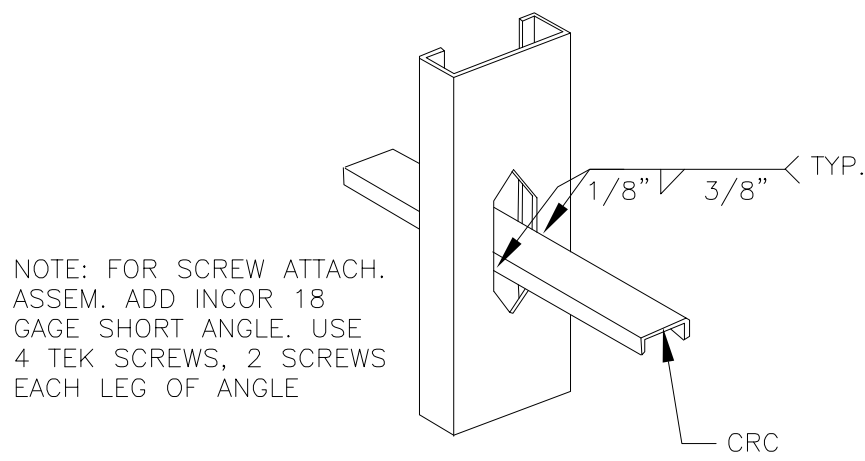


COMPOSITE GIRDER SCHEDULE					
MARK	SIZE	NO. OF 3/4" STUDS x5" REQ'D. EA. SP.	SPACING	NOTES	REACTION(KIPS)
G12	W16x26	10	@12"O.C.		14
G22	W21x44	42	@6"O.C.		40
G32	W18x35	32	@8"O.C.		29
G52	W16x26	10	@12"O.C.		11
G62	W18x40	28	@9"O.C.		30
G72	W16x26	20	@6"O.C.		13
G82	DO	DO	DO		10
G102	W21x50	40	@12"O.C.		49
G112	W18x40	42	@6"O.C.		32
G132	W14x26	20	@12"O.C.		21
G142	W16x26	15	@12"O.C.		34
G152	W18x40	36	@6"O.C.		47
G162	W21x50	38	@8"O.C.		
G182	W16x26				
G13	W21x44	20	@12"O.C.		40
G14	W21x44	20	DO		46
G1121	W24x55	32	@8"O.C.		66
G41	W16x36	11	@12"O.C.		30
G42	W16x31	11	@12"O.C.		24
G131	W21x44	20	@12" O.C.		

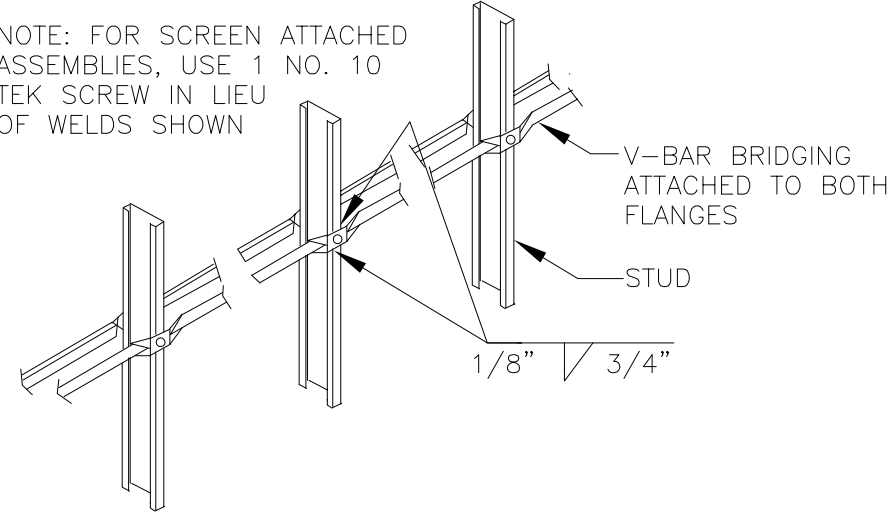
COMPOSITE BEAM SCHEDULE					
MARK	SIZE	NO. OF 3/4" STUDS x5" REQ'D. EA. SP.	SPACING	NOTES	REACTION(KIPS)
B10	W12x14	5	@12"O.C.		
B12	W16x26	5	@24"O.C.		10
B13	W24x55	21	DO	CAMBER +1"	24
B14	W24x68	21	DO	DO	30
B15	W8x10	10	@12"O.C.		
B16	W8x10	4	DO		
B141	W27x94	21	@24"O.C.	CAMBER 1 1/2"	62
B31	W16x26	16	@16"O.C.		15
B32	W12x14	5	@12"O.C.		
B33	W16x26	15	DO		11
B51	W21x50	16	@24"O.C.		
B52	W18x35	16	DO		16
B61	W16x26	10	DO		
B62	W14x22	10	DO		10
B71	W16x26	8	DO		
B72	W14x18	8	DO		9
B82	W16x26	12	DO		12
B92	W30x90	57	@8"O.C.	CAMBER +1"	48
B102	W12x14	5	@24"O.C.		5
B112	W24x55	21	DO	CAMBER +1"	21
B151	W16x31	10	@12"O.C.		
B221	W16x26	28	DO		14
B521	W18x40	16	@24"O.C.		10
B1122	W27x84	26	@24"O.C.	CAMBER +1 1/2"	27

STUD WALL SCHEDULE (INTERIOR)					
FLOOR	MAX. CLR. HEIGHT	SIZE	GAGE	SPACING	BRIDGING \$x IN ³
FT - 2 ND	14	4"	16	16"O.C.	3 ROW .428
2 ND - 3 RD	14	4"	16	16"O.C.	DO DO
ROOF	8	6"	16	16"O.C.	DO .765

