH FLOOR SOUTH FRAMING PLAN |
| o. S206-N | ROOF NORTH FRAMING PLAN |
| p. S206-S | ROOF SOUTH FRAMING PLAN |
| q. S302 | FOUNDATION DETAILS |
| r. S303 | FOUNDATION DETAILS |
| s. S304 | FOUNDATION DETAILS |
| t. S305 | SITE WALL DETAILS |
| u. S401 | FLOOR FRAMING DETAILS |
| v. S403 | FLOOR FRAMING DETAILS |
| w. S602 | COLUMN AND BEAM DETAILS |
| x. S605 | COLUMN AND BEAM DETAILS |

END OF ADDENDUM NO. 2



Jim Palmieri, AIA
The FWA Group

SECTION 01 21 00 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Quantity allowances.
- C. Related Requirements:
 - 1. Section 01 22 00 "Unit Prices" for procedures for using unit prices.
 - 2. Section 01 40 00 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine material covered by an allowance promptly on delivery for non-compliance to the specifications. Return non-compliant material for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Quantity Allowance: Unsatisfactory soil excavation above subgrade, disposal off-site, and replacement with satisfactory fill material or engineered fill off-site.
 - 1. Include in Base Bid 500 cubic yards of unsuitable soil above subgrade elevations.
 - 2. See Specification Section 01 22 00 "Unit Prices" and Section 31 20 00 "Earthwork" for allowance requirements and adjustments.
- B. Allowance No. 2: Quantity Allowance: Unsatisfactory soil excavation, disposal off-site, and replacement with satisfactory fill material or engineered fill off-site.
 - 1. Include in Base Bid 500 cubic yards of unsuitable soil below subgrade elevations.
 - 2. See Specification Section 01 22 00 "Unit Prices" and Section 31 20 00 "Earthwork" for allowance requirements and adjustments.
- C. Allowance No. 3: Quantity Allowance: Classified trench rock excavation, disposal off site, and replacement with satisfactory fill material or engineered fill from off site.
 - 1. Include in Base Bid 500 cubic yards of trench rock.
 - 2. See specification Section 01 22 00 "Unit Prices" and Section 31 20 00 "Earthwork" for allowance requirements and adjustments.

- D. Allowance No. 4: Quantity Allowance: Classified mass rock excavation, disposal off site, and replacement with satisfactory fill material or engineered fill from off site.
 - 1. Include in Base Bid 500 cubic yards of mass rock.
 - 2. See specification Section 01 22 00 "Unit Prices" and Section 31 20 00 "Earthwork" for allowance requirements and adjustments.

- E. Allowance No. 5: Quantity Allowance: Asbestos removal associated with removal of steam system pipe removal in base bid.
 - 1. Include in Base Bid 290 lineal feet of steam tunnel assembly. Credit or additions to the Contract Price for actual quantities removed shall be made per the Unit Prices contained in the Bid Form. Quantity of material shall be determined by the owners on site testing agency.
 - 2. See specification Section 01 22 00 "Unit Prices" and Section 02 11 19 "Selective Demolition" for allowance requirements and adjustments.

- F. Allowance No. 6: Quantity Allowance: Waterproofing @ Sanford Hall.
 - 1. Include in Base Bid 600 square feet of waterproofing.
 - 2. See specification Section 01 22 00 "Unit Prices" and Section 02 11 19 "Selective Demolition" for allowance requirements and adjustments.

END OF SECTION 01 21 00

SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
 - 2. Section 01 40 00 "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Removal of unsatisfactory soil above subgrade elevations and replacement with satisfactory soil material.
 - 1. Description: Unsatisfactory soil excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Section 21 20 00 "Earth Moving".
 - 2. Unit of Measurement: Cubic yard of soil excavated, based on survey of volume removed.
 - 3. Refer to Section 01 21 00 "ALLOWANCES" for quantity to be included in Base Bid.

- B. Unit Price No. 2: Removal of unsatisfactory soil below subgrade elevations and replacement with satisfactory soil material.
 - 1. Description: Unsatisfactory soil excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Section 31 20 00 "Earth Moving".
 - 2. Unit of Measurement: Cubic yard of soil excavated, based on survey of volume removed.
 - 3. Refer to Section 01 21 00 "ALLOWANCES" for quantity to be included in Base Bid.

- C. Unit Price No. 3: Trench rock excavation and replacement with satisfactory soil material.
 - 1. Description: Classified trench rock excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Section 21 20 00 "Earth Moving".
 - 2. Unit of Measurement: Cubic yard of rock excavated, based on survey of volume removed.
 - 3. Refer to Section 01 21 00 "ALLOWANCES" for quantity to be included in Base Bid.

- D. Unit Price No. 4: Mass rock excavation and replacement with satisfactory soil material.
 - 1. Description: Classified mass rock excavation and disposal off site and replacement with satisfactory fill material or engineered fill from off site, as required, according to Section 21 20 00 "Earth Moving".
 - 2. Unit of Measurement: Cubic yard of rock excavated, based on survey of volume removed.
 - 3. Refer to Section 01 21 00 "ALLOWANCES" for quantity to be included in Base Bid.

- E. Unit Price No. 5: Removal of Contaminated Material
 - 1. Description: Removal of existing steam tunnel assembly consisting of a hemispherical terracotta tunnel, concrete footing and piping (steam &

- condensate) that is possibly contaminated with asbestos insulation and waterproofing mastic.
2. Available Information: Refer to Section 00 31 26 "EXISTING HAZARDOUS MATERIAL INFORMATION" for an asbestos report and drawing documentation for the recent removal of a steam tunnel in the general vicinity of this project that is believed to be of the same construction.
 3. Testing: Contractor shall provide identified material to the Owner's testing company for confirmation of possible contaminants.
 4. Unit of Measurement: Lineal foot of steam tunnel assembly.
 5. Refer to Section 01 21 00 "ALLOWANCES" for quantity to be included in Base Bid.
- F. Unit Price No. 6: Waterproofing at Sanford Hall
1. Description: Cleaning and waterproofing of existing Sanford Hall from 12" below existing grade to top of new grade.
 2. Unit of Measurement: Square foot of existing building cleaning and installation of Self-Adhering Sheet Waterproofing w/protection board. Refer to Section 07 13 26 "SELF-ADHERING SHEET WATERPROOFING"..
 3. Refer to Section 01 21 00 "ALLOWANCES" for quantity to be include in Base Bid.
- G. Unit Price No. 7: Lean Concrete.
1. Description: Normal-weight Concrete (to be used in lieu of structural fill).
 2. Minimum Compressive Strength: 1,000 psi at 28 days.
 3. Unit of Measurement: Cubic yard

END OF SECTION 01 22 00

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.

- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. Alternate No. 1: Floor @ Room #033 (non-occupied space/storage)
1. Base Bid: Vapor Barrier on 4" compacted granular fill.
 2. Alternate: 4" concrete slab w/reinforcing on base bid vapor barrier on 4" compacted granular fill.
- B. Alternate No. 14: Footings at Bike Shelters and Archway Benches
1. Base Bid: Not provided.
 2. Alternate: Provide footings for bike shelters and benches at archway per S201-S and S305.
- C. Alternate No. 18: Service Elevators
1. Base Bid: Elevator #1 (North) and Elevator #2 (Central) to have a 3,500 lb. passenger style cab at 150 fpm as indicated on Sheet A-700 and as specified in Section 14 21 00 "Electric Traction Elevators".
 2. Alternate: Elevator #1 (North) and Elevator #2 (Central) to have a 4,000 lb. service style cab at 200 fpm.
- D. Alternate No. 19: Hydraulic MRL Elevator @ #3 (South)
1. Base Bid: Elevator #3 (South) to be an electric traction passenger elevator with a 2500 lb. capacity at 150 fpm as indicated on Sheet A-700 and as specified in Section 14 21 00 "Electric Traction Elevators".
 2. Alternate: Elevator #3 (South) to be a machine room-less (MRL) hydraulic elevator with hydraulic fluid that is vegetable-base, non-petroleum. Size, capacity, speed, finishes, operating systems, security features, hoistway entrance, car enclosure, signal equipment, etc. to be similar to base bid.

END OF SECTION 01 23 00

SECTION 03 05 10 - CONCRETE MOISTURE VAPOR REDUCTION ADMIXTURE (MVRA)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 and 03 Specification Sections, apply to this Section.
- B. The Contractor, Subcontractors, and/or suppliers providing goods and services referenced in or related to this Section shall also be bound by the Related Documents identified in Division 00 and 01.

1.2 SUMMARY

- A. Section includes:
 - 1. High Performance Concrete Moisture Vapor Reducing Admixture (MVRA) for all new concrete slabs, including first floor slab-on-grade, elevated slabs, stair treads and landings.
- B. Related Sections:
 - 1. Division 03 Section 03 30 00 "Cast-in-Place Concrete".

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 REFERENCES

- A. American Society for Testing and Materials International (ASTM)
 - 1. ASTM D 5084: Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.
 - 2. ASTM E 1643: Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.
 - 3. ASTM E 1745: Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
 - 4. ASTM F 710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
 - 5. ASTM C 494/C 494M-08a: Standard Specification for Chemical Admixtures for Concrete Type S.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's printed data.
- B. Product test reports performed by a qualified independent testing agency evidencing compliance of products with specified requirements of moisture vapor transmission based on comprehensive testing of current products.
- C. Manufacturer's certificate certifying admixture provided meets or exceeds specified requirements.
- D. Sample life of the concrete warranty.
- E. Sample adhesion guarantee.
- F. Sample moisture letter.

1.6 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A firm with not less than ten (10) years' experience in the manufacture of the specified concrete moisture vapor reduction admixture, capable of providing test reports indicating compliance with specified performance requirements, and able to provide on-site technical representation should the need arise. Selected product must have certification of compliance with ASTM C494 /C494M testing protocols from an independent AASHTO approved laboratory.
- B. **Pre-installation Conference.**
 - 1. Verify all are familiar with MVRA project specific quality control procedures, review concrete mix designs and examine procedures for ensuring quality of concrete materials. Each entity directly concerned with MVRA dosed concrete must attend in person or conference call
 - 2. Those required to participate or to review include but are not limited to:
 - a. Contractor.
 - b. Independent testing agency responsible for concrete design mixtures, sampling and testing.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor
 - e. Moisture Vapor Reduction Admixture manufacturer.
- C. **Ready Mixed Concrete Manufacturer Qualifications:** A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- D. **Moisture Vapor Reduction Admixture Collection Agent / Representative Qualifications**
 - 1. Personnel conducting field sampling on behalf of the MVRA manufacturer shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
- E. **Slab Moisture Testing and Evaluation:** Personnel performing laboratory tests shall be certified in the conduct of ASTM D5084 under the supervision of a licensed

geotechnical engineer. The determination as to whether the concrete slab is prepared to receive flooring, coatings, roofing, etc. rests with the MVRA manufacturer.

- F. Source Limitations: Obtain each type of concrete moisture vapor reducing admixture from the same manufacturer.
- G. ACI Publications: For slabs to receive moisture sensitive coatings or material, comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 302.2R-06, "Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring".

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver MVRA in manufacturer's original, undamaged containers.
- B. Store MVRA protected from exposure to harmful weather conditions and in a temperature controlled area above 36 degrees.
- C. Do not allow product to freeze. Should product freeze, immediately contact the MVRA manufacturer for further instructions.

1.8 WARRANTY

- A. Moisture Vapor Reduction Admixture (MVRA):
 - 1. MVRA must be installed according to, and in compliance with, the manufacturer's published data sheet to include, but not limited to:
 - a. Dosing instructions.
 - b. Onsite representation and sampling requirements.
 - c. Use of an ASTM E 1745 vapor retarder installed following ASTM E 1643 and ASTM F710 guidelines; elevated slabs to receive flooring do not require a vapor retarder
 - 2. Manufacturer's Warranty: To include:
 - a. Term: Life of the concrete.
 - b. Repair and/or removal of failed flooring.
 - c. Placement of a topical moisture remediation system.
 - d. Replacement of flooring/roofing materials like original installed to include material and labor.
 - 3. Adhesion Warranty: MVRA Manufacturer shall provide an adhesion warranty to match the term of the adhesive and/or primer / underlayment and or flooring manufacturer's material defect warranty upon MVRA manufacturer's acceptance of field bond test.
 - 4. The Flooring installer shall submit Material Data sheets or documentation from the primer, adhesive / underlayment and or flooring manufacturer indicating compliance and acceptance of their product for use on a nonporous application.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the specifications, quality control and warranty requirements of this section.

2.2 MATERIALS

- A. Concrete moisture vapor reduction admixture (MVRA) for all interior slab (on ground and elevated) construction shall be a non-toxic, liquid admixture that is free of all volatile organic compounds (VOC). It shall be specifically designed to have a natural chemical reaction with pre-existing elements inside the concrete to eliminate the route of moisture vapor emission through the slab by restricting the integral capillary system. Chemical reaction shall form a permanent barrier (capillary break) that is integral to the concrete, insoluble, and irremovable.
1. Hydraulic conductivity: Project specific maximum of 6.0 E-8 cm/s per ASTM D5084
 2. Toxicity: None
 3. Odor: None
 4. Flammability: None
 5. VOC levels: zero
 6. Solvent: water
 7. Freeze Temp: 32 degrees Fahrenheit (0⁰ C)(store above 36⁰ F (2.3⁰ C))
 8. Acid resistance: Excellent
 9. Hazardous vapors: None
 10. Installation: All concrete
 11. Capillary break: Calcium Silicate Hydrate
 12. pH: 11.3 maximum
 13. weight: 10.3 lbs/gal (net)
 14. Integral biocide to inhibit growth of mold and bacteria

2.3 RELATED MATERIAL

- A. Sheet Vapor Retarder: ASTM E 1745, Class A, compliant material with a maximum permeance of 0.01 US Perms after conditioning and a minimum thickness of 15 mil. Include manufacturer's recommended adhesive or pressure-sensitive tape.
1. Subject to compliance and minimum requirements specified in Section 03 30 00 Cast-In-Place Concrete, 2.8 Vapor Retarders.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with the requirements of Division 03 Cast-in-Place Concrete, or other appropriate section, for concrete mixing, placing and curing.
- B. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643, ASTM F710, ACI 302.2R-06 and manufacturer's written instructions.
- C. Add MVRA in accordance with manufacturer's printed data sheet instructions: Add separately from other admixtures at the tail end of the load. Mix designs below 0.42 and above 0.52 may require adjustment and consultation with MVRA manufacturer is required prior to their use.
1. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete with MVRA according to ASTM C 94/C 94M; furnish batch ticket information showing dosage of MVRA.

2. Project-Site Mixing: Not allowed.

- D. Freshening onsite with held back mix water is acceptable so long as the practice is in accordance with published ACI guidelines and does not exceed the original water to cementitious material ratio or instructions of the structural engineer.
- E. Use of water reducing admixtures is recommended to achieve slumps greater than 4" (102mm).
- F. Use of other admixtures in the same batch as MVRA is acceptable so long as each admixture is added separately. The MVRA shall be separately dosed at the tail end of the load. Addition of a SRA "Shrinkage Reduction Admixture" is not permitted.
- G. The inclusion of a shrink reducing admixture (SRA) is not acceptable
- H. Cold-Weather Placement: Comply with ACI 306.1.
- I. Hot-Weather Placement: Comply with ACI 301.

J.

3.2 CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Cure concrete slabs to receive moisture sensitive coatings according to ACI 302.2R-06, by one or a combination of the following methods:
 - 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure concrete containing MVRA for not less than 24 hours, longer if ambient conditions are hot, windy, and sunny or subject to periods of very low humidity. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.3 FIELD QUALITY CONTROL

- A. Testing and Inspecting: The manufacturer of the moisture vapor reduction admixture will, at their expense, engage qualified agencies to obtain project specific sample cylinders and independent certified laboratories for subsequent testing per ASTM D5084 and preparation of test reports.
- B. Testing of Slabs Containing MVRA:
 - 1. The moisture vapor reduction admixture (MVRA) manufacturer will perform all moisture testing in accordance with this specification and will issue project specific warranties and adhesion guarantees prior to installation of any slab finishes; no further field slab moisture nor pH testing shall be required.
 - a. Failure to provide a product that meets or exceeds these requirements will result in all subsequent testing and slab remediation costs being borne by the contractor.

2. A representative or agent of the moisture vapor reduction admixture (MVRA) manufacturer must be present at the jobsite during placement of all MVRA treated concrete.
 - a. Do not proceed without this representative being present.
 - b. A minimum of one business day notification is required.
3. Field testing technician shall, at the expense of the MVRA Manufacturer, procure at least one 4 inch (102 mm) cylinder from every day of placement of MVRA dosed concrete for the purpose of subsequent hydraulic conductivity/coefficient of permeability testing.
4. All cylinders shall be independently lab tested in accordance with ASTM D 5084 at the expense of the MVRA manufacturer.
5. Test results must conform to specified limits.
 - a. Should any cylinder from any day of placement deliver results in excess of 6.0 E-08 cm/sec , the concrete moisture vapor reduction admixture manufacturer shall procure, at their expense, a core (or cores) from that day of placement. This core (cores) shall be sent to an independent laboratory for hydraulic conductivity (coefficient or permeability) per ASTM D 5084.
 - b. Should any core deliver results in excess of 6.0 E-08 cm/sec per ASTM D 5084, the concrete moisture vapor reduction admixture manufacturer shall provide, at their expense, a topical moisture mitigation system for all areas not meeting the stated limit.
6. Proceeding with placement of concrete dosed with the MVRA without the required representation will result in the contractor bearing the cost to core and ship appropriate material for testing per ASTM D 5084.

3.4 REPAIRS

- A. Make repairs to slab in accordance with Division 03 Section "Cast-in-Place Concrete" and as recommended by concrete moisture vapor reduction admixture manufacturer.

END OF SECTION 03 05 10

SECTION 334100 - STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pipe and fittings.
2. Backwater valves.
3. Cleanouts.
4. Drains.
5. Manholes.
6. Channel drainage systems.
7. Catch basins.
8. Stormwater inlets.
9. Pipe outlets.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings:

1. Manholes: Include plans, elevations, sections, details, frames, and covers.
2. Catch basins and stormwater inlets. Include plans, elevations, sections, details, frames, covers, and grates.

1.3 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of cast-iron soil pipe and fitting, from manufacturer.

B. Field quality-control reports.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Protect pipe, pipe fittings, and seals from dirt and damage.

B. Handle manholes according to manufacturer's written rigging instructions.

C. Handle catch basins and stormwater inlets according to manufacturer's written rigging instructions.

1.5 PROJECT CONDITIONS

- A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
1. Notify Architect no fewer than two days in advance of proposed interruption of service.
 2. Do not proceed with interruption of service without Architect's written permission.

PART 2 - PRODUCTS

2.1 DUCTILE-IRON, PRESSURE PIPE AND FITTINGS

A. Push-on-Joint Piping:

1. Pipe: AWWA C151, for push-on joints.
2. Standard Fittings: AWWA C110, ductile or gray iron, for push-on joints.
3. Compact Fittings: AWWA C153, for push-on joints.
4. Gaskets: AWWA C111, rubber, of shape matching pipe and fittings.

B. Mechanical-Joint Piping:

1. Pipe: AWWA C151, with bolt holes in bell.
2. Standard Fittings: AWWA C110, ductile or gray iron, with bolt holes in bell.
3. Compact Fittings: AWWA C153, with bolt holes in bells.
4. Glands: Cast or ductile iron, with bolt holes and high-strength, cast-iron or high-strength, low-alloy steel bolts and nuts.
5. Gaskets: AWWA C111, rubber, of shape matching pipe, fittings, and glands.

2.2 PVC PIPE AND FITTINGS (ROOF LEADERS ONLY)

A. PVC Water-Service Piping:

1. Pipe: ASTM D 1785 Schedule 40 and Schedule 80 PVC, with plain ends for solvent-cemented joints.
2. Fittings: ASTM D 2467, Schedule 40 and 80 PVC, socket type.

2.3 CONCRETE PIPE AND FITTINGS

A. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76.

1. Bell-and-spigot ends and gasketed joints with ASTM C 443, rubber gaskets.
2. Class III, wall A.

2.4 CORRUGATED PE DRAINAGE PIPE AND FITTINGS (ROOF LEADERS ONLY)

- A. Corrugated PE Drainage Pipe and Fittings: AASHTO M 252M, Type S, with smooth waterway for coupling joints.
 - 1. Silttight Couplings: PE sleeve with ASTM D 1056, Type 2, Class A, Grade 2 gasket material that mates with tube and fittings. Joints made using couplings in subparagraph below are silttight.

2.5 BACKWATER VALVES

- A. Cast-Iron Backwater Valves:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Josam Company.
 - b. Tyler Pipe.
 - c. Watts Water Technologies, Inc.
 - d. Zurn Specification Drainage Operation; Zurn Plumbing Products Group.
 - 2. Description: ASME A112.14.1, gray-iron body and bolted cover, with bronze seat.
 - 3. Horizontal type; with swing check valve and hub-and-spigot ends.

2.6 CLEANOUTS

- A. Cast-Iron Cleanouts:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Josam Company.
 - b. MIFAB, Inc.
 - c. Smith, Jay R. Mfg. Co.
 - d. Tyler Pipe.
 - e. Watts Water Technologies, Inc.
 - f. Zurn Specification Drainage Operation; Zurn Plumbing Products Group.
 - 2. Description: ASME A112.36.2M, round, gray-iron housing with clamping device and round, secured, scoriated, gray-iron cover. Include gray-iron ferrule with inside calk or spigot connection and countersunk, tapered-thread, brass closure plug.
 - 3. Top-Loading Classification(s): Light Duty Medium Duty Heavy Duty and Extra-Heavy Duty.
 - 4. Sewer Pipe Fitting and Riser to Cleanout: ASTM A 74, Service class, cast-iron soil pipe and fittings.

B. Plastic Cleanouts:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Canplas LLC.
 - b. IPS Corporation.
 - c. NDS Inc.
 - d. Plastic Oddities; a division of Diverse Corporate Technologies, Inc.
 - e. Sioux Chief Manufacturing Company, Inc.
 - f. Zurn Light Commercial Products Operation; Zurn Plumbing Products Group.
2. Description: PVC body with PVC threaded plug. Include PVC sewer pipe fitting and riser to cleanout of same material as sewer piping.

2.7 DRAINS

A. Cast-Iron Area Drains:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Josam Company.
 - b. MIFAB, Inc.
 - c. Smith, Jay R. Mfg. Co.
 - d. Tyler Pipe.
 - e. Watts Water Technologies, Inc.
 - f. Zurn Specification Drainage Operation; Zurn Plumbing Products Group.
2. Description: ASME A112.6.3 gray-iron round body with anchor flange and round secured grate. Include bottom outlet with inside calk or spigot connection, of sizes indicated.
3. Top-Loading Classification: Heavy Duty.

2.8 MANHOLES

A. Designed Precast Concrete Manholes:

1. Description: ASTM C 913; designed according to ASTM C 890 for A-16 (AASHTO HS20-44), heavy-traffic, structural loading; of depth, shape, and dimensions indicated, with provision for sealant joints.
2. Ballast: Increase thickness of one or more precast concrete sections or add concrete to manhole as required to prevent flotation.
3. Joint Sealant: ASTM C 990, bitumen or butyl rubber.
4. Resilient Pipe Connectors: ASTM C 923, cast or fitted into manhole walls, for each pipe connection.

5. Steps: Individual FRP steps, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of manhole to finished grade is less than 60 inches.
6. Grade Rings: Reinforced-concrete rings, 6- to 9-inch total thickness, to match diameter of manhole frame and cover, and of height required to adjust manhole frame and cover to indicated elevation and slope.

B. Manhole Frames and Covers:

1. Description: Ferrous; 24-inch ID by 7- to 9-inch riser with 4-inch- minimum width flange and 26-inch- diameter cover. Include indented top design with lettering cast into cover, using wording equivalent to "STORM SEWER."
2. Material: ASTM A 536, Grade 60-40-18 ductile or ASTM A 48/A 48M, Class 35 gray iron unless otherwise indicated.

2.9 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, ACI 350/350R, and the following:

1. Cement: ASTM C 150, Type II.
2. Fine Aggregate: ASTM C 33, sand.
3. Coarse Aggregate: ASTM C 33, crushed gravel.
4. Water: Potable.

B. Portland Cement Design Mix: 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio.

1. Reinforcing Fabric: ASTM A 185/A 185M, steel, welded wire fabric, plain.
2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed steel.

C. Manhole Channels and Benches: Factory or field formed from concrete. Portland cement design mix, 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio. Include channels and benches in manholes.

1. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
 - a. Invert Slope: 2 percent through manhole.
2. Benches: Concrete, sloped to drain into channel.
 - a. Slope: 4 percent.

D. Ballast and Pipe Supports: Portland cement design mix, 3000 psi minimum, with 0.58 maximum water/cementitious materials ratio.

1. Reinforcing Fabric: ASTM A 185/A 185M, steel, welded wire fabric, plain.

2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (420 MPa) deformed steel.

2.10 POLYMER-CONCRETE, CHANNEL DRAINAGE SYSTEMS

- A. General Requirements for Polymer-Concrete, Channel Drainage Systems: Modular system of precast, polymer-concrete channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling. Include quantity of units required to form total lengths indicated.
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. ABT, Inc.
 2. ACO USA.
 3. Innovative Plastic, Inc.; a subsidiary of T-H Marine Supplies, Inc.
 4. Mea-Josam Div.; Josam Company.
 5. Poly-Cast.
- C. Sloped-Invert, Polymer-Concrete Systems:
 1. Channel Sections:
 - a. Interlocking-joint, precast, modular units with end caps.
 - b. Deep, rounded bottom, with built-in invert slope of 0.6 percent and with outlets in quantities, sizes, and locations indicated.
 - c. Extension sections necessary for required depth.
 - d. Frame: Refer to plans for grate type.
 2. Grates:
 - a. Manufacturer's designation "Heavy Duty," with slots or perforations that fit recesses in channels.
 - b. Material: Refer to plans for grate material.
 3. Covers: Match grate material.
 4. Locking Mechanism: Manufacturer's standard device for securing grates to channel sections.
- D. Supports, Anchors, and Setting Devices: Manufacturer's standard unless otherwise indicated.
- E. Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

2.11 CATCH BASINS

- A. Designed Precast Concrete Catch Basins: ASTM C 913, precast, reinforced concrete; designed according to ASTM C 890 for A-16 (ASSHTO HS20-44), heavy-traffic,

structural loading; of depth, shape, and dimensions indicated, with provision for joint sealants.

1. Joint Sealants: ASTM C 990, bitumen or butyl rubber.
2. Adjusting Rings: Interlocking rings with level or sloped edge in thickness and shape matching catch basin frame and grate. Include sealant recommended by ring manufacturer.
3. Grade Rings: Include two or three reinforced-concrete rings, of 6- to 9-inch total thickness, that match 24-inch- diameter frame and grate.
4. Steps: Individual FRP steps, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of catch basin to finished grade is less than 60 inches.
5. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.

B. Frames and Grates: ASTM A 536, Grade 60-40-18, ductile iron designed for A-16, structural loading. Include flat grate with small square or short-slotted drainage openings.

1. Size: Refer to drawings.
2. Grate Free Area: Approximately 50 percent unless otherwise indicated.

2.12 STORMWATER INLETS

A. Combination Inlets: Made with vertical curb and horizontal gutter openings, of materials and dimensions according to utility standards. Include heavy-duty frames and grates.

B. Frames and Grates: Heavy duty, according to utility standards.

2.13 PIPE OUTLETS

A. Head Walls: Cast-in-place reinforced concrete, with apron and tapered sides.

B. Energy Dissipaters: According to NSSGA's "Quarried Stone for Erosion and Sediment Control," No. A-1, 3-ton average weight armor stone, unless otherwise indicated.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavation, trenching, and backfilling are specified in Section 312000 "Earth Moving."

3.2 PIPING INSTALLATION

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- C. Install manholes for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated.
- D. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.
- E. When installing pipe under streets or other obstructions that cannot be disturbed, use pipe-jacking process of microtunneling.
- F. Install gravity-flow, nonpressure drainage piping according to the following:
 - 1. Install piping pitched down in direction of flow.
 - 2. Install piping with 36-inch minimum cover.
 - 3. Install ductile-iron piping and special fittings according to AWWA C600 or AWWA M41.
 - 4. Install PVC sewer piping according to ASTM D 2321 and ASTM F 1668.
 - 5. Install reinforced-concrete sewer piping according to ASTM C 1479 and ACPA's "Concrete Pipe Installation Manual."

3.3 PIPE JOINT CONSTRUCTION

- A. Join gravity-flow, nonpressure drainage piping according to the following:
 - 1. Join ductile-iron piping and special fittings according to AWWA C600 or AWWA M41.
 - 2. Join PVC sewer piping according to ASTM D 2321 and ASTM D 3034 for elastomeric-seal joints or ASTM D 3034 for elastomeric-gasketed joints.
 - 3. Join reinforced-concrete sewer piping according to ACPA's "Concrete Pipe Installation Manual" for rubber-gasketed joints.
 - 4. Join dissimilar pipe materials with nonpressure-type flexible couplings.

3.4 BACKWATER VALVE INSTALLATION

- A. Install horizontal-type backwater valves in piping where indicated.

3.5 CLEANOUT INSTALLATION

- A. Install cleanouts and riser extensions from sewer pipes to cleanouts at grade. Use cast-iron soil pipe fittings in sewer pipes at branches for cleanouts and cast-iron soil pipe for riser extensions to cleanouts. Install piping so cleanouts open in direction of flow in sewer pipe.
 - 1. Use Light-Duty, top-loading classification cleanouts in earth or unpaved foot-traffic areas.
 - 2. Use Medium-Duty, top-loading classification cleanouts in paved foot-traffic areas.
 - 3. Use Heavy-Duty, top-loading classification cleanouts in vehicle-traffic service areas.
 - 4. Use Extra-Heavy-Duty, top-loading classification cleanouts in roads.
- B. Set cleanout frames and covers in earth in cast-in-place concrete block, 18 by 18 by 12 inches deep. Set with tops 1 inch above surrounding earth grade.
- C. Set cleanout frames and covers in concrete pavement and roads with tops flush with pavement surface.

3.6 DRAIN INSTALLATION

- A. Install type of drains in locations indicated.
 - 1. Use Heavy-Duty, top-loading classification drains in vehicle-traffic service areas.
- B. Embed drains in 4-inch minimum concrete around bottom and sides.
- C. Fasten grates to drains if indicated.
- D. Set drain frames and covers with tops flush with pavement surface.
- E. Assemble trench sections with flanged joints.
- F. Embed trench sections in 4-inch minimum concrete around bottom and sides.

3.7 MANHOLE INSTALLATION

- A. General: Install manholes, complete with appurtenances and accessories indicated.
- B. Install precast concrete manhole sections with sealants according to ASTM C 891.
- C. Where specific manhole construction is not indicated, follow manhole manufacturer's written instructions.
- D. Set tops of frames and covers flush with finished surface of manholes that occur in pavements. Set tops 3 inches above finished surface elsewhere unless otherwise indicated.

3.8 CATCH BASIN INSTALLATION

- A. Construct catch basins to sizes and shapes indicated.
- B. Set frames and grates to elevations indicated.

3.9 STORMWATER INLET AND OUTLET INSTALLATION

- A. Construct inlet head walls, aprons, and sides of reinforced concrete, as indicated.
- B. Construct riprap of broken stone, as indicated.
- C. Install outlets that spill onto grade, anchored with concrete, where indicated.
- D. Install outlets that spill onto grade, with flared end sections that match pipe, where indicated.
- E. Construct energy dissipaters at outlets, as indicated.

3.10 CONCRETE PLACEMENT

- A. Place cast-in-place concrete according to ACI 318.

3.11 CHANNEL DRAINAGE SYSTEM INSTALLATION

- A. Install with top surfaces of components, except piping, flush with finished surface.
- B. Assemble channel sections to form slope down toward drain outlets. Use sealants, adhesives, fasteners, and other materials recommended by system manufacturer.
- C. Embed channel sections and drainage specialties in 4-inch minimum concrete around bottom and sides.
- D. Fasten grates to channel sections if indicated.
- E. Assemble channel sections with flanged or interlocking joints.
- F. Embed channel sections in 4-inch minimum concrete around bottom and sides.

3.12 CONNECTIONS

- A. Connect nonpressure, gravity-flow drainage piping in building's storm building drains specified in Section 221413 "Facility Storm Drainage Piping."
- B. Make connections to existing piping and underground manholes.

1. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.13 IDENTIFICATION

- A. Materials and their installation are specified in Section 312000 "Earth Moving." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
 1. Use detectable warning tape over ferrous piping.
 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.14 FIELD QUALITY CONTROL

- A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
 1. Submit separate reports for each system inspection.
 2. Defects requiring correction include the following:
 - a. Alignment: Less than full diameter of inside of pipe is visible between structures.
 - b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
 - c. Damage: Crushed, broken, cracked, or otherwise damaged piping.
 - d. Infiltration: Water leakage into piping.
 - e. Exfiltration: Water leakage from or around piping.
 3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
 4. Reinspect and repeat procedure until results are satisfactory.
- B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
 1. Do not enclose, cover, or put into service before inspection and approval.
 2. Test completed piping systems according to requirements of authorities having jurisdiction.
 3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
 4. Submit separate report for each test.
 5. Gravity-Flow Storm Drainage Piping: Test according to requirements of authorities having jurisdiction, UNI-B-6, and the following:
 - a. Option: Test concrete piping according to ASTM C 924.
- C. Leaks and loss in test pressure constitute defects that must be repaired.

- D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

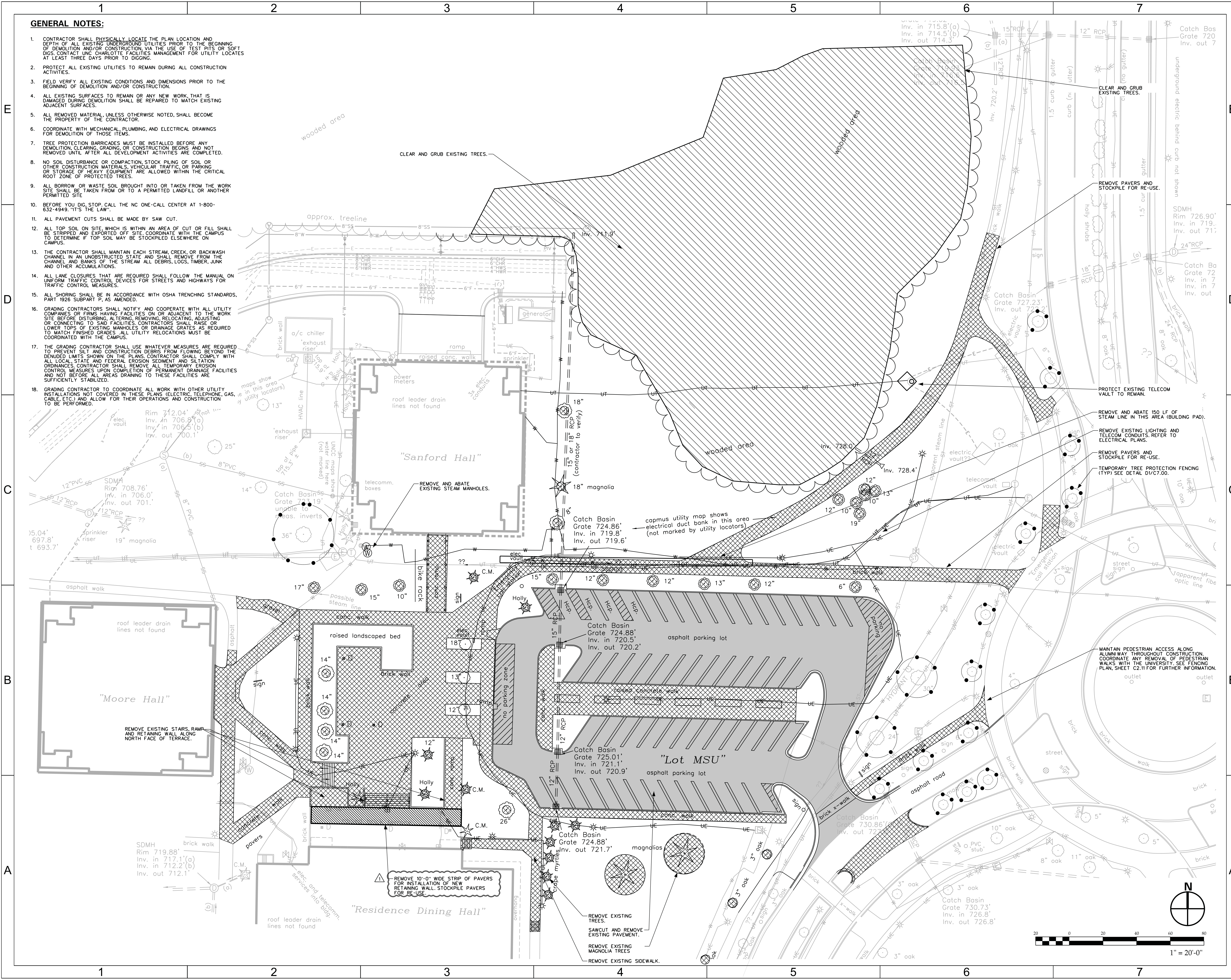
3.15 CLEANING

- A. Clean interior of piping of dirt and superfluous materials. Flush with potable water.

