

ADDENDUM NUMBER: 3

PROJECT: UNC Charlotte Residence Hall Phase XIV - Balance of Work

DATE: July 2, 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 CM RFI's #31 - 58 - Attached.

Revised Milestone Schedule Per Bid Package Manual General Summary of Work
2 Section 4.1 - Attached.

3 Bid date, time, and location remain the same.

REVISIONS TO DESIGN DOCUMENTS

1 FWA Group Addendum #01 Dated July 2, 2015 - Attached.

END OF ADDENDUM



Our Passion is Building®

Pre-Bid RFI Log - Construction Manager

RFI Log #2

Project:	UNCC Phase XIV Residence Hall - Balance of Work
To:	FWA Group
Prepared By:	Ben Palmer
Phone:	704-531-5173
Fax:	N/A
Email:	bpalmer@rodgersbuilders.com
Date:	July 2, 2015

Questions & Clarifications	
31	Can multiple Bid Packages be combined into one proposal, or can volunteer alternates be provided should multiple bid packages be awarded to the same bidder?
Answer:	RBI: No, multiple Bid Packages cannot be combined into one proposal. Each bid package must be bid separately in its own sealed envelope.
32	A) Please confirm the specific location and/or count for the skate deterrents. B) Please provide a manufacturer for the skate deterrents.
Answer:	RBI: For question (A), please refer to Arch. RFI #13. For question (B), please see Spec 12 93 00 and the Landscape Drawings.
33	Who is responsible for the concrete footer/foundation for the site steps?
Answer:	RBI: BP 03A is responsible for the concrete footer/foundation for the site steps.
34	Which bid package is responsible for installing the bike shelter as needed for Alternate #14?
Answer:	RBI: Please reference CM RFI #4.
35	Bid package 10C does not state who is responsible for punching the overhead steel per the submittal punch template. Bid package 5A states under C05 that the Misc. Steel subcontractor will be providing and installing the steel itself, but does not require them to punch the steel as the scope currently reads. Please confirm which package is responsible for punching the steel.
Answer:	RBI: BP 10C shall be responsible for and include punching/drilling holes as needed in the structural steel supporting operable partitions.
36	Bid package 10C does not mention blocking for the jambs of the operable partition and pocket door to be embedded into the drywall to prevent caving and properly support the weight of the pass doors. The description for bid package 9A states that they are to provide blocking for Division 10 specialties, without directly referencing the operation partition or the amount of blocking. Please confirm if the bid package 9A subcontract will be providing blocking for each end of the operable partition and for the jambs at each leaf of the pocket door.
Answer:	RBI: Blocking as shown on the Contract Documents will be provided and installed by BP 09A. Should additional blocking be required for operable partitions BP 10C, this will be provided and installed by BP 10C as indicated in BP 10C - Item GC-01.
37	Drawing A510, detail A1 correctly details an above ceiling plenum barrier required by ASTM E557 to prevent sound from flanking over the operable partition and through the ceiling. This construction is typically covered by the 9A subcontractor considering its drywall composition, but is not currently listed in their scope requirements. Please confirm that bid package 9A will be providing the plenum barrier as detailed
Answer:	RBI: Confirmed, BP 09A will be providing the plenum barrier as detailed. BP 10C will be providing and installing all operable partition components as shown in Detail A1/A510.
38	BP 08B: Reference general summary of work, 3.7, hoisting and bid package 08B- doors and hardware. A buck hoist or service elevator will be required for this subcontractors use for delivery of doors and hardware to floors 2-5. For both safety and insurance reasons, we will not be able to carry doors and hardware up stairs. Please confirm a buck hoist or service elevator will be available for use at time of door and hardware installation.
Answer:	RBI: Confirmed that either a buck hoist or construction elevator will be available for all use at the time of door and hardware installation. All trades will have access to the buck hoist and/or construction elevator to facilitate installation of the Work.

	39	Reference bid package 08B- doors and hardware. Item B07 states that frames are to be provided with conduit. This is highly atypical and not recommended. Typically, frames are provided with electrical box and prep only. Conduit is provided by bid package 16A. Please confirm bid package 16A is responsible for conduit at hollow metal frames.
Answer:		RBI: Confirmed. For clarification purposes, BP 16A is responsible for providing and installing conduit and wire to all door related devices. Termination of wiring to devices shall be by BP 08B.
	40	Reference bid package 08A- glass assemblies and bid package 08B- doors and hardware. Per 08A- item A11, all hardware for aluminum/glass doors by bid package 08A (other than cylinders/cores which will be by bid package 08B). Please confirm.
Answer:		RBI: Confirmed that all hardware for aluminum and glass doors is by BP 08A, except for cylinders/cores which shall be provided by BP 08B.
	41	Reference bid package 08B- doors and hardware. Item B23 states low voltage wiring by bid package 08B. To avoid overlap with bid package 16A, Please confirm this is a requirement of bid package 08B.
Answer:		RBI: To clarify, BP 08B Item B23 states <u>final connections</u> of electrical low voltage wiring are included in BP 08B. Low voltage wiring is included in BP 16A.
	42	Please reference 08 06 71- door hardware schedule and bid package 08B- doors and hardware. Bid package 08B, item B19 states that construction cylinders are required for use during construction. Spec section 08 06 71 is not scheduled in this way. For example, reference hardware set 16 (this is typical across all of the "housing" hardware sets). The lock is specified "LC". This is "less cylinder". The permanent cylinder is shown on the line below the lock "20-000". The way the hardware is currently designed, there won't be any way to lock these openings during construction. The locks will be shipped less the cylinder. The permanent cylinder won't be shipped and installed until the end, leaving the openings unsecured during construction. If EVERY opening is required to be secured during construction, we would suggest removing the "LC" from the locks in all hardware sets (then the locks will be shipped with a cylinder that can be used during construction and replaced with the permanent cylinder at a later date). If every opening will not be required to lock and you only require a set amount of doors to be secured, we would suggest adding a requirement to 08B such as "please provide "XX" construction cylinders for use during construction at contractors discretion to secure openings until permanent cylinders are installed". This will suffice at ALL MORTISE LOCK and/or EXIT DEVICE applications. The cylindrical locks are a different story. With a key-in-lever cylinder, the only way to change out the cylinder is to remove the lever completely. You can't just simply swap out the cylinder. The lever has to be taken off the door. While it is not impossible it makes it rather labor intensive and expensive. For the most part, the common area consist of mortise locks so this won't be a big issue in the common area. However, the bedroom doors inside the units all have lockable cylindrical locks. Obviously, this is one of the most common door types with a very large quantity. Please advise if the unit bedroom doors will be required to be secured during construction?
Answer:		RBI: Include provisions to allow for the following doors to be locked during the construction process: Exterior entry doors, electrical rooms, mechanical rooms, IT rooms, and main entry door from corridor into each suite. Bedroom doors do not require a temporary lock.
	43	Please confirm anodized aluminum clad steel doors & frames are to be provided and installed by bid package 08A- glass assemblies. Reference door schedule on A610, door material "ST" and frame material "ACST" (reference opening 140 for an example).
Answer:		RBI: Confirmed that aluminum clad steel doors & frames are to be provided and installed by BP 08A.
	44	BP 16A Electrical - Please clarify where BP 16A is to pull feeders from/to and where to start their conduit (where the hand off is from BO 02J).
Answer:		RBI: BP 16A shall provide and install all underground duct bank(s) that are not clearly identified in the Early Site Bid Documents. BP16A shall provide and install ALL feeders.
	45	Sheet A101N, General Note #14 – Please confirm the Plumbing package has the SS panels at the janitors mop sink.
Answer:		RBI: Confirmed, Plumbing BP 15C will furnish and install the stainless steel wall guards, mop hangers, etc. as required of Plumbing Fixture P-7.
	46	Please clarify how the HVAC, plumbing equipment and construction elevator will be powered for construction use.
Answer:		RBI: BP 16A shall include provisions to provide power for equipment and elevator operation for construction use prior to and after permanent power.
	47	Refer to dwg#E503 detail#11, who is responsible for providing Elevator/Fire Curtains. What are the locations? Are these on all levels and for all elevators? If by EC please provide specifications for Elevator Curtains.
Answer:		RBI: Elevator Smoke Curtains shall be provided by BP 16A as defined in the Specific Summary of Work. The locations are shown on the Electrical & Architectural Drawings. The spec section for Elevator Smoke Guards is 08 34 83.
	48	Refer to dwg#E508 detail#1, notes#1&2. Please clarify who supplies the 20A duplex receptacle in the Washer Box provided by Plumbing Contractor. Please clarify?
Answer:		RBI: Plumbing BP 15C shall provide the integral 20A receptacle in the Washer Boxes. See Plumbing Fixture WP-1. BP 16A shall make electrical connections and terminations to receptacle.

	Refer to dwg#E705, who is providing disconnects for the following: 1. ODU-01, ODU-1-3, 1-4, 1-5 and 1-1. 2. EVR-1, EVR-2 and AHU-1. 3. UH-1-mentions note#6 integral to unit, also note#9 disconnect by EC please clarify?
Answer:	RBI: Items #1 & 2 - BP 15D HVAC to provide and install; See Note #7 on M002. Item #3 will be provided & installed by BP 15D HVAC.
50	Please refer to Para A50 of Bid Package -16A Electrical Specific Summary of work- Communication System-Paging and Music systems and resident call system. We don't see any locations for these items. Please clarify where to look for these. If not, please delete these items from EC scope of work. Please clarify?
Answer:	RBI: To clarify, the verbiage for 'paging and music systems, resident call raceway' are not applicable. The intent of the 'Communication Systems' reference in A50-BP 16A is to ensure that BP 16A includes all low voltage and communication systems as shown in the Drawings and Specifications.
51	Please refer to Para A38 of Bid Package -16A Electrical Specific Summary of work-Please provide low voltage matrix to clarify what is EC's responsibility and what is Owner's responsibility. This will clarify who is providing what.
Answer:	RBI: A low voltage matrix will not be provided. BP 16A is to include all low voltage and communication systems as shown in the Drawings and Specifications.
52	Please refer to Para A53 of Bid Package -16A Electrical Specific Summary of work- Please provide details/locations where to provide power to interior and exterior signage. Are we missing these somehow?
Answer:	RBI: Bidders are responsible to review all Drawings and Specifications. For example, one location for signage to note is the Exterior Light Fixture Schedule on Drawing E003.
53	Please refer to Para B- B01 thru B08 of Bid Package -16A Electrical Specific Summary of work- Elevator Smoke Guards- we understand during the pre bid meeting that Elevator work has been awarded- so is it possible to get details on these elevators so that we can price the smoke guard system compatible with the Elevators you will be installing. This will help everyone in the end. Please provide necessary details.
Answer:	RBI: Thyssen Krupp has been awarded the elevator contract (BP 14A). Shop drawings are in progress but are not finalized at this time.
54	BP 16A - Is there any traffic control work involved for this project we are bidding. If so please provide details. Please clarify?
Answer:	RBI: Each Bid Package shall provide traffic control as required to install work, including but not limited to deliveries, unloading of materials, barricades and traffic control (including flagmen) by each bid package. Flaggers in the Right of Way must be DOT certified in flagging operations.
55	BP 16A - Alternate#14- where can we find the complete scope for this alternate-please mark on the respective drawings to properly quote our scope of work. Please clarify?
Answer:	RBI: Ref. Drawings E011 and Detail #1/E301.
56	For RR-ADA-R tiled bathrooms: Will the slab be recessed in this area to allow roll-in accessibility? If so, will recess area be in the shower area only or the entire bathroom floor?
Answer:	RBI: Yes the slab will be recessed per Drawing C5/A141. Ref Structural Drawings for slab depression locations/size/depth.
57	Are there Liquidated Damages associated with this project?
Answer:	RBI: Yes, please Ref. Article #23 of the Supplementary General Conditions (00 73 23), which states For each day in excess of the contract duration, the CM shall pay to the Owner, the sum of One Thousand Dollars (\$1,000.00) per calendar day until November 28, 2016 and the sum of One Hundred Dollars (\$100.00) per calendar day per bed after November 28, 2016 the work is delayed beyond the completion date or authorized extension thereof, as liquidated damages reasonably estimated in advance to cover the losses to be incurred by the Owner by reason of failure of said CM to complete the work within the time specified, such time being of the essence of this contract and a material consideration thereof.
58	Please clarify who is to provide and install power supplies for electrified door hardware?
Answer:	RBI: BP 08A & 08B shall provide power supplies for their associated doors. BP 16A shall install power supplies.