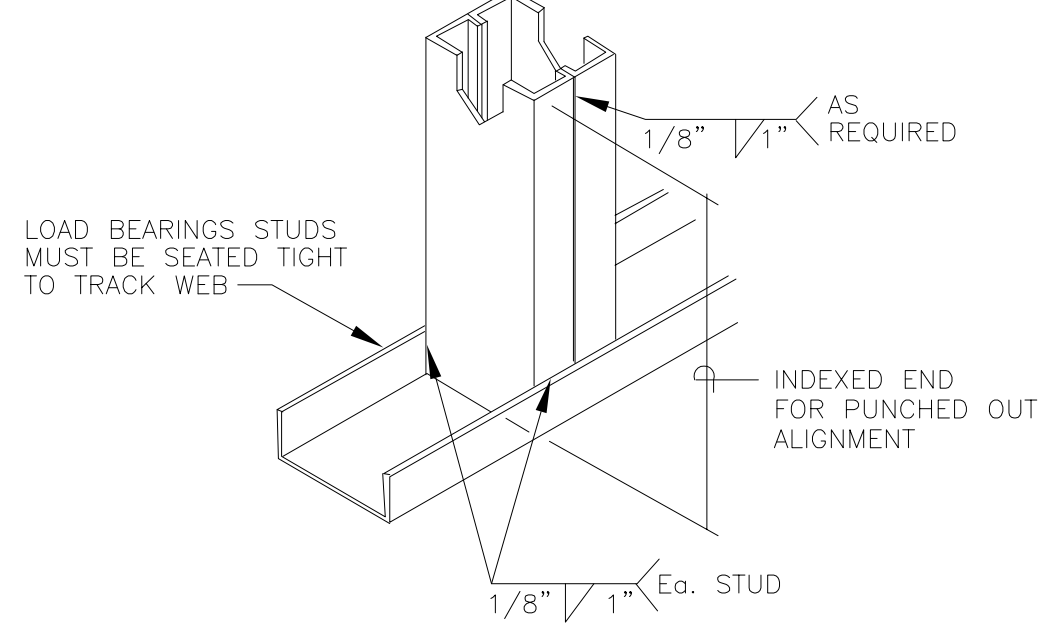
NOTES: 1. MAX. DEFLECTION V_{max}
2. MIN. 2 FULL HEIGHT STUDS EACH WINDOW OPENING
3. PROVIDE 16GA. SLOTTED P U W / #9GA. GALV. WIRE TIES
@ 16" O.C. HORIZ. & VERT.



DETAIL D S18



DETAIL E S18



DETAIL F S18

STRUCTURAL NOTES

GENERAL

- DESIGN LIVE LOADS
ROOF: 20 PSF PLUS 10 PSF (FUTURE)
FLOORS: 100 PSF
MECHANICAL: 300 PSF
CATWALK: 25 PSF
ATTIC: 10 PSF
BASIC WIND DESIGN VELOCITY: 100 MPH -EXP. C
SEISMIC ZONE 1 $A_v=.075$
- CONTRACTOR VERIFY ALL DIMENSIONS AND DETAILS AT JOB SITE.
- U.N.O MEANS "UNLESS NOTED OTHERWISE"
- ALL SPECIFICATIONS REFER TO LATEST EDITION.
- ALL WORK TO COMPLY WITH N.C. STATE BUILDING CODE VOLUME 1.
- STRUCTURAL FRAME TO BE BRACED UNTIL ERECTION IS COMPLETE.
DESIGN BASED ON RIGID WELDED STEEL MOMENT FRAMES AND MASONRY SHEAR WALLS.
- FOUNDATION-PIILING:
AUGERCAST PILING:
1. PILES SHALL MEET SECTION 1307 OF THE N.C. STATE BUILDING CODE INCLUDING ALL TESTING REQUIREMENTS. MIN. f_c AT 28 DAYS SHALL BE 4000 PSI. (AUGER CAST) PILES SHALL BE INSTALLED TO 40 TON CAPACITY. LOAD TEST THE TWO PILES AS PER SECTION 1303.2.4 N.C. STATE BUILDING CODE AND SPECIFICATIONS.

- SPREAD FOOTINGS:
1. FOOTING DESIGN ON ALLOWABLE SOIL PRESSURE OF 2500 PSF. CONTRACTOR TO VERIFY IN FIELD. SEE WESTINGHOUSE REPORT NO. 1054-91-406 DATED 1/30/91
- REMOVE TOPSOIL, ORGANICS, SOFT CLAY UNDER ALL FLOOR SLABS, FOOTINGS AND 5'-0" BEYOND BUILDING WALL. PROOFROLL EXPOSED SUBGRADE WITH 10 TON VIBRATORY ROLLER MAKING 3 PASSES IN EACH DIRECTION. BACKFILL W/CLEAN SELECTED FILL COMPACTED IN 8" LAYERS TO 98% OF MAXIMUM DENSITY AT OPT. MOISTURE CONTENT. FILL UNDER FLOOR SLABS TO BE COMPACTED IN 6" LAYERS TO 100% DENSITY AT OPT. MOISTURE CONTENT (ASTM D-698)
- WHEN BOTTOM FOOTING IS AT OR BELOW WATER TABLE, PROPERLY DEWATER EXCAVATION PRIOR TO PLACING CONCRETE.

CONCRETE

- CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS: PILE CAPS AND FOOTINGS=3000 PSI, SLAB ON GRADE & FLOORS=3000 PSI. GRADE BEAMS 4000 PSI.
- REINFORCING STEEL ASTM A615, GRADE 60, WELDED WIRE FABRIC ASTM A185.
- CLEAR CONCRETE COVER ON REINF.; FOOTINGS 3", SLAB ON GRADE 1 1/2", WALLS 2", FLOORS 3/4", BEAMS, GIRDERS, COLUMNS = 1 1/2".
- DOWELS AND CONTINUOUS REINF. SHALL HAVE MIN. LAP OF 36 BAR DIAMETERS OR 16" MIN.
- PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT.
- REINF. CONCRETE WORK SHALL CONFORM TO LATEST EDITION OF ACI CODE 301

STRUCTURAL STEEL:

- ALL WORK TO CONFORM TO:
AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AND AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS LATEST EDITIONS.
- STRUCTURE IS TYPE 1 CONSTRUCTION AS DEFINED IN THE LATEST AISC SPECIFICATIONS.
- STRUCTURAL STEEL - A36 U.N.O
- WELDING ELECTRODES - E-70 SERIES. BOLTS 3/4" / d.i.s. ASTM A325-N U.N.O MIN. DESIGN CONNECTIONS FOR FULL STRENGTH OF MEMBERS.
- STEEL ROOF DECK TO BE SCREWED TO SUPPORTS IN ACCORDANCE W/SDI RECOMMENDATIONS FOR DIAPHRAM ACTION. MIN 36/4 PATTERN
- ALL WELDS SHALL BE MADE BY CERTIFIED WELDERS OF AWS FOR TYPE OF WELD REQUIRED
- STUDS - A108
NO SHOP PAINT SHALL BE APPLIED TO ANY STUDS NOR TO TOP FLANGE SURFACE OF STEEL BEAM RECEIVING FIELD WELDED STUDS.
- SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
- SHOP PAINT TWO COATS AND TOUCH UP AFTER ERECTION AS REQ'D.
- PROVIDE "TENSION CONTROL BOLTS" FOR ALL FIELD CONNECTIONS.
- STEEL FLOOR DECK - 20 GA. GALV. ASTM A446, $i=.0430$ IN / 4" FT. X2"
- BEARING END OF ALL BEAMS TO BE CENTERED OVER WEB OF SUPPORTING MEMBERS. MINIMUM BEARING ON MASONRY 4", ON STEEL 2 1/2"
- STUDS - A108

STRUCTURAL MASONRY:

- ALL MASONRY WALLS ARE CONSIDERED STRUCTURAL MASONRY
- COMPRESSIVE STRENGTH OF MASONRY UNITS: CONC. UNITS GRADE N, TYPE I LIGHTWEIGHT, $f_m = 1500$ PSI. BRICK - $f_m = 2500$ PSI.
- COMPRESSIVE STRENGTH OF MORTAR AT 28 DAYS TO BE 1,800 PSI. MIN. TYPE S.
- TIE WYTHES WITH HORIZ. REINF. BARS AS SPECIFIED.
- USE 2-#5 REINF. IN BLOCK LINTELS; MIN. BEARING 8", FILL BOND BEAMS & LINTELS, PILASTERS & WALL WITH 3000 PSI CONCRETE. (PEA GRAVEL MIX).
- WHERE REINFORCING BARS ARE SHOWN TO BE GROUTED IN MASONRY, THEY SHALL BE INSTALLED IN ACCORDANCE WITH ACI WITH PROPER LAPS. LAPS SHALL BE TIED.
- WHERE GROUTED REINFORCING MASONRY IS SHOWN, GROUT SHALL BE INSTALLED IN A MAXIMUM OF 5 FT. LIFTS.

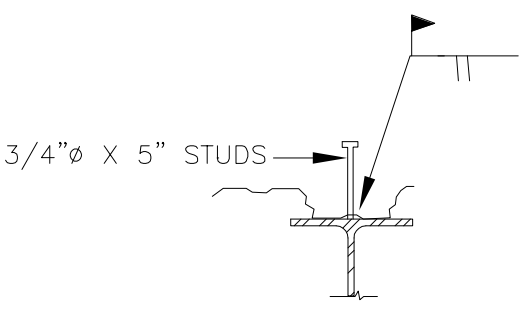
LIGHTGAUGE STEEL FRAMING:

- A.I.S.I. "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS".
- STUDS: GALV. STEEL - 14 & 16 GA. CONFORM TO ASTM A446-76, GRADE D, $F_y = 50$ KSI - 18 & 20 GA. CONFORM TO ASTM A446-76, GRADE A, $F_y=33$ KSI.
- WELD STUDS WITH A MIN. OF 1" x 1/8" FILLET EACH SIDE U.N.O ALL WELD TO BE BY WELDERS AS UNDER "STRUCTURAL STEEL".
- BRIDGING (WALLS) - TWO ROWS @ 5'-0" O.C. MAX.

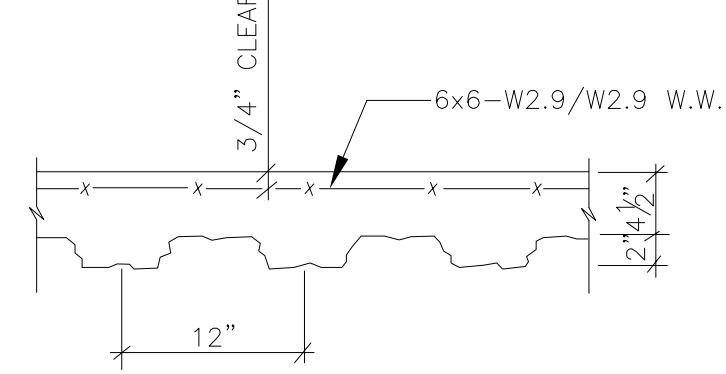
DEAD LOAD	DESIGN LOADS			
	ROOF TOP CHORD	ROOF BOT. CHORD	CLASSROOMS OFFICES	CORRIDORS
SHINGLES	3.0 PSF			
GYP SUM. DECK	10.0 PSF			
CEILING		7.0 PSF	5.0 PSF	5.0 PSF
M/E	2.0 PSF	5.0 PSF	10 PSF	10 PSF
4 1/2 N. WT. COMPOSITE W/2" GALV. STEEL DECK			69	69
FIREPROOFING AND FLOORING			6	6
PARTITIONS			20	
TOTAL DEAD LOAD	15 PSF	12.0 PSF	110 PSF	90 PSF
TOTAL LIVE LOAD	30 PSF	10.0 PSF	80.0 PSF	100 PSF

STRUCTURAL TIMBER:

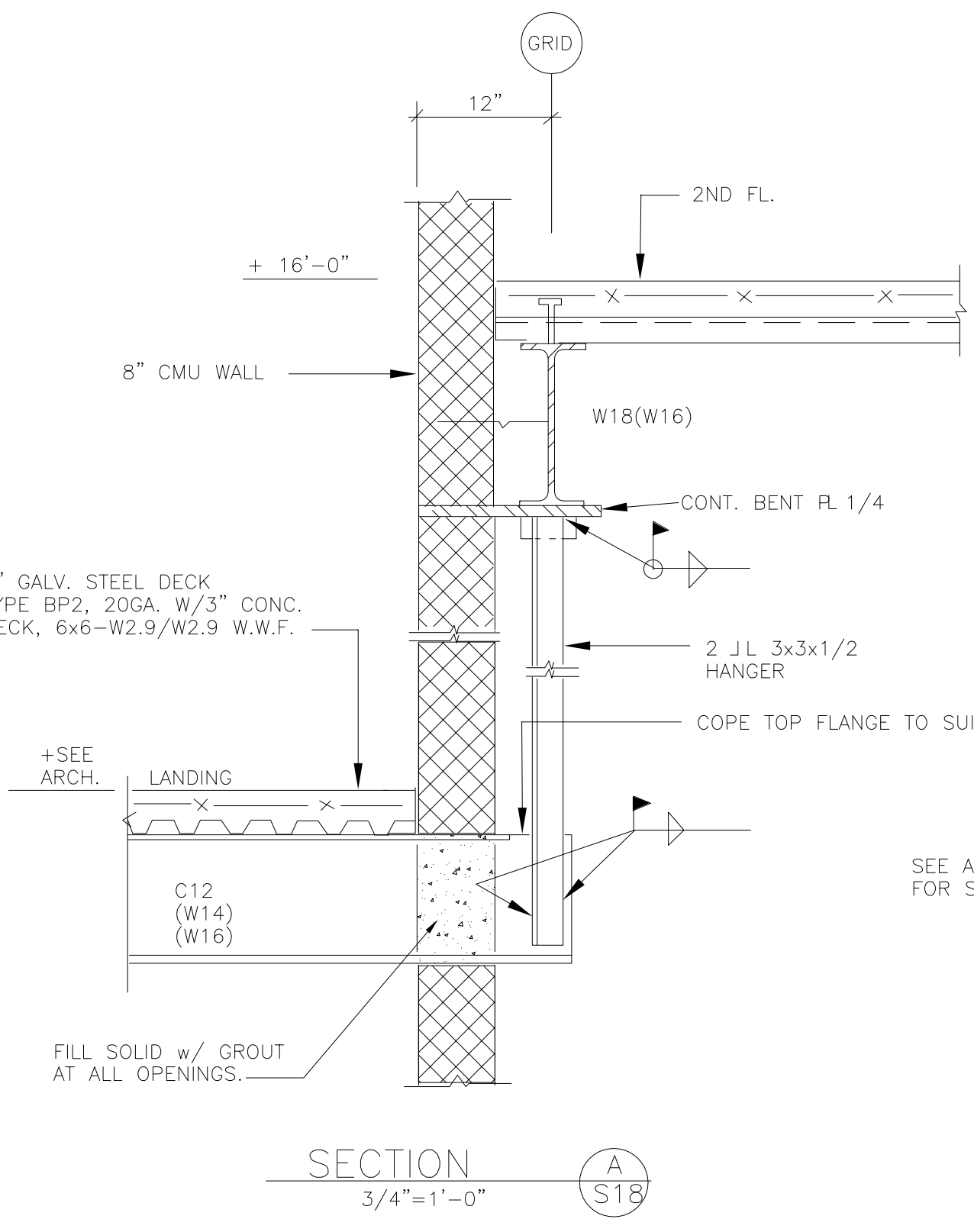
- LUMBER SHALL BE AS FOLLOWS:
2# KD SOUTHERN YELLOW PINE OR EQUAL.
- NAIL SIZES AND NO. REQUIRED ARE NOT SHOWN. SUFFICIENT NAILING SHALL BE REQUIRED TO DEVELOPE JOINT STRENGTH IN KEEPING WITH BEST PRACTICE. USE ONLY DOMESTIC H.D. GALVANIZED NAILS. ALL NAILING SHALL BE IN ACCORDANCE WITH N.C. BUILDING CODE TABLE 1704.1 FASTENING SCHEDULE.
- ALL HARDWARE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 AS APPLICABLE OR USE "2 MAX".
- LUMBER ABOVE GROUND AND EXPOSED TO WEATHER SHALL BE PRESSURE TREATED TO 0.25 LBS/CF NET RETENTION. ALL LUMBER IN CONTACT WITH GROUND SHALL BE PRESSURE TREATED TO 0.6 LBS/CF NET RETENTION.