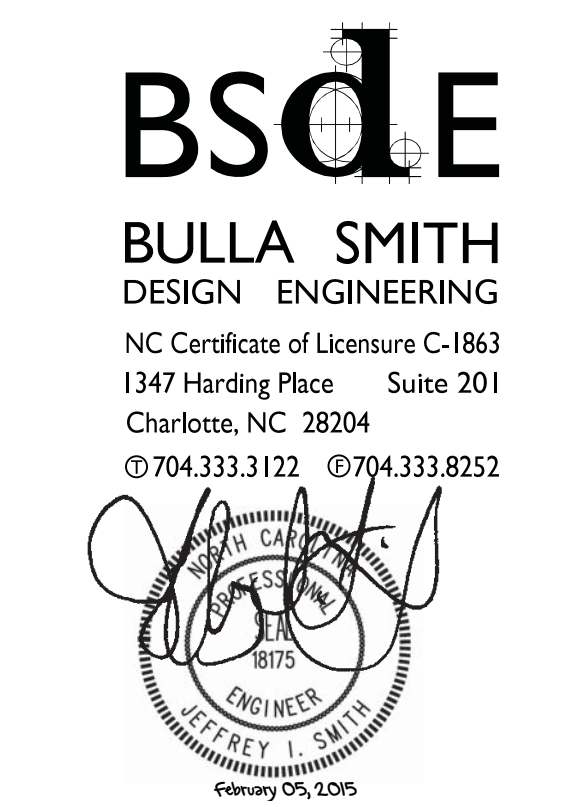
END OF SECTION 334100

GENERAL NOTES:

- CONTRACTOR SHALL PHYSICALLY LOCATE THE PLAN LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE BEGINNING OF DEMOLITION AND/OR CONSTRUCTION VIA THE USE OF TEST PITS OR SOFT DIGS. CONTACT UNC CHARLOTTE FACILITIES MANAGEMENT FOR UTILITY LOCATES AT LEAST THREE DAYS PRIOR TO DIGGING.
- PROTECT ALL EXISTING UTILITIES TO REMAIN DURING ALL CONSTRUCTION ACTIVITIES.
- FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO THE BEGINNING OF DEMOLITION AND/OR CONSTRUCTION.
- ALL EXISTING SURFACES TO REMAIN OR ANY NEW WORK THAT IS DAMAGED DURING DEMOLITION SHALL BE REPAIRED TO MATCH EXISTING ADJACENT SURFACES.
- ALL REMOVED MATERIAL, UNLESS OTHERWISE NOTED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- COORDINATE WITH MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR DEMOLITION OF THOSE ITEMS.
- TREE PROTECTION BARRICADES MUST BE INSTALLED BEFORE ANY DEMOLITION, CLEARING, GRADING, OR CONSTRUCTION BEGINS AND NOT REMOVED UNTIL AFTER ALL DEVELOPMENT ACTIVITIES ARE COMPLETED.
- NO SOIL DISTURBANCE OR COMPACTION, STOCK PILING OF SOIL OR OTHER CONSTRUCTION MATERIALS, VEHICULAR TRAFFIC, OR PARKING OR STORAGE OF HEAVY EQUIPMENT ARE ALLOWED WITHIN THE CRITICAL ROOT ZONE OF PROTECTED TREES.
- ALL BORROW OR WASTE SOIL BROUGHT INTO OR TAKEN FROM THE WORK SITE SHALL BE TAKEN FROM OR TO A PERMITTED LANDFILL OR ANOTHER PERMITTED SITE.
- BEFORE YOU DIG, STOP, CALL THE NC ONE-CALL CENTER AT 1-800-632-4949. "IT'S THE LAW".
- ALL PAVEMENT CUTS SHALL BE MADE BY SAW CUT.
- ALL TOP SOIL ON SITE, WHICH IS WITHIN AN AREA OF CUT OR FILL SHALL BE STRIPPED AND EXPORTED OFF SITE. COORDINATE WITH THE CAMPUS TO DETERMINE IF TOP SOIL MAY BE STOCKPILED ELSEWHERE ON CAMPUS.
- THE CONTRACTOR SHALL MAINTAIN EACH STREAM, CREEK, OR BACKWASH CHANNEL IN AN UNOBSTRUCTED STATE AND SHALL REMOVE FROM THE CHANNEL AND BANKS OF THE STREAM ALL DEBRIS, LOGS, TIMBER, JUNK AND OTHER ACCUMULATIONS.
- ALL LANE CLOSURES THAT ARE REQUIRED SHALL FOLLOW THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS FOR TRAFFIC CONTROL MEASURES.
- ALL SHORING SHALL BE IN ACCORDANCE WITH OSHA TRENCHING STANDARDS, PART 1926 SUBPART P, AS AMENDED.
- GRADING CONTRACTORS SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE WORK SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING OR CONNECTING TO SAID FACILITIES. CONTRACTORS SHALL RAISE OR LOWER TOPS OF EXISTING MANHOLES OR DRAINAGE GRATES AS REQUIRED TO MATCH FINISHED GRADES. ALL UTILITY RELOCATIONS MUST BE COORDINATED WITH THE CAMPUS.
- THE GRADING CONTRACTOR SHALL USE WHATEVER MEASURES ARE REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING BEYOND THE DENIED LIMITS SHOWN ON THE PLANS. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL EROSION, SEDIMENT AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND NOT BEFORE ALL AREAS DRAINING TO THESE FACILITIES ARE SUFFICIENTLY STABILIZED.
- GRADING CONTRACTOR TO COORDINATE ALL WORK WITH OTHER UTILITY INSTALLATIONS NOT COVERED IN THESE PLANS (ELECTRIC, TELEPHONE, GAS, CABLE, ETC.) AND ALLOW FOR THEIR OPERATIONS AND CONSTRUCTION TO BE PERFORMED.



800 EAST BOULEVARD
CHARLOTTE, NORTH CAROLINA 28203
704 | 332-7004
#10 Palmetto Business Park
Hilton Head Island, SC 29928
843 | 785-2199



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

**UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV
EARLY SITE PACKAGE**

UNIVERSITY OF NORTH CAROLINA CHARLOTTE
9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK	DATE (YYYY-MM-DD)	DESCRIPTION
	2015-01-06	BID DOCUMENTS
1	2015-02-05	ADDENDUM #2

FWA PROJECT NO.: 2420.02
SCO PROJECT NO.: #12-10117-03C

DRAWN BY: JKS
APPROVED BY: JIS

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SHEET TITLE

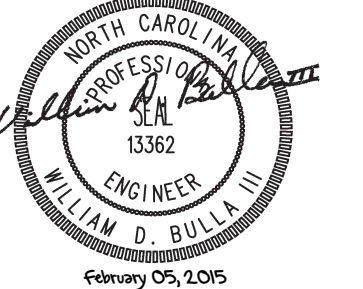
EARLY SITE DEMOLITION PLAN

SHEET NUMBER

C2.10

05-FEB-2015 08:03

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FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS



UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV
EARLY SITE PACKAGE

UNIVERSITY OF NORTH
CAROLINA CHARLOTTE
9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-01-26	ADDENDUM #1
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY: KPM
APPROVED BY: WDB

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SHEET TITLE

NORTH FOUNDATION PLAN

SHEET NUMBER

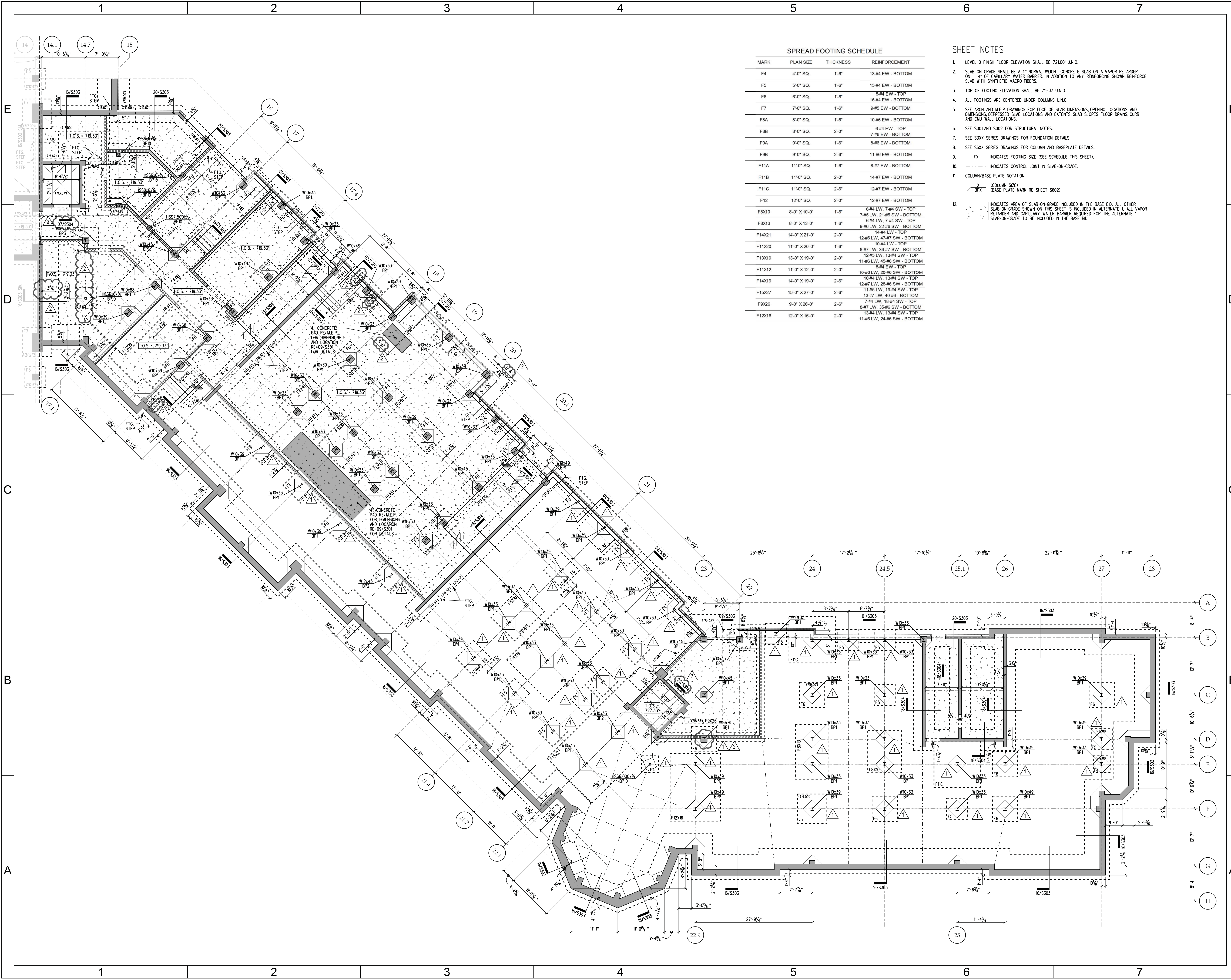
S101-N

SPREAD FOOTING SCHEDULE

MARK	PLAN SIZE	THICKNESS	REINFORCEMENT
F4	4'-0" SQ.	1'-6"	13-#4 EW - BOTTOM
F5	5'-0" SQ.	1'-6"	15-#4 EW - BOTTOM
F6	6'-0" SQ.	1'-6"	5-#4 EW - TOP 16-#4 EW - BOTTOM
F7	7'-0" SQ.	1'-6"	9-#5 EW - BOTTOM
F8A	8'-0" SQ.	1'-6"	10-#6 EW - BOTTOM
F8B	8'-0" SQ.	2'-0"	6-#4 EW - TOP
F9A	9'-0" SQ.	1'-6"	8-#6 EW - BOTTOM
F9B	9'-0" SQ.	2'-6"	11-#6 EW - BOTTOM
F11A	11'-0" SQ.	1'-6"	8-#7 EW - BOTTOM
F11B	11'-0" SQ.	2'-0"	14-#7 EW - BOTTOM
F11C	11'-0" SQ.	2'-6"	12-#7 EW - BOTTOM
F12	12'-0" SQ.	2'-0"	12-#7 EW - BOTTOM
FBX10	8'-0" X 10'-0"	1'-6"	6-#4 LW, 7-#4 SW - TOP 7-#5 LW, 21-#6 SW - BOTTOM
FBX13	8'-0" X 13'-0"	1'-6"	6-#4 LW, 7-#4 SW - TOP 9-#6 LW, 22-#6 SW - BOTTOM
F14X21	14'-0" X 21'-0"	2'-0"	14-#4 LW - TOP 12-#6 LW, 47-#7 SW - BOTTOM
F11X20	11'-0" X 20'-0"	1'-6"	10-#4 LW - TOP 8-#7 LW, 36-#7 SW - BOTTOM
F13X19	13'-0" X 19'-0"	2'-0"	12-#5 LW, 13-#4 SW - TOP 11-#6 LW, 45-#6 SW - BOTTOM
F11X12	11'-0" X 12'-0"	2'-0"	8-#4 EW - TOP 10-#6 LW, 20-#6 SW - BOTTOM
F14X19	14'-0" X 19'-0"	2'-6"	10-#4 LW, 13-#4 SW - TOP 12-#7 LW, 28-#6 SW - BOTTOM
F15X27	15'-0" X 27'-0"	2'-6"	11-#5 LW, 19-#4 SW - TOP 13-#7 LW, 40-#6 SW - BOTTOM
FBX26	9'-0" X 26'-0"	2'-6"	7-#4 LW, 18-#4 SW - TOP 13-#4 LW, 13-#4 SW - TOP
F12X16	12'-0" X 16'-0"	2'-0"	11-#6 LW, 24-#6 SW - BOTTOM

SHEET NOTES

- LEVEL 0 FINISH FLOOR ELEVATION SHALL BE 721.00' U.N.O.
- SLAB ON GRADE SHALL BE A 4" NORMAL WEIGHT CONCRETE SLAB ON A VAPOR RETARDER ON 4" OF CAPILLARY WATER BARRIER. IN ADDITION TO ANY REINFORCING SHOWN, REINFORCE SLAB WITH SYNTHETIC MACRO-FIBERS.
- TOP OF FOOTING ELEVATION SHALL BE 719.33' U.N.O.
- ALL FOOTINGS ARE CENTERED UNDER COLUMNS U.N.O.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DEPRESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S3XX SERIES DRAWINGS FOR FOUNDATION DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- FX INDICATES FOOTING SIZE (SEE SCHEDULE THIS SHEET).
- INDICATES CONTROL JOINT IN SLAB-ON-GRADE.
- COLUMN/BASE PLATE NOTATION:
 (COLUMN SIZE)
 (BASE PLATE MARK, RE: SHEET S602)
- INDICATES AREA OF SLAB-ON-GRADE INCLUDED IN THE BASE BD. ALL OTHER SLAB-ON-GRADE SHOWN ON THIS SHEET IS INCLUDED IN ALTERNATE 1. ALL VAPOR RETARDER AND CAPILLARY WATER BARRIER REQUIRED FOR THE ALTERNATE 1 SLAB-ON-GRADE TO BE INCLUDED IN THE BASE BD.



05-FEB-2015 08:02

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DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY: KPM
APPROVED BY: WDB

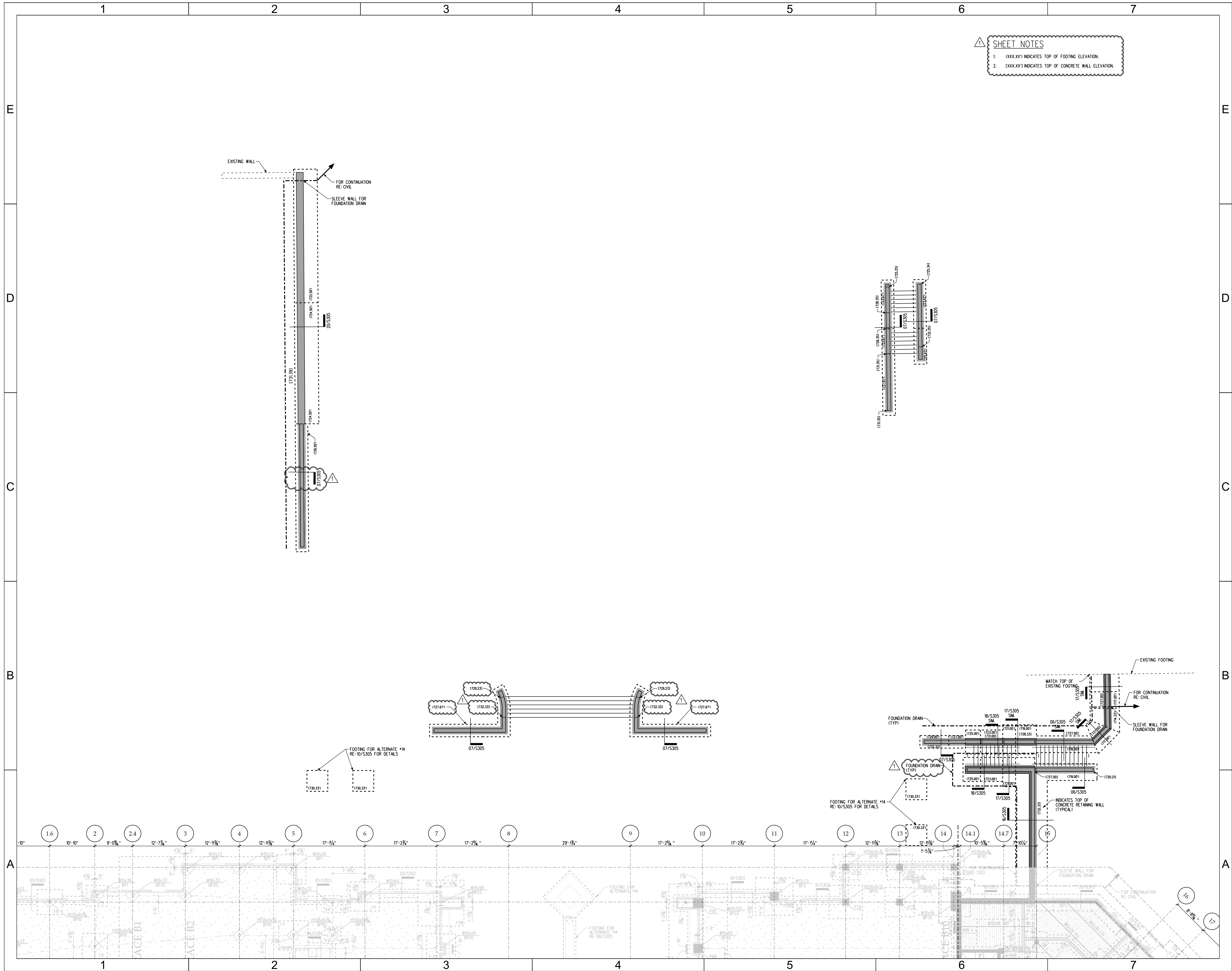
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SHEET TITLE

**SITE WALL
PLAN**

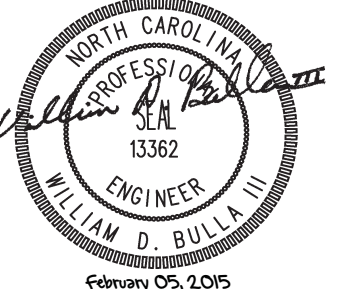
SHEET NUMBER

S103



05-FEB-2015 08:02

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FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV
EARLY SITE PACKAGE

UNIVERSITY OF NORTH
CAROLINA CHARLOTTE
9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK	DATE (YYYY-MM-DD)	DESCRIPTION
	2015-01-06	BID DOCUMENTS
▲	2015-01-26	ADDENDUM #1
▲	2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-1017-03C

DRAWN BY: KPM
APPROVED BY: WDB

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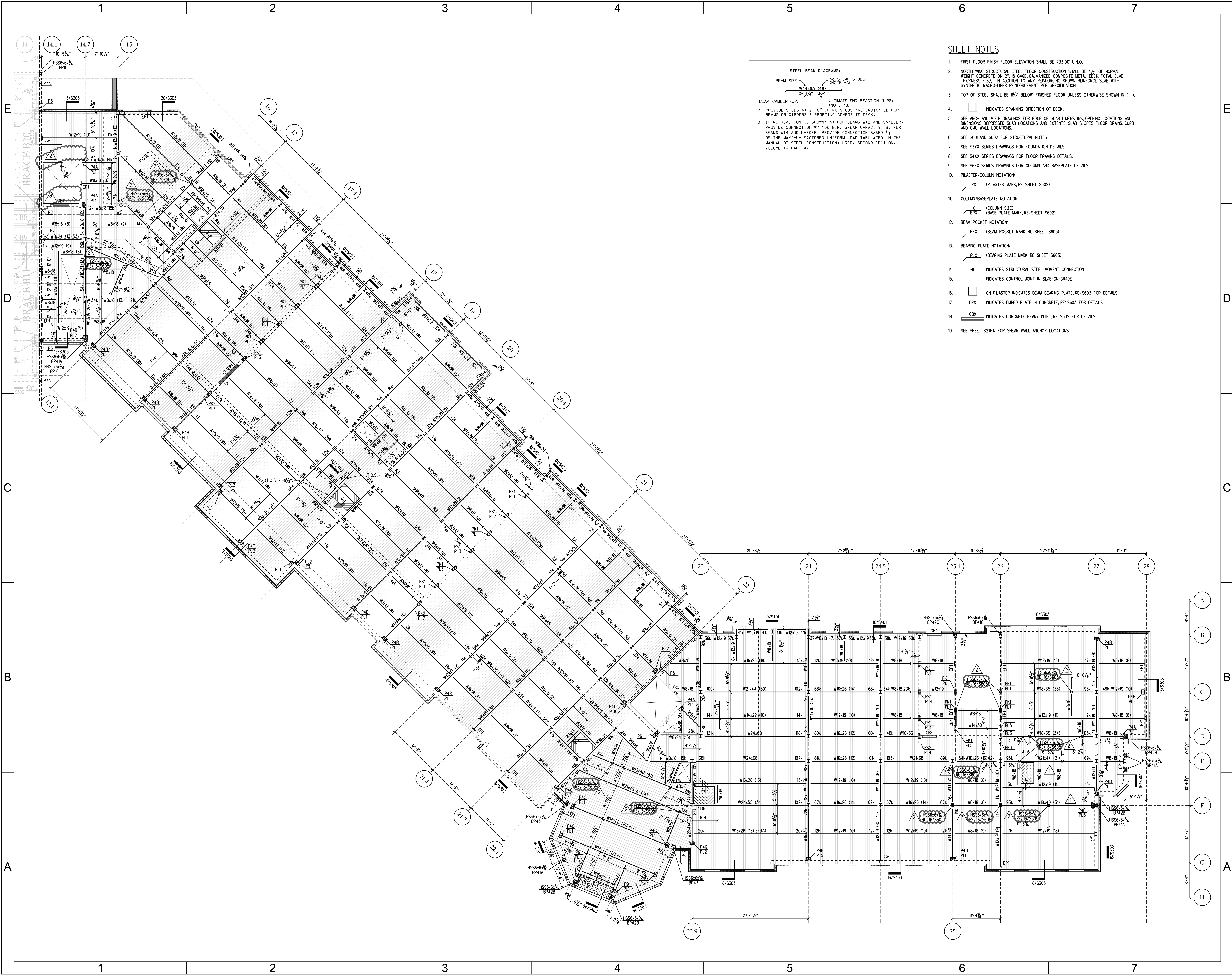
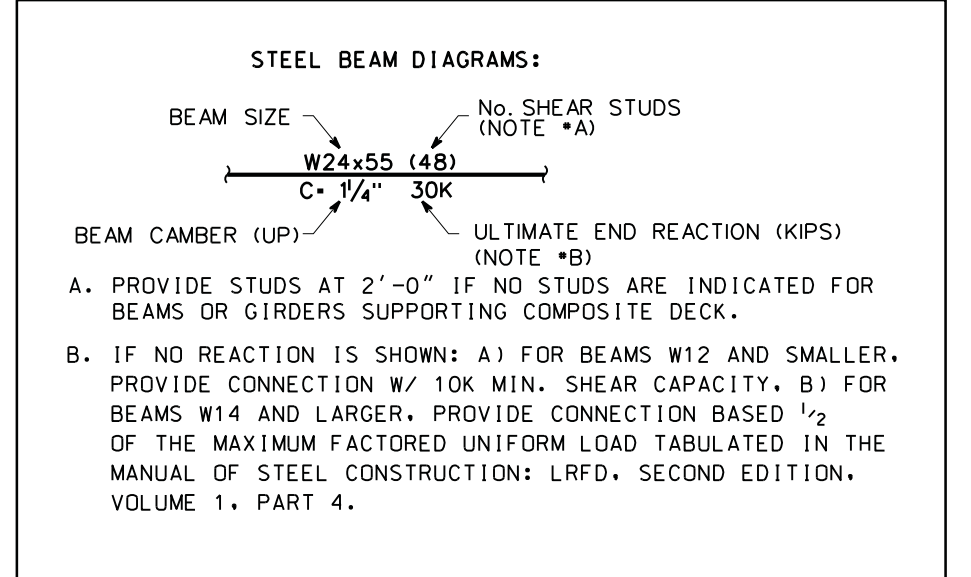
SHEET TITLE

**1ST FLOOR
NORTH
FRAMING PLAN**

SHEET NUMBER
S201-N

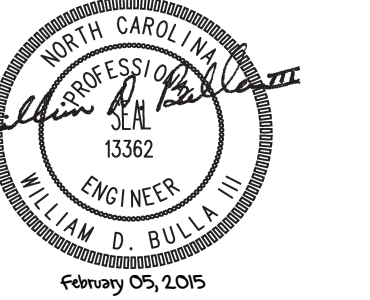
SHEET NOTES

- FIRST FLOOR FINISH FLOOR ELEVATION SHALL BE 733.00' U.N.O.
- NORTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 4 1/2" OF NORMAL WEIGHT CONCRETE ON 2" 18 GAGE GALVANIZED COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 6 1/2". IN ADDITION TO ANY REINFORCING SHOWN, REINFORCE SLAB WITH SYNTHETIC MACRO-FIBER REINFORCEMENT PER SPECIFICATION.
- TOP OF STEEL SHALL BE 6/2" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- INDICATES SPANNING DIRECTION OF DECK.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DEPRESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S4XX SERIES DRAWINGS FOR FOUNDATION DETAILS.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- PILASTER/COLUMN NOTATION:
PX (PILASTER MARK, RE: SHEET S302)
- COLUMN/BASEPLATE NOTATION:
BX (COLUMN SIZE)
CBX (BASE PLATE MARK, RE: SHEET S602)
- BEAM POCKET NOTATION:
PKX (BEAM POCKET MARK, RE: SHEET S603)
- BEARING PLATE NOTATION:
PLX (BEARING PLATE MARK, RE: SHEET S603)
- INDICATES STRUCTURAL STEEL MOMENT CONNECTION
- INDICATES CONTROL JOINT IN SLAB-ON-GRADE
- ON PLASTER INDICATES BEAM BEARING PLATE, RE: S603 FOR DETAILS
- EPX INDICATES EMBED PLATE IN CONCRETE, RE: S603 FOR DETAILS
- CBX INDICATES CONCRETE BEAM/LINTEL, RE: S302 FOR DETAILS
- SEE SHEET S211-N FOR SHEAR WALL ANCHOR LOCATIONS.



05-FEB-2015 08:02

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FOR CONSTRUCTION

**CONSTRUCTION
DOCUMENTS**



**UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV
EARLY SITE PACKAGE**

UNIVERSITY OF NORTH
CAROLINA CHARLOTTE
9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-01-26	ADDENDUM #1
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY: KPM
APPROVED BY: WDB

THESE DRAWINGS AND THE PROJECT MANUAL ARE INSTRUMENTS OF SERVICE AND REMAIN THE PROPERTY OF THE FWA GROUP ARCHITECTS. UNAUTHORIZED DUPLICATION OR REUSE WITHOUT WRITTEN CONSENT IS PROHIBITED.

SHEET TITLE

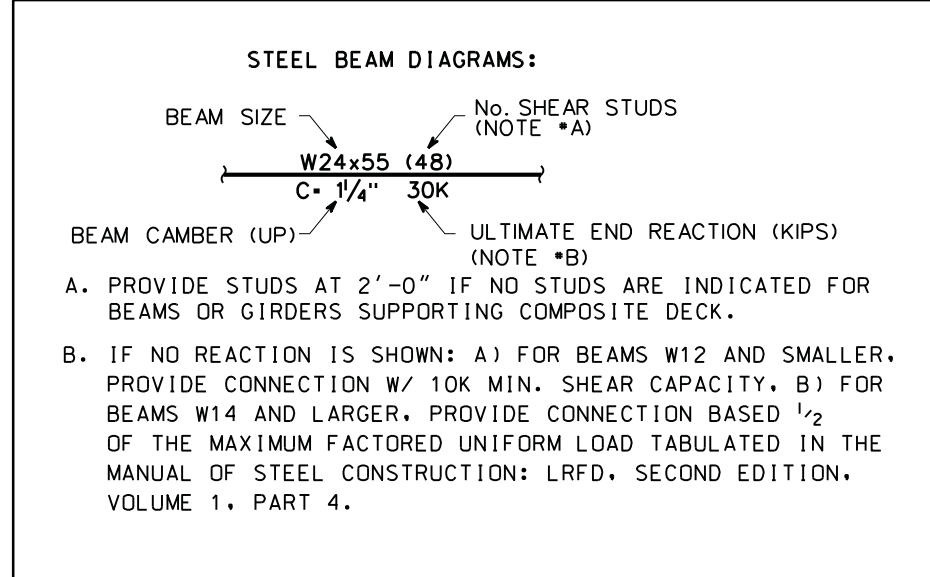
**1ST FLOOR
SOUTH FOUNDATION
AND FRAMING PLAN**

SHEET NUMBER

S201-S

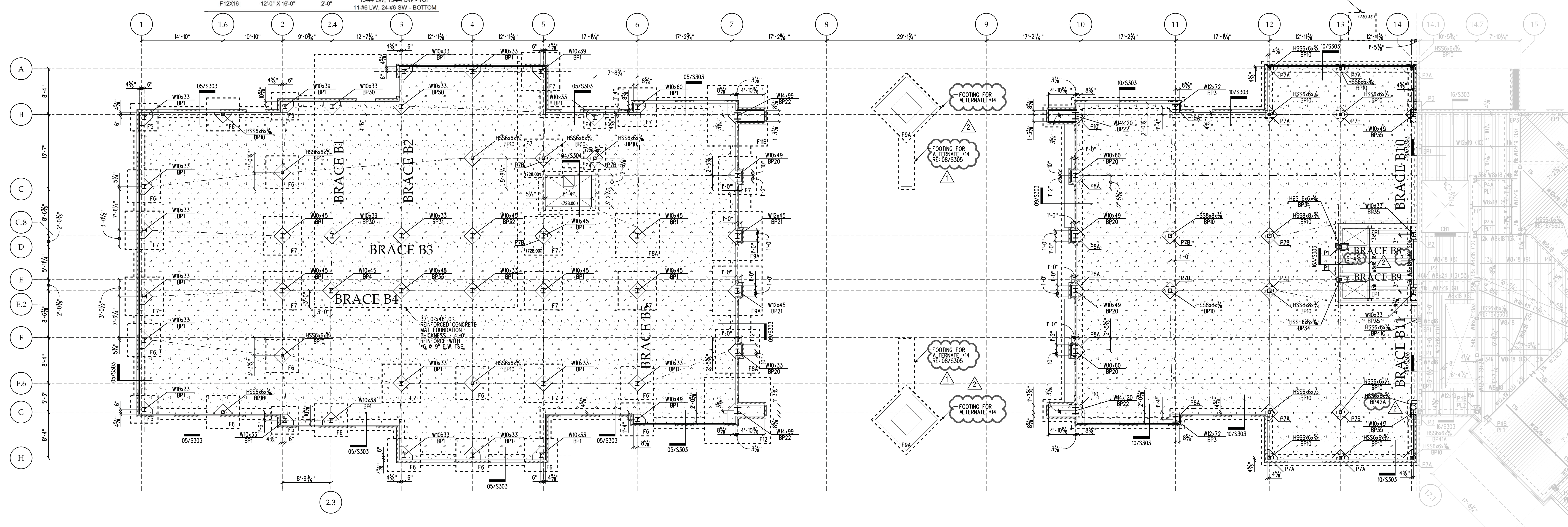
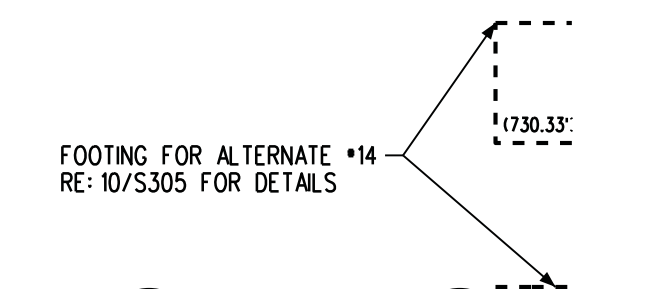
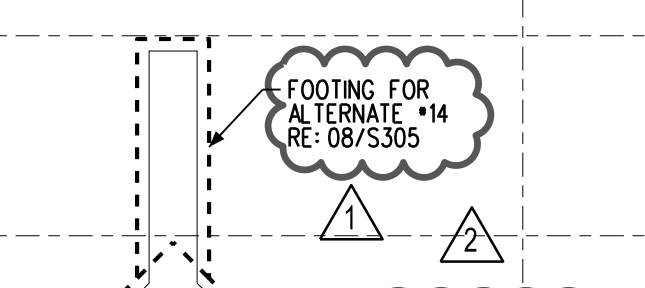
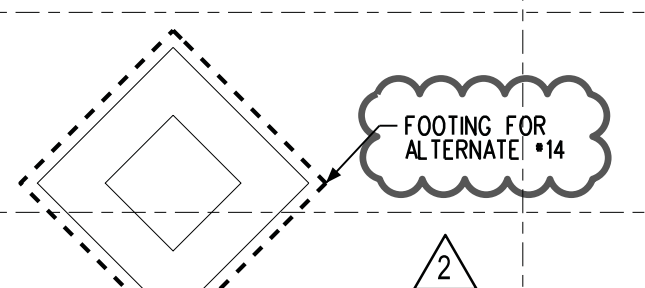
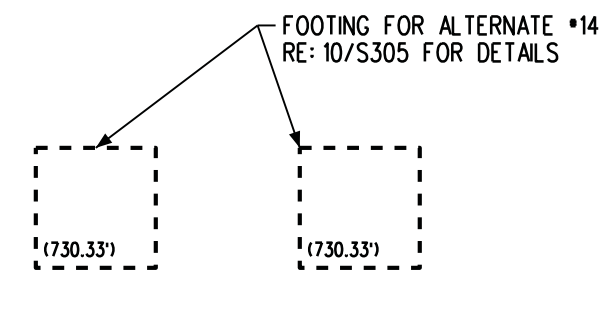
SPREAD FOOTING SCHEDULE

MARK	PLAN SIZE	THICKNESS	REINFORCEMENT
F4	4'-0" SQ.	1'-6"	13-#4 EW - BOTTOM
F5	5'-0" SQ.	1'-6"	15-#4 EW - BOTTOM
F6	6'-0" SQ.	1'-6"	5-#4 EW - TOP 16-#4 EW - BOTTOM
F7	7'-0" SQ.	1'-6"	9-#5 EW - BOTTOM
F8A	8'-0" SQ.	1'-6"	10-#6 EW - BOTTOM
F8B	8'-0" SQ.	2'-0"	8-#4 EW - TOP 7-#6 EW - BOTTOM
F9A	9'-0" SQ.	1'-6"	8-#6 EW - BOTTOM
F9B	9'-0" SQ.	2'-6"	11-#6 EW - BOTTOM
F11A	11'-0" SQ.	1'-6"	8-#7 EW - BOTTOM
F11B	11'-0" SQ.	2'-0"	14-#7 EW - BOTTOM
F11C	11'-0" SQ.	2'-6"	12-#7 EW - BOTTOM
F12	12'-0" SQ.	2'-0"	12-#7 EW - BOTTOM
F8X10	8'-0" X 10'-0"	1'-6"	6-#4 LW, 7-#4 SW - TOP 7-#6 LW, 21-#5 SW - BOTTOM
F8X13	8'-0" X 13'-0"	1'-6"	6-#4 LW, 7-#4 SW - TOP 9-#6 LW, 22-#6 SW - BOTTOM
F14X21	14'-0" X 21'-0"	2'-0"	14-#4 LW - TOP 12-#6 LW, 47-#7 SW - BOTTOM
F11X20	11'-0" X 20'-0"	1'-6"	10-#4 LW - TOP 8-#7 LW, 36-#7 SW - BOTTOM
F13X19	13'-0" X 19'-0"	2'-0"	12-#5 LW, 13-#4 SW - TOP 11-#6 LW, 45-#6 SW - BOTTOM
F11X12	11'-0" X 12'-0"	2'-0"	8-#4 EW - TOP 10-#6 LW, 20-#6 SW - BOTTOM
F14X19	14'-0" X 19'-0"	2'-6"	10-#4 LW, 13-#4 SW - TOP 12-#7 LW, 28-#6 SW - BOTTOM
F15X27	15'-0" X 27'-0"	2'-6"	11-#6 LW, 19-#4 SW - TOP 13-#7 LW, 40-#6 SW - BOTTOM
F9X26	9'-0" X 26'-0"	2'-6"	7-#4 LW, 18-#4 SW - TOP 8-#7 LW, 35-#6 SW - BOTTOM
F12X16	12'-0" X 16'-0"	2'-0"	13-#4 LW, 13-#4 SW - TOP 11-#6 LW, 24-#6 SW - BOTTOM