Our Passion is Building®

Description of Milestone/Duration	North Wing Milestone Date/Duration	South Wing Milestone Date/Duration
Structural walls and decking	9/22/2015 - 12/28/2015	10/16/2015 - 12/1/2015
Roof trusses and sheathing	12/29/2015 - 1/26/2016	12/9/2015 - 1/5/2016
Miscellaneous exterior framing and exterior sheathing	10/21/2015 - 1/26/2016	10/16/2015 - 1/12/2016
Brick veneer	12/28/2015 - 3/8/2016	12/8/2015 - 12/16/2015
Dry in	1/26/2016	1/12/2016
Exterior skin mock up complete	11/13/2015	11/13/2015
AHU & ERV delivery	12/17/2015	12/17/2015
Elevator Ready For Construction Use	2/16/2016	2/16/2016
Permanent Power	3/11/2016	3/11/2016
Rough in prior to dry in	11/25/2015 - 3/23/2016 (15 days/floor)	12/16/2015 - 3/16/2016 (10 days/floor)
MC cable install after dry in	1/27/2016 - 6/15/2016 (15 days/floor)	1/12/2016 - 6/15/2016 (10 days/floor)
Hang/tape/finish	15 days/floor	10 days/floor
Temporarily Controlled Conditioned Air	3/18/2016	3/18/2016
Final Designer Inspection	10/10/2016	10/10/2016
Final SCO Inspection	10/21/2016	10/21/2016

ADDENDUM NO. 1
Residence Hall Phase XIV
University of North Carolina at Charlotte
July 2, 2015



ADDENDUM NUMBER ONE (1)

DATE: July 2, 2015

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

**FWA PROJECT
NUMBER:** 2420.02

This Addendum Number One (1) 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 Document drawings, specifications, schedules and other documents dated June 18, 2015 as issued by The FWA Group.

This Addendum consists of three (3) pages of written text, zero (0) specification sections and sixteen (16) full size drawings.

CHANGES TO PRIOR ADDENDA:

- NA

CHANGES TO PROCUREMENT AND CONTRACTING REQUIREMENTS:

Revise the following Specification Section:

00 01 10 - TABLE OF CONTENTS (Revise the following)

21 31 13 FIRE PUMPS
26 24 16 PANELBOARDS

CHANGES TO SPECIFICATIONS GROUP

Revise the following Specification Sections:

09 91 13 – INTERIOR PAINT (Revise the following)

2.1 MANUFACTURERS

- C. Approved Equivalent Products;
 - 5. Latex, exterior, satin:
 - a. S-W: SuperPaint Exterior Latex Satin, A89 Series
 - b. BenMoore: Moorlife Exterior Flat, N105
 - c. PPG Paints: PP739 Acri Shield Satin Acrylic House Paint

ADDENDUM NO. 1
Residence Hall Phase XIV
University of North Carolina at Charlotte
July 2, 2015

3.6 EXTERIOR PAINTING SCHEDULE

- C. Exterior Gypsum Board Substrates: Ceiling in archway
 - 1. Latex System:
 - c. Topcoat: Latex, exterior, satin: S-W SuperPaint Exterior Latex Satin, A89 Series, at 4.0 mils wet, 1.5 mils dry, per coat.

08 80 00 – GLAZING (Revise the following)

2.8 INSULATING-GLASS UNITS

- A. Radian Low-E Insulating-Glass Units (G1):
 - 1. Basis-of-Design Product: Guardian Industries Corp.; Sunguard SNX 62/27 (#2) on Green) or a comparable product by one of the following:
 - a. PPG Industries Solarban 70XL (2) Solexia/Clear
 - b. Viracon, Inc. VNE-63 #2
- B. Radian Low-E Insulating-Glass Units (G1T):
 - 1. Basis-of-Design Product: Guardian Industries Corp.; Sunguard SNX 62/27 (#2) on Green) or a comparable product by one of the following:
 - a. PPG Industries Solarban 70XL (2) Solexia/Clear
 - b. Viracon, Inc. VNE-63 #2

CHANGES TO DRAWINGS:

The sheets listed below (Revised by Addendum No. 1) are hereby revised and made part of the Contract Documents:

VOLUME 1 DRAWINGS

(Revisions include scupper/conductor head details, miscellaneous door schedule corrections, additional information for Window IF01 @ Laundry Rm's X42 and hollow metal frames revised to storefront @ Rm's 151, 157 & 159)

- a. A503 – EXTERIOR DETAILS-R1
- b. A610 – DOOR SCHEDULE & TYPES_R1
- c. A611 – EXTERIOR & INTERIOR FRAME TYPES_R1
- d. A612 – DOOR DETAILS_R1

VOLUME 2 DRAWINGS

(Revisions include addition details & clarifications to cold-formed framing)

- a. CF101-MATERIAL SCHEDULES_R1
- b. CF202-N-2ND FLOOR NORTH STRUCTURAL WALL PLAN_R1
- c. CF203-N-3RD FLOOR NORTH STRUCTURAL WALL PLAN_R1
- d. CF204-N-4TH FLOOR NORTH STRUCTURAL WALL PLAN_R1
- e. CF205-N-5TH FLOOR NORTH STRUCTURAL WALL PLAN_R1
- f. CF205-S-5TH FLOOR SOUTH STRUCTURAL WALL PLAN_R1
- g. CF206-N-ROOF NORTH STRUCTURAL WALL PLAN_R1
- h. CF301-TYPICAL DETAILS_R1
- i. S002-STRUCTURAL NOTES_R2

ADDENDUM NO. 1
Residence Hall Phase XIV
University of North Carolina at Charlotte
July 2, 2015

- j. S202-N-2ND FLOOR NORTH FRAMING PLAN_R7
- k. S303-FOUNDATION DETAILS_R4
- l. S501-ROOF FRAMING DETAILS_R3

VOLUME3 DRAWINGS
• NA

END OF ADDENDUM NO. 1



Jim Palmieri, AIA
The FWA Group



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS



UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK (YYYY-MM-DD)	DATE	DESCRIPTION
2014-10-20	PRICING PACKAGE	
2015-01-15	SCO/OWNER CD	BUDGET
2015-04-03	SCO/OWNER CD	SUBMITTAL
2015-06-15	FINAL SUBMITTAL	
2015-06-18	BD DOCUMENTS	
1 2015-07-02	ADDENDUM NO. 001	

FWA PROJECT NO.: 2420.02

SCO PROJECT NO.: #12-10117-03A

DRAWN BY: JLR

APPROVED BY: GRL

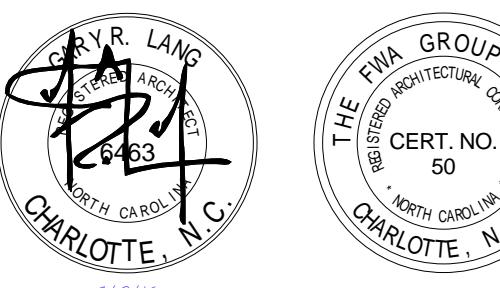
THESE DRAWINGS AND THE PROJECT
MANUAL ARE THE PROPERTY OF THE OWNER AND
REMAINS THE PROPERTY OF THE FWA GROUP
ARCHITECTS. UNAUTHORIZED DUPLICATION
OR REUSE WITHOUT WRITTEN CONSENT IS
PROHIBITED.

SHEET TITLE

DOOR SCHEDULE & TYPES

SHEET NUMBER

DOOR SCHEDULE																				
IDENTIFICATION		DOOR INFORMATION				FRAME INFORMATION				DETAIL REFERENCE		HARDWARE		PANIC HARDWARE PROVIDED		SIGN TYPE		COMMENTS		
NO.	ROOM NAME	WIDTH	HEIGHT	UNDER CUT	MATERIAL	FINISH	DOOR TYPE	MATERIAL	FINISH	FRAME TYPE	FRAME DEPTH	HEAD	JAMB	THRESHOLD	FIRE RATING LABEL	hardware set	PANIC HARDWARE PROVIDED	SIGN TYPE	COMMENTS	
008A	STAIR NORTH	3' - 0"	7' - 0"	1/2"	HM	PTD	F	HM	PTD	H1A	5 7/8"	E1/A614*	E1/A614**	-	90 MIN	33.0	No	F	"A7/A612 & **A6/A612 @ BID ALT. #1	
033A	ALTERNATE STORAGE	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H2A	10 1/4"	D4/A614*	A4/A614**	***	-	43.0	No	A	"D3/A614, **C3/A614, **A1/A614 @ BID ALT. #1"	
033A	ALTERNATE STORAGE	3' - 0"	7' - 0"	1/2"	HM	PTD	F	HM	PTD	H1A	5 7/8"	D1/A614*	D1/A614**	-	-	33.0	No	A	"E7/A612, **E6/A612 @ BID ALT. #1"	
014A	I.T.	3' - 0"	7' - 0"	1/2"	HM	PTD	F	HM	PTD	H1A	10 1/4"	D3/A614	C3/A614	A1/A614	-	44.0	No	A	-	
016	ELEV. CONTROL ROOM	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H2A	5 7/8"	E7/A612	E6/A612	-	1 HR	38.1	No	A	SELF-CLOSING WITH COORDINATOR	
032	MECH.	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H1A	5 7/8"	A7/A614	E6/A612	-	90 MIN	38.0	No	A	-	
032A	MECH.	3' - 0"	7' - 0"	1/2"	HM	PTD	F	HM	PTD	H1A	10 1/4"	D3/A614	C3/A614	A1/A614	-	44.0	No	A	-	
032B	MECH.	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H2A	5 7/8"	E7/A612	E6/A612	-	42.0	No	A	-		
034	CORRIDOR	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H2A	10 1/4"	D3/A614	A6/A612 & C3/A614	A1/A614	-	41.0	No	-	-	
035	ATS ROOM	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H2A	5 7/8"	E7/A612	E6/A612	-	90 MIN	37.0	No	A	-	
036	ELECTRICAL	6' - 0"	7' - 0"	3/4"	HM	PTD	(PR) F	HM	PTD	H2A	5 7/8"	E7/A612	E6/A612	-	45 MIN	39.0	Yes	A	-	
037	STORAGE	3' - 0"	7' - 0"	1/2"	HM	PTD	F	HM	PTD	H1A	5 7/8"	E7/A612	E6/A612 & C3/A614	-	-	31.0	No	A	-	
038	TRASH ROOM	9' - 4"	8' - 8"	3/4"	AL	ANO	OH	AL	ANO	MFR	9 1/8"	D6/A614	C4/A614	C6/A614	-	48.0	No	A	-	
038A	TRASH ROOM	3' - 6"	7' - 0"	3/4"	HM	PTD	F	HM	PTD	H1A	5 7/8"	E7/A612	E6/A612	-	45 MIN	35.0	No	A	-	
040	HOUSE KEEPING	3' - 0"	7' - 2"	1/2"	HM	PTD	F	HM	PTD	H1A	5 7/8"	E7/A612	E6/A612	-	-	32.0	No	A	-	
042	FIRE PUMPS	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H2A	5 7/8"	C3/A614	C1/A614	A1/A614	-	43.0	No	A	-	
044A	ELEV. CONTROL ROOM	6' - 0"	7' - 0"	1/2"	HM	PTD	(PR) F	HM	PTD	H2A	5 7/8"	E7/A612	E6/A612	-	1 HR	38.1	No	A	SELF-CLOSING WITH COORDINATOR	
046	EQUIP.	3' - 6"	7' - 0"	1/2"	HM	PTD	F	HM	PTD	H1A	5 7/8"	E7/A612	E6/A612	-	-	36.0	No	A	-	
114	I.T.	3' - 0"	7' - 0"	1/2"	HM	PTD	F	HM	PTD	H1	8 1/4"	E2/A612	E1/A612	A1/A610	20 MIN	17.0	No	A	-	
115	JAN.	3' - 0"	7' - 0"	3/4"	HM	PTD	F	HM	PTD	H1	8 1/4"	E2/A612	E1/A612	A1/A610	20 MIN	21.0	No	A	-	
137	ELECTRICAL	3' - 0"	7' - 0"	3/4"	HM	PTD	F	HM	PTD	H1	8 1/4"	E2/A612	E1/A612	A1/A610	20 MIN	16.0	No	A	-	
139	RR	3' - 0"	7' - 0"	3/4"	SCPG	PTD	F	HM	PTD	H1	8 1/4"	E2/A612	E1/A612	A1/A610	20 MIN	45 MIN	No	D	-	
140	LOUNGE	3' - 0"	7' - 0"	1/2"	ST	PTD	SR-FG	ACST	PTD	H1	4 1/8"	B2/F612	B2/A612 & C3/A614	E1/A610	20 MIN	14.0	No	A	SEE DOOR SCHEDULE NOTES FOR *2 NOTE	
140A	LOUNGE	3' - 0"	7' - 0"	1/2"	ST	PTD	SR-FG	ACST	PTD	H5	4 1/8"	B2/F612	B2/A612 & D1/A612	E1/A610	20 MIN	11.0	No	A	SEE DOOR SCHEDULE NOTES FOR *2 NOTE	
142	LAUNDRY	3' - 0"	7' - 0"	3/4"	ST	PTD	SR-FG	ACST	PTD	H6	4 1/8"	B2/F612	B2/A612 & E1/A612	E1/A610	20 MIN	19.0	No	A	SEE DOOR SCHEDULE NOTES FOR *2 NOTE	
150	CORRIDOR	3' - 0"	7' - 0"	1/2"	ST	PTD	SR-DG	ACST	PTD	H6B	4 1/8"	D5/A612	B3/A612	B2/A612 & B5/A612	E1/A610	45 MIN	29.0	No	A	SEE DOOR SCHEDULE NOTES FOR *3 NOTE
151	OPEN OFFICE	3' - 0"	7' - 0"	1/2"	AL	ANO	SR-FG	AL	ANO	H6A	4 1/2"	C6/A612	B3/A612 & B6/A612	E1/A610	20 MIN	25.0	No	A	-	
153	MAIL ROOM	3' - 0"	7' - 0"	1/2"	SCPG	PTD	F	HM	PTD	H1	5 7/8"	E2/A612	E1/A612	A1/A610	20 MIN	28.0	No	A	-	
154	WOMEN	3' - 0"	7' - 0"	3/4"	SCPG	PTD	F	HM	PTD	H1	5 7/8"	E2/A612	E1/A612	A1/A610	20 MIN	14.0	No	B	-	
155	STORAGE	3' - 0"	7' - 0"	1/2"	SCPG	PTD	F	HM	PTD	H1	5 7/8"	E2/A612	E1/A612	A1/A610	20 MIN	28.0	No	A	-	
156	MEN	3' - 0"	7' - 0"	3/4"	SCPG	PTD	F	HM	PTD	H1	5 7/8"	E2/A612	E1/A612	A1/A610	20 MIN	15.0	No	C	-	
157	OFFICE	3' - 0"	7' - 0"	1/2"	AL	ANO	SR-FG	AL	ANO	H4	4 1/2"	B5/A612	B3/A612 & B5/A612	E1/A610	20 MIN	24.0	No	E	-	
158	I.T.	3' - 0"	7' - 0"	3/4"	SCPG	PTD	F	HM	PTD	H1	5 7/8"	E2/A612	E1/A612	A1/A600	20 MIN	27.0	No	A	-	
159	OFFICE	3' - 0"	7' - 0"	1/2"	AL	ANO	SR-FG	AL	ANO	H										