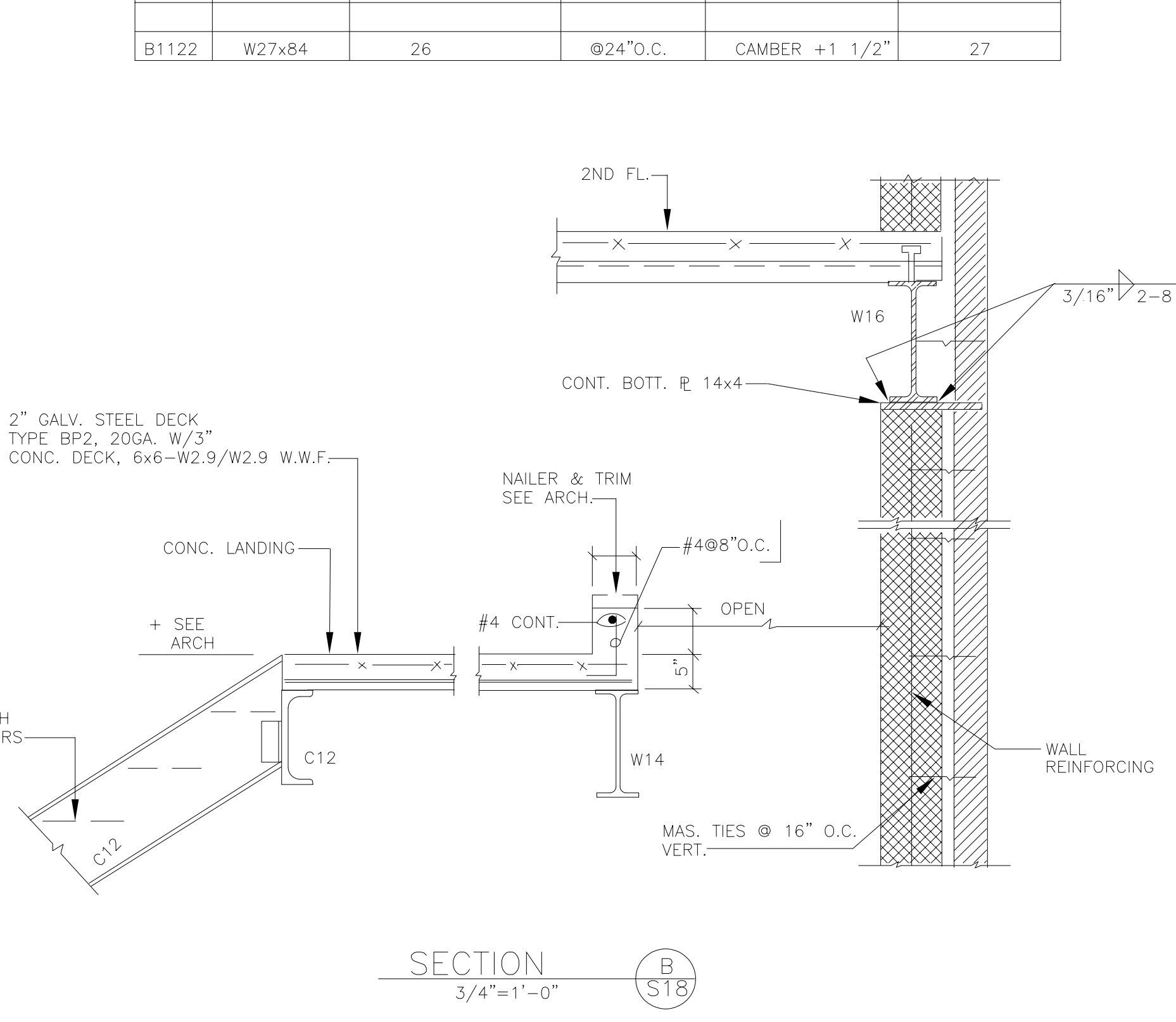
STUD WELDING DETAILS N.T.S.



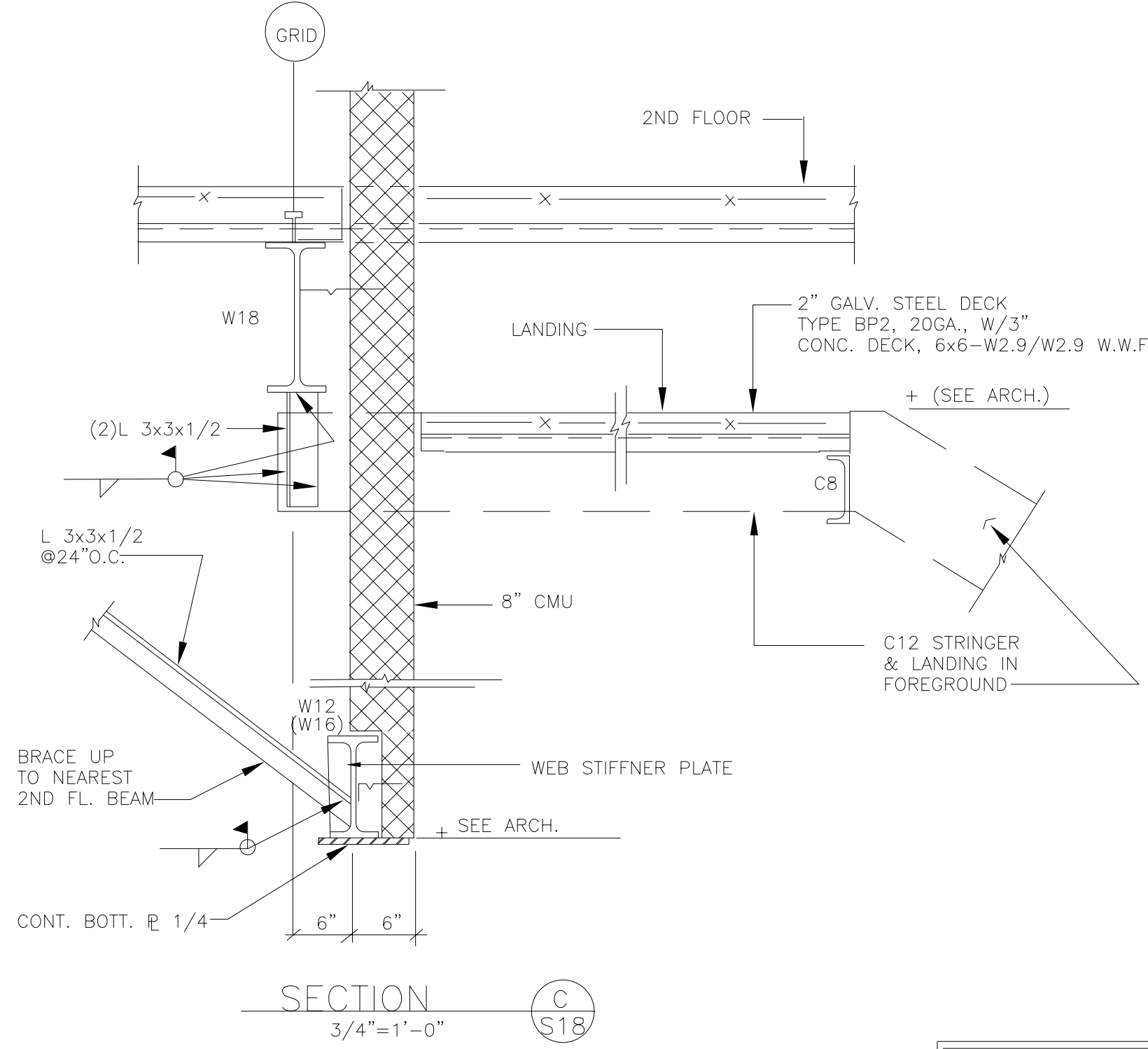
TYPICAL DECK SECTION N.T.S. TYPE BP2 SP=.37in² 20GA. GALV. $i=.0430$ in⁴/FT