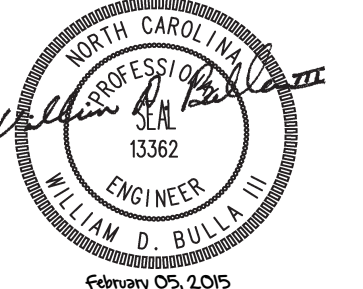
SHEET NOTES

- FIRST FLOOR FINISH FLOOR ELEVATION SHALL BE 733.00' U.N.O.
- SLAB ON GRADE SHALL BE A 4" NORMAL WEIGHT CONCRETE SLAB ON A VAPOR RETARDER ON 4" OF CAPILLARY WATER BARRIER, IN ADDITION TO ANY REINFORCING SHOWN, REINFORCE SLAB WITH SYNTHETIC MACRO-FIBERS. ALL 1ST FLOOR SLAB-ON-GRADE IS INCLUDED IN THE BASE BD.
- TOP OF FOOTING ELEVATION SHALL BE 731.00' U.N.O.
- ALL FOOTINGS ARE CENTERED UNDER COLUMNS U.N.O.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DEPRESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S3XX SERIES DRAWINGS FOR FOUNDATION DETAILS.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- FX INDICATES FOOTING SIZE (SEE SCHEDULE THIS SHEET).
- INDICATES CONTROL JOINT IN SLAB-ON-GRADE.
- NORTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 4 1/2" OF NORMAL WEIGHT CONCRETE ON 2" B GAGE GALVANIZED COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 6 1/2" IN ADDITION TO ANY REINFORCING SHOWN, REINFORCE SLAB WITH W.W.F. 6x6-W2.5xW2.5.
- TOP OF STEEL SHALL BE 6 1/2" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- INDICATES SPANNING DIRECTION OF DECK.
- PLASTER/COLUMN NOTATION:
PX (PLASTER MARK, RE: SHEET S302)
- COLUMN/BASEPLATE NOTATION:
X (COLUMN SIZE)
BPX (BASE PLATE MARK, RE: SHEET S602)
- BEAM POCKET NOTATION:
PKX (BEAM POCKET MARK, RE: SHEET S603)
- BEARING PLATE NOTATION:
PLX (BEARING PLATE MARK, RE: SHEET S603)
- INDICATES STRUCTURAL STEEL MOMENT CONNECTION
- INDICATES CONTROL JOINT IN SLAB-ON-GRADE
- ON PLASTER INDICATES BEAM BEARING PLATE, RE: S603 FOR DETAILS
- EPX INDICATES EMBED PLATE IN CONCRETE, RE: S603 FOR DETAILS
- CBX INDICATES CONCRETE BEAM/INTEL, RE: S302 FOR DETAILS



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FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

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UNIVERSITY OF NORTH CAROLINA CHARLOTTE
9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-01-26	ADDENDUM #1
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-1017-03C

DRAWN BY: KPM
APPROVED BY: WDB

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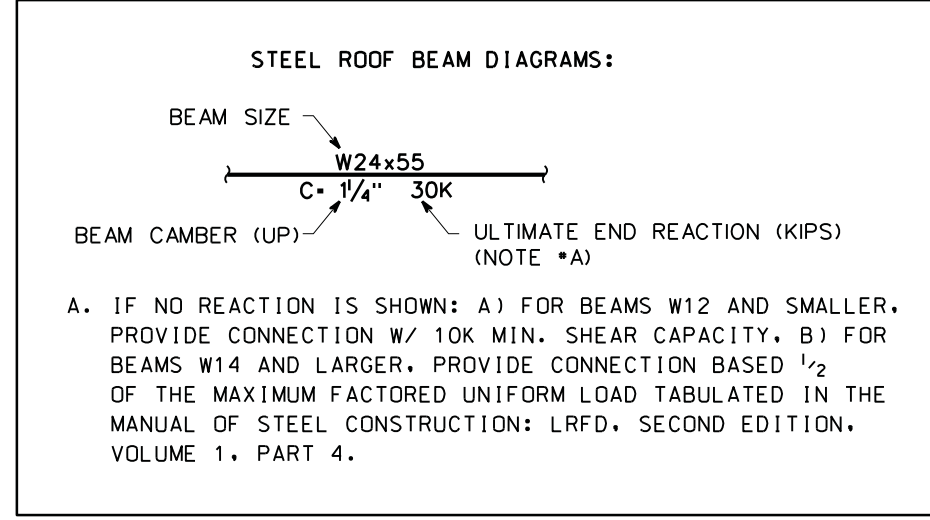
SHEET TITLE

2ND FLOOR NORTH FRAMING PLAN

SHEET NUMBER
S202-N

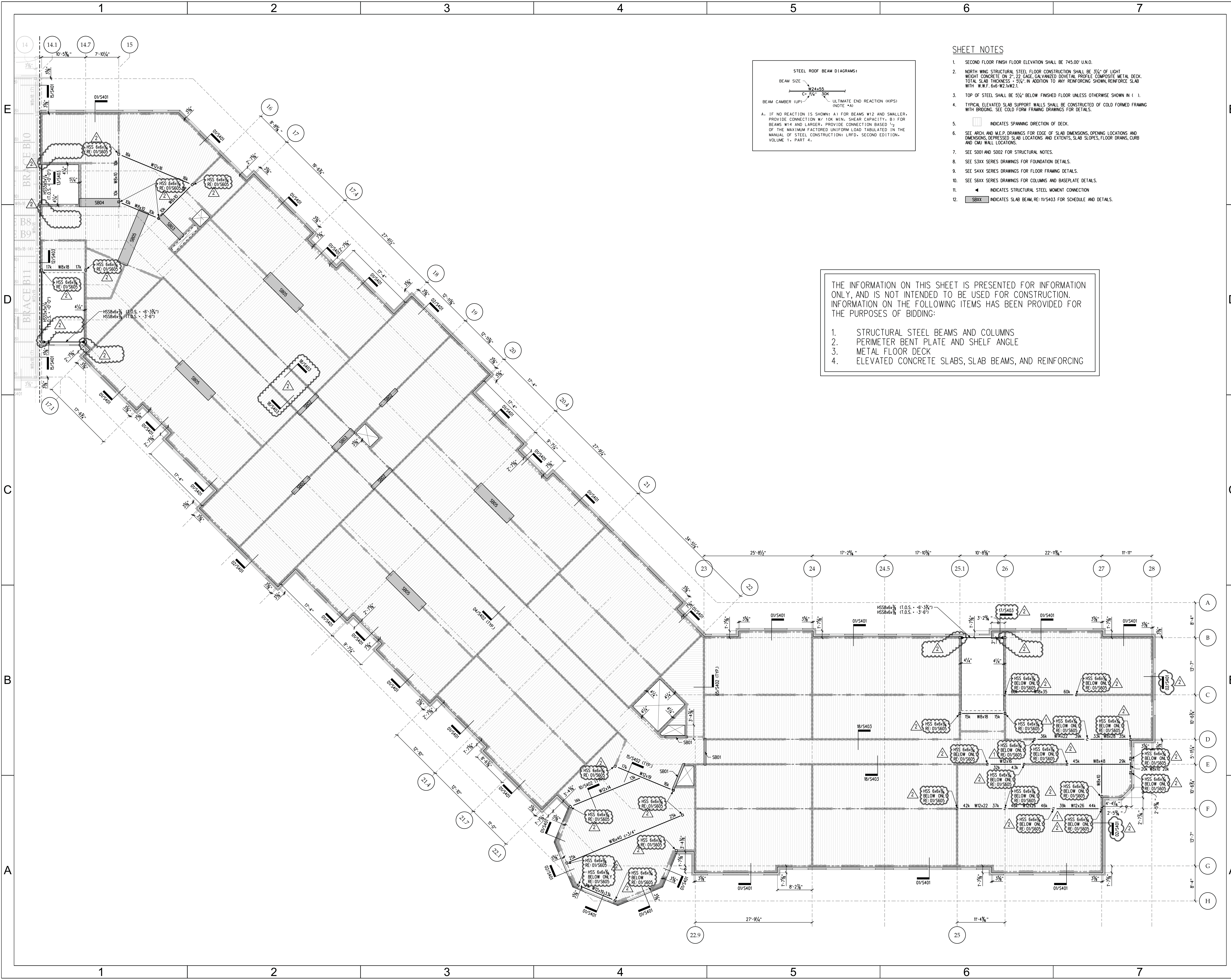
SHEET NOTES

- SECOND FLOOR FINISH FLOOR ELEVATION SHALL BE 745.00' U.N.O.
- NORTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 3/4" OF LIGHT WEIGHT CONCRETE ON 2" ZZ GALV. GALVANIZED DOVETAIL PROFILE COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 5/4" IN ADDITION TO ANY REINFORCING SHOWN. REINFORCE SLAB WITH W.W.F. 6x6-W2xW2.1.
- TOP OF STEEL SHALL BE 3/4" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- TYPICAL ELEVATED SLAB SUPPORT WALLS SHALL BE CONSTRUCTED OF COLD FORMED BRICK WITH BRIDGING. SEE COLD FORM FRAMING DRAWINGS FOR DETAILS.
- INDICATES SPANNING DIRECTION OF DECK.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DERESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S3XX SERIES DRAWINGS FOR FOUNDATION DETAILS.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMNS AND BASEPLATE DETAILS.
- INDICATES STRUCTURAL STEEL MOMENT CONNECTION
- INDICATES SLAB BEAM, RE: 11/S403 FOR SCHEDULE AND DETAILS.

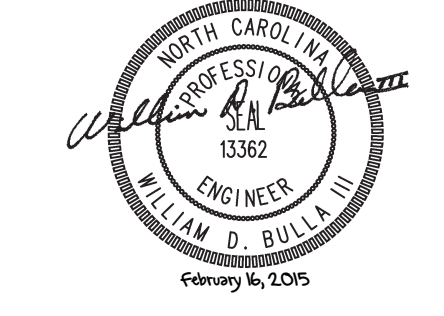


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- STRUCTURAL STEEL BEAMS AND COLUMNS
- PERIMETER BENT PLATE AND SHELF ANGLE
- METAL FLOOR DECK
- ELEVATED CONCRETE SLABS, SLAB BEAMS, AND REINFORCING



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UNIVERSITY OF NORTH
CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-1017-03C

DRAWN BY: KPM
APPROVED BY: WDB

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SHEET TITLE

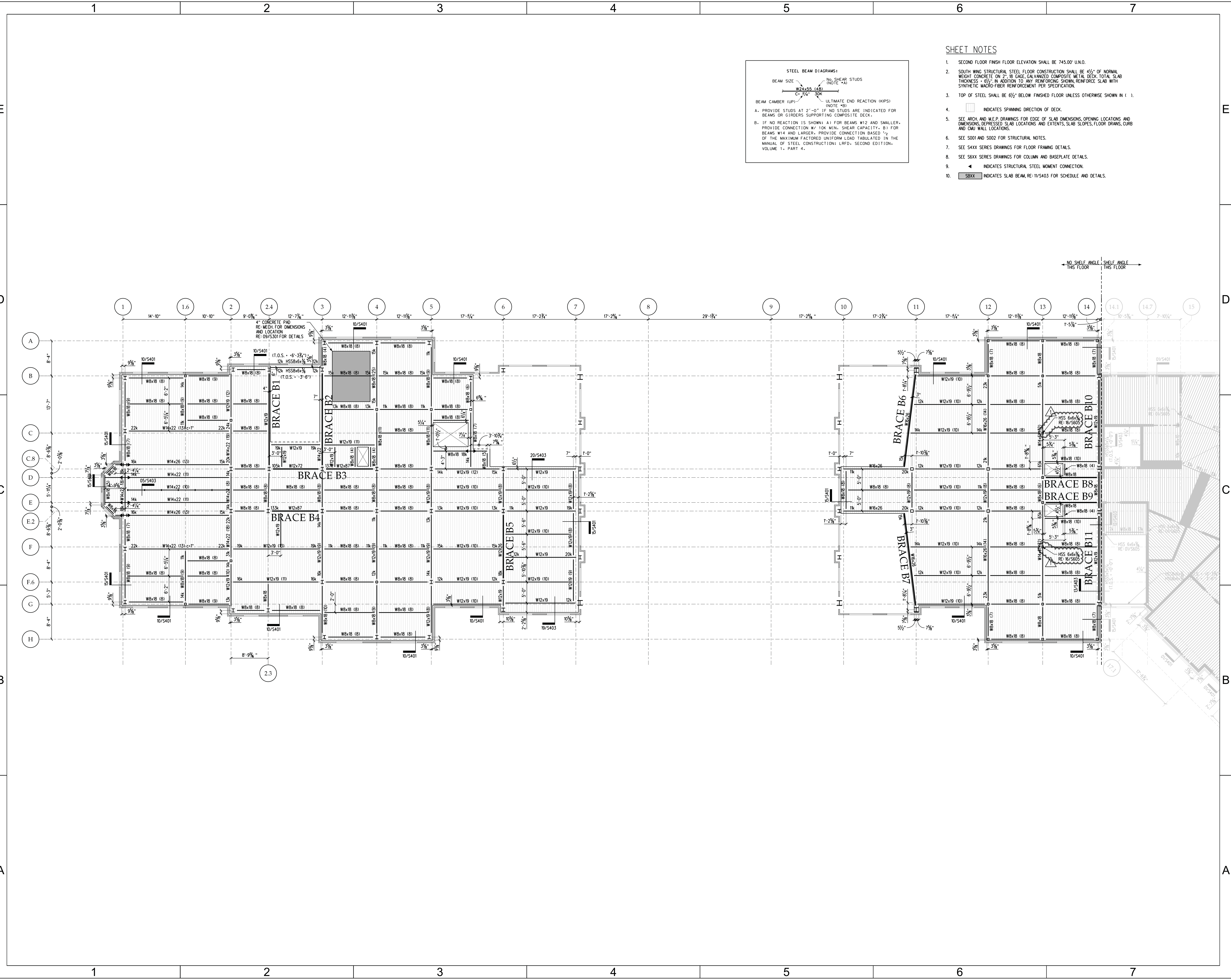
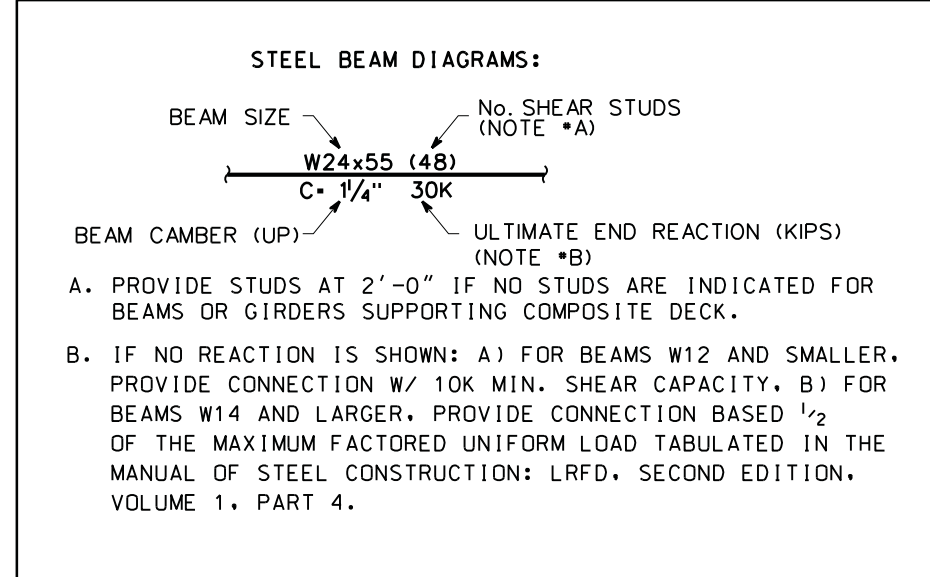
**2ND FLOOR
SOUTH
FRAMING PLAN**

SHEET NUMBER

S202-S

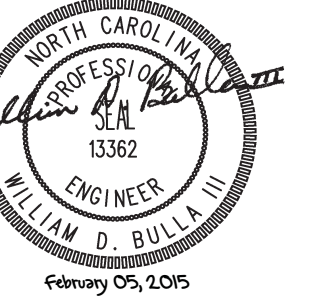
SHEET NOTES

- SECOND FLOOR FINISH FLOOR ELEVATION SHALL BE 745.00' U.N.O.
- SOUTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 4 1/2" OF NORMAL WEIGHT CONCRETE ON 2" X 18 GAGE GALVANIZED COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 6 1/2". IN ADDITION TO ANY REINFORCING SHOWN, REINFORCE SLAB WITH SYNTHETIC MACRO-FIBER REINFORCEMENT PER SPECIFICATION.
- TOP OF STEEL SHALL BE 6/2" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- [Symbol] INDICATES SPANNING DIRECTION OF DECK.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DEPRESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CURB WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- [Symbol] INDICATES STRUCTURAL STEEL MOMENT CONNECTION.
- [Symbol] INDICATES SLAB BEAM, RE: 11/5403 FOR SCHEDULE AND DETAILS.



16-FEB-2015 13:57

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FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV
EARLY SITE PACKAGE

UNIVERSITY OF NORTH CAROLINA CHARLOTTE
9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-1017-03C

DRAWN BY: KPM
APPROVED BY: WDB

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SHEET TITLE

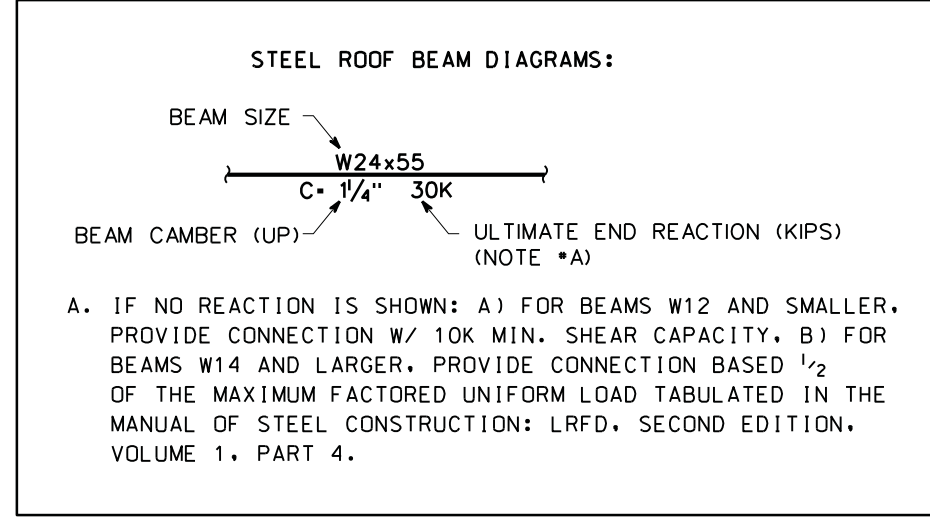
3RD FLOOR NORTH FRAMING PLAN

SHEET NUMBER

S203-N

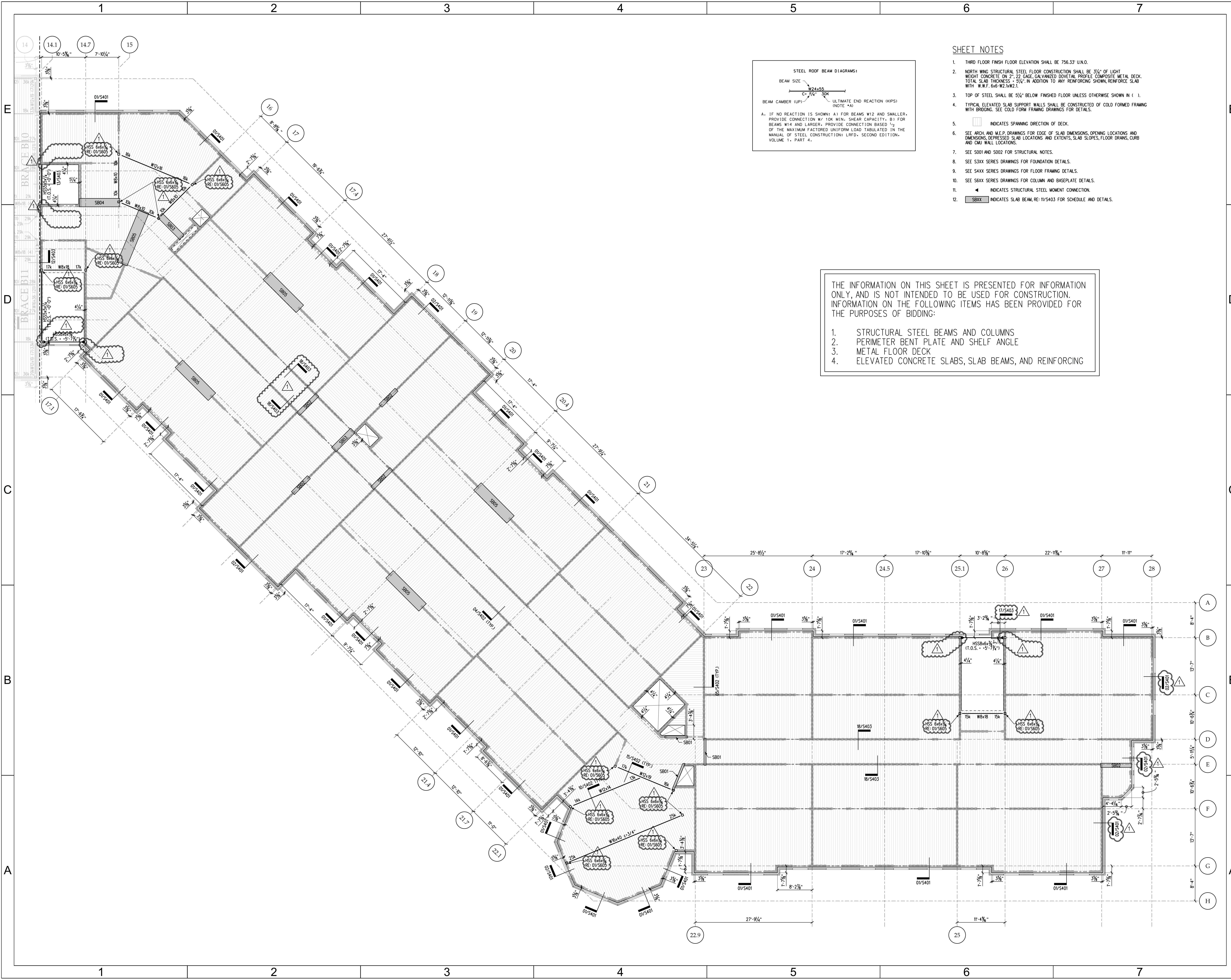
SHEET NOTES

- THRD FLOOR FINISH FLOOR ELEVATION SHALL BE 756.33' U.N.O.
- NORTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 3/4" OF LIGHT WEIGHT CONCRETE ON 2" ZZ GAGE GALVANIZED DOVETAIL PROFILE COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 5/4" IN ADDITION TO ANY REINFORCING SHOWN. REINFORCE SLAB WITH W.W.F. 6x6-W2.1xW2.1.
- TOP OF STEEL SHALL BE 3/4" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- TYPICAL ELEVATED SLAB SUPPORT WALLS SHALL BE CONSTRUCTED OF COLD FORMED BRICK WITH BRIDGING. SEE COLD FORM FRAMING DRAWINGS FOR DETAILS.
- INDICATES SPANNING DIRECTION OF DECK.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DERESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S3XX SERIES DRAWINGS FOR FOUNDATION DETAILS.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- INDICATES STRUCTURAL STEEL CONNECTION.
- INDICATES SLAB BEAM, RE: 11/S403 FOR SCHEDULE AND DETAILS.



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- STRUCTURAL STEEL BEAMS AND COLUMNS
- PERIMETER BENT PLATE AND SHELF ANGLE
- METAL FLOOR DECK
- ELEVATED CONCRETE SLABS, SLAB BEAMS, AND REINFORCING



05-FEB-2015 08:03
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MARK	DATE (YYYY-MM-DD)	DESCRIPTION
	2015-01-06	BID DOCUMENTS
▲	2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY: KPM
APPROVED BY: WDB

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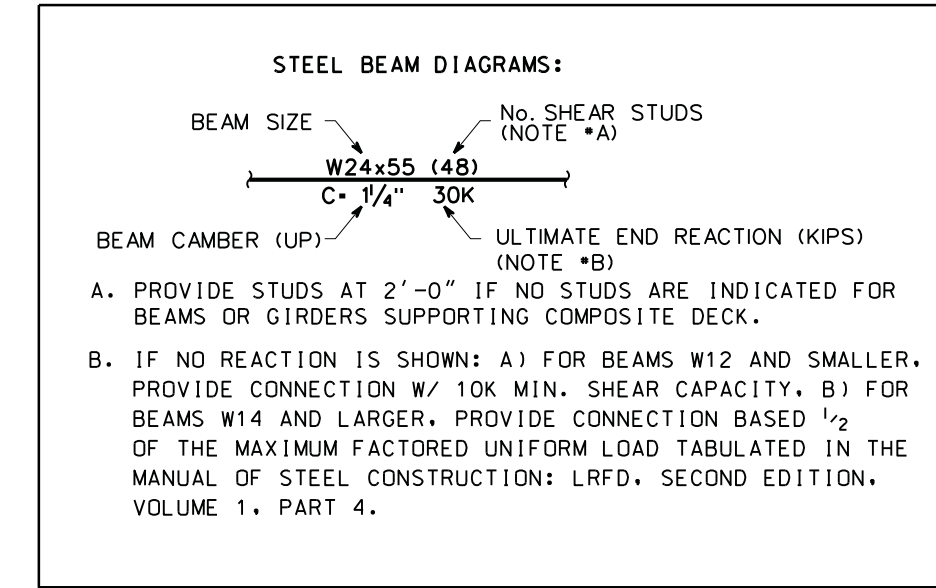
SHEET TITLE

3RD FLOOR
SOUTH
FRAMING PLAN

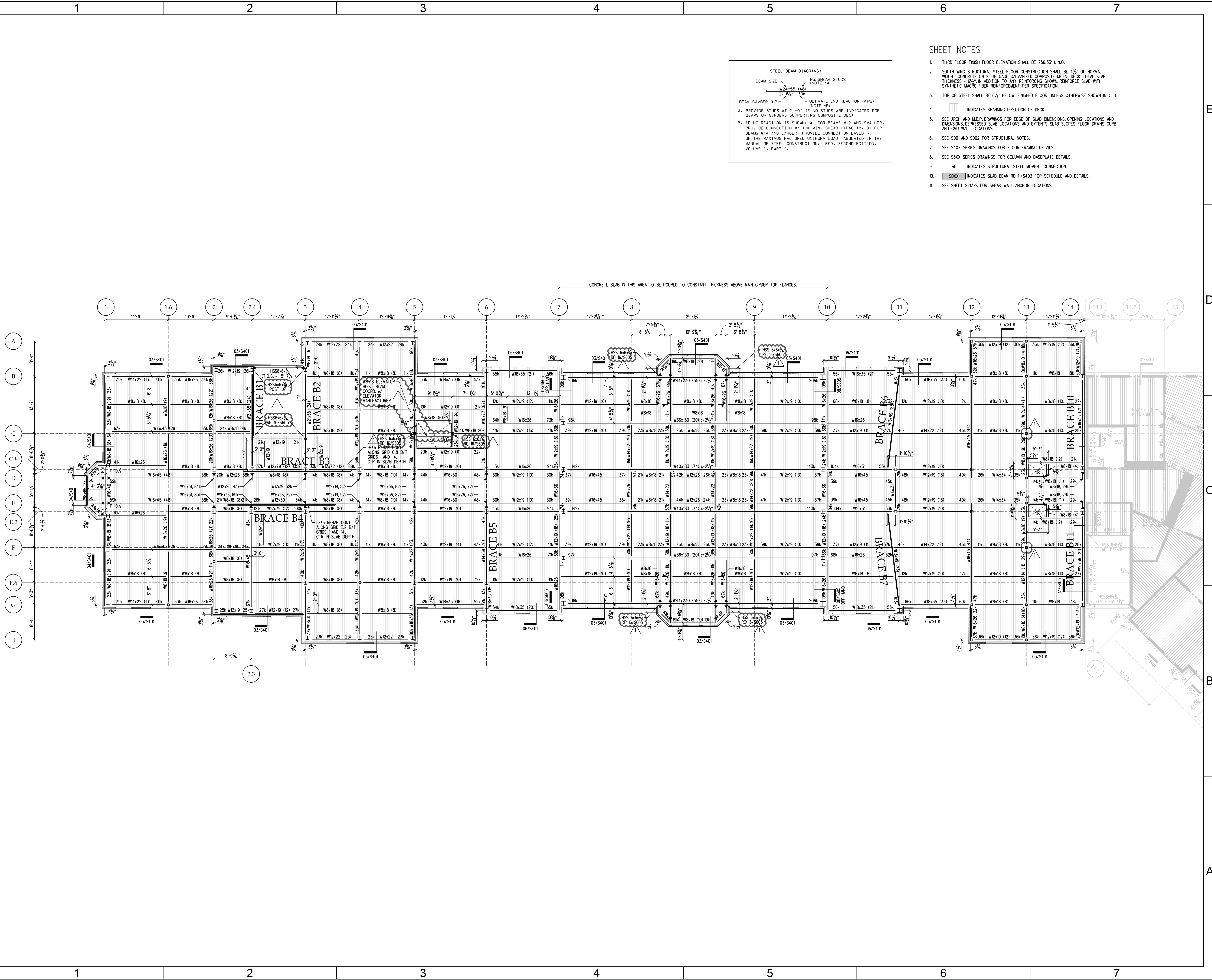
SHEET NUMBER
S203-S

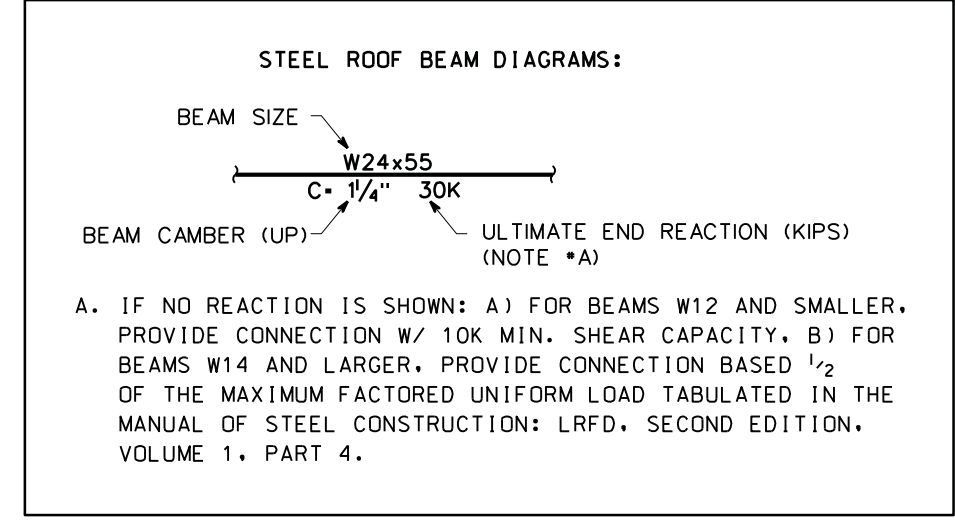
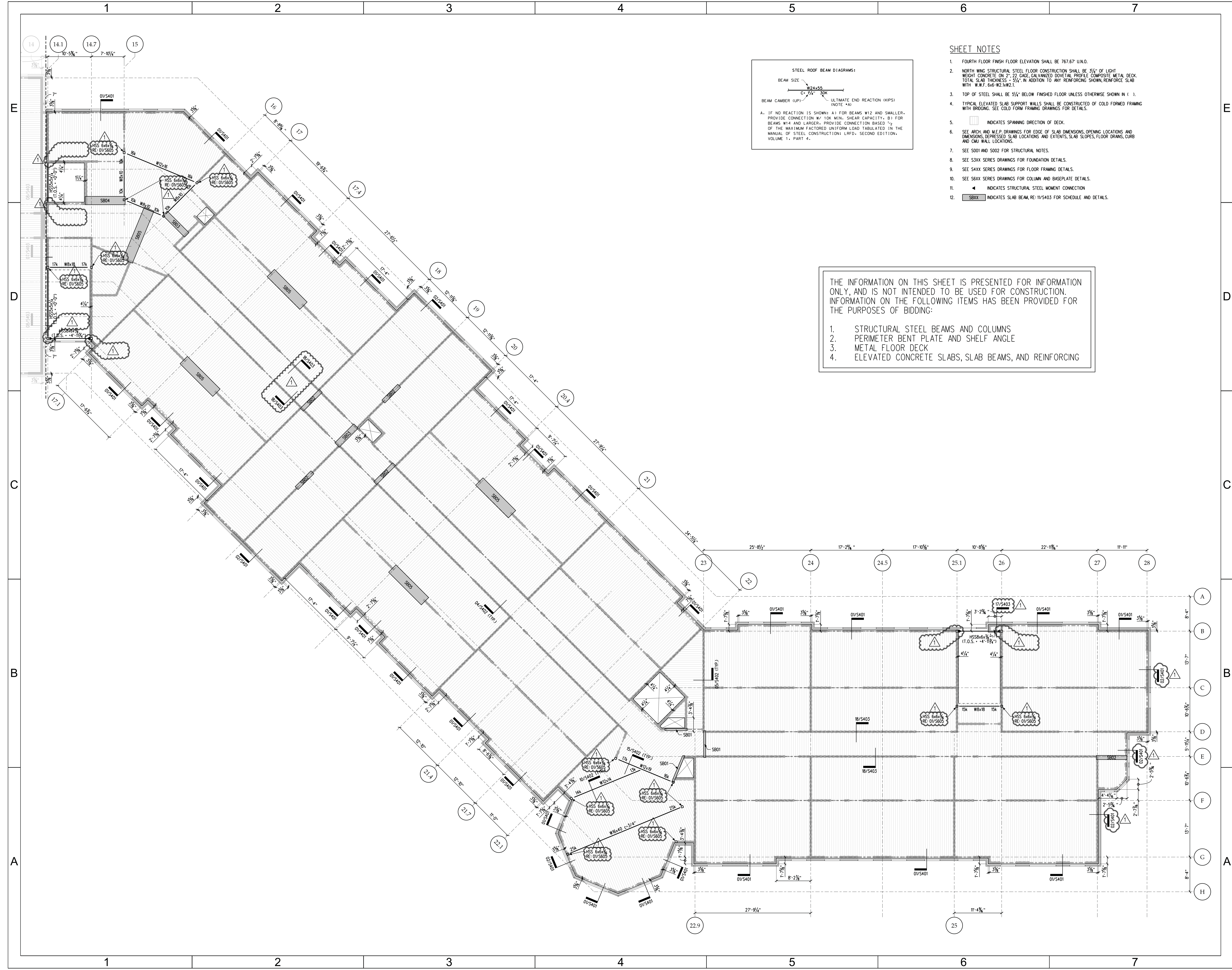
SHEET NOTES

- THRD FLOOR FINISH FLOOR ELEVATION SHALL BE 756.33' U.N.O.
- SOUTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 4 1/2" OF NORMAL WEIGHT CONCRETE ON 2" RIB GALVANIZED COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 6 1/2". IN ADDITION TO ANY REINFORCING SHOWN, REINFORCE SLAB WITH SYNTHETIC MACRO-FIBER REINFORCEMENT PER SPECIFICATION.
- TOP OF STEEL SHALL BE 6 1/2" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- INDICATES SPANNING DIRECTION OF DECK.
- SEE ARCH AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DEPRESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CHAM WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- ◀ INDICATES STRUCTURAL STEEL MOMENT CONNECTION.
- ▭ SBXX INDICATES SLAB BEAM RE-11/5403 FOR SCHEDULE AND DETAILS.
- SEE SHEET S213-S FOR SHEAR WALL ANCHOR LOCATIONS.