FOR CONSTRUCTION

FRAME TYPE NOTES:

- ALL DIMENSIONS ARE TO NOMINAL FRAME ROUGH OPENING AND EDGE OF INTERMEDIATE MULLIONS.
- FRAME MANUFACTURER TO FIELD VERIFY AND CORRECT ALL DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION.
- CONTRACTOR TO COORDINATE ALL MISCELLANEOUS FRAMING AND COMPONENTS THAT ARE REQUIRED FOR PROPER FRAME INSTALLATION BUT NOT PROVIDED BY FRAME MANUFACTURER.
- SEE GLAZING TYPES ON A602 FOR GLAZING DESIGNATIONS AND INFORMATION.
- SEE DOOR SCHEDULE & DOOR SCHEDULE NOTES FOR ALL PROVIDED RATED FRAME URGENT REQUIREMENTS.
- ALL EXTERIOR ALUMINUM FRAMES ARE TO HAVE PAINTED FINISH TO MATCH EXTERIOR WINDOWS. ALL INTERIOR ALUMINUM FRAMES ARE TO BE ANODIZED FINISH.

CONSTRUCTION DOCUMENTS



UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV

UNIVERSITY OF NORTH
CAROLINA AT CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK	DATE (YYYY-MM-DD)	DESCRIPTION	PRICING PACKAGE
2014-10-20		SCO/OWNER CD SUBMITTAL	
2015-01-15		SCO/OWNER CD SUBMITTAL	
2015-04-03		SCO/OWNER CD SUBMITTAL	
2015-06-15		FINAL SUBMITTAL	
2015-06-18		BID DOCUMENTS	
1	2015-07-02	ADDENDUM NO. 001	

FWA PROJECT NO: 2420.02

SCO PROJECT NO: #12-10117-03A

DRAWN BY: JLR
APPROVED BY: GRL

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

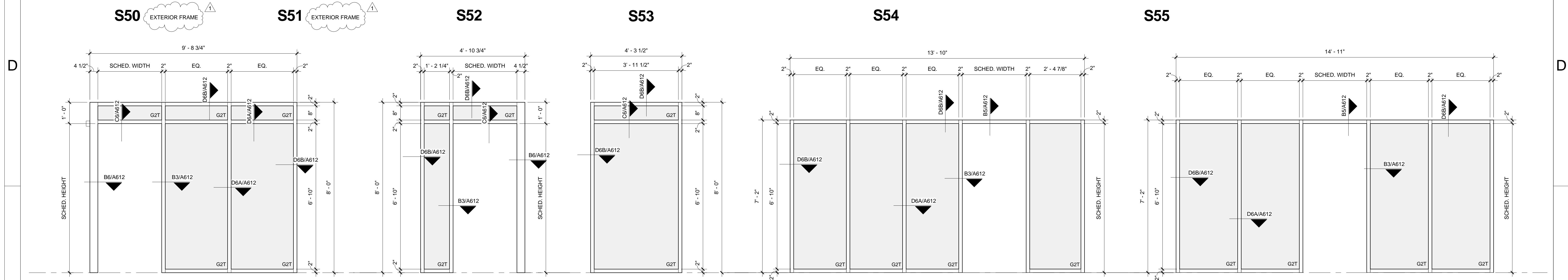
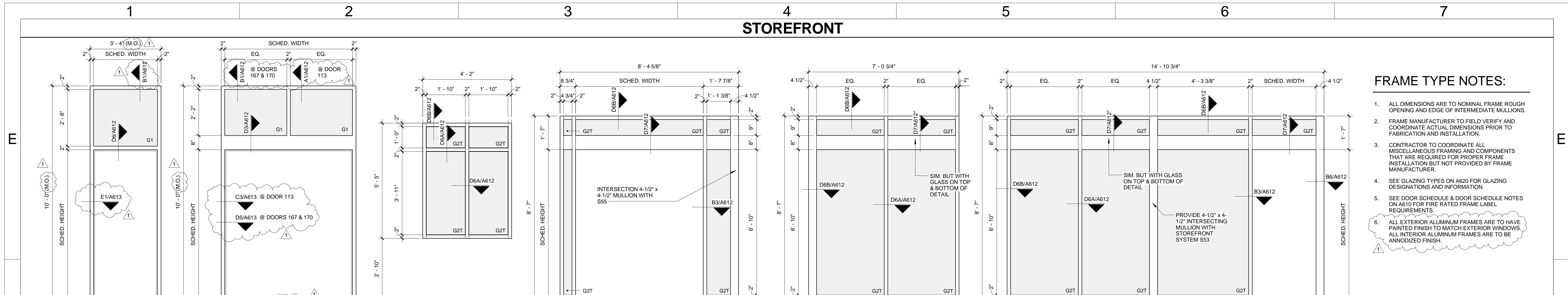
SHEET TITLE

EXTERIOR &
INTERIOR FRAME
TYPES

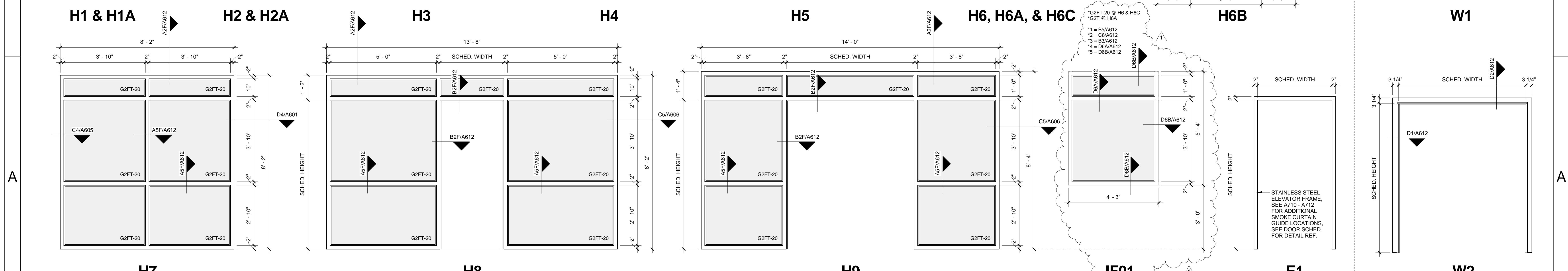
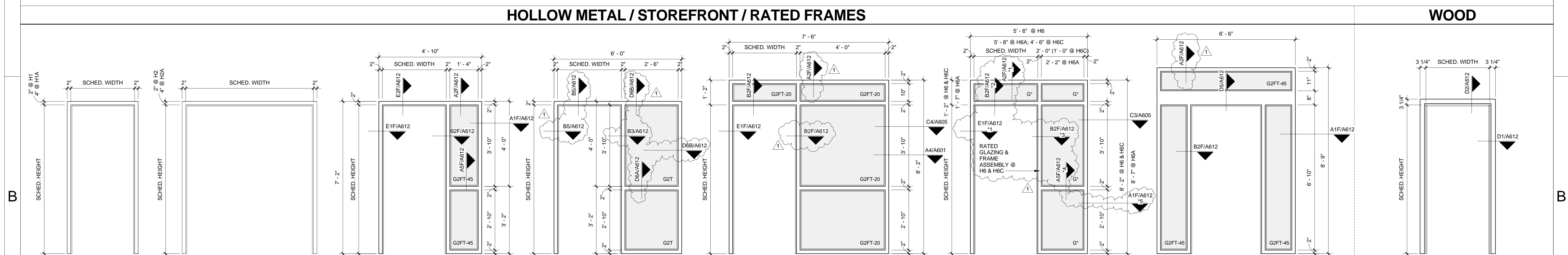
SHEET NUMBER

A611

STOREFRONT

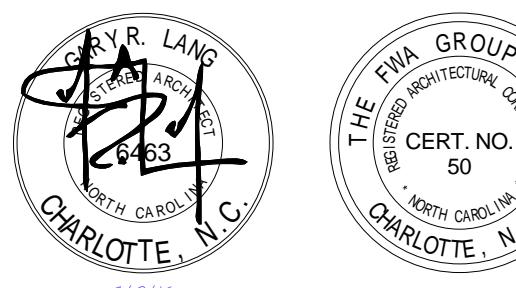


HOLLOW METAL / STOREFRONT / RATED FRAMES



SHEET NUMBER

A611



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS



UNIVERSITY OF NORTH
CAROLINA AT CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK	DATE	SCO/OWNER CD	DESCRIPTION
	2015-01-15	BID DOCUMENTS	
2015-04-03		SCO/OWNER CD SUBMITTAL	
2015-05-15		FINAL SUBMITTAL	
2015-06-18		BID DOCUMENTS	
1	2015-07-02	ADDENDUM NO. 001	