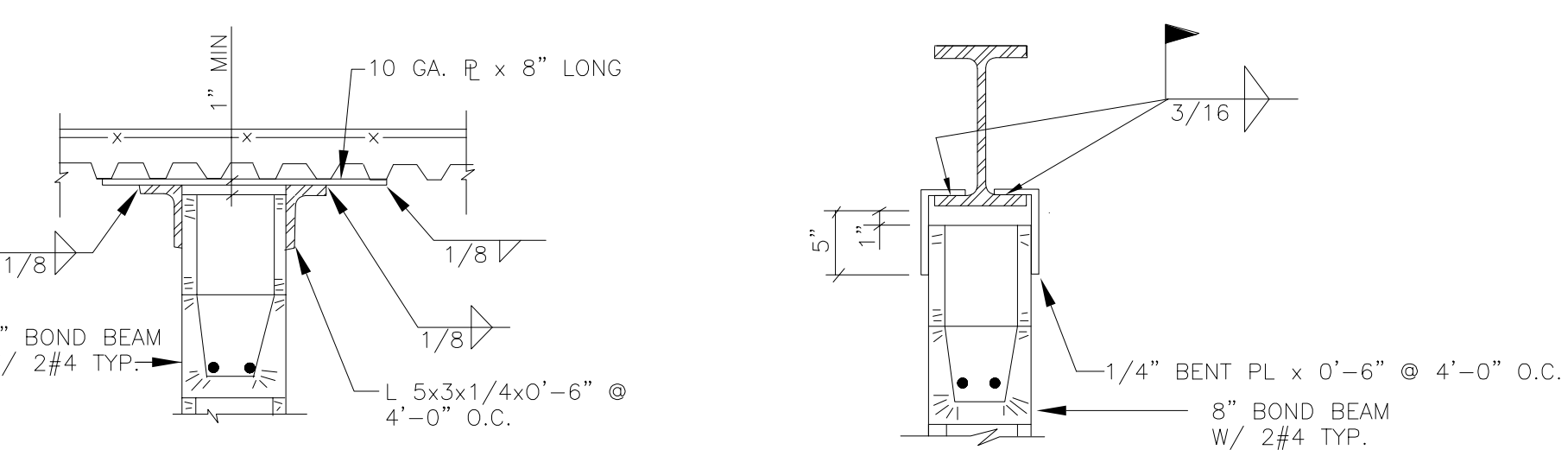
SECTION A S18



SECTION B S18

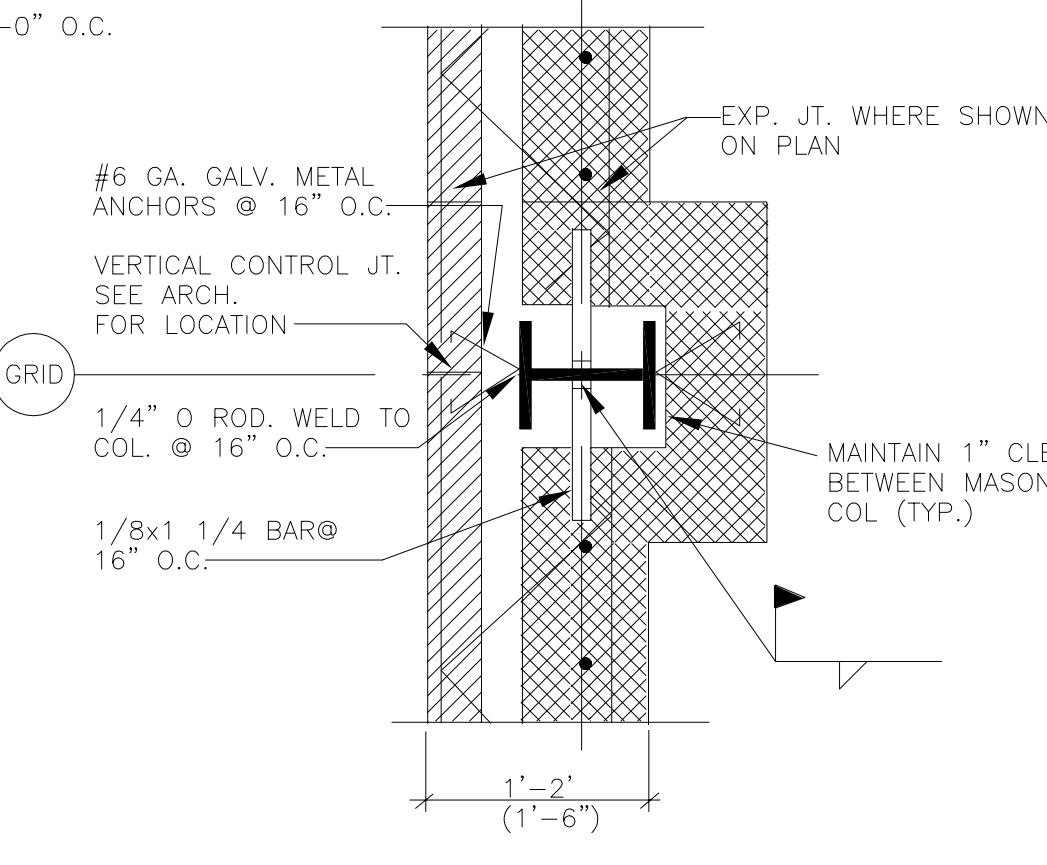


SECTION C S18

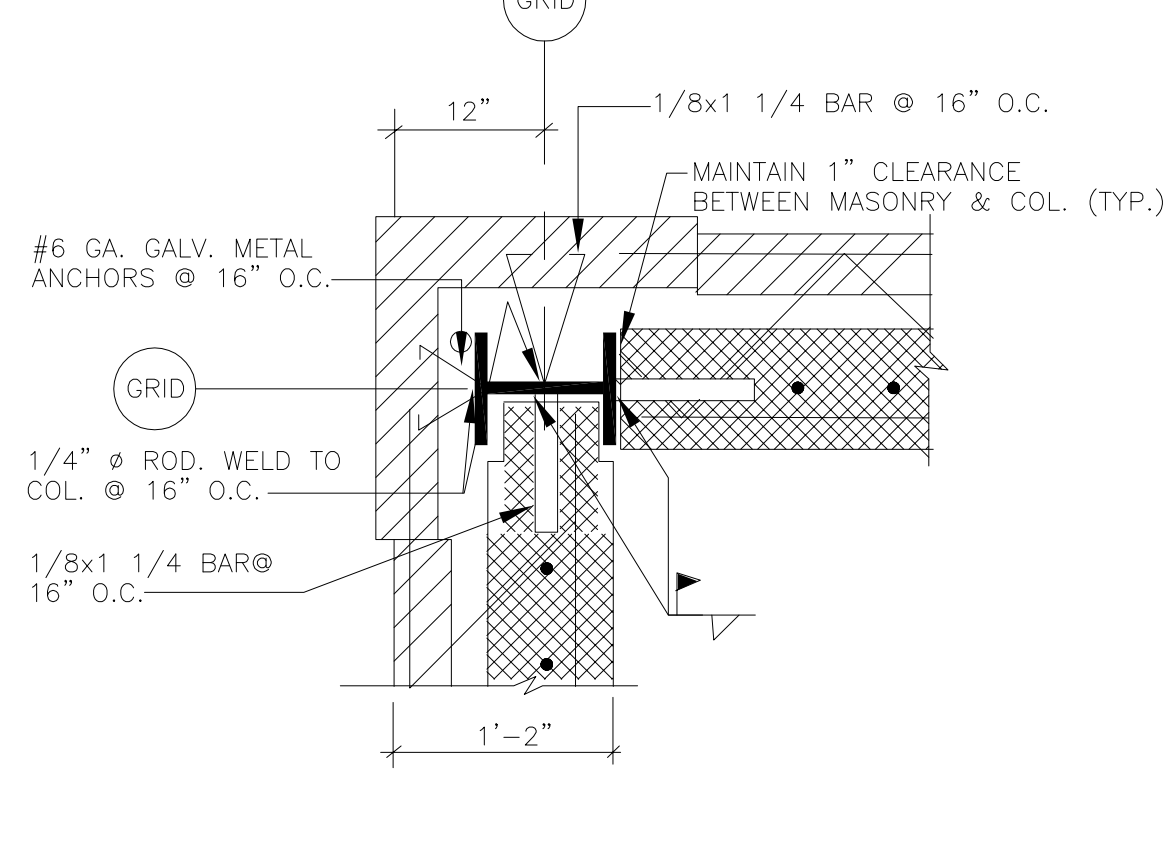