CONCRETE SLAB IN THIS AREA TO BE POURED TO CONSTANT THICKNESS ABOVE MAIN ORDER TOP FLANGES.





- ### SHEET NOTES
- FOURTH FLOOR FINISH FLOOR ELEVATION SHALL BE 767.67' U.N.O.
 - NORTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 3/4\"
 - TOP OF STEEL SHALL BE 3/4\"
 - TYPICAL ELEVATED SLAB SUPPORT WALLS SHALL BE CONSTRUCTED OF COLD FORMED STEEL WITH BRIDGING. SEE COLD FORM FRAMING DRAWINGS FOR DETAILS.
 - INDICATES SPANNING DIRECTION OF DECK.
 - SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DERESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
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- PERIMETER BENT PLATE AND SHELF ANGLE
- METAL FLOOR DECK
- ELEVATED CONCRETE SLABS, SLAB BEAMS, AND REINFORCING



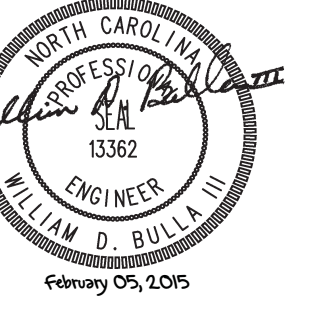
800 EAST BOULEVARD
CHARLOTTE, NORTH CAROLINA 28203
704 | 332-7004

#10 Palmetto Business Park
Filion Head Island, SC 29928
843 | 785-2199

BS&E

**BULLA SMITH
DESIGN ENGINEERING**

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1347 Harding Place Suite 201
Charlotte, NC 28204
© 704.333.3122 © 704.333.8252



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS



UNC CHARLOTTE

RESIDENCE HALL PHASE XIV EARLY SITE PACKAGE

UNIVERSITY OF NORTH CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-1017-03C

DRAWN BY: KPM
APPROVED BY: WDB

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SHEET TITLE

4TH FLOOR NORTH FRAMING PLAN

SHEET NUMBER

S204-N

05-FEB-2015 08:03

P:\2013\2013.23 UNCC Phase X\A\CADD Files\ESP\15204N.dgn

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY: KPM
APPROVED BY: WDB

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SHEET TITLE

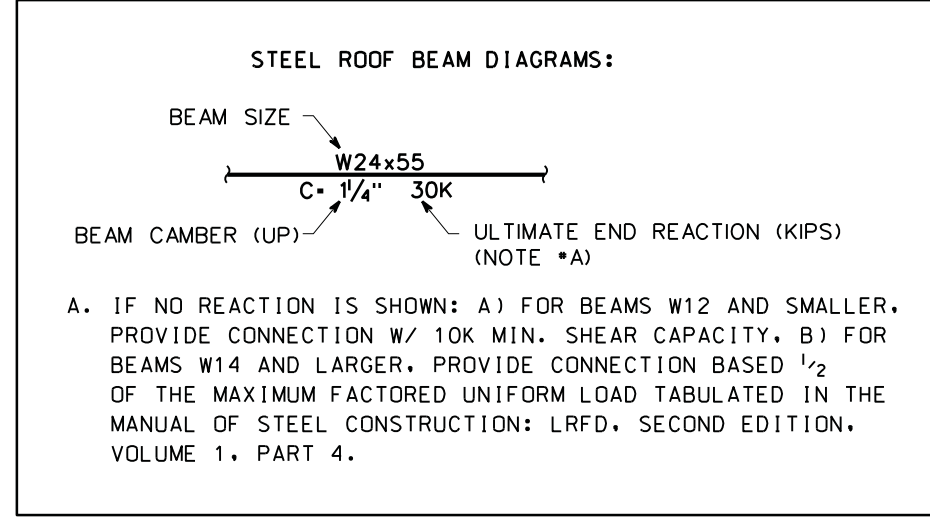
4TH FLOOR
SOUTH
FRAMING PLAN

SHEET NUMBER

S204-S

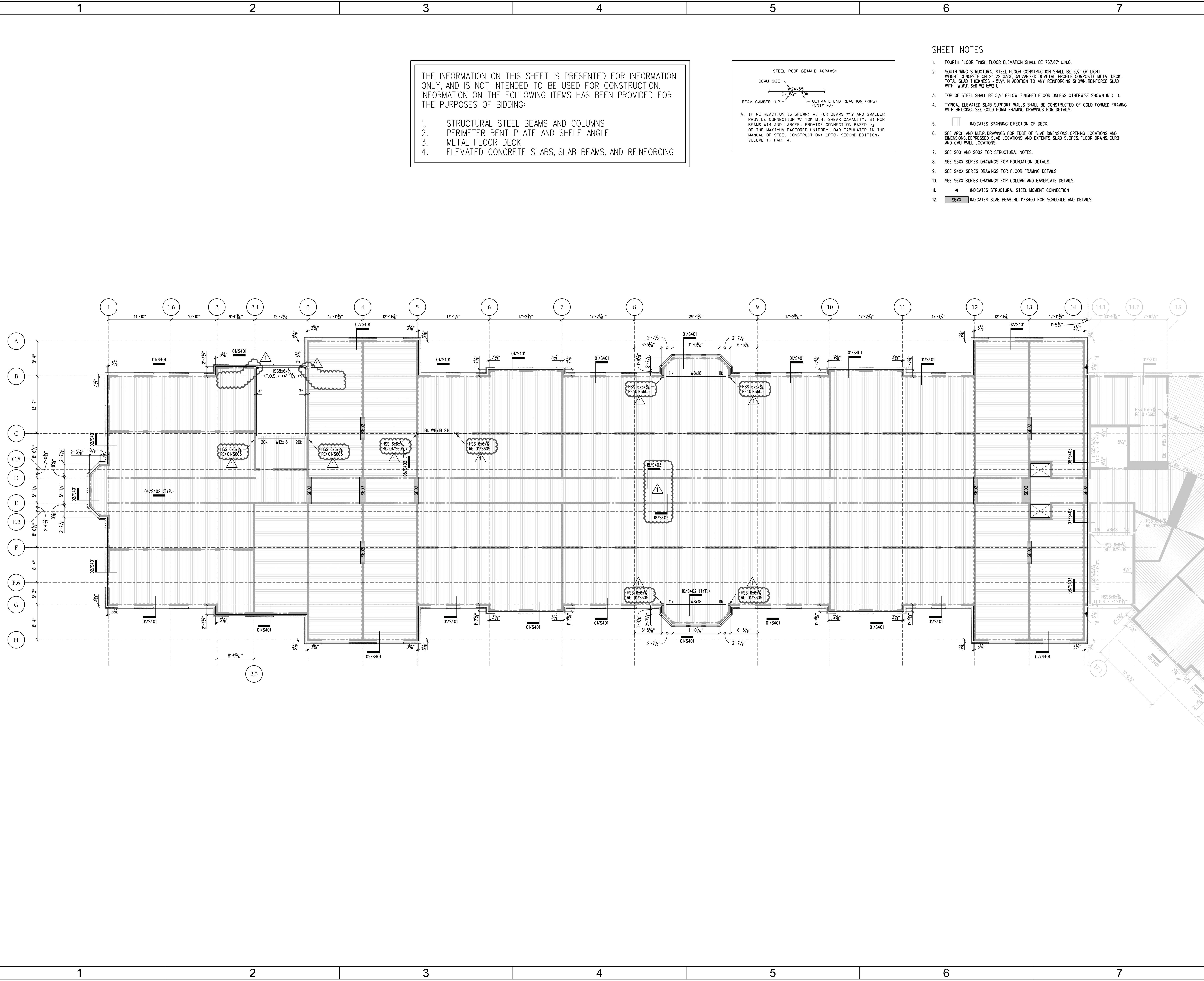
SHEET NOTES

- FOURTH FLOOR FINISH FLOOR ELEVATION SHALL BE 767.67' U.N.O.
- SOUTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 3/4" OF LIGHT WEIGHT CONCRETE ON 2" ZIG ZAG GALVANIZED DOVETAIL PROFILE COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 5/4". IN ADDITION TO ANY REINFORCING SHOWN, REINFORCE SLAB WITH W.W.F. 6x6-W21x21.
- TOP OF STEEL SHALL BE 3/4" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- TYPICAL ELEVATED SLAB SUPPORT WALLS SHALL BE CONSTRUCTED OF COLD FORMED BRICK WITH BRIDGING. SEE COLD FORM FRAMING DRAWINGS FOR DETAILS.
- INDICATES SPANNING DIRECTION OF DECK.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DERESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S3XX SERIES DRAWINGS FOR FOUNDATION DETAILS.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- ◀ INDICATES STRUCTURAL STEEL MOMENT CONNECTION
- SBXX INDICATES SLAB BEAM, RE: 11/S403 FOR SCHEDULE AND DETAILS.



THE INFORMATION ON THIS SHEET IS PRESENTED FOR INFORMATION ONLY, AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION. INFORMATION ON THE FOLLOWING ITEMS HAS BEEN PROVIDED FOR THE PURPOSES OF BIDDING:

- STRUCTURAL STEEL BEAMS AND COLUMNS
- PERIMETER BENT PLATE AND SHELF ANGLE
- METAL FLOOR DECK
- ELEVATED CONCRETE SLABS, SLAB BEAMS, AND REINFORCING



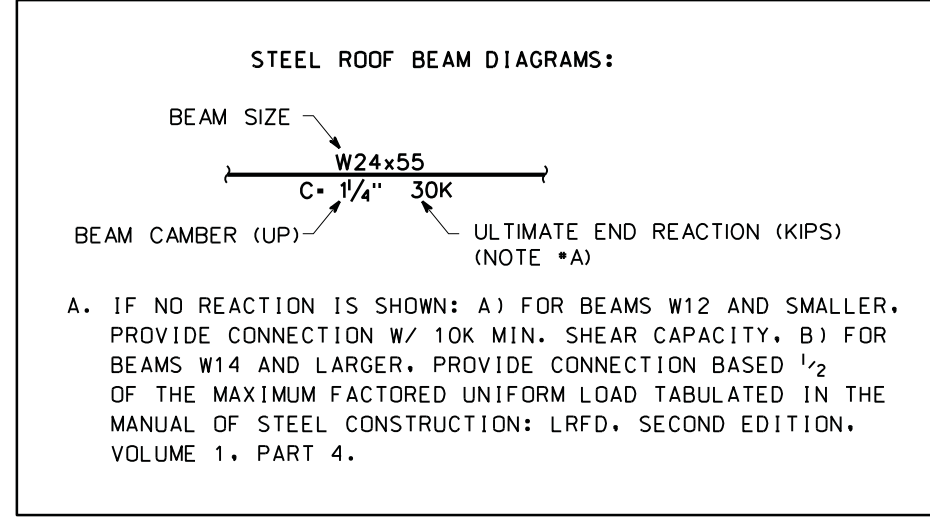
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DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

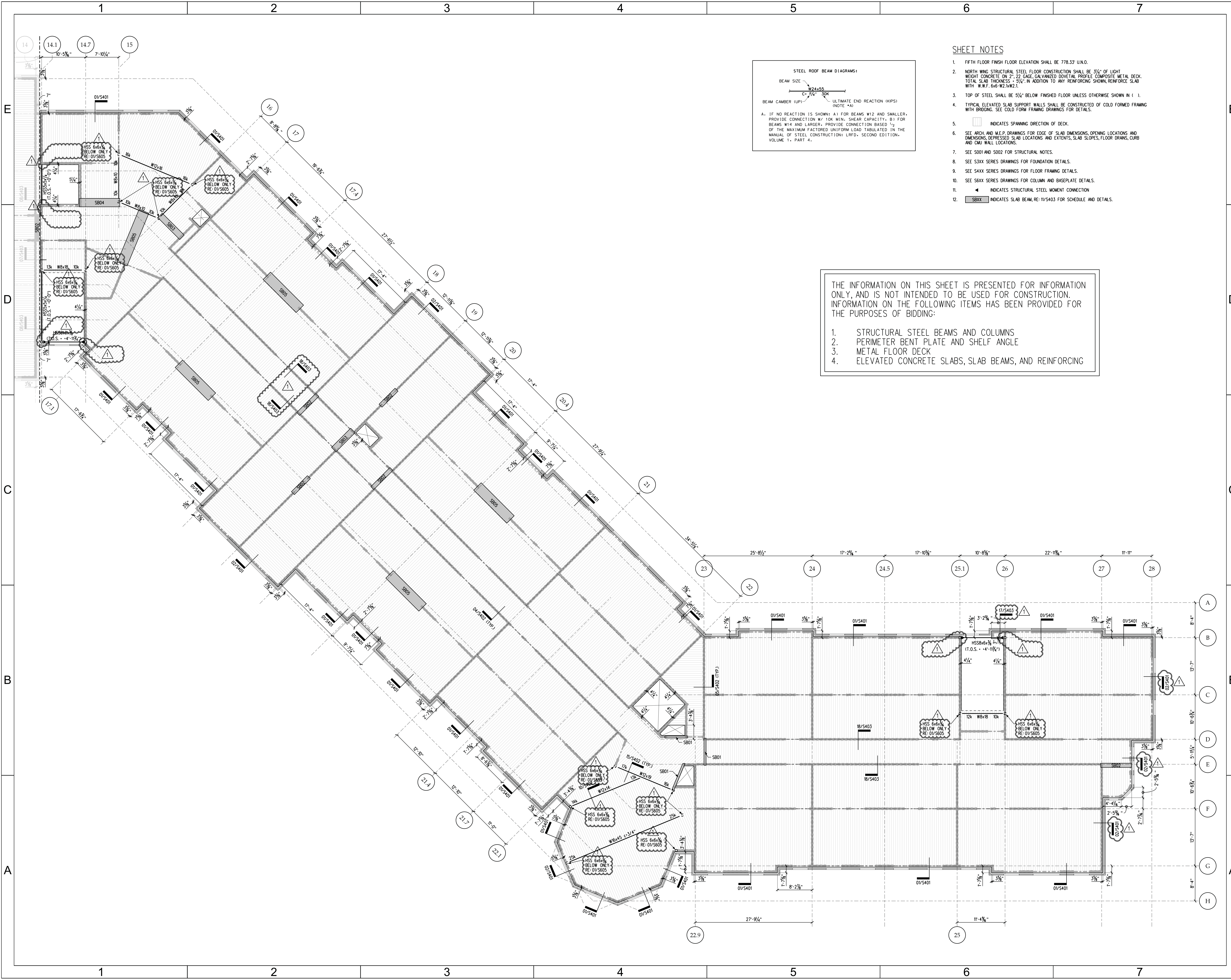
SHEET NOTES

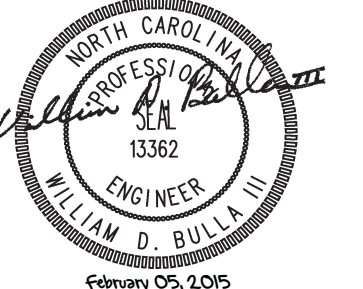
- FIFTH FLOOR FINISH FLOOR ELEVATION SHALL BE 778.33' U.N.O.
- NORTH WING STRUCTURAL STEEL FLOOR CONSTRUCTION SHALL BE 3/4" OF LIGHT WEIGHT CONCRETE ON 2" ZZ GAGE GALVANIZED DOVETAIL PROFILE COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 5/4" IN ADDITION TO ANY REINFORCING SHOWN. REINFORCE SLAB WITH W.W.F. 6x6-W2.W2.1.
- TOP OF STEEL SHALL BE 3/4" BELOW FINISHED FLOOR UNLESS OTHERWISE SHOWN IN ().
- TYPICAL ELEVATED SLAB SUPPORT WALLS SHALL BE CONSTRUCTED OF COLD FORMED BRICK WITH BRIDGING. SEE COLD FORM FRAMING DRAWINGS FOR DETAILS.
- INDICATES SPANNING DIRECTION OF DECK.
- SEE ARCH. AND M.E.P. DRAWINGS FOR EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DERESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, FLOOR DRAINS, CURB AND CMU WALL LOCATIONS.
- SEE S001 AND S002 FOR STRUCTURAL NOTES.
- SEE S3XX SERIES DRAWINGS FOR FOUNDATION DETAILS.
- SEE S4XX SERIES DRAWINGS FOR FLOOR FRAMING DETAILS.
- SEE S6XX SERIES DRAWINGS FOR COLUMN AND BASEPLATE DETAILS.
- INDICATES STRUCTURAL STEEL MOMENT CONNECTION
- INDICATES SLAB BEAM, RE: 11/S403 FOR SCHEDULE AND DETAILS.



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- STRUCTURAL STEEL BEAMS AND COLUMNS
- PERIMETER BENT PLATE AND SHELF ANGLE
- METAL FLOOR DECK
- ELEVATED CONCRETE SLABS, SLAB BEAMS, AND REINFORCING





FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV
EARLY SITE PACKAGE

UNIVERSITY OF NORTH
CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY:
APPROVED BY:

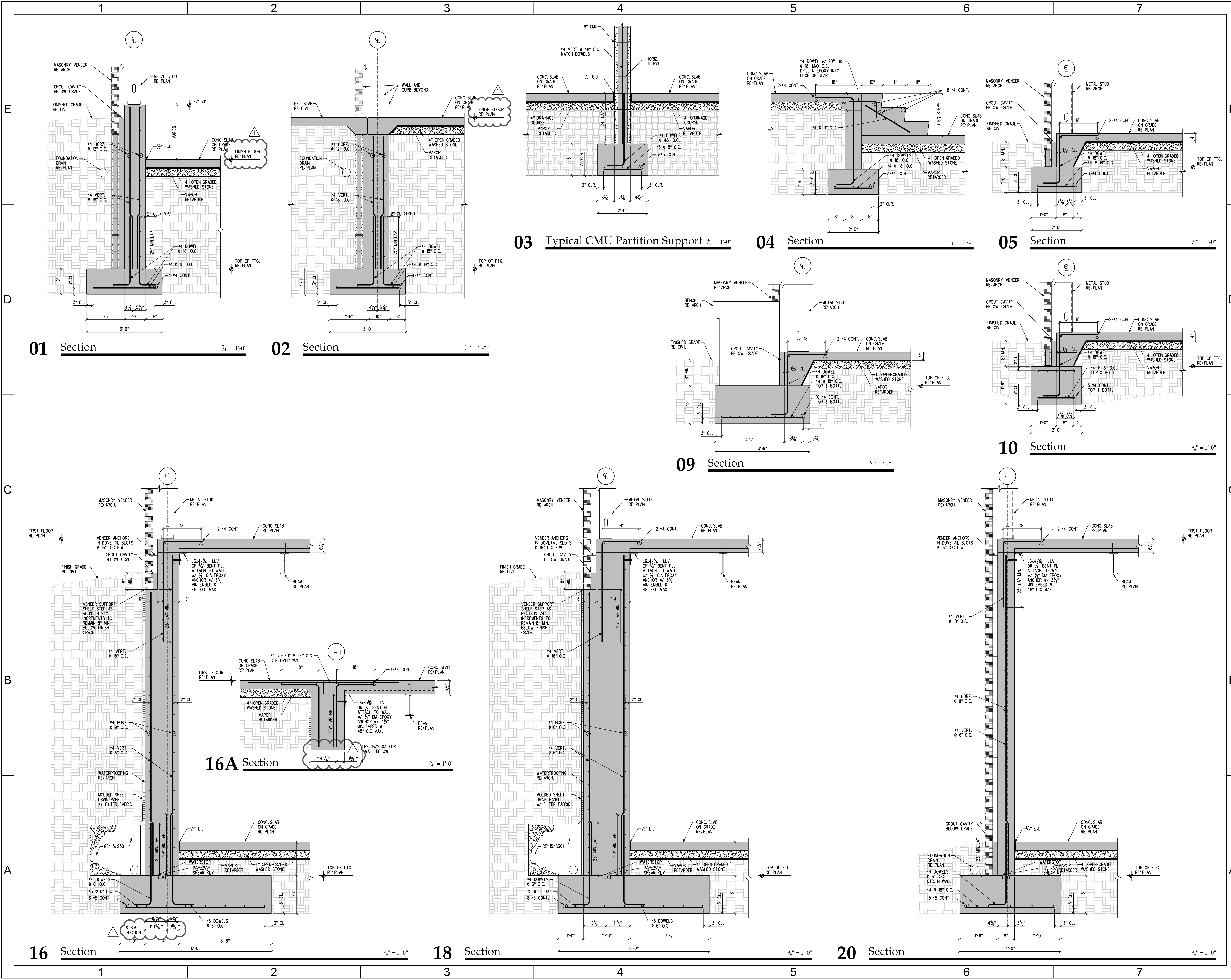
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SHEET TITLE

FOUNDATION DETAILS

SHEET NUMBER

S303



05-FEB-2015 08:03

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DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY:
APPROVED BY:

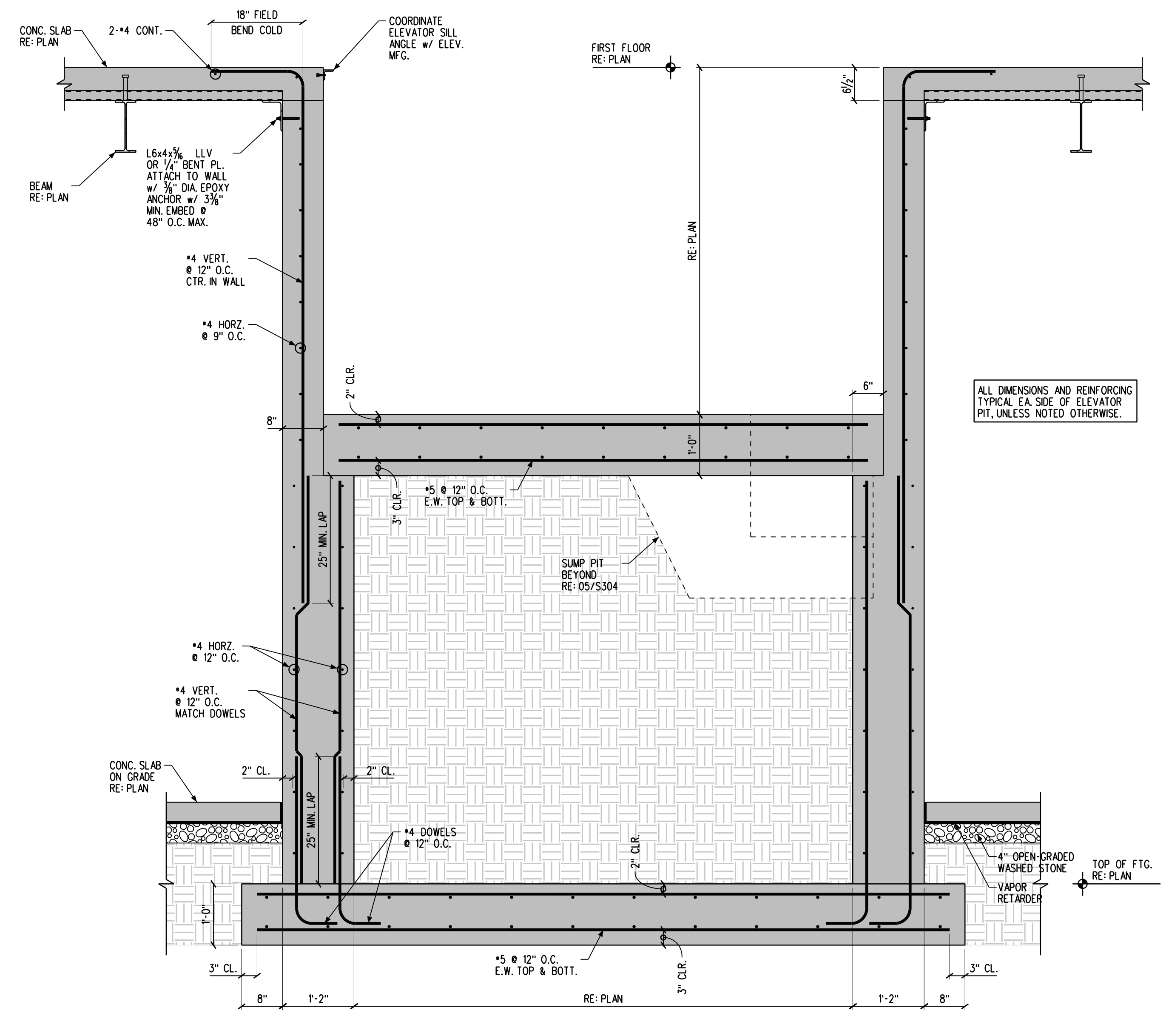
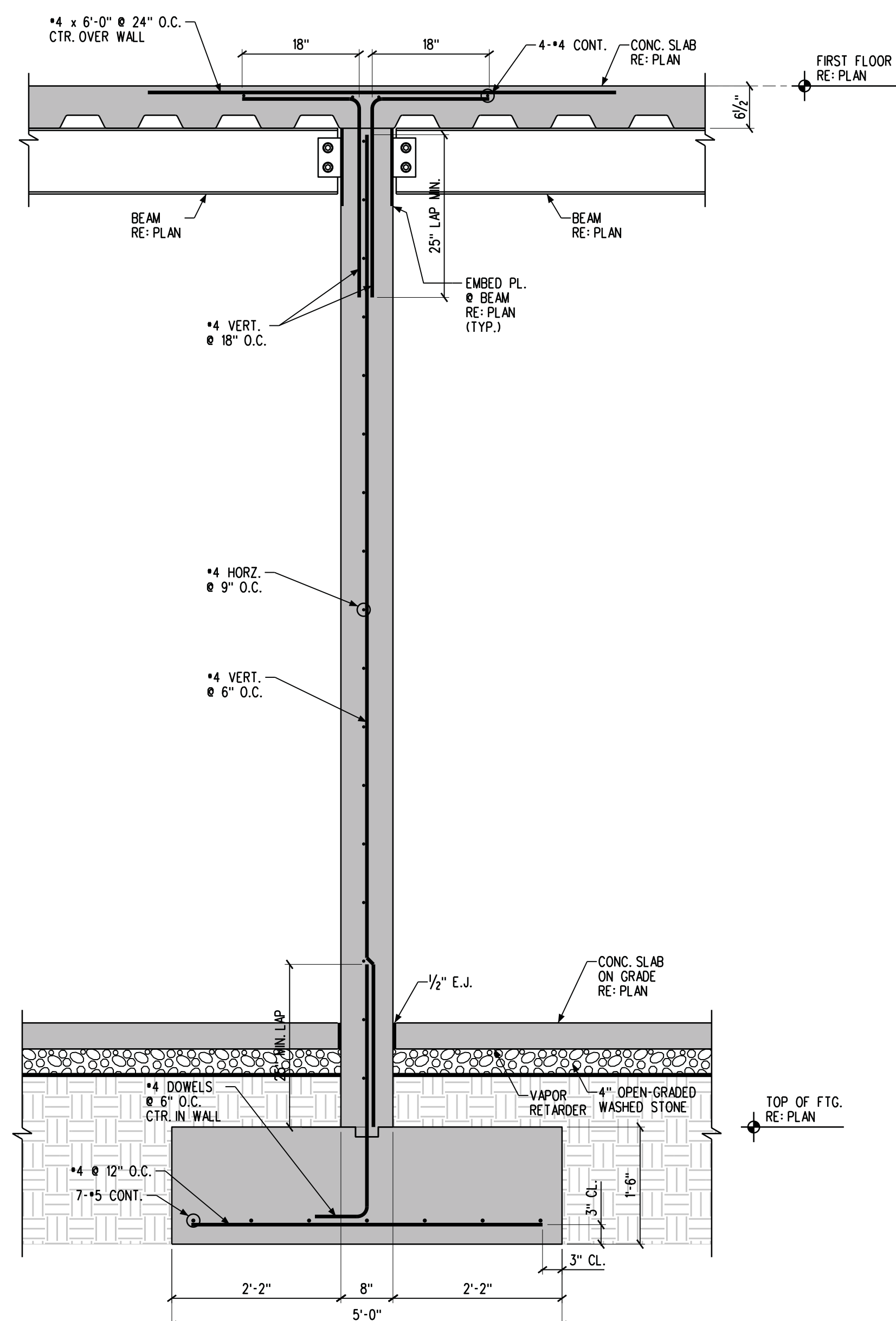
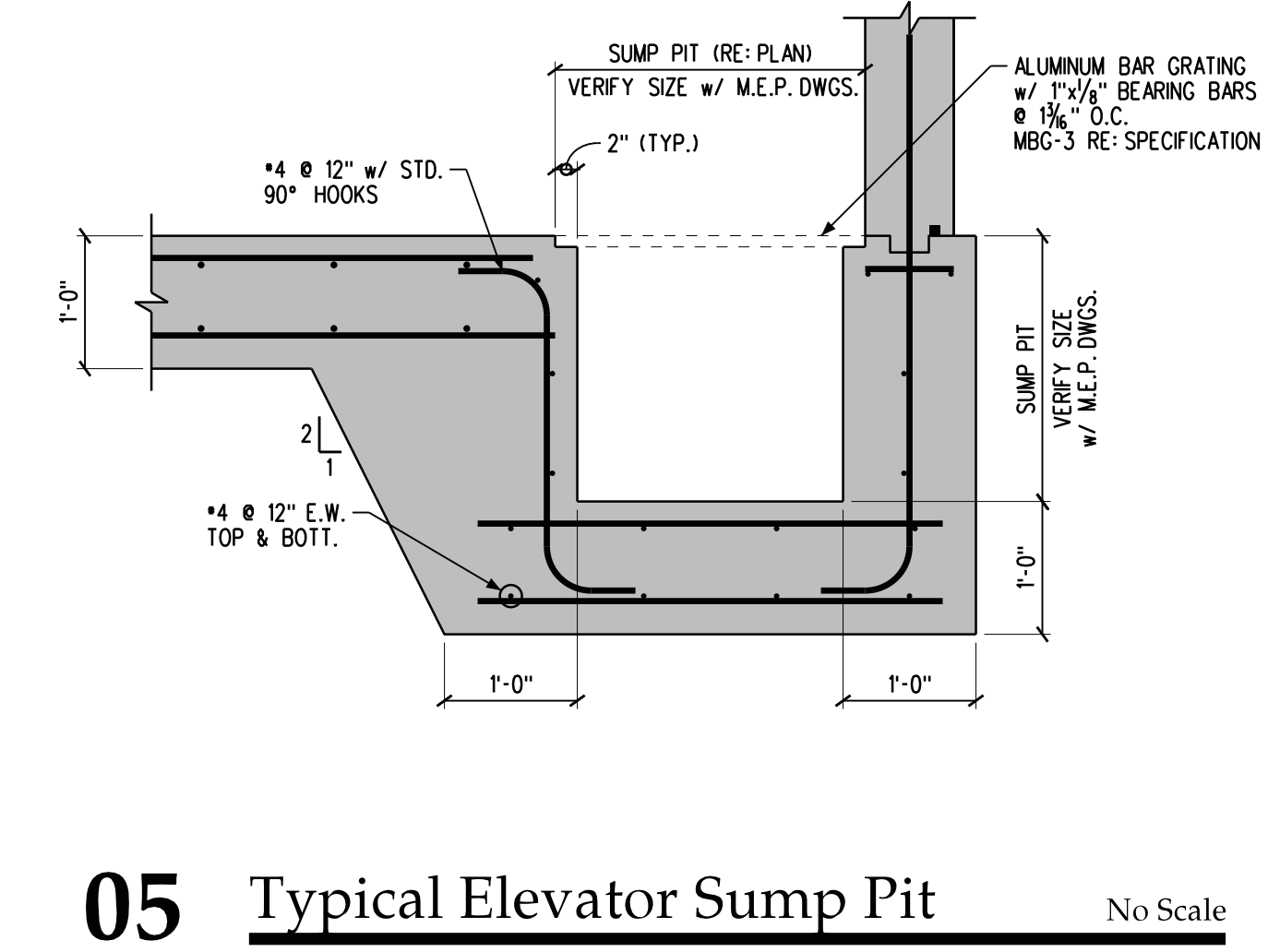
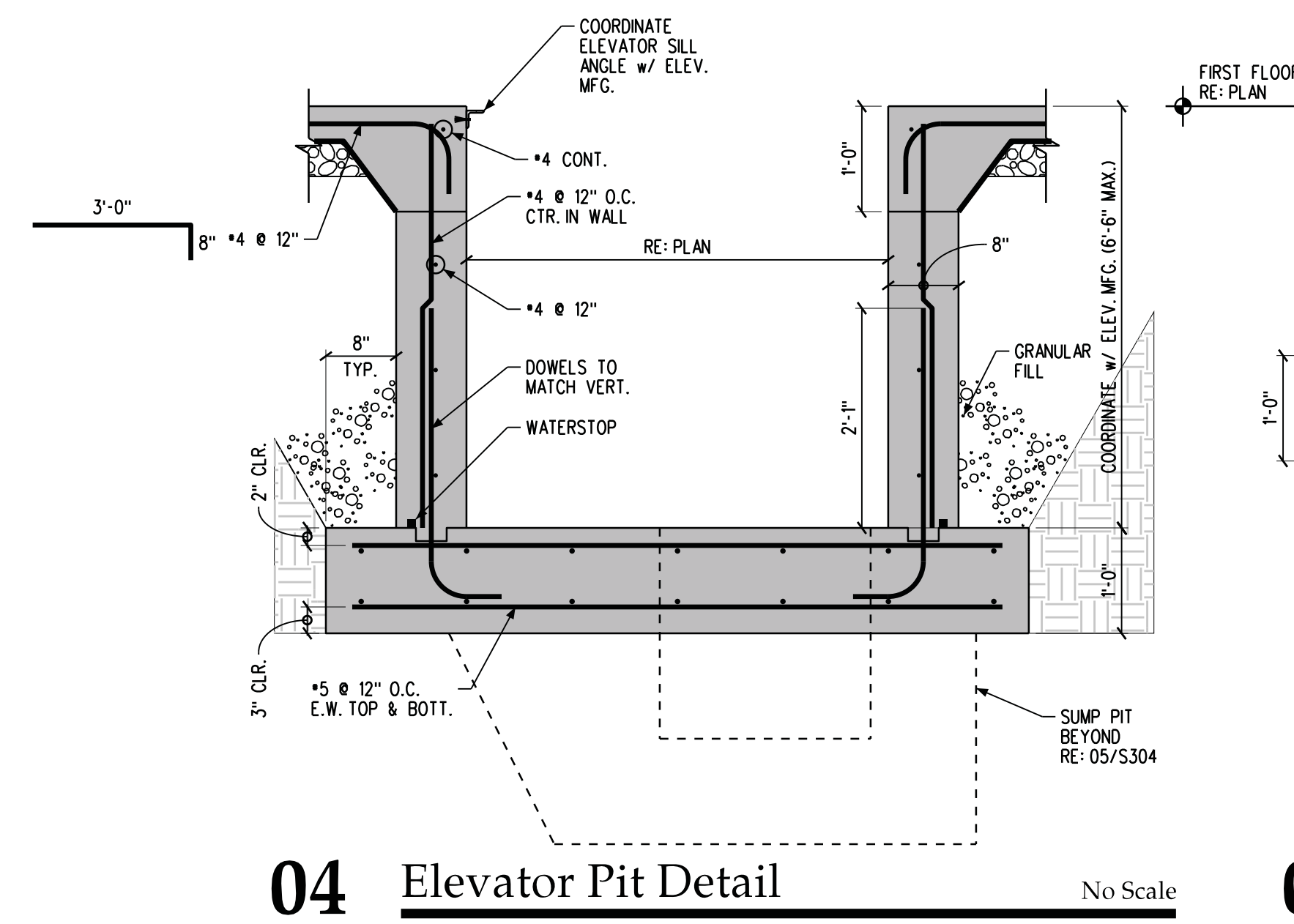
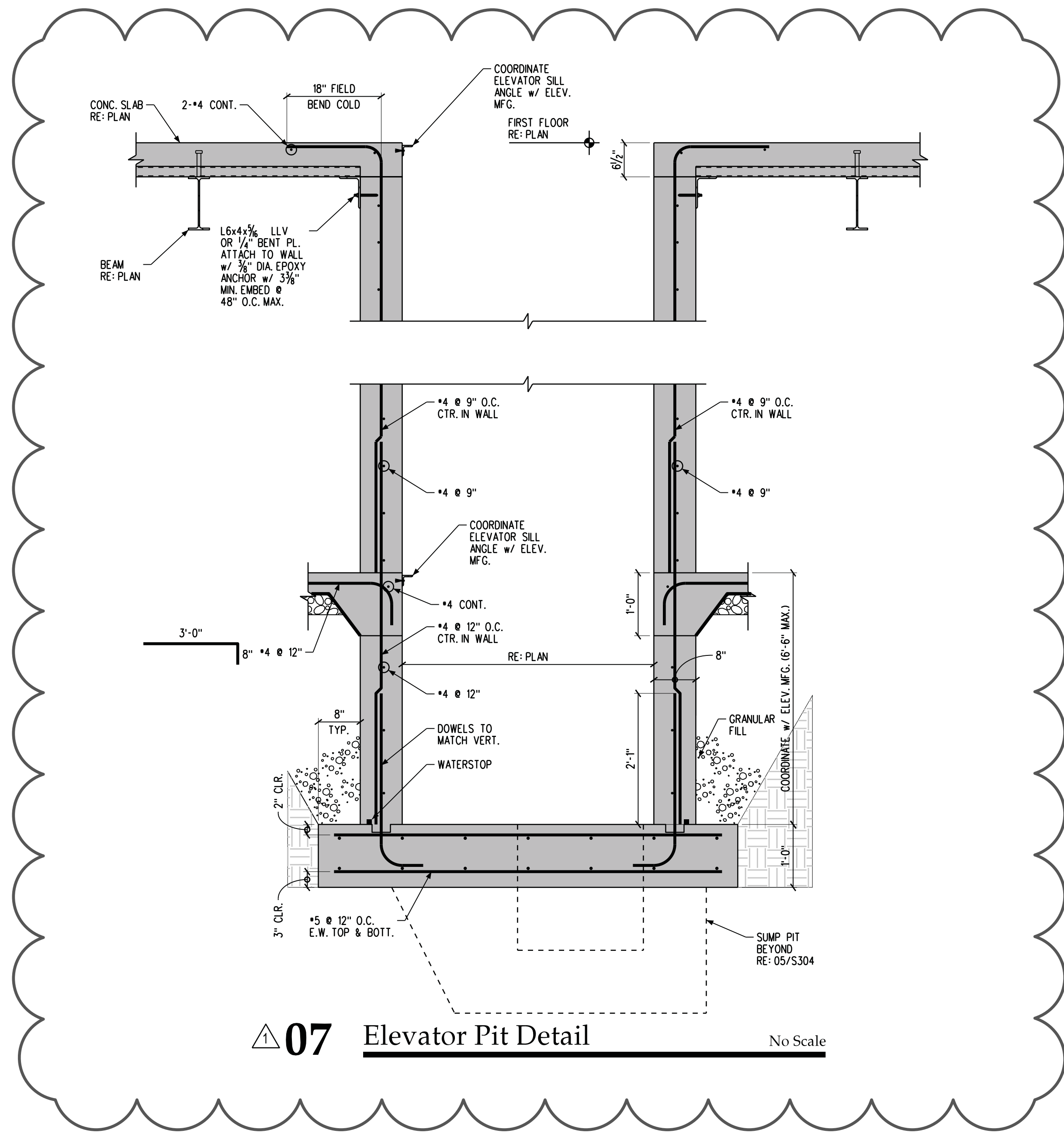
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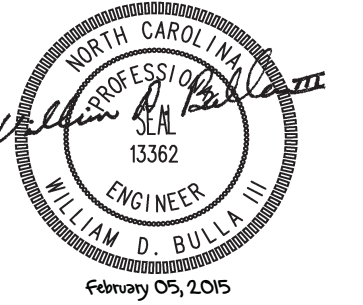
SHEET TITLE