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

DRAWN BY: JLR
APPROVED BY: GRL

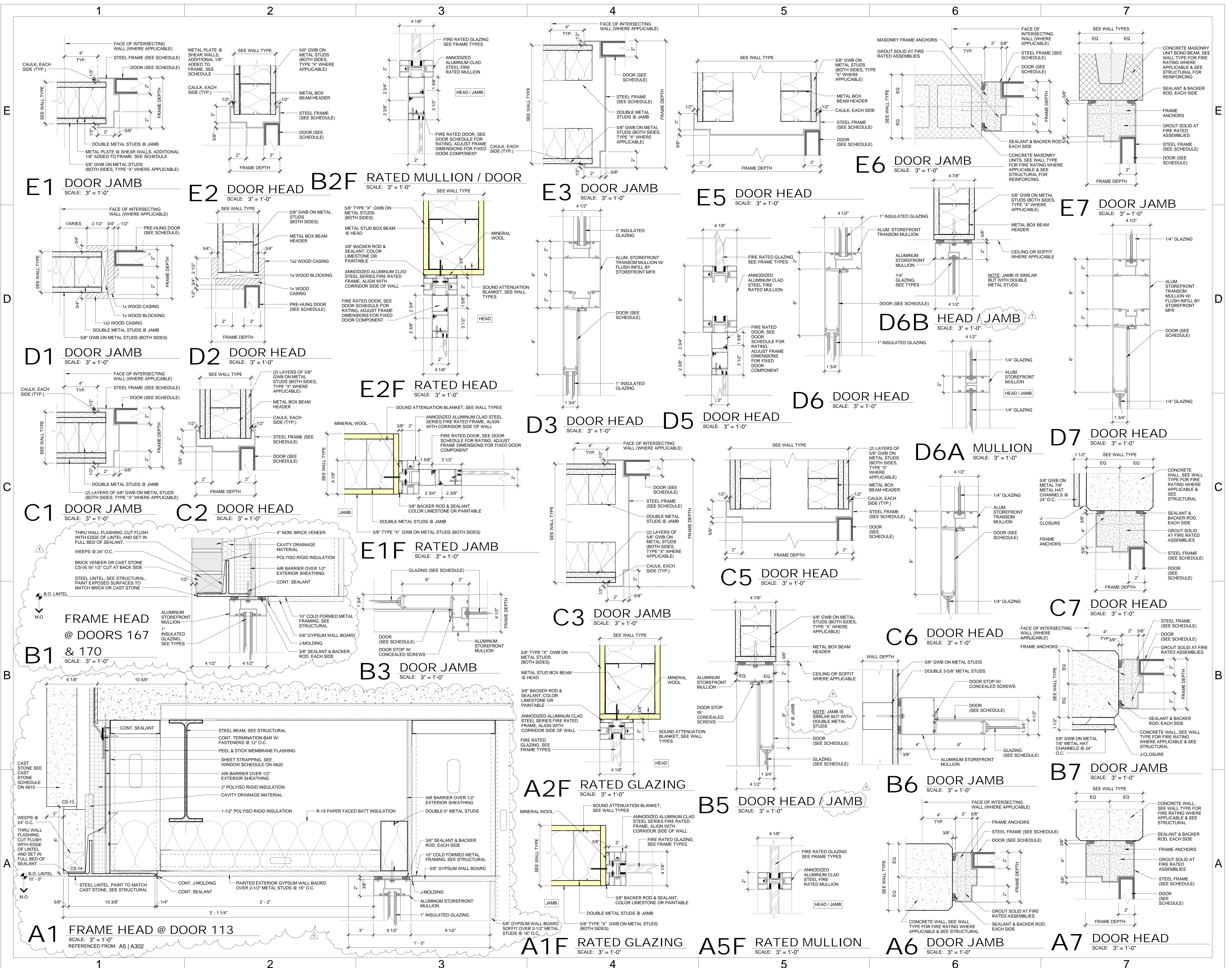
THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF SERVICE AND
REMAINS THE PROPERTY OF THE FWA GROUP.
ARCHITECTS. UNAUTHORIZED DUPLICATION
OR REUSE WITHOUT WRITTEN CONSENT IS
PROHIBITED.

SHEET TITLE

DOOR DETAILS

SHEET NUMBER

A612





FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS



UNIVERSITY OF NORTH
CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

DATE	DESCRIPTION
2015-06-18	BUILDING PACKAGE BID DOCUMENTS
2015-07-02	ADDENDUM #1

FWA PROJECT NO:	2420.02
SCO PROJECT NO:	#12-10117-03A
KWK PROJECT NO:	13110
DRAWN BY:	KPM
APPROVED BY:	WDB

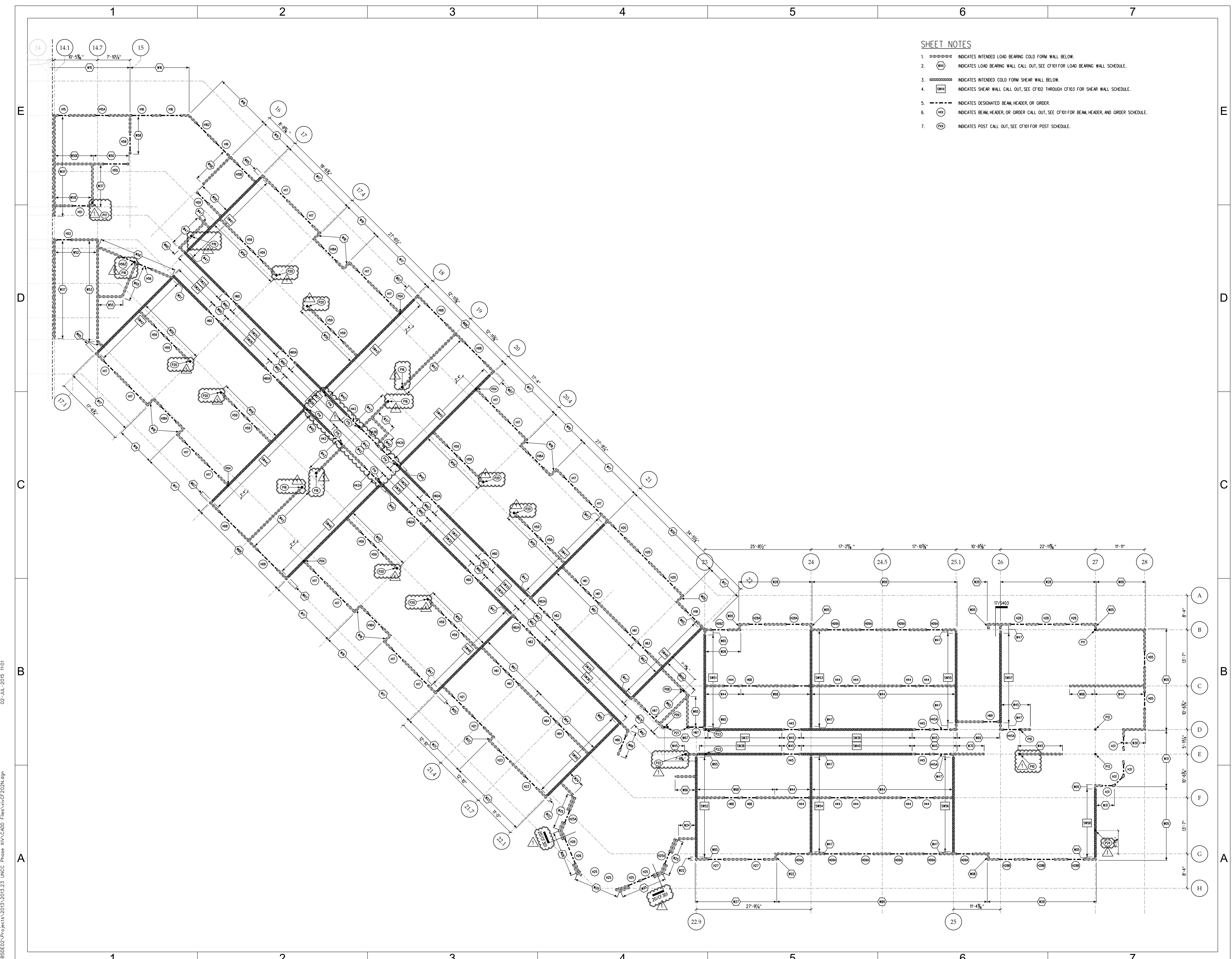
THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF TRADE
AND MUST NOT BE COPIED BY THE FWA
GROUP ARCHITECTS. UNAUTHORIZED
DUPLICATION OR REUSE WITHOUT
WRITTEN CONSENT IS PROHIBITED.

SHEET TITLE

2ND FLOOR
NORTH
STRUCTURAL
WALL PLAN

SHEET NUMBER

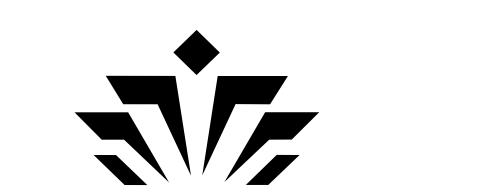
CF202-N





FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS



UNIVERSITY OF NORTH
CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK (YYYY-MM-DD)	DESCRIPTION BUILDING PACKAGE BID DOCUMENTS
2015-06-18	ADDENDUM #1

FWA PROJECT NO:	2420.02
SCO PROJECT NO:	#12-10117-03A
KWK PROJECT NO:	13110
DRAWN BY:	KPM
APPROVED BY:	WDB

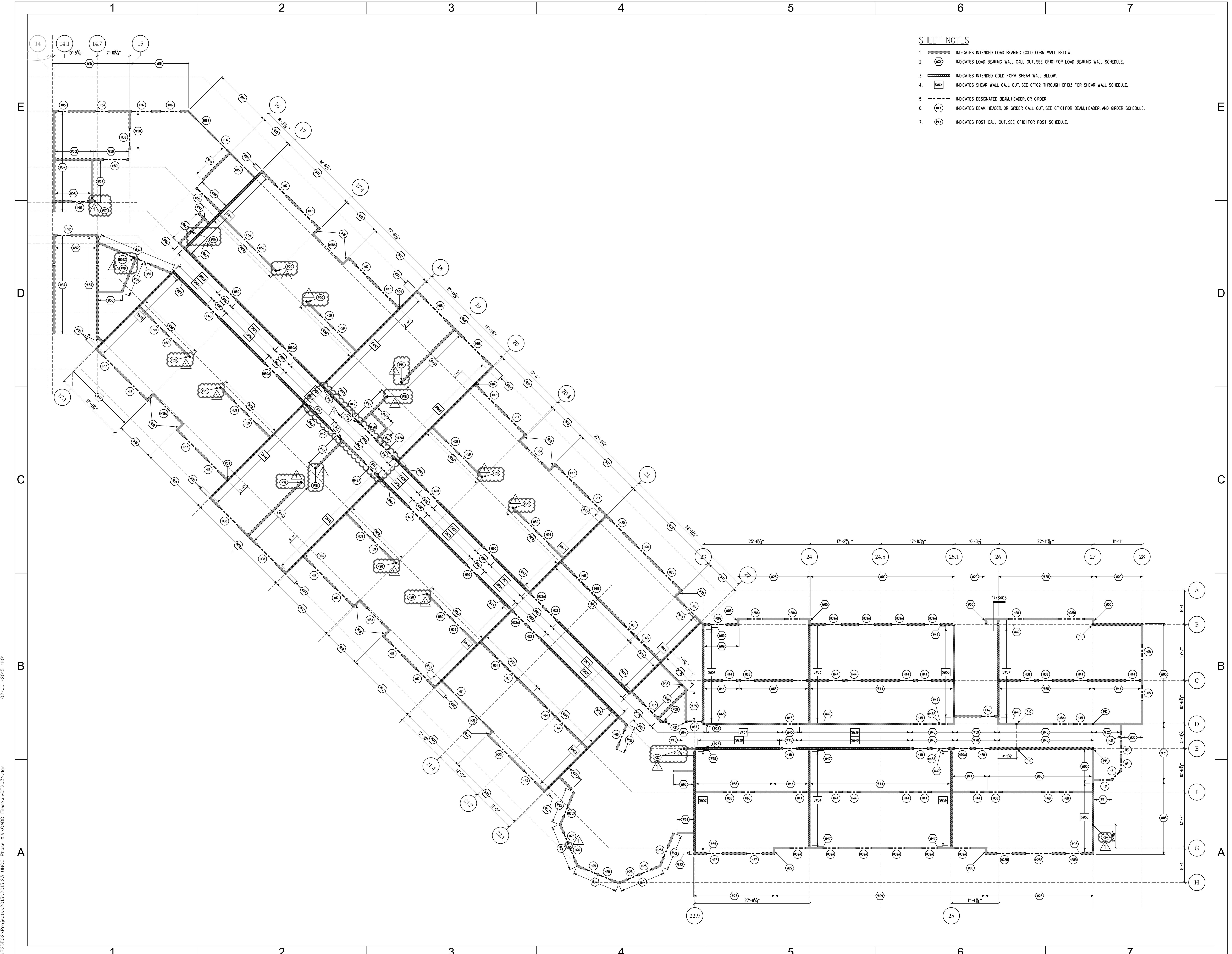
THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF TRADE
AND MUST NOT BE COPIED BY THE FWA
GROUP ARCHITECTS. UNAUTHORIZED
DUPLICATION OR REUSE WITHOUT
WRITTEN CONSENT IS PROHIBITED.