WALL BRACING DETAILS (INTERIOR & EXTERIOR MASONRY WALLS)

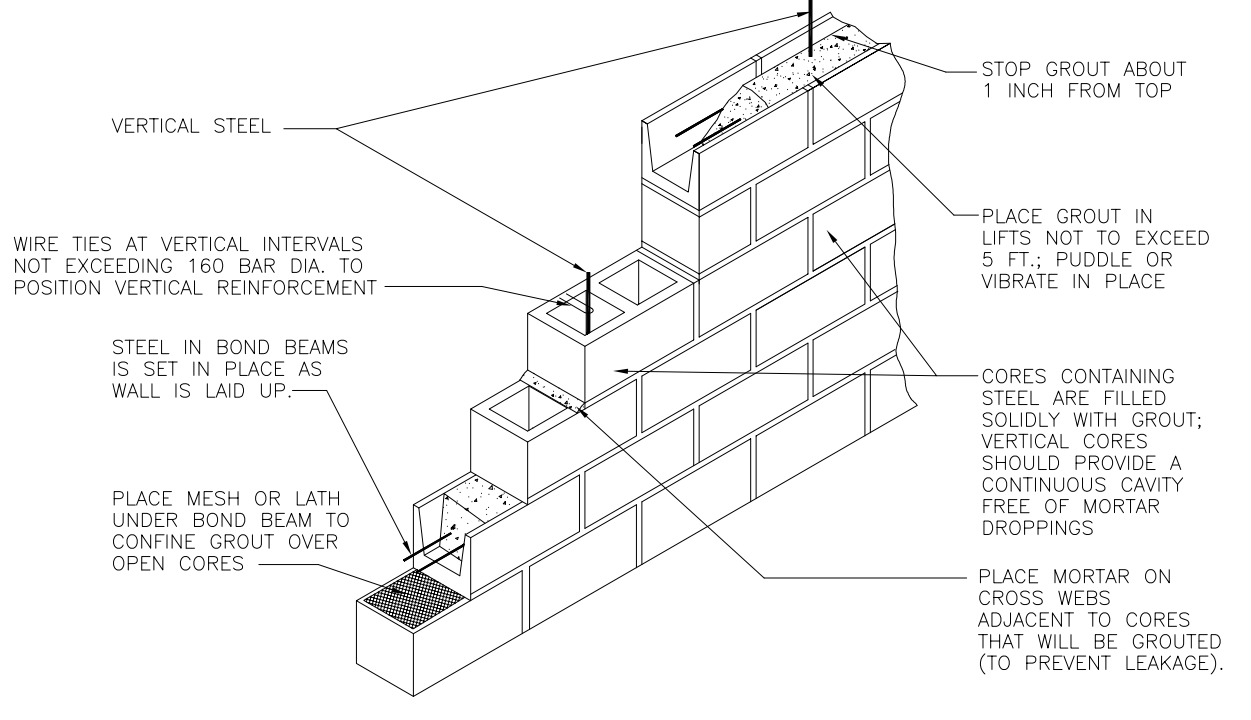
EXTERIOR MASONRY WALL REINFORCING SCHEDULE		
#4 @ 16" O.C. REQ'D. SEE SECTION		S18