**FOUNDATION
DETAILS**

SHEET NUMBER

S304





FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY:
APPROVED BY:

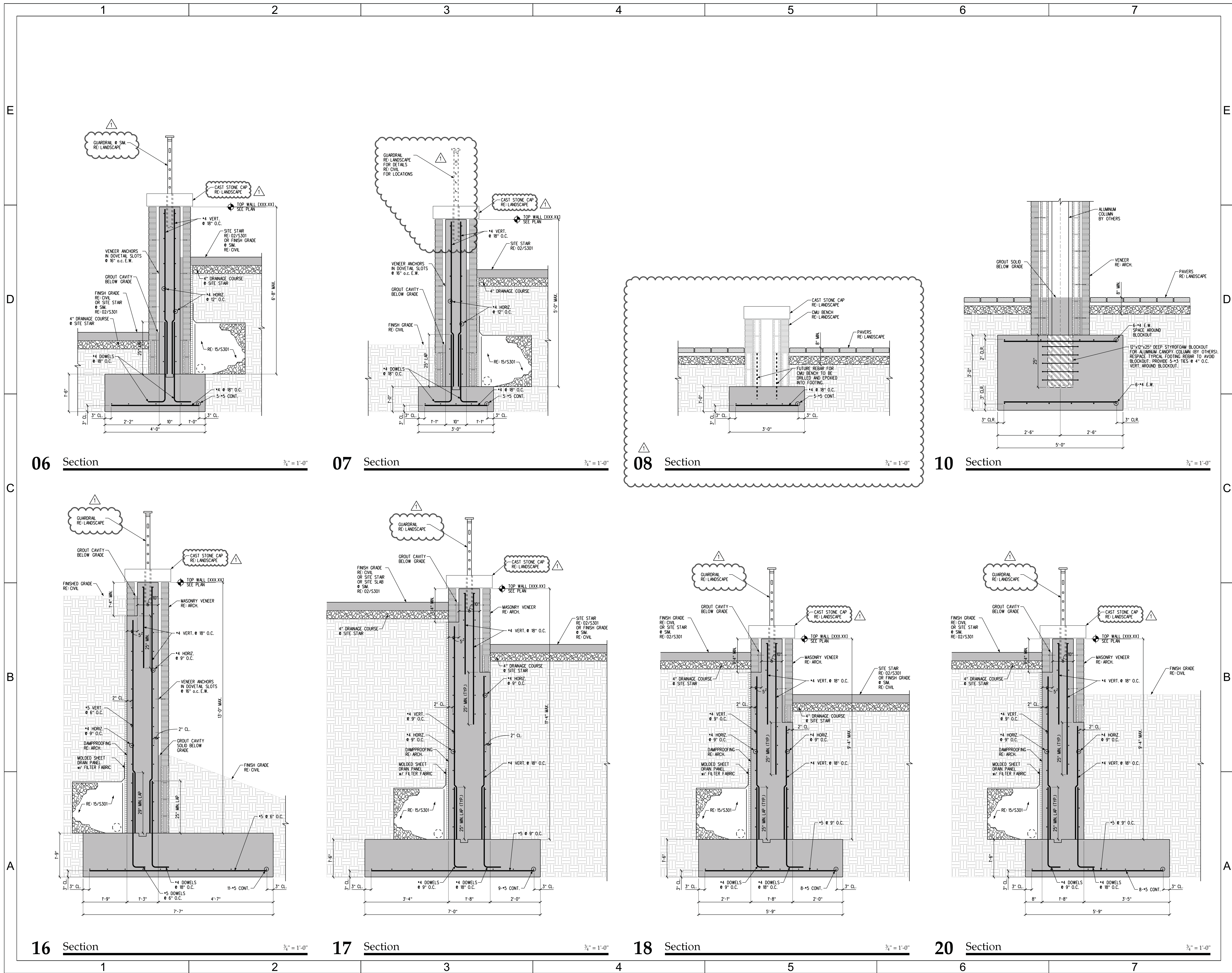
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SHEET TITLE

SITE WALL DETAILS

SHEET NUMBER

S305



06 Section $\frac{3}{4}'' = 1'-0''$

07 Section $\frac{3}{4}'' = 1'-0''$

08 Section $\frac{3}{4}'' = 1'-0''$

10 Section $\frac{3}{4}'' = 1'-0''$

16 Section $\frac{3}{4}'' = 1'-0''$

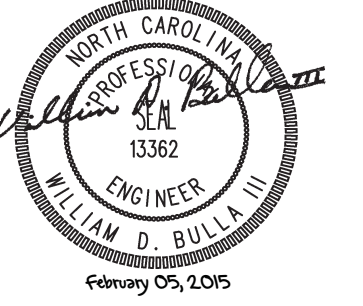
17 Section $\frac{3}{4}'' = 1'-0''$

18 Section $\frac{3}{4}'' = 1'-0''$

20 Section $\frac{3}{4}'' = 1'-0''$

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FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-01-26	ADDENDUM #1
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-1017-03C

DRAWN BY: KPM
APPROVED BY: WDB

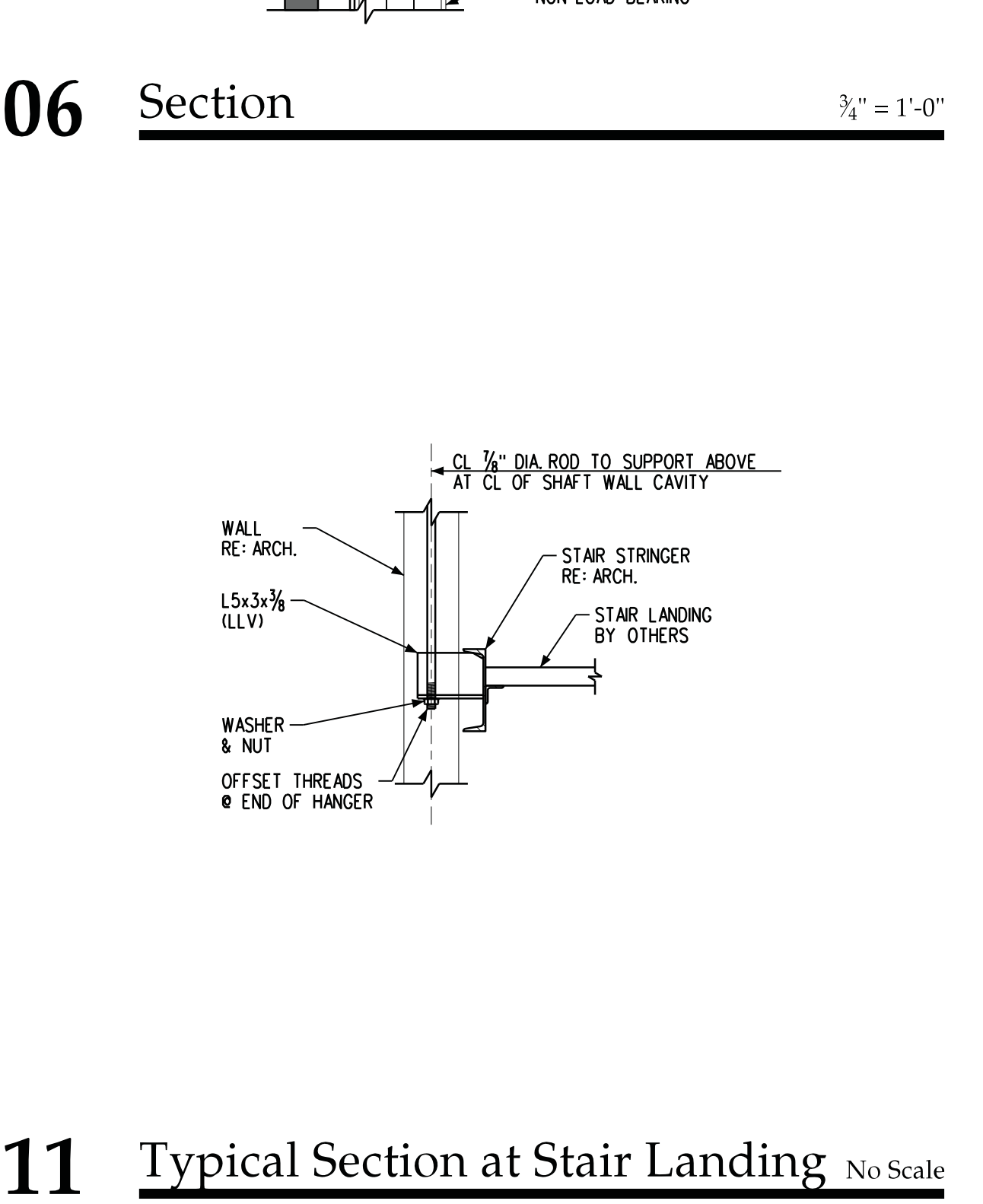
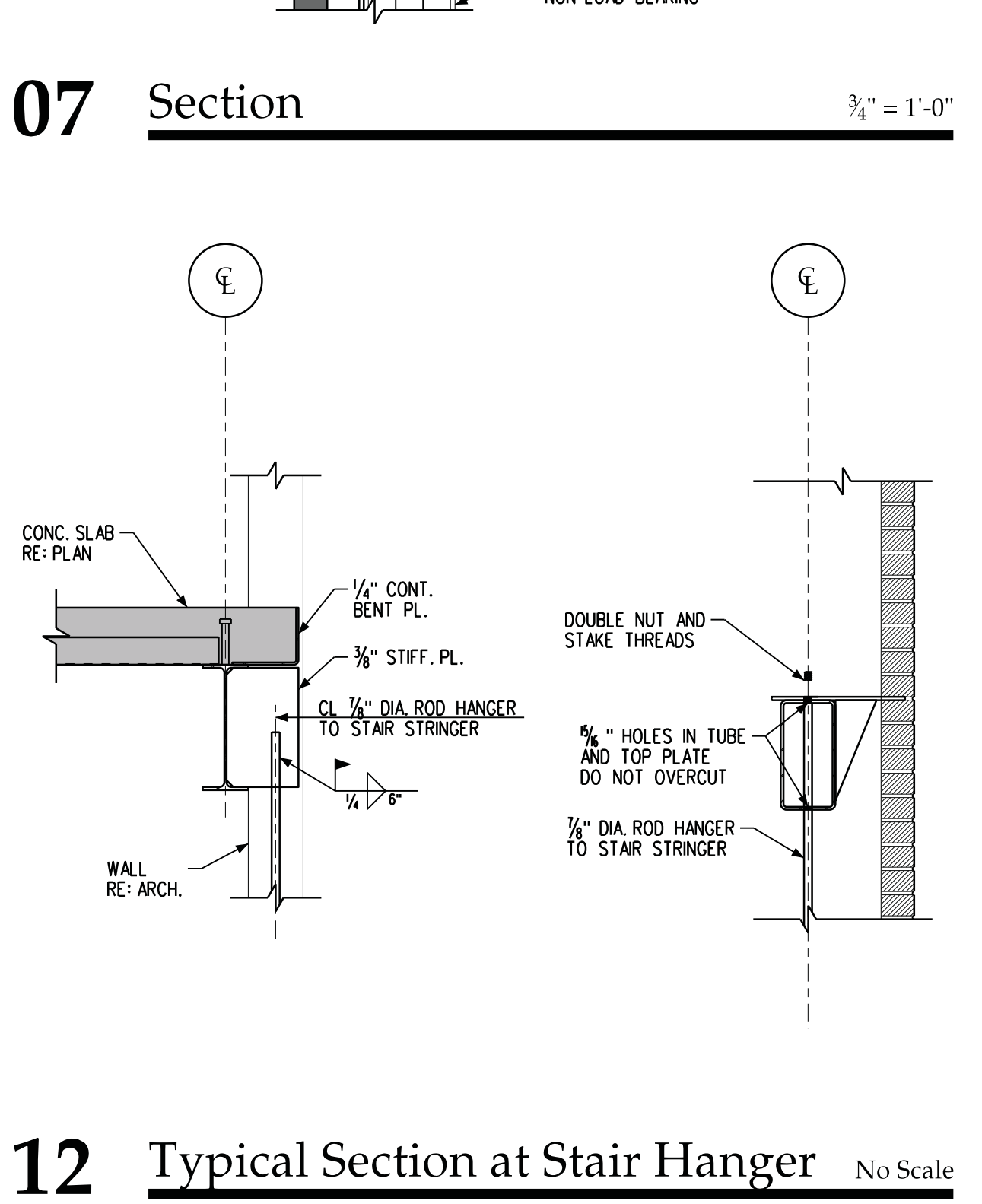
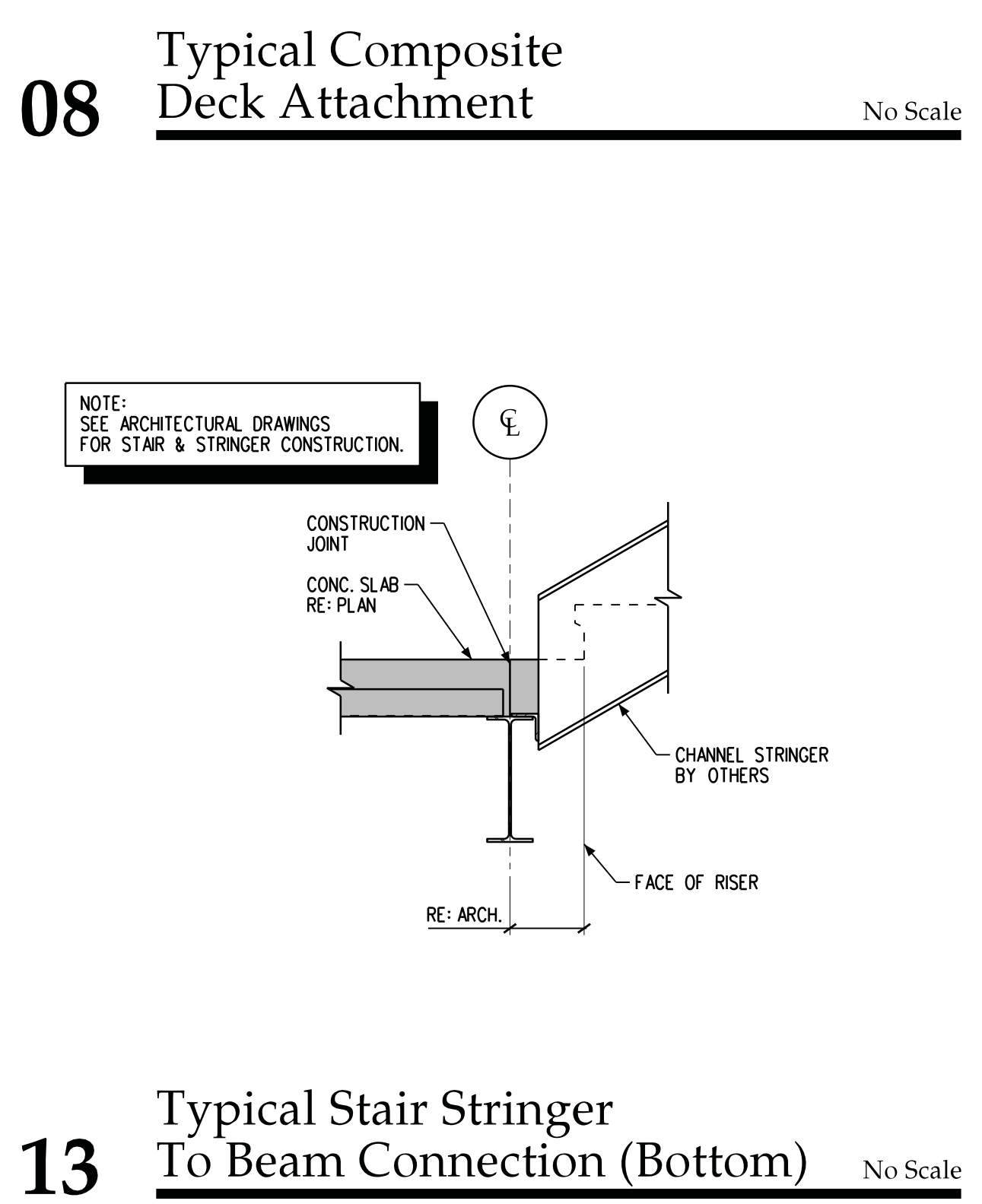
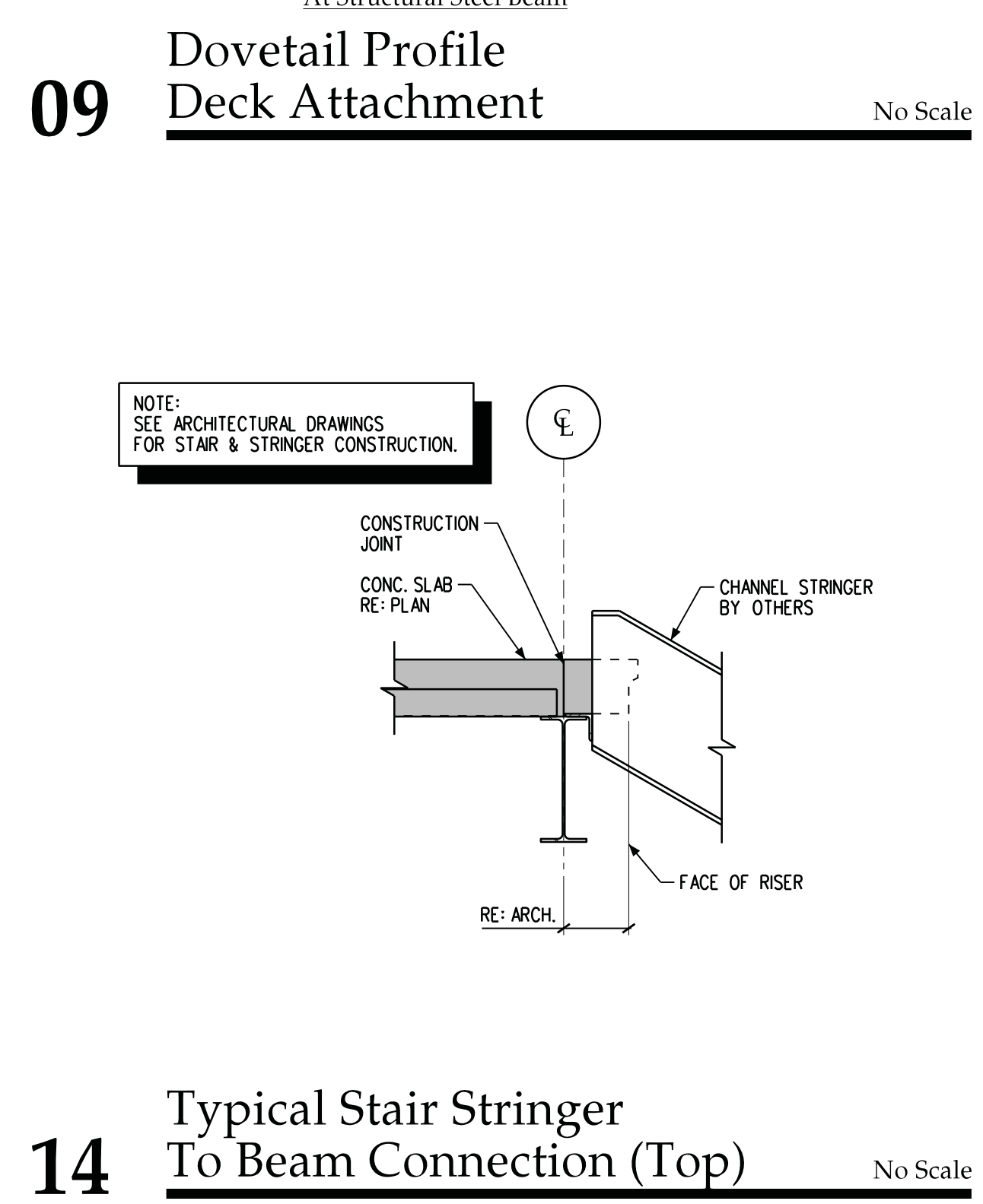
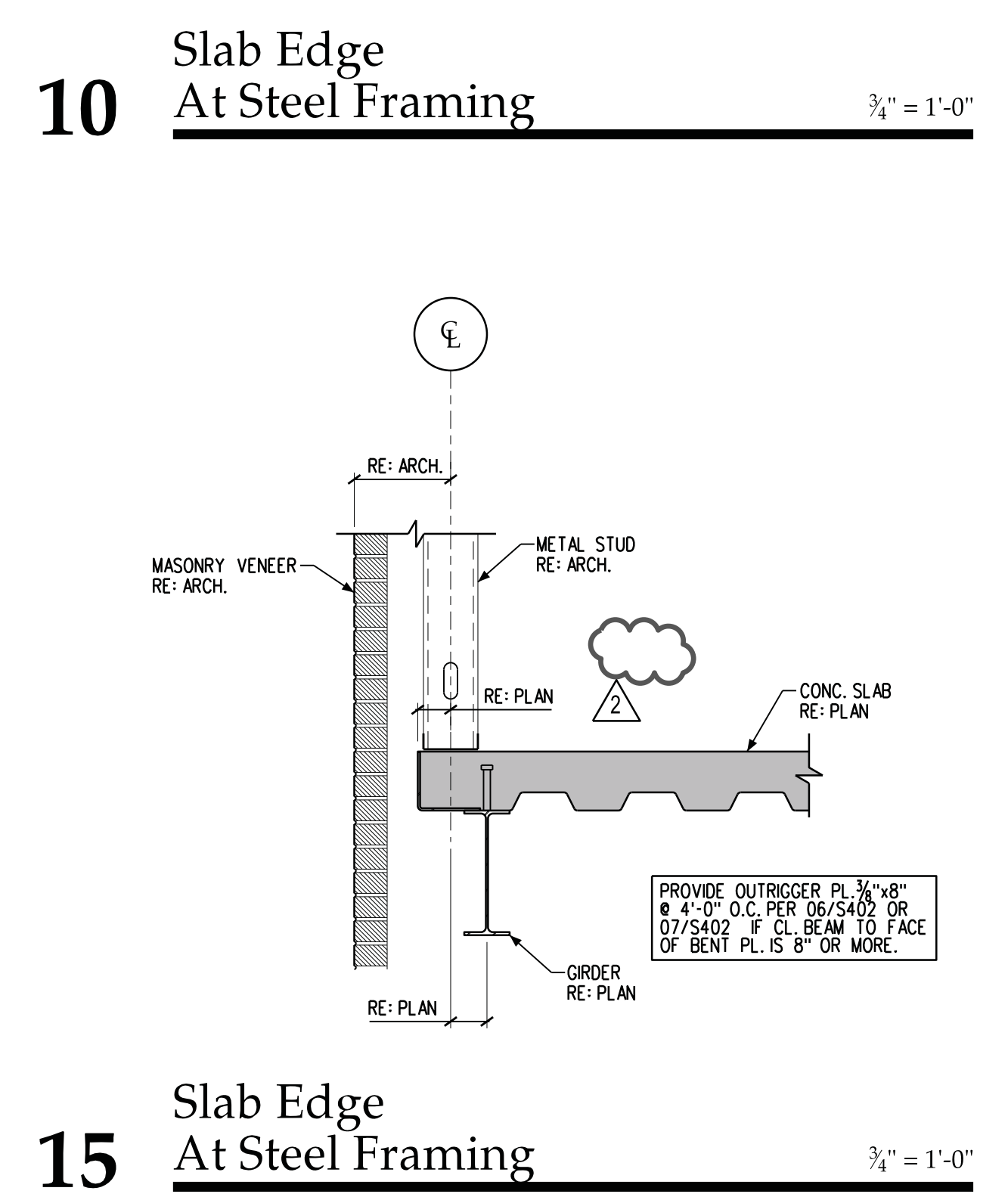
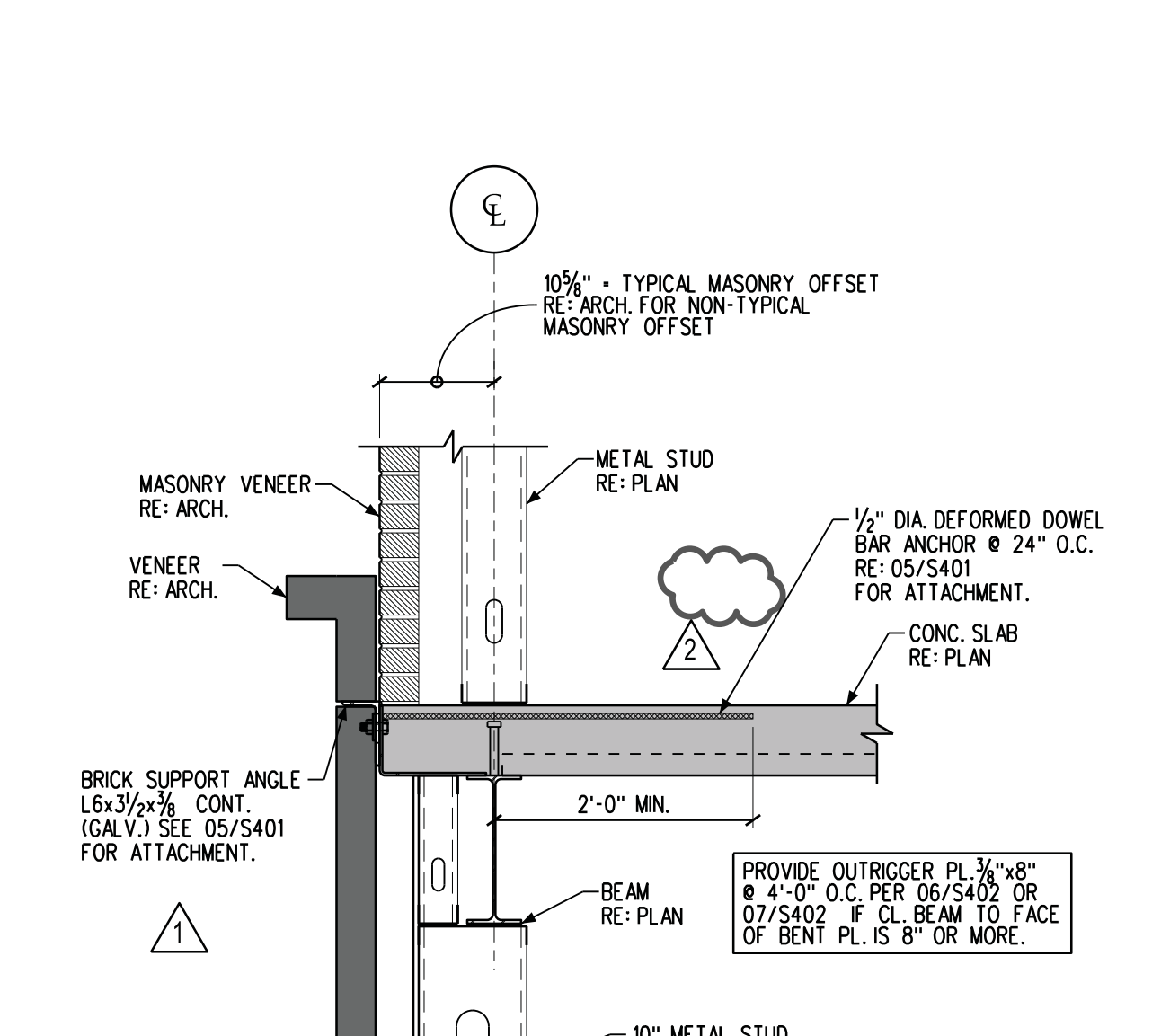
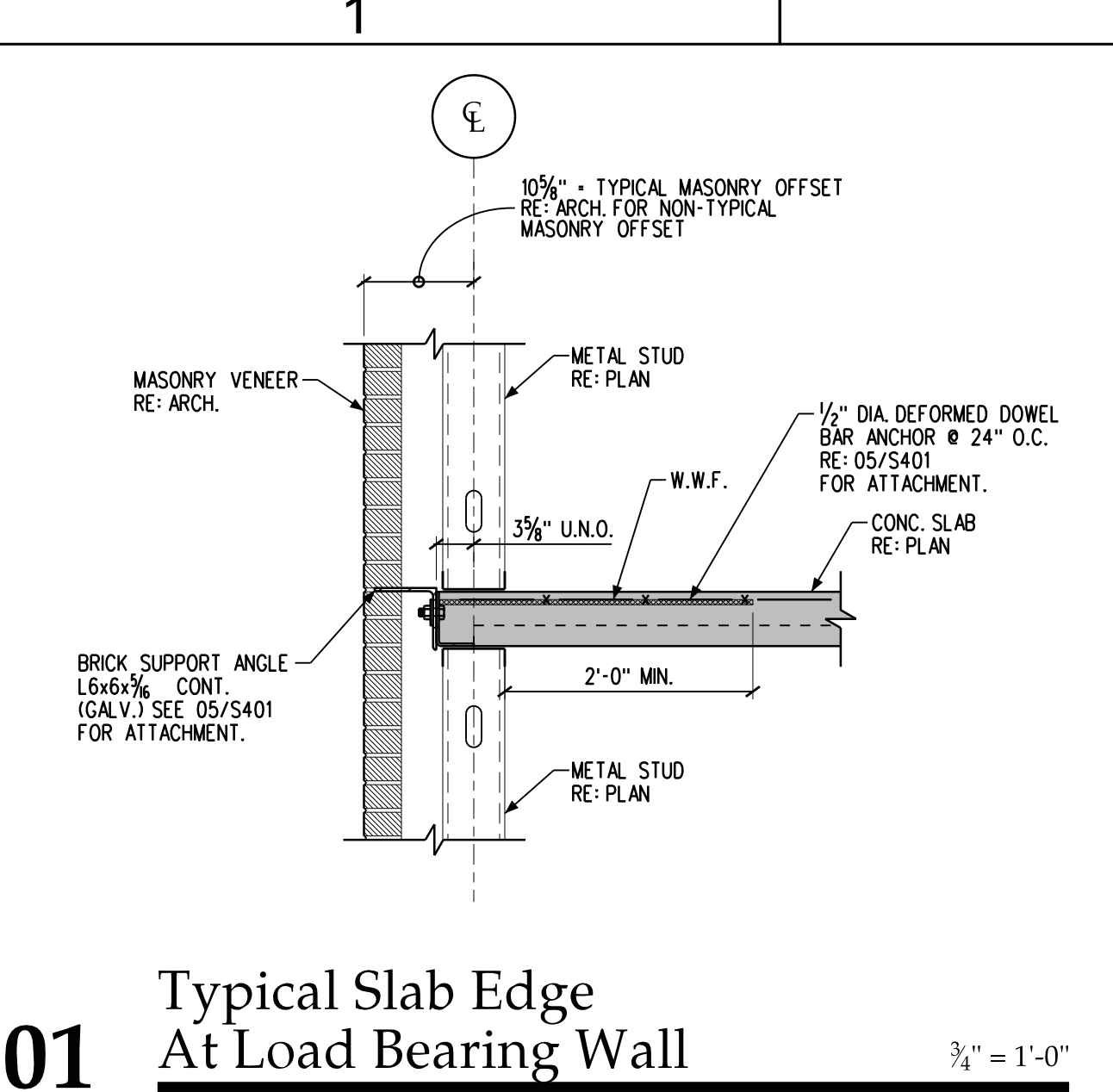
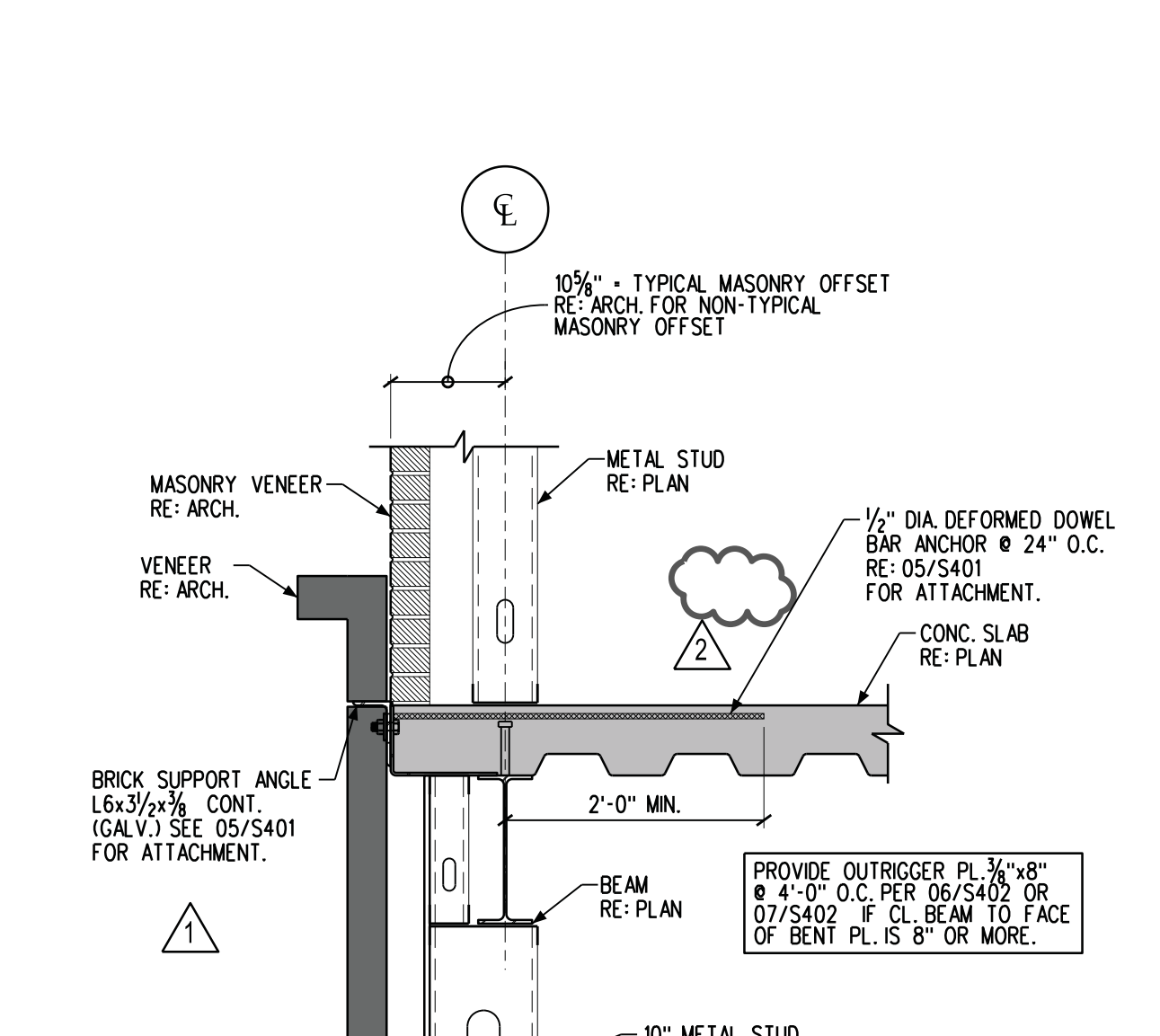
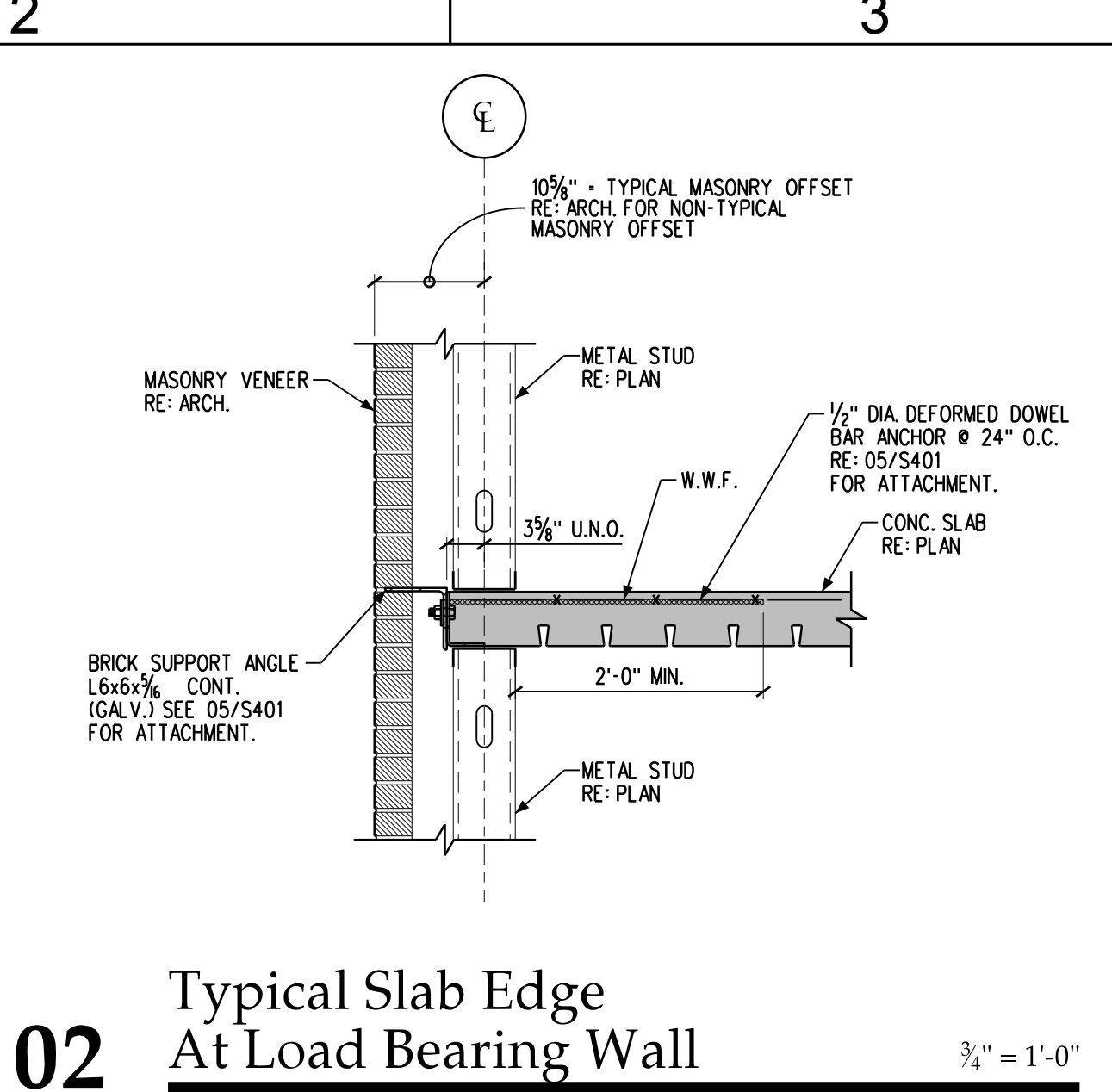
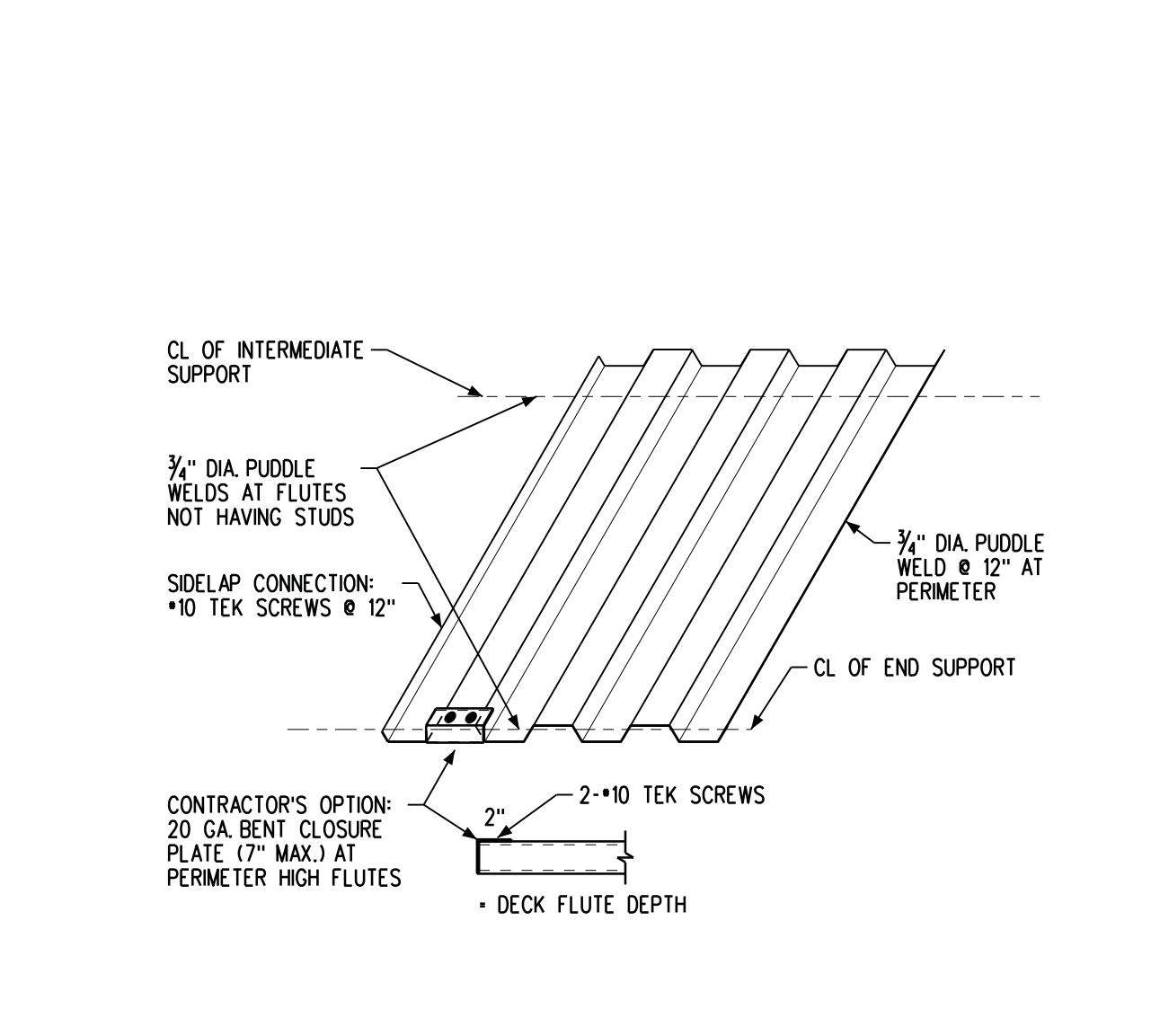
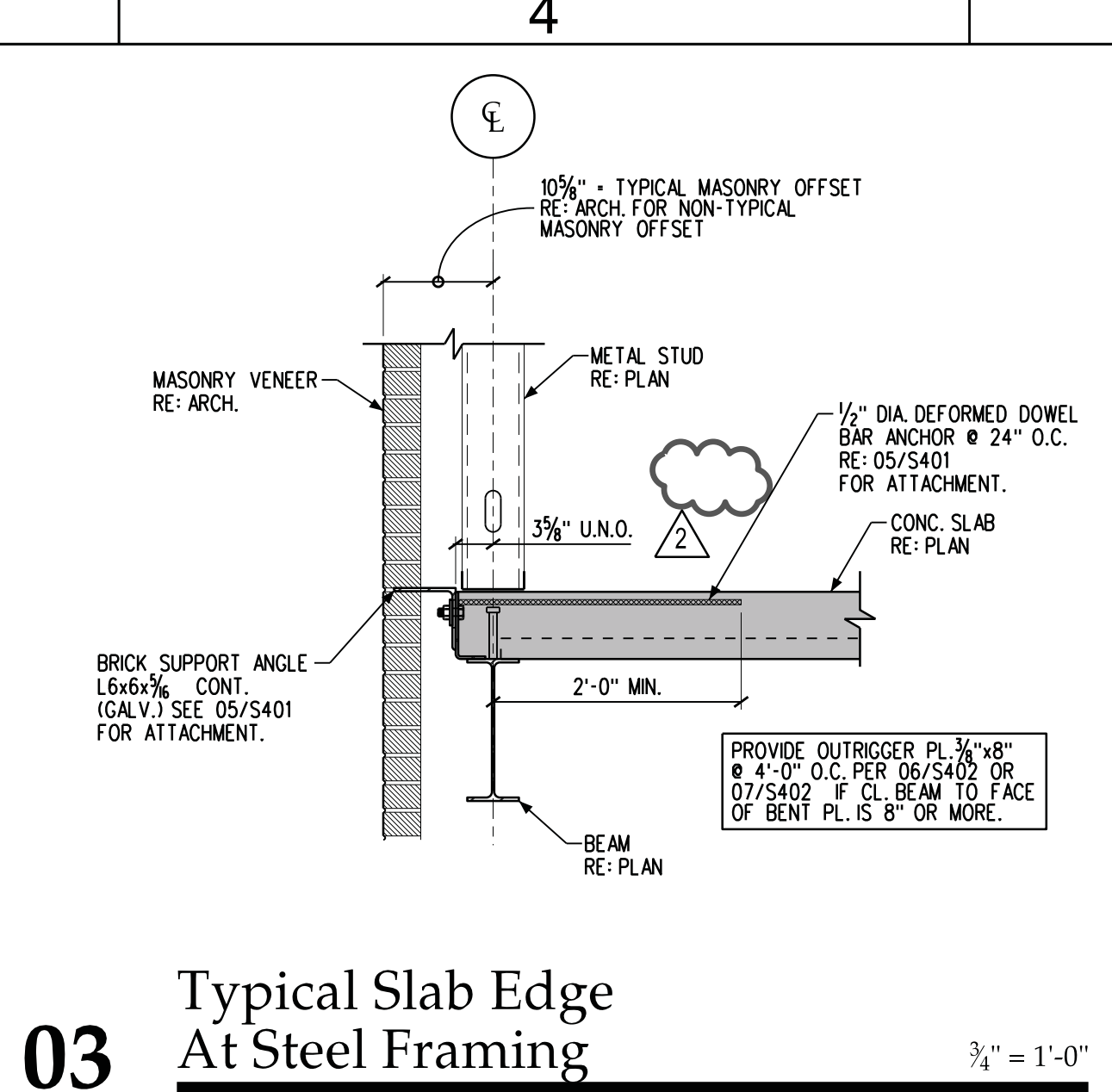
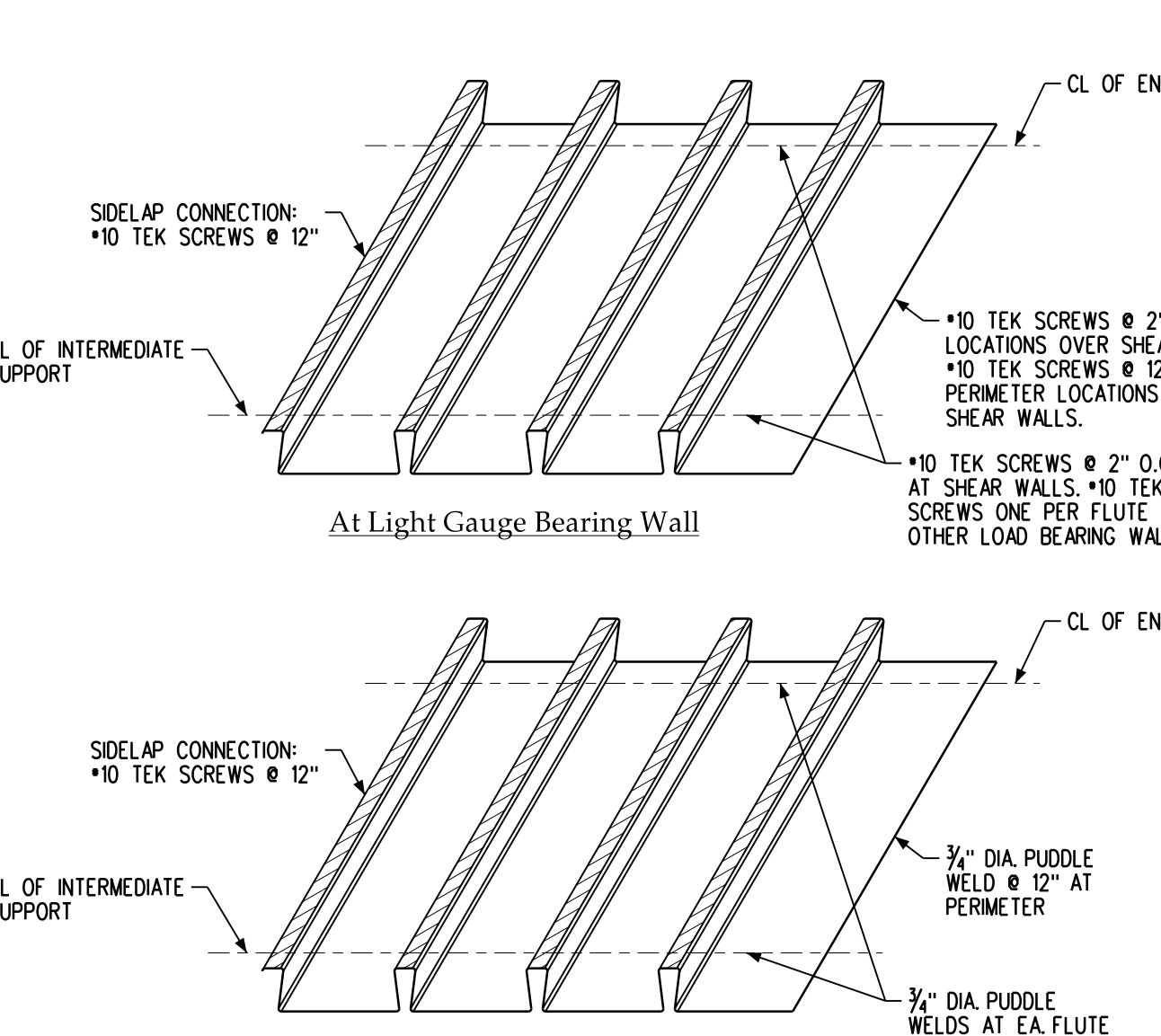
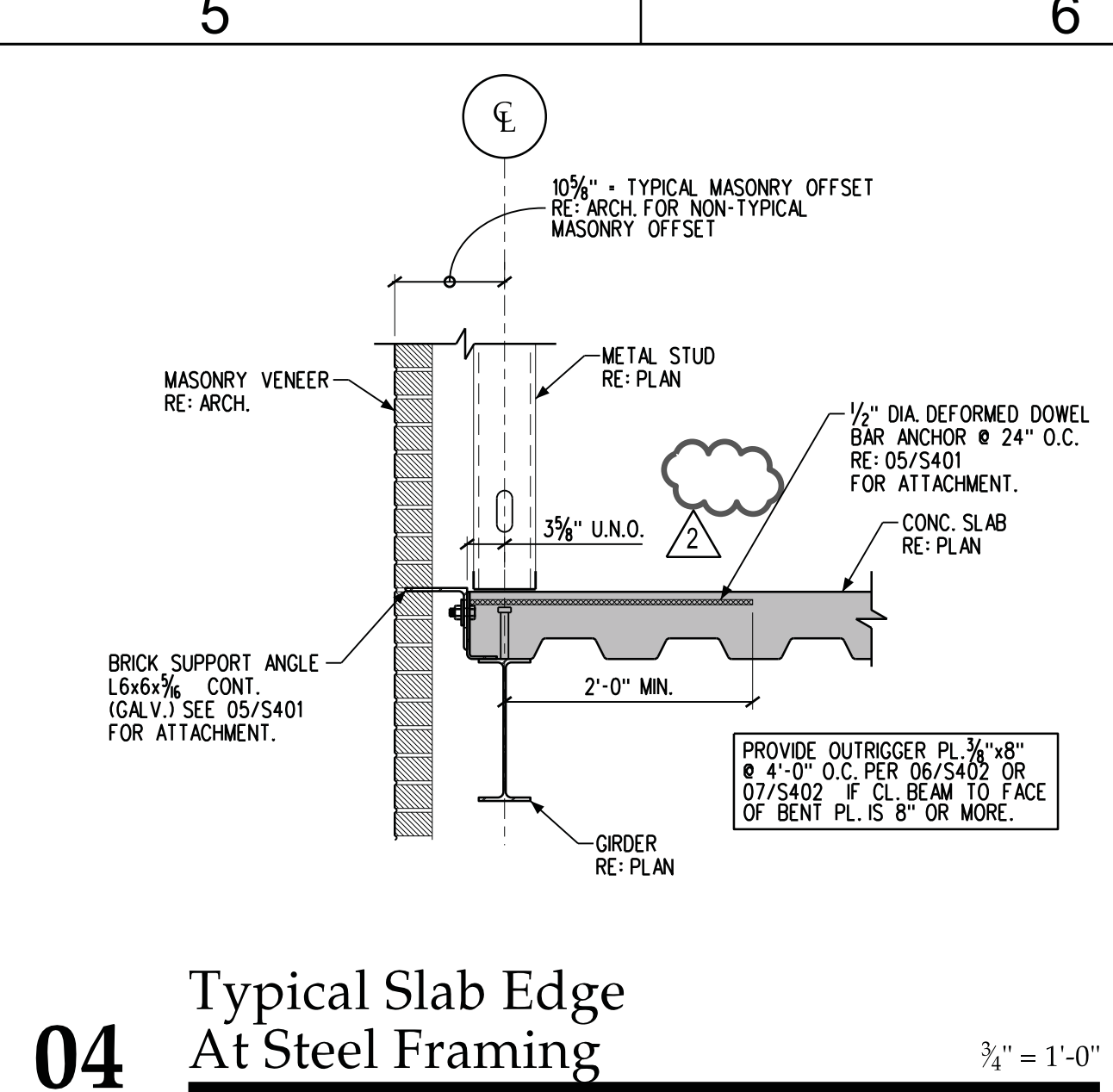
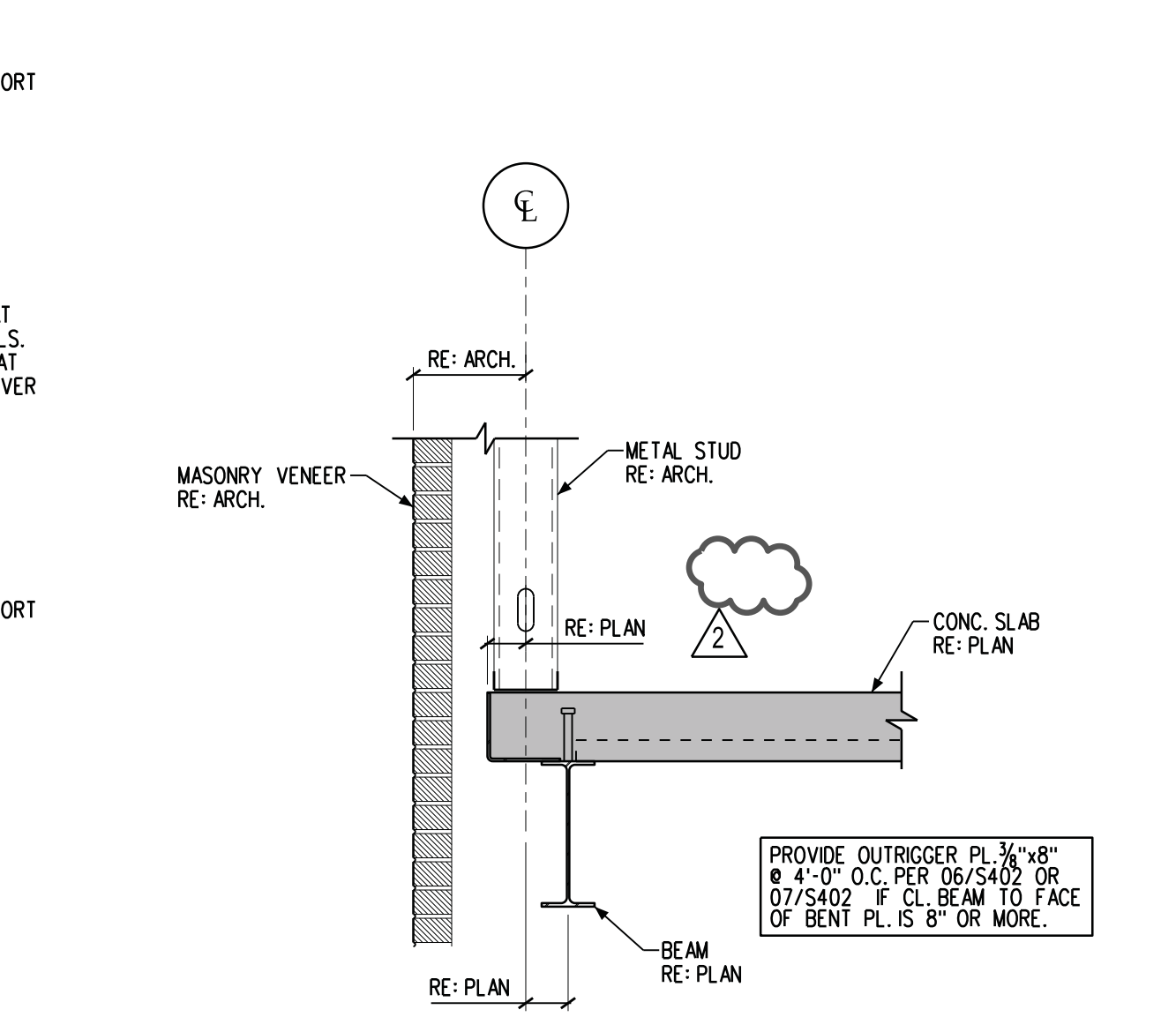
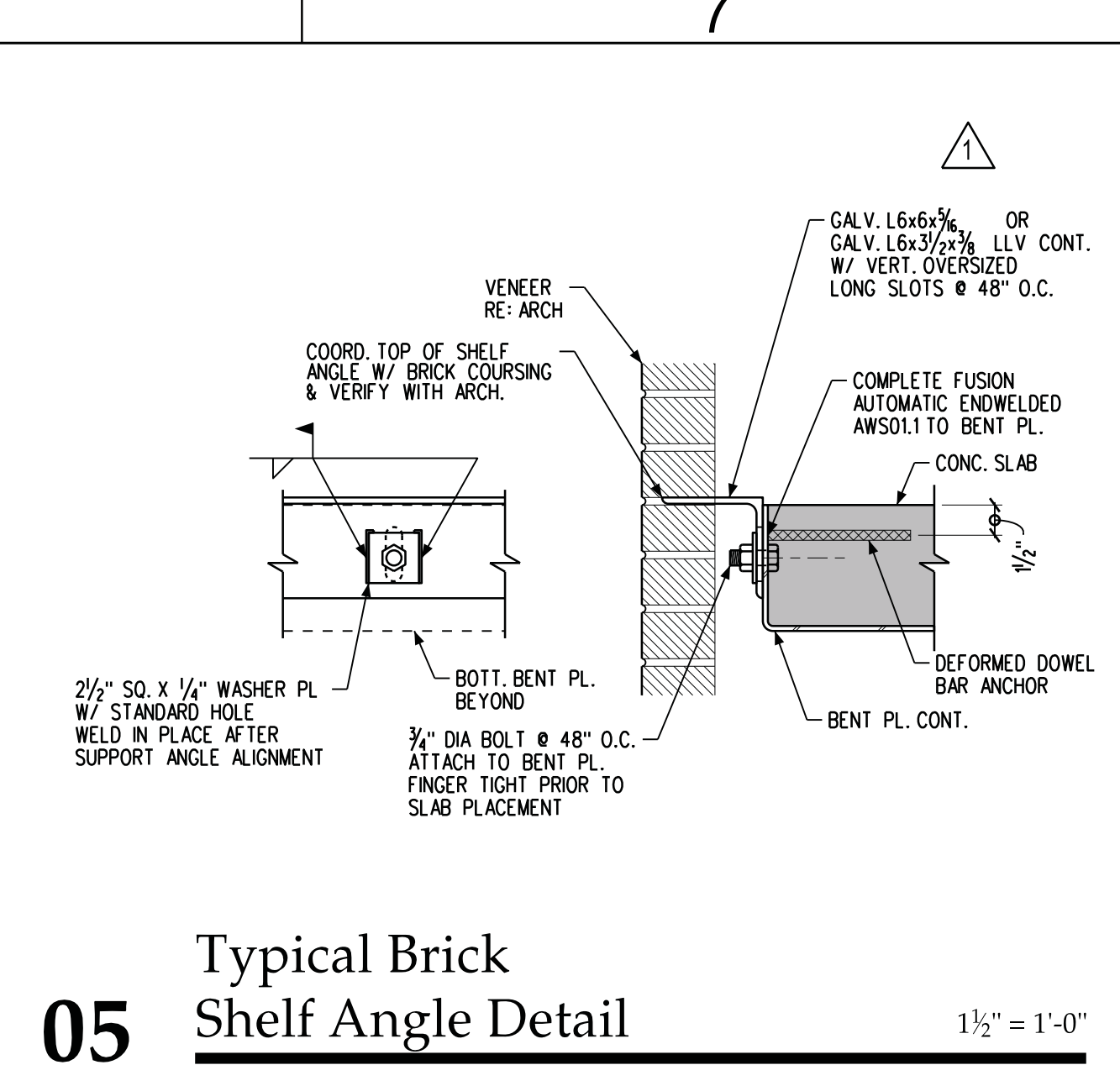
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SHEET TITLE