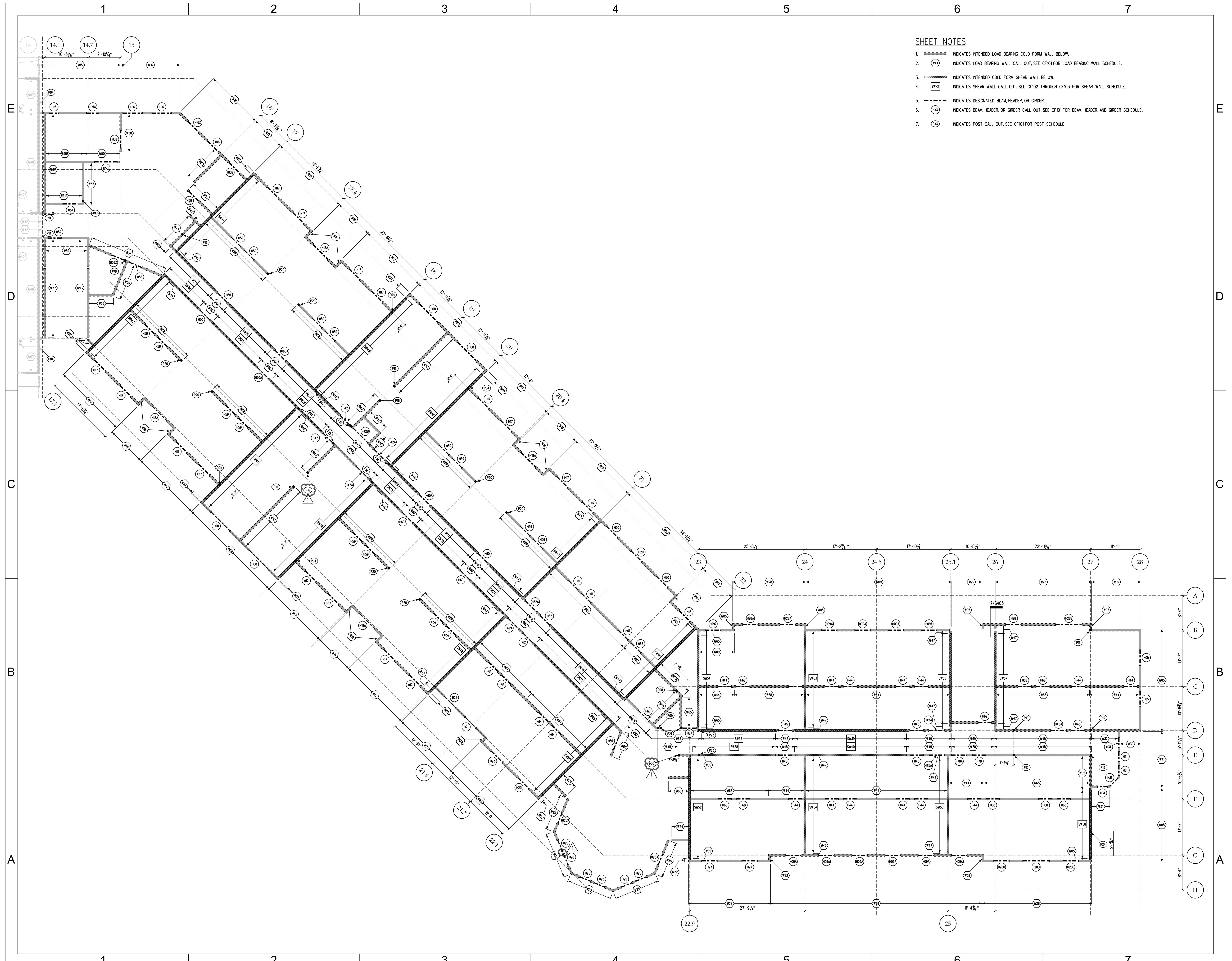
SHEET TITLE

3RD FLOOR
NORTH
STRUCTURAL
WALL PLAN

SHEET NUMBER

CF203-N





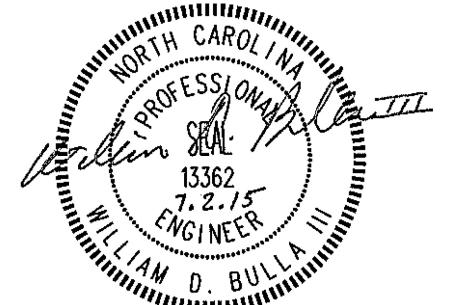
FWI Group

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

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

BSD E

BULLA SMITH
DESIGN ENGINEERING
NC Certificate of Licensure C-1863
1347 Harding Place Suite 201
Charlotte, NC 28204
⑤ 704.333.3122 ⑥ 704.333.8252



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

The logo consists of a stylized graphic element resembling a diamond or a star with radiating lines, positioned above the text "UNC CHARLOTTE RESIDENCE HALL".

VERSITY OF NORTH
ROLINA CHARLOTTE

1 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

A PROJECT NO: 2420.02

W/K PROJECT NO: 13110

AWN BY: KPM

PROVED BY: WDB

REVIEWED BY WSD

THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF SERVICE
AND REMAIN THE PROPERTY OF THE FWA

© 2013 CLOUTIER ARCHITECTURE INC. ALL RIGHTS RESERVED.
DO NOT REPRODUCE OR DISTRIBUTE WITHOUT THE WRITTEN
CONSENT OF CLOUTIER ARCHITECTURE INC.

REPRODUCTION OR RESALE WITHOUT
WRITTEN CONSENT IS PROHIBITED.

STREET TITLE

III-EL-SOB

H FLOOR

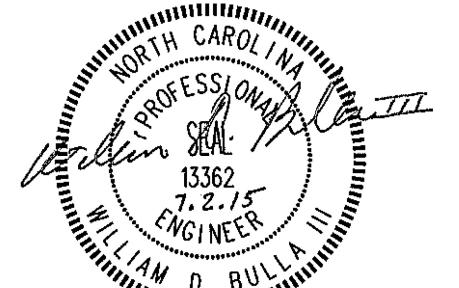
DORTH

STRUCTURAL

STRUCTURAL

© ΣΕΩΑΡ Ν

CF204-1



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS



UNIVERSITY OF NORTH
CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK (YYYY-MM-DD)	DESCRIPTION BUILDING PACKAGE BID DOCUMENTS
2015-06-18	ADDENDUM #1

FWA PROJECT NO:	2420.02
SCO PROJECT NO:	#12-10117-03A
KWK PROJECT NO:	13110
DRAWN BY:	KPM
APPROVED BY:	WDB

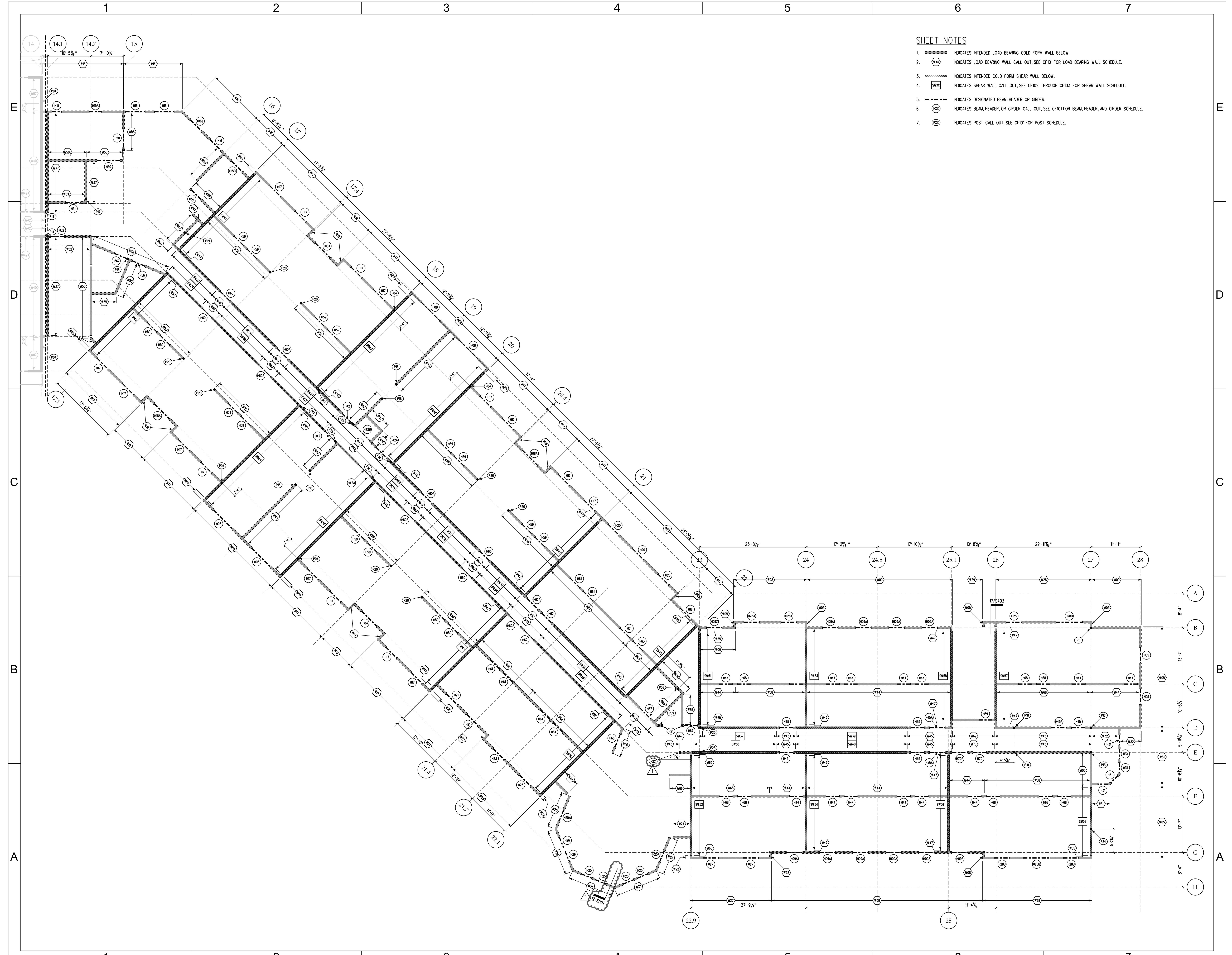
THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF TRADE
AND NOT TO BE COPIED EXCEPT BY THE FWA
GROUP ARCHITECTS. UNAUTHORIZED
DUPLICATION OR REUSE WITHOUT
WRITTEN CONSENT IS PROHIBITED.

SHEET TITLE

5TH FLOOR
NORTH
STRUCTURAL
WALL PLAN

SHEET NUMBER

CF205-N



E

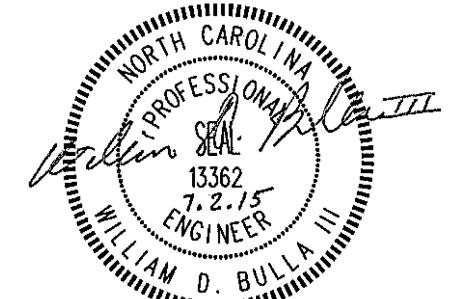
1

FW Group

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

BSdE

BULLA SMITH
DESIGN ENGINEERING
NC Certificate of Licensure C-1863
1347 Harding Place Suite 201
Charlotte, NC 28204
① 704.333.3122 ② 704.333.8252



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

The logo for UNC Charlotte Residence Hall features a stylized graphic element above the text. It consists of three upward-pointing, slanted bars forming a triangular shape, with a small diamond at the top vertex.