WALL CONTROL JOINT DETAIL

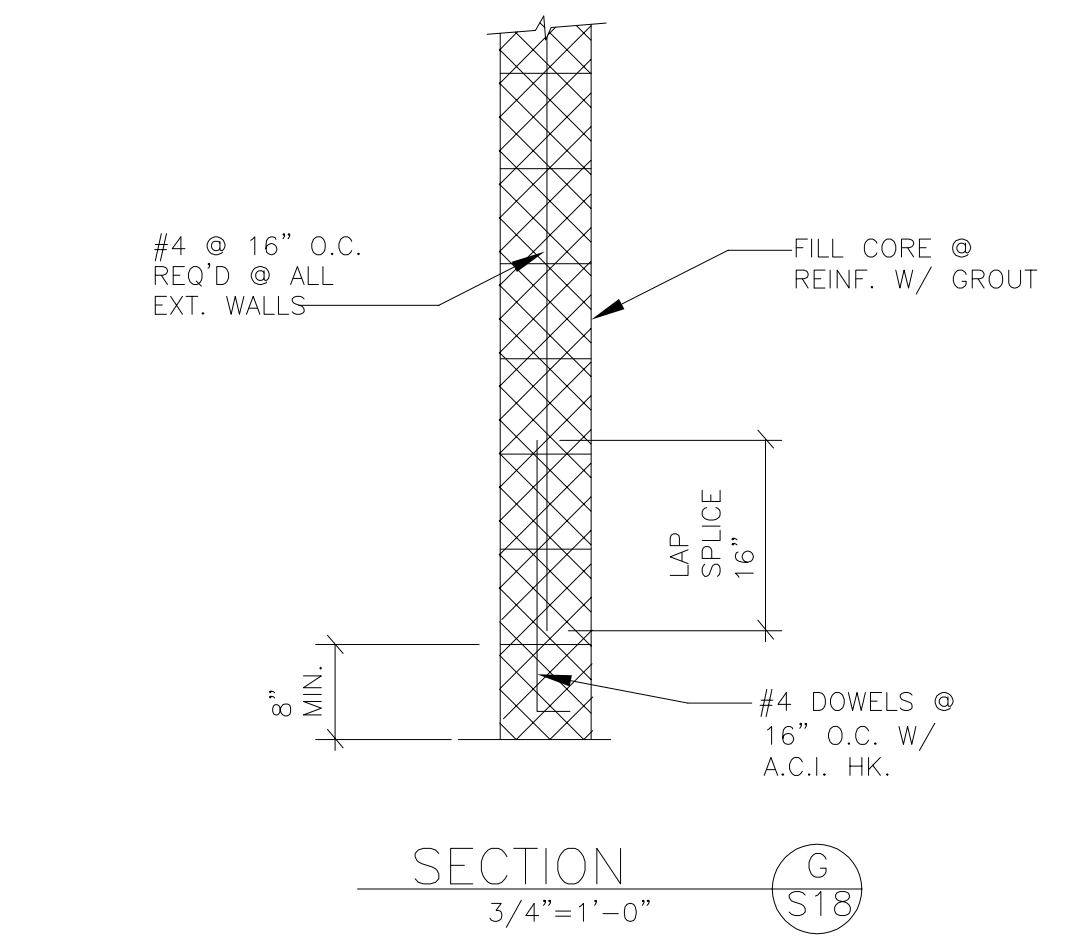


WALL CONTROL JOINT @CORNER DETAIL

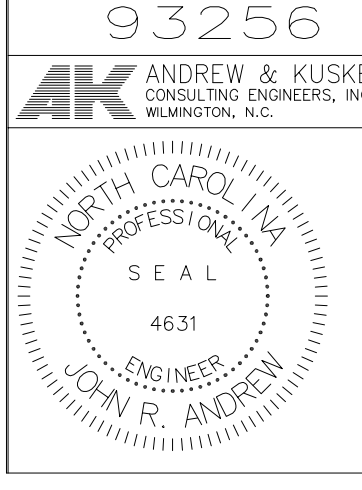


LOW LIFT GROUT METHOD DETAIL NTS

LINTEL SCHEDULE		
TYPE	MARK	DESCRIPTION
CONCRETE MASONRY	L1	SIZE: 8x8 OR 6x8 CMU REINF: 2 #4 BOTTOM ALLOW 8" MIN. BRG. EA. SIDE OF M.O. MAX. M.O. 4'-0"
	L2	SIZE: 12x16 OR 8x16 CMU REINF: 2 #5 BOTTOM ALLOW 8" MIN. BRG. EA. SIDE OF M.O. MAX. M.O. 8'-0"
	L3	SIZE: 12x8 CMU REINF: 3 #5 BOTTOM ALLOW 8" MIN. BRG. EA. SIDE OF M.O. MAX. M.O. 4'-0"
STEEL ANGLE	L4	BRICK VENEER ON CMU OR STUD WALL UP TO 4'-0" M.O. USE $\angle 3 \times 3 \times 5/16$
	L5	SPANS 4'-0" TO 6'-0" $\angle 4 \times 3 \times 5/16$ SPANS 6'-0" TO 8'-0" $\angle 5 \times 3 \times 5/16$ ALLOW 6" MIN. BRG. EA. SIDE OF M.O. FOR 8" BRICK WALL USE TWO ANGLES OF THE SAME SIZE AS NOTED ABOVE



SECTION G S18



DRAWING REVISIONS:		
NO.	DATE:	REMARKS:

DATE:	5/16/94
PROJECT#:	9305
DESIGNED BY:	JRA
DRAWN BY:	JAZ
CHECKED BY:	JRA