FLOOR FRAMING DETAILS

SHEET NUMBER

S401



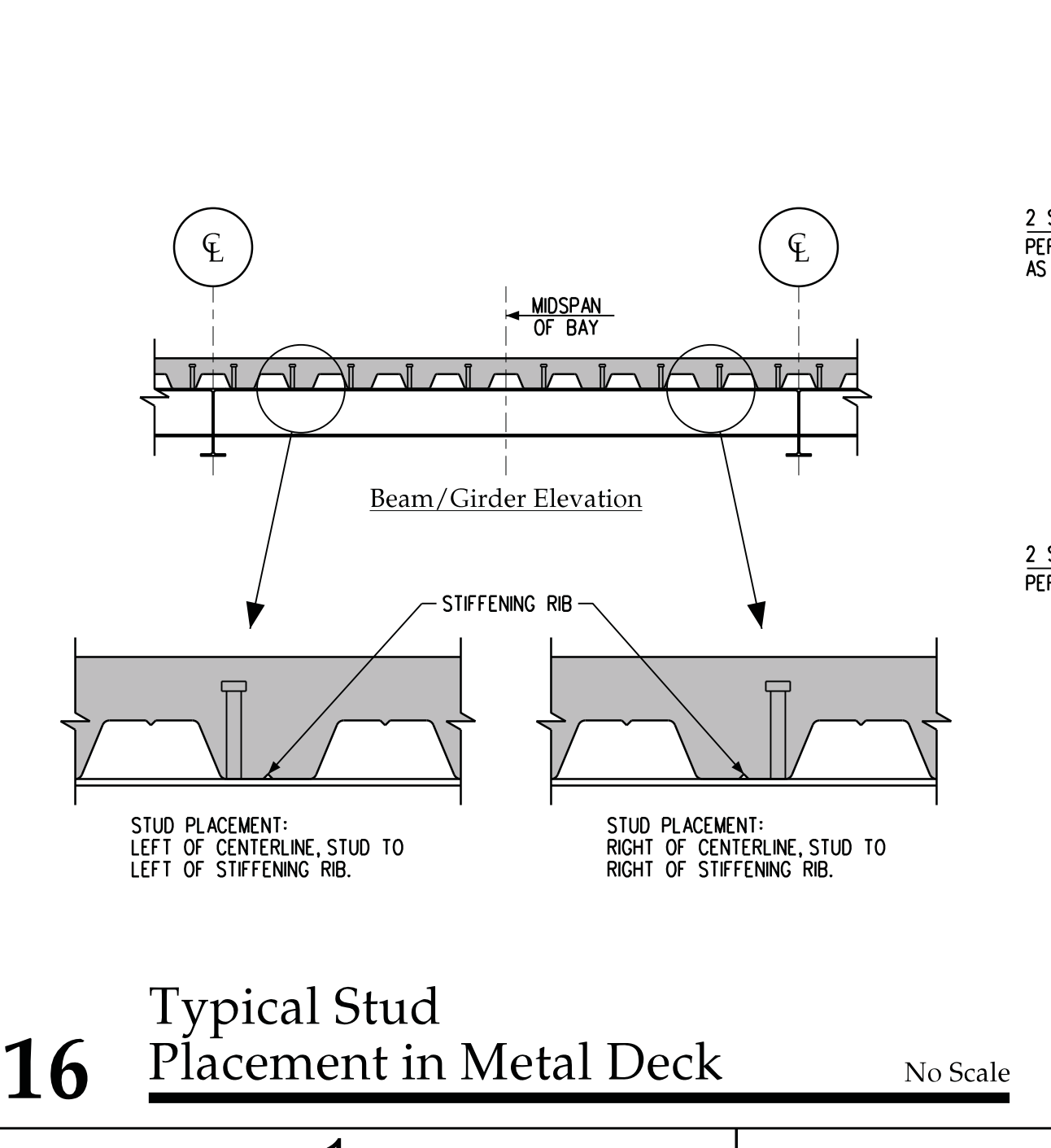
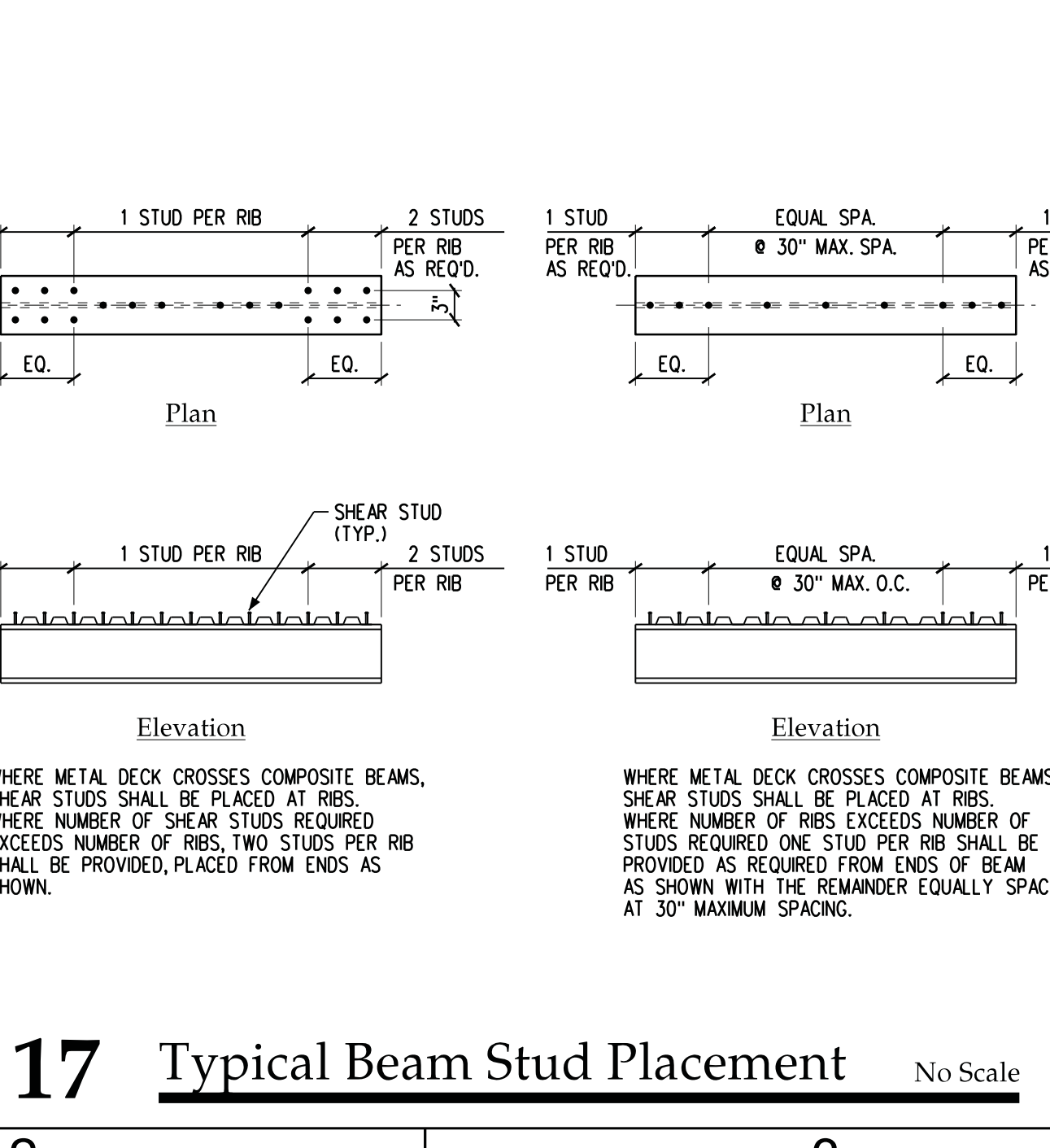
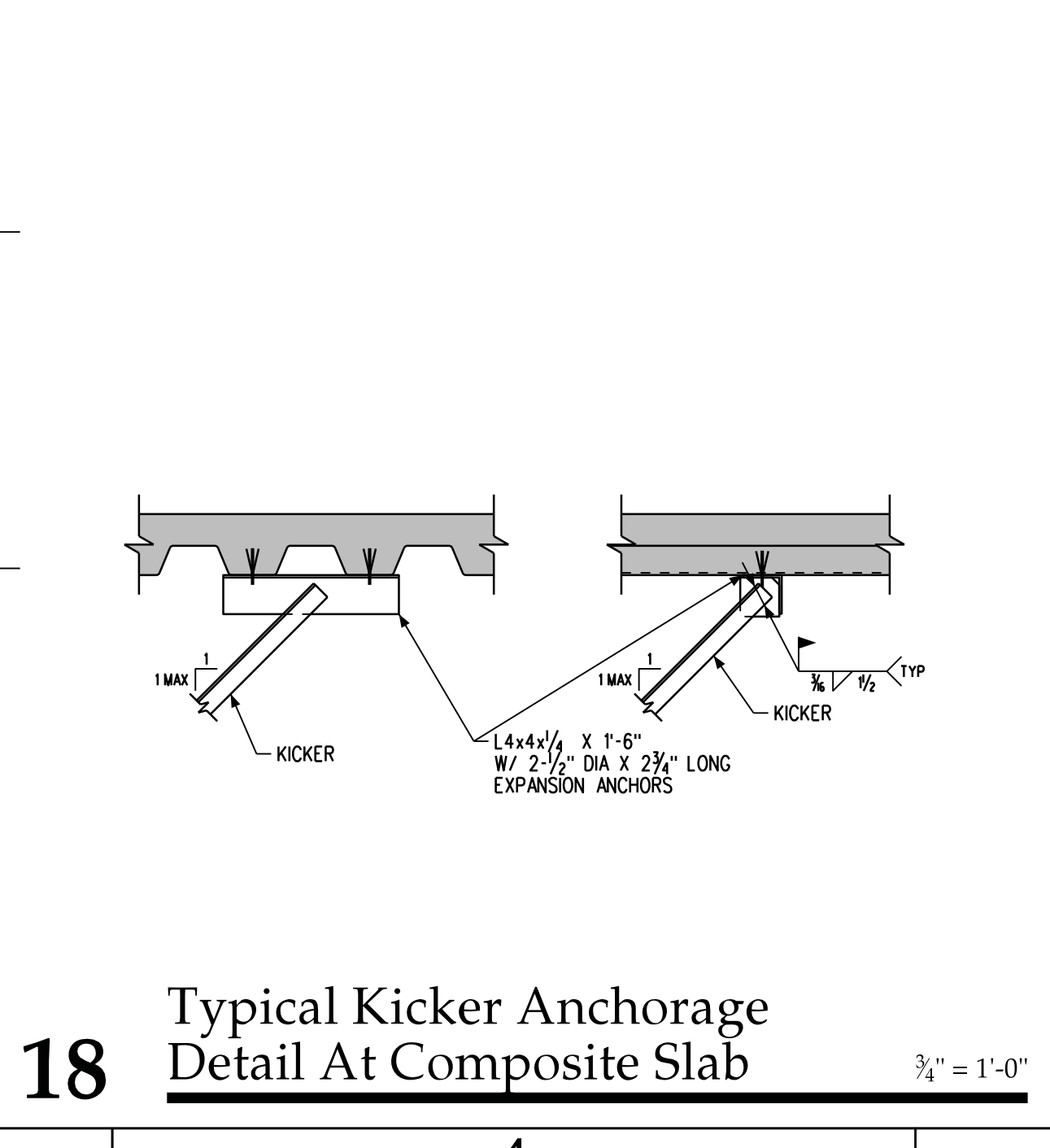
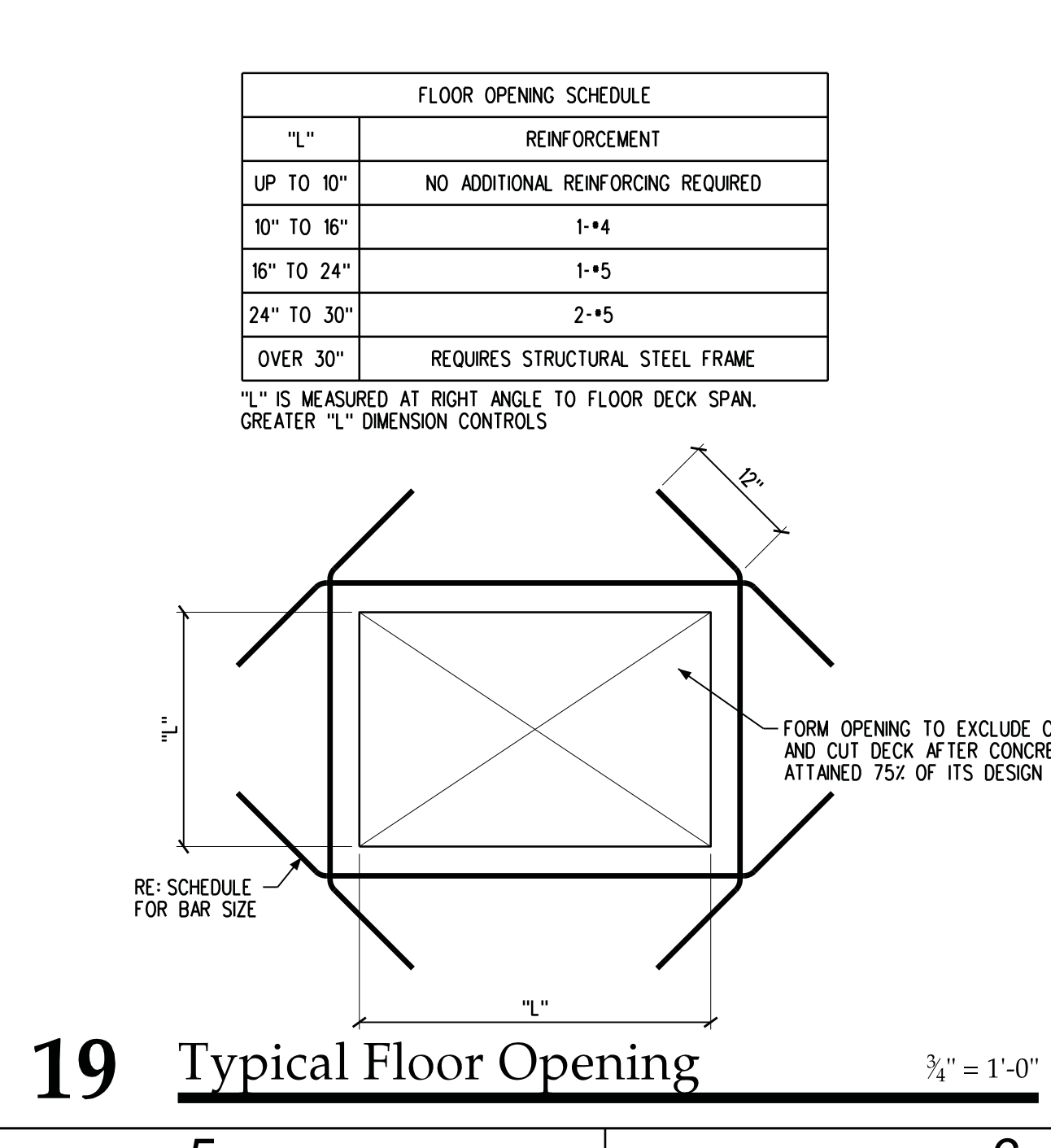
FLOOR OPENING SCHEDULE