UNIVERSITY OF NORTH
CAROLINA CHARLOTTE

MARK	DATE (YY/YY/MM/DD)	DESCRIPTION
------	-----------------------	-------------

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03A
KWK PROJECT NO: 13110
DRAWN BY: KPM
APPROVED BY: WDB

**THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF SERVICE
AND REMAIN THE PROPERTY OF THE FWA
OR GSA/ARCHITECTS, UNLAWFUL TO REBID.**

SHEET TITLE

5TH FLOOR SOUTH STRUCTURAL WALL PLAN

SHEET NUMBER

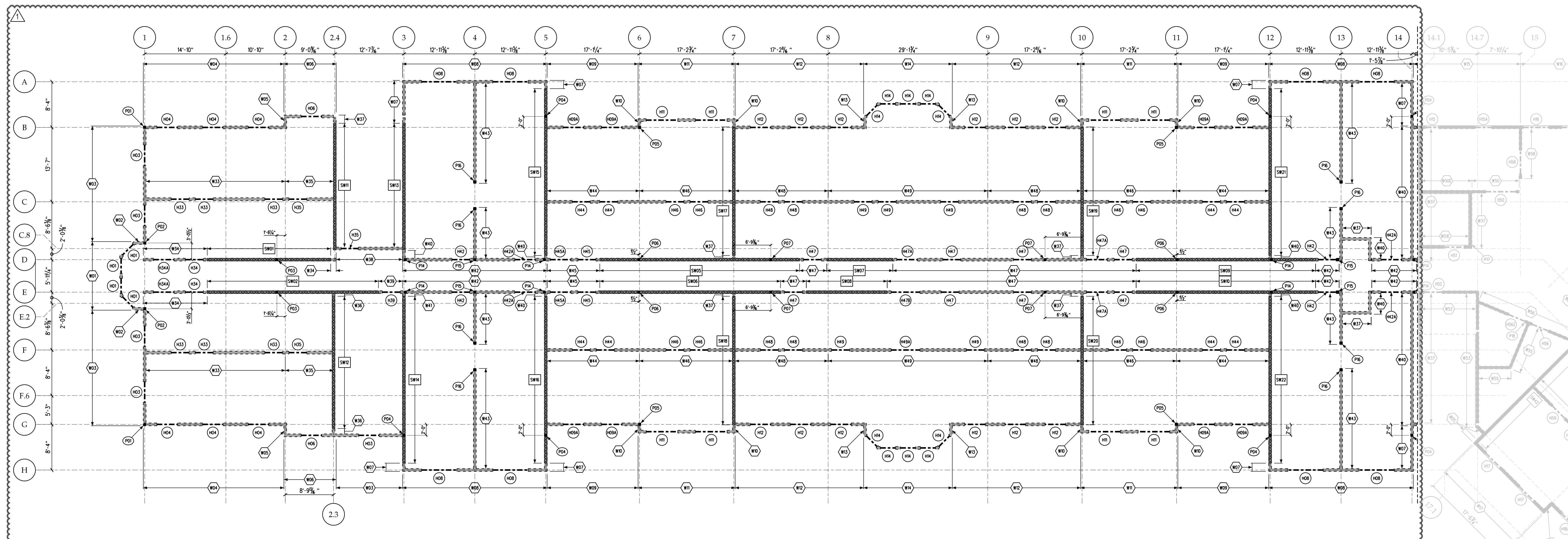
CF205-S

SHEET NOTES

1.  INDICATES INTENDED LOAD BEARING COLD FORM WALL BELOW.
 2.  INDICATES LOAD BEARING WALL CALL OUT, SEE CF101 FOR LOAD BEARING WALL SCHEDULE.
 3.  INDICATES INTENDED COLD FORM SHEAR WALL BELOW.
 4.  INDICATES SHEAR WALL CALL OUT, SEE CF102 THROUGH CF103 FOR SHEAR WALL SCHEDULE.
 5.  INDICATES DESIGNATED BEAM, HEADER, OR GIRDER.
 6.  INDICATES BEAM, HEADER, OR GIRDER CALL OUT, SEE CF101 FOR BEAM, HEADER, AND GIRDER SCHEDULE.
 7.  INDICATES POST CALL OUT. SEE CF101 FOR POST SCHEDULE.

02-JUL-2015 11:01

\\\\BSDE02\\Projects\\2013\\2013.23 UNCC Phase XIV\\CADD Files\\xivCF205S.dgn



5TH FLOOR SOUTH STRUCTURAL WALL PLAN

02-JUL-2015 11:01

\\BSDE02\Projects\2013\2013.23 UNCC Phase XIV\CADD Files\xivCF206N.dgn

SHEET NOTES

1. INDICATES INTENDED LOAD BEARING COLD FORM WALL BELOW.
2. INDICATES LOAD BEARING WALL CALL OUT, SEE CF101 FOR LOAD BEARING WALL SCHEDULE.
3. INDICATES INTENDED COLD FORM SHEAR WALL BELOW.
4. INDICATES SHEAR WALL CALL OUT, SEE CF102 THROUGH CF103 FOR SHEAR WALL SCHEDULE.
5. INDICATES DESIGNATED BEAM, HEADER, OR ORDER.
6. INDICATES BEAM, HEADER, OR GIRDERS CALL OUT, SEE CF101FOR BEAM, HEADER, AND ORDER SCHEDULE.
7. INDICATES POST CALL OUT, SEE OF101FOR POST SCHEDULE.

Partial Plan Above

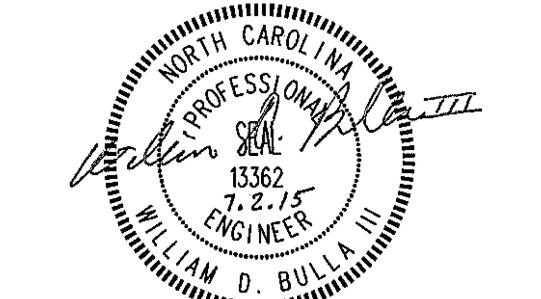
SHEET NOTES

1. INDICATES INTENDED LOAD BEARING COLD FORM WALL BELOW.
 2. INDICATES LOAD BEARING WALL CALL OUT, SEE CF101 FOR LOAD BEARING WALL SCHEDULE.
 3. INDICATES INTENDED COLD FORM SHEAR WALL BELOW.
 4. INDICATES SHEAR WALL CALL OUT, SEE CF102 THROUGH CF103 FOR SHEAR WALL SCHEDULE.
 5. INDICATES DESIGNATED BEAM, HEADER, OR GIRDER.
 6. INDICATES BEAM, HEADER, OR GIRDER CALL OUT, SEE CF101 FOR BEAM, HEADER, AND GIRDER SCHEDULE.
 7. INDICATES POST CALL OUT, SEE CF101 FOR POST SCHEDULE.

EW Group

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

The logo consists of four large, bold, black letters 'B', 'S', 'D', and 'E' arranged horizontally. The letters 'S' and 'D' have internal cross-hatching and circular patterns resembling engineering drawings or grids. Below the letters, the company name 'BULLA SMITH' is written in a large, bold, sans-serif font, with 'DESIGN' on the first line and 'ENGINEERING' on the second line. Underneath the company name, the address '1347 Harding Place Suite 201 Charlotte, NC 28204' is provided, followed by the phone numbers '(704) 333-3122' and '(704) 333-8252'.



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

The logo consists of a stylized graphic element above the text. It features five black, upward-pointing triangles of varying sizes, with a small diamond shape at the very top center.

UNIVERSITY OF NORTH CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

FWA PROJECT NO: 2420.02
SCO PROJECT NO: #12-10117-03A
KWK PROJECT NO: 13110
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

BOOK

ROOF MATERIAL

NORTH STRUCTURAL

STRUCTURAL

WALL PLAN

SHEET NUMBER

SHEET NUMBER

CET206-N

01 200 1

STRUCTURAL NOTES

E STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO THE "LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
- STRUCTURAL STEEL SHALL BE OF THE FOLLOWING GRADE UNLESS NOTED OTHERWISE ON DRAWINGS:
 - W-SHAPES SHALL CONFORM TO ASTM A992, GRADE 50. (ASTM A572, GRADE 50 MAY BE SUBSTITUTED FOR ASTM A992.)
 - SQUARE/RECTANGULAR HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B.
 - ROUND HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A501 OR ASTM A500, GRADE B.
 - PLATE SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.
 - OTHER STEEL SHAPES (CHANNELS AND ANGLES) MAY CONFORM TO ASTM A36.
- BOLTS, RODS, ANCHORS AND HEADED STUDS:
 - ALL CONNECTIONS SHALL BE SNUG TIGHT WITH A MINIMUM $\frac{3}{4}$ " DIAMETER A325 HIGH-STRENGTH BOLTS.
 - ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE.
 - EXPANSION ANCHORS SHALL BE HILTKWIK BOLT 3. ANCHORS SUPPLIED BY HILTFASTENING SYSTEMS, TRUBOLT WEDGE ANCHORS SUPPLIED BY ITW RAMSET/RED HEAD, POWER-STUD ANCHORS SUPPLIED BY POWERS FASTENING, OR APPROVED EQUAL. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 6 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.
 - ADHESIVE ANCHORS SHALL CONSIST OF AN ALL-THREAD STEEL ANCHOR WITH HIT-RE500 MAX INJECTION ADHESIVE (HIT HY20 INJECTION ADHESIVE FOR MASONRY CONSTRUCTION WITH VOIDS) SUPPLIED BY HILTFASTENING SYSTEMS; EPCON SYSTEM CERAMIC 6 EPOXY ADHESIVE SUPPLIED BY ITW RAMSET/RED HEAD, POWER-FAST EPOXY GEL SUPPLIED BY POWERS FASTENING, OR APPROVED EQUAL. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 6 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.
 - HEADED STUDS SHALL BE $\frac{3}{4}$ " DIAMETER, UNLESS NOTED OTHERWISE, AND SHALL CONFORM TO AWS D1.1. LENGTH OF STUD SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWING:

COMPOSITE BEAMS: 5" LONG HEADED STUDS (LENGTH BEFORE WELDING)
MISCELLANEOUS EMBEDS: SEE CONTRACT DRAWINGS

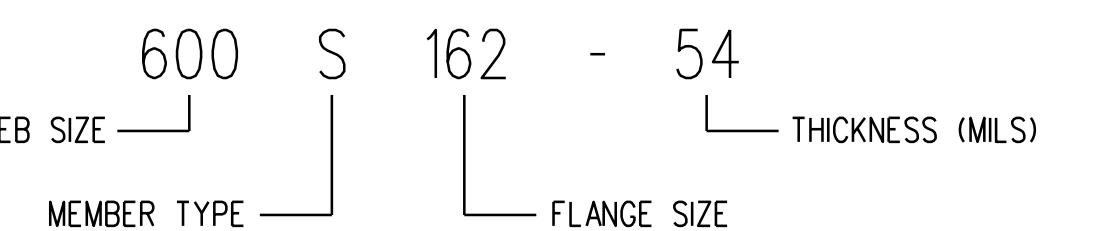
- CONNECTIONS SHALL BE DETAILED BASED ON THE DESIGN INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. DEVIATION FROM THE CONNECTION DETAILS DEPICTED IN THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.
 - STANDARD SHEAR CONNECTIONS SHALL BE DETAILED AS DOUBLE-ANGLE, SINGLE-PLATE, SINGLE-ANGLE, OR TEE CONNECTIONS IN ACCORDANCE WITH CONNECTION TABLES IN THE "MANUAL OF STEEL CONSTRUCTION: LRFD", SECOND EDITION, VOLUME II, PART 9.
 - FOR WELDED CONNECTIONS, USE PREQUALIFIED WELDED JOINTS IN ACCORDANCE WITH AISC AND THE STRUCTURAL WELDING CODE OF THE AMERICAN WELDING SOCIETY. "NON-PREQUALIFIED JOINTS" SHALL BE QUALIFIED PRIOR TO FABRICATION.
 - FACTORED DESIGN REACTIONS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS OR, IF NOT SHOWN, THE FACTORED DESIGN REACTION SHALL BE HALF OF THE MAXIMUM FACTORED UNIFORM LOAD TABULATED IN THE "MANUAL OF STEEL CONSTRUCTION: LRFD", SECOND EDITION, VOLUME I, PART 4.
 - STEEL CONNECTIONS NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY THE CONTRACTOR. THIS DESIGN SERVICE SHALL BE INCLUDED IN THE CONTRACTOR'S SCOPE OF SERVICES. SHOP DRAWINGS AND CALCULATIONS OF SUCH CONNECTIONS SHALL BE SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF SUCH CONNECTIONS. FOR CONNECTION DETAILS DEPICTING ARRANGEMENT CONCEPT OF THE CONNECTION WITHOUT COMPLETE DETAILS, THE CONNECTION DESIGN ENGINEER SHALL FOLLOW THAT ARRANGEMENT CONCEPT IN THE DESIGN.
 - COMPOSITE FLOOR MEMBERS ARE DESIGNED TO BE UNSHORED UNLESS OTHERWISE NOTED. THE WEIGHT OF THE WET CONCRETE WILL RESULT IN REFLECTIONS OF THE SUPPORTING STEEL DECK BEAMS AND GIRDERS. ALL OVERURNS OF CONCRETE QUANTITIES ARE TO BE ANTICIPATED AND INCLUDED IN THE CONTRACTORS BID. THE CONTRACTOR SHALL COORDINATE EMBEDDED ITEMS REQUIRED FOR ARCHITECTURAL, STRUCTURAL, AND MECHANICAL ELEMENTS. CONCRETE FLOORS UTILIZING UNSHORED CONSTRUCTION SHALL BE SCREEDED LEVEL.
- THE CAMBER OF STEEL MEMBERS SHALL BE VERIFIED IN THE SHOP AND THE FIELD PER THE SPECIFICATIONS.
- STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED, UNLESS OTHERWISE DIRECTED BY THE ARCHITECT.