"L"	REINFORCEMENT
UP TO 10"	NO ADDITIONAL REINFORCING REQUIRED
10" TO 16"	1+4
16" TO 24"	1+5
24" TO 30"	2+5
OVER 30"	REQUIRES STRUCTURAL STEEL FRAME

"L" IS MEASURED AT RIGHT ANGLE TO FLOOR DECK SPAN. GREATER "L" DIMENSION CONTROLS.

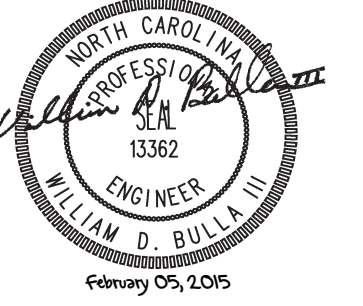
SECTION A

TYPE	OPENING	"H"	BRG.
TYPE 1	0'-0" TO 10'-0"	4"	8"
	10'-0" TO 12'-0"	5"	8"
	12'-0" TO 14'-0"	6"	12"
TYPE 2	0'-0" TO 10'-0"	2-4x3/4"	8"
	10'-0" TO 12'-0"	2-5x3/4"	8"
	12'-0" TO 14'-0"	2-6x3/4"	12"



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FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV
EARLY SITE PACKAGE

UNIVERSITY OF NORTH
CAROLINA CHARLOTTE
9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY: KPM
APPROVED BY: WDB

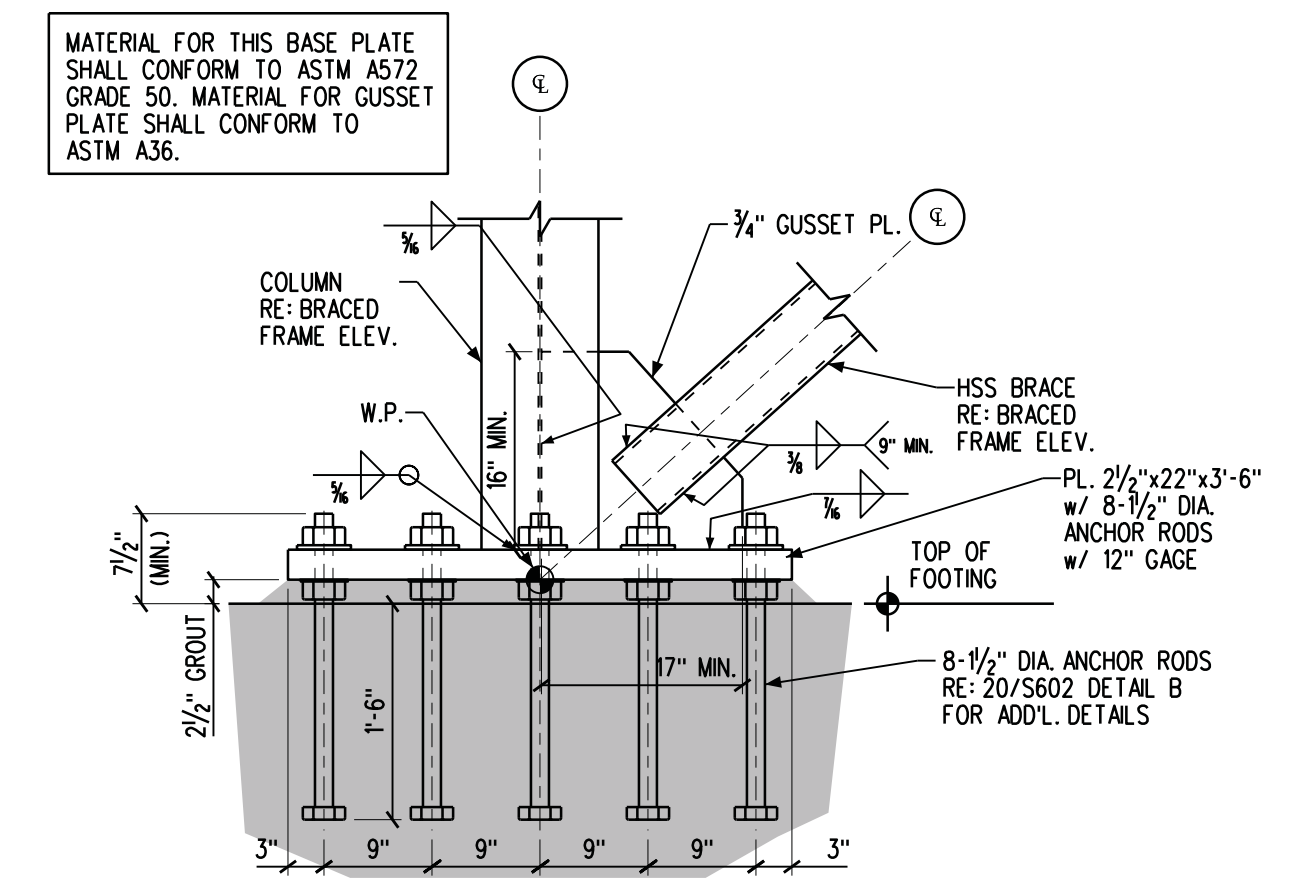
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SHEET TITLE

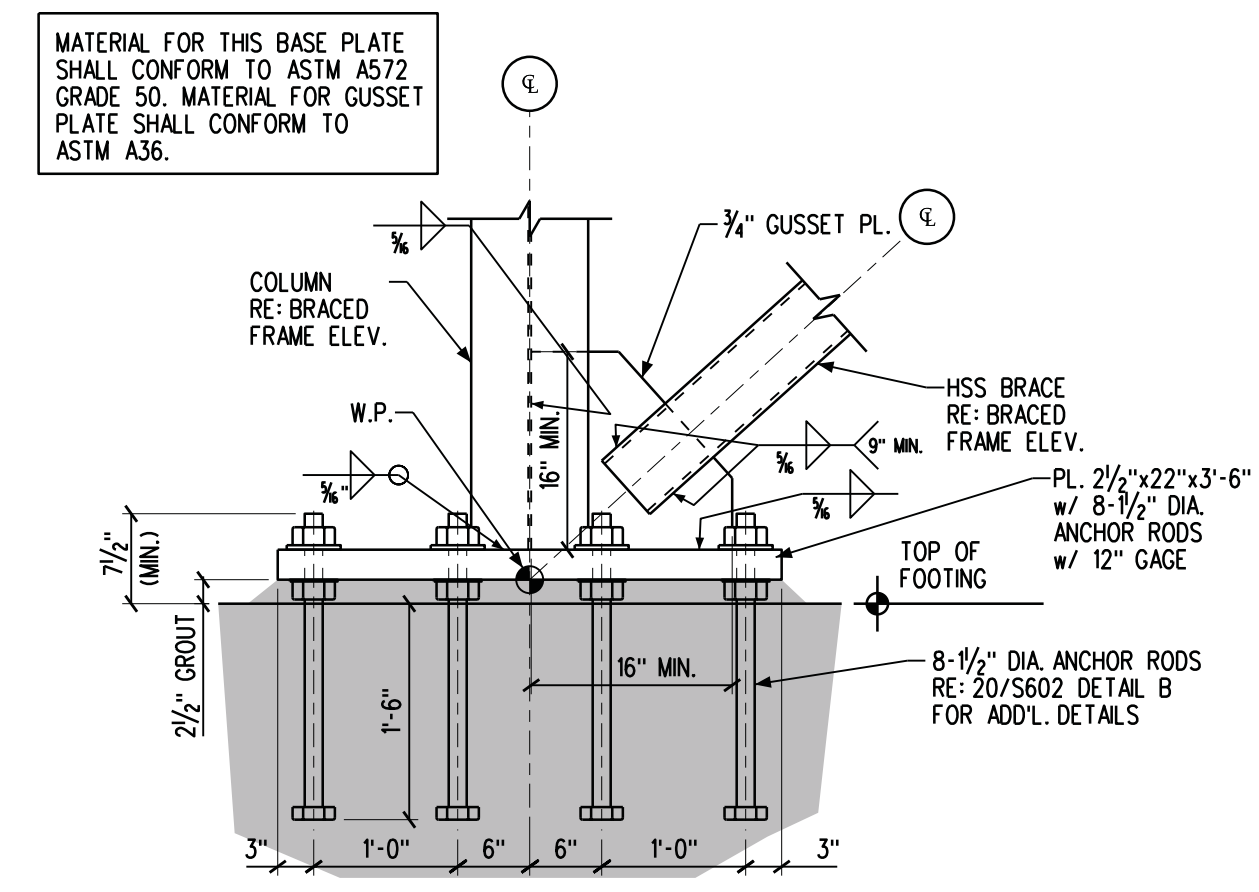
COLUMN AND BEAM DETAILS

SHEET NUMBER

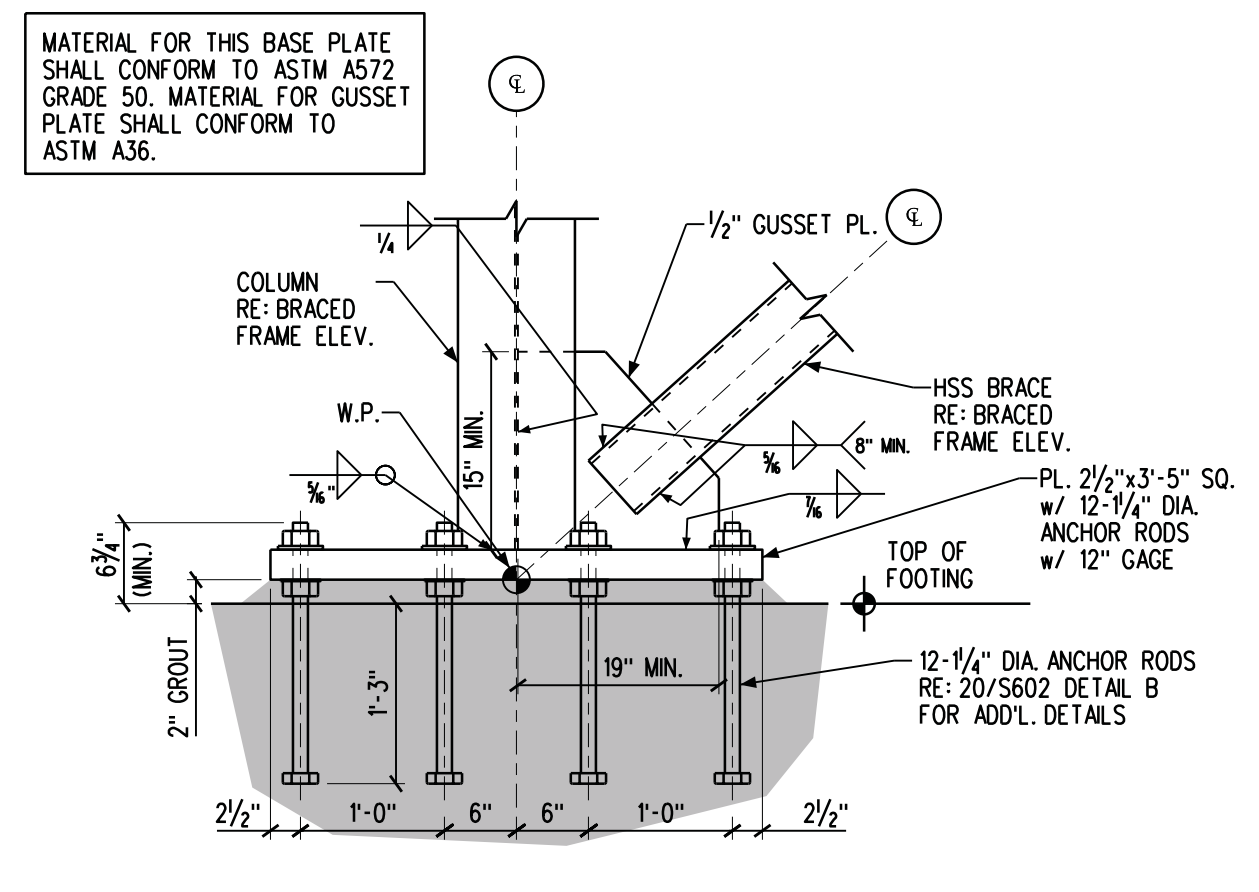
S602



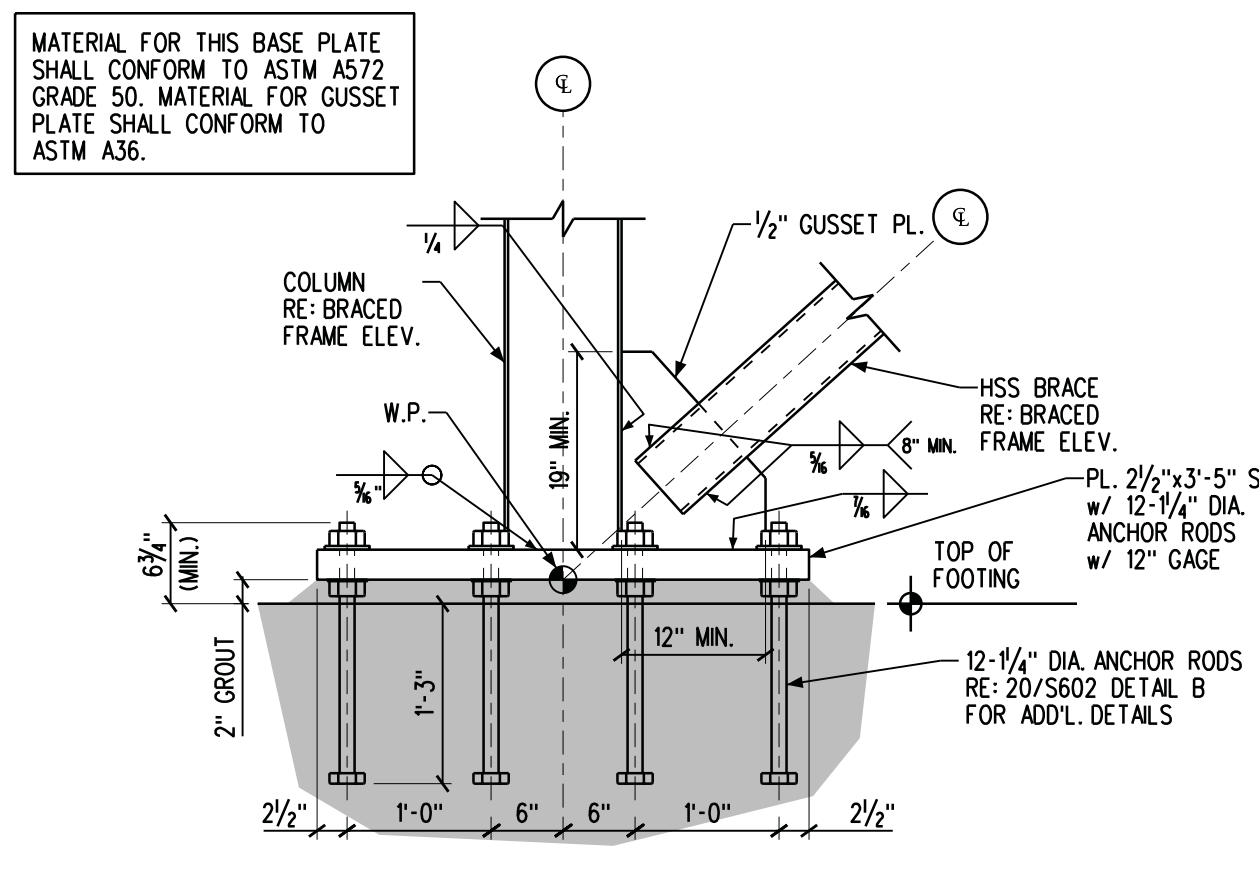
05 Braced Frame Base Plate BP33 No Scale



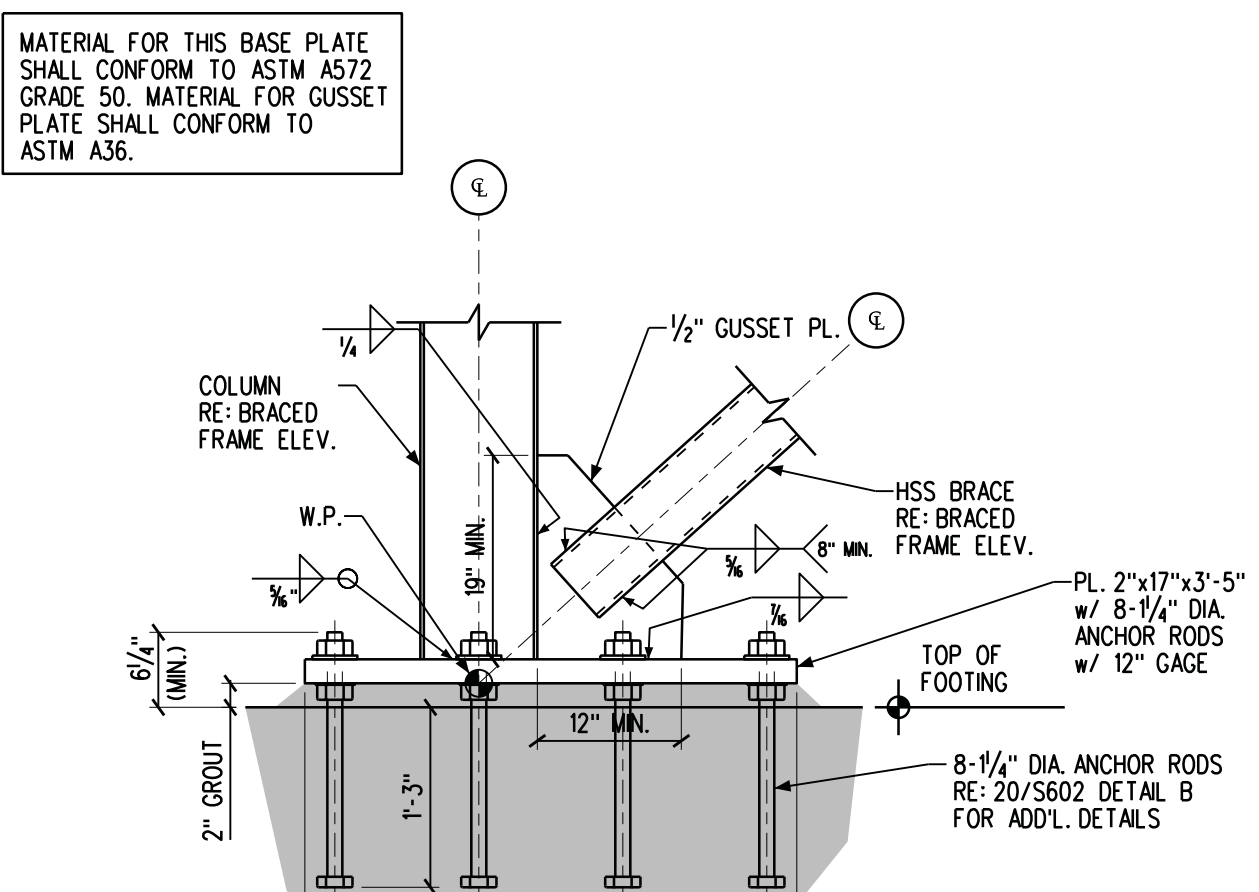
04 Braced Frame Base Plate BP32 No Scale



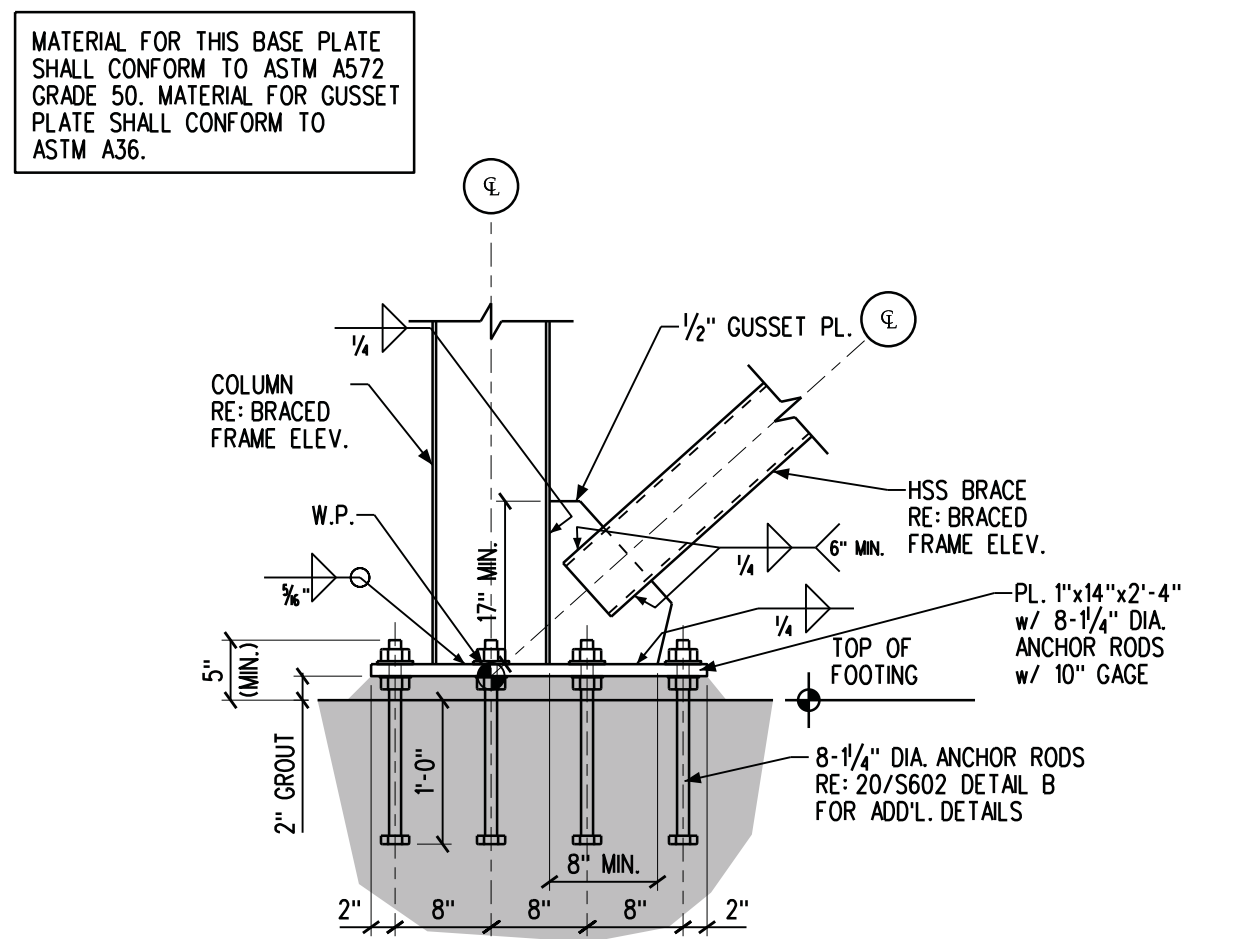
04 Braced Frame Base Plate BP32 No Scale



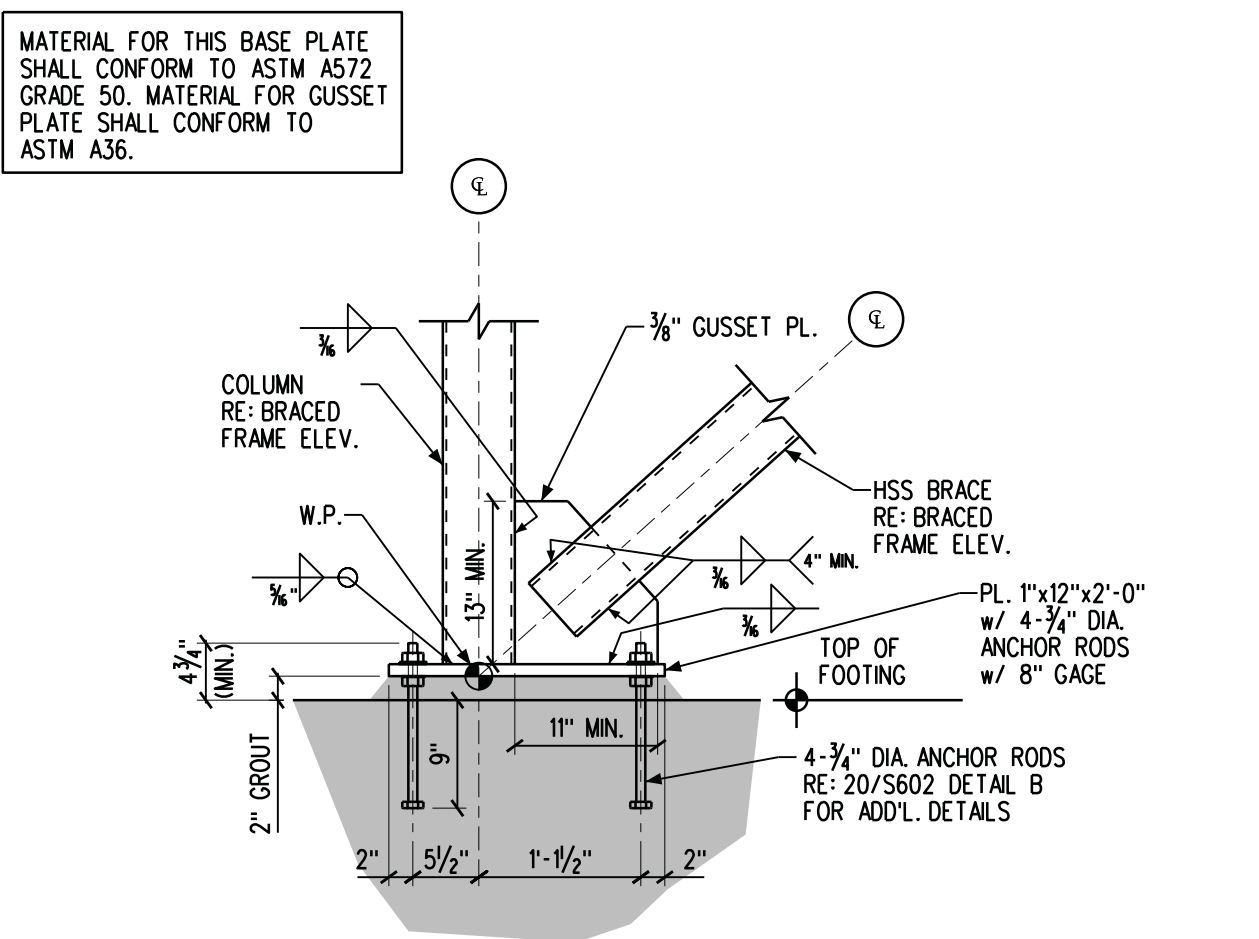
02 Braced Frame Base Plate BP31 No Scale



01 Braced Frame Base Plate BP30 No Scale



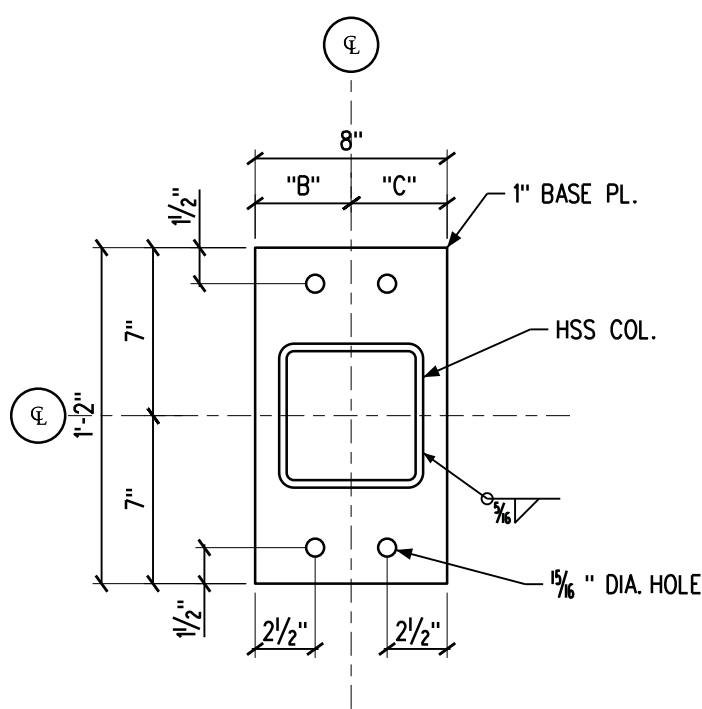
07 Braced Frame Base Plate BP35 No Scale



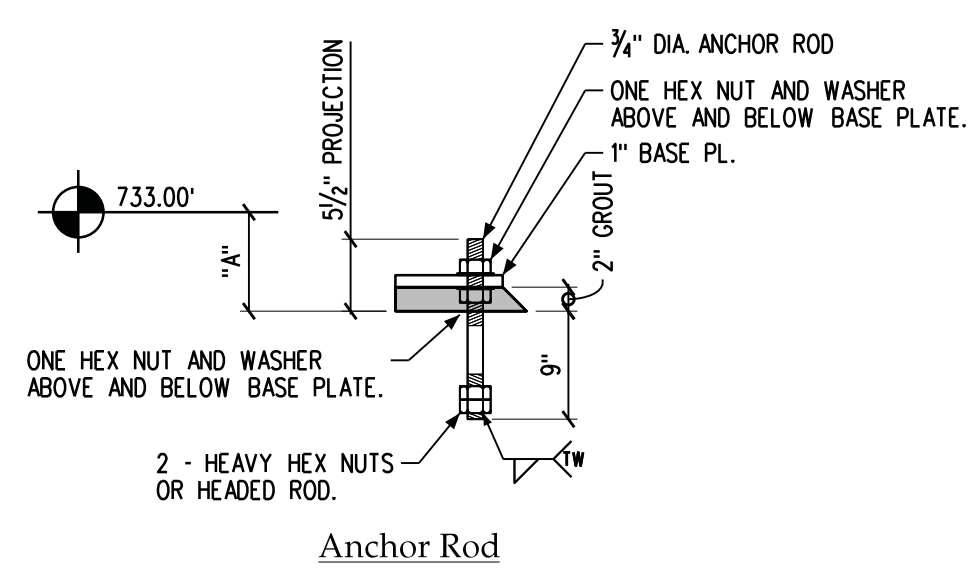
06 Braced Frame Base Plate BP34 No Scale