COLD-FORMED STEEL FRAMING

- ALL 54-MIL AND HEAVIER MEMBERS SHALL BE FORMED FROM STEEL CORRESPONDING TO THAT LISTED IN THE AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURE MEMBERS", WITH A MINIMUM YIELD STRENGTH OF 50 KSI (U.N.O.).
- ALL 43-MIL AND LIGHTER MEMBERS SHALL BE FORMED FROM STEEL CORRESPONDING TO THAT LISTED IN THE AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURE MEMBERS", WITH A MINIMUM YIELD STRENGTH OF 33 KSI (U.N.O.).
- ALL MEMBERS SHALL BE FORMED FROM STEEL WITH A G90 COATING.
- ALL DEFLECTION CLIPS, RIGID CLIPS, AND ANGLES TO BE 50 KSI (U.N.O.).
- INSTALLATION OF COLD-FORMED STEEL FRAMING TO CONFORM TO THE FOLLOWING:
 - ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR AS REQUIRED ON ANGULAR FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE HELD POSITIVELY IN PLACE UNTIL PROPERLY FASTENED.
 - TEMPORARY BRACING SHALL BE PROVIDED & REMAIN IN PLACE UNTIL THE STRUCTURE IS COMPLETELY STABILIZED. TEMPORARY BRACING IS THE RESPONSIBILITY OF OTHERS.
 - ALL FIELD CUTTING OF STUDS MUST BE DONE BY SAWING OR SHEARING. TORCH CUTTING OF COLD-FORMED STEEL MEMBERS IS NOT PERMITTED.
 - WHEN REQUIRED FOR BRIDGING PURPOSES, THE FRAMING FABRICATOR IS TO ENSURE PUNCH OUT ALIGNMENT WHEN ASSEMBLING FRAMING & FIELD CUTTING STUDS TO LENGTH. REFER TO TYPICAL STUD/TRACK CONNECTION & INDEXING DETAIL.
 - NO SPLICING IN STUDS, JOISTS, OR OTHER LOAD CARRYING MEMBERS MAY BE MADE WITHOUT PRIOR ENGINEERING REVIEW & SPECIFIC DETAILS FOR ANY SUCH SPLICE(S).
 - NO FIELD CUT HOLES OR NOTCHING/COPING OF COLD-FORMED MEMBERS IS ALLOWED, UNLESS SPECIFICALLY DETAILED.
 - WALL BRIDGING MEMBERS ARE STRUCTURAL COMPONENTS. ANY CUT OR DAMAGED BRIDGING MEMBERS MUST BE PROPERLY REPAIRED AS INDICATED.
 - WHERE SPLICING OF WALL TRACK IS NECESSARY BETWEEN STUDS, A PIECE OF STUD SHALL BE PLACED IN THE ADJOINING TRACK SECTIONS & FASTENED TO THE TRACK FLANGES AT BOTH SIDES OF THE WALL OR THE TRACKS SHALL BE BUTTED TIGHT TOGETHER & FASTENED TO STRUCTURE EITHER SIDE OF JOINT.
 - MECHANICAL BRIDGING, SPACED AT INTERVALS SHOWN WITHIN THE STRUCTURAL DRAWINGS, SHALL BE INSTALLED PRIOR TO THE ATTACHMENT OF FACING MATERIALS.
 - INSTALLATION OF SHEATHING, WALLBOARD, OR ANY OTHER COLLATERAL MATERIAL SHALL BE PERFORMED IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S SPECIFICATIONS, THE CURRENT ASTM STANDARD AND/OR GUIDELINES OUTLINED IN THE CONTRACT DOCUMENTS.
 - ALL TRACKS USED IN COMPOSITE MEMBERS SUCH AS TRUSSES, POSTS, HEADERS & JAMBES MUST BE INSTALLED AS A SINGLE PIECE; NO SPLICING IS PERMITTED.
 - THE MAXIMUM ALLOWABLE GAP (MEASURED BETWEEN THE WEB OF THE STUD AND THE WEB OF THE STUD AND THE WEB OF THE TRACK) FOR A STUD SEATED IN A TRACK IN A NON-AXIAL LOAD BEARING CONDITION IS $\frac{1}{8}$ " U.N.O. IT IS RECOMMENDED THAT THIS GAP BE ELIMINATED IN AN AXIAL LOAD BEARING CONDITION BY PRE-LOADING THE STUDS UNTIL THEY ARE FULLY SEATED IN THE TRACK. FAILURE TO DO SO COULD RESULT IN SERVICABILITY PROBLEMS IN THE FUTURE.
 - ROOF & FLOOR JOISTS MUST ALIGN DIRECTLY OVER STUDS (U.N.O.).

COLD-FORMED STEEL FRAMING - CONT'D.

- CONNECTIONS OF COLD-FORMED STEEL FRAMING TO CONFORM TO THE FOLLOWING:
 - ALL WELDED CONNECTIONS TO BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF AWS D1.3, "SPECIFICATIONS FOR WELDING SHEET STEEL IN STRUCTURES". CONSULT AWS D19.0 "WELDING ZINC-COATED STEEL" & ANSI/STANDARD Z49.1 FOR INFORMATION REGARDING SAFE WELDING PROCEDURES. ALL WELDS ARE TO BE TOUCHED-UP WITH A RUST INHIBITIVE GALVANIZING PAINT.
 - SUGGESTED WELD METAL & PROCESS FOR SHOP WELDING ARE: 60KSI WELD METAL STRENGTH (MINIMUM). SUGGESTED METHODS FOR FIELD WELDING: $\frac{1}{8}$ " (U.N.O.) E70XX (MINIMUM ELECTRODE - SMAW; OR "GASLESS" MIG. MINIMUM WELD THROAT THICKNESS (I) MUST MATCH OR EXCEED THE BASE STEEL THICKNESS OF THE THINNEST CONNECTED PART (U.N.O.).
 - ALL SCREWS SHALL BE OF THE DIAMETER & SIZE INDICATED ON THE DRAWINGS & SHALL BE THOSE MANUFACTURED & TESTED BY GRABBER BUILDEX, OR APPROVED EQUIVALENT. A MINIMUM OF $1.5 \times$ SCREW DIAMETER EDGE DISTANCE & $3 \times$ SCREW DIAMETER SPACING IS REQUIRED (U.N.O.).
 - SCREW PENETRATION THROUGH JOINED MATERIALS SHALL NOT BE LESS THAN THREE EXPOSED THREADS.
 - SELECT SCREW WITH AN ADEQUATE CUTTING TIP TO ACCOMMODATE THE TOTAL THICKNESS TO BE DRILLED. DRILLING MUST BE COMPLETED BEFORE THE THREADS ENGAGE THE MATERIAL.
 - WHERE SCREW ATTACHMENTS ARE MADE TO FRAMING COMPONENTS OF DIFFERENT THICKNESS, THE THINNEST COMPONENT MUST BE PENETRATED FIRST.
 - ALL SCREWS WITH HEADS TO BE COVERED BY DIRECTLY-APPLIED WALL SHEATHING TO HAVE LOW PROFILE HEADS.
- PRODUCT IDENTIFICATION:
 - THE AMERICAN IRON AND STEEL INSTITUTE STANDARDS ARE USED IN THIS PACKAGE. ANY MANUFACTURER WHOSE PRODUCT GEOMETRIES MEET OR EXCEED AISI STANDARDS ARE ACCEPTABLE.
 - MEMBER IDENTIFICATION:



7.3 THE LAST TWO NUMBERS INDICATE THE STEEL THICKNESS:

GAUGE	DESIGN	MINIMUM	AISI
18	0.0451"	0.0428"	43 MILS
16	0.0566"	0.0538"	54 MILS
14	0.0713"	0.0677"	68 MILS
12	0.1017"	0.0966"	97 MILS
10	0.1242"	0.1180"	118 MILS



FWA Group
500 EAST BOULEVARD
CHARLOTTE, NORTH CAROLINA 28203
704 | 332-7004

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

BSD E
BULLA SMITH
DESIGN ENGINEERING
NC Certificate of Licensure C-1863
1347 Harding Place Suite 201
Charlotte, NC 28204
©704.333.3122 ©704.333.8252

NORTH CAROLINA
PROFESSIONAL
SOCIETY
7.2.7.5
BULLA SMITH
DESIGN ENGINEERING

FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV

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

DATE	DESCRIPTION
2015-01-06	BID DOCUMENTS
2015-06-18	BUILDING PACKAGE BID DOCUMENTS
2015-07-02	ADDENDUM #1

FWA PROJECT NO:	2420.02
SCO PROJECT NO:	#12-10117-03A
KWK PROJECT NO:	13110
DRAWN BY:	KPM
APPROVED BY:	WDB

THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF TRADE
AND MUST NOT BE COPIED OR USED BY
THE FWA GROUP ARCHITECTS. UNAUTHORIZED
DUPLICATION OR REUSE WITHOUT
WRITTEN CONSENT IS PROHIBITED.

SHEET TITLE

STRUCTURAL NOTES

SHEET NUMBER

S002



FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV

UNIVERSITY OF NORTH
CAROLINA CHARLOTTE

9201 UNIVERSITY CITY BLVD.
CHARLOTTE, NC 28223

MARK	DATE (YYYY-MM-DD)	DESCRIPTION
△	2015-01-06	BID DOCUMENTS
△	2015-02-05	ADDENDUM #2
△	2015-06-18	BUILDING PACKAGE BID DOCUMENTS
△	2015-07-02	ADDENDUM #1