BASE PLATE DIMENSIONS

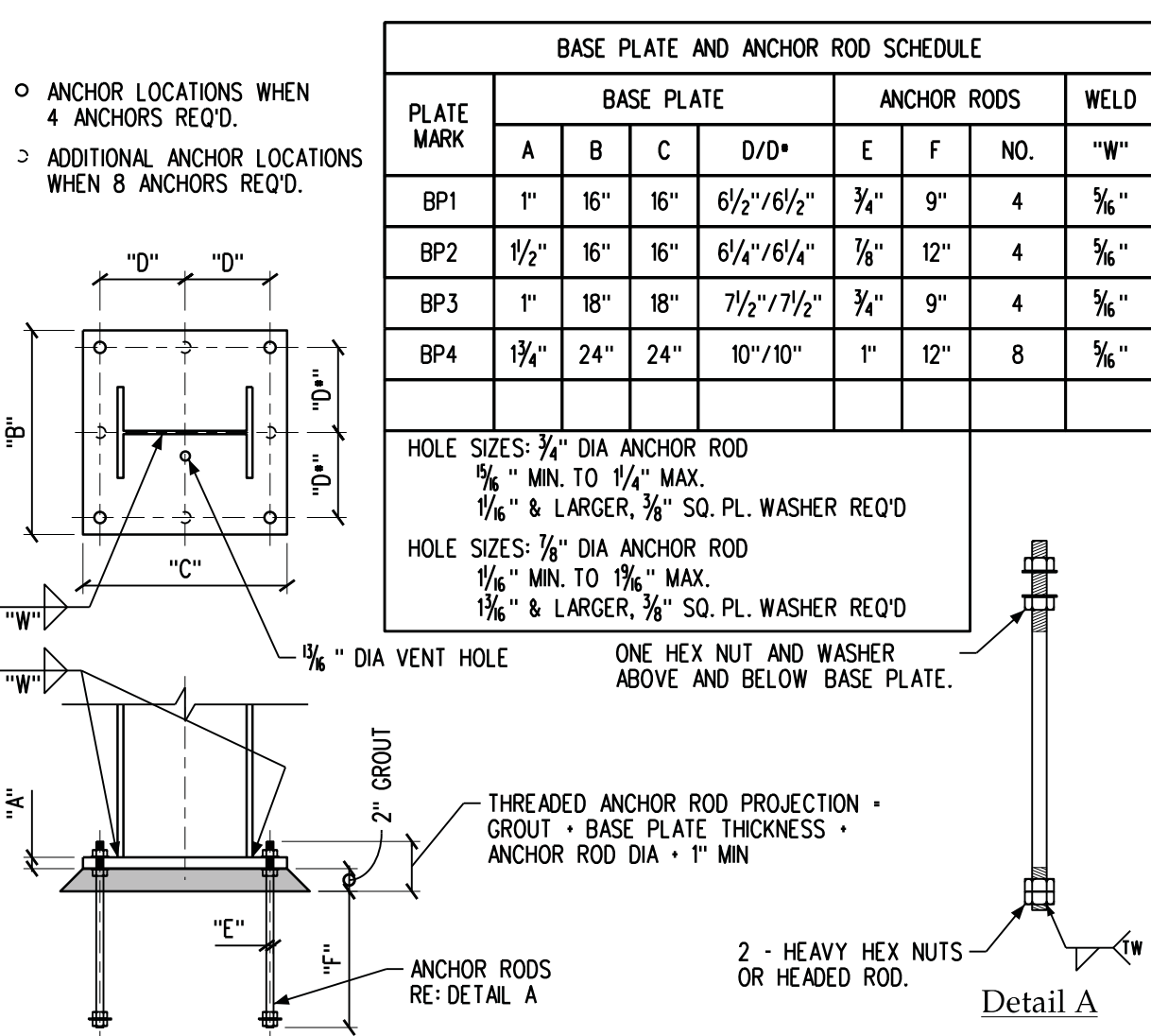
BP	"A"	"B"	"C"	"D"	"E"
41A	6 1/2"	4"	4"	N/A	N/A
41B	6 1/2"	4 3/4"	3 3/4"	N/A	N/A
41C	6 1/2"	4 1/4"	3 3/4"	N/A	N/A
42A	24"	4 1/4"	3 3/4"	4"	4"
42B	6 1/2"	4 1/4"	3 3/4"	3 3/4"	4 3/4"
42C	6 1/2"	4"	4"	4"	4"
43	6 1/2"	N/A	N/A	N/A	N/A



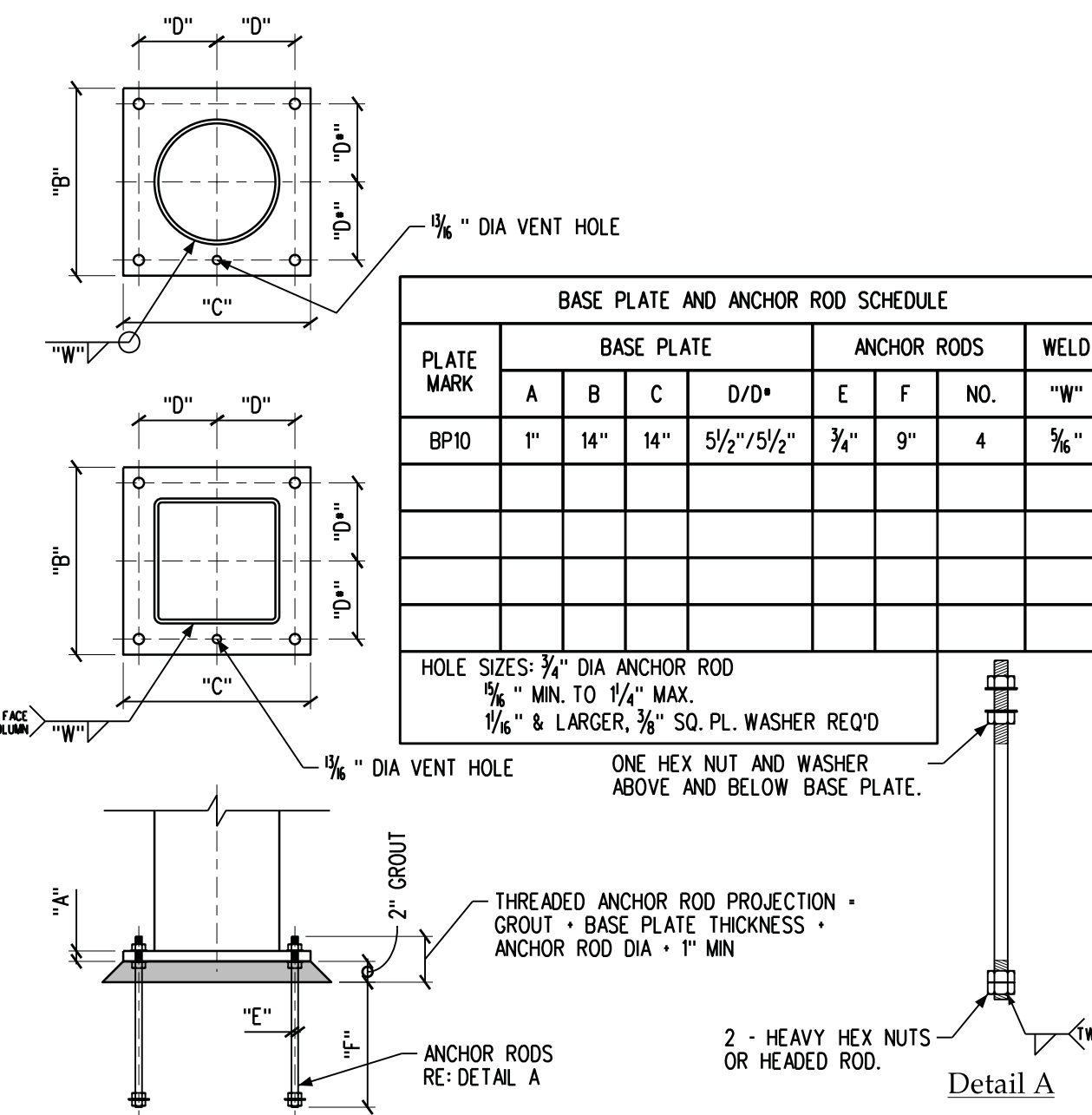
HSS Base Plate BP41



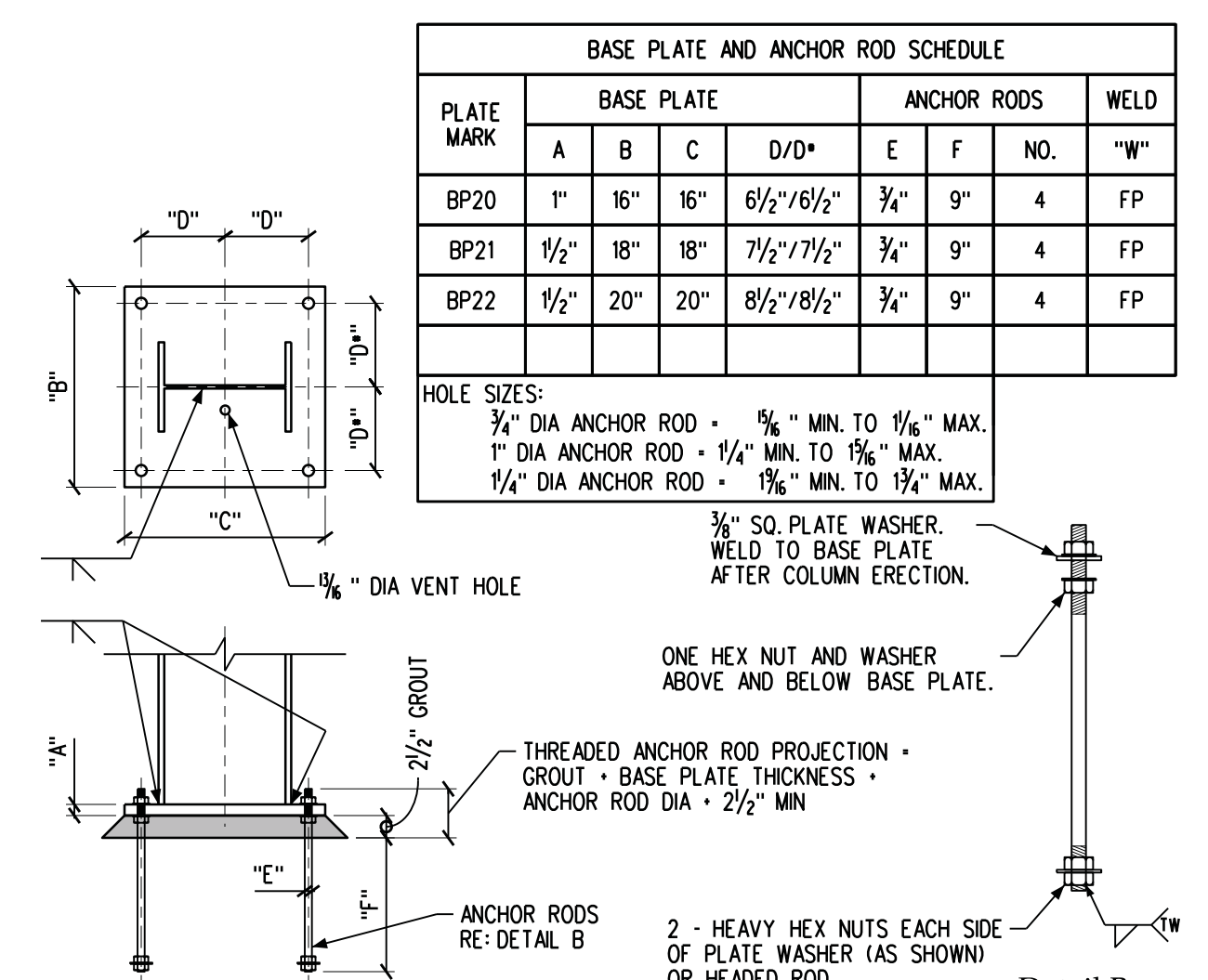
Anchor Rod



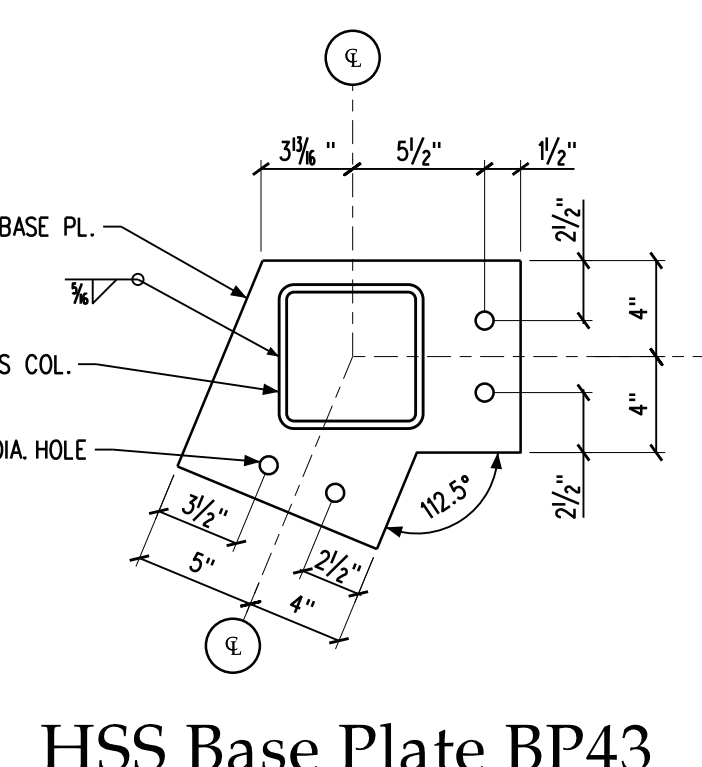
18 Base Plate and Anchor Rod Schedule At Wide Flange Columns No Scale



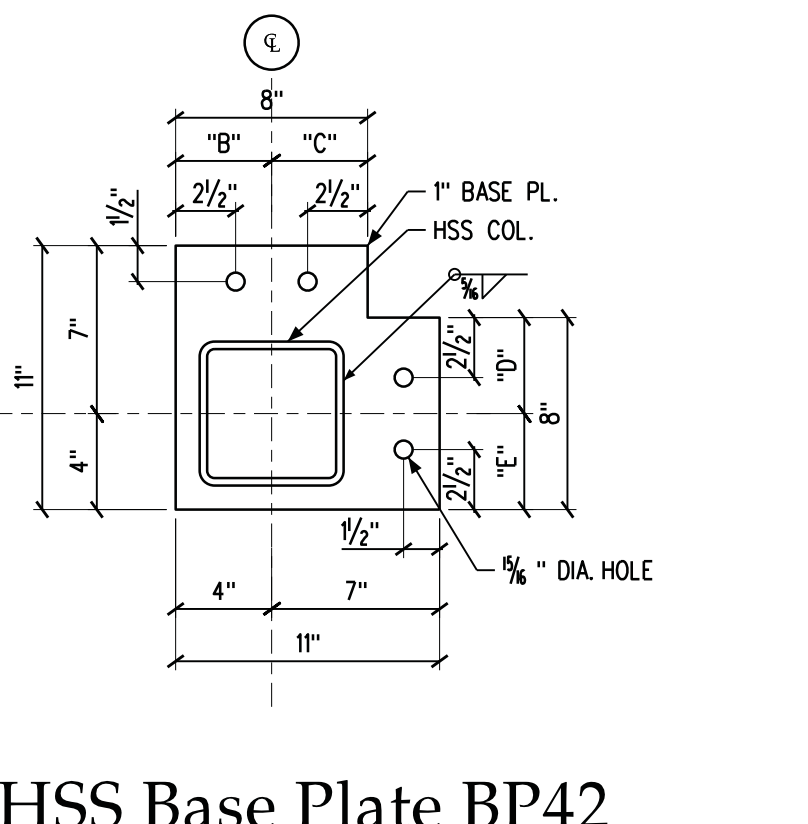
19 Base Plate and Anchor Rod Schedule At HSS Columns No Scale



20 Base Plate and Anchor Rod Schedule at Frame Columns No Scale



HSS Base Plate BP43



HSS Base Plate BP42

16 HSS Column Base Plates No Scale

05-FEB-2015 08:03

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DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-02-05	ADDENDUM #2

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03C

DRAWN BY: KPM
APPROVED BY: WDB

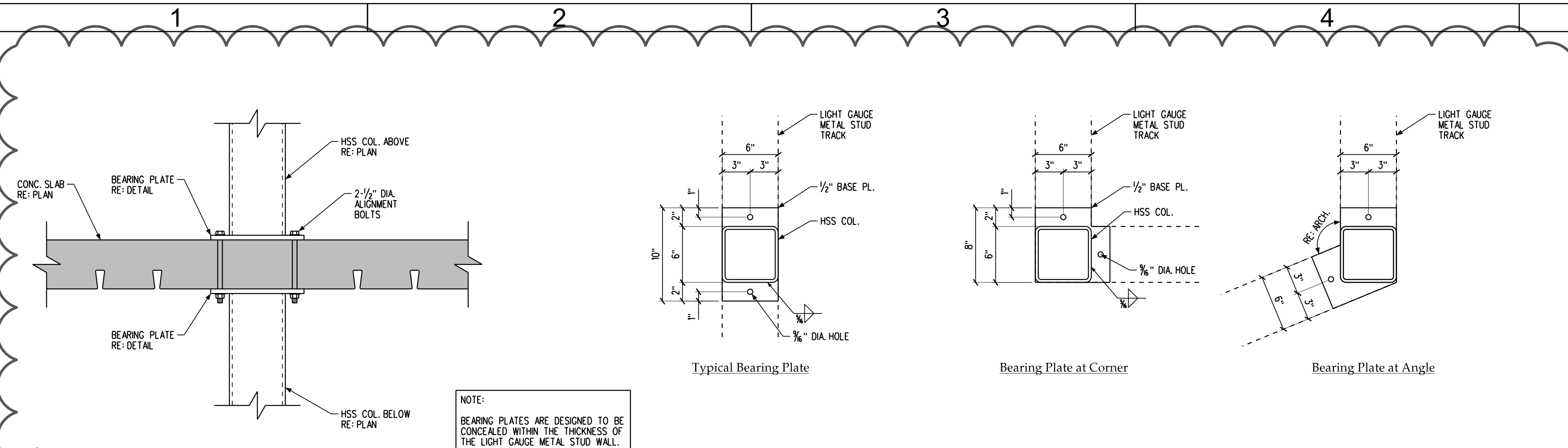
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SHEET TITLE

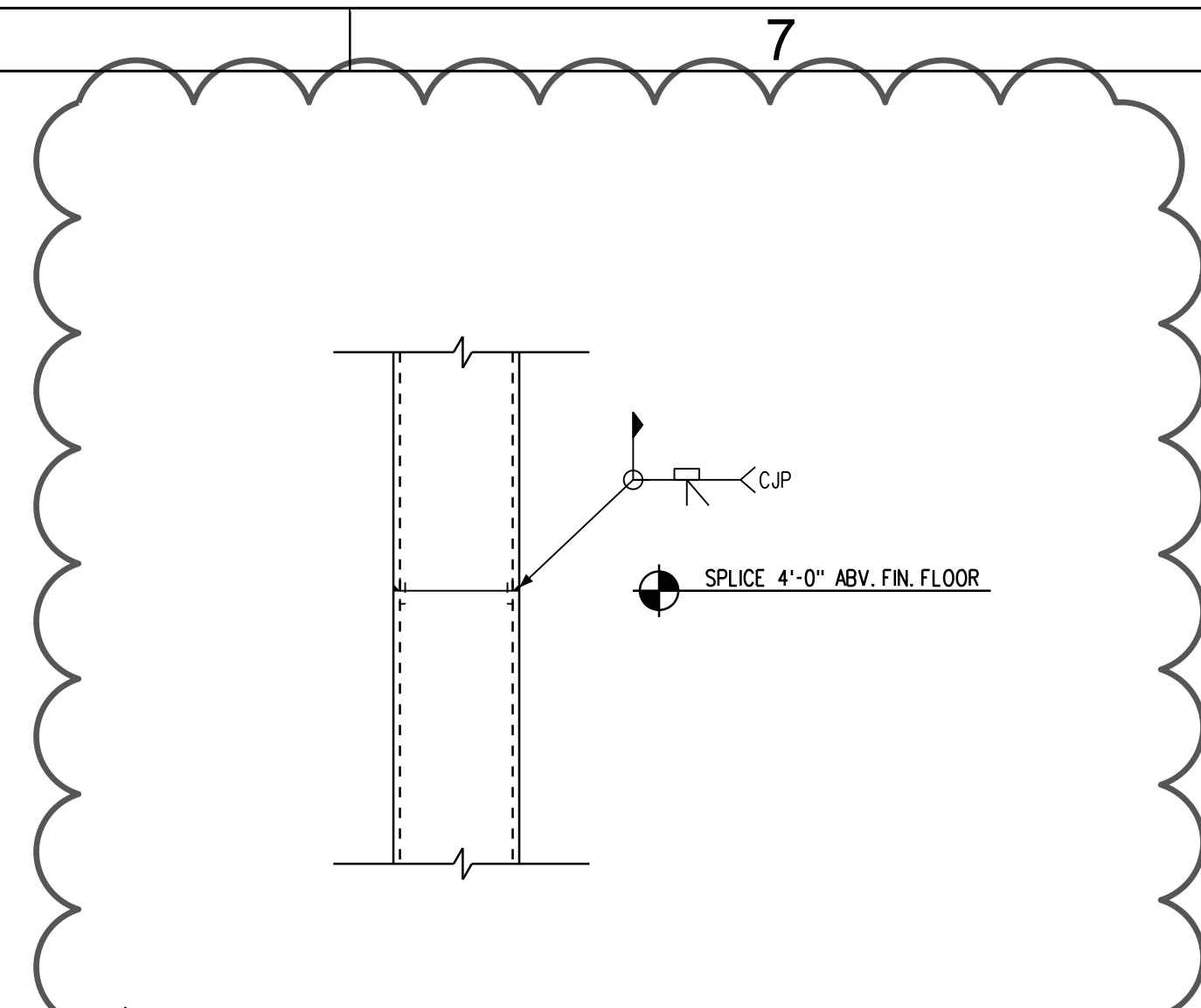
COLUMN AND BEAM DETAILS

SHEET NUMBER

S605



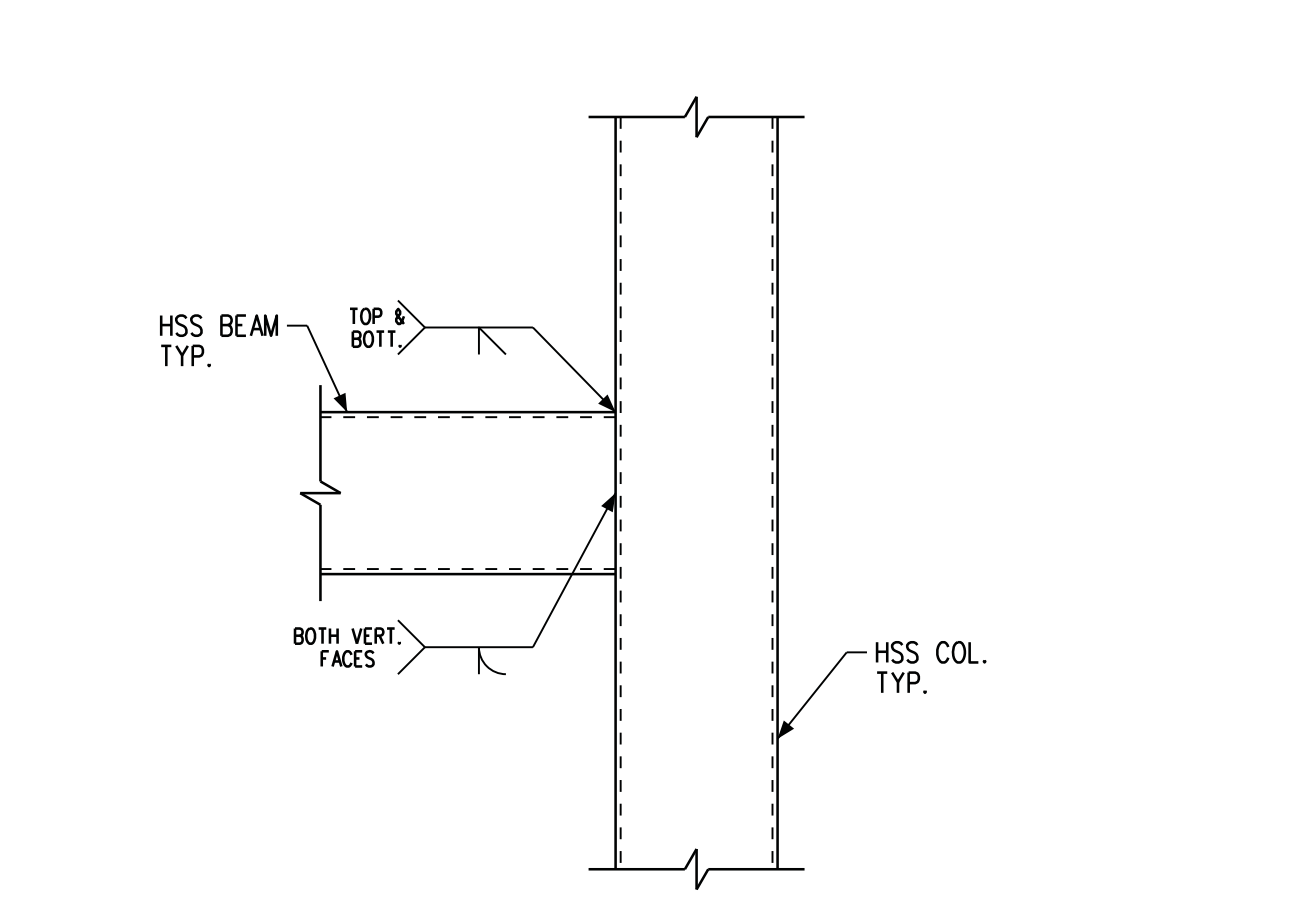
01 Platform Framed HSS Column Details No Scale



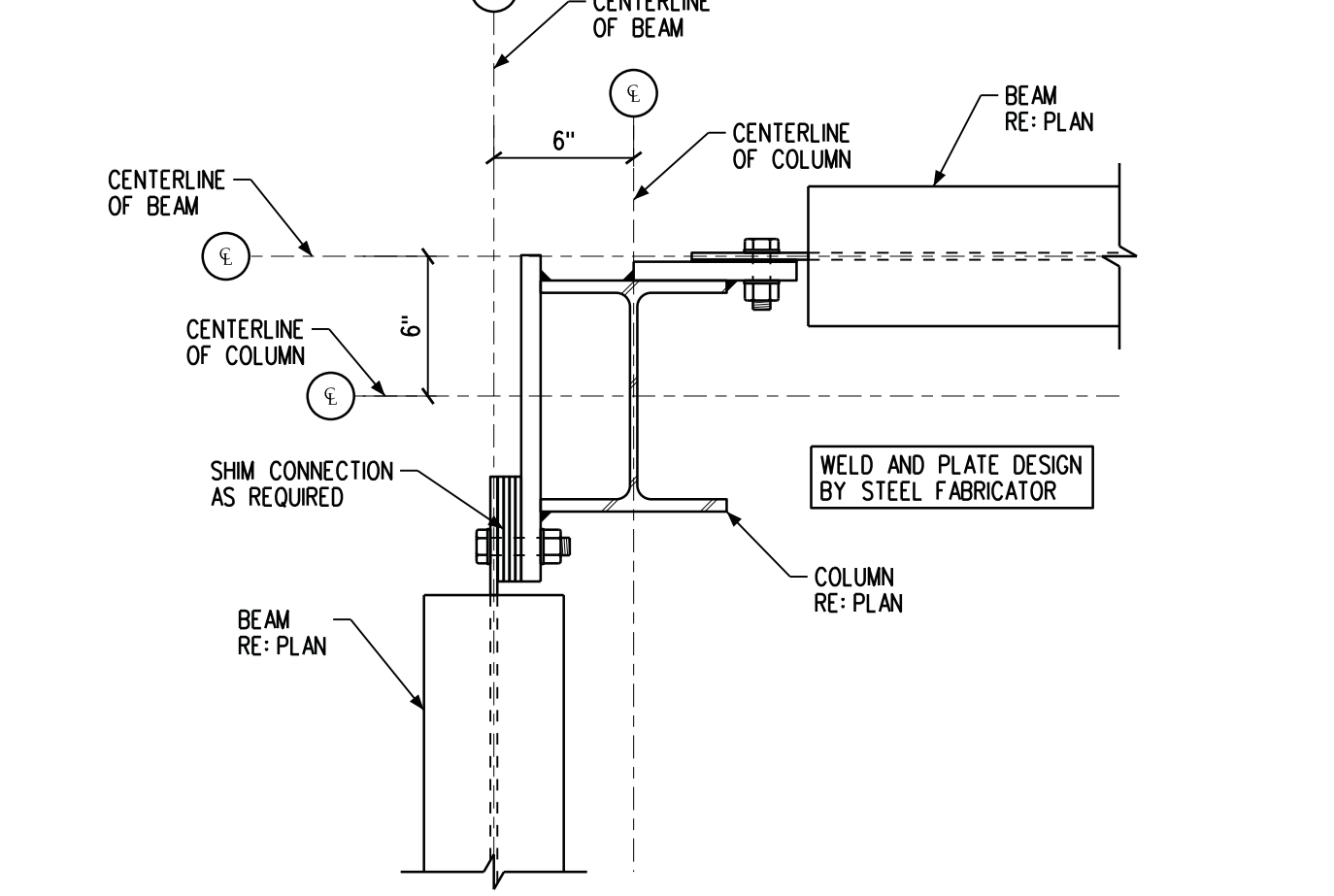
05 Typical HSS Column Splice 1/2" = 1'-0"



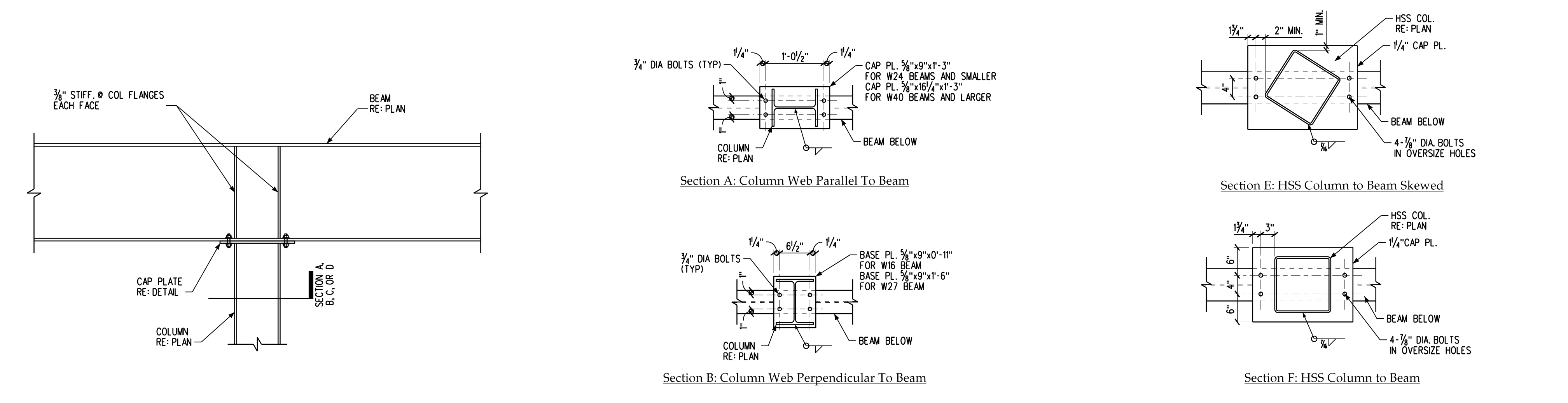
08 Bracket Connection No Scale



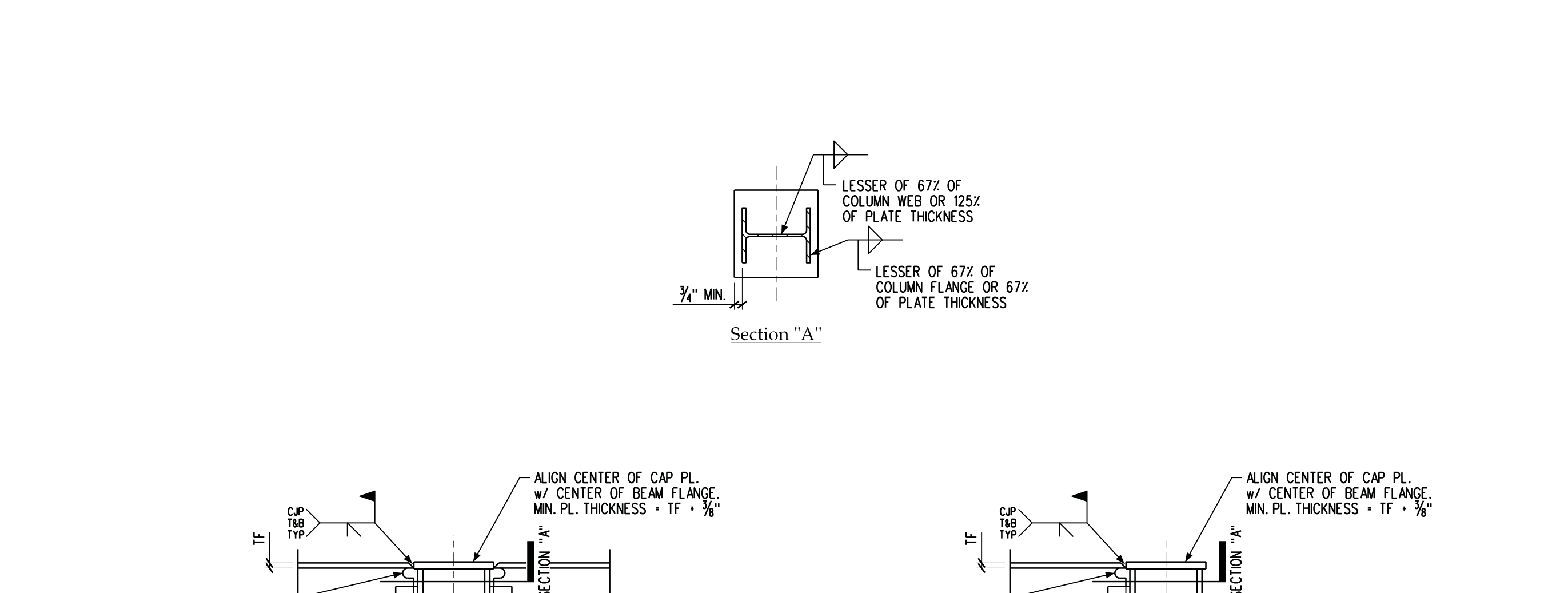
09 Typical HSS Moment Connection No Scale



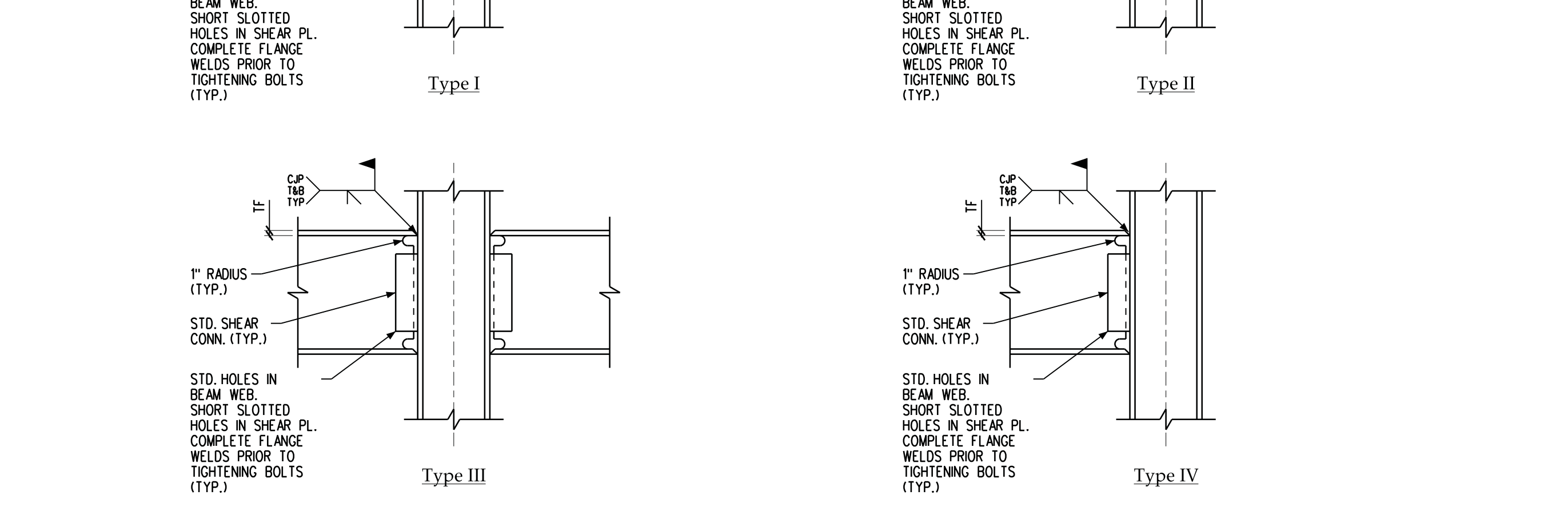
10 Offset Beam to Column Connection No Scale



11 Typical Cantilevered Beam Over Column Connection No Scale



16 Typical Connection of Column to Transfer Beam No Scale



NOTES:
1. STD. SHEAR CONNECTION TO BE DESIGNED FOR REACTIONS SHOWN ON STRUCTURAL DRAWINGS.
2. TF = BEAM FLANGE THICKNESS.
3. CAP PLATE AND STIFFENER PLATE STEEL GRADE SHALL MATCH THE BEAM STEEL GRADE. ALTERNATE: WHERE THE PLATE IS 1.4 TIMES THICKER THAN THE BEAM FLANGE, THE PLATE STEEL GRADE MAY BE A36.

19 Typical Strong Axis Moment Connection No Scale

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