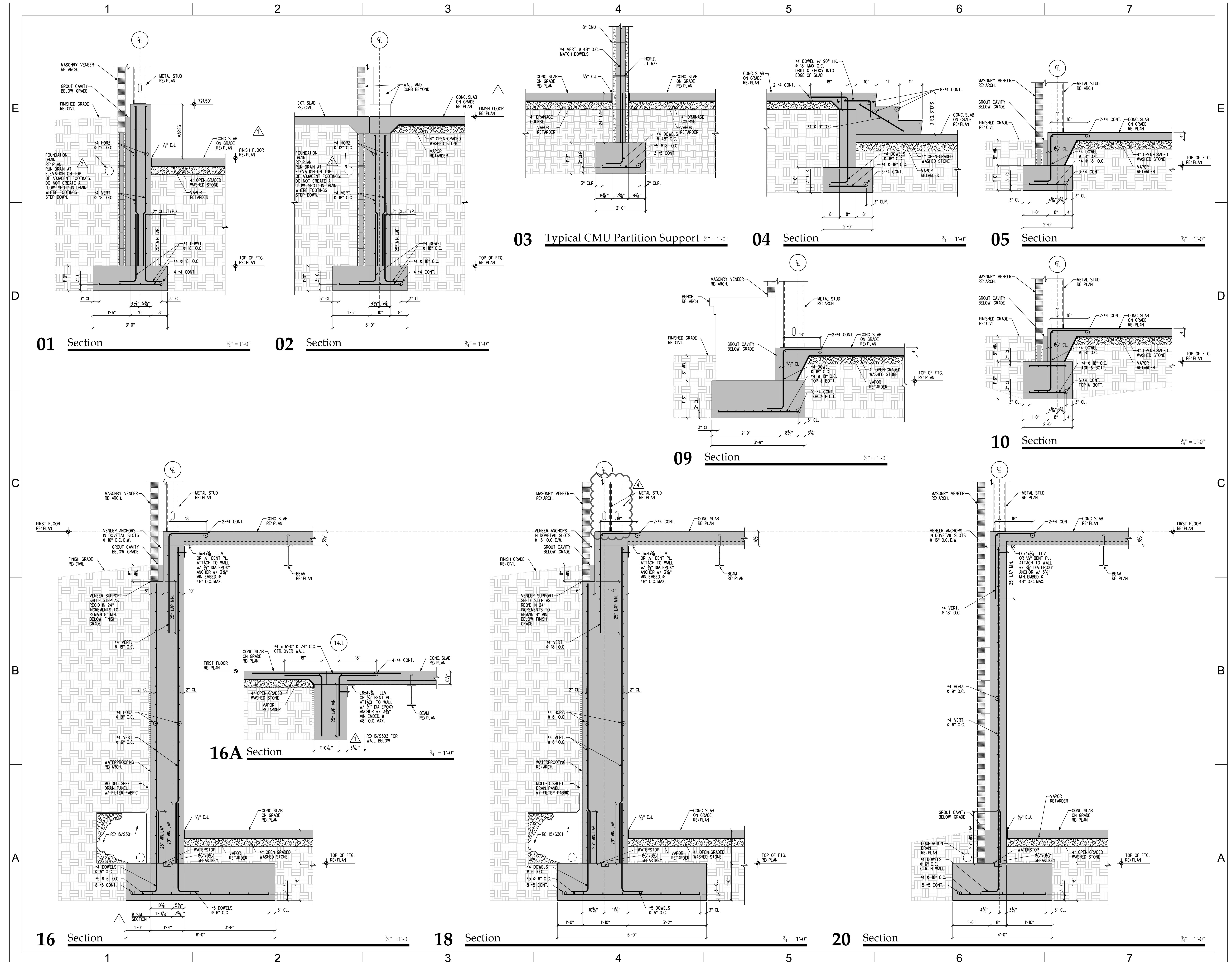
FWA PROJECT NO.: 2420.02
SCO PROJECT NO.: #12-10117-03A
KWK PROJECT NO.: 13110
DRAWN BY:
APPROVED BY:
THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF CONTRACT
AND NOT TO BE COPIED EXCEPT BY THE FWA
GROUP ARCHITECTS. UNAUTHORIZED
DUPLICATION OR REUSE WITHOUT
WRITTEN CONSENT IS PROHIBITED.

SHEET TITLE

FOUNDATION
DETAILS

SHEET NUMBER

S303





FOR CONSTRUCTION

CONSTRUCTION DOCUMENTS

UNC CHARLOTTE
RESIDENCE HALL
PHASE XIV

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

MARK (YYYY-MM-DD)	DATE	DESCRIPTION
2015-04-10		BID DOCUMENTS
2015-04-18		ADDENDUM #5
2015-04-18		BUILDING PACKAGE BID DOCUMENTS
2015-07-02		ADDENDUM #1

FWA PROJECT NO.: 2420.02
SCO PROJECT NO.: #12-10117-03A
KWK PROJECT NO.: 13110
DRAWN BY: KPM
APPROVED BY: WDB

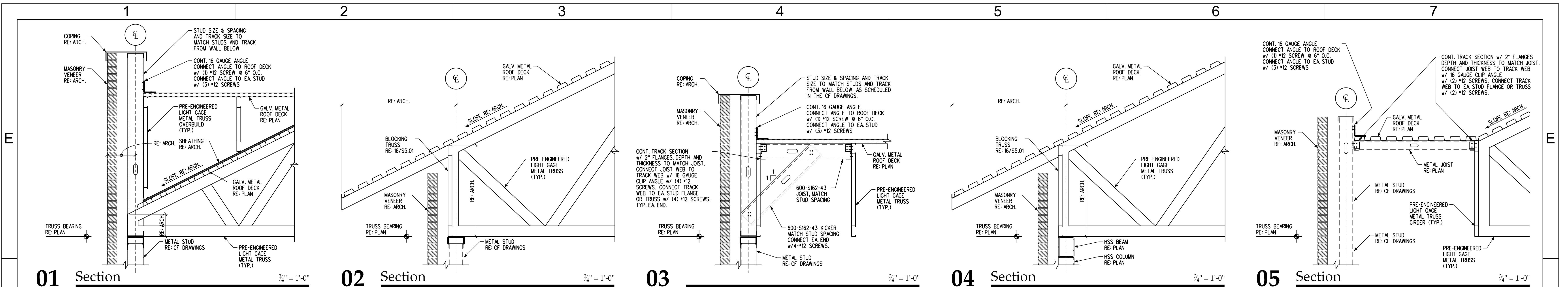
THESE DRAWINGS AND THE PROJECT
MANUAL ARE INSTRUMENTS OF TRADE
AND NOT TO BE COPIED EXCEPT BY THE FWA
GROUP ARCHITECTS. UNAUTHORIZED
DUPLICATION OR REUSE WITHOUT
WRITTEN CONSENT IS PROHIBITED.

SHEET TITLE

ROOF FRAMING DETAILS

SHEET NUMBER

S501



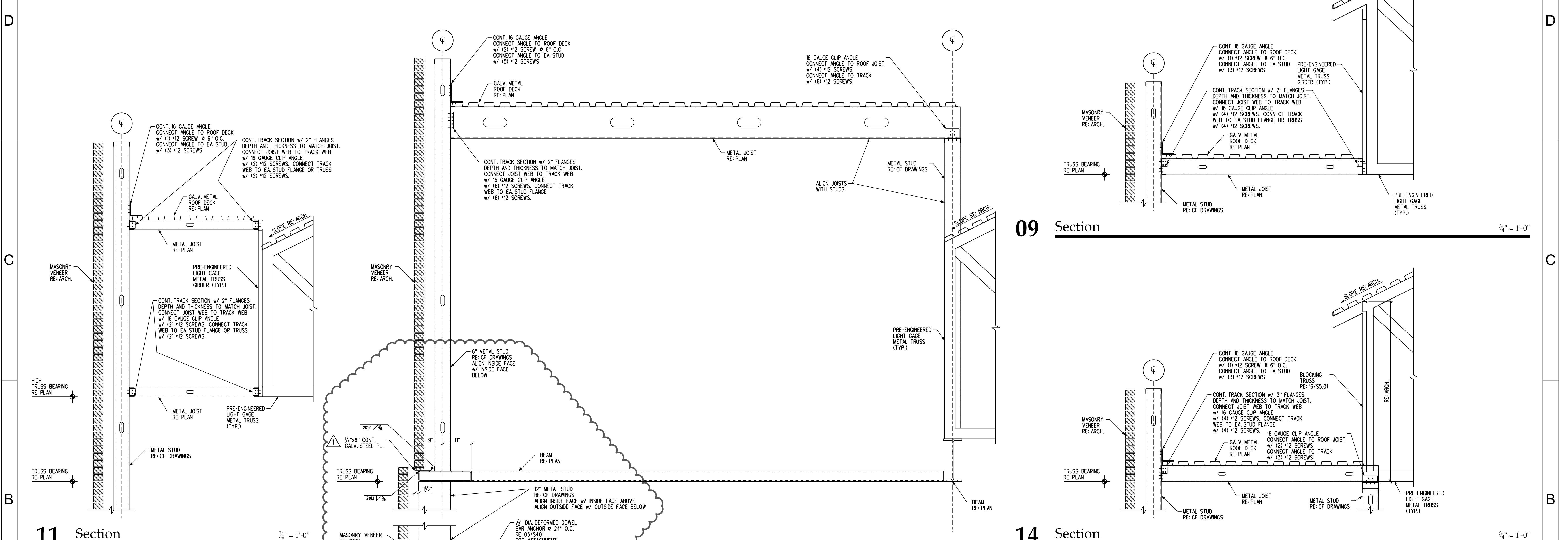
01 Section $\frac{3}{4}'' = 1'-0''$

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

03 $\frac{3}{4}'' = 1'-0''$

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

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

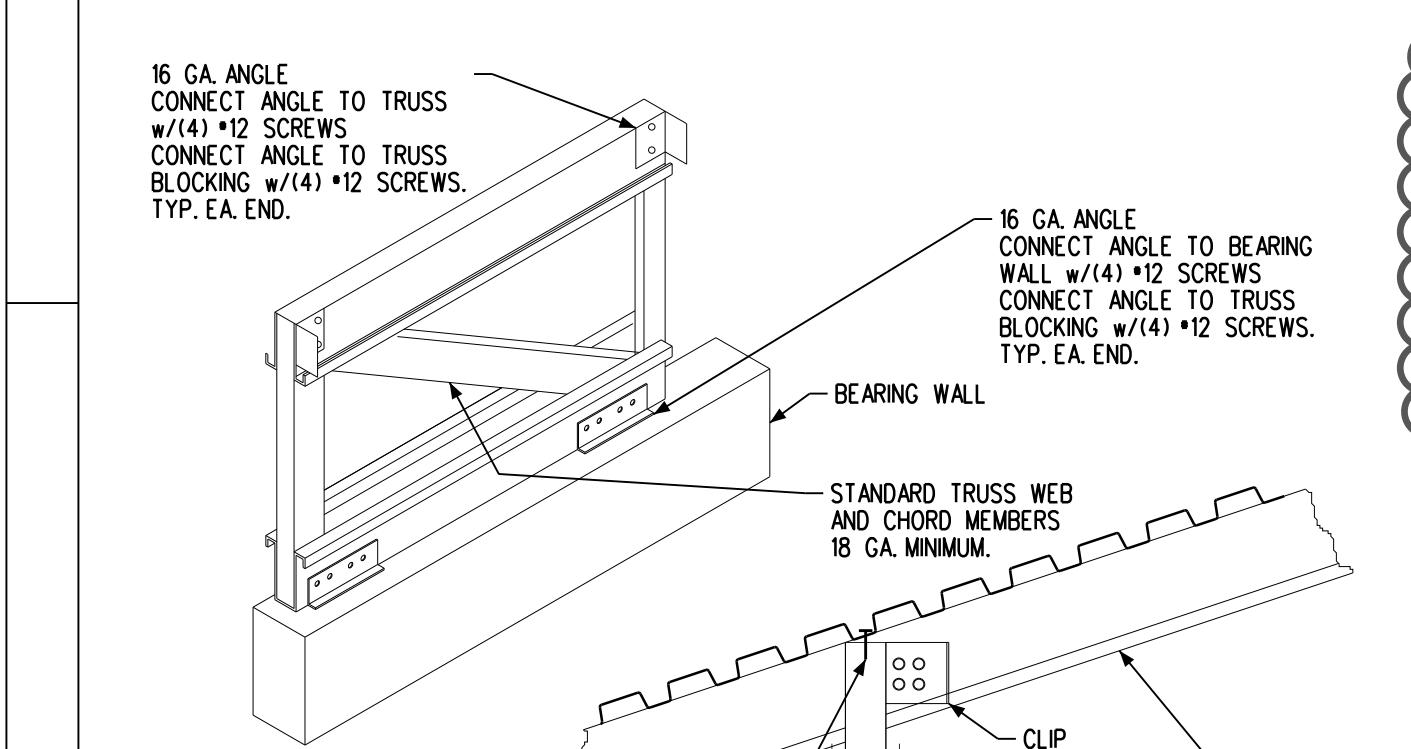


09 Section $\frac{3}{4}'' = 1'-0''$

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

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

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



16 Blocking Truss Details No Scale

16 GA ANGLE CONNECT ANGLE TO TRUSS
w/(14)*12 SCREWS CONNECT ANGLE TO TRUSS
BLOCKING w/(14)*12 SCREWS.
TYP: EA END.

16 GA ANGLE CONNECT ANGLE TO BEARING WALL w/(14)*12 SCREWS CONNECT ANGLE TO TRUSS
BLOCKING w/(14)*12 SCREWS.
TYP: EA END.

BRICK SUPPORT ANGLE 6x6x1/4 CONT. (GALV.) SEE S501 FOR ATTACHMENT.

6"-6 METAL STUD RE: CF DRAWINGS ALIGN INSIDE FACE w/ INSIDE FACE ABOVE
ALIGN OUTSIDE FACE w/ OUTSIDE FACE BELOW

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

W.W.F. CONC. SLAB RE: PLAN

2'-0" MIN.

6"-6 METAL STUD RE: CF DRAWINGS ALIGN INSIDE FACE w/ OUTSIDE FACE ABOVE

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.
RE: 05/5401 FOR ATTACHMENT.

1/2"-1/4" DIA DEFORMED DOWEL BAR ANCHOR @ 24" O.C.